

Project Summary

Project Scope
New two-family dwelling and associated site work on newly platted undeveloped lot.

Site Data
Street Address: **See Plot Plan**

Neighborhood: **See Plot Plan**

Legal Description: **See Plot Plan**

Zoning: **See Plot Plan**

Minimum setbacks: **See Plot Plan**

Maximum height: 2 1/2 stories / 35'

Maximum driveway: 3-car garage = 32'

Code Authority:
City of Lee's Summit, MO

Applicable Codes:
2018 IRC, 2018 IECC, 2018 IBC, 2018 Existing Building Code, and local amendments.

Building Code Summary

- 2018 International Residential Code (IRC)**
- 3 - Building Planning**
- 301 Design Criteria
Wind, Seismic, Snow Loads: **See Structural.**
Live & Dead Loads: **See Structural.**
- 302 Fire Resistant Construction
- 302.1 Exterior Walls > 5': 0 Hours.
- 302.6 Dwelling/Garage Separation:
From residence / attic: 1/2" gyp board
From habitable rooms above: 5/8" Type X gyp board
Structure supporting separating floor/ceiling: 1/2" gyp board
Garages <3' from dwelling unit on same lot: 1/2" gyp board
- 302.7 Under stair protection: 1/2" gyp board
- 302.9 Wall and ceiling finishes: Flame spread index < 200; smoke developed index < 450.
- 302.10 Insulation, vapor retarders: Flame spread index < 25; smoke developed index < 450.
- 302.11 Fireblocking required between stories and between top story and roof.
- 302.12 Draftstopping required where concealed space exceeds 1,000 SF; 1/2" gyp board or equivalent.
- 308 Glazing in doors, showers, railings, transoms, skylights shall be safety glazing per code.
- 309 Garage floor shall slope to a drain or to the vehicle entrance.
- 310 Basements, habitable attics and sleeping rooms shall have at least one approved emergency escape and rescue opening. Sill height max 44"; minimum clear opening 5.7 SF; minimum clear opening height 24"; minimum clear opening width 20".
- 310.2 Window wells: minimum horizontal area 9 SF; minimum projection and width 36"; permanent ladder required if depth > 44".
- 311 Means of Egress
- 311.2 At least one doorway side-hinged 32" minimum clear opening, with inside and outside landings minimum 36" in direction of travel. Outdoor landing elevation no more than 7 3/4" below top of threshold.
- 311.6 Hallways minimum width 36".
- 311.7 Stairways minimum width 36"; minimum headroom 80"; maximum riser 7 3/4"; minimum tread 10"; nosing minimum 3/4" & maximum 1 1/4"; railing on at least one side; railing height 34" - 38" above nosing.
- 312 Window fall protection is required at windows where sill is > 72" above grade and < 24" above floor.
- 314 Smoke alarms required in each sleeping room, outside each group of sleeping rooms, and on each additional story, including basements and habitable attics, but not in uninhabitable attics nor crawl spaces. Smoke alarms shall be hard-wired and interconnected per code.
- 315 Carbon monoxide alarms required outside each group of sleeping rooms in dwellings with fuel-fired appliances or attached garage.
- 316 Foam plastics shall comply with R316. Thermal barrier minimum 1/2" gyp board.
- 317 Wood decay protection required
- In crawl space for joists < 18" above exposed ground and girders < 12" above exposed ground.
 - All wood framing in contact with concrete or masonry and < 8" above grade.
 - Sills and sleepers on concrete on masonry
 - Wood siding or sheathing < 6" above grade or < 2" above concrete paving
 - Wood framing supporting water-permeable decking
- 318 Termite protection required per R318.
- 4 thru 9 – Foundations, Floors, Walls, Roofs**
See Structural Notes and Framing Plans for joists, rafters, species & grade.
- 11 – Energy Efficiency**
- N1101 Climate Zone 4
- N1102 Minimum building envelope:
- Fenestration U = 0.35
 - Skylight U = 0.55
 - SHGC = 0.40
 - Ceiling/roof R = 49
 - Wood framed walls R = 20 cavity (or R13 cavity + R5 continuous)
 - Mass walls R = 8 exterior (or R13 interior)
 - Floors above unconditioned space R = 19
 - Basement walls R = 10 continuous (or R13 cavity)
 - Slabs (if < 12" below grade) R = 10 extending at least 24" vertically at the slab edge or horizontally under the slab
 - Crawl space walls R = 10 continuous (or R13 cavity)
- N1102.4Building thermal envelop shall limit air leakage per this section. Provide testing as required by local official.
- 12 thru 44 – Building Services (MEP)**
See MEP drawings by others, who are responsible for code compliance for their portions of the work.
- 2018 International Building Code (IBC)**
- 302 Occupancy Classification Group R-3 Residential
- 601 Construction Type V-B Unsprinklered
Fire resistance ratings = 0 hrs

Residential General Notes

- It is the responsibility of the contractor to become fully aware of and all conditions related to the site and existing conditions that may effect the cost or schedule of construction activities, prior to submitting a bid.
- Contractor shall verify all dimensions and conditions at the job site including soil conditions, and conditions related to the existing utilities and services before commencing work and be responsible for same. All discrepancies shall be reported to the owner immediately.
- Do not scale drawings or details — Use given dimensions. Check details for location of all items not dimensioned on plans. Dimension on plans are to face of framing or center line of columns typically. Door and cased openings without dimensions are to be six (6) inches from face of adjacent wall or centered between walls.
- The 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 structural engineer.
- Building systems and components not specifically detailed shall be installed, as per minimum manufacturers recommendations. Notify the architect of any resulting conflicts.
- All work shall conform to applicable building codes and ordinances. In case of any conflict wherein the methods or standards of installation or the materials specified do no equal or exceed the requirements of the laws or ordinances, the laws or ordinances shall govern.
- Install dust barriers and other protection as required to protect installed finishes and facilities.
- Plumbing, mechanical and electrical drawings, etc. are supplementary to the architectural drawings. It shall be in the responsibility of each contractor to check with the architectural drawings before installation of their work. Any discrepancy between the architectural drawings and the consulting engineer(s) or other supplementary drawings shall be brought to the owner's attention in writing.
- This project contains glazing that will be subject to federal and local glazing standards and the glazing subcontractor shall be responsible for adherence to these requirements. If the glazing subcontractor finds anything in the documents not in compliance with the standards, he/she shall bring discrepancies to the attention of the architect before proceeding.
- All glazing in hazardous locations, defined by the IRC R308.4, shall by safety glazing, including but not limited to the safety glazing identified in the construction documents.
- There shall be no exposed pipe, conduits, ducts, vents, etc. All such lines shall be concealed or furred and finished, unless noted as exposed construction on drawings. Offset studs where required, so that finished wall surface will be flush.
- Contractor shall provide temporary bracing for the structure and structural components until all final connections have been completed in accordance with the plans.
- Carry all footings to solid, undisturbed original earth. Remove all unsuitable material under footings and slab and replace with concrete or with compacted fill as directed by architect.
- All wood framing details not shown otherwise shall be constructed to the minimum standards of the IRC.
- All wood in direct contact with concrete or exposed to weather shall be pressure treated with an approved preservative unless decay resistant heartwood of cedar or redwood is used. Fasteners for pressure treated wood shall be hot dipped galvanized steel, stainless steel, silicon bronze, or copper.
- Nail gypsum wallboard to all studs, top and bottom plates and blocking with drywall nails @ 7 inches o.c. maximum spacing unless shown otherwise. Use 5d for 1/2 wallboard, 6d for 5/8 inch wallboard.
- Provide galvanic separation between dissimilar metals.
- The contractor is to verify the location of all utilities and services to the site prior to beginning any site improvements.
- No materials from the work are to be stock piled on public rights-of-way. All rubbish and debris is to be removed from the site.
- Adjacent properties, streets and walks are to be protected from damage at all times.
- All downspouts and roof drains to be connected to drywells min 10' from foundation, or surface drainage min 3' from foundation unless noted otherwise in construction documents.
- All dimensions are face of stud wall, centerline of column, or face of concrete unless noted otherwise.
- The contractor shall secure permits required by the fire department prior to building occupation.
- The contractor shall take all necessary precautions to ensure the safety of the occupants and workers at all times during the course of the project.
- Approved plans shall be kept in a plan box and shall not be used by any workmen. All construction sets shall reflect the same information. The contractor shall also maintain in good condition, one complete set of plans with all revisions, addenda and changes orders on the premises at all times. Said plans are to be under the care of the job superintendent.
- The contractor and/or the sub-contractors shall apply for, obtain and pay for all required permits and fees except for the building permit.
- Construction hours, per jurisdiction, are to be observed for all phases of the project.

Precautionary Notes

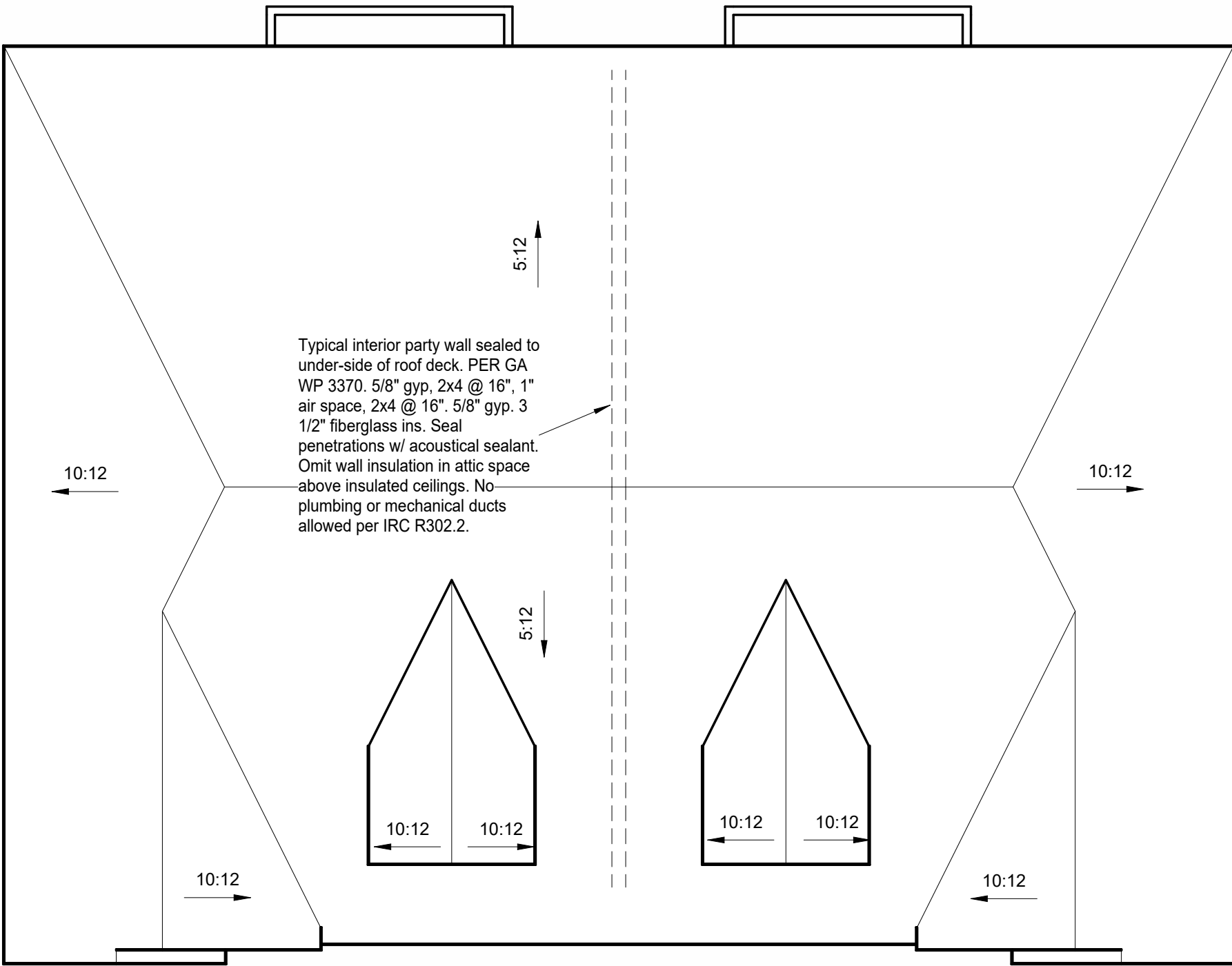
This drawing has been produced by the Architect or prepared under his direct supervision as an instrument of service and is intended for use only on this project. All Drawings, Specifications, ideas and designs, including the overall layout, form, arrangement and composition of spaces and elements portrayed, constitute the original unpublished Work of the Architect. Any reproduction, use or disclosure of the information contained herein without the written consent of the Architect is strictly prohibited.

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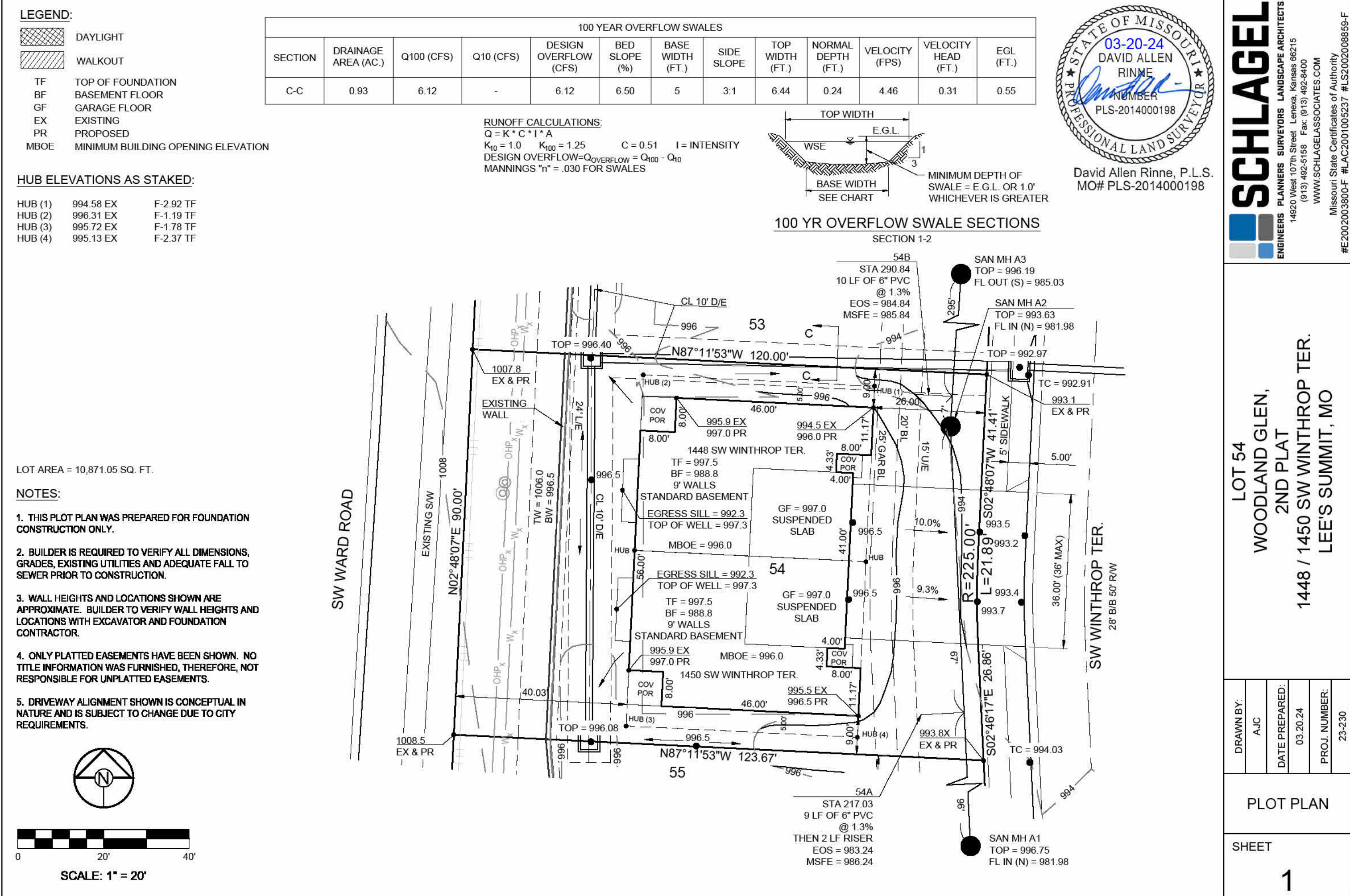
- Responsibilities. THE ARCHITECT DISCLAIMS responsibility for the existing building structure, site conditions, existing construction elements or any documents, drawings or other instruments used for any part of this Project which do not bear the Architect's seal. The Architect's services are undertaken only in the interest of the Project Owner. The Architect assumes no obligation for the benefit of any other entity.
- Related Documents. This Drawing is a single component of an integrated set of Construction Documents. General and Supplementary Conditions of the Contract, General Requirements, Specifications and other Drawings also affect the Work described. Failure to review and integrate the design intent of the whole of the Construction Documents does not relieve the Contractor from providing a complete Project. Codes and Ordinances. COMPLY WITH all laws, codes, ordinances and regulations of authorities having jurisdiction and with requirements of the Landlord, if applicable. Do not start Work until all permits and required approvals are obtained.
- Verification conditions. VERIFY ALL CONDITIONS and dimensions prior to construction. Commencement of Work constitutes verification and acceptance of all existing conditions. Application of a material or equipment item to Work installed by others constitutes acceptance of that Work and assumption of responsibility for satisfactory installation.



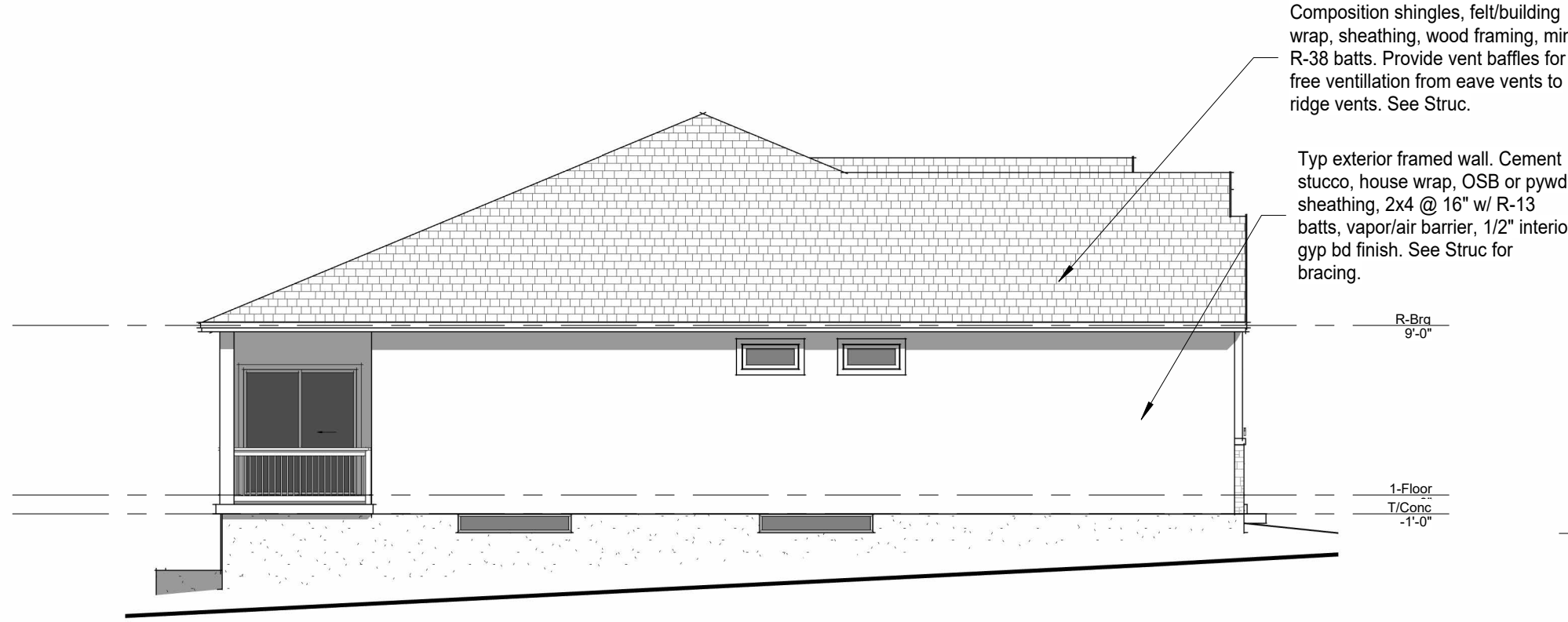
1 Front View



2 Roof Plan
1/8" = 1'-0"



2 Left Side Elevation
1/8" = 1'-0"



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



Exterior Elevation Notes

1. Hold finish grade min 6" below bottom of wood siding, trim, and framing.
2. See Floor Plans for window sizes.
3. See Roof Plan for roof slopes.

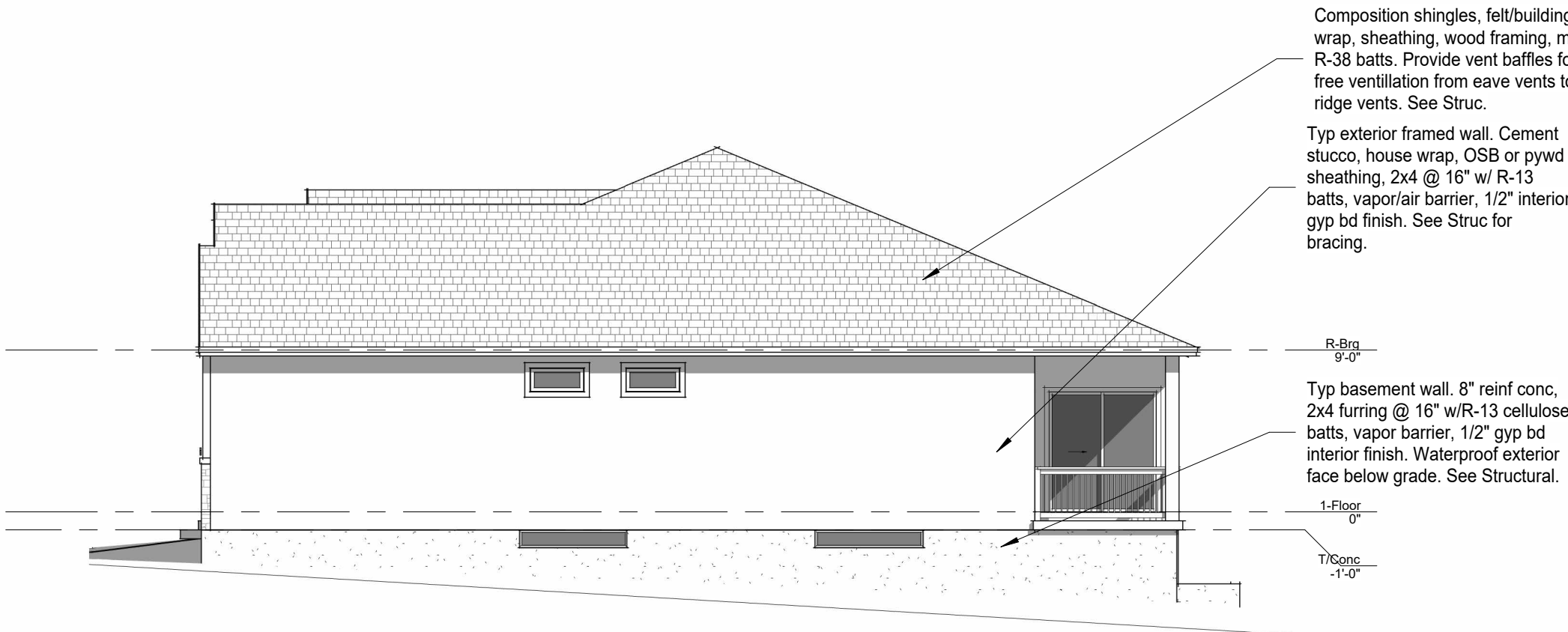
3 Rear Elevation
1/8" = 1'-0"



Note:

1. Hold finish grade min 6" below bottom of siding or wood framing.

4 Right Side Elevation
1/8" = 1'-0"



5 Party Wall
12" = 1'-0"

GA WP 3370

DESIGN NO. GA WP 3370

1 HOUR

15

UL 1013

3-1/2" (91 mm)

INTERIOR

WOOD STUD (LOAD-BEARING)

ASSEMBLY REQUIREMENTS:

GYPSUM PANELS: ONE LAYER 5/8" (15.9 mm) SHEETROCK SCORSMART GYPSUM PANEL (UL TYPE ULX™)

WOOD STUDS: 2" x 4" (51 x 89 mm) WOOD STUDS, 16" (406 mm) O.C.

INSULATION: 3-1/2" (91 mm) FIBERGLASS INSULATION

ONE LAYER 5/8" (15.9 mm) SHEETROCK SCORSMART GYPSUM PANEL (UL TYPE ULX™)

GA WP 3370

1 HOUR

15

UL 1013

3-1/2" (91 mm)

INTERIOR

WOOD STUD (LOAD-BEARING)

ASSEMBLY REQUIREMENTS:

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ONE LAYER 5/8" (15.9 mm) SHEETROCK SCORSMART GYPSUM PANEL (UL TYPE SCX)

GA FILE NO. WP 3370

GENERIC

1 HOUR FIRE

45 to 49 STC SOUND

GYPSUM WALLBOARD, WOOD STUDS

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of double row of 2 x 4 wood studs 16" o.c. on separate plates 1" apart with 6d coated nails, 17/8" long, 0.0915" shank, 1/4" heads, 7" o.c.

Joints staggered 16" on opposite sides. Horizontal bracing required at mid-height. (LOAD-BEARING)

Thickness: 9/16"

Approx. Weight: 8 psf

Fire Test: See WP 3605 (UL R1319-4, 6, 6-17-52; UL R2717-39, 1-20-66; UL R3501-52, 3-15-66; UL Design U305; ULC Design W301)

Sound Test: Estimated

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N.C.A.R.B.
National Council Architectural Registration Boards



Project:

Twin Villa

Woodland Glen Lot 54

Location:
1448 / 1450 SW Winthrop Ter, Lee's Summit, MO

Exclusively for:
John Duggan
(913) 498-3536 / jduggan@kc-dslaw.com

BFA No:

TWIN-WG54

Sheet Name:

Elevations

Sheet No:

A11

PERMIT SET

Date:
2/22/24

Current Revision Date:
10/29/24

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
10/30/2024 12:47:43

Area Summary per Unit

Covered Patio	
64 SF	1-Floor
64 SF	
Covered Porch	
37 SF	1-Floor
37 SF	
Finished	
972 SF	0-Floor
1,311 SF	1-Floor
2,283 SF	
Garage	
452 SF	1-Floor
452 SF	
Storage	
791 SF	0-Floor
791 SF	
3,627 SF	

Floor Plan Notes

- Unless noted otherwise, exterior wall dimensions are to face of stud or concrete. Interior wall dimensions are to face of finish. Wall thickness dimensions are nominal. Coordinate precision with abutting elements.
- Window and door tags indicate sash or leaf sizes. Example: 3068 = 3'-0" x 6'-8". Tag suffix as follows: C = Casement, F = Fixed, DH = Double-hung, SH = Single-hung, T = Transom, E = Egress, S = Slider. See Elevations for window and door types.
- Field verify all existing conditions relevant to the work.
- Loose furnishings, if shown, are by Owner.
- Mechanical and electrical designs are by design-build contractors who are responsible for coordinating with Owner's requirements and code conformance.
- All sleeping rooms shall have at least one egress window per IRC R310. See Project Notes and Window Schedule.
- Fire resistant construction, if required, shall comply with IRC R302. See Project Notes.
- Safety glazing, where required, shall comply with IRC R308.
- Garage floor slab shall comply with IRC R309.
- Emergency egress paths such as floors and landings at exterior doors, stairs, and hallways shall comply with IRC R311.
- Where window sills are 24" or lower, provide window fall protection per IRC R312.
- Refer to IRC R317 for preservative treated wood requirements.
- Refer to IRC R318 for termite protection requirements.
- Provide smoke detector, hard-wired and interconnected, in each sleeping room per IRC 314.
- Provide combination smoke/carbon monoxide detector, hard-wired and interconnected, outside each group of sleeping rooms and inside the interior garage door per IRC 315.

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NCARB
National Council Architectural Registration Boards



2/22/24
3/20/24

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Exclusively for:
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BFA No:

TWIN-WG54

Sheet Name:

Basement Plan

Sheet No:

A21

Date:

2/22/24

Current Revision Date:

3/20/24

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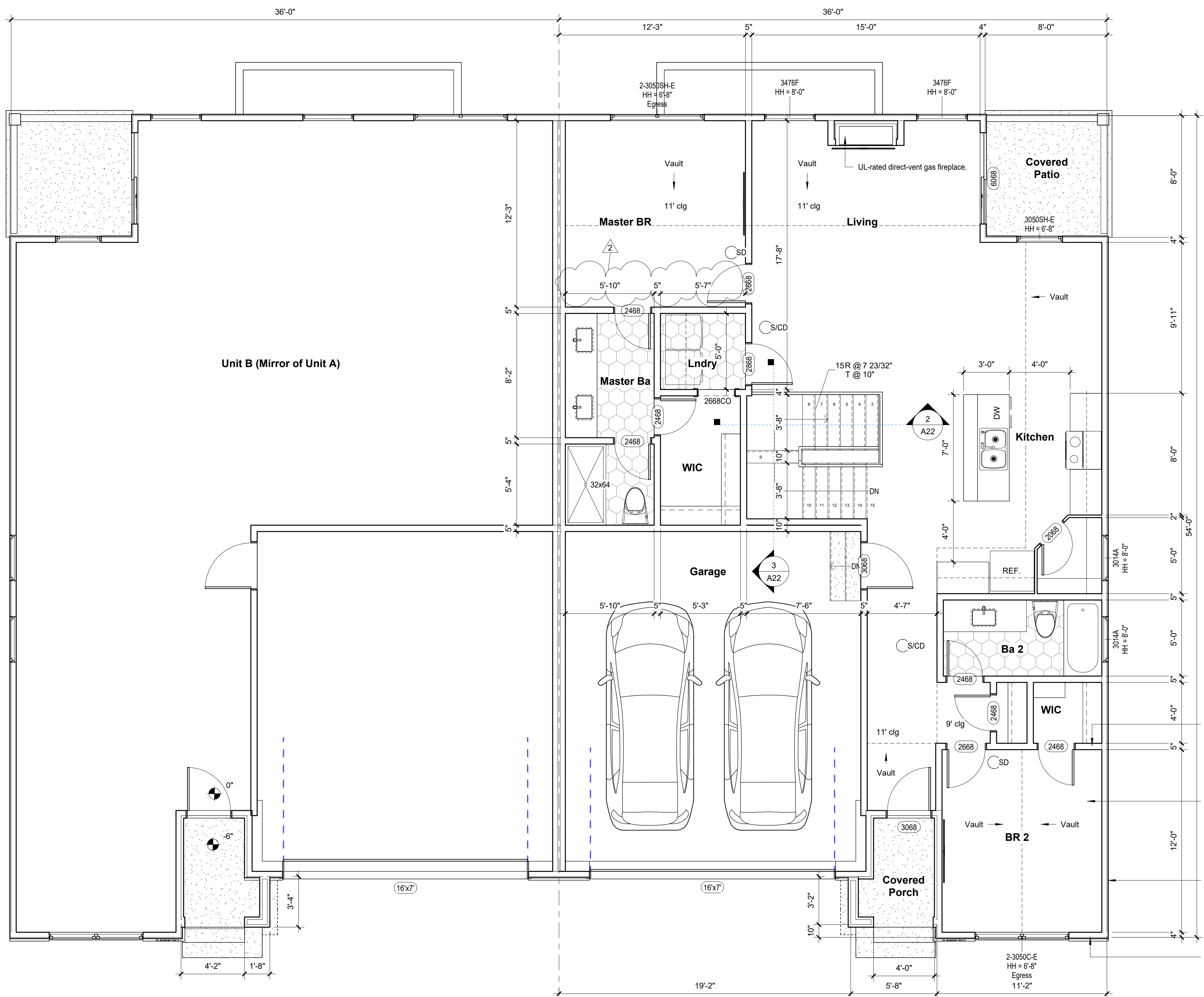
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Plan North



1 Basement Floor Plan

1/4" = 1'-0"



Plan North
1 First Floor Plan
1/4" = 1'-0"

Area Summary per Unit

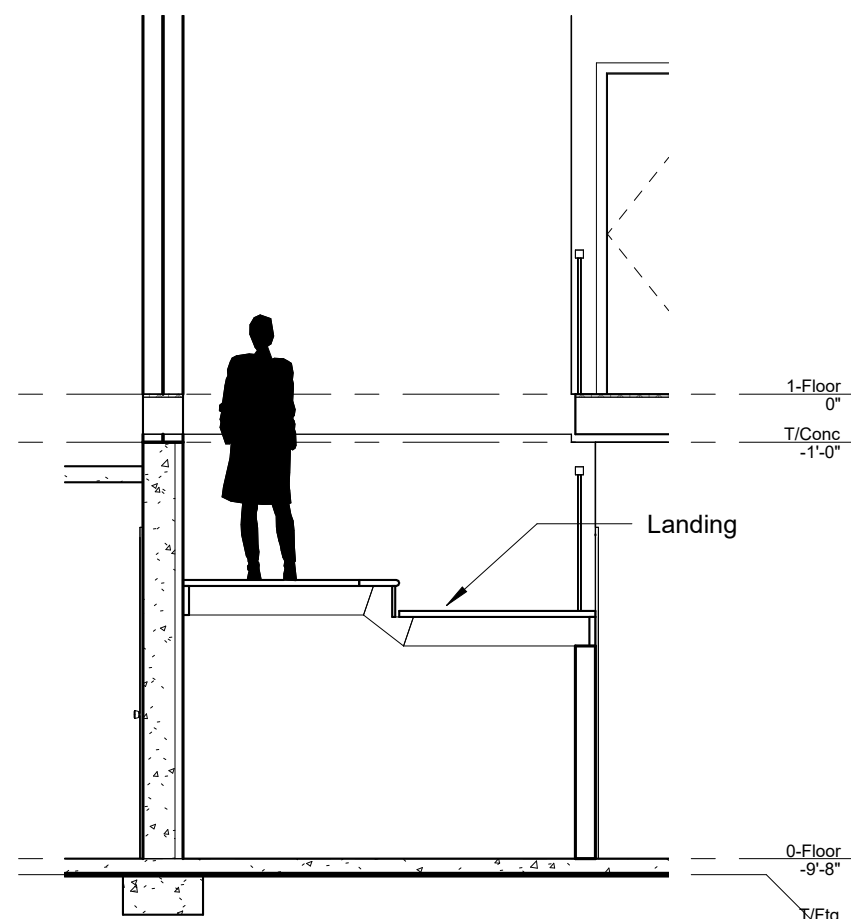
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- Provide combination smoke/carbon monoxide detector, hard-wired and interconnected, outside each group of sleeping rooms and inside the interior garage door per IRC 315.

2 Stair Headroom

1/4" = 1'-0"



3 Stair Landing

1/4" = 1'-0"



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2/22/24
5/9/24

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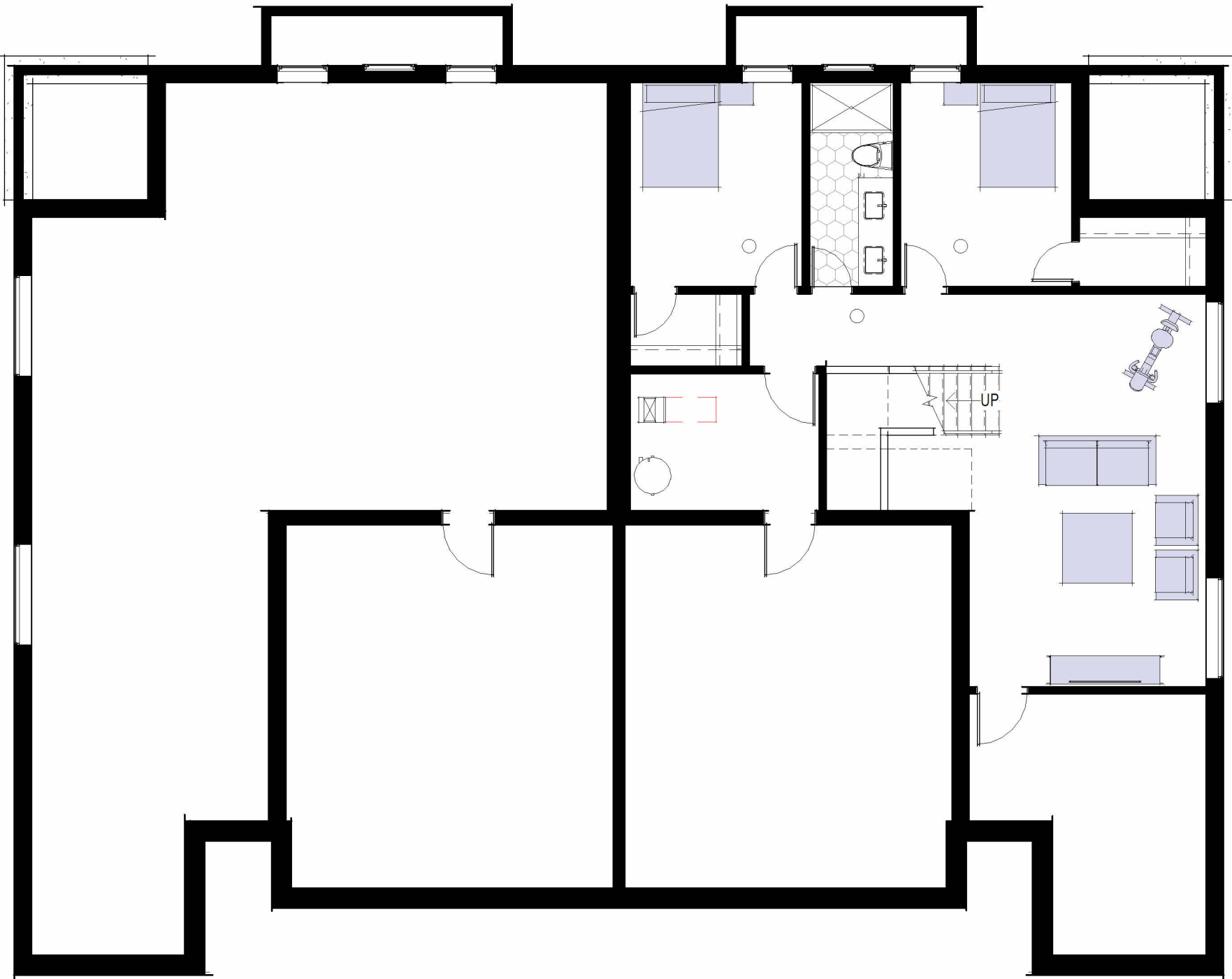
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First Floor Plan

Sheet No:
2/22/24

A22

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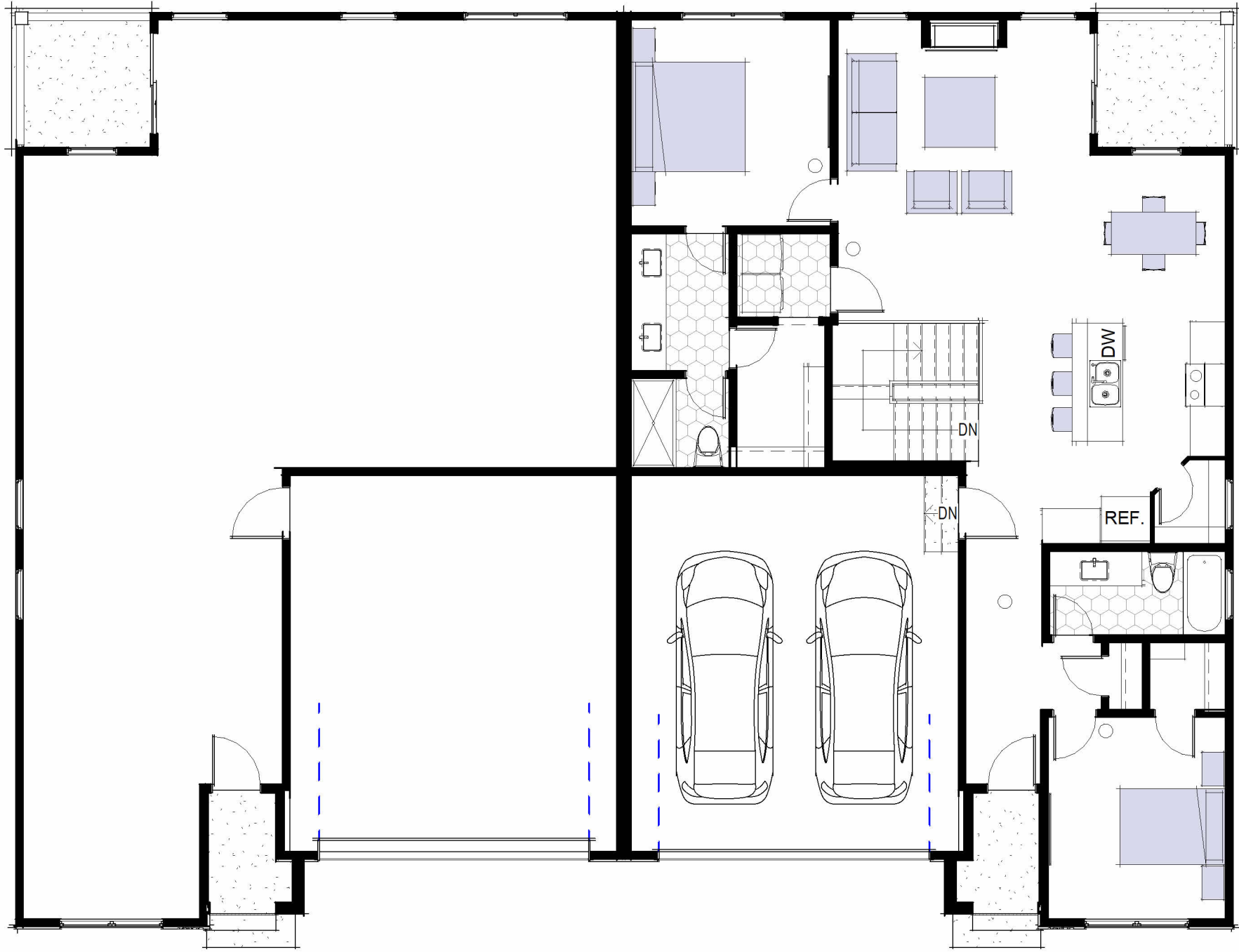


Plan North



1 Basement Floor Plan

1/8" = 1'-0"



Plan North



2 First Floor Plan

1/8" = 1'-0"

Furnishing Plan Notes

1. Loose furnishings are by others - not in contract.
2. Furnishing layout is preliminary and must be coordinated with Developer.
3. Furnishing layout is provided as a suggestion to aid in locating electrical and media outlets.

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Sheet Name:

Furnishing Plans

Sheet No:

A23

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Date:

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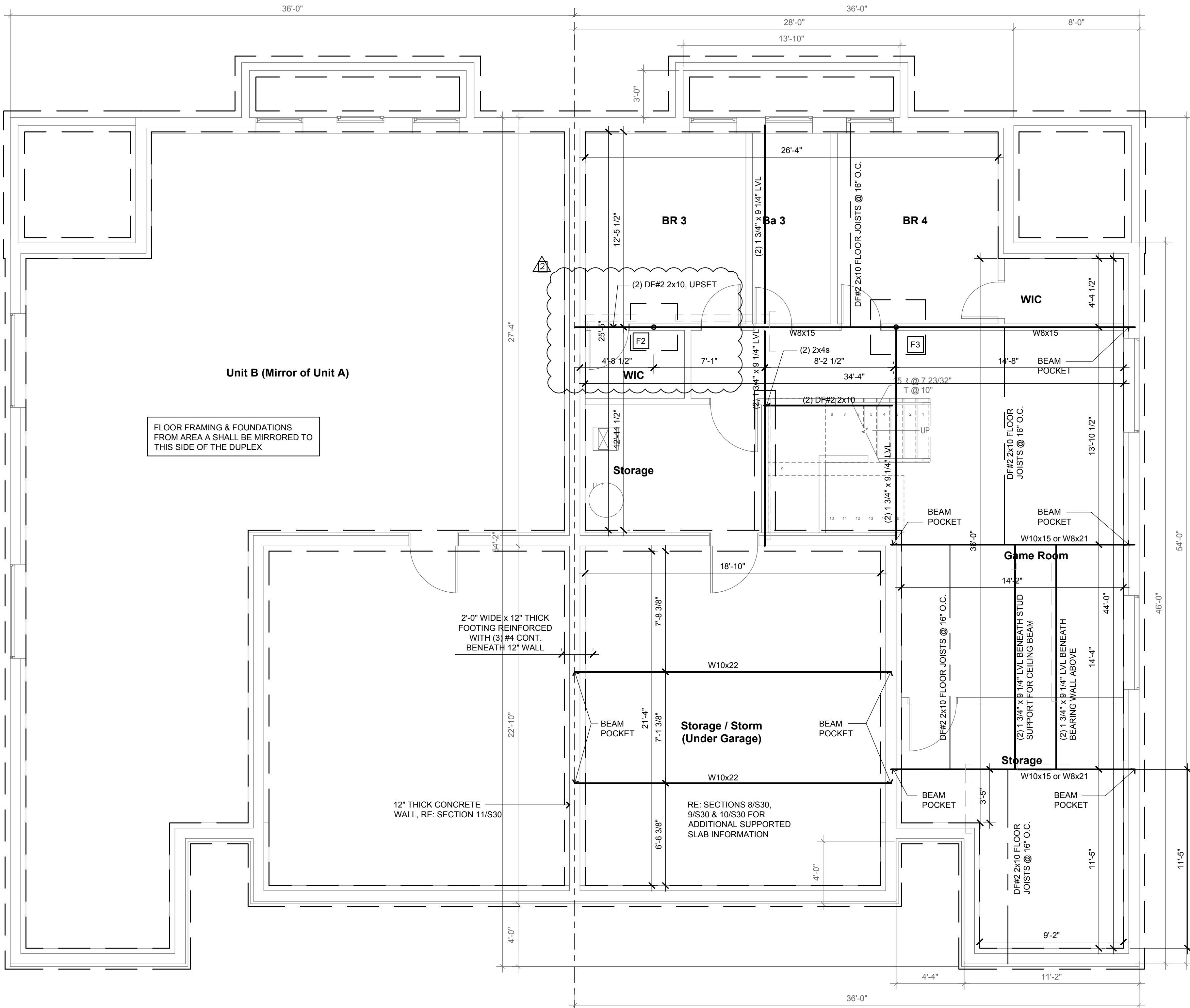
Current Revision Date:

FLOOR FRAMING PLAN NOTES

- NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.
- PROVIDE 3/4" TONGUE AND GROOVE WOOD STRUCTURAL PANEL SHEATHING FOR SUBFLOOR GLUED AND NAILED TO WOOD JOISTS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
 - ALL EXTERIOR WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
 - PROVIDE 1/2" EXTERIOR GRADE PLYWOOD SHEATHING NAILED TO WOOD STUDS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
 - ALL INTERIOR BEARING WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
 - DOUBLE FLOOR JOISTS UNDER ALL PARTITION WALLS RUNNING PARALLEL WITH JOISTS.
 - PROVIDE PROPER WALL INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
 - STAIRS SHALL HAVE A MAXIMUM RISE OF 7-3/4" AND MINIMUM TREAD OF 10". ALL RISERS AND TREADS TO BE EQUAL BETWEEN FLOORS.
 - PROVIDE WALL BRACING AS SHOWN ON PLAN.
 - PROVIDE HEADERS AS SHOWN ON PLAN, FOR HEADERS NOT MARKED REFERENCE TYPICAL BEARING WALL HEADER SCHEDULE.
 - FLOOR JOISTS: SEE IRC TABLE R502.3.1(1) AND R502.3.1(2) FOR SPAN, SIZE, SPACING, AND GRADE OF FLOOR JOISTS.
 - PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
 - INTERIOR FOOTINGS OF LOAD BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.

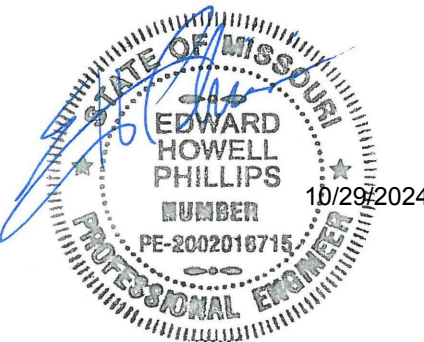
FOOTING SCHEDULE

MARK	SIZE L x W x THK	REINFORCING (NO) SIZE LOCATION	TOF EL	COLUMN
F1	2'-0" x 2'-0" x 1'-0"	(4) #4 EW BOTTOM	8" BELOW TOP OF SLAB	3"Ø STD STEEL PIPE COLUMN
F2	3'-0" x 3'-0" x 1'-0"	(6) #4 EW BOTTOM	8" BELOW TOP OF SLAB	3"Ø STD STEEL PIPE COLUMN
F3	3'-6" x 3'-6" x 1'-4"	(8) #4 EW BOTTOM	8" BELOW TOP OF SLAB	3"Ø STD STEEL PIPE COLUMN
F4	4'-6" x 4'-6" x 1'-4"	(9) #4 EW BOTTOM	8" BELOW TOP OF SLAB	3"Ø STD STEEL PIPE COLUMN



1 FOUNDATION/1ST FLOOR FRAMING PLAN

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



REVISIONS

2	4/09/2024	CONTRACTOR REVISIONS
3	10/29/2024	FRAMING CLARIFICATION

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BFA No:

TWIN-WG54

Sheet Name:
**FOUNDATION & 1ST FLOOR
FRAMING PLAN**

Sheet No:
S10

Date:
2/22/24

Current Revision Date:
4/09/24

PERMIT SET

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
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TYPICAL BRACED WALL METHOD

WSP - WOOD STRUCTURAL PANEL; WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" FOR 16" STUD SPACINGS. FASTEN WITH 6d COMMON NAILS (1 1/2"x2" LONG) AT 6"oc ALONG EDGES AND 12"oc AT INTERMEDIATE SUPPORTS, WHERE SHOWN ON PLANS. UNLESS OTHERWISE NOTED, PANEL WIDTH = 4'-0".

CS-WSP - CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL; WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" FOR 16" STUD SPACING. FASTEN WITH 6d COMMON NAILS (1 1/2"x2" LONG) AT 6"oc ALONG EDGES AND 12"oc AT INTERMEDIATE SUPPORTS, PLACED ON ALL SHEATHABLE SURFACES ON ONE SIDE OF THE BRACED WALL LINE INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS.

GB - GYPSUM BOARD; 1/2" GYPSUM BOARD WITH 13 GAGE, 1 3/8" LONG, 19/64" HEAD; 0.098" DIA, 1 3/8" LONG, ANNULAR-RINGED; 6d COOLER NAIL, 0.092" DIA, 1 7/8" LONG, 1/4" HEAD; OR GYPSUM BOARD NAIL, 0.0915" DIA, 1 7/8" LONG, 19/64" HEAD; TYPE W OR TYPE S SCREWS; AT 7"oc EDGES & 7"oc FIELD

PFH - PORTAL FRAME WITH HOLD-DOWNS; REF PORTAL FRAME WITH HOLD-DOWNS DETAIL

ABW - ALTERNATE BRACED WALL; REF ALTERNATE BRACED WALL DETAIL

PFG - PORTAL FRAME AT GARAGE; REF PORTAL FRAME AT GARAGE DETAIL

LIB - LET-IN BRACE; REF LET-IN BRACE DETAIL.

HPS - HARDBOARD PANEL SIDING; HARDBOARD PANEL SIDING WITH A 7/16" THICKNESS. FASTEN WITH 0.092" DIA, 0.225" DIA HEAD NAILS WITH LENGTH TO ACCOMMODATE 1 1/2" PENETRATION INTO STUDS AT 4"oc ALONG EDGES AND 8" AT INTERMEDIATE SUPPORTS.

CEILING FRAMING PLAN NOTES

NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.

- PROVIDE PROPER CEILING INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
- PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
- LOAD BEARING WALL STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF/CEILING DIAPHRAGM PER IRC 602.3.
- WALL SHEATHING SHALL BE CONTINUOUS TO UNDERSIDE OF ROOF SHEATHING PER FIRE WALL REQUIREMENTS. ATTACH CEILING JOIST ADJACENT TO WALL, THROUGH WALL SHEATHING, WITH (1) SIMPSON SDWS22600DB SCREW AT EACH STUD.
- REFERENCE ROOF FRAMING PLAN FOR FRAMING IN VAULTED AREAS.

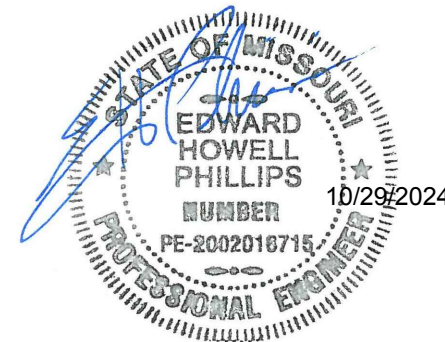
JOIST HANGER TABLE

(BASED ON SIMPSON STRONG-TIE WOOD CONSTRUCTION CONNECTORS 2021 CATALOG)

JOIST SIZE	MODEL NO.	FASTENERS		DF/SP ALLOWABLE LOADS (lb.)	
		HEADER	JOIST	FLOOR (100)	SNOW (115)
2x4	LU24	(4) 0.162 x 3-1/2	(2) 0.148 x 1-1/2	555	630
DBL 2x4	LUS24-2	(4) 0.162 x 3-1/2	(2) 0.162 x 3-1/2	800	905
2x6	LUS26	(4) 0.148 x 3	(4) 0.148 x 3	865	990
DBL 2x6	LUS26-2	(4) 0.162 x 3-1/2	(4) 0.162 x 3-1/2	1,030	1,170
2x8	LUS28	(6) 0.148 x 3	(4) 0.148 x 3	1,100	1,260
DBL 2x8	LUS28-2	(6) 0.162 x 3-1/2	(4) 0.162 x 3-1/2	1,315	1,490
2x10	LUS210	(8) 0.148 x 3	(4) 0.148 x 3	1,335	1,530
DBL 2x10	LUS210-2	(8) 0.162 x 3-1/2	(6) 0.162 x 3-1/2	1,830	2,075
2x12	LUS210	(8) 0.148 x 3	(4) 0.148 x 3	1,335	1,530
DBL 2x12	LUS210-2	(8) 0.162 x 3-1/2	(6) 0.162 x 3-1/2	1,830	2,075
(2) 1 3/4 x 9 1/2	HUS410	(8) 0.162 x 3-1/2	(8) 0.162 x 3-1/2	2,125	2,420
1 3/4 x 11 1/4	HU11	(22) 0.162 x 3-1/2	(6) 0.148 x 1-1/2	3,275	3,695
(2) 1 3/4 x 11 1/4	HHUS410	(30) 0.162 x 3-1/2	(10) 0.162 x 3-1/2	5,635	6,380
(2) 1 3/4 x 11 7/8	HHUS410	(30) 0.162 x 3-1/2	(10) 0.162 x 3-1/2	5,635	6,380
(1) 1 3/4 x 14	HU14	(28) 0.162 x 3-1/2	(8) 0.148 x 1-1/2	4,165	4,420

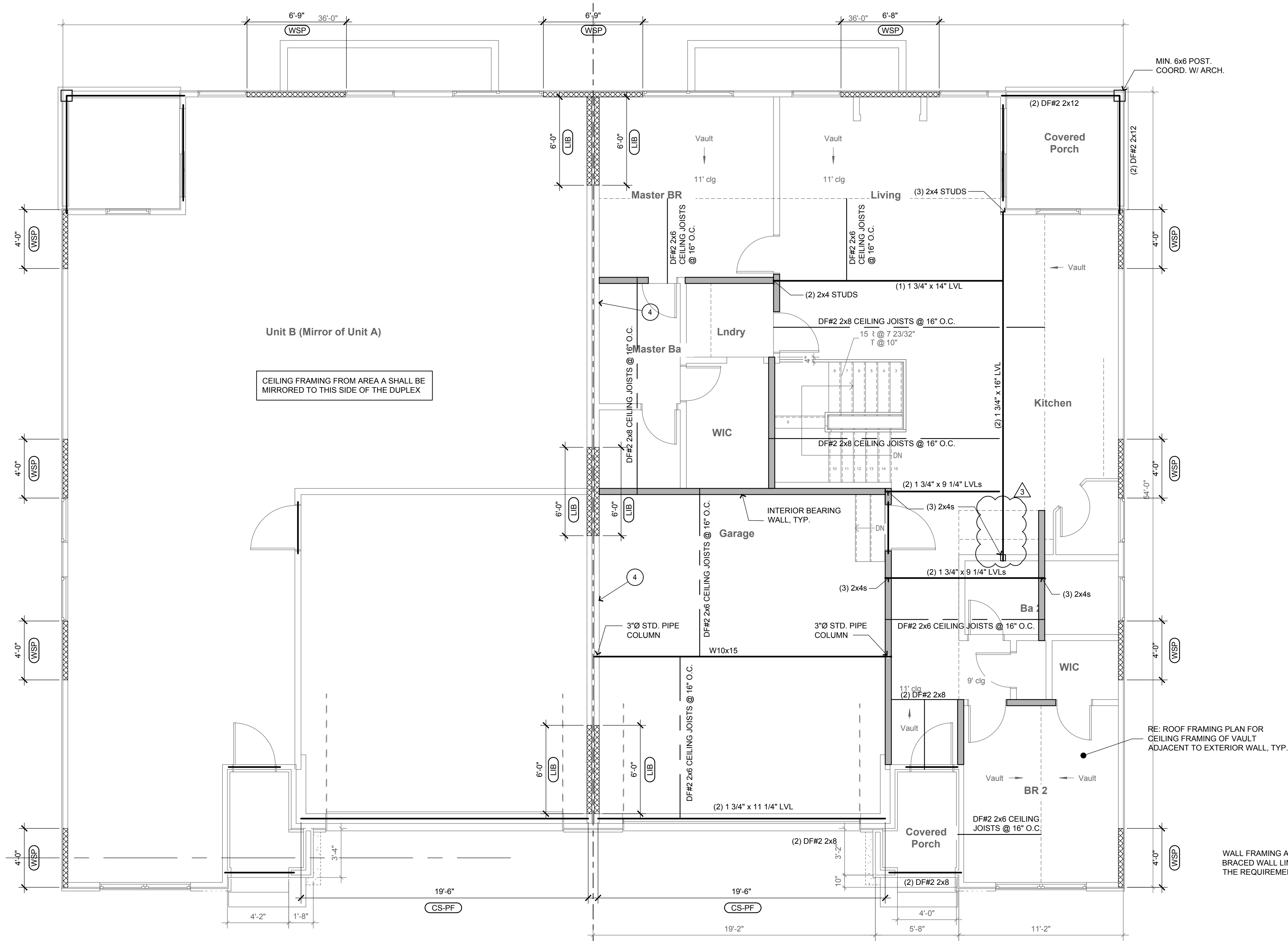
- a. FOR MINIMUM NAILING QUANTITY AND LOAD VALUES, FILL ALL ROUND HOLES; FOR MAXIMUM NAILING QUANTITY AND LOAD VALUES, FILL ALL ROUND AND TRIANGULAR HOLES.
- b. FASTENERS: NAIL DIMENSIONS ARE LISTED DIAMETER BY LENGTH.

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REVISIONS

2	4/09/2024	CONTRACTOR REVISIONS
3	10/29/2024	FRAMING CLARIFICATION



1

MAIN FLOOR FRAMING PLAN

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

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N.C.A.R.B.
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Twin Villa

Woodland Glen Lot 54

Location:

1448 / 1450 SW Winthrop Ter, Lee's Summit, MO

Exclusively for:

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BFA No:

TWIN-WG54

Sheet Name:

MAIN FLOOR FRAMING PLAN

Sheet No:

S20

Date:

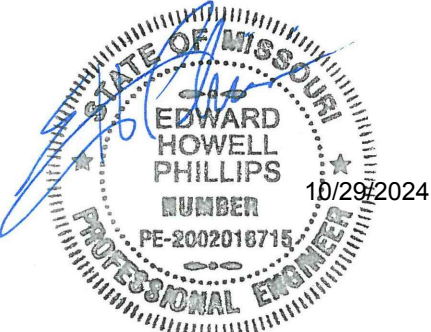
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4/09/24

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REVISIONS

2	4/09/2024	CONTRACTOR REVISIONS
3	10/29/2024	FRAMING CLARIFICATION

ROOF FRAMING PLAN NOTES

- NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.
- PROVIDE 1/2" EXTERIOR GRADE PLYWOOD SHEATHING NAILED TO ROOF RAFTERS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
 - PROVIDE ADDITIONAL DEPTH TO JOISTS AS REQUIRED TO PROVIDE 1" AIR GAP TO PREVENT CONDENSATION PLUS 12" INSULATION TO PROVIDE R-38 INSULATION VALUE TO VAULTED CEILING AREA WHERE SHOWN ON PLAN WITH CROSS HATCH.
 - ALL RIDGE, VALLEY, AND HIP MEMBERS SHALL BE 2" NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER.
 - HIP AND VALLEY MEMBERS SHALL BE SUPPORTED AT THE RIDGE WITH A 2x6 T-BRACE TO A BEARING WALL BELOW.
 - PROVIDE SOFFIT, RIDGE, AND GABLE END VENTS AS REQUIRED TO PROVIDE ADEQUATE VENTILATION FOR ROOF.
 - PROVIDE PROPER FLASHING AND BUILDING PAPER UNDER SHINGLES AS REQUIRED TO PROVIDE WATER TIGHT SEAL AT ALL ROOF PENETRATIONS, RIDGES, VALLEYS, HIPS AND/OR OTHER SLOPE CHANGES.
 - GUTTERS, DOWNSPOUTS, AND SPLASH BLOCKS SHALL BE PROVIDED TO INSURE ALL ROOF DRAINAGE IS DIRECTED 5 FEET MINIMUM FROM HOUSE BEFORE TOUCHING SOIL.
 - ALL GABLE END WALL FRAMING SHALL BE 2x4 DOUG-FIR STUD GRADE AT 16"oc.
 - PROVIDE PROPER CEILING INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
 - PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
 - PROVIDE OVER-BUILD FRAMING AS REQUIRED TO ACHIEVE THE DESIRED ROOF SLOPES/PROFILES.
 - LOAD BEARING WALL STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF/CEILING DIAPHRAGM PER IRC 602.3.
 - ROOF RAFTERS DO NOT EXCEED 200 PLF OF UPLIFT. ATTACH ALL MEMBERS PER FASTENING SCHEDULE ON S33.
 - BRACE HIP/RIDGE/VALLEY DOWN TO BEARING WALL OR BEAM BELOW.
 - U.N.O. ALL HIPS/VALLEYS/RIDGES SHALL BE A MIN. OF DF#2 2x10 MEMBERS.
 - CEILING BEAM, REFERENCE CEILING FRAMING PLAN.
 - ALL ROOF RAFTER FRAMING SHALL BE DF#2 2x6 RAFTERS @ 16" O.C., UNLESS NOTED OTHERWISE. INCREASE DEPTH OF RAFTER AS REQUIRED AT VAULTED CEILING AREAS AS REQUIRED TO MEET INSULATION REQUIREMENTS.
 - SUPPORT RAFTER FRAMING/PURLIN BRACING ON CEILING BEAM.
 - WALL SHEATHING SHALL BE CONTINUOUS TO UNDERSIDE OF ROOF SHEATHING PER FIRE WALL REQUIREMENTS. ATTACH RAFTER ADJACENT TO WALL, THROUGH WALL SHEATHING, WITH (1) SIMPSON SDWS22600DB SCREW AT EACH STUD.
 - SUPPORT PURLIN BRACING OFF CEILING BEAMS AND BEARING WALLS BELOW. REFERENCE SHEET S33 FOR ADDITIONAL REQUIREMENTS.

NOTE: ROOF HAS BEEN DESIGNED WITH STRUCTURAL HIPS & VALLEYS. ALL HIPS & VALLEYS TO BE BRACED PER HIP/VALLEY RAFTER TABLE. ALL HIPS & VALLEYS TO BE 2x10 MIN UNO.

NOTE: ALL HIPS, VALLEYS, RIDGES, AND ROOF BEAMS SHALL COMPLY WITH IRC R802.3 & R802.4.3 & HAVE (1) SIMPSON H2.5A AT EACH END TO RESIST UPLIFT. WHERE THE ROOF MEMBER IS SUPPORTED BY A STRUT, IN ADDITION TO THE ROOF MEMBER TO STRUT UPLIFT CONNECTION, THE STRUT SHALL ALSO BE CONNECTED TO A BEARING WALL OR BEAM BELOW WITH A SIMPSON H2.5A.

PURLIN SPAN TABLE

PURLIN (DF #2) *	MAX SPAN			
	2x6	2x8	2x10	2x12
2x6 RAFTERS AT 24"oc	4'-3"	5'-4"	6'-4"	7'-1"
2x6 RAFTERS AT 16"oc	3'-11"	4'-10"	5'-10"	6'-6"

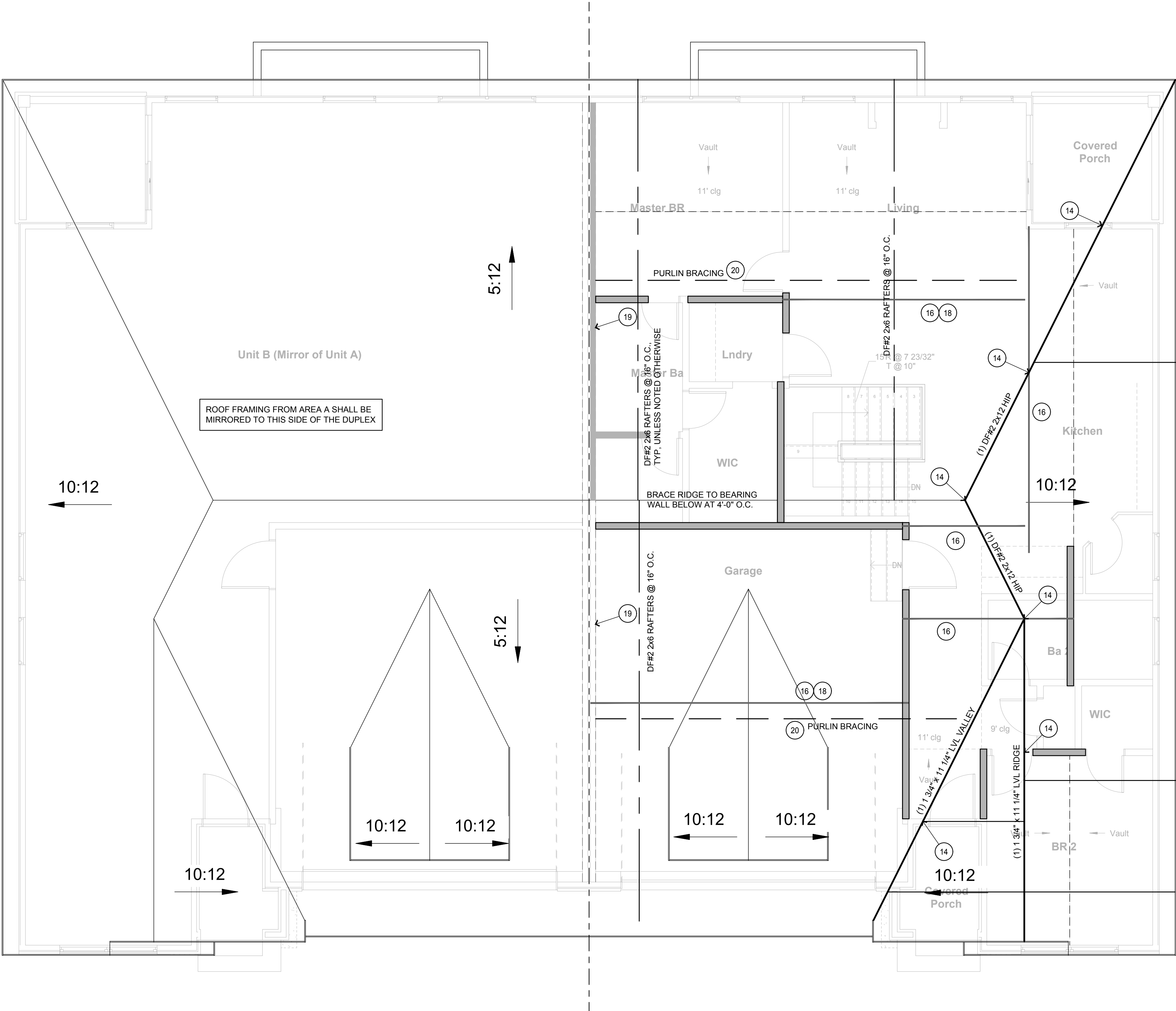
* BRACE PURLINS WITH 2x6 "T" BRACES.

FOR BRACE LENGTHS LESS THAN 6'-0", 2x4 "T" BRACES MAY BE USED.

FOR BRACE LENGTHS OVER 20', USE 2x8 "T" BRACES.

HIP/VALLEY RAFTER TABLE

TYPE	MAX UNBRACED SPAN					
	2x6	2x8	2x10	2x12	1 3/4"x9 1/2" LVL	1 3/4"x11 1/2" LVL
HIP RAFTERS	9'-6"	11'-2"	12'-9"	14'-1"	15'-8"	18'-2"
VALLEY RAFTERS	7'-7"	8'-10"	10'-1"	11'-2"	13'-2"	15'-3"



1 ROOF FRAMING PLAN

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

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ROOF FRAMING PLAN

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Date:

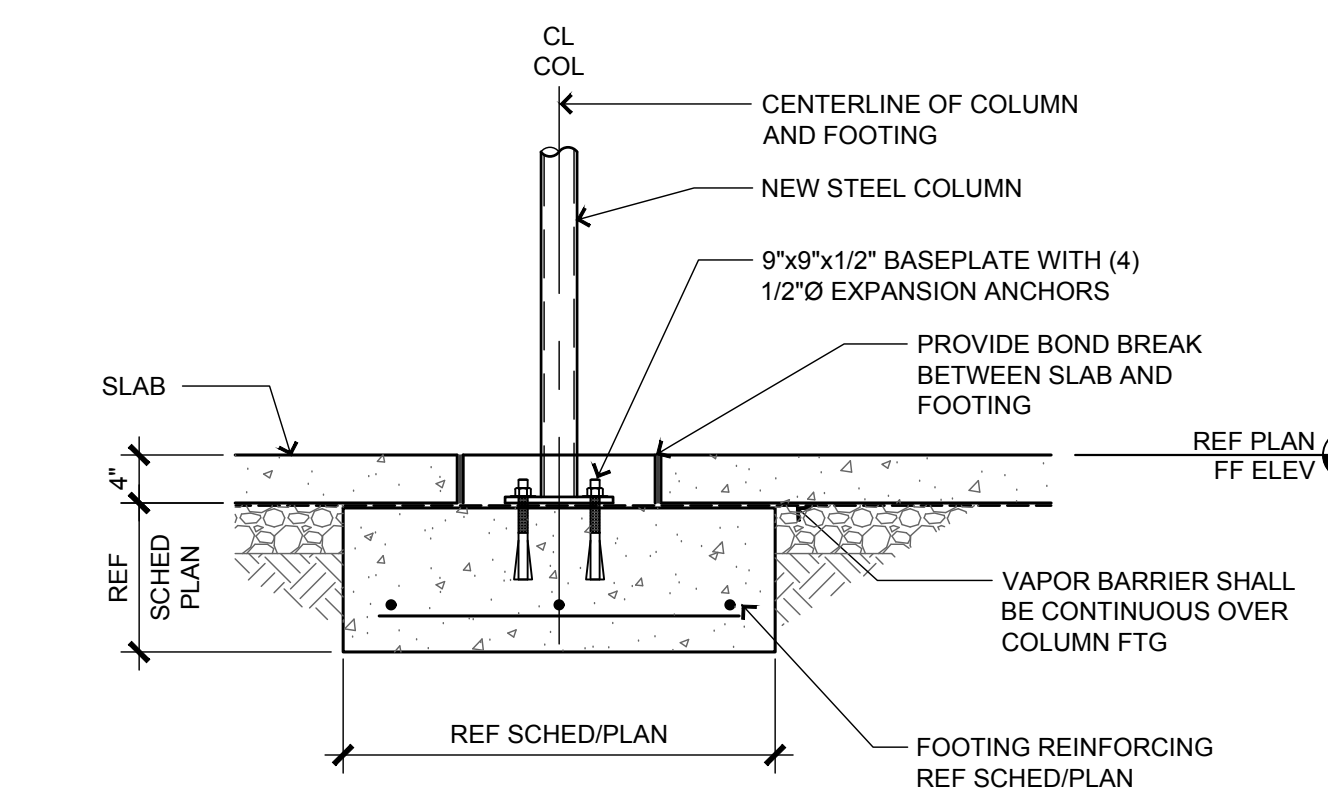
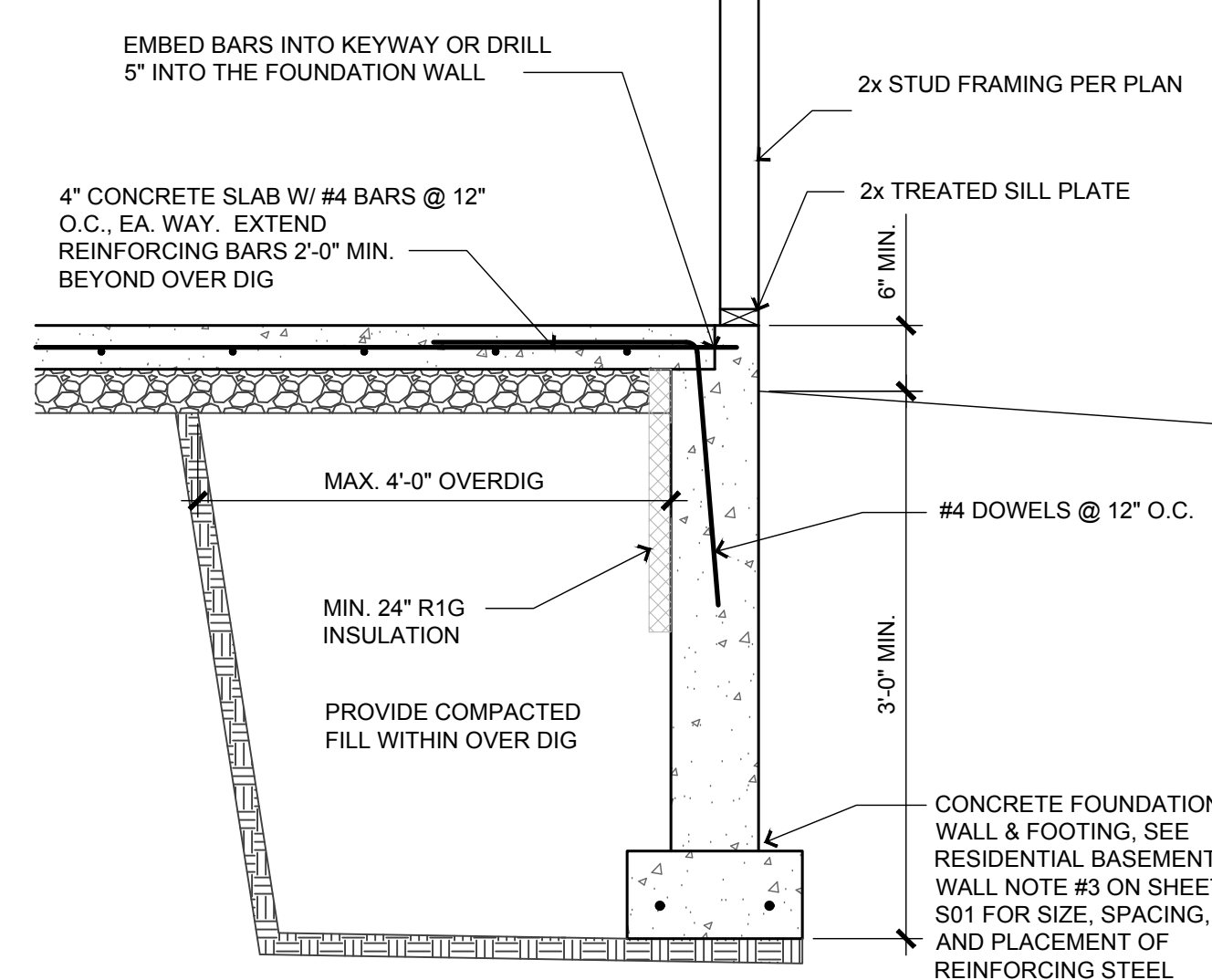
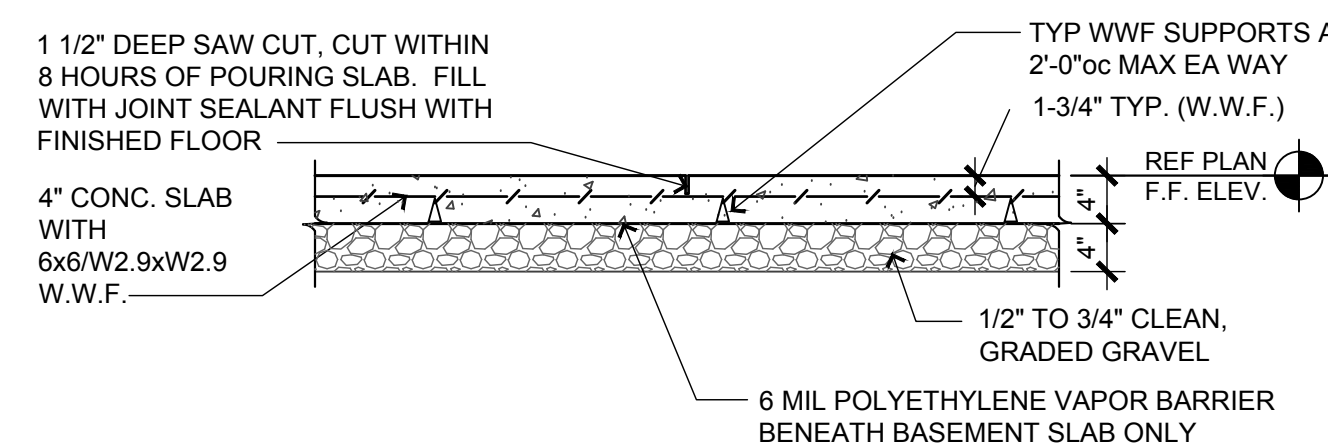
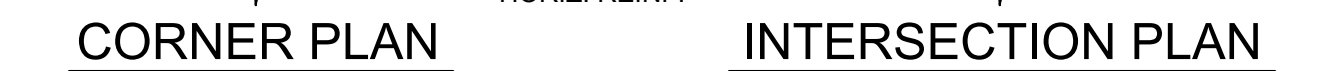
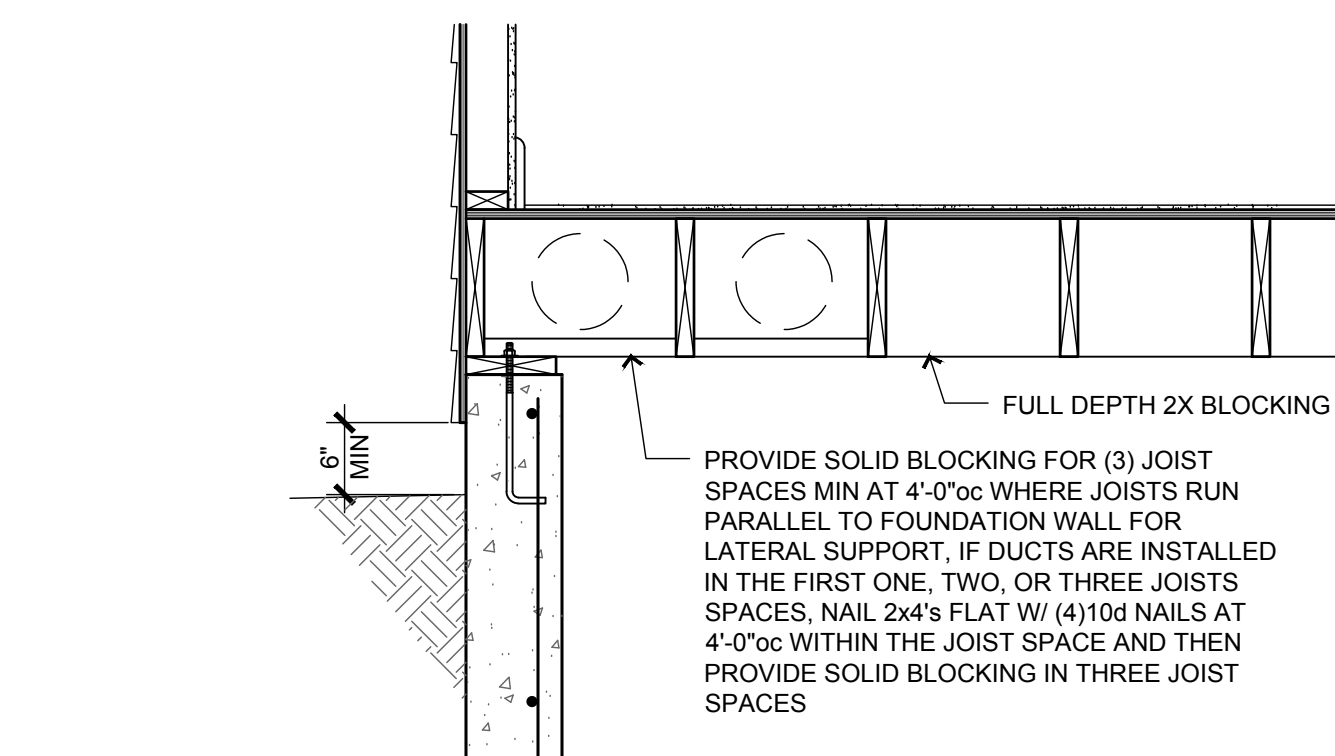
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PATTERN 1

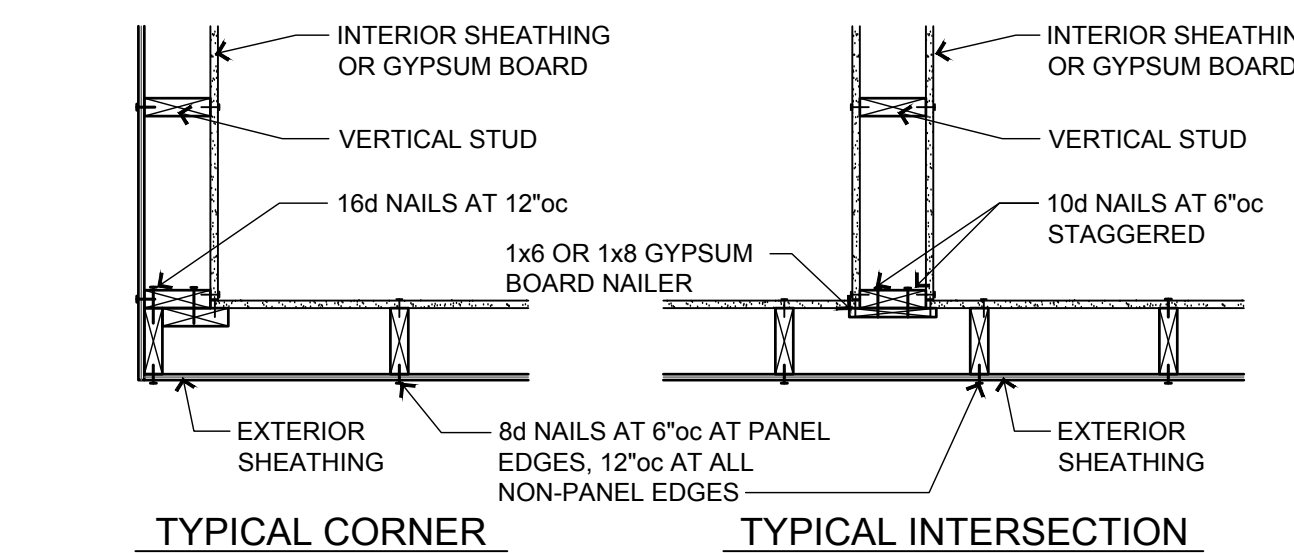
PATTERN 2

○—INDICATES NAILS DRIVEN FROM NEAR FACE

□—INDICATES NAILS DRIVEN FROM FAR FACE

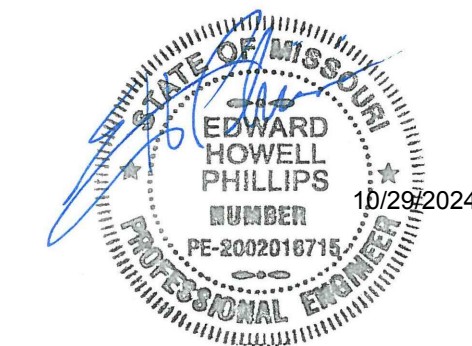
NOTE:

1. ADJACENT NAILS ARE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN.
2. CONTRACTOR MAY SUBSTITUTE 1/2" Ø BOLTS W/ METAL PLATE OR WASHER IN PLACE OF 30d & 50d NAILS.
3. CONTRACTOR SHALL PRE-DRILL STUDS W/ 1/8" DRILL BIT WHEN USING 30d & 50d NAILS TO PREVENT SPLITTING.
4. ALL BUILT UP COLUMNS SHALL EXTEND TO THE ROOF TRUSSE.

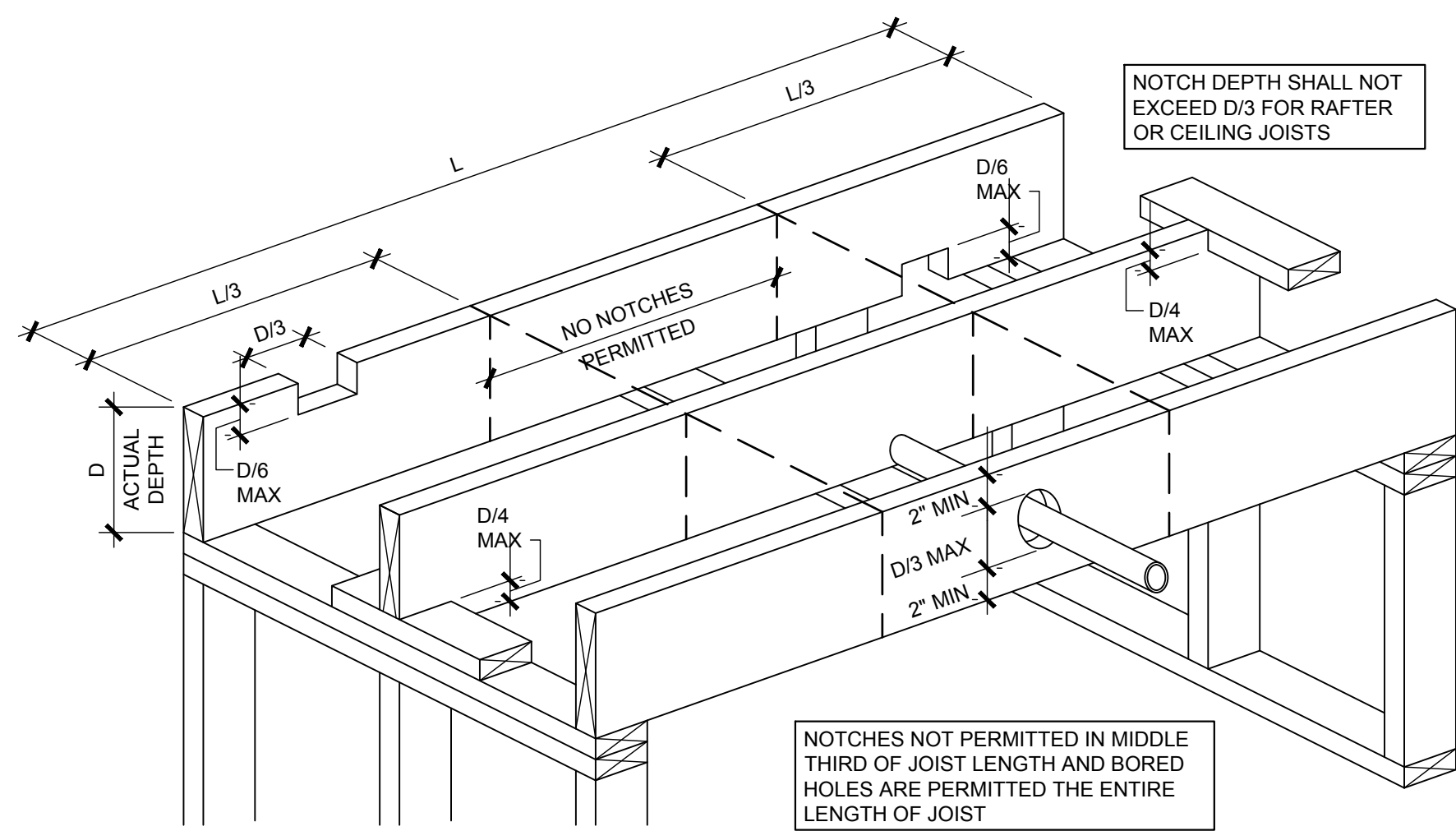


BEARING WALL HEADERS (CENTER BEARING FLOOR)						
INTERIOR WALL (1 FLOOR) ₃			EXTERIOR WALL (ROOF ONLY)			
SPAN	SIZE	NO. J.S.	SPAN	SIZE	NO. J.S.	
0'-0" - 4'-5"	(2) 2x8	2	0'-0" - 5'-4"	(2) 2x8	2	
4'-6" - 5'-5"	(2) 2x10	2	5'-5" - 6'-6"	(2) 2x10	2	
5'-6" - 6'-3"	(2) 2x12	2	6'-7" - 7'-6"	(2) 2x12	2	
INTERIOR WALL (2 FLOORS) ₃			EXT WALL (ROOF + FLOOR)			
0'-0" - 3'-2"	(2) 2x8	2	0'-0" - 4'-6"	(2) 2x8	2	
3'-3" - 3'-10"	(2) 2x10	3	4'-7" - 5'-6"	(2) 2x10	2	
3'-11" - 4'-5"	(2) 2x12	3	5'-7" - 6'-5"	(2) 2x12	2	
			EXT WALL (ROOF + 2 FLOORS)			
			0'-0" - 3'-9"	(2) 2x8	2	
			3'-10" - 4'-7"	(2) 2x10	2	
			4'-8" - 5'-3"	(2) 2x12	2	

[illegible]

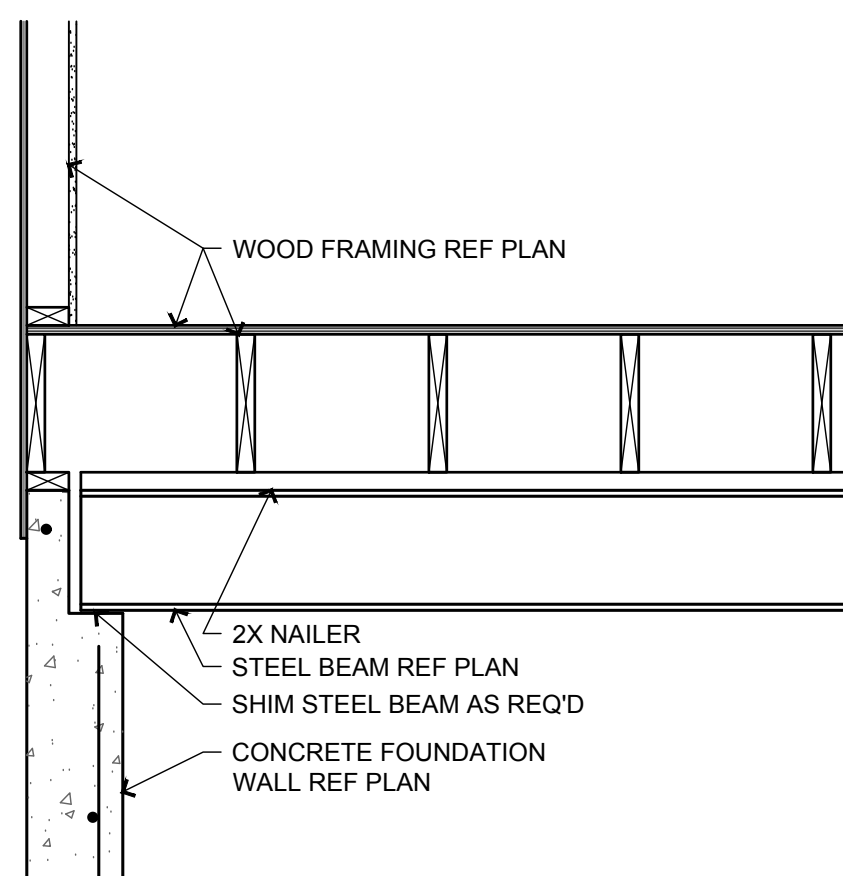


REVISIONS		
2	4/09/2024	CONTRACTOR REVISIONS
3	10/29/2024	FRAMING CLARIFICATION



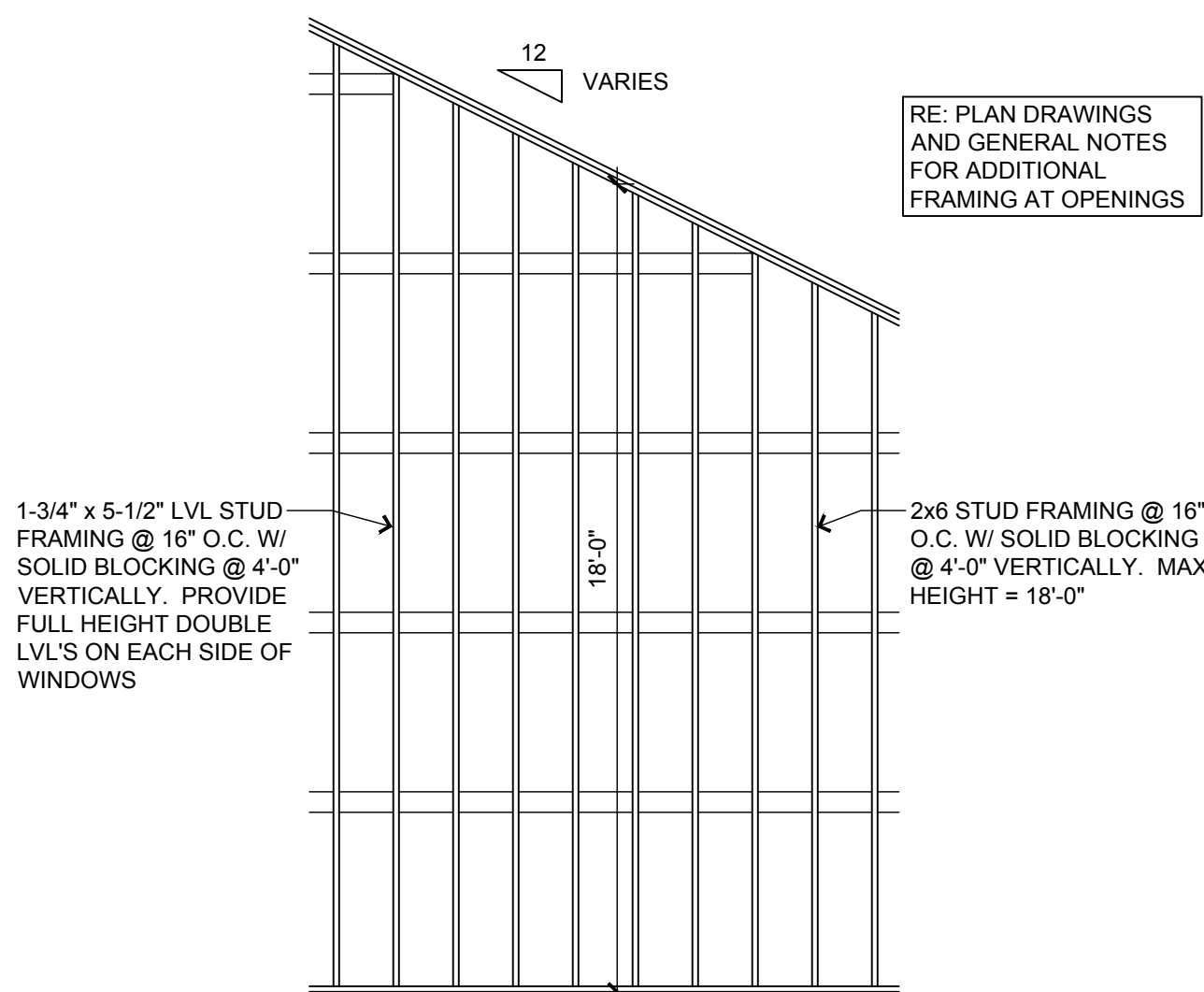
3 NOTCHING AND BORING CEILING OR FLOOR JOISTS

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



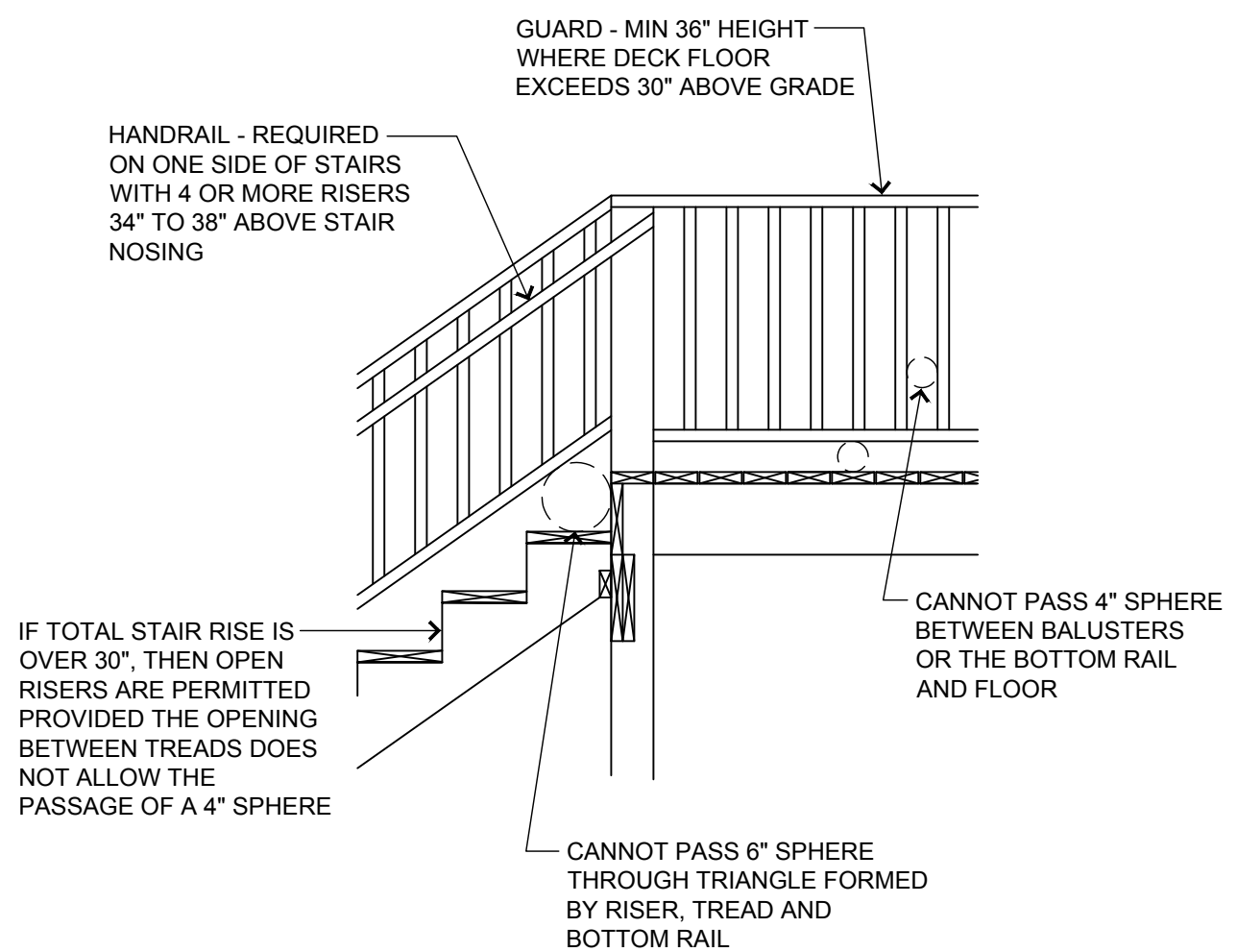
6 STL. BM. ON CONC. FNDN. WALL

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



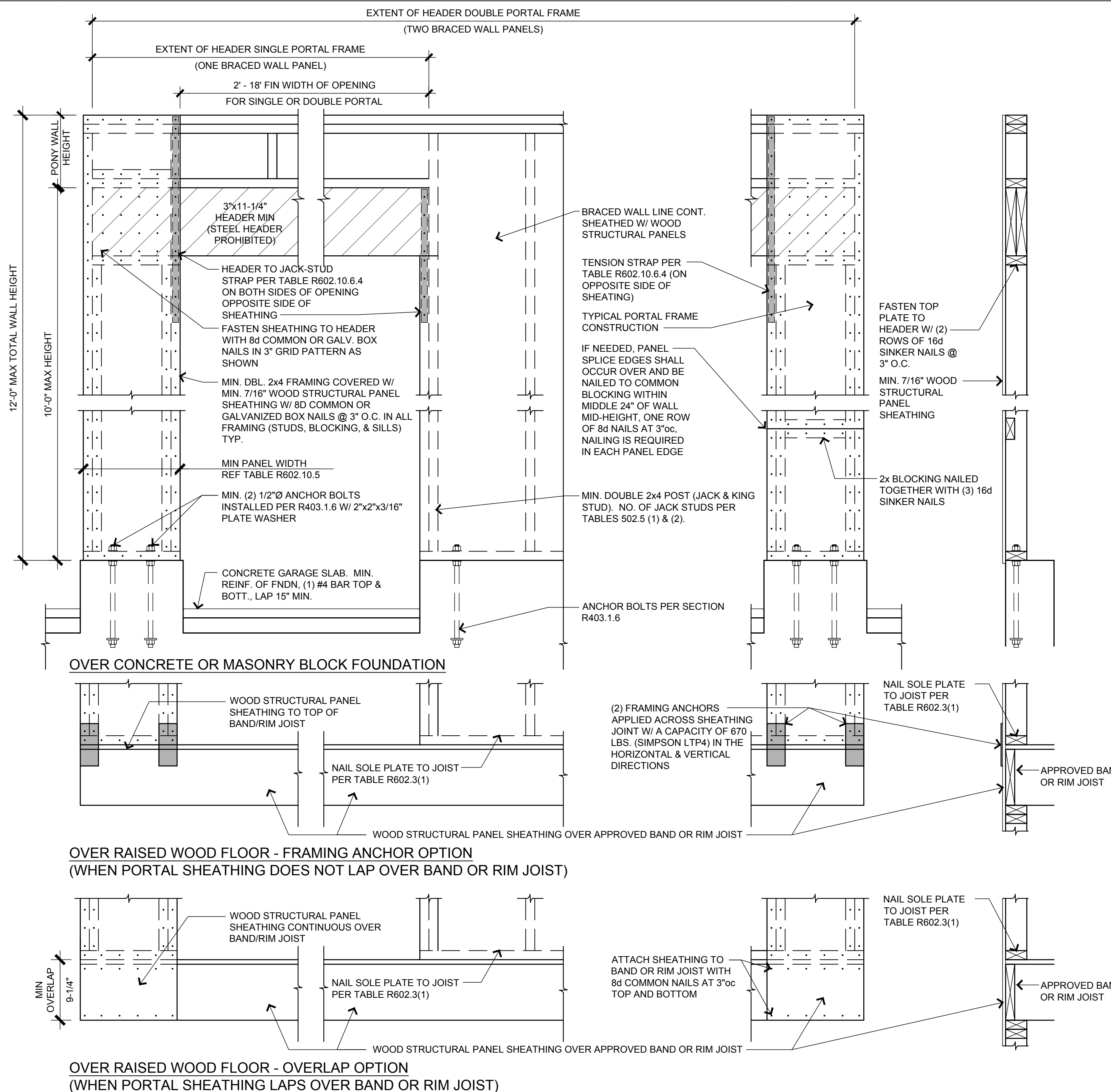
4 GENERIC GABLE END WALL FRAMING @ VAULTED CEILINGS

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



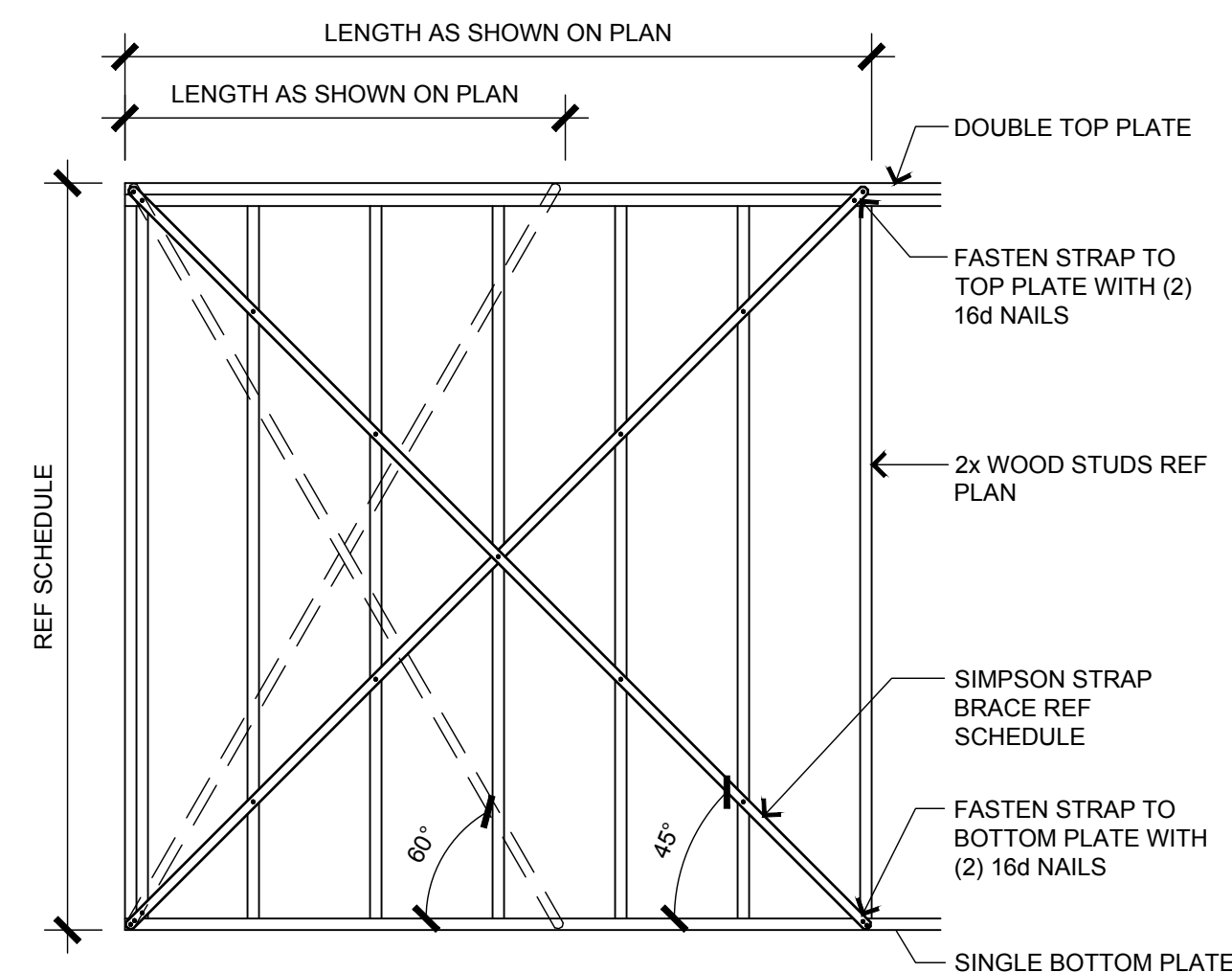
5 GUARD DETAIL

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



1 METHOD CS-PF CONT SHEATHED PORTAL FRAME PANEL (R602.10.6.4)

SCALE: 1" = 1'-0"



2 INTERIOR BRACED WALL (LIB)

SCALE: N.T.S.

METHOD		WALL LENGTH PER PORTAL HEADER HEIGHT				
		8 FEET	9 FEET	10 FEET	11 FEET	12 FEET
PFH	SUPPORTING ROOF ONLY	16"	16"	16"	(c)	(c)
	SUPPORTING ONE STORY AND ROOF	24"	24"	24"	(c)	(c)
PFG		24"	27"	30"	(d)	(d)
CS-PF	SEISMIC DESIGN CATEGORY A, B, C	16"	18"	20"	(e)	(e)
	SEISMIC DESIGN CATEGORY D ₀ , D ₁ , D ₂	16"	18"	20"	(e)	(e)

(c) MAXIMUM HEADER HEIGHT FOR PFH IS 10 FEET IN ACCORDANCE WITH FIGURE R602.10.6.2, BUT WALL HEIGHT MAY BE INCREASED TO 12 FEET WITH PONY WALL.
(d) MAXIMUM HEADER HEIGHT FOR PFG IS 10 FEET IN ACCORDANCE WITH FIGURE R602.10.6.3, BUT WALL HEIGHT MAY BE INCREASED TO 12 FEET WITH PONY WALL.
(e) MAXIMUM HEADER HEIGHT FOR CS-PF IS 10 FEET IN ACCORDANCE WITH FIGURE R602.10.4, BUT WALL HEIGHT MAY BE INCREASED TO 12 FEET WITH PONY WALL.

INTERIOR BRACED WALL SCHEDULE

SIMPSON MODEL NO.	STRAP LENGTH	WALL DIM'S HEIGHT x WIDTH	ANGLE FROM HORIZONTAL	FASTENERS	
				PLATES	EA STUD
WB106	9'-5 5/8"	8'-0" x 5'-0"	60°	(2) 16d	(1) 8d
WB126	11'-4 3/8"	8'-0" x 8'-0"	45°	(2) 16d	(1) 8d
WB106C	9'-6"	8'-0" x 5'-0"	60°	(2) 16d	(1) 8d
WB126C	11'-4 13/16"	8'-0" x 8'-0"	45°	(2) 16d	(1) 8d
WB143C	14'-3"	10'-0" x 10'-0"	45°	(2) 16d	(1) 8d

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STANDARD DETAILS,
SCHEDULES, & NOTES
Sheet No: Date: 2/22/24

S32

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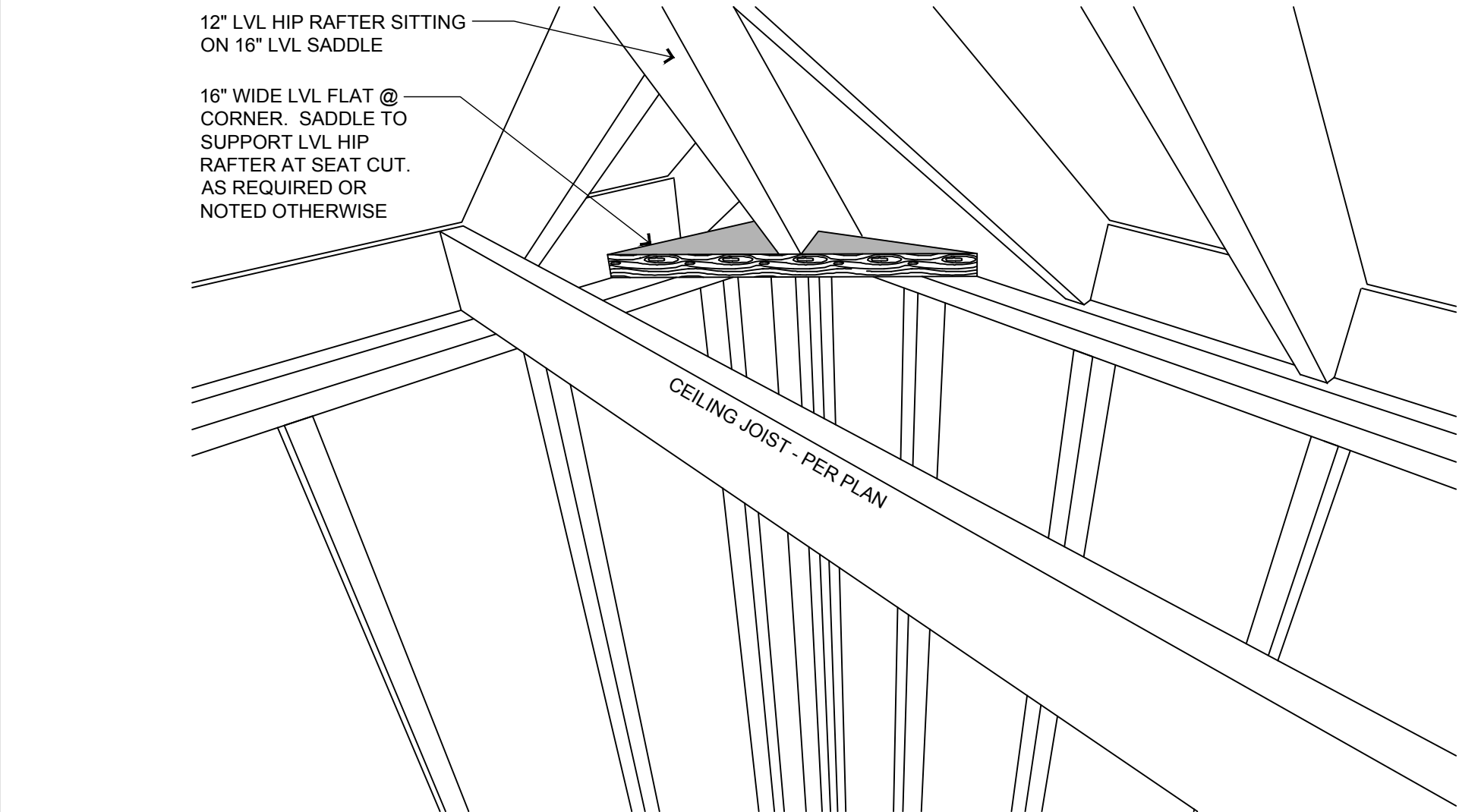
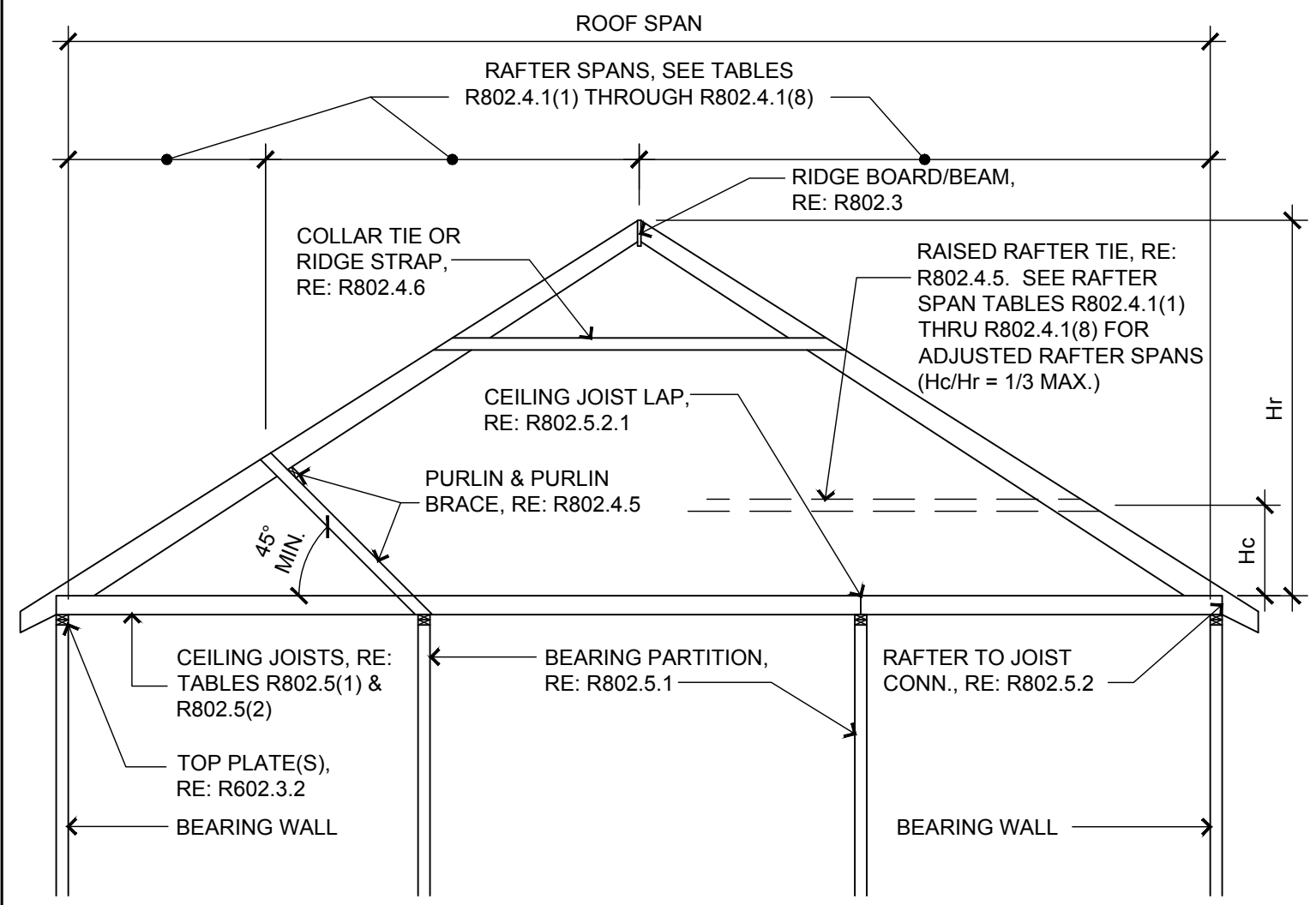
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ROOF RAFTER SCHEDULE						
GRADE	MEMBER SIZE / SPACING	MAX SPAN CEILING JSTS AT TOP PLATE	MAX SPAN H _c /H _b =0.16	MAX SPAN H _c /H _b =0.20	MAX SPAN H _c /H _b =0.25	MAX SPAN H _c /H _b =0.33
#2 DF/L	2x6 / 24"oc	11'-9"	10'-6"	9'-9"	8'-11"	7'-10"
#2 DF/L	2x6 / 16"oc	14'-1"	12'-8"	11'-8"	10'-8"	9'-5"
#2 DF/L	2x8 / 16"oc	18'-2"	16'-4"	15'-1"	13'-9"	12'-2"
#2 DF/L	2x10 / 16"oc	22'-3"	20'-0"	18'-5"	16'-10"	14'-10"
#2 DF/L	2x12 / 16"oc	25'-9"	23'-2"	21'-4"	19'-7"	17'-3"

SPANS ABOVE ARE FOR ROOF LIVE LOAD OF 20 PSF AND DEAD LOAD OF 10 PSF WITH CEILINGS ATTACHED TO RAFTERS. RE: TABLES R802.4.1(1) THROUGH R802.4.1(8) FOR ADDITIONAL RAFTER SPAN INFORMATION.

THE ROOF FRAMING ON THIS HOME UTILIZES RAFTERS SPACED AT 16" ON CENTER IN EXPOSURE B WITH A ROOF SPAN LESS THAN 42' ON IN 90 MPH WIND ZONE. THEREFORE THE UPLIFT FORCE ON THE RAFTER IS LESS THAN 200 LBS. AND CAN BE CONNECTED PER TO THE WALL FRAMING PER TABLE R602.3(1).



LVL HIP RAFTER BEARING ON 16" LVL FLAT AT CORNERS

2

SCALE: 1/2" = 1'-0"

TABLE R802.5.2 RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS (a,b,c,d,e,g)

RAFTER SLOPE	RAFTER SPACING (inches)	GROUND SNOW LOAD (PSF)																															
		20(f)								30								50								70							
		ROOF SPAN (FEET)																															
		12	20	28	36	12	20	28	36	12	20	28	36	12	20	28	36	12	20	28	36												
		REQUIRED NUMBER OF 16d COMMON NAILS(a,b) PER HEEL JOINT SPLICES (c,d,e)																															
3:12	12	4	6	8	10	4	6	8	11	5	8	11	14	6	11	15	20	8	11	15	20	26	26	26	26								
	16	5	8	10	13	5	8	11	16	6	11	14	18	7	12	17	22	9	16	21	30	39	39	39									
	24	7	11	15	19	7	11	16	21	9	16	23	30	12	21	30	39	12	21	30	39	16	23	29	39								
4:12	12	3	5	6	8	3	5	6	8	4	6	8	11	5	8	12	15	6	11	5	8	12	15	15	15								
	16	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20	8	14	20	26	26	26	26									
	24	5	8	12	15	5	9	12	16	7	12	17	22	9	16	21	30	12	21	30	39	16	23	29	39								
5:12	12	3	4	5	6	3	4	5	7	3	5	7	9	4	7	9	12	5	9	12	16	23	29	39									
	16	3	5	6	8	3	5	7	9	4	7	9	12	5	9	12	16	5	9	12	16	23	29	39									
	24	4	7	9	12	4	7	10	13	6	10	14	18	7	13	18	23	7	13	18	23	29	39	39									
7:12	12	3	4	4	5	3	3	4	5	3	3	4	5	7	3	5	7	9	4	7	9	12	16	23									
	16	3	4	5	6	3	4	5	6	3	4	5	7	9	4	7	9	4	6	9	13	17	23	29									
	24	3	5	7	9	3	5	7	9	4	7	10	13	5	9	13	17	5	9	13	17	23	29	39									
9:12	12	3	3	4	4	3	3	3	4	3	3	3	4	5	3	4	5	7	3	4	5	7	9	12									
	16	3	3	4	5	3	3	3	4	5	3	3	4	5	7	3	4	5	7	3	4	5	7	9									
	24	3	4	6	7	3	4	6	7	3	6	8	10	4	7	10	13	7	10	13	17	23	29	39									
12:12	12	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	5	7	9	12	16	23									
	16	3	3	3	4	3	3	3	3	4	3	3	4	5	3	4	5	7	9	12	16	23	29	39									
	24	3	4	4	5	3	3	4	6	3	4	6	8	3	6	8	3	6	8	3	6	8	10	10	10								

- a. 40d BOX NAILS SHALL BE PERMITTED TO BE SUBSTITUTED FOR 16D COMMON NAILS.
- b. NAILING REQUIREMENTS SHALL BE PERMITTED TO BE REDUCED 25% IF NAILS ARE CLINCHED.
- c. HEEL JOINT CONNECTIONS ARE NOT REQUIRED WHEN THE RIDGE IS SUPPORTED BY A LOAD-BEARING WALL, HEADER, OR RIDGE BEAM.
- d. WHEN INTERMEDIATE SUPPORT OF THE RAFTER IS PROVIDED BY VERTICAL STRUTS OR PURLINS TO A LOAD-BEARING WALL, THE TABULATED HEEL JOINT CONNECTION REQUIREMENTS SHALL BE PERMITTED TO BE REDUCED PROPORTIONALLY TO THE REDUCTION IN SPAN.
- e. EQUIVALENT NAILING PATTERNS ARE REQUIRED FOR CEILING JOIST TO CEILING JOIST LAP SPLICES.
- f. APPLIES TO ROOF LIVE LOAD OF 20 psf OR LESS.
- g. TABULATED HEEL JOINT CONNECTION REQUIREMENTS ASSUME THAT CEILING JOISTS OR RAFTER TIES ARE LOCATED AT THE BOTTOM OF THE ATTIC SPACE. WHEN CEILING JOISTS OR RAFTER TIES ARE LOCATED HIGHER IN THE ATTIC, HEEL JOINT CONNECTION REQUIREMENTS SHALL BE INCREASED BY THE FOLLOWING FACTORS:

Hc/Hr	HEEL JOINT CONNECTION ADJUSTMENT FACTOR
1/3	1.5
1/4	1.33
1/5	1.25
1/6	1.2
1/10 OR LESS	1.11

WHERE:

Hc= HEIGHT OF CEILING JOISTS OR RAFTER TIES MEASURED VERTICALLY ABOVE THE TOP OF THE RAFTER SUPPORT WALLS.

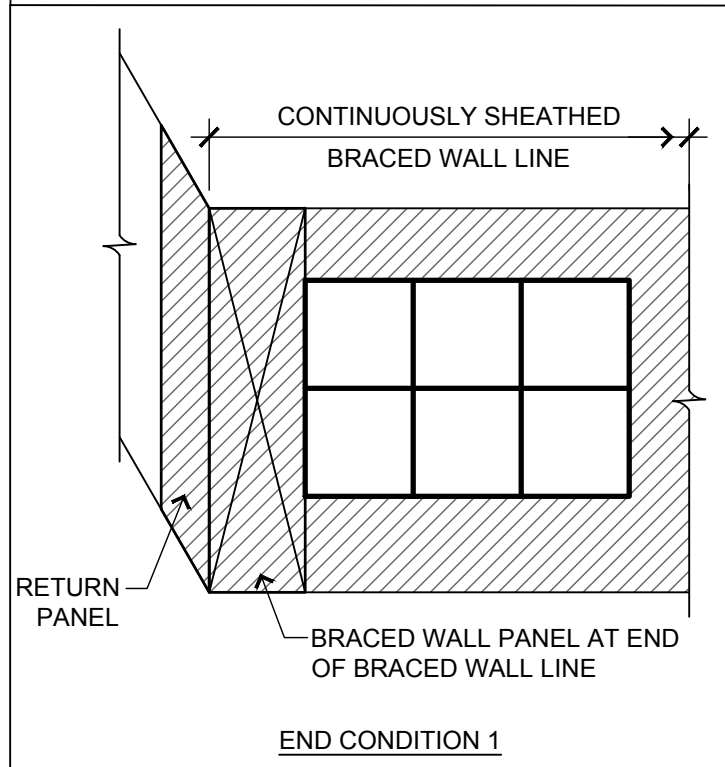
Hr=HEIGHT OF ROOF RIDGE MEASURED VERTICALLY ABOVE THE TOP OF THE RAFTER SUPPORT WALLS.

REQUIREMENTS

RETURN PANEL:
24" FOR BRACED WALL LINES SHEATHED WITH WOOD STRUCTURAL PANELS
32" FOR BRACED WALL LINES SHEATHED WITH STRUCTURAL FIBERBOARD

DISTANCE D:
24" FOR BRACED WALL LINES SHEATHED WITH WOOD STRUCTURAL PANELS
32" FOR BRACED WALL LINES SHEATHED WITH STRUCTURAL FIBERBOARD

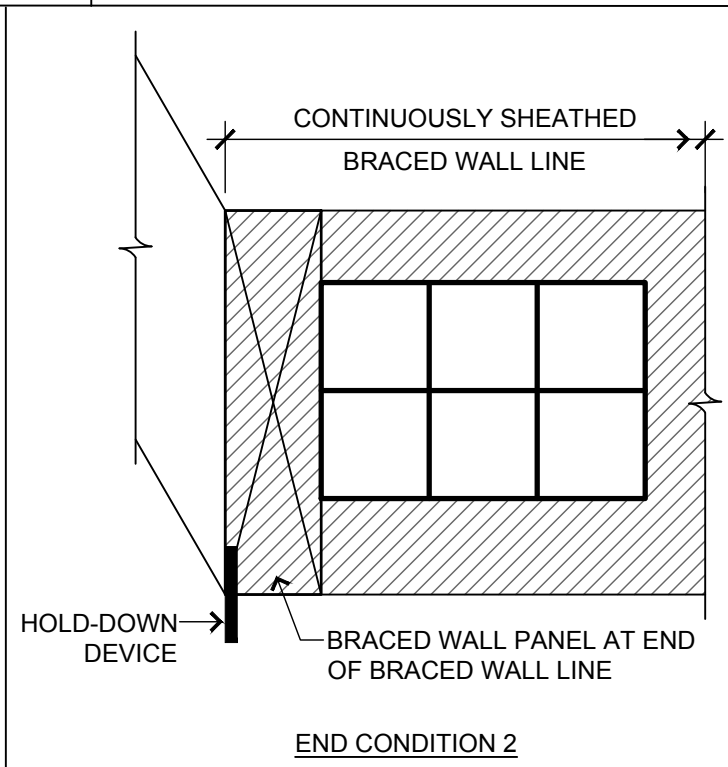
HOLD-DOWN DEVICE:
800 lbs CAPACITY FASTENED TO THE EDGE OF THE BRACED WALL PANEL CLOSEST TO THE CORNER AND TO THE FOUNDATION OR FLOOR FRAMING BELOW



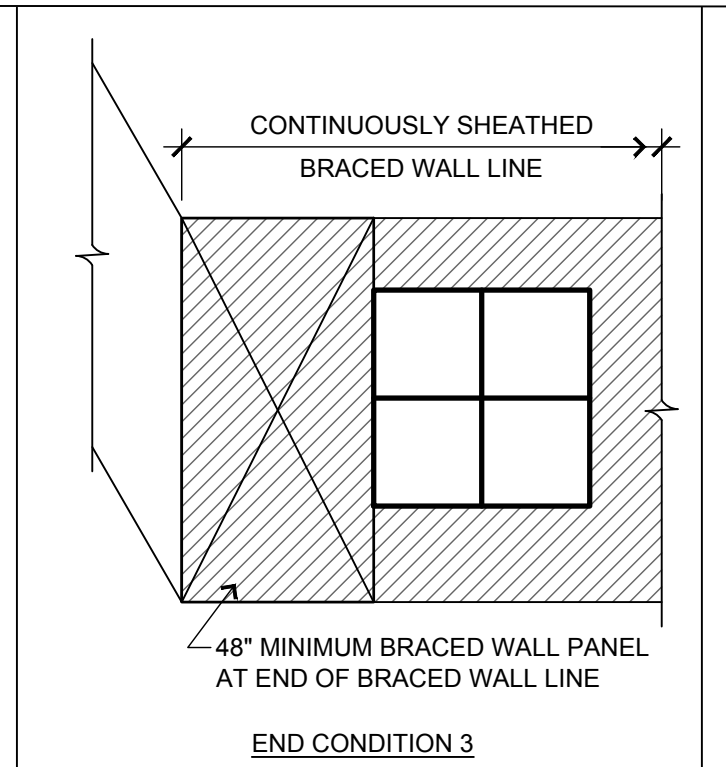
1

END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING R602.10.7

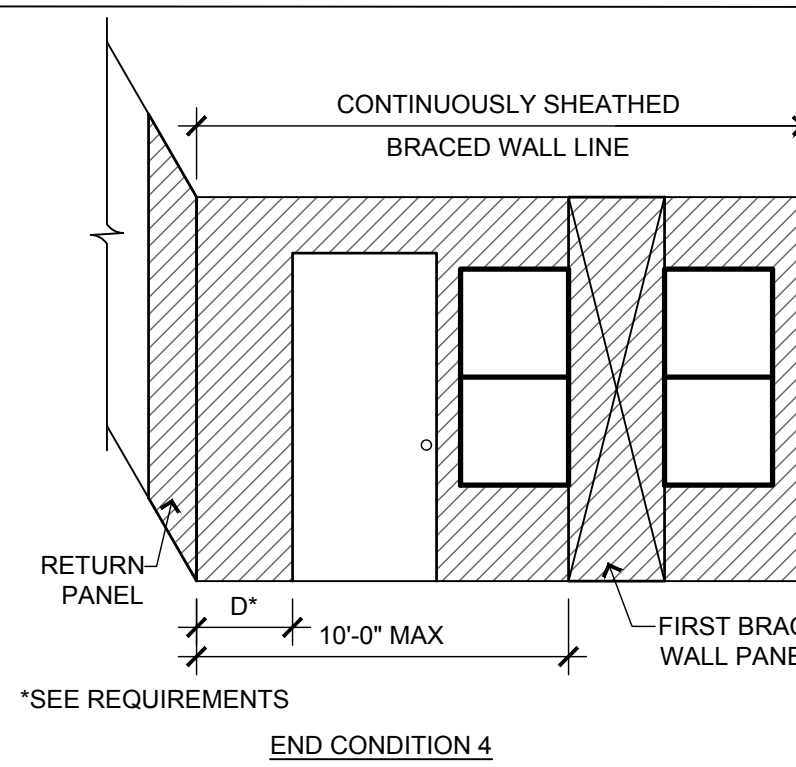
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END CONDITION 2

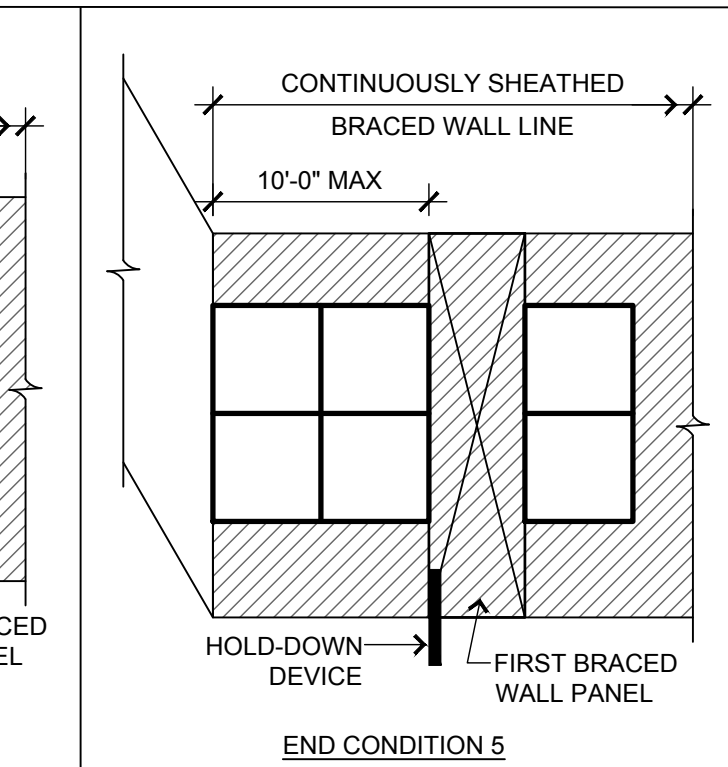


END CONDITION 3



*SEE REQUIREMENTS

END CONDITION 4



END CONDITION 5

FASTENING SCHEDULE

IRC 2018 TABLE R602.3(1)

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER (a)(b)(c)	SPACING AND LOCATION
Roof			
1	Blocking between ceiling joists or rafters to top plate	4-8d box (2-1/2" x 0.113"); or 3-8d common (2-1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	Toe nail
2	Ceiling joists to top plate	4-8d box (2-1/2" x 0.113"); or 3-8d common (2-1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	Per joist, toe nail
3	Ceiling joist not attached to parallel rafter, laps over partitions (see Section R802.5.2 and Table R802.5.2)	4-10d box (3" x 0.128"); or 3-16d common (3-1/2" x 0.162"); or 4-3" x 0.131" nails	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (see Section R802.5.2 and Table R802.5.2)	Table R802.5.2	Face nail
5	Collar tie to rafter, face nail or 11/4" x 20 ga. ridge strap to rafter	4-10d box (3" x 0.128"); or 3-10d common (3" x 0.148"); or 4-3" x 0.131" nails	Face nail each rafter
6	Rafter or roof truss to plate	3-16d box nails (3-1/2" x 0.135"); or 3-10d common nails (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss()
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam	4-16d (3-1/2" x 0.135"); or 3-10d common (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	Toe nail
		3-16d box (3-1/2" x 0.135"); or 2-16d common (3-1/2" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	End nail
Wall			
8	Stud to stud (not at braced wall panels)	16d common (3-1/2" x 0.162")	24" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0.131" nails	16" o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d box (3-1/2" x 0.135"); or 3" x 0.131" nails	12" o.c. face nail
10	Built-up header (2" to 2" header with 1/2" spacer)	16d common (3-1/2" x 0.162")	16" o.c. each edge face nail
		16d box (3-1/2" x 0.135")	12" o.c. each edge face nail
11	Continuous header to stud	5-8d box (2-1/2" x 0.113"); or 4-8d common (2-1/2" x 0.131"); or 4-10d box (3" x 0.128")	Toe nail
		16d common (3-1/2" x 0.162")	16" o.c. face nail
12	Top plate to top plate	10d box (3" x 0.128"); or 3" x 0.131" nails	12" o.c. face nail
13	Double top plate splice	8-16d common (3-1/2" x 0.162"); or 12-16d box (3-1/2" x 0.135"); or 12-10d box (3" x 0.128"); or 12-3" x 0.131" nails	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3-1/2" x 0.162")	16" o.c. face nail
		16d box (3-1/2" x 0.135"); or 3" x 0.131" nails	12" o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking (at braced wall panel)	3-16d box (3-1/2" x 0.135"); or 2-16d common (3-1/2" x 0.162"); or 4-3" x 0.131" nails	3 each 16" o.c. face nail 2 each 16" o.c. face nail 4 each 16" o.c. face nail
16	Top or bottom plate to stud	4-8d box (2-1/2" x 0.113"); or 3-16d box (3-1/2" x 0.135"); or 4-8d common (2-1/2" x 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	Toe nail
		3-16d box (3-1/2" x 0.135"); or 2-16d common (3-1/2" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	End nail
17	Top plates, laps at corners and intersections	3-10d box (3" x 0.128"); or 2-16d common (3-1/2" x 0.162"); or 3-3" x 0.131" nails	Face nail
18	1" brace to each stud and plate	3-8d box (2-1/2" x 0.113"); or 2-8d common (2-1/2" x 0.131"); or 2-10d box (3" x 0.128"); or 2 staples 1-3/4"	Face nail
19	1" x 6" sheathing to each bearing	3-8d box (2-1/2" x 0.113"); or 2-8d common (2-1/2" x 0.131"); or 2-10d box (3" x 0.128"); or 2 staples, 1" crown, 16 ga., 1-3/4" long	Face nail
20	1" x 8" and wider sheathing to each bearing	3-8d box (2-1/2" x 0.113"); or 4-8d box (2-1/2" x 0.113"); or 3-8d common (2-1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 4 staples, 1" crown, 16 ga., 1-3/4" long (continued)	Face nail

		Floor	
21	Joist to sill, top plate or girder	4-8d box (2-1/2" × 0.113"); or 3-8d common (2-1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	Toe nail
22	Rim joist, band joist or blocking to sill or top plate (roof applications also)	8d box (2-1/2" × 0.113")	4" o.c. toe nail
23	1" × 6" subfloor or less to each joist	8d common (2-1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., 1-3/4" long	6" o.c. toe nail
24	2" subfloor to joist or girder	3-16d box (3-1/2" × 0.135"); or 2-16d common (3-1/2" × 0.162")	Blind and face nail
25	2" planks (plank & beam—floor & roof)	3-16d box (3-1/2" × 0.135"); or 2-16d common (3-1/2" × 0.162")	At each bearing, face nail
26	Band or rim joist to joist	3-16d common (3-1/2" × 0.162") 4-10 box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" × 14 ga. staples, 7/16" crown	End nail
27	Built-up girders and beams, 2-inch lumber layers	20d common (4" × 0.192"); or	Nail each layer as follows: 32" o.c. at top and bottom and staggered.
		10d box (3" × 0.128"); or 3" × 0.131" nails	24" o.c. face nail at top and bottom staggered on opposite sides
		And: 2-20d common (4" × 0.192"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	Face nail at ends and at each splice
28	Ledger strip supporting joists or rafters	4-16d box (3-1/2" × 0.135"); or 3-16d common (3-1/2" × 0.162"); or 4-10 box (3" × 0.128"); or 4-3" × 0.131" nails	At each joist or rafter, face nail
29	Bridging or blocking to joist	2-10d box (3" × 0.128"); or 2-8d common (2-1/2" × 0.131"); or 2-3" × 0.131" nails	Each end, toe nail
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER (a)(b)(c)	SPACING OF FASTENERS Edges (inches)(h) Intermediate supports(c)(e) (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing [see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing]			
30	3/8" – 1/2"	6d common (2" × 0.113") nail (subfloor, wall)(i) 8d common (2-1/2" × 0.131") nail (roof); or RRSRS-01 (2-3/8" × 0.113") nail (roof)(j)	6 12(f)
31	19/32" – 1"	8d common nail (21/2" × 0.131"); or RRSRS-01; (2-3/8" × 0.113") nail (roof)(j)	6 12(f)
32	1-1/8" – 1-1/4"	10d common (3" × 0.148") nail; or 8d (21/2" × 0.131") deformed nail	6 12
Other wall sheathing(g)			
33	1/2" structural cellulosic fiberboard sheathing	1-1/2" galvanized roofing nail, 7/16" head diameter, or 1-1/4" long 16 ga. staple with 7/16" or 1" crown	3 6
34	25/32" structural cellulosic fiberboard sheathing	1-3/4" galvanized roofing nail, 7/16" head diameter, or 1-1/2" long 16 ga. staple with 7/16" or 1" crown	3 6
35	1/2" gypsum sheathing(d)	1-1/2" galvanized roofing nail; staple galvanized, 1-1/2" long; 1-1/4" screws, Type W or S	7 7
36	5/8" gypsum sheathing(d)	1-3/4" galvanized roofing nail; staple galvanized, 1-5/8" long; 1-5/8" screws, Type W or S	7 7
Wood structural panels, combination subfloor underlayment to framing			
37	3/4" and less	6d deformed (2" × 0.120") nail; or 8d common (2-1/2" × 0.131") nail	6 12
38	7/8" – 1"	8d common (2-1/2" × 0.131") nail; or 8d deformed (2-1/2" × 0.120") nail	6 12
39	1-1/8" – 1-1/4"	10d common (3" × 0.148") nail; or 8d deformed (2-1/2" × 0.120") nail	6 12
a.	Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters greater than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.		
b.	Staples are 16 gauge wire and have a minimum 7/16-inch on diameter crown width.		
c.	Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.		
d.	Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.		
e.	Spacing of fasteners not included in this table shall be based on Table R602.3(2).		
f.	For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 6 inches on center where the ultimate design wind speed is less than 130 mph and shall be spaced 4 inches on center where the ultimate design wind speed is 130 mph or greater but not less than 140 mph.		
g.	Gypsum sheathing shall conform to ASTM C1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C208.		
h.	Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking, and to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.		
i.	Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.		
j.	RRSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.		