GENERAL NOTES:

THESE DRAWINGS ARE THE PROPERTY OF THE ARCHITECT/DESIGNER AND MAY BE REPRODUCED ONLY WITH THE WRITTEN PERMISSION OF THE ARCHITECT/DESIGNER. AUTHORIZED REPRODUCTIONS MUST BEAR THE NAME OF THE ARCHITECT/DESIGNER. COPYRIGHT 2015 BY DME CONSTRUCTION. THESE DRAWINGS ARE FULLY PROTECTED BY FEDERAL AND STATE COPYRIGHT LAWS. ANY INFRINGEMENT WILL BE VIGOROUSLY PROSECUTED.

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES:
* 2018 INTERNATIONAL RESIDENTIAL CODE
* 2018 WASHINGTON STATE ENERGY CODE
* 2018 INTERNATIONAL MECHANICAL CODE
* 2018 INTERNATIONAL PLUMBING CODE
* 2018 INTERNATIONAL FIRE CODE

CONTRACTORS RESPONSIBILITY:

CONTRACTOR TO VERIFY ALL DIMENSIONS AND STRUCTURAL MEMBER SIZES PRIOR TO CONSTRUCTION.

CONTRACTOR TO INFORM ARCHITECT/DESIGNER OF ANY DISCREPANCIES IN THE DRAWINGS OR FROM THE CODES.

CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/DESIGNER AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON THE DRAWINGS ONLY WILL NOT SATISFY THE REQUIREMENT.

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

ALL STRUCTURAL SYSTEMS SUCH AS WOOD TRUSSES WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH THE INSTRUCTIONS PREPARED BY THE SUPPLIER.

THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ARCHITECT/DESIGNER IF UNUSUAL, UNFORESEEABLE, OR UNEXPECTED SUBSURFACE CONDITIONS ARE ENCOUNTERED.

DRAWINGS:

GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH WORK. DO NOT SCALE DRAWINGS.

NOTIFY ARCHITECT CONCERNING QUESTIONS, CHANGES, CONFLICTS OR OMISSIONS. IN THE EVENT OF CONFLICTS OR CHANGES BETWEEN DETAILS OR BETWEEN THE PLANS AND SPECIFICATIONS, NOTIFY ARCHITECT IMMEDIATELY. OBTAIN CLARIFICATION BEFORE PROCEEDING.

FACE OF FRAMING IS TO BE FLUSH WITH FACE OF CONCRETE, UNLESS OTHERWISE INDICATED.

THE TYPICAL EXTERIOR DIMENSIONS ARE TO FACE OF CONCRETE AND/OR FACE OF FRAMING. INTERIOR DIMENSIONS ARE TO FACE OF FRAMING, UNLESS OTHERWISE INDICATED.

DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE SIMILAR IN CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. REFER TO ARCHITECTURAL DRAWINGS FOR OPENINGS, ARCHITECTURAL REQUIREMENTS AND DIMENSIONS.

INFORMATION CONTAINED WITHIN THESE DRAWINGS WITH REGARD TO EXISTING CONDITIONS IS PROVIDED FOR THE CONVENIENCE OF THE GENERAL CONTRACTOR. ALL ATTEMPTS HAVE BEEN MADE TO ACCURATELY REPRESENT THE EXISTING BUILDING AND SURROUNDINGS VIA OWNER SUPPLIED AS-BUILTS AND FIELD VERIFICATION. THE GENERAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK TO AVOID UNREASONABLE DELAYS TO THE SCHEDULE.

ALL DRAWINGS OF EXISTING CONDITIONS ARE FOR REFERENCE ONLY, ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED.

SITE:

HYDRANT 96A3-28 IS THE CLOSEST HYDRANT ON THE SAME SIDE OF THE STREET AS THE RESIDENCE AND HAS A FLOW RATE OF 1,759 GPM @ 96 PSI. HYDRANT 94A2-26 LOCATED 275 FT. FROM RESIDENCE HAS A FLOW RATE OF 5,000 GPM @ 94 PSI. 1,500 GPM IS THE REQUIRED MIN. THE FLOW RATES EXCEED MIN. BY OVER 117% AND 330%.

SEE ATTACHED TREE REPORT FROM SUPERIOR NW ENTERPRISES DATED MAY 16, 2006.

SOILS:

CONTRACTOR TO VERIFY ALL DIMENSIONS AND STRUCTURAL MEMBER SIZES PRIOR TO CONSTRUCTION.

CONTRACTOR TO INFORM ARCHITECT/DESIGNER OF ANY DISCREPANCIES IN THE DRAWINGS OR FROM THE CODES.

CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/DESIGNER AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON THE DRAWINGS ONLY WILL NOT SATISFY THE REQUIREMENT.

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

ALL STRUCTURAL SYSTEMS SUCH AS WOOD TRUSSES WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH THE INSTRUCTIONS PREPARED BY THE SUPPLIER.

THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ARCHITECT/DESIGNER IF UNUSUAL, UNFORESEEABLE, OR UNEXPECTED SUBSURFACE CONDITIONS ARE ENCOUNTERED.

MATERIALS/ASSEMBLIES:

CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL WORK AND MATERIALS IN ACCORDANCE WITH ALL APPLICABLE COUNTY, LOCAL BUILDING AND FIRE CODES AS REQUIRED.

ALL WOOD AND SONITUBE FORMS USED FOR CONCRETE IN THE GROUND OR BETWEEN FOUNDATION SILLS & THE GROUND SHALL BE REMOVED.

ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED WOOD OR ANY SPECIES OR FOUNDATION GRADE CEDAR OR REDWOOD, ALL MARKED BY AN APPROVED TESTING AGENCY.

PROVIDE 90# FELT BETWEEN POSTS & CONCRETE.

PROVIDE DRAFT STOPS, FIRE BLOCKING, AND FIRESTOPS AS REQUIRED BY CODE.

FLASHING AND COUNTER FLASHING TO BE MIN. 24 GAUGE OF CORROSION- RESISTANT METAL, AND SHALL BE INSTALLED IN COMPLIANCE WITH LOCAL BUILDING CODES AND MANUFACTURES RECOMMENDATIONS.

GENERAL CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL WALL-MOUNTED HARDWARE, TOILET ACCESSORIES, TOWEL BARS, LIGHT FIXTURES, BUILT-INS, ETC...., AS REQUIRED FOR SECURE AND PROPER INSTALLATION.

ALL INTERIOR WALLS & CEILINGS SHALL HAVE 5/8" TYPE 'C' GYP. BD. (FIRECODE C CORE).

PROVIDE AN APPLICATION OF JOHN MANVILLE IGNITION BARRIER COATING AS AN IGNITION BARRIER OVER OPEN AND CLOSED-CELL SPRAY FOAM INSULATION IN MAIN FLOOR CEILING AND FLOOR OVER OCCUPIED SPACE.

PROVIDE A UL RATED "CLASS A" FIRE RESISTANT ROOFING MEMBRANE WHERE APPLICABLE.

ALL EXTERIOR DECKS TO BE CONSTRUCTED WITH PRESSURE TREATED WOOD.

VAPOR BARRIER BELOW SLABS ON GRADE TO BE 6 MIL POLYETHYLENE, PER SPECIFICATIONS.

ALL COUNTERS TO BE 36" A.F.F. UNLESS OTHERWISE NOTED.

PROVIDE 1 HR. FIRE RATED ASSEMBLY BETWEEN GARAGE AND LIVING SPACE.

MINIMUM STAIRWAY REQUIREMENTS ARE AS FOLLOWS: 36" MIN. WIDTH, 6'-8" MIN. HEADROOM, 8" MAX. RISE AND 9" MIN. RUN FOR (4) OR MORE RISERS. PROVIDE A HANDRAIL 34"-38" A.F.F. HAND GRIP PORTION TO BE CONTINUOUS AND 1 1/4"-2" IN CROSS SECTION WITH BOTH ENDS RETURNED. THERE SHALL BE A SPACE OF NOT LESS THAN 1 1/2" BETWEEN THE WALL AND THE HANDRAIL. GUARD RAILS SHALL BE IN ACCORDANCE WITH 2018 IRC, SECTION R312.

BATHTUB, SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND SHOWER ENCLOSURES SHALL BE FINISHED WITH A NONABSORBENT SURFACE A MINIMUM OF 6' ABOVE THE FLOOR PER 2018 IRC, R307.2.

WALLS:

INSULATED WITH R-21 BATT (FOR 2x6 WALLS) AND R-13 BATT (FOR 2x4 WALLS), UNLESS NOTED OTHERWISE.

FLOORS:

PROVIDE R-30 BATT INSULATION OVER UNHEATED SPACE, UNLESS NOTED OTHERWISE.

ROOFS AND CEILINGS:

INSULATED WITH R-49 BATT, UNLESS NOTED OTHERWISE. PROVIDE INSULATION IN CEILING WHERE POSSIBLE AND IN RAFTERS IF VAULTED CEILING USE R-38 BATT, IF CONDITION EXISTS, MAINTAIN A MIN. OF 1" CLEAR BETWEEN TOP OF INSULATION AND BOTTOM OF SHEATHING FOR VENTING. VENTING MUST OCCUR IN EACH JOIST SPACE. WHERE CONTINUOUS VENTING WITHIN A JOIST SPACE IS INTERUPTED BY A HEADER (I.E. SKYLIGHT OR AT HIP END), PROVIDE (2) H/2" VENTING HOLES AT THE TOP OF THE RAFTER AT THE HEADER TO ALLOW FOR CONTINUAL THROUGH VENTING INTO THE ADJACENT JOIST SPACE.

SLAB ON GRADE:

PROVE EXTRUDED RIGID CLOSE CELL INSULATION R-10. INSULATION TO PROVIDE THERMAL BREAK BETWEEN SLAB AND FOOTING AND RUN FROM TOP OF SLAB TO THE BOTTOM OF FOOTING. INSULATION MAY BE INTERRUPTED FOR 6" EVERY 2'-0" TO ALLOW FOR DOWELING TO TIE SLAB AND FOOTING TOGETHER.

VAPOR BARRIER:

AN APPROVED 10 MIL. VAPOR BARRIER SHALL BE INSTALLED AT EXTERIOR WALLS AND AT ROOF DECKS, BELOW ENCLOSED JOIST SPACES WHERE CEILING FINISHES ARE DIRECTLY INSTALLED TO JOIST, AND ANY OTHER WALL OR CEILING SURFACES WHICH RECEIVE INSULATION. THIS VAPOR BARRIER MAY BE A COMPONENT OF THE INSULATION MATERIAL. APPLICATION AND INSTALATIONS OF THE INSULATION AND VAPOR BARRIERS SHALL COMPLY WITH STAT OF WASHINGTION THERMAL INSULATION STANDARDS (HB %)

ENERGY:

ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE IRC 2018 AND THE WASHINGTON STATE ENERGY CODE, LATEST EDITION. VERIFY ALL CONDITIONS BEFORE PROCEEDING WITH WORK..

ALL WOOD AND SONITUBE FORMS USED FOR CONCRETE IN THE GROUND OR BETWEEN FOUNDATION SILLS & THE GROUND SHALL BE REMOVED.

ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED WOOD OR ANY SPECIES OR FOUNDATION GRADE CEDAR OR REDWOOD, ALL MARKED BY AN APPROVED TESTING AGENCY.

PROVIDE 90# FELT BETWEEN POSTS & CONCRETE.

PROVIDE DRAFT STOPS, FIRE BLOCKING, AND FIRESTOPS AS REQUIRED BY CODE.

FLASHING AND COUNTER FLASHING TO BE MIN. 24 GAUGE OF CORROSION- RESISTANT METAL, AND SHALL BE INSTALLED IN COMPLIANCE WITH LOCAL BUILDING CODES AND MANUFACTURES RECOMMENDATIONS.

GENERAL CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL WALL-MOUNTED HARDWARE, TOILET ACCESSORIES, TOWEL BARS, LIGHT FIXTURES, BUILT-INS, ETC...., AS REQUIRED FOR SECURE AND PROPER INSTALLATION.

ALL INTERIOR WALLS & CEILINGS SHALL HAVE 1/2" GYP. BD.

APPLICATION INSTALLATIONS OF INSULATION AND VAPOR BARRIERS SHALL COMPLY WITH STATE OF WASHINGTON THERMAL INSULATION STANDARDS (HB 98).

PROVIDE A UL RATED "CLASS A" FIRE RESISTANT ROOFING MEMBRANE WHERE APPLICABLE.

FLOOR INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING. INSULATION SUPPORTS SHALL BE INSTALLED SO SPACING IS NO MORE THAN 24" O.C. FOUNDATION VENTS SHALL BE PLACED SO THAT THE TOP OF THE VENT IS BELOW THE LOWER SURFACE OF THE FLOOR INSULATION PER 2018 IRC, R402.2.7.

PROVIDE AN EAVE BAFFLE FOR AIR PERMEABLE INSULATION IN THE VENTED ATTIC MAINTAINING AN OPENING EQUAL OR GREATER THAN THE SIZE OF THE VENT EXTENDING OVER THE TOP OF THE INSULATION PER 2018 IRC, R402.2.3.

PROVIDE AND SPECIFY HIGH-EFFICIENCY FIXTURES FOR ALL OUTDOOR LIGHTING ATTACHED TO THE BUILDING OR PROVIDE PHOTO DAYLIGHT CONTROL AND A MOTION SENSOR PER 2018 IRC.

PROVIDE AND SPECIFY THAT 75% OF PERMANENTLY INSTALLED LAMPS IN LIGHTING FIXTURES SHALL BE HIGH-EFFICIENCY LAMPS PER 2018 IRC, R404.1.

SECTION R406:
ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS
R406.1 SCOPE. THIS SECTION ESTABLISHES OPTIONS FOR ADDITIONAL CRITERIA TO BE MET FOR ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES, AS DEFINED IN SECTION 101.2 OF THE INTERNATIONAL RESIDENTIAL CODE TO DEMONSTRATE COMPLIANCE WITH THIS CODE.
R406.2 ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS (MANDATORY). EACH DWELLING UNIT IN ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES, AS DEFINED IN SECTION 101.2 OF THE INTERNATIONAL RESIDENTIAL CODE SHALL COMPLY WITH SUFFICIENT OPTIONS FROM TABLE R406.2 SO AS TO ACHIEVE THE FOLLOWING MINIMUM NUMBER OF CREDITS: 2018 WASHINGTON STATE ENERGY CODE RE-33

1

1. SMALL DWELLING UNIT: .... 3 POINTS DWELLING UNITS LESS THAN 1500 SQUARE FEET IN CONDITIONED FLOOR AREA WITH LESS THAN 300 SQUARE FEET OF FENESTRATION AREA. ADDITIONS TO EXISTING BUILDING THAT ARE LESS THAN 750 SQUARE FEET OF HEATED FLOOR AREA.
2. MEDIUM DWELLING UNIT: .... 6 POINTS ALL DWELLING UNITS THAT ARE NOT INCLUDED IN #1 OR #3.
3. LARGE DWELLING UNIT: .... 7 POINTS DWELLING UNITS EXCEEDING 5000 SQUARE FEET OF CONDITIONED FLOOR AREA.

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.

TABLE 406.2 - ENERGY CREDITS (DEBITS) OPTION DESCRIPTION CREDIT(S)

1a - EFFICIENT BUILDING ENVELOPE 1a:
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.1 WITH THE FOLLOWING MODIFICATIONS:
FENESTRATION U .= 0.28
FLOOR R-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 R402.1.4: REDUCE THE TOTAL UA BY 5%. 0.5

1b - EFFICIENT BUILDING ENVELOPE 1b:
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.1 WITH THE FOLLOWING MODIFICATIONS:
FENESTRATION U .= 0.25
WALL R-21 PLUS R-4
FLOOR R-38
BASEMENT WALL R-21 INT PLUS R-5 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 R402.1.4: REDUCE THE TOTAL UA BY 15%. 1.0

1c EFFICIENT BUILDING ENVELOPE 1c:
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.1 WITH THE FOLLOWING MODIFICATIONS: FENESTRATION U .= 0.22
CEILING AND SINGLE-RAFTER OR JOIST-VAULTED R-49 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 R402.1.4: REDUCE THE TOTAL UA BY 30%. 2.0

2a - AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2a:
COMPLIANCE BASED ON R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 4.0 AIR CHANGES PER HOUR MAXIMUM
AND
ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1507.3 OF THE INTERNATIONAL RESIDENTIAL CODE SHALL BE MET WITH A HIGH EFFICIENCY FAN (MAXIMUM 0.35 WATTS/CFM), NOT INTERLOCKED WITH THE FURNACE FAN. VENTILATION SYSTEMS USING A FURNACE INCLUDING AN ECM MOTOR ARE ALLOWED, PROVIDED THAT THEY ARE CONTROLLED TO OPERATE AT LOW SPEED IN VENTILATION ONLY MODE.
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.

3a - HIGH EFFICIENCY HVAC EQUIPMENT 3a:
GAS, PROPANE OR OIL-FIRED FURNACE WITH MINIMUM AFFUE OF 95% OR GAS, PROPANE OR OIL-FIRED BOILER WITH MINIMUM AFUE OF 92%.
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.

5b - EFFICIENT WATER HEATING 5b:
WATER HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: GAS, PROPANE OR OIL WATER HEATER WITH MINIMUM EF OF 0.82
OR
ELECTRIC HEAT PUMP WATER HEATER WITH A MINIMUM EF OF 2.0 AND MEETING THE STANDARDS OF NEEA'S NORTHERN CLIMATE SPECIFICATIONS FOR HEAT PUMP WATER HEATERS
OR
WATER HEATER HEATED BY GROUND SOURCE HEAT PUMP MEETING THE REQUIREMENTS OF OPTION 3c.
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.

WINDOWS/DOORS:

IN EACH SLEEPING ROOM AN EGRESS WINDOW OR DOOR SHALL BE PROVIDED THAT HAS 5.7 S.F. OF CLEAR NET OPERABLE AREA. THE SMALLEST CLEAR MIN. DIMENSION SHALL NOT BE LESS THAN 20" IN WIDTH OR 24" IN HEIGHT. WINDOW SILLS IN SLEEPING ROOMS NOT TO EXCEED 44" ABOVE FLOOR PER 2018 IRC, R310 & 310.1.

ALL WINDOWS TO BE DOUBLE-GLAZED WITH A MINIMUM U-VALUE OF 0. 30 OR BETTER.

ALL GLAZING IN A DOOR OR WITHIN 12" OF DOOR, OR WITHIN 18" OF FLOOR OR WITHIN 60" OF TUB FLOOR, OR ANY OTHER HAZARDOUS AREA PER CODE, TO BE TEMPERED SAFETY GLASS.

20 MIN., SELF-CLOSING DOOR W/ WEATHER STRIPPING REQUIRED AT GARAGE ENTRANCE TO LIVING SPACE.

PROVIDE AT LEAST ONE EGRESS DOOR THAT IS SIDE HINGED WITH A MINIMUM CLEAR OPEN WIDTH OF 32" (36" WIDE DOOR) AND MINIMUM CLEAR HEIGHT OF NOT LESS THAN 78" PER 2018 IRC, R311.2.

WINDOW SILLS - WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW, THE SILL SHALL BE A MINIMUM OF 24" ABOVE THE FINISHED FLOOR OF THE ROOM IT IS IN. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF 4' DIAMETER SPHERE WHERE OPENINGS ARE WITHIN 24" OF THE FLOOR PER 2018 IRC, R312.2.1.

SKYLIGHT GLAZING MATERIAL TO MEET ALL REQUIREMENTS PER 2018 IRC, R308.6.2.

PROVIDE MINIMUM 4" CURB HEIGHT FOR SKYLIGHTS PER 2018 IRC, R308.6.8.

GLAZING:

TO BE IN COMPLIANCE WITH IRC 2018, SECTION R308 AND WASHINGTON STATE SAFETY OR TEMPERED GLASS. EXCEPTIONS ARE AS OUTLINED IN IRC 2018, SECTION R308.4. HAZARDOUS LOCATIONS ARE:
1. GLAZING IN ALL FIXED AND PERABLE PANELS OF SWINGING, SLIDING AND BIFOLD DOORS.
2. GLAZING IN ALL INDIVIDUAL FIXED OR OPERABLE PANEL ADJUACENT TO A DOOR WHERE THE NEAREST VERICAL EDGE IS WITHIN A 24" ARC OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE.
3. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS:
3.1 THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 S.F.
    3.2 THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18" ABOVE THE FLOOR.
    3.3 THE TOP EDGE OF THE GLAZING IS MORE THAN 36" ABOVE THE FLOOR..
    3.4 ONE OR MORE WALKING SURFACES ARE WITHIN 36", MEASURED HORIZONTALLY AND IN A STRAIGHT LINE OF THE GLAZING.
4. ALL GLAZING IN RAILINGS REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE. INCLUDED ARE STRUCTURAL BALLISTER PANELS AND NONSTRUCTURAL INFILL PANELS.
5. GLAZING IN ENCLOSEURES FOR OR WALLS FACING HOT TUBS, WHIRLPOOLS, SAUNAS, STEAMROOMS, BATHTUBS AND SHOWERS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE.

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VENTILATION:

- PROVIDE PROPER ROOF & CRAWL SPACE VENTILATION PER 2018 IRC.
- VENT DRYER TO OUTSIDE PER MECHANICAL CODE.
- VENT ALL FANS TO OUTSIDE W/ 3' MIN. SEPARATION TO BUILDING OPENINGS.
- VENT HOT WATER TANK TO EXPANSION TANK.
- VENT DISHWASHER AT SINK.

EXHAUST MINIMUMS:

PROVIDE SOURCE SPECIFIC INTERMITTENT OPERATION EXHAUST FANS WITH THE FOLLOWING MINIMUM STANDARDS:

BATHROOMS:	80 CFM
LAUNDRY ROOM:	190 CFM
KITCHEN HOODS & DOWNDRAFTS:	1200 CFM

PROVIDE WHOLE HOUSE VENTILATION SYSTEM SO AS TO CONFORM WITH STATE VENTILATION AND INDOOR AIR CODE.
- CURRENT EDITION AND SHALL BE CAPABLE WITH THE FOLLOWING MINIMUM STANDARDS:
- BE SIZED ACCORDING TO TABLE 3-2 WSEC AT 0.25" W.G. & SOUND RATED AT 1.5 SONES MAX...
- BE CONTROLLED BY READILY ACCESSIBLE 24 HR TIMER CAPABLE OF CONTINUOUS OPERATION WITH MANUAL & AUTOMATIC CONTROL
- INSULATED DUCTS SIZED TO MIN. R-4 & TERMINATED OUTSIDE BUILDING.

ALL UNITS WILL BE SEALED COMBUSTION DIRECT VENTS. THEY WILL HAVE TWO PVC VENTS OFF EACH UNIT, ONE EXHAUST AND ONE COMBUSTION.

DRYERS ON BOTH FLOORS WILL GO DOWN THROUGH THE FLOOR IN JOIST BAY AND OUT TO RIM. THEY WILL HAVE ONE ELBOW AND BE 12' LONG.

CRAWL VENTILATION:

TOTAL CUBIC FEET DIVIDED BY 15.124 CFM CONTINUOUSLY RUNNING.
TWO FANTECH FG-8 IN-LINE FANS, ONE INTAKE AND ONE EXHAUST.

ATTIC:

APPLY ROOFING IN ACCORDANCE WITH IRC 2018, SECTION R905. PROVIDE ATTIC VENTILATION AS INDICATED ON ROOF FRAMING PLANS/ROOF DETAILS.

ATTIC VENTILATION: THE TOTAL NET FREE VENTILATION AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT REDUCTION OF THE TOTAL AREA TO 1/300 IS PERMITTED PROVIDED THAT AT LEAST 50% AND NOT MORE THAN 80% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE THE EAVE OR CORNICE VENTS. AS AN ALTERNATE, THE NET FREE CROSS VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR BARRIER IS INSTALLED ON THE WARM-IN-WATER SIDE OF THE CEILING (IRC 20012, SECTION R806.2)

ATTIC ACCESS OPENING MUST BE PROVIDED FOR ALL ATTIC AREAS THAT EXCEED 30 S.F. AND HAVE A VERTICAL HEIGHT OF 30' OR GREATER. ROUGH FRAMED OPENING MIN. 22"x30". ACCESS TO BE UNOBSTRUCTED AND READILY ACCESSIBLE. WHEN LOCATED IN A CEILING, MIN. 30' UNOBSTRUCTED HEADROOM AT SOME POINT ABOVE THE ACCESS MEASURED VERTICALLY FROM THE BOTTOM OF CEILING FRAMING MEMBERS (IRC 2018, SECTION R807.1)

PROVIDE 2" MIN. CONTINUOUS SCREEN VENT AT EACH END OF EACH RAFTER/ROOF TRUSS BAY.

MECHANICAL AND ELECTRICAL:

ALL WASTE LINES TO BE INSULATED WITH ACOUSTIC INSULATION. CAST IRON PIPING AT KEY LOCATIONS PER PLAN.

ELECTRICAL WIRING SHALL CONFORM TO THE 2018 WASHINGTON STATE ELECTRICAL CODE.

INSTALL OUTLETS AND SWITCHES AT HEIGHTS AND LOCATIONS REQUIRED BY 2018 IRC AND THE 2018 WASHINGTON STATE ELECTRICAL CODE.

LIGHTING WATTAGE SHALL MEET THE 2018 WASHINGTON STATE ELECTRICAL CODE.

PROVIDE SMOKE DETECTORS TO MEET THE 2018 IRC AND 2018 INTERNATIONAL FIRE CODE. SMOKE DETECTORS SHALL BE HARD WIRED AND EQUIPPED WITH BATTERY BACK UP. SMOKE DETECTORS SHALL SOUND AN ALARM THAT IS AUDIBLE THROUGH OUT THE BUILDING. SMOKE DETECTORS SHALL BE PLACES AT LEAST ON PER LEVEL, ONE IN EACH SLEEPING ROOM, ONE IN HALLWAY GIVING ACCESS TO THE SLEEPING ROOMS.

PROVIDE CARBON MONOXIDE DETECTORS AT ALL LEVEL PER 2018 IRC.

INSTALL A MONITORED NFPA 72 LOW VOLTAGE FIRE ALARM SYSTEM WITH HEAT SENSOR IN THE GARAGE. MONITORING COMPANY TO BE LICENSED AND BONDED.

INSTALL AN EXTERIOR SIREN CONNECTED INTO THE ALARM SYSTEM.

VERTICAL DISTANCE BETWEEN COOK TOP OF RANGE AND HOOD SHALL BE NO LESS THAN 30".

SHEET INDEX:

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ARBORIST:
N/A

MECHANICAL AND ELECTRICAL:
(TBD)

PROJECT DETAILS:

RENOVATION PROJECT WITH MINIMAL BUILDING ENVELOPE MODIFICATIONS

LEGAL DESCRIPTION:

EL DORADO ESTATES ADD LESS S 5 FT
PLAT BLOCK:
PLAT LOT: 12

PARCEL NUMBER:

PARCEL #: 228700-0120

ZONING:

R-9.6

LOT COVERAGE (SF.):

ALLOWED LOT COVERAGE	40 % MAX.
GROSS LOT AREA	12,192 SF
SEE SITE DEVELOPMENT WORKSHEET ON SHEET A-1.2	

BLD. HEIGHT (FT.):

MAX BUILDING HEIGHT	30' (SEE ABE CALCS)

VICINITY MAP:

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6080
REGISTERED ARCHITECT
RICHARD W. FLAKE
STATE OF WASHINGTON

RAQUEPAU RESIDENCE
REMODEL & ADDITION
9116 SE 58TH STREET
MERCER ISLAND, WA 98040

DESIGN:
RWF

DRAWN:
HAVILAND CONSULTING

CHECKED:
RWF

REVISIONS:

1	CITY REVIEW 12-19-2023
2	CITY REVIEW 2-28-2024

Mar 12, 2024

A-0.1

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2018 Washington State Energy Code (WSEC) and ACCA Manuals J and S. 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.

Project Information	*Contact Information*
RAQUEPAU RESIDENCE	RICHARD FLAKE
	RICHARD@RFARCHITECTURE.COM

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: Bellevue
Design Temperature Difference (ΔT): 46
ΔT = Indoor (70 degrees) - Outdoor Design Temp

Area of Building
Conditioned Floor Area
Instructions: Conditioned Floor Area (sq ft): 3,075

Average Ceiling Height
Instructions: Average Ceiling Height (ft): 9.0
Conditioned Volume: 27,675

Glazing and Doors
Instructions: U-0.28

	U-Factor	X	Area	=	UA
	0.280		732		204.96

Skylights
Instructions:

	U-Factor	X	Area	=	UA
	0.50				---

Insulation
Attic
Instructions: Select R-Value

	U-Factor	X	Area	=	UA
	No selection				---

Single Rafter or Joist Vaulted Ceilings
Instructions: R-38 Vented

	U-Factor	X	Area	=	UA
	0.027		1,131		30.54

Above Grade Walls *(see Figure 1)*
Instructions: R-21 Intermediate

	U-Factor	X	Area	=	UA
	0.056		3,656		204.74

Floors
Instructions: R-30

	U-Factor	X	Area	=	UA
	0.029		1,944		56.38

Below Grade Walls *(see Figure 1)*
Instructions: Select R-value

	U-Factor	X	Area	=	UA
	No selection				---

Slab Below Grade *(see Figure 1)*
Instructions: select conditioning

	F-Factor	X	Length	=	UA
	No selection				---

Slab on Grade *(see Figure 1)*
Instructions: Select R-Value

	F-Factor	X	Length	=	UA
	No selection				---

Location of Ducts
Instructions: Unconditioned Space
Duct Leakage Coefficient: 1.10

Figure 1

Sum of UA	496.61
Envelope Heat Load *Sum of UA x ΔT*	22,844 Btu / Hour
Air Leakage Heat Load *Volume x 0.6 x ΔT x 0.018*	13,749 Btu / Hour
Building Design Heat Load *Air leakage + envelope heat loss*	36,593 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*	40,252 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*	50,315 Btu / Hour

Window, Skylight and Door Schedule

Project Information	*Contact Information*
RAQUEPAU RESIDENCE	RICHARD FLAKE
9116 SE 58TH ST	RICHARD@RFARCHITECTURE.COM
MERCER ISLAND, WA 98040	

	Ref.	U-factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
Exempt Swinging Door (24 sq. ft. max.)								0.0	0.00
Exempt Glazed Fenestration (15 sq. ft. max.)								0.0	0.00

Vertical Fenestration (Windows and doors)

Component Description	Ref.	U-factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
3080			1	3	0	8	0	24.0	0.00
3080			1	3	0	8	0	24.0	0.00
3080			1	3	0	8	0	24.0	0.00
3080			1	3	0	8	0	24.0	0.00
20080			1	20	0	8	0	160.0	0.00
6068			1	6	0	6	8	40.0	0.00
10080			1	10	0	8	0	80.0	0.00
								0.0	0.00
12050			1	12	0	5	0	60.0	0.00
2030			1	2	0	3	0	6.0	0.00
2030			1	2	0	3	0	6.0	0.00
2036			1	2	0	3	6	7.0	0.00
6056			1	6	0	5	6	33.0	0.00
3030			1	3	0	3	0	9.0	0.00
2036			1	2	0	3	6	7.0	0.00
40100			1	4	0	10	0	40.0	0.00
5056			1	5	0	5	6	27.5	0.00
6036			1	6	0	3	6	21.0	0.00
6056			1	6	0	5	6	33.0	0.00
6056			1	6	0	5	6	33.0	0.00
2640			1	2	6	4	0	10.0	0.00
2030			1	2	0	3	0	6.0	0.00
5056			1	5	0	5	6	27.5	0.00
2640			1	2	6	4	0	10.0	0.00
2640			1	2	6	4	0	10.0	0.00
2640			1	2	6	4	0	10.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
Sum of Vertical Fenestration Area and UA								732.0	0.00
Vertical Fenestration Area Weighted U = UA/Area									0.00

Overhead Glazing (Skylights)

Component Description	Ref.	U-factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
Sum of Overhead Glazing Area and UA								0.0	0.00
Overhead Glazing Area Weighted U = UA/Area									0.00
Total Sum of Fenestration Area and UA *(for heating system sizing calculations)*								732.0	0.00

2018 Washington State Energy Code – Residential
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Single Family – New & Additions (effective February 1, 2021) Version 1.2

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

Project Information	*Contact Information*
Raquepau Residence	Richard Flake
	richard@rfarchitecture.com

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

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

Authorized Representative *Date* 8/7/2023

All Climate Zones (Table R402.1.1)	R-Value [a]	U-Factor [a]
Fenestration U-Factor [b]	n/a	0.30
Skylight U-Factor [b]	n/a	0.50
Glazed Fenestration SHGC [b,e]	n/a	n/a
Ceiling [e]	49	0.026
Wood Frame Wall [e,h]	21 int	0.056
Floor	30	0.029
Below Grade Wall [c,h]	10/15/21 int + TB	0.042
Slab [d] R-Value & Depth	10, 2 ft	n/a

a. *R*-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed *R*-value of the insulation from Appendix Table A101.4 shall not be less than the *R*-value specified in the table.
b. The fenestration *U*-factor column excludes skylights.
c. "10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-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% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

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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 meet this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.

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

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

Summary of Table R406.2 and 406.3

Heating Options	Fuel Normalization Descriptions	Credits - select ONE heating option		User Notes
1	Combustion heating minimum NAECA[b]	0.0	☐	
2	Heat pump[c]	1.0	■	
3	Electric resistance heat only - furnace or zonal	-1.0	☐	
4	DHP with zonal electric resistance per option 3.4	0.5	☐	
5	All other heating systems	-1.0	☐	
Energy Options	**Energy Credit Option Descriptions**	**Credits - select ONE energy option from each category [5]**		
1.1	Efficient Building Envelope	0.5	☐	
1.2	Efficient Building Envelope	1.0	☐	
1.3	Efficient Building Envelope	0.5	■	
1.4	Efficient Building Envelope	1.0	☐	
1.5	Efficient Building Envelope	2.0	☐	
1.6	Efficient Building Envelope	3.0	☐	
1.7	Efficient Building Envelope ☐	0.5	☐	
2.1	Air Leakage Control and Efficient Ventilation	0.5	☐	
2.2	Air Leakage Control and Efficient Ventilation	1.0	■	
2.3	Air Leakage Control and Efficient Ventilation	1.5	☐	
2.4	Air Leakage Control and Efficient Ventilation ☐	2.0	☐	
3.1[a]	High Efficiency HVAC	1.0	☐	
3.2	High Efficiency HVAC	1.0	☐	
3.3[a]	High Efficiency HVAC	1.5	☐	
3.4	High Efficiency HVAC	1.5	☐	
3.5.1	High Efficiency HVAC	1.5	■	
3.5.2	High Efficiency HVAC	1.5	☐	
3.6[a]	High Efficiency HVAC ☐	2.0	☐	
4.1	High Efficiency HVAC Distribution System	0.5	■	
4.2	High Efficiency HVAC Distribution System ☐	1.0	☐	

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Summary of Table R406.2 (cont.)

Energy Options	Energy Credit Option Descriptions (cont.)	Credits - select ONE energy option from each category [5]		User Notes
5.1[d]	Efficient Water Heating	0.5	☐	
5.2	Efficient Water Heating	0.5	☐	
5.3	Efficient Water Heating	1.0	☐	
5.4	Efficient Water Heating	1.5	■	
5.5	Efficient Water Heating	2.0	☐	
5.6	Efficient Water Heating ☐	2.5	☐	
6.1[e]	Renewable Electric Energy (3 credits max)	1.0	☐	
7.1	Appliance Package	0.5	☐	
	Total Credits		6.0	Calculate Total / Clear Form

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

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Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
1. EFFICIENT BUILDING ENVELOPE OPTIONS	Only one option from Items 1.1 through 1.7 may be selected in this category. Compliance with the conductive UA targets is demonstrated using Section R402.1.4, Total UA alternative, where: [1-(Proposed UA/Target UA)] > the required %UA reduction.	
1.1	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.24**	0.5
1.2	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.20**	1.0
1.3	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.28** Floor R-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 R402.1.4: Reduce the Total conductive UA by 5%	0.5
1.4	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.25** Wall R-21 plus R-4 ci Floor R-38 Basement wall R-21 int plus R-5 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 R402.1.4: Reduce the Total conductive UA by 15%	1.0
1.5	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.22** Ceiling and single-rafter or joist-vaulted R-49 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 R402.1.4: Reduce the Total conductive UA by 30%	2.0
1.6	Prescriptive compliance is based on Table R402.1.1 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 R402.1.4: Reduce the Total conductive UA by 40%.	3.0
1.7	Advanced framing and raised heel trusses or rafters Vertical Glazing U-0.28 R-49 Advanced (U-0.020) as listed in Section A102.2.1, *Ceilings below a vented attic and* R-49 vaulted ceilings with full height of uncompressed insulation extending over the wall top plate at the eaves.	0.5

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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 2.4 may be selected in this category.	
2.1	Compliance based on R402.4.1.2: Reduce the tested air leakage to **3.0 air changes per hour** maximum at 50 Pascals ***or*** For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to **0.3 cfm/sf maximum at 50 Pascals *and*** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a high efficiency fan(s) **(maximum 0.35 watts/cfm)**, not interlocked with the furnace fan (if present). Ventilation systems using a furnace including an ECM motor are allowed, provided that they are controlled to operate at low speed in ventilation only mode. To qualify to claim this credit, the building permit drawings shall specify the option being selected and the maximum tested building air leakage, and shall show the qualifying ventilation system and its control sequence of operation.	0.5
2.2	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/sf maximum at 50 Pascals ***and*** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.65. [1]	1.0
2.3	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 **0.25 cfm/sf** maximum at 50 Pascals ***and*** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.75. [1]	1.5
2.4	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/sf** maximum at 50 Pascals **and** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of **0.80. Duct installation shall comply with Section R403.3.7**. [1]	2.0

[1] 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.

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Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS	Only one option from Items 3.1 through 3.6 may be selected in this category.	
3.1 [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%. [2]	1.0
3.2 [2]	Air-source centrally ducted heat pump with minimum HSPF of 9.5. [3]	1.0
3.3 [2]	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. [3]	1.5
3.4	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 minimum HSPF of 10.0 shall be installed and provide heating to the largest zone of the housing unit. [4]	1.5
3.5.1 [2]	Air-source, centrally ducted heat pump with minimum HSPF of 11.0. [4]	1.5
3.5.2 [2]	Air-source, inverter driven (variable speed) centrally ducted heat pump with minimum HSPF of 10.0 with at least one of the following: [4] 1. The system is listed on the NEEP cold climate air source heat pump database. 2. Compliance based on Section R402.1.4: Reduce the total conductive UA by 22%. This option shall not be used if any other envelope category option is selected to show compliance with Section R406. 3. If Option 5.3 has been selected, upgrade the Tier III heat pump water heater to a Tier IV heat pump water heater that is a unitary (nonsplit) system. 4. Use the appliance credit option 7.1, but the dryer is required to have a CEF of 3.93 or higher. This option is not available if it is already selected as one of the options to show compliance with Section R406.	1.5
3.6 [2]	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. 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

[2] An alternative heating source sized at a maximum of 0.5 W/sf (equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
[3] 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.
[4] 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.

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

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
4. HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS		
4.1	All supply and return ducts located in an unconditioned attic shall be deeply buried in ceiling insulation in accordance with Section R403.3.7. For mechanical equipment located outside the conditioned space, a maximum of 10 linear feet of return duct and 5 linear feet of supply duct connections to the equipment may be outside the deeply buried insulation. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices. Duct leakage shall be limited to 3 cfm per 100 square feet of conditioned floor area. Air handler(s) shall be located within the conditioned space.	0.5
4.2	HVAC equipment and associated duct system(s) installation shall comply with the requirements of Section R403.3.7. Locating system components in conditioned crawl spaces is not permitted under this option. Electric resistance heat 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.	1.0

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Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
5. EFFICIENT WATER HEATING OPTIONS	Only one option from Items 5.2 through 5.6 may be selected in this category. Item 5.1 may be combined with any option.	
5.1	A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all and only the showers, and has 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	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.80. [5]	0.5
5.3	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.91 ***or*** Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems ***or*** Water heater heated by ground source heat pump meeting requirements of Option 3.3. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of minimum energy savings.	1.0
5.4	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier I of NEEA's advanced water heating specification ***or*** For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier I of NEEA's advanced water heating specification, 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. [5]	1.5
5.5	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification ***or*** For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification, 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. [5]	2.0
5.6	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 ***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. [5]	2.5

[5] 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.

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

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
6. RENEWABLE ELECTRIC ENERGY OPTION		
6.1	For each 1200 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 1.0 credit shall be allowed, up to 3 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 following factors: 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.	1.0
7. APPLIANCE PACKAGE OPTION		
7.1	All of the following appliances shall be new and installed in the dwelling unit and shall meet the following standards: Dishwasher – Energy Star rated Refrigerator (if provided) – Energy Star rated Washing machine – Energy Star rated Dryer – Energy Star rated, ventless dryer with minimum CEF rating of 5.2. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the appliance type and provide documentation of Energy Star compliance. At the time of inspection, all appliances shall be installed and connected to utilities. Dryer ducts and exterior dryer vent caps are not permitted to be installed in the dwelling unit.	0.5

ENERGY DATA

ALL NEW GLAZING, DOOR U-VALUES AND INSULATION R-VALUES TO SATISFY PRESCRIPTIVE PATH OF THE 2018 WASHINGTON STATE ENERGY CODE.

CONDITIONED FLOOR AREA: 3,075 SQ. FT.

COMPONENT PERFORMANCE PER 2018 WSEC:

	TARGET	DESIGN
NEW VERTICAL GLAZING:	U= 0.28	U= 0.28
NEW DOOR GLAZING:	U= 0.28	U= 0.28
FLOORS	R-38	R-38
VAULTED	R-49	R-49
FLAT CEILINGS:	U= 0.026(R-49)	U= 0.0135(R-49)

NEW WALLS ABOVE GRADE:

NEW 2x6 WALLS	R-21	R-21
SLAB ON GRADE:	R-10	R-10

DUCT LEAKAGE TEST RESULTS SHALL BE PROVIDED TO THE BUILDING INSPECTOR PRIOR TO AN APPROVED FINAL INSPECTION IF REQUESTED.

A RESIDENTIAL ENERGY COMPLIANCE CERTIFICATE COMPLYING WITH SEC 105.4 IS REQUIRED TO BE COMPLETED AND PERMANENTLY POSTED WITHIN 3' OF THE ELECTRICAL PANEL PRIOR TO FINAL INSPECTION, IF REQUIRED.

ALL NEW EXTERIOR WALL GLAZING SHALL BE DOUBLE GLAZED AND COMPLY WITH STATE OF WASHINGTON ENERGY CODE.

90% OF ALL LIGHT FIXTURES SHALL BE LED RECESSED (HIGH EFFICIENCY). ALL CAN LIGHTS MUST MEET R402.4.4.

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PH: (253) 359-4039
Richard@rfarchitecture.com
7421 214th Ave E Bonney Lake, WA 98391

6080 REGISTERED ARCHITECT RICHARD FLAKE STATE OF WASHINGTON

RAQUEPAU RESIDENCE
REMODEL & ADDITION
9116 SE 58TH ST.
MERCER ISLAND, WA 98040

DESIGN: RWF
DRAWN: HAVLAND CONSULTING
CHECKED: RWF
REVISIONS:
1 CITY REVIEW 12.19.2023
2 CITY REVIEW 2.28.2024

Mar 12, 2024

A-0.2

2018 Residential Ventilation Compliance Summary

Applicant: RAQUEPAU Parcel: Permit Number:

A whole-house ventilation system is required by the building code (2018 IRC Section M1505.4) to promote healthy indoor air quality in homes and provide increased comfort for occupants. **This is required for new dwelling units, and additions to existing dwelling units over 500 square feet.**

WHOLE HOUSE VENTILATION SYSTEM TYPE (see descriptions next page)

Note, if the project has selected an Air Leakage Control and Efficient Ventilation Option from WSEC Table R406.3, the ventilation system type chosen must be consistent with that option's requirements.

- ☐ Exempt: addition less than 500 sq.ft. or remodel only
- ☐ Exhaust fan(s) only (IRC M1505.4.1.2)
- ☐ Supply fan(s) only (IRC M1505.4.1.3)
- ■ Balanced system (IRC M1505.4.1.4), including HRVs
- ☐ Furnace Integrated Supply (IRC M1505.4.1.5)

System will be distributed: ☐ Yes ■ No (see definition next page)

Floor plans should indicate the location, type, and airflow rate of whole-house ventilation system.

WHOLE HOUSE VENTILATION SYSTEM AIRFLOW RATE

Step 1: Find airflow rate minimum from Table 1, circle applicable airflow.
Step 2: Multiple airflow rate by applicable multiplier from Table 2, type adjusted airflow in table.
Step 3: Multiply airflow rate by applicable multiplier from Table 3, type adjusted airflow in table.

Table 1. WHOLE-HOUSE SYSTEM MINIMUM VENTILATION RATES (circle)

Conditioned Floor Area of the Home in square feet	Number of Bedrooms in the Home				
	Studio & 1 bedroom	2 bedrooms	3 bedrooms	4 bedrooms	5 or more bedrooms
	Airflow in cubic feet per minute (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
> 5,001	(0.01 x Conditioned Floor Area of the Home in square feet) + [7.5 x (Number of Bedrooms in the Home + 1)]				

Table 2. WHOLE-HOUSE VENTILATION QUALITY ADJUSTMENT (circle, type adjusted rate)

SYSTEM TYPE	DISTRIBUTED	NOT DISTRIBUTED	Min. adjusted fan size (CFM)
BALANCED	1.0	1.25	
NOT BALANCED	1.25	1.5	

Table 3. INTERMITTENT WHOLE-HOUSE VENTILATION RATE FACTORS (circle, type adjusted rate)

Run-time % in each 4-hour segment	Multiplier	Min. adjusted fan size (CFM)
50% (2 hrs every 4 hrs; 12 hrs /day)	2	
66% (2 hrs 40 min every 4 hrs; 16 hrs /day)	1.5	
75% (3 hrs every 4 hrs; 18 hrs /day)	1.3	
100% (continuously operating)	1.0	

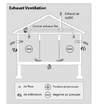
WHOLE HOUSE VENTILATION SYSTEM SUMMARY

Specify: Location of ventilation equipment: ROOF Airflow rate (CFM): 200 Specify run-time: ALTERNATE @ 4 TIMES PER HOUR

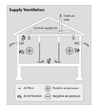
WHOLE HOUSE VENTILATION SYSTEM TYPES

Balanced whole house ventilation is any combination of concurrently operating mechanical exhaust and mechanical supply whereby the total mechanical exhaust airflow rate is within10% or 5 cfm of the total mechanical supply airflow rate, whichever is greater.

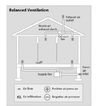
Distributed whole house ventilation is when outdoor air is supplied directly (not transfer air) to each habitable space and the exhausts air from all kitchen and bathrooms is vented directly to the outside.



Exhaust fan(s) only (IRC M1505.4.1.2)
This type of system has one or more exhaust fans, such as in bathrooms and laundry rooms, that have controls to provide intermittent or continuous exhaust from the dwelling unit to remove stale, moist air. In this type of system there is no dedicated supply air to replace the exhausted air, so fresh air is brought into the home passively through openings such as windows, window vents, through-wall vents, or leakage in the home's air barrier. With recent air barrier construction requirements and techniques improving, homes are becoming tighter and provide less opportunities for air leakage.



Supply fan(s) only (IRC M1505.4.1.3)
This type of system has one or more supply fans that are provided with controls to provide intermittent or continuous fresh air into the dwelling unit. In this type of system there is no interconnected exhaust fans, so the system works to pressurize the home, pushing stale moist air out of the building through openings such as windows, window vents, through-wall vents, or leakage in the home's air barrier. With recent air barrier construction requirements and techniques improving, homes are becoming tighter and provide less opportunities for air leakage.



Balanced system (IRC M1505.4.1.4), including HRVs
This type of system has both supply and exhaust fans that are provided with controls to provide intermittent or continuous fresh air into the dwelling unit and exhaust from the dwelling unit to remove stale, moist air. When two fans and two duct systems are used, these must provide a balanced airflow rate to operate as designed. A balanced system can also include an energy (or heat) recovery ventilator (ERV/HRV), an appliance that provides both supply and exhaust air in one unit and captures the energy or heat from the exhaust air and transfers it to the supply air via a heat exchanger to minimize energy loss in the system.

Furnace Integrated Supply (IRC M1505.4.1.5)
Previous editions of the codes allowed fresh air to be introduced to the home from an outside air duct connected directly to a home's furnace. This is no longer permitted in the code outright, as the system uses excess energy when the fans in the heating/cooling equipment are required to operate to distribute the air. This type of system may only be used if the heating system air handler fan(s) have multi-speed or variable speed flow capability.

AIR BARRIER AND INSULATION INSTALLATION TABLE R402.4.1.1		
COMPONENT	**AIR BARRIER CRITERIA**	**INSULATION CRITERIA**
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air permeable insulation shall not be used as a sealing material. Class I or II vapor retarders are required on the interior side of framed cavities.
Cavity insulation installation	All cavities in the thermal envelope shall be filled with insulation. The density of the insulation shall be at the manufacturers' product recommendation and said density shall be maintained for all volume of each cavity. Batt type insulation will show no voids or gaps and maintain an even density for the entire cavity. Batt insulation shall be installed in the recommended cavity depth. Where an obstruction in the cavity due to services, blocking, bracing or other obstruction exists, the batt product will be cut to fit the remaining depth of the cavity. Where the batt is cut around obstructions, loose fill insulation shall be placed to fill any surface or concealed voids, and at the manufacturers' specified density. Where faced batt is used, the installation tabs must be stapled to the face of the stud. There shall be no compression to the batt at the edges of the cavity due to inset stapling installation tabs. Insulation that upon installation readily conforms to available space shall be installed filling the entire cavity and within the manufacturers' density/recommendation.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stair or knee wall doors to unconditioned attic spaces shall be sealed.	Batt insulation installed in attic roof assemblies may be compressed at exterior wall lines to allow for required attic ventilation. The insulation in any dropped ceiling or soffit shall be aligned with the air barrier.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers shall be insulated by completely filling the cavity with a material having a minimum thermal resistance of R-3 per inch. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Windows, skylights and	Space between window/door jambs and framing and skylights and framing shall be sealed.	
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated
Floors (including above-garage and cantilevered)	The air barrier shall be installed at any exposed edge of insulation.	Installed to maintain permanent contact with underside of subfloor decking or permitted to be in contact with the topside of sheathing or continuous insulation installed on the underside of floor framing and extend from the bottom to the top of all perimeter floor
Crawl space walls	Soil in unvented crawl spaces shall be covered with Class I, black vapor retarder with joints taped.	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	
Narrow cavities		Batts in narrow cavities shall be cut to fit and installed to the correct density without any voids or gaps or compression. Narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Shall be sealed to the drywall.	Shall be air tight, and IC rated.
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls. There shall be no voids or gaps or compression where cut to fit. Insulation that readily conforms to available space shall extend behind piping and wiring.
Shower and/or tub	Installed at exterior walls adjacent to showers and tubs shall separate them from showers and tubs.	Exterior walls adjacent to showers or tubs shall be insulated
Electrical/phone	Barrier shall be installed behind electrical or communication boxes on exterior wall or install air sealed boxes.	
HVAC register boots	Boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	
Concealed Sprinklers	When required to be sealed, fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	

AIR INFILTRATION AND TESTING
The building shall be tested and verified as having an air leakage rate not exceeding 5.0 air changes per hour (ACH). Note, if the project has selected an Air Leakage Control and Efficient Ventilation Option from WSEC Table R406.3, the maximum air leakage allowed may be reduced.

Testing shall be conducted with a blower door at a pressure of 0.2 in. w.g. For this test only, the volume of the home shall be the square feet of conditioned floor area multiplied by 8.5 feet. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open, access hatches to conditioned crawl spaces and conditioned attics shall be open.
4. Exterior or interior terminations for continuous ventilation systems and heat recovery ventilators shall be sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Exceptions:
1. Additions less than 500 square feet (46 m^2) of conditioned floor area.
2. Additions tested with the existing home having a combined maximum air leakage rate of 7 air changes per hour. To qualify for this exception, the date of construction of the existing house must be prior to the 2009 Washington State Energy Code.

Blower door test calculated flow: BLDG Volume 27,675 **ft.^{3} x 5 ACH / 60 min. =** 2,306 **cfm**
OR Adjusted rate per Energy Credit Option 2.____
Blower door test calculated flow: BLDG Volume _____ **ft.^{3} x __ ACH / 60 min. =** _____ **cfm**

DUCT LEAKAGE AND TESTING
1. Ducts shall be leak tested in accordance with WSU RS-33, using the maximum 4 cfm per 100 square feet of conditioned floor area. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm per 100 square feet of conditioned floor area.

Total sq.ft. 5,730 **sq.ft. / 100 sq.ft. X 4 cfm =** 149.2 **cfm**

Exceptions:
1. The total leakage test or leakage to the outdoors is not required for ducts and air handlers located entirely within the building thermal envelope. For forced air ducts, a maximum of 10 linear feet of return ducts and 5 linear feet of supply ducts may be located outside the conditioned space. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices. Flex duct connections must be made with nylon straps and installed using a plastic strapping tensioning tool. Ducts located in crawl spaces do not qualify for this exception.
2. A duct air leakage test shall not be required for ducts serving heat or energy recovery ventilators that are not integrated with ducts serving heating or cooling systems.

A written report of results must be signed by the party conducting the test and provided to the King County Building Inspector.

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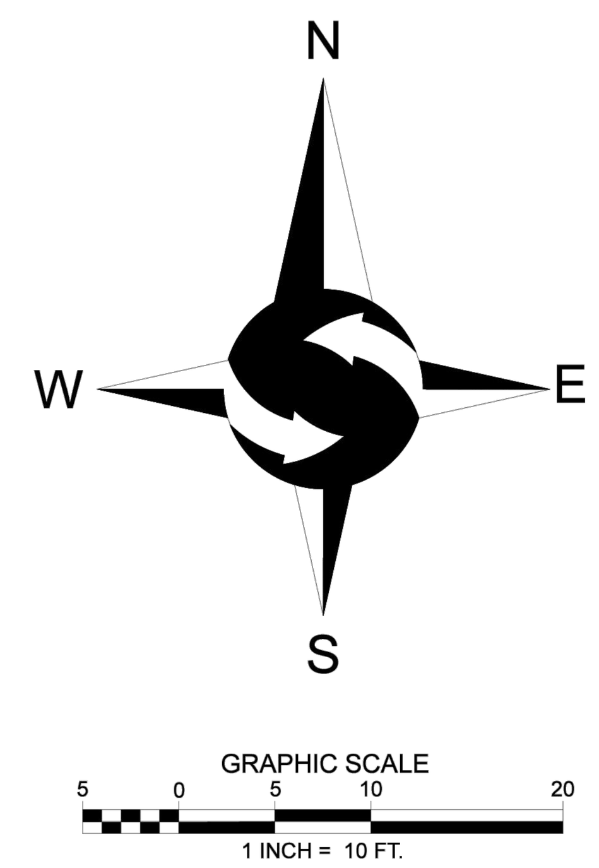
6080 REGISTERED ARCHITECT RICHARD W. FLAKE STATE OF WASHINGTON

RAQUEPAU RESIDENCE
REMODEL & ADDITION
9116 SE 58TH STREET
MERCER ISLAND, WA 98040

DESIGN: RWF
DRAWN: HAVILAND CONSULTING
CHECKED: RWF
REVISIONS:
1 CITY REVIEW 12.19.2023
2 CITY REVIEW 2.28.2024

Mar 12, 2024

A-0.3



LEGEND

Symbol	Description	Symbol	Description
	FOUND MONUMENT IN CASE	OHP	OVERHEAD POWER
	FOUND REBAR AS DESCRIBED	OHU	OVERHEAD UTILITIES
	FOUND NAIL AS DESCRIBED		WOOD FENCE
	SET MAG NAIL AS DESCRIBED		CONCRETE WALL
	SET 5/8" X 24" IRON ROD W/1" YELLOW PLASTIC CAP		MAILBOX
	POWER METER		ASPHALT SURFACE
	GAS METER		CONCRETE SURFACE
	GUY WIRE		BRICK SURFACE
	UTILITY POLE		FLAGSTONE SURFACE
	YARD DRAIN	CE	CEDAR
	SANITARY SEWER MANHOLE	DF	DOUGLAS FIR
	WATER VALVE	DS	DECIDUOUS
	FIRE HYDRANT		* INDICATES MULTI-TRUNK
	WATER METER		
SS	APPROXIMATE LOCATION SANITARY SEWER LINE		
W	APPROXIMATE LOCATION UNDERGROUND WATER LINE		

LEGAL DESCRIPTION

LOT 12 OF EL DORADO ESTATES, AS PER PLAT RECORDED IN VOLUME 62 OF PLATS, PAGE 7, RECORDS OF KING COUNTY AUDITOR;

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

RECORD OF SURVEY BY TERRANE, RECORDED IN VOLUME 390 OF SURVEYS, PAGE 163, UNDER RECORDING NO. 20180830900020, RECORDS OF KING COUNTY, WASHINGTON.

PROJECT INFORMATION

PROPERTY OWNER:	JEREME RAQUEPAU & ANGELA GRIBBLE 9116 SE 58TH STREET MERCER ISLAND, WA 98040
TAX PARCEL NUMBER:	228700-0120
PROJECT ADDRESS:	9116 SE 58TH STREET MERCER ISLAND, WA 98040
ZONING:	R-9.6
JURISDICTION:	CITY OF MERCER ISLAND
PARCEL ACREAGE:	12,192 S.F. (0.280 ACRES) AS SURVEYED

GENERAL NOTES

1. THIS SURVEY WAS COMPLETED WITHOUT BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST ON THIS PROPERTY THAT ARE NOT SHOWN HEREON.
2. INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND SPECTRAPRECISION FOCUS 35 TOTAL STATION AND AN EMLID REACH RS2 GPS RECEIVER. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090.
3. THE INFORMATION ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE IN JANUARY 2023 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
4. UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.
5. ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.

VERTICAL DATUM & CONTOUR INTERVAL

DATUM

ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM GPS OBSERVATION USING THE WSRN.

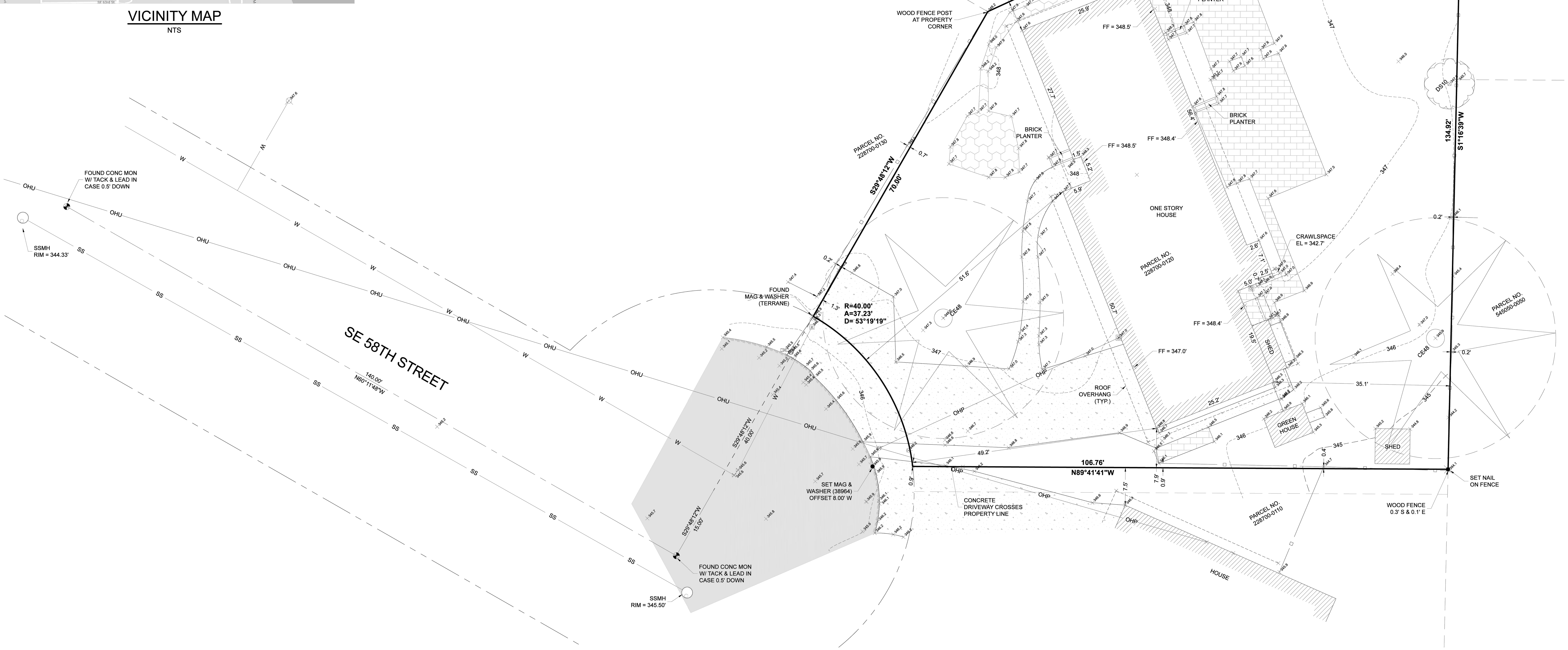
DATUM - NAVD 88

2.0' CONTOUR INTERVAL - THE EXPECTED VERTICAL ACCURACY IS EQUAL TO 1/2 THE CONTOUR INTERVAL OR PLUS / MINUS 1.0' FOR THIS PROJECT.

SPOT ELEVATIONS SHOWN ON THE FACE OF THE SURVEY ARE ACCURATE TO 0.2'

VICINITY MAP

NTS



NE 1/4, SW 1/4, SEC 19, TWP 24N, RNG 5E, W.M.

Site Surveying, Inc.

21923 NE 11th Street Sammamish, WA 98074

Phone: 425.298.4412

www.sitesurveymapping.com

2/23/24

DATE	REVISION	DRN

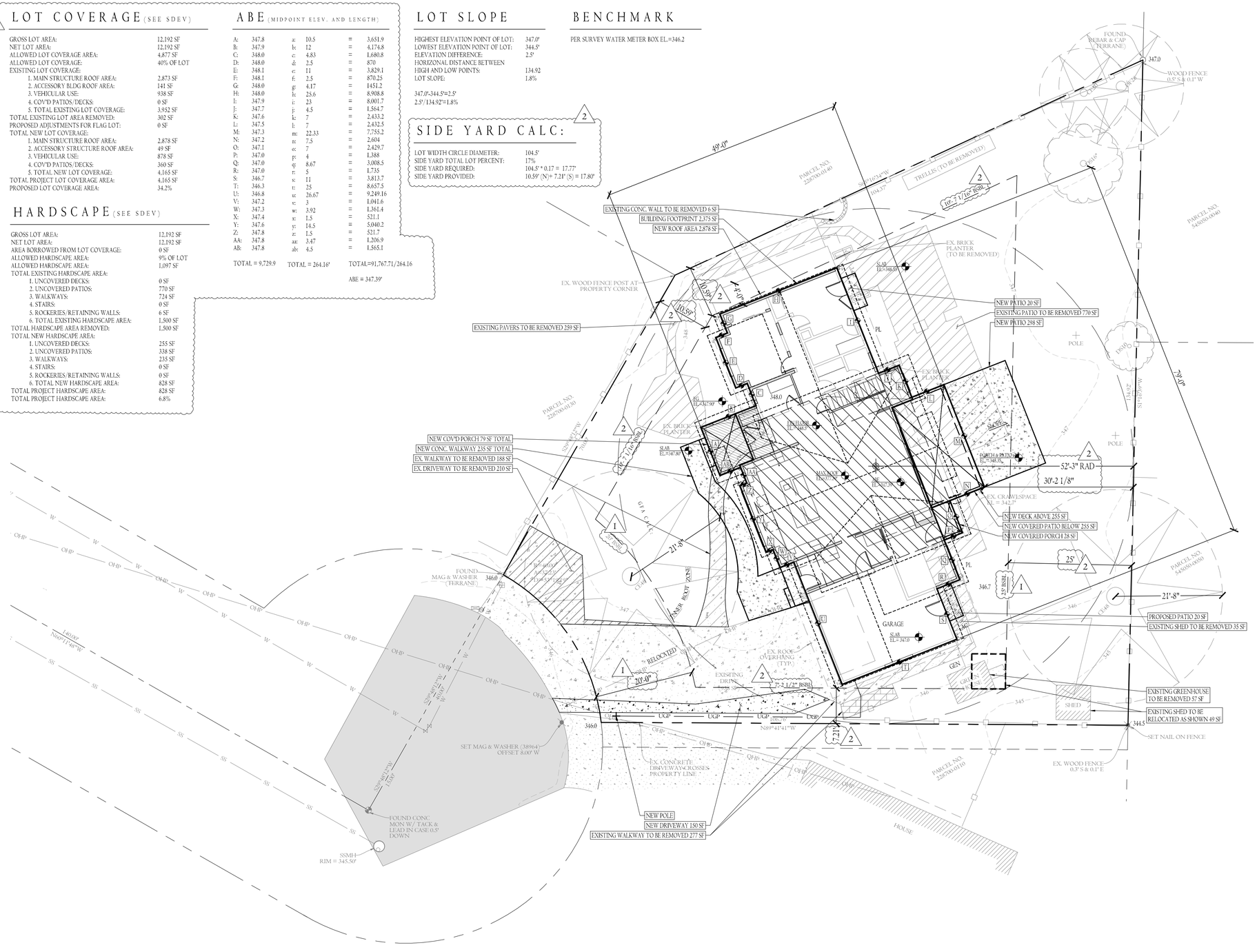
TOPOGRAPHIC SURVEY

JEREME RAQUEPAU
9116 SE 58TH STREET
MERCER ISLAND, WA 98040

PROJECT NO. 22-702

DRAWN BY: MTS
CHECKED BY: TNW
DATE: 1/13/2023

SHEET 1 OF 1



LOT COVERAGE (SEE SDEV)

2

GROSS LOT AREA:	12,192 SF
NET LOT AREA:	12,192 SF
ALLOWED LOT COVERAGE AREA:	4,877 SF
ALLOWED LOT COVERAGE:	40% OF LOT
EXISTING LOT COVERAGE:	
1. MAIN STRUCTURE ROOF AREA:	2,873 SF
2. ACCESSORY BLDG ROOF AREA:	141 SF
3. VEHICULAR USE:	938 SF
4. COV'D PATIOS/DECKS:	0 SF
5. TOTAL EXISTING LOT COVERAGE:	3,952 SF
TOTAL EXISTING LOT AREA REMOVED:	302 SF
PROPOSED ADJUSTMENTS FOR FLAG LOT:	0 SF
TOTAL NEW LOT COVERAGE:	
1. MAIN STRUCTURE ROOF AREA:	2,878 SF
2. ACCESSORY STRUCTURE ROOF AREA:	49 SF
3. VEHICULAR USE:	878 SF
4. COV'D PATIOS/DECKS:	360 SF
5. TOTAL NEW LOT COVERAGE:	4,165 SF
TOTAL PROJECT LOT COVERAGE AREA:	4,165 SF
PROPOSED LOT COVERAGE AREA:	34.2%

HARDSCAPE (SEE SDEV)

GROSS LOT AREA:	12,192 SF
NET LOT AREA:	12,192 SF
AREA BORROWED FROM LOT COVERAGE:	0 SF
ALLOWED HARDSCAPE AREA:	9% OF LOT
ALLOWED HARDSCAPE AREA:	1,097 SF
TOTAL EXISTING HARDSCAPE AREA:	
1. UNCOVERED DECKS:	0 SF
2. UNCOVERED PATIOS:	770 SF
3. WALKWAYS:	724 SF
4. STAIRS:	0 SF
5. ROCKERIES/RETAINING WALLS:	6 SF
6. TOTAL EXISTING HARDSCAPE AREA:	1,500 SF
TOTAL HARDSCAPE AREA REMOVED:	1,500 SF
TOTAL NEW HARDSCAPE AREA:	
1. UNCOVERED DECKS:	255 SF
2. UNCOVERED PATIOS:	338 SF
3. WALKWAYS:	235 SF
4. STAIRS:	0 SF
5. ROCKERIES/RETAINING WALLS:	0 SF
6. TOTAL NEW HARDSCAPE AREA:	828 SF
TOTAL PROJECT HARDSCAPE AREA:	828 SF
TOTAL PROJECT HARDSCAPE AREA:	6.8%

ABE (MIDPOINT ELEV. AND LENGTH)

A:	347.8	a:	10.5	=	3,651.9
B:	347.9	b:	12	=	4,174.8
C:	348.0	c:	4.83	=	1,680.8
D:	348.0	d:	2.5	=	870
E:	348.1	e:	11	=	3,829.1
F:	348.1	f:	2.5	=	870.25
G:	348.0	g:	4.17	=	1451.2
H:	348.0	h:	25.6	=	8,908.8
I:	347.9	i:	23	=	8,001.7
J:	347.7	j:	4.5	=	1,564.7
K:	347.6	k:	7	=	2,433.2
L:	347.5	l:	7	=	2,432.5
M:	347.3	m:	22.33	=	7,755.2
N:	347.2	n:	7.5	=	2,604
O:	347.1	o:	7	=	2,429.7
P:	347.0	p:	4	=	1,388
Q:	347.0	q:	8.67	=	3,008.5
R:	347.0	r:	5	=	1,735
S:	346.7	s:	11	=	3,813.7
T:	346.3	t:	25	=	8,657.5
U:	346.8	u:	26.67	=	9,249.16
V:	347.2	v:	3	=	1,041.6
W:	347.3	w:	3.92	=	1,361.4
X:	347.4	x:	1.5	=	521.1
Y:	347.6	y:	14.5	=	5,040.2
Z:	347.8	z:	1.5	=	521.7
AA:	347.8	aa:	3.47	=	1,206.9
AB:	347.8	ab:	4.5	=	1,565.1

TOTAL = 9,729.9

TOTAL = 264.16'

TOTAL=91,767.71/264.16

ABE = 347.39'

LOT SLOPE

HIGHEST ELEVATION POINT OF LOT:	347.0'
LOWEST ELEVATION POINT OF LOT:	344.5'
ELEVATION DIFFERENCE:	2.5'
HORIZONAL DISTANCE BETWEEN HIGH AND LOW POINTS:	134.92
LOT SLOPE:	1.8%

347.0'-344.5'=2.5'

2.5'/134.92'=1.8%

BENCHMARK

PER SURVEY WATER METER BOX EL.=346.2

SIDE YARD CALC:

2

LOT WIDTH CIRCLE DIAMETER:	104.5'
SIDE YARD TOTAL LOT PERCENT:	17%
SIDE YARD REQUIRED:	104.5' * 0.17 = 17.77'
SIDE YARD PROVIDED:	10.59' (N)+ 7.21' (S) = 17.80'

SITE PLAN

RF ARCHITECTURE

PH: (253) 359-4039
Richard@rfarchitecture.com
7421 214th Ave E Bonneylake, WA 98391

6080
REGISTERED ARCHITECT
RICHARD W. FLAKE
STATE OF WASHINGTON

RAQUEPAU RESIDENCE

REMODEL & ADDITION
9116 SE 58TH STREET
MERCER ISLAND, WA 98040

DESIGN:
RWF

DRAWN:
HAVILAND CONSULTING

CHECKED:
RWF

REVISIONS:

1	CITY REVIEW	12-19-2023
2	CITY REVIEW	2-28-2024

Mar 12, 2024

A-1.1

CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercergov.org

MERCER ISLAND TREE INVENTORY & REPLACEMENT SUBMITTAL INFORMATION

PROJECT INFORMATION	
Property Owner Name:	Jeremy & Angela Raquepau
Site Address or Parcel Number:	9116 SE 58th St
Project Contact Name:	Richard Flake
Contact Email Address:	richard@rfarchitecture.com
Contact Phone Number:	(253) 359-4039

EXCEPTIONAL TREES

Exceptional Trees- means a tree or group of trees that because of its unique historical, ecological or aesthetic value constitutes an important community resource. A tree that is rare or exceptional by virtue of its size, species, condition, cultural/historical importance, age, and/or contribution as part of a tree grove. Trees with a diameter of more than 36 inches, or with a diameter that is equal to or greater than the diameter listed in the Exceptional Tree Table shown in MICC 19.16 under Tree, Exceptional.

List the total number of trees for each category and the tree identification numbers from the arborist report.

Number of trees 36" or greater: 2
List tree numbers: #1, #2

Number of trees 24" or greater (including 36" or greater): 3
List tree numbers: #1, #2, #6

Number of trees from Exceptional Tree Table (MICC 19.16): 3
List tree numbers: (2) Western Red Cedar: #1 and #2, (1) Douglas Fir #6

LARGE REGULATED TREES

Large Regulated Trees- means any tree with a diameter of 10 inches or more, and any tree that meets the definition of an Exceptional Tree.

Number of Large Regulated Trees on site: 6 (A)
List tree numbers: 1,2,3,4,5,6

Number of Large Regulated Trees on site proposed for removal: 0 (B)
List tree numbers: N/A

Percentage of trees to be retained ((A-B)/Ax100) note: must be at least 30%: 100 %

RIGHT OF WAY TREES

Right of Way Trees- means a tree that is located in the street right of way adjacent to the project property.

Number of Large Regulated Trees in right of way: 0
List tree numbers: N/A

Number of Large Regulated Trees in right of way proposed for removal: 0
List tree numbers: N/A

Reason for removal: N/A

N/A

TREE REPLACEMENT

Tree replacement- removed trees must be replaced based on the ratio in the table below. Replacement trees shall be conifers at least six feet tall and or deciduous at least one and one-half inches in diameter at base.

Diameter of Removed Tree (measured 4.5' above ground)	Tree replacement Ratio	Number of Trees Proposed for Removal	Number of Tree Required for Replacement Based on Size/Type
Less than 10"*	1	0	
10" up to 24"	2	0	
Greater than 24" up to 36"	3	0	
Greater than 36" and any Exceptional Tree	6	0	
TOTAL TREE REPLACEMENTS			0

no replacement tree is needed if the tree fits all of the following;
***Less than 10 inches in diameter, not an exceptional tree, and not a replacement tree from another tree permit. ***

NAME: RAQUEPAU
PROJECT: 9116 SE 58TH ST

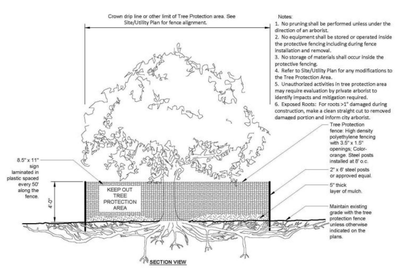
	TYPE	DBH"	DRPLN RAD'	STATUS	REMARKS
TREE #1	CE48	48"	21'-8"	RETAIN	EXCEPTIONAL
TREE #2	CE48	48"	21'-8'	RETAIN	EXCEPTIONAL
TREE #3	DS10	10"	5'	RETAIN	
TREE #4	DS16	16"	8'	RETAIN	
TREE #5	CE20	20"	9'	RETAIN	
TREE #6	DF28	28"	12'-6"'	RETAIN	EXCEPTIONAL

TREE NOTES

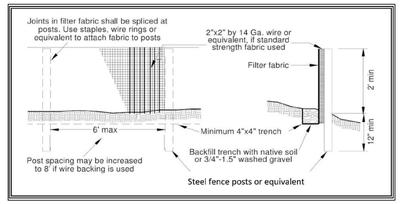
1. TREE PROTECTION FENCING SHALL CONSIST OF 6' 1. TALL CHAIN-LINK FENCING, SECURELY STAKED INTO PLACE.
2. TREE PROTECTION ZONE SIGNAGE, PER MERCER 2. ISLAND CODE SHALL BE POSTED EVERY TEN FEET (10') ALONG THE FENCE PERIMETER AND SHALL BE MADE TO BE WEATHER RESISTANT.
3. TREE PROTECTION FENCING SHALL BE PLACED AS 3. SHOW ON THE PLAN.
4. INVASIVE OR NON-NATIVE SPECIES SHALL BE 4. REMOVED, BY THE USE OF HAND TOOLS, WITHIN THE TREE PROTECTION ZONE.
5. BARE SOILS INSIDE THE TREE PROTECTION ZONE 5. SHOULD BE COVERED WITH ARBORIST CHIPS OR A COMMERCIAL MULCH MATERIAL, TO A DEPTH OF 3".
6. NO PRUNING OF LIMBS SHOULD BE NECESSARY FOR 6. BUILDING CLEARANCE OR CONSTRUCTION AREA ACCESS. IF LIMBS DO NEED TO BE TRIMMED, THIS WORK SHALL BE DONE UNDER THE SUPERVISION OF A PROFESSIONAL TREE PERSON.

TREE LEGEND

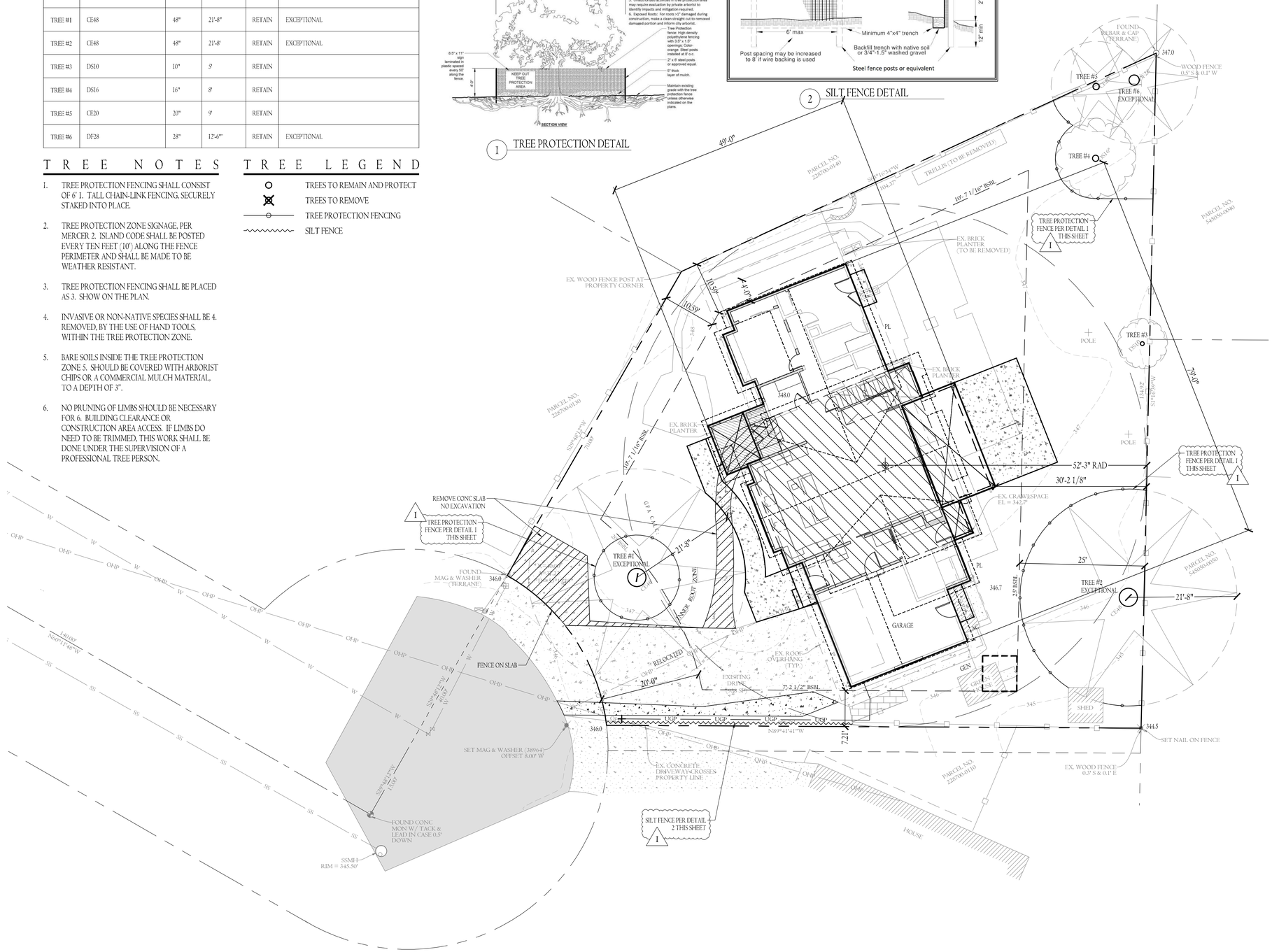
- TREES TO REMAIN AND PROTECT
- TREES TO REMOVE
- TREE PROTECTION FENCING
- SILT FENCE



1 TREE PROTECTION DETAIL



2 SILT FENCE DETAIL



SCALE: 1"=10'
NORTH
0' 2.5' 5' 10' 20'

TREE PLAN

RF ARCHITECTURE
PH: (253) 359-4039
Richard@rfarchitecture.com
7421 214th Ave E Bonney Lake, WA 98391

6080 REGISTERED ARCHITECT RICHARD W. FLAKE STATE OF WASHINGTON

RAQUEPAU RESIDENCE
REMODEL & ADDITION
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MERCER ISLAND, WA 98040

DESIGN: RWF
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1 CITY REVIEW 12.19.2023
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Mar 12, 2024

A-1.2

CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercergov.org
Inspection Requests: Online: www.mybuildingpermit.com VM: 206.275.7730

SITE DEVELOPMENT INFORMATION

Worksheet for single family residential development

PROJECT INFORMATION

Permit Number:		Parcel Number:	2287000120
Site Address:	9116 SE 58TH STREET	Phone Number:	(206) 349-4272
Owner Name:	JEREME RAQUEPAU	Date:	DEC 28, 2023

Signature & phone number of individual who completed this worksheet:

Signature (253) 359-4039 Phone Number

GENERAL INFORMATION

Will any large trees be removed as a result of this development activity? Yes ☐ No ☑
Large tree- trees with diameter of greater than or equal to 10 inches.

Do you have an Accessory Dwelling Unit? New ADU ☐ Existing ADU ☐ No ☑

Will you be adding air conditioning to the proposed development? Yes ☑ No ☐

What is the total square footage of all proposed decks (covered and uncovered)on the property? N/A Square Feet

This is a worksheet and is not a substitute for the Mercer Island Development Regulations. Please consult the Mercer Island City Code. The City may require additional information to be supplies to document compliance with regulations.

LOT SLOPE

According to the Mercer Island City Code, slope is a measurement of the average incline of the lot or other piece of land calculated by subtracting the lowest elevation of the property from the highest elevation and dividing the resulting number by the shortest horizontal distance between these two points. The resulting product is multiplied by 100.

LOT SLOPE CALCULATIONS

Highest Elevation Point of Lot:	347.0	Feet
Lowest Elevation Point of Lot:	344.5	Feet
Elevation Difference:	2.5	Feet
Horizontal Distance Between High and Low Points:	134.92	Feet
Lot Slope*	1.8	%

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

Lot slope calculations shown on Sheet # A-1.1

LOT COVERAGE

For single family residential development, "lot coverage" is the area of a lot that may be covered by a combination of the buildings and vehicular driving surfaces. Lot coverage is based on "net lot area". Net lot area is the size of the lot minus the area within any access easements on the property that do not provide access to the home on the subject lot. The maximum lot coverage for a specific lot is based upon the lots slope (see above). The area of the lot that cannot be used for lot coverage is "required landscaping area"; the landscaping area is typically improved with either hardscape (see below) or softscape.
***Please note:** Lot coverage is not the same as impervious surface calculations used for drainage review.*

Lot Slope	Maximum Lot Coverage (House, driving surfaces, and accessory buildings)	Required Landscaping Area
Less than 15%	40%	60%
15% to less than 30%	35%	65%
30% to 50%	30%	70%
Greater than 50% slope	20%	80%

ADJUSTMENTS

A one-time reduction in the required landscaping area and an increase in the allowed maximum lot coverage is allowed if:

A. The total reduction in required landscaping area shall not exceed 5%, and the total increase in maximum lot coverage shall not exceed 5%; and
B. The reduction in required landscaping area is associated with:
   1. A development proposal that will result in a single-story dwelling with wheelchair accessible entry, and may also include a single-story accessory building; or
   2. A development proposal on a flag lot that, after optimizing driveway routing and minimizing driveway width, requires a driveway that is more than the 25% of the allowed lot coverage. The allowed reduction in the required landscaping area and increase in the maximum lot coverage shall not exceed 5% or the area of the driveway in excess of 25% of the lot coverage, whichever is less. For example, a development proposal with a driveway that occupies 27% of the allowed lot coverage, may increase the total lot coverage by 2%
C. A recorded notice on title, covenant, easement, or other documentation in a form approved by the city, shall be required. The notice on title or other documentation shall describe the basis for the reduced landscaping area an increase in lot coverage.

Does this project include a proposed adjustment? Yes ☐ No ☐

LOT COVERAGE CALCULATIONS

A.	Gross Lot Area	12,192	Square Feet
B.	Net Lot Area	12,192	Square Feet
C.	Allowed Lot Coverage Area	4,877	Square Feet
D.	Allowed Lot Coverage	40	% of Lot
E.	Existing Lot Coverage:		
	1. Main Structure Roof Area	2,873	Square Feet
	2. Accessory Building Roof Area	141	Square Feet
	3. Vehicular Use (driveway, paved access easements [portion used by the lot for access], parking	938	Square Feet
	4. Covered Patios and Covered Decks	0	Square Feet

	5. Total Existing Lot Coverage Area (E1+E2+E3+E4)	3,952	Square Feet
F.	(Total Lot Coverage Area Removed)	302	Square Feet
G.	Proposed Adjustment for Single Story (Area)		Square Feet
H.	Proposed Adjustment for Flag Lot		Square Feet
I.	Total New Lot Coverage Area:		
	1. Main Structure Roof Area	2,878	Square Feet
	2. Accessory Structure Roof Area	49	Square Feet
	3. Vehicular Use (driveway, paved access easement [portion used by the lot for access], parking)	878	Square Feet
	4. Covered Patios and Covered Decks	360	Square Feet
	5. Total New Lot Coverage Area (I1 + I2 + I3 + I4)	4,165	
J.	Total Project Lot Coverage Area = (E5 - F) + I5	4,165	Square Feet
K.	Proposed Lot Coverage Area = (J/B) x 100	34.2	% of Lot

Lot coverage calculations shown on Plan Sheet # A-1.1

HARDSCAPE

Up to 9% of the net lot area may consist of hardscape areas. For single family residential development, hardscape is the solid, hard, elements or structures that are incorporated into landscaping. The hardscape includes, but is not limited to, structures, paved areas, stairs, walkways, decks, patios, rockeries and retaining walls, and similar constructed elements that do not have a roof. The hardscape within the landscaping area consists of materials such as wood, stone, concrete, gravel, permeable pavements or pavers, and similar materials. Hardscape does not include solid, hard elements or structures that are covered by a minimum of two feet of soil intended for softscape (for example, a septic tank covered with at least two feet of soil and planted shrubs is not hardscape). The hardscape does not include driving surfaces or buildings.
In addition, unused lot coverage may also be improved with hardscape.

HARDSCAPE CALCULATIONS

A.	Gross Lot Area	12,192	Square Feet
B.	Net Lot Area	12,192	Square Feet
C.	Area Borrowed from Lot Coverage	0	Square Feet
D.	Allowed Hardscape Area = 9% of lot area + C	9	% of Lot
E.	Allowed Hardscape Area	1,097	Square Feet
F.	Total Existing Hardscape Area:		
	1. Uncovered Decks	0	Square Feet
	2. Uncovered Patios	770	Square Feet
	3. Walkways	724	Square Feet
	4. Stairs	0	Square Feet
	5. Rockeries and Retaining Walls	6	Square Feet
	6. Other		Square Feet
	7. Total Existing Hardscape Area (F1+F2+F3+F4+F5+F6)	1,500	Square Feet
G.	(Total Hardscape Area Removed)	1,500	Square Feet
H.	Total New Hardscape Area:		
	1. Uncovered Decks	255	Square Feet
	2. Uncovered Patios	338	Square Feet
	3. Walkways	235	Square Feet
	4. Stairs	0	Square Feet
	5. Rockeries and Retaining Walls	0	Square Feet

	6. Other		Square Feet
	7. Total New Hardscape Area (H1+H2+H3+H4+H5+H6)	828	Square Feet
I.	Total Project Hardscape Area = (F7 - G) + H7	828	Square Feet
J.	Total Project Hardscape Area = (I/B)x100	6.8	% of Lot

Hardscape calculations shown on Plan Sheet # A-1.1

GROSS FLOOR AREA (GFA)

For single family residential development, GFA is the total square footage of floor area, bounded by the exterior faces of the building(s). The GFA includes the floor area of the main building, accessory buildings, garages, attached roofed decks on the second or third story of a single family home, staircases, etc. The GFA does not include second- or third-story uncovered decks or uncovered rooftop decks.
The GFA includes the floor area of the main building, accessory buildings, garages, attached roofed decks on the second or third story of a single family home, staircases, etc. The GFA does not include second- or third-story uncovered decks or uncovered rooftop decks. GFA does not include any portion of a building that is below ground (refer to page 6).

Allowed GFA

A. R-8.4: 5,000 square feet or 40% of the lot area, whichever is less.
B. R-9.6: 8,000 square feet or 40% of the lot area, whichever is less.
C. R-12: 10,000 square feet or 40% of the lot area, whichever is less.
D. R-15: 12,000 square feet or 40% of the lot area, whichever is less.
E. All zones: Lots with a lot area of 7,500 square feet or less, the lesser of 3,000 square feet or 45% of the lot area.
F. All zones: If an accessory dwelling unit is proposed, the 40% allowed GFA may be increased by the lesser of 5 percentile points, or the floor area of the accessory dwelling unit. Provided, this allowance shall not result in a GFA of more than 4,500 square feet or 45% of the lot area, whichever is less.

GFA Modifiers

The GFA calculation for a floor with a ceiling height of 12 to 16 feet, is 150% of the area of the floor.
The GFA calculation for a floor with a ceiling height of more than 16 feet, is 200% of the area of the floor.
The GFA calculation for a stair case shall be counted as a single floor for the first two stories accessed by the stair case. For each additional story above two stories, the stair case shall count as a single floor area.
**Floor plans shall identify rooms with a ceiling height of more than 12 feet and rooms with a ceiling height of more than 16 feet.*
All building areas must be identified and labeled on the site plan. Please distinguish all new construction from existing areas on both your drawing and in the calculations you complete below.

Will you be excluding a portion of the basement floor area? Yes ☐ No ☐
If yes, you must provide basement floor area calculations, with your building permit application, that show how you determined what portion of the basement will be excluded. Refer to page 6.

GROSS FLOOR AREA CALCULATIONS

Building Area	Existing Area	Removed Area	New/Addition Area	Total
Upper Floor	0 Sq. Ft.	0 Sq. Ft.	1,243 Sq. Ft.	1,243 Sq. Ft.
Main Floor	1,765 Sq. Ft.	102 Sq. Ft.	277 Sq. Ft.	1940 Sq. Ft.
Gross Basement Area	0 Sq. Ft.	Sq. Ft.	Sq. Ft.	0 Sq. Ft.
Garage/ Carport	435 Sq. Ft.	Sq. Ft.	Sq. Ft.	435 Sq. Ft.
Total Floor Area	Sq. Ft.	Sq. Ft.	Sq. Ft.	3,618 Sq. Ft.
Accessory Buildings	49 Sq. Ft.	Sq. Ft.	Sq. Ft.	49 Sq. Ft.

Accessory Dwelling Unit	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
2nd & 3rd Story Roofed Decks	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
Basement Area Excluded	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
150% GFA Modifier* (main and upper floor x2)	Sq. Ft.	Sq. Ft.	547 Sq. Ft.	547 Sq. Ft.
200% GFA Modifier* (main and upper floor x2)	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
Staircase GFA Modifier* (x2 for a three story staircase, x3 for a four story staircase)	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
TOTAL Building Area	2,249 Sq. Ft.	102 Sq. Ft.	2,067 Sq. Ft.	4,214 Sq. Ft.

**Enter the actual room area*

A.	Lot Area	12,192	Square Feet
B.	Zone R-8.4 ☐ R-9.6 ☑ R-12 ☐ R-15 ☐		
C.	Allowed Gross Floor Area (refer to "allowed GFA")	4,877	Square Feet
D.	Allowed Gross Floor Area	40	% of Lot
E.	Proposed Gross Floor Area	4,214	Square Feet
F.	Proposed Gross Floor Area	34.6	% of Lot

Gross floor area calculations found on Plan Sheet # A-4.1

Basement exclusion calculations found on Plan Sheet # N/A

BUILDING HEIGHT

All building height measurements must be taken from existing grade or finished grade, whichever is lower. Existing grade refers to ground surface as it exists at the proposed building perimeter before grading or other alterations take place. Finished grade refers to the ground surface as it exists at the building perimeter after grading or other alterations take place.

Single family new construction and additions are limited to a maximum height of 30 ft. above the Average Building Elevation (ABE) – see section on next pages. The height is measured to the top of the structure. On the downhill side of a sloping lot, the wall façade height is also limited to a height of 30 feet measured from existing or finished grade (whichever is lower) to the top of the exterior wall facade supporting the roof framing, rafters, trusses, etc.

A topographic survey is required at permit application when the proposed building height is within 2 ft. of the allowable building height. The survey must include a statement that attests the average contour elevation within the vicinity of the building footprint to be accurate within 6 inches vertically and horizontally from actual elevations.

BUILDING HEIGHT CALCULATIONS

A.	Average Building Elevation (ABE) calculations located on sheet #:	A-1.1	
B.	Allowable Building Height (ABE + 30 ft.)	377.38	Feet
C.	Proposed Building Height	30	Feet
D.	Benchmark Elevation*	346.2	Feet
E.	Describe Benchmark Location (must be undisturbed throughout project)	WATER METER BOX PER SURVEY	

F.	Sloping lot (Downhill side)- maximum height of top of exterior wall façade above lowest existing grade (30-ft max)	N/A	Feet
G.	ABE and Allowable Building Height Shown on elevations plan sheet #	A-6.1 - A-7.1	
H.	Topo-survey Accuracy Attested on Plan Sheet #	A-1.0	

Note: survey must attest to accuracy when proposed building height is within 2 feet of the allowable building height. Please see page 8 for more information on calculating Average Building Elevation (ABE)
*The benchmark elevation is a fixed elevation point on or off site that will not be disturbed during development activity and is used to verify the final building height.

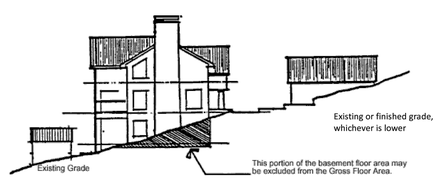
BASEMENT FLOOR AREA CALCULATION

The Mercer Island Development Code allows for the portion of the basement floor area which is below grade to be excluded from the Gross Floor Area. That portion of the basement which will be excluded is calculated as shown:
Portion of Excluded Basement Floor Area = Total Basement Area x

$$\frac{\Sigma \text{ (Wall Segment Coverage x Wall Segment Length)}}{\text{Total of all Wall Segment lengths}}$$

Where the terms are defined as follows:

Total Basement Area: The total amount of all basement floor area.
Wall Segment Coverage: The portion of an exterior wall below existing or finished grade, whichever is lower. It is expressed as a percentage. Refer to example below.
Wall Segment Length: The horizontal length of each exterior wall in feet.



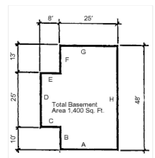
EXAMPLE OF BASEMENT FLOOR AREA CALCULATION

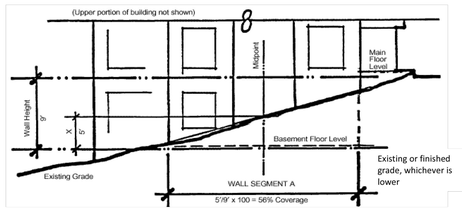
This example illustrates how a portion of the basement floor area may be excluded from the Gross Floor Area. In order to complete this example, the following information is needed:

a. A topographic map of the existing (e) grades and showing proposed finished (f) grades.
b. Building plans showing dimensions of all exterior wall segments and floor areas.
c. Building elevations showing the location of existing and finished grades in relation to basement level.

Step One
Determine the number and lengths of the Wall Segments.

Step Two
Determine the Wall Segment Coverage (in %) for each Wall Segment. In most cases this will be readily apparent, for example a downhill elevation which is entirely above existing and finished grade. In other cases, where the existing contours are complex, an averaging system shall be used. Refer to illustration.





Step Three
Multiply each Wall Segment Length by the percentage of each Wall Segment Coverage and add these results together. Divide that number by the sum of all Wall Segment Lengths. This calculation will result in a percentage of basement wall which is below grade. (This calculation is most easily completed by compiling a table of the information as illustrated below.)

Wall Segment	Length x	Coverage=	Result
A	25'	56%	14%
B	10'	0%	0%
B	8'	0%	0%
D	25'	0%	0%
E	8'	0%	0%
F	13'	0%	0%
G	25'	60%	15%
H	48'	100%	48%
Totals	**162'**	**NA**	**77%**

Step Four
Multiply the Total Basement Floor Area by the above percentage to determine the Excluded Basement Floor Area. Portion of Excluded Basement Floor Area Calculation below

1,400 Sq. Ft.x $\frac{(25' \times 56\% + 10' \times 0\% \ldots 25' \times 60\% + 48' \times 100\%)}{162'}$
= 1,400 Sq. Ft. x 47.53%
= 665.42 Sq. Ft. Excluded from the Gross Floor Area

CALCULATING AVERAGE BUILDING ELEVATION (ABE)

No part of a structure may exceed 30 feet in height above the "Average Building Elevation" to the top of the structure, except that on the downhill side of a sloping lot the structure shall not extend to a height greater than 30 feet measured from existing or finished grade to the top plate of the roof; provided the roof ridge does not exceed 30 feet in height above the "Average Building Elevation." ABE is defined as: The elevation established by averaging the elevation at existing or finished grade, whichever is lower, at the center of all exterior walls of the completed building.

NOTE:
INCOMPLETE AVERAGE BUILDING ELEVATION INFORMATION COULD SUBSTANTIALLY DELAY THE PROCESSING OF YOUR APPLICATION

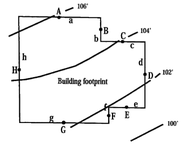
AVERAGE BUILDING ELEVATION FORMULA:

$$\frac{\text{(Mid-point Elevation of Individual Wall Segment) x (Length of Individual Wall Segment)}}{\text{(Total Length of Wall Segments)}}$$

—OR—

$$\frac{(Axa)+(Bxb)+(Cxc)+(Dxd)+(Exe)+(Dxd)+(Exe)+(Fxf)+(Gxg)+(Hxh)}{a+b+c+d+e+f+g+h}$$

WHERE: A,B,C,D… = Lower of Finished or Existing Ground Elevation at Midpoint of Wall Segment
AND: a,b,c,d… = Length of Wall Segment Measured on Outside Wall



MIDPOINT ELEVATION	WALL SEGMENT LENGTH
A = 105.9 feet	a = 30 feet
B = 104.7 feet	b = 9 feet
C = 103.7 feet	c = 17 feet
D = 102.7 feet	d = 25 feet
E = 101.6 feet	e = 13 feet
F = 101.7 feet	f = 6 feet
G = 102.2 feet	g = 34 feet
H = 104.5 feet	h = 40 feet

ABE CALCULATION:

$$\frac{(105.9)(30)+(104.7)(9)+(103.7)(17)+(102.2)(25)+(101.6)(13)+(101.7)(6)+(102.2)(34)+(104.5)(40)}{30+9+17+25+13+6+34+40}$$

$$\frac{\mathbf{18023'}}{\mathbf{174'}} = \mathbf{103.6'\ Average\ Building\ Elevation\ (ABE)}$$

NOTE: This example is not to scale. Site plans submitted to the building department must be to scale.

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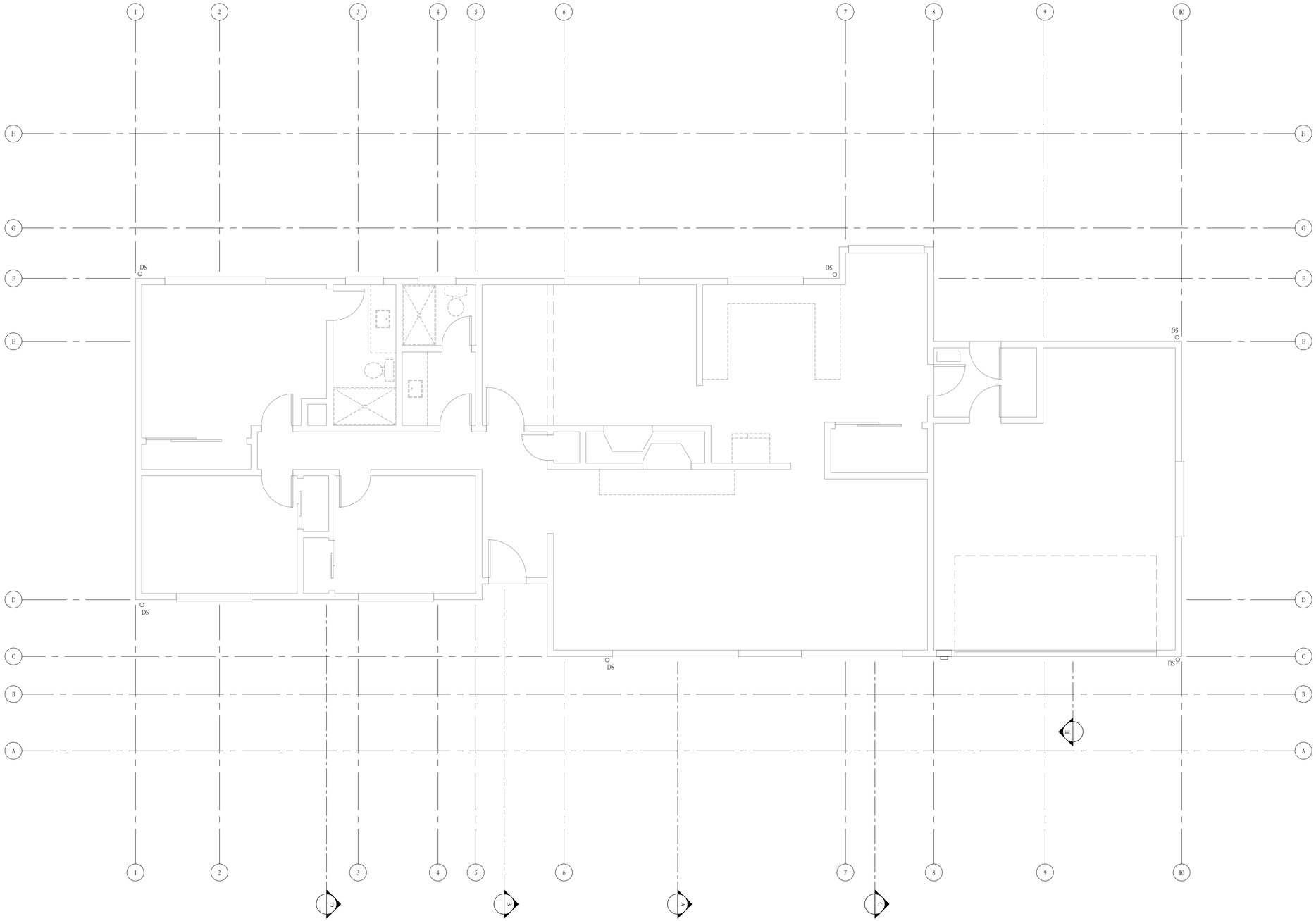
RAQUEPAU RESIDENCE
REMODEL & ADDITION
9116 SE 58TH ST.
MERCER ISLAND, WA 98040

DESIGN: RWF
DRAWN: HAVILAND CONSULTING
CHECKED: RWF
REVISIONS:
1 CITY REVIEW 12.19.2023
2 CITY REVIEW 2.28.2024

Mar 12, 2024

2 A-I.3



MAIN FLOOR ASBUILTS

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

LEGEND

▨ EXISTING REMOVED

▒ NEW WALLS

▭ EXISTING TO REMAIN

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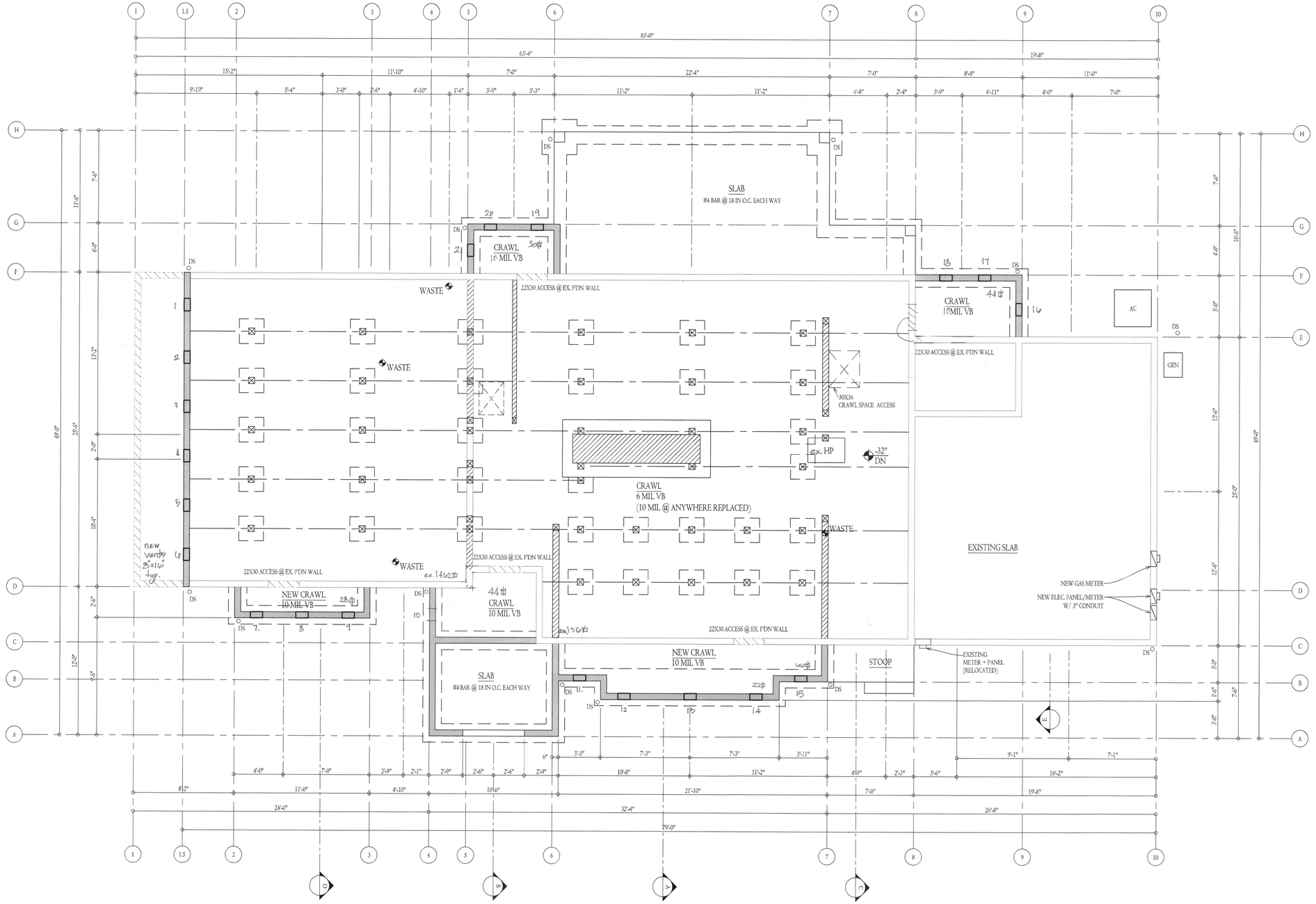

*COORDINATE WITH STRUCTURAL FOUNDATION PLAN

FOUNDATION PLAN LEGEND

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

- FOUNDATION REMOVED
- NEW FDN WALL
- EXISTING FDN WALL
- LOAD BRG ABOVE
- NEW POST & FTG
- 8"x16" SCREENED VENT (TYP)

2

crawlspace venting:
1462 ft + 130 ft = 1593 ft existing crawl
1593 ft + 23 + 44 + 30 ft + 32 ft + 44 = 1826 ft
1826/150 = 12.17 ft vent area x 144 = 1752 sq. in.
8"x16" = 128 sq. in./vent x .9 = 115 sq. in./vent net
1752/115 = 15.23 ≤ 16 vents min. SEE PLAN

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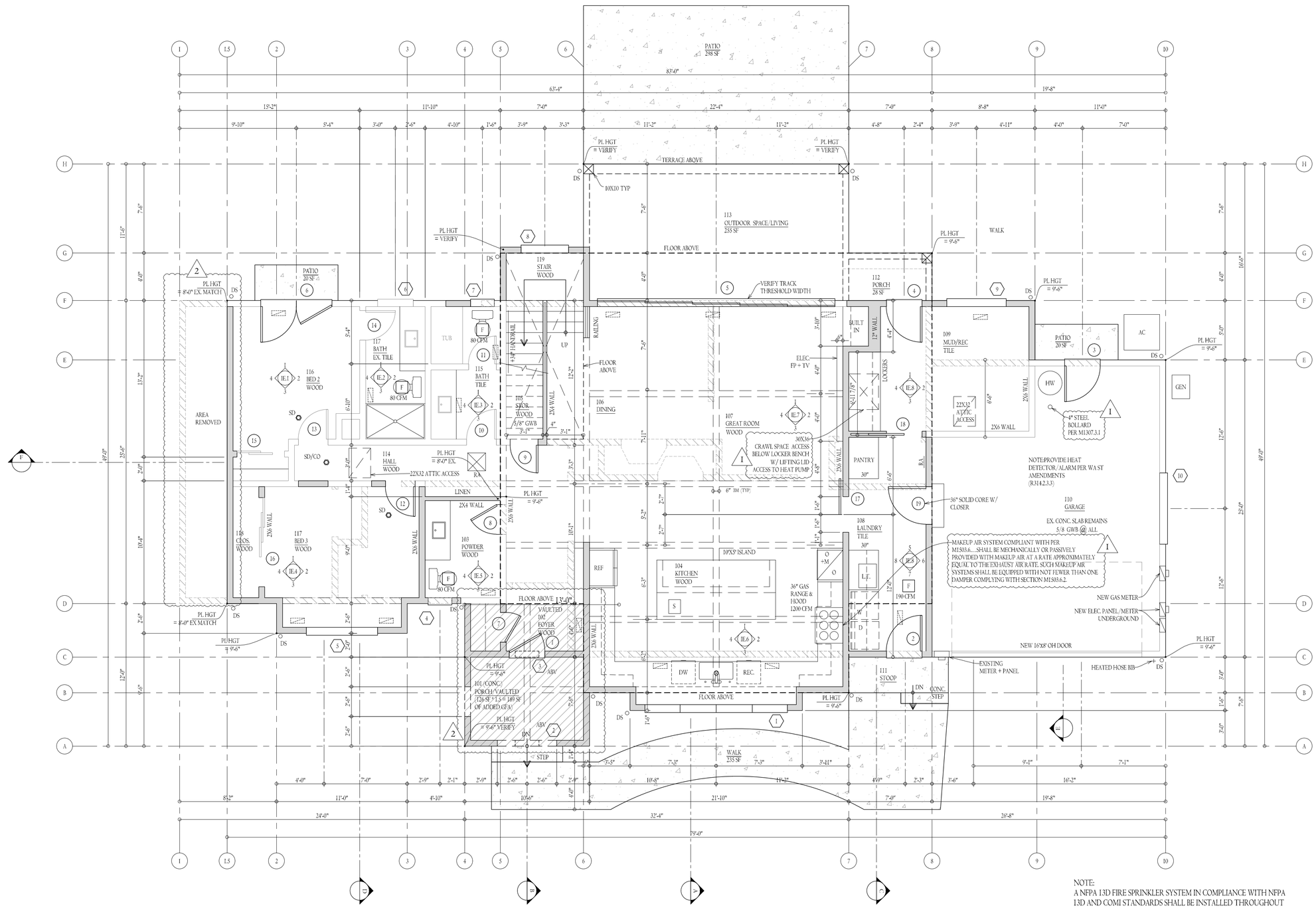

NOTE:
A NFPA 13D FIRE SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 13D AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED.
MINIMUM OF 1" WATER METER WATER SUPPLY LINE.

GFA CALC:

GFA_1 MAIN FLOOR	1,940 SF
GFA_2 UPPER FLOOR	1,243 SF
GARAGE	435 SF
TOTAL FLOOR AREA	3,618 SF
ACCESSORY BLDG	49 SF
150% GFA MODIFIER	547
TOTAL BUILDING AREA	4,214 SF

MAIN FLOOR PLAN

1,940	SF HEATED MAIN FLOOR
189	SF ADDED GFA MAIN FLOOR
1,243	SF HEATED FLOOR UPPER
358	SF ADDED GFA UPPER FLOOR
3,730	SF TOTAL HEATED FLOOR AREA

435	SF GARAGE EXISTING
235	SF WALKWAYS
338	SF UNCOVERED PATIOS
283	SF OUTDOOR SPACE/LIVING
49	SF ACCESSORY BLDG/SHED

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

LEGEND

▨	EXISTING REMOVED
▬	NEW WALLS
═	EXISTING TO REMAIN

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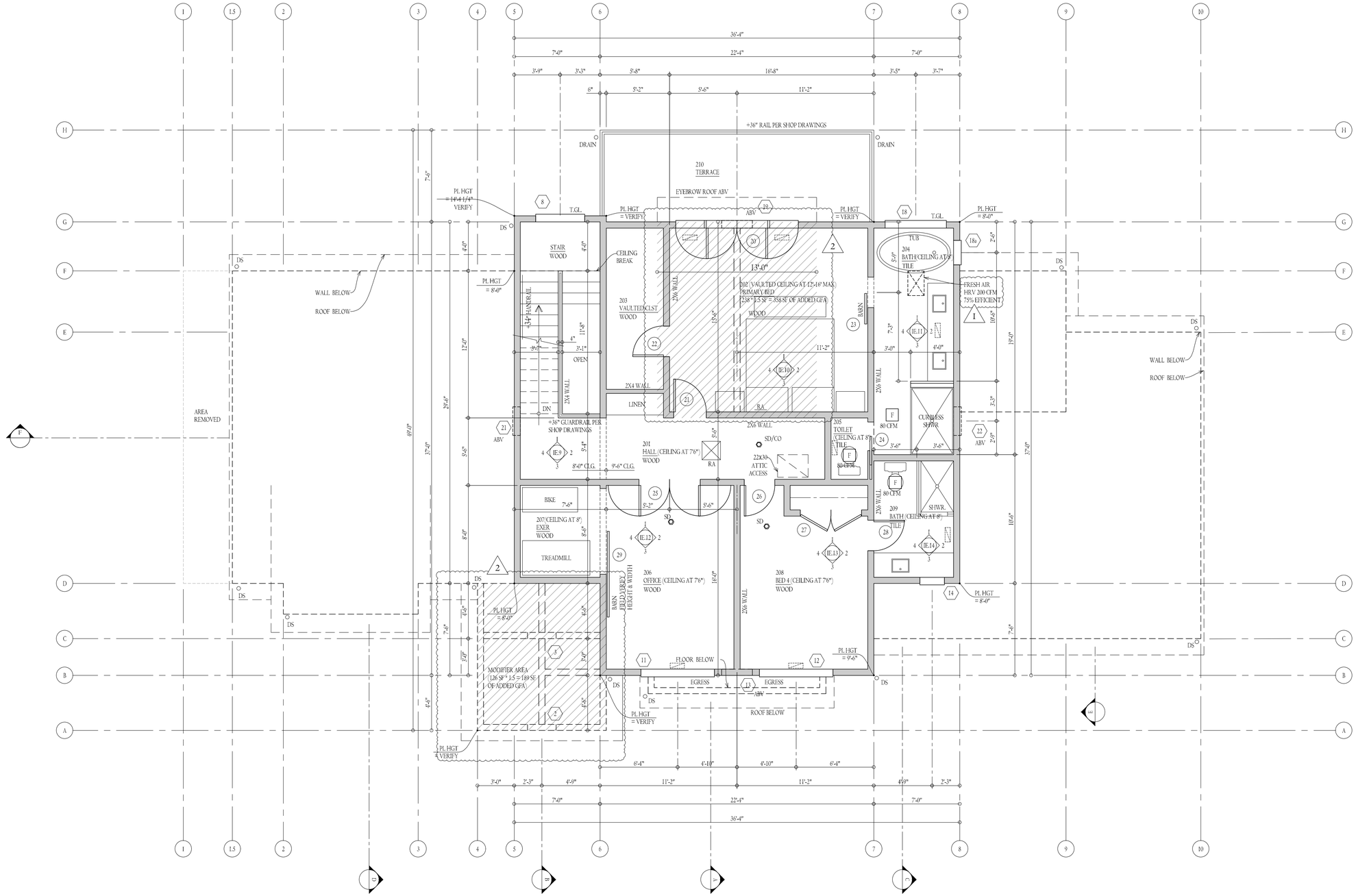

UPPER FLOOR PLAN LEGEND

1,243 SF	HEATED UPPER FLOOR ADDITION	2
358 SF	GFA ADDED	
1,601 SF	HEATED UPPER FLOOR ADDITION TOTAL	

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

EXISTING REMOVED
NEW WALLS
EXISTING TO REMAIN

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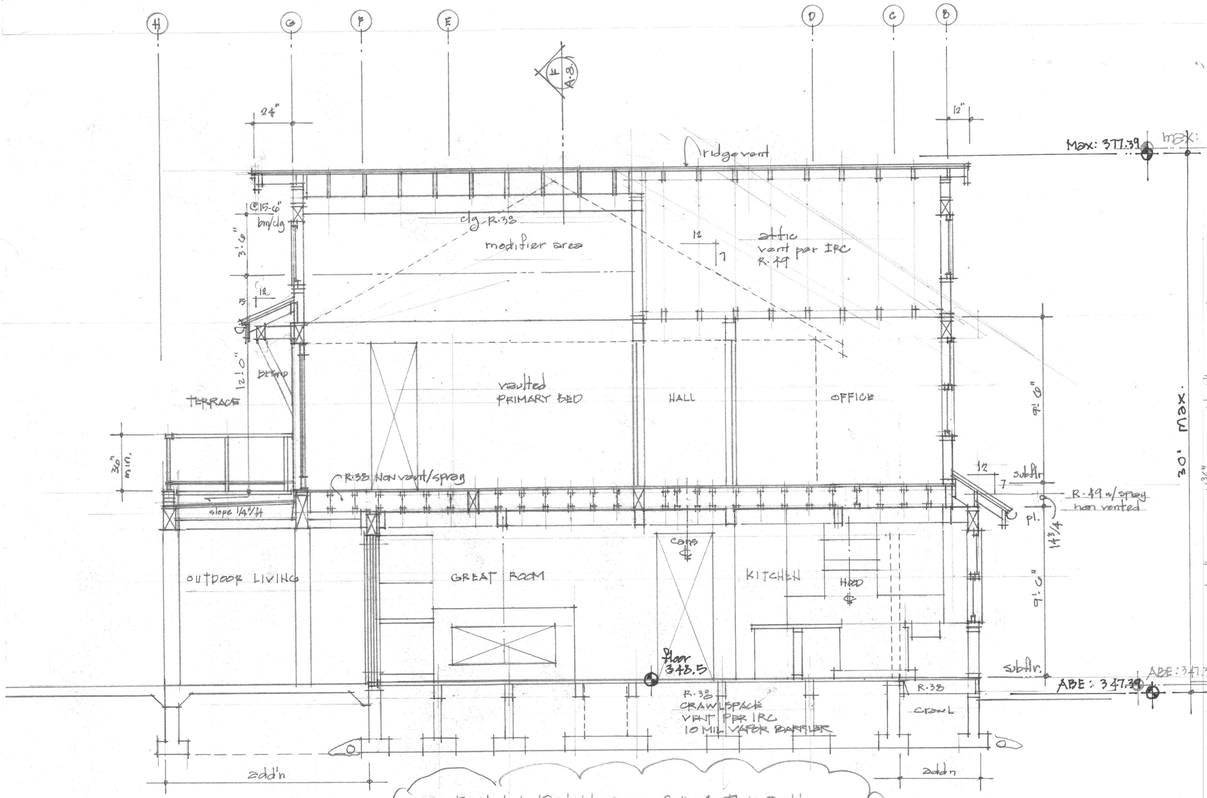
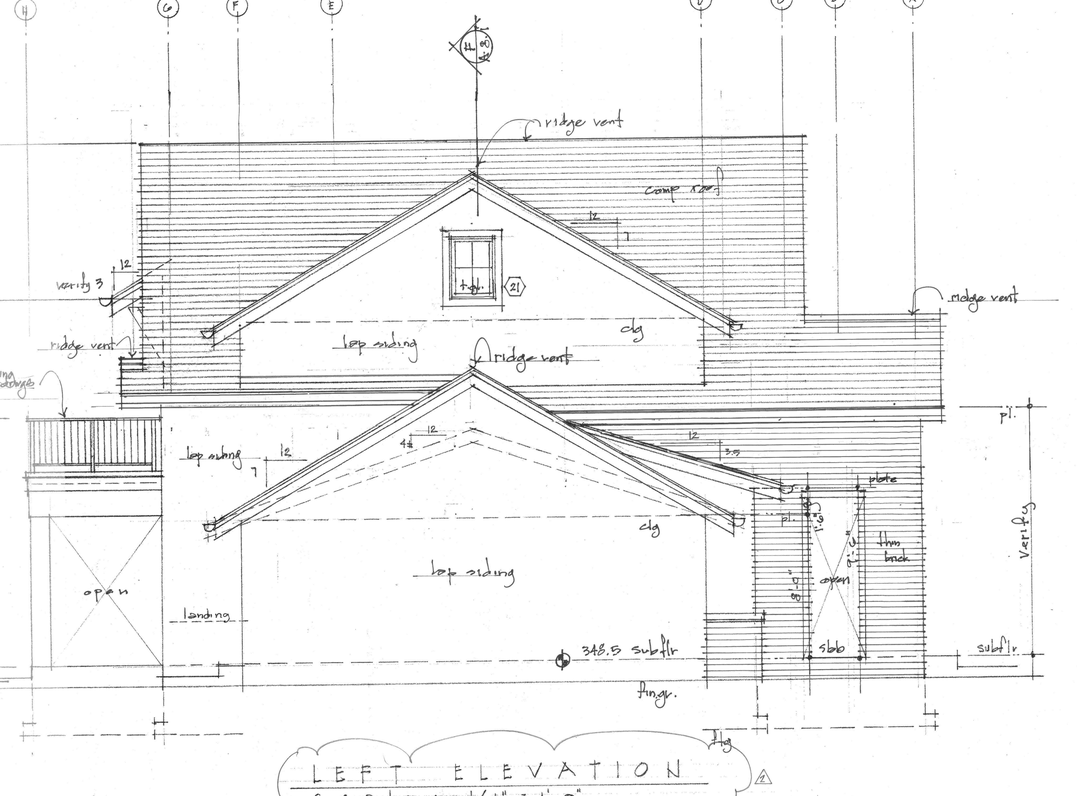
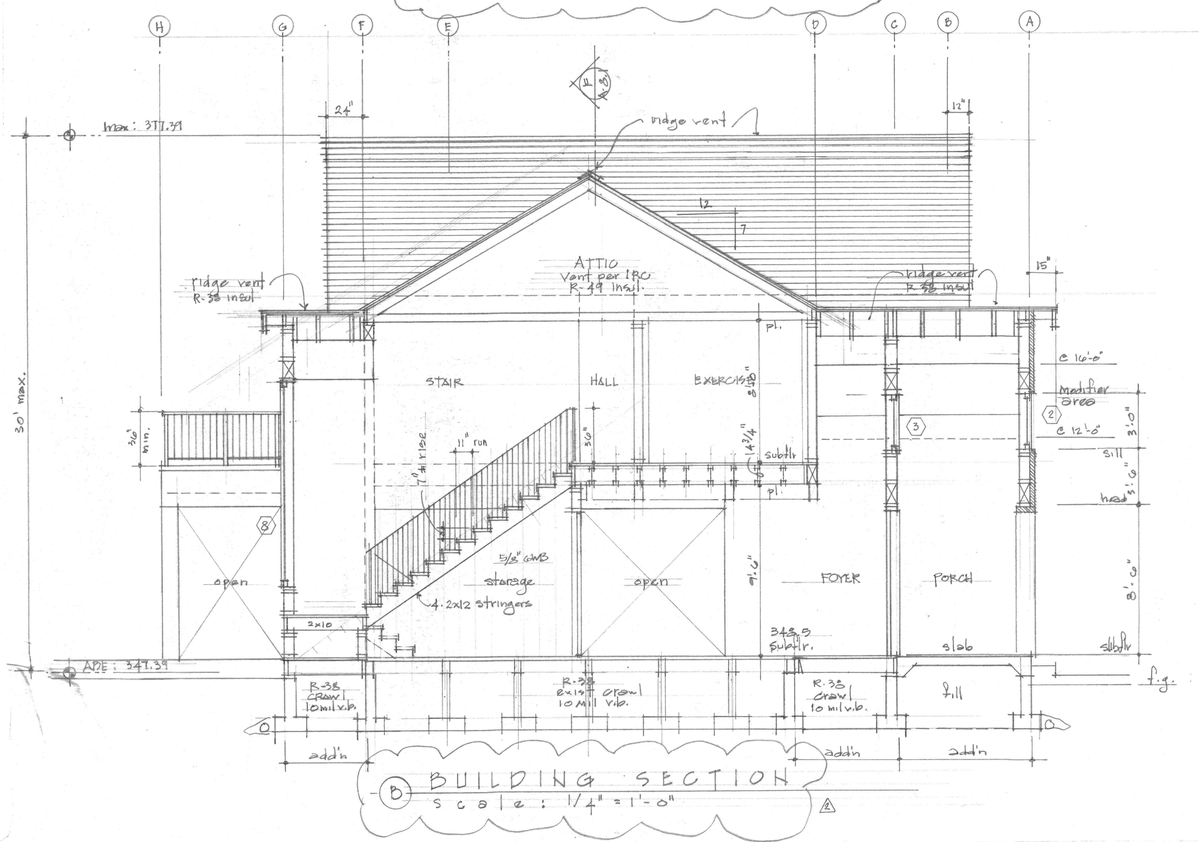


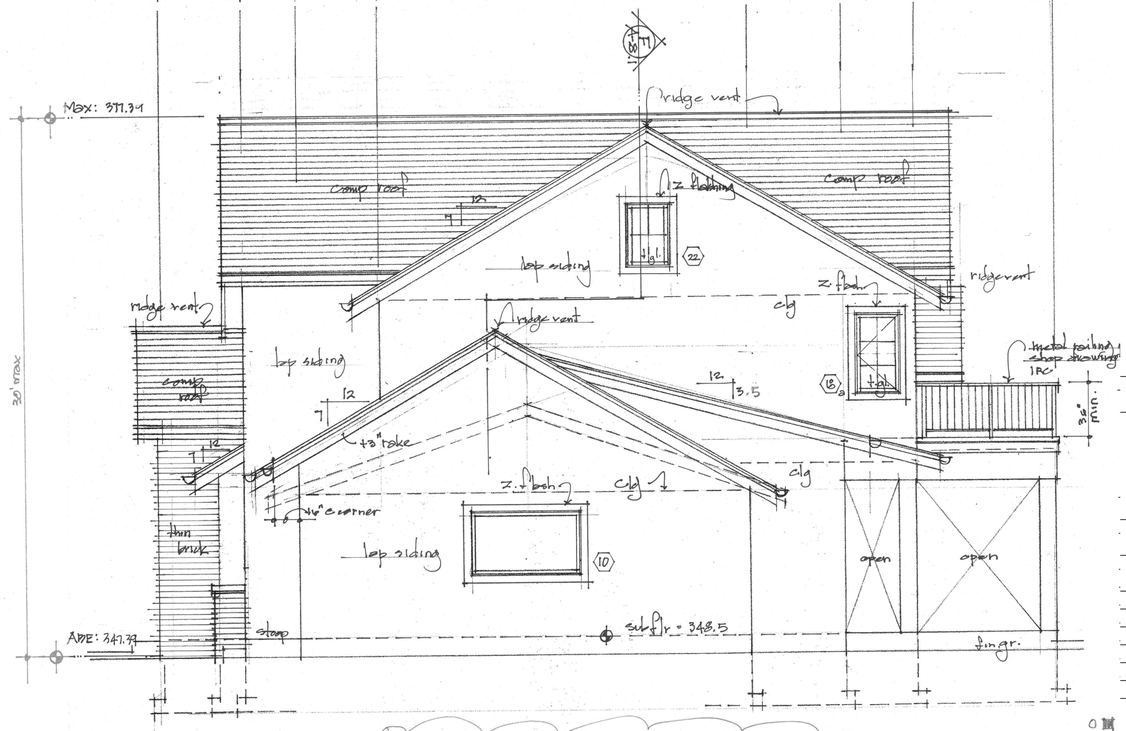
A BUILDING SECTION
scale: 1/4" = 1'-0"



LEFT ELEVATION
scale: 1/4" = 1'-0"



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



RIGHT ELEVATION
scale: 1/4" = 1'-0"

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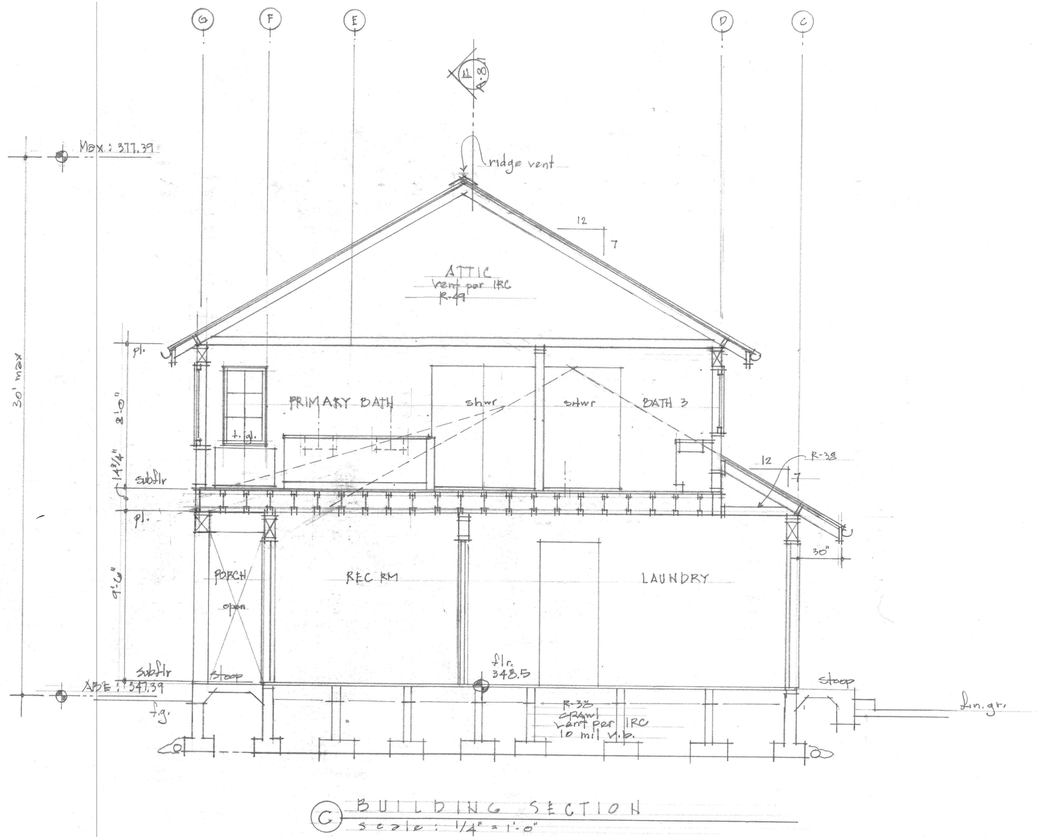
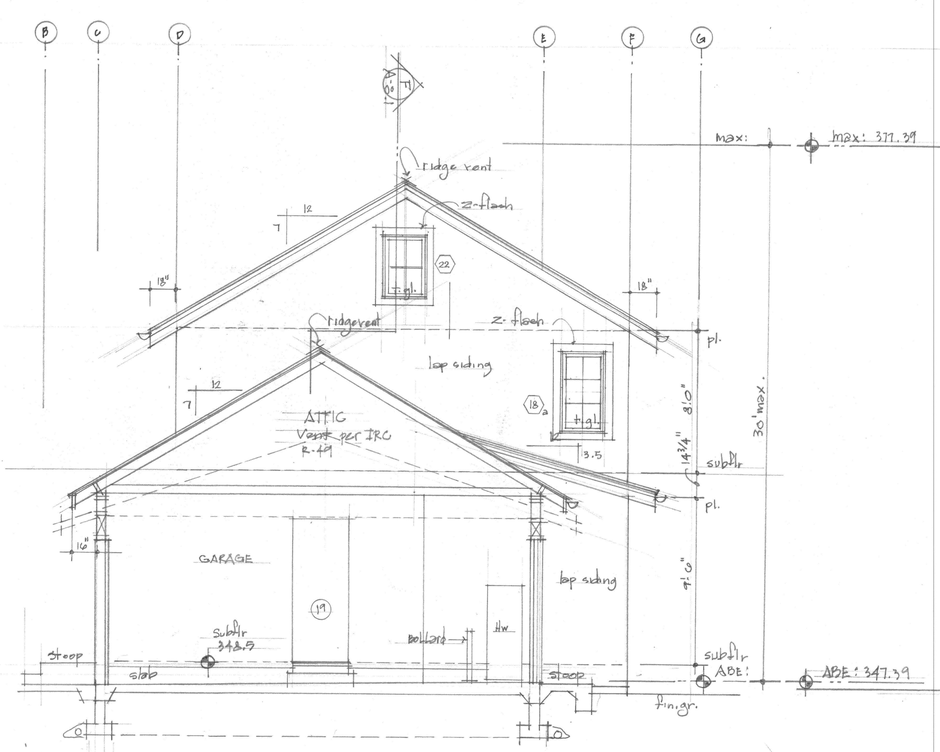
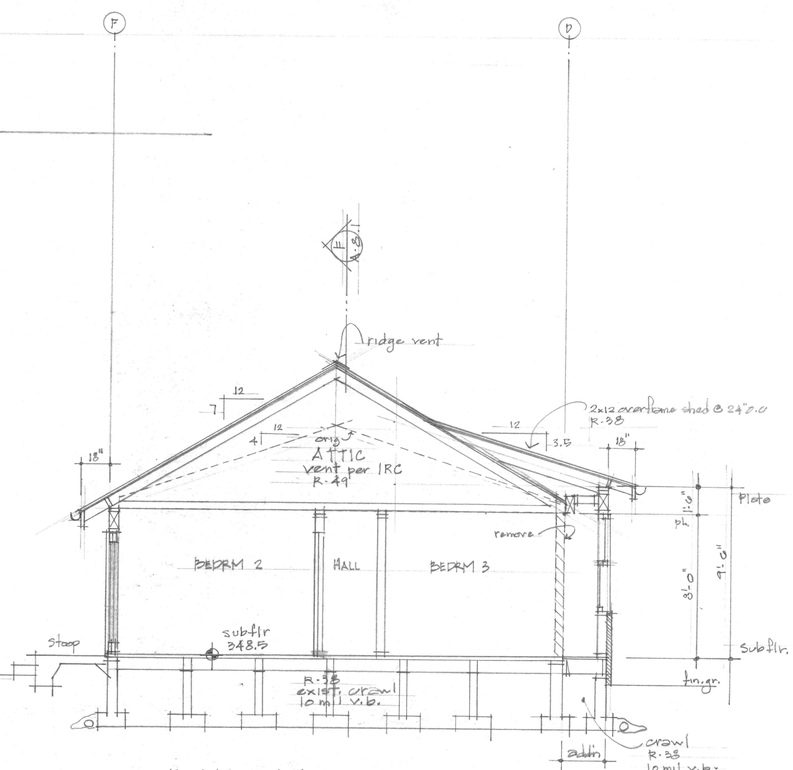


C BUILDING SECTION
scale : 1/4" = 1'-0"



E BUILDING SECTION
scale : 1/4" = 1'-0"



D BUILDING SECTION
scale : 1/4" = 1'-0"

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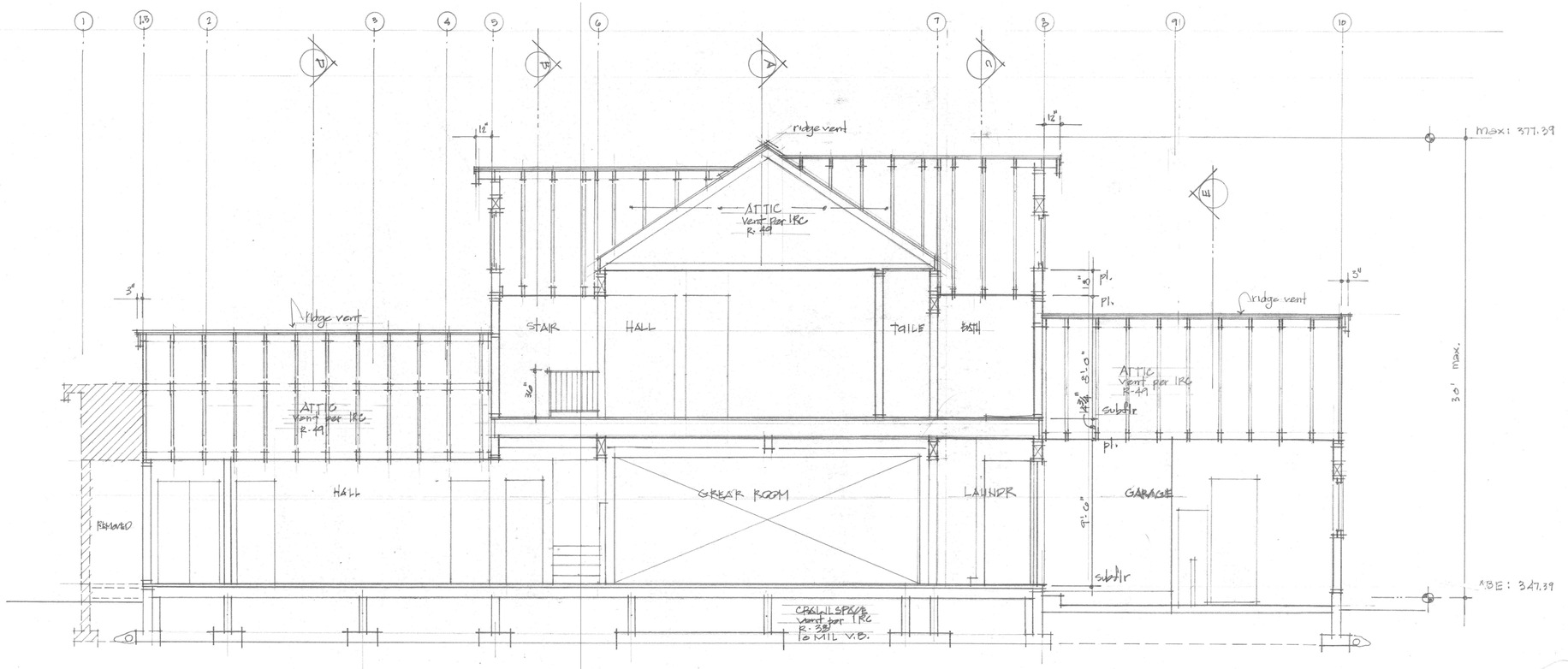

F BUILDING SECTION
scale: 1/4" = 1'-0"

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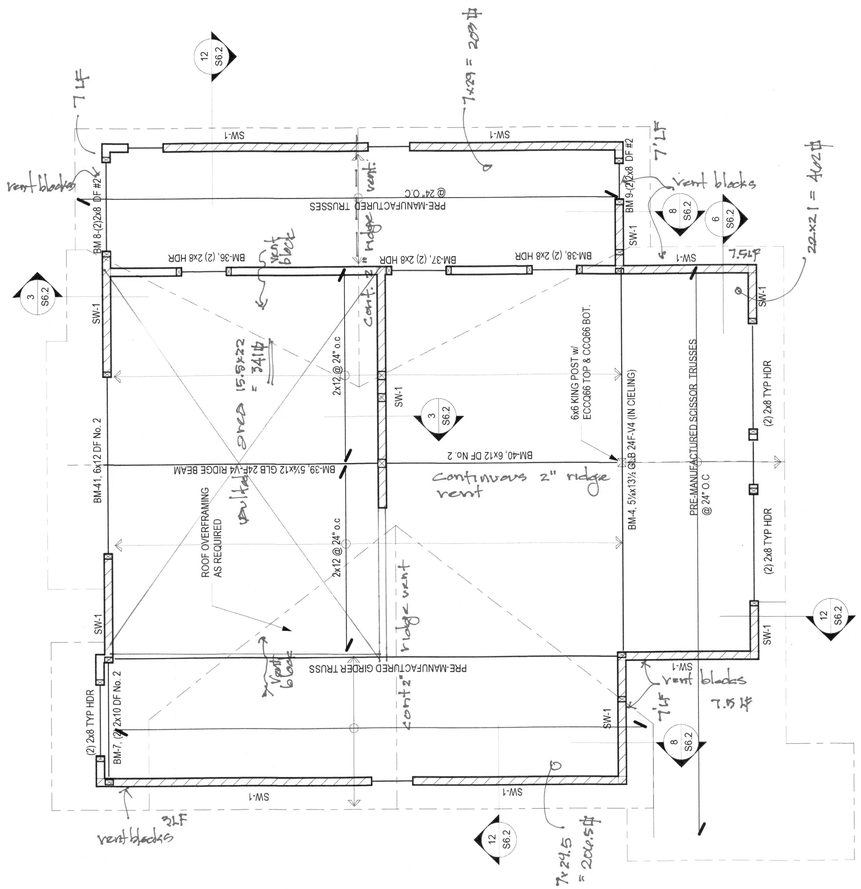
A-8.2

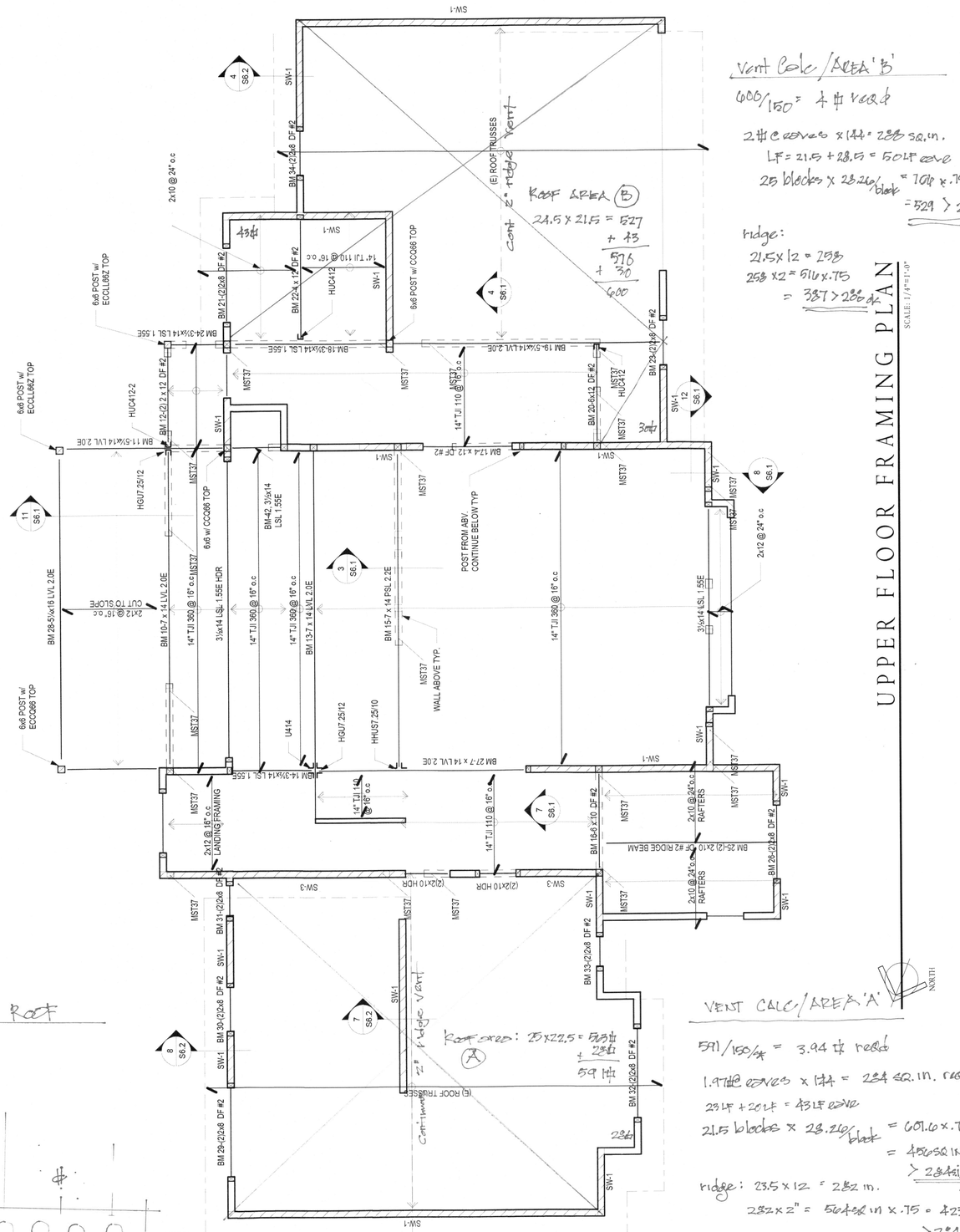
ROOF FRAMING PLAN

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



UPPER FLOOR FRAMING PLAN

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



ATTIC VENTILATION CALCS @ UPPER ROOF

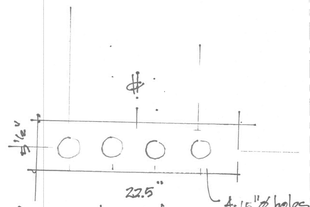
203
+462
420.5
+34.1
1213 # gross area

1213 x 150/sf rent area = 8.09 # net

4.05 # @ eaves
4.05 # @ ridges

Eaves: 4.05 # x 144 = 582 sq in.

ridge: 50 LF x 12 = 600 in x 2"
= 1200 sq in x .75 % eff
= 900 sq in > 582 sq in. req'd



area: πr² = 3.14 x (4.15)² = 7.86 sq in/hole
39 blocks x 28.26/blk = 1102 SF x .75 eff = 826 sq in > 582 sq in. req'd

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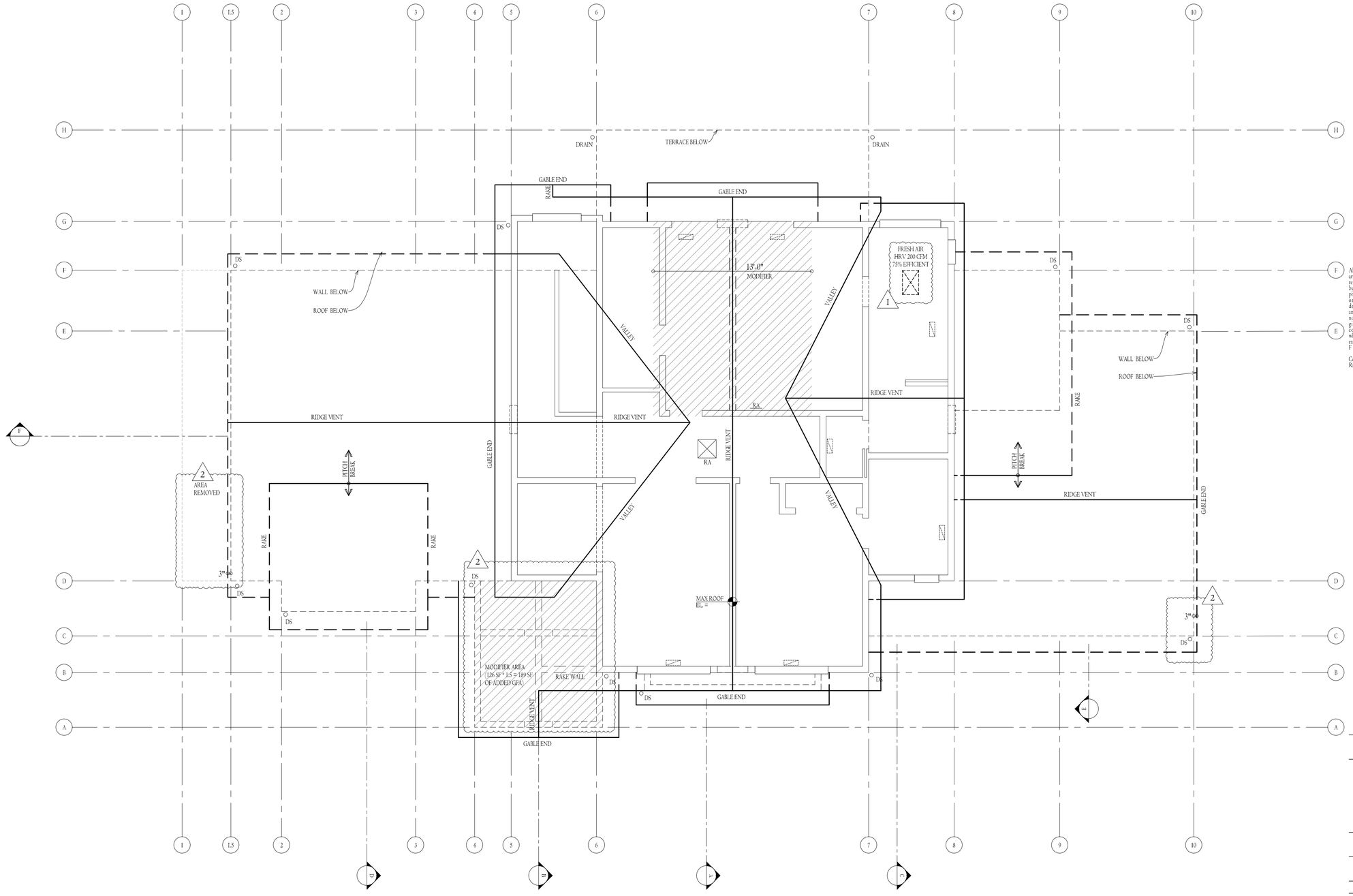

ROOF/ATTIC PLAN

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

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ROOM FINISH SCHEDULE (TO BE DETERMINED)

		FLOOR FINISH		WALL FINISH				CEILING FINISH	REMARKS
MARK	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	CEILING	
101	PORCH/VAULTED								
102	FOYER								
103	POWDER								
104	KITCHEN								
105	STORAGE								
106	DINING								
107	GREAT ROOM								
108	LAUNDRY								
109	MUD/REC								
110	GARAGE								
111	STOOP								
112	PORCH								
113	OUTDOOR SPACE/LIVING								
114	HALL								
115	BATH								
116	BED 2								
117	BED 3								
118	CLOSET								
119	STAIR								
201	HALL								
202	PRIMARY BED								
203	VAULT								
204	BATH								
205	TOILET								
206	OFFICE								
207	EXER								
208	BED 4								
209	BATH								
210	TERRACE								

DOOR SCHEDULE

MARK	SIZE	THICKNESS	TYPE	STYLE	DOOR FINISH	FRAME FINISH	MANUFACTURER	SERIES	U-VALUE	REMARKS
EXTERIOR DOORS:										
1	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	ENTRY	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.20	2X6 JAMBS TYP
2	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	1/2 LIGHT	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.28	2X6 JAMBS TYP
3	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	1/2 LIGHT	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.28	2X6 JAMBS TYP
4	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	STORE DOOR	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.28	2X6 JAMBS TYP
5	$20^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	MULTI-SLIDE	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.28	2X6 JAMBS TYP
6	$6^{\underline{0}}$ x $6^{\underline{8}}$	1 3/4"	STORE DOOR	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.28	2X6 JAMBS TYP
19	$10^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	STORE DOOR	VERIFY	VERIFY	VERIFY	FRANK DR KOLBE	TBD	0.28	FIXED PANELS
INTERIOR DOORS:										
7	$2^{\underline{6}}$ x $8^{\underline{0}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
8	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
9	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
10	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
11	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
12	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
13	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
14	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
15	$4^{\underline{0}}$ x $6^{\underline{8}}$	1 3/4"	BIPASS	2P/1P VERIFY	VERIFY	VERIFY				
16	$7^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	BIPASS	2P/1P VERIFY	VERIFY	VERIFY				
17	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	BARN	2P/1P VERIFY	VERIFY	VERIFY				
18	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	POCKET 2P/1P	2P/1P VERIFY	VERIFY	VERIFY				
19	$3^{\underline{0}}$ x $8^{\underline{0}}$	1 3/4"	2P/1P	2P/1P VERIFY	VERIFY	VERIFY				SOLID CORE W/ BOMMER
21	$2^{\underline{8}}$ x $8^{\underline{0}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
22	$2^{\underline{6}}$ x $8^{\underline{0}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
23	$3^{\underline{0}}$ x $7^{\underline{0}}$	1 3/4"	BARN (VERIFY)	2P/1P VERIFY	VERIFY	VERIFY				
24	$2^{\underline{4}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
25	PAIR $2^{\underline{6}}$ x $8^{\underline{0}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
26	$2^{\underline{6}}$ x $8^{\underline{0}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
27	PAIR $2^{\underline{6}}$ x $8^{\underline{0}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
28	$2^{\underline{6}}$ x $6^{\underline{8}}$	1 3/4"	SWING 2P	2P/1P VERIFY	VERIFY	VERIFY				
29	$7^{\underline{6}}$ x $7^{\underline{0}}$	1 3/4"	BARN (VERIFY)	2P/1P VERIFY	VERIFY	VERIFY				

WINDOW SCHEDULE

MARK	SIZE (WXH)	TYPE	MANUFACTURER	SERIES	U-VALUE	REMARKS
1	$12^{\underline{0}}$ x $5^{\underline{0}}$	VERT SLIDE	KOLBE	VERIFY	0.28	
2	$2^{\underline{0}}$ x $3^{\underline{0}}$	PIC	KOLBE	VERIFY	0.28	
3	$2^{\underline{0}}$ x $3^{\underline{0}}$	PIC	KOLBE	VERIFY	0.28	
4	$2^{\underline{0}}$ x $3^{\underline{6}}$	CSMT	KOLBE	VERIFY	0.28	
5	$6^{\underline{0}}$ x $5^{\underline{6}}$	V. SLIDE EGRESS	KOLBE	VERIFY	0.28	
6	$3^{\underline{0}}$ x $3^{\underline{0}}$	CSMT	KOLBE	VERIFY	0.28	
7	$2^{\underline{0}}$ x $3^{\underline{6}}$	CSMT	KOLBE	VERIFY	0.28	
8	$4^{\underline{0}}$ x $10^{\underline{0}}$	PIC T.GL	KOLBE	VERIFY	0.28	
9	$5^{\underline{0}}$ x $5^{\underline{6}}$	CSMT	KOLBE	VERIFY	0.28	
10	$6^{\underline{0}}$ x $3^{\underline{6}}$	SLIDER	KOLBE	VERIFY	0.28	
11	$6^{\underline{0}}$ x $5^{\underline{6}}$	V. SLIDER EGRESS	KOLBE	VERIFY	0.28	
12	$6^{\underline{0}}$ x $5^{\underline{6}}$	V. SLIDER EGRESS	KOLBE	VERIFY	0.28	
13	$2^{\underline{6}}$ x $3^{\underline{6}}$	PIC	KOLBE	VERIFY	0.28	
14	$2^{\underline{0}}$ x $3^{\underline{0}}$	CSMT	KOLBE	VERIFY	0.28	
15	(NOT USED)		KOLBE	VERIFY	0.28	
16	(NOT USED)		KOLBE	VERIFY	0.28	
17	(NOT USED)		KOLBE	VERIFY	0.28	
18	$5^{\underline{0}}$ x $5^{\underline{0}}$	CSMT T.GL	KOLBE	VERIFY	0.28	
18a	$2^{\underline{6}}$ x $5^{\underline{0}}$	CSMT T.GL	KOLBE	VERIFY	0.28	
19	$2^{\underline{6}}$ x $3^{\underline{6}}$	PIC	KOLBE	VERIFY	0.28	
20	(NOT USED)		KOLBE	VERIFY	0.28	
21	$2^{\underline{6}}$ x $3^{\underline{6}}$	PIC	KOLBE	VERIFY	0.28	
22	$2^{\underline{6}}$ x $3^{\underline{6}}$	PIC	KOLBE	VERIFY	0.28	

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6080
REGISTERED ARCHITECT
RICHARD W. FLAKE
STATE OF WASHINGTON

RAQUEPAU RESIDENCE
REMODEL & ADDITION
9116 SE 58TH STREET
MERCER ISLAND, WA 98040

DESIGN:
RWF

DRAWN:
HAVILAND CONSULTING

CHECKED:
RWF

REVISIONS:

1 CITY REVIEW
12-19-2023

2 CITY REVIEW
2-28-2024

Mar 12, 2024

A-11.1

SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.

RAQUEPAU RESIDENCE
REMODEL

APPLICANT

JEREME RAQUEPAU
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ARCHITECT

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(206) 596-2020
CONTACT: JUSTIN JONES, PE

SURVEYOR

SITE SURVEYING INC.
21923 NE 11TH STREET
SAMMAMISH, WA 98074
(425) 298-4412
CONTACT: THOMAS WOLDENDROP, PLS

SITE INFORMATION:

SITE ADDRESS:	9116 SE 58TH STREET MERCER ISLAND, WA 98040
TAX PARCEL NUMBER(S):	228700-0120
ZONING:	R-9.6
TOTAL PROJECT AREA:	0.280 ACRES

VERTICAL DATUM & CONTOUR INTERVAL

ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM GPS OBSERVATION USING THE WSRN.

DATUM – NAVD 88

2.0' CONTOUR INTERVAL– THE EXPECTED VERTICAL ACCURACY IS EQUAL TO ½ THE CONTOUR INTERVAL OR PLUS / MINUS 1.0' FOR THIS PROJECT.

SURVEY DATE: JANUARY 13TH, 2023

BASIS OF BEARINGS

RECORD OF SURVEY BY TERRANE, RECORDED IN VOLUME 390 OF SURVEYS, PAGE 163, UNDER RECORDING NO. 20180830900020, RECORDS OF KING COUNTY, WASHINGTON.

LEGAL DESCRIPTION

LOT 12 OF EL DORADO ESTATES, AS PER PLAT RECORDED IN VOLUME 62 OF PLATS, PAGE 7, RECORDS OF KING COUNTY AUDITOR;

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON

SERVICE PROVIDERS:

WATER:	CITY OF MERCER ISLAND
SEWER:	CITY OF MERCER ISLAND
POWER:	PUGET SOUND ENERGY
GAS:	PUGET SOUND ENERGY

VICINITY MAP

9116 SE 58th Street Mercer Island , WA 98040

SHEET INDEX

Page #	Sheet #	Sheet Name
1	C-01	Cover Sheet
2	C-02	Existing Site Plan
3	C-03	Demolition & TESC Plan
4	C-04	Site & Grading Plan
5	C-05	Storm Plan
6	C-06	Details
7	C-07	Details

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Bonneylake, WA 98391
(253) 359-4039

Engineer:

JMJ Team
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Sumner, WA 98390
(206) 596-2020

Project:

Raquepau Residence

9116 Se 58th Street
Mercer Island, WA 98040

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PROFESSIONAL ENGINEER
03-04-2024

REV	DATE	DESCRIPTION
1	11-1-23	Revised per City Comments
2	3-4-24	Revised per City Comments

SHEET TITLE:

Cover Sheet

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ
SHEET NUMBER: C-01
DWG: 1 OF 7

SITE INFORMATION

SITE ADDRESS:	9116 SE 58TH STREET MERCER ISLAND, WA 98040
TAX PARCEL NUMBER(S):	228700-0120
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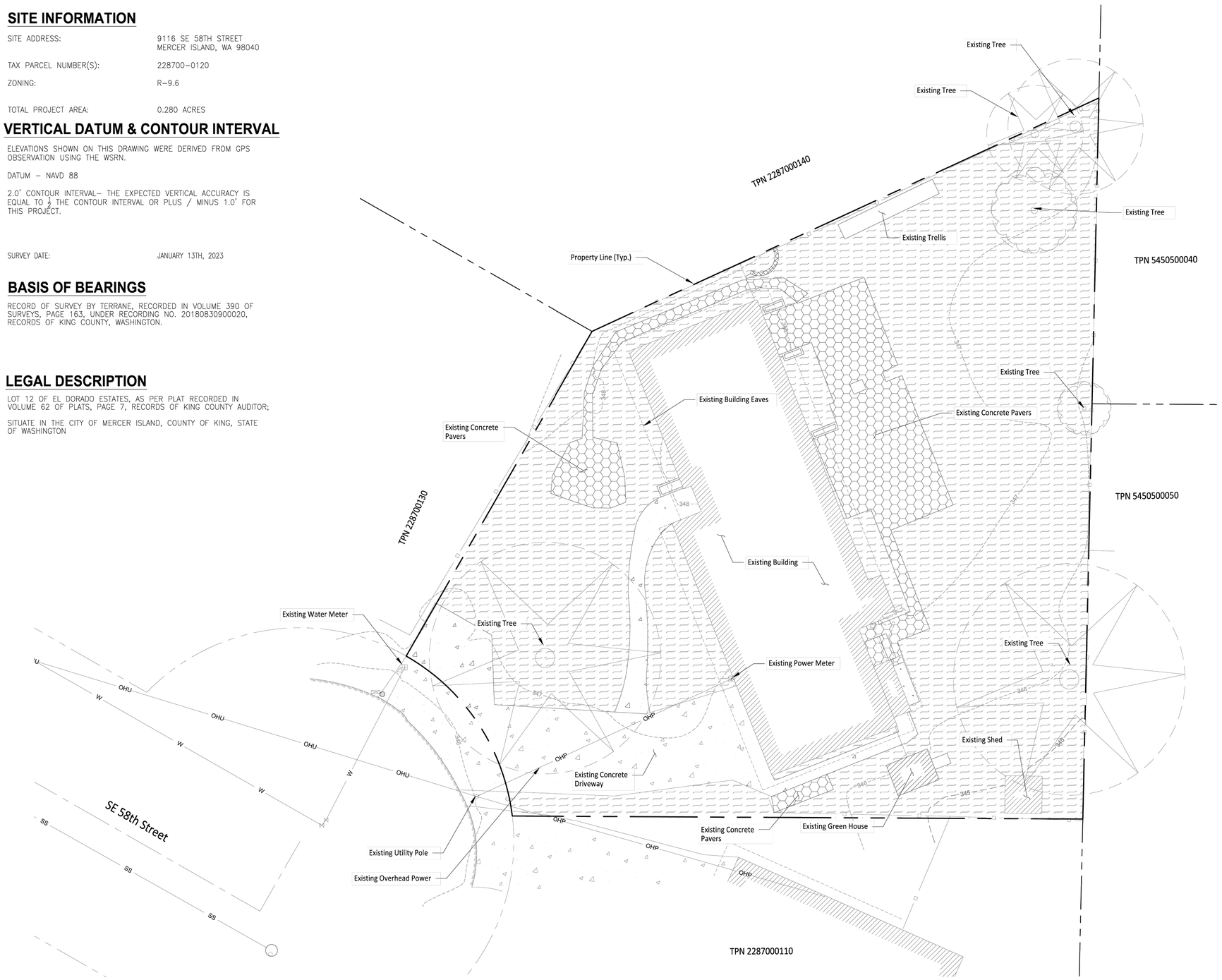
SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON



LEGEND

- Found Monument In Case
- Found Rebar As Described
- Found Nail As Described
- Set Mag Nail As Described
- Set $\frac{5}{8}$" X 24" Iron Rod W/1" Yellow Plastic Cap
- Power Meter
- Gas Meter
- Guy Wire
- Utility Pole
- Yard Drain
- Sanitary Sewer Manhole
- Water Valve
- Fire Hydrant
- Water Meter
- SS — Approximate Location Sanitary Sewer Line
- W — Approximate Location Underground Water Line
- OHP — Overhead Power
- OHU — Overhead Utilities
- Wood Fence
- Mailbox
- Concrete Surface
- Concrete Pavers
- CE Cedar
- DF Douglas Fir
- DS Deciduous
- * Indicates Multi-Trunk

EXISTING LOT COVERAGE

- Site Area: 12,192 SF (0.28 AC)
- Total Impervious Coverage: 5,260 SF (43.1%)
  - Roof: 2,973 SF
  - Concrete Pavement: 2,287 SF
- Total Pervious Coverage: 6,932 SF (56.9%)

0 10 20 FEET
1" = 10'

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1	11-1-23	Revised per City Comments
2	3-4-24	Revised per City Comments

SHEET TITLE:

Existing Site Plan

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ

SHEET NUMBER:

C-02

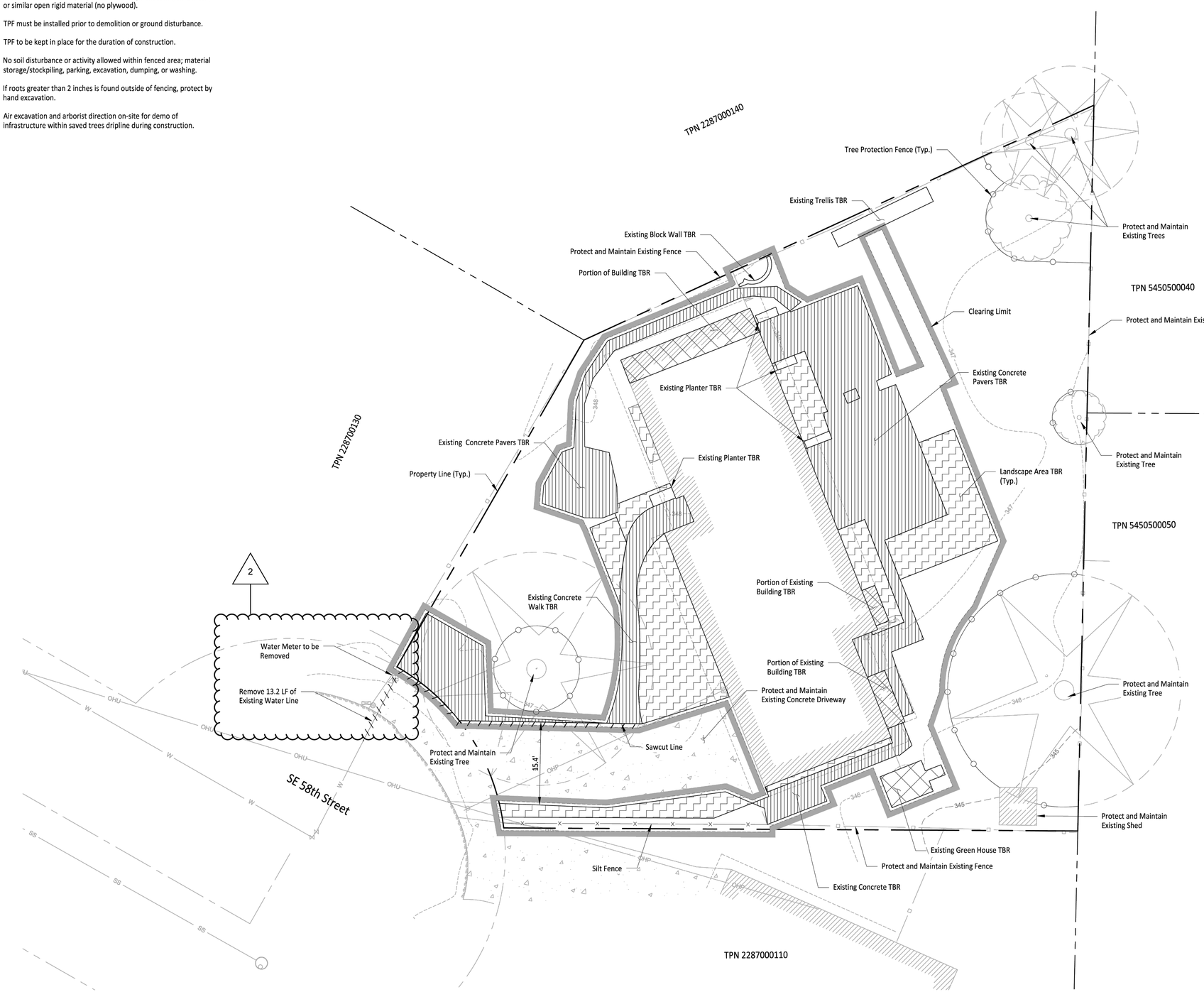
DWG:

2 OF 7

File: 1565008C-EX.dwg Path: J:\1565 - RF Architecture\008 - Raquepau Residence\CAD\ Plotted by: MrassoOshoo Date: 04-Mar-24 2:27:06pm

TREE PROTECTION NOTES

- Tree Protection Fence (TPF) to be 6 feet High Chainlink, wire mesh, or similar open rigid material (no plywood).
- TPF must be installed prior to demolition or ground disturbance.
- TPF to be kept in place for the duration of construction.
- No soil disturbance or activity allowed within fenced area; material storage/stockpiling, parking, excavation, dumping, or washing.
- If roots greater than 2 inches is found outside of fencing, protect by hand excavation.
- Air excavation and arborist direction on-site for demo of infrastructure within saved trees dripline during construction.



LEGEND

- Existing Building to be Removed
- Existing Concrete to be Removed
- Landscaping to be Removed
- Sawcut Existing Concrete
- CLR. LIMIT — Clearing Limit
- Silt Fence
- Tree Protection Fence
- Utility To Be Removed
- TBR — To Be Removed

TESC NOTES

- Contractor to install temporary erosion and sediment control measures as necessary to ensure stormwater leaving the site is free of settleable solids.
- Roads shall be cleaned thoroughly as needed to protect stormwater infrastructure and downstream water resources. Sediment shall be removed from roads by shoveling or pickup sweeping and be transported to a controlled sediment disposal area.
- Install Silt Fence as necessary per DOE BMP C233.
- Install straw bale barriers, wattles and other TESC measures as necessary.
- Exposed soils shall be watered as necessary to prevent dust from leaving the site.
- Contractor to mark clearing limits with lath and flagging.
- Concrete handling and equipment washing in accordance with DOE BMP C151.

SOIL AMENDMENT NOTES

The lawn and landscape areas are required to provide Post-Construction Soil Quality and Depth in accordance with BMP T5.13.

- POST-CONSTRUCTION SOIL MANAGEMENT

1. Retain & Protect Native Vegetation and Soil
   1.1. Identify Areas of the site that will not be disturbed construction. Fence areas to prevent impacts during construction.
2. Loosen Compacted Subsoil
   2.1. In Areas Compacted by Construction Traffic Scarify the top 4-inches of subsoil. Use a Cat-mounted Ripper, tractor-mounted disc, or tiller to mix the first lift of topsoil into the subsoil. Use the equipment listed to scarify soils to a depth of 12-inches before tilling in at least 8-inches of compost.
3. Restore Soils that are Disturbed During Construction
   3.1. Stockpile and reuse existing topsoil (amend if needed to meet 5% organic matter content for turf areas; 10% organic matter content for planting beds).
4. Add Mulch to Planting Beds
   4.1. Spread mulch (coarse bark or wood chips) in the spring or fall (after planting) to control weeds, reduce the need for irrigation and prevent erosion). Apply 1 to 2 inches of mulch on planting beds and around shallow-rooted annuals. Apply 2 to 4 inches of mulch around trees and woody perennials, but make sure to keep mulch 2-3 inches away from tree trunks.
5. Protect Restored Soils from Erosion anad Re-Compaction
   5.1. Prevent runoff from roads or open slopes onto amended soil areas. Compost blankets are an approved erosion control Best Management Practice (BMP) that can be used during construction and then tilled into existing soil at the end of the construction process prior to planting. Once soils have been amended, vehicle traffic should be prohibited to prevent recompilation from occurring.

DEMOLITION NOTES

- Landscaping to be Cleared & Grubbed: 1,055 SF
- Existing Concrete Pavement to be Removed: 1,675 SF
- Existing Building to be Removed: 235 SF
- Disturbed Area: 6,400 SF

0 10 20 FEET
1" = 10'

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UTILITIES UNDERGROUND LOCATION CENTER

Owner/Developer:
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(206) 596-2020

Project:
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Mercer Island, WA 98040

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03-04-2024

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1	11-1-23	Revised per City Comments
2	3-4-24	Revised per City Comments

SHEET TITLE:
TESC & Demo Plan

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ

SHEET NUMBER:
C-03

DWG:
3 OF 7

File: 1565008C - TESC DM.dwg Path: J:\1565 - RF Architecture\008 - Raquepau Residence\CAD\ Plotted by: MrasseOshoe Date: 04-Mar-24 2:55:05pm

LEGEND

- Existing Concrete
- Proposed Concrete
- Proposed Gravel
- New/Replaced Roof Area
- Proposed Bldg. Extents
- Proposed Eaves
- SE — Spot Elevation
- ME — Match Existing Grade

PROPOSED LOT COVERAGE

- Site Area: 12,192 SF (0.28 AC)
- Total Impervious Coverage: 4,854 SF (39.8%)
  - Existing Remain: 2,167 SF
    - Roof: 1,378 SF
    - Concrete Pavement: 789 SF
  - New/Replaced: 2,687 SF
    - Roof: 1,728 SF
    - Concrete Pavement: 704 SF
    - Gravel: 255 SF
- Total Pervious Coverage: 7,338 SF (60.2%)
- Net Impervious: - 406 SF

0 10 20 FEET
1" = 10'

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1	11-1-23	Revised per City Comments
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SHEET TITLE:

Site & Grading Plan

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ
SHEET NUMBER:

C-04

DWG:
4 OF 7

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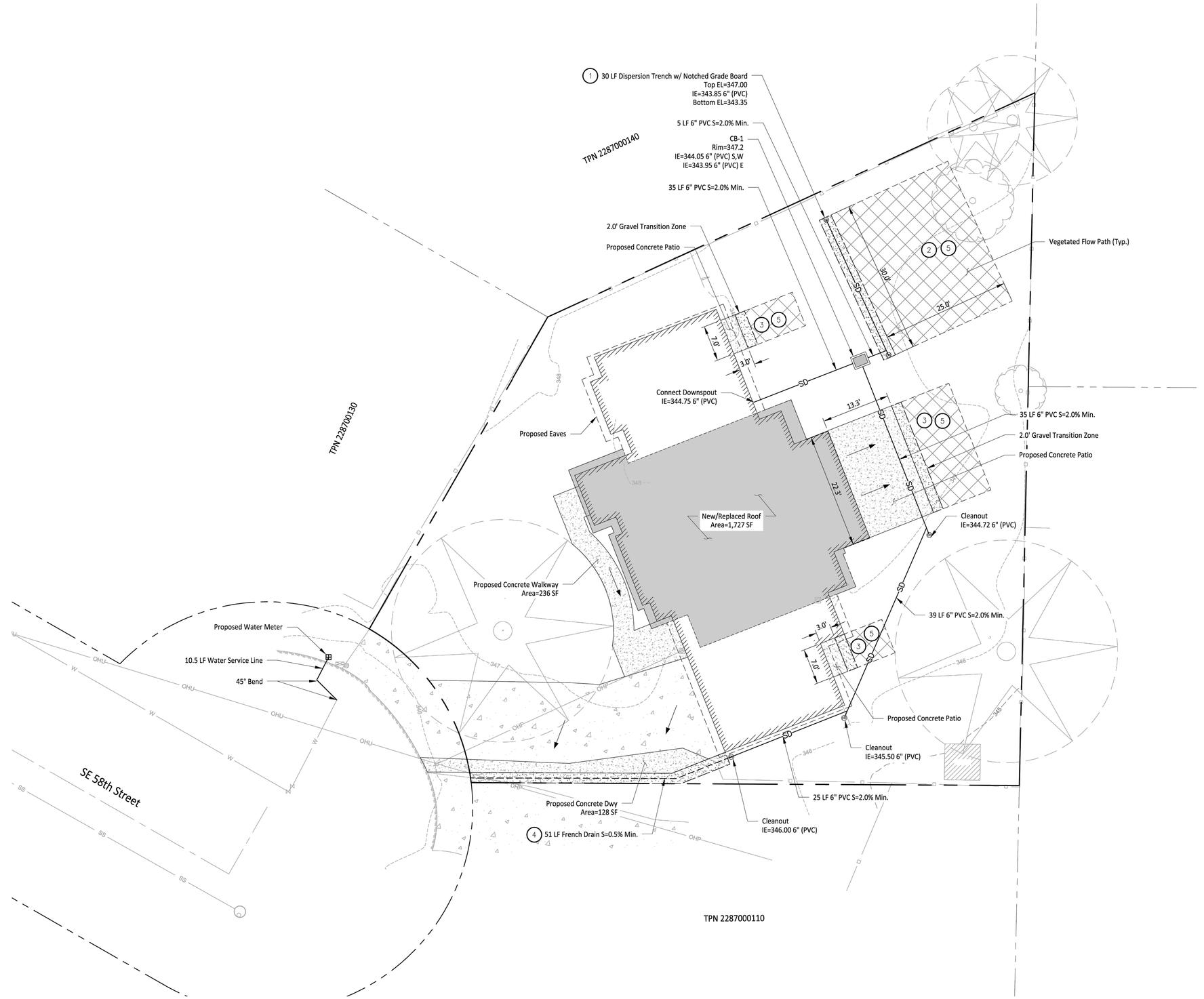

LEGEND

- Existing Concrete
- Proposed Concrete
- Proposed Gravel
- New/Replaced Roof Area
- Vegetated Flow Path
- Proposed Bldg. Extents
- Proposed Eaves
- SD — 6" PVC Storm Line
- Water Line
- Water Meter
- Cleanout
- Type 1 Catch Basin, Solid Lid
- Flow Path

CONSTRUCTION NOTES

1. Dispersion Trench to be constructed per DOE Figure V-4.5. See Detail on Sheet C-06.
2. Dispersion Trench Vegetated Flow Path to be a minimum of 25 LF in length.
3. Sheet Flow Vegetated Flow Path to be a minimum of 10 LF in length.
4. Install French Drain per Section B on Sheet C-06.
5. All Vegetated flow path shall be amended to meet BMP T5.13. See Sheet C-07 for detail.
6. Storm Pipes to be SDR 35 PVC piping.
7. Storm Pipes to maintain a minimum cover of 1.5' from finished grade surface.

2

0 10 20 FEET
1" = 10'

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SHEET TITLE:
Storm Plan

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ
SHEET NUMBER: C-05
DWG: 5 OF 7

BMP C233: Silt Fence

Purpose Use of a silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow. See Figure 4.2.12 for details on silt fence construction.

Conditions of Use Silt fence may be used downslope of all disturbed areas.

- Silt fence shall prevent soil carried by runoff water from going beneath, through, or over the top of the silt fence, but shall allow the water to pass through the fence.
- Silt fence is not intended to treat concentrated flows, nor is it intended to treat substantial amounts of overland flow. Convey any concentrated flows through the drainage system to a sediment pond.
- Do not construct silt fences in streams or use in V-shaped ditches. Silt fences do not provide an adequate method of silt control for anything deeper than sheet or overland flow.

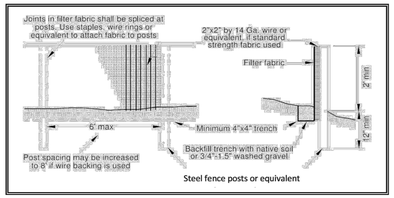


Figure 4.2.12 – Silt Fence

Design and Installation Specifications

- Use in combination with sediment basins or other BMPs.
- Maximum slope steepness (normal (perpendicular) to fence line) 1H:1V.
- Maximum sheet or overland flow path length to the fence of 100 feet.
- Do not allow flows greater than 0.5 cfs.
- The geotextile used shall meet the following standards. All geotextile properties listed below are minimum average roll values (i.e., the test result for any sampled roll in a lot shall meet or exceed the values shown in Table 4.2.3):

Table 4.2.3 Geotextile Standards

Polymeric Mesh AOS (ASTM D4751)	0.60 mm maximum for slit film woven (#30 sieve). 0.30 mm maximum for all other geotextile types (#50 sieve). 0.15 mm minimum for all fabric types (#100 sieve).
Water Permittivity (ASTM D4491)	0.02 sec^{-1} minimum
Grab Tensile Strength (ASTM D4632)	180 lbs. Minimum for extra strength fabric. 100 lbs minimum for standard strength fabric.
Grab Tensile Strength (ASTM D4632)	30% maximum
Ultraviolet Resistance (ASTM D4355)	70% minimum

- Support standard strength fabrics with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the fabric. Silt fence materials are available that have synthetic mesh backing attached.
- Filter fabric material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0°F. to 120°F.
- One-hundred percent biodegradable silt fence is available that is strong, long lasting, and can be left in place after the project is completed, if permitted by local regulations.
- Refer to Figure 4.2.12 for standard silt fence details. Include the following standard Notes for silt fence on construction plans and specifications:
  1. The contractor shall install and maintain temporary silt fences at the locations shown in the Plans.
  2. Construct silt fences in areas of clearing, grading, or drainage prior to starting those activities.
  3. The silt fence shall have a 2-feet min. and a 2½-feet max. height above the original ground surface.
  4. The filter fabric shall be sewn together at the point of manufacture to form filter fabric lengths as required. Locate all sewn seams at support posts. Alternatively, two sections of silt fence can be overlapped, provided the Contractor can demonstrate, to the satisfaction of the Engineer, that the overlap is long enough and that the adjacent fence sections are close enough together to prevent silt laden water from escaping through the fence at the overlap.
  5. Attach the filter fabric on the up-slope side of the posts and secure with staples, wire, or in accordance with the manufacturer's recommendations. Attach the filter fabric to the posts in a manner that reduces the potential for tearing.
  6. Support the filter fabric with wire or plastic mesh, dependent on the properties of the geotextile selected for use. If wire or plastic mesh is used, fasten the mesh securely to the up-slope side of the posts with the filter fabric up-slope of the mesh.
  7. Mesh support, if used, shall consist of steel wire with a maximum mesh spacing of 2-inches, or a prefabricated polymeric mesh. The strength of the wire or polymeric mesh shall be equivalent to or greater than 180 lbs. grab tensile strength. The polymeric mesh must be as resistant to the same level of ultraviolet radiation as the filter fabric it supports.
  8. Bury the bottom of the filter fabric 4-inches min. below the ground surface. Backfill and tamp soil in place over the buried portion of the filter fabric, so that no flow can pass beneath the fence and scouring cannot occur. When wire or polymeric back-up support mesh is used, the wire or polymeric mesh shall extend into the ground 3-inches min.
  9. Drive or place the fence posts into the ground 18-inches min. A 12–inch min. depth is allowed if topsoil or other soft subgrade soil is not present and 18-inches cannot be reached. Increase fence post min. depths by 6 inches if the fence is located on slopes of 3H:1V or steeper and the slope is perpendicular to the fence. If required post depths cannot be obtained, the posts shall be adequately secured by bracing or guying to prevent overturning of the fence due to sediment loading.
  10. Use steel or equivalent posts. The spacing of the support posts shall be a maximum of 6-feet. Posts shall consist of either:
      - No. 6 steel rebar or larger.
      - ASTM A 120 steel pipe with a minimum diameter of 1-inch.
      - U, T, L, or C shape steel posts with a minimum weight of 1.35 lbs./ft.
      - Other steel posts having equivalent strength and bending resistance to the post sizes listed above.
  11. Locate silt fences on contour as much as possible, except at the ends of the fence, where the fence shall be turned uphill such that the silt fence captures the runoff water and prevents water from flowing around the end of the fence.
  12. If the fence must cross contours, with the exception of the ends of the fence, place gravel check dams perpendicular to the back of the fence to minimize concentrated flow and erosion. The slope of the fence line where contours must be crossed shall not be steeper than 3H:1V.
      - Gravel check dams shall be approximately 1-foot deep at the back of the fence. Gravel check dams shall be continued perpendicular to the fence at the same elevation until the top of the check dam intercepts the ground surface behind the fence.
      - Gravel check dams shall consist of crushed surfacing base course, gravel backfill for walls, or shoulder ballast. Gravel check dams shall be located every 10 feet along the fence where the fence must cross contours.
- Refer to Figure 4.2.13 for slicing method details. Silt fence installation using the slicing method specifications:
  1. The base of both end posts must be at least 2- to 4-inches above the top of the filter fabric on the middle posts for ditch checks to drain properly. Use a hand level or string level, if necessary, to mark base points before installation.
  2. Install posts 3- to 4-feet apart in critical retention areas and 6- to 7- feet apart in standard applications.
  3. Install posts 24-inches deep on the downstream side of the silt fence, and as close as possible to the filter fabric, enabling posts to support the filter fabric from upstream water pressure.
  4. Install posts with the nipples facing away from the filter fabric.
  5. Attach the filter fabric to each post with three ties, all spaced within the top 8-inches of the filter fabric. Attach each tie diagonally 45 degrees through the filter fabric, with each puncture at least 1-inch vertically apart. Each tie should be positioned to hang on a post nipple when tightening to prevent sagging.
  6. Wrap approximately 6-inches of fabric around the end posts and secure with 3 ties.
  7. No more than 24-inches of a 36-inch filter fabric is allowed above ground level.

     Compact the soil immediately next to the filter fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips. Check and correct the silt fence installation for any deviation before compaction. Use a flat-bladed shovel to tuck fabric deeper into the ground if necessary.

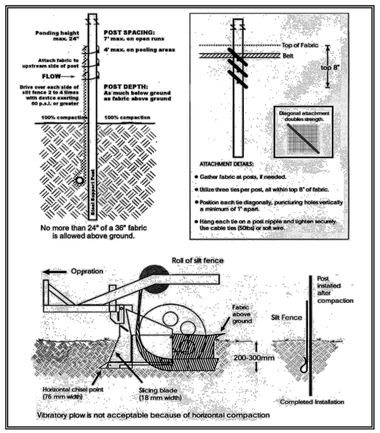
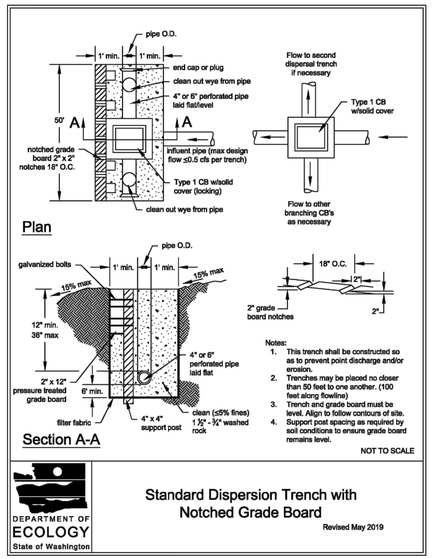


Figure 4.2.13 – Silt Fence Installation by Slicing Method

Maintenance Standards

- Repair any damage immediately.
- Intercept and convey all evident concentrated flows uphill of the silt fence to a sediment pond.
- Check the uphill side of the fence for signs of the fence clogging and acting as a barrier to flow and then causing channelization of flows parallel to the fence. If this occurs, replace the fence or remove the trapped sediment.
- Remove sediment deposits when the deposit reaches approximately one-third the height of the silt fence, or install a second silt fence.
- Replace filter fabric that has deteriorated due to ultraviolet breakdown.

Figure V-4.5: Standard Dispersion Trench with Notched Grade Board



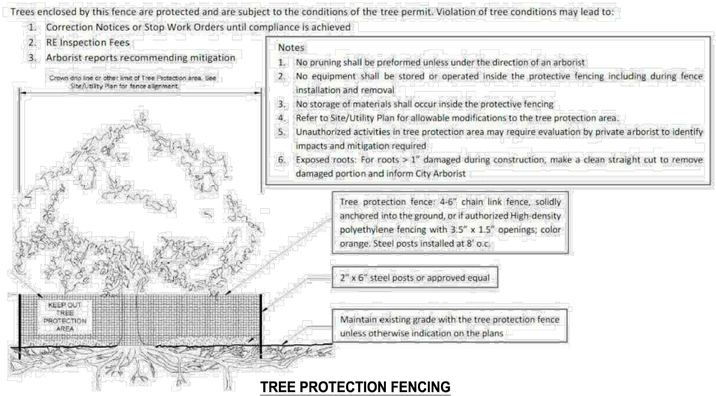
TREE PROTECTION AREA (TPZ)

KEEP OUT!

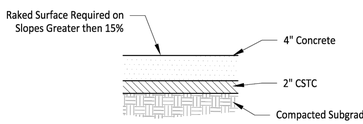
DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

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

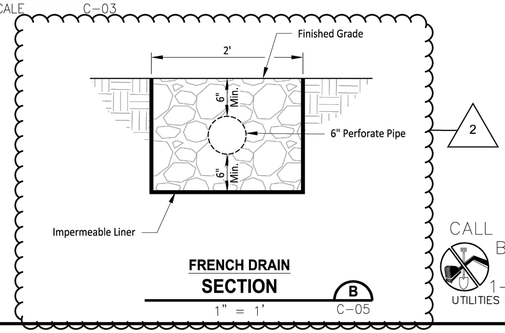
1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees
3. Arborist reports recommending mitigation



TREE PROTECTION FENCING
DETAIL 1
NOT TO SCALE C–03



CONCRETE PAVEMENT
SECTION A
1" = 1' C–04



FRENCH DRAIN
SECTION B
1" = 1' C–05

2

CALL TWO BUSINESS DAYS BEFORE YOU DIG
1–800–424–5555
UTILITIES UNDERGROUND LOCATION CENTER

Owner/Developer:

Jereme Raquepau
9116 SE 58th Street
Mercer Island, WA 98040

Architect:

RF Architecture
Richard Flake
7421 214th Avenue E
Bonneylake, WA 98391
(253) 359-4039

Engineer:

JMJ Team
905 Main Street, Suite #200
Sumner, WA 98390
(206) 596-2020

Project:

Raquepau Residence

9116 Se 58th Street
Mercer Island, WA 98040

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

Civil Permit

JUSTIN M. JONES — STATE OF WASHINGTON — 41829 — REGISTERED PROFESSIONAL ENGINEER

03-04-2024

REV	DATE	DESCRIPTION
1	11-1-23	Revised per City Comments
2	3-4-24	Revised per City Comments

SHEET TITLE:

Details

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ

SHEET NUMBER:

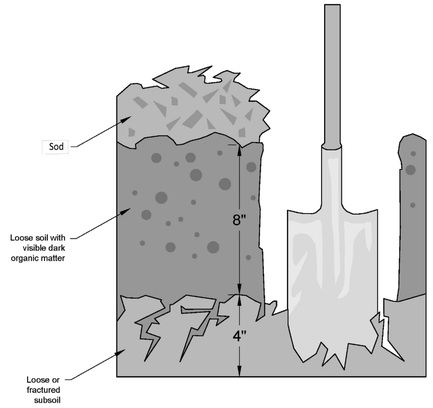
C-06

DWG:

6 OF 7

File: 1565008C-01.dwg Path: J:\1565 – RF Architecture\008 – Raquepau Residence\CAD\ Plotted by: MrJasonOchoa Date: 04–Mar–24, 2:29:01pm

Figure V-11.1: Planting Bed Cross-Section



Reprinted from *Guidelines and Resources For Implementing Soil Quality and Depth BMP T5.13 in WDOE Stormwater Management Manual for Western Washington*, 2010, Washington Organic Recycling Council

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Planting Bed Cross-Section

Revised June 2016

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03-04-2024

REV	DATE	DESCRIPTION
1	11-1-23	Revised per City Comments
2	3-4-24	Revised per City Comments

SHEET TITLE:
Details

PROJ. NO: 1565-008
DATE: March 4th, 2024
DRAWN BY: MO
DESIGN BY: JJ

SHEET NUMBER:
C-07

DWG:
7 OF 7

CALL TWO BUSINESS DAYS BEFORE YOU DIG
1-800-424-5555
UTILITIES UNDERGROUND LOCATION CENTER

GENERAL STRUCTURAL NOTES:

PROJECT SPECIFIC DESIGN CRITERIA

Wind Design Data

Wind Design Speed, Vu = 110 MPH, Vasd = 85 MPH
Wind Exposure = B
Wind Importance Factor, Iw = 1.0
Internal Pressure Coefficient = +/- 0.18
Ktz = 1.00
Kd = 0.85

Seismic Design Data

Importance factor = 1.0
Ss = 1.47g, S1 = 0.57g
Site Class = D
SDS = 1.18g, SD1 = 0.65g
SDC = D
Seismic System = 15. Light-frame (wood) walls sheathed with wood structural panels rated for shear resistance
Design Base Shear = 15.00 kips
Cs = 0.181
R = 6.5
Analysis procedure: ASCE 11.4, 11.5 & 12.8

Snow Loads

Flat-roof snow load, *pf* = 25.0 psf
Snow exposure factor, *Ce* = 1.00
Snow load important factor, *Is* = 1.00
Thermal factor, *Ct* = 1.00

Gravity Loads*

Roof Dead Load = 15 psf + 5 psf (SOLAR PANELS)
Roof Live Load = 25 psf
Floor Live Load (Office) = 50 psf
Floor Live Load (Residential) = 40 psf, Balcony & Roof Decks = 60 psf
Floor live Load (Corridor) = 100 psf
Partition Loads = 10 psf (residential)
Partition Loads = 20 psf (office)
Floor Dead Loads = 12 psf (residential)
At rest earth pressure = 60 pcf
*As Applicable

GENERAL

1. ALL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
2. THE ARCHITECT/ENGINEER (ARCH/ENGR) IS NOT RESPONSIBLE FOR THE LOCATION OF PROPERTY LINES AND/OR EASEMENT, SOIL CONDITIONS, MECHANICAL AND ELECTRICAL WORK, AND THE PRESENCE OF UTILITIES NOT REPORTED TO THE ARCH/ENGR IN WRITING BY THE OWNER.
3. THE ENGINEER IS NOT RESPONSIBLE FOR FIELD REVIEW OF CONSTRUCTION UNLESS SPECIFICALLY RETAINED FOR THAT PURPOSE.
4. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
5. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. CONTRACTOR SHALL COMPARE THE DRAWINGS AND NOTIFY THE ARCH/ENGR OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH THE WORK.
6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
8. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
9. 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 AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
10. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE, AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

GEOTECHNICAL

11. GEOTECHNICAL FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE SOILS REPORT OR AS DIRECTED BY THE SOILS ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD WORKING WITH THE TESTING LAB AND SOILS ENGINEER. BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE SOILS REPORT.

IN THE ABSENCE OF A SOILS REPORT THE FOLLOWING VALUES ARE USED:

ALLOWABLE SOIL PRESSURE	2,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/35 PCF
LATERAL EARTH PRESSURE (SEISMIC)	8H (ULTIMATE LOAD)
PASSIVE EARTH PRESSURE (INCLUDES FACTOR OF SAFETY = 1.5)	350 PCF
COEFFICIENT OF FRICTION (INCLUDES FACTOR OF SAFETY = 1.5)	0.35

SOILS REPORT REFERENCE: (N/A)

CONCRETE

12. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH ACI 318-14 AND ACI 301-10. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH (f'c) OF 3000 PSI, SHALL CONTAIN NO LESS THAN 5-1/2 SACKS OF CEMENT, HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45, AND A SLUMP OF 5 INCHES OR LESS. CONCRETE HAS BEEN DESIGNED BASED ON A CONCRETE STRENGTH (f'c) OF 2500 PSI PER SEATTLE BUILDING CODE SECTION 1705.3 EXCEPTION 2.3 TO AVOID SPECIAL INSPECTIONS AND MATERIAL TESTING.

13. PERFORMANCE MIX DESIGNS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX DESIGN SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE (3/4" MAXIMUM), WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, TARGET CONCRETE STRENGTH. SUBSTANTIATING STRENGTH DATA CONFORMING TO CURRENT ACI AND ASTM STANDARDS SHALL BE SUBMITTED WITH THE PERFORMANCE MIX DESIGN. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE PAID BY THE GENERAL CONTRACTOR. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY WITH CONTRACT DOCUMENTS. CONTRACTOR OR SUPPLIER MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

14. ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494M, AND C618. UNLESS OTHERWISE NOTED THE TOTAL AIR CONTENT SHALL BE 5%. AIR CONTENT SHALL BE SAMPLED IN ACCORDANCE WITH ASTM C172 ABD ARI CONTENT MEASURED IN ACCORDANCE WITH ASTM C231 OR C173.

15. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENTS S1), GRADE 60, Fy = 60,000 PSI.
WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185

16. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI SP-66-04 AND ACI 318-14 CHAPTER 25. UNLESS OTHERWISE NOTED LAP REINFORCEMENT A MINIMUM OF 48 X BAR DIAMETER AND EMBED STANDARD 90 DEGREE HOOKS A MINIMUM OF 6-INCHES. LAP SPLICES SHALL BE STAGGERED SUCH THAT A MAXIMUM OF 50% OF THE TOTAL REINFORCEMENT IS SPLACED AT ANY ONE LOCATION. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS.

LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. FIELD BENDING OF GRADE 60 REINFORCEMENT SHALL NOT BE ALLOWED.

17. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
ALL OTHER SURFACES	1½"

18. SLABS-ON-GRADE: UNLESS NOTED OTHERWISE SHALL BE 4" CONCRETE, REINFORCED WITH 6X6 W1.4XW1.4 WELDED WIRE FABRIC CENTERED IN SLAB. UNLESS OTHERWISE DIRECTED BY SOILS REPORT PROVIDE MINIMUM 10 MIL VAPOR BARRIER OVER 4" OF COMPACTED SAND OR GRAVEL.

19. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES.

WOOD

20. FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17, LATEST EDITION. FURNISH TO THE FOLLOWING MINIMUM STANDARDS.

JOISTS: (2X, 3X, AND 4X MEMBERS)	HEM-FIR NO. 2 MINIMUM BASIC DESIGN STRESS, F_b = 850 PSI
BEAM AND STRINGERS: (6 X AND LARGER MEMBERS)	DOUGLAS FIR LARCH NO. 1 MINIMUM BASIC DESIGN STRESS, F_b = 1,350 PSI
STUDS PLATES & MISCELLANEOUS LIGHT FRAMING	DOUGLAS FIR LARCH OR HEM-FIR NO. 2, MINIMUM BASIC DESIGN STRESS F_b = 850PSI, F_C = 1,300 PSI

21. GLUED LAMINATED MEMBERS SHALL BE FABRICATED AND IDENTIFIED AS REQUIRED BY ASTM D3737 AND A.I.T.C. A190.1. EACH MEMBER SHALL BEAR AN A.I.T.C. IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN A.I.T.C. CERTIFICATE OF CONFORMANCE. IN ADDITION ALL GLULAMS SHALL CONFORM TO APA PERFORMANCE STANDARD PRG-305. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, F_b = 2,400 PSI, F_v = 240 PSI, E = 1,800,000 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, F_b = 2,400 PSI, F_v= 240 PSI, E = 1,800,000 PSI. UNLESS OTHERWISE NOTED CAMBER ALL GLULAM BEAMS TO 2,000 FOOT RADIUS. WHERE REQUIRED BEAMS AND COLUMNS SHALL BE PRESSURE TREATED AFTER MANUFACTURE IN ACCORDANCE WITH AMERICAN WOOD-PRESERVATIVES ASSOCIATION STANDARD U1.

22. PARALLEL STRAND LUMBER (PSL): EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED I.C.C.-E.S. EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F_b = 2900 PSI, E = 2200,000 PSI, Fv = 290 PSI.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY THE WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

WOOD CONTINUED

23. LAMINATED STRAND LUMBER (LSL): EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED I.C.C.-E.S. EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F_b = 2325 PSI, Fv = 310 PSI, E = 1,550,000 PSI,

LSL RIM JOISTS SHALL CONFORM TO ANSI/APA PRR 410 AND SHALL BE MARKED IN ACCORDANCE WITH THE STANDARD.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER, ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

24. PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOIST MANUFACTURED BY THE WEYERHAEUSER. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.

30. PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1-09 OR PS 2-10 AND AMERICAN PLYWOOD ASSOCIATION PERFORMANCE STANDARD PRP-108. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD. SEE PLANS FOR THICKNESS, PANEL IDENTIFICATION INDEX AND NAILING REQUIREMENTS. EACH PANEL SHALL BE IDENTIFIED FOR GRADE AND GLUE TYPE BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY.

31. ALL WOOD PLATES IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE, PROVIDE 2 LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER BETWEEN UNTREATED LEDGERS, BLOCKING, ETC. AND CONCRETE OR MASONRY.

PRESSURE TREATED LUMBER SHALL COMPLY WITH THE AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, COMMODITY SPECIFICATION A.
ALL TREATED LUMBER SHALL BEAR THE QUALITY MARK OF AN ACCREDITED INSPECTION AGENCY. THE QUALITY MARK SHALL INCLUDE:

A. IDENTIFICATION OF TREATING MANUFACTURER
B. TYPE OF PRESERVATIVE USED
C. MINIMUM PRESERVATIVE RETENTION (PCF)
D. END USE FOR WHICH THE PRODUCT IS TREATED
E. IDENTITY OF THE ACCREDITED INSPECTION AGENCY
F. STANDARD TO WHICH THE PRODUCT IS TREATED

32. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NUMBER C-C-2019. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER. SHIMS, WHERE REQUIRED, SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. ALL LAG SCREWS SHALL BE INSTALLED IN PRE-DRILLED HOLES.

UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON AND MAXIMUM NUMBER OF NAILS AS SPECIFIED BY THE MANUFACTURER SHALL BE PROVIDED.

UNLESS NOTED OTHERWISE ALL SAWN LUMBER JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS AND ALL PREFABRICATED PLYWOOD WEB JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "IUS" SERIES JOIST HANGERS UNLESS NOTED OTHERWISE.

ALL CONNECTIONS IN CONTACT WITH PRESERVATIVE-TREATED OR FIRE-RETARDANT-TREATED WOOD, SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL. HOT DIPPED GALVANIZED FASTENERS SHOULD CONFORM TO ASTM STANDARD 153, AND HOT DIPPED GALVANIZED CONNECTORS SHOULD CONFORM TO ASTM STANDARD A653 (CLASS G-185). STAINLESS STEEL FASTENERS AND CONNECTORS SHOULD BE TYPE 304 OR 316. NOTE: ELECTROPLATED GALVANIZED FASTENERS AND CONNECTORS ARE NOT TO BE USED WITH PRESSURE TREATED WOOD. SIMPSON PRODUCT FINISHES CORRESPONDING TO THE ABOVE REQUIREMENTS ARE ZMAX (HOT DIPPED GALVANIZED) AND SST300 (STAINLESS STEEL). STAINLESS STEEL HARDWARE AND FASTENERS SHALL NOT BE COMBINED WITH UNTREATED OR GALVANIZED MATERIAL.

33. WOOD FASTENERS:

A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

SIZE	LENGTH	DIAMETER
6d	2"	0.113"
8d	2-1/2"	0.131"
10d	3"	0.148"
12d	3-1/4"	0.148"
16d	3-1/2"	0.162"

DESIGN IS BASED ON COMMON STEEL WIRE NAILS MEETING THE REQUIREMENTS OF ASTM F1667. USE OF ALTERNATE FASTENERS MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.

B. NAILS – PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.

WOOD CONTINUED

34. WOOD FRAMING NOTES – THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE SEATTLE BUILDING CODE. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLE 2304.10.1 OF THE SEATTLE BUILDING CODE. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE AS SPECIFIED ABOVE. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. INSTALLATION OF BOLTS AND LAG SCREWS SHALL CONFORM TO SECTIONS 12.1.3 AND 12.1.4 OF THE 2015 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. NATURALLY DURABLE OR PRESSURE TREATED WOOD SHALL BE PROVIDED WHERE REQUIRED BY SECTION 2304.12 OF THE SEATTLE BUILDING CODE.

B. WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 2X6 AT 16" O.C. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS. TWO 2 x 8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED AND SHALL BEAR FULLY ON A MINIMUM OF TWO STUDS. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE SOLID BLOCKING BETWEEN STUDS AT MID-HEIGHT OF ALL STUD WALLS OVER 10' IN HEIGHT.

STUDS MAY BE NOTCHED, CUT, OR PENETRATED WITH ROUND BORED HOLES AS FOLLOWS:

STUD SIZE	MAXIMUM NOTCH / CUT	MAXIMUM BORED HOLE
2X4	7/8"	1-3/8"
2X6	1-3/8"	2-1/8"

BORED HOLES SHALL NOT BE LOCATED WITH 5/8" FROM THE EDGE OF THE STUD OR AT THE SAME LOCATION AS A NOTCH OR CUT.

WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A DOUBLE TOP PLATE. END NAIL TOP PLATE TO EACH STUD WITH TWO 16d NAILS, AND TOENAIL OR END NAIL EACH STUD TO BOTTOM PLATE WITH TWO 16d NAILS. FACE NAIL DOUBLE TOP PLATE WITH 16d AT 12" O.C. AND LAP MINIMUM 4'-0" AT JOINTS AND PROVIDE EIGHT 16d NAILS AT 4" O.C. EACH SIDE OF JOINT.

ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS AT 12" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS (WITH 7" MINIMUM EMBEDMENT) @ 4'-0" O.C. UNLESS INDICATED OTHERWISE. PROVIDE 3"x3" x1/4" HOT-DIPPED GALVANIZED PLATE WASHERS AT ALL ANCHOR BOLTS. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH 16d NAILS @ 12" O.C. STAGGERED. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES NAILED TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING WITH NAILS AT 7" O.C. USE 5d COOLER NAILS FOR 1/2" GWB AND 6d COOLER NAILS FOR 5/8" GWB. PROVIDE 15/32" APA RATED SHEATHING (SPAN RATING 24/0) ON EXTERIOR SURFACES NAILED AT ALL PANEL EDGES (BLOCK UNSUPPORTED EDGES), TOP AND BOTTOM PLATES WITH 8d NAILS @ 6" O.C. AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH NAILS @ 12" O.C. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS.

C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS.

NOTCHES AT THE END OF JOISTS AND RAFTERS SHALL NOT EXCEED 1/4 THE DEPTH OF THE MEMBER. NOTCHES IN THE TOP OR BOTTOM SHALL NOT EXCEED 1/6 THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED WITHIN THE MIDDLE 1/3 OF THE SPAN. THE DIAMETER OF ROUND HOLES BORED IN JOISTS AND RAFTERS SHALL NOT EXCEED 1/3 OF THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED WITHIN 2" FROM THE TOP OR BOTTOM EDGE.

TOENAIL JOISTS TO SUPPORTS WITH TWO 16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI-JOIST BEAMS TOGETHER WITH TWO ROWS OF 16d @ 12" O.C. ATTACH RAFTERS AND ROOF TRUSSES AT BEARING LINES WITH H2.5 @ 24" O.C. UNLESS OTHER METAL CONNECTIONS ARE PROVIDED.

UNLESS OTHERWISE NOTED ON THE PLANS, APA RATED ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS AND NAILED WITH NAILS @ 6" O.C. TO FRAMED PANEL EDGES AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" O.C. TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF ALL ROOF AND FLOOR SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16d @ 12" O.C. UNLESS OTHERWISE NOTED. AT BLOCKED FLOOR AND ROOF DIAPHRAGMS PROVIDE FLAT 2X BLOCKING AT ALL UNFRAMED PLYWOOD PANEL EDGES AND NAIL WITH EDGE NAILING SPECIFIED.

POST INSALLED ANCHORS

35. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER–OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCEMENT. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND ICC-ES REPORT. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD. SUBSTITUTIONS SHALL HAVE CURRENT ICC-ES APPROVAL.

A. CONCRETE ANCHORS
1. MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:
a. SIMPSON STRONG-TIE "STRONG-BOLT" (ICC-ES ESR-1771)
b. SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-2713)

2. ADHESIVE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
a. SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508)
b. SIMPSON STRONG-TIE "AT-XP" (IAPMO UES ER-263)

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MERCER ISLAND, WA 98040

Number	Revision	Date

DWG TITLE
GENERAL NOTES

56997 REGISTERED PROFESSIONAL ENGINEER

7/31/2023

PROJECT #
Z4-3205

SHEET NO
S1.0

FOUNDATION PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

1. SLAB ON GRADE ELEVATION VARIES PER ARCHITECTURAL PLAN. SLAB SHALL BE 4" THICK WITH 6x6 W1.4xW1.4 WWM CENTERED, U.O.N. PREPARE SOILS AND PROVIDE MINIMUM 6-MIL VISQUEEN VAPOR BARRIER UNDER ALL SLABS. SLABS SHALL BE SUPORTED ON MINIMUM 4 INCHES OF FREE DRAINING MATERIAL.

2. REFER ARCHITECTURAL SHEETS FOR DIMENSIONS AND ADDITIONAL TOP OF SLAB/CURB ELEVATIONS.

FRAMING PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

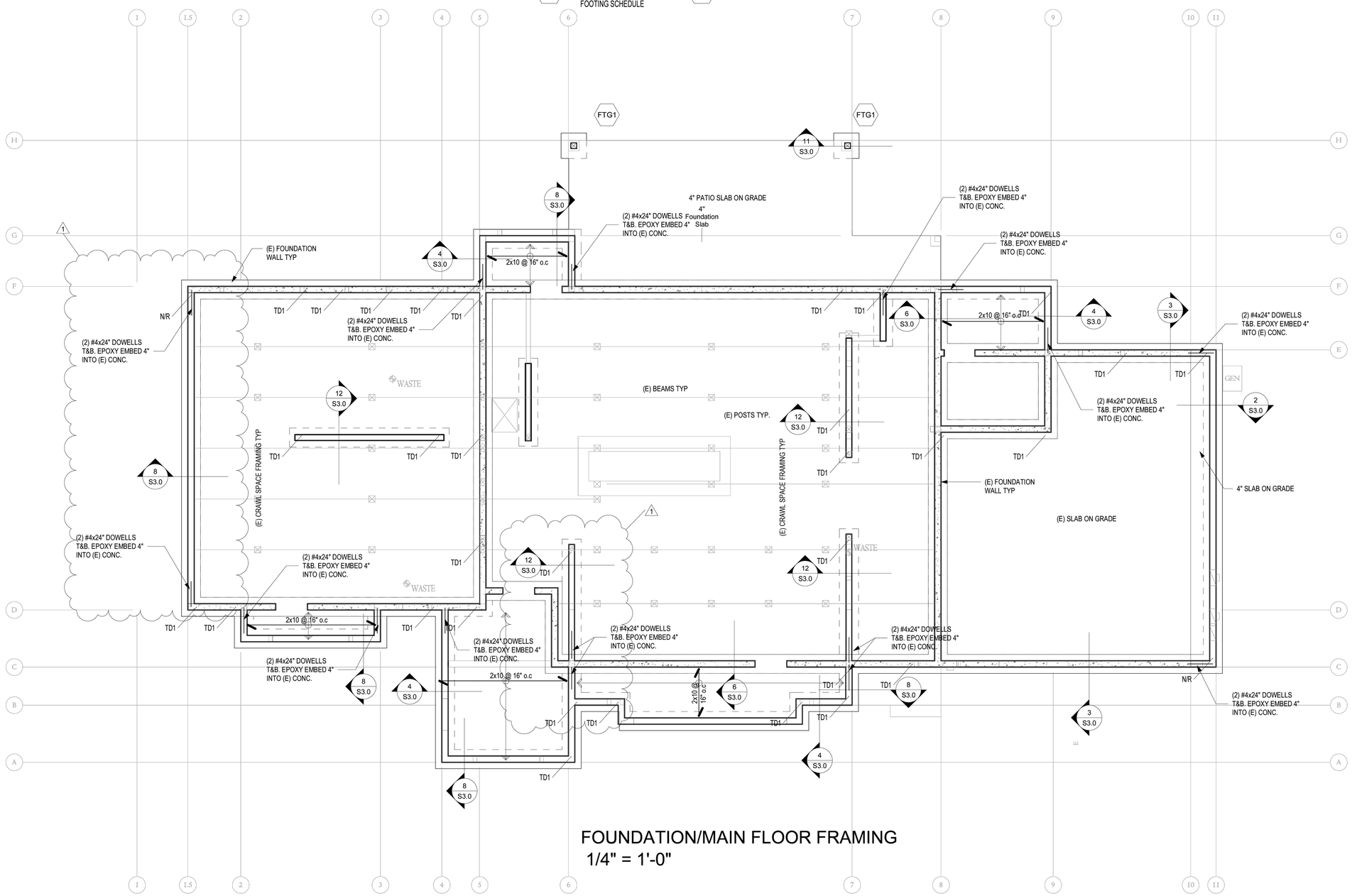
1. FLOOR SHEATHING SHALL BE 23/32" TONGUE AND GROOVE APA RATED SHEATHING (SPAN RATING 40/20). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/10d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING.
2. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING (SPAN RATING 24/0). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/ 8d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING. ENTIRE ROOF HAS BEEN DESIGNED FOR ADDITIONAL 5 PSF SOLAR PANELS.
3. SW-_ INDICATES STRUCTURAL WALL TYPE PER SCHEDULE 12/S6.0b. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL WALL INFORMATION.
4. ALL HEADERS AND BEAMS ARE MARKED ON PLAN. REFER NOTE 5 FOR SUPPORT REQUIRMENTS.
5. COLUMNS SHALL CONSIST OF STUDS TO MATCH WIDTH OF BEAM TYPICAL OR MATCH POST SIZE SPECIFIED ON PLAN IF APPLICABLE. NOTE THE MINIMUM SUPPORT STUDS SHALL BE (2) 2x. BEAM OR HEADER SHALL BEAR FULLY ON COLUMN.

LEGEND

- HANGER
- COLUMNS BELOW
- COLUMNS ABOVE
- ABRUPT CHANGE IN SLAB/ FRAMING ELEVATION
- FB — INDICATES FLUSH BEAM
- SPAN AND EXTENTS
- FTGX — SPOT FOOTING - SIZE AND REQUIRED REINFORCING PER FOOTING SCHEDULE
- SW-x — INDICATES SHEARWALL PER SCHEDULE 12/S6.0b
- HDU x — INDICATES SIMPSON HOLDOWN. REFER DETAIL 8/S6.0b FOR REQUIRED NUMBER OF STUDS, THREADED ROD CALLOUT & EMBEDMENT INTO CONCRETE.
- MSTCXX — INDICATES SIMPSON STRAP HOLDOWN. REFER DETAIL 8/S6.0b
- Hx — HANGER ID PER SCHEDULE

FOOTING SCHEDULE

FOOTING ID	SIZE (WIDTH X LENGTH X DEPTH)	REINFORCING	NOTES (IF APPLICABLE)
FTG1	2'-0" x 2'-0" x 10" FTG	(3) #4 E.W	



FOUNDATION/MAIN FLOOR FRAMING
1/4" = 1'-0"

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DWG TITLE: FOUNDATION & MAIN FLOOR FRAMING PLAN

Number	Revision	Date
1	PERMIT CORRECTION SET	2/26/2024

KYLE ROS A. MCLEOD — 56997 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON

7/31/2023

PROJECT # Z4-3205

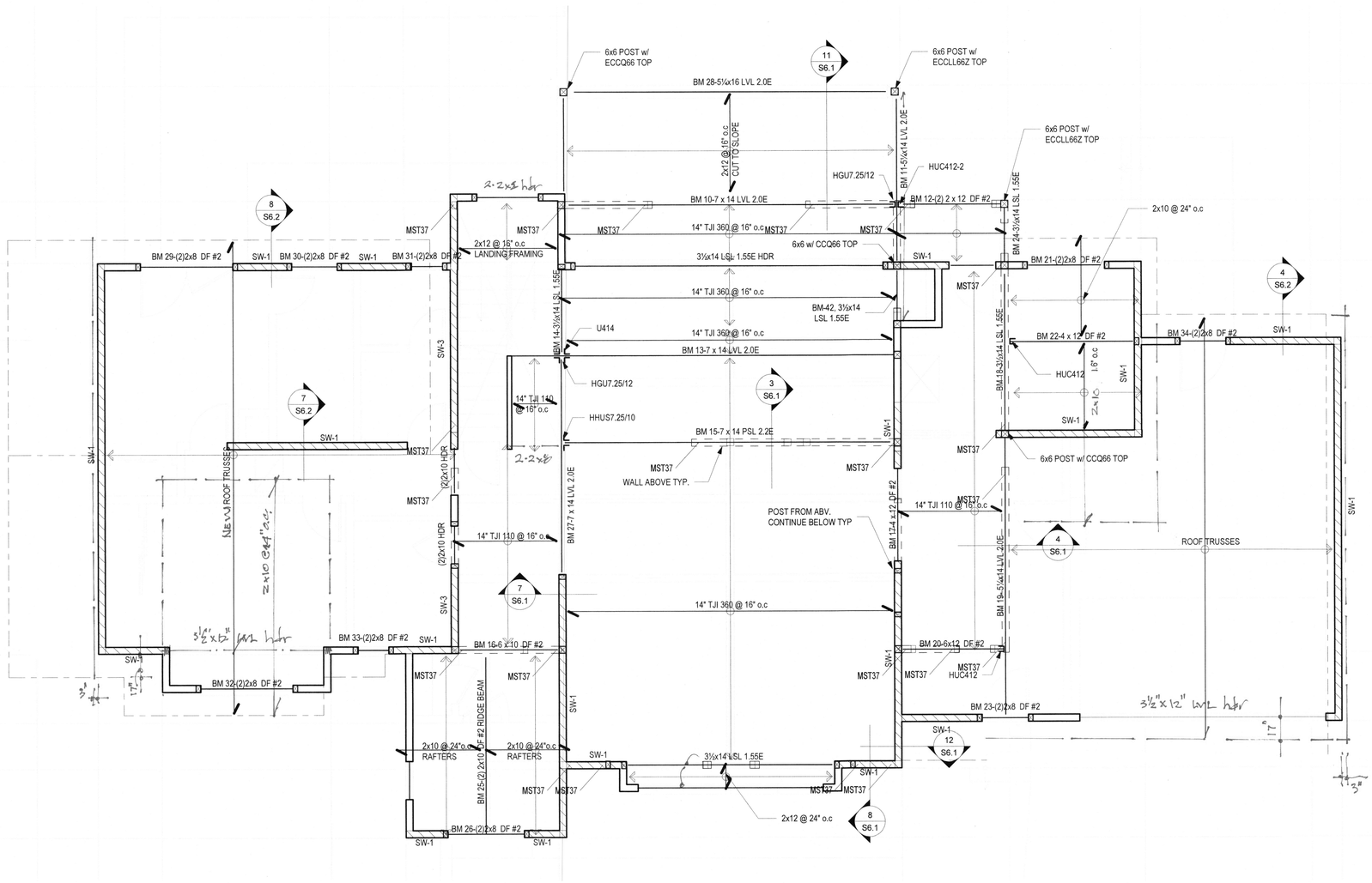
SHEET NO S2.0

FRAMING PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

1. FLOOR SHEATHING SHALL BE 23/32" TONGUE AND GROOVE APA RATED SHEATHING (SPAN RATING 40/20). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/10d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING.
2. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING (SPAN RATING 24/0). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/ 8d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING. ENTIRE ROOF HAS BEEN DESIGNED FOR ADDITIONAL 5 PSF SOLAR PANELS.
3. SW-_ INDICATES STRUCTURAL WALL TYPE PER SCHEDULE 12/S6.0b. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL WALL INFORMATION.
4. ALL HEADERS AND BEAMS ARE MARKED ON PLAN. REFER NOTE 5 FOR SUPPORT REQUIRMENTS.
5. COLUMNS SHALL CONSIST OF STUDS TO MATCH WIDTH OF BEAM TYPICAL OR MATCH POST SIZE SPECIFIED ON PLAN IF APPLICABLE. NOTE THE MINIMUM SUPPORT STUDS SHALL BE (2) 2x. BEAM OR HEADER SHALL BEAR FULLY ON COLUMN.

LEGEND

- HANGER
- COLUMNS BELOW
- COLUMNS ABOVE
- ABRUPT CHANGE IN SLAB/ FRAMING ELEVATION
- FB — INDICATES FLUSH BEAM
- SPAN AND EXTENTS
- FTGX — SPOT FOOTING - SIZE AND REQUIRED REINFORCING PER FOOTING SCHEDULE
- SW-x — INDICATES SHEARWALL PER SCHEDULE 12/S6.0b
- HDU x — INDICATES SIMPSON HOLDOWN. REFER DETAIL 8/S6.0b FOR REQUIRED NUMBER OF STUDS, THREADED ROD CALLOUT & EMBEDMENT INTO CONCRETE.
- MSTCXX — INDICATES SIMPSON STRAP HOLDOWN. REFER DETAIL 8/S6.0b
- Hx — HANGER ID PER SCHEDULE



UPPER FLOOR FRAMING PLAN
1/4" = 1'-0"

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DWG TITLE: UPPER FLOOR FRAMING

Number	Revision	Date

KYLE A. MILLER — 56097 — REGISTERED PROFESSIONAL ENGINEER

7/31/2023

PROJECT # Z4-3205

SHEET NO S2.1

FRAMING PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

1. FLOOR SHEATHING SHALL BE 23/32" TONGUE AND GROOVE APA RATED SHEATHING (SPAN RATING 40/20). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/10d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING.
2. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING (SPAN RATING 24/0). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/ 8d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING. ENTIRE ROOF HAS BEEN DESIGNED FOR ADDITIONAL 5 PSF SOLAR PANELS.
3. SW-_ INDICATES STRUCTURAL WALL TYPE PER SCHEDULE 12/S6.0b. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL WALL INFORMATION.
4. ALL HEADERS AND BEAMS ARE MARKED ON PLAN. REFER NOTE 5 FOR SUPPORT REQUIRMENTS.
5. COLUMNS SHALL CONSIST OF STUDS TO MATCH WIDTH OF BEAM TYPICAL OR MATCH POST SIZE SPECIFIED ON PLAN IF APPLICABLE. NOTE THE MINIMUM SUPPORT STUDS SHALL BE (2) 2x. BEAM OR HEADER SHALL BEAR FULLY ON COLUMN.

LEGEND

HANGER	
COLUMNS BELOW	
COLUMNS ABOVE	
ABRUPT CHANGE IN SLAB/ FRAMING ELEVATION	
FB	INDICATES FLUSH BEAM
SPAN AND EXTENTS	
FTGX	SPOT FOOTING - SIZE AND REQUIRED REINFORCING PER FOOTING SCHEDULE
SW-x	INDICATES SHEARWALL PER SCHEDULE 12/S6.0b
HDU x	INDICATES SIMPSON HOLDOWN. REFER DETAIL 8/S6.0b FOR REQUIRED NUMBER OF STUDS, THREADED ROD CALLOUT & EMBEDMENT INTO CONCRETE.
MSTCxx	INDICATES SIMPSON STRAP HOLDOWN. REFER DETAIL 8/S6.0b
Hx	HANGER ID PER SCHEDULE

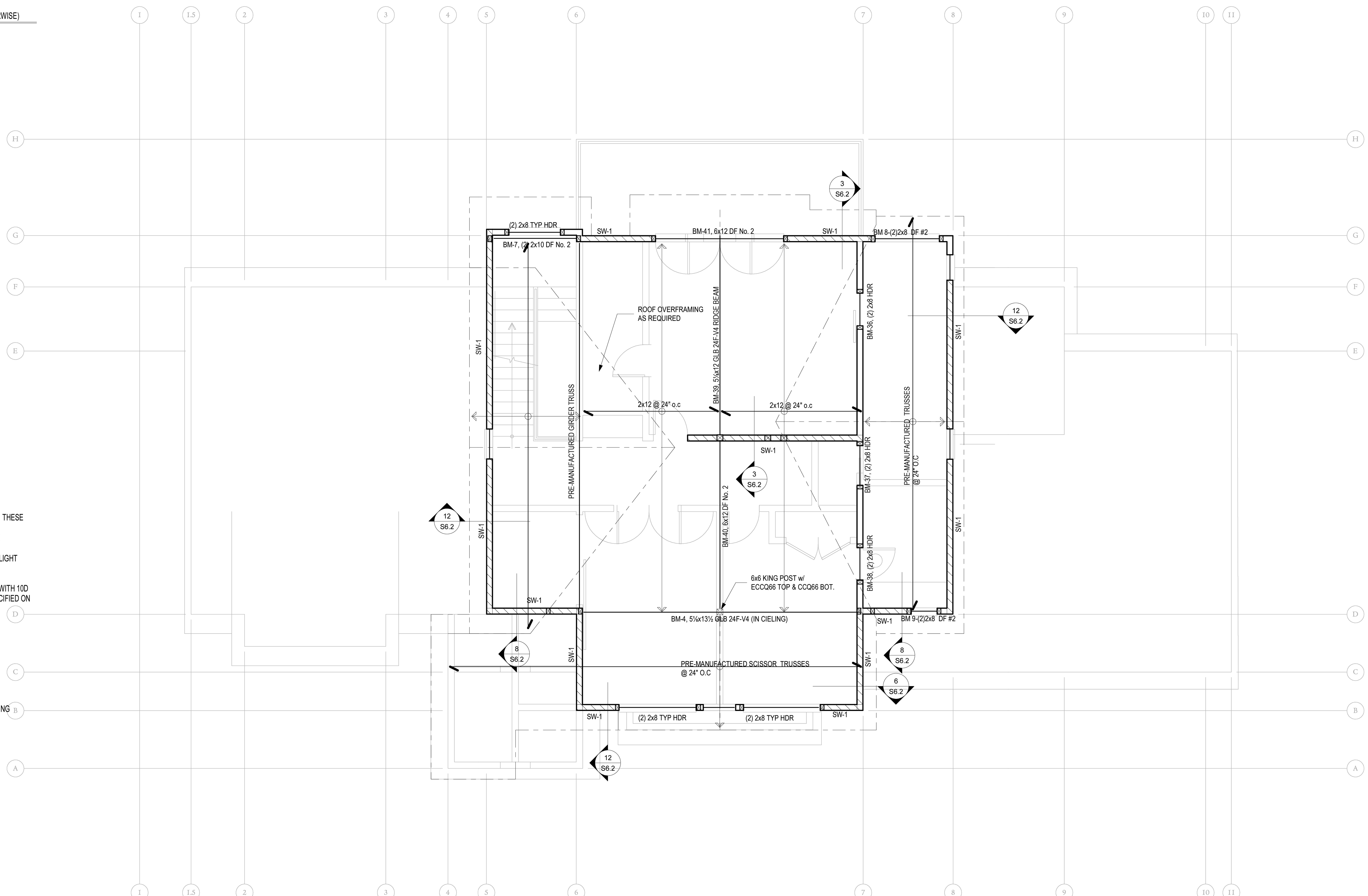
FRAMING PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

TRUSS DESIGN LOADS:
SNOW: 25 PSF
ROOF DEAD = 15 PSF
UPLIFT = 10 PSF
MINIMUM LWR CHORD DESIGN LOAD = 20 PSF

PRE-MANUFACTURED TRUSSES PER SECTION IBC 2303.4.1
TRUSS DESIGN DRAWINGS. TRUSS CONSTRUCTION DOCUMENTS SHALL BE PREPARED BY A WASHINGTON STATE LICENSED ENGINEER AND SHALL BE PROVIDED TO THE BUILDING OFFICIAL AND APPROVED PRIOR TO INSTALLATION. THESE CONSTRUCTION DOCUMENTS SHALL INCLUDE, AT A MINIMUM, THE INFORMATION SPECIFIED BELOW. TRUSS SHOP DRAWINGS SHALL BE PROVIDED WITH THE SHIPMENT OF TRUSSES DELIVERED TO THE JOB SITE.

1. SLOPE OR DEPTH, SPAN AND SPACING;
2. LOCATION OF JOINTS;
3. REQUIRED BEARING WIDTHS;
4. DESIGN LOADS AS APPLICABLE;
5. TOP CHORD LIVE LOAD (INCLUDING SNOW LOADS);
6. TOP CHORD DEAD LOAD;
7. BOTTOM CHORD LIVE LOAD;
8. BOTTOM CHORD DEAD LOAD;
9. CONCENTRATED LOADS AND THEIR POINTS OF APPLICATION;
10. CONTROLLING WIND AND EARTHQUAKE LOADS;
11. ADJUSTMENTS TO LUMBER AND METAL CONNECTOR PLATE DESIGN VALUE FOR CONDITIONS OF USE;
12. EACH REACTION FORCE AND DIRECTION;
13. METAL CONNECTOR PLATE TYPE, SIZE, THICKNESS OR GAGE, AND THE DIMENSIONED LOCATION OF EACH METAL CONNECTOR PLATE EXCEPT WHERE SYMMETRICALLY LOCATED RELATIVE TO THE JOINT INTERFACE;
14. LUMBER SIZE, SPECIES AND GRADE FOR EACH MEMBER;
15. CONNECTION REQUIREMENTS FOR:
15.1. TRUSS TO TRUSS GIRDER;
15.2. TRUSS PLY TO PLY; AND
15.3. FIELD SPECIES;
15.4. DRAG TRUSS CONNECTION TO SHEAR WALLS FOR THE LOADS SPECIFIED (WHERE APPLICABLE).
16. CALCULATED DEFLECTION RATIO OR MAXIMUM DEFLECTION FOR LIVE AND TOTAL LOAD;
17. MAXIMUM AXIAL COMPRESSION FORCES IN THE TRUSS MEMBERS TO DESIGN THE SIZE, CONNECTIONS AND ANCHORAGE OF THE PERMANENT CONTINUOUS LATERAL BRACING. FORCES SHALL BE SHOWN ON THE TRUSS CONSTRUCTION DOCUMENTS OR ON SUPPLEMENTAL DOCUMENTS; AND
18. REQUIRED PERMANENT TRUSS MEMBER BRACING LOCATION.

- PROVIDE 4 X 6 DF 1 POST UNDER ALL GIRDER TRUSS SUPPORT LOCATIONS. THESE SUPPORTS MUST FOLLOW TO FOUNDATION TO DISTRIBUTE BEARING LOADS
- **UNLESS NOTED OTHERWISE THE ROOF STRUCTURE SHALL CONSIST OF THE FOLLOWING:**
  1. LIGHT WEIGHT ROOF NOT EXCEEDING 6 PSF. THIS MAY CONSIST OF: LIGHT WEIGHT TILE, CEDAR SHAKES, COMPOSITION ROOF, LIGHT GAUGE METAL.
  2. 15# FELT (OR AS SPECIFIED BY ARCHITECT).
  3. 15 / 32 CDX OR 1/2" OSB. NAILED TO 2X NOMINAL FRAMING MEMBERS WITH 10D @ 6" O.C. EDGES & 12" O.C. FIELD. NO BLOCKING IS REQUIRED, UNLESS SPECIFIED ON PLAN.
  4. INSULATION PER ARCHITECTURAL DRAWINGS.
- NO MODIFICATION IS ALLOWED ON PRE-ENGINEERED TRUSSES.
- FRAMING/BRACING IS ERECTORS RESPONSIBILITY.
- OVER FRAMING SHALL CONSIST OF THE FOLLOWING:
  1. 2 X 4 HF #2 FOR SPANS UP TO 6'
  2. 2 X 6 HF #2 FOR SPANS UP TO 8'
  3. 2 X 8 HF #2 FOR SPANS UP TO 12'
  4. 2 X 10 HF #2 FOR SPANS UP TO 16'
- REFER TO THE TYPICAL HEADER DETAIL ON THIS SHEET FOR HEADERS NOT SPECIFICALLY CALLED OUT ON THE PLAN. THIS DETAIL IS TYPICAL FOR NON-BEARING EXTERIOR WALLS.



ROOF FRAMING PLAN
1/4" = 1'-0"

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DWG TITLE: ROOF FRAMING PLAN

Number	Revision	Date

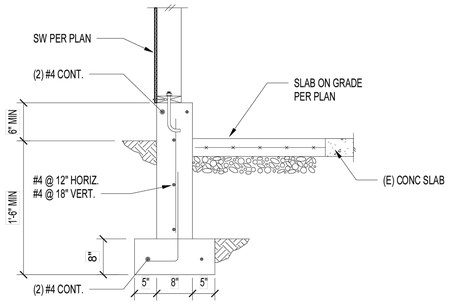
REGISTERED PROFESSIONAL ENGINEER 56997

7/31/2023

PROJECT # Z4-3205

SHEET NO S2.2

1



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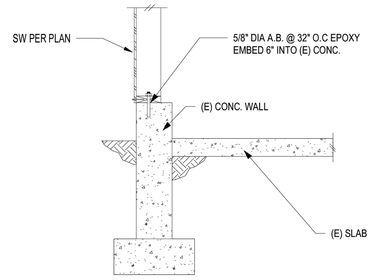

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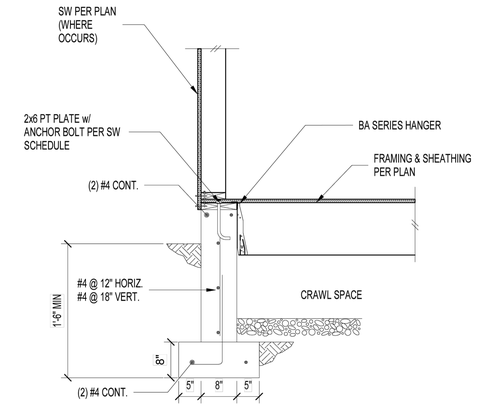

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Number	Revision	Date

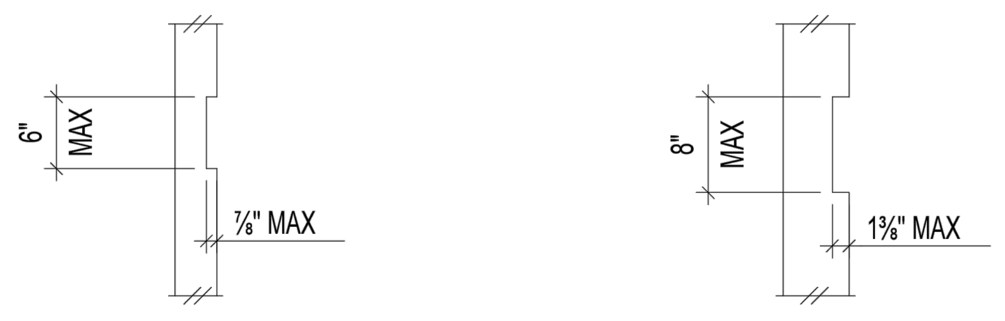
DWG TITLE
DETAILS

KYLE LOS A. MORELOS
56997
REGISTERED
PROFESSIONAL ENGINEER
7/31/2023

PROJECT #
Z4-3205

SHEET NO
S3.0

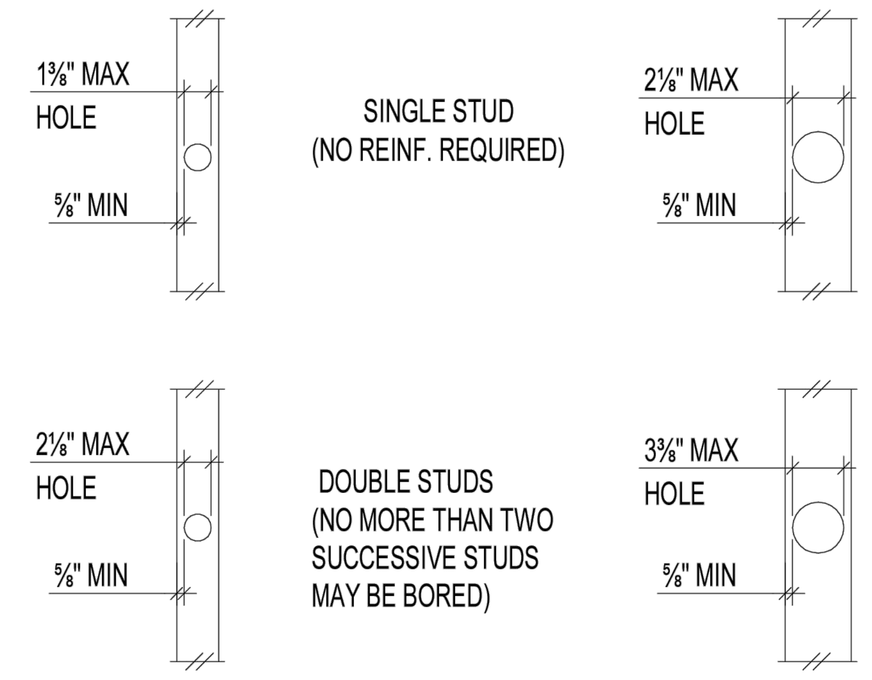
NOTE: NOTCHES SHALL NOT OCCUR IN MORE THAN (2) SUCCESSIVE STUDS



ANY NOTCH OR HOLE THRU STUDS EXCEEDING ABOVE DETAIL SHALL GET E.O.R. APPROVAL FOR POSSIBLE REINFORCING REQUIREMENTS PRIOR TO DRILLING/NOTCHING

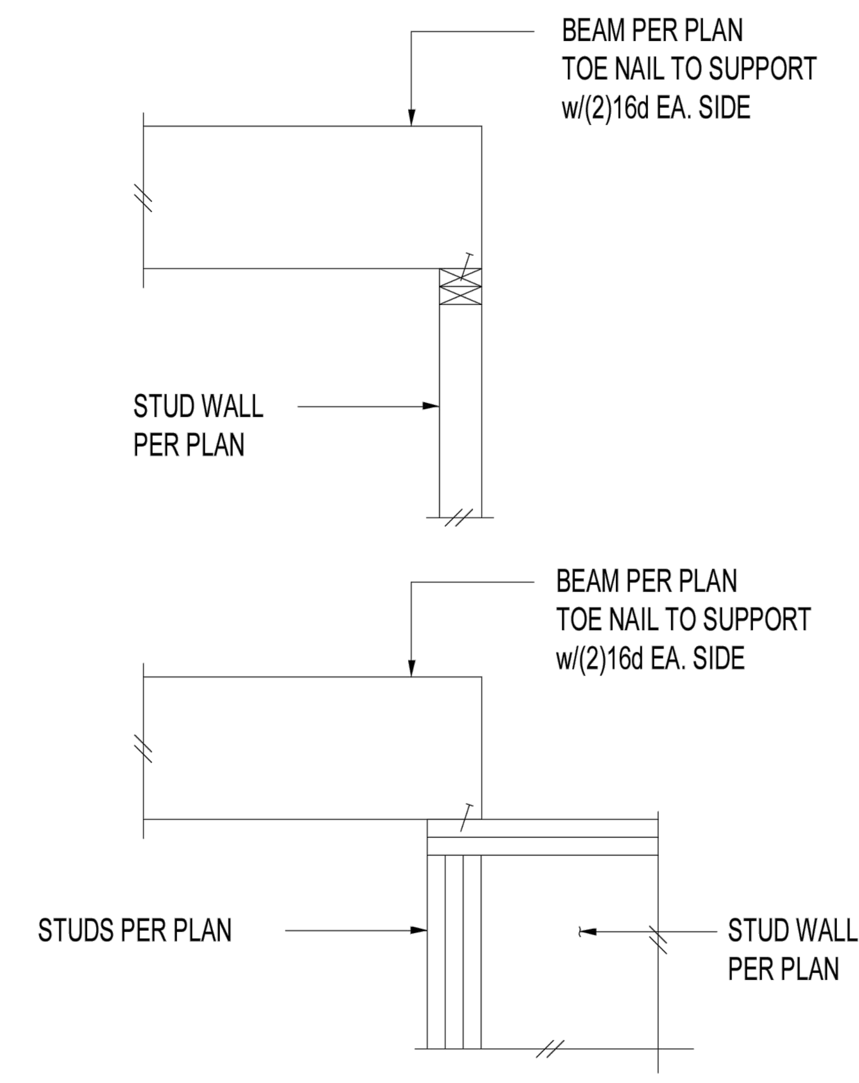
ALLOWABLE NOTCHES IN STUDS - N.T.S 1

NOTE: BORED HOLES SHALL NOT BE LOCATED @ THE SAME SECTION OF STUD AS A NOTCH.

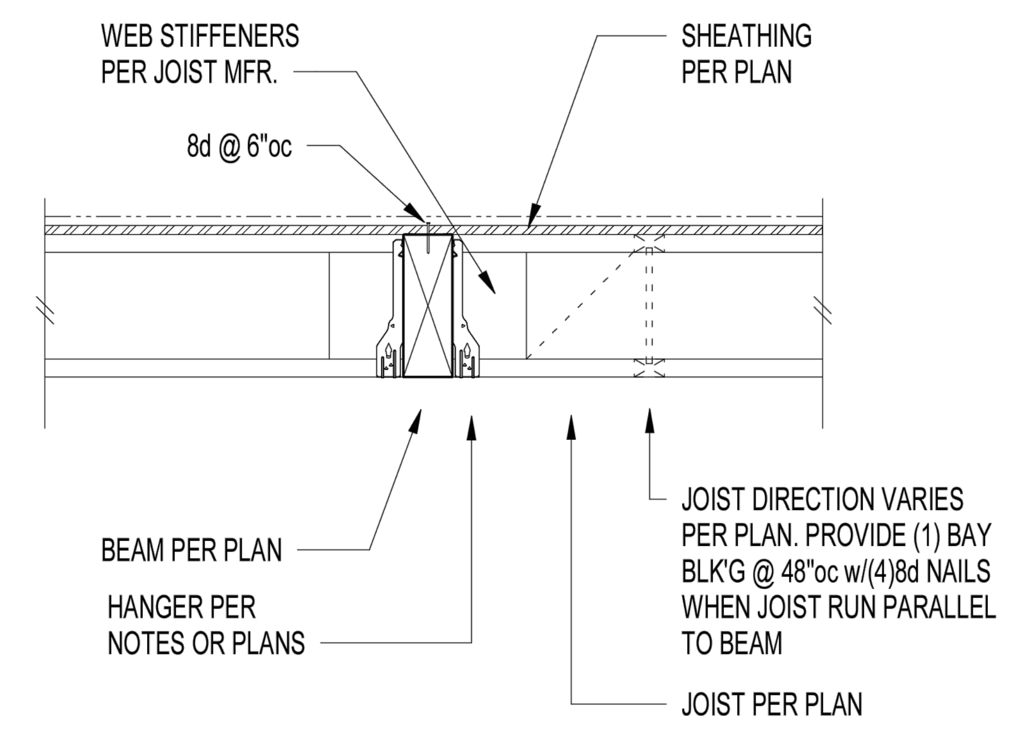


NOTE: BORED HOLES SHALL NOT BE LOCATED @ THE SAME SECTION OF STUD AS A NOTCH.

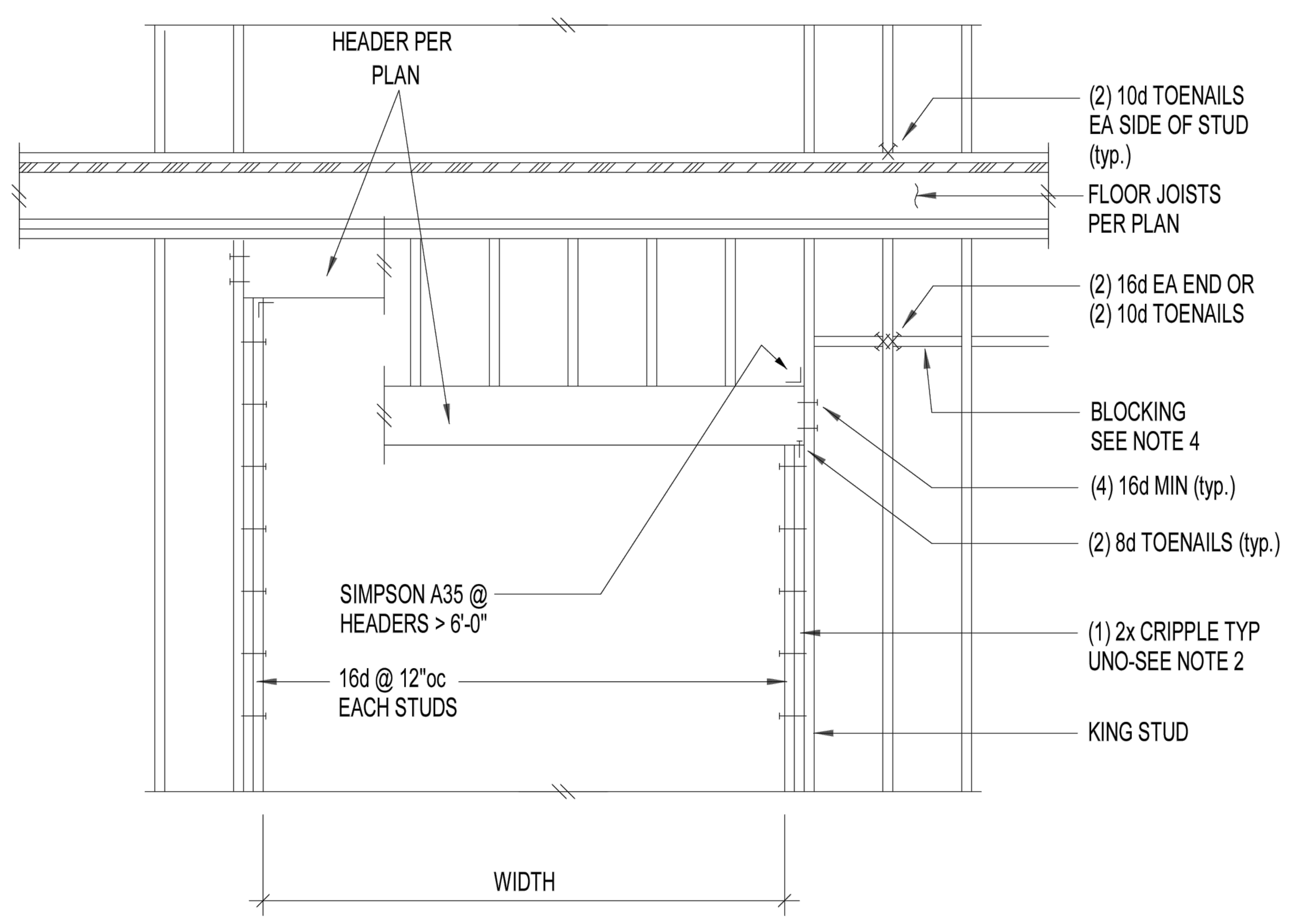
HOLES ALLOWED THROUGH STUDS - N.T.S 2



TYPICAL BEAM TO STUD DETAIL - N.T.S 3



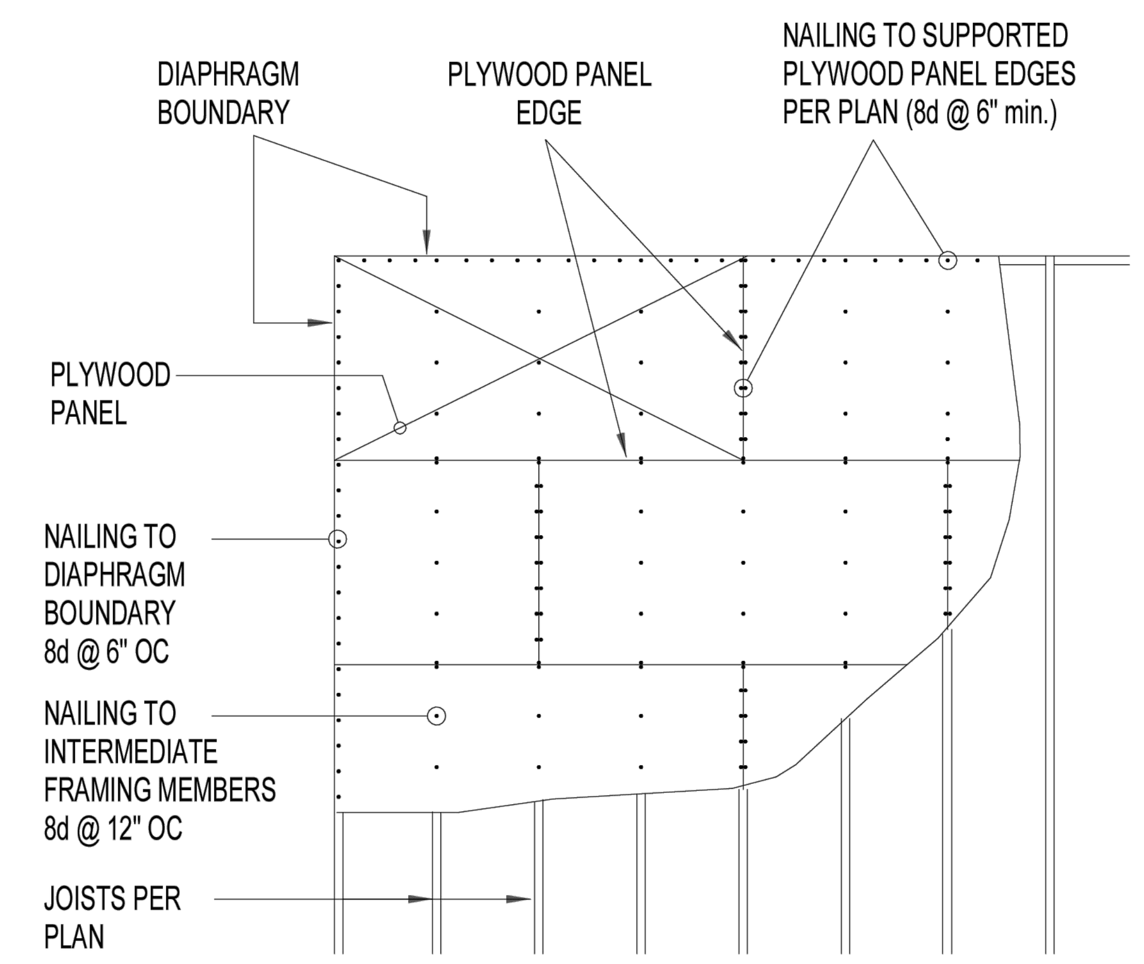
TYPICAL FLUSH BEAM CONNECTION - N.T.S 4



NOTES:

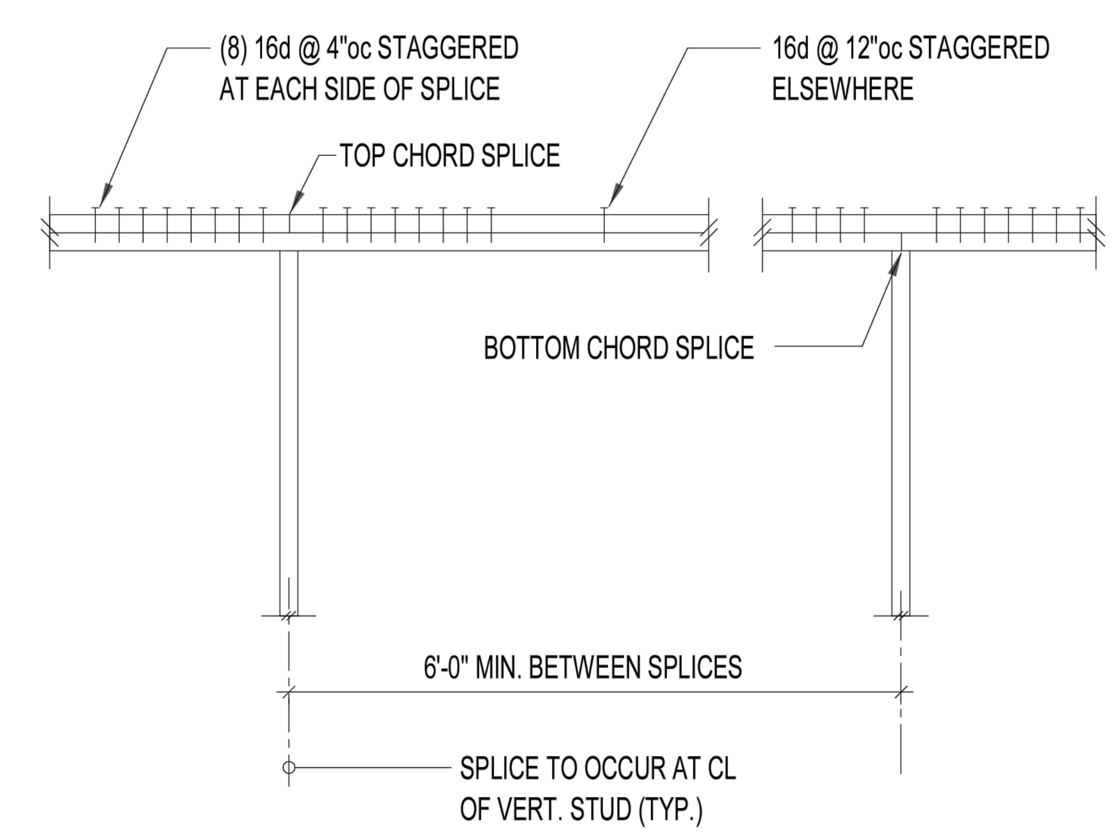
1. HEADERS PER PLAN
2. PROVIDE (1) 2x CRIPPLE STUDS MINIMUM TYPICAL, U.O.N.
3. SEE ARCHITECTURAL DRAWINGS FOR OPENING SIZES AND LOCATIONS
4. 2x SOLID BLOCKING REQUIRED AT CEILING LINE, ALL PANEL EDGES, AND @ 8'-0"oc MAX.

TYPICAL WALL OPENING FRAMING ELEVATION - N.T.S 6

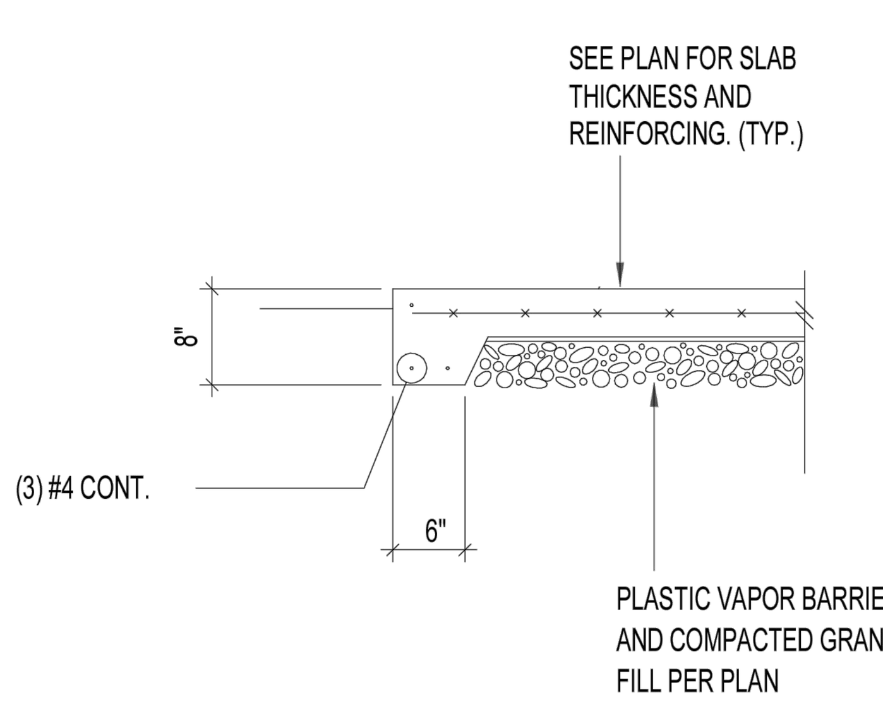


NOTE:
BEARING AND SHEAR WALL INTERSECTIONS SHALL BE CONSIDERED DIAPHRAGM BOUNDARIES, TYP

TYPICAL UNBLOCKED SHEATHING - N.T.S 7



TOP PLATE SPLICE - N.T.S 8



TYPICAL SLAB EDGE - N.T.S 9

10

11

12

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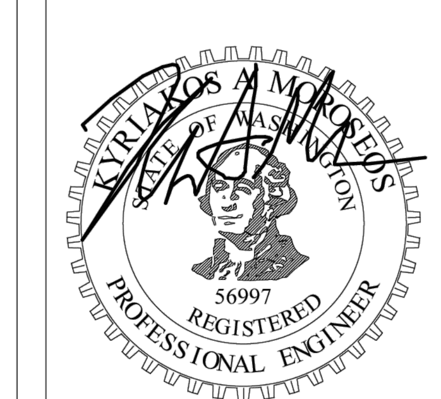
DWG TITLE
TYPICAL WOOD DETAILS

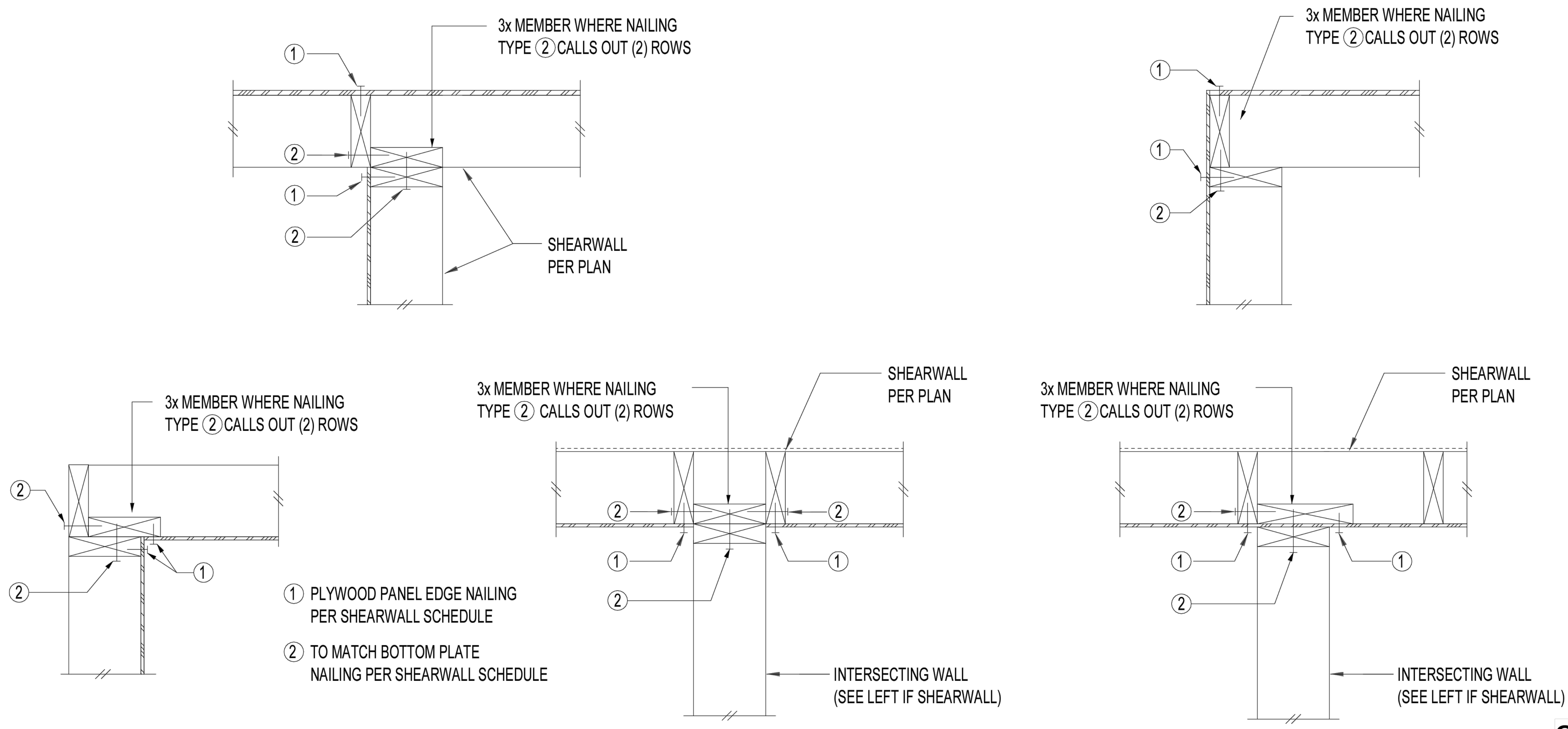
Number	Revision	Date



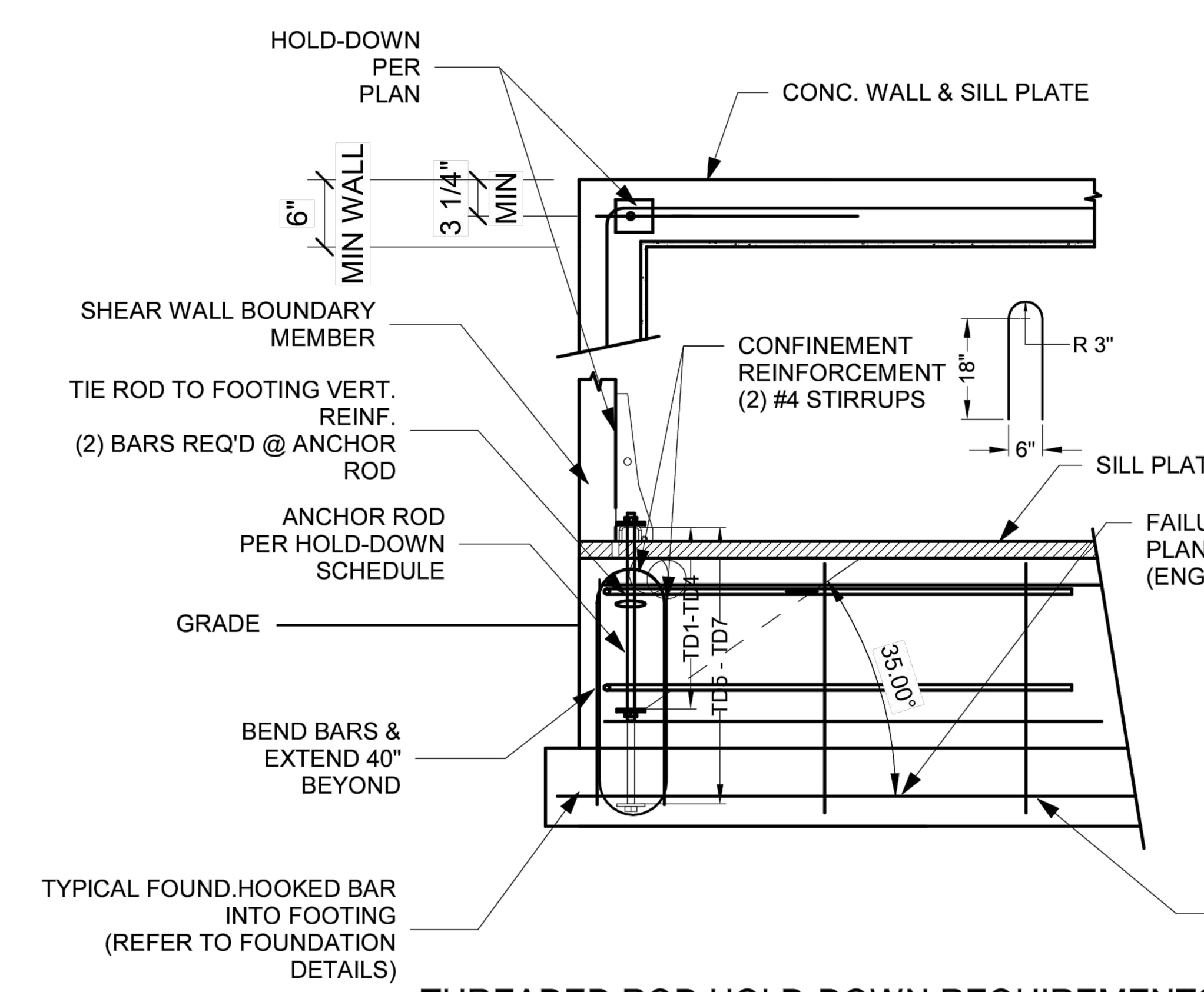
7/31/2023

PROJECT #
Z4-3205

SHEET NO
S6.0a

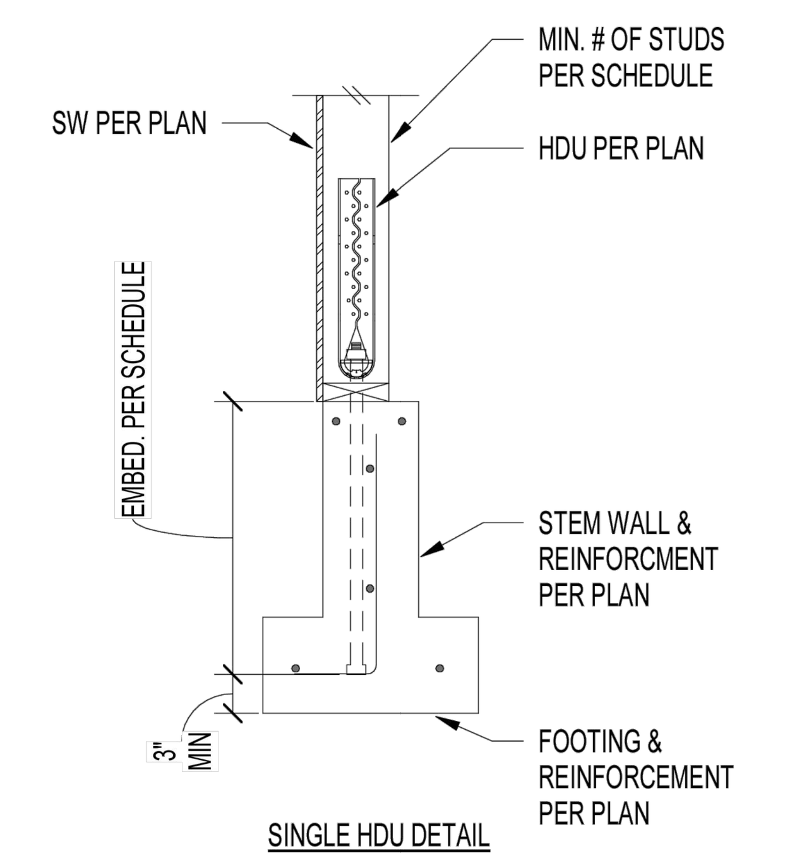


SHEARWALL INTERSECTION DETAILS - N.T.S 2

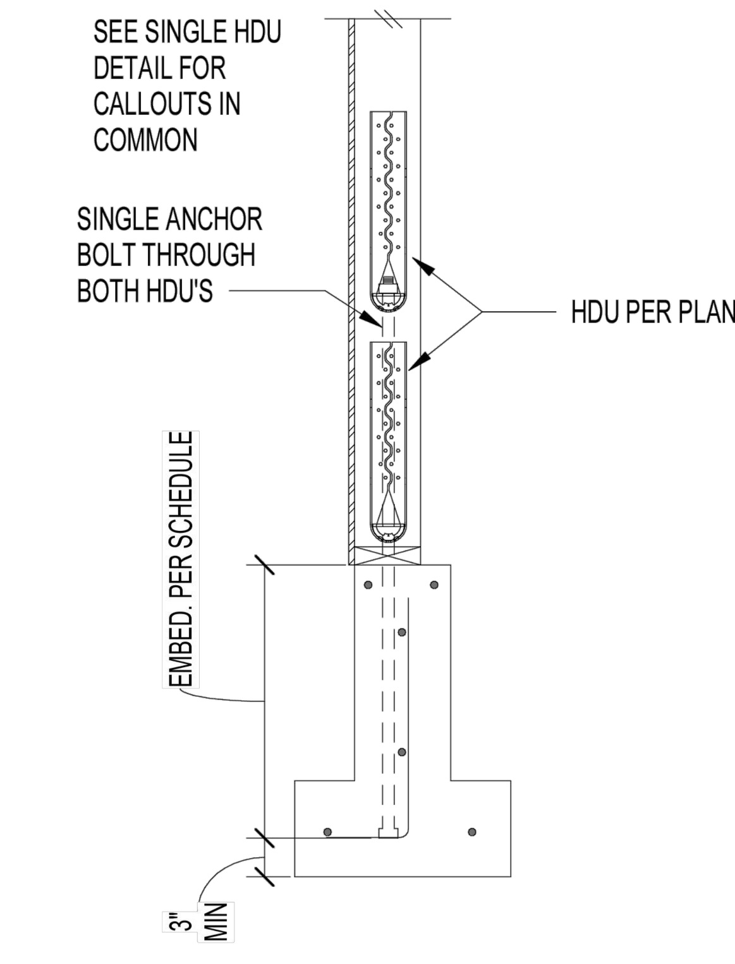


THREADED ROD HOLD-DOWN REQUIREMENTS

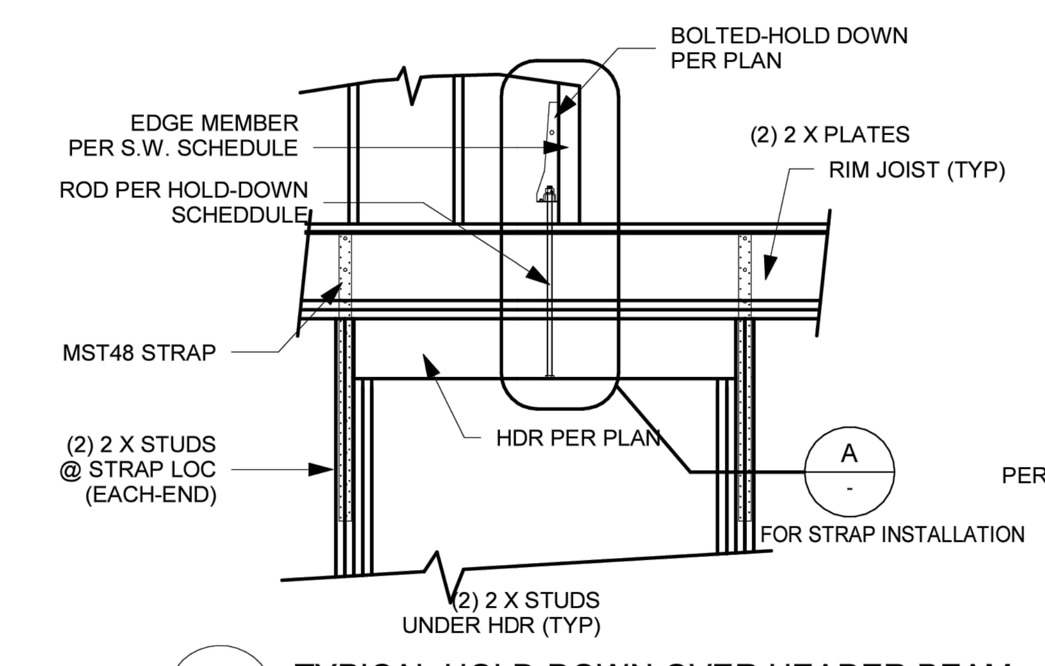
1. THIS A TYPICAL DETAIL IS APPLICABLE TO HOLD-DOWNS TD1-TD9. AND FOUNDATION WALLS AT LEAST 48" LONG. REFER TO SPECIFIC DETAILS FOR OTHER CONDITIONS.
2. THIS DETAIL IS APPLICABLE TO FOUNDATIONS WITH CRAWLSPACE. EXTEND THREADED ABOVE FLOOR RIM.



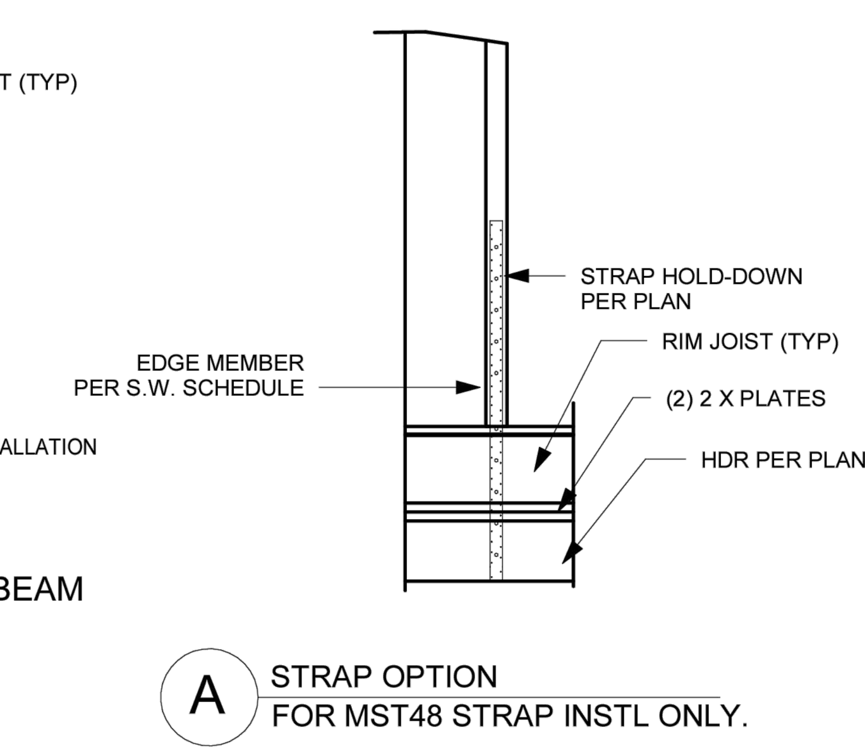
SINGLE HDU DETAIL



DOUBLE HDU DETAIL



TYPICAL HOLD-DOWN OVER HEADER BEAM
FOR TD2 HOLD-DOWNS & GREATER



A STRAP OPTION
FOR MST48 STRAP INSTL ONLY.

HOLD-DOWN SCHEDULE - HOLD DOWNS ATTACHED BETWEEN FRAMED WALLS

TYPE (2)	CAPACITY (3)(4)	NUMBER OF STUDS / SOLID COLUMN	NAILS / SCREWS /BOLTS
MST37	2010	(2) 2 X HEM-FIR	30 - 10d (0.148" DIA)
MST48	3105	(2) 2 X DOUG-FIR	38 - 10d (0.148" DIA)
MST60	4800	(2) 2 X DOUG-FIR	40 - 10d (0.148" DIA)
(2) MST48	6210	(2) 2 X DOUG-FIR	(2) 38 - 10d (0.148" DIA)**
(2) MST60	9600	(3) 2 X DOUG-FIR	(2) 40 - 10d (0.148" DIA)**

NOTES:
(1) FILL ALL HOLES WITH 10d COMMONS NAILS (EXCEPTION SEE NOTE 3).
(2) WHERE DOUBLE STRAPS ARE INDICATED SUCH AS (2) MST37 USE 10d X 1-1/2" COMMONS NAILS. SEE DETAIL A/S7.1 FOR DETAIL.
(3) THE VALUES ABOVE ARE BASED ON A 16" CLEAR SPAN WITH HEM-FIR FRAMING & WIND LOAD DURATION.
** STAGGER NAILING PER DETAIL B

HOLD-DOWN SCHEDULE - HOLD DOWNS ATTACHED TO CONCRETE

MARK	TYPE	CAPACITY	ANCHOR BOLT (MONO POUR)	ANCHOR BOLT (TWO POUR)	NUMBER OF STUDS / SOLID COLUMN	NAILS / SCREWS /BOLTS
TD1	STHD14 OR HDU4-SDS2.5	3285	SSTB24 (FOR HDU4)	SSTB24 (FOR HDU4)	(2) 2 X HEM-FIR	30 - 10d (0.148" DIA)
TD2	HDU5-SDS2.5 (SPF/HF)	4065	SSTB24 (FOR HDU5)	SSTB24 (FOR HDU5)	(2) 2 X DOUG-FIR	38 - 10d (0.148" DIA)
TD3	HDU5-SDS2.5 (DF/SP)	5645	5/8" Ø x 24 ASTM A307	5/8" Ø x 24 ASTM A307	(2) 2 X DOUG-FIR	40 - 10d (0.148" DIA)
TD4	HDU8-SDS2.5	7460	SSTB28	SSTB34	(2) 2 X DOUG-FIR	20 - 1/4" X 3 - SCREWS
TD5	HDU11-SDS2.5	9540	1" Ø X 24 ASTM A307	1" Ø X 24 ASTM A307	6 X 6 DF 2 POST	26 - 1/4" X 3 - SCREWS
TD6	HDU11-SDS2.5	11175	1" Ø X 24 ASTM A307	1" Ø X 24 ASTM A307	6 X 6 DF 1 POST	
TD7	HDU14-SDS2.5	14445	1" Ø X 24 ASTM A307	1" Ø X 24 ASTM A307	6 X 6 DF 1 POST	
TD8	HD12	15510	1-1/8" X 24 ASTM A307	1-1/8" X 24 ASTM A307	6 X 6 DF 1 POST	
TD9	HD19	19070	1-1/4" X 24" ASTM 307	1-1/4" X 24" ASTM A307	6 X 6 DF 1 POST	

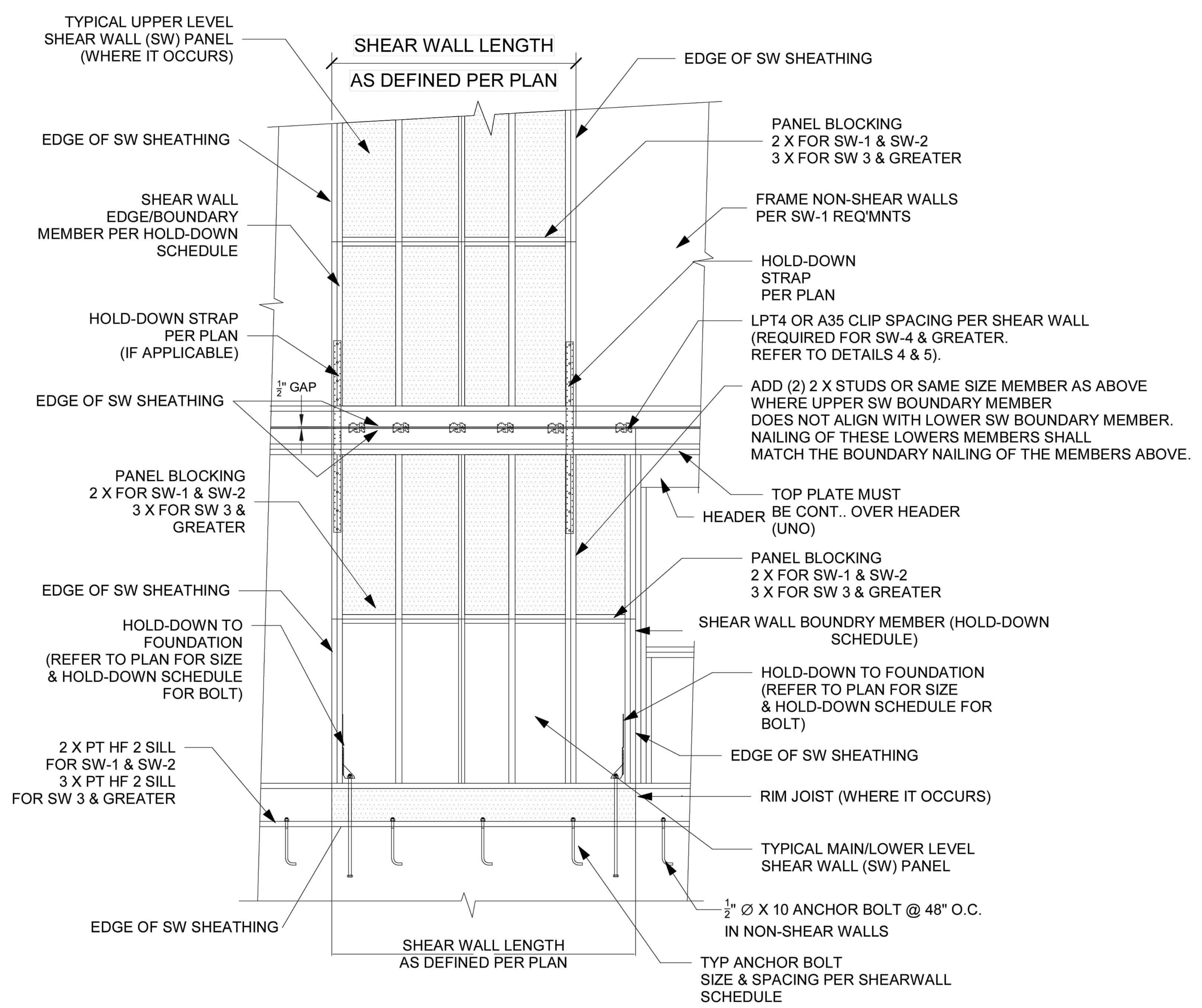
NOTES:
1. HOLDDOWNS SHALL BE MANUFACTURED BY THE SIMPSON STRONG-TIE CO, OR EQUIVALENT.
2. ALL BUILTUP STUDS SHALL RECEIVE SHEAR WALL EDGE NAILING.
3. INSTALL HOLD-DOWN BOLTS THRU THE THICKER SECTION OF THE SOLID POST.
4. 5/8" DIA ASTM A36 THREADED ROD EMBEDDED 12 INCHES IS ACCEPTABLE SUBSTITUTION FOR SST20, SST24, OR SST28.
3/4" DIA ASTM A36 THREADED ROD EMBEDDED 12 INCHES IS ACCEPTABLE SUBSTITUTION FOR SST28 OR SST34.

HOLD-DOWN SCHEDULE - HOLD DOWNS ATTACHED TO EXISTING WITH EPOXY

MARK	EPOXY EMBED	NUMBER OF STUDS / SOLID COLUMN	NAILS / SCREWS /BOLTS
HDU2	7"	(2) 2 X HEM-FIR	30 - 10d (0.148" DIA)
HDU4	9"	(2) 2 X DOUG-FIR	38 - 10d (0.148" DIA)
HDU5	12"	(2) 2 X DOUG-FIR	40 - 10d (0.148" DIA)
HDU8	15"	(2) 2 X DOUG-FIR	(2) 38 - 10d (0.148" DIA)**
HDU11	-	(3) 2 X DOUG-FIR	(2) 40 - 10d (0.148" DIA)**

NOTES:
1. USE SIMPSON SERIES EPOXY AS INDICATED IN GENERAL NOTES

TYPICAL HOLD-DOWN SCHEDULE - N.T.S 8



NOTES FOR TYPICAL SEGMENTED SHEAR WALLS (SW)

NO SCALE
1. REFER TO PLAN FOR SHEAR WALL LENGTH & HOLD-DOWN SIZES.
2. REFER TO SHEAR WALL SCHEDULE FOR SW PANEL SIZE, NAILING AND BLOCKING.
3. REFER TO SHEAR WALL SCHEDULE FOR BOUNDARY MEMBERS.
4. REFER TO HOLD-DOWN SCHEDULE FOR HOLD-DOWNS & BOLTS.

TYPICAL SEGMENTED SHEARWALLS - N.T.S 10

SHEAR WALL SCHEDULE

MARK	CAPACITY (LB/FT) (1)	SHEATHING (PLYWOOD/OSB) (2)	NAIL SIZE (3)	EDGE NAIL SPACING (4)	FIELD NAIL SPACING	BOTTOM PLATE NAILING (2ND FLOOR) (6)	SILL PLATE CONN. TO FOUNDATION (10)	SHEAR CLIP SPACING (LTP4 OR A35 REFER TO DETAILS)	TYP FRAMING (U.N.0	FRAMING AT ABUTTING EDGES (11)	FOUNDATION SILL PLATES	PLATES
SW-1	213	7/16	8d (0.131" DIA)	6	SEE NOTE 5	16d @ 6" O.C.	1/2" X 10 @ 35" O.C.	LTP4 or A35 @ 16" O.C.	2 X	2 X	2 X	(2) 2 X
SW-2	254	7/16	8d (0.131" DIA)	4	SEE NOTE 5	16d @ 4" O.C.	1/2" X 10 @ 30" O.C.	LTP4 or A35 @ 16" O.C.	2 X	2 X	2 X	(2) 2 X
SW-3	350	7/16	8d (0.131" DIA)	3	SEE NOTE 5	16d @ 4" O.C.	1/2" X 10 @ 20" O.C.	LTP4 or A35 @ 16" O.C.	2 X	3 X	3 X	(2) 2 X
SW-4	492	15/32	10d (0.148 DIA)	3	SEE NOTE 5	16d @ 3" O.C.	5/8" X 10 @ 24" O.C.	LTP4 or A35 @ 12" O.C.	2 X	3 X	3 X	(2) 2 X
SW-5	631	15/32	10d (0.148 DIA)	2	SEE NOTE 5	16d @ 2" O.C.	5/8" X 10 @ 18" O.C.	LTP4 or A35 @ 9" O.C.	2 X	3 X	3 X	(2) 2 X
SW-6	836	15/32 BOTH SIDES	10d (0.148 DIA)	4	SEE NOTE 5	1/4" DIA LAG SCREW @ 4" O.C.	3/4" X 10 @ 18" O.C.	SEE DETAIL 1	2 X	3 X	3 X	(2) 2 X
SW-7	1200	15/32 BOTH SIDES	10d (0.148 DIA)	3	SEE NOTE 5	1/4" DIA LAG SCREW @ 3" O.C.	3/4" X 10 @ 14" O.C.	SEE DETAIL 1	2 X	3 X	3 X	(2) 2 X
SW-8	1540	15/32 BOTH SIDES	10d (0.148 DIA)	2	SEE NOTE 5	1/4" DIA LAG SCREW @ 3" O.C.	3/4" X 10 @ 24" O.C.	SEE DETAIL 1	2 X	3 X	3 X	(2) 2 X

NOTES

1. ALLOWABLE SHEAR CAPACITY ASSUMES HEM-FIR FRAMING, AND IS BASED ON THE 2018 IBC WITH INCREASES FOR LOAD DURATION. **SW-7 & SW-8 REQUIRES DOUG-FIR FRAMING.**
2. UPON ENGINEERS APPROVAL, 19/32" RATED SHEATHING MAY BE USED WITH NO CAPACITY REDUCTION. O.S. INDICATES ONE SIDE OR WALL TO BE SHEATHED, B.S. INDICATES SHEATHING ON BOTH SIDES.
3. 8d NAILS = 0.131" dia 10d NAILS = 0.148" dia
4. FOR SHEAR WALL TYPES SW-3 AND HIGHER, ALL PANEL EDGE NAILING AND FOUNDATION SILL NAILING SHALL BE STAGGERED.
5. 12" FIELD NAILING FOR STUDS 16" O.C. AND 6" FIELD NAILING FOR STUDS 24" O.C.
6. WHERE LAG SCREWS ARE REQUIRED, SCREW LENGTH MUST BE ADEQUATE TO ENSURE 2-1/4" PENETRATION OF THE LAG INTO THE RIM JOIST BELOW. PRE DRILL WITH 3/16" DIA LEAD HOLE.
7. ADDITIONAL BOTTOM PLATE ANCHORS ARE ONLY REQUIRED AT WALLS DESIGNATED ON PLANS AS PERFORATED SHEAR WALLS. THESE ANCHORS ARE NOT REQUIRED AT FOUNDATION SILL PLATES.
8. ALIGN STRAPS WITH WALL STUDS AND CENTER AT FLOOR SHEATHING.
9. WALLS WITH OUT SHEAR WALL ID SHALL CONFORM SW-1.
10. 3" x 3" x 1/4" GALVANIZED PLATE WASHER IS REQUIRED. EMBED ANCHOR BOLTS 7.5" MINIMUM. REFER TO S-1 TO PRESSURE TREATING NOTES FOR ANCHOR BOLTS IN CONTACT WITH PRESSURE TREATED LUMBER. REFER TO FOUNDATION WALL SILL BOLTING REQUIREMENTS WHERE ANCHOR BOLT SPACING MAY LESS THAN SHOWN PER THIS TABLE.
11. REFER TO HOLD-DOWN TABLE WHERE SHEAR WALL EDGE MEMBERS ARE CONTROLED BY THE REQ'D HOLD-DOWN. AS A MINIMUM REQUIREMENT, A 3X MEMBER AT HOLD DOWNS SHALL BE USED. WHERE (3) 2 X MEMBERS ARE REQUIRED PER THE HOLD-DOWN TABLE, USE (1) 3 X & (1) 2 X .

SHEAR WALL SCHEDULE - N.T.S 12

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DWG TITLE: TYPICAL LATERAL DETAILS

Number	Revision	Date

7/31/2023

PROJECT # Z4-3205

SHEET NO S6.0b

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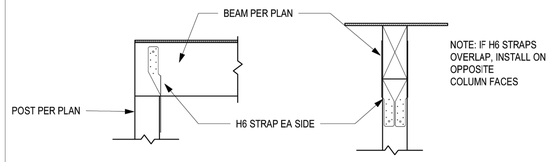

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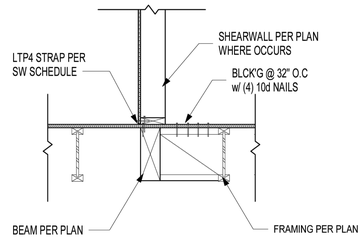

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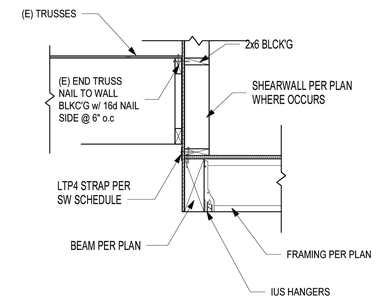

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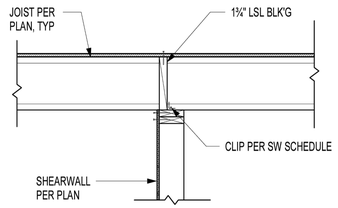

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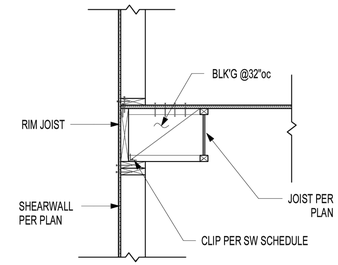

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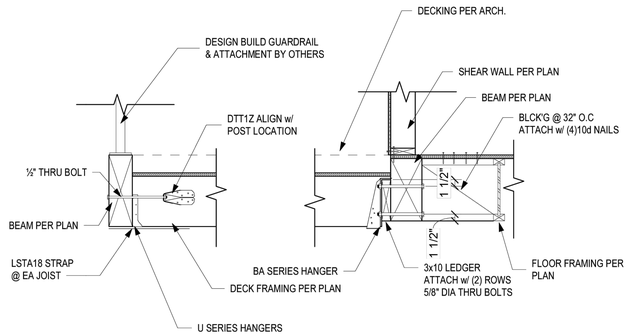

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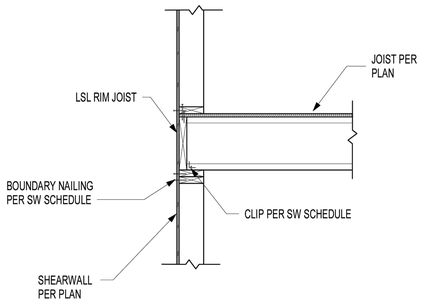

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Number | Revision | Date

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PROJECT #
Z4-3205

SHEET NO
S6.1

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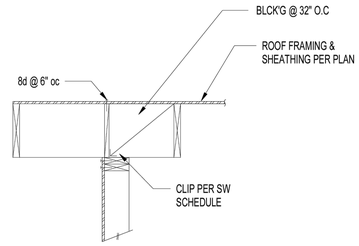

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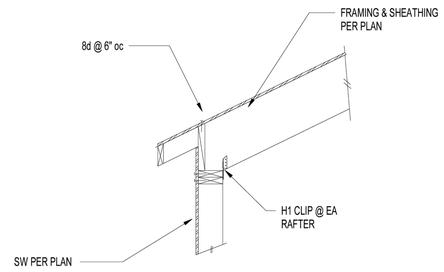

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TYPICAL ROOF OVERFRAMING

11

12

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7/31/2023

PROJECT #
Z4-3205

SHEET NO
S6.2