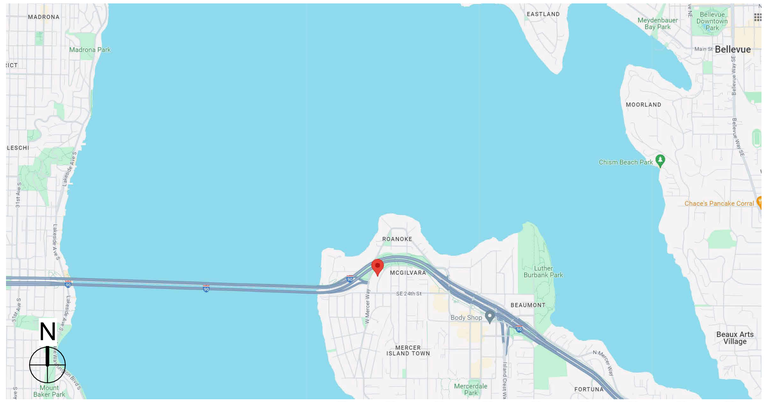
PROJECT INFORMATION

LEGAL DESCRIPTION:	HIGHPARK ADD PLat Block: 1 Plat Lot: 7
PARCEL NUMBER:	330770-0035
ZONING:	R-9.6
JURISDICTION:	MERCER ISLAND
PRESENT USE:	Single Family (Res Use/Zone)
PROJECT ADDRESS:	2247 66th Avenue SE Mercer Island, WA 98040
OWNER INFORMATION:	Name: David Sheldon & Jianchun Fan Address: 2247 66th Avenue SE Mercer Island, WA 98040 Email: dsheldonffs@gmail.com jianchun@gmail.com
ARCHITECT:	5ft2 Studio Architects, LLC info@5ft2studio.com
GENERAL CONTRACTOR:	TBD
STRUCTURAL ENGINEER:	Name: NKH Engineering Email: nabil@nkhengineering.com
WORK DESCRIPTION:	Construct one new 2-Storey Single-Family House with 1 Basement; Remove existing Single-Family House with 1 Basement and existing driveway

VICINITY MAP



ADOPTED CODES

1. BUILDING: 2021 WASHINGTON STATE RESIDENTIAL CODE
2. ENERGY: 2021 WASHINGTON STATE ENERGY CODE
3. PLUMBING: 2021 UNIFORM PLUMBING CODE (UPC) W/ WASHINGTON STATE AMENDMENT, ALL PLUMBING WORK SHALL BE DONE BY LICENSED CONSTRUCTOR UNDER SEPARATE PERMIT
4. ELECTRICAL:NATIONAL ELECTRICAL CODE (NEC) / WASHINGTON CITIES ELECTRICAL CODE (WCEC), ALL ELECTRICAL WORK SHALL BE DONE BY LICENSED CONSTRUCTOR UNDER SEPARATE PERMIT
5. MECHANICAL: 2021 INTERNATIONAL MECHANICAL CODE

FIRE SPRINKLER

MMC TITLE 17: REQUIRED FIRE SYSTEMS AND FIRE PREVENTION FEATURES:

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.

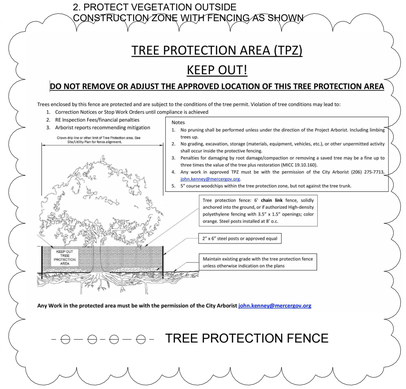
TREE & VEGETATION PROTECTION

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

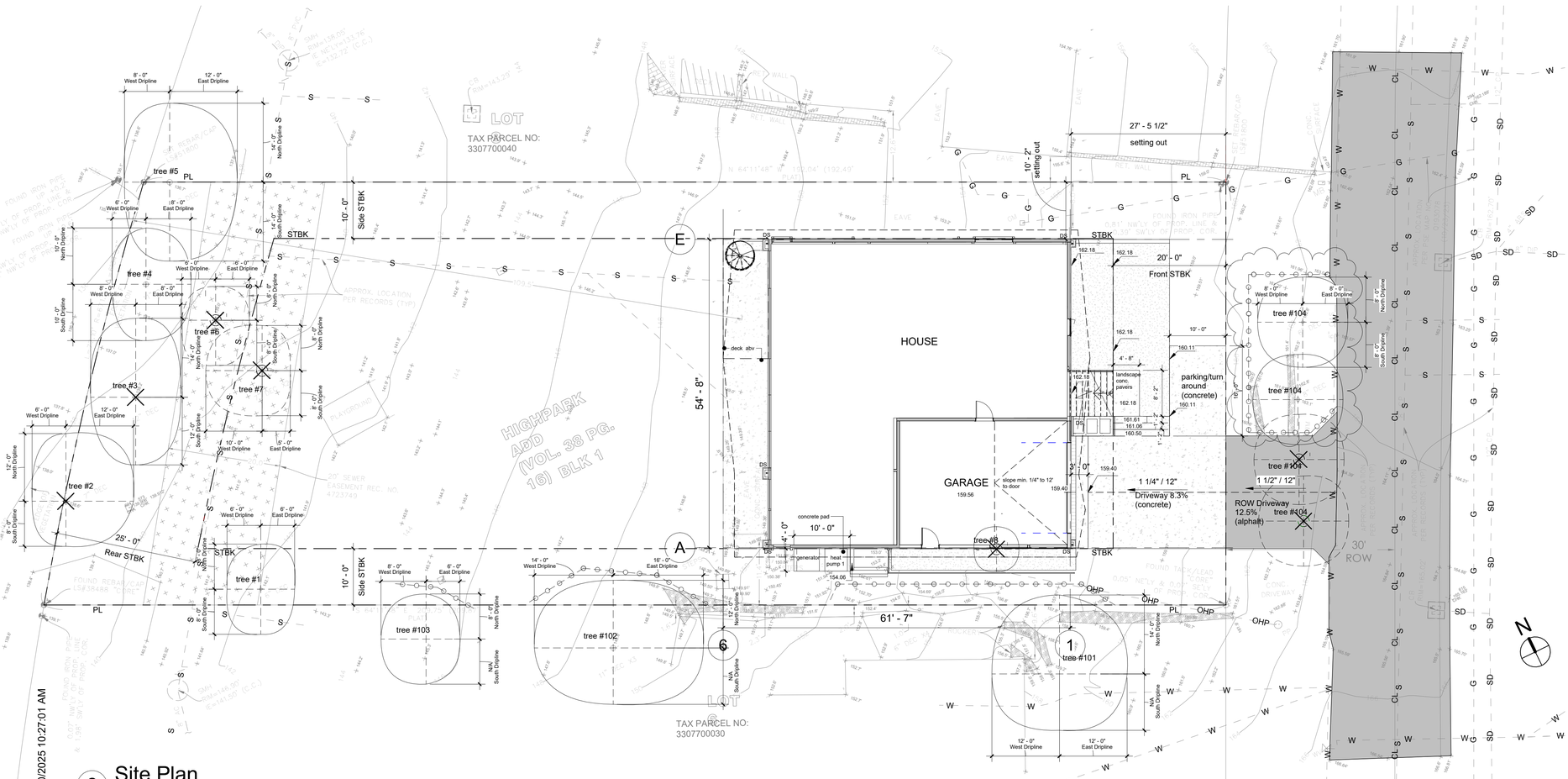
VEGETATION PROTECTION (DOES NOT APPLY TO TREES):

1. ORANGE MESH OR SIMILAR OPEN MATERIAL
2. PROTECT VEGETATION OUTSIDE CONSTRUCTION ZONE WITH FENCING AS SHOWN



ABBREVIATIONS

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



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

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SITE PLAN LEGEND

- FILL SLOPE (NOT EXCEED 6 FT FROM ORIGINAL GRADE) WITH SOFTSCAPE
- WOODEN DECK
- CONCRETE
- TREE PROTECTION FENCE
- TREE TO BE REMOVE

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20120172 REGISTERED ARCHITECT PEIK LI PANG STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

Building Permit

NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

DATE: Nov 23, 2024

Cover Sheet and Site Plan

.G1.0

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

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2625 Northup Way, Ste 100,
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20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

Building Permit

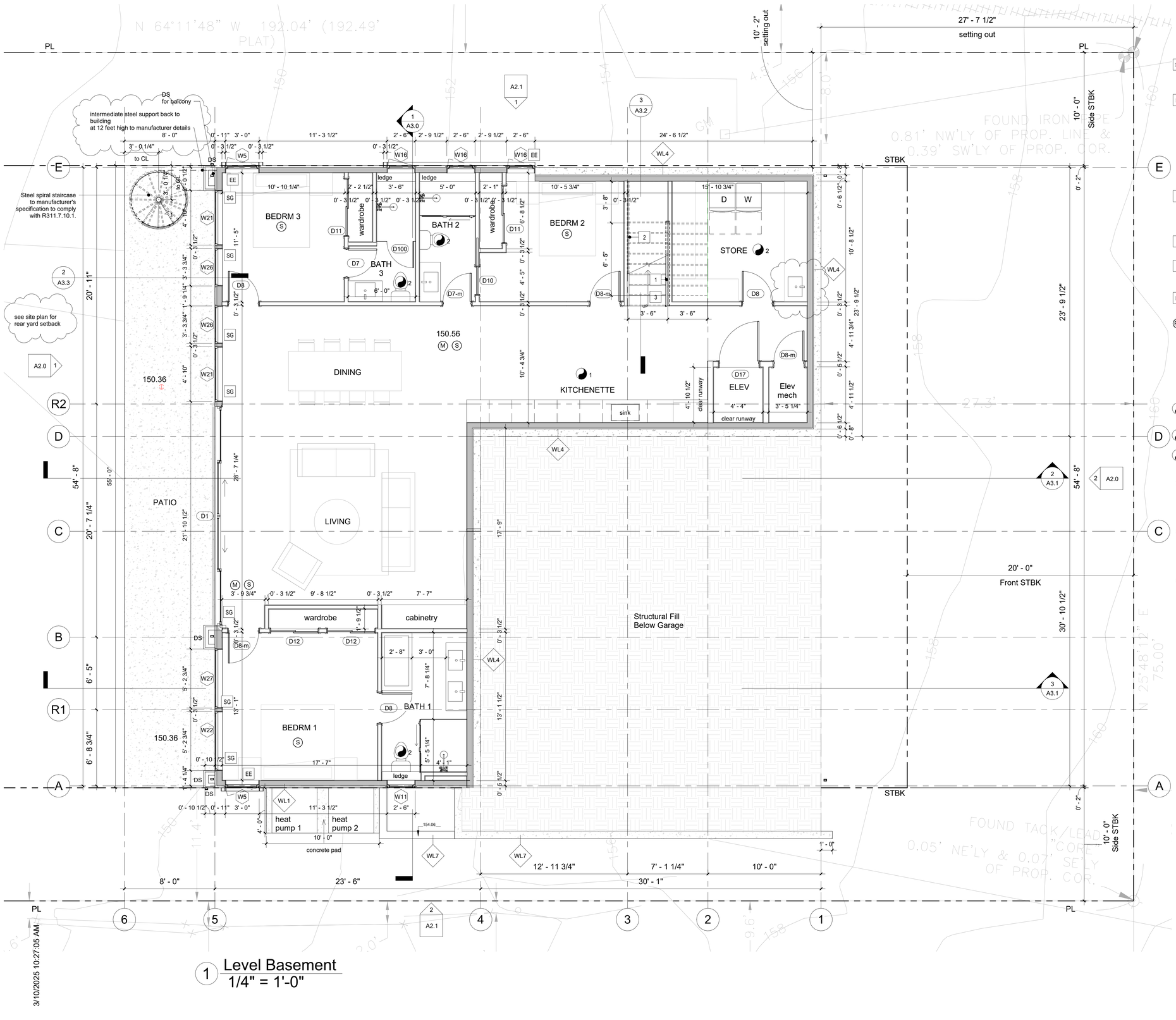
NO.	DESCRIPTION	DATE

DATE: Nov 23, 2024

General Notes

.G1.1

3/10/2025 10:27:02 AM



1 Level Basement
1/4" = 1'-0"

3/10/2025 10:27:05 AM

PLAN NOTES

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

SAFETY GLAZING PER R308 IN WINDOWS AND DOORS

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

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.

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

FP FIREPLACE
direct vent gas fireplace, install per manufacturers specification

MECHANICAL VENTILATION (M1505)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION AND WHOLE HOUSE MECHANICAL VENTILATION

1 250 CFM ON SWITCH
(makeup air shall be provided per M1503.4 if exhaust rate is 401 cfm or greater)

2 50 CFM ON SWITCH

3 90 CFM per TABLE M1505.4.3(1)

S SMOKE DETECTORS (R314.3)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

M CARBON MONOXIDE ALARM (R315.1)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

HID NEW ATTACHED GARAGES (R314.2.3)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

DWELLING-GARAGE OPENING AND PENETRATION PROTECTION (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: (R302.6)

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SEPARATION	MATERIAL
From the residence and attics	Not less than ½-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than ⅝-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than ½-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than ½-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.

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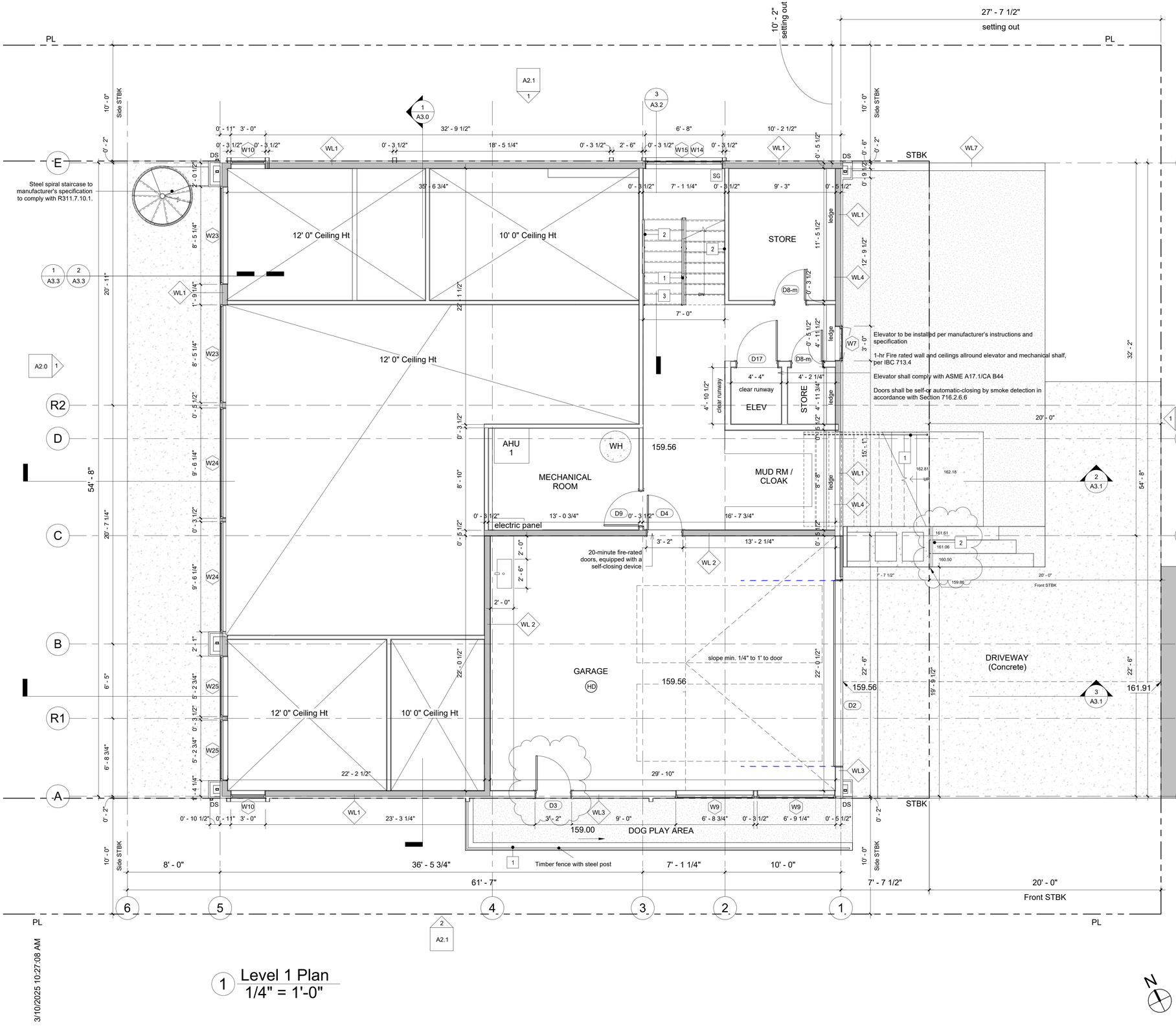
Basement

A1.0



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

3/10/2025 10:27:08 AM

PLAN NOTES

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

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FG FROSTED GLASS

FP FIREPLACE
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3 90 CFM per TABLE M1505.4.3(1)

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M CARBON MONOXIDE ALARM (R315.1)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

HD NEW ATTACHED GARAGES (R314.2.3)

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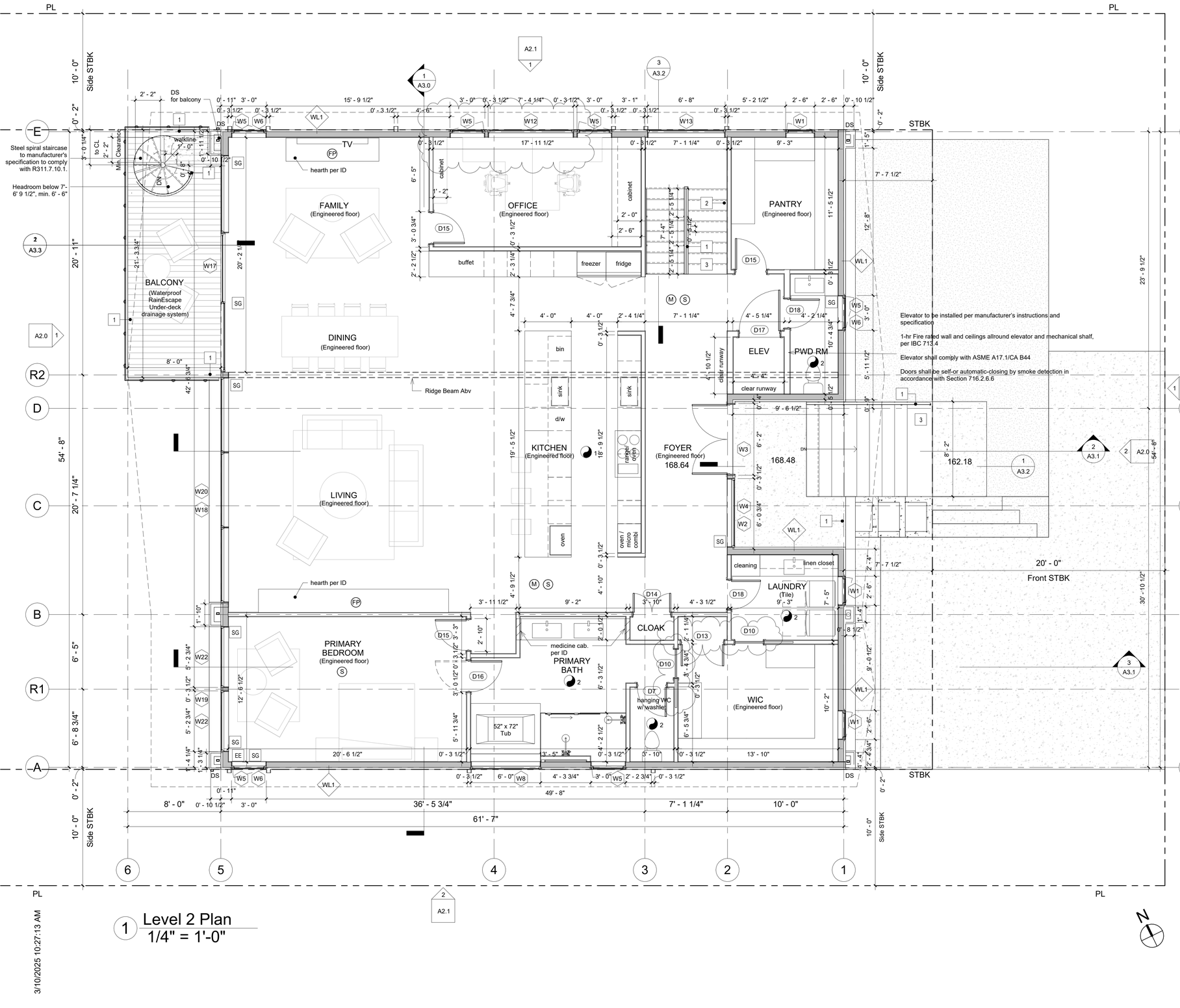
Level 1
Plan

A1.1



1 Level 2 Plan
1/4" = 1'-0"

3/10/2025 10:27:13 AM

PLAN NOTES

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

SAFETY GLAZING PER R308 IN WINDOWS AND DOORS

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FG FROSTED GLASS

FP FIREPLACE

direct vent gas fireplace, install per manufacturers specification

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2 50 CFM ON SWITCH

3 90 CFM per TABLE M1505.4.3(1)

S SMOKE DETECTORS (R314.3)

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M CARBON MONOXIDE ALARM (R315.1)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

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TABLE R302.6 DWELLING-GARAGE SEPARATION

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From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side
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STATE OF WASHINGTON
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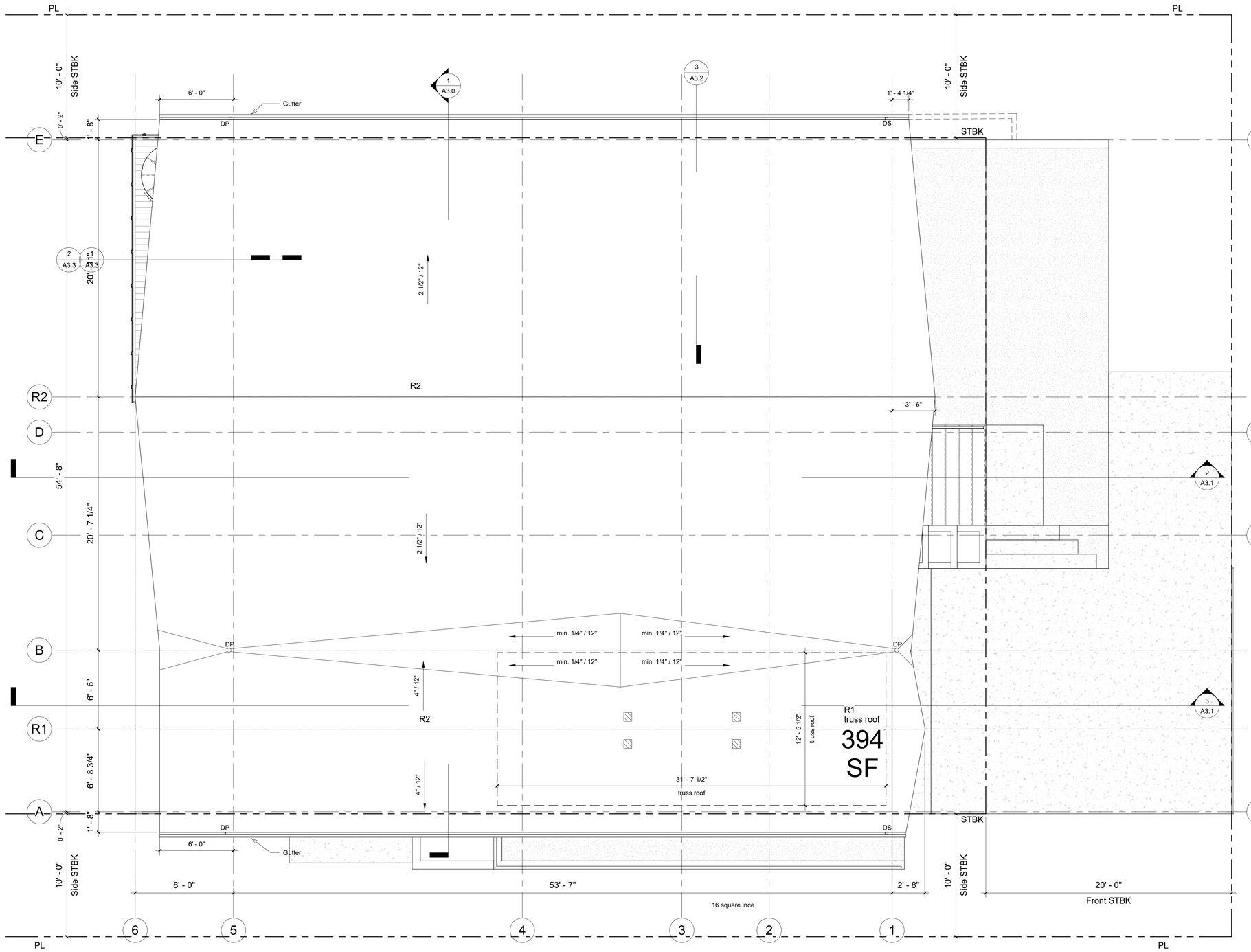
Level 2
Plan

A1.2



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

3/10/2025 10:27:15 AM

PLAN NOTES

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

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FP FIREPLACE
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S SMOKE DETECTORS (R314.3)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

M CARBON MONOXIDE ALARM (R315.1)

SEE SHEET A7.1 FOR COMPLIANCE - ALARMS AND VENTILATION

HG NEW ATTACHED GARAGES (R314.2.3)

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

ROOF NOTES

ROOF VENT CALCULATIONS PER R806
Roof area over heated space : 394 sf
Ventilation required:(394 sf/150)X 144 sq. in./sf =378 sq.in.

Required exhaust = 189 sq. in.
Required intake = 189 sq. in.

PROPOSED EXHAUST NEAR RIDGE OF THE ROOF

Roof Vents providing 50 sq. in. of net free area,189/50 = 4 pieces required.

PROPOSED INTAKE ON SOFFITS/UNDEREAVE
Provide 2" wide vent of 94.5 inear inch = 189 sq. in

PROPOSED VENT BLOCK ON TRUSS HEEL
2" Dia x 4 for each block, 12.56 x total 16 blocks = 200 sq. in.
see A5.1/2 and A5.1/4

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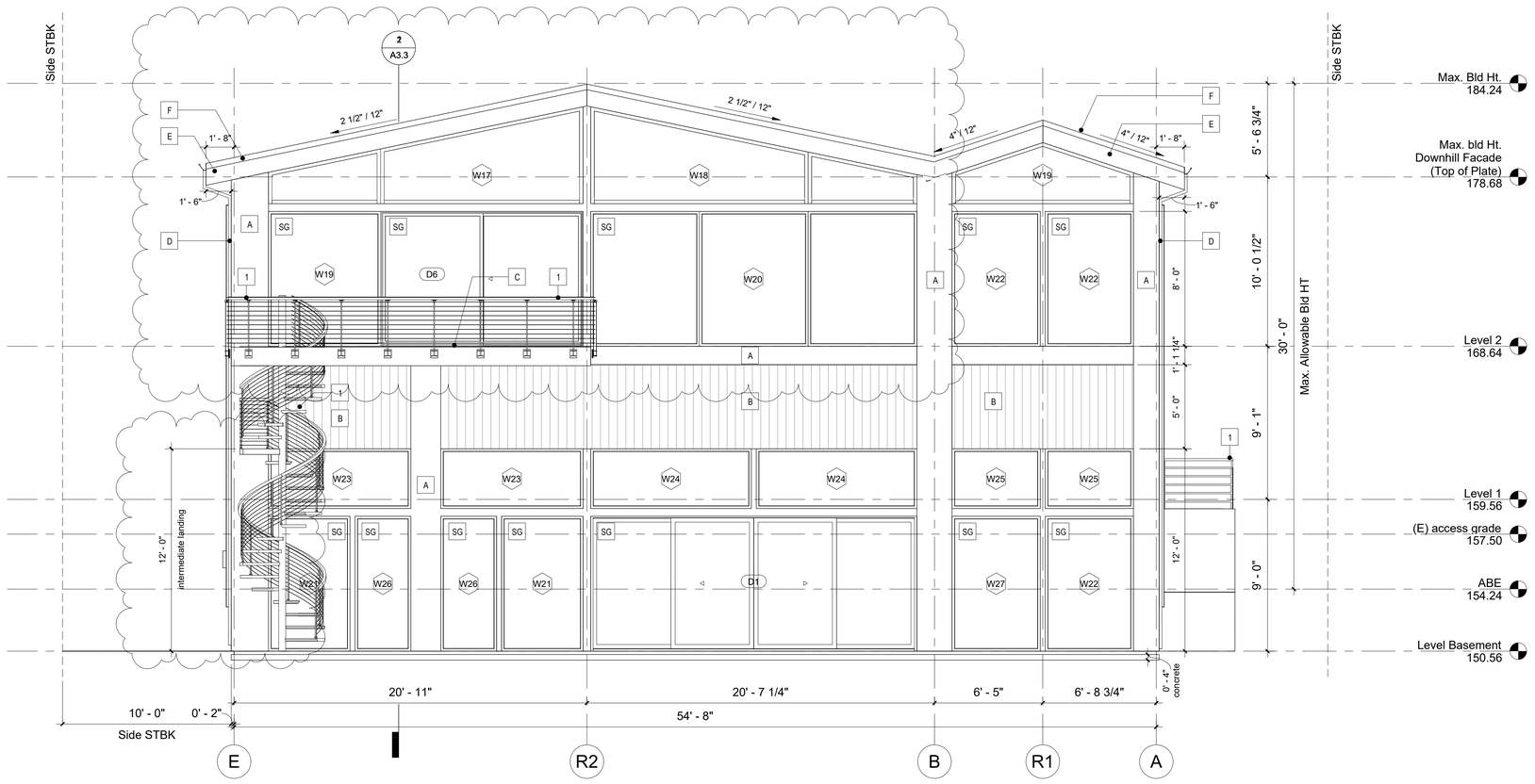
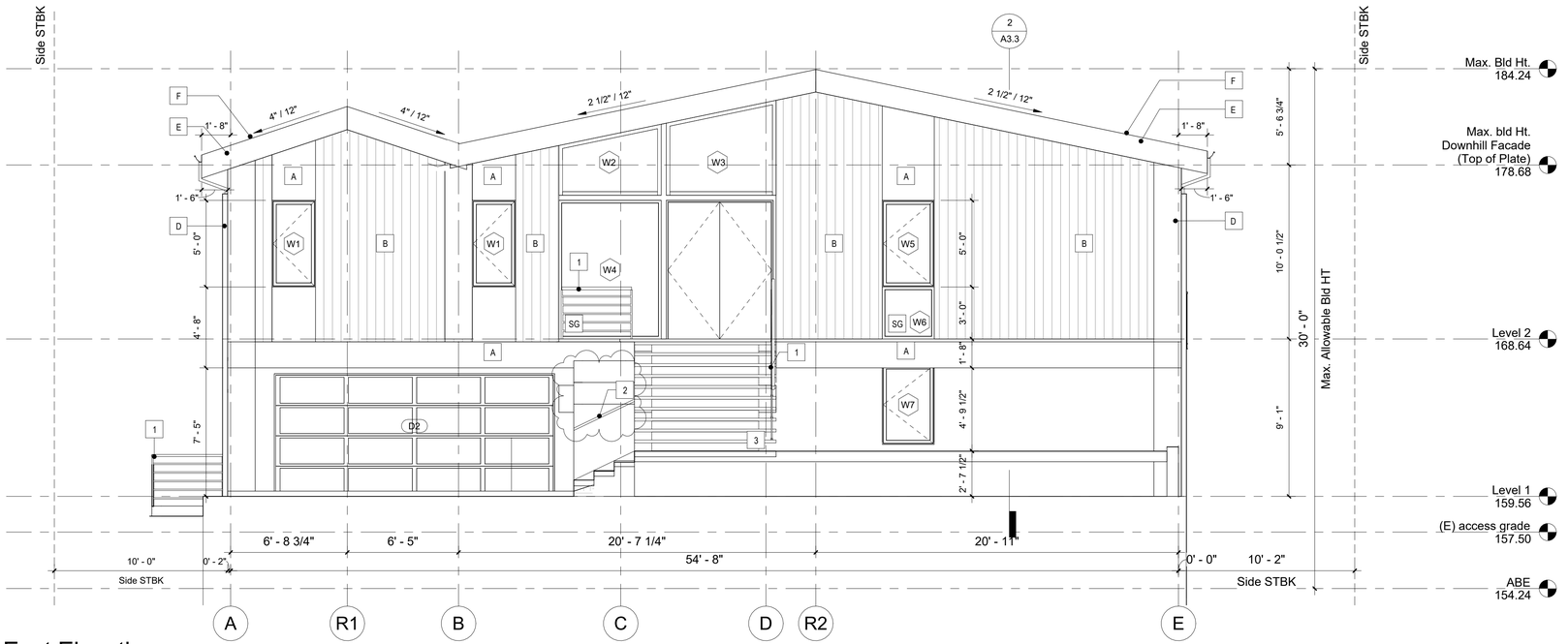
Roof
Plan

A1.3



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



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

3/10/2025 10:27:23 AM

ELEVATION & SECTION NOTES

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

SAFETY GLAZING PER R308 IN WINDOWS AND DOORS

5.7 sf EE

EMERGENCY ESCAPE AND RESCUE OPENING (E.E.) : (R310.2)

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5.7 sf EE

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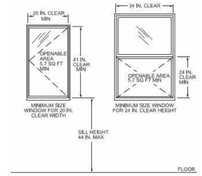

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3 Riser: max 7 3/4", tread: min.10"

MATERIALS & FINISHING

A Primary Facade Siding
James Hardie Panel Fiber Cement Smooth Siding 48"x120"
Stucco textured, Black Water or equivalent

B Secondary Facade Siding
Newtechwood
Japanese Cedar (CE) - Straight Grain or equivalent

C Wood Decking
Newtechwood Composite Decking 8' length
Japanese Cedar (CE) - Straight Grain or equivalent
https://www.newtechwood.com/colors/

D Dark Grey Metal Downspout

E Dark Grey Metal Fascia

F Owen Corningm
Oakridge Estate Gray Algae Resistant Laminate Architectural Roofing Shingles

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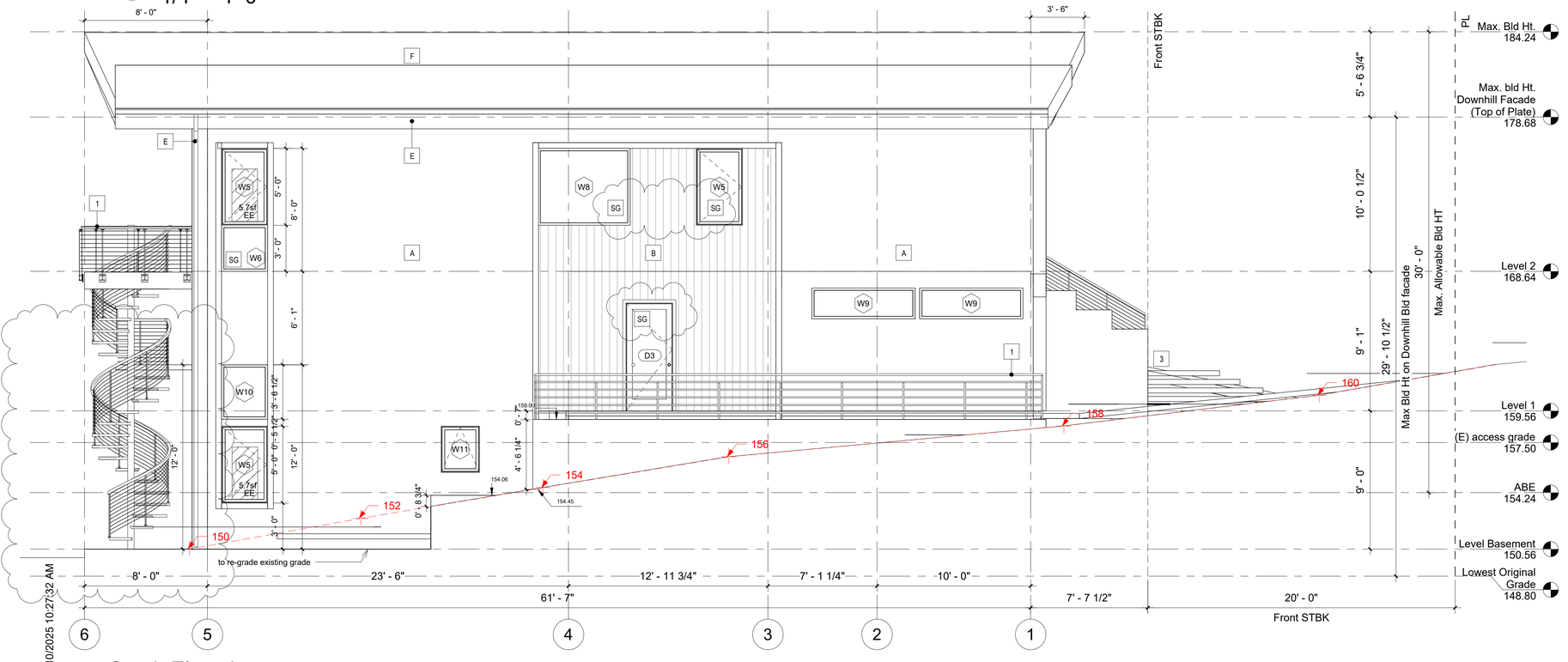
Elevation
1

A2.0

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



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

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ELEVATION & SECTION NOTES

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5.7sf EE

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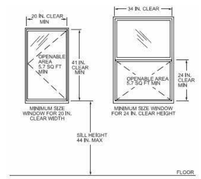

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WA 98040

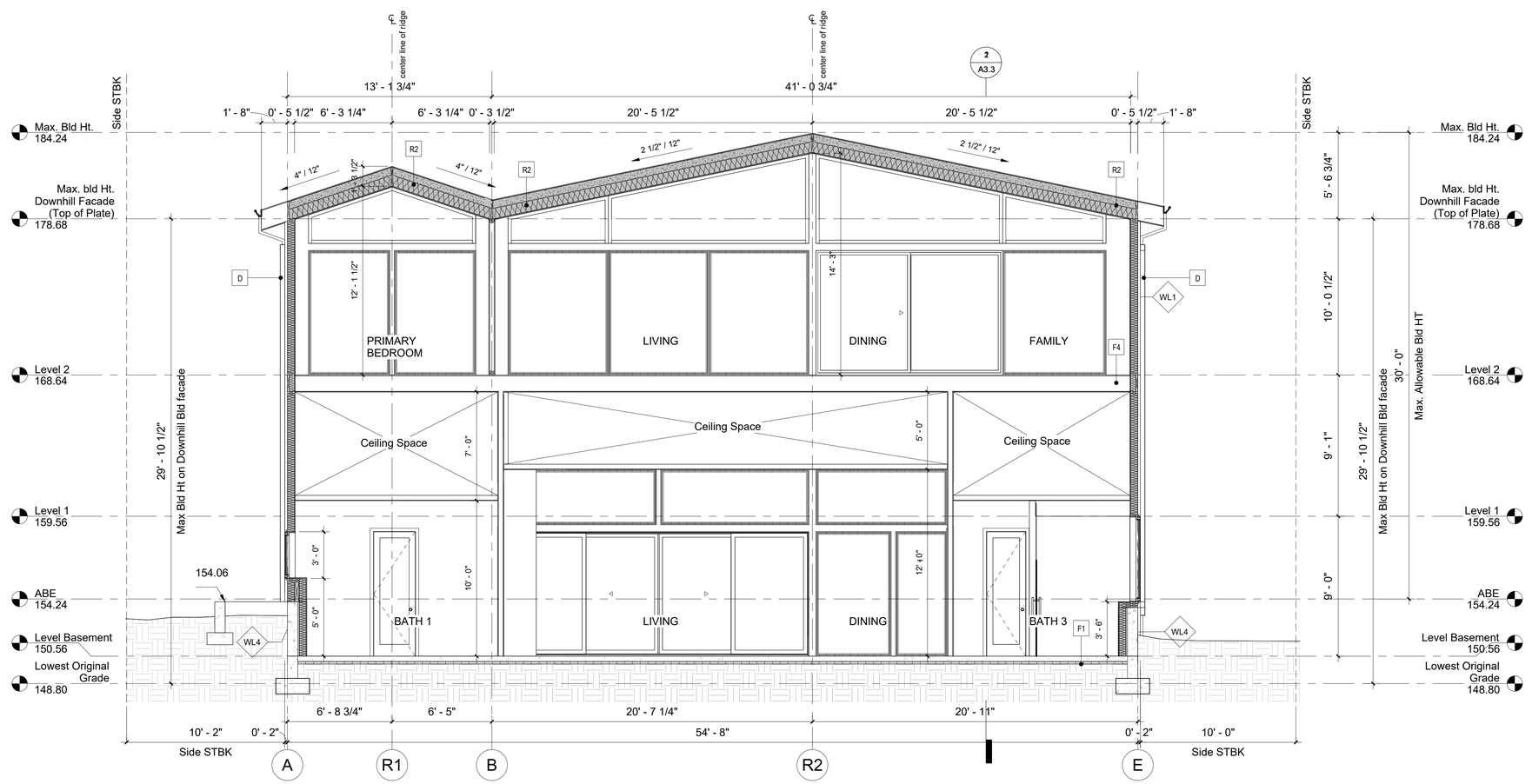
Building Permit

NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

DATE: Nov 23, 2024

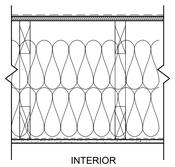
Elevation
2

A2.1



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

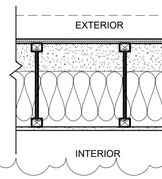
R1



THERMAL min. R60

VENTILATED ROOF
- Fully adhered roofing membrane (TPO)
-15# Felt
- Sheathing per structureal
- Mono truss per structural
- 2x R30, Fiberglass roof insulation (8.25" each thick)
- Vapor retarder, Class II
- 5/8" GWB Ceiling, smoothly skimmed and painted

R2

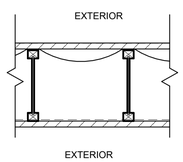


THERMAL min. R60

NON VENTILATED ROOF

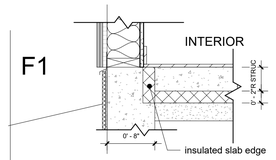
- Fully adhered roofing membrane covering entire roof deck
-15# Roofing Felt
- Sheathing per structural
- TJI per structural
- Min. 4.7" spray foam insulation (R6.5/inch) = R30.55
- Fiberglass roof insulation (8.25" thick) = R30
- 5/8" GWB Ceiling, smoothly skimmed and painted

R3



- Deck assembly per plan
- Waterproof RainEscape Under-deck drainage system
- TJI per structural
- cedar soffit

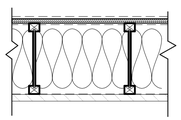
F1



THERMAL min. R10

- 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

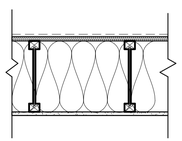
F2



THERMAL min. R38

- 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

F2B

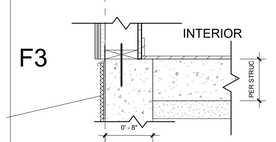


THERMAL min. R38

1-hr Fire Rate
L570 assembly typical

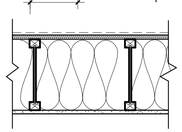
- Finish per plan
- Sheathing per structural
- TJI per structural
- Batt Insulation between joists, thick 12", R-38 seams taped and sealed
- GWB-X ceiling

F3



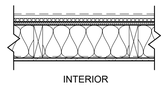
- Finish per plan
- Reinforced concrete slab per structural
- Vapor Barrier
- Granular capillary break and drainage pad
- Compacted soil

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

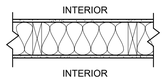
WL1



THERMAL R20+R5-ci

- 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

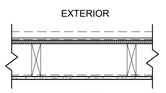
WL2



THERMAL min. R21

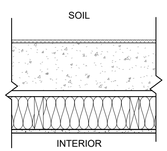
- 1/2" GWB, smoothly skimmed and painted
- Studwall 2X6 w/ insulation min. R21
- 1/2" GWB, smoothly skimmed and painted

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



THERMAL min. R21

- Foundation waterproofing drainage mat
- Concrete Retainer per structural
- 1" Air gap
- Studwall 2x6 w/ rigid insulation, min. R21
- 1/2" GWB, smoothly skimmed and painted

3/10/2025 10:27:34 AM

ELEVATION & SECTION NOTES

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

SAFETY GLAZING PER R308 IN WINDOWS AND DOORS

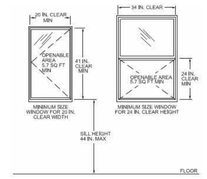
5.7 sf EE EMERGENCY ESCAPE AND RESCUE OPENING (E.E.) : (R310.2)

R310.1. All sleeping rooms must have an emergency egress window or door that leads directly to a yard or public way and shall have minimum dimensions as specified in this section.

5.7 sf EE

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

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 provided 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" 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"

MATERIALS & FINISHING

A Primary Facade Siding
James Hardie Panel Fiber Cement Smooth Siding 48"x120"
Stucco textured, Black Water or equivalent

B Secondary Facade Siding
Newtechwood
Japanese Cedar (CE) - Straight Grain or equivalent

C Wood Decking
Newtechwood Composite Decking 8' length
Japanese Cedar (CE) - Straight Grain or equivalent
https://www.newtechwood.com/colors/

D Dark Grey Metal Downspout

E Dark Grey Metal Fascia

F Owen Corningm
Oakridge Estate Gray Algae Resistant Laminate Architectural Roofing Shingles

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
Nov 23, 2024

Mercer Firsthill 2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

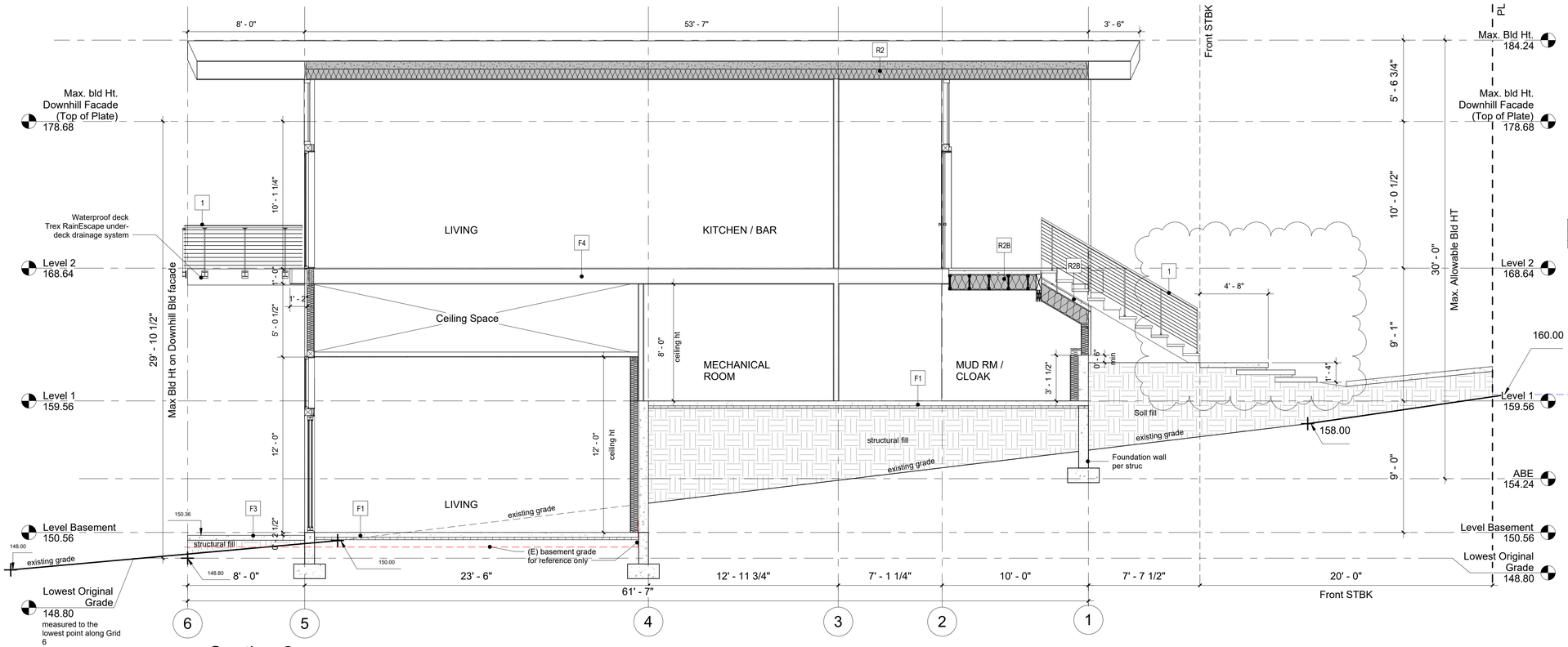
Building Permit

NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

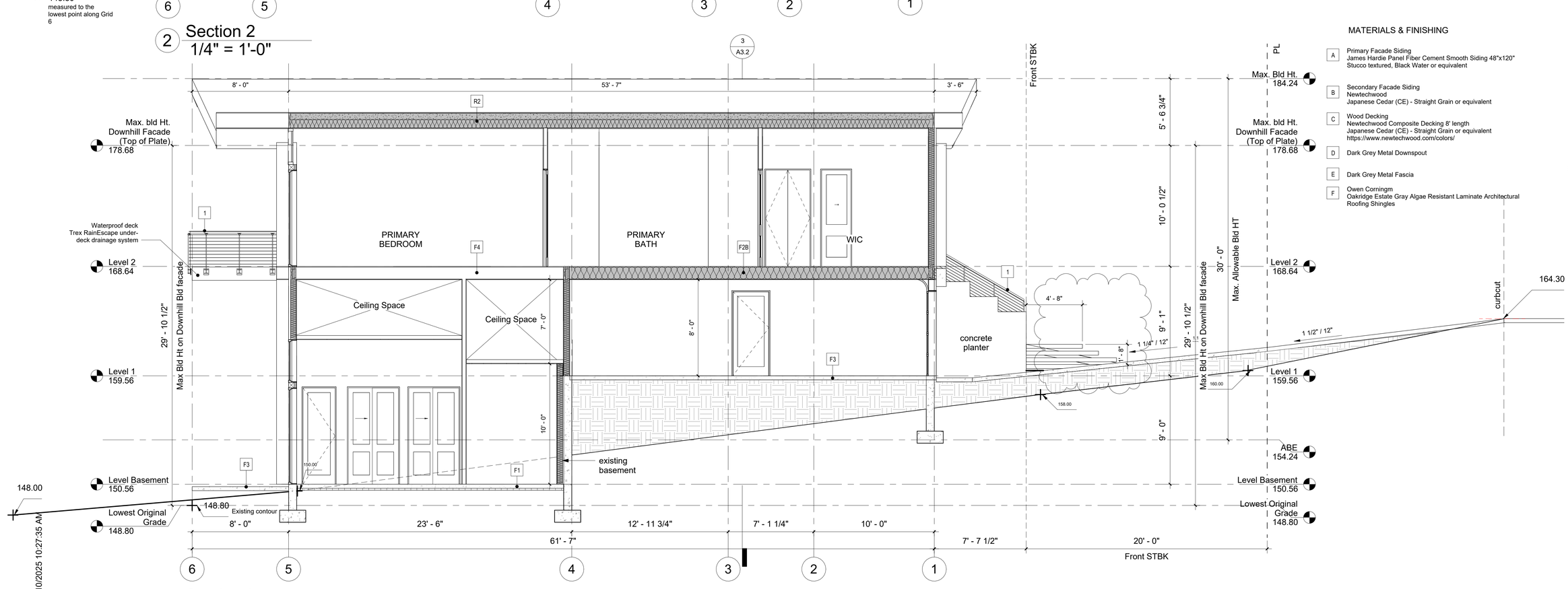
DATE: Nov 23, 2024

Section 1

A3.0



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



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

3/10/2025 10:27:35 AM

ELEVATION & SECTION NOTES

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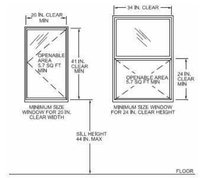

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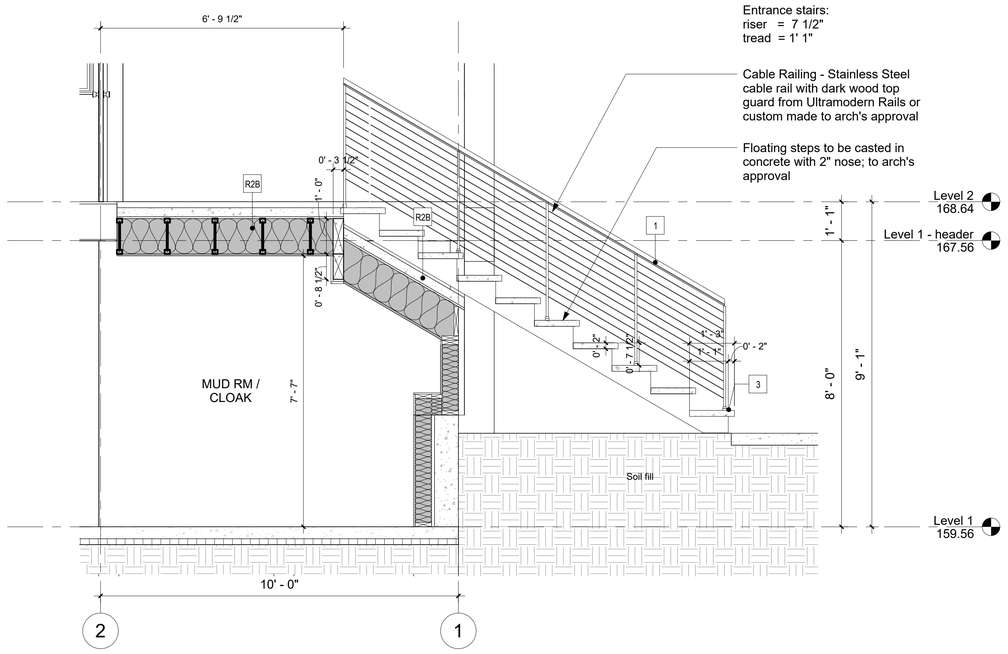
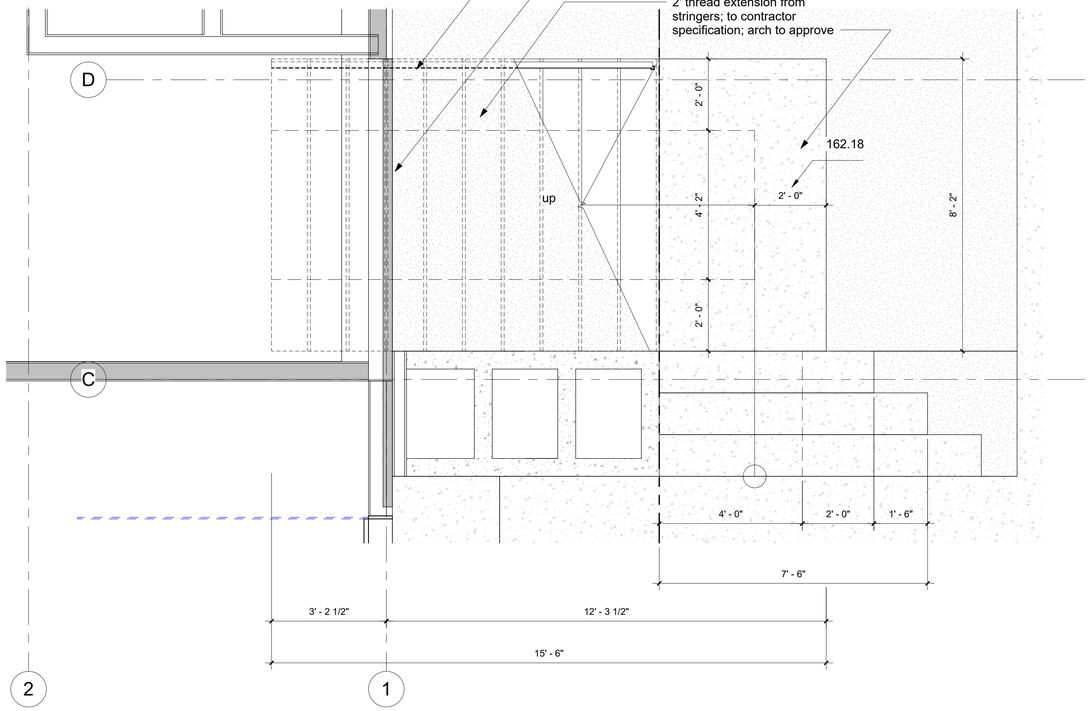
Section 2

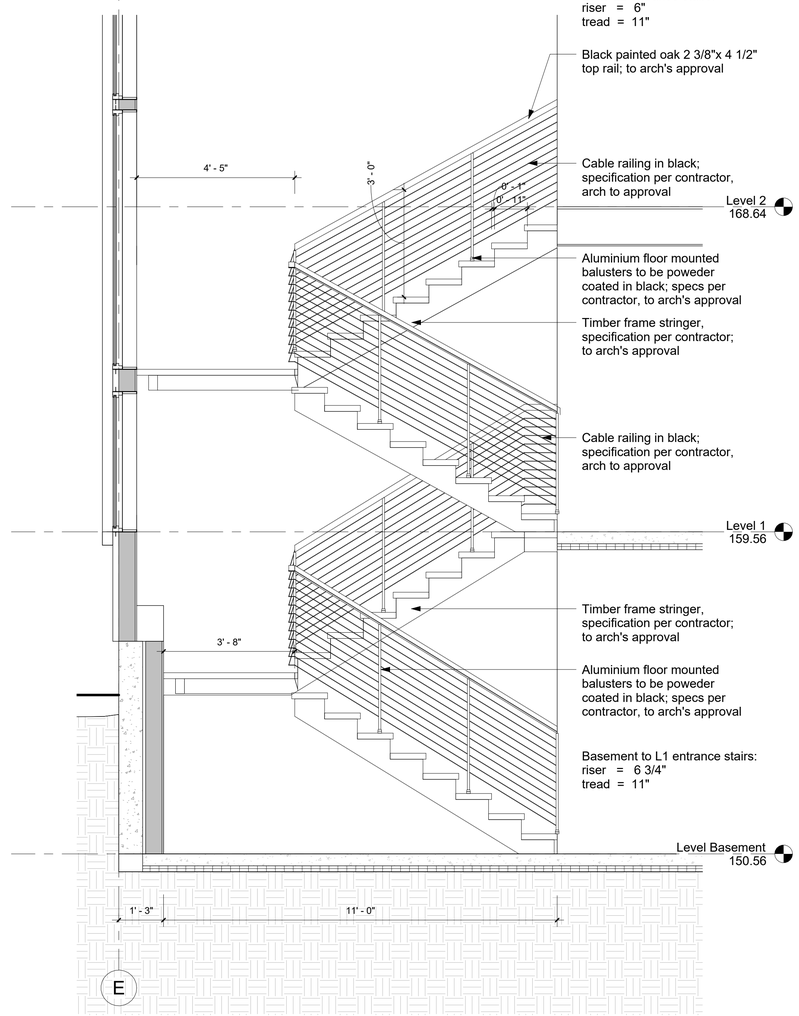
A3.1



1 Partial Section 1 - Entrance Stair
1/2" = 1'-0"



2 Partial Plan 1 - Entrance Stair
1/2" = 1'-0"



3 Partial Section 2 - Indoor Stair
1/2" = 1'-0"

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2247

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Partial
Section
1

A3.2

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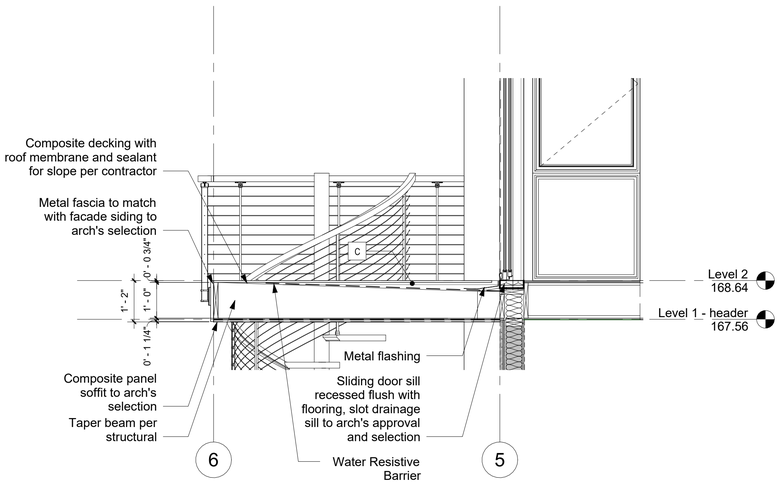
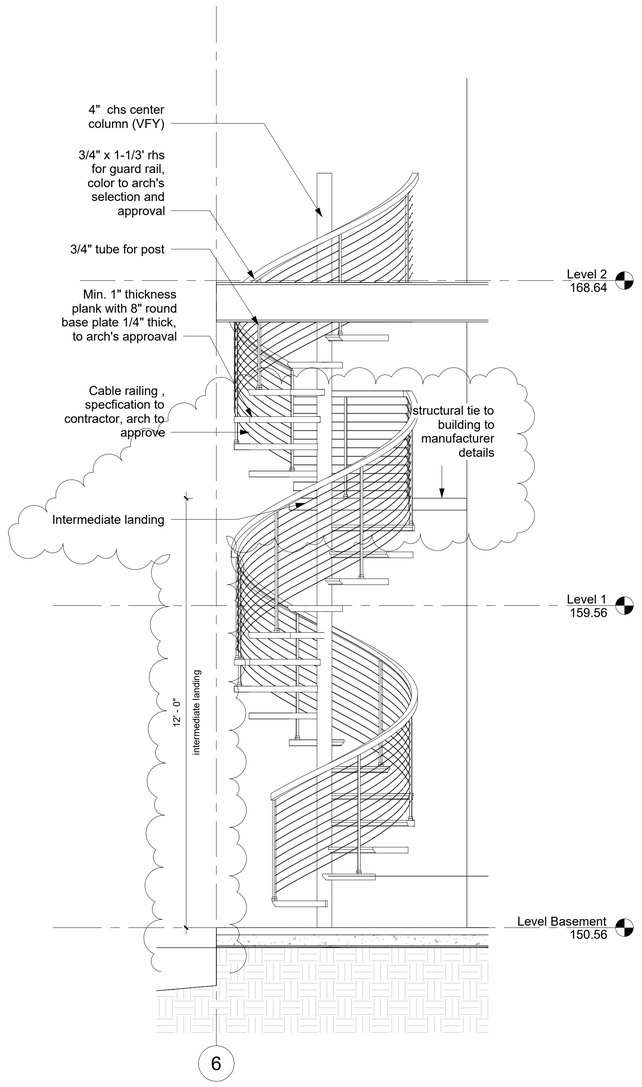
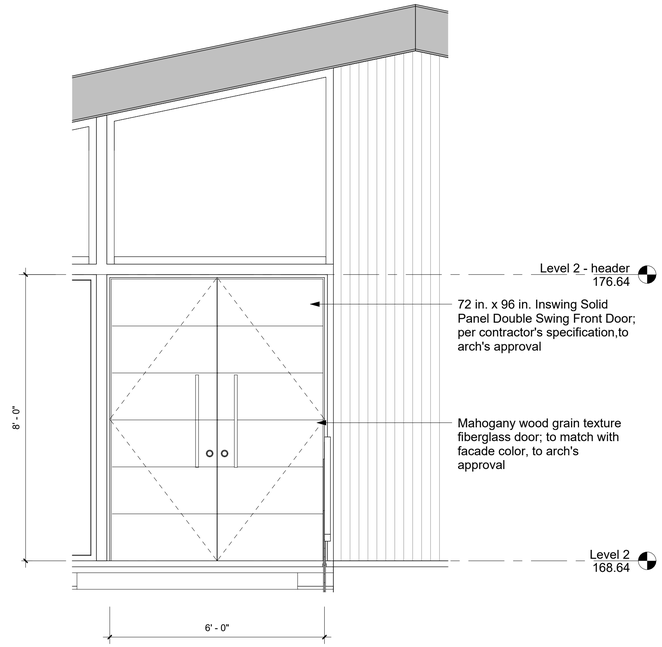


1 Partial Section 4 - Balcony Deck
1/2" = 1'-0"



2 Partial Section 5 - Spiral Stair
1/2" = 1'-0"



3 Partial Elevation - Main Door Elevation
1/2" = 1'-0"

5ft2

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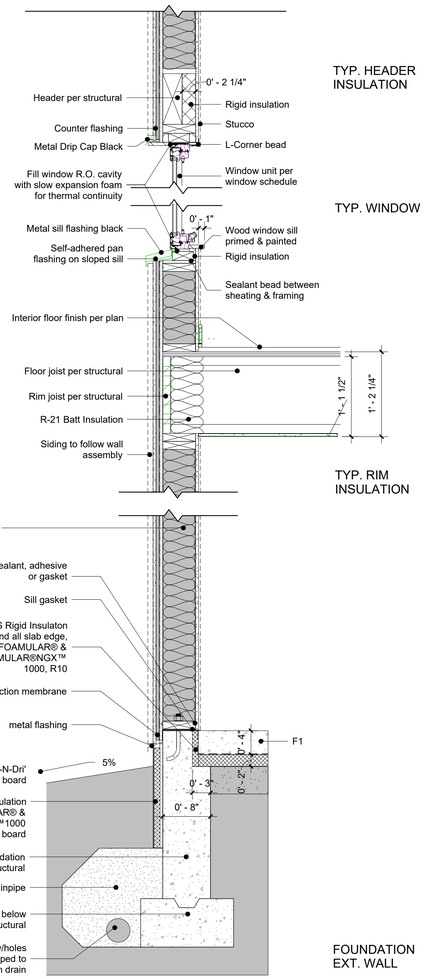
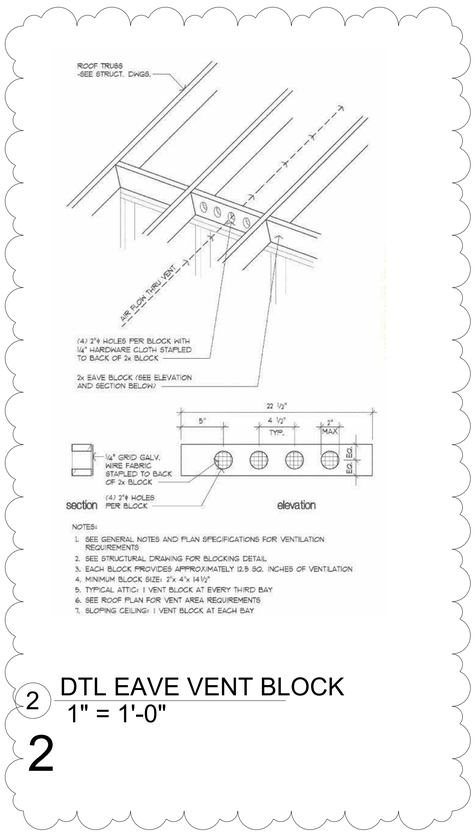
Partial Section 2

A3.3

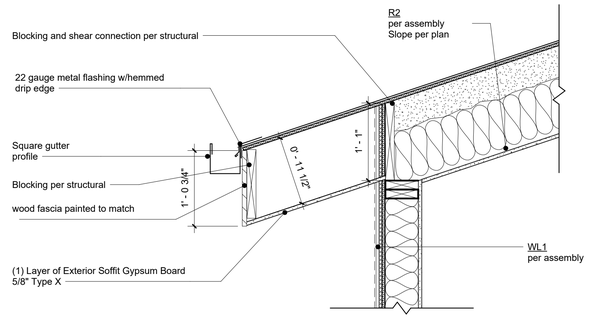
3/10/2025 10:27:55 AM



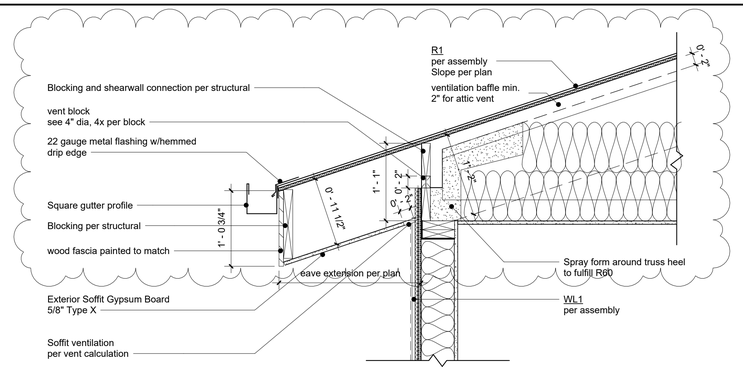
1 (1) DTL-TYP WALL SECTION W/ SLAB
1" = 1'-0"



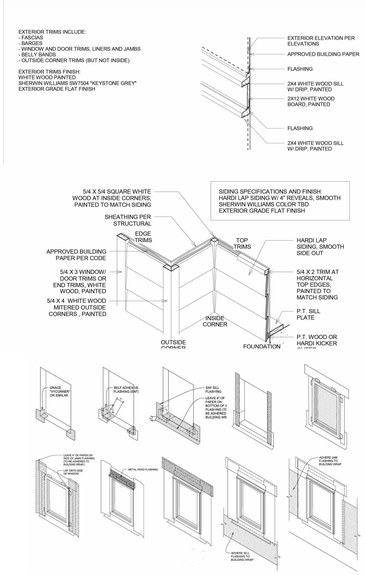
2 DTL EAVE VENT BLOCK
1" = 1'-0"



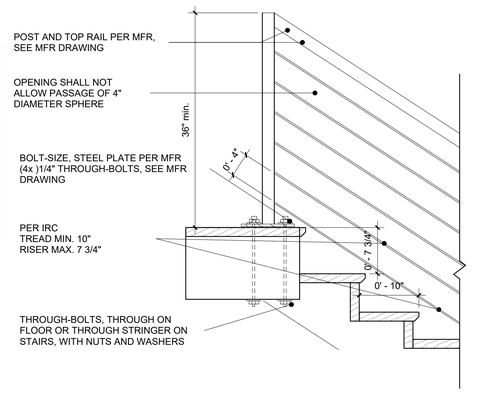
3 (3) DTL -RAFTER VAULTED CEILING NON-VENTED AND EAVE
1" = 1'-0"



4 (4) DTL- TRUSS VENTED
1" = 1'-0"



5 (5) DTL-EXTERIOR FINISH
6" = 1'-0"



6 (6) DTL TYP. STAIR GUARDRAIL
1" = 1'-0"

3/10/2025 10:27:56 AM

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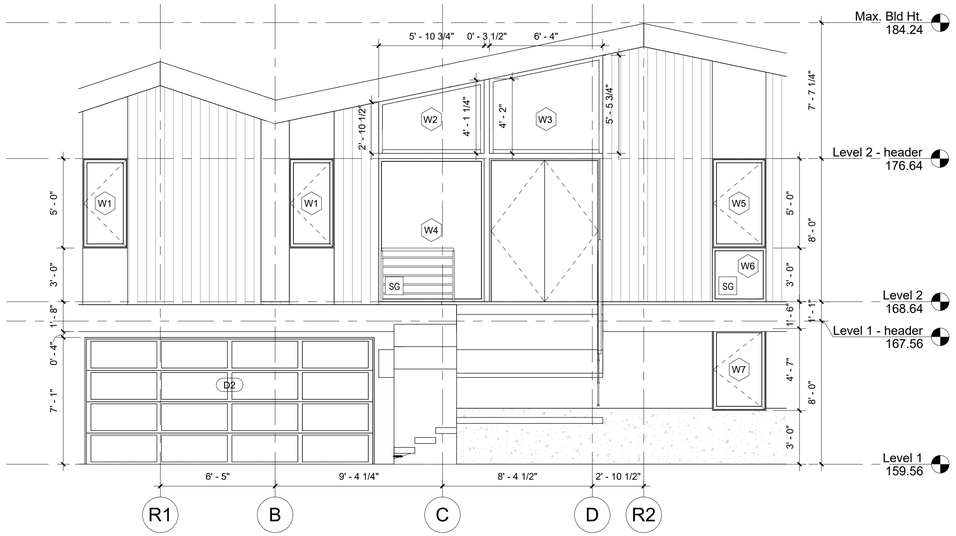
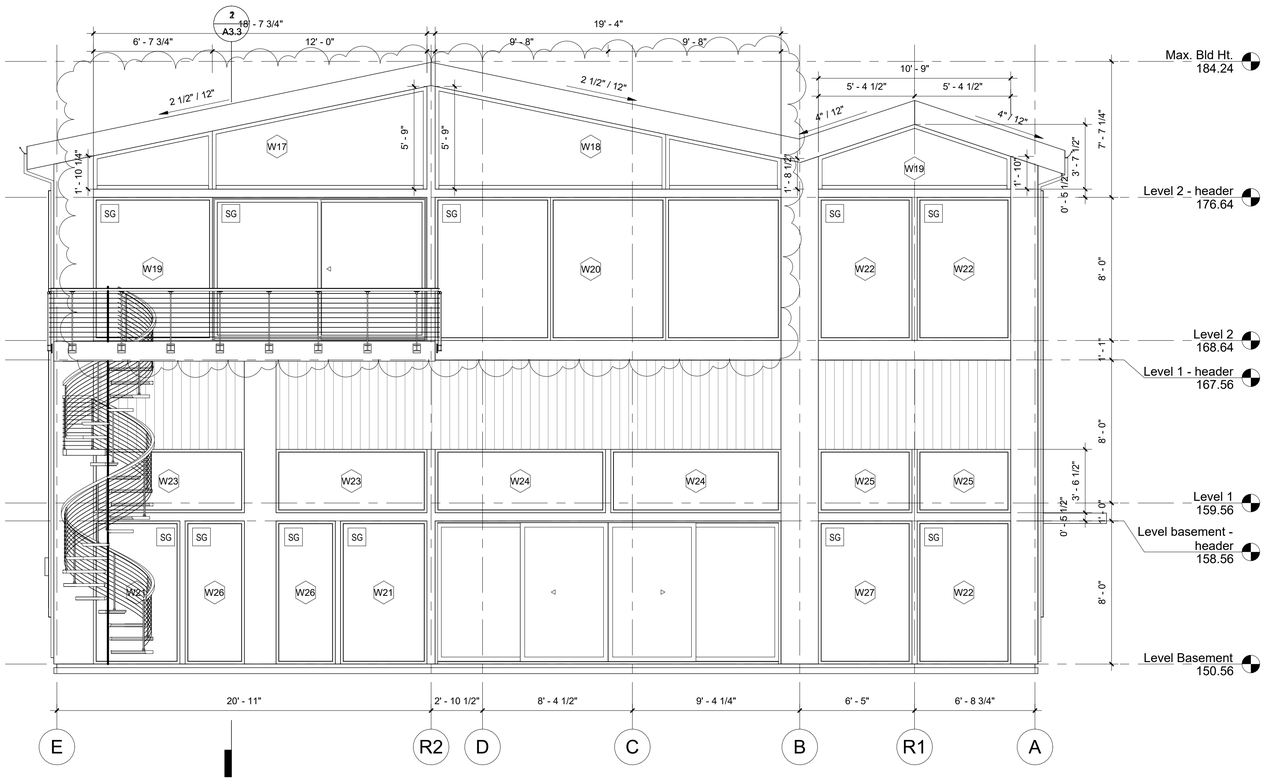
Details 1

A5.1



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



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

Window Schedule

Type Mark	Count	Width	Height	Sill Height
W1	3	2' - 6"	5' - 0"	3' - 0"
W4	1	5' - 10 3/4"	8' - 0"	0' - 0"
W5	8	3' - 0"	5' - 0"	3' - 0"
W6	3	3' - 0"	3' - 0"	0' - 0"
W7	1	3' - 0"	4' - 7"	3' - 0"
W8	1	6' - 0"	5' - 0"	3' - 0"
W9	2	6' - 8 3/4"	2' - 0"	6' - 0"
W10	2	3' - 0"	3' - 6 1/2"	8' - 5 1/2"
W11	1	2' - 6"	3' - 0"	5' - 0"
W12	1	7' - 4 1/4"	5' - 0"	3' - 0"
W13	1	6' - 8"	5' - 0"	12' - 1"
W14	1	6' - 8"	7' - 3"	4' - 6 1/2"
W15	1	6' - 8"	3' - 11"	0' - 0"
W16	3	2' - 6"	5' - 6"	3' - 6"
W21	2	4' - 10"	8' - 0"	0' - 0"
W22	3	5' - 2 3/4"	8' - 0"	0' - 0"
W23	2	8' - 5 1/4"	3' - 6 1/2"	-0' - 6 1/2"
W24	2	9' - 6 1/4"	3' - 6 1/2"	-0' - 6 1/2"
W25	2	5' - 2 3/4"	3' - 6 1/2"	-0' - 6 1/2"
W26	2	3' - 3 3/4"	8' - 0"	0' - 0"
W27	1	5' - 2 3/4"	8' - 0"	0' - 0"

W2	1	5' - 10 3/4"	4' - 1 1/4"	8' - 3 1/2"
W3	1	6' - 4"	5' - 5 3/4"	8' - 3 1/2"
W17	1	18' - 7 3/4"	5' - 9"	8' - 5 1/2"
W18	1	19' - 4"	5' - 9"	8' - 5 1/2"
W19	1	6' - 7 3/4"	8' - 0"	0' - 0"
W20	1	19' - 4"	8' - 0"	0' - 0"

ALL WINDOWS DIMENSIONS ARE REPESENTING
ROUGH OPENING (RO)

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
Nov 23, 2024

Mercer Firsthill
2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

Building Permit

NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

DATE: Nov 23, 2024

Window
Schedule
1

A6.0

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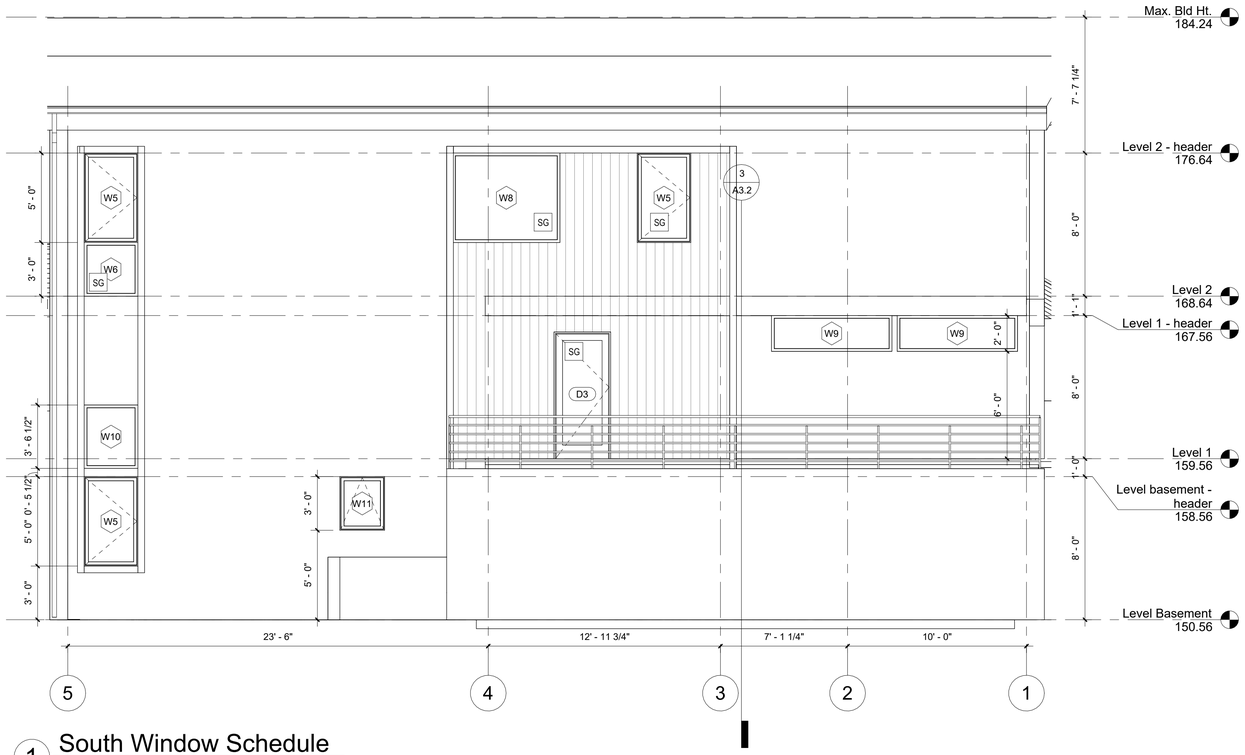

1 South Window Schedule
1/4" = 1'-0"

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

3/10/2025 10:28:00 AM

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WA 98040

Building Permit

.

NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

DATE: Nov 23, 2024

Window Schedule 2

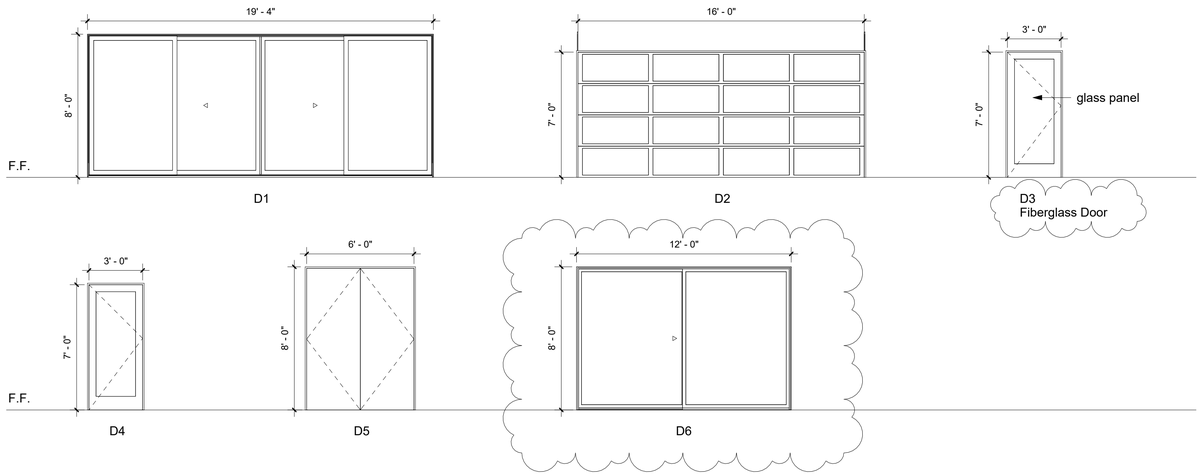
A6.1

DOOR SCHEDULE

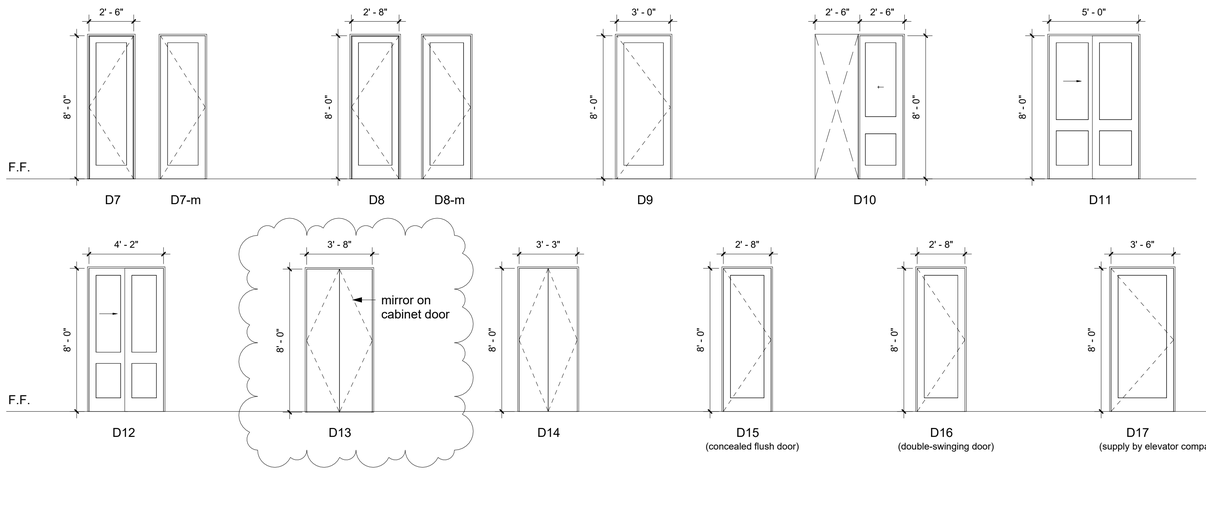
ALL EXTERIOR DOORS DIMENSIONS ARE REPESENTING ROUGH OPENING (RO)

FOR INTERIOR DOORS, ALL DIMENSIONS SHOWN ARE DOORS SLAB DIMENSION

EXTERIOR



INTERIOR



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

Door Schedule

Door Type	Count	Width	Height	Level
D1	1	19' - 4"	8' - 0"	Level Basement
D2	1	16' - 0"	7' - 0"	Level 1
D3	1	3' - 0"	7' - 0"	Level 1
D4	1	3' - 0"	7' - 0"	Level 1
D5	1	6' - 0"	7' - 11"	Level 2
D6	1	12' - 0"	8' - 0"	Level 2
D7	2	2' - 6"	8' - 0"	<varies>
D7-m	1	2' - 6"	8' - 0"	Level Basement
D8	3	2' - 8"	8' - 0"	Level Basement
D8-m	5	2' - 8"	8' - 0"	<varies>
D9	1	3' - 0"	8' - 0"	Level 1
D10	3	2' - 6"	8' - 0"	<varies>
D11	2	5' - 0"	8' - 0"	Level Basement
D12	2	4' - 2"	8' - 0"	Level Basement
D13	1	3' - 8"	8' - 0"	Level 2
D14	1	3' - 3"	8' - 0"	Level 2
D15	3	2' - 8"	8' - 0"	Level 2
D16	1	2' - 8"	8' - 0"	Level 2
D17	3	3' - 6"	8' - 0"	<varies>
D18	2	2' - 6"	8' 0"	Level 2

5ft2

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20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

Building Permit

NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

DATE: Nov 23, 2024

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 R402.1.3
INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENTS[a]

CLIMATE ZONE 5 AND MARINE 4	
Fenestration U-Factor[b, j]	0.30
Skylight[b] U-Factor	0.50
Ceiling R-Value[e]	60
Wood Frame Wall[g, i] R-Value	20+5 or 13+10
Floor R-Value	30
Below-Grade[c, h] Wall R-value	10/15/21 int + 5TB
Slab[d, f] R-Value & Depth	10, 4 ft

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 A Table A101.4 of chapter 51-11C WAC shall not be less than the R-value specified in the table.
b. The fenestration U-factor column excludes skylights.
c. "10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.
d. R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.
e. For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.
f. R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.
g. For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400.
h. Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78 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 RE-21

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 – 46-67 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 D.O.E. procedures. Units meet or exceed the energy efficiency requirements of NAECA, ASHRAE standard 90, ICC Code and all state energy efficiency performance criteria.

* WiFi broadband internet connection required

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

LEED Points = 3

See specifications chart on back.

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

7. Appliance Package Option	cu. Ft.	Brand	Model # (link to energy star rating)	Energy Star	Most Efficient 2024	
1 Dishwasher	-	Bosch	SHP95CM5N	Y	N	SHP95CM5N Dishwasher | BOSCH US (bosch-home.com)
2 Refrigerator	21.7	Subzero	DEC3650R/R	Y	N	DEC3650R | Sub-Zero Trade Resources | Specs & Manuals
3 Washing Machine (residential)	4.5	LG	WM5500HWA	Y	N	4.5 Cu. Ft. High-Efficiency Smart Front Load Washer
4 Dryer	7.8	LG	DLHC5502W	Y	Y	LG - 7.8 Cu. Ft. Stackable Smart Electric Dryer

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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	2247 66th Avenue SE
City	Mercer Island
Zip	98040

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	[signature]	Date	

All Climate Zones Table 402.1.3	R-Value [a]	U-Factor [a]
Fenestration U-Factor [b, j]	n/a	0.30
Skylight U-Factor [b]	n/a	0.50
Ceiling [e]	60	n/a
Wood Frame Wall [g, i]	20+5 or 13+10	n/a
Floor	30	n/a
Below Grade Wall [c, h]	10/15/21 int + 5TB	n/a
Slab [d, f] R-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 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.
d. R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.
e. For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.
f. R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.
g. For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400.
h. Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78 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.

Prescriptive Path – Single Family WSEC-R 2021 Edition EPCA C103 (V 01/2024) 1

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[c]	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	X
5	For heating system based on electric resistance with: 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 R401.1 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.

Prescriptive Path – Single Family WSEC-R 2021 Edition EPCA C103 (V 01/2024) 2

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[d]		Comments:
1.1	Efficient Building Envelope	0.5	☐	
1.2	Efficient Building Envelope	1.0	X	
1.3	Efficient Building Envelope	1.5	☐	
1.4	Efficient Building Envelope	2.5	☐	
2.1	Air Leakage Control and Efficient Ventilation	1.0	X	
2.2	Air Leakage Control and Efficient Ventilation	1.5	☐	
2.3	Air Leakage Control and Efficient Ventilation	2.0	☐	
3.1[a]	High Efficiency HVAC	1.0	☐	
3.2[a]	High Efficiency HVAC	0.5	X	
3.3[a,c,d]	High Efficiency HVAC	0.5	☐	
3.4[a,d]	High Efficiency HVAC	1.5	☐	
3.5[d]	High Efficiency HVAC	1.5	☐	
3.6[a]	High Efficiency HVAC	1.0	☐	
3.7[a,d,e]	High Efficiency HVAC	2.0	☐	
3.8[a,d]	High Efficiency HVAC	1.0	☐	
3.9[c]	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	X	
5.6	Efficient Water Heating	2.0	☐	
5.7	Efficient Water Heating	2.5	☐	
5.8	Efficient Water Heating	2.5	☐	
6.1[e]	Renewable Electric Energy (4.5 credits max)	0.5-4.5	0.0	
7.1	Appliance Package	0.5	X	
	Total Credits	8	Calculate Total	

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 R401.1 and residential building in Section R202 for Group R-2 scope.
c. Option 3.11 can only be taken with Options 3.1 and 3.3. To qualify to claim Option 3.11 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 may 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 heat for water heating system shall be in accordance with Section R403.5.7.

Prescriptive Path – Single Family WSEC-R 2021 Edition EPCA C103 (V2/1/2024) 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)

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 FloorR-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 single-rafter or 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-rafter 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

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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, or 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 0.6 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
	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.	

Prescriptive Path – Single Family WSEC-R 2021 Edition EPCA C103 (V2/1/2024) 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
	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. Reference the chart at the appendix for the HSPF2 Rating conversions for the HVAC selections.	

Energy Credit Options	Old HSPF	HSPF2
3.2 & 3.3 Ducted central heat pump	9.5	8.5
3.5 ductless heat pump in main living area + electric resistance in other rooms	10	9
3.6 ducted central heat pump	11	9.4
3.6 ducted central heat pump – NEEP cc VCHP list	10	8.5
3.7 ductless heat pump with no electric resistance (except footnote A)	10	9
3.7 ductless heat pump with no electric resistance ≤ 24,000 Btu (except footnote A)	9	8.1

Option	Description	Credits: SF
3.1[a]	For System Type 1 in Table R406.2: 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]	For secondary heating system serving System Type 2 in Table R406.2: Air-source centrally ducted heat pump with minimum (HSPF 9.5) HSPF2 8.5 **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,c,d]	Air-source, centrally ducted heat pump with minimum (HSPF 9.5) HSPF2 8.5. In areas 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,d]	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[d]	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 areas 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,d,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 loads of 24,000 BTUs 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. 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).	2.0
3.8[a,d]	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 1.15, shall serve all units	1.5
3.10[f]	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 serve 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 1.15, shall serve 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

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3.11[f]	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 5.3 through 5.8 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 0.91 **or** Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating 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 1.15, 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.	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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	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 to 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-8 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 1.15, 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

Table 406.3 – Energy Credits (Single Family)		
Option	Description	Credits: SF
	6. RENEWABLE ELECTRIC ENERGY OPTION	
6.1	For each 600 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 4.5 credits. Generation shall be calculated as follows: For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator 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

3
3600 KWH per year min.

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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 show the appliance type and provide documentation of Energy Star compliance. At the time of inspection, all appliances shall be installed and connected to utilities. ***Dryer ducts and exterior dryer vent caps are not permitted to be installed in the dwelling unit.***	0.5

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 R401.1 and residential building in Section R202 for Group R-2 scope.
c. Option 3.11 can only be taken with Options 3.1 and 3.3. To qualify to claim option 3.11 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 5 from Table R406.2.
e. Primary living areas include living, dining, kitchen, family rooms, and similar areas.
f. Option 3.11 may 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 heat for water heating system shall be in accordance with Section R403.5.7.

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Door Schedule

Door Type	Count	Width	Height	Area (SF)	Total Area (SF)
D4	1	3' - 0"	7' - 0"	21	21
D5	1	6- 0"	8' - 0"	47.5	47.5
Total Exterior Door Area					**68.5**

Window Schedule

Type	Count	Daylight Area (SF)	Width	Height	Total Area (SF)
W1	3	9	2' - 6"	5' - 0"	27
W4	1	43	5' - 10 3/4"	8' - 0"	43
W5	8	11	3' - 0"	5' - 0"	88
W6	3	7	3' - 0"	3' - 0"	21
W7	1	10	3' - 0"	4' - 7"	10
W8	1	26	6' - 0"	5' - 0"	26
W10	2	9	3' - 0"	3' - 6 1/2"	18
W11	1	5	2' - 6"	3' - 0"	5
W12	1	39	8' - 9 1/4"	5' - 0"	39
W13	1	30	6' - 8"	5' - 0"	30
W14	1	44	6' - 8"	7' - 3"	44
W15	1	25	6' - 8"	4' - 3"	25
W16	3	10	2' - 6"	5' - 6"	30
W21	3	35	4' - 10"	8' - 0"	105
W22	3	38	5' - 2 3/4"	8' - 0"	114
W23	2	26	8' - 5 1/4"	3' - 6 1/2"	52
W24	2	30	9' - 6 1/4"	3' - 6 1/2"	60
W25	2	16	5' - 2 3/4"	3' - 6 1/2"	32
W26	2	23	3' - 3 3/4"	8' - 0"	46
W27	1	38	5' - 2 3/4"	8' - 0"	38
W2	1	17	4' - 0 3/4"	3' - 8 3/4"	17
W3	1	26	8' - 2"	5' - 5 3/4"	26
W17	1	39	18' - 7 3/4"	5' - 9"	39
_W17	1	21			21
W18	1	40	19' - 4"	5' - 9"	40
_W18	1	21			21
W19	1	24	19' - 4"	3' 7 1/2"	24
W20	1	140	19' - 4"	8' - 0"	140
D1	1	128	19' - 4"	8' - 0"	128
D6	1	90	13' - 6 1/4"	8' - 0"	90
Total Window Area					**1399**
Total Glazing and Doors					**1467.5**

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2018 and 2021 Washington State Energy Code (WSEC). This tool will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please complete the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please contact the WSU Energy Program at energycode@energy.wsu.edu or (360) 956-2042 for assistance.

This tool is for the permitting purposes only. A Manual J calculation is required to meet the requirement of the Washington State Energy Code.

Project Information
Project Name: Mercer Firsthill 2247
Address: 2247 66th Avenue SE, Mercer Island, WA 98040

Contact Information
Peik Li Pang
5ft2 Studio Architects

Heating System Type: ○ All Other Systems ◉ Heat Pump

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

Design Temperature — Instructions: Mercer Island
Deisgn Temperature 25
Design Temperature Difference (ΔT) 45
Δ T = Indoor (70 degrees) - Outdoor Design Temp

Area of Building
Conditioned Floor Area — Instructions — Conditioned Floor Area (sq ft): 5,333
Average Ceiling Height — Instructions — Average Ceiling Height (ft): 9.7
Conditioned Volume: 51,570

Component	Selection	U-Factor	X	Area	=	UA
Glazing and Doors	U-0.25	0.250		1,468		366.88
Skylights		0.50		0		0.00
Insulation – Attic	R-60	0.024		441		10.58
Single Rafter or Joist Vaulted Ceilings	R-60	0.017		2,491		42.35
Above Grade Walls *(see Figure 1)*	R-21 INT plus R-5 ci	0.041		3,163		129.68
Floors	R-38	0.025		730		18.25
Below Grade Walls and Slabs *(see Figure 1)* — Wall & Slab	R21 Batt w/TB	Wall U-Factor 0.035		Area 1,461		51.14
Below Grade Walls and Slabs — Depth	7' depth	Slab F-Factor 0.500		Length 188		94.20
Slab on Grade *(see Figure 1)*	R-10 Fully Insulated	F-Factor 0.360		Length 215		77.40

Location of Ducts — Instructions: Conditioned Space
Duct Leakage Coefficient 1.000

Figure 1.

Sum of UA	790.47
Envelope Heat Load *Sum of UA x ΔT*	35,571 Btu / Hour
Air Leakage Heat Load *Volume x 0.6 x ΔT x 0.018*	25,063 Btu / Hour
Building Design Heat Load *Air leakage + envelope heat loss*	60,634 Btu / Hour
Building and Duct Heat Load *Ducts in unconditioned space: sum of building heat loss x 1.10; Ducts in conditioned space: sum of building heat loss x 1*	60,634 Btu / Hour
Maximum Heat Equipment Output *Building and duct heat loss x 1.40 for forced air furnace; Building and duct heat loss x 1.25 for heat pump*	75,793 Btu / Hour

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20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill 2247

2247 66th Avenue SE, Mercer Island, WA 98040

Building Permit

NO.	DESCRIPTION	DATE

DATE: Nov 23, 2024

Compliance - Energy

A7.0

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 dwelling, 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 M1505.4.4.1
Minimum Local Exhaust Rates

	Exhaust Rates	
Area to Be Exhausted	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

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 90 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

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.

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20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

Building Permit

NO.	DESCRIPTION	DATE

DATE: Nov 23, 2024

Compliance - Alarms and Ventilation (IRC)

A7.1

3/10/2025 10:28:02 AM

SITE DATA AND ZONING

ZONING	R-9.6	
LOT AREA	15,124 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 75.0'

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

HARDSCAPE CALCULATIONS

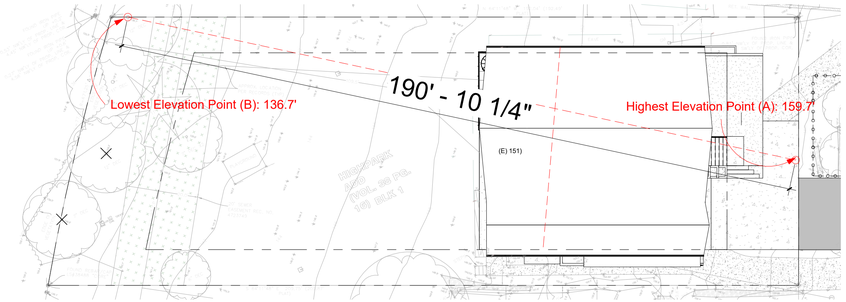
A.	Gross Lot Area	15,124 Square Feet
B.	Net Lot Area	15,124 Square Feet
C.	Area Borrowed from Lot Coverage	1,734 Square Feet
D.	Allowed Hardscape Area = 9% of lot area + C	20.5 % of Lot
E.	Allowed Hardscape Area	3094.8 Square Feet
F.	Total Existing Hardscape Area	
	1 Uncovered Decks	NA Square Feet
	2 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	67 Square Feet
	2 Uncovered Patios	0 Square Feet
	3 Walkways	129 Square Feet
	4 Stairs	incl Square Feet
	5 Rockeries and Retaining Walls	43 Square Feet
	6 Other ***[INSERT TEXT HERE]***	0 Square Feet
	7 Total New Hardscape Area (H1 +H2 +H3 +H4 + H5 + H6)	239 Square Feet
I.	Total Project Hardscape Area = (F7-G) + H7	239 Square Feet
J.	Total Project Hardscape Area = (I/B) x 100	1.6 % of Lot

Hardscape calculations shown on Plan Sheet # **A7.2:** Compliance - Zoning 1

LOT COVERAGE CALCULATIONS

A.	Gross Lot Area	15,124 Square Feet
B.	Net Lot Area	15,124 Square Feet
C.	Allowed Lot Coverage Area	6049.6 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	3,636 Square Feet
	2 Accessory Structure Roof Area Vehicular Use (driveway, paved accesseasement [portion used by	0 Square Feet
	3 the lot for access],parking)	680 Square Feet
	4 Covered Patios and Covered Decks	0 Square Feet
	5 Total New Lot Coverage Area (I1 + I2 + I3 + I4)	**4,316** Square Feet
J.	Total Project Lot Coverage Area = (E5 - F) + I5	4,316 Square Feet
K.	Proposed Lot Coverage Area = (J/B) x 100	28.5% % of Lot

Lot Coverage calculations shown on Plan Sheet # **A7.2:** Compliance - Zoning 1



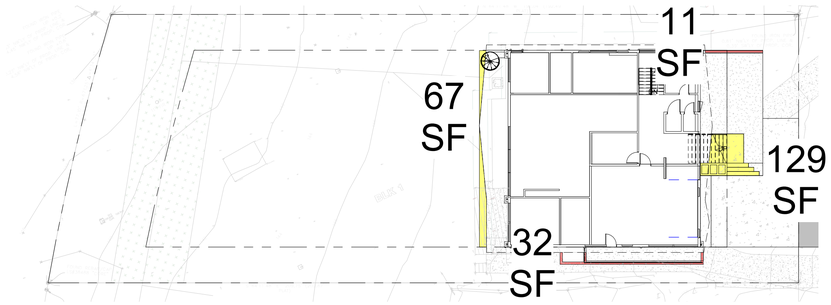
1 D.Lot Slope Calculation
1" = 20'-0"

LOT SLOPE CALCULATIONS

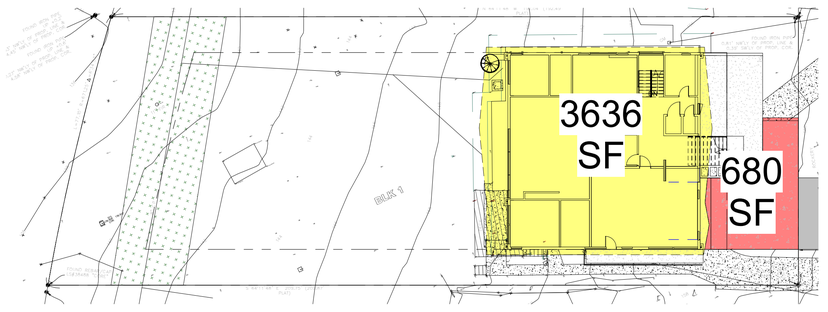
A.	Highest Elevation Point of Lot:	159.7 Feet
B.	Lowest Elevation Point of Lot:	136.7 Feet
C.	Elevation Difference	23 Feet
D.	Horizontal Distance Between High and Low Points	191 Feet
E.	Lot Slope*	12.0 %

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

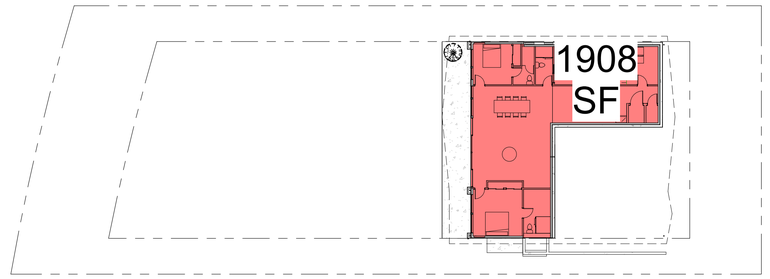
Lot Slope calculations shown on Plan Sheet # A7.2: Compliance - Zoning 1



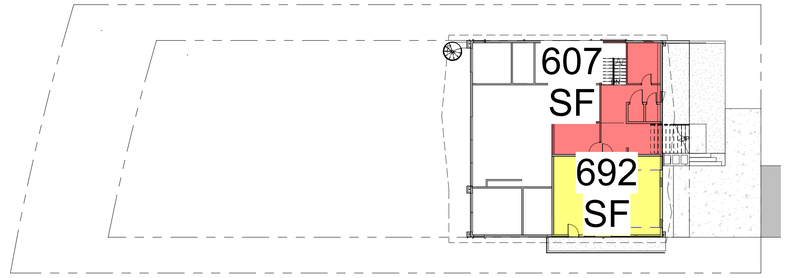
2 D. Hardscape
1" = 20'-0"



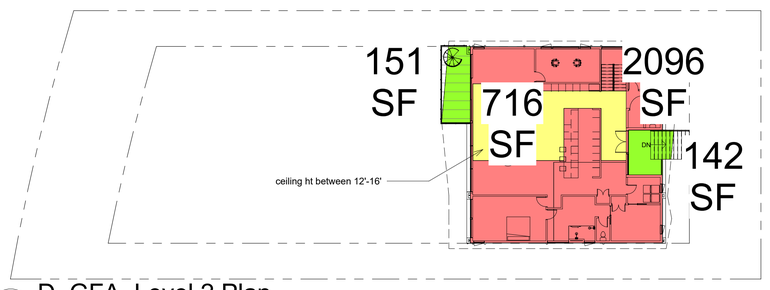
3 D. Lot Coverage
1" = 20'-0"



4 D. GFA Basement Plan
1" = 20'-0"



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



6 D. GFA_Level 2 Plan
1" = 20'-0"

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	2,096	
Main Floor	0	0	607	
Gross Basement Area (including 1x staircase)	0	0	1,908	
Garage / Carport	0	0	692	
Total Floor Area	0	0	5,303	5,303
Accessory Buildings	0	0	0	
Accessory Dwelling Unit	0	0	0	
2nd and 3rd Story Roof Decks	0	0	293	293
Basement Area Excluded	0	0	648.0	-648.0
150% GFA Modifier* (main and upper floor x2)	0	0	716	1074
200% GFA Modifier* (main and upper floor x2)	0	0	0.0	0.0
Staircase GFA Modifier* (x2 for a three story staircase, x3 for a four story staricase)	0	0	incl	incl
				**1 x included in basement*
TOTAL Building Area				6,022.0

A.	Lot Area			**15,124**	Square Feet
B.	Zone	R-8.4 ( )	R-9.6 (x)	R-12 ( )	**R-15 ( )**
C.	Allowed Gross Floor Area (refer to "allowed GFA")			**6049.6**	Square Feet
D.	Allowed Gross Floor Area			**40**	% of Lot
E.	Proposed Gross Floor Area			**6022.0**	Square Feet
F.	Proposed Gross Floor Area			**39.82%**	% of Lot

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2625 Northup Way, Ste 100,
Bellevue, WA 98004

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www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

2247 66th Avenue
SE, Mercer Island,
WA 98040

Building Permit

NO.	DESCRIPTION	DATE

DATE: Nov 23, 2024

Compliance - Zoning 1

A7.2

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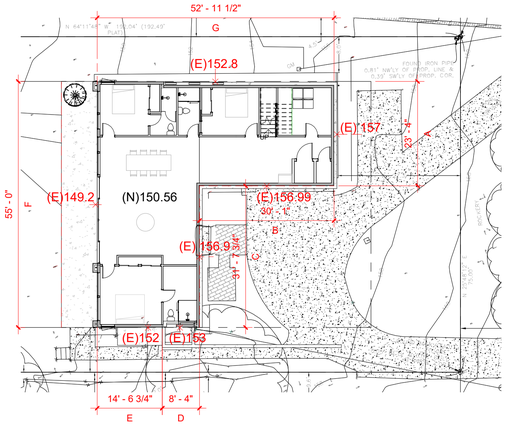
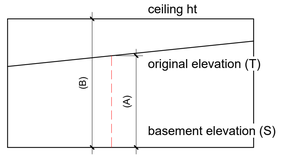
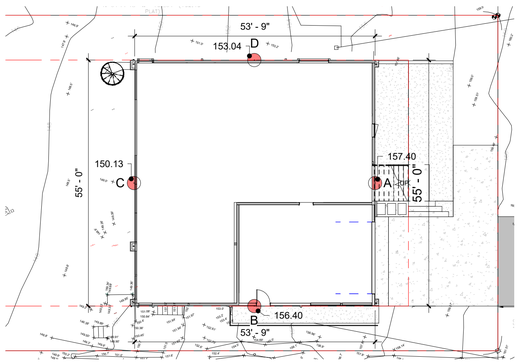


1 D. Basement Excluded
1/16" = 1'-0"

BASEMENT EXCLUSION TABLE CALCULATION METHOD

WALL SEGMENT	LENGTH (FT)	BASEMENT ELEVATION (S)	ORIGINAL ELEVATION (T)	(A) = (T)-(S)	(B) CEILING HT	COVERAGE (A*B)	RESULT
A	23.33	150.56	157	6.44	8	81%	18.8%
B	30.08	150.56	156.99	6.43	8	80%	24.2%
C	31.74	150.56	156.9	6.34	12	53%	16.8%
D	8.33	150.56	153	2.44	10	24%	2.0%
E	14.72	150.56	152	1.44	12	12%	1.8%
F	55	150.56	149.2	0	12	0%	0.0%
G	52.96	150.56	152.8	2.24	12	19%	9.9%
(X)	216.16					(Y)	73.4%
						Y/X	33.96%
			Gross Basement Area (including 1x staircase) (SF)				1908
			Basement Area Excluded (SF)				648.0





2 D. Average Building Elevation (ABE)
1/16" = 1'-0"

No.	GRADE (FT) (X)	LENGTH (Y)	(X)*(Y)
A	157.40	55	8657.00
B	156.40	53.75	8406.50
C	150.13	55	8257.15
D	153.04	53.75	8225.90
		217.5	33546.55
AVERAGE BUILDING ELEVATION (ABE)			154.24 di

BUILDING HEIGHT CALCULATIONS		
A.	Average Building Elevation (ABE) calculations located on sheet #:	**A7.3:** Compliance - Zoning 2
B.	Allowable Building Height (ABE + 30ft.)	184.24 Feet
C.	Proposed Building Height	184.24 Feet
D.	Sloping lot (Downhill side) - maximum height of top of exterior wall façade above lowest existing grade (30-ft max)	178.68 Feet

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Nov 23, 2024

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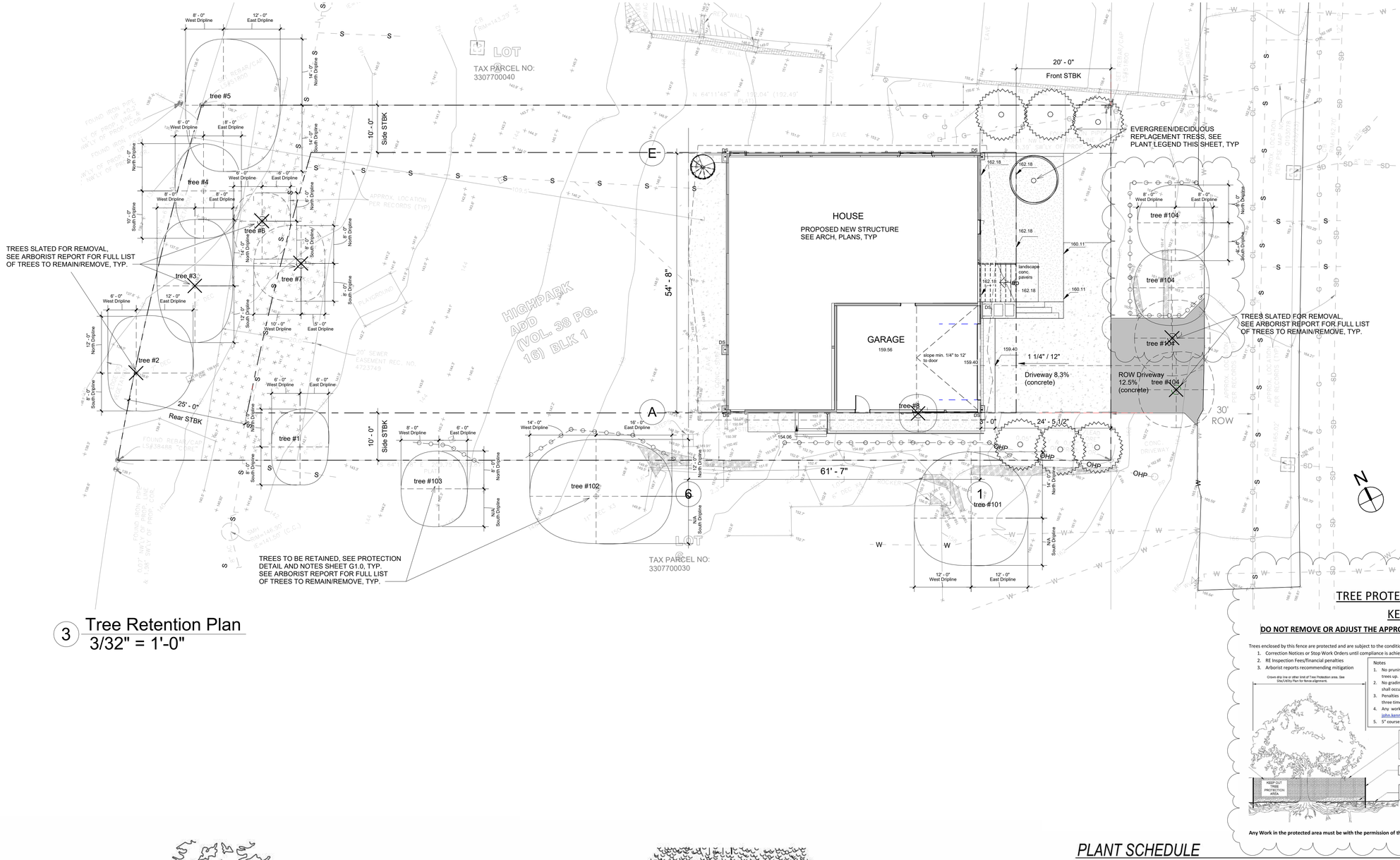
Compliance - Zoning 2

A7.3



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

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.

Crown drip line or other limit of Tree Protection area. See Site/Utility Plan for fence alignment.

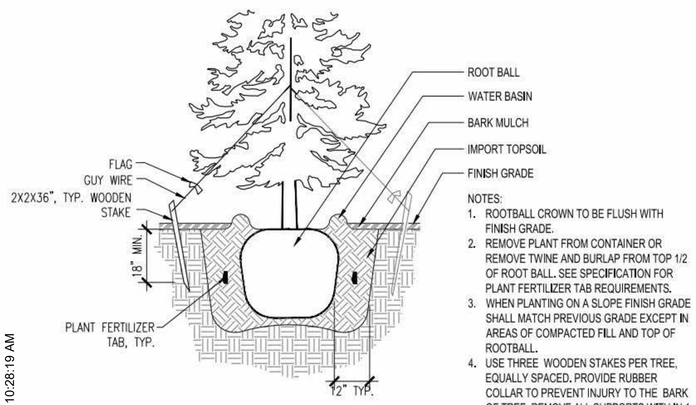
Tree protection fence: 6' **chain link** fence, solidly anchored into the ground, or if authorized High-density polyethylene fencing with 3.5" x 1.5" openings; color orange. Steel posts installed at 8' o.c.

2" x 6" steel posts or approved equal

KEEP OUT TREE PROTECTION AREA

Maintain existing grade with the tree protection fence unless otherwise indication on the plans

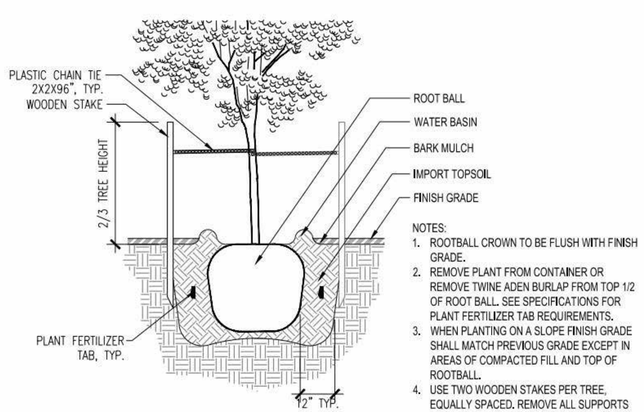
Any Work in the protected area must be with the permission of the City Arborist john.kenney@mercergov.org



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 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.



2 DECIDUOUS 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.

PLANT SCHEDULE

% AREA	BOTANICAL NAME	COMMON NAME	SPACING	SIZE/CONT.
TREES:				
15%	ACER PALMATUM	JAPANESE MAPLE	AS SHOWN	1.5" CAL.
85%	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	AS SHOWN	6' MIN. HT.

CODE COMPLIANCE & INSTALL NOTES:

REQUIRED REPLACEMENT TREES PER INVENTORY AND REPLACEMENT FORM: 7 EA
TOTAL REPLACEMENT TREES PROVIDED: 7 EA
FEE IN LIEU:

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.

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20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

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NO.	DESCRIPTION	DATE
1	Revision 1	03.10.2025

DATE: Nov 23, 2024

Tree Replacement & Retention Plan

A7.4

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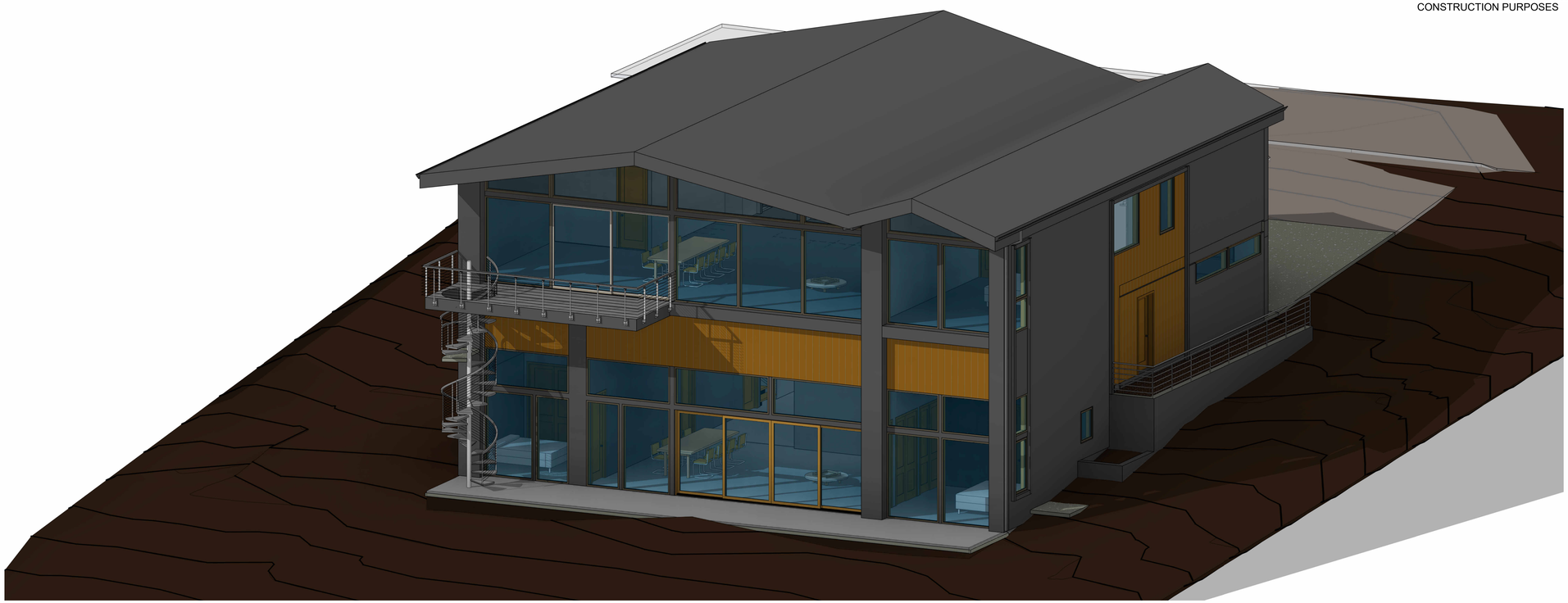
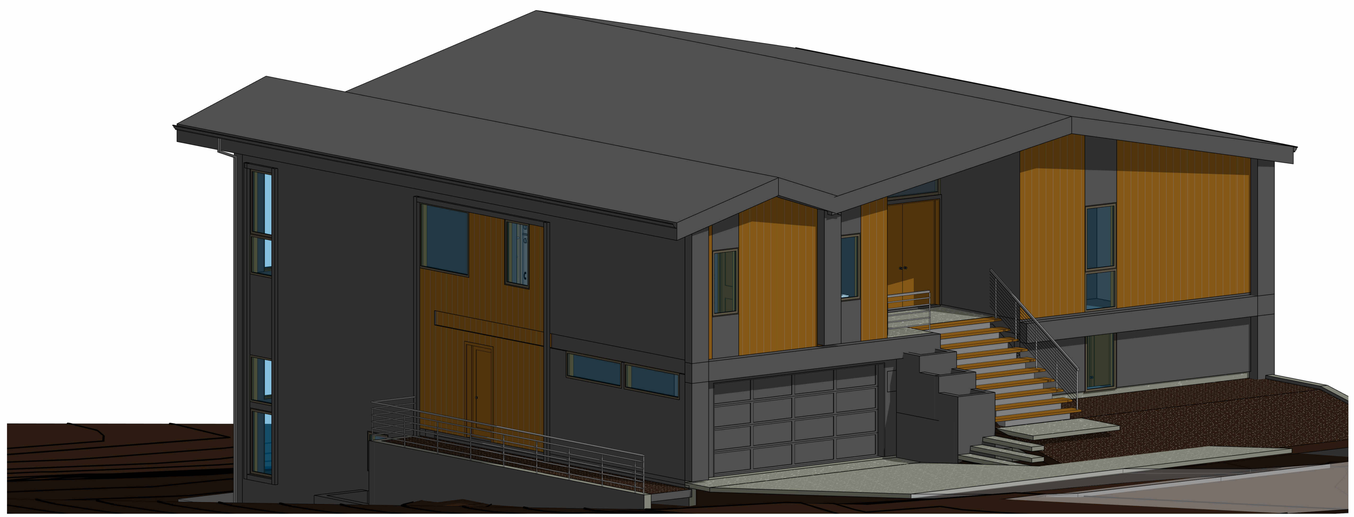
NOTE: ALL THE PERSPECTIVES SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY AND NOT FOR CONSTRUCTION PURPOSES



1 View 1



2 View 2

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PEIK LI PANG
STATE OF WASHINGTON
Nov 23, 2024

Mercer Firsthill
2247

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NO.	DESCRIPTION	DATE

DATE: Nov 23, 2024

3D
Views

A9.0

1 View 3

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STATE OF WASHINGTON
Nov 23, 2024

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DATE: Nov 23, 2024

3D
Views 2

A9.1

SURVEY NOTES:

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN APRIL 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 GROUNDMARK LAND SURVEYING 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; GROUNDMARK LAND SURVEYING 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. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
5. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
6. 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.

SITE ADDRESS:
2247 66TH AVE SE
MERCER ISLAND, WA 98040

TAX PARCEL NUMBER:
3307700035

AREA:
TOTAL SITE AREA IS 15,124± SQUARE FEET OR 0.35± ACRES.

LEGAL DESCRIPTION:
LOT 7, BLOCK 1, HIGHPARK ADDITION, ACCORDING TO THE PLAT RECORDED IN VOLUME 38 OF PLATS, PAGE 16, RECORDS OF KING COUNTY, STATE OF WASHINGTON.

BASIS OF BEARING:
NAD83(2011) EPOCH 2010.00, WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE PER GPS OBSERVATIONS.

VERTICAL DATUM:
NAVD88 PER GPS OBSERVATIONS.

SITE BENCHMARK: SET "MAG" NAIL ON EASTERLY SIDE OF 66TH AVE SE ACROSS FROM SOUTHERLY DRIVEWAY TO HOUSE #2247 +/- 3.1' EAST OF CENTER OF CATCH BASIN COVER
ELEV: 165.17'

REFERENCES:
R1: RECORD OF SURVEY VOL. 78, PAGE 176, RECORDS OF KING COUNTY, WASHINGTON.

R2: RECORD OF SURVEY VOL. 242, PAGE 265, RECORDS OF KING COUNTY, WASHINGTON

LEGEND:

- ASPHALT SURFACE
- BENCHMARK
- BUILDING LINE
- CATCH BASIN
- CENTERLINE
- CONCRETE SURFACE
- CONIFER TREE
- DECIDUOUS TREE
- EAVE LINE
- OHP — ELECTRIC LINE (OVERHEAD)
- EM — ELECTRIC METER
- FENCE LINE (WIRE/CHAIN LINK)
- FENCE LINE (WOOD)
- GAS LINE (RECORD)
- GM — GAS METER
- MB — MAILBOX (RESIDENTIAL)
- MANHOLE (AS NOTED)
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- MONUMENT IN CASE
- NAIL (AS NOTED)
- OVERHEAD BUILDING LINE
- PAVER SURFACE
- PP — POWER POLE
- REBAR (AS NOTED)
- ROCKERY
- SEWER LINE
- STORM DRAIN LINE
- SUBJECT PARCEL PROPERTY LINE
- WALL (AS NOTED)
- WATER LINE (RECORD)
- WM — WATER METER
- WV — WATER VALVE
- SEWER EASEMENT REC. NO. 4723749

SCALE IN FEET
10 5 0 10 20

CONTROL MAP
SCALE IN FEET
100 50 0 100 200

SEAN A. ROULETTE-MILLER
STATE OF WASHINGTON
51800
REGISTERED
PROFESSIONAL LAND SURVEYOR
12/31/24

DATE	REVISION HISTORY
11/23/24	SITE BENCHMARK

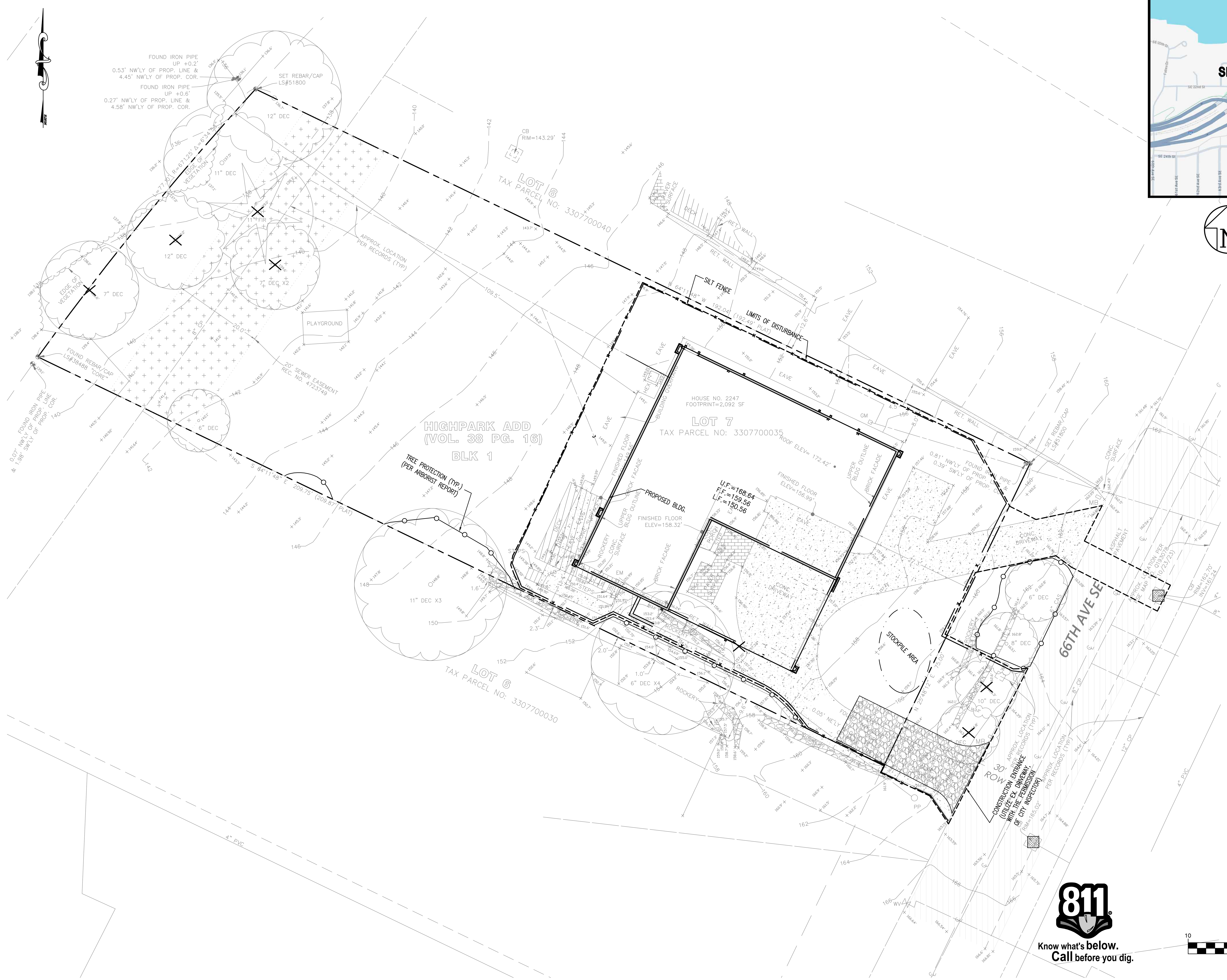
DAVID SHELDON
TAX PARCEL NO: 3307700035
2247 66TH AVE SE, MERCER ISLAND, WA 98040

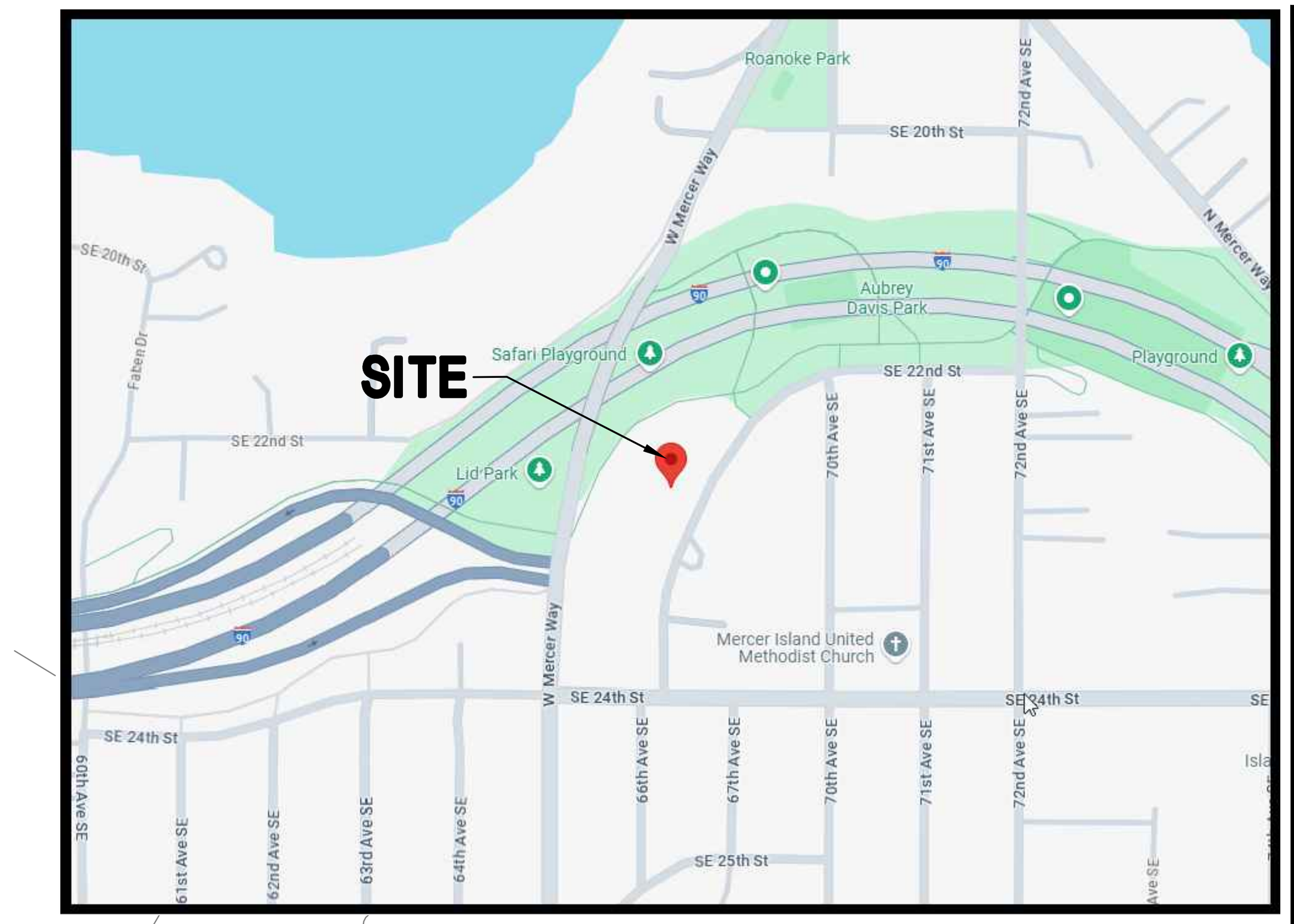
TOPOGRAPHIC & BOUNDARY SURVEY
SW 1/4 SW 1/4 SEC. 01, TWP. 24N, RGE. 4E, W.M.

GROUNDMARK
LAND SURVEYING, PLLC
PH: (206) 580-3801
SEAN@GROUNDMARKLS.NET
2712 E FIR ST
SEATTLE, WA 98122

SCALE: 1" = 10' | DATE: 4/17/24 | JOB NO: 24084 | SHEET 1 OF 1

SW 1/4, SW 1/4, SEC 01, TWP. 24N., RGE 4E., W.M.





VICINITY MAP
(NTS)

SURVEY LEGEND:

- ASPHALT SURFACE
- BUILDING LINE
- CATCH BASIN
- CENTERLINE
- CONCRETE SURFACE
- CONIFER TREE
- DECIDUOUS TREE
- EAVE LINE
- ELECTRIC LINE (OVERHEAD)
- ELECTRIC METER
- FENCE LINE (WIRE/CHAIN LINK)
- FENCE LINE (WOOD)
- GAS LINE (RECORD)
- GAS METER
- MAILBOX (RESIDENTIAL)
- MANHOLE (AS NOTED)
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- MONUMENT IN CASE
- NAIL (AS NOTED)
- OVERHEAD BUILDING LINE
- PAVER SURFACE
- POWER POLE
- REBAR (AS NOTED)
- ROCKERY
- SEWER LINE
- STORM DRAIN LINE
- SUBJECT PARCEL PROPERTY LINE
- WALL (AS NOTED)
- WATER LINE (RECORD)
- WATER METER
- WATER VALVE
- SEWER EASEMENT REC. NO. 4723749

LEGEND:

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

LEGAL DESCRIPTION

LOT 7, BLOCK 1, HIGHPARK ADDITION, ACCORDING TO THE PLAT RECORDED IN VOLUME 38 OF PLATS, PAGE 16, RECORDS OF KING COUNTY, STATE OF WASHINGTON.

BENCHMARK AND DATUM PER SURVEY

BASIS OF BEARING:
NAD83(2011) EPOCH 2010.00, WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE PER GPS OBSERVATIONS.

VERTICAL DATUM:
NAVD88 PER GPS OBSERVATIONS.

EARTHWORK QUANTITIES:

CUT = 93 C.Y.
FILL = 141 C.Y.

Know what's below. Call before you dig.

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

NO.	DATE	REVISION

CHOOMENG CHIN, STATE OF WASHINGTON, 30884, REGISTERED PROFESSIONAL ENGINEER 02/12/2025

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

PROJECT: FAN RESIDENCE
2247 66TH AVENUE SE
MERCER ISLAND, WA 98040

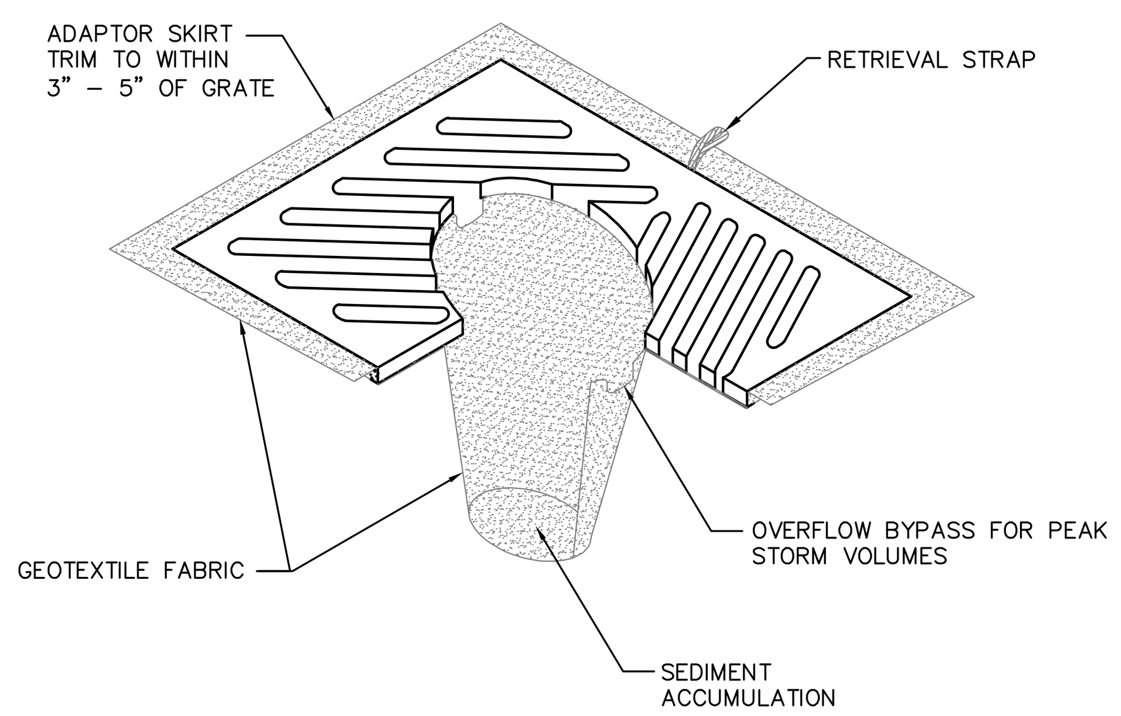
DATE: 11-06-24

TESC PLAN

FILE NO: 2427 DWG

SHEET C1.0

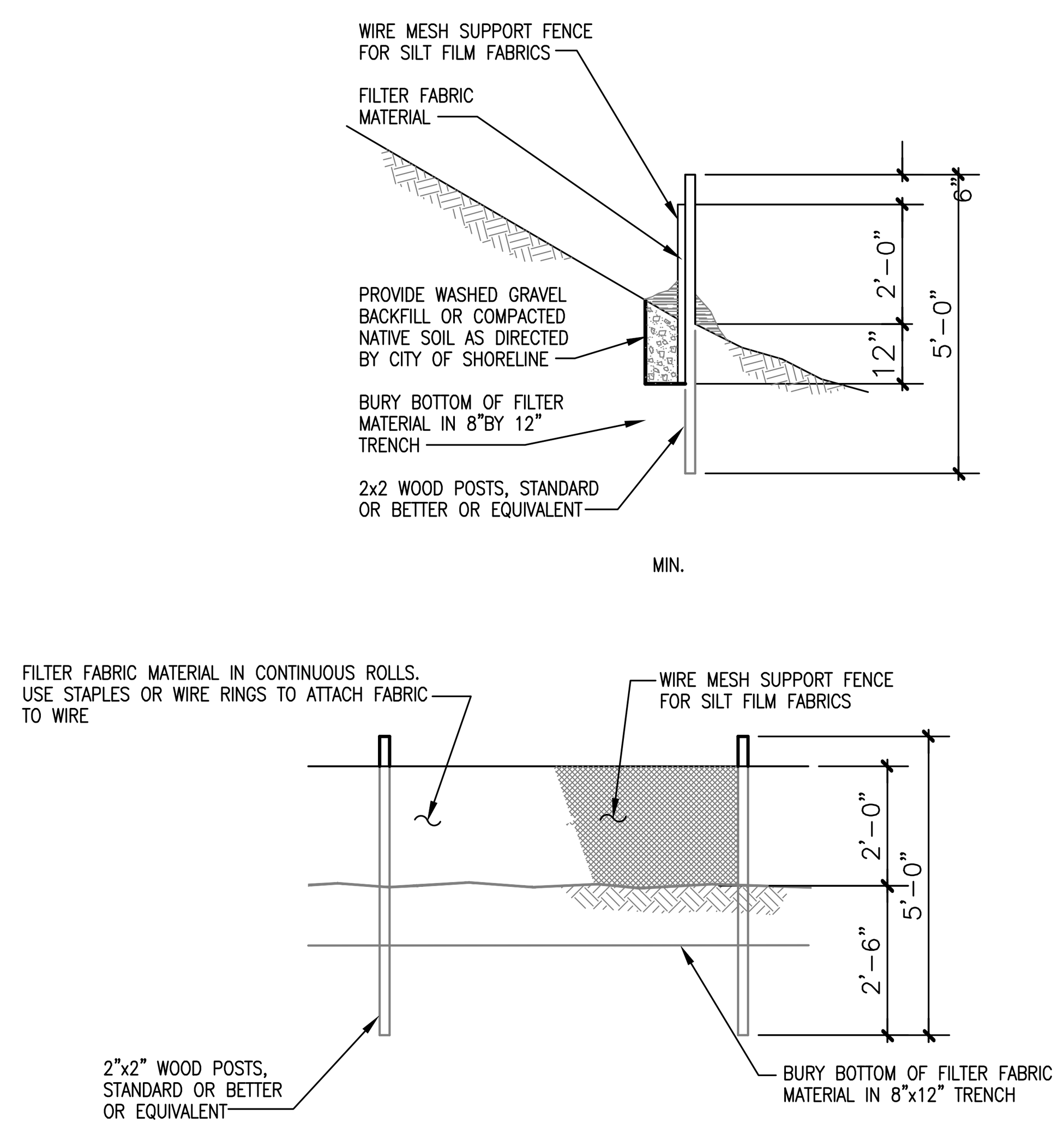
Feb 13, 2025 - 12:18pm CMC G:\Projects\2024\2427 - 2247 66th Avenue SE, Mercer Is WA 98040 - 5ft2\2427-C1.0.dwg Layout Name: C1



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.

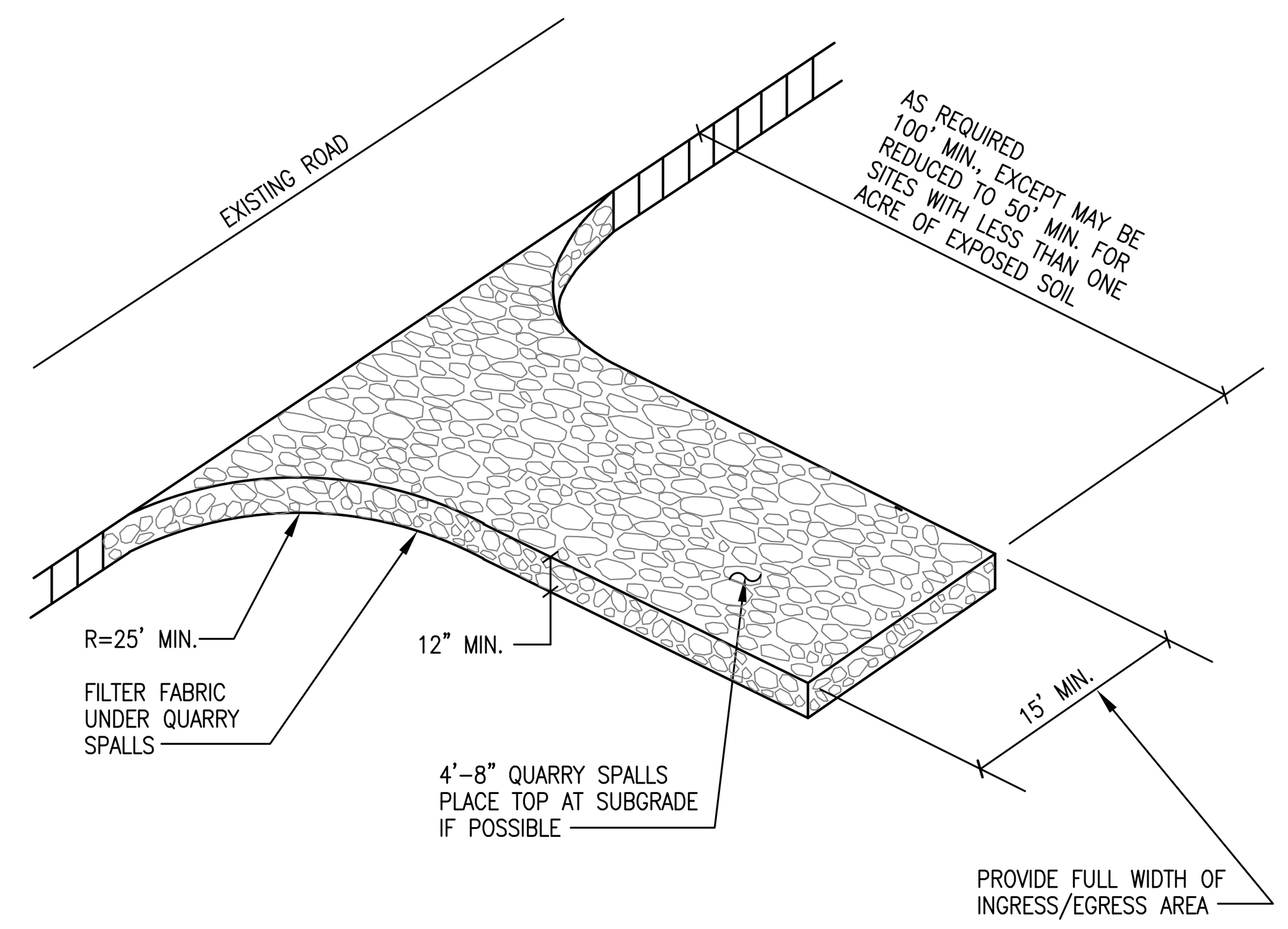
CATCH BASIN INLET PROTECTION INSERT

NTS



SILT FENCE

NO SCALE

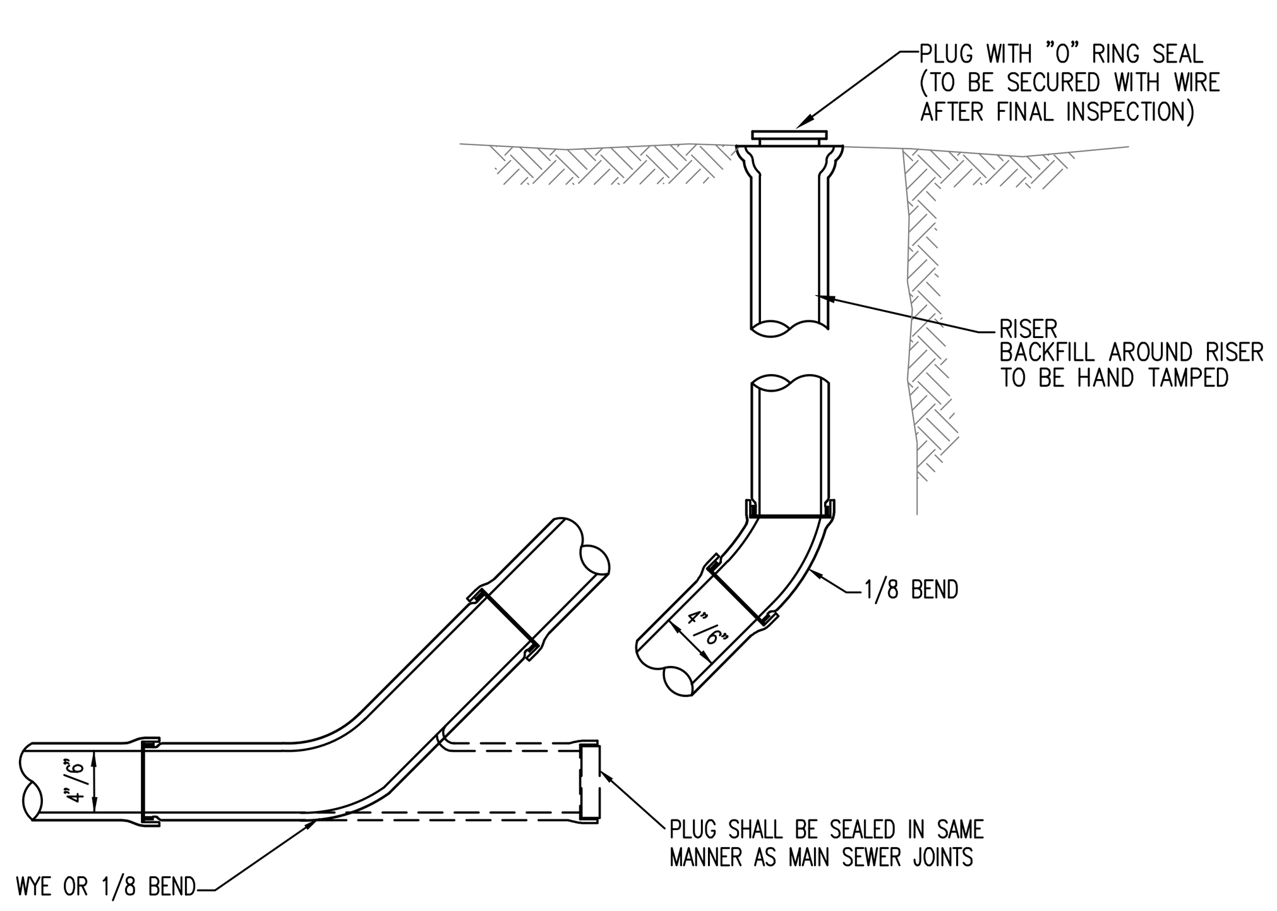


NOTES:

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.

STABILIZED CONSTRUCTION ENTRANCE

NO SCALE



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

CLEANOUT DETAILS

NTS

NO.	DATE	REVISION

C2MY
C2MY ENGINEERS, LLC
PO BOX 52083
BELLEVUE, WA 98015
(206) 922-9376
cmchin.c2my@gmail.com

PROJECT: FAN RESIDENCE
2247 66TH AVENUE SE
MERCER ISLAND, WA 98040

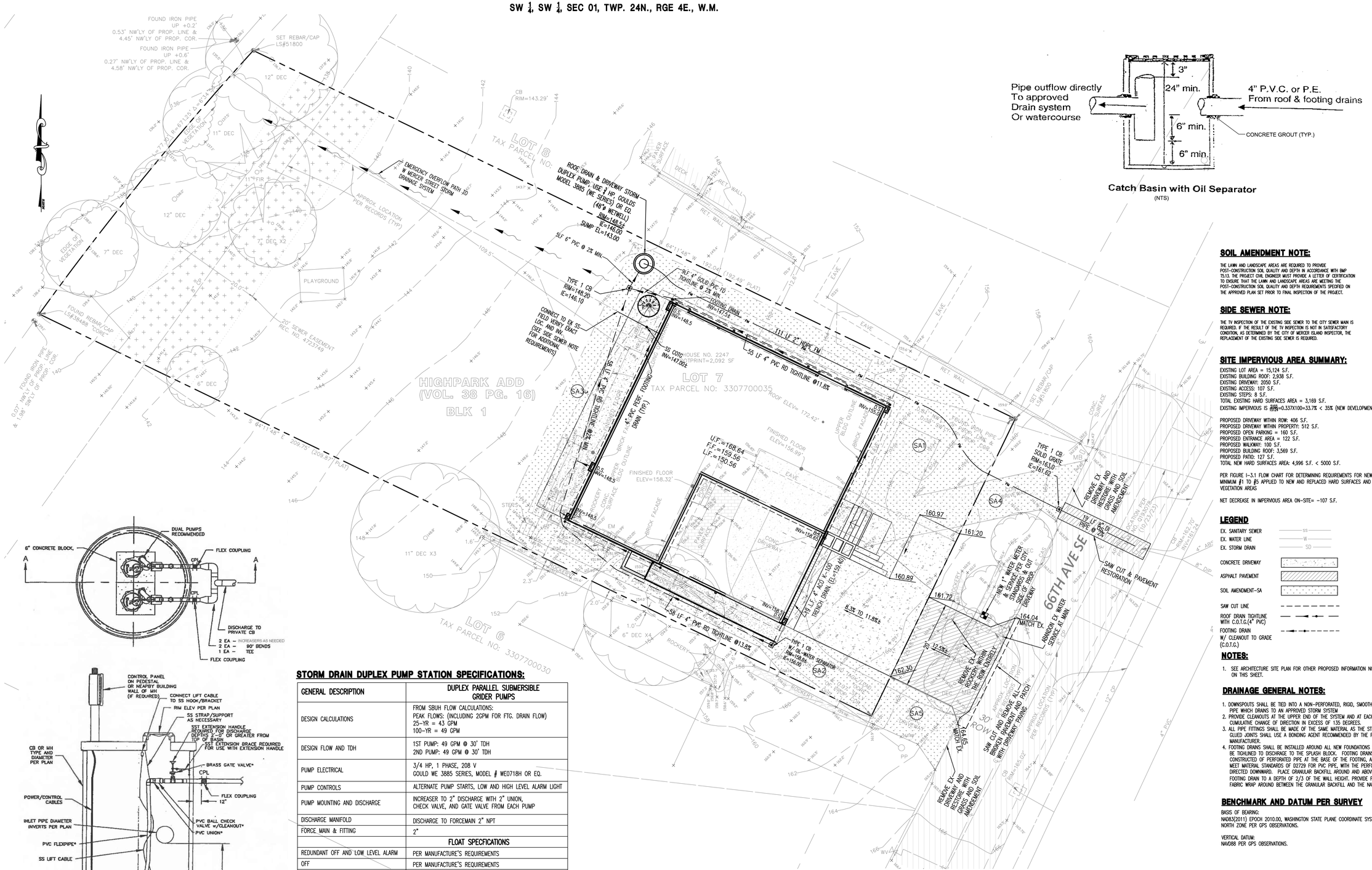
DATE: 11-06-24

TESC AND DRAINAGE DETAILS

FILE NO: 2427 DWG

SHEET C1.1

SW ¼, SW ¼, SEC 01, TWP. 24N., RGE 4E., W.M.



Catch Basin with Oil Separator
(NTS)

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 = 43 GPM 100-YR = 49 GPM
DESIGN FLOW AND TDH	1ST PUMP: 49 GPM @ 30' TDH 2ND PUMP: 49 GPM @ 30' TDH
PUMP ELECTRICAL	3/4 HP, 1 PHASE, 208 V GOULD WE 3885 SERIES, MODEL # WE0718H 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 2" 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.

STORM PUMP NOTES:

1. THE PUMP SYSTEM SHALL HAVE DUAL, ALTERNATING PUMPS WITH EMERGENCY ON-SITE, BACK-UP POWER SUPPLY AND AN EXTERNAL ALARM SYSTEM FOR SYSTEM FAILURE AND HIGH WATER LEVEL INDICATOR.
2. PUMP SYSTEMS SHALL BE OWNED, OPERATED, MAINTAINED, REPAIRED, AND REPLACED (AS NEEDED) BY PROPERTY OWNER(S) SERVED BY SUCH SYSTEM.
3. THE PRIVATE PROPERTY OWNER(S) SHALL BE RESPONSIBLE FOR ANY AND ALL CLAIMS FOR INJURIES AND DAMAGE DUE TO THE OPERATION OR NON-OPERATION OF THE PUMP SYSTEM.

SOIL AMENDMENT NOTE:

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP T5.13. THE PROJECT CIVIL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENTS SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION OF THE PROJECT.

SIDE SEWER NOTE:

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

SITE IMPERVIOUS AREA SUMMARY:

EXISTING LOT AREA = 15,124 S.F.
EXISTING BUILDING ROOF: 2,938 S.F.
EXISTING DRIVEWAY: 2050 S.F.
EXISTING ACCESS: 107 S.F.
EXISTING STEPS: 8 S.F.
TOTAL EXISTING HARD SURFACES AREA = 3,169 S.F.
EXISTING IMPERVIOUS IS $\frac{3169}{15124}$=0.337X100=33.7% < 35% (NEW DEVELOPMENT FLOW CHART)

PROPOSED DRIVEWAY WITHIN ROW: 406 S.F.
PROPOSED DRIVEWAY WITHIN PROPERTY: 512 S.F.
PROPOSED OPEN PARKING = 160 S.F.
PROPOSED ENTRANCE AREA = 122 S.F.
PROPOSED WALKWAY: 100 S.F.
PROPOSED BUILDING ROOF: 3,569 S.F.
PROPOSED PATIO: 127 S.F.
TOTAL NEW HARD SURFACES AREA: 4,996 S.F. < 5000 S.F.

PER FIGURE I-3.1 FLOW CHART FOR DETERMINING REQUIREMENTS FOR NEW DEVELOPMENT: MINIMUM #1 TO #5 APPLIED TO NEW AND REPLACED HARD SURFACES AND CONVERTED VEGETATION AREAS

NET DECREASE IN IMPERVIOUS AREA ON-SITE= -107 S.F.

LEGEND

EX. SANITARY SEWER ——SS——
EX. WATER LINE ——W——
EX. STORM DRAIN ——SD——
CONCRETE DRIVEWAY
ASPHALT PAVEMENT
SOIL AMENDMENT-SA
SAW CUT LINE
ROOF DRAIN TIGHTLINE WITH C.O.T.C.(4" PVC)
FOOTING DRAIN W/ CLEANOUT TO GRADE (C.O.T.C.)

NOTES:

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

DRAINAGE GENERAL NOTES:

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

BENCHMARK AND DATUM PER SURVEY

BASIS OF BEARING:
NAD83(2011) EPOCH 2010.00, WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE PER GPS OBSERVATIONS.

VERTICAL DATUM:
NAVD88 PER GPS OBSERVATIONS.

Know what's below. Call before you dig.

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

NO.	DATE	REVISION
1	02.12.2025	REVISED PER CITY COMMENTS

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

PROJECT: FAN RESIDENCE
2247 66TH AVENUE SE
MERCER ISLAND, WA 98040

Paving, Grading, Drainage Plan

DATE: 11-06-24

FILE NO: 2427 .DWG

SHEET C2.0

GENERAL STRUCTURAL NOTES

BUILDING CODE
2021 INTERNATIONAL BUILDING CODE

DESIGN METHOD
ALLOWABLE STRESS DESIGN (ASD)

FLOOR LOADS
DEAD LOAD : **15 psf**
LIVE LOAD: **40 psf**

ROOF LOADS
DEAD LOAD: **15 psf**
LIVE LOAD (SNOW): **25 psf**

WIND DESIGN DATA
1. BASIC WIND SPEED: **110 MPH**
2. RISK CATEGORY: **II**
3. WIND EXPOSURE: **B**
4. Kzt = **1.38**
5. ANALYSIS PROCEDURE: ENVELOPE SIMPLIFIED

SESIMIC DESIGN DATA
1. SEISMIC IMPORTANCE FACTOR: **1.0**
2. RISK CATEGORY: **II**
3. SPECTRAL RESPONSE ACCEL (S_S): **1.55**
4. SITE CLASS: D
5. SPECTRAL RESPONSE COEFF (S_{DS}): **1.16**
6. SEISMIC DESIGN CATEGORY: **D**
7. LFRS: WOOD SHEATHED SHEARWALLS
8. SEISMIC RESPONSE COEFFICIENT (Cs): **0.178**
9. RESPONSE MODIFICATION FACTOR (R): **6.5**
10. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
11. BASE SHEAR: 32 KIPS (ASD)

GENERAL

1. ANY DISCREPANCY FOUND AMONG THE DRAWINGS, THESE NOTES, AND THE SITE CONDITIONS SHALL BE REPORTED TO THE DESIGNER, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE CONTRACTORS RISK.

2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CONTRACT DRAWINGS.

3. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING. THE CONTRACTOR SHALL PROVIDE ERECTION BRACING, FORMWORK, AND TEMPORARY CONSTRUCTION SHORING IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. ANY DEVIATION MUST BE APPROVED IN WRITING PRIOR TO ERECTION.

4. ALL ERECTION PROCEDURES SHALL CONFORM TO OSHA STANDARDS. ANY DEVIATION MUST BE APPROVED BY OSHA PRIOR TO ERECTION.

5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION PROCEDURES.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND BE RESOLVED PRIOR TO PROCEEDING WITH THE WORK.

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

8. ALL DETAILS DESIGNATED AS STANDARD OR TYPICAL SHALL OCCUR IN ADDITION TO ANY OTHER SPECIFIC DETAIL CALLED OUT.

9. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ENGINEER SO THE PROPER REVISIONS MAY BE MADE. MODIFICATIONS TO CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER.

FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED ON THE RECOMMENDATION IN THE **INTERNATIONAL** BUILDING CODE TABLE 1806.2. FOUNDATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 18 OF THIS AND THE GEOTECH REPORT BY NELSON GEOTECHNICAL ASSOCIATES, INC. DATED JUNE 17th, 2024.

2. THE FOUNDATION DESIGN IS BASED ON THE FOLLOWING VALUES:
4"Ø PIN PILE COMPRESSION CAPACITY **20 kips**
EQUIV. FLUID PRESSURES

ACTIVE PRESSURE	40 PCF
AT REST PRESSURE	60 PCF
PASSIVE PRESSURE	150 PCF

3. ALL FOOTINGS SHALL BE FOUNDED AT LEAST 18" BELOW THE UNDISTURBED GROUND SURFACE OR TO FROST DEPTH. ALL FOOTINGS SHALL BE FOUNDED ON COMPACTED FILL OR UNDISTURBED NATURAL GRADE UNLESS OTHERWISE NOTED.

4. COMPACTION: MATERIAL FOR FILLING AND BACKFILLING SHALL CONSIST OF THE EXCAVATED MATERIAL AND/OR IMPORTED BORROW AND SHALL BE FREE OF ORGANIC MATTER, TRASH, LUMBER, OR OTHER DEBRIS. ALL WALLS SHALL BE ADEQUATELY BRACED PRIOR TO BACKFILLING. FILL AND BACKFILL SHALL BE DEPOSITED IN LAYERS NOT TO EXCEED 8 INCHES THICK, PROPERLY MOISTENED TO APPROXIMATE OPTIMUM REQUIREMENTS AND THOROUGHLY ROLLED OR COMPACTED WITH APPROVED EQUIPMENT IN SUCH A MANNER AND EXTENT AS TO PRODUCE A RELATIVE COMPACTION OF 90% OF MAXIMUM POSSIBLE DENSITY AS DETERMINED BY ASTM D1557. HAND TAMPERS SHALL WEIGH AT LEAST 50 POUNDS EACH AND SHALL HAVE A FACE AREA NOT IN EXCESS OF 64 SQUARE INCHES. HAND TAMPERS MAY BE OPERATED EITHER MANUALLY OR MECHANICALLY AND SHALL BE USED WHERE LARGER POWER DRIVEN COMPACTION EQUIPMENT CANNOT BE USED.

5. PIN PILES SHALL CONSIST OF 4" DIAMETER DRIVEN STEEL PILES. PILES SHOULD CONSIST OF GALVANIZED SCHEDULE-40, ASTM A-53 GRADE "A" PIPE AND BE DRIVEN TO REFUSAL, ABOUT 5'-0" - 8'-6" BELOW EXISTING SURFACE, WITH A TRACTOR-MOUNTED HAMMER WITH AN ENERGY RATING OF AT LEAST 1,100 FOOT-LB. REFUSAL CRITERIA BASED ON 15 SECONDS TO DRIVE PILE LESS THAN 1" DURING CONTINUOUS DRIVING AT A RATE OF 550 BLOWS PER MINUTE. BATTERED PILES SHALL BE AT A SLOPE OF 3H:12V (APPROX. 15°) OR STEEPER. TESTING OF PILES SHALL BE IN ACCORDANCE WITH ASTM STANDARD D1143-81 AND A GEOTECHNICAL SPECIAL INSPECTOR SHALL BE CONTINUOUSLY PRESENT DURING PIN PILE INSTALLATION AND LOAD TESTING. AT LEAST TWO PIN PILES IN DIFFERENT AREAS OF PLANNED RESIDENCE FOOTPRINT SHALL BE TESTED PRIOR TO INSTALLING THE PRODUCTION PILES FOR THE PROJECT. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

CONCRETE

1. ALL CONCRETE UNLESS OTHERWISE NOTED SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150 PCF) AGGREGATES SHALL CONFORM TO ASTM C33 WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.05%.

2. ALL CONCRETE DESIGN IS BASED ON A 28 DAY COMPRESSIVE STRENGTH (f'c) OF 2500 PSI. WHERE 3000 PSI CONCRETE IS REQUIRED BY THE BUILDING DEPARTMENT FOR WEATHERING PURPOSES ONLY, NO SPECIAL INSPECTION IS REQUIRED.

3. CEMENT SHALL CONFORM TO ASTM C150, TYPE I, CSA NORMAL.

4. MAXIMUM SLUMP SHALL NOT EXCEED 4 INCHES IN FLATWORK.

5. PLACEMENT OF CONCRETE SHALL CONFORM WITH ACI 301.

6. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF FIVE (5) DAYS AFTER PLACEMENT. ALTERNATE METHODS WILL BE APPROVED IF SATISFACTORY PERFORMANCE CAN BE ASSURED.

7. POUR/CONTROL JOINTS CAN BE USED TO MINIMIZE EFFECTS OF SHRINKAGE AS WELL AS PLACED AT POINTS OF LOW STRESS. RECOMMENDED MAXIMUM AREA OF POUR/CONTROL JOINTS IS 400SF.

8. MINIMUM CONCRETE COVERAGE OF REINFORCING STEEL FOR FORMED WORK SHALL BE AS FOLLOWS:
INTERIOR WALL: 3/4"
EXT. WALLS, NOT EXPOSED TO WEATHER: 1½"
EXPOSED TO EARTH OR WEATHER (#5 OR SMALLER): 1½"
*NOTE: CONCRETE CAST AGAINST GROUND SHALL HAVE 3" MIN. COVERAGE

9. PIPES AND CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED.

10. CONCRETE MIXES SHALL BE PROVIDED IN ACCORDANCE WITH ACI 318 (WHEN STRENGTH DATA FROM TRIAL BATCHES OR FIELD EXPERIENCE ARE NOT AVAILABLE). ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'c) OF 2500 PSI, WITH A MINIMUM CEMENT CONTENT OF 470 LBS/CUBIC YARD (5 SACKS PER CUBIC YARD). MIXES SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. NO MORE THAN A 1" PLUS TOLERANCE SHALL BE ALLOWED.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 (fy = 60 KSI) FOR BAR SIZES NO. 4 & LARGER, GRADE 40 (fy = 40 KSI) FOR NO. 3 BARS.

2. ALL REINFORCING STEEL SHALL BE LAPPED AS NOTED ON THE PLANS. WHERE LAP OR SPLICE LOCATIONS ARE NOT SPECIFICALLY INDICATED ON THE CONSTRUCTION DOCUMENTS, LAPS AND/OR SPLICES SHALL BE 42 BAR DIA AND BE WELL STAGGERED. NO MORE THAN 50% OF HORIZONTAL OR VERTICAL BARS SHALL BE SPLICED AT ONE LOCATION.

3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A82 AND A185 AND SHALL BE 6x6 W1.4xW1.4 UNLESS OTHERWISE NOTED. LAP REINFORCEMENT 6" MINIMUM.

4. ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED. SLAB ON GRADE REINFORCEMENT SHALL BE PLACED AT MID-DEPTH OF SLAB AND SHALL BE HELD SECURELY IN PLACE WITH MECHANICAL DEVICES DURING PLACING OF THE CONCRETE.

FRAMING LUMBER

1. FRAMING LUMBER SHALL BE DOUG-FIR NO. 2 FOR STUDS AND JOISTS, DOUG-FIR NO. 1. FOR BEAMS AND POSTS. GRADES ARE TYPICAL UNLESS OTHERWISE NOTED ON PLANS. LUMBER TO BE GRADE MARKED PER WCLIB SPECIFICATIONS.

2. GLU-LAMINATED MEMBERS SHALL BE 24F-V4 (DF-L) FOR SINGLE SPAN AND 24F-V8 FOR CONTINUOUS SPAN & CANTILEVERED.

3. STRUCTURAL SHEATHING SHALL BE APA RATED PLYWOOD OR OSB, EXPOSURE 1 SHEATHING CONFORMING TO EITHER COMMERCIAL STANDARDS P51-83, APA PRP-108, OR VOLUNTARY PRODUCT STANDARD PSE-92. PROVIDE A MINIMUM OF ⅜" EDGE DISTANCE ON ALL NAILS AND ⅛" EXPANSION JOINT BETWEEN ALL PANEL EDGES. MINIMUM SHEATHING REQUIREMENTS ARE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE PLANS:

4. NAILING SHALL CONFORM TO TABLE 2304.10.1 OF THE INTERNATIONAL BUILDING CODE UNLESS NOTED OTHERWISE. USE COMMON NAILS THROUGHOUT UNLESS NOTED OTHERWISE.

5. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

6. PROVIDE PROPERLY SIZED WASHERS UNDER HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD.

7. PROVIDE 3"x3"x0.229" WASHERS AT ALL ANCHOR BOLTS.

8. BOLT HOLES SHALL BE NOMINAL DIAMETER OF BOLT PLUS 1/16" UNLESS NOTED OTHERWISE. LAG BOLT PILOT HOLES SHALL BE PRE-DRILLED TO 60% OF THE NOMINAL DIAMETER OF THE LAG BOLT UNLESS NOTED OTHERWISE.

9. ALL SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WITH ⅝" MINIMUM DIAMETER BOLTS SPACED AT A MAXIMUM OF 48" ON CENTER. BOLTS MUST BE EMBEDDED A MINIMUM OF 7" INTO CONCRETE OR MASONRY. SEE PLANS AND DETAILS FOR SPECIFIC REQUIREMENTS WHERE APPLICABLE.

10. PROVIDE DOUBLE JOIST UNDER ALL PARALLEL PARTITION WALLS AND SOLID BLOCKING UNDER PERPENDICULAR PARTITION WALLS.

11. WHERE LEDGERS, SILL PLATES, POSTS, OR STUDS ARE IN DIRECT CONTACT WITH CONCRETE OR MASONRY, USE PRESERVE TREATED LUMBER OR PROVIDE GRACE VYCOR PLUS BARRIER BETWEEN WOOD MEMBERS AND CONCRETE OR MASONRY.

12. ALL FASTENERS IN CONTACT WITH PRESERVE TREATED LUMBER OR EXPOSED TO THE ELEMENTS SHALL BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL.

GLUED-LAMINATED TIMBER

1. ADHESIVE SHALL BE FOR WET USE.

2. LAMINATIONS SHALL BE OF DOUGLAS FIR/WESTER LARCH, COMBINATION 24F-V4 FOR SIMPLE SPAN BEAMS AND 24F-V8 FOR CONTINUOUS MULTIPLE SPAN AND CANTILEVERED BEAMS, FABRICATED IN ACCORDANCE WITH AITC A190.1 AND ASTM D 3737.

3. FABRICATION SHALL BE BY A LICENSED FABRICATOR.

4. GLULAM BEAMS EXPOSED TO WEATHER SHALL BE PROPERLY SEALED OR FLASHED TO PREVENT DECAY.

MANUFACTURED LUMBER

1. LAMINATED STRAND LUMBER DESIGN IS BASED ON TIMBERSTRAND LSL PRODUCTS AS SUPPLIED BY TRUS JOIST IN ACCORDANCE WITH ASTM D 5456 OR EQUIVALENT. DESIGN PROPERTIES SHALL BE:
Fb = 2325 PSI
Fv = 310 PSI
E = 1.55 x 10 ^6 PSI

2. PARALLEL STRAND LUMBER DESIGN IS BASED ON PARALLAM PSL PRODUCTS AS SUPPLIED BY TRUS JOIST IN ACCORDANCE WITH ASTM D 5456 OR EQUIVALENT. DESIGN PROPERTIES SHALL BE:
Fb = 2900 PSI
Fv = 290 PSI
E = 2.0 x 10 ^6 PSI

3. LAMINATED VENEER LUMBER DESIGN IS BASED ON MICROLAM LVL PRODUCTS AS SUPPLIED BY TRUS JOIST IN ACCORDANCE WITH ASTM D 5456 OR EQUIVALENT. DESIGN PROPERTIES SHALL BE:
Fb = 2600 PSI
Fv = 285 PSI
E = 1.9 x 10 ^6 PSI

4. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED ALONG WITH THE APPROPRIATE ICBO EVALUATION REPORTS TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. INSTALLATION OF SUBSTITUTIONS SHALL NOT PROCEED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER.

PREFABRICATED WOOD JOISTS/TRUSSES

1. THE JOISTS/TRUSSES SHALL BE MANUFACTURED BY TRUS JOIST, OR APPROVED EQUAL AND SHALL BE FABRICATED IN ACCORDANCE WITH ASTM D 5055. (SUBSTITUTIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEER OR ARCHITECT IN WRITING, PRIOR TO INSTALLATION)

2. SEE PLANS FOR SIZE, TYPE, AND LOCATIONS OF JOISTS/TRUSSES.

3. THE JOISTS/TRUSSES ARE TO BE ERECTED AND INSTALLED IN ACCORDANCE WITH THE PLANS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS AND RECOMMENDATIONS. CONTRACTOR SHALL GIVE NOTIFICATION PRIOR TO ENCLOSING THE JOISTS/TRUSSES TO PROVIDE AN OPPORTUNITY FOR INSPECTION OF THE INSTALLATION. PROVIDE BRIDGING, CONTINUOUS LATERAL BRACING, AND DIAGONAL BRACING BETWEEN THE JOISTS/TRUSSES PER THE MANUFACTURER'S RECOMMENDATIONS.

4. DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER. THE DRAWINGS SHALL SHOW ALL CRITICAL DIMENSIONS AS WELL AS THE LOADS THE JOISTS/TRUSSES ARE DESIGNED TO SUPPORT. THE JOISTS/TRUSSES ARE TO BE ERECTED AND INSTALLED IN ACCORDANCE WITH THE PLANS, APPROVED FABRICATOR DRAWINGS, AND INSTALLATION SUGGESTIONS.

DEFERRED SUBMITTALS

CONTRACTOR TO SUBMIT DRAWINGS & CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT TO ARCHITECT/ENGINEER BEFORE SUBMITTING TO JURISDICTION FOR REVIEW & PERMITTING.

ITEM
1. STEEL PIPE PIN PILES (INSTALLATION & TESTING)
2. OPEN WEB WOOD TRUSSES

SPECIAL INSPECTIONS

IN ACCORDANCE WITH IBC CHAPTER 17, THE FOLLOWING TYPES OF WORK REQUIRE SPECIAL INSPECTION. SEE THE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS FOR INSPECTION AND TESTING. SPECIAL INSPECTION SHALL BE PAID FOR AND PROVIDED BY THE OWNER.

MATERIAL	TASK	CONTINUOUS	PERIODIC	RESPONSIBLE FIRM
FOUNDATIONS	INSPECTION OF INSTALLATION & TESTING OF STEEL PIPE PIN PILES	X	-	SPECIAL INSPECTOR

ABBREVIATION LIST

A.B.	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ANCH	ANCHORAGE
ARCH	ARCHITECTURAL
ASD	ALLOWABLE STRESS DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BM	BEAM
BP	BASE PLATE
BRG	BEARING
BTM/BOT	BOTTOM
CIP	CAST-IN-PLACE
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DL	DEAD LOAD
DP	DEEP
EA	EACH
EF	EACH FACE
EL	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
(E)	EXISTING
FLR	FLOOR
FS	FAR SIDE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLU-LAMINTED BEAM
GYP	GYPSUM
HF	HEMLOCK FIR
HORIZ	HORIZONTAL
INCL	INCLUDE
K	KILOPOUND
L	ANGLE
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MISC	MISCELLANEOUS
MIN	MINIMUM
NS	NEAR SIDE
NTS	NOT TO SCALE
OF	OUTSIDE FACE
PCF	POUNDS PER CUBIC FOOT
PDA	POWDER DRIVEN ANCHORS
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
QTY	QUANTITY
REINF	REINFORCING
RF	ROOF
SCHED	SCHEDULE
SF	SQUARE FOOT
SHTG	SHEATHING
SIM	SIMILAR
SLV	SHORT LEG VERTICAL
SPECS	SPECIFICATIONS
SS	STAINLESS STEEL
STD	STANDARD
STRUCT	STRUCTURAL
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
TOB	TOP OF BEAM
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TYP	TYPICAL
ULT	ULTIMATE
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
WF	WIDE FLANGE
W/O	WITHOUT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

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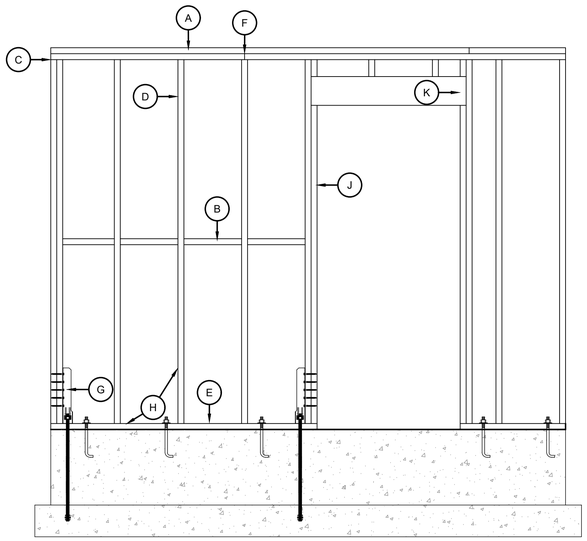
GENERAL STRUCTURAL NOTES

Sheet:
S1.0

Job Number: 24-086



- (A) DOUBLE TOP PLATE W/ EDGE NAILING (STAGGER)
- (B) SHEARWALL EDGE NAILING AT ALL PANEL EDGES. BLOCKING AT ALL PANEL EDGES WHERE APPLICABLE.
- (C) EDGE NAILING TO HOLDOWN POST (FULL HEIGHT) STAGGER INTO DOUBLE STUDS
- (D) STUDS AT 16" ON CENTER
- (E) PRESSURE TREATED SILL PLATE WITH EDGE NAILING AND ANCHOR BOLTS PER SHEARWALL SCHEDULE.
- (F) TOP PLATE SPLICE NAILING TO BE (12) 10d COMMONS (MIN). LAP 48" MINIMUM. CENTER SPLICE ON STUD.
- (G) HOLDOWN PER SCHEDULE AND PLAN
- (H) COORDINATE ALL STUD AND PLATE SIZES w/ SHEARWALL SCHEDULE REQUIREMENTS
- (J) EDGE NAILING TO POSTS, TRIM STUDS, AND KING STUDS
- (K) BEARING STUD FOR HEADER

1 S1.1 TYPICAL SHEARWALL ELEVATION
NTS

SHEARWALL SCHEDULE								
SHEARWALL MARK	SHEATHING MATERIAL	FASTENER TYPE AND SIZE	PANEL EDGE NAILING	PANEL FIELD NAILING	SILL PLATE MATERIAL AND ANCHOR BOLT SIZE AND SPACING (MIN EMBED 7")	BOTTOM PLATE SIZE AND CONNECTION	ALLOWABLE CAPACITY FOR SEISMIC LOADS (8d,7/16")	ALLOWABLE CAPACITY FOR WIND LOADS (8d,7/16")
SW-6	7/16" OR 15/32" OSB OR PLYWOOD SHEATHING ONE FACE	8d (0.134") COMMON NAIL (1-1/2" MIN PENETRATION INTO FRAMING MEMBERS)	6" O.C.	12" O.C.	PT 2x SILL PLATE w/ 5/8" Ø AB @ 48" O.C.	2x BOTTOM PLATE w/ 16d AT 6" O.C. INTO RIM JOIST/BLOCKING	240 PLF	335 PLF
SW-4			4" O.C.		PT 2x SILL PLATE w/ 5/8" AB Ø @ 32" O.C.	2x BOTTOM PLATE w/ 16d AT 4" O.C. INTO RIM JOIST/BLOCKING	350 PLF	490 PLF
SW-3			3" O.C.		PT 3x SILL PLATE w/ 5/8" Ø AB @ 16" O.C.	3x BOTTOM PLATE w/ (2) ROWS OF SIMPSON 6" SDW SCREWS AT 6" O.C. INTO RIM JOIST AND BLOCKING	450 PLF	630 PLF
SW-2			2" O.C.		PT 3x SILL PLATE w/ 5/8" Ø AB @ 16" O.C.	3x BOTTOM PLATE w/ (2) ROWS OF SIMPSON 6" SDW SCREWS AT 6" O.C. INTO RIM JOIST AND BLOCKING	585 PLF	820 PLF
WSWH	INDICATES SIMPSON STRONG-WALL, HIGH STRENGTH WOOD SHEARWALL PER MANUFACTURER & DETAIL 2/S3.1							

SHEARWALL NOTES

1. ALL STUDS, BLOCKING, TOP AND BOTTOM PLATES SHALL BE HEM-FIR NO. 2 UNLESS NOTED OTHERWISE ON PLANS. ALL SHEATHING EDGES MUST BE BACKED WITH 2x OR WIDER FRAMING (SEE NOTE #3).

2. SHEATHING MAY BE INSTALLED EITHER HORIZONTALLY OR VERTICALLY. ALL SHEARWALL SHEATHING MUST EXTEND TO THE OUTSIDE EDGE OF ALL HOLDOWN POSTS AND CORNERS, AND TO THE INSIDE EDGE OF FRAMING AROUND OPENINGS.

3. WHERE SHEATHING NAILING IS SHEARWALL TYPE SW-3 AND GREATER, ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN A SINGLE 3-INCH NOMINAL MEMBER. ADDITIONALLY, WHERE SHEARWALLS ARE SHEATHED ON BOTH FACES, ALL STUDS AND PLATES RECEIVING EDGE NAILING FROM BOTH FACES MUST BE A SINGLE 3-INCH NOMINAL MEMBER OR PANEL JOINTS MUST BE OFFSET. (2)2x MAY BE SUBSTITUTED FOR A SINGLE 3x MEMBER PROVIDED THE STUDS ARE STITCH NAILED TOGETHER w/ 10d NAILS STAGGERED AT 2½" O.C.

4. SHEARWALL NAILING CRITERIA IS BASED ON TABLE 4.2A OF THE AF&PA SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC. VALUES ARE BASED ON OSB OR PLYWOOD SHEATHING w/ HEM-FIR NO. 2 FRAMING AND COMMON NAILS.

5. HOLDOWNS AND OTHER CONNECTIONS MAY BE REQUIRED AT THE ENDS OF MANY SHEARWALLS. SIZES AND LOCATIONS OF THESE CONNECTORS ARE INDICATED ON THE PLANS. REFER TO THE APPROPRIATE DETAILS AND/OR HOLDOWN SCHEDULE FOR ADDITIONAL INFORMATION REGARDING ANCHOR BOLTS, EMBEDMENT LENGTH, ETC. WHERE (2) 2x's ARE USED AS A HOLDOWN POST, SHEARWALL EDGE NAILING MUST BE STAGGERED INTO EACH MEMBER OF THE POST.

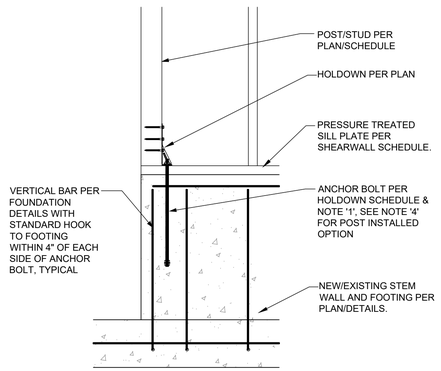
6. ANCHOR BOLTS MUST BE EMBEDDED A MINIMUM OF 7" INTO CONCRETE OR GROUTED CMU, AND SHALL BE PLACED TO PROVIDE A MINIMUM OF 2" COVER. PROVIDE 3" COVER FOR CONCRETE CAST AGAINST SOIL.

7. ALL MACHINE BOLTS SHALL BE ASTM A307 OR BETTER. HILTI KWIK BOLTS/SIMPSON TITEN HD BOLTS OF THE SAME DIAMETER AS SHOWN IN THE SHEARWALL SCHEDULE MAY BE SUBSTITUTED FOR ANCHOR BOLTS INTO EXISTING CONCRETE. BOLTS SHALL BE EMBEDDED A MINIMUM OF 3½" INTO EXISTING CONCRETE.

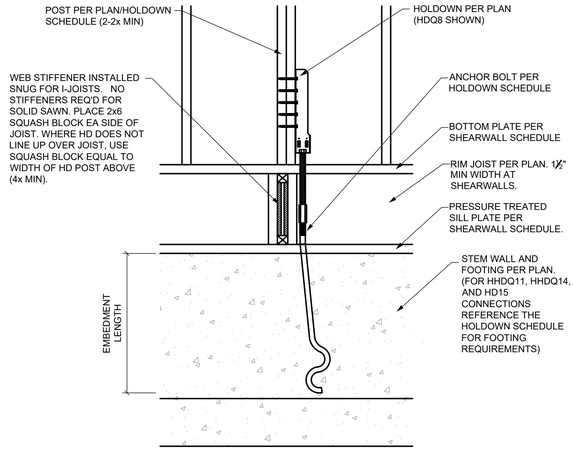
8. ALL NAILS AND CONNECTORS IN CONTACT WITH PRESSURE TREATED WOOD (EXCEPT FOR BORITE TREATED WOOD) MUST BE HOT DIPPED GALVANIZED OR STAINLESS STEEL TO RESIST CORROSION.

9. NAILS MUST BE STAGGERED WHEN SPACED AT 2" O.C.

10. PROVIDE A MINIMUM OF 3" x 3" x 0.229" PLATE WASHERS AT ALL ANCHOR BOLTS. THE EDGE OF THE PLATE WASHER MUST BE LOCATED NO MORE THAN ½" FROM THE INSIDE FACE OF THE SHEARWALL SHEATHING. FOR SHEARWALLS SHEATHED ON BOTH FACES, SQUARE PLATE WASHERS SHALL HAVE A MINIMUM SQUARE DIMENSION OF SILL PLATE WIDTH MINUS 1". (E.G. 4.5" x 4.5" x 0.229" WASHER FOR 3x6 SILL PLATE.)

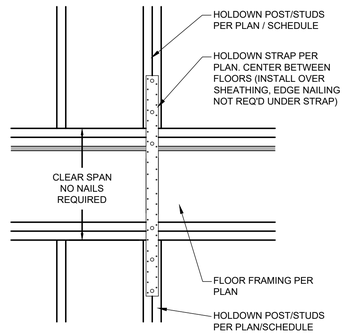


SLAB/STEMWAL

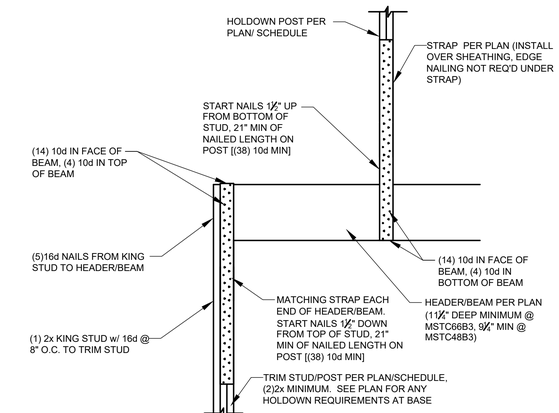


AT RIM JOIST

2 S1.1 TYP BOLTED HOLDOWN
1" = 1'-0"



3 S1.1 TYP FLR TO FLR STRAP
1" = 1'-0"



4 S1.1 STRAP HD @ BEAM/HEADER
NTS

HOLDOWN SCHEDULE							
HOLDOWN MARK	THREADED ROD SIZE	EMBED INTO CONCRETE	MIN EDGE DISTANCE	MINIMUM POST SIZE	TOTAL FASTENERS	CAPACITY	REMARKS
HDU2	5/8" Ø	10"	2½"	(2) 2x	(6) SDS ¼" x 1½"	3075#	SEE DET 2/S1.1
HDU4	5/8" Ø	12"	3"	(2) 2x	(10) SDS ¼" x 2½"	4565#	SEE DET 2/S1.1
HDU8	7/8" Ø	14"	3.5"	(3) 2x	(20) SDS ¼" x 2½"	6765#	SEE DET 2/S1.1
HDU11	1" Ø	16"	4"	6X6	(30) SDS ¼"X2 ½"	9535#	SEE DET 2/S1.1
MST37	N/A	N/A	N/A	(2) 2x	(22) 16d	2705#	SEE DET 3/S1.1
MST48	N/A	N/A	N/A	(2) 2x	(34) 16d	4200#	SEE DET 3/S1.1
MST72	N/A	N/A	N/A	(3) 2x	(62) 16d	6730#	SEE DET 3/S1.1
MSTC48B3	N/A	N/A	N/A	(2) 2x	(38) 16d	3975#	SEE DET 4/S1.1
(2)MSTC48B3	N/A	N/A	N/A	(4) 2x	(76) 16d	7950#	SEE DET 4/S1.1

HOLDOWN NOTES

1. ANCHOR BOLTS SHALL BE A307 ALL-THREAD w/ STANDARD CUT PLATE WASHER BETWEEN DOUBLE NUT OR EQUIVALENT SIMPSON PAB.

2. MINIMUM CONCRETE COMPRESSIVE STRENGTH (f'c) SHALL BE 2500 PSI. MINIMUM WALL THICKNESS IS 8", U.N.O. ON PLAN OR DETAILS

3. ALL HOLDOWNS REQUIRE A (2)2x POST UNLESS NOTED OTHERWISE. WHERE HOLDOWNS ARE INSTALLED INTO THE WIDE FACE OF THE STUD, STUDS MUST BE STITCH NAILED TOGETHER w/ 16d SINKERS STAGGERED AT 4" O.C.

4. THREADED RODS MAY BE POST INSTALLED WITH SIMPSON SET-3G, AT-XP, OR HILTI HY-150 EPOXY, UNO. CONSULT EOR FOR HDU8 & HEAVIER POST INSTALLED OPTIONS. SPECIAL INSPECTIONS ARE REQUIRED FOR POST-INSTALLED ANCHORS PER GENERAL STRUCTURAL NOTES.

5. MINIMUM EDGE DISTANCE IS FOR FORMED CONCRETE EXPOSED TO WEATHER OR SOIL. FOR CONCRETE CAST AGAINST SOIL PROVIDE 3" CLEAR TO ANCHOR BOLT.

6. NAILS/SCREWS TO HOLDOWN POST SHALL BE PER MANUFACTURER'S SPECIFICATIONS.

7. WHEN FIELD CONDITION BECOME LESS THAN MINIMUM SHOWN, CONTACT ENGINEER PRIOR TO PROCEEDING.

8. ALL HOLDOWN BOLTS MUST BE RE-TIGHTENED JUST PRIOR TO ENCLOSING SECOND SIDE OF WALL.

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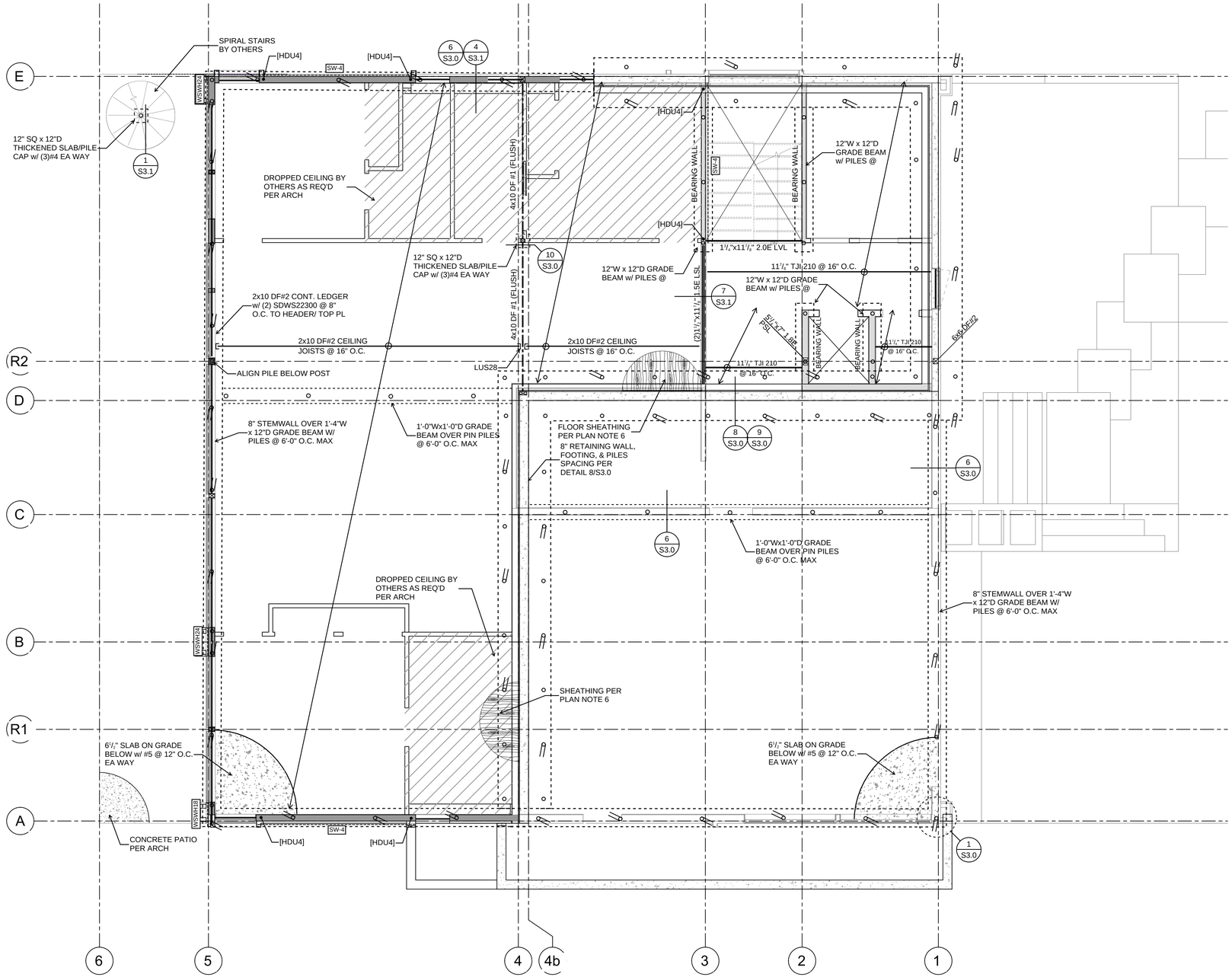
SHEARWALL SCHEDULE & DETAILS

Sheet:
S1.1

Job Number: 24-086



GENERAL NOTES

1. DO NOT SCALE DRAWINGS - SCALE ONLY APPLICABLE WHEN PRINTED FULL SIZE AND SCALE IS LISTED.
2. FOR GENERAL STRUCTURAL NOTES, SEE SHEET S1.0.
3. ALL HEADERS SHALL BE (2)2x6 DFL #2 U.N.O. ON PLANS.
4. PROVIDE (1) 2x TRIM STUD AND (1) 2x KING STUD FOR CLEAR OPENINGS UP TO 4'-0".
   PROVIDE (2) 2x TRIM STUD AND (2) 2x KING STUD FOR CLEAR OPENINGS UP TO 8'-0".
   PROVIDE (3) 2x TRIM STUD AND (3) 2x KING STUD FOR CLEAR OPENINGS GREATER THAN 8'-0" U.N.O. ON PLANS.
5. ROOF SHEATHING SHALL BE APA RATED ½" OSB OR PLYWOOD. NAIL PANEL EDGES W/ 10d @ 6" O.C., NAIL PANEL FIELD W/ 10d @ 12" O.C. TYP, U.N.O.
6. FLOOR SHEATHING SHALL BE APA RATED ¾" OSB OR PLYWOOD. NAIL PANEL EDGES W/ 10d @ 4" O.C., NAIL PANEL FIELD W/ 10d @ 12" O.C. TYP, U.N.O., BLOCK ALL PANEL EDGES.
7. PROVIDE SIMPSON CB POST BASE FOR ALL COLUMNS TO CONCRETE & BC POST BASE TO WOOD U.N.O. ON PLAN OR IN DETAILS. ORIENT BASE TO FASTENERS IN STUD WALL WHERE APPLICABLE. REFERENCE ARCH PLANS FOR LOCATION OF CUSTOM CONNECTIONS.
8. ALL EXTERIOR WALLS SHALL BE FRAMED AS SHEARWALL TYPE '6' U.N.O. ON PLANS
9. SHEATHING PER SHEARWALL SCHEDULE SHALL BE INSTALLED ABOVE AND BELOW ALL OPENINGS AND SHALL RUN CONTINUOUSLY BETWEEN CORNERS.
10. SEE SHEET S1.1 FOR TYPICAL HOLDOWN DETAILS.

LEGEND

- NEW STUD WALL PER PLAN, 2x4 @ 16" O.C. MIN INTERIOR, 2x6 @ 16" O.C. MIN EXTERIOR (U.N.O.)
- NEW POST PER PLAN
- NEW FOOTING PER PLAN
- SW-X — NEW SHEARWALL PER PLAN & SCHEDULE
- [--] — INDICATES HOLDOWN PER PLAN & S1.1
- 4" DIA. VERTICAL PIN PILE BY OTHERS, 20kip CAPACITY, SEE S1.0 FOR MORE INFORMATION
- 15° BATTERED 4" DIA. PIN PILE, 16 KIPS AXIAL CAPACITY, 5 KIPS LATERAL CAPACITY, SEE DETAIL 2/S3.0 FOR ADDITIONAL INFORMATION

N

1 S2.0 FOUNDATION & LEVEL 1 FRAMING PLAN
1/4" = 1'-0"

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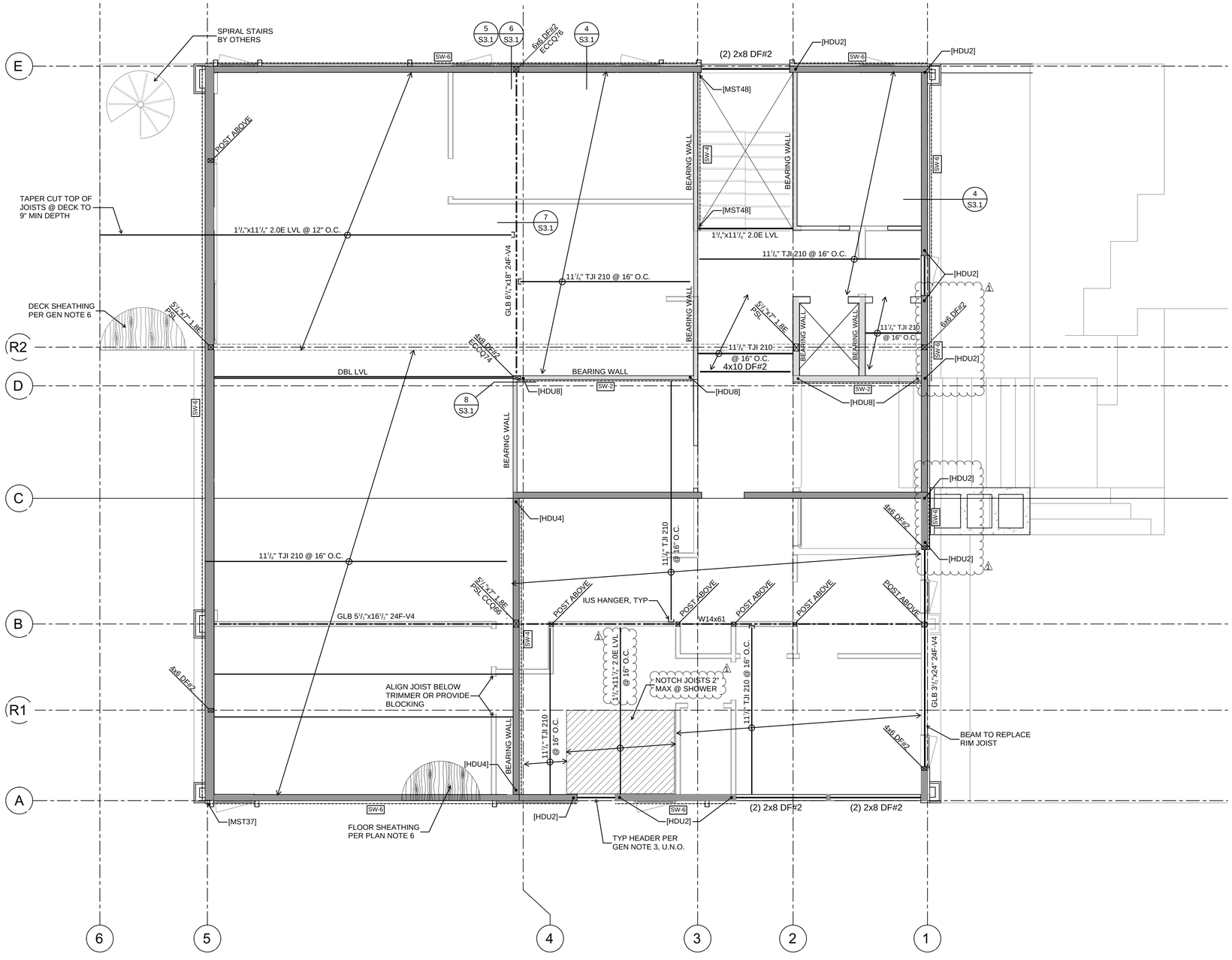

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N 1 S2.1 — LEVEL 2 FRAMING PLAN
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LEVEL 2 FRAMING PLAN

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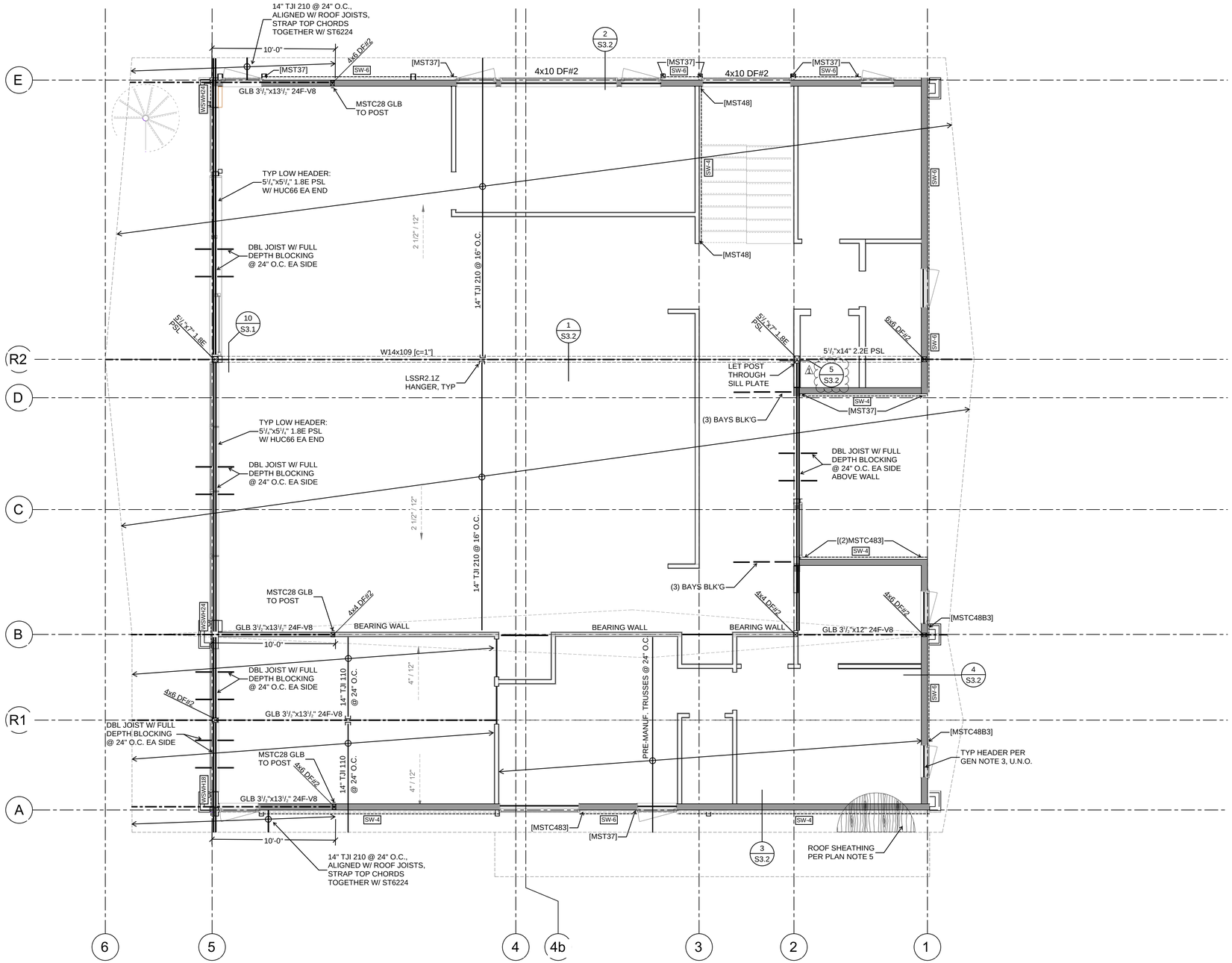

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2. FOR GENERAL STRUCTURAL NOTES, SEE SHEET S1.0.
3. ALL HEADERS SHALL BE (2)2x6 DFL #2 U.N.O. ON PLANS.
4. PROVIDE (1) 2x TRIM STUD AND (1) 2x KING STUD FOR CLEAR OPENINGS UP TO 4'-0".
   PROVIDE (2) 2x TRIM STUD AND (2) 2x KING STUD FOR CLEAR OPENINGS UP TO 8'-0".
   PROVIDE (3) 2x TRIM STUD AND (3) 2x KING STUD FOR CLEAR OPENINGS GREATER THAN 8'-0" U.N.O. ON PLANS.
5. ROOF SHEATHING SHALL BE APA RATED ½" OSB OR PLYWOOD. NAIL PANEL EDGES W/ 10d @ 6" O.C., NAIL PANEL FIELD W/ 10d @ 12" O.C. TYP, U.N.O.
6. FLOOR SHEATHING SHALL BE APA RATED ¾" OSB OR PLYWOOD. NAIL PANEL EDGES W/ 10d @ 4" O.C., NAIL PANEL FIELD W/ 10d @ 12" O.C. TYP, U.N.O., BLOCK ALL PANEL EDGES.
7. PROVIDE SIMPSON CB POST BASE FOR ALL COLUMNS TO CONCRETE & BC POST BASE TO WOOD U.N.O. ON PLAN OR IN DETAILS. ORIENT BASE TO FASTENERS IN STUD WALL WHERE APPLICABLE. REFERENCE ARCH PLANS FOR LOCATION OF CUSTOM CONNECTIONS.
8. ALL EXTERIOR WALLS SHALL BE FRAMED AS SHEARWALL TYPE '6' U.N.O. ON PLANS
9. SHEATHING PER SHEARWALL SCHEDULE SHALL BE INSTALLED ABOVE AND BELOW ALL OPENINGS AND SHALL RUN CONTINUOUSLY BETWEEN CORNERS.
10. SEE SHEET S1.1 FOR TYPICAL HOLDOWN DETAILS.

LEGEND

- NEW STUD WALL PER PLAN, 2x4 @ 16" O.C. MIN INTERIOR, 2x6 @ 16" O.C. MIN EXTERIOR (U.N.O.)
- NEW POST PER PLAN
- NEW FOOTING PER PLAN
- SW-X — NEW SHEARWALL PER PLAN & SCHEDULE
- [--] — INDICATES HOLDOWN PER PLAN & S1.1

ROOF FRAMING PLAN

N — 1 / S2.2 — 1/4" = 1'-0"

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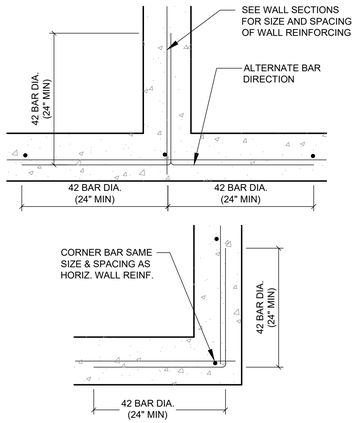
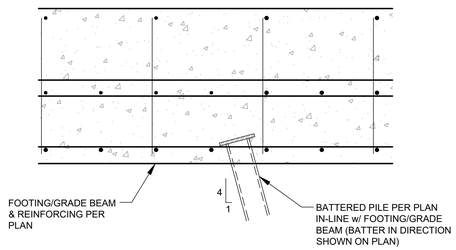
ROOF FRAMING PLAN

Sheet:
S2.2

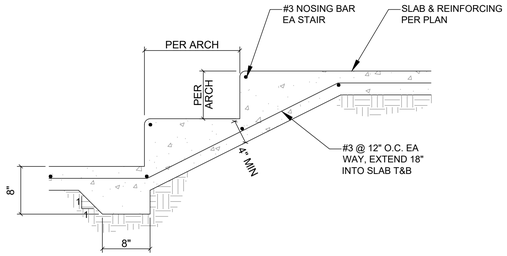
Job Number: 24-086



1 S3.0 TYP CORNER REINFORCEMENT
1" = 1'-0"

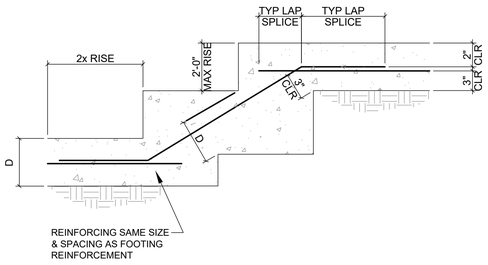


2 S3.0 BATTERED PILE TO FOOTING
1" = 1'-0"

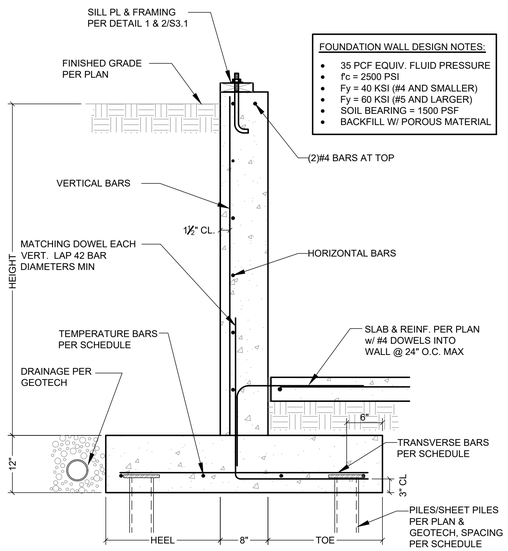


3 S3.0 TYPICAL CONCRETE STAIRS
1" = 1'-0"

NOTES:
1. SLOPE TO BE 1 VERT (MAX) TO 2 HORIZ UNO
2. LOCATE STEPS AS REQ'D
3. 'D' = FOOTING DEPTH PER PLAN



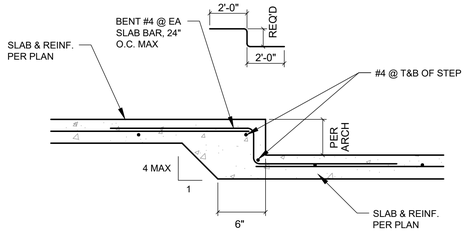
4 S3.0 TYPICAL STEP IN FOOTING
1" = 1'-0"



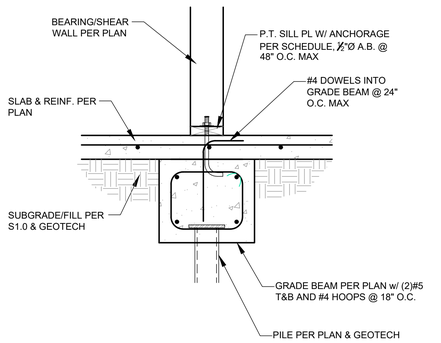
FOUNDATION WALL DESIGN NOTES:
- 35 PCF EQUIV. FLUID PRESSURE
- f'c = 2500 PSI
- Fy = 40 KSI (#4 AND SMALLER)
- Fy = 60 KSI (#5 AND LARGER)
- SOIL BEARING = 1500 PSF
- BACKFILL W/ POROUS MATERIAL

FOUNDATION WALL SCHEDULE							
HEIGHT	HEEL	TOE	PILE SPACING	VERTICAL BARS	HORIZONTAL BARS	TRANSVERSE FOOTING BARS	TEMPERATURE BARS
4'-0"	8"	8"	10'-0"	#4 @ 12" O.C.	#4 @ 12" O.C.	#5 @ 12" O.C.	#5 @ 12" O.C.
7'-0"	1'-8"	1'-8"	8'-0"	#5 @ 12" O.C.	#4 @ 12" O.C.	#5 @ 12" O.C.	#5 @ 12" O.C.
10'-0"	1'-8"	1'-8"	4'-0"	#5 @ 12" O.C.	#4 @ 12" O.C.	#5 @ 12" O.C.	#5 @ 12" O.C.

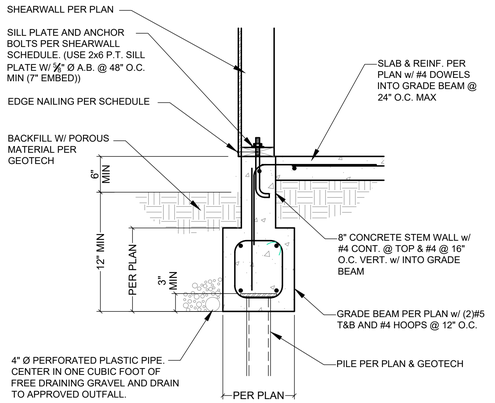
8 S3.0 RETAINING WALL SCHEDULE
NTS



5 S3.0 DEPRESSED SLAB(MONOLITHIC)
1" = 1'-0"

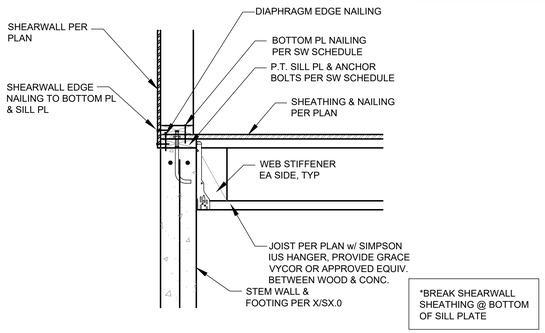


6 S3.0 SLAB TO GRADE BEAM



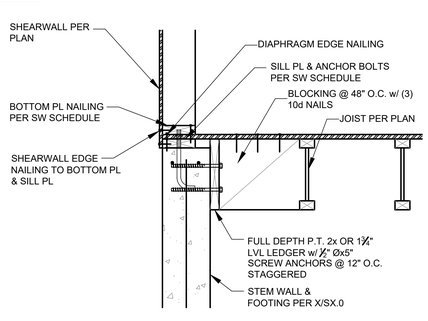
7 S3.0 WALL TO GRADE BEAM
1" = 1'-0"

NOTE: DO NOT BACKFILL UNTIL AFTER FLOOR FRAMING/SHEATHING HAS BEEN INSTALLED



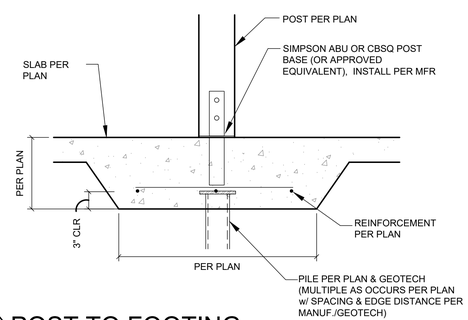
*BREAK SHEARWALL SHEATHING @ BOTTOM OF SILL PLATE

JOISTS PERPENDICULAR



JOISTS PARALLEL

9 S3.0 SHEARWALL & FLOOR FRAMING TO CONC. WALL
1" = 1'-0"



10 S3.0 POST TO FOOTING
1" = 1'-0"

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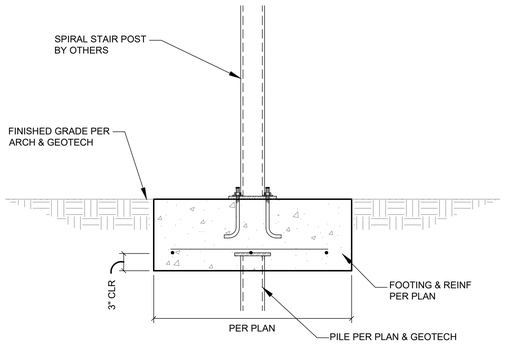
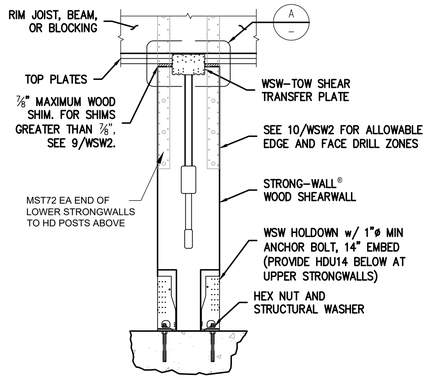
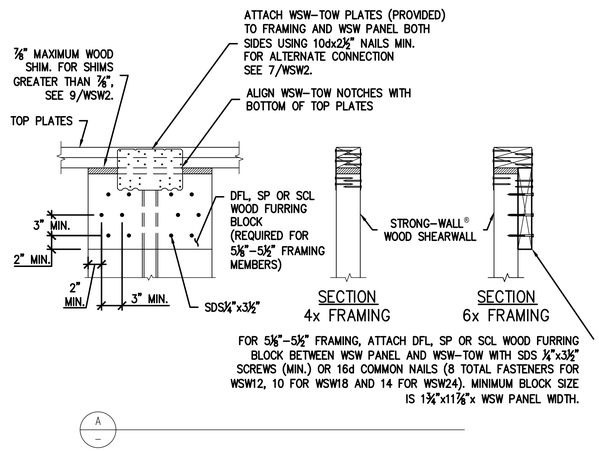
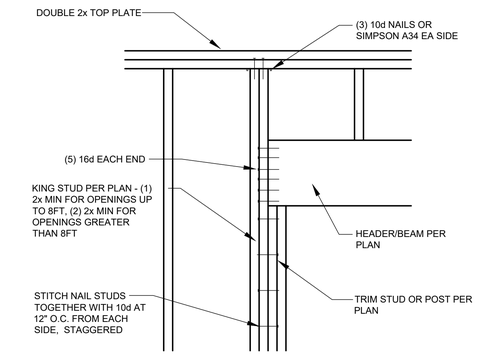


1 S3.1 PIPE POST TO FOOTING
1" = 1'-0"

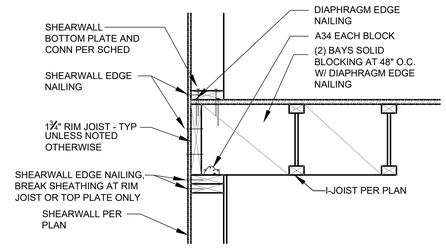




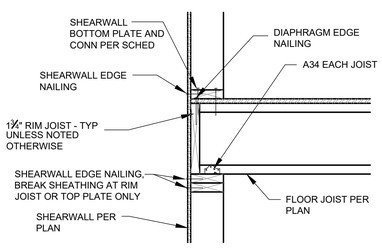
2 S3.1 SIMPSON WOOD STRONG-WALL
1" = 1'-0"



3 S3.1 TYPICAL HEADER/BEAM TO WALL
1" = 1'-0"

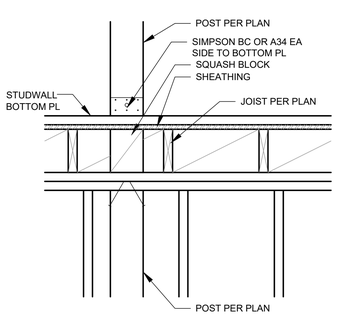


JOISTS PARALLEL

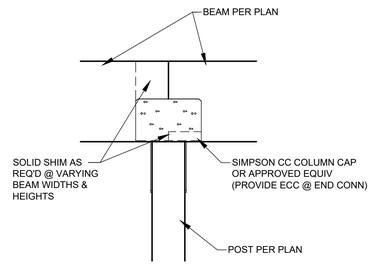


JOISTS PERPENDICULAR

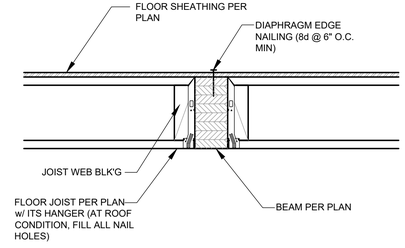
4 S3.1 FLOOR JOIST TO WALL CONNECTION
1" = 1'-0"



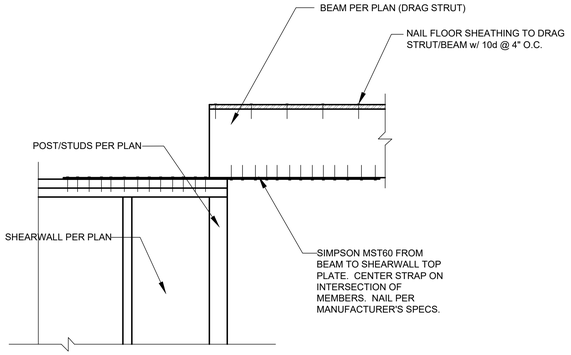
5 S3.1 STACKED POST IN WALL
1" = 1'-0"



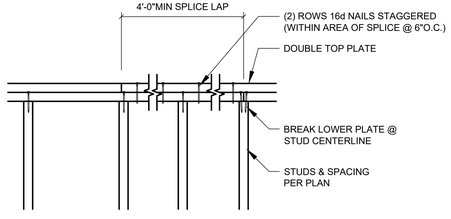
6 S3.1 TYPICAL BEAM TO POST
1" = 1'-0"



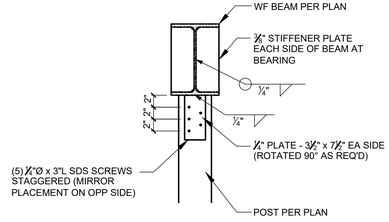
7 S3.1 JOIST/FLUSH BEAM CONNECTION
1" = 1'-0"



8 S3.1 DRAG STRUT/WALL CONNECTION
NTS



9 S3.1 TYPICAL TOP PLATE SPLICE
NTS



10 S3.1 WF BEAM TO POST
1" = 1'-0"

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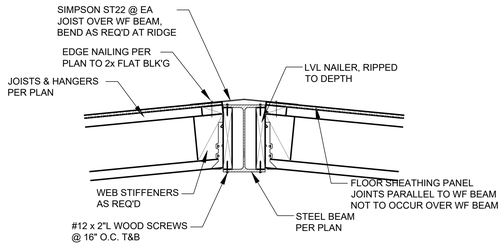
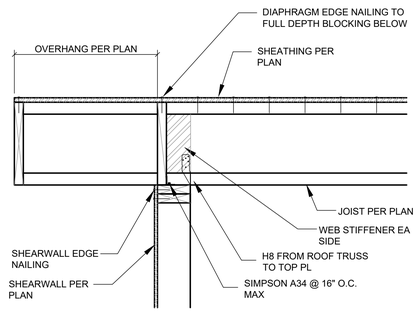
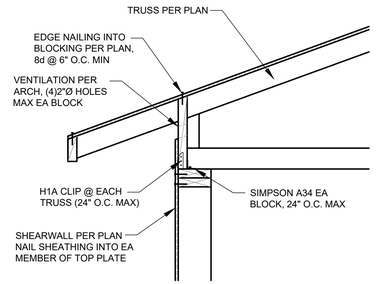


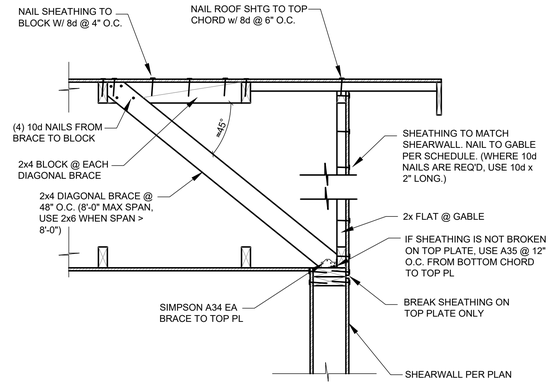
1 S3.2 JOISTS TO WF BEAM
1" = 1'-0"



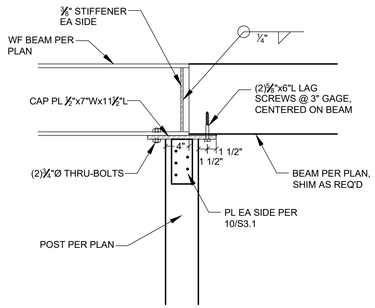
2 S3.2 JOIST TO SHEARWALL CONN.
1" = 1'-0"



3 S3.2 ROOF TO SHEARWALL CONN.
1" = 1'-0"



4 S3.2 SHEARWALL TO TRUSS
1" = 1'-0"



5 S3.2 BEAMS TO POST
1" = 1'-0"

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