Development Services
Building Permit Cover Sheet

VERY IMPORTANT

A PRINTED COPY OF ALL APPROVED DOCUMENTS MUST REMAIN ON THE JOB SITE AND BE AVAILABLE AT ALL TIMES FOR INSPECTORS.

THIS SHEET MUST BE PRINTED IN COLOR

Washington State University Energy Program

2021 WSEC-R Compliance Certificate

Property Address: _____
Contractor / Design Professional: _____
Conditioned Floor Area: _____
Conditioned Volume: _____
R2 MF Units / DUEA: _____

Permit # _____

Heating & Cooling Equipment:

System Type:	Model #	Efficiency
Heating:		
Cooling:		
DHW:		

Energy Equalization Credits & 406.3 Credit Selection — Total Credits: _____

- ☐ Energy Equalization #: _____ Credits ____
- ☐ Envelope / Efficient Building #: _____ Credits ____
- ☐ Air Leakage Control +ERV/HRV # _____ Credits ____
- ☐ HVAC selection #: _____Crd:_____ Ducts Inside Option? ____
- ☐ Domestic Water Heater # _____ Credits: _____
- ☐ Water Distribution?: 5.1 _____ 5.2 _____ Credits: _____
- ☐ Renewable(s): _____ KWH Credits: _____
- ☐ Appliance Package: Heat pump dryer model #: _____Crd:____

R & U Values

Floors / Slabs: _____
Walls Above Grade _____
Walls Below Grade
2': _____ 3.5' _____7': _____
Windows (Weighted) _____
Doors: 1_____2_____3_____
Skylights: _____
Ceiling / Attic: _____

Test Results

Blower Door: ACH@50PA or DUEA:
Target _____ Tested _____
Duct Leakage (CFM@25PA):
Target _____ Tested _____
Stove Hood CFM / Utility Room
_____ _____
ERV / HRV & Bathroom Ventilation:
CFM_____CFM_____
CFM_____CFM_____

City of Kirkland
123 5th Avenue
Kirkland, WA 98033

INSPECTION RECORD - THIS CARD MUST BE POSTED ON SITE
Schedule an inspection by 6:00 PM for next day inspections
Schedule online at: **www.MyBuildingPermit.com**

Permit #: **BSF24-09552**

How to request an inspection:
1) Go to **http://www.MyBuildingPermit.com**
2) Select Kirkland as the Jurisdiction.
3) Select Permit Number or Address.
4) Follow the on-screen instructions.

Description of Work:
*Martin Short Plat Lot 1 SFR: Construction of a new 3,372 square foot single-family home

BUILDING ADDRESS	PARCEL NUMBER	DATE PRINTED	PERMIT TYPE	WORKCLASS	SQ FT	VALUATION
6528 128TH AVENE	1241500266	4/1/25	Building Single Family	New	0	

REQUIRED INSPECTIONS - DO NOT COVER ANY WORK PRIOR TO INSPECTION

Inspection	Date	Insp	Inspection	Date	Insp
BLD - Footings/Setback/UFER			PLM - Other		
BLD - Insulation Slab on Grade			PW - 1st Erosion Control		
BLD - Footing Perimeter Drains			PW - 2nd Erosion Control		
BLD - Subfloor Framing			PW - Water Meter Drop In		
BLD - Height Verification			PW - Sewer Side		
BLD - Roof Sheathing			PW - Storm Amended Soils		
BLD - Floor Sheathing			ELE - Final		
BLD - Draft & Fire Stopping & Caulking			MEC - Final		
BLD - Height Survey			PW - Final Site Stabilization & Erosion Control		
BLD - Wall Insulation			PW - Final		
BLD - Floor Insulation			PCD - Final		
BLD - Wallboard Nailing			BLD - Final		
BLD - Other					
ELE - Temporary Power					
ELE - Ditch					
ELE - Feeder					
ELE - Rough In					
ELE - Soffits Cover					
ELE - Low Voltage Rough In					
ELE - Other					
MEC - Other					
PLM - Underslab					
PLM - Rough Plumbing DWV					
PLM - Rough Water Lines					
PCD - Tree Fencing Installation					
PW - 2nd Erosion Control					
PW - Water Meter Drop In					
PW - Storm System					
PW - Storm Amended Soils					
PW - Final					
PCD - Final					
BLD - Final					

* Note: 1st erosion control inspection is required prior to any excavation. * 2nd erosion control inspection is required after foundation backfill.
(These erosion control inspections only apply if they are listed on the above checklist)

Departmental staff: BLD is Building Dept, PW is Public Works Dept, PCD is Planning Dept, and FIR is Fire Dept

NOTE: THIS INSPECTION RECORD IS THE CERTIFICATE OF OCCUPANCY WHEN THE BUILDING FINAL INSPECTION HAS BEEN APPROVED

Building

City of Kirkland
Reviewed by: J.Moe
04/01/2025

BLDG. DEPT. CONDITIONS

HOURS OF WORK: 7AM TO 8PM MON-FRI, 9AM TO 6PM SAT; NO WORK SUNDAYS AND HOLIDAYS (PER KZC SEC 115.25). Exceptions must be approved in writing by Planning Official.

CONSTRUCTION TIP SHEETS - Helpful information and some additional construction details for single family projects can be found by going online to www.MyBuildingPermit.com and clicking on the link for "construction tip sheets ". NOTE: City of Kirkland approval by your plan reviewer is needed for all changes to your project before you do the work.

INSPECTION CHECKLISTS – Helpful information regarding inspections of single family projects can be found by going online to www.MyBuildingPermit.com and clicking on the link for "inspection checklists ". INSPECTIONS REQUIRED; WHEN TO COVER - By default, un-needed inspections are often listed on your permit. Please call only for the inspections you need and ask your inspector which apply if you are not sure. See permit for how to schedule inspections. All building elements and each layer of construction must be inspected prior to cover. Photos are not a substitute for inspections.

SUBJECT TO FIELD INSPECTION – The constructed elements of this project are subject to field inspection and your inspector may not approve of site built details that are different than, or were not on the approved plans. Most changes/revisions cannot be inspected in the field without prior review and you must stay within the original scope. Any changes/revisions are to be submitted to Development Services for review prior to building them.

SCOPE OF WORK - Changes to the scope of work, design, materials or method of construction will require revised plans to be submitted. The plans must be reviewed and approved by City of Kirkland review staff prior to being implemented in the field. Additional review fees will be charges as applicable.

ADDRESS NUMBERS - New and existing buildings shall have approved address numbers placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address number shall be Arabic numerals or alphabet letters. Numbers shall be a minimum of 4 inches (4 ") high with a minimum stroke width of 0.5 inches (1/2"). IFC Sec. 505.

SMOKE and CARBON MONOXIDE ALARMS - Smoke Alarms are required for all new dwelling units and in existing dwelling units when alterations or repairs require a permit, or when one or more sleeping rooms are created within an existing space. Alarms shall be hard wired with battery backup and interconnected. Smoke Alarms and Carbon Monoxide Alarms are required at each story and outside each separate sleeping area in the immediate vicinity of the bedroom. See IRC Sec 314 and 315

BLOWER DOOR/AIR LEAKAGE TESTING REQUIRED WSEC-R 402.4.1.2 & WSEC-R402.4.1.3.1.

Blower door testing required by third party agency and provided to field inspector.
The components of the building envelope listed in Table R402.4.1.1 shall be installed per the manufacturer's installation instructions and the component criteria. Maximum air leakage rate shall not exceed 4.0 air changes per hour (for projects utilizing an energy credit within option 2, testing shall comply with the required reduced air changes).
Testing shall be conducted with a blower door test at a test pressure of 0.2 inches w.g. (50 Pa).

IRC 309.6.2
Dedicated circuit for electric vehicle charging. A minimum of one 40-ampere dedicated 208/240-volt branch circuit shall be installed in the electrical panel for each dwelling unit.

The branch circuit shall terminate at a junction box, receptacle outlet, or electric vehicle charging equipment.

M1503.6 MAKEUP AIR REQUIRED
Where one or more gas, liquid or solid fuel-burning appliance that is neither directvent nor uses a mechanical draft venting system is located within a dwelling unit'Sair barrier, each exhaust system capable of exhausting in excess of 400 cubic feet per minute shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with not fewer than one damper complying with Section M1503.6.2.
Makeup air location per M1503.6.1.

WSEC-R Lighting - 2021

404.1 Lighting equipment.
All permanently installed lighting fixtures, excluding kitchen appliance lighting fixtures, shall contain only high-efficacy lighting sources.
404.2 Interior lighting controls.
Permanently installed fixtures shall be controlled with either a dimmer, an occupancy sensor control or other control that is installed or built into the fixture in all areas of the home except bathrooms, hallways, or lighting designed for safety or security.
404.3 Exterior lighting controls.
Where total permanently installed exterior lighting power is greater than 30 watts, lighting shall comply with requirements.

WSEC-R 401.3 Certificate.
A permanent certificate shall be completed by the builder or other approved party and posted on a wall in the space where the furnace is located, a utility room, or an approved location inside the building.
When located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels. The certificate shall indicate the following:
1. The predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, below- grade wall, and/or floor) and ducts outside conditioned spaces.
2. U-factors for fenestration and the solar heat gain coefficient (SHGC) of fenestration. Where there is more than one value for each component, the certificate shall indicate the area weighted average value.
3. The results from any required duct system and building envelope air leakage testing done on the building.
4. The results from the whole-house mechanical ventilation system flow rate test.
5. The types, sizes and efficiencies of heating, cooling, whole-house mechanical ventilation, and service water heating appliances. Where a gas-fired unvented room heater, electric furnace, or baseboard electric heater is installed in the residence, the certificate shall list "gas-fired unvented room heater," "electric furnace" or "baseboard electric heater," as appropriate. An efficiency shall not be listed for gas-fired unvented room heaters, electric furnaces or electric baseboard heaters.
6. Where on-site photovoltaic panel systems have been installed, the array capacity, inverter efficiency, panel tilt, orientation and estimated annual electrical generation shall be noted on the certificate.
7. The code edition under which the structure was permitted, and the compliance path used.

The code official may require that documentation for any required test results include an electronic record of the time, date and location of the test. A date-stamped smart phone photo or air leakage testing software may be used to satisfy this requirement.

WSEC R403.7 - Equipment sizing and efficiency rating
Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J. The output capacity of heating and cooling equipment shall not be greater than that of the smallest available equipment size that exceeds the loads calculated, including allowable oversizing limits.

WHOLE-HOUSE VENTILATION TESTING REQUIRED

WHOLE-HOUSE VENTILATION SYSTEM TO BE TESTED BY AN APPROVED THIRD PARTY IN ACCORDANCE WITH IRC M1505.4.1.6 & WSEC-R 403.6.2.

CERTIFICATE OF TESTING TO BE POSTED PER M1505.4.1.7.

Planning

PLANNING CONDITIONS – Contact Alex Kaiser, Phone Number 425-587-3258:

PBD 1.PLANNING TO PERFORM FINAL INSPECTION PRIOR TO BUILDING - BUILDING PERMIT INSPECTION CARD MUST BE SIGNED OFF BY PLANNING PRIOR TO ANY REQUEST FOR FINAL BUILDING INSPECTION. You can request an inspection through www.mybuildingpermit.com. 24 HOUR ADVANCE NOTICE REQUIRED FOR INSPECTION. Please consult these conditions before scheduling a Planning inspection.
PBD 2.HEIGHT VERIFICATION – A completed, signed and dated height verification form must be submitted to the building inspector at either the underfloor inspection or the slab insulation inspection.
PBD 3.SF AND DUPLEX-DRIVEWAYS - Prior to final inspection, all driveways and parking surfaces must be completed.
PBD 4.REVISED SITE PLAN - Any proposed changes to the approved site plan, such as but not limited to, added hard surfaces, HVAC units, accessory structures, or tree removals, must be submitted as a revision to the building permit for review and approval prior to implementation.
PBD 5.LOT COVERAGE - Any proposed increase in the total impervious and/or hardscape surfaces on the site must be submitted for review as a revision to this building permit prior to the addition of impervious/and or hardscape area.
PBD 6.LOT COVERAGE APPROVED PLANS - The approved plans do not show any areas of synthetic turf. This material shall not be installed unless a revision to this permit is submitted and approved by the City. For lot coverage purposes, synthetic turf is considered impervious by the Kirkland Zoning Code.
PBD 7.ADDITION/ALTERATION TREE RETENTION - No tree removal is allowed unless approved on your site plan. No damage to tree root systems is allowed. No heavy equipment and stockpiling of materials within tree drip lines. Any additional tree removal must be authorized by the Planning & Building Department prior to removal. Call the planner noted above for more information.
PBD 8.TREE MAINTENANCE REQUIRED- All pre-existing trees designated for preservation and the supplemental trees required to be planted shall be maintained for a period of five years following final inspection of the residence.
PBD 9.TREE MAINTENANCE AGREEMENT REQUIRED - Prior to requesting a Planning and Building Department final inspection, the applicant shall submit a five-year tree maintenance agreement and recording fee to the Planning & Building Department.
PBD 10.ALL - HOURS OF CONSTRUCTION - All development activity and heavy equipment operation is restricted to 7:00 AM to 8:00 PM Monday through Friday, and 9:00 AM to 6:00 PM Saturday. Other restrictions on Saturday include: no working in the right-of-way, no work requiring inspection, and no trucking into or out of the site; however, light grading work on-site on Saturday is allowed. NO development activity or heavy equipment operation may occur on Sundays or the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.
PBD 11.MAXIMUM NOISE LEVELS - All mechanical units shall comply with the maximum environmental noise levels established pursuant to the Noise Control Act of 1974, Revised Code of Washington (RCW) 70.107. See Chapter 173-60 Washington Administrative Code (WAC). A link to the WAC and RCW is available at http://www.kirklandwa.gov/Government/Codes_and_Laws.htm.
PBD 12.FENCE HEIGHT - A detached dwelling unit abutting a neighborhood access or collector street may not have a fence over 3.5 feet in height within the required front yard. On corner lots with two required front yards, this restriction shall apply only within the front yard adjacent to the front façade of the structure.
PBD 13.DRIVEWAYS - All driveways and parking surfaces must be of asphalt or a superior material unless otherwise approved by Planning.
PBD 14.MECHANICAL IN SETBACKS - HVAC and similar types of mechanical equipment may be placed no closer than five feet to a side or rear property line, and shall not be located within a required front yard (unless specifically approved pursuant to KZC 115.115(3)(p)(2)); provided, that such equipment may be located in a storage shed approved pursuant to KZC 115.115(3)(m) or a garage approved pursuant to KZC 115.115(3)(o)(2).
All HVAC and similar types of mechanical equipment shall be baffled, shielded, enclosed, or placed on the property in a manner that will ensure compliance with the Noise Control Act of 1974, Revised Code of Washington (RCW) 70.107. See Chapter 173-60 Washington Administrative Code (WAC).
PBD 15.TREE RETENTION - Trees designated to be saved under the tree retention plan must be retained. If any of these trees are removed or damaged, they must be replaced. Contact the Planning and Building Department at 425-587-3600 to speak to your planner about the requirements for replacement trees.
PBD 16.SUPPLEMENTAL TREE PLANTING - Prior to final inspection, the applicant must complete the required supplemental tree planting to achieve a minimum tree density of 8 tree credits.
The required minimum size of each supplemental tree worth one credit shall be six (6) feet tall for native or other conifers and two-inch (2) caliper for deciduous or broad-leaf evergreen trees. Supplemental Thuja/Arborvitae (or other slow-growing conifers as listed by the Planning and Building Department) planted on development sites shall not count towards tree density credits on a lot. All installation and maintenance standards shall conform to Kirkland Zoning Code Sections 95.50 and 95.51
The current plan calls for 6 trees to be planted. If there are any changes to this plan, the applicant is required to submit a revised landscape plan indicating the type, size, and exact location of trees to be planted. NOTE: Trees should be planted appropriately for species and future size. Do not plant trees directly next to a house foundation on or adjacent to the property, too close together, or under overhead utility lines. Consult with your nursery on planting standards for each tree to ensure survival.
PBD 17.ALL - PROHIBITED VEGETATION - Plants listed as prohibited in the Kirkland Plant List (available from the Planning & Building Department) shall not be planted in the City. These plants include Himalayan and Evergreen Blackberry, English Holly, Fragrant water lily; Bindweed or Morning Glory, Bird Cherry, English and Atlantic Ivy; Herb Robert; Bohemian, Giant, Himalayan, and Japanese Knotweed; Old man's beard, Poison hemlock, Reed canary grass, Scotch broom, Spurge laurel, Yellow archangel, and Yellow flag iris. Other plants, while not prohibited, are discouraged, including Butterfly bush, Black Locust, European Mountain Ash, Tree-of-Heaven, Common Hawthorn, and English laurel.
PBD 18.FLOOR AREA RATIO - Any proposed increase in the square footage of structures on the site must be submitted for review as a revision to this building permit prior to construction of additional floor area. The maximum floor area ratio on this property is 50% of the lot area.
PBD 19: PERMITTED SETBACK ENCROACHMENT - Chimneys, bay windows, greenhouse windows, eaves, cornices, awnings, and canopies may extend up to 18 inches into any required yard. Eaves on bay windows may extend an additional 18 inches beyond the bay window. The total horizontal dimension of the elements that extend into a required yard, excluding eaves and cornices, may not exceed 25 percent of the length of the facade of the structure. Except for properties located within the disapproval jurisdiction of the Houghton Community Council, chimneys, bay windows, greenhouse windows, cornices, awnings, and/or canopies may not extend closer than four feet to any property line. See Plate 10, Chapter 180 of Kirkland Zoning Code.

DEVELOPMENT SERVICES
BUILDING • FIRE • PLANNING • PUBLIC WORKS
www.mybuildingpermit.com • www.kirklandpermits.net

Building Height Table and Field Verification

Planning Department

Complete this form to submit at City Hall. Or, use mybuildingpermit.com to submit your application entirely online.

This form shall be completed and submitted with a Building Permit Application for projects that involve new construction, additions, or increases in height to existing roof structures.

BUILDING HEIGHT TABLE

Site Address: 6528 128th Ave NE

Parcel Number: 1241500266

Benchmark Location & Description (be specific):

Point Name: 108: 3" Brass disk stamped "City of Redmond Dept of Public Works, BM", Bellevue #202, flush with sidewalk, 1.3' SE of the SE face of traffic signal pole in the quad of the int of 132nd NE & Old Redmond Road. Elevation 466.536

Benchmark Elevation:	466.536
Finished First Floor or Basement Floor Elevation:	493.34
Difference between Benchmark & Finished First Floor or Basement Floor Elevations:	26.804
Average Building Elevation (ABE):	490.84
Maximum Allowed Height of Structure above ABE:	30
Maximum Allowed Elevation of Structure (ABE + Allowed Height of Structure above ABE):	520.84
Maximum Proposed Elevation of Structure (ABE + Proposed Height of Structure):	518.34
Difference between Maximum Proposed Elevation & Maximum Allowed Elevation:	2.5

See KZC 115.59 for how to calculate ABE.
Contact the Planning Department to determine the Allowed Height of Structure above ABE.
See KZC 5.10.357 for definition of Height of Structure.

BUILDING HEIGHT FIELD VERIFICATION AND SURVEY REQUIREMENTS

A building height field verification or survey shall be provided by the owner or owner's agent for all new buildings and additions to existing buildings, following these requirements:

1. At the subfloor inspection or the slab insulation inspection, a completed, signed, and dated height verification form must be submitted to the Building Inspector.
2. At the time of the roof sheathing inspection for structures that will be within *one foot* of the maximum allowed height, a height survey, by a licensed surveyor, must be submitted to the Building Inspector.
   > *A blank Building Height Field Verification Form is provided on Page 2 of this document.*

For Office Use Only:	Building height field verification is required (Yes or No?):	YES
	Height survey by a licensed surveyor required within one foot of maximum height (Yes or No?):	NO

Reviewed by: ALEX KAISER **Date:** 1/27/2025 **Permit #:** BSF24-09552

Kirkland City Hall | 123 5th Ave, Kirkland, WA 98033 | www.kirklandwa.gov | Planning and Building: 425-587-3600 | Fire: 425-587-3650 | Public Works: 425-587-3800

Check Permit Status

https://PermitSearch.MyBuildingPermit.com

PERMIT NUMBER: BSF24-09552
PROJECT NAME: MARTIN SHORT PLAT - LOT 1 SFR
SITE ADDRESS: 6528 128TH AVE NE

Request an Inspection

https://Inspection.MyBuildingPermit.com

11/18/2024 update

Development Services
Building Permit Cover Sheet

VERY IMPORTANT
A PRINTED COPY OF ALL APPROVED DOCUMENTS MUST REMAIN ON THE JOB SITE AND BE AVAILABLE AT ALL TIMES FOR INSPECTORS.

PUBLIC WORKS - PERMIT CONDITIONS AND STAMPS

PUBLIC WORKS CONDITIONS
General Conditions

1.Pre-construction Meeting Required Before Any Construction Activity: Request a pre-construction meeting online at www.mybuildingpermit.com after the permit has been issued.

2.Scheduling a Public Works Inspection: All required inspections must be requested by the contractor or permit applicant by 3:00 PM on the day prior to the inspection. Request inspections by going online at www.mybuildingpermit.com. If you need to speak with your Public Works Construction Inspector prior to scheduling your first inspection, call 425.587.3800; be prepared to provide your permit number and site address.

3.Clearing limits shall be accurately flagged and tree protection in place prior to commencement of site work.

4.A copy of the approved plans must be on the job site whenever construction is in progress. All changes agreed to must be shown on the "record drawings" prior to project completion.

5.Streets and sidewalks shall not be used for stockpiling building materials, debris, or equipment.

6.Before a street, traffic lane, pedestrian route, or sidewalk is closed, a traffic/pedestrian plan must be submitted to and approved by the City of Kirkland 48 hours prior to closure. Do not block sidewalks with equipment or traffic control signs unless you have a pedestrian detour route in place.

7.Daily work is limited to Monday through Friday, from 7:00 a.m. to 8:00 p.m. (arterial traffic lanes is 9 a.m. to 3:30 p.m.) and Saturday 9:00 a.m. to 6:00 p.m. No utility work in the ROW after 12:00 p.m. on Fridays; restoration only.
A.No work will be allowed on holidays that are observed by the City of Kirkland.
B.No work on Sunday.
C.No work is allowed on Saturday in the public right-of-way or any on-site utilities; light grading is permitted onsite. Also, no trucks permitted to haul in or out.
D.The following is the schedule of City closure days and holidays, and the work allowed:
•MLK Jr. Day - onsite grading only
•President's Day - onsite grading only
•Memorial Day - no work
•Independence Day - no work
•Labor Day - no work
•Veteran's Day observed - onsite grading only
•Thanksgiving Day - no work
•Day after Thanksgiving - onsite grading only
•Christmas Eve observed - onsite grading only
•Christmas Day - no work
•New Year's Eve observed - onsite grading only
•New Year's Day - no work

8.No water system work allowed on Fridays (or any day before a holiday or City closure day).

9.No steel sheets are allowed in Right-of-Way over weekend or on city closure days. Sheets must be removed and asphalt patching in place before 3:00 p.m. Friday.

10.All water valves shall be operated ONLY by City field crews.

11.For water emergencies such as a service or main break, first call Public Works Water Department at (425) 587-3900. Then, call your inspector.

12.Dust / Erosion / Sedimentation Controls, Developer and Contractor Responsibilities:
A.All required erosion /sedimentation controls must be constructed and in operation prior to land clearing.
B.During the period from October 1 to April 30, any area stripped of vegetation, including roadway embankments, shall be stabilized within 12 hours with the approved control methods (e.g., seeding, mulching, netting, erosion blankets, etc.).
C.During the period from May 1 to September 30, any cleared areas shall not lie open for a period longer than 7 days. If any erosion problem already exists on the site, immediate seeding, mulching, or other cover protection will be required.
D.Per Kirkland Municipal Code 15.52.100, the City of Kirkland may determine at any time during construction that implemented dust, erosion, and sedimentation control measures are not sufficient and additional action is required.
E.Developer/Contractor is responsible for controlling dust, mud, and debris within the project limits and onto existing streets.
F.DO NOT ALLOW RUNOFF FROM THE WASHING OF TRUCKS OR OTHER TOOLS OR EQUIPMENT (GENERATING MUD, SILT, CONCRETE WASTE, PAINT, ETC) INTO DRAINAGE SYSTEM.

13.All Work Must Meet Kirkland Standards: All work associated with this project, including street improvements and utility connections, must meet the City of Kirkland Public Works Standards and Policies. Purchase the Manual from Public Works or view on-line at www.kirklandwa.gov (navigate to PW Development Services).

14.Field Conditions May Warrant Revisions: Field conditions during construction may warrant required revisions or modifications to the site plan, utility plan, or street improvement plan.

15.Maintain Survey Monuments: Any existing survey monuments or other permanent survey markers within the public right-of-way shall be maintained during construction. If a monument or other survey marker in the right-of-way is disrupted during construction, it shall be replaced by a licensed surveyor.

16.Redline Comments Included: The owner/contractor is responsible for the implementation of any "redline", plan review comments found in the plans submitted to, and reviewed by the Public Works Department.

17.Traffic Control per MUTCD: All construction activity within the public right-of-way shall have traffic control signing and flagging per the standards within the Manual on Uniform Traffic Control Devices (MUTCD).

18.Re-inspection Fee: An additional review or inspection fee will be assessed for additional review or inspection of a modified design and for re-inspections when the applicant is not prepared for the requested inspection.

19.Plan Revision Clouding: Revisions submitted after the permit is issued shall be clouded and indexed with a number circumscribed in a triangle with the revision described in a revision block.

20.Replace Damaged Public Improvement: Any public improvements damaged during construction shall be replaced prior to final building inspection.

21.Contact PW Inspector when unknown utility lines are encountered: If existing unknown utility lines are encounter during construction, contact your Public Works Inspector before proceeding with work. Do not place any structure over an existing utility line.

22.Do no install utility lines in foundation bearing zone: No utility lines will be allowed in the "load bearing zone" of piers and footings. The Public Works Inspector shall be notified if these utilities are found near the excavation area for piers or footings.

23.Underground All Overhead Utility Lines: All new or existing overhead utility lines (power, phone, TV, etc) shall be placed underground from the building to the point of origin at the primary/distribution lines of the utility (overhead lines to secondary or service poles will not be allowed). New service lines shall be installed underground even if the site has existing overhead service lines that will remain in place.

Water and Sewer Conditions

24.Water Meter Installation Request: To request a water meter installation, call your Public Works inspection line to request a water service inspection and water meter installation. If the water service passes inspection and is ready for a water meter installation, your inspector will schedule the meter installation with the Water Department; please allow 48 hours for installation, once it has been approved.

25.AC Pipe Certification Required: All persons working with or on Asbestos Cement (AC) pipe are required to have proof of certification for working with AC pipe as prescribed in WAC 296-62-07705 and follow OSHA, WISHA, and PSAPCO requirements.

26.Monthly Sewer Billing Begins Before Final Inspection: Monthly Sewer billing will start upon completion of Rough Plumbing inspection and the side sewer connection.

27.Side Sewer and/or Storm Drainage As-built: The side sewer and/or storm drainage as-built drawings must be prepared prior to the arrival of the Public Works Inspector. If the as-built is not ready, an inspection of those systems will not be conducted at that time and a re-inspection will be required. As-built drawings shall have the following information: address, permit number, building outline, surface features (eg driveway), north arrow, street name, reflect all bends and pipe lengths, triangulation measurements, and be neat and legible. Each as-built shall have the measurement from stub to downstream manhole (distance, ft) or catch basin. Storm as-builts shall also show all LID features (eg porous pavement, rain garden, infiltration areas, etc.).

Erosion Control Conditions
28.Install Erosion Control Prior to Construction: Erosion control measures approved by the Public Works Department must be installed and inspected prior to the commencement of any construction.

29.Mandatory TESC Material Stockpiling: In addition to the mandatory TESC materials installed at the time of grading, the owner/contractor shall stockpile the following materials prior to work startup:
✓Minimum of 6 straw bales or wattles, and 6 additional bales /wattles per additional acre disturbed.
✓Minimum 75 feet of filter fabric, and 75 feet per additional disturbed acre.
✓Minimum of 15 silt fence stakes, and 15 stakes per additional disturbed acre.
This material must be protected from the elements and readily available to the contractor, if installation of emergency erosion control measures becomes necessary. Also, if any of the stockpiled materials are used, they shall be replaced within 2 days.

30.Protect Adjacent Property: Adequate drainage protection must be provided for adjacent properties. Applicants must control development runoff to ensure activities will not cause nuisance or adverse impact to adjacent private and public property.

31.Erosion Control Inspections: Erosion and Sediment Control (ESC) Inspections Required: Approved ESC measures must be installed prior to commencement of construction, and periodic inspections will be conducted during the course of construction.
✓ESC Inspection #1 - Required prior to pouring concrete for foundation and footings.
✓ESC Inspection #2 - Required after foundation backfill, rough grading, and prior to subfloor framing inspection. Subfloor framing inspection will not be performed until this ESC inspection has been successfully completed.
✓ESC Inspection #3 - Required for final site stabilization. A final building department inspection and sign-off will not occur until the final ESC inspection has been fully completed.
✓For demolition permits, only ESC Inspection #3 is required.

32.Cover All Exposed Soil: Construction drainage control shall be maintained by the developer and subject to periodic inspections. During the period from May 1 to September 30, all denuded soils must be covered within 7 days; between October 1 and April 30, all denuded soils must be covered within 12 hours. Additional erosion control measures may be required based on site and weather conditions. Exposed soils shall be stabilized at the end of the workday prior to a weekend, holiday, or predicted rain event.

33.Illicit Discharges and Connections (Municipal Code 15.52) are prohibited into the Storm Drain System:
Contractor is responsible for keeping streets clean and free of contaminants at all times, removing pollutants from a private system that enters the municipal storm system and/or surface and ground water, and preventing an illicit discharge (KMC 15.52) into the municipal storm drain system and/or surface and ground water. If your construction project violates Municipal Code 15.52, the City of Kirkland Storm Maintenance Division will be called to clean the public storm system, and other affected public infrastructure. The contractor(s), property owner, vendor, and any other responsible party may be charged all costs associated with the clean-up and may also be assessed a fine (KMC 1.12.200). The minimum fine is $500. A fine for a repeat violation shall be determined by multiplying the surface water fine by the number of violations. A fine may be reduced or waived for persons who immediately self-report violation to the city at 425-587-3900. A Final Inspection of your Project will not be granted until all costs associated with the clean-up, and penalties, are paid to the City of Kirkland.

Stormwater Conditions
34.Roof Drainage shall be Separate from Footing Drains: When roof and downspout drains are connected to the Public storm system, the onsite private storm must be tight lined separately from the foundation footing drains. All pipe material must be PVC gravity storm-sewer pipe meeting the requirements of ASTM D-3034, from the building to the stub or connection.

35.Curtain Drain may be Required: To protect adjacent properties from site runoff and groundwater due to site grading and soil modification, the owner/developer may be required to install a curtain drain/exfiltration trench along the property lines. The water collected by this drain must be conveyed to the storm drainage system. The configuration of this drain may need to be designed by a civil or geotechnical engineer, as directed by the Public Works Department.

Right-of-Way Conditions
36.Driveway Inspection Required: A Public Works inspection is required before pouring or paving any driveway to confirm that the location and dimensions of the driveway are according to plan.

Illicit Discharges and Connections (Municipal Code 15.52) are prohibited into the Storm Drain System:
Contractor is responsible for keeping streets clean and free of contaminants at all times, removing pollutants from a private system that enters the municipal storm system and/or surface and ground water, and preventing an illicit discharge (KMC 15.52) into a the municipal storm drain system and/or surface and ground water. If your construction project violates Municipal Code 15.52, the City of Kirkland Storm Maintenance Division will be called to clean the public storm system, and other affected public infrastructure. The contractor(s), property owner, vendor, and any other responsible party may be charged all costs associated with the clean-up and may also be assessed a fine (KMC 1.12.200). The minimum fine is $500. A fine for a repeat violation shall be determined by multiplying the surface water fine by the number of violations. A fine may be reduced or waived for persons who immediately self-report violation to the city at 425-587-3900. A Final Inspection of your Project will not be granted until all costs associated with the clean-up, and penalties, are paid to the City of Kirkland.

Check Permit Status

https://PermitSearch.MyBuildingPermit.com

PERMIT NUMBER:
PROJECT NAME:
SITE ADDRESS:

Request an Inspection

https://Inspection.MyBuildingPermit.com

05/29/2024 update

Development Services
Building Permit Cover Sheet

VERY IMPORTANT
A PRINTED COPY OF ALL APPROVED DOCUMENTS MUST REMAIN ON THE JOB SITE AND BE AVAILABLE AT ALL TIMES FOR INSPECTORS.

THIS SHEET MUST BE PRINTED IN COLOR

Planning

Arborist Report
All recommendations in report produced by project arborist, as reviewed and approved by City of Kirkland, must be followed.

FIELD HEIGHT VERIFICATION
Completed building height field verification form required at subfloor inspection/slab insulation inspection

KZC 95.32(2)(e) - Tree and Soil Protection During Development Activity
If any disturbance is proposed within the inner critical root zone of one or more regulated trees on a neighboring property, the applicant shall provide evidence that the owner of said tree(s) has been notified in writing of the potential impact. The Planning Official may waive this requirement if the applicant's qualified professional arborist can demonstrate, through noninjurious methods such as pneumatic root excavations, that there are no roots within the inner critical root zone.

NOTICE HOURS OF WORK:
7 AM TO 8 PM MON-FRI
9 AM TO 6 PM SAT
NO WORK SUNDAYS & HOLIDAYS (PER KZC SEC. 115.25). Exceptions must be approved in writing by Planning Official.

Open Space -
Prior to final inspection, lot area not calculated as lot coverage must be landscaped. No bare compacted soil is allowed. KZC 115.90.1

PCD APPROVED SITE PLAN
Any proposed changes to the approved site plan, such as but not limited to added hard surfaces, HVAC units, tree removals and accessory structures, must be submitted to the Planning and Building Department as a revision to the permit for review and approval by all departments prior to implementation.

PLACING MATERIAL NEAR TREES
No person may conduct any activity within the protected area of any tree designated to remain, including but not limited to, operating or parking equipment, placing solvents, storing building material or soil deposits, or dumping concrete washout or other chemicals. During construction no person shall attach any object to any tree designated for protection.

Building Height Table and Field Verification - continued

BUILDING HEIGHT FIELD VERIFICATION

Site Address: _____

Permit Number: _____

Finished First Floor Elevation: _____

OR

Finished Basement Floor Elevation: _____

I certify that the elevation above has been field verified and is accurate as of the date below.
I also certify that I am the:

○ Owner ○ Owner's Agent

Printed Name: _____

Signature: _____

Company Name: _____

Date: _____

Check Permit Status

https://PermitSearch.MyBuildingPermit.com

PERMIT NUMBER:
PROJECT NAME:
SITE ADDRESS:

Request an Inspection

https://Inspection.MyBuildingPermit.com

05/29/2024 update

2021 WSEC-R Plan Sheet
R-3 Units that comply with the International Residential Code.

- This sheet must be incorporated into the plan set. This sheet is only for prescriptive options.
- If utilizing the Total UA compliance path and using the WSU C3 calculator or equivalent, results must be incorporated into plan set.

☐ 1. (5 credits) Small less than 1500 sq ft conditioned floor area, less than 300 sq ft of glazing area. greater than 500 sq ft but less than 1500 sq ft.
☑ 2. (8 credits) Medium - All dwellings not included in 1 or 3
☐ 3. (9 credits) Large- Dwelling units exceeding 5,000 sq ft of conditioned floor area
☐ 4. (2 credits) Additions - 150 sq ft - 500 sq ft. Credits are not required if less than 150 sq ft, but WSEC-R compliance is.

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

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

For footnotes, please see the WSEC-R

ENERGY EQUALIZATION CREDITS - SELECT ONE

☐	1	For combustion heating equipment meeting minimum federal efficiency standards for the equipment listed in Table C403.3.2(5) or C403.3.2(6)	0
☐	2	For an initial heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) and supplemental heating provided by electric resistance or a combustion furnace meeting minimum standards listed in Table C403.3.2(5)b	1.5
☐	3	For heating system based on electric resistance only (either forced air or Zonal)	0.5
☑	4 – Additional points for the HVAC system included in Table R406.3	For heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) or C403.3.2(9) **or** Air to water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550/590	3.0
☐	5	For heating system based on electric resistance with: 1. Inverter-driven ductless mini-split heat pump system installed in the largest zone in the dwelling, or 2. With 2kW or less total installed heating capacity per dwelling	2.0

EFFICIENT BUILDING ENVELOPE - SELECT ONE
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.3 WITH THE FOLLOWING MODIFICATIONS

☐	1.1	Vertical fenestration U = 0.22.	0.5
☐	1.2	Vertical fenestration U = 0.25 Floor R-38 Basement wall R-21 int plus R-5 ci Ceiling and single-rafter or joist-vaulted R-60 advanced Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab	1.0
☐	1.3	Vertical fenestration U = 0.18 Ceiling and single-rafter or joist-vaulted R-60 advanced 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	1.5
☐	1.4	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	2.5

AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION - SELECT ONE
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.3 WITH THE FOLLOWING MODIFICATIONS

☑	2.1	Reduce the tested air leakage to 2.0 air changes per hour maximum at 50 Pascals.[1] **AND** All whole house ventilation requirements as determined by Section M1505.3 of the IRC or Section 403.8 of the IMC shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.65.	1.0
☐	2.2	Reduce the tested air leakage to 1.5 air changes per hour maximum at 50 Pascals.[1] **AND** All whole house ventilation requirements as determined by Section M1505.3 of the IRC or Section 403.8 of the IMC shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.75.	1.5
☐	2.3	Reduce the tested air leakage to 0.6 air changes per hour maximum at 50 Pascals.[1] **AND** All whole house ventilation requirements as determined by Section M1505.3 of the IRC or Section 403.8 of the IMC shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.80. Duct insulation shall comply with Section R403.3.2.	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.

HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS
Only one option from Items 3.1 - 3.10 may be selected in this category. 3.11 may be taken with 3.1 or 3.2[c] only.

☐	3.1[a, 1]	For a System Type 1 in Table R406.2: Energy Star rated (U.S. North) Gas or propane furnace with minimum AFUE of 95% **or** Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%.	1.0
☐	3.2[a, 1]	For secondary heating system serving System Type 2 in Table R406.2: Energy Star rated (U.S. North) Gas or propane furnace with minimum AFUE of 95% **or** Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%.	0.5
☐	3.3[a, c, d, 1]	Air-source, centrally ducted heat pump with minimum HSPF 2 of 8.1 (HSPF of 9.5). In areas where the winter design temperature as specified in Appendix RC is 23°F or below, a cold climate heat pump found on the NEEP cc ASHP qualified product list shall be used.	0.5
☐	3.4[a, d, 1]	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.	1.5
☐	3.5[d, 1]	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 2 of 9 (HSPF of 10.0) shall be installed and provide heating to the largest zone of the housing unit.	1.5
☑	3.6[a, 1]	Air-source, centrally ducted heat pump with minimum HSPF 2 of 9.4 (HSPF of 11.0). A centrally ducted air source cold climate variable capacity heat pump (cc VCHP) found on the NEEP cc VCHP qualified product list with a minimum of 8.5 HSPF 2 (10 HSPF) may be used to satisfy this requirement. In areas where the winter design temperature as specified in Appendix RC is 23°F or below, an air source centrally ducted heat pump shall be a cold climate variable capacity heat pump as listed on the NEEP qualified product list.	1.0
☐	3.7[a, d, e, 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 2 of 9 (HSPF of 10) shall be sized and installed to provide heat to entire dwelling unit at the design outdoor air temperature. **Exception**: In homes with total heating loads of 24,000 or less using multi-zone mini-split systems with nominal ratings of 24,000 or less, the minimum HSPF s to claim this credit shall be 8.19 HSPF 2 (or 9 HSPF).	2.0
☐	3.8[a, 2]	Air-to-water heat pump with minimum COP of 3.2 at 47°F, rated in accordance with AHRI 550/590 by an accredited or certified testing lab.	1.0
☐	3.9[1]	Gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15.	1.5
☐	3.10[f, 3]	Combination water heating and space heating system shall include one of the following: Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.	2.5
☐	3.11[c, 4]	Connected thermostat meeting ENERGY STAR Certified Smart Thermostats/EPA ENERGY STAR specifications.	0.5

1. 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.
2. 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).
3. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of the minimum energy savings.
4. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the thermostat model.

a. An alternative heating source sized at a maximum of 0.5 Watts/ft2 (equivalent) of heated floor area or 500 Watts, whichever is bigger, may be installed in the dwelling unit.
b. See Section R401.1 and residential building in Section R202 for Group R-2 scope.
c. Option 3.11 can only be taken with Options 3.1 and 3.3. To qualify to claim Option 3.11 with 3.3, the system shall be a 1-2 speed heat pump system. Variable capacity heat pumps are ineligible from claiming this option.
d. This option may only be claimed if serving System Type 5 from Table R406.2.
e. Primary living areas include living, dining, kitchen, family rooms, and similar areas.
f. Option 3.10 may only be taken with Efficient Water Heating Option 5.1 or 5.2. Equipment sizing for space heating shall be calculated as provided in Section R403.7 with increased capacity to provide a minimum of 75 percent of peak hot water demand or shall be sized in accordance with approved manufacturer's specifications or guidance. Supplementary heat for water heating shall be in accordance with Section R403.5.7.

HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTION

☑	4.1	HVAC equipment and associated duct system(s) installation shall comply with the requirements of Section R403.3.2. Electric resistance heat, hydronic heating and ductless heat pumps are not permitted under this option. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and shall show the location of the heating and cooling equipment and all the ductwork.	0.5

EFFICIENT WATER HEATING OPTIONS
Items 5.1 and 5.2 may be combined with any option.Only one option from 5.3 - 5.8 may be selected.

☐	5.1[1]	A drain water heat recovery unit(s) shall be installed, which captures waste water heat from at least two showers, including tub/shower combinations. It is acceptable, but not required, for sink water to be connected. Unit shall have a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 54% if installed for unequal flow. Such units shall be rated in accordance with CSA B55.1 or IAPMO IGC 346-2017 and be so labeled.	0.5
☑	5.2[2]	For Compact Hot Water Distribution system credit, the volume shall store not more than 16 ounces of water between the nearest source of heated water and the termination of the fixture supply pipe where calculated using Section R403.5.2. Construction documents shall indicate the ounces of water in piping between the hot water source and the termination of the fixture supply. When the hot water source is the nearest primed plumbing loop or trunk, this must be primed with an On Demand recirculation pump and must run a dedicated ambient return line from the furthest fixture or end of loop to the water heater.	0.5
☐	5.3[3]	Water heating system shall include the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.80.	0.5
☐	5.4[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 System **or** Water heater heated by ground source heat pump meeting the requirements of Option 3.4.	1.0
☐	5.5[3]	Water heating system shall include one of the following: Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.	1.5
☑	5.6[3]	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	2.0
☐	5.7[3]	Water heating system shall include one of the following: Electric heat pump water heater with a minimum UEF of 2.9 and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors. Equipment shall meet Section 4, requirements for all units, of the NEEA standard Advanced Water Heating Specification with the UEF noted above	2.5
☐	5.8	Combination water heating and space heating system shall include one of the following: Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.	2.5

1. 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.
2. To qualify for this credit, the dwelling must have a minimum of 1.5 bathrooms.
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. (Option 5.4 & 5.5 &5.8 - For solar water heating systems, the calculation of the minimum energy savings).

RENEWABLE ELECTRIC ENERGY OPTION

☐	6.1	For each 600 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 4.5 credits. Generation shall be calculated as follows: • For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTs or alternative approved 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.	0.5 – 4.5 **Select credit**

APPLIANCE PACKAGE OPTION

☐	7.1	All of the following appliances shall be new and installed in the dwelling unit and shall meet the following standards: 1. Dishwasher, standard – Energy Star rated, Most Efficient 2021 or Dishwasher, compact – Energy Star rated (Version 6.0) 2. Refrigerator (if provided) – Energy Star rated (Version 5.1) 3. Washing machine (Residential) – Energy Star rated (Version 8.1) 4. Dryer – Energy Star rated, Most Efficient 2022 To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the appliance type and provide documentation of Energy Star compliance. At the time of inspection, all appliances shall be installed and connected to utilities. Dryer ducts and exterior dryer vent caps are not permitted to be installed in the dwelling unit.	0.5

WSEC-R

TABLE R302.1(1) EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.3 of the *International Building Code* with exposure from both sides	0 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not allowed	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood[a, b]	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	NA	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet

For SI: 1 foot = 304.8 mm.
NA = Not Applicable.
a. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fireblocking is provided from the wall top plate to the underside of the roof sheathing.
b. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where ventilation openings are not installed in the rake overhang or in walls that are common to attic areas.

NE 1/4, SE 1/4, SEC 9, TWP 25N, RGE 5E, W.M.

MARTIN SHORT PLAT

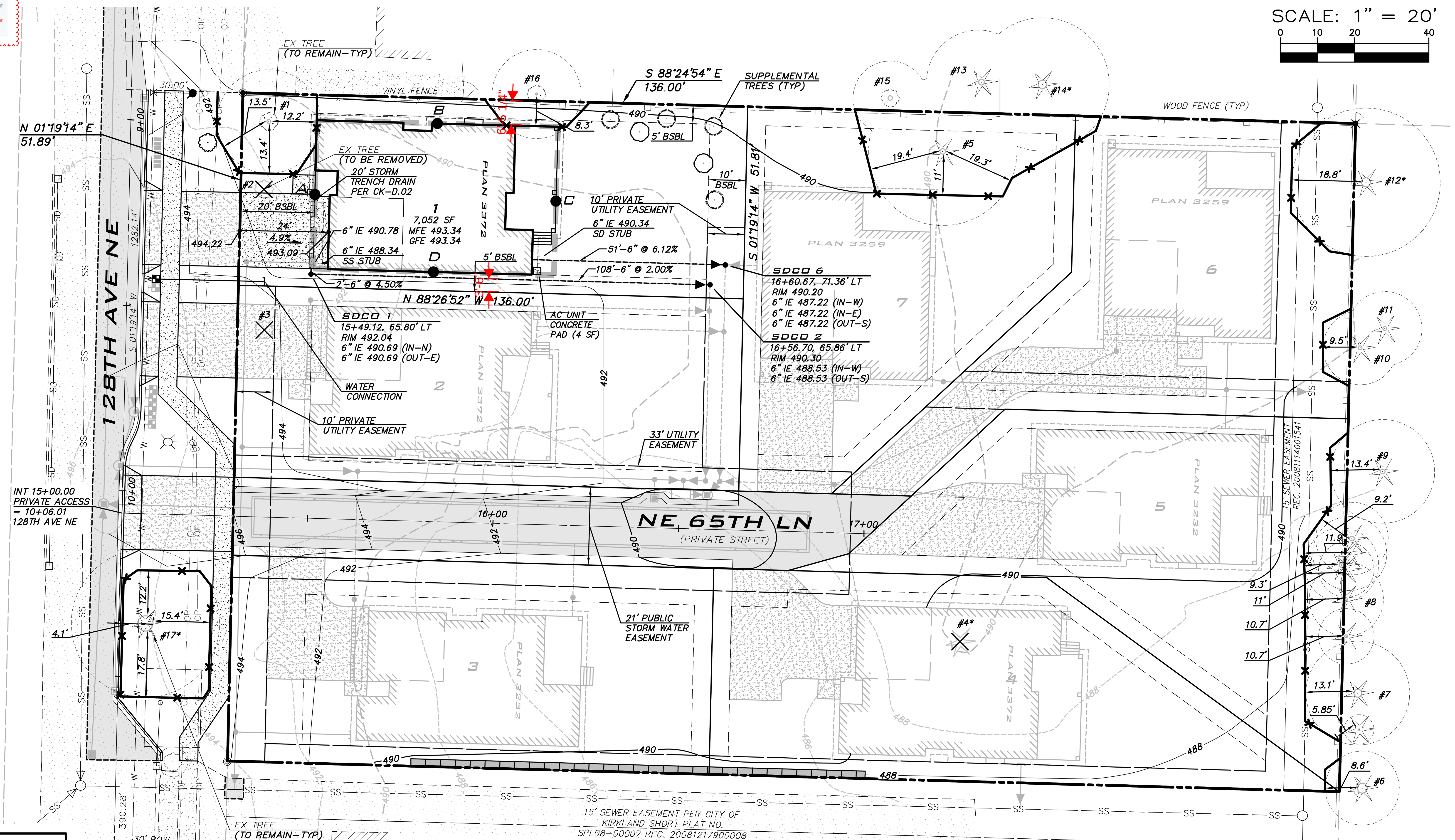
BUILDING PERMIT SITE PLAN

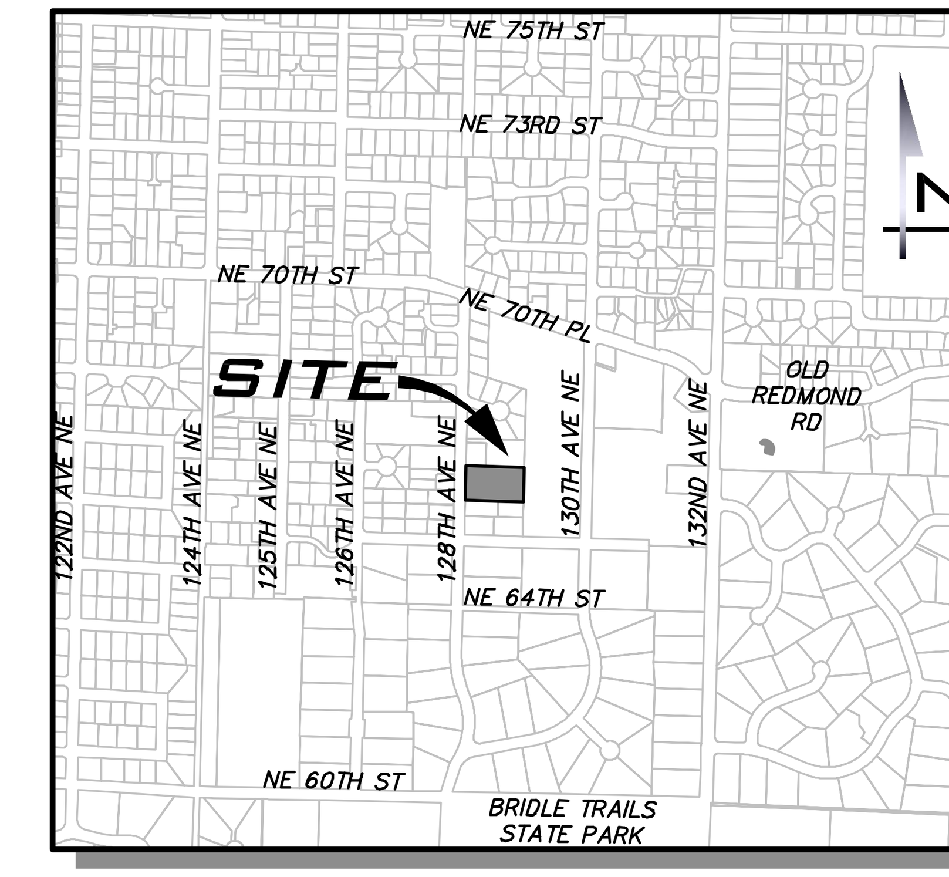
LOT 1 - 6528 128TH AVE NE

N

SCALE: 1" = 20'

0 10 20 40





VICINITY MAP

NOT TO SCALE

LEGAL DESCRIPTION

THE NORTH 180 FEET OF LOT 49, BLOCK 82, BURKE & FARRAR'S KIRKLAND ADDITION TO THE CITY OF SEATTLE, DIVISION NO. 20, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 21 OF PLATS, PAGE 43, IN KING COUNTY, WASHINGTON;

SUBJECT TO A SANITARY SEWER EASEMENT OVER, UNDER AND ACROSS THE EAST 15 FEET THEREOF, RECORDED UNDER RECORDER'S FILE NUMBER 20081114001541, RECORDS OF KING COUNTY, WASHINGTON;

ALSO SUBJECT TO AND TOGETHER WITH A SANITARY SEWER FACILITIES AGREEMENT RECORDED UNDER RECORDER'S FILE NUMBER 20101130000466, RECORDS OF KING COUNTY, WASHINGTON.

APN: 124150-0266

VERTICAL DATUM

NAVD '88

BENCHMARK

BENCH MARK: POINT NAME: 108: 3" BRASS DISK STAMPED "CITY OF REDMOND DEPT OF PUBLIC WORKS, BM 85", BELLEVUE #202, FLUSH WITH SIDEWALK, 1.3' SE OF THE SE FACE OF TRAFFIC SIGNAL POLE IN THE NE QUAD OF THE INT OF 132ND NE & OLD REDMOND ROAD.

ELEV: 466.536

PROPERTY CORNERS

P1 SET REBAR & CAP, LS 30581

P2 FOUND REBAR & CAP, 0.02' W & 0.13' S

P3 SET MAG W/ TAG, LS 30581

SURVEY NOTES

INSTRUMENT USED: TRIMBLE S7 EDM
METHOD USED: FIELD TRAVERSE

APPROXIMATE POINT ACCURACY: ±0.05'

SURVEY MEETS OR EXCEEDS STATE STANDARDS PER WAC 332-130-090.

MONUMENTS SHOWN HEREON WERE VISITED ON JANUARY 15, 2024.

THE INFORMATION SHOWN ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE INDICATED DATE AND CAN ONLY BE CONSIDERED AS THE GENERAL EXISTING CONDITION AT THAT TIME.

NO EASEMENTS, RESTRICTIONS OR RESERVATION OF RECORD WHICH WOULD BE DISCLOSED BY A TITLE REPORT ARE SHOWN.

PROJECT TEAM

OWNER
DGR DEVELOPMENT INC.
PO BOX 13316
MILL CREEK, WA 98082
(425) 210-6367
CONTACT: DOMINIQUE RUYBAL

CIVIL ENGINEER
ATWELL, LLC
25 CENTRAL WAY, SUITE 400
KIRKLAND, WA 98033
(425) 250-7224
CONTACT: TODD OBERG, PE

SURVEYOR
EMERALD LAND SURVEYING, INC.
PO BOX 13694
MILL CREEK, WA 98082
(425) 359-7198
CONTACT: BRENT EBLE, PLS

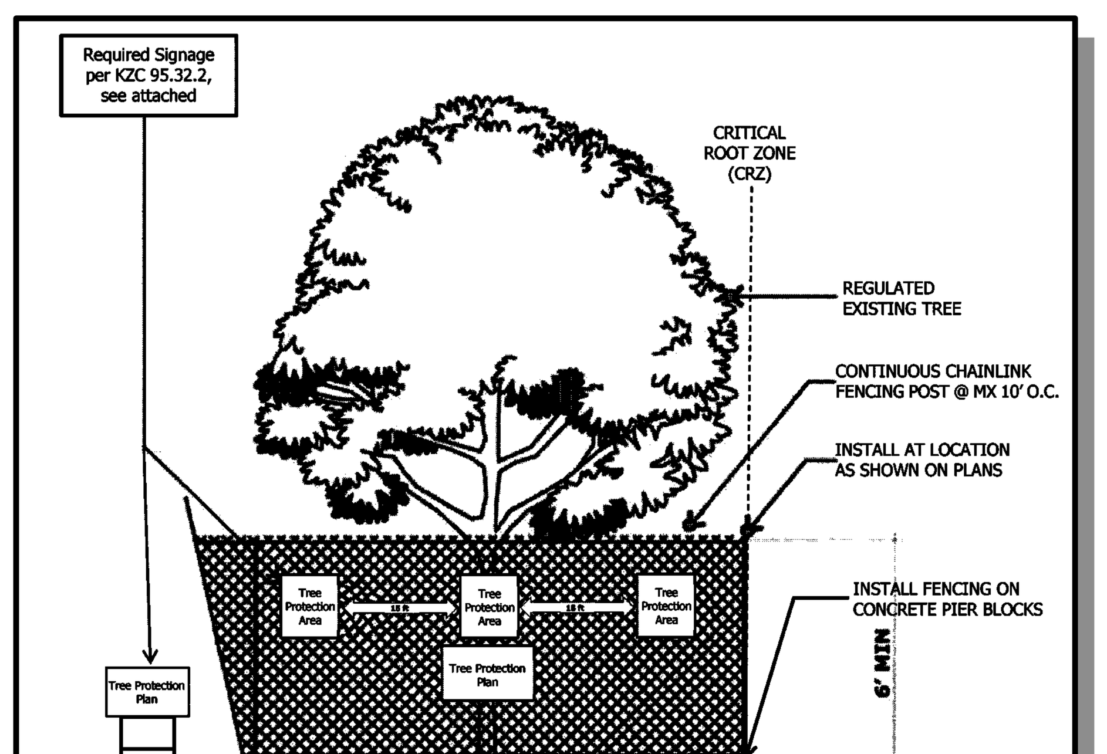
ARBORIST
SEATTLE ARBORICULTURAL ASSOCIATES
18032 17TH AVE NW
SHORELINE, WA 98177
(206) 510-4107
CONTACT: JOHN HUSHAGEN

GEOTECH
EARTH SOLUTIONS
15365 NE 90TH ST, SUITE 100
REDMOND, WA 98052
(425) 449-4704
CONTACT: SCOTT RIEGEL, LG, LEG

PROJECT INFORMATION

PARCEL NUMBER:	1241500266
SITE ADDRESS:	6528 128TH AVE NE KIRKLAND, WA 98033
SITE AREA:	53,993 SF
ACREAGE:	1.24 AC
ZONING:	RSX 7.2
PROPOSED USE:	LOW DENSITY RESIDENTIAL
SEWAGE DISPOSAL:	CITY OF KIRKLAND
WATER SYSTEM:	CITY OF KIRKLAND
SETBACKS:	20' FRONT (F), 5' SIDE (S), 10' REAR (R)

Lot 1		10/4/2024
AVERAGE BUILDING ELEVATION (ABE) (KZC 115.59)		
WALL SEGMENT LETTER	WALL SEGMENT LENGTH (FT)	EX GRADE @ MIDPOINT
A	40.00	491.63
B	65.00	489.44
C	40.00	490.41
D	65.00	492.01
	ABE:	490.84
	FINISHED FLOOR ELEVATION (FFE):	493.34
	BUILDING HEIGHT ABOVE MFE:	25.00
	MAX HEIGHT ABOVE ABE PER ZONE:	30.00
	RIDGE ELEVATION:	518.34
	MAX RIDGE ELEVATION:	520.84



1. MINIMUM SIX (6) FOOT HIGH CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE (CRZ) OR DESIGNATED TREE PROTECTION ZONE (TPZ) OF THE TREE TO BE SAVED. FENCE SHALL BE INSTALLED PER APPROVED TREE FENCING PLAN CONFIGURATION. INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.
2. NO ENTRY, GROUND DISTURBANCE, STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.
3. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION OUTSIDE OF TREE FENCE AREA: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE.
4. TREE PROTECTION AREA FENCING SIGNAGE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE AS DETAILED ABOVE (SEE SHEET 3 - ATTACHED)
5. SITE PLANS SHOWING APPROVED TREE RETENTION/PROTECTION SHALL BE DISPLAYED ON DEVELOPMENT SITES IN PLAIN VIEW WITH GENERAL CONTRACTOR OR OTHER RESPONSIBLE PARTY'S PHONE NUMBER (SEE SHEET 4 - ATTACHED)

CITY OF KIRKLAND WASHINGTON

TREE PROTECTION FENCING DETAIL
(for public and private trees)

SUPLEMENTAL TREE TABLE - LOT 1

PER KZC 95.34.4 - REQUIRED MINIMUM SIZE OF THE SUPPLEMENTAL TREE WORT (1) ONE TREE CREDIT SHALL BE 6-FT TALL FOR THUJA/ARBORVITAE OR 4-FT TALL FOR NATIVE OR OTHER CONIFERS; 2-INCH CALIPER FOR DECIDUOUS OR BROAD LEAF EVERGREEN TEE.

TREE SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE
(symbol)	4	THUJA PLICATA 'EXCELSA' / WESTERN RED CEDAR	6' MIN PLANTED HEIGHT
(symbol)	2	ACER TRUNCATUM 'PACIFIC SUNSET' TM / PACIFIC SUNSET MAPLE	2" CAL

TREE LEGEND

EXISTING TREE TO BE REMOVED
DRIP LINE
EXISTING TREE TO REMAIN
EXISTING OFF-SITE TREE
EXISTING NON-VIABLE TREE

TREE NOTES

1. DRIPLINES AND LOD'S SHOWN ARE PER ARBORIST REPORT.
2. INSTALL TREE PROTECTION FENCE AND SIGNAGE AT DRIPLINE PER COK TREE FENCING PROTECTION DETAIL, ON THIS SHEET.
3. REFER TO ARBORIST REPORT FOR ADDITIONAL DETAILS RELATED TO TREE PROTECTION MEASURES.
4. CONTRACTOR TO PROVIDE ARBORIST ON-SITE DURING EXCAVATION AND PREPARATION WITH WHEN WORK IS REQUIRED AND ALLOWED UP TO THE "LIMITS OF DISTURBANCE".

LOT COVERAGE CALCULATION - KZC 115.90							
LOT NO.	GROSS AREA (SF)	Building (SF)	Driveway	Walkway	AC Unit Pad	Patio	Total
1	7,052	2,438	477	29	4	0	2,948

MARTIN SHORT PLAT
LOT COVERAGE & FLOOR AREA RATIO (F.A.R.) CALCULATIONS
Lot Coverage: Reduced Impervious Surface Coverage per below
F.A.R.: 50% for the RS 7.2 Zone per KMC + 10% D-10

LOT NO.	AREA	MAX LOT COVERAGE	F.A.R.
1	7052	4231.2	3463

TREE PROTECTION NOTES

a. FOR EXCAVATION OCCURRING NEAR TREES 101, 102, AND 104 PNEUMATIC AIR EXCAVATION SHALL BE EMPLOYED AND MONITORED BY A QUALIFIED ARBORIST.
1. ANY ROOTS 2 INCHES OR LARGER SHALL BE RETAINED WHEREVER POSSIBLE. ANY ROOTS THAT NEED TO BE CUT SHALL BE CUT CLEANLY WITH THE COORDINATION OF THE ARBORIST.
2. EXCAVATION UNDER THE ROOTS SHALL BE FILLED AS SOON AS POSSIBLE TO AVOID THEM DRYING OUT. IF ROOTS MUST REMAIN EXPOSED, THEY SHALL BE WETTED REGULARLY AND COVERED IN BURLAP OR JUTE TO PREVENT DESICCATION.
3. IF EQUIPMENT IS USED FOR EXCAVATION BEYOND THE AIR EXCAVATION, STEPS SHALL BE TAKEN TO REDUCE COMPACTION AS MUCH AS POSSIBLE INCLUDING:
   3.1. A FLAT-FRONTED (TOOTHLESS BUCKET) SHALL BE USED.
   3.2. KEEP EQUIPMENT AS FAR FROM TREE TRUNKS AS POSSIBLE.
   3.3. DO NOT MOVE EQUIPMENT THROUGH ROOT ZONES.
4. DOCUMENT ROOT CUTS WITH PHOTOGRAPHS AND PROVIDE AN ARBORIST REPORT DISCUSSING RISK POTENTIAL TO THE PLANNING OFFICIAL. IF DISTURBANCES ARE DETERMINED TO BE IMPACTFUL, THE TREE OWNER SHALL BE NOTIFIED IN WRITING OF THE IMPACTS.

TREE DENSITY CALCS

TREE DENSITY CALCULATIONS 8/21/2024
EXISTING & PROPOSED TREE DENSITY CREDITS:

LOT NO.	AREA (SF)	REQ. TREE CREDITS	EX. TREE CREDITS	NEEDED CREDITS
1	7,052	8	2	6
2	7,043	8	0	8
3	7,204	8	0	8
4	7,202	8	0	11****
5	7,460	9	2	7
6	7,246	9	0	9
7	7,208	8	11	0

*50 CREDITS PER ACRE

** TREE CREDIT VALUE PER ARBORIST REPORT PREPARED BY AMERICAN FOREST MANAGEMENT, INC.

*** 1 CREDIT = 6' TALL CONIFER OR 2" CALIPER DECIDUOUS OR BROADLEAF EVERGREEN.

**** TREE #4* IS A LANDMARK TREE AND REQUIRES 3 MITIGATION TREES FOR IT'S REMOVAL.

EXISTING UTILITY NOTE

EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. THERE IS NO GUARANTEE THAT ALL UTILITY LINES ARE SHOWN, OR THAT THE LOCATION, SIZE AND MATERIAL IS ACCURATE. THE CONTRACTOR SHALL UNCOVER ALL INDICATED PIPING WHERE CROSSING, INTERFERENCES, OR CONNECTIONS OCCUR PRIOR TO TRENCHING OR EXCAVATION FOR ANY PIPE OR STRUCTURES, TO DETERMINE ACTUAL LOCATIONS, SIZE AND MATERIAL. THE CONTRACTOR SHALL MAKE THE APPROPRIATE PROVISION FOR ANY PROPOSED REVISION OF SAID FACILITIES. THE CONTRACTOR SHALL NOTIFY ONE CALL AT 8-1-1 (WASHINGTON811.COM) AND ARRANGE FOR FIELD LOCATION OF EXISTING FACILITIES BEFORE CONSTRUCTION.

ATWELL
25 CENTRAL WAY, SUITE 400
KIRKLAND, WA 98033
P: 425.216.4051
WWW.ATWELL-GROUP.COM

SCALE: AS NOTED
PROJECT MANAGER: TODD OBERG, PE
PROJECT ENGINEER: OLIVIA WESTMORELAND
DESIGNER: NADIA KROUMOVA
ISSUE DATE: 3/12/2025

REVISIONS

NO	DATE	BY	
1	3/12/25	BO	ADDED AC UNIT PAD LOCATION & REVISED PER CITY COMMENTS

LOT 1
MARTIN SHORT PLAT
6528 128TH AVE NE
PARCEL #1241500266
CITY OF KIRKLAND WASHINGTON

JOB NUMBER: 24000344
SHEET NAME: SP-01
SHT 1 OF 1

22X34
Mar 12, 2025 - 10:23am - User bdenney
\\wakir\Projects\Projects\24000344\CAD (E)\Dwg\Final\Plot Plan\24000344-Lot01.dwg

Written dimensions on this drawing shall have precedence over scaled dimensions. Contactor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work, or the Contractor shall accept full responsibility for the cost to rectify same.

DIRECTORY

CONSULTANTS

ARCHITECT
NASH AND ASSOCIATES ARCHITECTS
8003 118th AVE NE
KIRKLAND, WA 98033
PHONE: (425) 242-7440

STRUCTURAL ENGINEER
FELTEN GROUP
23175 224th PLACE SE SUITE C
MAPLE VALLEY, WA 98038
PHONE: (425) 531-7950

CODE INFORMATION

CONSTRUCTION TYPE: 5B
OCCUPANCY: R3/U-1
2021 INTERNATIONAL RESIDENTIAL CODE FOR ONE AND TWO FAMILY DWELLINGS
2021 INTERNATIONAL FIRE CODE
2021 UNIFORM PLUMBING CODE
2021 WASHINGTON STATE ENERGY CODE
2021 INTERNATIONAL MECHANICAL CODE
2023 NATIONAL ELECTRICAL CODE

PROJECT DESCRIPTION

NEW SINGLE FAMILY RESIDENCE TO BE CONSTRUCTED

NOTES:

1. ALL WOOD EXPOSED TO WEATHER SHALL BE PRESSURE TREATED, PAINTED OR CEDAR.
2. CAULK AND SEAL ALL WINDOW/DOOR AND EXTERIOR ENVELOPE PENETRATIONS.
3. GLAZING PER STATE ENERGY CODE.
4. PROTECTION FROM DECAY IS REQUIRED FOR ALL WOOD SIDING AND WALL FRAMING LESS THAN 2" ABOVE CONCRETE STEPS, PORCH SLABS, PATIO SLABS, AND SIMILAR HORIZONTAL SURFACES EXPOSED TO THE WEATHER
5. REFER TO ALL ELEVATIONS FOR TYPICAL NOTES.
6. S.G. = SAFETY GLASS

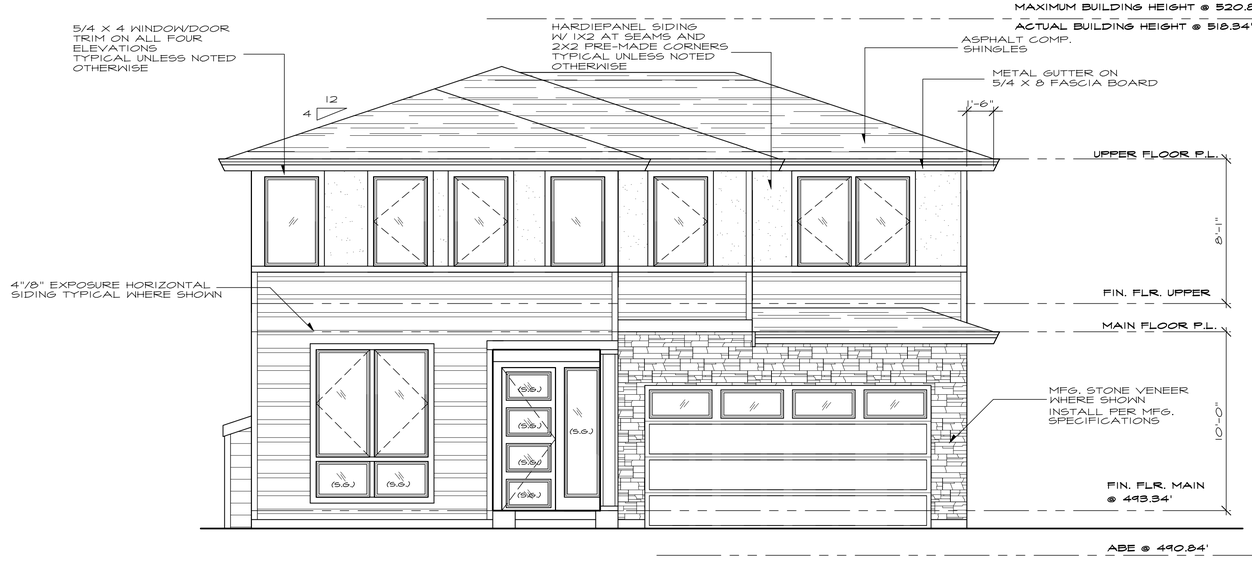
FLASHING NOTE

APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED SHINGLE FASHION IN SUCH A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER INTO THE BUILDING STRUCTURAL FRAMING COMPONENTS THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH. APPROVED CORROSION RESISTANT FLASHING SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:

1. EXTERIOR WINDOW AND DOOR OPENINGS. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER RESISTIVE BARRIER FOR SUBSEQUENT DRAINAGE
2. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS
3. UNDER AND AT THE ENDS OF MASONRY, WOOD, OR METAL COPINGS AND SILLS
4. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM
5. WHERE EXTERIOR PORCHES, DECKS, OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD FRAME CONSTRUCTION
6. AT WALL AND ROOF INTERSECTIONS
7. AT BUILT IN GUTTERS

ADDRESS NOTE:

ADDRESS NUMBERS SHALL BE A MINIMUM 4" HIGH WITH A MINIMUM STROKE WIDTH OF 1/2" AND TO BE ON A CONTRASTING BACKGROUND PER IRC 319.1



WEST ELEVATION

SEE GENERAL NOTES SCALE: 1/4" = 1'-0"

SQUARE FOOTAGES	
MAIN	1661
UPPER	1711
TOTAL	3372
GARAGE	391
COVERED PORCH	41
COVERED DECK	345

FAR CALCULATIONS
(SQUARE FOOTAGE TAKEN FROM THE AREA WITHIN THE EXTERIOR WALLS PER KMC 115.42)

SQUARE FOOTAGES	
MAIN	1578
UPPER	1614
GARAGE	371
STAIR EXEMPT.	-100
TOTAL	3463

NO ATTIC AREAS OVER 5'-0" TALL

LOT AREA= 7052 SQFT
.5 FAR ALLOWED PER KMC (3526 MAX SQFT)
ACTUAL 3463 SQFT (49.1%)

EAST ELEVATION

SEE GENERAL NOTES SCALE: 1/4" = 1'-0"

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA • 98033 • 425-828-4117
www.nash-architects.com

DGR DEVELOPMENT

ELEVATION A

project:
PLAN 3372
KIRKLAND, WA
LOT 1- MARTIN S.P.

date: 03-11-24
permit:
revisions:
02-27-25

drawn by: MWJ
checked by:

SHEET
A1

Written dimensions on this drawing shall have precedence over scaled dimensions. Contactor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work, or the Contractor shall accept full responsibility for the cost to rectify same.

NORTH ELEVATION

SEE GENERAL NOTES SCALE: 1/4" = 1'-0"

SOUTH ELEVATION

SEE GENERAL NOTES SCALE: 1/4" = 1'-0"

(287) REGISTERED ARCHITECT
MICHAEL WAYNE JOHNSON
STATE OF WASHINGTON

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA • 98033 • 425-828-4117
www.nash-architects.com

DGR DEVELOPMENT

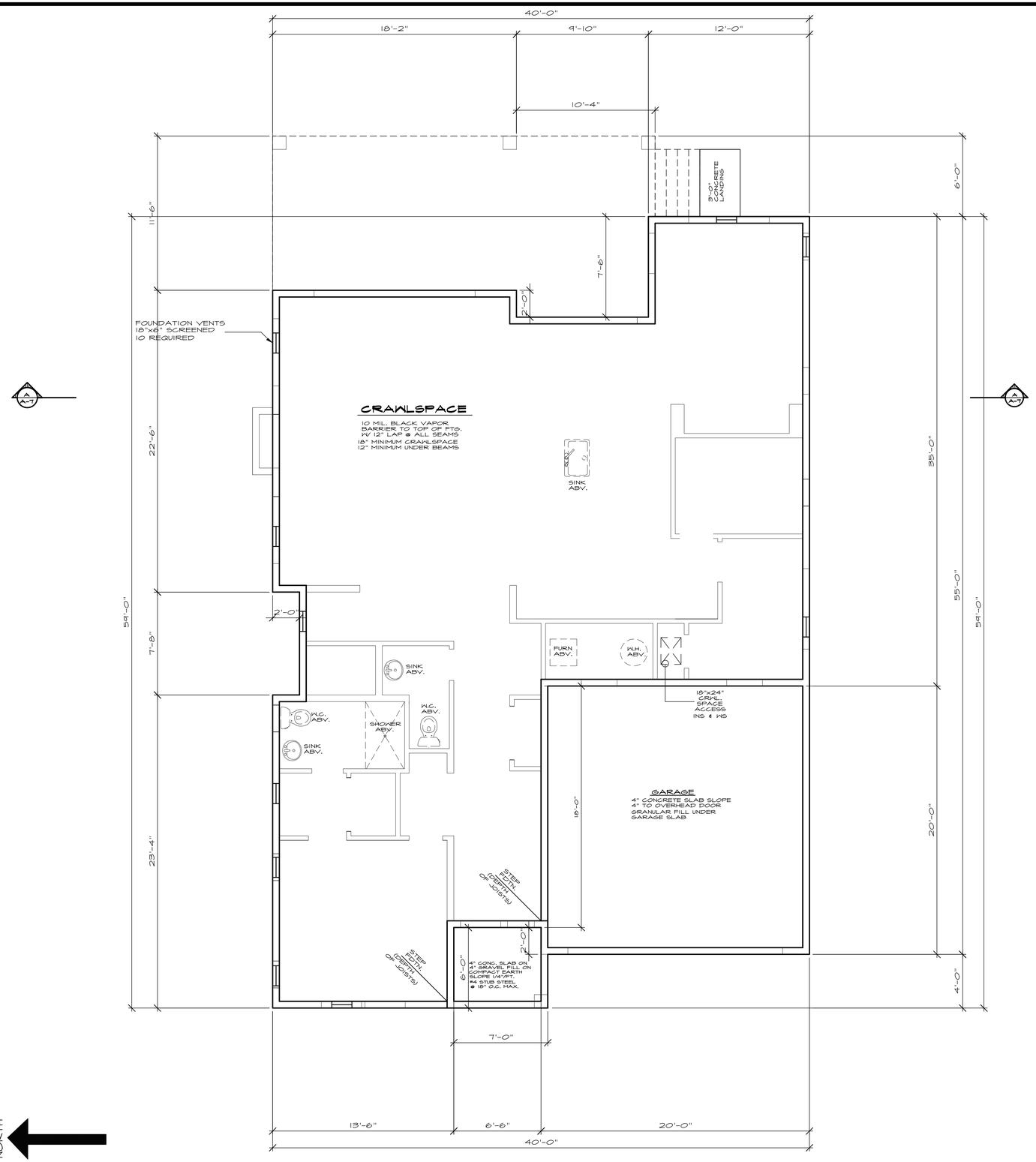
project:
PLAN 3372
KIRKLAND, WA
LOT 1- MARTIN S.P.

date: 03-11-24
permit:
revisions:

drawn by: MWJ
checked by:

SHEET
A2

Written dimensions on this drawing shall have precedence over scaled dimensions. Contactor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work, or the Contractor shall accept full responsibility for the cost to rectify same.



FOUNDATION VENT CALCULATION

1661 SQUARE FEET / 300 = 5.53 / .5T

10 VENTS REQUIRED

STRUCTURAL NOTES:

SEE "S" SHEETS FOR ALL STRUCTURAL NOTES AND DETAILS PROVIDED BY FELTEN GROUP

FOUNDATION PLAN

SEE GENERAL NOTES

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

12871 REGISTERED ARCHITECT MICHAEL WAYNE JOHNSON STATE OF WASHINGTON

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA • 98033 • 425-828-4417
www.nasharchitects.com

DGR DEVELOPMENT

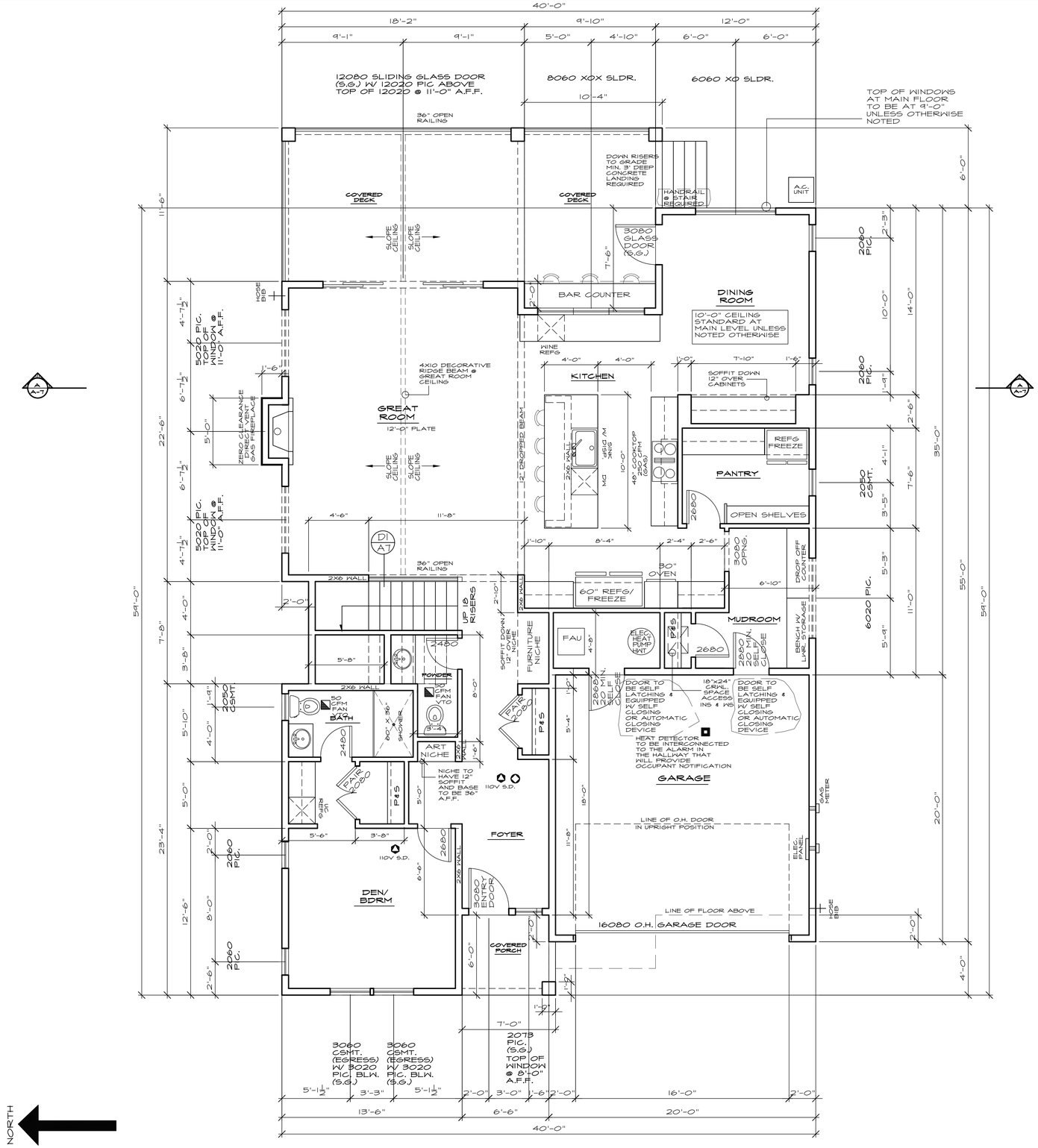
project: PLAN 3372 KIRKLAND, WA

date: 03-11-24
permit:
revisions:

drawn by: MWJ
checked by:

SHEET A3

Written dimensions on this drawing shall have precedence over scaled dimensions. Contactor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work, or the Contractor shall accept full responsibility for the cost to rectify same.



NOTES:

ALL EXTERIOR HEADERS MUST BE INSULATED WITH R-10 INSULATION PER IRSEC

FOR WINDOWS WITH OPERABLE OPENINGS MORE THAN 72" ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING SHALL BE 24" MINIMUM ABOVE THE FLOOR. EXCEPTIONS; FULLY OPEN WINDOWS WHERE A 4" SPHERE MAY NOT PASS THROUGH OR WHERE FALL PROTECTION DEVICES ARE PROVIDED PER ASTM F 2090 OR R312.2

TUB/SHOWER UNITS SHALL HAVE FIRE BLOCKING BETWEEN WALL STUDS AND WATERPROOF SURROUNDS TO +72" FROM DRAIN. GLAZING, INCLUDING WINDOWS WITHIN +72" OF DRAIN, SHALL BE SAFTEY GLASS. SHOWER FLOW IS LIMITED TO 1.75 GAL/MIN.

EXHAUST FANS LARGER THAN 50CFM MAY BE CONNECTED TO 4" SMOOTH WALL VENT PIPE IF RUNS DO NOT EXCEED 20' IN LENGTH. THE MINIMUM SIZE OF FLEX DUCT IS 5" DIAMETER WITH A MAXIMUM RUN OF 15'

COMBUSTION AIR REQUIRED FOR ALL FUEL BURNING APPLIANCES

EXTERIOR DOORS SHALL BE PROVIDED WITH LANDINGS OR FLOORS NOT MORE THAN 7-3/4" BELOW THE TOP OF THE THRESHOLD PROVIDED THAT THE DOOR DOES NOT SWING OVER THE LANDING OR FLOOR. R311.3.1 EXCEPTION

PROVIDE A MOISTURE EXHAUST DUCT FOR THE CLOTHES DRYER TO OUTSIDE AIR. THE DUCT SHALL BE MINIMUM 4" INCH IN DIAMETER OF METAL OR APPROVED MATERIAL WITH SMOOTH SURFACE. THE LENGTH SHALL NOT EXCEED 35 FEET (INCLUDING TRANSITION DUCTS) IF FITTINGS ARE USED, THE MAXIMUM LENGTH SHALL BE REDUCED TO BE PER DRYER OR THE DRYER EXHAUST POWER VENTILATOR'S MFG'S INSTALLATION PER IMC 504.8

ENVIRONMENTAL AIR DUCT EXHAUST SHALL TERMINATE NOT LESS THAN 3 FEET FROM A PROPERTY LINE AND 3 FEET FROM OPENINGS INTO A BUILDING PER IMC 501.3.1

THE MIXING VALVE IN A SHOWER (INCLUDING OVER A TUB) SHALL BE PRESSURE BALANCING SET AT 120F. THE WATER HEATER THERMOSTAT CANNOT BE USED TO MEET THESE PROVISIONS PER UPC 408.3 AND 409.4

COMBUSTION AIR TO BE PROVIDED TO FURNACE CLOSET VIA FRESH AIR FROM OUTSIDE. MECH CONTRACTOR TO FIELD VERIFY

EXPANSION TANK, PRESSURE RELIEF VALVE, AND SHUT OFF VALVE TO BE INSTALLED FOR THE WATER HEATER PER UPC 608.3

BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION PER WSEC R403.3.5

DUCTS WHICH PENETRATE THE WALL OR FLOOR BETWEEN THE WALL OR FLOOR BETWEEN THE DWELLING AND GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE SHEET STEEL OR APPROVED MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE PER IRC R302.5.2.

LEGEND:

- SMOKE DETECTOR 110V INTERCONNECTED W/ BATTERY BACK-UP. PER IRC 314
- CARBON MONOXIDE DETECTOR PER IRC 315

GARAGE NOTES:

1. GARAGE/LIVING SEPARATION, USE 5/8" TYPE 'X' GWB ON ALL SUPPORTING WALLS AND CEILINGS WRAP POSTS AND BEAMS.
2. INSULATE ALL WARM WALLS AND CEILING.
3. DOOR BETWEEN GARAGE AND RESIDENCE SHALL BE 1-3/8" MINIMUM THICK SOLID WOOD OR STEEL WITH SOLID OR HONEYCOMB CORE OR 20 MINUTE FIRE RATED EQUIPPED WITH A SELF CLOSING DEVICE.
4. DUCTS IN GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPERATING THE RESIDENCE FROM THE GARAGE SHALL BE NO. 26 GAGE SHEET STEEL AND HAVE NO OPENINGS INTO THE GARAGE

HEATING NOTES:

+ INSTALL PER ASHRAE 90A-88
+ 18" PLATFORM OF 2 LAYERS 3/4" PLYWOOD (1 LAYER IF PLATFORM IS ON SLAB)
+ SEE HEATING NOTES

OPTIONAL NOTES; RAISE ALL PILOTS, BURNERS AND SWITCHES +18" MINIMUM ABOVE SLAB.

FIREPLACE NOTE:

'0' CLEARANCE FIREPLACE W/ DIRECT VENT

FACTORY BUILT FIREPLACE SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL HAVE APPROVAL LABEL ATTACHED

5/8" TYPE "X" GWB TO ROOF SHEATHING

FIREPLACES & STOVES MUST BE D.O.E. APPROVED & BE TESTED, CERTIFIED & LABELED AS SUITABLE FOR USE DURING A FIRST STAGE BURN BAN.

STRUCTURAL NOTES:

SEE "S" SHEETS FOR ALL STRUCTURAL NOTES AND DETAILS PROVIDED BY FELTEN GROUP

NORTH

MAIN FLOOR PLAN

SEE GENERAL NOTES

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

REGISTERED ARCHITECT
12871
MICHAEL WAYNE JOHNSON
STATE OF WASHINGTON

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA • 98033 • 425-828-4117
www.nash-architects.com

IQR DEVELOPMENT

project:
PLAN 3372
KIRKLAND, WA

date: 03-11-24
permit:
revisions:

drawn by: MWJ
checked by:

SHEET
A4

Written dimensions on this drawing shall have precedence over scaled dimensions. Contactor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work, or the Contractor shall accept full responsibility for the cost to rectify same.

NOTES:

ALL EXTERIOR HEADERS MUST BE INSULATED WITH R-10 INSULATION PER WSEC

FOR WINDOWS WITH OPERABLE OPENINGS MORE THAN 72" ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING SHALL BE 24" MINIMUM ABOVE THE FLOOR. EXCEPTIONS: FULLY OPEN WINDOWS WHERE A 4" SPHERE MAY NOT PASS THROUGH OR WHERE FALL PROTECTION DEVICES ARE PROVIDED PER ASTM F 2090 OR R312.2

TUB/SHOWER UNITS SHALL HAVE FIRE BLOCKING BETWEEN WALL STUDS AND WATERPROOF SURROUNDS TO +72" FROM DRAIN. GLAZING, INCLUDING WINDOWS WITHIN +72" OF DRAIN, SHALL BE SAFTEY GLASS. SHOWER FLOW IS LIMITED TO 1.75 GAL/MIN.

EXHAUST FANS LARGER THAN 50CFM MAY BE CONNECTED TO 4" SMOOTH WALL VENT PIPE IF RUNS DO NOT EXCEED 20' IN LENGTH. THE MINIMUM SIZE OF FLEX DUCT IS 5" DIAMETER WITH A MAXIMUM RUN OF 15'

COMBUSTION AIR REQUIRED FOR ALL FUEL BURNING APPLIANCES

EXTERIOR DOORS SHALL BE PROVIDED WITH LANDINGS OR FLOORS NOT MORE THAN 7-3/4" BELOW THE TOP OF THE THRESHOLD PROVIDED THAT THE DOOR DOES NOT SWING OVER THE LANDING OR FLOOR. R311.3.1 EXCEPTION

PROVIDE A MOISTURE EXHAUST DUCT FOR THE CLOTHES DRYER TO OUTSIDE AIR. THE DUCT SHALL BE MINIMUM 4" INCH IN DIAMETER OF METAL OR APPROVED MATERIAL WITH SMOOTH SURFACE. THE LENGTH SHALL NOT EXCEED 35 FEET (INCLUDING TRANSITION DUCTS) IF FITTINGS ARE USED, THE MAXIMUM LENGTH SHALL BE REDUCED TO BE PER DRYER OR THE DRYER EXHAUST POWER VENTILATOR'S MFG'S INSTALLATION PER IMC 504.8

ENVIRONMENTAL AIR DUCT EXHAUST SHALL TERMINATE NOT LESS THAN 3 FEET FROM A PROPERTY LINE AND 3 FEET FROM OPENINGS INTO A BUILDING PER IMC 501.3.1

THE MIXING VALVE IN A SHOWER (INCLUDING OVER A TUB) SHALL BE PRESSURE BALANCING SET AT 120F. THE WATER HEATER THERMOSTAT CANNOT BE USED TO MEET THESE PROVISIONS PER UPC 408.3 AND 409.4

COMBUSTION AIR TO BE PROVIDED TO FURNACE CLOSET VIA FRESH AIR FROM OUTSIDE. MECH CONTRACTOR TO FIELD VERIFY

EXPANSION TANK, PRESSURE RELIEF VALVE, AND SHUT OFF VALVE TO BE INSTALLED FOR THE WATER HEATER PER UPC 609.3

BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION PER WSEC R403.3.5

DUCTS WHICH PENETRATE THE WALL OR FLOOR BETWEEN THE WALL OR FLOOR BETWEEN THE DWELLING AND GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE SHEET STEEL OR APPROVED MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE PER IRC R302.5.2.

LEGEND:

- SMOKE DETECTOR 110V INTERCONNECTED W/ BATTERY BACK-UP. PER IRC 314
- CARBON MONOXIDE DETECTOR PER IRC 315

GARAGE NOTES:

1. GARAGE/LIVING SEPARATION, USE 5/8" TYPE 'X' GWB ON ALL SUPPORTING WALLS AND CEILINGS WRAP POSTS AND BEAMS.
2. INSULATE ALL WARM WALLS AND CEILING.
3. DOOR BETWEEN GARAGE AND RESIDENCE SHALL BE 1-3/8" MINIMUM THICK SOLID WOOD OR STEEL WITH SOLID OR HONEYCOMB CORE OR 20 MINUTE FIRE RATED EQUIPPED WITH A SELF CLOSING DEVICE.
4. DUCTS IN GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPERATING THE RESIDENCE FROM THE GARAGE SHALL BE NO. 26 GAGE SHEET STEEL AND HAVE NO OPENINGS INTO THE GARAGE

HEATING NOTES:

+ INSTALL PER ASHRAE 90A-88
+ 15" PLATFORM OF 2 LAYERS 3/4" PLYWOOD (1 LAYER IF PLATFORM IS ON SLAB)
+ SEE HEATING NOTES

OPTIONAL NOTES: RAISE ALL PILOTS, BURNERS AND SWITCHES +18" MINIMUM ABOVE SLAB.

FIREPLACE NOTE:

'0' CLEARANCE FIREPLACE W/ DIRECT VENT

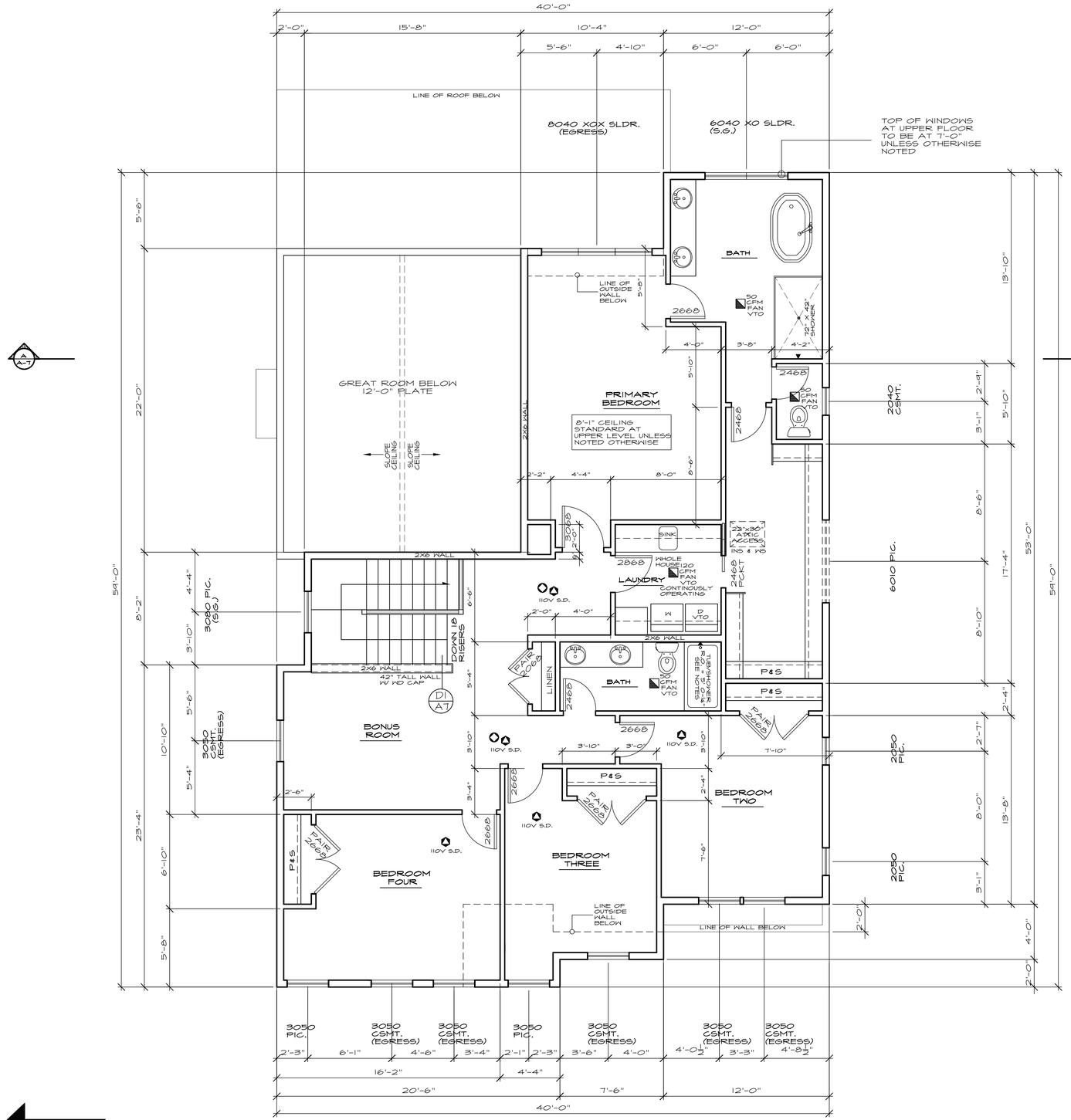
FACTORY BUILT FIREPLACE SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL HAVE APPROVAL LABEL ATTACHED

5/8" TYPE "X" GWB TO ROOF SHEATHING

FIREPLACES & STOVES MUST BE D.O.E. APPROVED & BE TESTED, CERTIFIED & LABELED AS SUITABLE FOR USE DURING A FIRST STAGE BURN BAN.

STRUCTURAL NOTES:

SEE "S" SHEETS FOR ALL STRUCTURAL NOTES AND DETAILS PROVIDED BY FELTEN GROUP



UPPER FLOOR PLAN

SEE GENERAL NOTES — SCALE: 1/4" = 1'-0"

12671 REGISTERED ARCHITECT
MICHAEL WAYNE JOHNSON
STATE OF WASHINGTON

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA. • 98033 • 425-828-4117
www.nasharchitects.com

DGR DEVELOPMENT

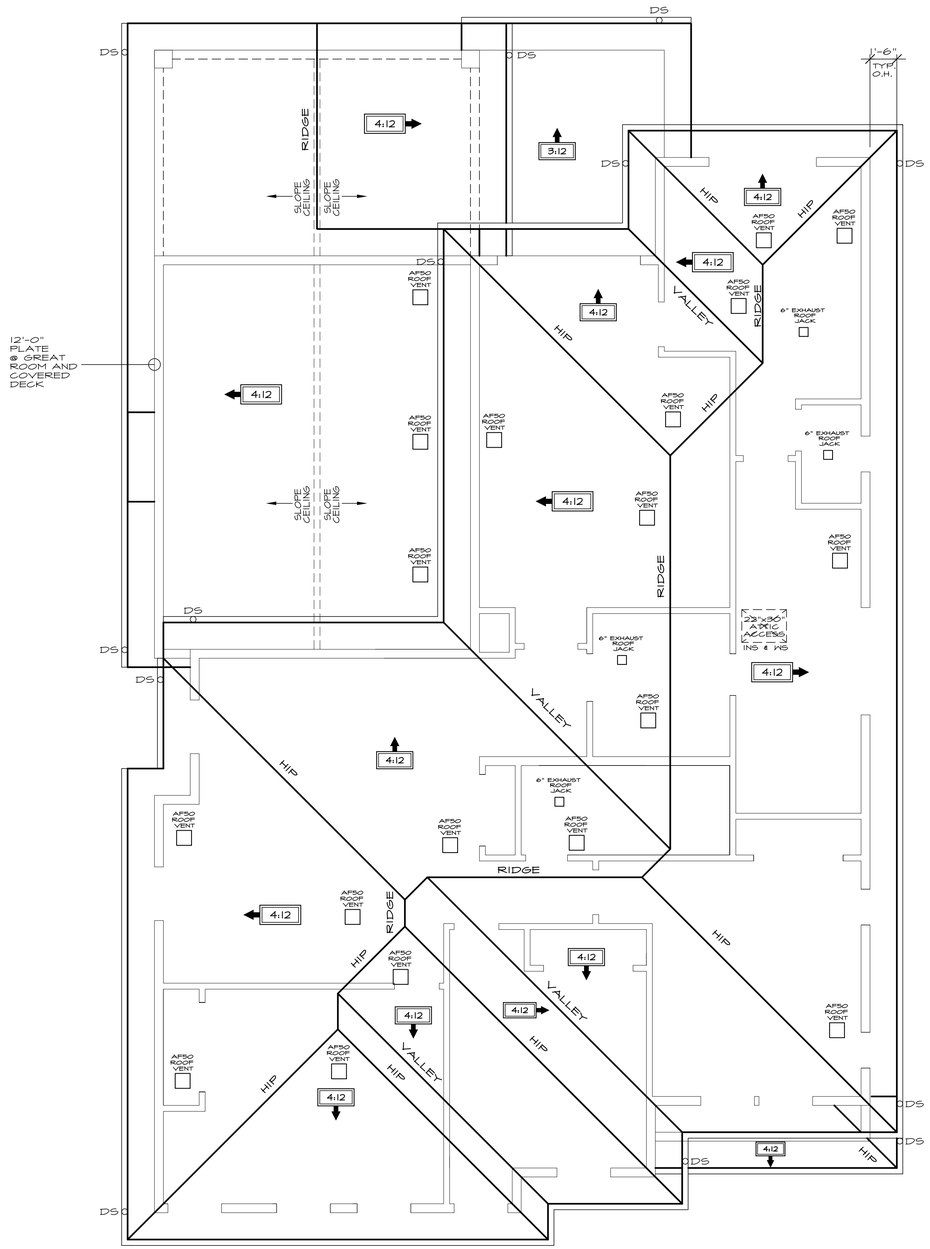
project:
PLAN 3372
KIRKLAND, WA

date: 03-11-24
permit:
revisions:

drawn by: MWJ
checked by:

SHEET
A5

Written dimensions on this drawing shall have precedence over scaled dimensions. Contactor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work or the Contractor shall accept full responsibility for the cost to rectify same.



PROJECTIONS ARE REQUIRED TO COMPLY WITH R302.1(1)

ROOF VENTING CALCULATION (UPPER ROOF AREA)

1714 SQFT AREA / 300 =5.72 SQFT REQUIRED

(5.72) X (50%)= 2.86 SQFT MIN. REQUIRED AT EAVES
TYPICAL TRUSS BLOCK HAS (4) 2 0 SCREENED HOLES PROVIDING 6.28 SQ. IN. (.044 SQFT) PER BLOCK.
APPROXIMATELY 40 VENTED BLOCKS= 1.76 SQFT PROVIDED
PROVIDE 6 AF50 VENTS= 2.04 SQFT PROVIDED

(5.72) X (50%)= 2.86 SQFT MIN. REQUIRED WITHIN 3' OF THE RIDGE
AF50 ROOF JACK VENTS= .34 SQFT EACH VENT
PROVIDE 10 AF50 VENTS= 3.40 SQFT PROVIDED

TOTAL VENT AREA PROVIDED= 7.20 SQ FT

NORTH

STRUCTURAL NOTES:

SEE "S" SHEETS FOR ALL STRUCTURAL NOTES AND DETAILS PROVIDED BY FELTEN GROUP

ROOF PLAN

SEE GENERAL NOTES — SCALE: 1/4" = 1'-0"

12871 REGISTERED ARCHITECT
MICHAEL WAYNE JOHNSON
STATE OF WASHINGTON

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA • 98033 • 425-284-4111
www.nash-architects.com

IQR DEVELOPMENT

project:
PLAN 3372
KIRKLAND, WA

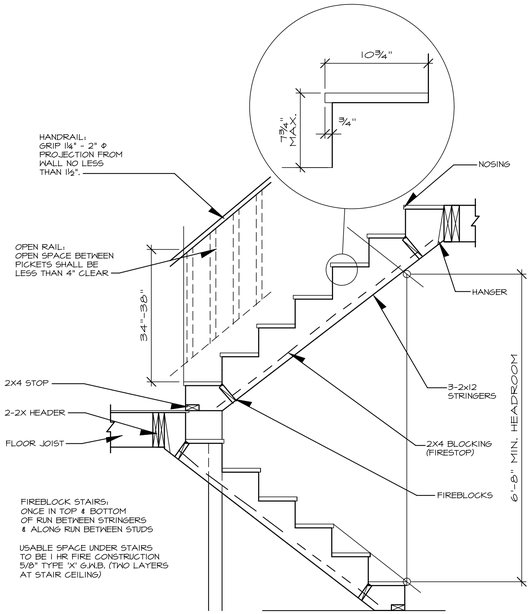
date: 03-11-24
permit:
revisions:

drawn by: MWJ
checked by:

SHEET
A6

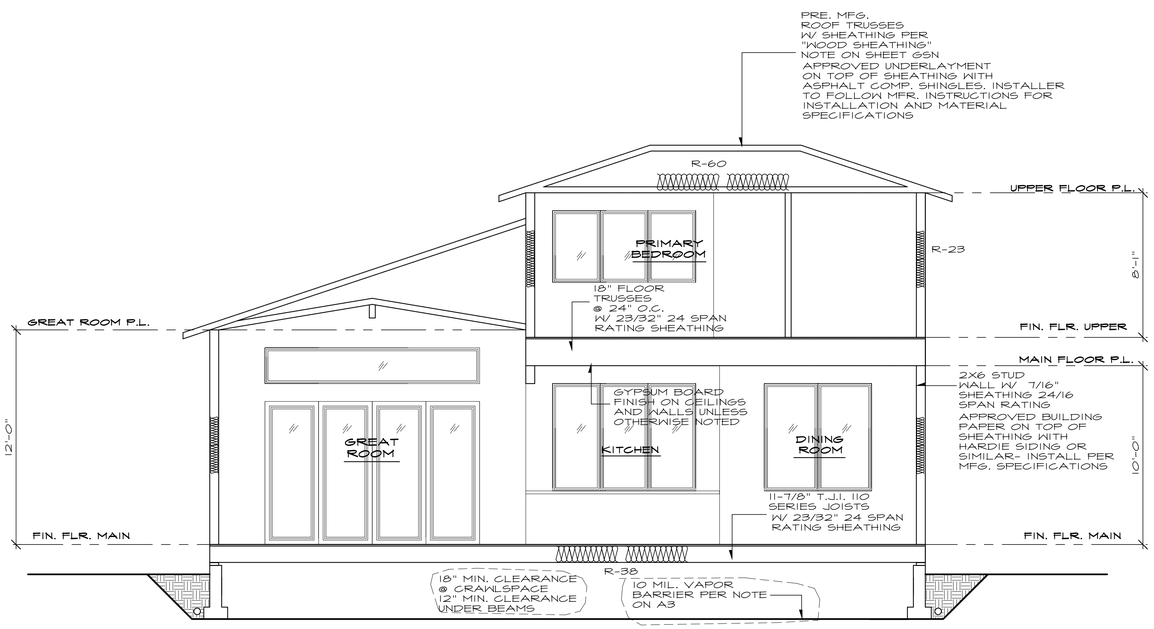
Written dimensions on this drawing shall have precedence over scaled dimensions. Contractor shall verify all dimensions, conditions, etc., pertaining to the work before proceeding. The Owner must be notified of any variations from the dimensions and/or conditions shown on these drawings. Any such variation shall be resolved by the Owner prior to proceeding with the work, or the Contractor shall accept full responsibility for the cost to rectify same.

STAIR LIGHTING
(IRC R303.7 & R303.8)
All stairways shall be provided with light sources. Where interior stairways have 6 or more risers, a wall switch shall be provided at each floor.



D1 / A7 **STAIR DETAIL - TYPICAL**
SCALE: N.T.S.

STAIR NOTES:
RISER HEIGHT = 7-3/4" MAX.
TREAD DEPTH = 10" MIN.



NOTE: REFER TO STRUCTURAL ENGINEER'S SHEETS FOR ALL STRUCTURAL MEMBER SIZINGS AND SPECIFICATIONS

SECTION A-A
SEE GENERAL NOTES
SCALE: 1/4" = 1'-0"

12871 REGISTERED ARCHITECT
MICHAEL WAYNE JOHNSON STATE OF WASHINGTON

NASH & ASSOCIATES ARCHITECTS
11644 NE 80th STREET • KIRKLAND, WA • 98033 • 425-828-4117
www.nash-architects.com

DGR DEVELOPMENT

project:
PLAN 3372
KIRKLAND, WA

date: 03-11-24
permit:
revisions:

drawn by: MWJ
checked by:

SHEET
A7

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

CLIMATE ZONE 5 AND MARINE 4 (PRESCRIPTIVE)	
FENESTRATION U-FACTOR b, j	0.30
SKYLIGHT b U-FACTOR	0.50
CEILING R-VALUE e	60
WOOD FRAME WALL g,i R-VALUE	20+5 OR 13+10
FLOOR R-VALUE	30
BELOW-GRADE c,h WALL R-VALUE	10/15/21 INT + 5TB
SLAB d,f R-VALUE & DEPTH	10, 4 FT

a. *R*-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the compressed *R*-value of the insulation from Appendix A Table A101.4 of chapter 51-11C WAC shall not be less than the *R*-value specified in the table.

b. The fenestration *U*-factor column excludes skylights.

c. "10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.

d. R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.

e. For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.

f. R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.

g. For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for *climate zone* 5 of ICC 400.

h. Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78 percent of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

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

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

CLIMATE ZONE 5 AND MARINE 4 (PROPOSED)	
FENESTRATION U-FACTOR b, j	U=.25
SKYLIGHT b U-FACTOR	0.50
CEILING R-VALUE e	R-60
WOOD FRAME WALL g,i R-VALUE	R-23
FLOOR R-VALUE	R-38
BELOW-GRADE c,h WALL R-VALUE	10/15/21 INT + 5TB
SLAB d,f R-VALUE & DEPTH	10, 4 FT

INSULATION VALUES HAVE BEEN CALCULATED USING THE 2021 CODE COMPLIANCE CALCULATOR OR PER ENERGY CREDITS CHOSEN. SEE SEPERATE DOCUMENT

THIS PROJECT:

	WILL REQUIRE CONTINUOUS EXTERIOR INSULATION (R-5) AND WILL USE RIGID FOAM.
	WILL REQUIRE CONTINUOUS EXTERIOR INSULATION (R-5) AND WILL USE ZIP-SHEATHING OR A SIMILAR PRODUCT.
	WILL NOT REQUIRE CONTINUOUS EXTERIOR INSULATION PER WSU's CODE COMPLIANCE CALCULATOR.

SECTION R403
SYSTEMS

R403.3.5 Duct testing. Ducts shall be leak tested in accordance with WSU RS-33, using the maximum duct leakage rates specified.

Exception: A duct air leakage test shall not be required for ducts serving ventilation systems that are not integrated with ducts serving heating or cooling systems.

A written report of the results shall be signed by the party conducting the test and provided to the code official.

R403.3.6 Duct leakage. The total leakage of the ducts, where measured in accordance with Section R403.3.3, shall be as follows:

1. Rough-in test: Total leakage shall be less than or equal to 4.0 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3.0 cfm (85 L/min) per 100 square feet (9.29 m²) of conditioned floor area.
2. Postconstruction test: Leakage to outdoors shall be less than or equal to4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area or total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
3. Test for ducts within thermal envelope: Where all ducts and air handlers are located entirely within the *building thermal envelope*, total leakage shall be less than or equal to 8.0 cubic feet per minute (226.6 L/min) per 100 square feet (9.29 m2) of conditioned floor area. 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.

SECTION R404
ELECTRICAL POWER AND LIGHTING SYSTEMS

R404.1 Lighting equipment. All permanently installed lighting fixtures, excluding kitchen appliance lighting fixtures, shall contain only *high-efficacy* lighting sources.

R404.1.1 Exterior lighting. Connected exterior lighting for residential buildings shall comply with Section C405.5.

Exceptions: Solar-powered lamps not connected to any electrical service.

R404.1.2 Fuel gas lighting equipment. Fuel gas lighting systems shall not have continuously burning pilot lights.

R404.2 Interior lighting controls. Permanently installed interior lighting fixtures shall be controlled with either a dimmer, an occupant sensor control or other control that is installed or built into the fixture.

Exception: Lighting controls shall not be required for the following:
1. Bathrooms.
2. Hallways.
3. Lighting designed for safety or security.

R404.3 Exterior lighting controls. Where the total permanently installed exterior lighting power is greater than 30 watts, the permanently installed exterior lighting shall comply with the following:

1. Lighting shall be controlled by a manual on and off switch which permits automatic shut-off actions.
   Exception: Lighting serving multiple *dwelling units*.
2. Lighting shall be automatically shut off when daylight is present and satisfies the lighting needs.
3. Controls that override automatic shut-off actions shall not be allowed unless the override automatically returns automatic control to its normal operation within 24 hours.

ADDITIONAL ENERGY INFORMATION:

OUTLET FOR EV CHARGER REQUIRED IN THE GARAGE

MIDEA ADVANTAGE SERIES
AIR HANDLER SYSTEM
DLFUAA-025B INDOOR AIR HANDLER

AO SMITH SMART HYBRID ELECTRIC
HEAT PUMP WATER HEATER (UEF OF 3.88)
OR SIMILAR TO BE USED FOR THIS PROJECT

R-23 INSULATION IN EXTERIOR/WARM WALLS- REQUIRES 5.5 WIDE WALL CAVITY RSI VALUE OF 4.1- JOHNS MANVILLE OR SIMILAR TO BE USED FOR THIS PROJECT

GRUNDFOS #99412493 RECIRC PUMP

TABLE R406.2 ENERGY EQUALIZATION CREDITS

	SYSTEM TYPE	DESCRIPTION OF PRIMARY HEATING SOURCE	CREDITS: ALL OTHER	CREDITS: GROUP R-2[a]
	1	FOR COMBUSTION HEATING EQUIPMENT MEETING MINIMUM FEDERAL EFFICIENCY STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(5) OR C403.3.2(6)	0	0
	2	FOR AN INITIAL HEATING SYSTEM USING A HEAT PUMP THAT MEETS FEDERAL STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(2) AND SUPPLEMENTAL HEATING PROVIDED BY ELECTRIC RESISTANCE OR A COMBUSTION FURNACE MEETING MINIMUM STANDARDS LISTED IN TABLE C403.3.2(5)[b]	1.5	0
	3	FOR HEATING SYSTEM BASED ON ELECTRIC RESISTANCE ONLY (EITHER FORCED AIR OR ZONAL)	0.5	-0.5
	4	FOR HEATING SYSTEM USING A HEAT PUMP THAT MEETS FEDERAL STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(2) OR C403.3.2(9) OR AIR TO WATER HEAT PUMP UNITS THAT ARE CONFIGURED TO PROVIDE BOTH HEATING AND COOLING AND ARE RATED IN ACCORDANCE WITH AHRI 550/590	3.0	2.0
	5	FOR HEATING SYSTEM BASED ON ELECTRIC RESISTANCE WITH: 1. INVERTER-DRIVEN DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM INSTALLED IN THE LARGEST ZONE IN THE DWELLING, OR 2. WITH 2KW OR LESS TOTAL INSTALLED HEATING CAPACITY PER DWELLING	2.0	0

a. See Section R401.1 and residential building in Section R202 for Group R-2 scope.
b. The gas back-up furnace will operate as fan-only when the heat pump is operating. The heat pump shall operate at all temperatures above 38°F (3.3°C) (or lower). Below that "changeover" temperature, the heat pump would not operate to provide space heating. The gas furnace provides heating below 38°F (3.3°C) (or lower).
c. Additional points for the HVAC system are included in Table R406.3.

R406.3 Additional energy efficiency requirements. Each dwelling unit in a residential building shall comply with sufficient options from Tables R406.2 and R406.3 so as to achieve the following minimum number of credits:

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

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

TABLE R406.3 ENERGY CREDITS

	OPTION	DESCRIPTION	CREDITS: ALL OTHER	CREDITS: GROUP R-2[b]
	1.	EFFICIENT BUILDING ENVELOPE OPTIONS ONLY ONE OPTION FROM ITEMS 1.1 THROUGH 1.4 MAY BE SELECTED IN THIS CATEGORY. COMPLIANCE WITH THE CONDUCTIVE UA TARGETS IS DEMONSTRATED USING SECTION R402.1.5, TOTAL UA ALTERNATIVE, WHERE [1-(PROPOSED UA/TARGET UA)] > THE REQUIRED %UA REDUCTION		
	1.1	PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.3 WITH THE FOLLOWING MODIFICATIONS: VERTICAL FENESTRATION U = 0.22.	0.5	0.5
	1.2	PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.3 WITH THE FOLLOWING MODIFICATIONS: VERTICAL FENESTRATION U = 0.25 FLOORR-38 SLAB ON GRADE R-10 PERIMETER AND UNDER ENTIRE SLAB BELOW GRADE SLAB R-10 PERIMETER AND UNDER ENTIRE SLAB OR COMPLIANCE BASED ON SECTION R402.1.5: REDUCE THE TOTAL CONDUCTIVE UA BY 15%.	1.0	1.0

✳ FOR FOOTNOTES, SEE SHEET EN-3

12871 REGISTERED ARCHITECT MICHAEL WAYNE JOHNSON STATE OF WASHINGTON

Nash ARCHITECTS
8003 118th AVENUE NE
KIRKLAND, WA 98033
425-828-4117
www.nash-architects.com

project: 2021 WSEC INFORMATION

date: 3-11-24
permit:
revisions:

drawn by: CWL
checked by: MWJ

SHEET
EN-1

TABLE R406.3 CONTINUED

OPTION	DESCRIPTION	CREDITS	
		ALL OTHER	GROUP R-2[b]
	1. EFFICIENT BUILDING ENVELOPE OPTIONS ONLY ONE OPTION FROM ITEMS 1.1 THROUGH 1.4 MAY BE SELECTED IN THIS CATEGORY. COMPLIANCE WITH THE CONDUCTIVE UA TARGETS IS DEMONSTRATED USING SECTION R402.1.5, TOTAL UA ALTERNATIVE, WHERE [1-(PROPOSED UA/TARGET UA)] > THE REQUIRED %UA REDUCTION		
1.3	PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.3 WITH THE FOLLOWING MODIFICATIONS: VERTICAL FENESTRATION U = 0.18 CEILING AND SINGLE-RAFTER OR JOIST-VAULTED R-60 ADVANCED WOOD FRAME WALL R-21 INT PLUS R-12 CI FLOOR R-38 BASEMENT WALL R-21 INT PLUS R-12 CI SLAB ON GRADE R-10 PERIMETER AND UNDER ENTIRE SLAB BELOW GRADE SLAB R-10 PERIMETER AND UNDER ENTIRE SLAB OR COMPLIANCE BASED ON SECTION R402.1.5: REDUCE THE TOTAL CONDUCTIVE UA BY 22.5%.	1.5	0.5
1.4	PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.3 WITH THE FOLLOWING MODIFICATIONS: VERTICAL FENESTRATION U = 0.18 CEILING AND SINGLE-RAFTER OR JOIST-VAULTED R-60 ADVANCED WOOD FRAME WALL R-21 INT PLUS R-16 CI FLOOR R-48 BASEMENT WALL R-21 INT PLUS R-16 CI SLAB ON GRADE R-20 PERIMETER AND UNDER ENTIRE SLAB BELOW GRADE SLAB R-20 PERIMETER AND UNDER ENTIRE SLAB OR COMPLIANCE BASED ON SECTION R402.1.5: REDUCE THE TOTAL CONDUCTIVE UA BY 30%.	2.5	2.0
	2. AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION OPTIONS ONLY ONE OPTION FROM ITEMS 2.1 THROUGH 2.3 MAY BE SELECTED IN THIS CATEGORY.		
2.1	COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 2.0 AIR CHANGES PER HOUR MAXIMUM AT 50 PASCALS, OR FOR R-2 OCCUPANCIES, OPTIONAL COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 0.25 CFM/FT² MAXIMUM AT 50 PASCALS AND ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1505.3 OF THE INTERNATIONAL RESIDENTIAL CODE OR SECTION 403.8 OF THE INTERNATIONAL MECHANICAL CODE SHALL BE MET WITH A HEAT RECOVERY VENTILATION SYSTEM WITH MINIMUM SENSIBLE HEAT RECOVERY EFFICIENCY OF 0.65. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED, THE MAXIMUM TESTED BUILDING AIR LEAKAGE, AND SHALL SHOW THE QUALIFYING VENTILATION SYSTEM AND ITS CONTROL SEQUENCE OF OPERATION.	1.0	1.0
2.2	COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 1.5 AIR CHANGES PER HOUR MAXIMUM AT 50 PASCALS, OR FOR R-2 OCCUPANCIES, OPTIONAL COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 0.20 CFM/FT MAXIMUM AT 50 PASCALS AND ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1505.3 OF THE INTERNATIONAL RESIDENTIAL CODE OR SECTION 403.8 OF THE INTERNATIONAL MECHANICAL CODE SHALL BE MET WITH A HEAT RECOVERY VENTILATION SYSTEM WITH MINIMUM SENSIBLE HEAT RECOVERY EFFICIENCY OF 0.75. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE MAXIMUM TESTED BUILDING AIR LEAKAGE AND SHALL SHOW THE HEAT RECOVERY VENTILATION SYSTEM.	1.5	1.5
2.3	COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 0.6 AIR CHANGES PER HOUR MAXIMUM AT 50 PASCALS, OR FOR R-2 OCCUPANCIES, OPTIONAL COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 0.15 CFM/FT² MAXIMUM AT 50 PASCALS AND ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1505.3 OF THE INTERNATIONAL RESIDENTIAL CODE OR SECTION 403.8 OF THE INTERNATIONAL MECHANICAL CODE SHALL BE MET WITH A HEAT RECOVERY VENTILATION SYSTEM WITH MINIMUM SENSIBLE HEAT RECOVERY EFFICIENCY OF 0.80. DUCT INSULATION SHALL COMPLY WITH SECTION R403.3.2. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE MAXIMUM TESTED BUILDING AIR LEAKAGE AND SHALL SHOW THE HEAT RECOVERY VENTILATION SYSTEM.	2.0	2.0

TABLE R406.3 CONTINUED

OPTION	DESCRIPTION	CREDITS	
		ALL OTHER	GROUP R-2[b]
	3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS ONLY ONE OPTION FROM ITEMS 3.1 THROUGH 3.10 MAY BE SELECTED IN THIS CATEGORY. ITEM 3.11 MAY BE TAKEN WITH ITEMS 3.1 AND 3.3[c] ONLY.		
3.1[a]	FOR A SYSTEM TYPE 1 IN TABLE R406.2: ENERGY STAR RATED (U.S. NORTH) GAS OR PROPANE FURNACE WITH MINIMUM AFUE OF 95% OR ENERGY STAR RATED (U.S. NORTH) GAS OR PROPANE BOILER WITH MINIMUM AFUE OF 90%. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	1.0	1.0
3.2[a]	FOR SECONDARY HEATING SYSTEM SERVING SYSTEM TYPE 2 IN TABLE R406.2: AIR-SOURCE CENTRALLY DUCTED HEAT PUMP WITH MINIMUM HSPF OF 9.5 OR ENERGY STAR RATED (U.S. NORTH) GAS OR PROPANE BOILER WITH MINIMUM AFUE OF 90%. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	0.5	0.5
3.3[a,c,d]	AIR-SOURCE, CENTRALLY DUCTED HEAT PUMP WITH MINIMUM HSPF 2 OF 8.1 (HSPF OF 9.5). IN AREAS WHERE THE WINTER DESIGN TEMPERATURE AS SPECIFIED IN APPENDIX RC IS 23°F OR BELOW, A COLD CLIMATE HEAT PUMP FOUND ON THE NEEP CC ASHP QUALIFIED PRODUCT LIST SHALL BE USED. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	0.5	N/A
3.4[a,d]	CLOSED-LOOP GROUND SOURCE HEAT PUMP; WITH A MINIMUM COP OF 3.3 OR OPEN LOOP WATER SOURCE HEAT PUMP WITH A MAXIMUM PUMPING HYDRAULIC HEAD OF 150 FEET AND MINIMUM COP OF 3.6. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	1.5	1.0
3.5[d]	DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM, ZONAL CONTROL: IN HOMES WHERE THE PRIMARY SPACE HEATING SYSTEM IS ZONAL ELECTRIC HEATING, A DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM WITH A MINIMUM HSPF 2 OF 9 (HSPF OF 10.0) SHALL BE INSTALLED AND PROVIDE HEATING TO THE LARGEST ZONE OF THE HOUSING UNIT. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	1.5	2.0
3.6[a]	AIR-SOURCE, CENTRALLY DUCTED HEAT PUMP WITH MINIMUM HSPF 2 OF 9.4 (HSPF OF 11.0). A CENTRALLY DUCTED AIR SOURCE COLD CLIMATE VARIABLE CAPACITY HEAT PUMP (CC VCHP) FOUND ON THE NEEP CC VCHP QUALIFIED PRODUCT LIST WITH A MINIMUM OF 9 HSPF 2 (10 HSPF) MAY BE USED TO SATISFY THIS REQUIREMENT. IN AREAS WHERE THE WINTER DESIGN TEMPERATURE AS SPECIFIED IN APPENDIX RC IS 23°F OR BELOW, AN AIR SOURCE CENTRALLY DUCTED HEAT PUMP SHALL BE A COLD CLIMATE VARIABLE CAPACITY HEAT PUMP AS LISTED ON THE NEEP QUALIFIED PRODUCT LIST. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	1.0	N/A
3.7[d,e]	DUCTLESS SPLIT SYSTEM HEAT PUMPS WITH NO ELECTRIC RESISTANCE HEATING IN THE PRIMARY LIVING AREAS. A DUCTLESS HEAT PUMP SYSTEM WITH A MINIMUM HSPF 2 OF 9 (HSPF OF 10) SHALL BE SIZED AND INSTALLED TO PROVIDE HEAT TO ENTIRE DWELLING UNIT AT THE DESIGN OUTDOOR AIR TEMPERATURE. EXCEPTION: IN HOMES WITH TOTAL HEATING LOADS OF 24,000 OR LESS USING MULTI-ZONE MINI-SPLIT SYSTEMS WITH NOMINAL RATINGS OF 24,000 OR LESS, THE MINIMUM HSPF S TO CLAIM THIS CREDIT SHALL BE 8.19 HSPF 2 (OR 9 HSPF). TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED, THE HEATED FLOOR AREA CALCULATION, THE HEATING EQUIPMENT TYPE(S), THE MINIMUM EQUIPMENT EFFICIENCY, AND TOTAL INSTALLED HEAT CAPACITY (BY EQUIPMENT TYPE).	2.0	3.0

✳ FOR FOOTNOTES, SEE SHEET EN-3

TABLE R406.3 CONTINUED

OPTION	DESCRIPTION	CREDITS	
		ALL OTHER	GROUP R-2[b]
3.8[a,d]	AIR-TO-WATER HEAT PUMP WITH MINIMUM COP OF 3.2 AT 47°F, RATED IN ACCORDANCE WITH AHRI 550/590 BY AN ACCREDITED OR CERTIFIED TESTING LAB. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED, THE HEATED FLOOR AREA CALCULATION, THE HEATING EQUIPMENT TYPE(S), THE MINIMUM EQUIPMENT EFFICIENCY, AND TOTAL INSTALLED HEAT CAPACITY (BY EQUIPMENT TYPE).	1.0	N/A
3.9	GAS-FIRED HEAT PUMP(S) MEETING ANSI Z21.40.2 AND Z21.40.4 OR CSA, WITH A MINIMUM UEF OF 1.15. FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP(S) MEETING ANSI Z21.40.2 AND Z21.40.4 OR CSA, WITH A MINIMUM UEF OF 1.15, SHALL SERVE ALL UNITS.	1.5	1.5
3.10[f]	COMBINATION WATER HEATING AND SPACE HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING TIER 2 OF THE NEEA ADVANCED WATER HEATING SPECIFICATION FOR GAS-FUELED RESIDENTIAL STORAGE WATER HEATERS VERSION 1.0. OR FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING TIER 2 OF THE NEEA ADVANCED WATER HEATING SPECIFICATION FOR GAS-FUELED RESIDENTIAL STORAGE WATER HEATERS VERSION 1.0., SHALL SERVE ALL UNITS. OR FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP(S) MEETING ANSI Z21.40.2 AND Z21.40.4 OR CSA, WITH A MINIMUM UEF OF 1.15, SHALL SERVE ALL UNITS. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY AND, FOR SOLAR WATER HEATING SYSTEMS, THE CALCULATION OF THE MINIMUM ENERGY SAVINGS.	2.5	2.5
3.11[c]	CONNECTED THERMOSTAT MEETING ENERGY STAR CERTIFIED SMART THERMOSTATS/EPA ENERGY STAR SPECIFICATIONS. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE THERMOSTAT MODEL.	0.5	0.5
	4. HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS		
4.1	HVAC EQUIPMENT AND ASSOCIATED DUCT SYSTEM(S) INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R403.3.2. ELECTRIC RESISTANCE HEAT, HYDRONIC HEATING AND DUCTLESS HEAT PUMPS ARE NOT PERMITTED UNDER THIS OPTION. DIRECT COMBUSTION HEATING EQUIPMENT WITH AFUE LESS THAN 80% IS NOT PERMITTED UNDER THIS OPTION TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE HEATING EQUIPMENT TYPE AND SHALL SHOW THE LOCATION OF THE HEATING AND COOLING EQUIPMENT AND ALL THE DUCTWORK.	0.5	N/A
	5. EFFICIENT WATER HEATING OPTIONS ONLY ONE OPTION FROM ITEMS 5.3 THROUGH 5.8 MAY BE SELECTED IN THIS CATEGORY. ITEMS 5.1 AND 5.2 MAY BE COMBINED WITH ANY OPTION.		
5.1	A DRAIN WATER HEAT RECOVERY UNIT(S) SHALL BE INSTALLED, WHICH CAPTURES WASTE WATER HEAT FROM AT LEAST TWO SHOWERS, INCLUDING TUB/SHOWER COMBINATIONS. IT IS ACCEPTABLE, BUT NOT REQUIRED, FOR SINK WATER TO BE CONNECTED. UNIT SHALL HAVE A MINIMUM EFFICIENCY OF 40% IF INSTALLED FOR EQUAL FLOW OR A MINIMUM EFFICIENCY OF 54% IF INSTALLED FOR UNEQUAL FLOW. SUCH UNITS SHALL BE RATED IN ACCORDANCE WITH CSA B55.1 OR IAPMO IGC 346-2017 AND BE SO LABELED. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL INCLUDE A PLUMBING DIAGRAM THAT SPECIFIES THE DRAIN WATER HEAT RECOVERY UNITS AND THE PLUMBING LAYOUT NEEDED TO INSTALL IT. LABELS OR OTHER DOCUMENTATION SHALL BE PROVIDED THAT DEMONSTRATES THAT THE UNIT COMPLIES WITH THE STANDARD.	0.5	0.5
5.2	FOR COMPACT HOT WATER DISTRIBUTION SYSTEM CREDIT, THE VOLUME SHALL STORE NOT MORE THAN 16 OUNCES OF WATER BETWEEN THE NEAREST SOURCE OF HEATED WATER AND THE TERMINATION OF THE FIXTURE SUPPLY PIPE WHERE CALCULATED USING SECTION R403.5.2. CONSTRUCTION DOCUMENTS SHALL INDICATE THE OUNCES OF WATER IN PIPING BETWEEN THE HOT WATER SOURCE AND THE TERMINATION OF THE FIXTURE SUPPLY. WHEN THE HOT WATER SOURCE IS THE NEAREST PRIMED PLUMBING LOOP OR TRUNK, THIS MUST BE PRIMED WITH AN ON DEMAND RECIRCULATION PUMP AND MUST RUN A DEDICATED AMBIENT RETURN LINE FROM THE FURTHEST FIXTURE OR END OF LOOP TO THE WATER HEATER. TO QUALIFY FOR THIS CREDIT, THE DWELLING MUST HAVE A MINIMUM OF 1.5 BATHROOMS.	0.5	0.5

12671 REGISTERED ARCHITECT
MICHAEL WAYNE JOHNSON
STATE OF WASHINGTON

Nash ARCHITECTS
8003 118th AVENUE NE
KIRKLAND, WA 98033
425-828-4117
www.nash-architects.com

project:
2021 WSEC INFORMATION

date: 3-11-24
permit:
revisions:

drawn by: CWL
checked by: MWJ

SHEET
EN-2

TABLE R406.3 CONTINUED

OPTION	DESCRIPTION	CREDITS	
		ALL OTHER	GROUP R-2[b]
5.3	WATER HEATING SYSTEM SHALL INCLUDE THE FOLLOWING: ENERGY STAR RATED GAS OR PROPANE WATER HEATER WITH A MINIMUM UEF OF 0.80. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	0.5	0.5
5.4	WATER HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: ENERGY STAR RATED GAS OR PROPANE WATER HEATER WITH A MINIMUM UEF OF 0.91 OR SOLAR WATER HEATING SUPPLEMENTING A MINIMUM STANDARD WATER HEATER. SOLAR WATER HEATING WILL PROVIDE A RATED MINIMUM SAVINGS OF 85 THERMS OR 2000 KWH BASED ON THE SOLAR RATING AND CERTIFICATION CORPORATION (SRCC) ANNUAL PERFORMANCE OF OG-300 CERTIFIED SOLAR WATER HEATING SYSTEM OR WATER HEATER HEATED BY GROUND SOURCE HEAT PUMP MEETING THE REQUIREMENTS OF OPTION 3.4. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY AND, FOR SOLAR WATER HEATING SYSTEMS, THE CALCULATION OF THE MINIMUM ENERGY SAVINGS.	1.0	1.0
5.5	WATER HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING TIER 2 OF THE NEEA ADVANCED WATER HEATING SPECIFICATION FOR GAS-FUELED RESIDENTIAL STORAGE WATER HEATERS VERSION 1.0. OR FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING TIER 2 OF THE NEEA ADVANCED WATER HEATING SPECIFICATION FOR GAS-FUELED RESIDENTIAL STORAGE WATER HEATERS VERSION 1.0. SHALL SUPPLY DOMESTIC HOT WATER TO ALL UNITS. OR FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING ANSI Z21.40.2 AND Z21.40.4 OR CSA, WITH A MINIMUM UEF OF 1.15, SHALL SUPPLY DOMESTIC HOT WATER TO ALL UNITS. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY AND, FOR SOLAR WATER HEATING SYSTEMS, THE CALCULATION OF THE MINIMUM ENERGY SAVINGS.	1.5	1.5
5.6	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. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	2.0	2.5
5.7	WATER HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: ELECTRIC HEAT PUMP WATER HEATER WITH A MINIMUM UEF OF 2.9 AND UTILIZING A SPLIT SYSTEM CONFIGURATION WITH THE AIR-TO-REFRIGERANT HEAT EXCHANGER LOCATED OUTDOORS. EQUIPMENT SHALL MEET SECTION 4, REQUIREMENTS FOR ALL UNITS, OF THE NEEA STANDARD ADVANCED WATER HEATING SPECIFICATION WITH THE UEF NOTED ABOVE OR FOR R-2 OCCUPANCY, ELECTRIC HEAT PUMP WATER HEATER(S), MEETING THE STANDARDS FOR TIER III OF NEEA'S ADVANCED WATER HEATING SPECIFICATION AND UTILIZING A SPLIT SYSTEM CONFIGURATION WITH THE AIR-TO-REFRIGERANT HEAT EXCHANGER LOCATED OUTDOORS, SHALL SUPPLY DOMESTIC HOT WATER TO ALL UNITS. IF ONE WATER HEATER IS SERVING MORE THAN ONE DWELLING UNIT, ALL HOT WATER SUPPLY AND RECIRCULATION PIPING SHALL BE INSULATED WITH R-8 MINIMUM PIPE INSULATION. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.	2.5	3.0

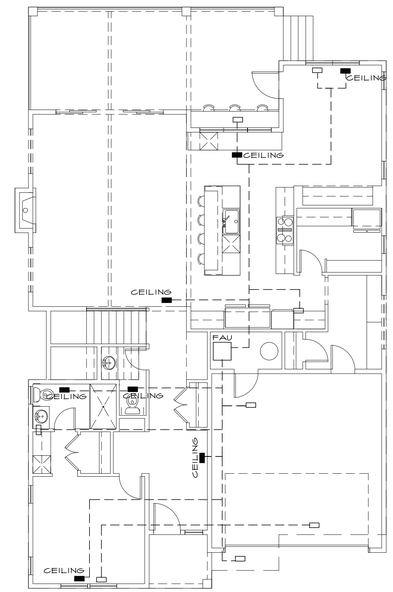
TABLE R406.3 CONTINUED

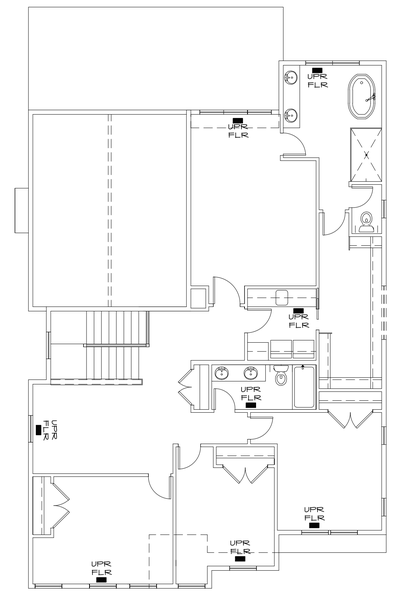
OPTION	DESCRIPTION	CREDITS	
		ALL OTHER	GROUP R-2[b]
5.8	COMBINATION WATER HEATING AND SPACE HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING TIER 2 OF THE NEEA ADVANCED WATER HEATING SPECIFICATION FOR GAS-FUELED RESIDENTIAL STORAGE WATER HEATERS VERSION 1.0. OR FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP WATER HEATER(S) MEETING TIER 2 OF THE NEEA ADVANCED WATER HEATING SPECIFICATION FOR GAS-FUELED RESIDENTIAL STORAGE WATER HEATERS VERSION 1.0., SHALL SUPPLY ALL UNITS. OR FOR R-2 OCCUPANCY, GAS-FIRED HEAT PUMP(S) MEETING ANSI Z21.40.2 AND Z21.40.4 OR CSA, WITH A MINIMUM UEF OF 1.15, SHALL SUPPLY ALL UNITS. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY AND, FOR SOLAR WATER HEATING SYSTEMS, THE CALCULATION OF THE MINIMUM ENERGY SAVINGS.	2.5	2.5
	6. RENEWABLE ELECTRIC ENERGY OPTION		
6.1	FOR EACH 600 KWH OF ELECTRICAL GENERATION PER HOUSING UNIT PROVIDED ANNUALLY BY ON-SITE WIND OR SOLAR EQUIPMENT A 0.5 CREDIT SHALL BE ALLOWED, UP TO 4.5 CREDITS. GENERATION SHALL BE CALCULATED AS FOLLOWS: FOR SOLAR ELECTRIC SYSTEMS, THE DESIGN SHALL BE DEMONSTRATED TO MEET THIS REQUIREMENT USING THE NATIONAL RENEWABLE ENERGY LABORATORY CALCULATOR PVWATTs OR ALTERNATIVE APPROVED 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.	0.5 - 4.5	0.5 - 4.5
	7. APPLIANCE PACKAGE OPTION		
7.1	ALL OF THE FOLLOWING APPLIANCES SHALL BE NEW AND INSTALLED IN THE DWELLING UNIT AND SHALL MEET THE FOLLOWING STANDARDS: 1. DISHWASHER, STANDARD - ENERGY STAR RATED, MOST EFFICIENT 2021 OR DISHWASHER, COMPACT - ENERGY STAR RATED (VERSION 6.0) 2. REFRIGERATOR (IF PROVIDED) - ENERGY STAR RATED (VERSION 5.1) 3. WASHING MACHINE (RESIDENTIAL) - ENERGY STAR RATED (VERSION 8.1) 4. DRYER - ENERGY STAR RATED, MOST EFFICIENT 2022 TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SHOW THE APPLIANCE TYPE AND PROVIDE DOCUMENTATION OF ENERGY STAR COMPLIANCE. AT THE TIME OF INSPECTION, ALL APPLIANCES SHALL BE INSTALLED AND CONNECTED TO UTILITIES. DRYER DUCTS AND EXTERIOR DRYER VENT CAPS ARE NOT PERMITTED TO BE INSTALLED IN THE DWELLING UNIT	1.0	N/A
	TOTAL CREDITS:	8.0	8.0

FOOTNOTES

a. An alternative heating source sized at a maximum of 0.5 Watts/ft^2 (equivalent) of heated floor area or 500 Watts, whichever is bigger, may be installed in the dwelling unit.
b. See Section R401.1 and *residential building* in Section R202 for Group R-2 scope.
c. Option 3.11 can only be taken with Options 3.1 and 3.3. To qualify to claim Option 3.11 with 3.3, the system shall be a 1-2 speed heat pump system. Variable capacity heat pumps are ineligible from claiming this option.
d. This option may only be claimed if serving System Type 4 or 5 from Table R406.2.
e. Primary living areas include living, dining, kitchen, family rooms, and similar areas.
f. Option 3.10 may one be taken with Efficient Water Heating Option 5.1 or 5.2. Equipment sizing for space heating shall be calculated as provided in Section R403.7 with increased capacity to provide a minimum of 75 percent of peak hot water demand or shall be sized in accordance with *approved* manufacturer's specifications or guidance. Supplementary heat for water heating shall be in accordance with Section R403.5.7.

PLAN 3372





HEATING EQUIPMENT AND ALL DUCTS TO BE CONTAINED WITHIN HEATED ENVELOPE. "CEILING" DUCTS SERVICE MAIN FLOOR AREAS "UPR FLR" DUCTS SERVICE UPPER FLOOR AREAS (VENTS IN FLOOR) IF DUCTS TRAVEL THROUGH FLOOR OVER UNHEATED SPACES (GARAGE, PORCHES) THEN R-38 INSULATION MUST BE PROVIDED UNDER HEAT DUCT

12871 REGISTERED ARCHITECT
MICHAEL WAYNE JOHNSON
STATE OF WASHINGTON

Nash ARCHITECTS
8003 118th AVENUE NE
KIRKLAND, WA 98033
425-828-4117
www.nash-architects.com

project: 2021 WSEC INFORMATION

date: 3-11-24
permit:
revisions:

drawn by: CWL
checked by: MWJ

SHEET
EN-3

Project Information

DGR Development
Plan 3372-Lot 1

Contact Information

Nash Architects
8003 118th Ave NE Kirkland, WA 98033
(425) 828-4117

Messages / Results *

UA Reduction = 41.68, Proposed UA is better than baseline by 9%

Vertical glazing area exceeds 15% of floor area.

-

Whole House Mechanical Ventilation Airflow Rate: 120 CFM with Run Time Percent of 100%, Unbalanced, Not Distributed

Maximum allowable total measured duct leakage: 270 CFM25

* Results assume your inputs are complete and correct. Results do not constitute an approval. Analysis should be reviewed by your AHJ.

ANALYSIS SET UP

What code compliance pathway are you using?	Total UA Alternative, Whole Building Trade Off Analysis
Project Building Type?	New Construction
Occupancy Type?	R3 Single family homes and duplexes
Code Version?	WSEC 2021 WSEC-R Rev: Oct. 2023, https://www.sbcc.wa.gov/sites/default/files/2023-12/O
Classification:	Medium Dwelling Unit -- 3372 sq. ft
Baseline Description:	Code Baseline - Maximum baseline window area is 15% of floor area.
About Your Selection:	No exempt window or door areas

RESULTS - Comparison of Baseline and Proposed Design

Component Performance, R occupancies	Baseline U *	Baseline Area	Baseline UA	Proposed Design U	Proposed Design Area	Proposed Design UA
Doors U =	0.300	91	27.2	0.280	91	25.4
Overhead Glazing U =	0.500	0	0.0		0	0.0
Vertical Glazing U =	0.300	506	151.7	0.250	575	143.6
Flat/Vaulted Ceilings U =	0.024	2,250	54.0	0.024	2,250	54.0
Wall (above grade) U =	0.056	3,250	182.0	0.049	3,250	159.3
Floors over Crawlspace U =	0.029	2,250	65.3	0.025	2,250	56.3
Slab on Grade F =	0.540	0	0.0		0	0.0
Below Grade Wall U =	N/A	0			0	0.0
Below Grade Slab F =	N/A	0			0	0.0

* Values from Table R402.1.2 (Oct 2023)

Baseline UA Total	480.2	Proposed UA Total	438.5
Required Credits	8.0	Proposed Credits	8.0 from Tables 406.2 and 406
		UA Percent Reduction	8.7%
		UA Reduction	41.7

Table R406.2 Energy Equalization Credits

System No.	Full Description	Select System Type	Fuel Normalization Credits (406.2)	Energy Credits (406.3)	Total Credits (406.2 & 406.3)
4	For heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) or Table C403.3.2(9) OR Air to Water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550/590	Variable Refrigerant Heat Pump or Air-to-Water Heat Pump	3.0	5.0	8.0

Table R406.3 Energy Credits

Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Not Selected	0.0	-
2	Air Leakage Control and Efficient Ventilation	Option 2.1	1.0	Per Section R402.4.1.2 / 2.0 ACH50 / For R-2, 0.25 cfm per ft2 at 50 Pa / HRV with min SHR eff of 0.65 per IRC Section M1505.3 or IMC Section 403.8
3.1 -3.10	High Efficiency HVAC	Option 3.6	1.0	Air source ducted Heat Pump w/ Min HSPF2 of 10 (HSPF of 11). If htg design temp is 23F or below,a cold climate variable capacity heat pump is required.
3.11	High Efficiency HVAC: Smart Thermostat	Not Selected	0.0	-

4	High Efficiency HVAC Distribution System	Option 4.1	0.5	Ducts/distribution system in conditioned space per R403.3.2 Electric resistance, hydronic, ductless and gas fired systems < 80% AFUE systems not permitted
5.1	Efficient Water Heating: Drain Heat Recovery		0.0	
5.2	Efficient Water Heating: Compact Hot Water Distribution	Option 5.2	0.5	Compact Hot Water Distribution System Max volume between heat source and fixture is 16 Oz per section R403.5.2, on demand circ. Pump may be required.
5.3-5.8	Efficient Water Heating	Option 5.6	2.0	Electric heat pump water heater meeting NEEA Tier 3.
6	Renewable Electric Energy	kWh	0.0	
7	Appliance Package	Not Selected	0.0	-
		Energy Credits	5.0	

*Refer to WSEC 2015 Table R406.2 for complete option descriptions and requirements

THERMAL ENVELOPE DETAILS - Proposed Design

Conditioned Floor Area, Proposed Design	3,372 sq. ft
Classification	Medium Dwelling Unit
Notes	

Exterior Doors

Plan ID	Component Description	Ref.	Door U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
	U=0.28	-	0.28	1	3	0	8	0	24	6.7
	U=0.28	-	0.28	2	2	9	8		43	11.9
	U=0.28	-	0.28	1	3		8		24	6.7
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
								Sum of Area and UA	91	25.4
								Exterior Doors Area Weighted U		0.280

Overhead Glazing

Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
									-	
									-	
									-	
									-	
								Sum of Area and UA	0.0	0
								Overhead Glazing Area Weighted U		

Vertical Glazing Schedule Rows to Show: 16

	Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
1		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	6	0	4	0	27.0	6.75
2		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	8.00	0	4	0	32.0	8.00
3		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	6	0	1	0	6.0	1.50
4		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	3	0	8	0	24.0	6.00
5		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	2	2	0	5	0	20.0	5.00
6		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	9	3	0	5	0	135.0	33.75
7		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	12	0	8	0	96.0	24.00
8		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	12	0	2	0	24.0	6.00
9		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	2	5	0	2	0	20.0	5.00
10		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	8	0	6	0	48.0	12.00
11		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	6	0	2	0	12.0	3.00
12		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	4	2	0	6	0	48.0	12.00
13		U=0.26 (2021 1.2; 2018 1.4)	Table 406.2	0.25	2	2	0	5	0	20.0	5.00
14		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	1	2	6	7	0	14.5	3.63
15		U=0.25 (2021 1.2; 2018 1.4)	Table 406.2	0.25	2	3	6	7	0	36.0	9.00
16		U=0.26 (2021 1.2; 2018 1.4)	Table 406.2	0.25	2	3	4	0	0	12.0	3.00
								Sum of Area and UA		574.5	143.6
								Vertical Glazing Area Weighted U			0.250
								Vertical Glazing and Doors Area Weighted U			0.264

Flat/Vaulted Ceilings

Plan ID	Component Description	Ref.	Attic U	Area	UA
	R60 blown Attic STD baffled (2021 Code Baseline)	10-7	0.024	2,250	54.0
			Sum of Area and UA	2,250	54.0

Walls (Above Grade)

Plan ID	Component Description	Ref.	Wall U	Net Area	UA
	R23 cavity+R0 foam INT 2X6W Lap	App A	0.049	3,250	159
			Sum of Area and UA	3,250	159

Floor (over crawl or exterior)

Plan ID	Component Description	Ref.	Floor U	Area	UA
main	R38 vented Joist 16oc (2021 1.2, 1.3; 2018 1.3-1.5)	10-3	0.025	2,250	56
			Sum of Area and UA	2,250	56

Slab on Grade (less than 2 feet below grade)

Plan ID	Component Description	Ref.	Slab F	Slab Perim	FP
	No slab on grade	NA	-		0
			Sum of Perimeter and FP	0	0

Below Grade Walls and Slabs

Plan ID	Component Description	Slab Depth	Ref.	Wall U	Wall Area	Wall UA	Slab F	Slab Perim	Slab UA
				Sum of Area, Length and UA	0	0.0		0	0

Links to Download Forms, Checklists and Other Resources

	Link	
Compliance Certificate	Compliance Certificate	Instructions
Insulation Certificate for Residential New Construction	Insulation Certificate	
Duct Testing Affadavits		
Existing Construction	Affidavit, Existing	
New Construction	Affidavit, New	
Prescriptive Checklist for 2018 WSEC	Prescriptive Checklist	
Alterations (Remodel) Worksheet	Worksheet	

Show Ventilation Calculator?	Show

Ventilation Requirements

Conditioned Floor Area	3,372 sq. ft.
Number of Bedrooms	4
Run-Time Percent in Each 4-Hour Segment	100%
Is the system Balanced?	Unbalanced
Is the system Distributed?	Not Distributed
Ventilation Code Section	IRC, Chapter 15
Whole House Mechanical Ventilation Airflow Rate	120 CFM

Show Distribution System Calculator?	Show

HVAC Thermal Distribution System Download RS-33 (2018) http://www.energy.wsu.edu/Documents/Duct%20Testing%20Standard.pdf

Is this a hydronic heating system?	No
Location of Ducts	Conditioned Space
Location of Air Handler	Conditioned Space
Is Duct Testing Required?	Yes

Maximum Duct Leakage:

Maximum total measured duct leakage per square foot	0.08	CFM25 per sq. ft.
Maximum allowable total measured duct leakage	270	CFM25

A maximum of 10 feet of return ducts and 5 feet of supply ducts are allowed to be located outside of the building thermal envelope, if insulated and sealed per R403.3.7.

Show Heating System Sizing?	Show

Heating System Sizing - Proposed Design Try Out BetterBuiltNW's HVAC Sizing Tool: https://betterbuiltnw.com/resources/hvac-sizing-tool

Nearest Weather Station	Kirkland	
Indoor Design Temperature	70 F	
Outdoor Design Temperature	17 F	
Design Temperature Difference (ΔT)	53 F	
Conditioned Floor Area, Proposed Design	3,372 ft2	
Conditioned Volume (Leave blank to use default of 8.5 ft. ceiling height)	26,976 ft3	
HVAC System Type	Heat Pump	
Location of HVAC Distribution System	Conditioned Space	
Sum of UA	439	
Envelope Heat Load (Sum of UA x ΔT)	23,241	Btu / Hour
Air Leakage Heat Load ((Volume X 0.6) X ΔT) X .018))	15,441	Btu / Hour
Building Design Heat Load (Air Leakage + Envelope Heat Loss)	38,682	Btu / Hour
Building and Duct Heat Load (For ducts located in unconditioned space: Sum of Building Heat Loss X 1.1; For ducts located in conditioned space or ductless: Sum of Building Heat Loss X 1	38,682	Btu / Hour
Maximum Heat Equipment Output (Building and Duct Heat Loss X 1.25 for heat pumps)	48,353	Btu / Hour
(Building and Duct Heat Loss X 1.40 for all other systems)	14.2	kW

Air conditioner is being proposed. Heating system sizing will need to be adjusted.

WSEC R403.7 - Equipment sizing and efficiency rating
Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J. The output capacity of heating and cooling equipment shall not be greater than that of the smallest available equipment size that exceeds the loads calculated, including allowable oversizing limits.

12671 REGISTERED ARCHITECT MICHAEL WAYNE JOHNSON STATE OF WASHINGTON

Nash ARCHITECTS
8003 118th AVENUE NE
KIRKLAND, WA 98033
425-828-4117
www.nash-architects.com

project: 2021 WSEC INFORMATION

date: 3-11-24
permit:
revisions:

drawn by: CWL
checked by: MWJ

SHEET
EN-4

GENERAL

1. ALL WORK SHALL COMPLY WITH THE GENERAL NOTES, DRAWINGS, APPLICABLE BUILDING CODES AND ALL LOCAL ORDINANCES, LAWS, REGULATIONS, AND PROTECTIVE COVENANTS GOVERNING THE SITE OF WORK.
2. IN CASE OF CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
3. TYPICAL DETAILS SHALL APPLY UNLESS SHOWN OTHERWISE IN THE DRAWINGS.
4. NO STRUCTURAL MEMBERS SHALL BE CUT, NOTCHED OR OTHERWISE PENETRATED UNLESS SPECIFICALLY APPROVED BY FELTEN GROUP IN ADVANCE OR AS SHOWN ON THESE DRAWINGS.
5. THE STANDARD OF CARE FOR ALL PROFESSIONAL ENGINEERING, AND RELATED SERVICES PERFORMED OR FURNISHED BY FELTEN GROUP, WILL BE THE CARE AND SKILL ORDINARILY USED BY MEMBERS OF THE SUBJECT PROFESSION PRACTICING UNDER SIMILAR CIRCUMSTANCES AT THE SAME TIME AND IN THE SAME LOCALITY, UNLESS NOTED OTHERWISE IN MASTER CONSULTANT AGREEMENT. FELTEN GROUP MAKES NO WARRANTIES, EXPRESS OR IMPLIED, OR OTHERWISE, IN CONNECTION WITH FELTEN GROUP'S SERVICES. FELTEN GROUP AND ITS CONSULTANTS MAY USE OR RELY UPON THE DESIGN SERVICES OF OTHERS, INCLUDING, BUT NOT LIMITED TO, ENGINEERS, ARCHITECTS, DESIGNERS, CONTRACTORS, MANUFACTURERS, AND SUPPLIERS.
6. THE CONTRACTOR, NOT FELTEN GROUP, IS RESPONSIBLE FOR THE CONSTRUCTION OF THE PROJECT, AND FELTEN GROUP IS NOT RESPONSIBLE FOR THE ACTS OR OMISSIONS OF ANY CONTRACTOR, SUBCONTRACTOR OR MATERIAL SUPPLIER: FOR SAFETY PRECAUTIONS, PROGRAMS OR ENFORCEMENT; OR FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED BY THE CONTRACTOR. FELTEN GROUP SHALL NOT AT ANY TIME SUPERVISE, DIRECT, OR HAVE CONTROL OVER ANY CONTRACTORS WORK.
7. FELTEN GROUP NEITHER GUARANTEES THE PERFORMANCE OF ANY CONTRACTOR NOR ASSUMES RESPONSIBILITY FOR ANY CONTRACTOR'S FAILURE TO FURNISH AND PERFORM ITS WORK IN ACCORDANCE WITH THE CONTRACT BETWEEN CLIENT AND SUCH CONTRACTOR.
8. FELTEN GROUP WILL NEITHER HAVE CONTROL OVER NOR BE NEITHER RESPONSIBLE NOR LIABLE IN ANY WAY FOR SAFETY PROCEDURES, SAFETY TRAINING AND PROGRAMS OR OTHER SAFETY RELATED ASPECTS OF THE WORK OF THE PROJECT SINCE THESE ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
9. ALL DESIGN DOCUMENTS PREPARED OR FURNISHED BY FELTEN GROUP ARE INSTRUMENTS OF SERVICE, AND FELTEN GROUP RETAINS OWNERSHIP AND PROPERTY INTEREST (INCLUDING THE COPYRIGHT) IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. CLIENT SHALL NOT REUSE THE DOCUMENTS WITHOUT WRITTEN PERMISSION FROM FELTEN GROUP.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND CONDITIONS WITH THE DRAWINGS PRIOR TO START OF CONSTRUCTION. THE SUBCONTRACTOR SHALL INFORM FELTEN GROUP OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS. ANY SUCH DISCREPANCIES, OMISSIONS, OR VARIATION NOT REPORTED SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR.
11. NOTED DIMENSIONS TAKE PRECEDENT OVER SCALED.
12. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION AND SHALL PROVIDE ADEQUATE SHORING AND BRACING DURING CONSTRUCTION. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF FELTEN GROUP AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK AFFECTED.
15. ALL PRODUCT SUBSTITUTIONS SHALL BE SUBMITTED TO FELTEN GROUP FOR REVIEW PRIOR TO CONSTRUCTION. CONTRACTOR TO SUBMIT DOCUMENTATION TO DEMONSTRATE THAT THE PROPOSED SUBSTITUTION IS EQUAL TO THE SPECIFIED PRODUCT. PRODUCT SUBSTITUTIONS MAY BE USED PROVIDED THEY ARE APPROVED BY FELTEN GROUP IN WRITING.
16. SPECIAL INSPECTIONS SHALL BE PROVIDED AS REQUIRED BY THE IBC AND LOCAL BUILDING OFFICIAL.
17. BUILDING MATERIALS SHALL BE PLACED ON FLOORS AND ROOFS SO AS NOT TO EXCEED THE DESIGN LOADS.
18. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON SITE FOR ALL PRODUCTS SPECIFIED ON PLANS.
19. WHERE PIPE BOLLARD IS SPECIFIED ON ARCHITECTURAL PLANS, USE MIN. 2" DIA. SCHEDULE 40 PIPE FILLED WITH CONCRETE WITH MIN. 36" HEIGHT ABOVE SLAB. ATTACH TO SLAB ON 6"x8"x1/4" PLATE WITH (3) 1/2" x 2 3/4" STUD ANCHOR.

FOUNDATION - CONCRETE

1. ALL MATERIALS, PROCEDURES, PLACEMENT, FORMWORK, LAPS, ETC. TO CONFORM TO THE LATEST ACI STANDARDS.
2. SHALL MEET ALL THE REQUIREMENTS OF ACI 301, TYPE II CEMENT U.N.O. MINIMUM STRENGTHS AT 28 DAYS - SEE FOUNDATION PLAN. LEAN MIX, SLURRY (1) SACK - 150 PSI
3. MAXIMUM SIZE OF AGGREGATE SHALL BE 1 INCH. AGGREGATE PER ASTM C57 OR C33.
4. MAXIMUM SLUMP TO BE 8 INCHES.
5. CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL MEET ALL REQUIREMENTS OF ACI 318, ASTM D98 AND ASTM C494.
6. CONCRETE THAT IS IN DIRECT CONTACT WITH NATIVE SOILS CONTAINING WATER-SOLUBLE SULFATES SHALL CONFORM TO THE FOLLOWING: FOR SULFATE CONCENTRATIONS GREATER THAN OR EQUAL TO 0.1% BUT LESS THAN 0.2% BY WEIGHT CONCRETE SHALL BE MADE WITH ASTM C 150 TYPE II CEMENT, OR AN ASTM C 595 OR C 1157 HYDRAULIC CEMENT MEETING MODERATE SULFATE-RESISTANT HYDRAULIC CEMENT (MS) DESIGNATION. FOR SULFATE CONCENTRATIONS EQUAL TO OR GREATER THAN 0.2% BY WEIGHT, CONCRETE SHALL BE MADE WITH ASTM C 150 TYPE V CEMENT OR AN ASTM C 595 OR C 1157 HYDRAULIC CEMENT MEETING HIGH SULFATE-RESISTANT HYDRAULIC CEMENT (HS) DESIGNATION AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS.
7. CONCRETE THAT IS EXPOSED TO FREEZING TEMPERATURES OR SUBJECT TO SEVERE WEATHERING AS DEFINED BY ACI SHALL HAVE 6% ± 1% AIR ENTRAINMENT.
8. FLYASH MAY BE USED PROVIDED IT MEETS ASTM C618 TYPE F AND DOES NOT EXCEED 20% OF THE WEIGHT OF TOTAL CEMENTITIOUS MATERIAL FOR CONCRETE STRENGTH UP TO AND INCLUDING 3000 PSI, AND 25% OF THE WEIGHT OF TOTAL CEMENTITIOUS MATERIAL FOR CONCRETE STRENGTH UP TO 4000 PSI.
9. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED ONLY BE VIBRATED AROUND PENETRATIONS, EDGES, AND HOLDOWNS.
10. FOUNDATIONS SUPPORTING WOOD SHALL EXTEND TO AT LEAST 6 INCHES ABOVE ADJACENT FINISH GRADE.
11. PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH FROM COLD OR HOT WEATHER IN COMPLIANCE WITH ACI 305 AND ACI 306.
12. THE CONTRACTOR SHALL PROVIDE PROPER CURING TO MINIMIZE SHRINKAGE CRACKING AND ENSURE PROPER STRENGTH GAIN.
13. THE CONTRACTOR SHALL SELECT THE LOCATIONS AND PROVIDE CRACK CONTROL JOINTS IN CONVENTIONAL SLABS TO MINIMIZE RANDOM SHRINKAGE CRACKING UNLESS THE JOINT LAYOUT IS SHOWN IN THE DRAWINGS. JOINTS SHALL BE A MINIMUM DEPTH OF 1/4 OF THE SLAB THICKNESS FOR CONVENTIONAL SLABS.
14. EVALUATION AND ACCEPTANCE OF CONCRETE SHALL BE BASED ON CYLINDER STRENGTH TESTS AS OUTLINED IN THE APPLICABLE CODE.
15. DO NOT BACKFILL UNTIL CONCRETE HAS REACHED 75% OF SPECIFIED DESIGN STRENGTH.
16. WHERE PLAIN CONCRETE PEDESTALS, E.G. SONOTUBES, ARE USED TO EXTEND THE HEIGHT OF A CONCRETE FOOTING, THE HEIGHT OF THE PEDESTAL SHALL NOT EXCEED 3x THE WIDTH OF THE PEDESTAL. IF HEIGHT EXCEEDS 3x: 12" PEDESTAL - MAX. 6' HEIGHT - (4) #5 FULL HEIGHT VERTICAL BARS W/ #4 TIES AT 12" O.C. OR 18" PEDESTAL - MAX. 12' HEIGHT- (9) #5 FULL HEIGHT VERTICAL BARS W/ #4 TIES AT 18" O.C. ATTACH TO FTG W/ #4 x 24" REBAR W/ 6" EMBED W/ SET-3G EPOXY

FOUNDATION - EPOXY

1. EPOXY TO BE SIMPSON SET 3G EPOXY ESR-4057 OR HILTI "HIT-RE 500 V3" ESR-3814 UNLESS NOTED OTHERWISE.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SPECIAL INSPECTION.

FOUNDATION - HEADED STUDS

1. ALL HEADED STUDS TO BE ASTM F1554 STEEL
2. ALL HEADED STUDS TO BE HEAVY HEX BOLT W/ HEAVY HEX NUT PER HOLDOWN SCHEDULE. HEX NUT SHALL BE THREADED ONTO BOLT SUCH THAT THE BOTTOM OF THE NUT IS FLUSH W/ BOTTOM OF BOLT. STRIKE THREADS OR TACK WELD NUT TO BOLT TO PREVENT BOLT ROTATION.

FOUNDATION - HOLDOWNS

1. ALL HOLDOWNS TO BE SIMPSON STRONG-TIE PRODUCTS OR APPROVED SUBSTITUTE UNLESS NOTED OTHERWISE INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL HOLDOWNS SHALL BE SECURELY TIED TO REINFORCING BEFORE PLACING CONCRETE.
3. BENDING STHD STRAPS MAY CAUSE SPALLING.
4. FOR LSTHD HOLDOWNS, IF SPALLING IS 1 INCH OR LESS, MEASURED FROM EMBEDMENT LINE TO THE BOTTOM OF THE SPALL, NO STRUCTURAL REPAIR IS REQUIRED.
FOR STHD HOLDOWNS, IF SPALLING IS 4 INCH OR LESS, MEASURED FROM EMBEDMENT LINE TO THE BOTTOM OF THE SPALL, NO STRUCTURAL REPAIR IS REQUIRED.
5. HOLDOWN STRAPS ARE TYPICALLY NAILED TO 2 FULL HEIGHT STUDS, HOWEVER HOLDOWN STRAPS MAY BE NAILED TO 1 KING STUD AND 1 TRIMMER STUD AT WINDOW AND DOOR OPENINGS. PROVIDED TRIMMER STUD IS NAILED TO KING STUD WITH A MINIMUM OF (20) 0.131" x 3" NAILS.
6. HOLDOWN LOCATIONS SHOWN ARE TO CENTERLINE OF HOLDOWN AND ARE BASED ON WINDOW AND SLIDING GLASS DOOR ROUGH OPENINGS 1/2" OVER CALLOUT, AND SWINGING DOOR ROUGH OPENINGS 2 1/2" OVER CALLOUT. IF DIFFERENT ROUGH OPENINGS ARE REQUIRED, CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ADJUST HOLDOWN LOCATIONS.
7. MINIMUM END DISTANCE FOR ANY STHD HOLDOWN SHALL BE 1 1/2".
8. NOTIFY FELTEN GROUP FOR MISPLACED OR MISSED HOLDOWN.

FOUNDATION - PLATE ANCHORAGE

ANCHOR BOLT:
1. ALL ANCHORS AND ANCHOR BOLTS SHALL BE ASTM A-307 OR ASTM A-36.
2. MINIMUM EMBEDMENT OF ALL BOLTS IN MASONRY, GROUT, OR CONCRETE TO BE 7" U.N.O. ON PLANS.
3. ALL BOLTS SHALL BE INSTALLED WITH PROPERLY SIZED NUTS AND WASHERS. WASHERS AT BOTTOM PLATE ANCHOR BOLTS SHALL BE 3" SQ. x 0.229" THICK.
4. PLATE ANCHORS SHOULD BE INSTALLED PER DETAIL 040, U.N.O. ON FOUNDATION PLANS.

MASA/MASAP:
1. AT SPALLING, FULL PUBLISHED CAPACITY IS ACHIEVED SO LONG AS A MAXIMUM HEIGHT OF 1 1/4" AND A MAXIMUM DEPTH OF 7/8" IS NOT EXCEEDED. ANY EXPOSED PORTION OF THE MUDSILL ANCHOR MUST BE PROTECTED AGAINST POSSIBLE CORROSION.
2. IF SPALLING IS MORE THAN LISTED ABOVE CONTACT FELTEN GROUP FOR STRUCTURAL ASSESSMENT.
3. USE 4-HOLE MASA PLACED BEHIND WOOD PANEL AND NAILED TO SOLE PLATE OR INSTALL WITH BOTH LEGS UP AT RIM LOCATIONS.

CONCRETE POWDER ACTUATED PINS AT SLAB ON GRADE:
1. ALL BOTTOM PLATES OF INTERIOR, NON-BEARING, NON SHEAR WALLS SHALL BE FASTENED WITH PINS SPACED AT 36" O.C. MAX.
2. ALL PINS TO BE HILTI X-CP 72, ESR-2379, OR SIMPSON STRONG-TIE PDPWL-300MG, PDPWLS-300MG, ESR-2138.
3. MINIMUM EDGE DISTANCE TO BE 3 INCHES.
4. MINIMUM SPACING TO BE 4 INCHES.
5. THE FASTENERS SHALL NOT BE DRIVEN UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 2000 PSI.

SCREW ANCHORS:
1. SCREW ANCHORS MAY BE USED IN LIEU OF ANCHOR BOLTS OR MASA ANCHORS USED AS SILL PLATE ANCHORAGE. SCREW ANCHORS MAY NOT BE USED TO REPLACE MASA USED AS HOLDOWN. SCREW ANCHOR SHALL BE USED AT SAME SPACING AS SPECIFIED ANCHOR BOLT OF SAME DIAMETER, OR 1/2" DIA. FOR MASA ANCHORS.
2. ALL SCREW ANCHORS TO BE TITEN HD. SEE ESR-2713 FOR CONCRETE AND ESR-1056 FOR MASONRY.
3. MINIMUM EMBEDMENT TO BE 3 1/4 INCHES.
4. MINIMUM EDGE DISTANCE TO BE 1 3/4 INCHES.
5. MINIMUM CONCRETE THICKNESS IS 1 1/2 TIMES THE EMBEDMENT DEPTH.
6. SPECIAL INSPECTION IS REQUIRED FOR TITEN HD ANCHORS INSTALLED IN CONCRETE PER THE ICC REPORT.
7. SPECIAL INSPECTION SHALL BE PROVIDED WHEN REQUIRED IN ESR-1056 FOR ALL TITEN HD ANCHORS INSTALLED IN MASONRY.
8. USE IN DRY AND NON-CORROSIVE ENVIRONMENTS.

WEDGE ANCHORS (STUD ANCHORS):
1. WEDGE ANCHORS MAY NOT BE USED IN LIEU OF ANCHOR BOLTS FOR MISSING, MIS-LOCATED OR DAMAGED ANCHOR BOLTS OR MASA. WEDGE ANCHORS MAY NOT BE USED TO REPLACE MASA USED AS HOLDOWNS.
2. ALL WEDGE ANCHORS TO BE SIMPSON STRONG-TIE STRONG BOLT, ESR-1771, STRONG BOLT 2, ESR-3037, OR ITW REDHEAD TRUBOLT, ESR-2251. DIAMETER TO BE 1/2".
3. MINIMUM EMBEDMENT TO BE 3 1/4", U.N.O. IN DRAWINGS.
4. MINIMUM EDGE DISTANCE TO BE 4" U.N.O. IN DRAWINGS.
5. MINIMUM CONCRETE THICKNESS IS 6" U.N.O. IN DRAWINGS.

FOUNDATION - SOIL AND SITE PREPARATION

1. ALL EXCAVATION, FILL (INCLUDING BASEMENT SLAB, BASEMENT WALL AND RETAINING WALL BACKFILL), COMPACTION, AND SOIL RELATED OPERATIONS SHALL BE PERFORMED ACCORDING TO SOILS CONSULTANT'S RECOMMENDATIONS. SEE SOILS REPORT AND ADDENDUMS BY THE GEOTECHNICAL ENGINEER FOR RECOMMENDATIONS ON THE CONSTRUCTION OF THE FOUNDATION.
2. GRADING AND DRAINAGE SHALL BE CONSTRUCTED TO THE STRICTER REQUIREMENTS OF THE SITE SPECIFIC SOILS REPORT OR THOSE LISTED BELOW. FINISHED GRADE TO BE DEFINED AS LOWEST GRADE WITHIN 5' OF FOUNDATION.
3.1THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET. WHERE LOT LINES, WALLS, SLOPES OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES OF FALL WITHIN 10 FEET, DRAINS OR SWALES SHALL BE PROVIDED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE.
3.2ROOF RUNOFF SHALL BE COLLECTED. PROVIDE TIGHT LINE DRAIN TO COLLECT ROOF RUNOFF AND DISCHARGE AWAY FROM STRUCTURE.
3.3PROPER GRADING SHALL BE PROVIDED DURING CONSTRUCTION AS WELL AS THROUGHOUT THE LIFE OF THE STRUCTURE.
3.4LANDSCAPE WATERING SHOULD NOT LEAD TO MOISTURE INFILTRATION OR MOISTURE CONTENT FLUCTUATION IN THE SOILS UNDER THE FOUNDATION. IT IS RECOMMENDED THAT VEGETATION BE KEPT A MINIMUM OF 3 FEET FROM THE STRUCTURE AND THAT THE VEGETATION RECEIVE SHALLOW WATERING, MOISTURE NOT TO PENETRATE INTO THE SOIL MORE THAN 8 INCHES).
3.5IT IS RECOMMENDED THAT TREES BE KEPT AWAY FROM THE STRUCTURE SUCH THAT THE DRIP LINE OF THE MATURE TREE DOES NOT OVERLAP THE FOUNDATION.
4. ALL FOUNDATIONS SHALL BEAR ON UNDISTURBED GRADE OR FILL APPROVED BY A GEOTECHNICAL ENGINEER, OR COMPLYING WITH PROVISIONS OF AN APPROVED GEOTECHNICAL REPORT.
5. THE EXCAVATION OUTSIDE THE FOUNDATION SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS, COBBLES AND BOULDERS, AND SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE THE FOUNDATION OR THE WATERPROOFING OR DAMPPROOFING MATERIAL.
6. AT EXTERIOR WALLS, FOUNDATION DRAINAGE SHALL BE PROVIDED
-4" DIA. PERFORATED DRAIN PIPE BELOW BOTTOM OF FOOTING IN GRAVEL OR CRUSHED STONE EXTENDING MIN. 12" FROM FOOTING AND 6" ABOVE TOP OF FOOTING. PLACE ON MIN. 2" OF GRAVEL/STONE, AND COVER WITH NOT LESS THAN 6" OF SAME. USE FILTER FABRIC TO COVER GRAVEL / ROCK.
-DISCHARGE BY GRAVITY OR MECHANICAL INTO AN APPROVED DRAINAGE SYSTEM.

FOUNDATION - STEEL

1. SHALL BE SUPPLIED AND INSTALLED PER THE LATEST ACI STANDARDS.
2. USE ASTM A615 GRADE 60 FOR ALL REINFORCEMENT.
3. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT.
   CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
   EXPOSED TO EARTH OR WEATHER 1 1/2"
   NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND 3/4"
4. U.N.O. LAP SPLICES SHALL BE 48 BAR DIAMETERS MINIMUM. STAGGER ALTERNATE SPLICES A MINIMUM OF 1 LAP LENGTH. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS.
5. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

FRAMING - GENERAL

1. ALL WALLS TO BE FRAMED ACCORDING TO FRAMING SCHEDULE - UNLESS NOTED OTHERWISE ON FRAMING PLANS.
2. ALL EXTERIOR, BEARING AND SHEAR WALLS SHALL HAVE DOUBLE TOP PLATES. NAILED TOGETHER WITH (2) 0.131" x 3" NAILS AT 24" 0.C.
3. END JOINTS IN TOP PLATES OF EXTERIOR, BEARING AND SHEAR WALLS SHALL BE OFFSET AT LEAST 24". FASTEN WITH (12) 0.131" x 3" NAILS EACH SIDE OF SPLICE. UNLESS NOTED OTHERWISE. NO STUDS SHALL BE REQUIRED AT END JOINT LOCATIONS.
4. WHERE DOUBLE TOP PLATES OF BEARING AND/OR EXTERIOR WALLS ARE NOTCHED MORE THAN 25 PERCENT, ADD A 16 GAGE BY 1 1/2 INCH WIDE STRAP TO NOTCH SIDE OF EACH PLATE. FASTEN WITH NOT LESS THAN (8) 0.162" x 3 1/2" NAILS OR (12) 0.131" x 3" NAILS AT EACH END OF EACH STRAP. WHERE TOP PLATES ARE NOTCHED MORE THAN 50 PERCENT, ADD A 16 GAGE BY 1 1/2 INCH WIDE STRAP TO BOTH SIDES OF EACH PLATE. FASTEN WITH NOT LESS THAN (8) 0.162" x 3 1/2" OR (12) 0.131" x 3" NAILS AT EACH END OF EACH STRAP.
5. OVERLAP DOUBLE TOP PLATES AT ALL CORNERS, INTERSECTIONS WITH (4) 0.131" x 3" FACE NAILS. WHERE OVERLAP CAN NOT BE CONSTRUCTED, USE A35 ON TOP OF PLATES.
6. TOP PLATE SPLICES OCCURRING AT INTERIOR, NON-SHEAR, NON-BEARING LOCATIONS NEED NOT MEET REQUIREMENTS ABOVE.
7. TRIMMER STUDS SHALL BE NAILED TO KING STUDS WITH (2) 0.131" x 3" NAILS AT 12" 0.C.
8. PROVIDE SOLID BLOCKING THROUGH FLOOR DEPTH FOR ALL MULTIPLE STUD INCLUDING DOUBLE TRIMMERS OR 4x OR GREATER POSTS. BLOCKING SHALL BE SAME SIZE AS POST ABOVE. POSTS SHALL BE CONTINUOUS TO STRUCTURAL ELEMENT OR CARRYING MEMBER OR FOUNDATION.
9. WHEN THE DRAWINGS CALL FOR 4x OR 6x POSTS OR HEADERS, THESE ARE TO BE SOLID SAWN MEMBERS, NOT BUILT-UPS.
10. ALL BEAMS AND GIRDERS TO HAVE FULL WIDTH BEARING, U.N.O.
11. FLOOR BEAMS AND GIRDERS SHALL BE ATTACHED TO TOP PLATE WITH A34.
12. COLUMNS AND POSTS LOCATED DIRECTLY ON CONCRETE (NOT ON A WOOD SILL) SHALL BE SUPPORTED BY CONCRETE PIERS OR METAL CONNECTORS PROJECTING ABOVE THE SLAB (UNLESS THE POST IS AN APPROVED WOOD SPECIES OF NATURAL RESISTANCE TO DECAY OR PRESERVATIVE TREATED WOOD). THE PIERS OR BASES SHALL PROJECT AT LEAST 6 INCHES ABOVE EXPOSED EARTH AND AT LEAST 1 INCH ABOVE THE CONCRETE SLAB.
13. AT ALL GABLE WALLS ADJACENT TO SCISSOR TRUSSES OR PARALLEL CHORD TRUSSES, GABLE TRUSS SHALL BE DESIGNED WITH MATCHING PROFILE AND STUDS SHALL BE BALLOON FRAMED FROM BOTTOM PLATE TO UNDERSIDE OF GABLE END TRUSS.
14. TEMPORARY OR ERECTION BRACING IS SOLELY THE RESPONSIBILITY OF THE FRAMING CONTRACTOR. THE DEPTH OF NOTCHES FOR LET-IN BRACES SHALL NOT EXCEED THE PRESCRIPTIVE CODE LIMITS FOR NOTCHES.
15. SLOPE CLOSED DECKS A MINIMUM OF 1/4 INCH PER FOOT.
16. 2x NAILERS OR BLOCKING SHALL BE NAILED WITH (2) 0.131" x 3" TOENAILS OR END NAILS AT EACH END UNLESS NOTED OTHERWISE.
17. BUILT-UP 2x HEADERS SHALL BE NAILED TOGETHER PER DETAIL 604.
18. BUILT-UP CORNER STUDS SHALL BE NAILED TOGETHER WITH 0.131" x 3" NAILS AT 8" O.C. U.N.O.
19. BUILT-UP WOOD POSTS OF 2x4 OR 2x6 STUDS SHALL BE NAILED WITH (2) 0.131" x 3" NAILS AT 12" O.C. PER PLY FOR FULL LENGTH OF POST.
20. TOP AND BOTTOM PLATE TO STUD SHALL BE NAILED PER BELOW:
    2x4 STUD = (2) 0.131" x 3" END NAILS OR (3) 0.131" x 3" TOENAILS
    2x6 STUD = (3) 0.131" x 3" END NAILS OR (4) 0.131" x 3" TOENAILS
21. FIREBLOCKING AND DRAFTSTOPPING SHALL BE INSTALLED AS SHOWN OR SPECIFIED IN THE ARCHITECTURAL DRAWINGS AND APPLICABLE BUILDING CODE, UNLESS NOTED ON FRAMING PLANS.
22. END NOTCHES, LOCATED AT THE ENDS OF SAWN LUMBER BENDING MEMBERS FOR BEARING OVER A SUPPORT, SHALL BE PERMITTED, AND SHALL NOT EXCEED 1/4 THE BEAM DEPTH.
23. INTERIOR NOTCHES, LOCATED IN THE OUTER THIRDS OF THE SPAN OF A SINGLE SPAN SAWN LUMBER BENDING MEMBER, SHALL BE PERMITTED, AND SHALL NOT EXCEED 1/6 THE DEPTH OF THE MEMBER. INTERIOR NOTCHES ON THE TENSION SIDE OF 3 1/2" OR GREATER THICK-NESS (4" NOMINAL THICKNESS) SAWN LUMBER BENDING MEMBERS ARE NOT PERMITTED.
24. EXTERIOR AND BEARING WALL STUDS MAY BE NOTCHED UP TO 25% OF THE DEPTH OF STUD AND/OR BORED UP TO 40% OF STUD DEPTH WITH MINIMUM EDGE DISTANCE OF 5/8". BORING AND NOTCH MAY NOT OCCUR IN SAME CROSS SECTION.
25. INTERIOR NON BEARING WALL STUDS MAY BE NOTCHED UP TO 40% OF THE DEPTH OF THE STUD AND/OR BORED UP TO 60% OF STUD DEPTH WITH MINIMUM EDGE DISTANCE OF 5/8". BORING AND NOTCH MAY NOT OCCUR IN SAME CROSS SECTION.
26. WHERE GRADE CONDITIONS REQUIRE THE USE OF A FRAMED CRIPPLE WALL UNDER THE MAIN FLOOR SYSTEM, THE CRIPPLE WALL SHALL BE CONSTRUCTED OF 2x STUDS TO MATCH SIZE, SPECIES AND SPACING OF WALL ABOVE, U.N.O. CRIPPLE STUDS SHALL BE ADDED BELOW ALL POSTS AND TRIMMERS ABOVE. WHERE FRAMED CRIPPLE WALLS EXCEED 9'-0" HEIGHT, CONTACT ENGINEER FOR ADDITIONAL INFO.
27. STUDS SHALL NOT BE REQUIRED TO BE ALIGNED WITH ROOF OR FLOOR MEMBERS UNLESS NOTED ON FRAMING PLANS.
28. CRAWLSPACE BEAMS MAY BE SPLICED IN THE FIELD. AT THE SPLICE, EACH BEAM SHALL HAVE A MINIMUM BEARING LENGTH EQUAL TO HALF THE WIDTH OF THE POST SPECIFIED ON THE PLANS.
29. CRAWLSPACE VENTS SHALL BE LOCATED AT LEAST 6" CLEAR OF ALL BEAMS, POST LOADS, AND HOLDOWNS ABOVE.
30. OPEN DECKING SHALL BE ATTACHED TO EVERY DECK JOIST WITH (2) 0.131" x 2 1/2" NAILS OR (2) #8 x 2" SCREWS
31. IN CRAWLSPACE AND DECK CONDITIONS, POSTS LABELED AS 4x ON PLANS THAT ARE GREATER THAN 9' TALL SHALL BE UPSIZED TO 6x

FRAMING - CONNECTORS

ALL HANGERS, STRAPS, HOLDOWNS AND OTHER METAL CONNECTORS SHALL BE INSTALLED WITH THE MANUFACTURER'S MAXIMUM SIZE AND QUANTITY OF RECOMMENDED FASTENERS, U.N.O.
1. TOENAILS SHALL BE DRIVEN AT AN ANGLE OF APPROXIMATELY 30° WITH WOOD MEMBER AND STARTED APPROXIMATELY 1/3 THE LENGTH OF THE NAIL FROM THE MEMBER END.

SCREWS:
1. SCREWS FOR BOTTOM/SILL PLATE ANCHORS SHALL BE NO. 8 x 3 INCH LONG; AND MAY BE USED I.L.0 0.131" x 3" NAILS SHOWN IN DRAWINGS AT A 1 FOR 1 SUBSTITUTION.

FRAMING - GUARDRAILS AND HANDRAILS

1. GUARDRAILS AND HANDRAILS SHALL BE DESIGNED FOR A SINGLE 200 POUND CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP.
2. THE DESIGN OF GUARDRAIL WALLS CONSTRUCTED OF WOOD STUD FRAMING SHALL BE THE RESPONSIBILITY OF FELTEN GROUP.
3. THE DESIGN OF GUARDRAILS AND HANDRAILS CONSTRUCTED OF FINISH WOOD, STEEL OR OTHER MATERIALS INSTALLED AFTER ROUGH FRAMING SHALL BE THE RESPONSIBILITY OF THE PRODUCT SUPPLIER.

FRAMING - HARDWARE

1. ALL METAL HARDWARE AND SDS SCREWS TO BE SIMPSON STRONG-TIE PRODUCTS OR APPROVED SUBSTITUTE, UNO USP PRODUCTS MAY BE USED AS ALTERNATES FOR SOME CONNECTORS PER CONNECTOR CONVERSION CHART. SEE DETAIL 612.
2. ALL HANGERS, STRAPS, HOLDOWNS AND OTHER METAL CONNECTORS SHALL BE INSTALLED WITH THE MANUFACTURER'S MAXIMUM SIZE AND QUANTITY OF RECOMMENDED FASTENERS, U.N.O.
3. WHERE HUS/LUS HANGERS ARE CONNECTED TO A SINGLE 2x MEMBER, USE 0.148" x 1 1/2" NAILS.

FRAMING - I-JOISTS

1. MANUFACTURER SHALL FURNISH I-JOIST PLACEMENT PLANS AND I-JOIST DESIGN INFORMATION SEALED AND SIGNED BY A REGISTERED ENGINEER LICENSED IN THE STATE OF WASHINGTON. PLACEMENT PLANS AND DESIGN INFORMATION SHALL BE REVIEWED BY THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO SHIPPING.
2. I-JOISTS SHALL BE DESIGNED FOR MAXIMUM TOTAL LOADS SHOWN UNDER DESIGN LOADS, CONCENTRATED LOADS FROM AIR HANDLER UNITS AND ANY OTHER CONCENTRATED LOADS.
3. I-JOISTS SHALL BE HANDLED DURING MANUFACTURING, DELIVERY AND AT THE JOBSITE SO AS NOT TO BE SUBJECTED TO ANY DAMAGE.
4. I-JOISTS SHALL BE INSTALLED WITH PROPER BRACING DURING CONSTRUCTION TO PREVENT TOPPLING OR DOMINOING. INSTALL ALL BRACING BEFORE PLACING CONCENTRATED LOADS ATOP I-JOISTS. THE INSTALLATION OF TEMPORARY/ERECTION BRACING IS SOLELY THE RESPONSIBILITY OF THE FRAMING TRADE PARTNER.
5. NOTCHING OR CUTTING OF I-JOIST FLANGES IS PROHIBITED.
6. HOLES MAY BE CUT IN I-JOIST WEBS PER MANUFACTURER'S RECOMMENDATIONS.
7. JOIST TO JOIST CONNECTIONS UTILIZING SIMPSON ITS HANGERS SHALL HAVE BACKER BLOCKS PER MANUFACTURER AT SUPPORTED LENGTHS OVER 5'-0".

FRAMING - LEDGERS

1. WHERE THE DRAWINGS CALL FOR WOOD LEDGERS, LEDGERS SHALL BE INSTALLED WITH AS LONG OF LENGTHS AS POSSIBLE. THE MINIMUM LEDGER LENGTH ALLOWED SHALL BE 4 FEET. THE MINIMUM NUMBER OF SUPPORTS PER LEDGER SHALL BE THREE.
2. LEDGER SPLICES MAY OCCUR AT SUPPORTS OR BETWEEN SUPPORTS. LEDGER SPLICES AT SUPPORTS REQUIRE A MINIMUM OF A 3 INCH WIDE SUPPORT FOR NAILING, SUCH AS DOUBLE STUDS OR THE END OF A FLOOR TRUSS.
3. LEDGER SPLICES NEED NOT BE STRAPPED U.N.O. IN THE DRAWINGS
4. LEDGER SPLICES SHALL BE LOCATED SO THAT RAFTER, TRUSS OR JOIST HANGERS DO NOT FALL ON A SPLICE.
5. LEDGERS AT NON-TYPICAL LOADS FROM ROOF GIRDERS AND BEAMS SHALL BE NAILED TO A MINIMUM OF A 3-INCH WIDE SUPPORT ON EACH SIDE OF THE NON-TYPICAL LOAD WITH DOUBLE THE TYPICAL NAILING U.N.O. ON FRAMING PLAN.

FRAMING - MEMBERS

SAWN LUMBER

MEMBER	SPECIES	GRADE
HEADERS/BEAMS, 2x	HEM-FIR	NO. 2
4x, 6x, 8x, 10x, 12x	DOUG-FIR	NO. 2
RAFTERS/JOISTS	HEM-FIR	NO. 2
STUDS / POSTS / BLOCKING	HEM-FIR	STUD
LEDGERS	HEM-FIR OR DOUG-FIR	NO. 2
TOP*/BOTTOM/SOLE PLATES	HEM-FIR	STANDARD
OPEN DECKING**	5/4" x 4" CEDAR	CLEAR
	5/4" x 6" CEDAR	ALL
	2x4 CEDAR	ALL
OPEN WEB TRUSS TOP CHORD	HEM-FIR OR DOUG-FIR	ANY

SEE DETAIL 611 FOR 2x HEADER/BEAM ALTERNATES.
*USE CONSTRUCTION GRADE FOR TOP PLATES WHEN ROOF TRUSS CLEAR SPAN EXCEEDS 40 FT. OR WHEN FLOOR TRUSS CLEAR SPAN EXCEEDS 16'.
**OR USE ENGINEERED PRODUCT W/ MIN. 16" SPAN RATING

1. SAWN LUMBER SHALL COMPLY WITH THE LATEST GRADING RULES OF THE ALSC, WWPA OR WCLIB. ALL LUMBER SHALL BEAR AN APPROVED GRADING STAMP.
2. FINGER JOINTED MATERIAL STAMPED "VERTICAL USE ONLY" OF THE SAME SPECIES AND MINIMUM GRADE SHOWN ABOVE OR IN THE DRAWINGS MAY BE USED FOR STUDS AND BLOCKING IN UNRATED CONSTRUCTION. FINGER JOINTED MATERIAL IN FIRE-RATED CONSTRUCTION REQUIRES A HEAT RESISTANT ADHESIVE (HRA) STAMP. FINGER JOINTED MATERIAL STAMPED "CERT EXT. JNTS" OF THE SAME SPECIES AND MINIMUM GRADE SHOWN ABOVE OR IN THE DRAWINGS MAY BE USED FOR ANY SAWN LUMBER APPLICATION IN UNRATED CONSTRUCTION. FINGER JOINTED MATERIAL IN FIRE-RATED CONSTRUCTION REQUIRES A HEAT RESISTANT ADHESIVE (HRA) STAMP.

GLU-LAM BEAMS
1. FABRICATION AND HANDLING OF ALL GLULAM BEAMS SHALL BE PER APA-EWS/ANSI A 190.1, AMERICAN NATIONAL STANDARD FOR STRUCTURAL GLUED LAMINATED TIMBER.
2. BEAMS TO BEAR APA-EWS CERTIFICATE AND GRADE STAMP.
3. GLULAM BEAMS SHALL HAVE THE FOLLOWING PROPERTIES OR BETTER:

	STANDARD BEAMS	NATURALLY DURABLE BEAMS
APA-EWS	24F-V4	20F-V12
DF/DF	UNBALANCED LAYUP	AYC/AYC UNBALANCED
Fb +/- =	2400 PSI/1850 PSI	2000 PSI/1400 PSI
Fv =	265 PSI	265 PSI
E =	1,800,000 PSI	1,500,000 PSI
Fc (PERP.) =	650 PSI	560 PSI

ALL BEAMS SHALL BE FABRICATED USING WATERPROOF GLUE.
4. APPEARANCE TO BE INDUSTRIAL GRADE, UNO.
5. BEAMS SHALL HAVE STANDARD CAMBER (BASED ON 5000 FT. RADIUS) OR FLATTER, UNLESS NOTED OTHERWISE.
6. BEAMS HAVE A TOP AND BOTTOM AND NEED TO BE INSTALLED RIGHT SIDE UP.
7. BEAMS OF GREATER WIDTH OR DEPTH THAN SPECIFIED MAY BE USED.

STRUCTURAL COMPOSITE LUMBER

MEMBER	E	Fb
LAMINATED STRAND LUMBER (LSL)	1.55E	2325
LAMINATED VENEER LUMBER (LVL)	2.0E	2600
PARALLEL STRAND LUMBER (PSL)	2.0E	2900
RIM JOIST/BOARD - 1 1/8" MIN. WIDTH	0.6E	700

1. 2 AND 3 PLY BEAMS SHALL BE CONNECTED W/ (3) ROWS OF 0.131" x 3" NAILS AT 12" O.C. U.N.O. DRIVE NAILS FROM BOTH SIDES FOR (3) PLY BEAMS.
2. 4 PLY BEAMS SHALL BE CONNECTED W/ (2) ROWS OF SDS 1/4" x 6" SCREWS AT 16" O.C. OR (2) ROWS OF 1/2" DIAMETER THROUGH BOLTS AT 24" O.C. U.N.O.

FRAMING - PRESERVATIVE TREATMENT

1. PROTECTION OF WOOD AND WOOD-BASED PRODUCTS FROM DECAY SHALL BE PROVIDED BY THE USE OF NATURALLY DURABLE WOOD OR WOOD THAT IS PRESERVATIVE TREATED IN ACCORDANCE WITH AWPA STANDARD U1 WITH USE CATEGORY (UC) AS INDICATED IN THE CHART BELOW

MEMBER		UC
POSTS IN DIRECT CONTACT WITH CONCRETE		UC4A
EXPOSED, EXTERIOR ELEMENTS - COATED/ UNCOATED		UC3A/B
ALL INTERIOR MEMBERS, INCLUDING SILL PLATES, IN DIRECT CONTACT WITH CONCRETE OR MASONRY		UC2
FURRING STRIPS ATTACHED DIRECTLY TO CONCRETE		UC3B
ENDS OF BEAMS/GIRDERS ENTERING CONCRETE/MASONRY WALLS HAVING < 1/2" CLEARANCE ON TOP, SIDES OR ENDS.		UC3B
CRAWLSPACE MEMBER	DISTANCE TO EXPOSED GROUND OR UNEXCAVATED AREAS	
JOISTS AND FLOOR TRUSSES	< 18"	UC2
BEAMS AND GIRDERS	< 12"	UC2
EXTERIOR DECK MEMBERS		
POSTS AND LEDGERS		UC4A
ALL MEMBERS WITH ≥ 6" OF CLEARANCE TO GRADE		UC3B
ALL MEMBERS WITH < 6" OF CLEARANCE TO GRADE		UC4A

2. PRESERVATIVE TREATED WOOD PRODUCTS SHALL BE CARED FOR IN ACCORDANCE WITH AWPA-M4.
3. FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE OF HOT DIPPED, ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. STAPLES SHALL BE OF STAINLESS STEEL. COATING TYPES AND WEIGHTS FOR CONNECTORS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR NOT LESS THAN ASTM A653 TYPE G185 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED. EXCEPTIONS:
   1. 1/2" DIAMETER OR GREATER STEEL BOLTS
   2. FASTENERS OTHER THAN NAILS, STAPLES AND TIMBER RIVETS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B695, CLASS 55 MINIMUM
   3. PLAIN CARBON STEEL FASTENERS IN SBX/DOT AND ZINC BORATE PRESERVATIVE-TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT
3. HARDWARE IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL HAVE SIMPSON ZMAX COATING.

WOOD SHEATHING

1. EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE TRADEMARK OF A.P.A. OR APPROVED SUBSTITUTE, AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF VOLUNTARY PRODUCT STANDARD PS-1, VOLUNTARY PRODUCT STANDARD PS-2 OR A.P.A. PRP-108 PERFORMANCE STANDARDS.
2. ALL PANELS SHALL BE A.P.A. RATED SHEATHING, EXPOSURE 1 PER CHART BELOW:

LOCATION	THICKNESS	SPAN RATING	NAILING - EDGE/ FIELD
ROOF ≥ 2:12 SLOPE	7/16"	24/16**	0.131 x 2 1/2" - 6"/12"
ROOF < 2:12 SLOPE	15/32"	32/16***	16 GAUGE 1 3/4" - 3"/6"
FLOOR ROOFTOP TERRACE	23/32" STURD-I-FLOOR	24" O.C.	RINGSHANK 0.131" x 2 1/2" - 6"/12" #8 x 2"- 6"/12"(SCREW)
CLOSED DECK	23/32" PLYWOOD	24" O.C.	
WALL****	7/16"	24/16	0.131 x 2 1/2" - 6"/12"*

* U.N.O. IN THE BRACED/SHEAR WALL SCHEDULE.
** 24/0 SPAN RATING MAY BE USED. H-CLIPS OR BLOCKING SHALL BE ADDED AT ALL EDGES WHEN 24/0 IS USED.
*** H CLIPS, TONGUE AND GROOVE EDGES, OR SOLID BLOCKING SHALL BE USED AT ALL EDGES
**** 3-PLY PLYWOOD PANELS SHALL BE APPLIED W/ LONG DIMENSION ACROSS STUDS

NOTE: ROOF AND FLOOR SHEATHING IS UNBLOCKED, UNLESS NOTED OTHERWISE ON PLANS
WHEN ROOF SNOW LOAD EXCEEDS 40 PSF, USE 15/32" SHEATHING FOR ALL SLOPES
3. INSTALL ROOF AND FLOOR PANELS WITH LONG DIMENSION OR STRENGTH AXIS OF THE PANEL ACROSS SUPPORTS. INSTALL PANELS CONTINUOUS OVER TWO OR MORE SPANS. WALL PANELS MAY BE INSTALLED HORIZONTALLY OR VERTICALLY, U.N.O.
4. PANEL END JOINTS SHALL OCCUR OVER FRAMING. PANEL END JOINTS SHALL BE STAGGERED, NOT REQUIRED AT WALL SHEATHING. MINIMUM SPACING OF 1/8" IS RECOMMENDED AT ALL PANEL ENDS AND EDGES. PANEL SPACING SHALL NOT EXCEED 1/4 INCH.
5. SEE DETAIL 812 FOR FLOOR SHEATHING OVERSPAN.
6. ADHESIVES MAY BE USED FOR FLOOR AND DECK SHEATHING. ADHESIVES SHALL MEET A.P.A. SPECIFICATION AFG-01 OR ASTM D3498, APPLIED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS. SHEATHING ADHESIVE SHALL BE APPLIED TO FRAMING MEMBERS PRIOR TO PLACEMENT OF SHEATHING. SHEATHING TO BE FULLY FASTENED PRIOR TO SETTING TIME OF ADHESIVE.
7. BASED ON THE FLOOR SHEATHING SPECIFIED ABOVE, THE MAXIMUM DEFLECTION LIMIT OF FLOOR FRAMING MEMBERS SHALL BE L/360 IN AREAS TO RECEIVE CERAMIC FLOOR TILE AND L/720 IN AREAS TO RECEIVE NATURAL STONE TILE.
8. PLACE ROOF SHEATHING WITH SIDE WITH SKID-RESISTANT COATING UP. KEEP ROOF DECK FREE OF DIRT, DEBRIS AND SAWDUST DURING CONSTRUCTION.
9. NAIL ROOF SHEATHING 6" O.C. AT FIELD NAILING WITHIN 4 FEET OF ANY ROOF EDGE.
10. ROOF SHEATHING SHALL BE INSTALLED WITH A 24" MINIMUM PANEL WIDTH WHEREVER POSSIBLE. FOR PANEL WIDTHS GREATER THAN 16" BUT LESS THAN 24", USE (2) PANEL EDGE CLIPS OR LUMBER BLOCKING AT UNSUPPORTED EDGES. THE EDGE SUPPORT IS TO BE PLACED AT THE JOINT BETWEEN THE NARROW-WIDTH PANEL AND AN ADJACENT FULL WIDTH PANEL. UNLESS OTHERWISE REQUIRED BY THE BUILDING CODE, THE SUPPORT MAY BE OMITTED AT THE EDGE ADJACENT TO A RIDGE OR VALLEY WHEN THE OPPOSITE EDGE OF THE NARROW-WIDTH PANEL IS THUS SUPPORTED. WHEN USED, (2) PANEL EDGE CLIPS, EQUALLY SPACED, SHOULD BE PLACED BETWEEN EACH PAIR OF SUPPORTS. AS AN ALTERNATIVE, 2x4 BLOCKING MAY BE USED FLATWISE OR EDGEWISE AND SHOULD BE ADEQUATELY ATTACHED TO ROOF FRAMING. FOR PANEL WIDTHS GREATER THAN 12" BUT LESS THAN OR EQUAL TO 16", ONLY LUMBER BLOCKING AS DESCRIBED ABOVE IS RECOMMENDED. FOR PANEL WIDTHS OF 12" OR LESS, LUMBER BLOCKING APPLIED TO BOTH NARROW-WIDTH PANEL EDGES IS RECOMMENDED REGARDLESS OF ADJACENT RIDGE OR VALLEY.
11. ROOF SHEATHING ON TRUSSES TO CONTINUE TO ENDS OF TRUSSES TYPICAL. THIS APPLIES TO ALL OVERFRAMING AREAS. SHEATHING MAY BE OMITTED FOR VENTILATION AS SHOWN IN THE DETAIL 451.
12. WALL SHEATHING JOINTS MUST OCCUR OVER COMMON FRAMING MEMBERS.
13. WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUDS.

WOOD TRUSSES

1. ALL TRUSSES SHALL BE SUPPLIED BY A CITY OR COUNTY APPROVED FABRICATOR (WHICHEVER HAS JURISDICTION). TRUSSES SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH ANSI/TPI 1 NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION AND APPLICABLE BUILDING CODE.
2. MANUFACTURER SHALL FURNISH TRUSS PLACEMENT PLANS AND TRUSS DESIGN DRAWINGS. THE TRUSS DESIGN DRAWINGS SHALL BE SEALED AND SIGNED BY A REGISTERED ENGINEER LICENSED IN THE STATE OF WASHINGTON.
3. TRUSSES SHALL BE DESIGNED FOR MAXIMUM TOTAL LOADS SHOWN UNDER DESIGN LOADS, CONCENTRATED LOADS FROM AIR HANDLER UNITS AND ANY OTHER CONCENTRATED LOADS.
ATTIC LIVE LOAD MUST BE USED ON BOTTOM CHORDS FOR LOCATIONS WHERE TWO OR MORE ADJACENT TRUSSES USE WEB CONFIGURATIONS CAPABLE OF ACCOMMODATING AN ASSUMED RECTANGLE 42 INCHES IN HEIGHT BY 24 INCHES IN WIDTH, OR GREATER, WITHIN THE PLANE OF THE TRUSS. FOR ALL OTHER BOTTOM CHORDS, ATTIC LIVE LOAD (WITHOUT STORAGE) MAY BE USED. LOADS ARE NON-CONCURRENT WITH OTHER LIVE LOADS.
4. TRUSSES SHALL BE DESIGNED FOR THE LARGER OF UNIFORM ROOF SNOW LOADS STIPULATED BY THE JURISDICTION HAVING AUTHORITY OR ROOF SNOW LOADS CALCULATED BY ASCE7 INCLUDING UNBALANCED SNOW LOAD, DRIFT AND/OR SLIDING SNOW.
5. TRUSSES SHALL BE DESIGNED TO NOT EXCEED BEARING PRESSURE OF TOP PLATES - 425 PSI.
6. LUMBER USED SHALL BE IDENTIFIED BY GRADE MARK OF A LUMBER INSPECTION BUREAU OR AGENCY APPROVED BY BOARD OR REVIEW OF AMERICAN LUMBER STANDARDS COMMITTEE, AND SHALL BE THE SIZE, SPECIES, AND GRADE IN ACCORDANCE WITH THE TRUSS DESIGN DRAWINGS.
7. CONNECTOR PLATES SHALL BE MANUFACTURED BY A TPI MEMBER PLATE SUPPLIER AND SHALL MEET OR EXCEED ASTM A653/A653M REQUIREMENTS FOR STRUCTURAL STEEL.
8. HANDLING, INSTALLING, RESTRAINING & BRACING SHALL BE IN ACCORDANCE WITH "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES", BCSI LATEST EDITION BY WTCA AND TPI.
9. TRUSSES SHALL BE SET AND SECURED LEVEL AND PLUMB, AND IN CORRECT LOCATION.
10. TRUSSES SHALL BE SUFFICIENTLY BRACED DURING ERECTION TO PREVENT TOPPLING OR DOMINOING. INSTALL ALL BRACING BEFORE PLACING CONCENTRATED LOADS ATOP TRUSSES. THE INSTALLATION OF TEMPORARY/ERECTION BRACING IS SOLELY THE RESPONSIBILITY OF THE FRAMING TRADE PARTNER.
11. PERMANENT RESTRAINT/ BRACING OF CHORDS AND WEB MEMBERS SHALL BE INSTALLED IN ACCORDANCE WITH BCSI-B3 UNLESS NOTED OTHERWISE.
12. WHERE PERMANENT BRACING OF TRUSS WEB MEMBERS IS REQUIRED ON THE TRUSS DESIGN DRAWINGS, IT SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING METHODS:
    1. THE TRUSSES SHALL BE DESIGNED SO THAT THE BUCKLING OF ANY INDIVIDUAL TRUSS MEMBER IS RESISTED INTERNALLY BY MEMBER T-BRACING, L-BRACING, ETC. OF THE INDIVIDUAL TRUSS. THE BUCKLING REINFORCEMENT OF THE TRUSS INDIVIDUAL MEMBER SHALL BE INSTALLED AS SHOWN ON THE TRUSS DESIGN DRAWING OR ON SUPPLEMENTAL TRUSS MEMBER BUCKLING REINFORCEMENT DIAGRAMS PROVIDED BY THE TRUSS DESIGNER.
    2. CONTINUOUS LATERAL RESTRAINT (CLR) CONSISTING OF MINIMUM 2x4 STRESS-GRADED DIMENSION LUMBER ATTACHED AT RIGHT ANGLES TO THE WEBS WITH A MINIMUM OF (2) 0.131" x 3" NAILS PER TRUSS. LAP BRACING A MINIMUM OF ONE TRUSS BAY. PROVIDE DIAGONAL BRACE AT ANGLE OF APPROXIMATELY 45° TO THE CLR, ATTACH AS CLOSE AS POSSIBLE TO THE TOP AND BOTTOM CHORD PLANE WITH (2) 0.131" x 3" NAILS. REPEAT DIAGONAL BRACE EVERY 20 FEET UNLESS NOTED OTHERWISE.
13. GABLE END TRUSS PERMANENT BRACING SHALL BE PROVIDED AS SHOWN IN DETAIL 408.
14. NOTCHING OF TOP CHORD OF GABLE END TRUSS FOR LOOKOUTS SHALL BE ACCOUNTED FOR IN DESIGN BY TRUSS MANUFACTURER.
15. CUTTING AND ALTERING OF TRUSSES IS NOT PERMITTED. TRUSS REPAIRS SHALL BE SEALED AND SIGNED BY A REGISTERED ENGINEER LICENSED IN THE STATE OF WASHINGTON.
16. WHEN PIGGYBACK ROOF TRUSS SYSTEM IS USED, FULLY SHEATH LOWER TRUSSES OR PROVIDE CONTINUOUS LATERAL RESTRAINT (CLR) AT SPACING SPECIFIED ON THE TRUSS DESIGN DRAWING AND DIAGONAL BRACING EVERY 10 FEET UNLESS NOTED OTHERWISE IN THE DRAWINGS. ALL BRACING TO BE INSTALLED PER LATEST EDITION OF BCSI-B3. DIAGONAL BRACING TO HAVE (2) 0.131" x 3" NAILS AT EACH INTERMEDIATE TRUSS AND (3) 0.131" x 3" NAILS AT EACH END.
17. TRUSSES ARE NOT REQUIRED TO BE DESIGNED FOR DRAG LOADS SHOWN ON FRAMING PLAN IF FULLY SHEATHED.
18. ATTICS CONTAINING APPLIANCES SHALL BE PROVIDED WITH A MINIMUM 20" x 30" ACCESS OPENING AND A CLEAR AND UNOBSTRUCTED PASSAGEWAY NOT LESS THAN 30" HIGH x 22" WIDE. THE DISTANCE FROM THE OPENING TO THE APPLIANCE, MEASURED ALONG THE CENTERLINE OF THE PASSAGEWAY, SHALL BE NO MORE THAN 20 FEET. THE PASSAGEWAY SHALL HAVE CONTINUOUS SOLID 3/4" (23/32" ACTUAL) DECK SHEATHING NOT LESS THAN 24" WIDE. A LEVEL 30" x 30" x 30" SERVICE SPACE IS REQUIRED IN FRONT OF EQUIPMENT WHERE ACCESS IS REQUIRED.
19. FELTEN GROUP DESIGNS INCLUDE MWFRS LOADS AND ARE BASED ON RATIONAL ANALYSIS. FELTEN GROUP'S CALCULATED TRUSS REACTIONS, UPLIFTS AND/OR CONNECTIONS SHALL SUPERSEDE ALL REACTIONS, UPLIFTS AND/OR CONNECTIONS LISTED IN THE TRUSS SHOP DRAWINGS.
20. FLOOR TRUSS STRONGBACKS SHALL BE A MINIMUM 2x6,ATTACHED WITH A MINIMUM OF (3) 0.131" x 3" NAILS TO A 2x4 VERTICAL WEB, IN CONTACT WITH BOTTOM CHORD, NOT CUT OR NOTCHED, AND PLACED AS SHOWN IN TRUSS DESIGN DRAWINGS, SPACED NOT TO EXCEED 10' UNLESS THERE IS A RIGID CEILING ATTACHED AND LIVE LOAD DEFLECTION NOT TO EXCEED 480.
21. IN THE ABSENCE OF A VERTICAL WEB, A 2x4 SCAB VERTICAL SHALL BE SECURED TO THE TRUSS TOP AND BOTTOM CHORDS WITH A MINIMUM OF (2) 0.131" x 3" NAILS. THE STRONGBACK MAY THEN BE ATTACHED TO THE SCAB.

DESIGN LOADS

2021 INTERNATIONAL BUILDING, RESIDENTIAL AND WASHINGTON CODES (IBC/IRC)

ROOF DEAD LOAD =	15 psf.	SHINGLE/MEMBRANE
ROOF LIVE LOAD =	16 psf. 20 psf.	4:12 SLOPE AND GREATER LESS THAN 4:12 SLOPE
ROOF SNOW LOAD =	25 psf.	
ATTIC LIVE LOAD = (WITHOUT STORAGE)	20 psf. NON CONCURRENT 10 psf. NON - CONCURRENT	
FLOOR DEAD LOAD =	15 psf.	
FLOOR LIVE LOAD =	40 psf.	
DECK LIVE LOAD =	60 psf.	
EXT. WALL DEAD LOAD =	12 psf.	
INT. WALL DEAD LOAD =	7 psf.	
	IBC	IRC
WIND SPEED =	110 mph.	110 mph.
EXPOSURE AT M.W.F.R.S =		C
EXPOSURE AT C & C =		C
RISK CATEGORY	2	
SEISMIC DESIGN CATEGORY =	D2	SITE CLASS = C
GROUND SNOW LOAD; Pg =	25 psf.	
LATERAL EARTH PRESSURE; EFP =	35 pcf (ACTIVE)	

WA

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602.867.2500 WWW.FELTENGROUP.COM

DGR DEVELOPMENT

TITLE: GENERAL STRUCTURAL NOTES

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
10/02/2024
EXPIRES: 04/28/2025

CHECKED BY: J. MORGAN DATE: 09/29/2024

LOT 1

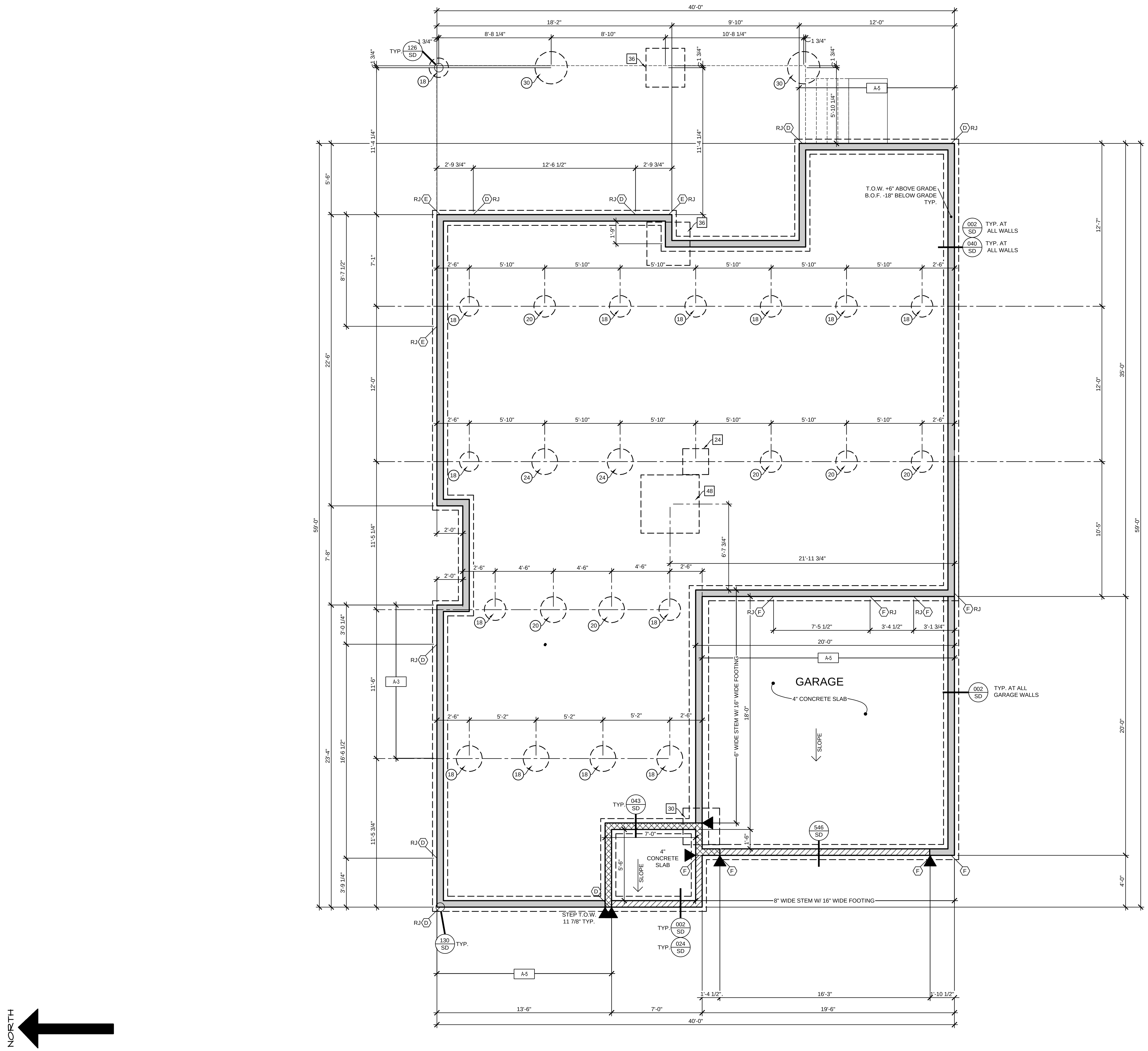
SERIES

SUBDIVISION
MARTIN S.P.
KIRKLAND, WA

PLAN NUMBER
3372A

SHEET NUMBER
GSN

Jacob.morgan Oct 02, 2024 - 5:06pm W:\DGR Development\Martin Short Plat\Lot 1-3372A-GR\Active Folder\S-Lot1-01-GSN.dwg



FOUNDATION PLAN

1/4" = 1'-0"

SOILS INFORMATION

GEOTECHNICAL REPORT BY	EARTH SOLUTIONS NW, LLC
GEOTECHNICAL REPORT #	ES-9703
GEOTECHNICAL REPORT DATE	02/29/2024
ALLOWABLE BEARING PRESSURE	2500 psf

ALL EXCAVATION, FILL, COMPACTION AND SOIL RELATED OPERATIONS SHALL BE PERFORMED ACCORDING TO GEOTECHNICAL REPORT RECOMMENDATIONS.

CONV. FOUNDATION INFORMATION

STRENGTH AT 28 DAYS:

FOOTINGS =	3000 psi	BASEMENT SLABS =	3000 psi
WALLS =	3000 psi	ALL OTHER SLABS =	3000 psi

ALL WALLS ARE DESIGNED USING 2500 PSI STRENGTH CONCRETE AND DO NOT REQUIRE SPECIAL INSPECTIONS. A 3000 PSI CONCRETE IS ONLY SPECIFIED WHERE IT IS REQUIRED TO MEET WEATHERING REQUIREMENTS.

LEGEND

- = CONCRETE WALL
- = THICKENED SLAB
- = RAISED STEM
- = CONCRETE WALL STEP

T.O.W. = TOP OF WALL
B.O.W. = BOTTOM OF WALL
T.O.F. = TOP OF FOOTING
B.O.F. = BOTTOM OF FOOTING
T.O.S. = TOP OF SLAB

FOUNDATION ANCHORAGE SCHEDULE

USE STANDARD SPACING BELOW, UNLESS NOTED OTHERWISE

ANCHOR TYPE	5/8" DIA. ANCHOR BOLT	1/2" DIA. ANCHOR BOLT	MASA
STANDARD	**4'-0" O.C.**	**4'-0" O.C.**	**4'-0" O.C.**
SPECIFICATION ON PLAN	INCREASED ANCHORAGE ONLY REQUIRED WHERE SPECIFIED ON PLAN		
A-1	4'-0" O.C.	3'-8" O.C.	4'-0" O.C.
A-2	4'-0" O.C.	2'-8" O.C.	2'-8" O.C.
A-3	2'-8" O.C.	2'-0" O.C.	2'-0" O.C.
A-4	2'-8" O.C.	1'-4" O.C.	2'-0" O.C.
A-5	2'-0" O.C.	1'-4" O.C.	1'-4" O.C.
A-6	1'-4" O.C.	0'-8" O.C.	1'-4" O.C.
A-7	1'-4" O.C.	0'-8" O.C.	0'-8" O.C.
A-8	1'-0" O.C.	0'-8" O.C.	0'-8" O.C.
A-9	0'-8" O.C.	N/A	0'-8" O.C.

1. ANCHOR BOLT PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON THE SHEATHED SIDE OF WALL FOR ALL ANCHOR BOLT SPACINGS A-3 THROUGH A-9
2. MASA ANCHOR TO BE INSTALLED PER STANDARD INSTALLATION-BOTH LEGS DOWN

HOLDOWN SCHEDULE

MARK	CAST-IN-PLACE	POST-SET
A	LTT20B W/ 1/2" DIA. HEAVY HEX BOLT, HEADED STUD, J-BOLT OR L-BOLT W/ 2 3/4" EMBED.	LTT20B W/ 1/2" DIA. TITEN HD W/ 3 1/4" MIN. EMBED.
B	HTT5-3/4 DIA. HEAVY HEX BOLT OR HEADED STUD W/ 4 1/8" EMBED.	HTT5-3/4 W/ 5/8" DIA. TITEN HD W/ 4" MIN. EMBED.
C	HDU8-SDS2.5 W/ 7/8" DIA. HEAVY HEX BOLT OR HEADED STUD W/ 6 1/2" EMBED.	HDU8-SDS2.5 W/ 3/4" DIA. TITEN HD W/ 5 1/2" MIN. EMBED.
D	LSTHD8	DETAIL 832
E	STHD10	N/A
F	STHD14	N/A
I	MASA	LTT20B W/ 1/2" DIA. TITEN HD W/ 3 1/4" MIN. EMBED.

1. RJ AFTER CALLOUT INDICATES STHD'S FOR RIM JOIST APPLICATIONS
2. HOLDOWNS W/ SB REQUIRE FOOTING AND STEM WALL TO BE POURED MONOLITHICALLY
3. STHD14 MAY BE USED ILO STHD10 OR LSTHD8

FOOTING SCHEDULE

CALLOUT	ROUND	SQUARE
18	18" DIA. x 8" DEEP	18" SQ. x 8" DEEP
20	20" DIA. x 8" DEEP	18" SQ. x 8" DEEP
24	24" DIA. x 9" DEEP	22" SQ. x 9" DEEP
30	30" DIA. x 11" DEEP	27" SQ. x 11" DEEP
36	36" DIA. x 13" DEEP	32" SQ. x 13" DEEP
24	N/A	24" SQ. x 8" DEEP W/ (2) #4 REBAR EACH WAY
30	N/A	30" SQ. x 8" DEEP W/ (3) #4 REBAR EACH WAY
36	N/A	36" SQ. x 8" DEEP W/ (3) #4 REBAR EACH WAY
42	N/A	42" SQ. x 8" DEEP W/ (5) #4 REBAR EACH WAY
48	N/A	48" SQ. x 10" DEEP W/ (5) #4 REBAR EACH WAY

1. WHEN NO REBAR IS SPECIFIED, PLAIN CONCRETE MAY BE USED
2. WHEN REBAR IS SPECIFIED, IT SHALL BE LOCATED 3" ABOVE BOTTOM OF FOOTING
3. ROUND OR SQUARE MAY BE USED PER THE ABOVE CHART AND IS NOT REQUIRED TO MATCH WHAT IS GRAPHICALLY SHOWN ON PLANS
4. MINIMUM SIZE SPECIFIED ABOVE, ACTUAL FOOTING SIZE MAY EXCEED SIZES SHOWN

FOUNDATION DIMENSIONS

FOOTING DEPTH BELOW GRADE: (FROST DEPTH)	18"
*FOOTING WIDTH:	14"
*FOOTING THICKNESS:	6"
*STEM WIDTH:	6"
* AT LOCATIONS RETAINING MORE THAN 4' OF GRADE: SEE SPECIFIED DETAIL FOR SIZING	ALL SIZES ABOVE ARE STANDARD SIZES U.N.O. ON FOUNDATION PLAN

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602 867 2500 WWW.FELTENGROUP.COM

DGR DEVELOPMENT

TITLE: FOUNDATION PLAN

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
10/02/2024
EXPIRES: 04/28/2025

CHECKED BY: J. MORGAN DATE: 09/29/2024

LOT 1

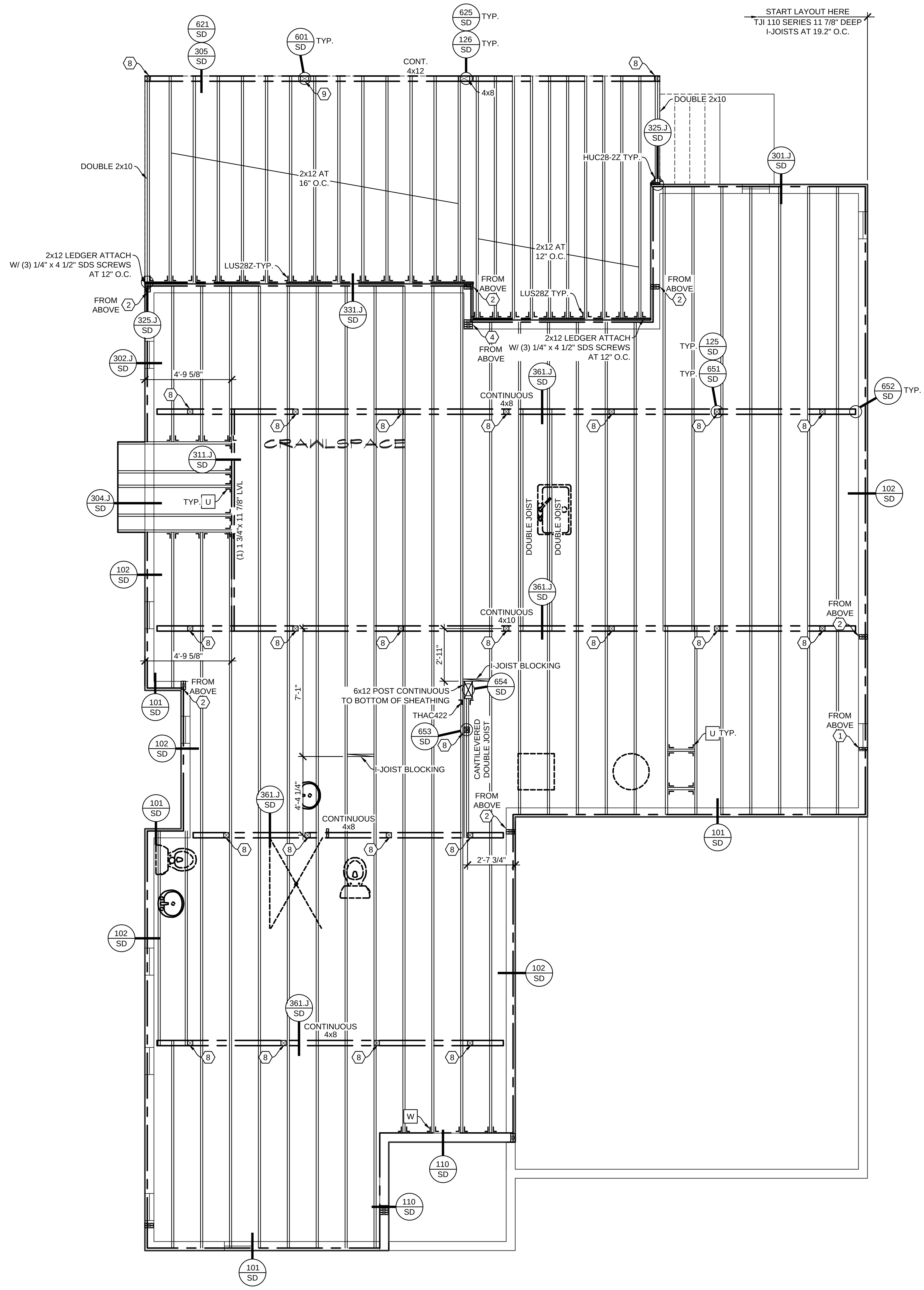
SERIES

SUBDIVISION
MARTIN S.P.
KIRKLAND, WA

PLAN NUMBER
3372A

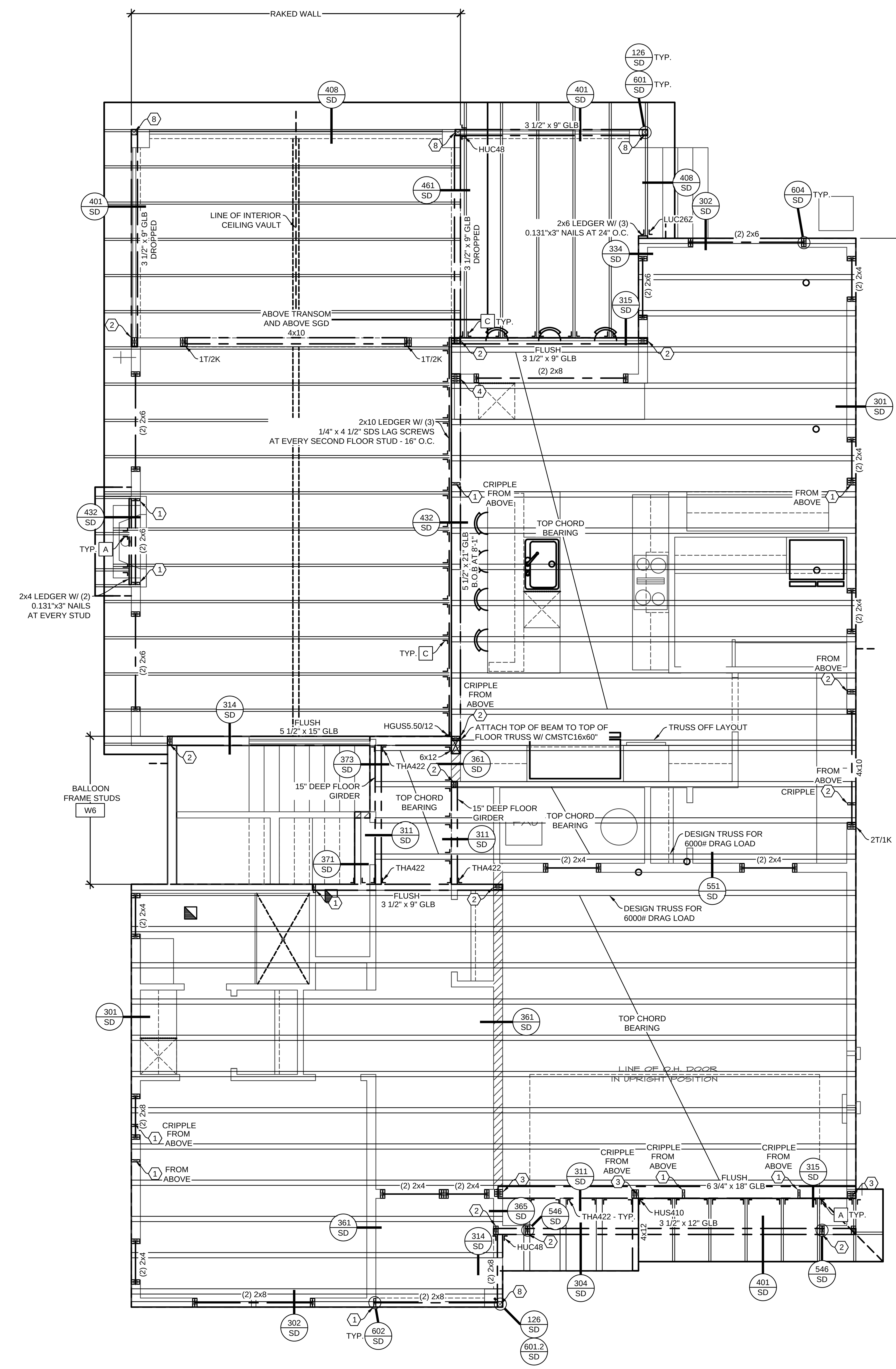
SHEET NUMBER
S1.01

NOTE:
EXTERIOR, EXPOSED WOOD SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH GSN OR NATURALLY DURABLE WOOD



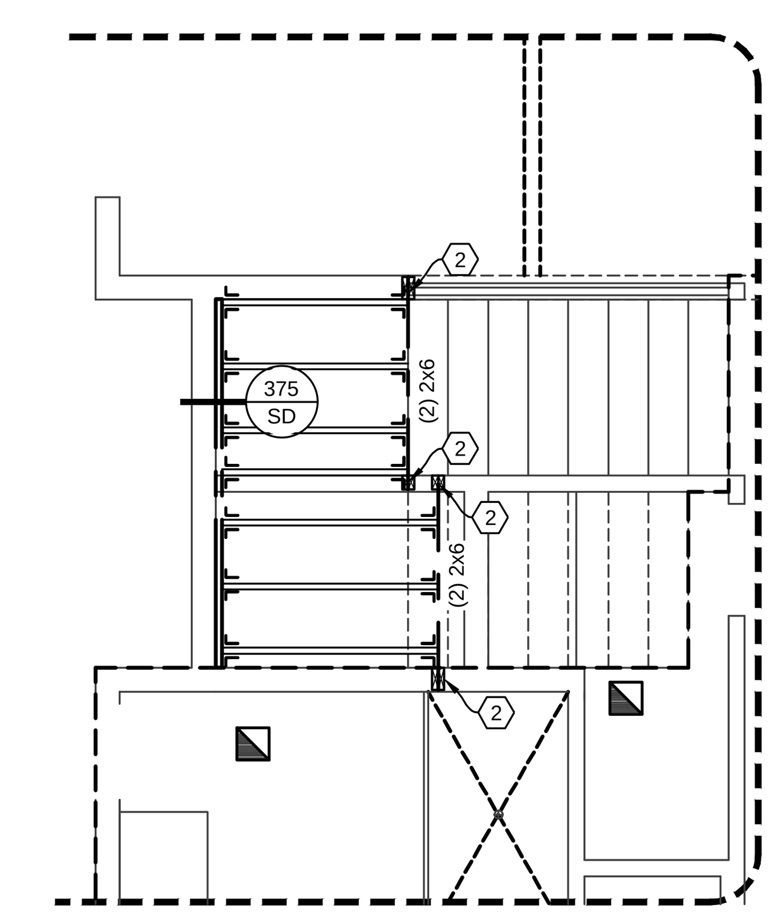
MAIN FLOOR FRAMING PLAN

1/4" = 1'-0"



UPPER FLOOR FRAMING PLAN

1/4" = 1'-0"



STAIR LANDING

1/4" = 1'-0"

HANGER SCHEDULE

TRUSS TO TRUSS CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE TRUSS DESIGNER

A = LUS24	C = HUS26	E = HHUS26-2
B = LUS26	D = HGUS26	F = HGUS26-2

I-JOIST HANGERS SHALL BE SIZED TO MATCH I-JOISTS PER MANUFACTURER SPECIFICATIONS

U = IUS/ITS	W = ITS	Y = MIU
V = IUS	X = MIT	Z = HU

TRIMMER AND KING STUD SCHEDULE

USE (1) TRIMMER STUD AND (1) KING STUD FOR ALL OPENINGS, UNLESS NOTED OTHERWISE ON FRAMING PLAN.

xT/yK : x = # OF TRIMMERS, y = # OF KING STUDS — EXAMPLE: 2T/3K : (2) TRIMMERS AND (3) KING STUDS

POST SCHEDULE

USE (1) POST FOR ALL BEAMS AND GIRDERS, UNLESS NOTED OTHERWISE

0 = NO POST REQUIRED

1 = (1) 2x STUD	4 = (4) 2x STUDS	7 = (7) 2x STUDS	10 = 6x6
2 = (2) 2x STUDS	5 = (5) 2x STUDS	8 = 4x4	11 = 6x8
3 = (3) 2x STUDS	6 = (6) 2x STUDS	9 = 4x6	12 = 8x8

STUD SCHEDULE

WALL WIDTH - PER ARCH.:	2x6	2x4
ALL BEARING AND/OR EXTERIOR WALLS	HF OR SPF STUD GRADE STUDS AT 24" O.C., U.N.O.	HF OR SPF STUD GRADE STUDS AT 16" O.C., U.N.O.
NON-BEARING INTERIOR WALLS	HF OR SPF STUD GRADE AT 24" O.C., U.N.O.	

W1	2x4 HEM-FIR OR S.P.F. STUD GRADE STUDS AT 16" O.C.	W4	2x6 HEM-FIR OR S.P.F. STUD GRADE STUDS AT 16" O.C.
W2	2x4 HEM-FIR OR S.P.F. No. 2 STUDS AT 16" O.C.	W5	2x6 HEM-FIR OR S.P.F. No. 2 STUDS AT 16" O.C.
W3	2x4 HEM-FIR OR S.P.F. No. 2 STUDS AT 12" O.C.	W6	2x6 HEM-FIR OR S.P.F. No. 2 STUDS AT 12" O.C.

LEGEND

B.O.B. = BOTTOM OF BEAM	= INTERIOR BEARING WALL
T.O.B. = TOP OF BEAM	= CRIPPLE WALL
N.L.B. = NON LOAD BEARING	

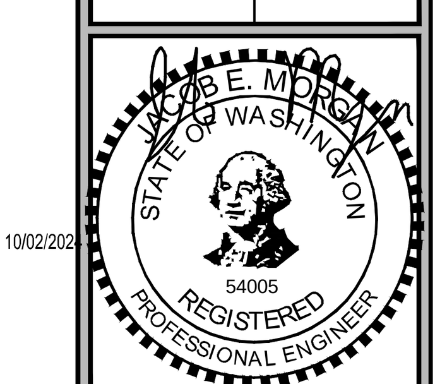
* INDICATES THAT THIS HEADER MAY BE OMITTED IF GABLE END TRUSS IS DESIGNED TO SPAN ACROSS OPENING AND CARRY THE ADDITIONAL LOAD

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND SHALL NOTIFY FELTEN GROUP, INC. OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE CONSTRUCTION DOCUMENTS.

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602.867.2500 WWW.FELTENGROUP.COM

DGR DEVELOPMENT

TITLE: FRAMING PLAN



10/02/2024

CHECKED BY: J. MORGAN — DATE: 09/29/2024

LOT 1

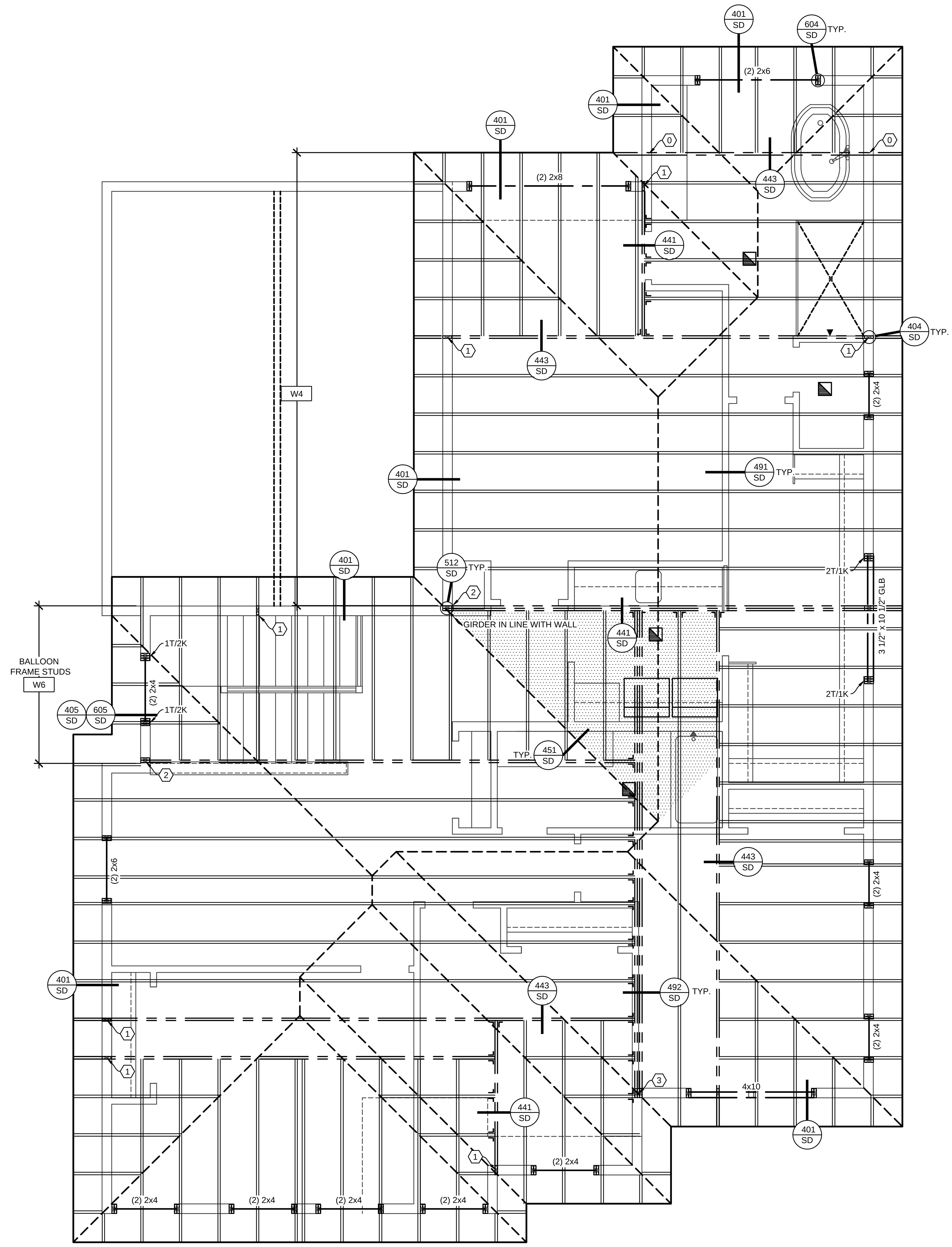
SERIES

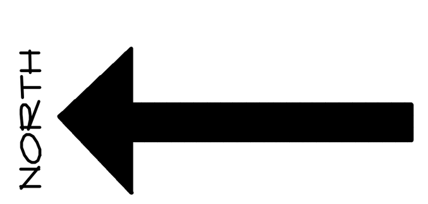
SUBDIVISION: MARTIN S.P. KIRKLAND, WA

PLAN NUMBER: 3372A

SHEET NUMBER: S2.01

Jacob.morgan Oct 02, 2024 - 5:07pm W:\DGR Development\Martin Short Plat\Lot 1-3372A-GR\Active Folder\S-Lot1-403-Framing Plan.dwg





ROOF FRAMING PLAN

1/4" = 1'-0"

HANGER SCHEDULE

TRUSS TO TRUSS CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE TRUSS DESIGNER

A = LUS24	C = HUS26	E = HHUS26-2
B = LUS26	D = HGUS26	F = HGUS26-2

I-JOIST HANGERS SHALL BE SIZED TO MATCH I-JOISTS PER MANUFACTURER SPECIFICATIONS

U = IUS/ITS	W = ITS	Y = MIU
V = IUS	X = MIT	Z = HU

TRIMMER AND KING STUD SCHEDULE

USE (1) TRIMMER STUD AND (1) KING STUD FOR ALL OPENINGS, UNLESS NOTED OTHERWISE ON FRAMING PLAN.

xT/yK : x = # OF TRIMMERS, y = # OF KING STUDS — EXAMPLE: 2T/3K : (2) TRIMMERS AND (3) KING STUDS

POST SCHEDULE

USE (1) POST FOR ALL BEAMS AND GIRDERS, UNLESS NOTED OTHERWISE

0 = NO POST REQUIRED

1 = (1) 2x STUD	4 = (4) 2x STUDS	7 = (7) 2x STUDS	10 = 6x6
2 = (2) 2x STUDS	5 = (5) 2x STUDS	8 = 4x4	11 = 6x8
3 = (3) 2x STUDS	6 = (6) 2x STUDS	9 = 4x6	12 = 8x8

STUD SCHEDULE

WALL WIDTH - PER ARCH.:	2x6	2x4
ALL BEARING AND/OR EXTERIOR WALLS	HF OR SPF STUD GRADE STUDS AT 24" O.C., U.N.O.	HF OR SPF STUD GRADE STUDS AT 16" O.C., U.N.O.
NON-BEARING INTERIOR WALLS	HF OR SPF STUD GRADE AT 24" O.C., U.N.O.	

W1 — 2x4 HEM-FIR OR S.P.F. STUD GRADE STUDS AT 16" O.C.	W4 — 2x6 HEM-FIR OR S.P.F. STUD GRADE STUDS AT 16" O.C.
W2 — 2x4 HEM-FIR OR S.P.F. No. 2 STUDS AT 16" O.C.	W5 — 2x6 HEM-FIR OR S.P.F. No. 2 STUDS AT 16" O.C.
W3 — 2x4 HEM-FIR OR S.P.F. No. 2 STUDS AT 12" O.C.	W6 — 2x6 HEM-FIR OR S.P.F. No. 2 STUDS AT 12" O.C.

LEGEND

B.O.B. = BOTTOM OF BEAM	= INTERIOR BEARING WALL
T.O.B. = TOP OF BEAM	= CRIPPLE WALL
N.L.B. = NON LOAD BEARING	

* INDICATES THAT THIS HEADER MAY BE OMITTED IF GABLE END TRUSS IS DESIGNED TO SPAN ACROSS OPENING AND CARRY THE ADDITIONAL LOAD

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602.867.2500 WWW.FELTENGROUP.COM

DGR DEVELOPMENT

TITLE: ROOF FRAMING PLAN

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 04/28/2025
10/02/2024

CHECKED BY: J. MORGAN
DATE: 09/29/2024

LOT 1

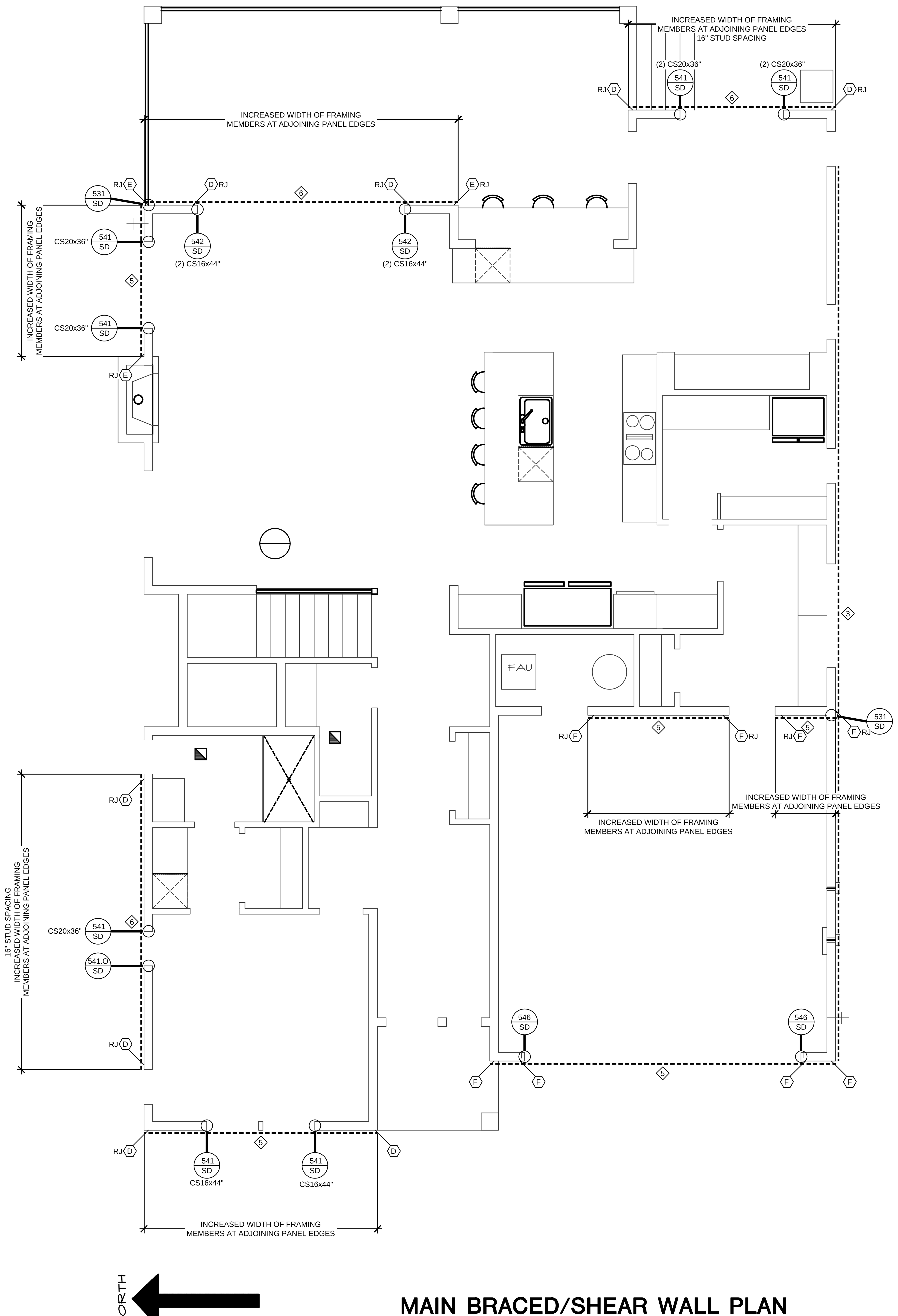
SERIES

SUBDIVISION
MARTIN S.P.
KIRKLAND, WA

PLAN NUMBER
3372A

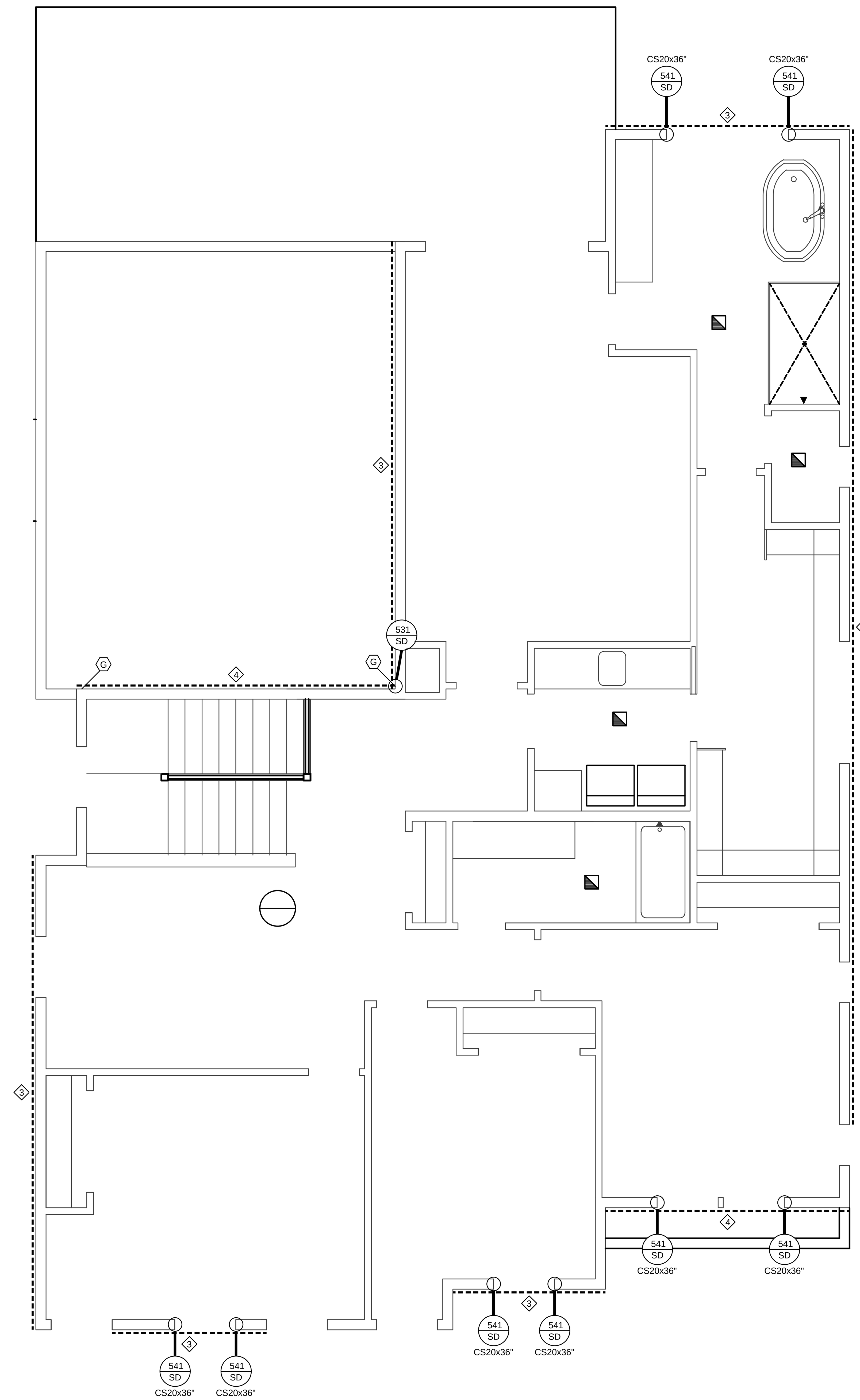
SHEET NUMBER
S2.02

Jacob.morgan Oct 02, 2024 - 5:07pm W:\DGR Development\Martin Short Plat\Lot 1-3372A-GR\Active Folder\S-Lot1-403-Framing Plan.dwg



MAIN BRACED/SHEAR WALL PLAN

1/4" = 1'-0"



UPPER BRACED/SHEAR WALL PLAN

1/4" = 1'-0"

BRACED/SHEAR WALL SCHEDULE

MATERIAL:	7/16" MIN. RATED SHEATHING		
NAILS:	.131" x 2 1/2" NAILS		
3	NAIL SPACING:	EDGE: 6" O.C.	FIELD: 6" O.C. *
	SOLE PLATE TO FRAMING BELOW:	0.131" x 3" NAILS AT 4" O.C.	
3 BRACED	AT WALLS LABELED AS "BRACED", 12" O.C. FIELD NAILING MAY BE USED WITH ALL STUD SPACINGS		
4	NAIL SPACING:	EDGE: 4" O.C.	FIELD: 6" O.C. *
	SOLE PLATE TO FRAMING BELOW:	0.131" x 3" NAILS AT 3" O.C.	
5	NAIL SPACING:	EDGE: 3" O.C.	FIELD: 6" O.C. *
	SOLE PLATE TO FRAMING BELOW:	0.131" x 3" NAILS AT 2" O.C. STAGGERED **	
6	NAIL SPACING:	EDGE: 2" O.C.	FIELD: 6" O.C. *
	SOLE PLATE TO FRAMING BELOW:	0.162" x 3 1/2" NAILS AT 2" O.C. STAGGERED **	

* AT STUDS SPACED AT 16" O.C. OR LESS, USE 12" O.C.

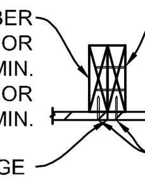
** AT STAGGERED NAILING: PROVIDE MIN. 3" WIDE FRAMING MEMBER BELOW SOLE PLATE/SHEATHING - DOUBLE 2x MEMBER ALLOWABLE.

NOTES:
- BRACED/SHEAR WALLS SHALL HAVE DOUBLE TOP PLATES. WHEN DOUBLE TOP PLATES AT BRACED/SHEAR WALLS ARE CUT, ADD A MSTC52 STRAP ON EACH SIDE OF WALL WITH (48) 0.148" x 3 1/4" NAILS.
- SOLE PLATE NAILING SHOWN ABOVE IS VERTICAL NAILING TO FRAMING BELOW - NOT REQUIRED WHEN SHEAR WALL SILL PLATE IS LOCATED DIRECTLY ON CONCRETE FOUNDATION

INCREASED WIDTH AT ADJOINING PANEL EDGES

REQUIRED AS NOTED ON PLANS AND AT ALL 5 and 6 WALLS

TYPICAL ADJOINING PANEL EDGES -



- EDGE NAILS SHALL BE STAGGERED 1/2" WHEN 2" O.C. SPACING IS SPECIFIED.
- INCREASED WIDTH ONLY REQUIRED AT ADJOINING PANEL EDGES.
- ADJOINING PANEL EDGES (SHEATHING SPLICES) SHALL BE NAILED ACCORDING TO DETAIL 505.

HOLDOWN SCHEDULE

MARK	WOOD TO CONCRETE HOLDOWN		MIN. WOOD MEMBER SIZE
	CAST-IN-PLACE	POST-SET	
A	LTT22P W/ 1/2" DIA. HEAVY HEX BOLT, HEADED STUD, J-BOLT OR L-BOLT W/ 2 3/4" EMBED.	LTT22P W/ 1/2" DIA. TITEN HD W/ 3 1/4" MIN. EMBED.	(2) 2x
B	HTT5-3/4 DIA. HEAVY HEX BOLT OR HEADED STUD W/ 4 1/8" EMBED	HTT5-3/4 W/ 5/8" DIA. TITEN HD W/ 4" MIN. EMBED.	(2) 2x4 OR (1) 2x6
C	HDU8-SDS2.5 W/ 7/8" DIA. HEAVY HEX BOLT OR HEADED STUD W/ 6 1/2" EMBED	HDU8-SDS2.5 W/ 3/4" DIA. TITEN HD W/ 5 1/2" MIN. EMBED.	(2) 2x4 OR (1) 2x6
D	LSTHD8	DETAIL 832 OR DETAIL 835	(2) 2x
E	STHD10	DETAIL 835	(2) 2x
F	STHD14	N/A	(3) 2x4 OR (2) 2x6
I	MASA	LTT20B W/ 1/2" DIA. TITEN HD W/ 3 1/4" MIN. EMBED.	(2) 2x - AT LTT20B ONLY
MARK	VERTICAL WOOD TO WOOD STRAP		
G	VERTICAL CS16 STRAP CLEAR SPAN + 28" W/ (26) 0.131" x 2 1/2" NAILS.		(1) 2x
H	VERTICAL CMSTC16 STRAP CLEAR SPAN + 38" W/ (44) 0.131" x 3" NAILS. OR (2) VERTICAL CS16 STRAPS CLEAR SPAN + 28" W/ (26) 0.131" x 2 1/2" NAILS EACH STRAP.		(2) 2x

1. RJ AFTER CALLOUT INDICATES STHD'S FOR RIM JOIST APPLICATIONS

SHEATHING PANELS MAY BE INSTALLED VERTICALLY FOR ALL STUD SPACINGS

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602.867.2500 WWW.FELTENGROUP.COM

DGR DEVELOPMENT

TITLE
BRACED/SHEAR WALL PLAN

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 04/28/2025
10/02/2024

CHECKED BY: J. MORGAN
DATE: 09/29/2024

LOT 1

SERIES

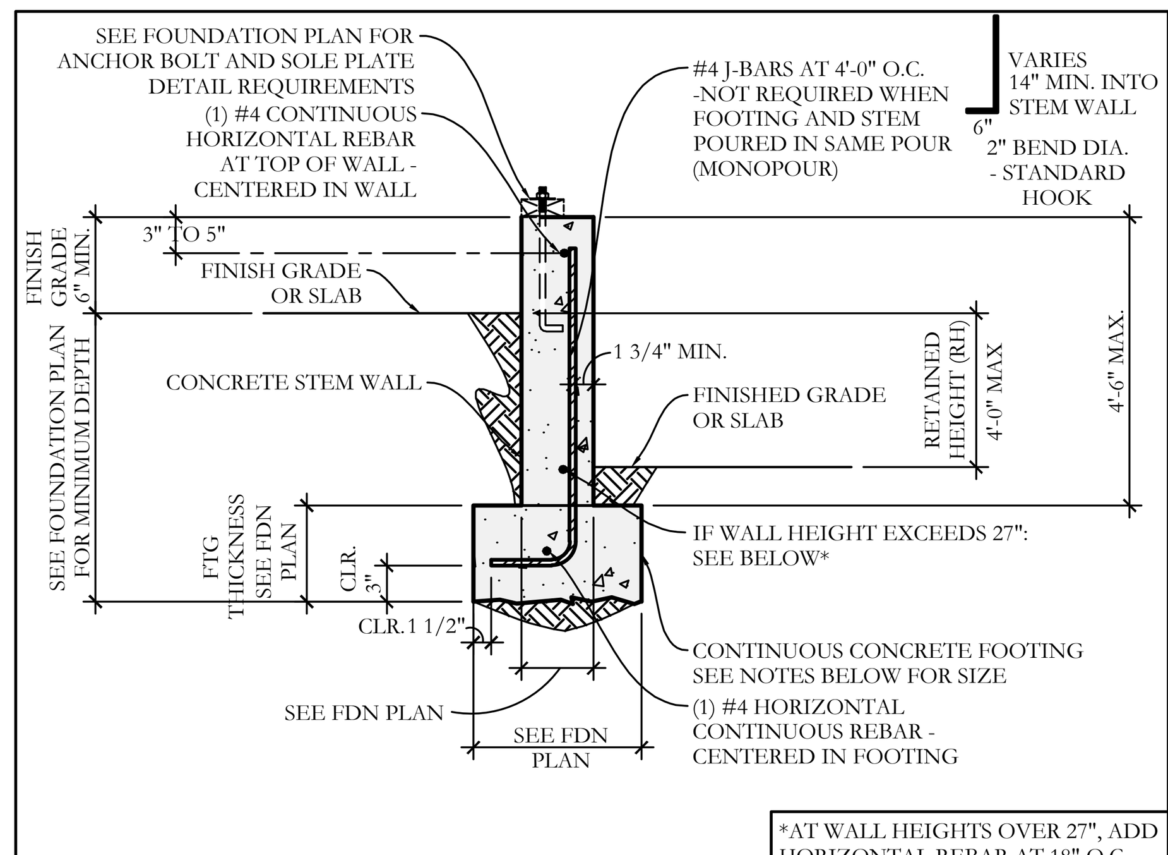
SUBDIVISION
MARTIN S.P.
KIRKLAND, WA

PLAN NUMBER
3372A

SHEET NUMBER
S3.01

Jacob.morgan Oct 02, 2024 - 5:07pm W:\DGR Development\Martin Short Plat\Lot 1-3372A-GR\Active Folder\S-Lot1-04-Braced Wall.dwg

002 STEM WALL
4'-0" MAX RETAINED HEIGHT



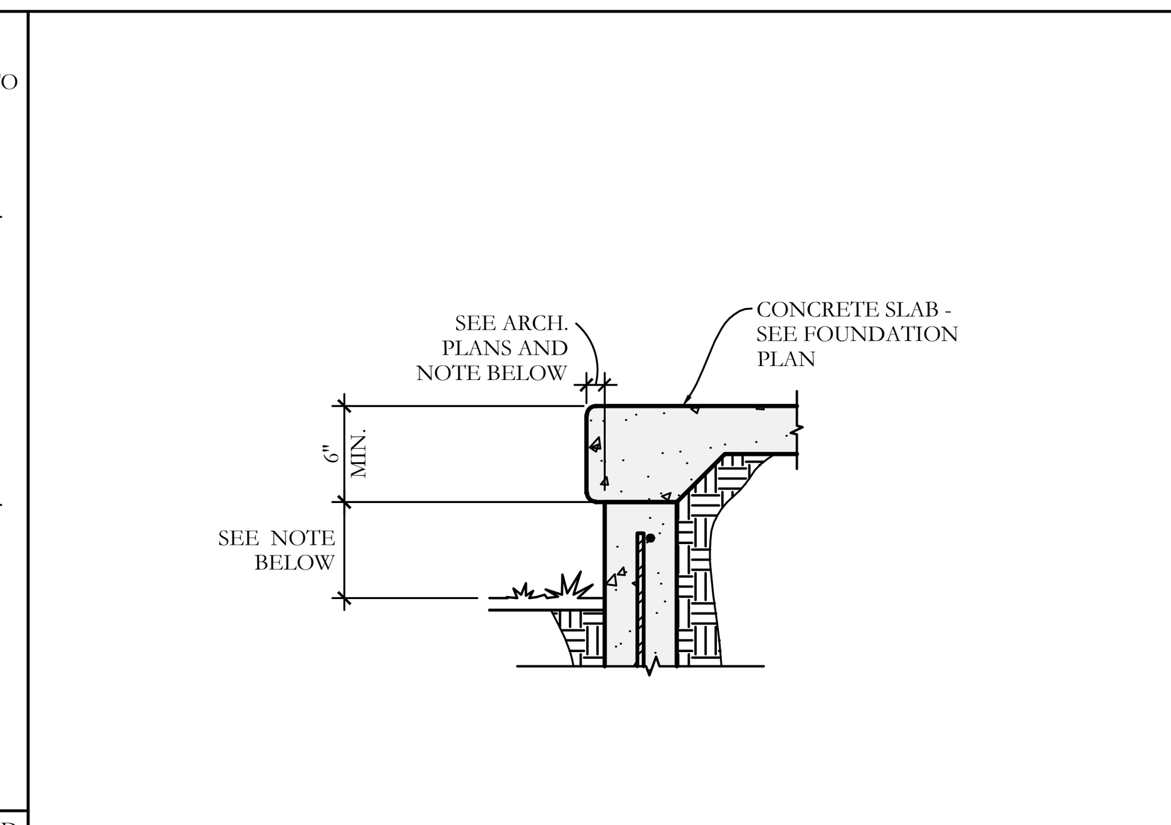
*AT WALL HEIGHTS OVER 27", ADD HORIZONTAL REBAR AT 18" O.C.

NOTE: CONTINUOUS REBAR SHALL BE BENT UNDER POURED IN PLACE VENTS WITH 3" CLEARANCE

J-BAR HOOK MAY BE ORIENTED PARALLEL TO FOOTING TO MAINTAIN MIN. 1 1/2" CLEAR FROM EDGE OF FOOTING

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

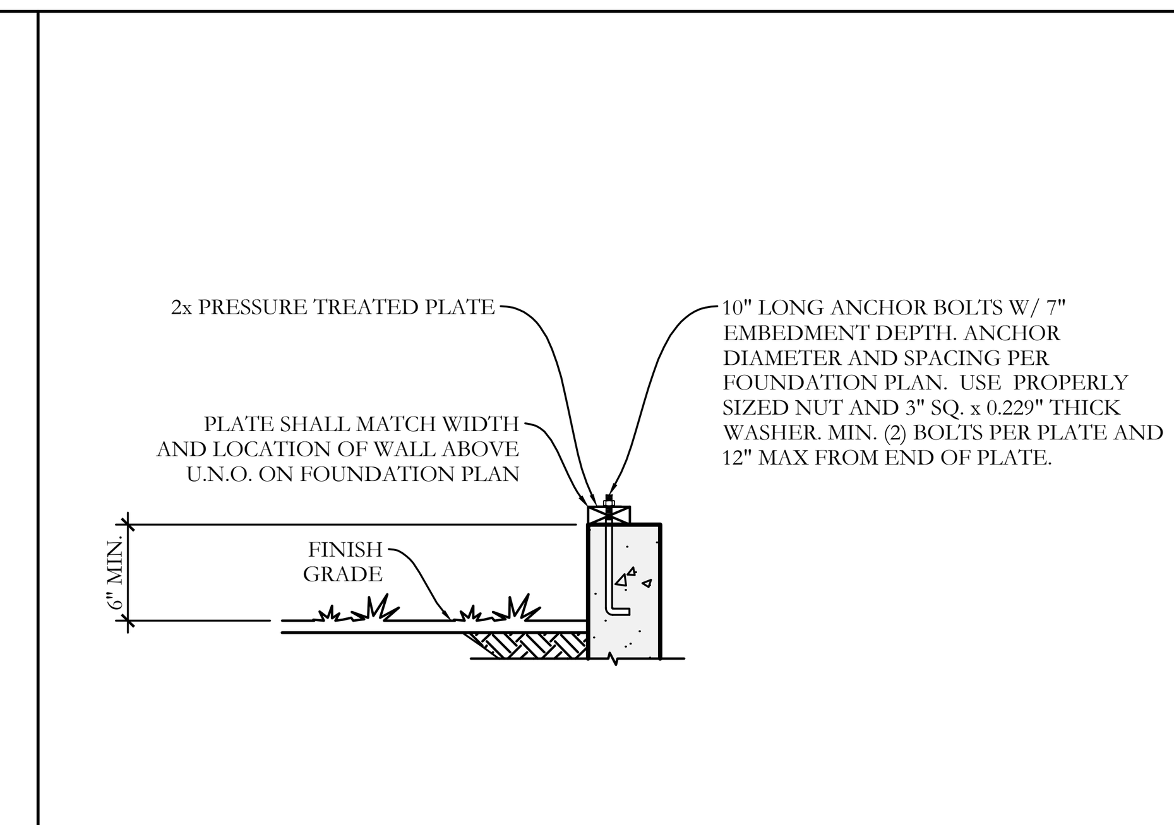
024 SLAB OVER STEM WALL



NOTE: SLAB OVERHANG SHOWN AS EXAMPLE. NO OVERHANG REQUIRED. SLAB EDGE MAY BE FLUSH WITH STEM WALL. SLAB TO STEM WALL JOINT MAY OCCUR ABOVE, AT, OR BELOW GRADE LEVEL.

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

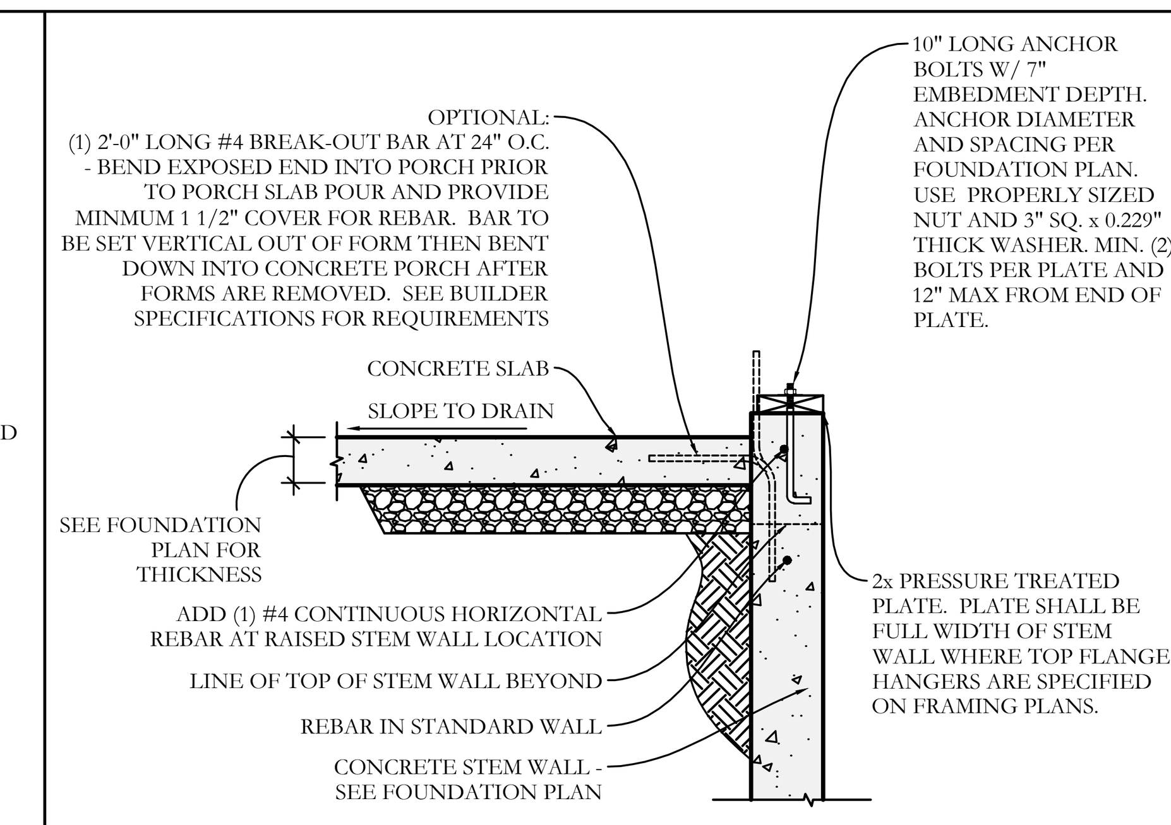
040 PLATE CONNECTION TO FOUNDATION AT STANDARD WALL



NOTE: ANCHOR BOLTS MAY BE SUBSTITUTED WITH MASA/MASAP MUDSILL ANCHORS PER CHART ON FOUNDATION PLAN. ANCHORS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.

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

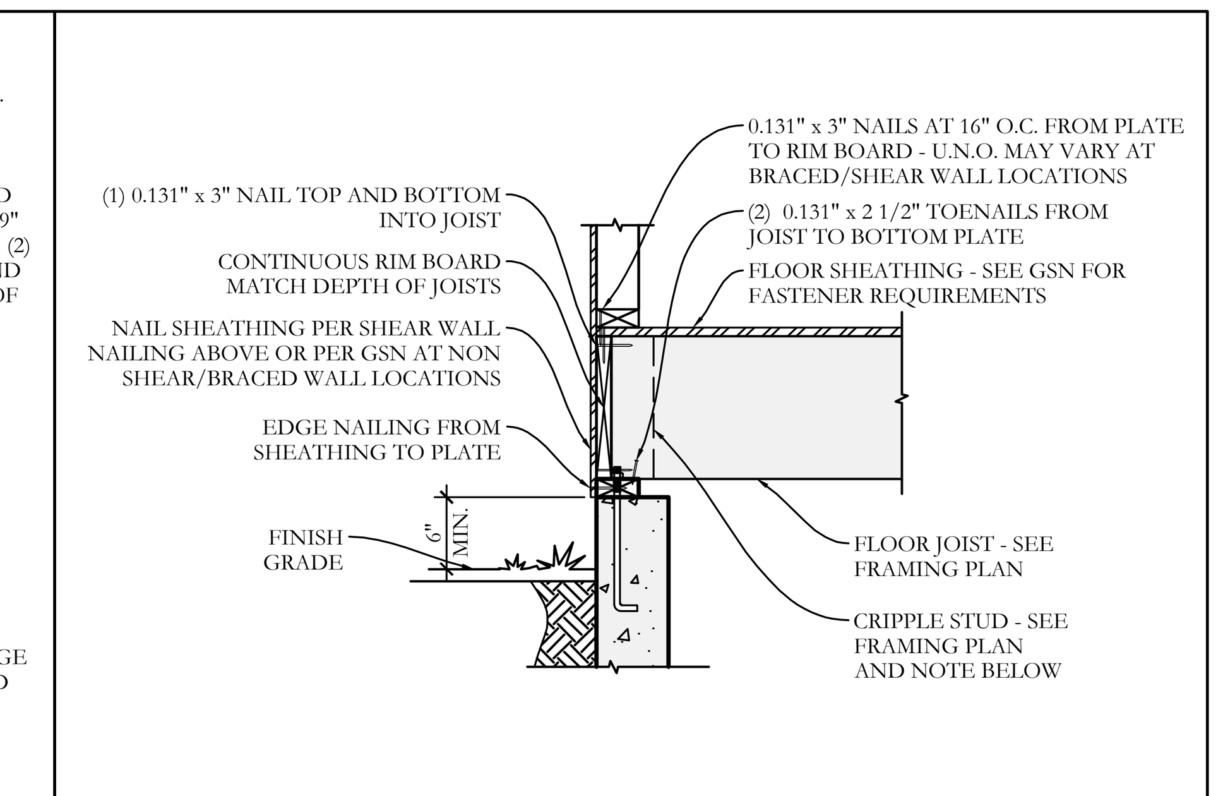
043 SLAB AT RAISED FOUNDATION WALL



NOTE: SEE FOUNDATION PLAN FOR REINFORCEMENT REQUIREMENTS. WHERE NO SPECIFICATION IS PROVIDED, PLAIN CONCRETE MAY BE USED.

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

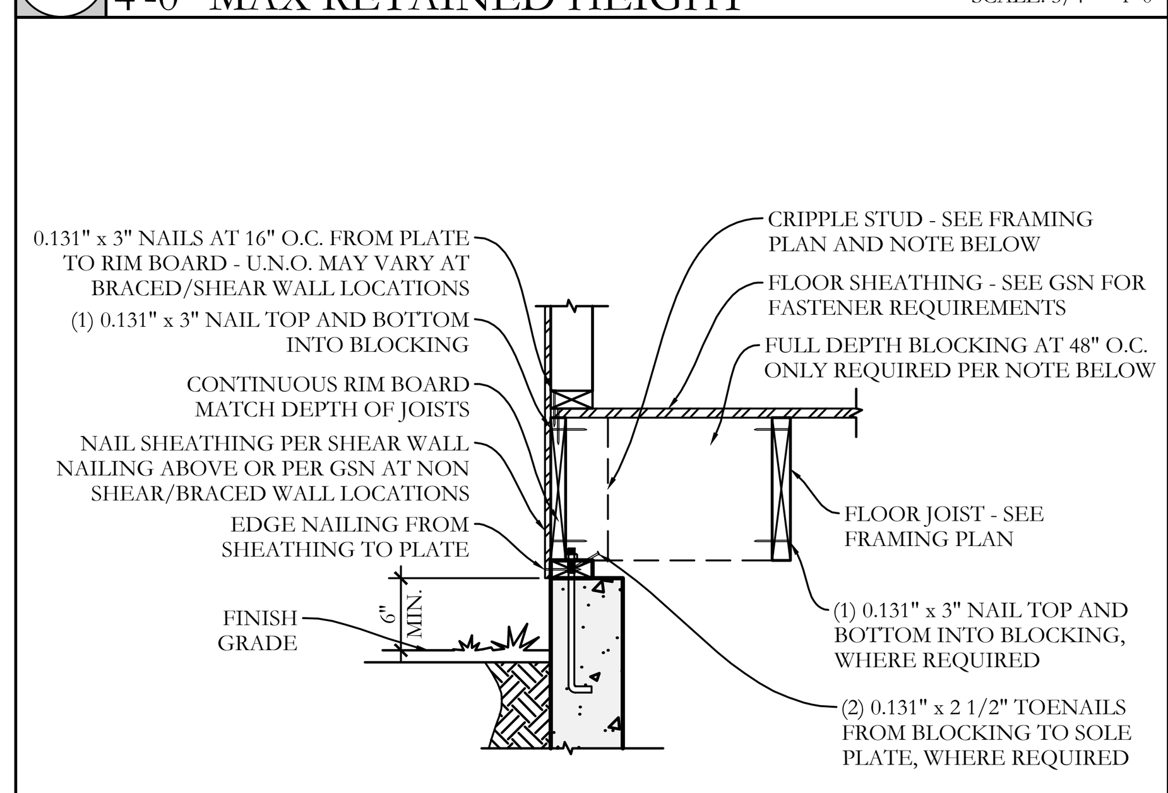
101 PERPENDICULAR JOIST AT STEM WALL



NOTE: PROVIDE 2x CRIPPLE STUDS CONTINUOUS TO FOUNDATION AT ALL LOCATIONS SHOWN ON FRAMING PLANS AND ALL LOCATIONS OF 2 OR MORE TRIMMERS/POSTS ABOVE - MATCH POST/TRIMMER COUNT ABOVE, UNO. NO CRIPPLE STUDS ARE REQUIRED UNDER KING STUDS AT OPENINGS.

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

102 PARALLEL JOIST AT STEM WALL

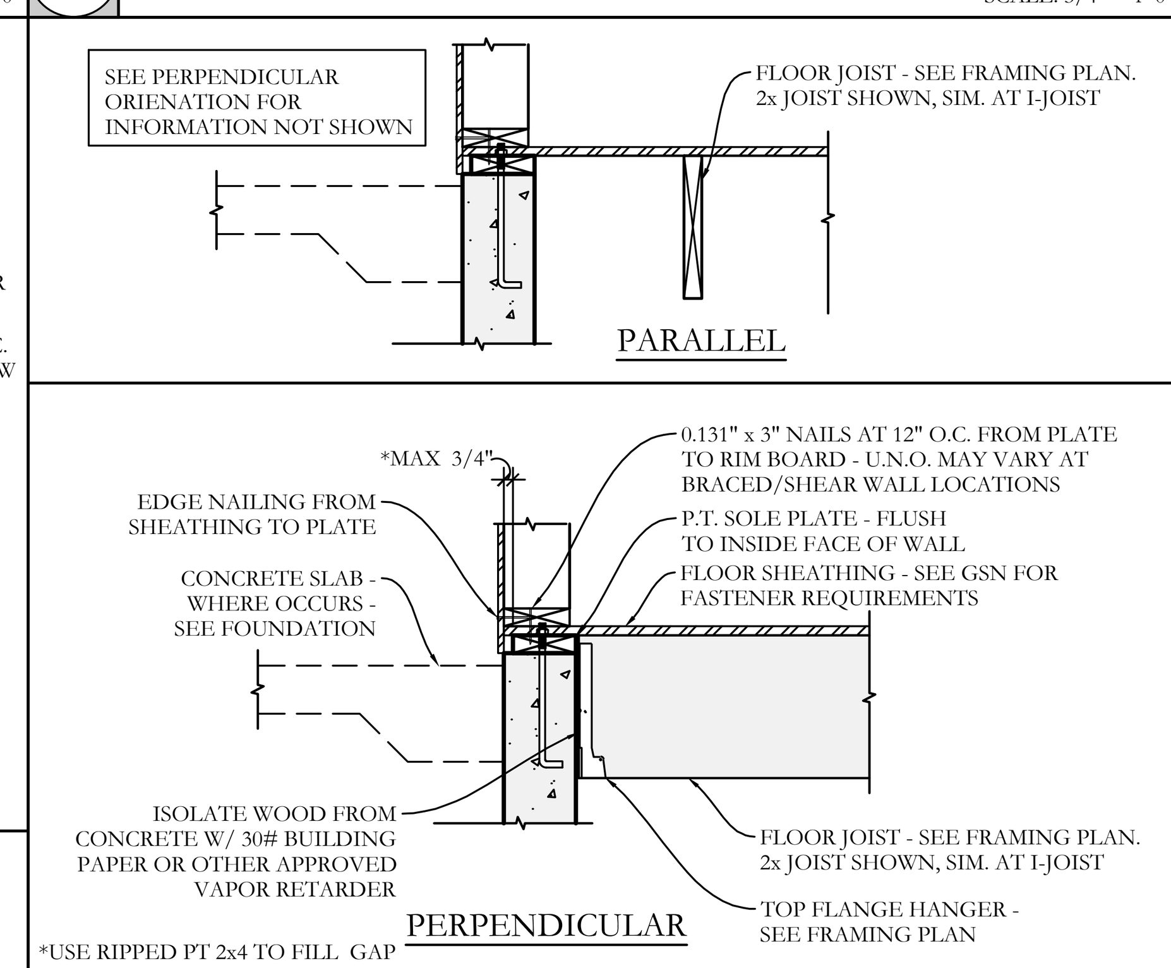


NOTE: PROVIDE 2x CRIPPLE STUDS CONTINUOUS TO FOUNDATION AT ALL LOCATIONS SHOWN ON FRAMING PLANS AND ALL LOCATIONS OF 2 OR MORE TRIMMERS/POSTS ABOVE - MATCH POST/TRIMMER COUNT ABOVE, UNO. NO CRIPPLE STUDS ARE REQUIRED UNDER KING STUDS AT OPENINGS.

NOTE: FULL DEPTH BLOCKING ONLY REQUIRED AT LOCATIONS WHERE EXTERIOR TO CRAWLSPACE GRADE DIFFERENTIAL EXCEEDS 4'

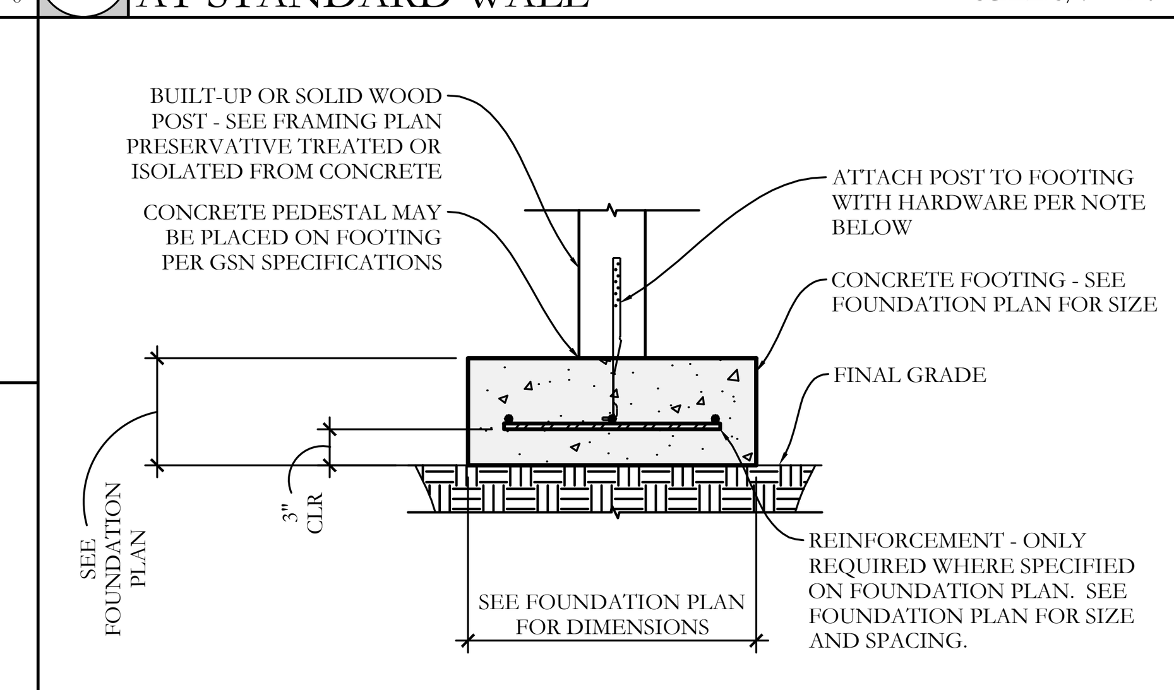
SCALE: 3/4" = 1'-0"

110 JOIST AT RAISED STEM WALL



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

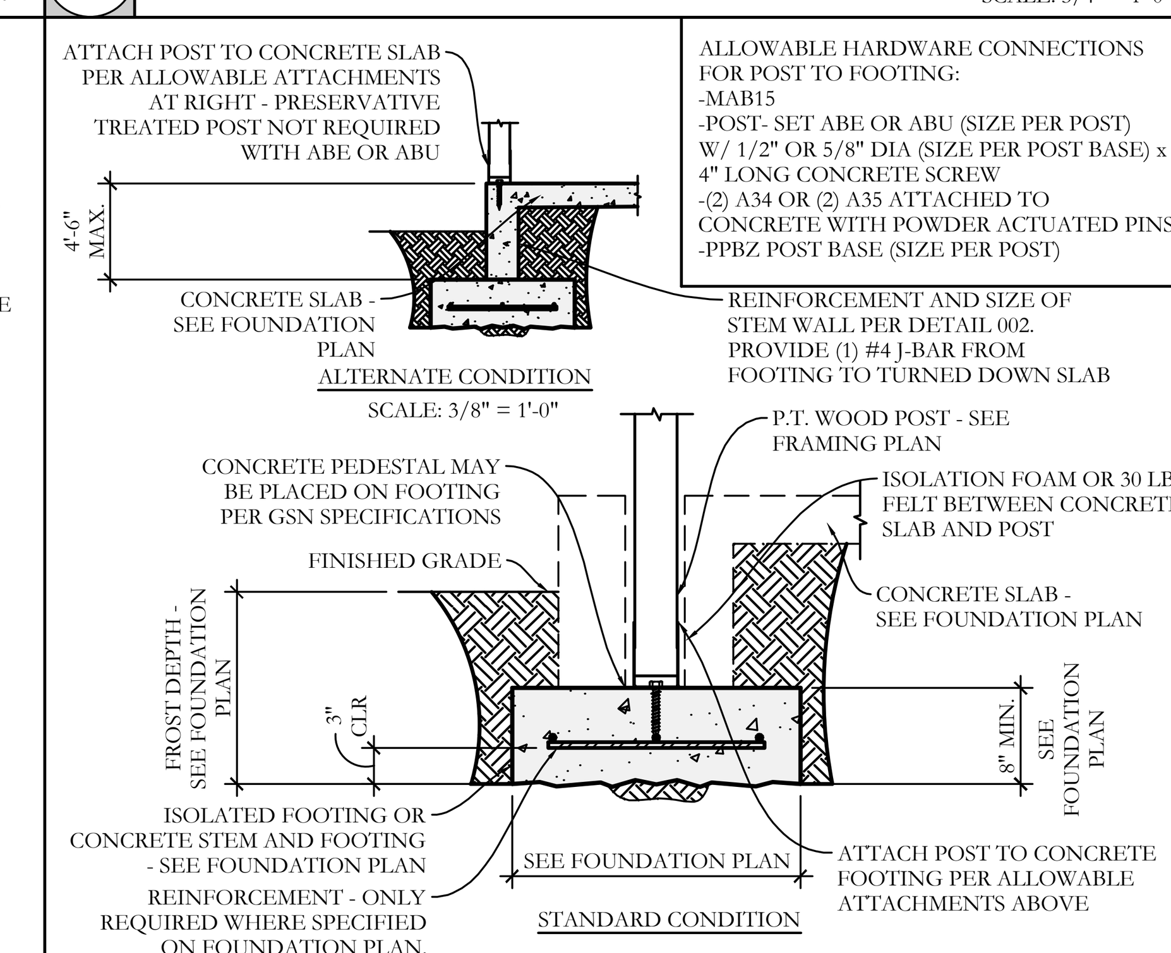
125 POST BASE CONNECTION



ALLOWABLE HARDWARE CONNECTIONS FOR POST TO FOOTING:
-MAB15
-POST- SET ABE OR ABU (SIZE PER POST) W/ 1/2" OR 5/8" DIA (SIZE PER POST BASE) x 4" LONG CONCRETE SCREW - PRESERVATIVE TREATED POST NOT REQUIRED
-(2) A34 OR (2) A35 ATTACHED TO CONCRETE WITH POWDER ACTUATED PINS
-A24 W/ 1/2" DIA. J-BOLT

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

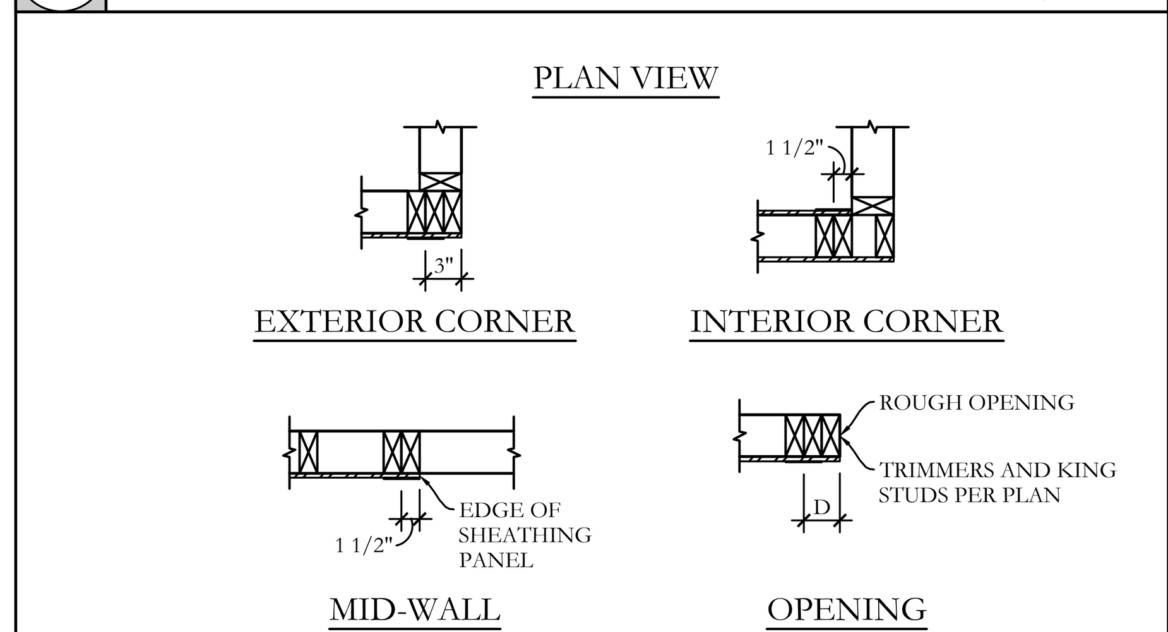
126 COLUMN AT FOOTING



ALLOWABLE HARDWARE CONNECTIONS FOR POST TO FOOTING:
-MAB15
-POST- SET ABE OR ABU (SIZE PER POST) W/ 1/2" OR 5/8" DIA (SIZE PER POST BASE) x 4" LONG CONCRETE SCREW
-(2) A34 OR (2) A35 ATTACHED TO CONCRETE WITH POWDER ACTUATED PINS
-PPBZ POST BASE (SIZE PER POST)

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

130 HOLDOWN LOCATION & ATTACHMENT TO FRAMING

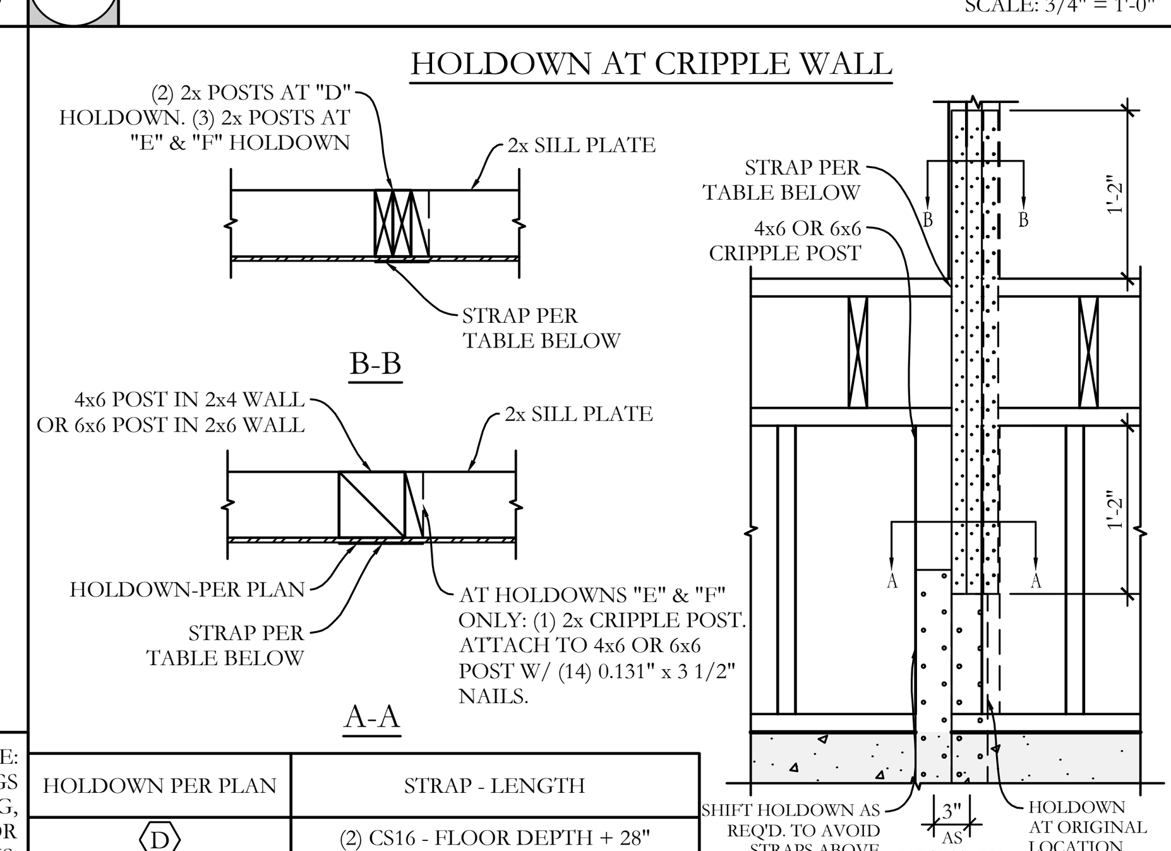


HOLDOWN DIMENSION	
# OF TRIMMERS	DIMENSION - D
1	3"
2	4 1/2"
3	6"

ADD 1 1/2" TO "D" FOR EACH ADDITIONAL TRIMMER

NOTE: DIMENSIONS SHOWN FROM OPENINGS ARE FROM EDGE OF ROUGH OPENING. COORDINATE WITH FRAMING FOR ROUGH OPENING DIMENSIONS.

NOTE: HOLDOWN DIMENSIONS SHOWN ON FOUNDATION PLAN SUPERCEDE DIMENSIONS SHOWN HERE.



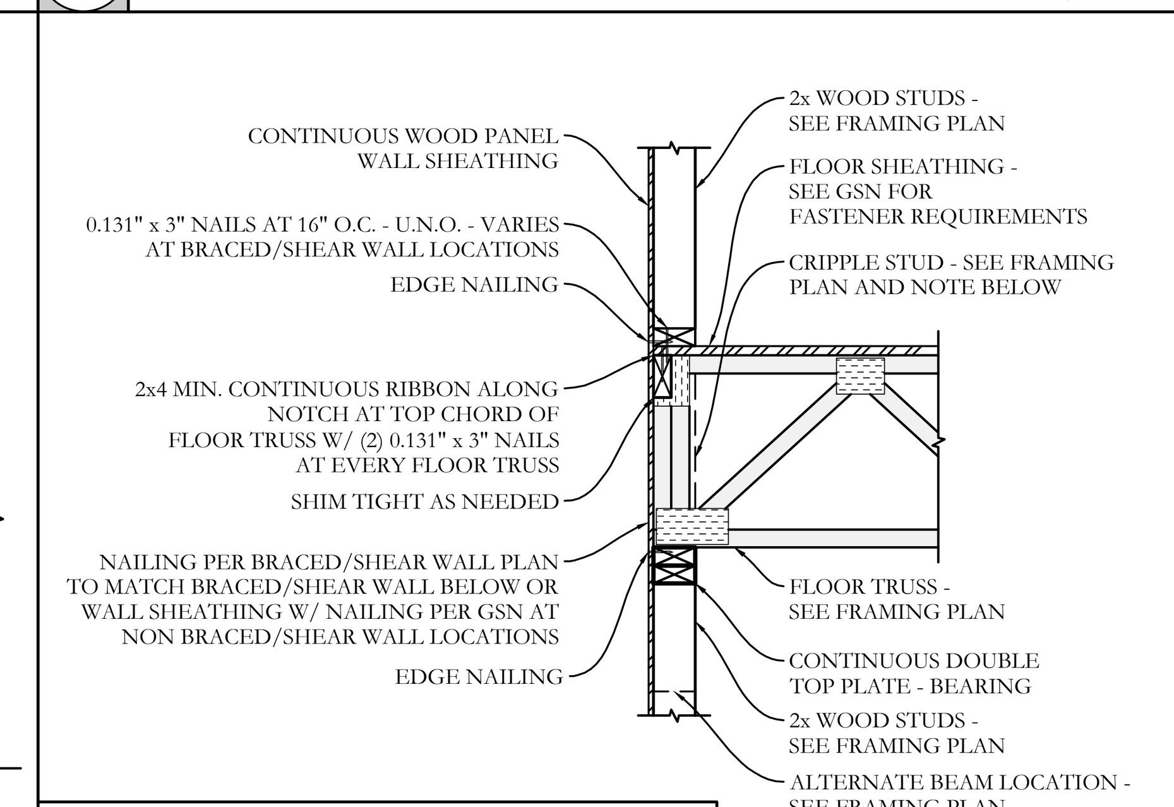
HOLDOWN PER PLAN	STRAP - LENGTH
D	(2) CS16 - FLOOR DEPTH + 28"
E & F	(3) CS16 - FLOOR DEPTH + 28"

- USE TABLE FOR CRIPPLE WALLS TALLER THAN 1'
- FOR CRIPPLE WALLS 1' OR SHORTER, USE "RJ" VERSION OF HOLDOWN AND PROVIDE SOLID BLOCKING THROUGH FLOOR SYSTEM

NOTE: HOLDOWN AND STRAPS SHALL NOT OVERLAP. SHIFT HOLDOWN AS NECESSARY TO AVOID OVERLAP.

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

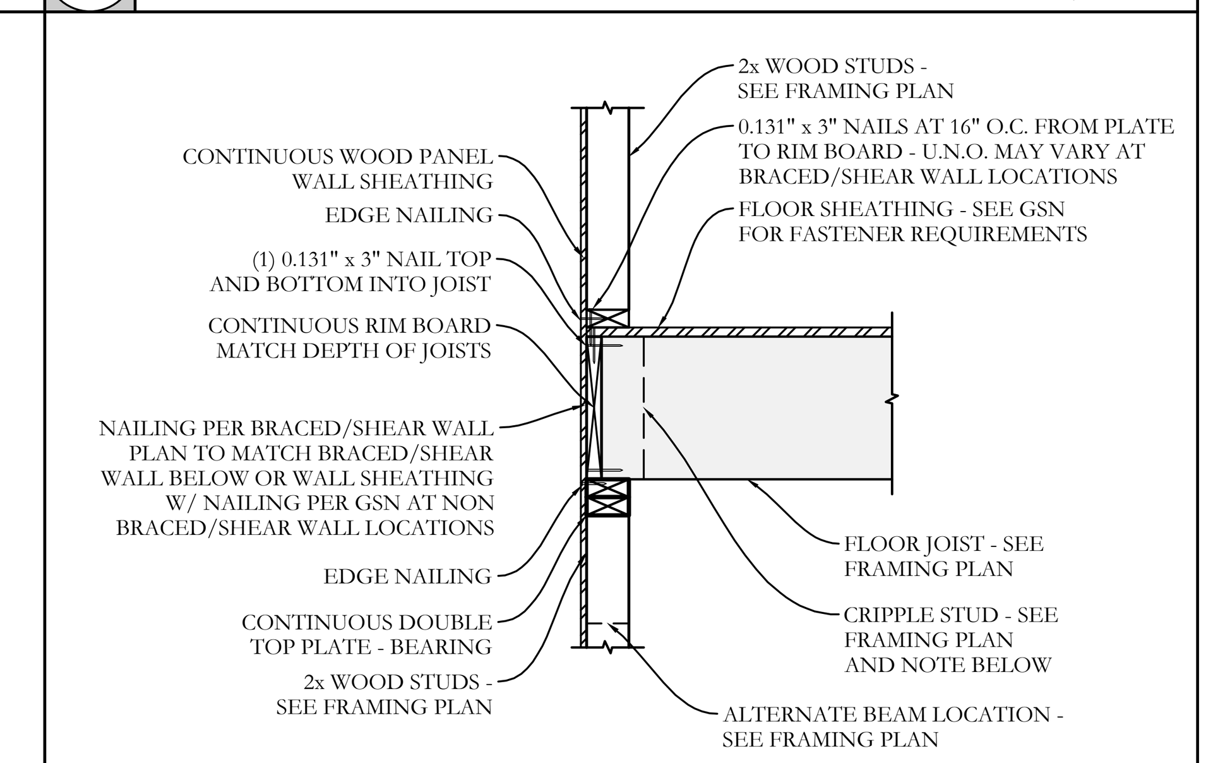
301 PERPENDICULAR TRUSS AT EXTERIOR WALL



NOTE: PROVIDE 2x CRIPPLE STUDS CONTINUOUS TO FOUNDATION AT ALL LOCATIONS SHOWN ON FRAMING PLANS IDENTIFYING POSTS FROM ABOVE - MATCH POST/TRIMMER COUNT ABOVE, UNO. NO CRIPPLE STUDS ARE REQUIRED UNDER KING STUDS AT OPENINGS.

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

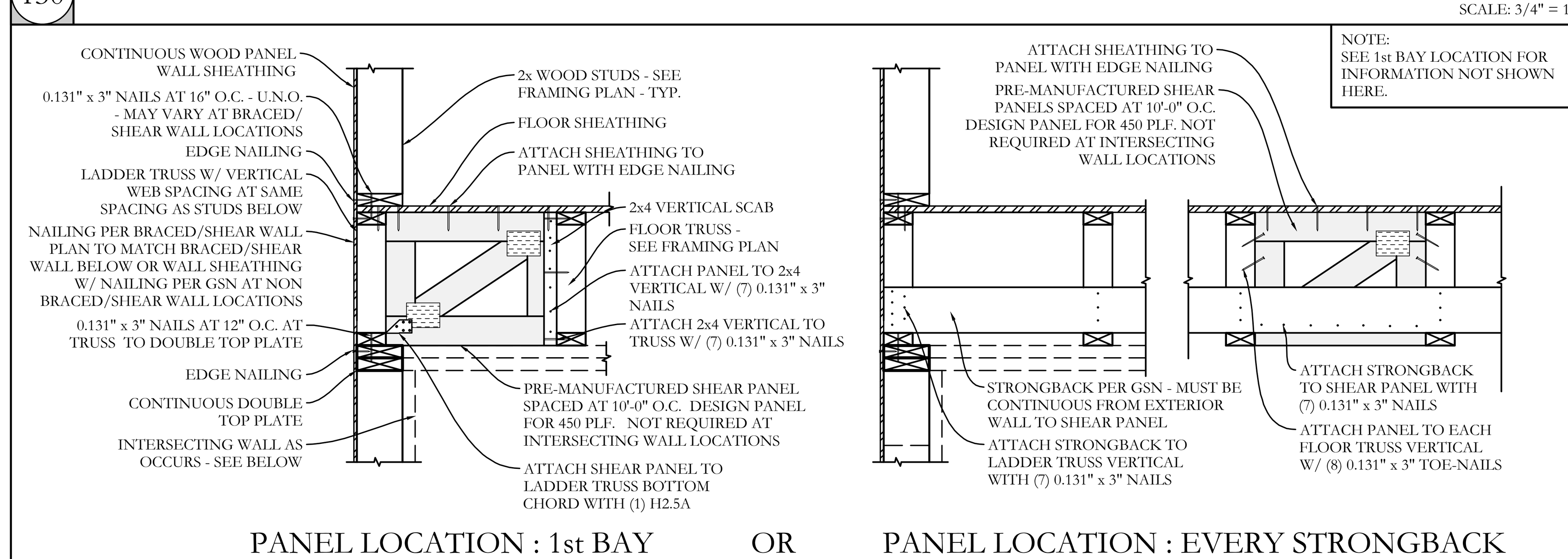
301.J PERPENDICULAR JOIST AT EXTERIOR WALL



NOTE: PROVIDE 2x CRIPPLE STUDS CONTINUOUS TO FOUNDATION AT ALL LOCATIONS SHOWN ON FRAMING PLANS IDENTIFYING POSTS FROM ABOVE - MATCH POST/TRIMMER COUNT ABOVE, UNO. NO CRIPPLE STUDS ARE REQUIRED UNDER KING STUDS AT OPENINGS.

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

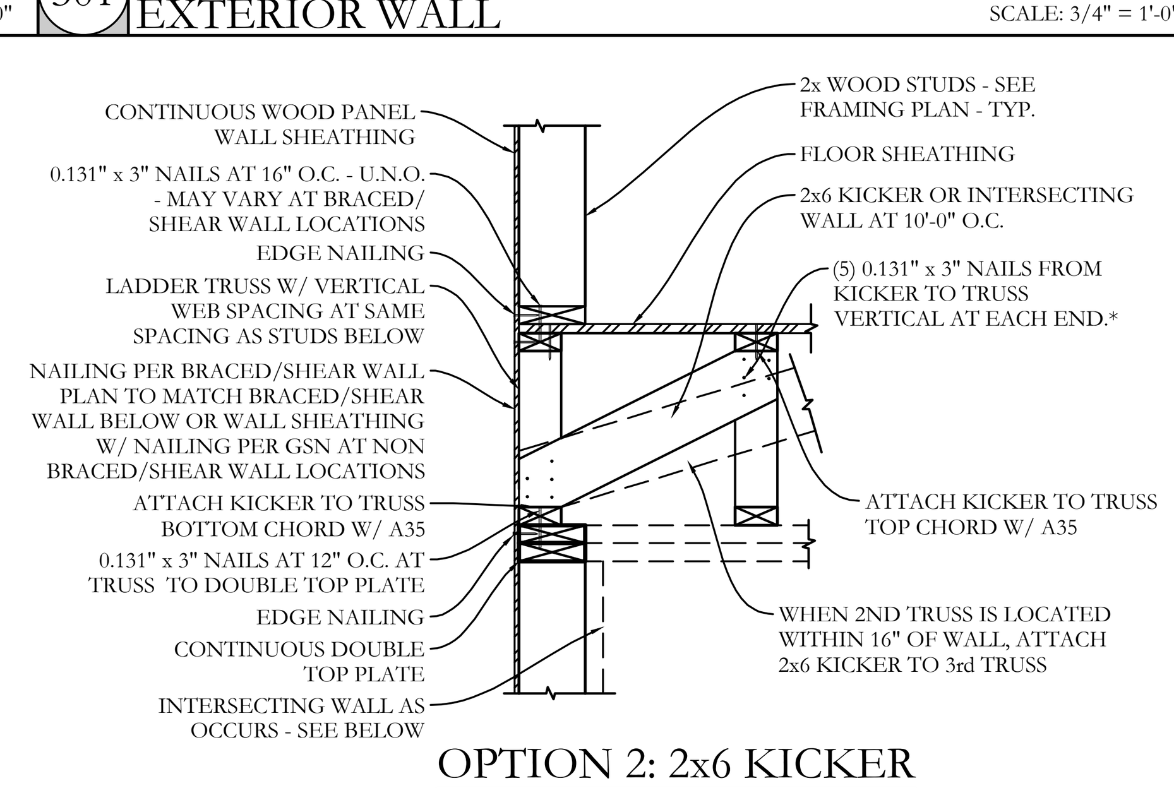
302 PARALLEL TRUSS AT EXTERIOR WALL



NOTE: SEE 1st BAY LOCATION FOR INFORMATION NOT SHOWN HERE.

PANEL MAY BE REPLACED WITH SITE BUILT SHEAR BOX. WALL SHEATHING NAILED TO 2x4 BLOCKS W/ 0.131" x 3" NAILS AT 6" O.C. ON ALL (4) SIDES

OPTION 1: SHEAR PANEL
PANEL OR INTERSECTING WALL AT 10'-0" O.C.



OPTION 2: 2x6 KICKER
KICKER OR INTERSECTING WALL AT 10'-0" O.C.

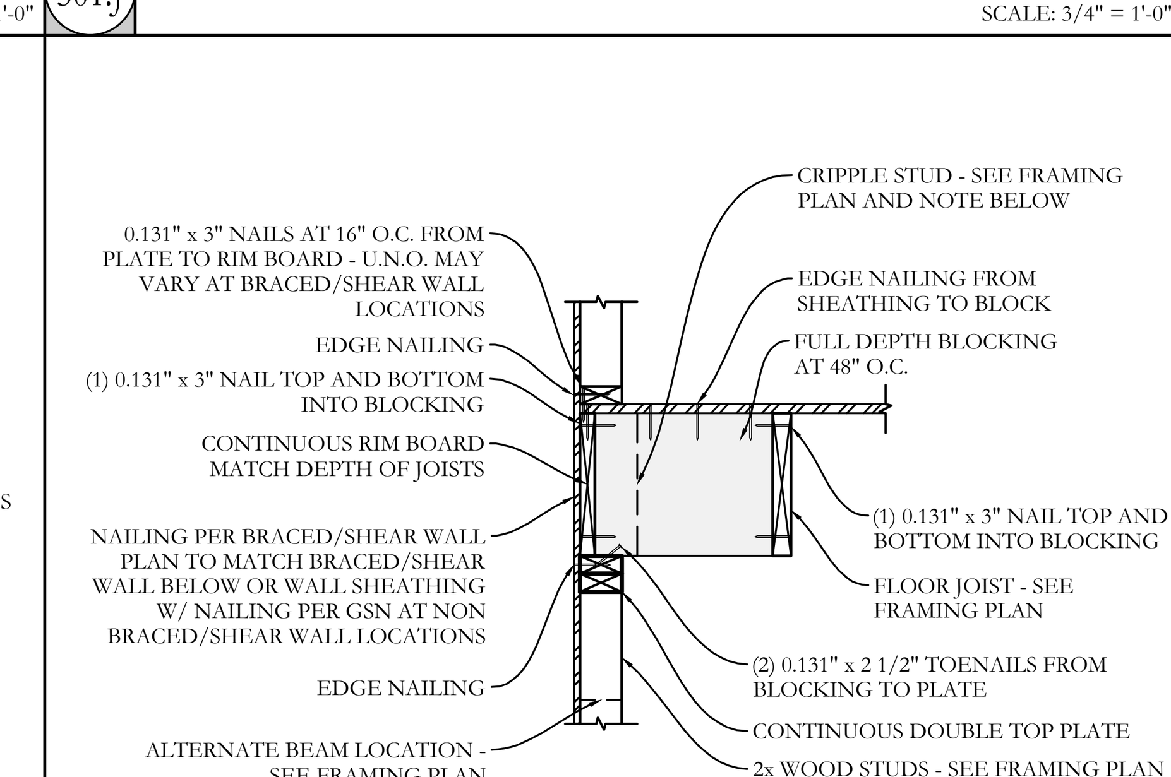
NOTE: PROVIDE 2x CRIPPLE STUDS CONTINUOUS TO FOUNDATION AT ALL LOCATIONS SHOWN ON FRAMING PLANS IDENTIFYING POSTS FROM ABOVE - MATCH POST/TRIMMER COUNT ABOVE, UNO. NO CRIPPLE STUDS ARE REQUIRED UNDER KING STUDS AT OPENINGS.

NOTE: INTERSECTING WALL TO BE 8'-0" MINIMUM LENGTH TO QUALIFY AS SUPPORT.

* WHERE TRUSS VERTICALS DO NOT ALIGN, ADD TRUSS VERTICAL IN TRUSS AND ATTACH TO TOP AND BOTTOM CHORD WITH (3) 0.131" x 3" TOENAILS

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

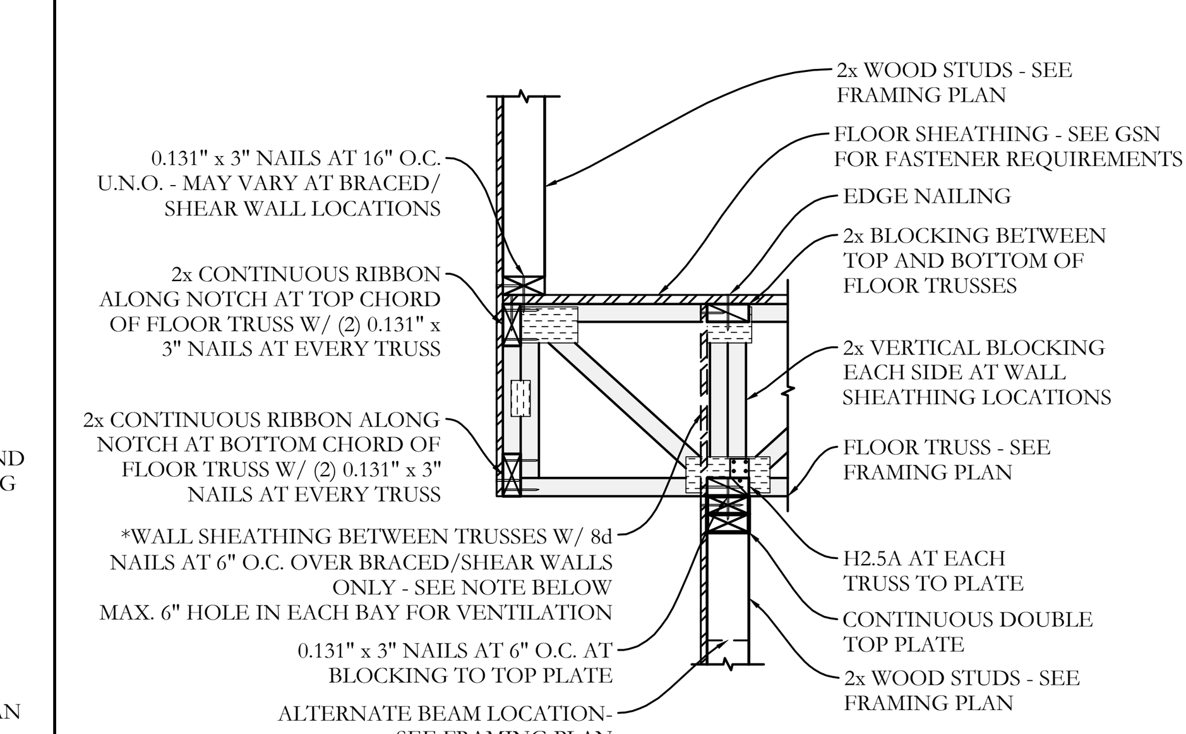
302.J PARALLEL JOIST AT EXTERIOR WALL



NOTE: PROVIDE 2x CRIPPLE STUDS CONTINUOUS TO FOUNDATION AT ALL LOCATIONS SHOWN ON FRAMING PLANS IDENTIFYING POSTS FROM ABOVE - MATCH POST/TRIMMER COUNT ABOVE, UNO. NO CRIPPLE STUDS ARE REQUIRED UNDER KING STUDS AT OPENINGS.

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

304 CANTILEVERED TRUSS AT WALL



NOTE: WALL SHEATHING BETWEEN TRUSSES MAY BE REPLACED WITH MANUFACTURED DRAG TRUSS. DRAG TRUSS SHALL BE DESIGNED FOR 350 PLF DRAG LOAD AND ATTACHED TO PLATE W/ (2) LTP4 AT EVERY TRUSS. (1) DRAG TRUSS MAY BE REMOVED EVERY (4) BAYS.

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

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE 602.867.2500 WWW.FELTENGROUP.COM

DOR DEVELOPMENT

TITLE: STRUCTURAL DETAILS

JACOB E. MORGAN, STATE OF WASHINGTON, 54005, REGISTERED PROFESSIONAL ENGINEER, EXPIRES: 04/28/2025, 10/02/2024

CHECKED BY: J. MORGAN DATE: 09/29/2024

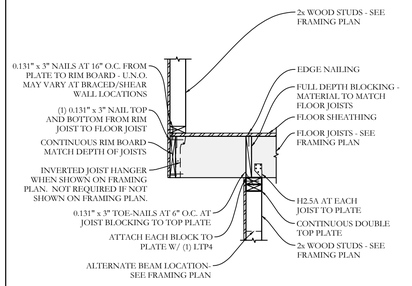
LOT 1

SERIES

SUBDIVISION: MARTIN S.P. KIRKLAND, WA

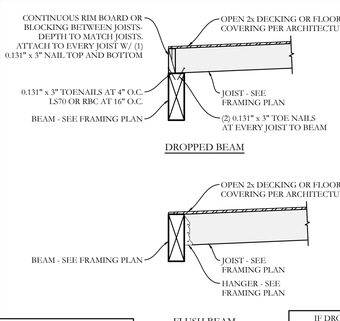
PLAN NUMBER: 3372A

SHEET NUMBER: SD



304.J CANTILEVERED JOIST AT WALL

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

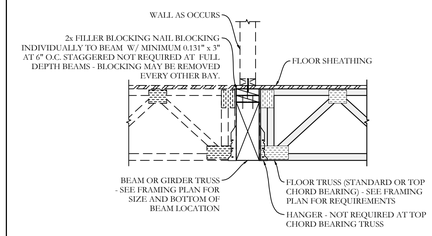


EXPOSED FRAMING SHALL BE PRESERVATIVE TREATED. SEE GSN FOR REQUIREMENTS

IF DROPPED BEAM SHOWN ON PLAN, FLUSH MAY BE USED AS ALTERNATIVE. USE HANGER SPECIFIED AT LEDGER/WALL

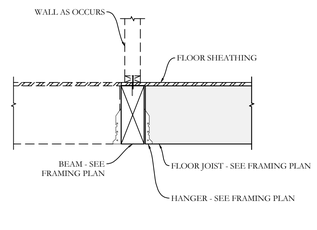
305 JOISTS AT DROPPED BEAM

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



311 FLOOR TRUSS AT FLUSH BEAM/GIRDER AT INTERIOR WALL

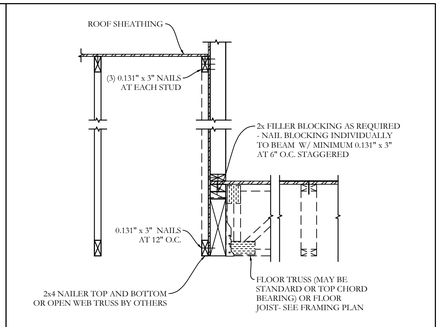
SCALE: 3/4" = 1'-0"



NOTE: WHEN BEAM DEPTH DOES NOT MATCH JOIST DEPTH USE 2x FILLER BLOCKING. NAIL BLOCKING INDIVIDUALLY TO BEAM W/ MINIMUM 0.131" x 3" AT 6" O.C. STAGGERED

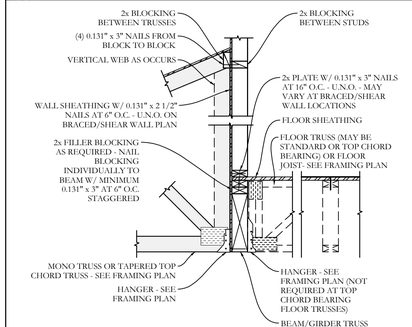
311.J FLOOR JOIST AT FLUSH BEAM

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



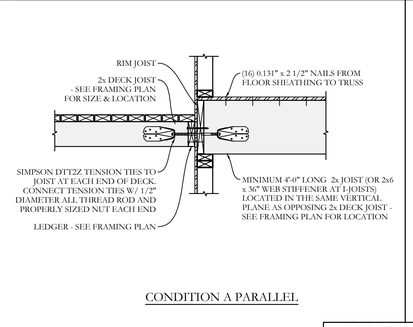
314 PARALLEL ROOF TRUSS AT BEAM/GIRDER

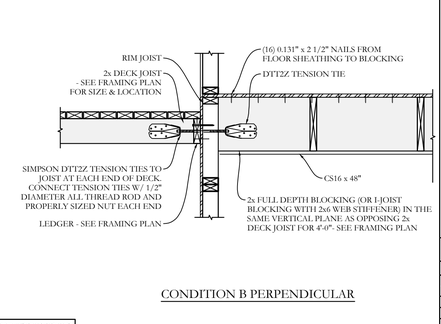
SCALE: 3/4" = 1'-0"



315 PERPENDICULAR ROOF TRUSS AT FLUSH BEAM

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

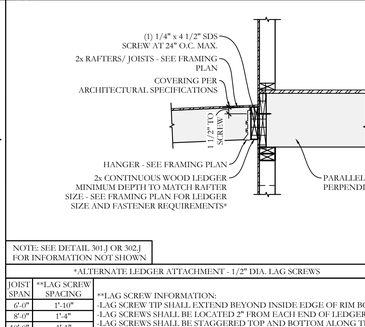




SIMPSON LTT20B MAY BE USED ILO DTT2Z. USE DOUBLE MEMBERS AT ALL LOCATIONS WHEN LTT20B IS USED

325.J DECK ATTACHMENT FOR LATERAL SUPPORT 1500# PRESCRIPTIVE

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



NOTE: SEE DETAIL 301.J OR 302.J FOR INFORMATION NOT SHOWN

*ALTERNATE LEDGER ATTACHMENT - 1/2" DIA. LAG SCREWS

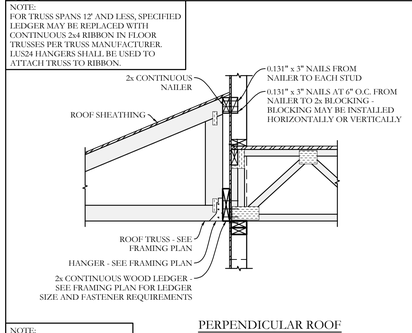
JOIST SPAN	**LAG SCREW SPACING
6'-0"	1'-10"
8'-0"	1'-4"
10'-0"	1'-1"
12'-0"	0'-11"
14'-0"	0.9"

**LAG SCREW INFORMATION:
-LAG SCREW TIP SHALL EXTEND BEYOND INSIDE EDGE OF RIM BOARD
-LAG SCREWS SHALL BE LOCATED 2" FROM EACH END OF LEDGER
-LAG SCREWS SHALL BE STAGGERED TOP AND BOTTOM ALONG THE HORIZONTAL RUN OF LEDGER. TOP SCREWS SHALL BE 2" FROM TOP OF LEDGER, BOTTOM SCREWS SHALL BE 3/4" FROM BOTTOM OF LEDGER

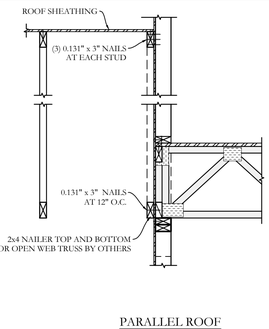
331.J RAFTER/JOIST TO LEDGER AT FLOOR JOIST AT WALL

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

NOTE: FOR TRUSS SPANS 12' AND LESS, SPECIFIED LEDGER MAY BE REPLACED WITH CONTINUOUS 2x4 RIBBON IN FLOOR TRUSSES PER TRUSS MANUFACTURER. LUS24 HANGERS SHALL BE USED TO ATTACH TRUSS TO RIBBON.



PERPENDICULAR ROOF



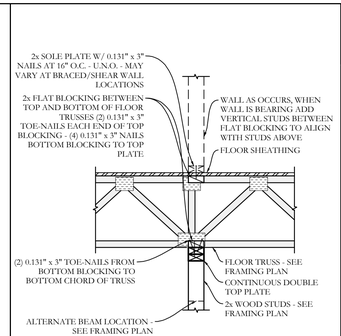
PARALLEL ROOF

NOTE: SEE DETAIL 301 FOR ALL INFORMATION NOT SHOWN

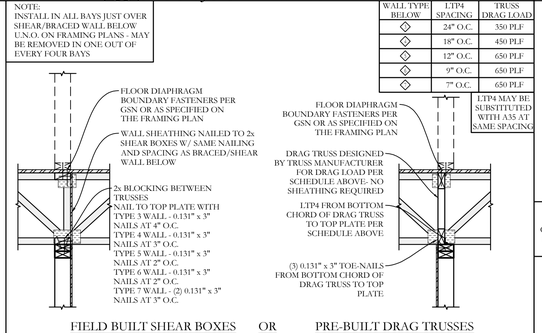
334 ROOF TRUSS AND PERPENDICULAR FLOOR TRUSS AT WALL

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

NOTE: INSTALL IN ALL BAYS JUST OVER SHEAR/BRACED WALL BELOW U.N.O. ON FRAMING PLANS - MAY BE REMOVED IN ONE OUT OF EVERY FOUR BAYS



NON SHEAR/BRACED WALL

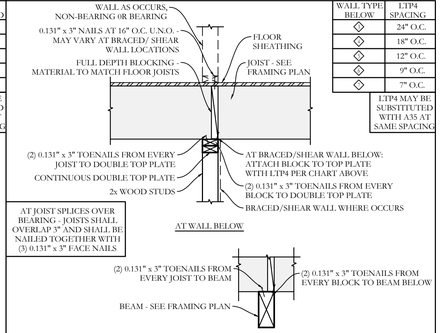


FIELD BUILT SHEAR BOXES OR PRE-BUILT DRAG TRUSSES

SHEAR/ BRACED WALL BELOW

WALL TYPE BELOW	LTP4 SPACING	TRUSS DRAG LOAD
◇	24" O.C.	350 PLF
◇	18" O.C.	450 PLF
◇	12" O.C.	650 PLF
◇	9" O.C.	650 PLF
◇	7" O.C.	650 PLF

LTP4 MAY BE SUBSTITUTED WITH A35 AT SAME SPACING



WALL TYPE BELOW	LTP4 SPACING
◇	24" O.C.
◇	18" O.C.
◇	12" O.C.
◇	9" O.C.
◇	7" O.C.

LTP4 MAY BE SUBSTITUTED WITH A35 AT SAME SPACING

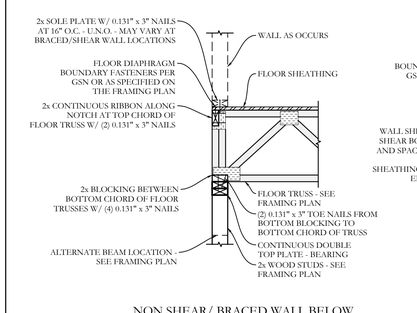
AT JOIST SPLICES OVER BEARING - JOISTS SHALL OVERLAP 5" AND SHALL BE NAILED TOGETHER WITH (3) 0.131" x 3" FACE NAILS

361 CONTINUOUS FLOOR TRUSS AT INTERIOR BEARING WALL

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

361.J JOIST AT INTERIOR BEARING WALL

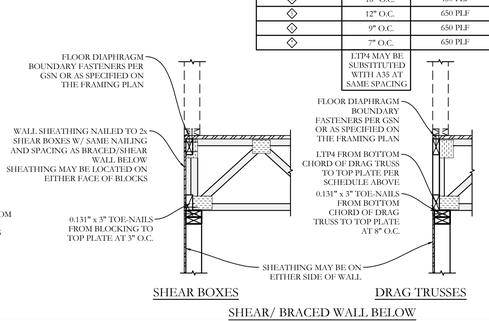
SCALE: 3/4" = 1'-0"



NON SHEAR/ BRACED WALL BELOW

WALL TYPE BELOW	LTP4 SPACING	TRUSS DRAG LOAD
◇	24" O.C.	350 PLF
◇	18" O.C.	450 PLF
◇	12" O.C.	650 PLF
◇	9" O.C.	650 PLF
◇	7" O.C.	650 PLF

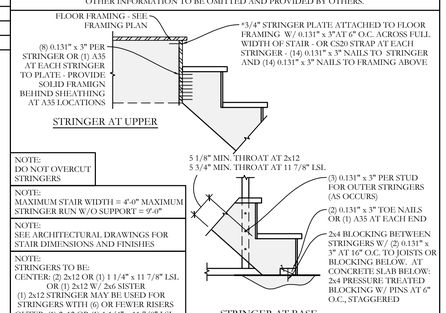
LTP4 MAY BE SUBSTITUTED WITH A35 AT SAME SPACING

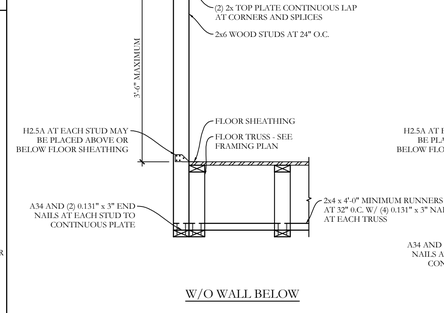


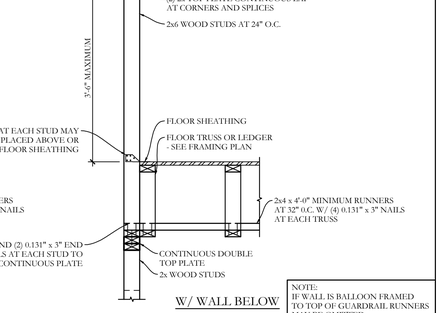
SHEAR BOXES DRAG TRUSSES

SHEAR/ BRACED WALL BELOW

WHERE PRE-FABRICATED STAIRS ARE USED - ONLY STRINGER PLATE ATTACHMENT TO FLOOR FRAMING SHOWN IN "STRINGER AT UPPER" INFORMATION BELOW SHALL BE REQUIRED (MARKED WITH * FOR INFORMATION THAT STILL APPLIES WHEN PRE-FABRICATED STAIRS ARE USED. ALL OTHER INFORMATION TO BE OMITTED AND PROVIDED BY OTHERS.







NOTE: IF WALL IS BALLOON FRAMED TO TOP OF GUARDRAIL RUNNERS MAY BE OMITTED.

365 TRUSS AT INTERIOR BEARING WALL

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

371 STAIR FRAMING - 3 STRINGER STAIR

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

373 GUARDRAIL WALL PARALLEL TO TRUSS

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

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE 602.867.2500 WWW.FELTENGROUP.COM

DR DEVELOPMENT

TITLE: STRUCTURAL DETAILS

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 01/29/2026

10/02/2024

CHECKED BY: J. MORGAN
DATE: 09/29/2024

LOT 1

SERIES

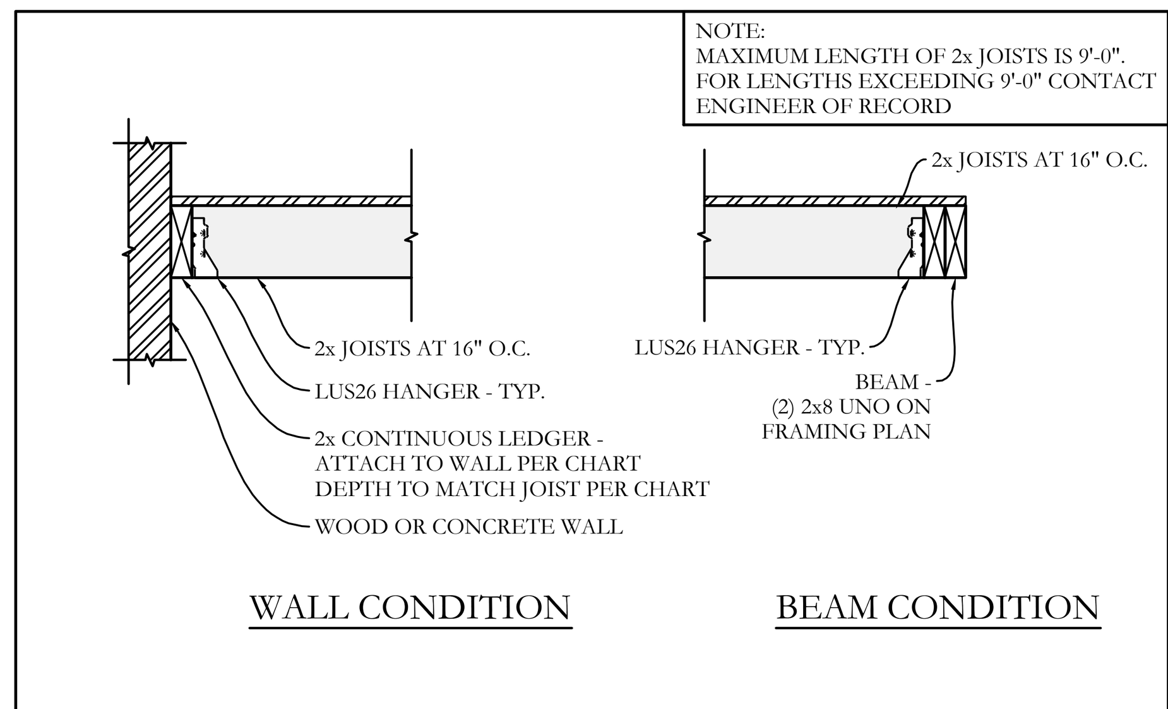
SUBDIVISION: MARTIN S.P. KIRKLAND, WA

PLAN NUMBER: 3372A

SHEET NUMBER: SD

Jacob.morgan Oct 02, 2024 - 5:07pm W:\DGR Development\Martin Short Plat\Lot 1-3372A-GR\Active Folder\S-Lot1-05-Structural Details.dwg

NOTE:
MAXIMUM LENGTH OF 2x JOISTS IS 9'-0". FOR LENGTHS EXCEEDING 9'-0" CONTACT ENGINEER OF RECORD



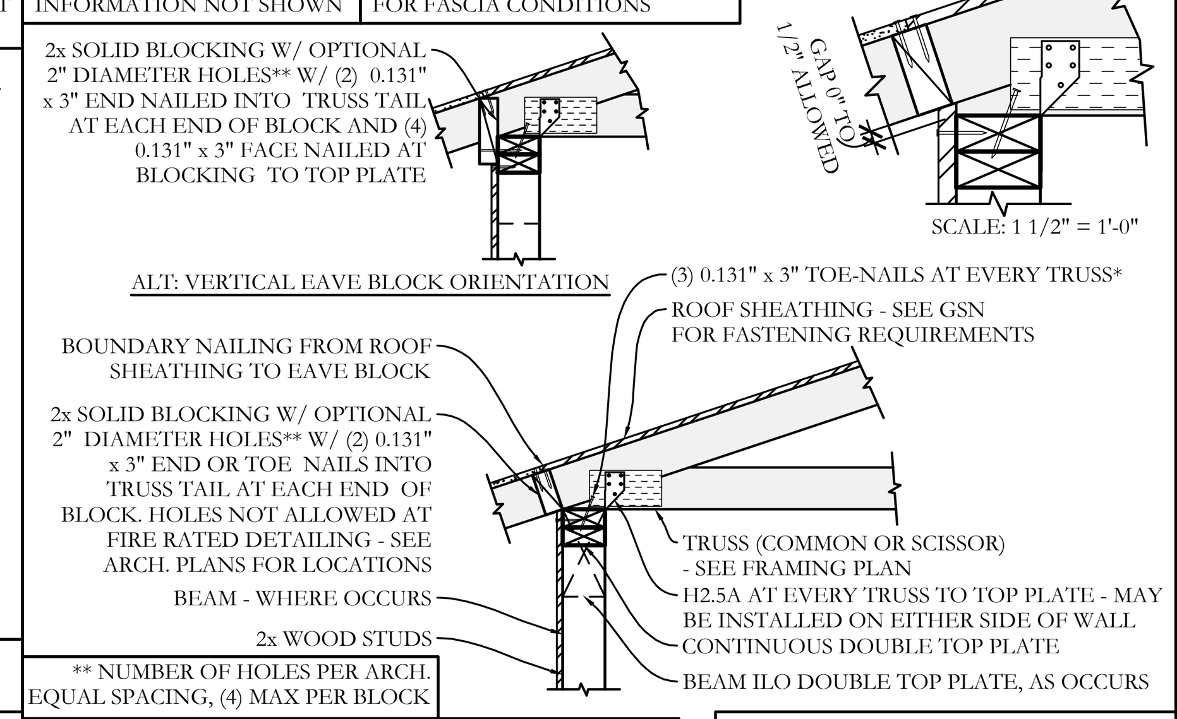
MAX. JOIST LENGTH	JOIST SIZE	WALL CONSTRUCTION	LEDGER ATTACHMENT
4'-6"	2x6	CONCRETE	(1) 1/2" DIA x 5 1/2" LONG SIMPSON WEDGE ALL AT 16" O.C.
		2x STUDS AT 16" O.C.	(3) 0.131" x 3" NAILS AT 16" O.C.
		2x STUDS AT 24" O.C.	(3) 0.131" x 3" NAILS AT 24" O.C.
9'-0"	2x8	CONCRETE	(1) 1/2" DIA. x 5 1/2" LONG SIMPSON WEDGE ALL AT 16" O.C.
		2x STUDS AT 16" O.C.	(4) 0.131" x 3" NAILS AT 16" O.C.
		2x STUDS AT 24" O.C.	(4) 0.131" x 3" NAILS AT 24" O.C. AND (1) A35 AT 24" O.C.

375 STAIR LANDING FRAMING

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

NOTE: SEE DETAIL BELOW FOR INFORMATION NOT SHOWN

NOTE: SEE ARCHITECTURAL DRAWINGS FOR FASCIA CONDITIONS



** NUMBER OF HOLES PER ARCH. EQUAL SPACING, (4) MAX PER BLOCK

* AT WALL HEIGHTS GREATER THAN 16' : USE (5) 0.131" x 3" TOENAILS

NOTE: USE SAME ANCHORAGE AT TRUSS TO BEAM CONNECTION - U.N.O.

H2.5A MAY BE SUBSTITUTED WITH H1A, H2.5T, 6" TIMBERLOK OR SDWC15600

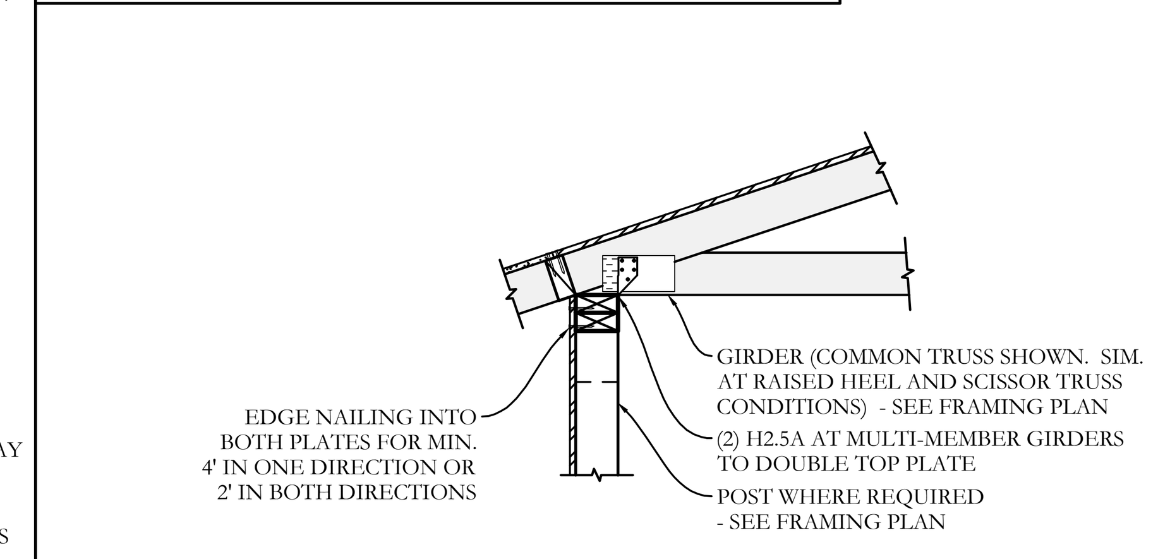
NOTE: ALL SCISSOR TRUSS LOCATIONS ALLOW FOR FREE HORIZONTAL MOVEMENT AT ONE SUPPORT. INSTALL NAILS IN H2.5A TO TRUSS AFTER LOADING ROOF W/ ALL MATERIALS

NOTE: EAVE BLOCKING MAY BE OMITTED FOR FULL SCREEN EAVE VENTS AS FOLLOWS: 1. ONE VENT PER 8'-0" LENGTH OF EAVE

401 TRUSS AT WALL

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

NOTE:
TRUSS UPLIFT CONNECTION SHOWN HERE GOVERNS OVER THE TRUSS UPLIFT VALUES SHOWN ON TRUSS CALCULATIONS. PER ASCE7 2.4.1, MAXIMUM UPLIFT THAT MUST BE RESOLVED IS 0.6W + 0.6D LOAD COMBINATION.
TRUSS CALCULATIONS SHOW THE PURE UPLIFT VALUE, AND DO NOT REDUCE IT BY 60% OF THE DEAD LOAD, WHICH IS THE CODE PRESCRIBED LOAD COMBINATION THAT MUST BE DESIGNED FOR.



NOTE: SEE ROOF TRUSS AT WALL DETAIL FOR INFORMATION NOT SHOWN HERE

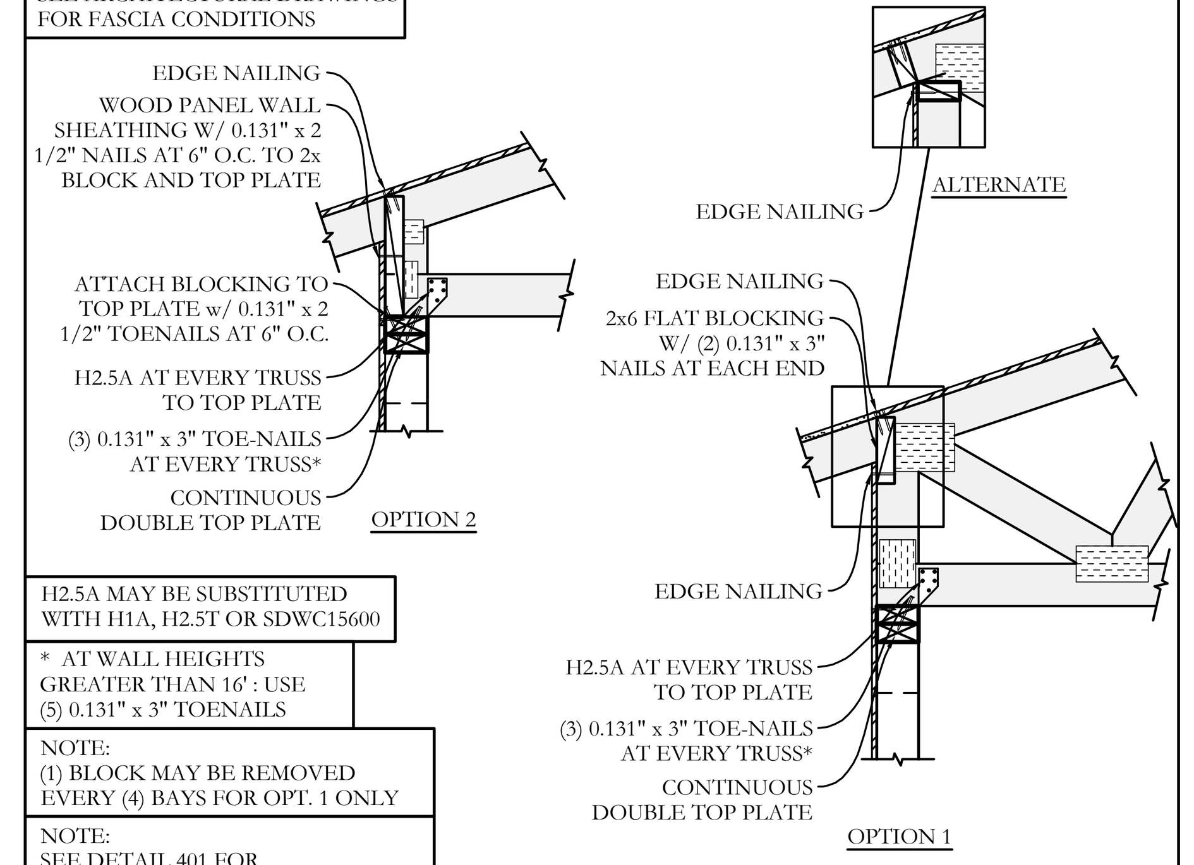
NOTE: (1) H2.5, (1) H1A, OR (1) SDWC15600 MAY BE USED AT SINGLE MEMBER GIRDER

NOTE: H2.5 FROM TRUSS TO TOP PLATE MAY BE SUBSTITUTED WITH TBE

404 GIRDER TRUSS AT WALL

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

NOTE: SEE ARCHITECTURAL DRAWINGS FOR FASCIA CONDITIONS



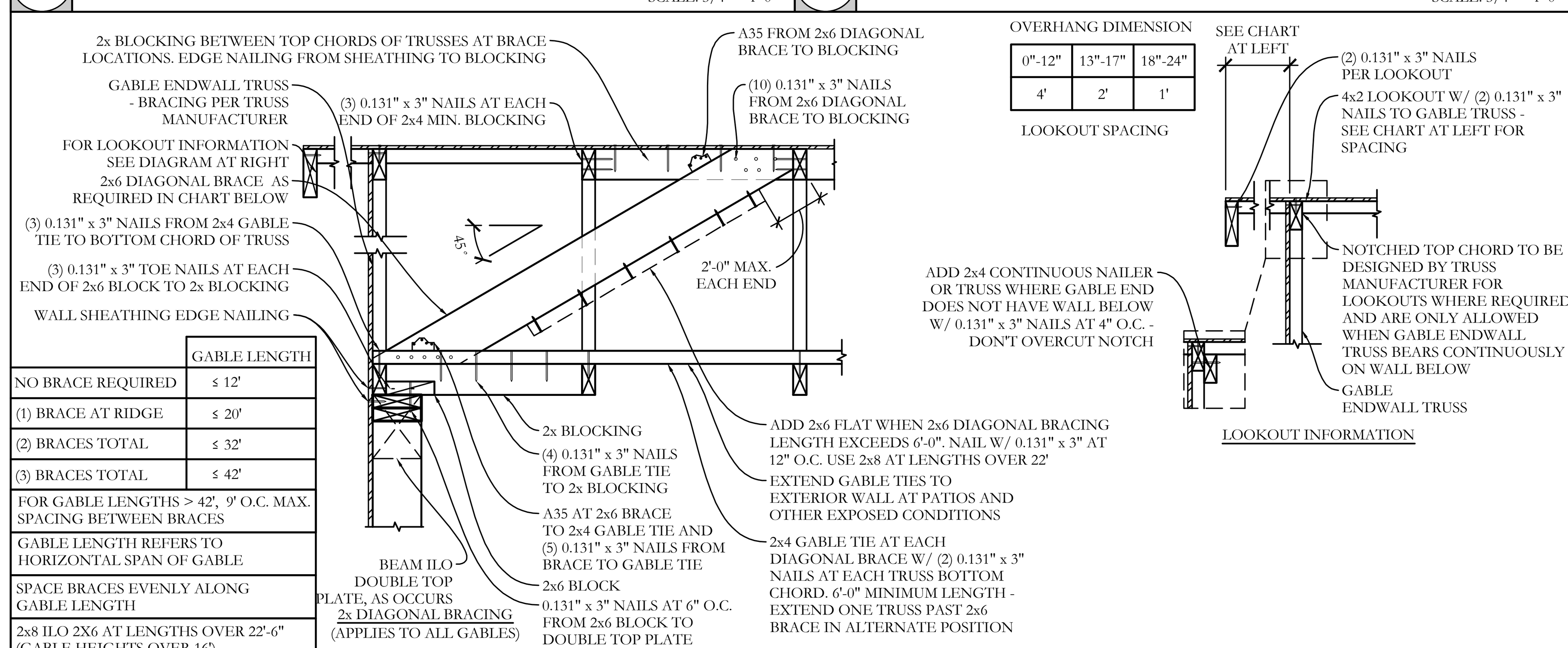
H2.5A MAY BE SUBSTITUTED WITH H1A, H2.5T OR SDWC15600

* AT WALL HEIGHTS GREATER THAN 16' : USE (5) 0.131" x 3" TOENAILS

NOTE: (1) BLOCK MAY BE REMOVED EVERY (4) BAYS FOR OPT. 1 ONLY

NOTE: SEE DETAIL 401 FOR INFORMATION NOT SHOWN HERE

405 RAISED HEEL TRUSS AT WALL



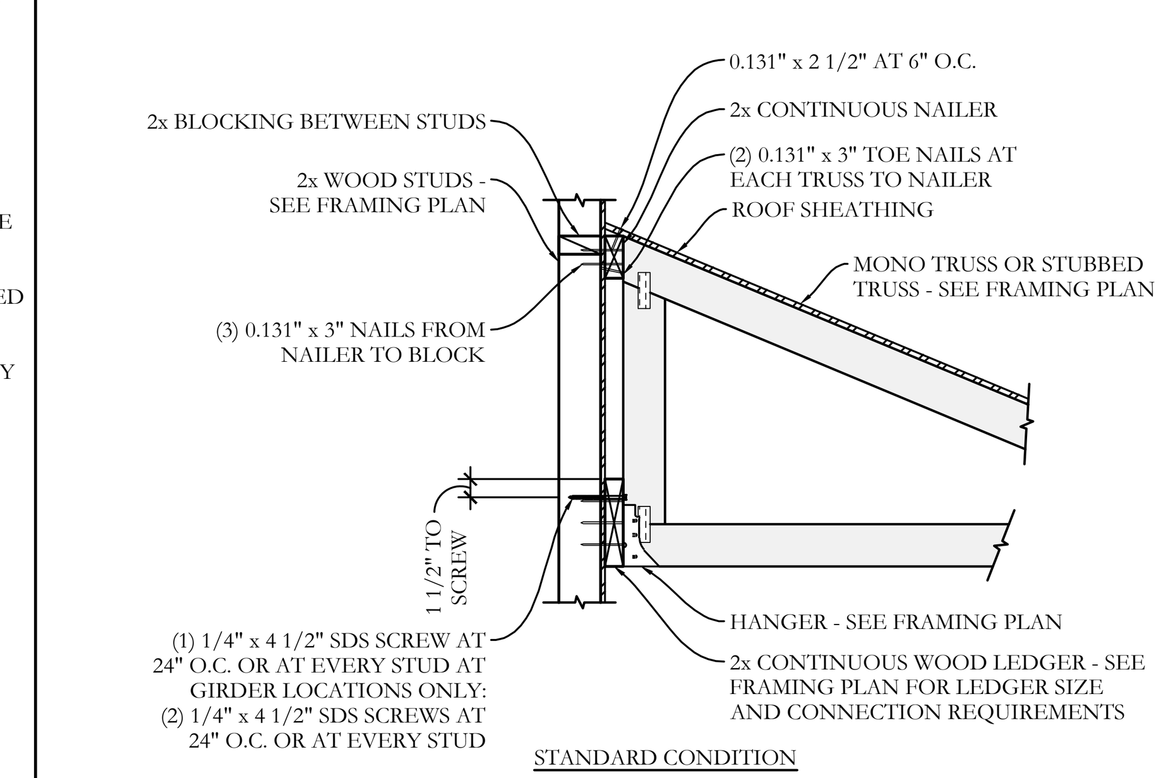
OVERHANG DIMENSION		
0"-12"	13"-17"	18"-24"
4'	2'	1'

LOOKOUT SPACING

	GABLE LENGTH
NO BRACE REQUIRED	≤ 12'
(1) BRACE AT RIDGE	≤ 20'
(2) BRACES TOTAL	≤ 32'
(3) BRACES TOTAL	≤ 42'
FOR GABLE LENGTHS > 42', 9' O.C. MAX. SPACING BETWEEN BRACES	
GABLE LENGTH REFERS TO HORIZONTAL SPAN OF GABLE	
SPACE BRACES EVENLY ALONG GABLE LENGTH	
2x8 ILO 2X6 AT LENGTHS OVER 22'-6" (GABLE HEIGHTS OVER 16')	

408 GABLE ENDWALL BRACING

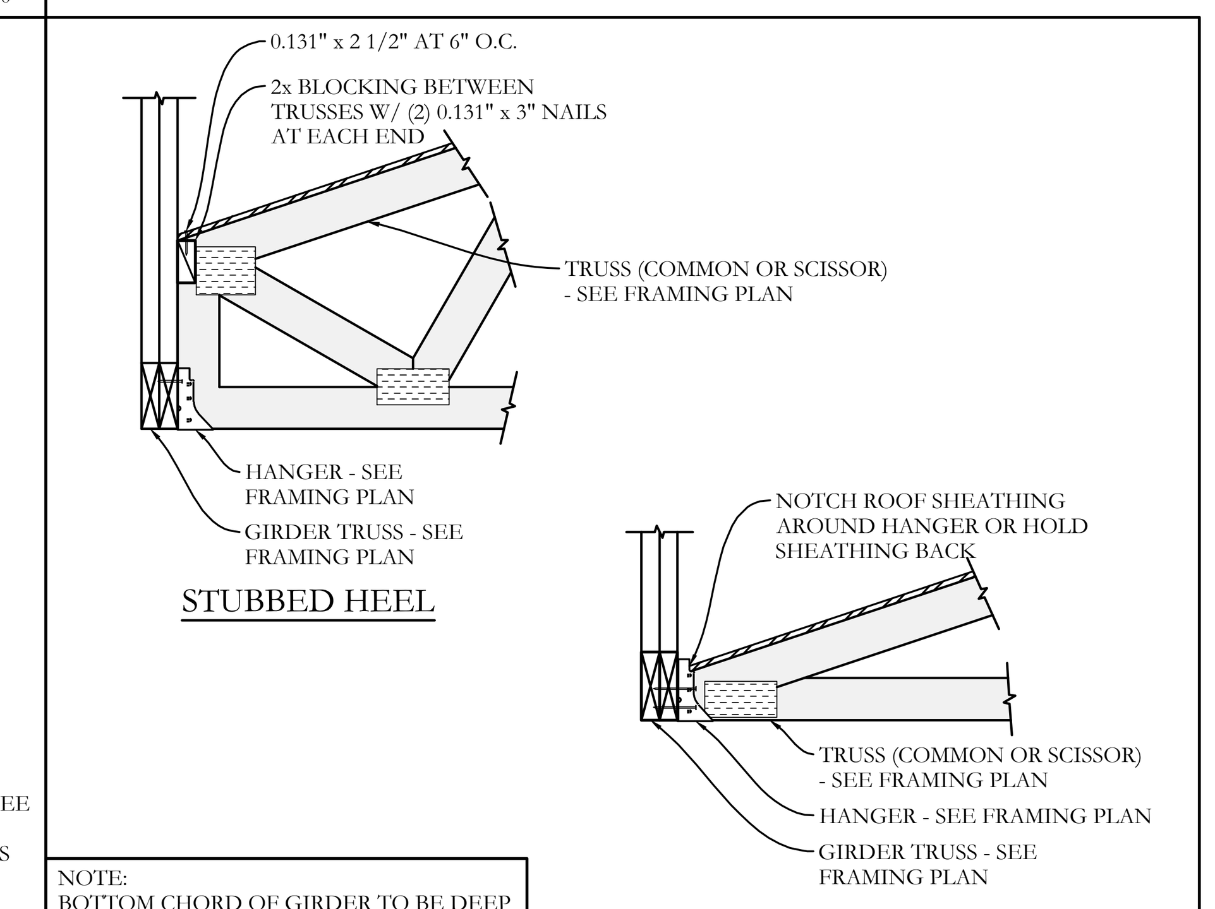
SCALE: 3/4" = 1'-0"



NOTE: HANGER CALLOUTS ON FRAMING PLAN MAY BE IGNORED AT ALTERNATE BEARING CONDITION

432 MONO TRUSS TO LEDGER

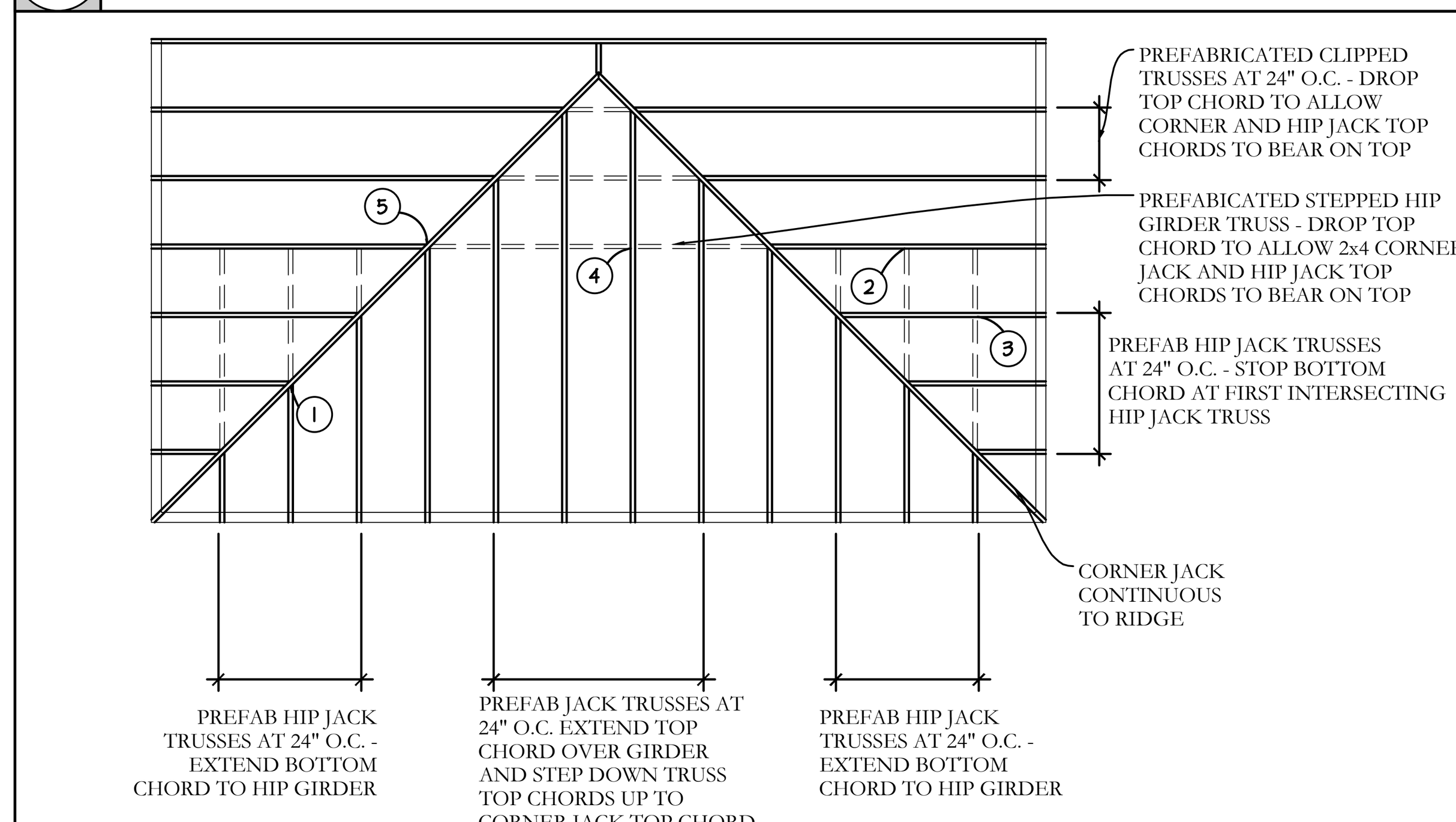
SCALE: 3/4" = 1'-0"



NOTE: BOTTOM CHORD OF GIRDER TO BE DEEP ENOUGH SO THAT SIDE FLANGES OF HANGER ARE NOT BENT

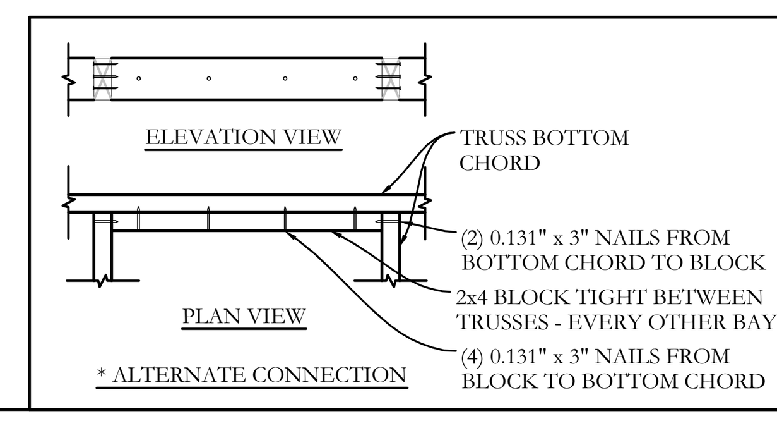
441 TRUSS AT GIRDER TRUSS

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



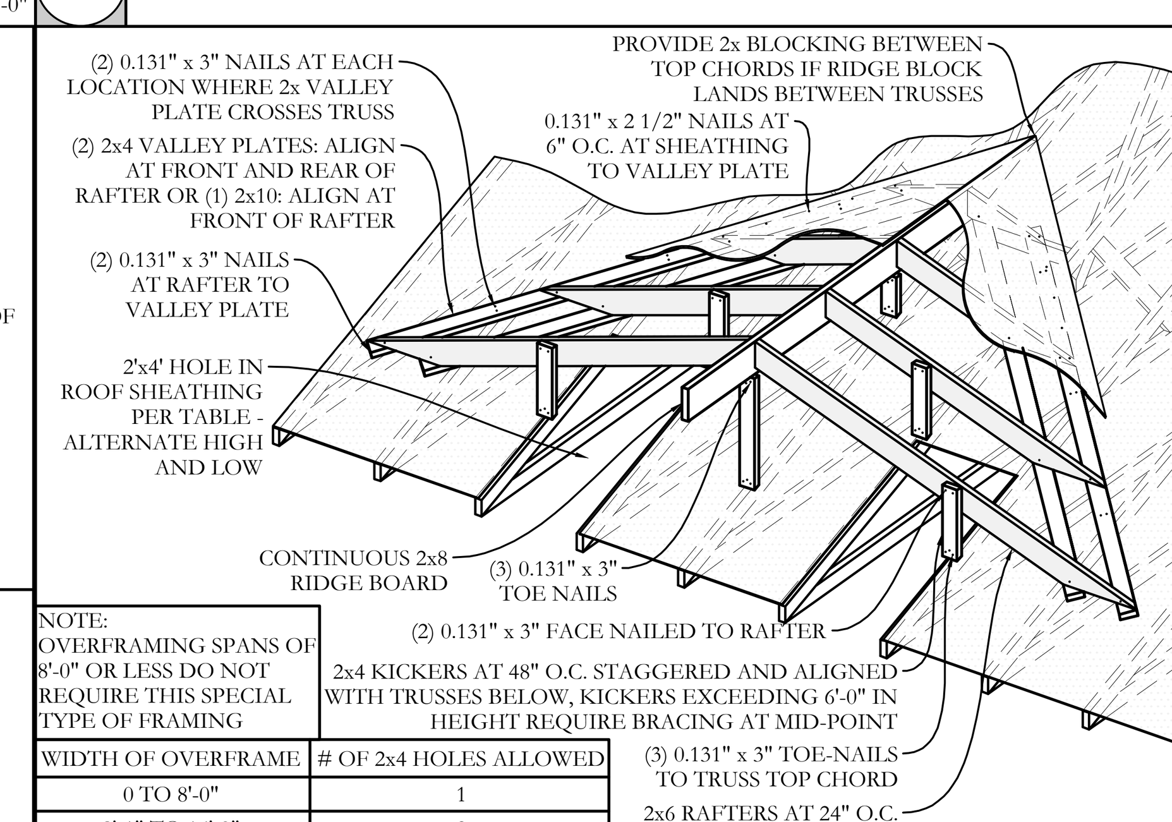
LEGEND

1. PROVIDE MIN. (3) 0.131" x 3" TOE-NAILS AT TOP CHORD OF JACK TRUSSES TO CORNER JACK
   JACK TRUSS BOTTOM CHORD TO HIP GIRDER BOTTOM CHORD - USE LUS24, (3) 0.131" x 3" TOENAILS OR USE ALTERNATE*
2. TOE NAIL BOTTOM CHORD OF HIP JACKS W/ (2) 0.131" x 3" MIN. - OR ALTERNATE *
3. TOP CHORD OF JACK TRUSSES TO BEAR ON TOP OF HIP GIRDER TRUSS - TYP.
5. CORNER JACK TO BEAR ON GIRDER TRUSS AND CLIPPED TRUSS TOP CHORDS - TYP.



443 CALIFORNIA HIP FRAMING

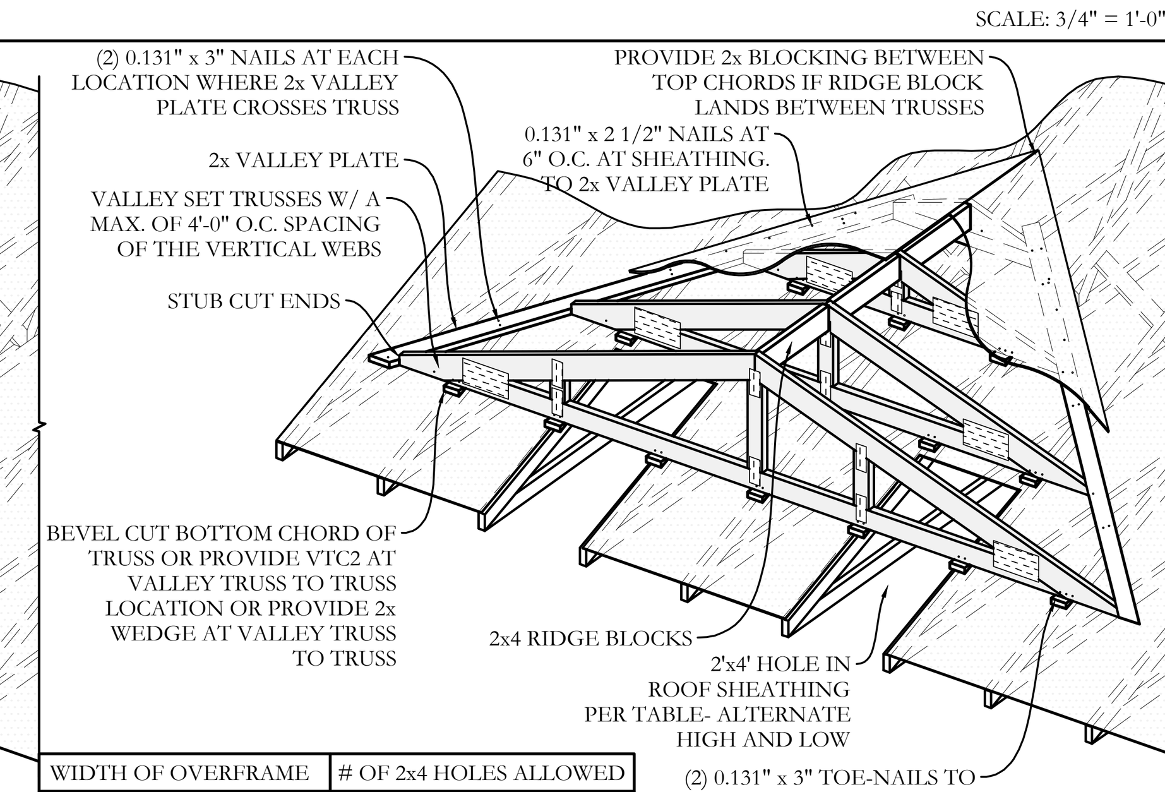
SCALE: NO SCALE



NOTE:
OVERFRAMING SPANS OF 8'-0" OR LESS DO NOT REQUIRE THIS SPECIAL TYPE OF FRAMING

WIDTH OF OVERFRAME	# OF 2x4 HOLES ALLOWED
0 TO 8'-0"	1
8'-1" TO 16'-0"	2
16'-1" TO 24'-0"	3
24'-1" TO 32'-0"	4
32'-1" TO 40'-0"	5
40'-1" TO 48'-0"	6

DETAIL NOT REQUIRED WHEN THE TRUSS MANUFACTURER CHOOSES TO USE A SPECIALLY SHAPED TRUSS THAT ELIMINATES THE OVERFRAMING



WIDTH OF OVERFRAME	# OF 2x4 HOLES ALLOWED
0 TO 8'-0"	1
8'-1" TO 16'-0"	2
16'-1" TO 24'-0"	3
24'-1" TO 32'-0"	4
32'-1" TO 40'-0"	5
40'-1" TO 48'-0"	6

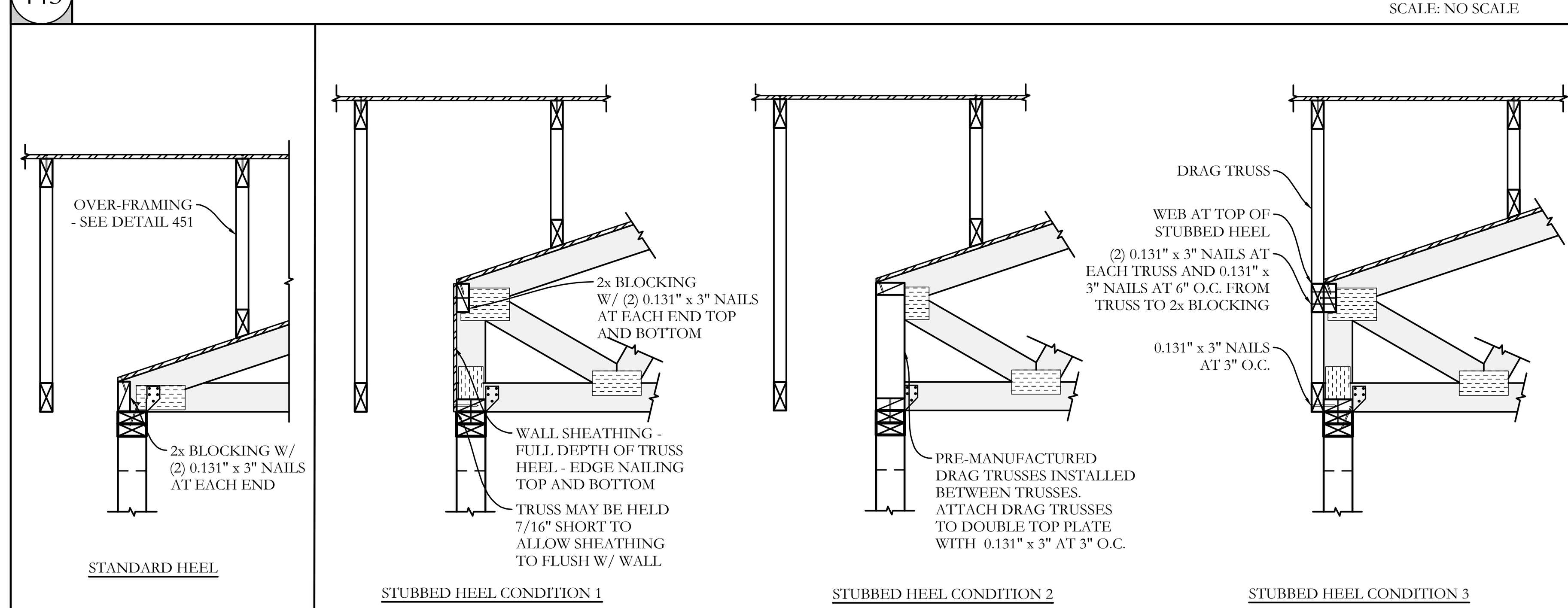
FOLLOW TRUSS LAYOUT FROM TRUSS MANUFACTURER

DETAIL NOT REQUIRED WHEN THE TRUSS MANUFACTURER CHOOSES TO USE A SPECIALLY SHAPED TRUSS THAT ELIMINATES THE OVERFRAMING

451 SUPPORT OF VALLEY RAFTERS AT OVERFRAMED ROOF

SUPPORT OF VALLEY SET TRUSS AT OVERFRAMED ROOF

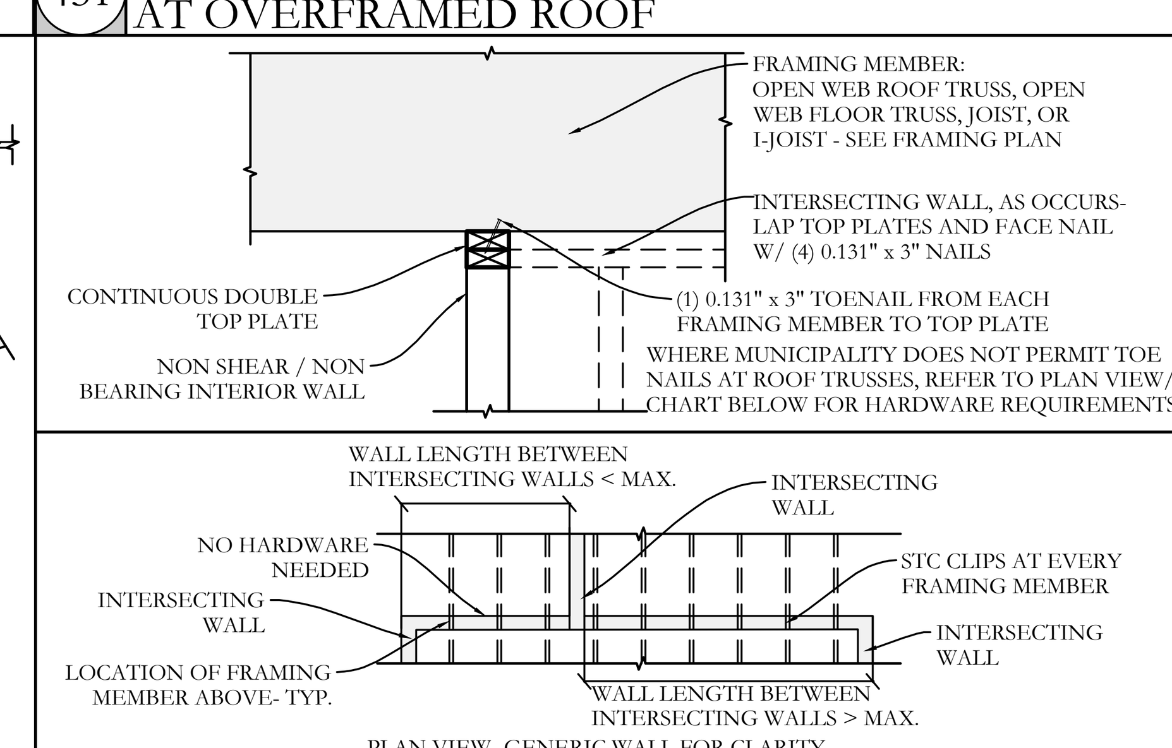
SCALE: 3/4" = 1'-0"



NOTE:
SEE DETAIL 401 FOR INFORMATION NOT SHOWN HERE

461 TRUSS AT BEARING WALL - NO TAIL

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



NOTE:
EACH WALL SHALL HAVE A MINIMUM OF (2) SUPPORTS PER WALL. SUPPORT (INTERSECTING WALL OR HARDWARE) REQUIRED WITHIN 12" FROM END OF WALL.

PLATE HEIGHT	MAX. WALL LENGTH
≤ 8'-1"	14'-0"
≤ 10'-1"	13'-0"
≤ 12'-1"	12'-0"

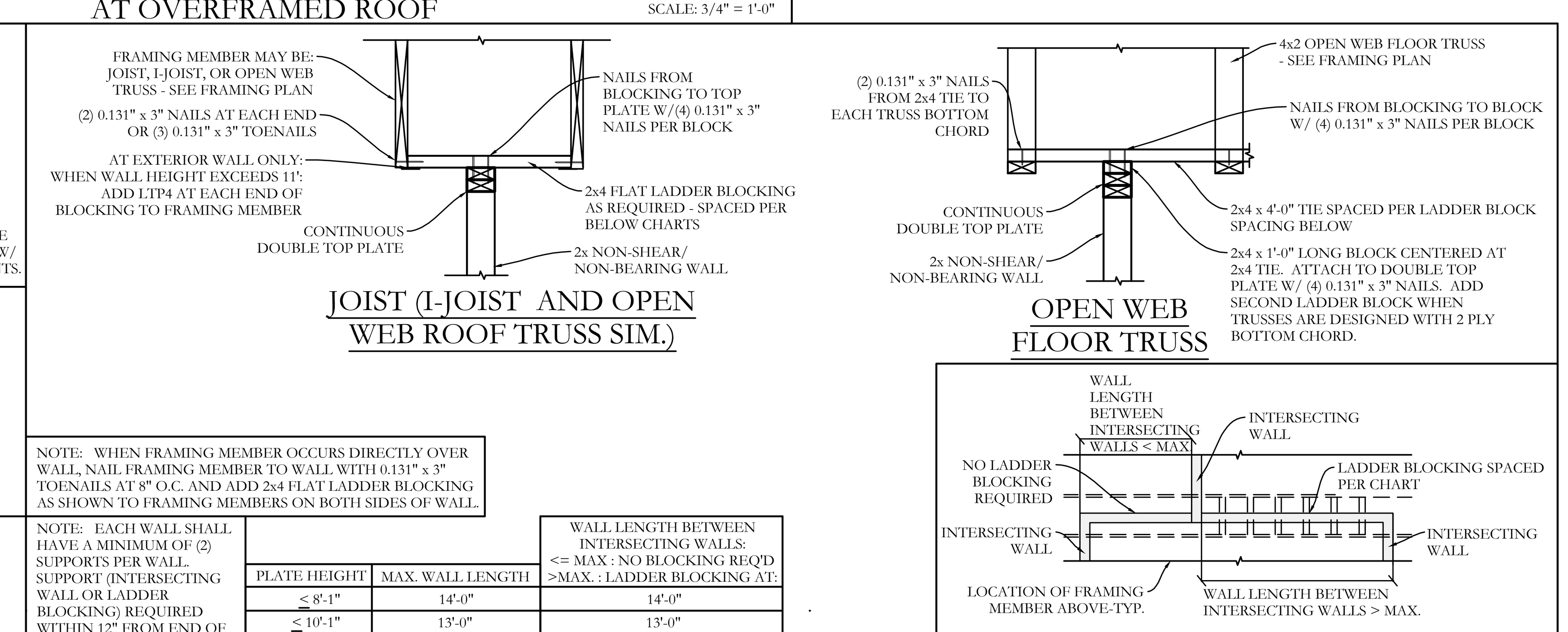
WALL LENGTH BETWEEN INTERSECTING WALLS:

<= MAX : NO HARDWARE

>MAX. : STC - EVERY FRAMING MEMBER

491 TYPICAL NON SHEAR/ NON BEARING WALL PERPENDICULAR FRAMING ABOVE

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



NOTE: WHEN FRAMING MEMBER OCCURS DIRECTLY OVER WALL, NAIL FRAMING MEMBER TO WALL WITH 0.131" x 3" TOENAILS AT 8" O.C. AND ADD 2x4 FLAT LADDER BLOCKING AS SHOWN TO FRAMING MEMBERS ON BOTH SIDES OF WALL.

NOTE: EACH WALL SHALL HAVE A MINIMUM OF (2) SUPPORTS PER WALL. SUPPORT (INTERSECTING WALL OR LADDER BLOCKING) REQUIRED WITHIN 12" FROM END OF WALL.

PLATE HEIGHT	MAX. WALL LENGTH	WALL LENGTH BETWEEN INTERSECTING WALLS: <= MAX : NO BLOCKING REQ'D >MAX. : LADDER BLOCKING AT:
≤ 8'-1"	14'-0"	14'-0"
≤ 10'-1"	13'-0"	13'-0"
≤ 12'-1"	12'-0"	12'-0"

492 TYPICAL NON-SHEAR/NON-BEARING WALL PARALLEL FRAMING ABOVE

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

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE 602 867 2500 WWW.FELTENGROUP.COM

DR DEVELOPMENT

TITLE
STRUCTURAL DETAILS

JACOB E. MORGAN, STATE OF WASHINGTON, 54005, REGISTERED PROFESSIONAL ENGINEER, EXPIRES: 04/28/2026

10/02/2024

CHECKED BY: J. MORGAN DATE: 09/29/2024

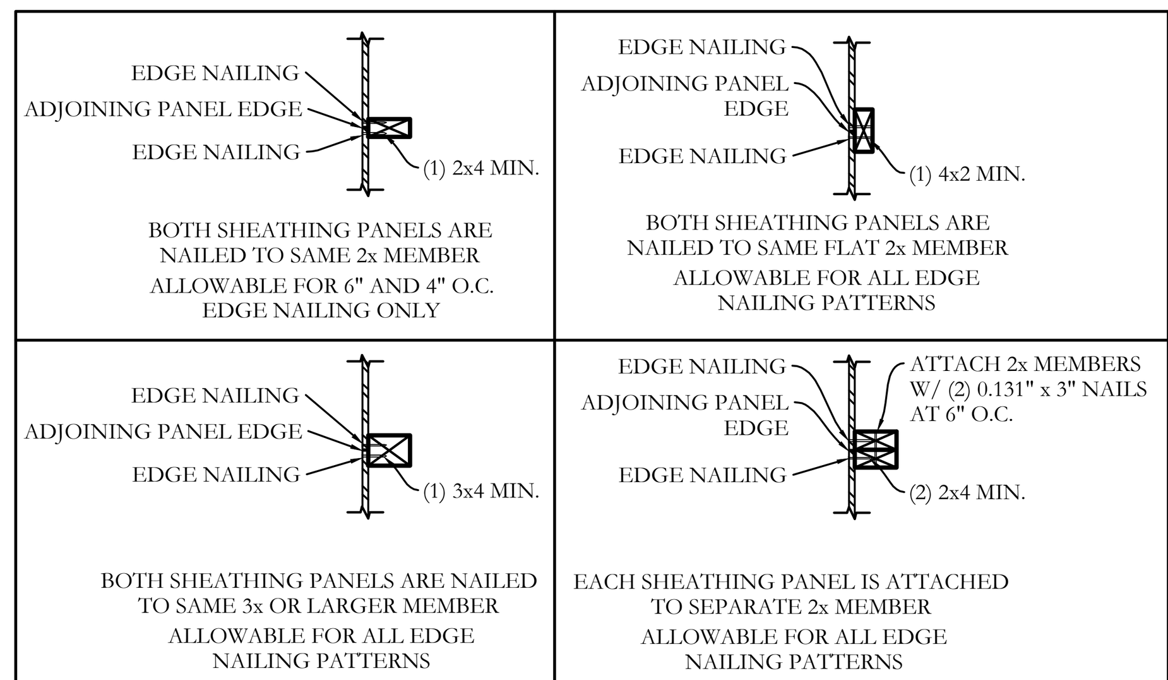
LOT 1

SERIES

SUBDIVISION
MARTIN S.P.
KIRKLAND, WA

PLAN NUMBER
3372A

SHEET NUMBER
SD



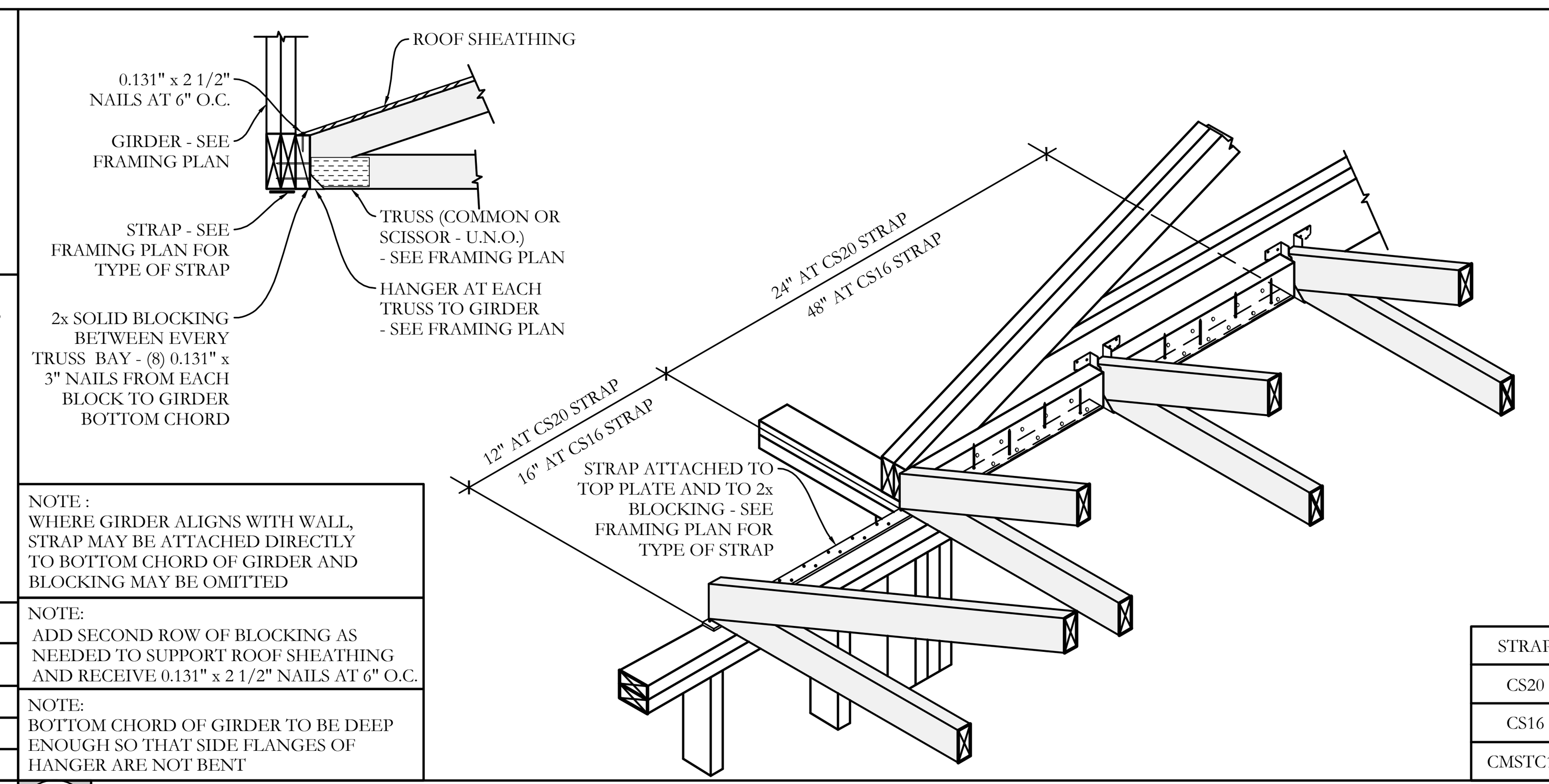
ALL CONDITIONS ARE APPLICABLE FOR BOTH HORIZONTAL AND VERTICAL ADJOINING PANEL EDGES

ALL EDGE NAILING SHALL BE PER GENERAL STRUCTURAL NOTES UNLESS NOTED OTHERWISE ON BRACED/SHEAR WALL PLAN

AT LOCATIONS WHERE SPLICING DETAILS ABOVE ARE UNABLE TO BE USED, ATTACH PANELS AT SPLICE WITH LTP4 SPACED PER CHART AT RIGHT

WALL TYPE	LTP4 SPACING
◇3 OR NO SPEC	16" O.C.
◇4	11" O.C.
◇5	8" O.C.
◇6	6" O.C.

505 ADJOINING SHEATHING PANEL EDGES CONNECTIONS
SCALE: 3/4" = 1'-0"



NOTE : WHERE GIRDER ALIGNS WITH WALL, STRAP MAY BE ATTACHED DIRECTLY TO BOTTOM CHORD OF GIRDER AND BLOCKING MAY BE OMITTED

NOTE: ADD SECOND ROW OF BLOCKING AS NEEDED TO SUPPORT ROOF SHEATHING AND RECEIVE 0.131" x 2 1/2" NAILS AT 6" O.C.

NOTE: BOTTOM CHORD OF GIRDER TO BE DEEP ENOUGH SO THAT SIDE FLANGES OF HANGER ARE NOT BENT

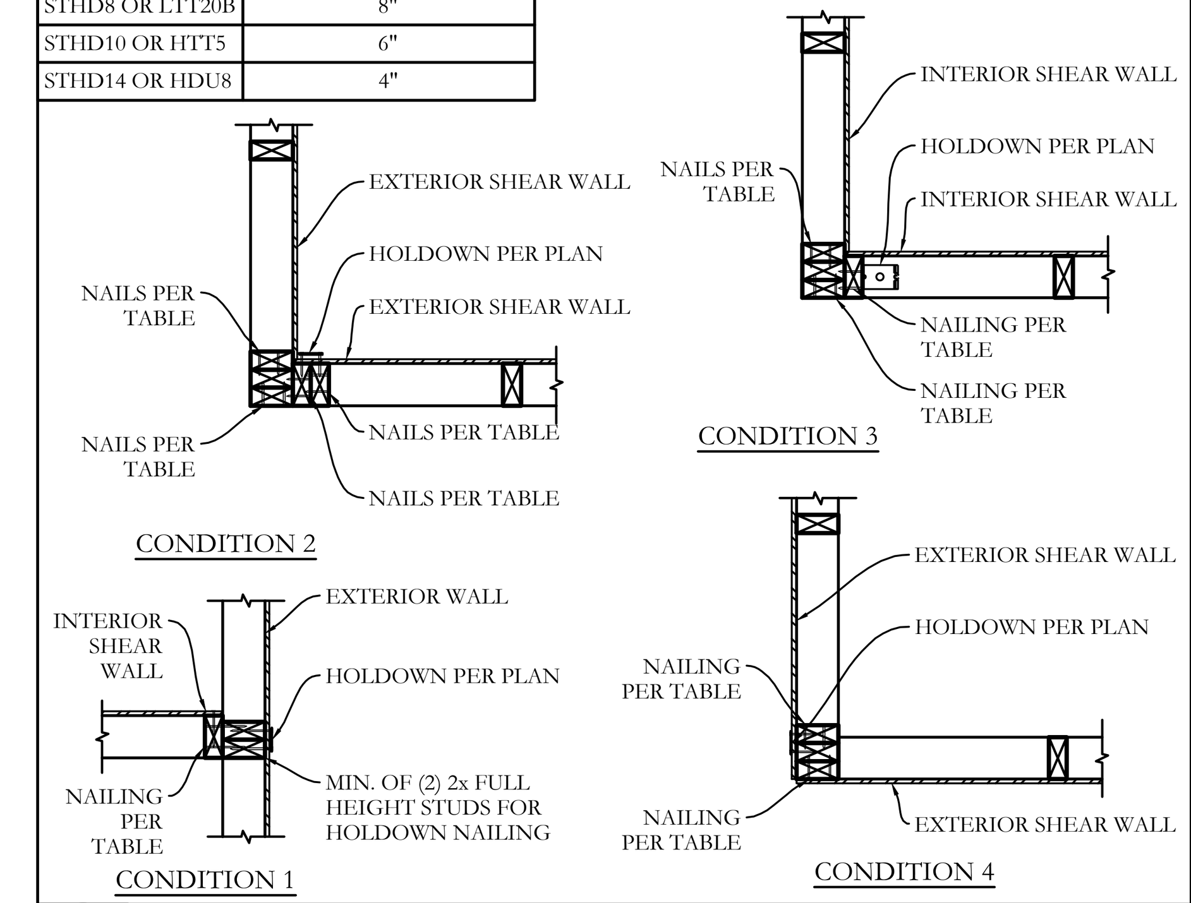
NOTE : A CS20 MAY BE SUBSTITUTED WITH A TS22 STRAP.

NOTE : WHERE NO STRAP IS SPECIFIED ON PLANS, A CS20 SHALL BE USED

STRAP	NUMBER OF NAILS AT EACH END
CS20	(16) 0.131" x 2 1/2" OR (14) 0.131" x 3"
CS16	(26) 0.131" x 2 1/2" OR (22) 0.131" x 3"
CMSTC16	(58) 0.131" x 3"

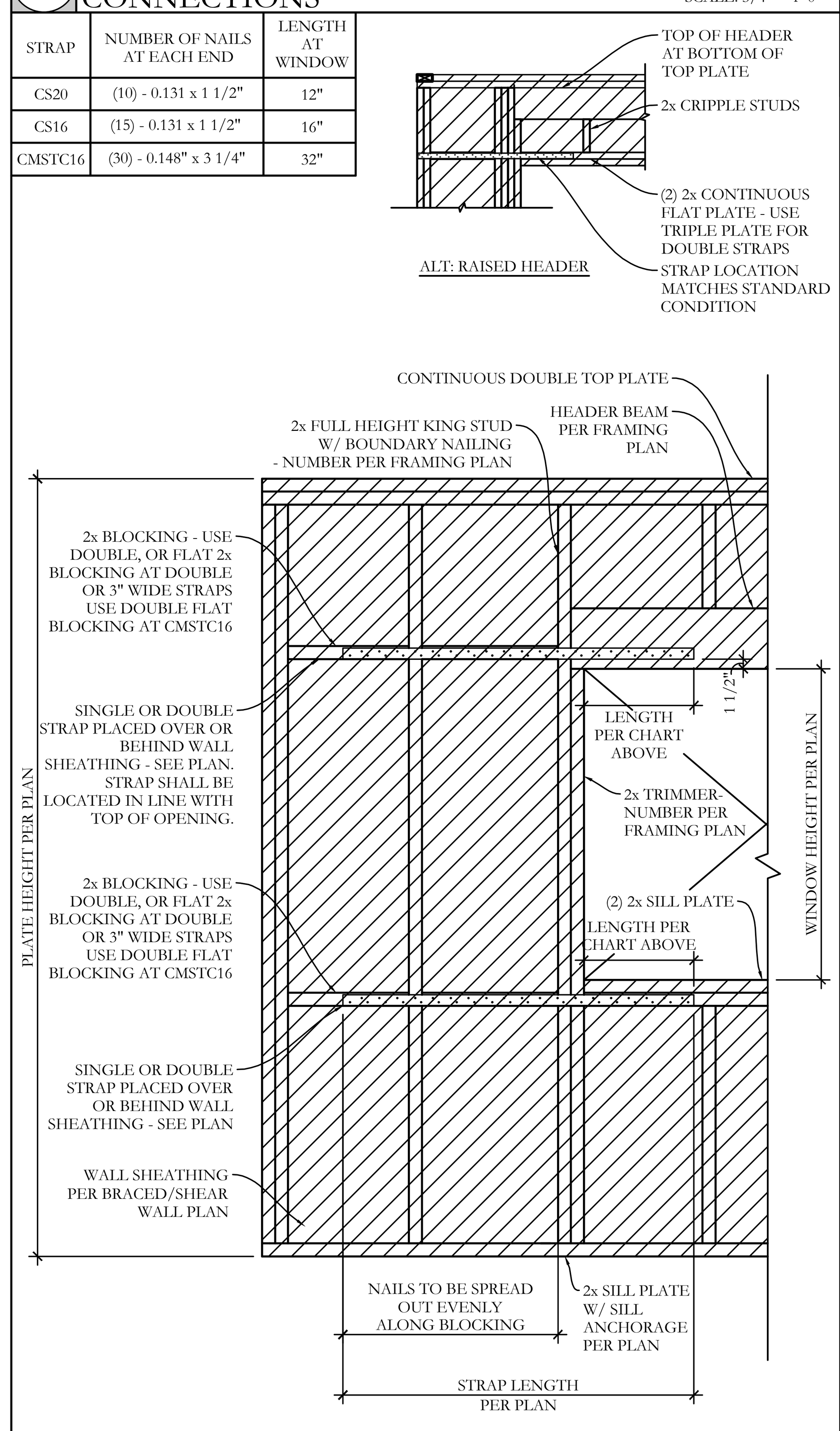
512 DRAG GIRDER TRUSS TO WALL CONNECTION
SCALE: 3/4" = 1'-0"

HOLDOWN	0.131" x 3" NAIL SPACING
STHD8 OR LTT20B	8"
STHD10 OR HTT5	6"
STHD14 OR HDU8	4"



531 HOLDOWN AT SHEAR WALL TO INTERSECTING WALL CONNECTION
SCALE: 3/4" = 1'-0"

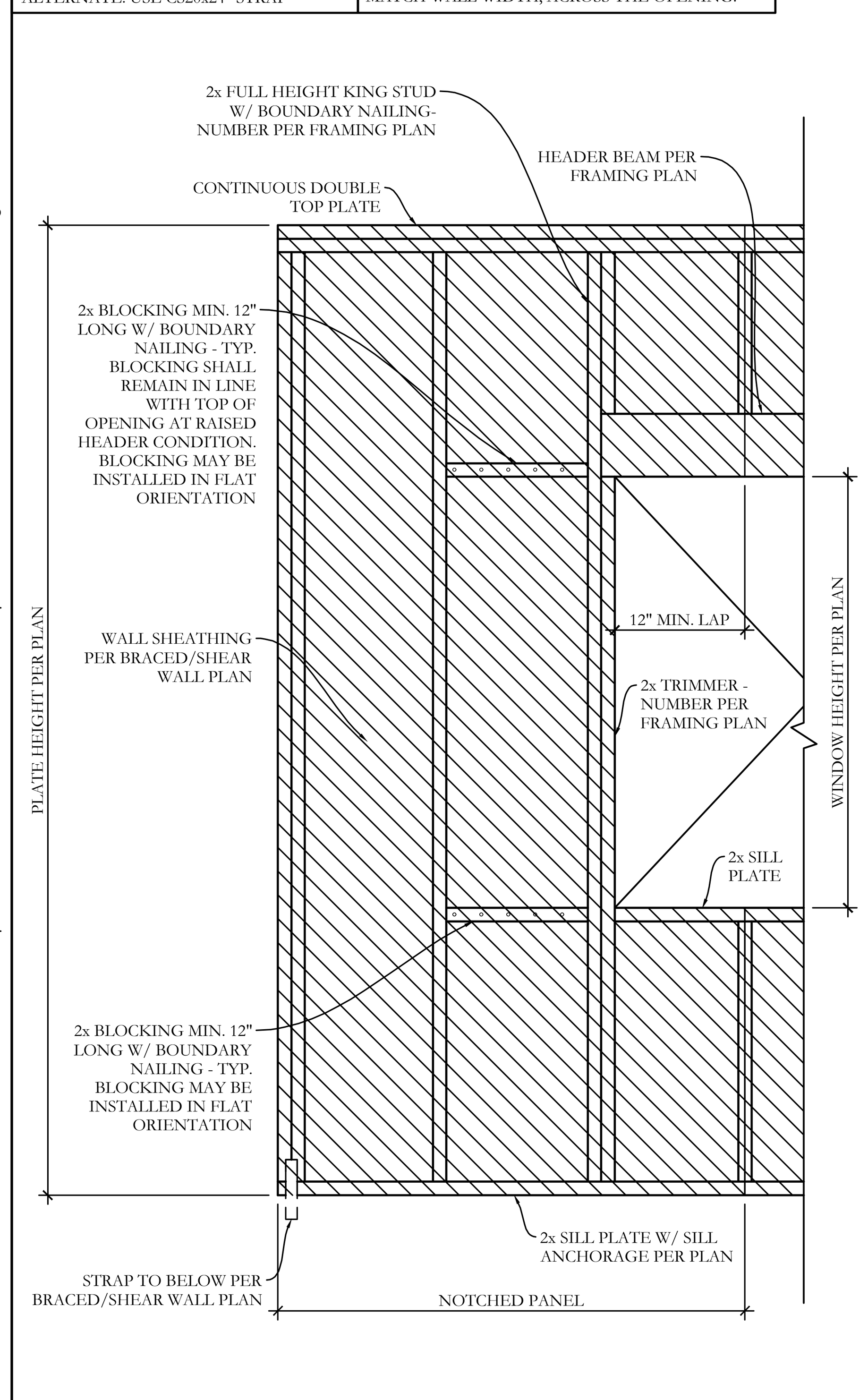
STRAP	NUMBER OF NAILS AT EACH END	LENGTH AT WINDOW
CS20	(10) - 0.131 x 1 1/2"	12"
CS16	(15) - 0.131 x 1 1/2"	16"
CMSTC16	(30) - 0.148" x 3 1/4"	32"



541 FORCE TRANSFER AROUND OPENING
SCALE: 3/4" = 1'-0"

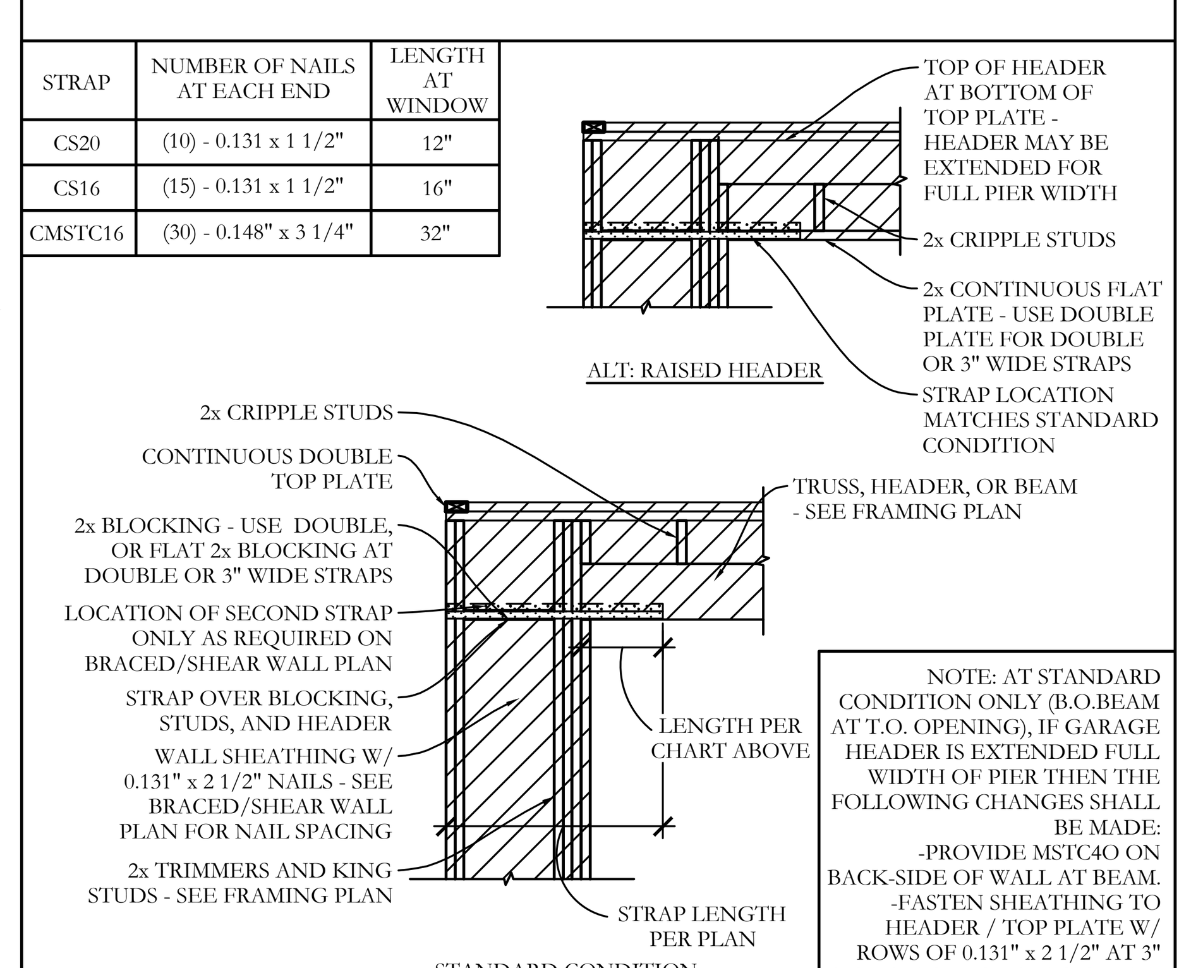
NOTE: WALL SHEATHING PANELS TO BE NOTCHED AS SHOWN WITH 12" MIN. EXTENSION EACH SIDE OF JAMB. ALTERNATE: USE CS20x24" STRAP

NOTE: HEADER MAY BE HELD UP AT TOP PLATE AS SHOWN IN DETAIL 604. IT SHALL BE REPLACED WITH A CONTINUOUS, FLAT 2x, WITH WIDTH TO MATCH WALL WIDTH, ACROSS THE OPENING.



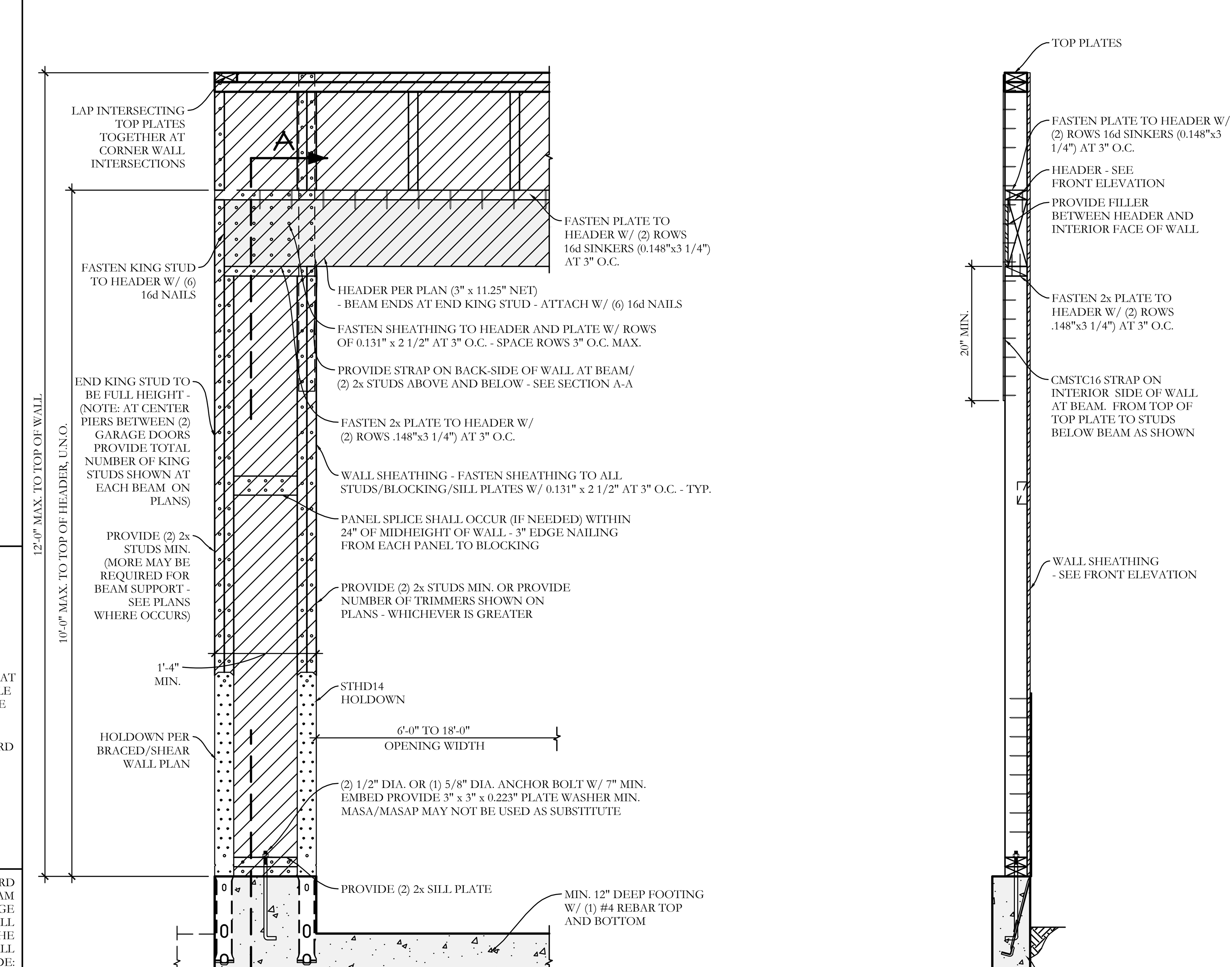
541.0 FORCE TRANSFER AROUND OPENING
NO STRAP
SCALE: 3/4" = 1'-0"

STRAP	NUMBER OF NAILS AT EACH END	LENGTH AT WINDOW
CS20	(10) - 0.131 x 1 1/2"	12"
CS16	(15) - 0.131 x 1 1/2"	16"
CMSTC16	(30) - 0.148" x 3 1/4"	32"



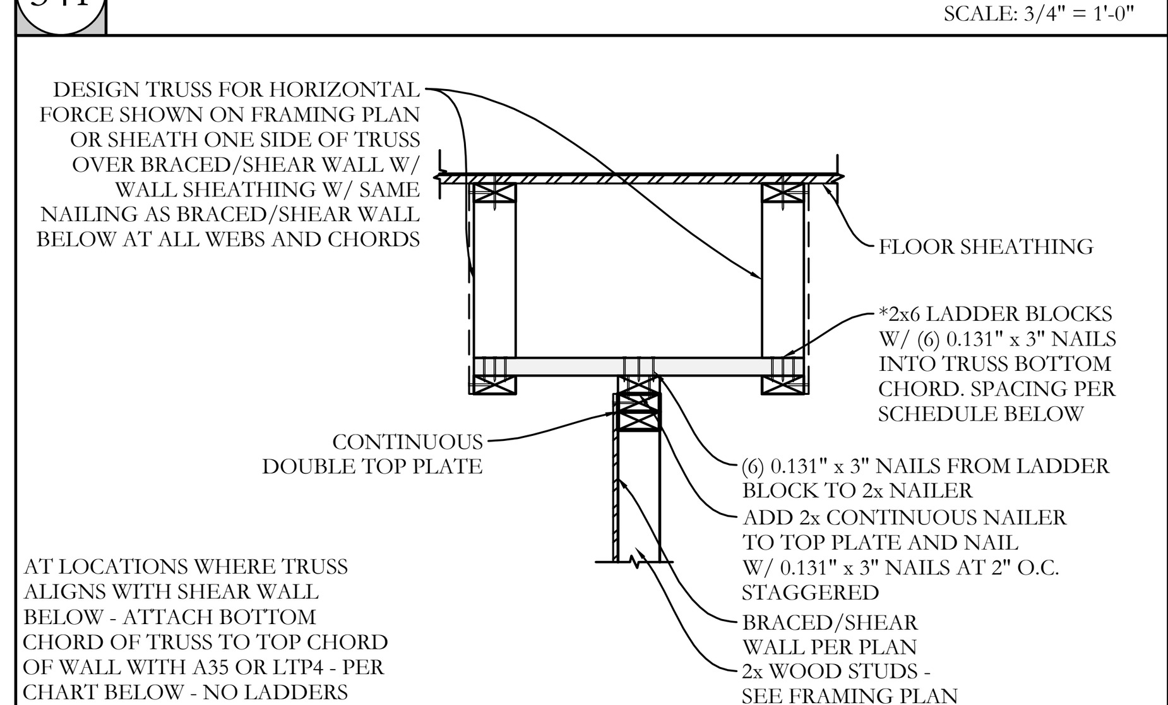
NOTE: AT STANDARD CONDITION ONLY (B.O.BEAM AT T.O. OPENING), IF GARAGE HEADER IS EXTENDED FULL WIDTH OF PIER THEN THE FOLLOWING CHANGES SHALL BE MADE: -PROVIDE MSTC40 ON BACK-SIDE OF WALL AT BEAM. -FASTEN SHEATHING TO HEADER / TOP PLATE W/ ROWS OF 0.131" x 2 1/2" O.C. - SPACE ROWS 3" O.C. MAX.

542 DRAG STRUT
SCALE: 3/8" = 1'-0"



HEADER SHOWN GRAPHICALLY AT TOP OF OPENING, HEADER MAY BE RAISED WITH TOP OF BEAM SET UNDER DOUBLE TOP PLATE. 10'-1" MAX. HEIGHT TO TOP OF BEAM IS STILL APPLICABLE.

546 PORTAL FRAME WITH HOLDOWNS APA PORTAL FRAME
SCALE: 3/4" = 1'-0"

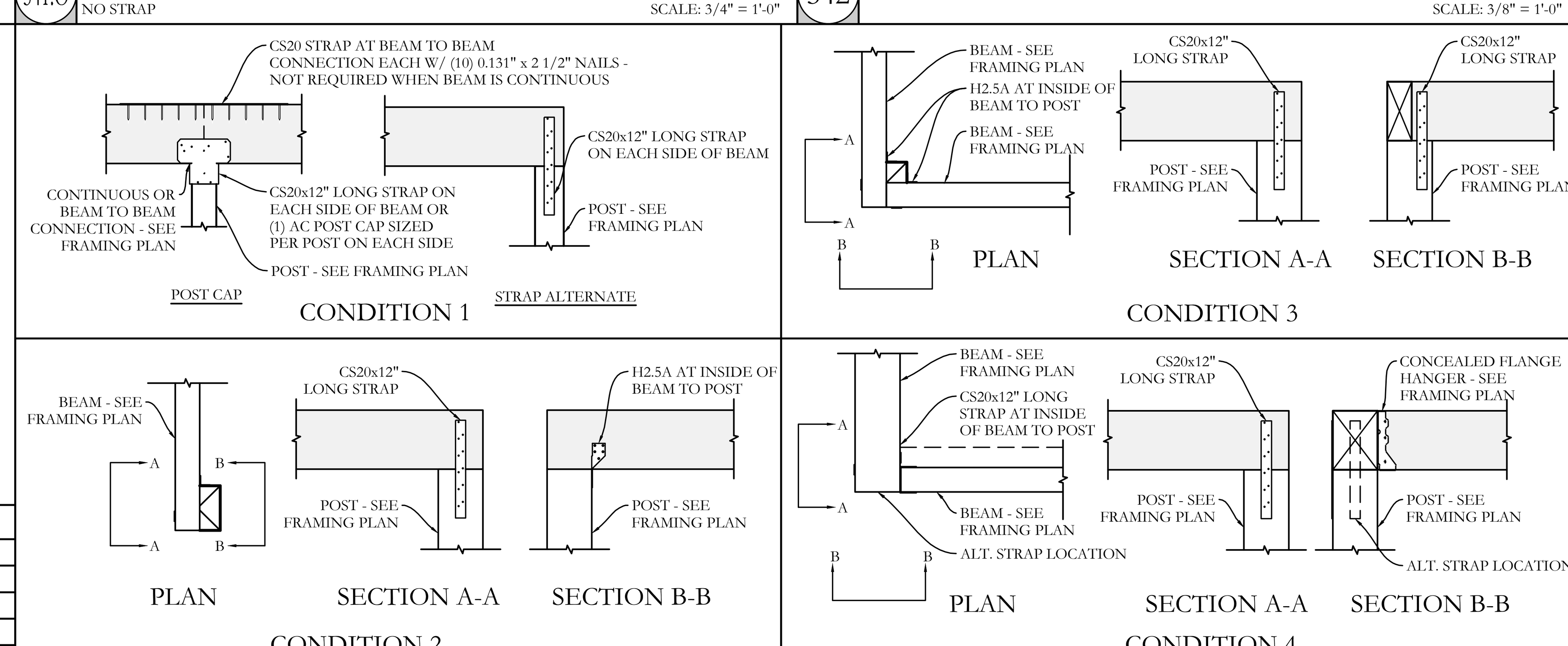


AT LOCATIONS WHERE TRUSS ALIGNS WITH SHEAR WALL BELOW - ATTACH BOTTOM CHORD OF TRUSS TO TOP CHORD OF WALL WITH A35 OR LTP4 - PER CHART BELOW - NO LADDERS BLOCKING REQUIRED

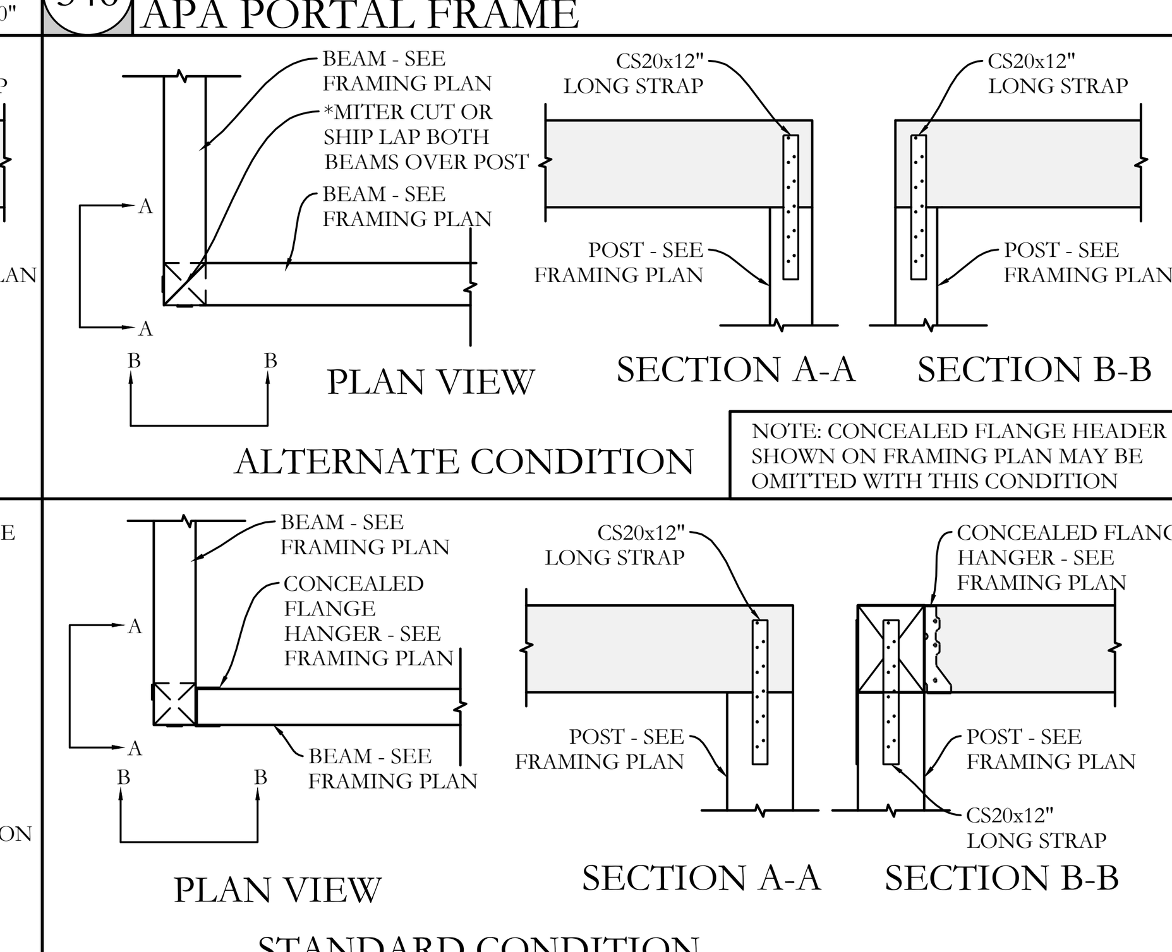
WALL TYPE BELOW	HARDWARE SPACING
◇3	16" O.C.
◇4	11" O.C.
◇5	8" O.C.
◇6	6" O.C.
◇7	5.5" O.C.

WALL TYPE BELOW	BLOCK SPACING
◇3	28" O.C.
◇4	20" O.C.
◇5	15" O.C.
◇6	12" O.C.
◇7	9" O.C.

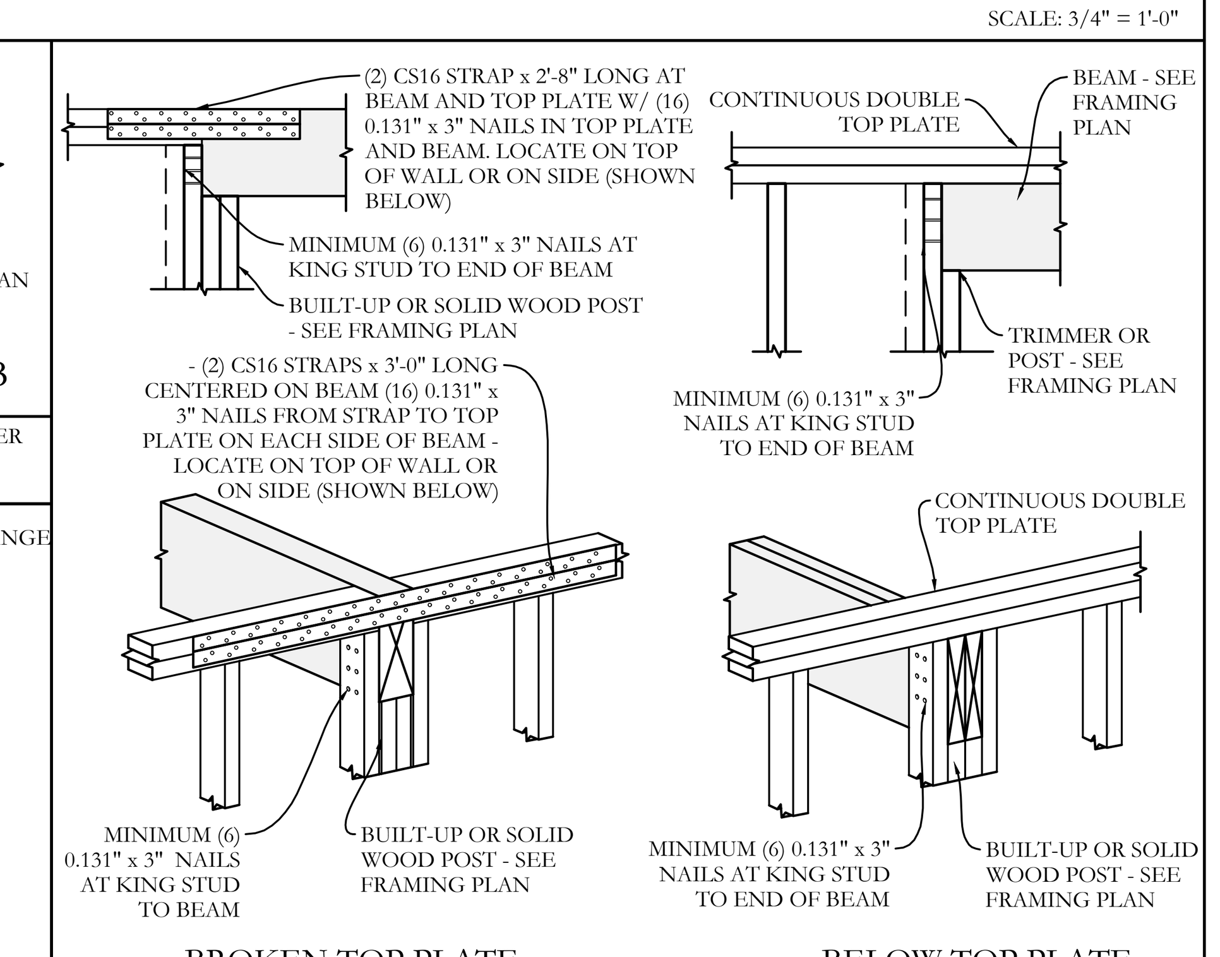
551 SHEAR TRANSFER AT PARALLEL FLOOR TRUSS(ES) TO BRACED/SHEAR WALL
SCALE: 3/4" = 1'-0"



601 BEAM AT POST CONNECTION
SCALE: 3/4" = 1'-0"



601.2 TWO BEAMS AT POST CONNECTION
SCALE: 3/4" = 1'-0"



602 BEAM AT WALL CONNECTION
SCALE: 3/4" = 1'-0"

FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602.867.2500 WWW.FELTENGROUP.COM

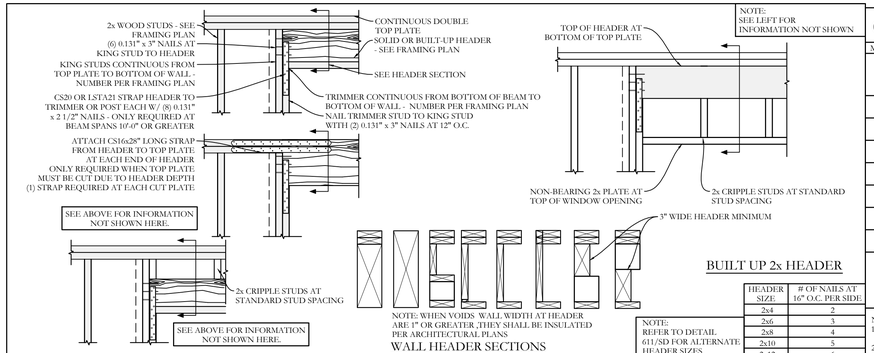
DR DEVELOPMENT

TITLE
STRUCTURAL DETAILS

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 04/28/2025
10/02/2024

CHECKED BY: J. MORGAN
DATE: 09/29/2024

LOT 1
SERIES
SUBDIVISION
MARTIN S.P.
KIRKLAND, WA
PLAN NUMBER
3372A
SHEET NUMBER
SD



NOTE: SEE LEFT FOR INFORMATION NOT SHOWN

BUILT UP 2x HEADER

HEADER SIZE:	# OF NAILS AT 16" O.C. PER SIDE
2x4	2
2x6	3
2x8	4
2x10	5
2x12	6

NOTE: REFER TO DETAIL 611/SD FOR ALTERNATE HEADER SIZES

NOTE: WHEN VOIDS WALL WIDTH AT HEADER ARE 1" OR GREATER, THEY SHALL BE INSULATED PER ARCHITECTURAL PLANS

WALL HEADER SECTIONS

604 TYPICAL WINDOW OR DOOR HEADER

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

(2) 2x HEM-FIR #2 TO GLB, GANG LAM (LVL) CONVERSION CHART

MAX. SPAN	(2) 2x4	(2) 2x6	(2) 2x8	(2) 2x10	(2) 2x12
ALL	4x4 DF #2 3 1/8" x 6" GLB 3 1/2" x 3 1/2" LVL	4x6 DF #2 3 1/8" x 6" GLB 3 1/2" x 3 1/2" LVL	4x8 DF #2 3 1/8" x 6" GLB 3 1/2" x 3 1/2" LVL	4x10 DF #2 3 1/2" x 3 1/2" LVL	4x12 DF #2
5'-3"				3 1/8" x 6" GLB	3 1/8" x 7 1/2" GLB
7'-3"				3 1/2" x 5 1/2" LVL	3 1/2" x 7 1/4" LVL
8'-3"				3 1/8" x 6" GLB	3 1/8" x 7 1/2" GLB
10'-3"				3 1/2" x 7 1/4" LVL	3 1/2" x 7 1/4" LVL
11'-3"				3 1/8" x 6" GLB	3 1/8" x 7 1/2" GLB
14'-3"				3 1/8" x 7 1/4" LVL	3 1/2" x 9 1/2" LVL
20'-3"				3 1/8" x 7 1/2" GLB	3 1/8" x 9" GLB
				3 1/2" x 7 1/2" GLB	3 1/2" x 9 1/2" LVL
				3 1/8" x 9" GLB	3 1/8" x 10 1/2" GLB
				3 1/2" x 9 1/2" LVL	3 1/2" x 9 1/2" LVL

NOTES:
1. GLU-LAM BEAMS ARE BASED ON THE FOLLOWING PROPERTIES FOR 24F-V4:
Fb = 2400 psi, Fv = 240 psi, AND E = 1,800,000 psi.
2. LAMINATED VENEER LUMBER (LVL) BEAMS ARE BASED ON 1.5E.

611 HEADER CONVERSION CHART

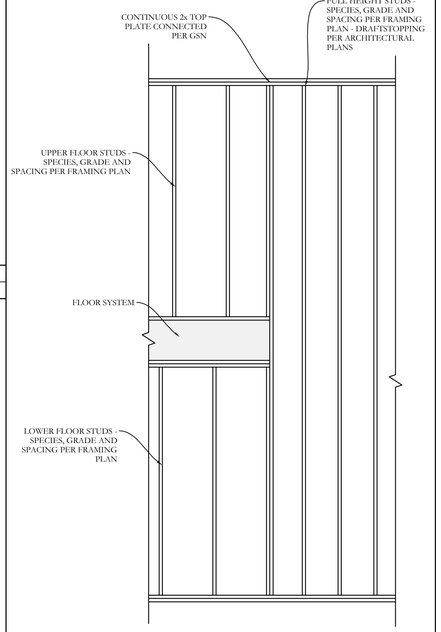
SCALE: 3/4" = 1'-0"

SIMPSON STRONG-TIE	USP
A34	MP34
A35	MP41
ABU44	PAU44
ABU66	PAU66
AC4	PBS44
ACE4	PBE544
CMSTC16	CMSTC16
CS16	RS150
CS20	RS250
DTC	TR2
EPCZ (44)	EPCM44-T2
H1	RT15
H2.5A	RT7A
H2.5T	RT7AT
HDQ8-SDS3	PHD8
HDU8-SDS2.5	PHD8
HGUS26	THDH26
HGUS26-2	THDH26-2
HGUS26-3	THDH26-3
HGUS28-2	THDH28-2
HGUS28-3	THDH28-3
HGUS210-3	THDH210-3
HHUS210-2	THD210-2
HTS16	HTW16
HTC4	HTC4 (60% O.C. SPACING)
HTT4	HTT45 (MIN.)
HTT5	HTT45 (MAX.)
HUS26	HUS26
IT5	IT5
LSS0	MP5

SIMPSON STRONG-TIE	USP
LS70	MP7
LSSU210	LSSH210
LSTA12	LSTA12
LSTA18	LSTA18
LSTA24	LSTA24
LSTHD8	Not Allowed
THJA26	HHC26/ HJC26
LTP4	MP4F
LTT20B	DTB-TZ
LUS24	JUS24
LUS26	JUS26
LUS28	JUS28
MA5A	FAA1 (75% O.C. SPACING AT SILL ANCHORAGE)
MSTC28	MSTC28
MTHMQ.SDS	HJHC28
RSP4	RSPT4
SSP	RSPT6
ST12	ST12
ST6224	KST224
STHD10	Not Allowed
STHD14	Not Allowed
SUR/L26	SKH26 R/L
TBE4	SBP4
THA29	MSH29
THA213	MSH213
THA413	MSH413
THA418	MSH418
THA422	MSH422IF
THJA26	HHC26/ HJC26
TS22	KTS24

612 CONNECTOR CONVERSION CHART

SCALE: N.T.S.



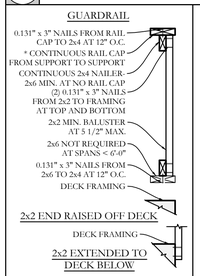
605 VOLUME (BALLOON FRAME) WALL

SCALE: 3/8" = 1'-0"

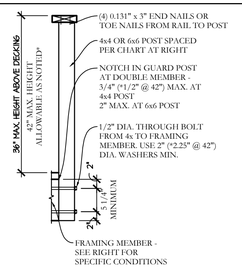
621 GUARDRAIL

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

GUARDRAIL

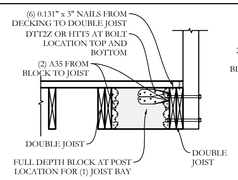


RAIL CAP	MAXIMUM SPAN BETWEEN SUPPORTS
NO RAIL CAP	6'-0"
2x4	6'-11"
2x6	11'-2"
MANUFACTURED BOARD	REFER TO MFR FOR REQUIRED SPACING



GUARD POST - SIDE VIEW

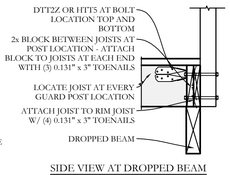
NOTE: POST MAY BE SET ON INSIDE OF FRAMING MEMBER - ALL OTHER CONNECTIONS REMAIN THE SAME



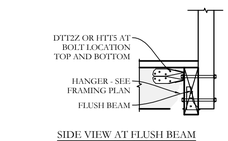
SIDE VIEW AT PARALLEL JOIST GUARD POST ATTACHMENT

SIMILAR AT GUARDRAIL POSTS AT STAIRS - STRINGERS ILO JOISTS

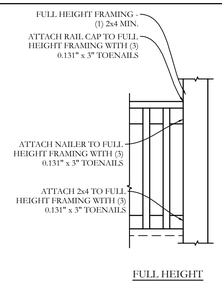
GUARD POST SUPPORT CONDITION



SIDE VIEW AT DROPPED BEAM GUARD POST ATTACHMENT



SIDE VIEW AT FLUSH BEAM GUARD POST ATTACHMENT

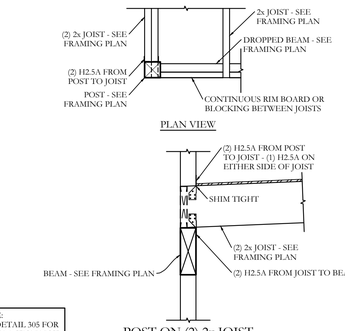


FULL HEIGHT WALL/COLUMN

FULL HEIGHT WALL/COLUMN SUPPORT CONDITION

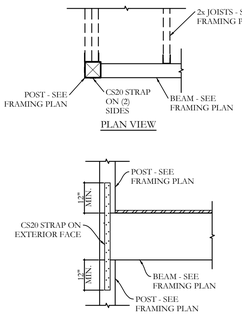
625 POST AT DECK CONNECTION

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



POST ON (2) 2x JOIST

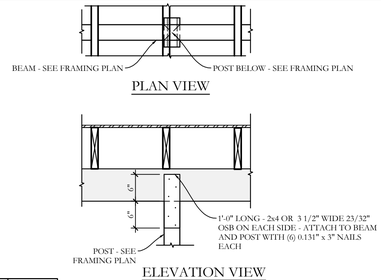
NOTE: SEE DETAIL 305 FOR INFORMATION NOT SHOWN HERE



POST ON BEAM

651 CRAWLSPACE BEAM AT POST CONNECTION

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



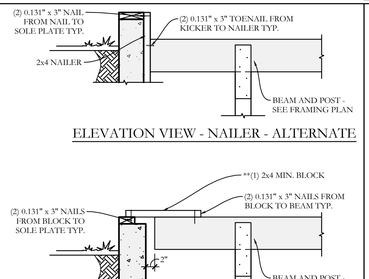
POST SIZE	MAXIMUM HEIGHT
(2) 2x	5'-0"
4x	9'-0"
6x AND GREATER	12'-0"

NOTE: WHERE SITE SPECIFIC CONDITIONS CAUSE HEIGHTS ABOVE MAXIMUM ALLOWABLE, CONTACT ENGINEER FOR ALTERNATE POST SIZE.

NOTE: FROM GRADE, PROVIDE MINIMUM 12" OF CLEARANCE TO BOTTOM OF BEAM AND 18" CLEARANCE TO BOTTOM OF JOISTS. WHERE CLEARANCE IS NOT PROVIDED, USE PRESSURE TREATED OR NATURALLY DURABLE WOOD

652 CRAWLSPACE BEAM AT END

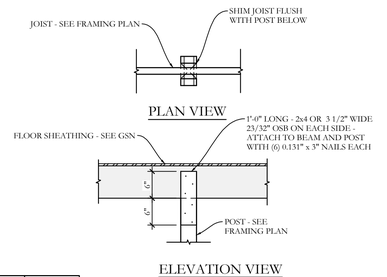
SCALE: 3/4" = 1'-0"



** WHERE FIRST JOIST ABOVE IS LOCATED WITHIN 6" OF END OF BEAM, BLOCK MAY BE OMITTED.

653 CRAWLSPACE JOIST AT POST CONNECTION

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



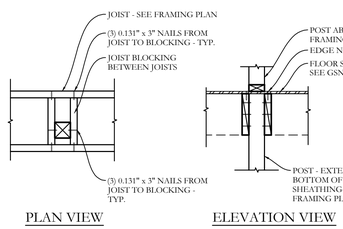
POST SIZE	MAXIMUM HEIGHT
(2) 2x	5'-0"
4x	9'-0"
6x AND GREATER	12'-0"

NOTE: WHERE SITE SPECIFIC CONDITIONS CAUSE HEIGHTS ABOVE MAXIMUM ALLOWABLE, CONTACT ENGINEER FOR ALTERNATE POST SIZE.

NOTE: PROVIDE MINIMUM 18" OF CLEARANCE BETWEEN BOTTOM OF JOIST AND TOP OF FINISHED GRADE

654 CRAWLSPACE POST AT DECK CONNECTION

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

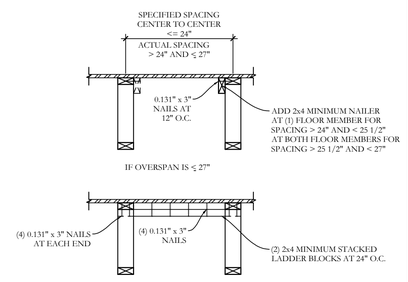


POST SIZE	MAXIMUM HEIGHT
(2) 2x	5'-0"
4x	9'-0"
6x AND GREATER	12'-0"

NOTE: WHERE SITE SPECIFIC CONDITIONS CAUSE HEIGHTS ABOVE MAXIMUM ALLOWABLE, CONTACT ENGINEER FOR ALTERNATE POST SIZE.

812 FLOOR SHEATHING OVERSPAN

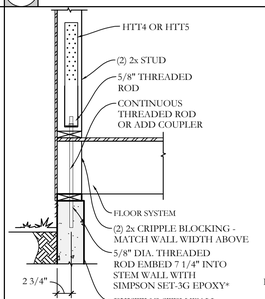
SCALE: 3/4" = 1'-0"



NOTE: IF OVERSPAN EXCEEDS 30" FLOOR MEMBERS SHALL BE MOVED OR AN ADDITIONAL FLOOR MEMBER SHALL BE INSTALLED.

832 HOLDOWN RETROFIT - EPOXY RETROFIT FOR ALL LSTHD8

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

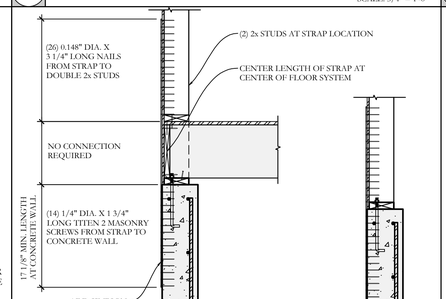


AT ENDWALL AND CORNER CONDITIONS - LOCATE THREADED ROD 4 1/2" OR MORE FROM CORNER/END OF WALL

*WHEN CONCRETE TEMPERATURE IS EXPECTED TO DROP BELOW 40 DEGREES IN UP TO 8 DAYS FOLLOWING INSTALL - SUBSTITUTE SET-3G WITH AT-XP AND CHANGE EMBED DEPTH TO 5 1/2"

835 RETROFIT HOLDOWN AT WALL 4220# CAPACITY

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



FELTENGROUP
ARCHITECTURE | ENGINEERING | FORENSICS
PHONE: 602.867.2600 WWW.FELTENGROUP.COM

IDR DEVELOPMENT

TITLE: STRUCTURAL DETAILS

JACOB E. MORGAN
STATE OF WASHINGTON
54005
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/02/2025

10/02/2024

CHECKED BY: J. MORGAN DATE: 09/29/2024

LOT 1

SERIES

SUBDIVISION: MARTIN S.P. KIRKLAND, WA

PLAN NUMBER: 3372A

SHEET NUMBER: SD