GENERAL STRUCTURAL NOTES (The following apply unless shown otherwise on the plans)

CRITERIA

- 1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE 2018 INTERNATIONAL BUILDING CODE (IBC 2018 EDITION).
- 2. DESIGN LOADING CRITERIA

ROOF LIVE LOAD	25 PSF (SNOW)
FLOOR LIVE LOAD (RESIDENTIAL)	40 PSF
DECK LIVE LOAD	
BASIC WIND SPEED (3-SEC GUST) 1	10 MPH, MRI 50YR = 85 MPH, EXPOSURE C, Kzt = 1.3, I = 1.0
SEISMIC	SITE CLASS "D", R=6.0, Ss=1.473, S1=0.508, I = 1.0

- 3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
- 5. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
- 6. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.

GEOTECHNICAL

7. FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED EARTH AT LEAST 18" BELOW ADJACENT FINISHED GRADE. UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS ABOVE.

BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE. ALL VALUES ARE ASSUMED.

ASSUMED ALLOWABLE SOIL PRESSURE......1500 PSF

CONCRETE

8. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH IBC SECTION 1905 AND ACI 301. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF fc=3000 PSI (FOR WEATHERING PURPOSES AND NOT STRENTH, MIN 2,500 PSI FOR STRENGTH) AND MIX SHALL HAVE A MAXIMUM ABSOLUTE WATER: CEMENT RATIO OF 0.58 FOR NON-AIR ENTRAINED CONCRETE AND 0.46 FOR AIR-ENTRAINED CONCRETE CONCRETE SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. AIR ENTRAINED CONCRETE SHALL BE USED AT ALL EXTERIOR AND UNHEATED EXPOSURES.

THE MINIMUM AMOUNTS OF CEMENT AND MAXIMUM AMOUNTS OF WATER MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE CONCRETE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH SBC 1905.3. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY WITH CONTRACT DOCUMENTS. CONTRACTOR OR SUPPLIER MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, AND C618. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH TABLE 1904.2.1 OF INTERNATIONAL BUILDING CODE.

CEMENT CONTENT MAY BE REDUCED 15% - 25% BY VOLUME AND REPLACED WITH FLY ASH SHALL NOT MAKE UP MORE THAN 35% OF THE TOTAL CEMENTITIOUS CONTENT. FLY ASH SHALL COMPLY WITH ASTM C618 OR AASHTO M295.

- 9. A MINIMUM OF 80% OF REINFORCING STEEL SHALL COME FROM RECYCLED MATERIALS. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, Fy=60,000 PSI. EXCEPTIONS: ANY BARS #5 AND SMALLER CAN BE GRADE 40, Fy=40,000 PSI.
- 10. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318, CLASS B. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

- 11. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE IN ACCORDANCE WITH IBC SECTION 1907.7.

WOOD

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

2x MEMBERS: HEM-FIR #2 OR BETTER

2x STUDS AND PLATES: HEM-FIR STUD GRADE OR BETTER

13. STRUCTURAL WOOD PANEL SHEATHING (PLYWOOD) SHALL BE APA RATED PANELS WITH EXPOSURE 1 CLASSIFICATION.

FLOOR SHEATHING SHALL BE 3/4" T&G MINIMUM, W/ SPAN RATING 48/24 (MIN). ROOF SHEATHING SHALL BE 5/8" (NOMINAL) WITH SPAN RATING 24/16. WALL SHEATHING SHALL BE 1/2" WITH SPAN RATING 24/0.

REFER TO WOOD FRAMING NOTES BELOW FOR TYPICAL NAILING REQUIREMENTS.

- 14. ALL WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE OR (2) LAYERS OF 15# ASPHALT IMPREGNATED BUILDING PAPER OR ONE LAYER OF 30# ASPHALT IMPREGNATED BUILDING PAPER SHALL BE PROVIDED BETWEEN UNTREATED WOOD AND CONCRETE OR MASONRY.
- 15. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NO. C-2015. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICBO APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTNERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR

UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

16. WOOD FASTENERS

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

SIZE LENGIN	DIAIVIETER	EQUIV STAPLE	MIIN LEING I
8d 2-1/2"	0.131"	13 GA.	1-3/4"
10d 3"	0.148"	12 GA.	1-3/4"
16d 3-1/2"	0.162"	NO EQUIV	NO EQUIV

IF CONTRACTOR PROPOSES THE USE OF ALTERNATE NAILS OR STAPLES, SHALL BE SUBMIT NAIL SPECIFICATIONS TO THE ENGINEER (PRIOR TO CONSTRUCTION) FOR REVIEW AND APPROVAL.

- B. NAILS AND STAPLES PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.
- 17. LAMINATED STRAND LUMBER (LSL) BOARD SHALL BE MANUFACTURED UNDER A PROCESS APPROVED BY THE NATIONAL RESEARCH BOARD. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE NATIONAL RESEARCH BOARD NUMBER, AND THE QUALITY CONTROL AGENCY. ALL PARALLEL STRAND LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH NER-292 GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF

Fb=2325 PSI, E=1550 KSI, Fv=310 PSI (FOR 1.55E MEMBERS)

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

18. PARALLEL STRAND LUMBER (PSL) SHALL BE MANUFACTURED UNDER A PROCESS APPROVED BY THE NATIONAL RESEARCH BOARD. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE NATIONAL RESEARCH BOARD NUMBER, AND THE QUALITY CONTROL AGENCY. ALL PARALLEL STRAND LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH NER-292 GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER.

Fb=2900 PSI, E=2000 KSI, Fv=290 PSI (FOR 2.0E MEMBERS)

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

19. PREFABRICATED PLYWOOD WEB JOISTS SHALL BE DESIGNED BY THE MANUFACTURER FOR THE SPANS AND CONDITIONS SHOWN ON THE PLANS AND SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S PUBLISHED SPECIFICATIONS. ALL NECESSARY BRIDGING, BLOCKING, BLOCKING PANELS, STIFFENERS, ETC., SHALL BE DETAILED AND FURNISHED BY THE MANUFACTURER. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. DESIGN SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON. PERMANENT AND TEMPORARY BRIDGING SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S SPECIFICATIONS.

DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE TRUS-JOIST CORPORATION. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUED FOR ITEMS SHOWN PROVIDED THEY HAVE I.C.B.O. APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.

- 20. WOOD FRAMING NOTES-THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:
- A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE INTERNATIONAL BUILDING CODE. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLE 2304.9.1 OF THE IBC. UNLESS OTHERWISE NOTED, ALL NAILS SHALL BE COMMON. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

WOOD (cont)

B. WALL FRAMING: ALL NEW STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 2x4 STUDS @ 24" O.C. AT EXTERIOR WALLS. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS. TWO 2x8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED.

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

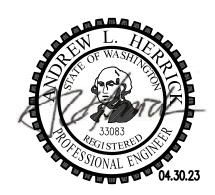
ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS @ 12" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS (WITH 7" MINIMUM EMBEDMENT) @ 4'-0" O.C. UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH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

C. ROOF FRAMING: UNLESS OTHERWISE NOTED ON THE PLANS, PLYWOOD ROOF SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED WITH 8d NAILS @ 6" O.C. TO FRAMED PANEL EDGES AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" O.C. TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOFSHEATHING EDGES. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING.

RENOVATION

21. DEMOLITION: VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION. PROVIDE ADEQUATE SHORING AND BRACING OF STRUCTURAL MEMBERS, EXISTING CONSTRUCTION AND SOIL EXCAVATIONS AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCES. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. LIMIT CONSTRUCTION LOADING, INCLUDING DEMOLITION DEBRIS, ON EXISTING FLOOR SYSTEMS TO 20 PSF. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND LOCATION OF MEMBERS PRIOR TO CUTTING ANY OPENINGS.

IN AREAS OF RENOVATION INSPECT EXISTING FRAMING MEMBERS FOR SIGNS OF DRY-ROT DAMAGE OR INSECT INFESTATION. REPORT ALL DRY-ROT DAMAGE TO THE ENGINEER AND OWNER. REPORT ALL INSECT INFESTION TO ENGINEER AND OWNER.



sliderule

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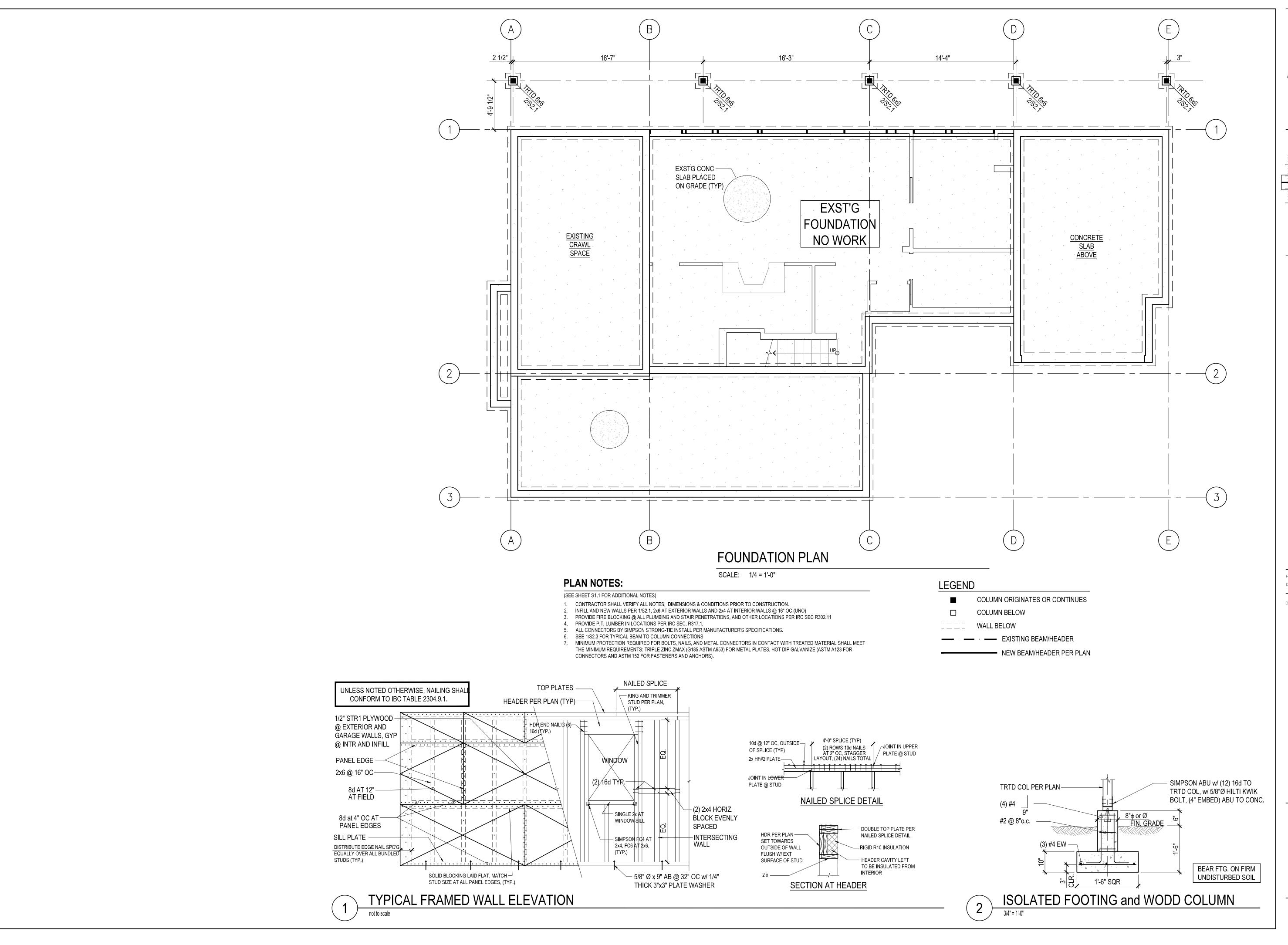
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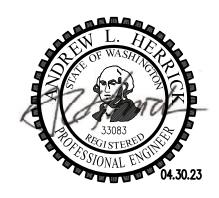
PROJECT MANAGER: DRAWN BY:

04.30.23

PERMIT

Structural Notes





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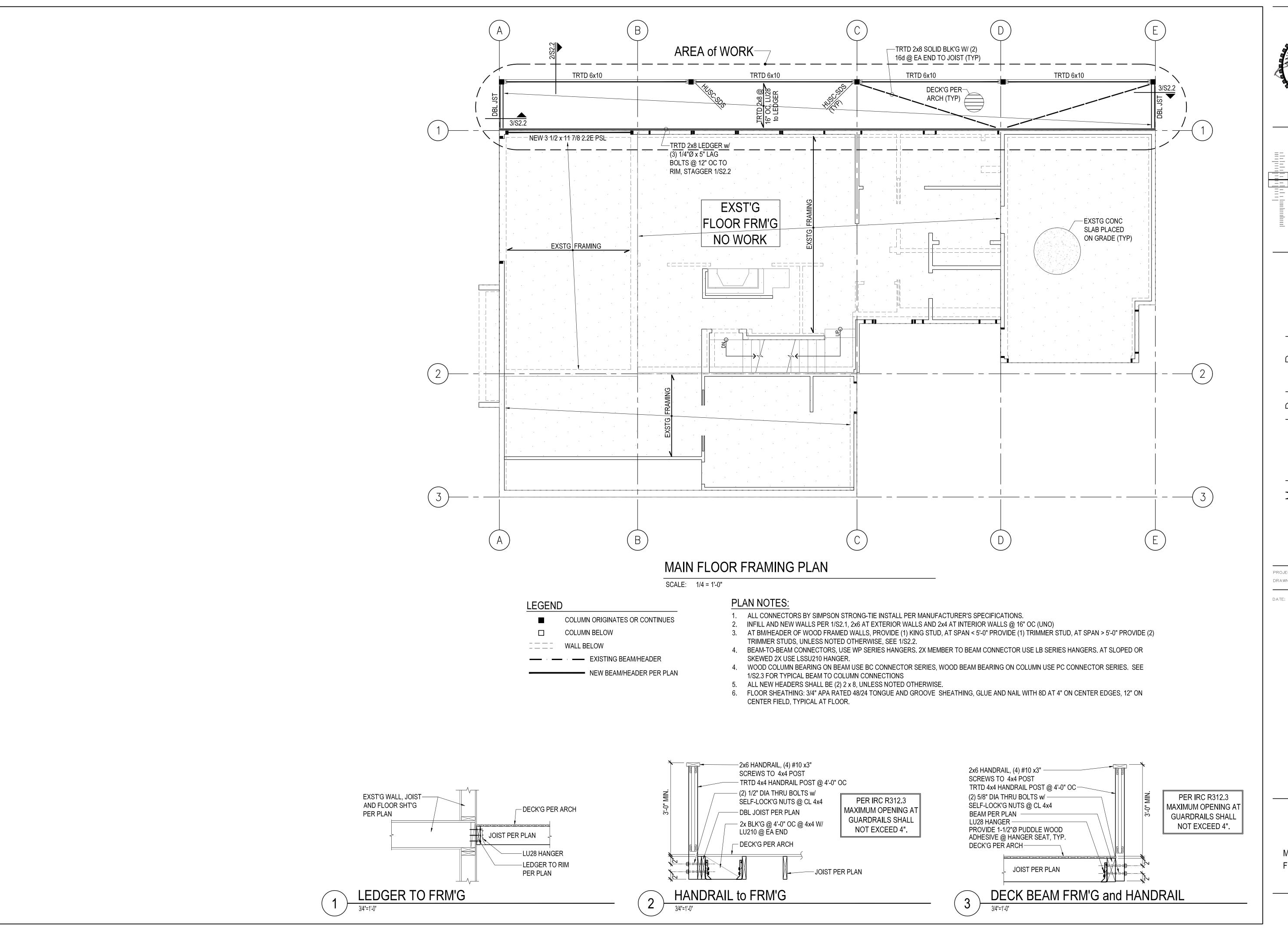
Malcom and Debra Buxton
Primary Suite Addition and Remodel

PROJECT MANAGER: AH
DRAWN BY: ta

DATE: 04.30.23

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Foundation Plan





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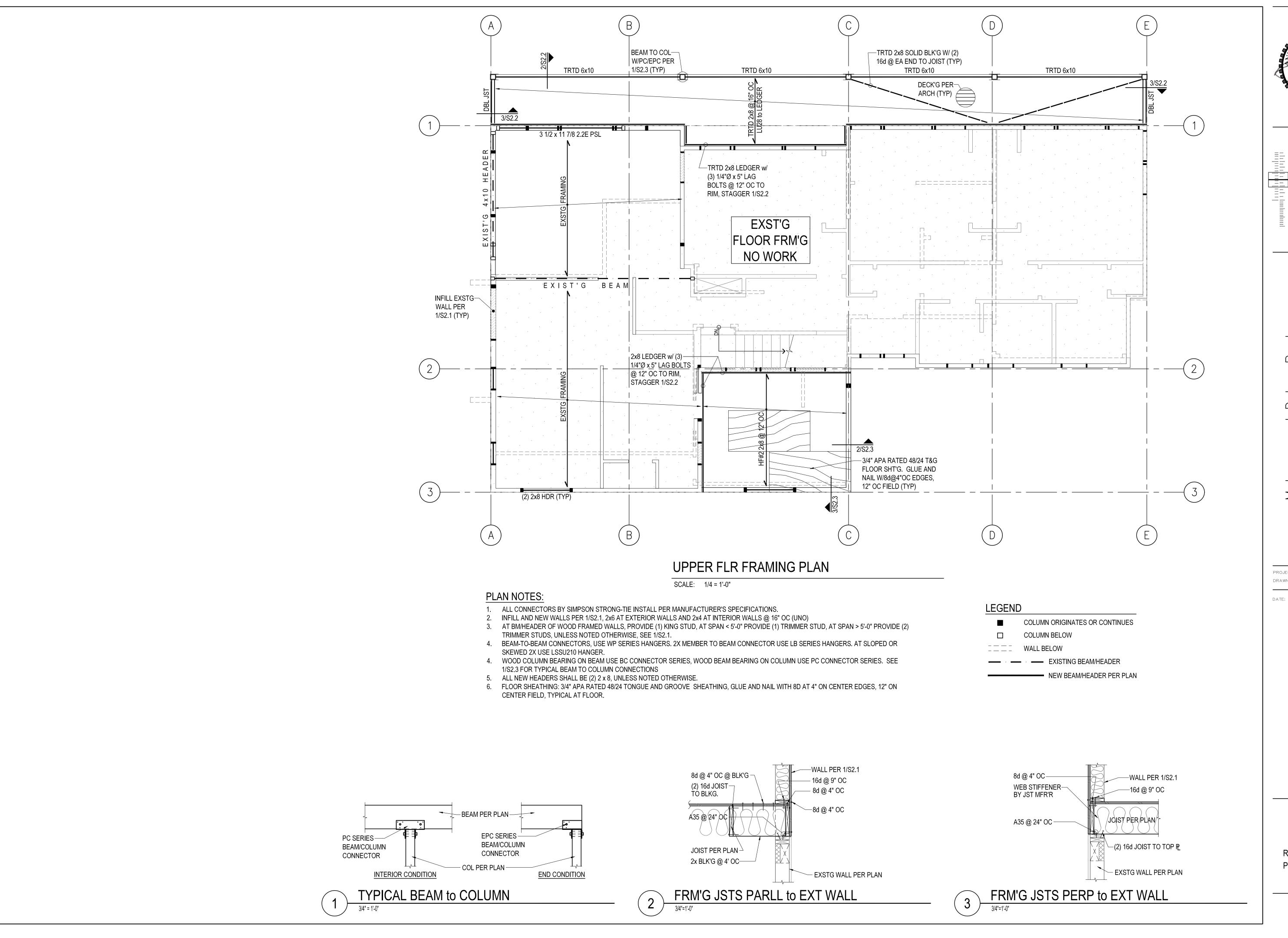
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Primary Suite Addition and Remodel

PROJECT MANAGER: AH
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04.30.23

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Main Floor Framing PLan





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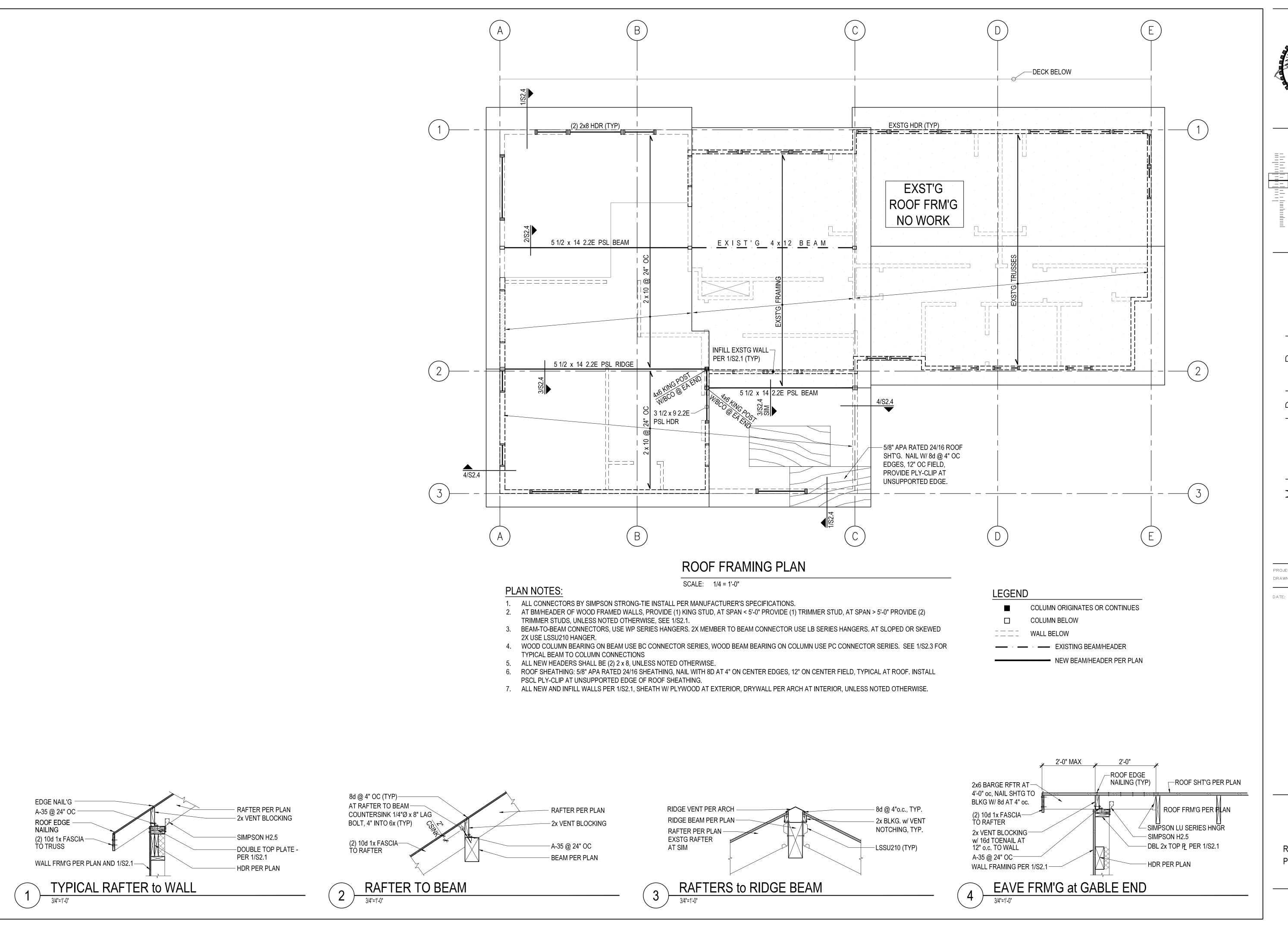
Malcom and Debra Buxton
Primary Suite Addition and Remodel

PROJECT MANAGER: AH
DRAWN BY: ta

DATE: 04.30.23

PERMIT SUBMITTAL

Roof Framing Plan



L. H. C. WASHINGTON WA

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Primary Suite Addition and Remodel

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DATE: 04.30.23

PERMIT Submittal

Roof Framing Plan