Project Summary

Project Scope

New single family detached dwelling and associated site work on newly platted undeveloped lot.

Site Data:

Street Address: See Title Block

Neighborhood: See Tittle Block

Legal Description: See Title Block

Zoning: RP-1 Planned Single Family District

Minimum setbacks: Front: 30'

Side: 7'

Rear: 25'

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)

N1102.4 Building 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

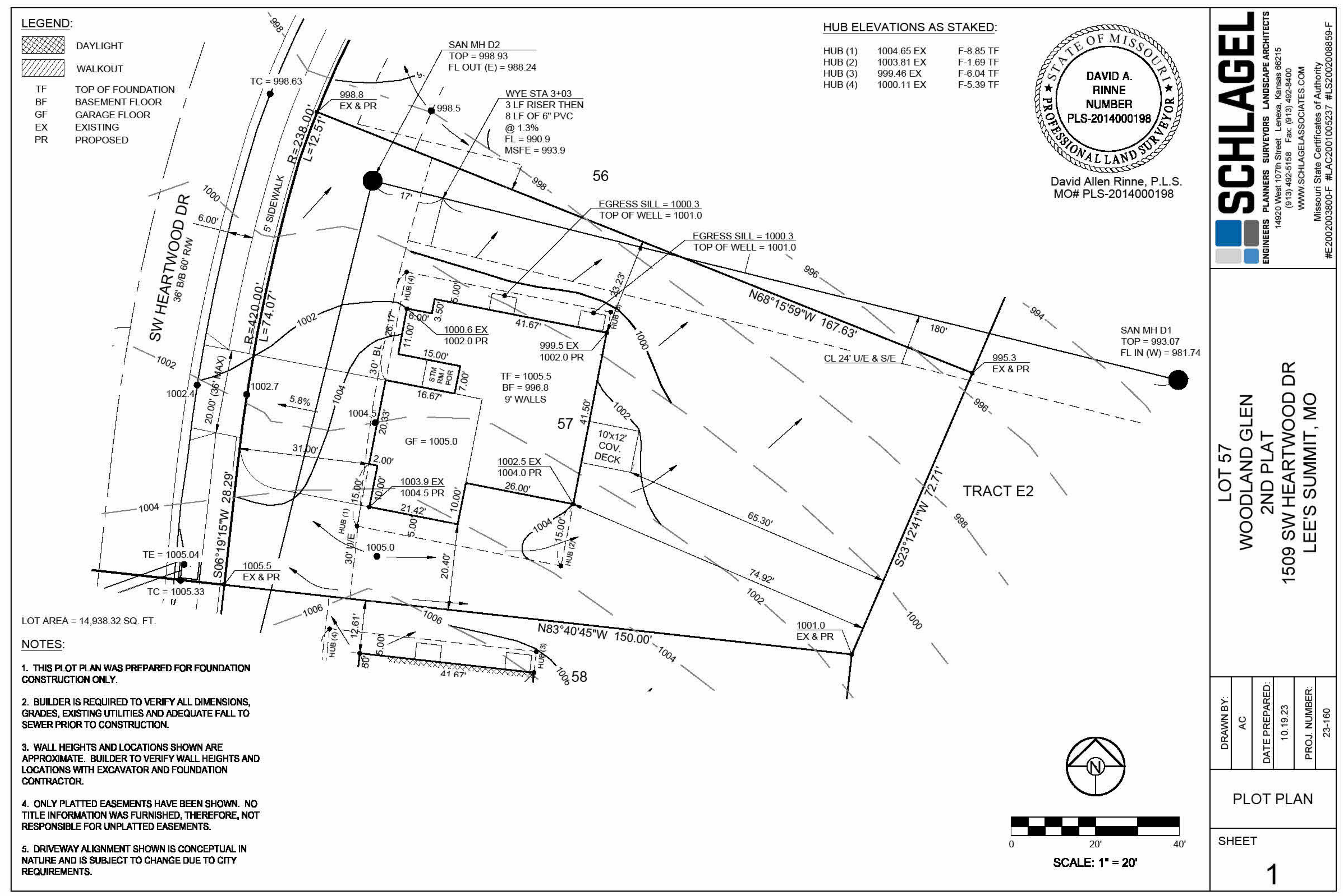
Residential General Notes

1. It is the responsibility of the contractor to become fully aware of any 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.
2. 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.
3. 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.
4. 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.
5. Building systems and components not specifically detailed shall be installed, as per minimum manufacturers recommendations. Notify the architect of any resulting conflicts.
6. 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.
7. Install dust barriers and other protection as required to protect installed finishes and facilities.
8. 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.
9. 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.
10. 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.
11. 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.
12. Contractor shall provide temporary bracing for the structure and structural components until all final connections have been completed in accordance with the plans.
13. 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.
14. All wood framing details not shown otherwise shall be constructed to the minimum standards of the IRC.
15. 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.
16. 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.
17. Provide galvanic separation between dissimilar metals.
18. The contractor is to verify the location of all utilities and services to the site prior to beginning any site improvements.
19. 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.
20. Adjacent properties, streets and walks are to be protected from damage at all times.
21. 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.
22. All dimensions are face of stud wall, centerline of column, or face of concrete unless noted otherwise.
23. The contractor shall secure permits required by the fire department prior to building occupation.
24. 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.
25. 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.
26. The contractor and/or the sub-contractors shall apply for, obtain and pay for all required permits and fees except for the building permit.
27. Construction hours, per jurisdiction, are to be observed for all phases of the project.

Precautionary Notes

1. 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.
2. 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.
3. 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.
4. Verifying 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



I:\PROJECTS\2023\23-159\3.0 Design\23-159.dwg, 23-160 LOT 57, 10/19/2023 5:23:39 PM, 1:1

2 Plot Plan
1" = 20'-0"

Sheet List

Sht No	Sheet Name	Project Issue Date	Current Revision
Architectural			
A01	Cover Sheet	10/10/23	10/20/23
A11	Elevations	10/10/23	10/20/23
A21	Basement Plan	10/10/23	
A22	Main Floor Plan	10/10/23	
AA2	Furnishing Plans	10/10/23	
Structural			
S01	Structural	10/10/23	
S10	Structural	10/10/23	
S20	Structural	10/10/23	
S21	Structural	10/10/23	
S30	Structural	10/10/23	
S31	Structural	10/10/23	
S32	Structural	10/10/23	
S33	Structural	10/10/23	
S34	Structural	10/10/23	

Area Summary

Basement	
945 SF	Finished Area
235 SF	Mechanical
974 SF	Storage/Storm
2,153 SF	
Main Floor	
134 SF	Covered Deck
56 SF	Covered Front Porch
663 SF	Garage
1,423 SF	Main Floor
2,276 SF	
4,429 SF	

BILL FOWLER ARCHITECT

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913 908 5363 / BWFOWLER@ME.COM

NCARB
National Council Architectural Registration Boards

STATE OF MISSOURI BILLY WAYNE FOWLER A-2009030387 ARCHITECT
10/10/23
10/20/23

Project:

Woodland Glen Lot 57

The Woodbridge 1 1/2 Reverse

Location:
1509 SW Heartwood Dr.
Lee's Summit, MO

Client:
John Duggan
913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:
WBRG-WG57

Sheet Name:
Cover Sheet

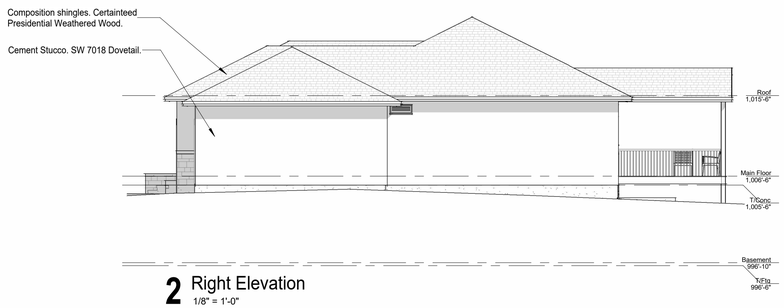
Sheet No: **A01**

Date: **10/10/23**

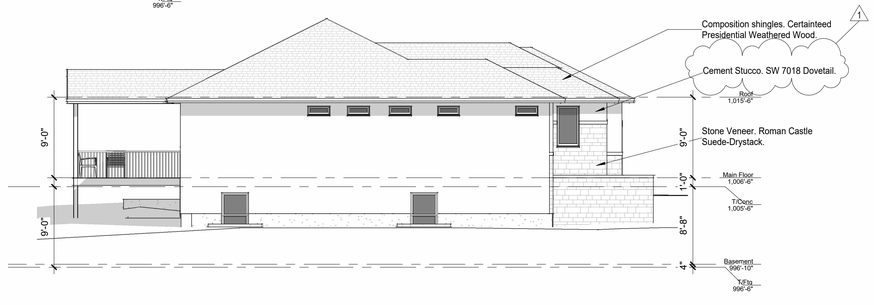
Current Revision Date: **10/20/23**

PERMIT SET

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



2 Right Elevation
1/8" = 1'-0"

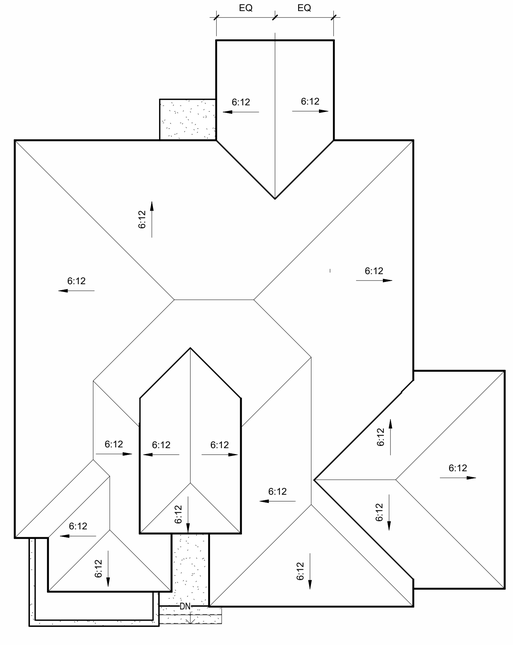


3 Left Elevation
1/8" = 1'-0"

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

Exterior Elevation Notes

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



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

Exterior Materials

Exterior Cement Stucco & siding: SW 7018 Dovetail

Stone Veneer: Roman Castle Suede-Drystack

Exterior Trim: SW 7005 Pure White

Garage Doors: SW 7020 Black Fox

Roof: Certainteed Presidential Weathered Wood

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Sheet Name:

Elevations

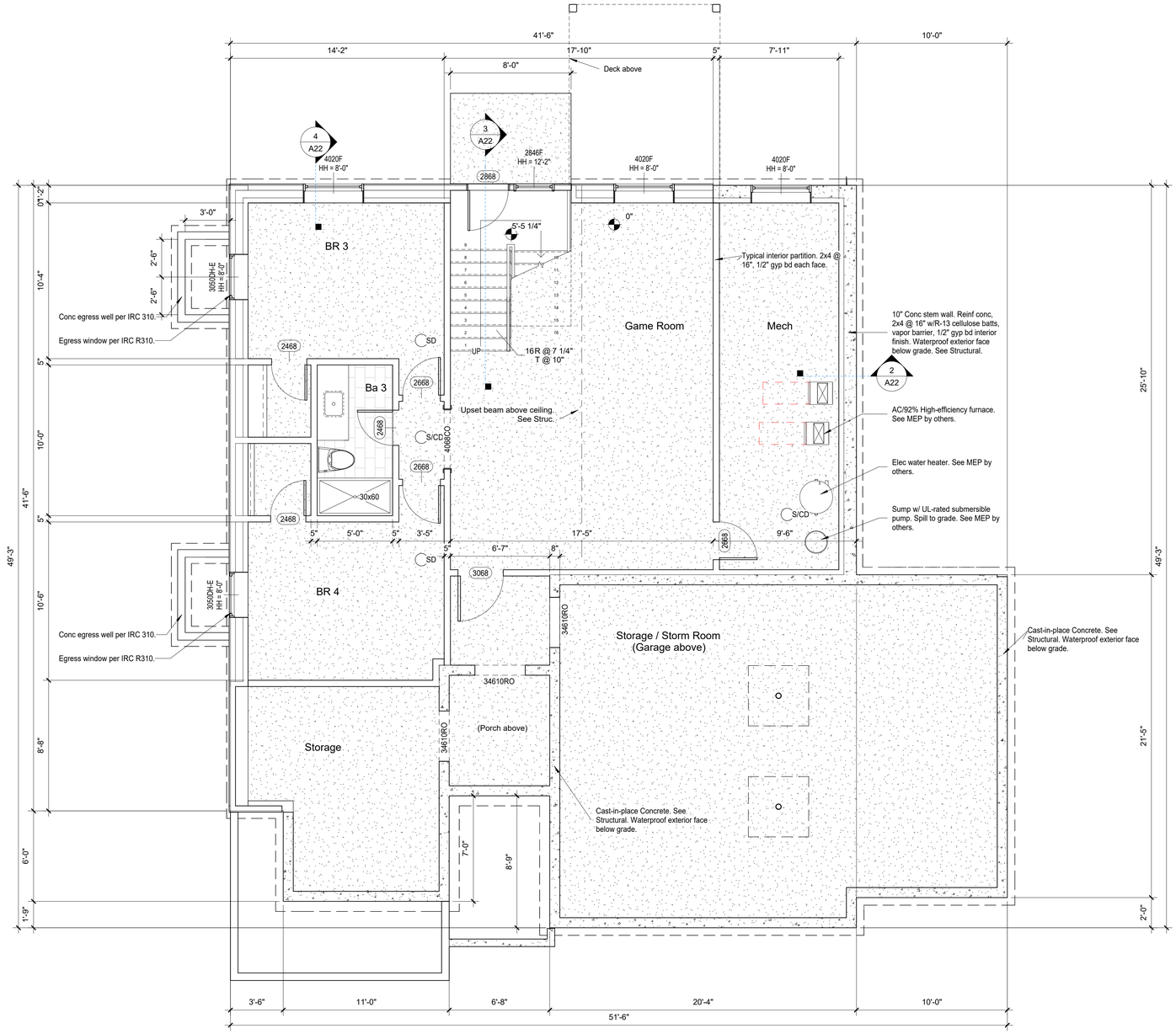
Sheet No:

A11

Date:
10/10/23

Current Revision Date:
10/20/23

PERMIT SET



Plan North

1 Basement Floor Plan

1/4" = 1'-0"

Area Summary

Basement	
945 SF	Finished Area
235 SF	Mechanical
974 SF	Storage/Storm
2,153 SF	

Main Floor	
134 SF	Covered Deck
56 SF	Covered Front Porch
663 SF	Garage
1,423 SF	Main Floor
2,276 SF	
4,429 SF	

Floor Plan Notes

1. 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.
2. Window and door tags indicate nominal 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.
3. Field verify all existing conditions relevant to the work.
4. Loose furnishings, if shown, are by Owner.
5. Mechanical and electrical designs are by design-build contractors who are responsible for coordinating with Owner's requirements and code conformance.
6. All sleeping rooms shall have at least one egress window per IRC R310. See Project Notes and Window Schedule.
7. Fire resistant construction, if required, shall comply with IRC R302. See Project Notes.
8. Safety glazing, where required, shall comply with IRC R308.
9. Garage floor slab shall comply with IRC R309.
10. Emergency egress paths such as floors and landings at exterior doors, stairs, and hallways shall comply with IRC R311.
11. Where window sills are 24" or lower, provide window fall protection per IRC R312.
12. Refer to IRC R317 for preservative treated wood requirements.
13. Refer to IRC R318 for termite protection requirements.
14. Provide a smoke detector, hard-wired and interconnected, in each sleeping room per IRC 314.
15. Provide a carbon monoxide detector, hard-wired and interconnected, outside each group of sleeping rooms and at interior garage door per IRC 315.

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ARCHITECT

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Client:
John Duggan
913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:

WBRG-WG57

Sheet Name:

Basement Plan

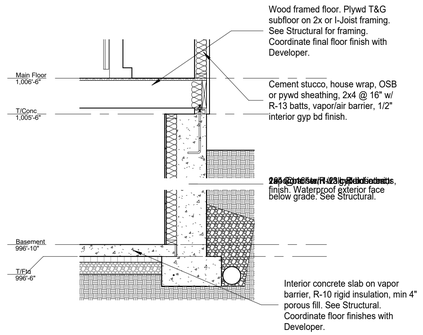
Sheet No:

A21

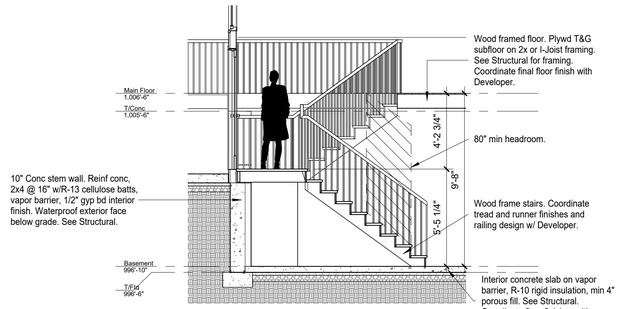
Date:
10/10/23

Current Revision Date:

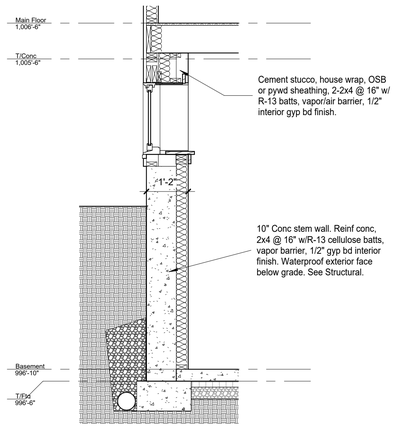
PERMIT SET



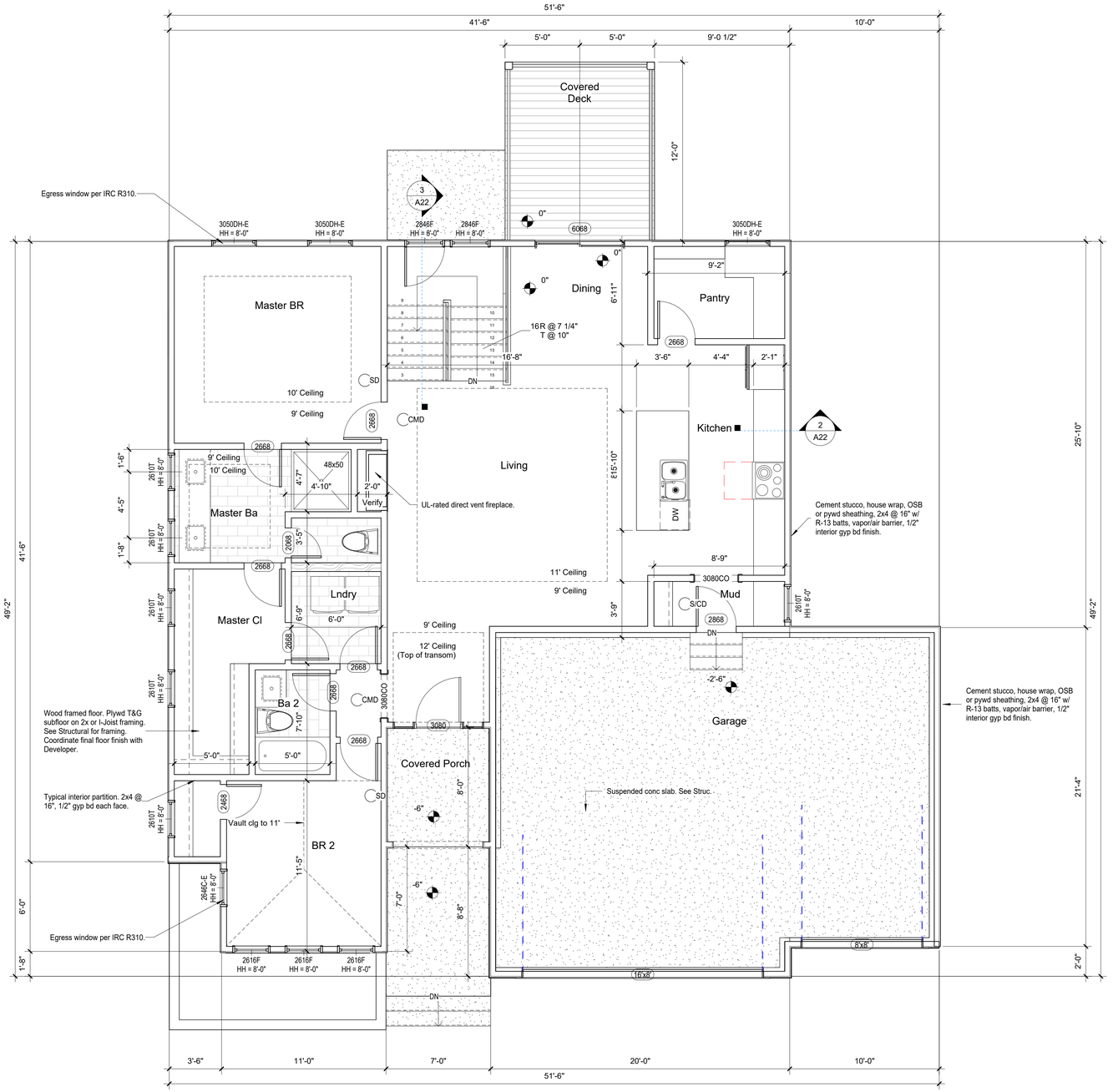
2 Concrete Stem Wall Section
1/2" = 1'-0"



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



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



Plan North

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

Area Summary

Basement	
945 SF	Finished Area
235 SF	Mechanical
974 SF	Storage/Storm
2,153 SF	

Main Floor	
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56 SF	Covered Front Porch
663 SF	Garage
1,423 SF	Main Floor
2,276 SF	
4,429 SF	

Floor Plan Notes

1. 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.
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3. Field verify all existing conditions relevant to the work.
4. Loose furnishings, if shown, are by Owner.
5. Mechanical and electrical designs are by design-build contractors who are responsible for coordinating with Owner's requirements and code conformance.
6. All sleeping rooms shall have at least one egress window per IRC R310. See Project Notes and Window Schedule.
7. Fire resistant construction, if required, shall comply with IRC R302. See Project Notes.
8. Safety glazing, where required, shall comply with IRC R308.
9. Garage floor slab shall comply with IRC R309.
10. Emergency egress paths such as floors and landings at exterior doors, stairs, and hallways shall comply with IRC R311.
11. Where window sills are 24" or lower, provide window fall protection per IRC R312.
12. Refer to IRC R317 for preservative treated wood requirements.
13. Refer to IRC R318 for termite protection requirements.
14. Provide a smoke detector, hard-wired and interconnected, in each sleeping room per IRC 314.
15. Provide a carbon monoxide detector, hard-wired and interconnected, outside each group of sleeping rooms and at interior garage door per IRC 315.

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STATE OF MISSOURI
BILLY WAYNE FOWLER
A-2009030387
ARCHITECT
10/10/23

Project:

Woodland Glen Lot 57

The Woodbridge 1 1/2 Reverse

Location:
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Client:
John Duggan
913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:

WBRG-WG57

Sheet Name:

Main Floor Plan

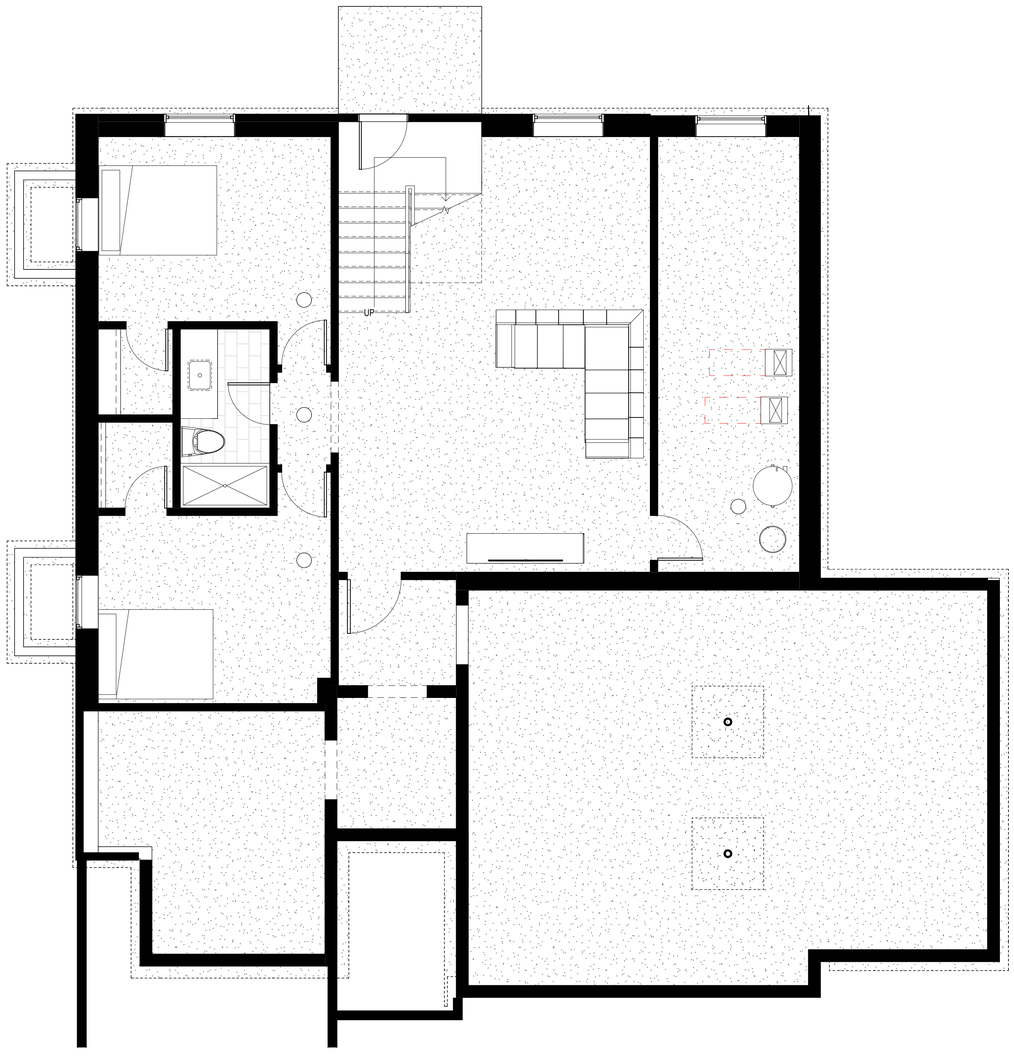
Sheet No:

A22

Date:
10/10/23

Current Revision Date:

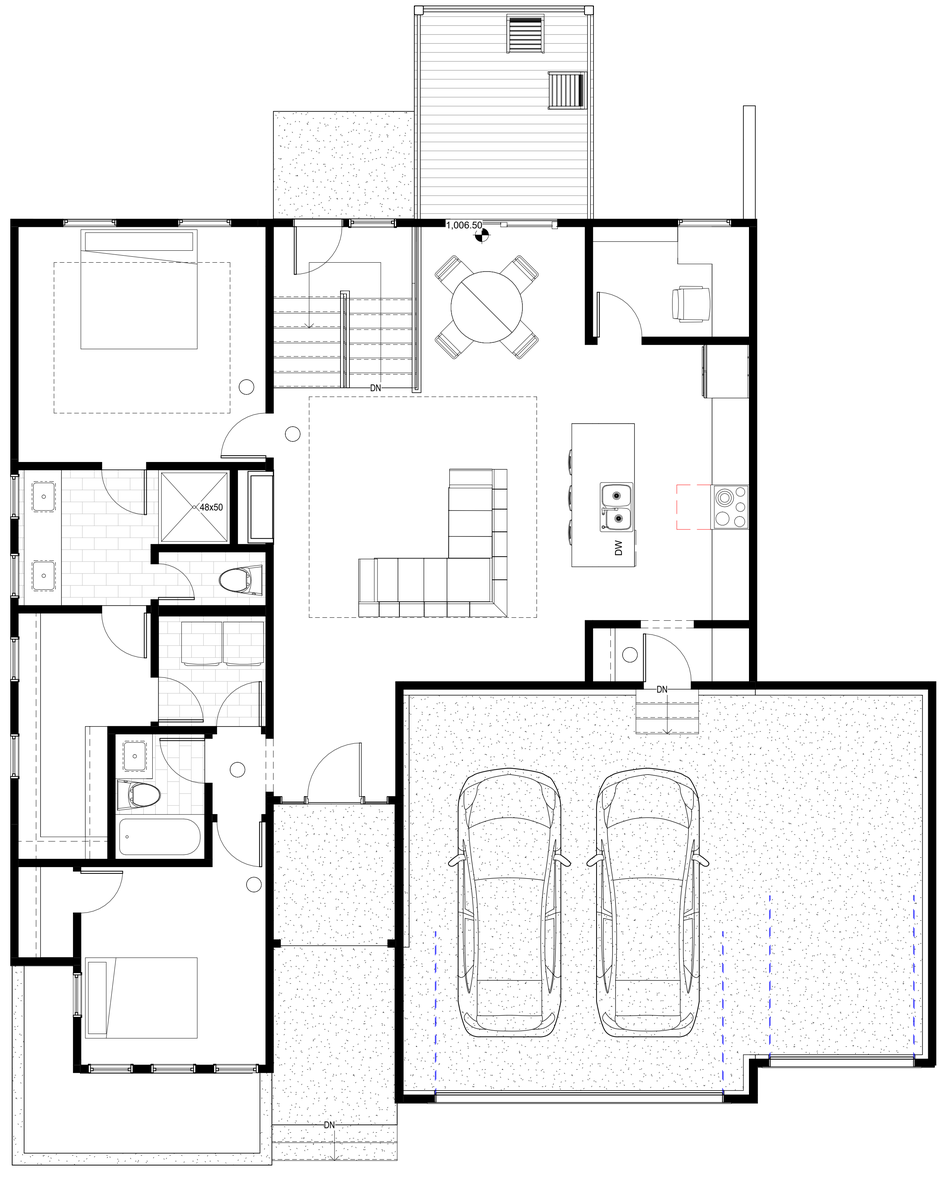
PERMIT SET



Plan North

1 Basement Floor Plan
1/4" = 1'-0"

1/4" = 1'-0" SCALE 2 0 2 4 6 8 10 FEET



Plan North

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

1/4" = 1'-0" SCALE 2 0 2 4 6 8 10 FEET

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913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:

WBRG-WG57

Sheet Name:

Furnishing Plans

Sheet No:

AA2

Date:
10/10/23

Current Revision Date:

PERMIT SET

GENERAL NOTES

GOVERNING BUILDING CODE: 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) AND ITS APPROPRIATE SUPPLEMENTS

DESIGN LOADS:

ROOF DEAD LOAD:	15 psf
ROOF LIVE LOAD:	20 psf
FLOOR DEAD LOAD:	10 psf
FLOOR LIVE LOAD:	
BEDROOMS:	30 psf
ALL OTHER LIVING AREAS:	40 psf
WIND LOADS:	Vasd=115 MPH, EXPOSURE C
SEISMIC LOADS:	SITE CLASS "B"
ASSUMED ALLOWABLE SOIL BEARING PRESSURE:	1,500 PSF

GENERAL:

1. FURNISH ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHOWN OR INFERRED BY THESE DRAWINGS.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS AND FOR COORDINATING ALL DIMENSIONS AND ELEVATIONS SHOWN WITH THE EXISTING CONDITIONS. IF ERRORS OR DISCREPANCIES IN THE DIMENSIONS OCCUR, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING ALL DISCREPANCIES TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING AND SHORING AS REQUIRED DURING CONSTRUCTION TO ENSURE THE SAFETY OF ALL INDIVIDUALS INVOLVED.
4. ALL MECHANICAL, ELECTRICAL, AND PLUMBING ELEMENTS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND THE LOCAL MUNICIPALITY.
5. NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. HAS DESIGNED THE STRUCTURAL FLOOR FRAMING AND WALL BRACING SYSTEM OF THESE PLANS FOR THE CONSTRUCTION OF A RESIDENCE AT THE ADDRESS REFERENCED IN THE PLANS. NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. WILL NOT TAKE RESPONSIBILITY FOR ANY RE-USE OF ANY PORTION OF THE DESIGN, PLANS OR SPECIFICATIONS AT ANY OTHER PROPERTY OR ADDRESS WITHOUT OUR PRIOR WRITTEN CONSENT.

BUILDER'S PLANS:

THE TERM "BUILDER'S PLANS" REFERS TO A CERTAIN LEVEL OF DEVELOPMENT OF THE DRAWINGS. AS THE NAME IMPLIES, THESE PLANS REQUIRE THAT THE CONTRACTOR POSSESSES COMPETENCE IN RESIDENTIAL CONSTRUCTION AND A THOROUGH UNDERSTANDING OF THE INTERNATIONAL RESIDENTIAL CODE (IRC). THE CONTRACTOR WARRANTS TO NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C., THAT HE POSSESSES THE PARTICULAR COMPETENCE AND SKILL IN CONSTRUCTION NECESSARY TO BUILD THIS PROJECT WITHOUT FULL ENGINEERING AND DESIGN SERVICES, AND FOR THAT REASON THE CONTRACTOR OR HOME OWNER HAS RESTRICTED THE SCOPE OF PROFESSIONAL SERVICES. THE CONSTRUCTION DOCUMENTS PROVIDED BY THE LIMITED SERVICES SHALL BE TERMED "BUILDER'S PLANS" IN RECOGNITION OF THE CONTRACTOR'S SOPHISTICATION. ALTHOUGH NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. AND OUR CONSULTANTS HAVE PERFORMED THEIR SERVICES WITH DUE CARE AND DILIGENCE, WE CANNOT GUARANTEE PERFECTION. ANY AMBIGUITY OR DISCREPANCY DISCOVERED BY THE USE OF THESE PLANS SHALL BE REPORTED IMMEDIATELY TO NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. CONSTRUCTION MAY REQUIRE THAT THE CONTRACTOR ADAPT THE "BUILDER'S PLANS" TO THE FIELD CONDITIONS ENCOUNTERED AND MAKE LOGICAL ADJUSTMENTS IN FIT, FORM, DIMENSION AND QUANTITY. CHANGES MADE FROM THE PLANS WITHOUT THE CONSENT OF NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. ARE UNAUTHORIZED. IT IS ALSO UNDERSTOOD THAT THE CONTRACTOR WILL BE RESPONSIBLE FOR MEETING ALL APPLICABLE BUILDING CODES INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, AND PLUMBING CODE REQUIREMENTS (WHICH IS EXCLUDED FROM THESE PLANS). IN THE EVENT ADDITIONAL DETAIL OR GUIDANCE IS NEEDED BY THE CONTRACTOR OR HOMEOWNER FOR CONSTRUCTION OF ANY ASPECT OF THE PROJECT, NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. OR A QUALIFIED ARCHITECT/ENGINEER SHALL IMMEDIATELY BE RETAINED. FAILURE TO NOTIFY US OF THESE NEEDS OR OF CHANGES TO THE PLANS SHALL RELIEVE NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. OF ALL RESPONSIBILITIES OF THE CONSEQUENCES.

ARCHITECTURAL NOTES:

1. WATER RESISTIVE EXTERIOR WALL COVERING, FREE FROM HOLES AND BREAKS, SHALL BE APPLIED TO STUDS OR SHEATHING OF ALL EXTERIOR WALLS. WRAP SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SHALL BE IN COMPLIANCE WITH SECTION R703.2.
2. BUILDING SHALL COMPLY WITH IRC SECTION R802.5.2 FOR RAFTER AND CEILING JOIST CONNECTIONS.
3. "UFER" GROUND SHALL BE PROVIDED PER IRC SECTION E3608.1
4. GUTTERS, DOWNSPOUTS, AND SPLASH BLOCKS SHALL BE PROVIDED TO INSURE ALL ROOF DRAINAGE IS DIRECTED 5 FEET MINIMUM FROM HOUSE BEFORE TOUCHING SOIL.

STAIR NOTES:

1. MAXIMUM RISER AT STAIRWAYS IS 7 3/4" AND MINIMUM TREAD IS 10" WITH A MINIMUM 6'-8" HEADROOM, PER IRC SECTION R311.7.
2. PLACE HANDRAILS ON ALL STAIRS AND/OR LEVELS THAT EXCEED 30" ABOVE THE FLOOR OR GRADE. RAILINGS TO BE MIN. 36" HIGH AND HAVE INTERMEDIATE RAILS THAT DO NOT ALLOW THE PASSAGE OF A 4" DIAMETER SPHERE AND SHALL COMPLY WITH IRC SECTIONS R311.7.8 & R312.
3. ENCLOSE ACCESSIBLE SPACE BENEATH STAIRS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON ENCLOSURE SIDE PER SECTION R302.7.
5. STAIRWAYS CONSISTING OF 3 OR MORE RISERS SHALL HAVE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE STAIR NOSINGS.
6. HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1 1/4" MINIMUM TO 2" MAXIMUM OR OTHER APPROVED GRASPABLE SHAPER PER SECTION R311.7.8.5.
7. SPIRAL STAIRS SHALL BE CONSTRUCTED PER SECTION R311.7.10.1.

WINDOWS AND SAFETY GLAZING NOTES:

1. GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE OF APPROVED SAFETY GLAZING MATERIALS: GLASS IN STORM DOORS; INDIVIDUAL FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARCH OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR; WALLS ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS AND WHIRLPOOLS; GLAZING IN FIXED OR OPERABLE PANELS EXCEEDING 9 SQ. FT. AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".
2. ALL WINDOWS SHALL MEET THE FALL PROTECTION REQUIREMENTS OF SECTION R312.2.

EMERGENCY EGRESS NOTES:

1. ALL SLEEPING ROOMS AND BASEMENT SHALL BE PROVIDED WITH PROPER EMERGENCY ESCAPE AND RESCUE OPENINGS PER IRC SECTION R310. PROVIDE (1) WINDOW IN EACH BEDROOM THAT HAS A MINIMUM OPERABLE AREA OF 5.7 SQ. FT. WITH A MINIMUM OPERABLE HEIGHT OF 24" AND WIDTH OF 20".
2. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS AND ON EACH ADDITIONAL FLOOR, INCLUDING BASEMENTS AND STAIRWAYS. ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM ACTIVATES ALL OTHERS AND BE HARD WIRED WITH A BATTERY BACKUP, PER IRC SECTION R314 AND NFPA 72.
3. CARBON MONOXIDE DETECTORS SHALL BE PROVIDED PER R315.

CONCRETE & REINFORCING NOTES:

1. CONCRETE STRENGTH SHALL MEET THE FOLLOWING MINIMUM 28 DAY STRENGTH REQUIREMENTS (IRC R402.2):
   - 1.1. 2,500 PSI FOR BASEMENT FLOOR SLABS ON UNDISTURBED GRADE.
   - 1.2. 3,000 PSI FOR FOOTINGS, FOUNDATION WALLS, AND OTHER VERTICAL CONCRETE.
   - 1.3. 3,500 PSI FOR CARPORT AND GARAGE FLOOR SLABS ON UNDISTURBED GRADE.
   - 1.4. 3,500 PSI FOR STRUCTURAL FLOOR SLABS.
2. CONCRETE SHALL BE 6%±1% AIR ENTRAINED FOR GARAGE SLABS AND FOR ALL LOCATIONS (FOOTINGS, WALLS, FLATWORK, ETC.) EXPOSED TO WEATHER.
3. CONCRETE SHALL HAVE A SLUMP OF 4" ± 1". THE SLUMP CAN BE INCREASED THROUGH THE USE OF APPROVED ADDITIVES (NOT WATER).
4. THE REINFORCING STEEL SHALL BE ASTM A615, GRADE 40 MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL BARS SHALL BE LAPPED A MINIMUM OF 48 BAR DIAMETERS AND/OR CORNER BARS SHALL BE PROVIDED AT ALL FOOTING AND WALL CORNERS, AND FOOTING STEPS.
5. MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS (ACI 318):
   - 5.1. EARTH FORMED - 3"
   - 5.2. EXPOSED TO WEATHER - 1 1/2" FOR #5 BARS & SMALLER
   - 5.3. NOT EXPOSED TO WEATHER - 3/4" FOR SLABS.
6. NO WATER SHALL BE ADDED TO THE CONCRETE MIX AT THE SITE.
7. ADDITION OF CALCIUM CHLORIDE TO CONCRETE IS NOT PERMITTED.
8. NO ALUMINUM SHALL BE EMBEDDED/PLACED IN CONCRETE.
9. CONCRETE PLACED IN COLD WEATHER SHALL COMPLY WITH ACI 306. CONCRETE PLACED IN HOT WEATHER SHALL COMPLY WITH ACI 305.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

STRUCTURAL STEEL	ASTM A992, Fy = 50 KSI
MISCELLANEOUS STEEL	ASTM A36
HOLLOW STRUCTURAL STEEL (HSS)	ASTM A500, GRADE B
STEEL PIPE	ASTM A53, GRADE B (SCHED 40 MIN)

2. ALL BEAM CONNECTIONS SHALL BE DESIGNED BY THE STEEL FABRICATOR UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER UNLESS SPECIFIC CONNECTIONS ARE SHOWN ON THE DRAWINGS. CONNECTIONS SHALL BE DESIGNED TO 50% U.D.L. OR THE REACTION PROVIDED ON THE DRAWINGS, WHICH EVER IS GREATER. CONNECTIONS SHALL BE WELDED OR BOLTED PER AISC STEEL CONSTRUCTION MANUAL 13TH EDITION. BOLTS SHALL BE ASTM A325N.
3. ALL COLUMN ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 36.
4. WELDING SHALL CONFORM TO THE LATEST PUBLICATION OF APPLICABLE CODES SET FORTH BY THE AMERICAN WELDING SOCIETY. NO UNAUTHORIZED WELDS WILL BE ACCEPTED.
5. PROVIDE 30# FELT BOND BREAK AROUND ALL STEEL COLUMNS WHERE IN CONTACT WITH SLAB-ON-GRADE.
6. ALL EXTERIOR STEEL EXPOSED TO THE ELEMENTS SHALL BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE.
7. ALL STRUCTURAL STEEL SHALL HAVE ONE COAT OF RUST INHIBITIVE PRIMER CONFORMING TO SPECIFICATIONS. FIELD TOUCHUP ALL UNPAINTED AREAS AND WELD AREAS.

WOOD FRAMING NOTES:

1. ALL STRUCTURAL LUMBER (RAFTERS, CEILING JOISTS, PURLINS AND HEADERS) SHALL BE DOUGLAS FIR LARCH #2 OR BETTER UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL LOAD BEARING WALL STUDS AND PURLIN STRUTS SHALL BE DOUGLAS FIR STUD GRADE OR BETTER.
2. GLUE LAMINATED MEMBERS MARKED "LVL" (LAMINATED VENEER LUMBER) SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS (FB) OF 2950 PSI, A MINIMUM ALLOWABLE SHEAR STRESS (FV) OF 285 PSI, AND A MINIMUM MODULUS OF ELASTICITY (E) OF 2,000 KSI. ALL MANUFACTURER'S RECOMMENDATIONS FOR NAILING AND CONNECTIONS SHALL BE FOLLOWED.
3. FLOOR JOISTS: SEE IRC TABLE R502.3.1(1) AND R502.3.1(2) FOR SPAN, SIZE, SPACING, AND GRADE OF FLOOR JOISTS.
4. FLOOR JOISTS BELOW PARTITION WALLS RUNNING PARALLEL TO THE JOIST SPAN SHALL BE DOUBLED. ALL DOUBLED MEMBERS SHALL BE NAILED TOGETHER WITH 16d NAILS 16" ON CENTER IN TWO ROWS STAGGERED OR PER MANUFACTURER SPECS.
5. SOLID BLOCKING BETWEEN FLOOR JOISTS SHALL BE INSTALLED WHERE JOISTS BEAR ON TOP OF BEAMS OR HEADERS AND BELOW POINT LOADS. ALL SOLID BLOCKING AND RIM JOIST MATERIAL SHALL BE THE SAME SIZE AND GRADE AS THE JOISTS.
6. ALL FLOOR AND CEILING JOISTS THAT BUTT INTO THE SIDE OF A HEADER OR STEEL BEAM SHALL BE ANCHORED TO THE HEADER OR STEEL BEAM WITH STANDARD JOIST HANGERS.
7. ALL SUPPORTS FOR WOOD TRUSSES, RAFTERS AND PURLINS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, SHALL BEAR ON LOAD BEARING WALLS (WALLS LOCATED DIRECTLY ABOVE A BEAM LINE OR CONTINUOUS FOOTING)! ALL CONCENTRATED LOADS SHALL BE CARRIED THROUGH THE FLOOR SYSTEM THICKNESS WITH SOLID BLOCKING OR WITH 2x4 STUB COLUMNS (SQUASH BLOCKS) THAT TRANSFER THE LOAD DOWN TO THE SUPPORT WALL OR BEAM BELOW.
8. ALL NAILING NOT INDICATED ON THE DRAWINGS SHALL CONFORM TO THE NAILING SCHEDULE OF THE GOVERNING BUILDING CODE. SPACING, END DISTANCES AND EDGE DISTANCES OF NAILS AND SPIKES SHALL BE SUCH AS TO AVOID THE UNUSUAL SPLITTING OF THE WOOD.
9. ALL NON-LOADBEARING STUD WALLS IN THE BASEMENT SHALL BE PROVIDED WITH A 1" MINIMUM VERTICAL EXPANSION JOINT TO ALLOW FOR HEAVE IN THE FLOOR SLAB.
   WALLS SHALL NOT BE TIGHT BETWEEN THE SLAB AND THE FRAMING ABOVE!
10. SHEATHING FOR HORIZONTAL DIAPHRAGMS SHALL BE EXTERIOR GRADE, C/D, STRUCTURAL GROUP II OR BETTER. ROOF AND WALL FRAMING SHALL BE OF DOUGLAS FIR-LARCH OR SOUTHERN PINE. PROVIDE SOLID BLOCKING AT ALL PANEL EDGES UNLESS OTHERWISE NOTED. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.
11. ALL WOOD STRUCTURAL PANELS SHALL BE IDENTIFIED WITH THE APPROPRIATE GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION (APA) AND SHALL MEET THE REQUIREMENTS OF PRODUCT STANDARD PS-1.
12. WOOD STRUCTURAL PANELS SHALL BE SET WITH FACE GRAIN PERPENDICULAR TO SUPPORTING MEMBERS AND STAGGER END JOINTS 4'-0".
13. STANDARD WASHERS SHALL BE USED WITH ALL BOLTS FASTENING WOOD MEMBERS.
14. ALL SAWN LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
15. ROOF FRAMING - RIDGE BEAMS, VALLEY AND HIP RAFTERS SHALL HAVE A MINIMUM NOMINAL THICKNESS OF 2" AND MINIMUM DEPTH NOT LESS THAN THE END CUT OF THE RAFTERS. HIP AND VALLEY RAFTERS SHALL BE SUPPORTED AT THE RIDGE BY A 2x6 "TEE" BRACE TO A BEARING PARTITION. WHERE ROOF BRACING IS USED TO PERMIT LONGER RAFTERS SPAN, USE 2x6 "TEE" BRACES AT 4'-0" O.C. WITH CONTINUOUS 2x6 PURLIN UNDER THE RAFTERS. BRACE RAFTERS TO BEARING PARTITIONS.
16. PROVIDE CONTINUOUS STRONG BACKS FOR CEILING JOIST SPANS 12'-0" OR GREATER.
17. CEILING JOISTS: SEE IRC TABLE R802.5(1) AND R802.5(2) FOR SPAN, SIZE, SPACING, AND GRADE OF CEILING JOISTS.
18. ROOF RAFTERS: SEE IRC TABLE R802.4.1(1) THRU R802.4.1(8) FOR SPAN, SIZE, SPACING, AND GRADE OF ROOF RAFTERS.
19. BRACE THE COMPRESSION FLANGE OF ALL BEAMS UNLESS NOTED OTHERWISE.
20. ALL BEAMS OR HEADERS THAT BEAR ON WOOD FRAMING SHALL BE SUPPORTED BY ANOTHER BEAM OR HEADER OR A BUILT-UP (2) STUD MIN COLUMN THE FULL WIDTH OF THE BEAM CONTINUOUS TO THE FOUNDATION OR OTHER STRUCTURAL FRAMING MEMBER, U.N.O.
21. ALL LIGHT GAGE METAL FRAMING ACCESSORIES NOTED SHALL BE AS MANUFACTURED BY "SIMPSON STRONG TIE" OR APPROVED EQUAL, ATTACH FRAMING ACCESSORIES TO WOOD FRAMING IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
22. PROVIDE HEADERS AS SHOWN ON PLAN, FOR HEADERS NOT MARKED REFERENCE TYPICAL BEARING WALL HEADER SCHEDULE.
23. FLOOR SHEATHING SHALL BE 3/4" TONGUE & GROOVE WOOD STRUCTURAL PANEL. GLUE & NAIL TO FLOOR JOISTS WITH 8d NAILS AT 6" O.C. AT ALL PANEL EDGES AND AT 12" O.C. AT INTERMEDIATE SUPPORTS.
24. ALL EXTERIOR WOOD WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc, UNO.
25. ALL INTERIOR BEARING WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc, UNO.
26. MULTIPLE STUD MEMBERS CALLED OUT FOR SUPPORT OF LVL BEAMS AND HEADERS SHALL BE CARRIED DOWN TO TOP OF FOUNDATIONS OR SUPPORT BEAM(S).

GARAGE:

1. GARAGE FLOORS SHALL SLOPE TOWARDS THE GARAGE DOORWAYS.
2. DOORS BETWEEN THE GARAGE AND THE DWELLING SHALL BE A MINIMUM 1-3/8" SOLID CORE OR HONEY COMBED STEEL DOOR OR A 20 MINUTE FIRE RATED DOOR PER IRC SECTION R302.5.1.
3. THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS UNFINISHED ATTIC AREAS BY A MINIMUM 1/2" GYPSUM BOARD APPLIED TO THE GARAGE SIDE. WHERE UNFINISHED ATTIC AREAS ARE PROVIDED ABOVE THE GARAGE, THE SUPPORTING COLUMNS AND BEAMS SHALL ALSO BE PROTECTED WITH 1/2"GYPSUM BOARD OR EQUIVALENT. WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE THE FLOOR/CEILING ASSEMBLY SHALL BE PROTECTED WITH A MINIMUM 5/8" TYPE X GYPSUM BOARD ON THE GARAGE CEILING, SHALL COMPLY WITH IRC SECTION R309.
4. GARAGE DOOR AND FRAME (H-FRAME) FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL JAMBS RUNNING FROM THE FLOOR TO CEILING ATTACHED WITH 1 3/4"x0.12" NAILS @ 7"oc STAGGERED WITH (7) 3 1/4"x0.102" NAILS THRU THE JAMB INTO THE HEADER, MINIMUM 2x8 HEADER FOR ATTACHMENT FOR COUNTER BALANCE SYSTEM.
5. BUILDING SHALL COMPLY WITH THE REQUIREMENTS FOR A SELF CLOSING DOOR BETWEEN RESIDENCE AND GARAGE.
6. GARAGE DOORS SHALL MEET THE REQUIREMENTS OF DASMA 115 MPH.

WOOD DECK FRAMING NOTES:

1. ALL WOOD DECK FRAMING SHALL COMPLY WITH THE LATEST EDITION OF THE "RESIDENTIAL DECKS - PERMIT AND CONSTRUCTION GUIDELINES" AS PUBLISHED BY THE JOHNSON COUNTY CONTRACTOR LICENSING PROGRAM.
2. WOOD FRAMING FOR EXTERIOR DECKS SHALL BE PRESERVATIVE TREATED SOUTHERN PINE #2 OR BETTER.

FOUNDATION NOTES:

1. ALL FOUNDATIONS SHALL BEAR ON NATIVE, UNDISTURBED SOIL CAPABLE OF SUPPORTING THE ASSUMED ALLOWABLE SOIL BEARING PRESSURE LISTED UNDER THE DESIGN LOADS ON THIS PAGE, UNLESS NOTED OTHERWISE, WITHOUT UNDUE SETTLEMENT OR HEAVING. NORTON & SCHMIDT IS NOT RESPONSIBLE FOR REVIEW OF THE SOIL CONDITIONS AT THE SITE, THE CONTRACTOR OR EXCAVATOR, IF APPROPRIATELY QUALIFIED AND EXPERIENCED OR A QUALIFIED TESTING LAB (APPROVED BY THE OWNER) SHALL FIELD VERIFY THE ACTUAL SOIL'S SUITABILITY, SOIL BEARING CAPACITY AND OTHER SOIL CONDITIONS (SUCH AS EXPANSIVE SOILS, COMPRESSIBLE SOILS, SHIFTING SOILS OR OTHER QUESTIONABLE SOIL CHARACTERISTICS). REFERENCE IRC R401.
2. ALL EXTERIOR FOOTINGS SHALL BEAR A MIN. OF 36" BELOW FINISHED GRADE.
3. IF THE EXISTING SITE TOPOGRAPHY OR SOIL CONDITIONS VARY FROM THE CONDITIONS SHOWN ON THE DRAWINGS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT/ENGINEER SO THAT A DESIGN THAT IS APPROPRIATE FOR THE SITE CAN BE GENERATED.
4. FOOTINGS SHALL BE POURED CONTINUOUS AT FOOTING STEPS (SOLID JUMPS).
5. ANY FILL THAT IS INSTALLED UNDER THE BASEMENT OR GARAGE FLOOR SLABS SHALL BE PROPERLY COMPACTED TO PREVENT SETTLEMENT OF THE FILL MATERIAL. PROPER COMPACTION IS WHERE THE SOIL IS PLACED IN 6" LIFTS AND EACH LIFT IS COMPACTED PRIOR TO INSTALLING MORE SOIL. THIS COMPACTED FILL SHALL THEN BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER. AT THE CONTRACTOR'S OPTION, A PROPERLY DESIGNED STRUCTURAL SLAB MAY BE INSTALLED OVER ANY FILL THAT HAS NOT BEEN PROPERLY COMPACTED. ALL EXTERIOR SLABS INSTALLED ADJACENT TO THE FOUNDATION SHALL BE DOWELED INTO THE FOUNDATION WITH #4 BARS AT 12" ON CENTER (GRADE 60 STEEL) DRILLED IN 6" MINIMUM AND EPOXIED.
6. CONTROL JOINTS IN THE FLOOR SLABS SHALL BE INSTALLED AS TO MINIMIZE THE AMOUNT OF RANDOM CRACKING (12' INTERVALS MAXIMUM). THESE JOINTS SHALL BE SAWCUT 1-1/4" DEEP WITHIN 8 HOURS OF POURING THE SLAB OR MAY BE TOOLED INTO THE SLAB WHEN POURED. SAWCUTS SHALL BE IN APPROXIMATE SQUARE PATTERN WITH MAXIMUM ASPECT RATIO OF 1-1/2 TO 1.
7. THE BUILDER SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE STEPS TO MINIMIZE THE EFFECTS OF EXPANSIVE SOIL ON THE FOUNDATION, SLABS, AND WOOD FRAMED PORTIONS OF THE HOUSE. THIS INCLUDES ISOLATING THE FLOOR SLAB AT ALL COLUMNS, INTERIOR BEARING WALLS, AND AT THE FOUNDATION WALLS WITH TWO LAYERS OF 15# FELT. PARTITION WALLS IN THE BASEMENT SHALL NOT BE CONSTRUCTED TIGHT AGAINST THE FRAMING ABOVE.
8. INSTALL CONTINUOUS DRAIN TILE (4" DIAMETER MINIMUM) AROUND THE PERIMETER OF THE ENTIRE LOWER LEVEL AND COVER THE TILE WITH FILTER FABRIC AND COURSE, CLEAN ROCK. INSTALL VERTICAL DRAINS TO PERIMETER DRAIN TILE AT ALL WINDOW WELLS. THE DRAIN TILE SHALL BE CONNECTED TO A 40 GALLON (MINIMUM) SUMP PIT WITH SUFFICIENT DEPTH FOR PROPER SUMP PUMP OPERATION, OR SHALL BE DRAINED BY GRAVITY TO DAYLIGHT AT LEAST 10' FROM THE FOUNDATION. FOUNDATION DRAINAGE SHALL ALSO BE IN ACCORDANCE WITH IRC SECTION R-405.1.
9. CONCRETE BASEMENT SLABS SHALL BE A MIN. OF 4" THICK OVER A MIN. OF 4" OF 1/2" TO 3/4" CLEAN, GRADED ROCK, U.N.O. OR IF SITE CONDITIONS REQUIRE OTHERWISE. MIN REINFORCING SHALL BE #4'S AT 24"oc OR EQUIVALENT.
10. PROVIDE A MIN. 6-MIL POLYETHYLENE MOISTURE BARRIER OVER GRAVEL BASE UNDER BASEMENT FLOOR SLABS (NOT REQUIRED FOR GARAGE SLABS) PER SECTION R405.2.2. LAP JOINTS A MIN. OF 6".
11. ALL FOOTING AND SLAB REINFORCEMENT SHALL BE BLOCKED OFF SUBGRADE WITH CHAIRS OR CONCRETE BRICKS.

RESIDENTIAL BASEMENT WALL NOTES:

1. VERTICAL REBAR SPACING FOR CONCRETE FOUNDATION WALLS SHALL BE PER THE TABLE BELOW:

		60 KSI REINFORCING			40 KSI REINFORCING	
WALL THICKNESS		8"	10"	12"	8"	10"
WALL HEIGHT	6' OR LESS	#4 @ 36" O.C.	#4 @ 36" O.C.		#4 @ 36" O.C.	#4 @ 36" O.C.
	7'	#4 @ 32" O.C.	#4 @ 36" O.C.		#4 @ 21" O.C.	#4 @ 36" O.C.
	8'	#4 @ 24" O.C.	#4 @ 36" O.C.		#4 @ 16" O.C.	#4 @ 36" O.C.
	9'	#4 @ 16" O.C.	#4 @ 20" O.C.		#4 @ 12" O.C.	#4 @ 16" O.C.
	10'	#4 @ 12" O.C.	#4 @ 16" O.C.		#4 @ 8" O.C.	#4 @ 12" O.C.
	12'			#5 @ 12" O.C. EACH FACE		
	14'			#5 @ 8" O.C. EACH FACE		

   a. MINIMUM REQUIREMENT FOR VERTICAL REBAR IN PLAIN CONCRETE WALLS IS #4 BARS @ 36" O.C. (ACI 332).
   b. VERTICAL BARS SHALL BE CONTINUED TO WITHIN 4" OF THE TOP OF THE WALL.
   c. REBAR SHALL BE POSITIONED AT THE TENSION FACE OF THE WALL (2" FROM THE INSIDE FACE.
   d. REINFORCEMENT SHALL LAP A MINIMUM OF 24" AT ENDS, SPLICES, AND AROUND CORNERS.
   e. DESIGN BY A PROFESSIONAL ENGINEER IS REQUIRED FOR WALLS OVER 10' IN HEIGHT.
   f. HORIZONTAL REINFORCING SHALL MATCH THE SIZE OF THE VERTICAL REINFORCING. PROVIDE 1 - BAR WITHIN 12" OF THE TOP OF THE WALL WITH ADDITIONAL BARS SPACED AT 24" O.C. MAX.

2. BARS SHALL LAP A MINIMUM OF 48 BAR DIAMETERS AT ENDS, SPLICES AND AROUND CORNERS. UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
3. CONTINUOUS WALL FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS WITH 3" CLEARANCE FROM SOIL FOR 8" THICK WALLS, U.N.O. CONTINUOUS WALL FOOTINGS SHALL BE A MINIMUM OF 24" WIDE AND 12" DEEP WITH (2) #4 BARS CONTINUOUS WITH 3" CLEARANCE FROM SOIL FOR 12" THICK WALLS.
4. INSTALL 1/2"Ø x 1'-2" LONG ANCHOR BOLTS (7" EMBEDMENT) AT 2'-0" O.C. AND WITHIN 12" OF THE END OF EACH SILL MEMBER (2-BOLTS MIN PER PLATE SECTION). MINIMUM SILL PLATE TO BE 2x6 PRESSURE TREATED.
5. THE TOPS OF ALL BASEMENT (LOWER LEVEL) FOUNDATION WALLS SHALL BE CONNECTED TO THE FLOOR JOISTS. NAIL EACH FLOOR JOIST END AND END WALL BLOCKING TO THE WOOD SILL PLATE PER THE IRC NAILING SCHEDULE. WHERE FLOOR JOISTS RUN PARALLEL TO THE FOUNDATION WALLS, PROVIDE BLOCKING IN THE FIRST THREE JOIST SPACES AT 2'-0" O.C. OVER THE ENTIRE LENGTH OF THE FLOOR JOISTS.
6. WALLS SHALL BE FULL HEIGHT FROM FOOTING TO FLOOR FRAMING. NO WOOD FRAMED CRIPPLE WALLS EXCEPT AS SPECIFICALLY NOTED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
7. FOUNDATION WALLS SHALL BE DESIGNED FOR AN EQUIVALENT FLUID PRESSURE (EFP) 60 PSF.
8. PROVIDE STEEL SHIMS IN BEAM POCKETS TO LEVEL BEAMS. BEAM POCKETS SHALL BE GROUTED SOLID WITH 4,000 PSI NON-SHRINK GROUT AFTER BEAMS ARE LOADED WITH FRAMING MEMBERS.
9. REINFORCE AROUND BEAM POCKETS BY BENDING TOP CONTINUOUS HORIZONTAL BAR BELOW BEAM POCKET OR INSTALL SEPARATE BENT BAR LAPPED AND TIED MINIMUM 24" EACH SIDE.
10. PROVIDE TWO #4 X 4'-0" LONG DIAGONAL BARS AT THE CORNERS OF ALL OPENINGS IN CONCRETE WALLS AND AT FOOTING STEPS. ALSO PROVIDE 2 ADDITIONAL #4 ON ALL SIDES OF WALL OPENINGS. BARS SHALL BE 3'-0" LONGER THAN OPEN VERTICAL OR HORIZONTAL DIMENSION.
11. FOUNDATION WALLS THAT RETAIN EARTH AND ENCLOSE INTERIOR SPACES AND FLOORS BELOW GRADE SHALL BE DAMP PROOFED FROM THE TOP OF THE FOOTING TO THE FINISHED GRADE WITH A BITUMINOUS COATING IN ACCORDANCE WITH SECTION R406.1.
12. INSULATION SHALL BE INSTALLED FOR ALL BASEMENT WALLS AS REQUIRED PER SECTION N1102.1.
13. ALL SITE RETAINING WALLS GREATER THAN 4'-0" IN HEIGHT SHALL REQUIRE A DESIGN BY A PROFESSIONAL ENGINEER.
14. A CONCRETE ENCASED GROUNDING ELECTRODE CONNECTION SHALL BE PROVIDED TO THE ELECTRICAL SERVICE PER SECTION E3608.1.

ENERGY REQUIREMENTS

1. THE BUILDING THERMAL ENVELOPE SHALL BE SEALED WITH AN AIR BARRIER PER IRC SECTION N1102.
2. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER N1102.
3. PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER N1103.1.1.
4. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER N1103.3.2.1.
5. BUILDING CAVITIES USED AS RETURN AIR PLENUMS SHALL BE SEALED TO PREVENT LEAKAGE ACROSS THE THERMAL ENVELOPE AS REQUIRED PER N1103.
6. BUILDING CAVITIES IN A THERMAL ENVELOPE WALL SHALL NOT BE USED AS RETURN AIR PLENUMS UNLESS THE REQUIRED INSULATION BARRIER IS MAINTAINED PER M1601.1.1.
7. HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER N1103.4.1.
8. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER M1505.2.
9. MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM AS REQUIRED PER M1503.6.
10. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER M1601.6.
11. MINIMUM MECHANICAL EFFICIENCY RATING FOR AC EQUIPMENT IS 13 SEER AS REQUIRED PER IRC.
12. MINIMUM MECHANICAL EFFICIENCY RATING FOR FORCED AIR FURNACE IS 78% AS REQUIRED PER IRC.
13. CONTRACTOR SHALL PROVIDE COMPLIANCE REPORT PER N1105.4.2 AND N1105.4.3 TO THE BUILDING OFFICIAL.

ABBREVIATIONS LEGEND

AB	ANCHOR BOLT	MECH	MECHANICAL
ACI	AMERICAN CONCRETE INSTITUTE	MFR	MANUFACTURER
AFF	ABOVE FINISH FLOOR	MIN	MINIMUM
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MISC	MISCELLANEOUS
AISI	AMERICAN IRON AND STEEL INSTITUTE	MTL	METAL
ARCH	ARCHITECTURAL	NO	NUMBER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	NS	NEAR SIDE
AWS	AMERICAN WELDING SOCIETY	NTS	NOT TO SCALE
BFF	BELOW FINISH FLOOR	OC	ON CENTER
BFS	BOTTOM OF FOOTING STEP	OH	OPPOSITE HAND
BO	BOTTOM OF	PAF	POWDER ACTUATED FASTENERS
BOS	BOTTOM OF STEEL	PCF	POUNDS PER CUBIC FEET
BRG	BEARING	PL	PLATE
BWP	BRACED WALL PANEL	PLF	POUNDS PER LINEAR FOOT
CIP	CAST-IN-PLACE CONCRETE	PSF	POUNDS PER SQUARE FOOT
CJ	CONTROL JOINT (WALL)	PSI	POUNDS PER SQUARE INCH
CL	CENTER LINE	QTY	QUANTITY
CLR	CLEAR	REF	REFERENCE
COL	COLUMN	REINF	REINFORCING
CONC	CONCRETE	REQD	REQUIRED
CONST	CONSTRUCTION	REV	REVERSE
CONT	CONTINUOUS	RO	ROUGH OPENING
DIA	DIAMETER	SIM	SIMILAR
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM	T&B	TOP AND BOTTOM
EL	ELEVATION	TFS	TOP OF FOOTING STEP
ELEC	ELECTRICAL	THK	THICK
EQ	EQUAL	TO	TOP OF
EW	EACH WAY	TOC	TOP OF CONCRETE
FDN	FOUNDATION	TOF	TOP OF FOOTING
FF	FINISH FLOOR	TOP	TOP OF PAVING
FS	FAR SIDE	TOS	TOP OF STEEL
FTG	FOOTING	TRANS	TRANSVERSE
GA	GAGE	TYP	TYPICAL
GC	GENERAL CONTRACTOR	UNO	UNLESS NOTED OTHERWISE
GYP BD	GYPSUM BOARD	VERT	VERTICAL
HORIZ	HORIZONTAL	W	WIDTH
HSA	HEADED STUD ANCHOR	WBM	WALL BRACE METHOD
INFO	INFORMATION	WP	WORK POINT
JST	JOIST	WS	WALL STEP
JT	JOINT	WWF	WELDED WIRE FABRIC
KSI	KIPS PER SQUARE INCH		
LBS	POUNDS		
LONG	LONGITUDINAL		
MAX	MAXIMUM		

SYMBOLS LEGEND

ELEVATION DESCRIPTION	ELEVATION DESIGNATION	△ 1	REVISION DESIGNATION
	CUT SYMBOL	22	PLAN NOTE SYMBOL
TYPE NO/SHEET	SECTION CUT	1	SLAB JOINT DESIGNATION
TYPE NO/SHEET	ELEVATION DETAIL	100'-0"	SPOT ELEVATION
TYPE NO/SHEET TYPE	BLOWUP DETAIL		CONCRETE WALL
WSP	WOOD STRUCTURAL PANEL		WOOD NON-LOAD BEARING STUD WALL
CS-WSP	CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL	▩	BRACED WALL PANEL
PFH	PORTAL FRAME WITH HOLD-DOWNS	— — — —	BRACED WALL LINE
PFG	PORTAL FRAME AT GARAGE	▬	WOOD STUD BEARING WALL

INSULATION AND FENESTRATION REQUIREMENTS - IRC TABLE N1102.1.2

THESE VALUES ARE BASED ON CLIMATE ZONE 4 PER IRC FIGURE N1101.7 OR TABLE N1101.7. REFERENCE IRC FOR DIFFERENT CLIMATE ZONE VALUES

COMPONENT		VALUE	
FENESTRATION		U ≦ 0.32	(b)
SKYLIGHT		U ≦ 0.55	(b)
GLAZED FENESTRATION SHGC		U ≦ 0.40	(b)(e)
CEILING		R-49	
CEILING WITH ATTIC SPACES (OVER 100% OF THE CEILING)		R-38	
CEILING - VAULTED (500 SQ.FT. OR 20% OF THE TOTAL INSULATED CEILING AREA, WHICHEVER IS LESS)		R-30	
WOOD FRAME WALL		R-20 or R-13 + 5	(h)
MASS WALL		R-8 / R-13	(i)
FLOOR		R-19	
BASEMENT WALL		R-10 / R-13	(c)
SLAB (R VALUE/DEPTH)		R-10 / 2 FT	(d)
CRAWLSPACE WALL		R-10 / R-13	(c)
DUCTS OUTSIDE OF THE CONDITIONED SPACE	SUPPLY AND RETURN	R-8	
	IN FLOOR & CEILING ASSEMBLY	R-6	

a. R VALUES ARE MINIMUMS. U - FACTORS AND SHGC ARE MAXIMUMS. WHERE INSULATION IS INSTALLED IN A CAVITY THAT IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.
b. THE FENESTRATION U - FACTOR EXCLUDES SKYLIGHTS. THE SHGC APPLIES TO ALL GLAZED FENESTRATION.
c. "10/13" MEANS R-10 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-13 CAVITY INSULATION ON THE INTERIOR OF THE BASEMENT WALL.
d. R - 5 SHALL BE PROVIDED UNDER THE FULL SLAB AREA OF A HEATED SLAB IN ADDITION TO THE REQUIRED SLAB EDGE INSULATION R-VALUE FOR SLABS, AS INDICATED IN THE TABLE. THE SLAB EDGE INSULATION FOR HEATED SLABS SHALL NOT BE REQUIRED TO EXTEND BELOW THE SLAB.
e. THERE ARE NO SHGC REQUIREMENTS IN THE MARINE ZONE.
f. BASEMENT WALL INSULATION SHALL NOT BE REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.10 AND TABLE N1101.10.
g. ALTERNATIVELY, INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY PROVIDING NOT LESS THAN AN R-VALUE OF R-19.
h. THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS INSULATION. THEREFORE, AS AN EXAMPLE, "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 CONTINUOUS INSULATION.
i. MASS WALLS SHALL BE IN ACCORDANCE WITH SECTION N1102.2.5. THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF OF THE INSULATION IS ON THE INTERIOR OF THE MASS WALL.

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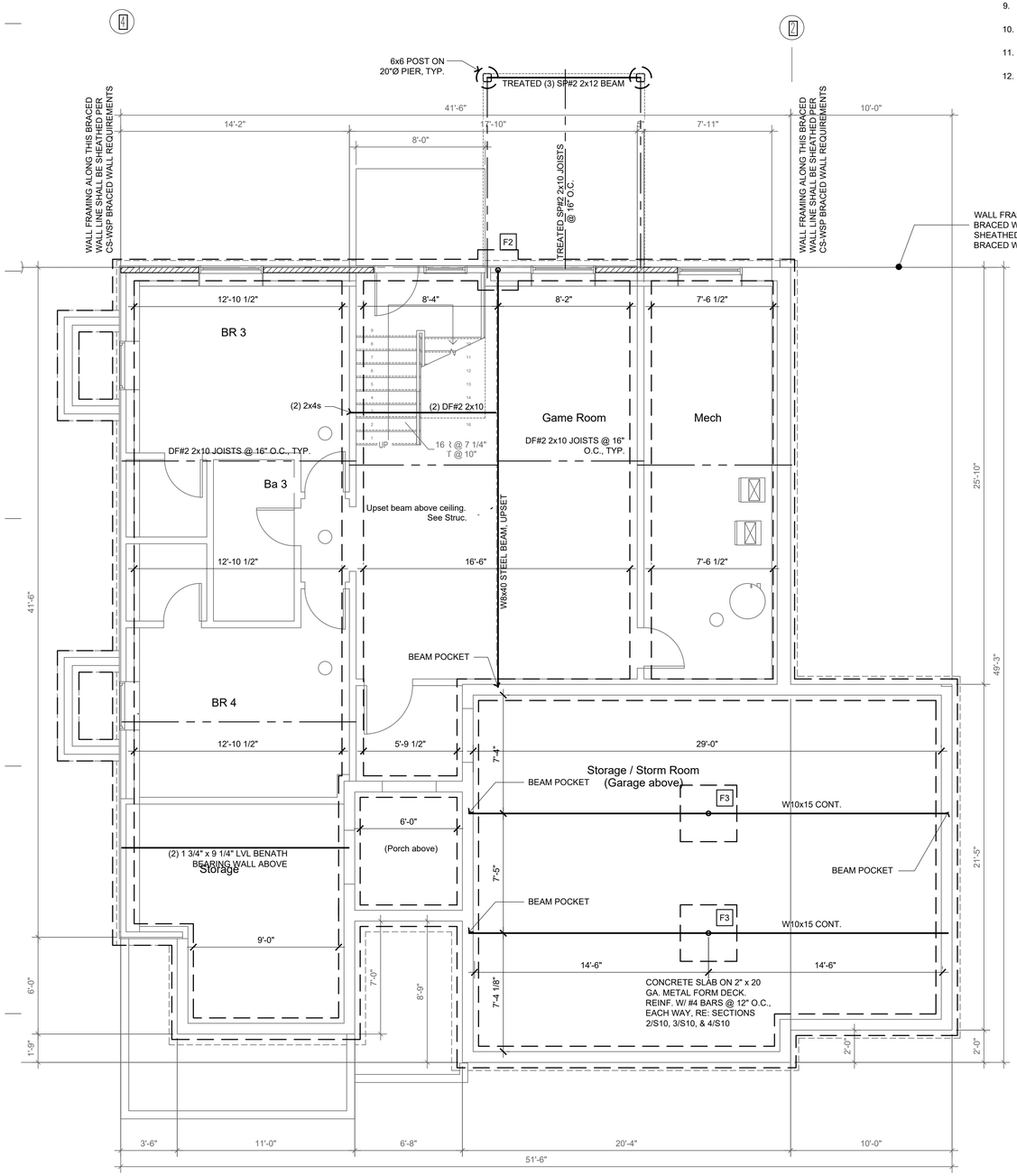


1 FOUNDATION/1ST FLOOR FRAMING PLAN

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

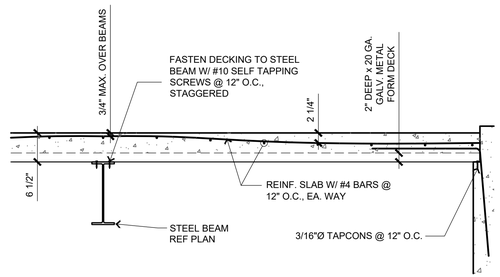
FLOOR FRAMING PLAN NOTES

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

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

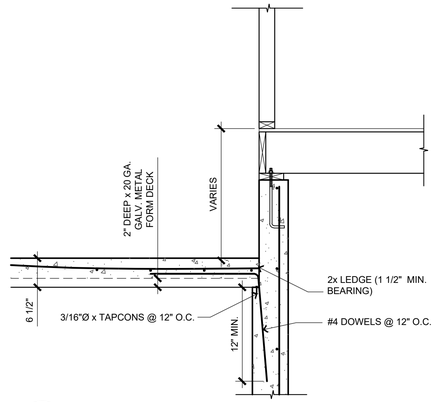
FOOTING SCHEDULE

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
F2a	3'-0" x 3'-0" x 3'-6"	(6) #4 EW TOP & BOTTOM	6" ABOVE FINISH GRADE	(2) STUDS TREATED UNDER EACH BEAM
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



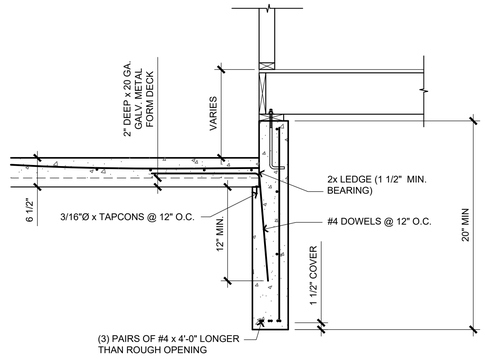
2 SLAB OVER BEAM

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



3 GARAGE SLAB ON FILL @ WALL

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



4 SUPPORTED GARAGE SLAB

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

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Foundation & 1st Floor Framing Plan

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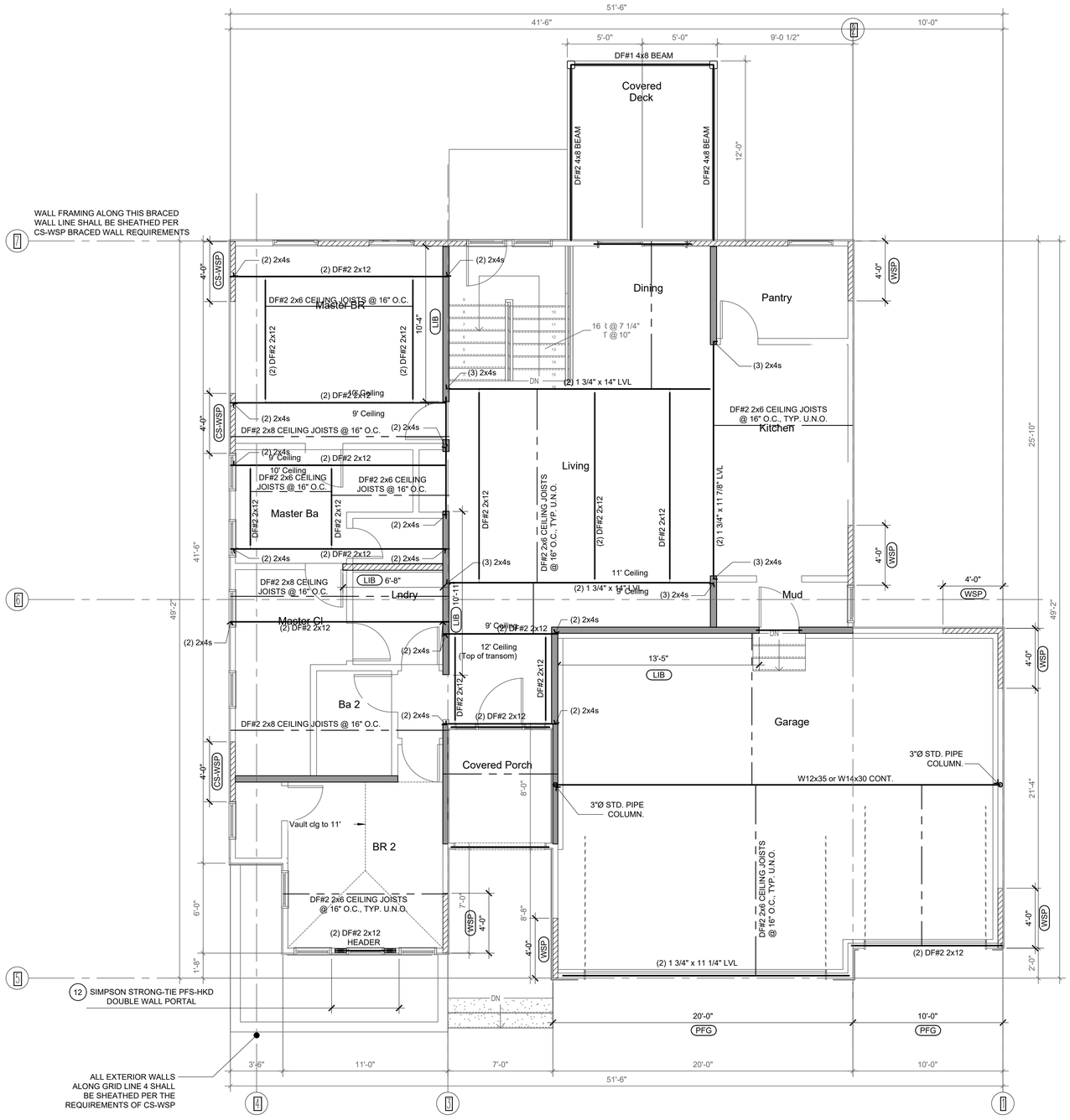

1 CEILING & BRACED WALL FRAMING PLAN

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

TYPICAL BRACED WALL METHOD

WSP - WOOD STRUCTURAL PANEL; WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" FOR 16" STUD SPACING, FASTEN WITH 6d COMMON NAILS (.131"Øx2" 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 - CONTINOUSLY 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 (.131"Øx2" 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.

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.

1. 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.
2. ALL EXTERIOR WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
3. 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.
4. ALL INTERIOR BEARING WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
5. DOUBLE FLOOR JOISTS UNDER ALL PARTITION WALLS RUNNING PARALLEL WITH JOISTS.
6. PROVIDE PROPER WALL INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
7. STAIRS SHALL HAVE A MAXIMUM RISE OF 7-3/4" AND MINIMUM TREAD OF 10". ALL RISERS AND TREADS TO BE EQUAL BETWEEN FLOORS.
8. PROVIDE WALL BRACING AS SHOWN ON PLAN.
9. PROVIDE HEADERS AS SHOWN ON PLAN, FOR HEADERS NOT MARKED REFERENCE TYPICAL BEARING WALL HEADER SCHEDULE.
10. FLOOR JOISTS: SEE IRC TABLE R502.3.1(1) AND R502.3.1(2) FOR SPAN, SIZE, SPACING, AND GRADE OF FLOOR JOISTS.
11. PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
12. SIMPSON STRONG-TIE PFS-HKD DOUBLE WALL PORTAL WITH (2) DF#2 2x10 COLUMNS EACH END WITH HEADERS AS INDICATED ON THE PLAN AND SHIMS AS REQUIRED. COLUMNS SHALL BEAR DIRECTLY ON TOP OF FOUNDATION WALL.
13. PROVIDE SIMPSON LSTA12 STRAP AT BOTTOM OF BRACED WALL PANEL (ALLOW. TENSION CAPACITY = 925 LBS.).

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

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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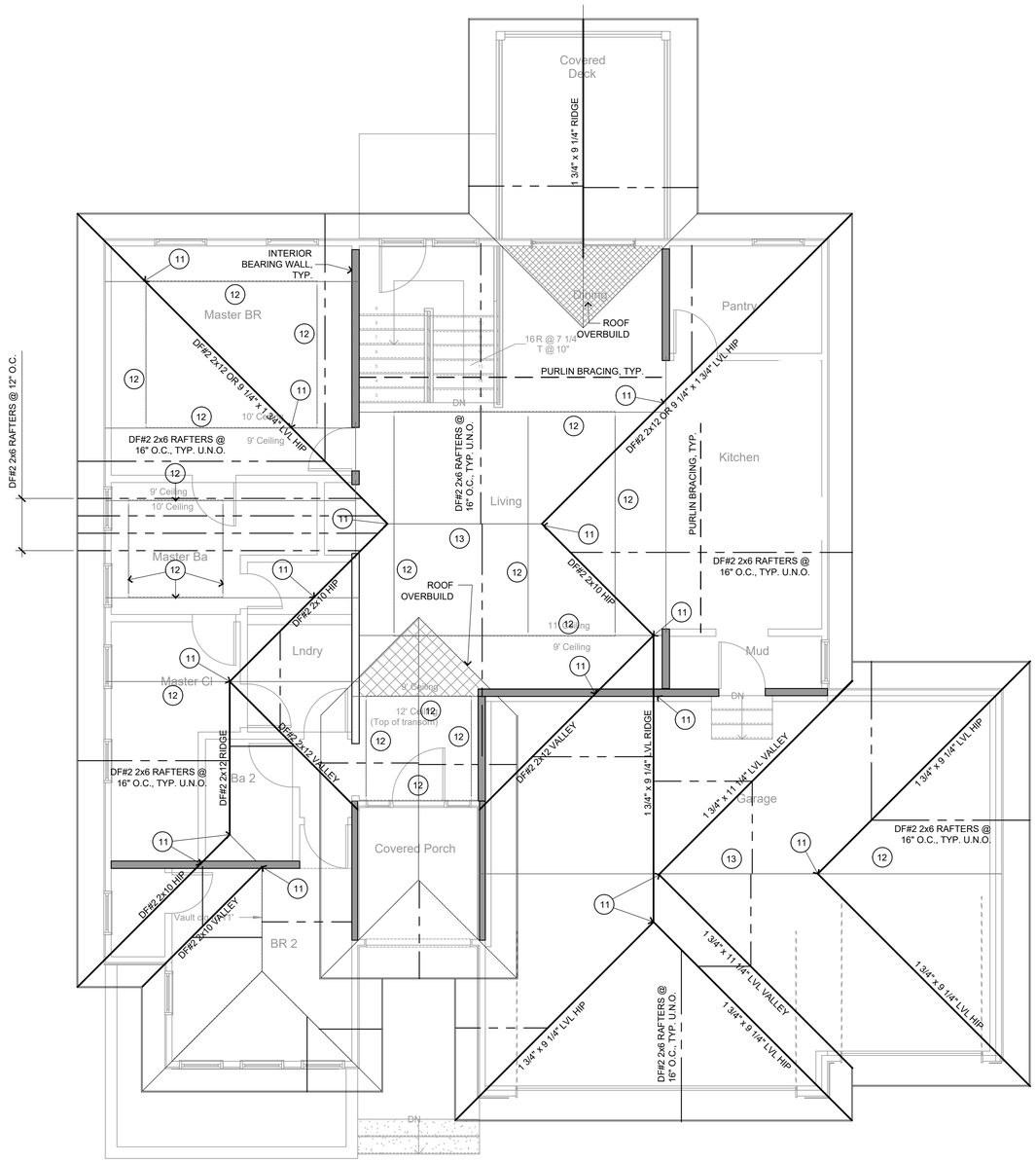

1 ROOF FRAMING PLAN

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

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.

1. 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.
2. 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.
3. ALL RIDGE, VALLEY, AND HIP MEMBERS SHALL BE 2" NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER.
4. HIP AND VALLEY MEMBERS SHALL BE SUPPORTED AT THE RIDGE WITH A 2x6 T-BRACE TO A BEARING WALL BELOW.
5. PROVIDE SOFFIT, RIDGE, AND GABLE END VENTS AS REQUIRED TO PROVIDE ADEQUATE VENTILATION FOR ROOF.
6. 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.
7. GUTTERS, DOWNSPOUTS, AND SPLASH BLOCKS SHALL BE PROVIDED TO INSURE ALL ROOF DRAINAGE IS DIRECTED 5 FEET MINIMUM FROM HOUSE BEFORE TOUCHING SOIL.
8. ALL GABLE END WALL FRAMING SHALL BE 2x4 DOUG-FIR STUD GRADE AT 16"oc.
9. PROVIDE PROPER CEILING INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
10. PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.

(11) BRACE RIDGES/HIPS DOWN TO BEAMS PROVIDED IN CEILING FRAMING OR BEARING WALLS BELOW. RE: CEILING FRAMING PLAN FOR BEAM SIZES.

(12) CEILING BEAM BELOW, RE: CEILING FRAMING PLAN.

(13) BRACE RIDGE TO BEAM BELOW WITH 2x4 T-BRACES @ 5'-0" O.C. MAX.

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 1/4" LVL	1 3/4"x11 1/4" 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"

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N&S JOB NUMBER: 2023-2168

STATE OF MISSOURI
EDWARD HOWELL PHILLIPS
NUMBER PE-2002016715
PROFESSIONAL ENGINEER
10/10/2023

BILL FOWLER ARCHITECT

3601 W 122nd Terrace, Leawood, KS 66209
913 908 5363 / BWFOWLER@ME.COM

NCARB National Council Architectural Registration Boards

Project:

Woodland Glen Lot 57

The Woodbridge 1 1/2 Reverse

Location:
1509 SW Heartwood Dr.
Lee's Summit, MO

Client:
John Duggan
913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:
WBRG-WG57

Revisions

NO.	DATE	DESCRIPTION

Sheet Name:
Roof Framing Plan

Sheet No:
S21

Date:
10/10/23

PERMIT SET

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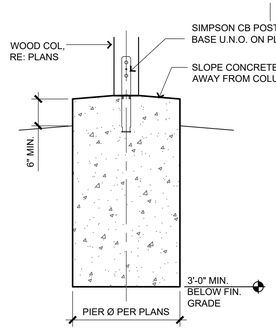
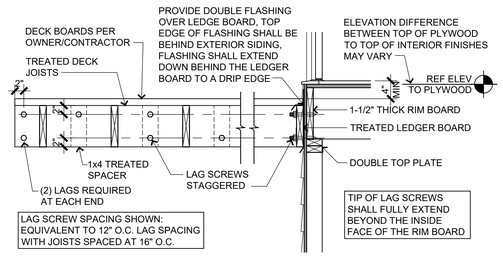


PIER SIZE	AREA S.F.	CAPACITY LBS. ALLOW BRG. 1500 PSF	2000 PSF
12"Ø	0.79	1,177	1,570
14"Ø	1.07	1,602	2,137
16"Ø	1.40	2,094	2,792
18"Ø	1.77	2,650	3,534
20"Ø	2.18	3,272	4,363
22"Ø	2.64	3,959	5,279
24"Ø	3.14	4,712	6,283
26"Ø	3.68	5,530	7,374
28"Ø	4.27	6,414	8,552

10 DECK PIER

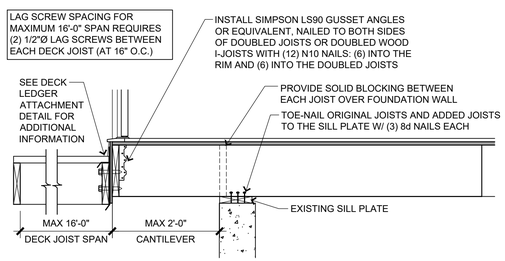
SCALE: 3/4" = 1'-0"



CONNECTION DETAILS	JOIST SPAN: UP TO 6'	6'-1" TO 8'	8'-1" TO 10'	10'-1" TO 12'	12'-1" TO 14'	14'-1" TO 16'	16'-1" TO 18'
1/2"Ø LAG SCREWS W/ 1/2" MAX SHEATHING EQUIVALENT LAG SPACING FOR JOISTS @ 16"oc (SEE ROW ABOVE)	SPACING OF FASTENERS: 30"oc	23"oc	18"oc	15"oc	13"oc	11"oc	10"oc
	EVERY OTHER JOIST SPACES	(2) EVERY THIRD JOIST SPACE	EACH JOIST SPACE		EACH JOIST SPACE W/ (2) EVERY OTHER SPACE		(2) IN EACH JOIST SPACE

11 DECK LEDGER ATTACHMENT

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



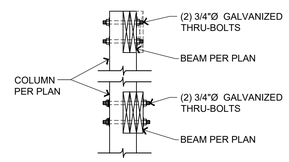
EXISTING JOISTS MUST BE 2x10'S (MIN) OR WOOD I-JOISTS @ 16" O.C.
MAXIMUM DECK JOIST SPAN CONNECTING TO CANTILEVERED JOISTS IS 16'-0".

FOR 2'-0" CANTILEVER, EACH 2x10 MUST BE DOUBLED WITH AN ADDITIONAL 6'-0" LG 2x10 NAILED TOGETHER W/ 10d COMMON NAILS @ 16" O.C. STAGGERED.
EACH I-JOIST MUST BE DOUBLED WITH 30" LONG WEB STIFFENERS ADDED. WEB STIFFENERS SHALL BE PLACED BETWEEN THE I-JOISTS ON THE OUTSIDE FLANGES OF EACH OF THE TWO I-JOISTS AND NAILED TOGETHER W/ A ROW OF (4) 10d NAILS EVERY 16".

FOR 1'-0" CANTILEVER, EXISTING JOISTS DO NOT NEED TO BE DOUBLED.

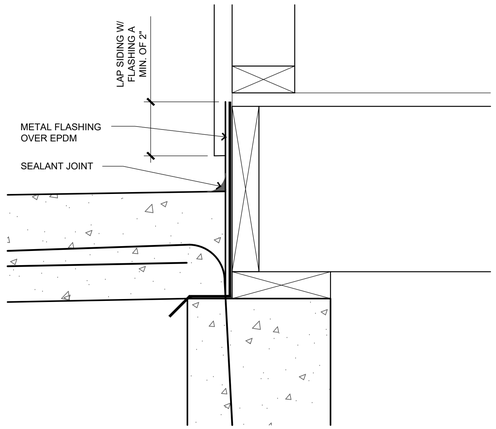
12 DECK LEDGER ATTACHMENT TO CANTILEVERED JOISTS

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



13 DECK BEAM TO COL CONN

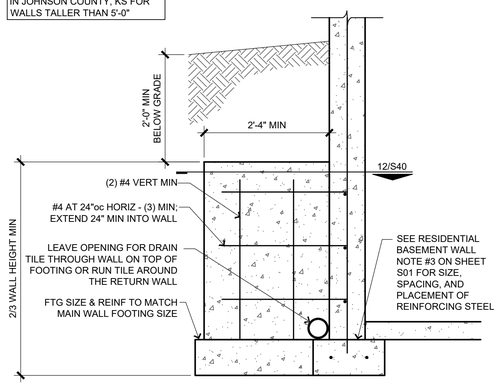
SCALE: 3/4" = 1'-0"



7 STOOP SECTION

SCALE: 3" = 1'-0"

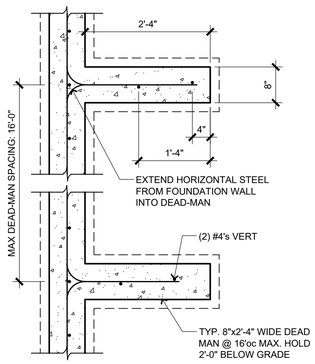
THIS DETAIL APPLICABLE ONLY IN JOHNSON COUNTY, KS FOR WALLS TALLER THAN 5'-0"



8 TYP RETURN WALL DETAIL

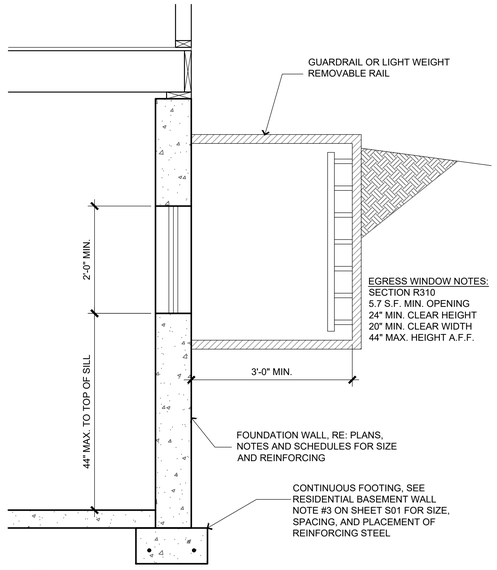
SCALE: 3/4" = 1'-0"

THIS DETAIL APPLICABLE ONLY IN JOHNSON COUNTY, KS FOR WALLS TALLER THAN 5'-0"



9 TYP DEAD-MAN SECTION

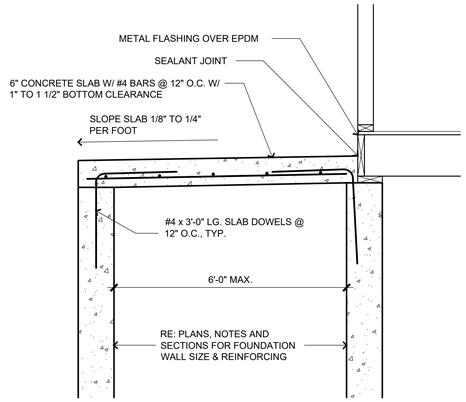
SCALE: 3/4" = 1'-0"



EGRESS WINDOW NOTES:
SECTION R310
5.7 S.F. MIN. OPENING
24" MIN. CLEAR HEIGHT
20" MIN. CLEAR WIDTH
44" MAX. HEIGHT A.F.F.

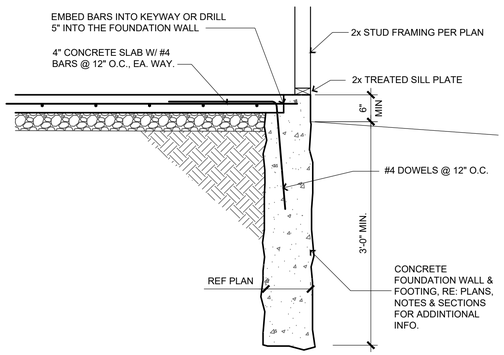
4 TYP EGRESS WINDOW SECTION

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



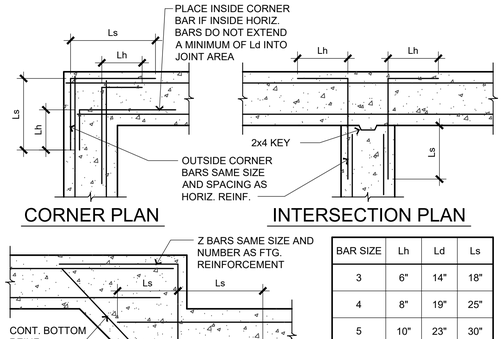
5 SUSPENDED PORCH STOOP

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

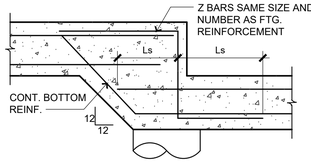


6 WALKOUT/GARAGE FTG SECTION

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



CORNER PLAN | INTERSECTION PLAN

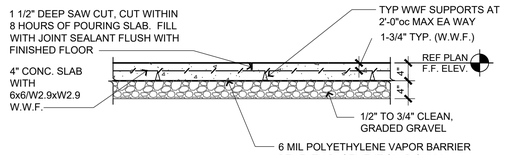


GRADE BEAM STEP ELEV.

BAR SIZE	Lh	Ld	Ls
3	6"	14"	18"
4	8"	19"	25"
5	10"	23"	30"
6	1'-0"	28"	37"
7	1'-2"	42"	54"
8	1'-4"	48"	62"

1 TYP WALL AND GRADE BEAM DTL'S

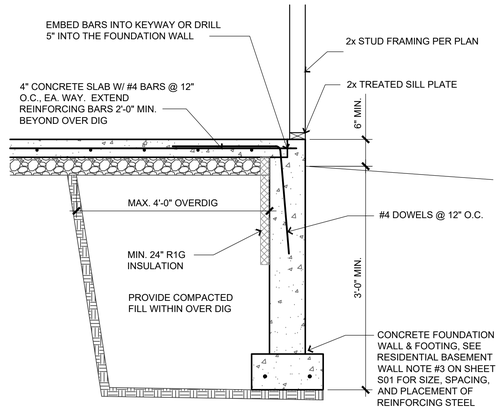
SCALE: 3/4" = 1'-0"



STANDARD 4" SLAB

2 STANDARD SLAB DETAILS

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



3 OVERDIG SECTION BSMT SLAB

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

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Standard Details, Schedules, & Notes

Sheet No: **S30**

Date: **10/10/23**

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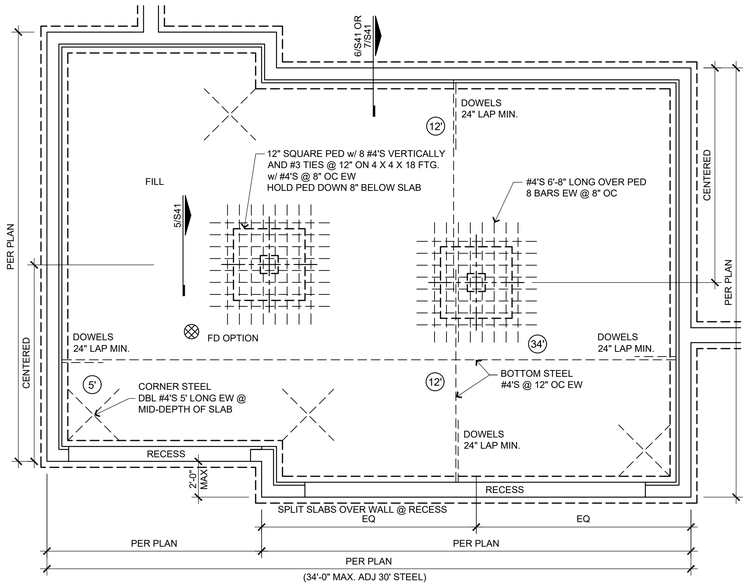
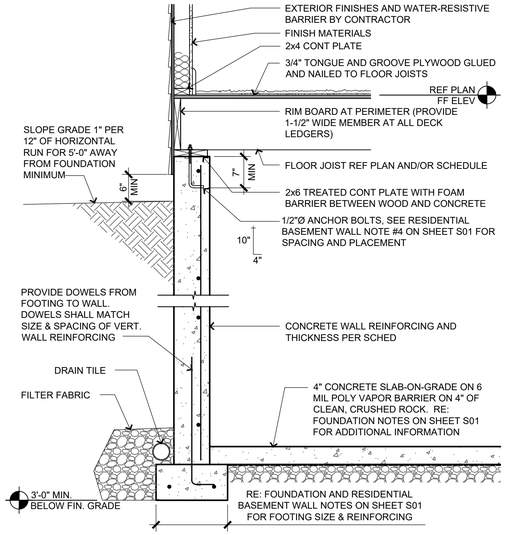


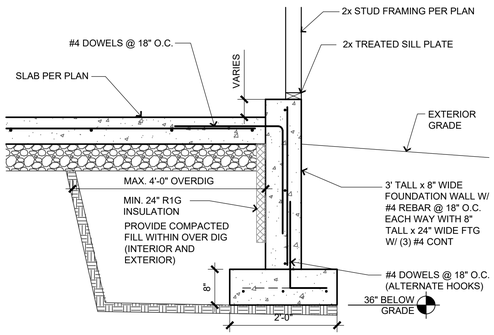
7 GARAGE SLAB ON FILL

SCALE: NTS



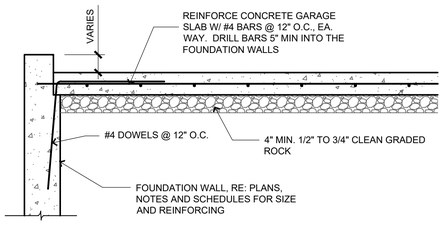
4 FOUNDATION BEARING WALL

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



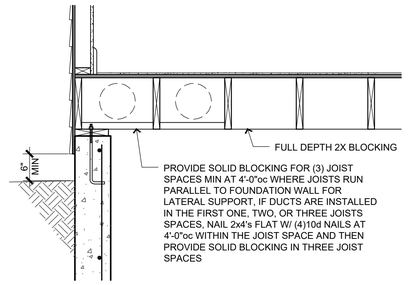
1 OVERDIG SLAB/WALL SECTION

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



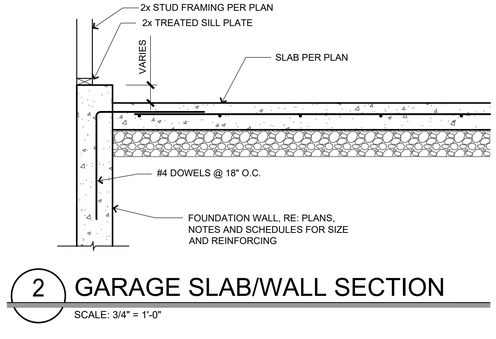
9 GARAGE SLAB/WALL SECTION

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



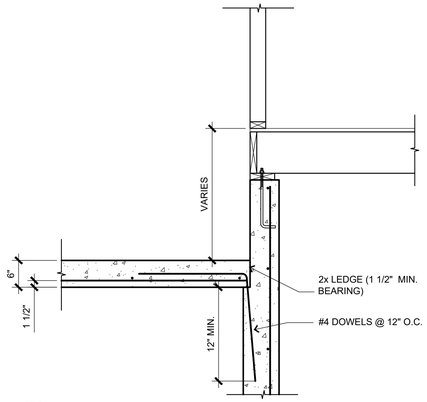
5 JOISTS PARALLEL TO WALL

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



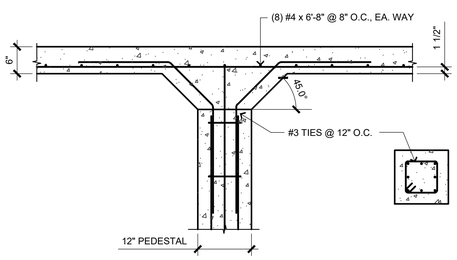
2 GARAGE SLAB/WALL SECTION

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



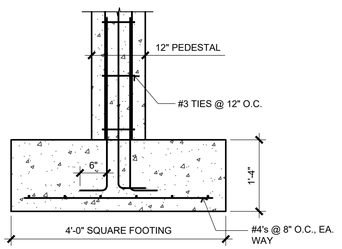
10 GARAGE SLAB ON FILL @ WALL

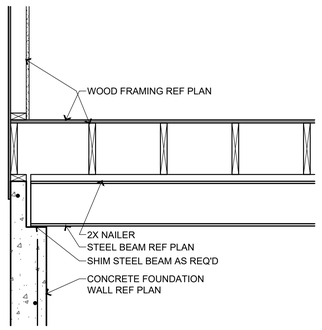
SCALE: 3/4" = 1'-0"



8 GARAGE SLAB PEDESTAL

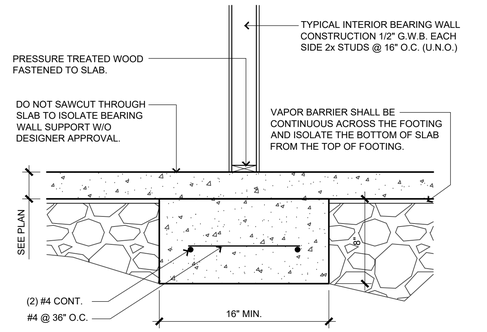
SCALE: 3/4" = 1'-0"





6 STL. BM. ON CONC. FNDN. WALL

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



3 INTERIOR BEARING WALL

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

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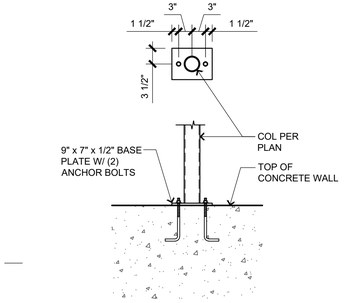
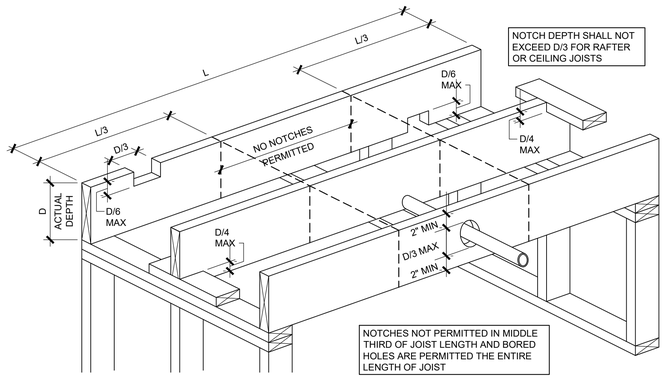


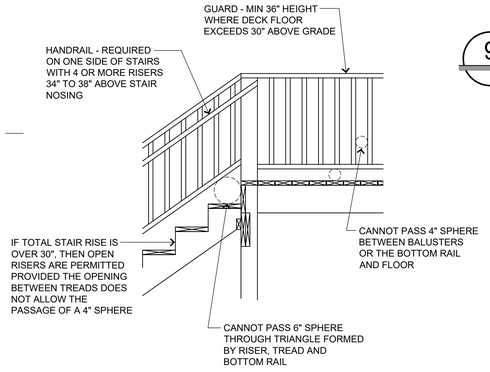
14 STL COL ON CONC WALL

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



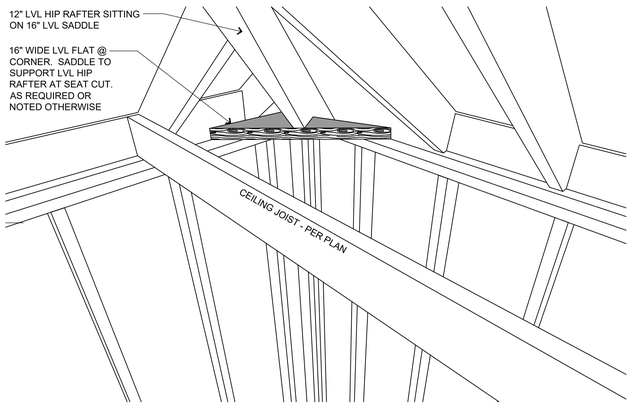
9 NOTCHING AND BORING CEILING OR FLOOR JOISTS

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



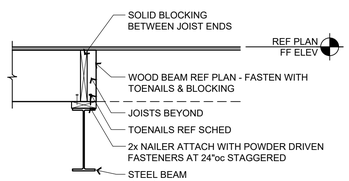
15 GUARD DETAIL

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



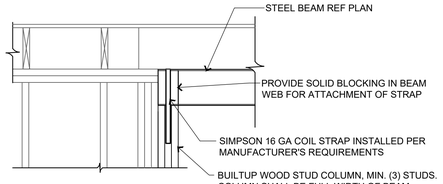
16 LVL HIP RAFTER BEARING ON 16" LVL FLAT AT CORNERS

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



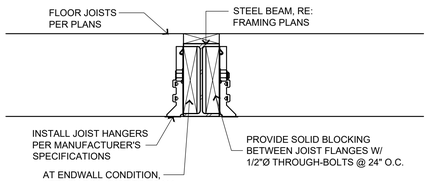
10 WD BEAM ON STEEL BEAM

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



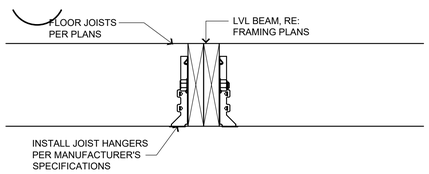
11 STL BM PARALLEL TO WALL

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



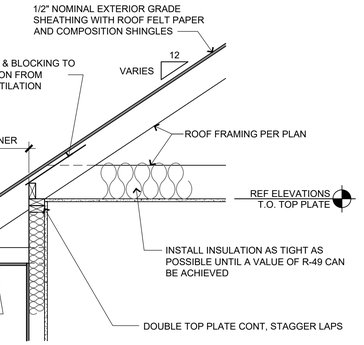
12 UPSET STEEL BEAM

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



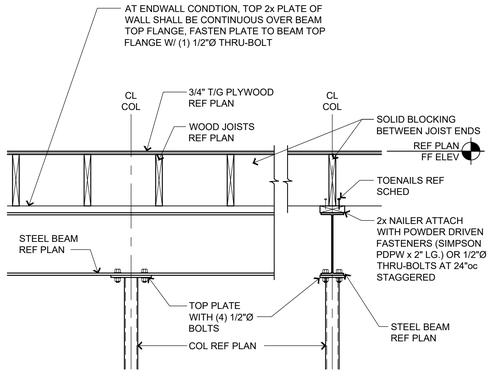
13 UPSET LVL BEAM

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



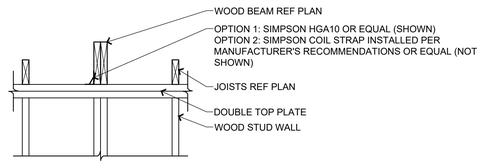
4 ROOF RAFTER BEARING

SCALE: 3/4" = 1'-0" X-WALSEC02



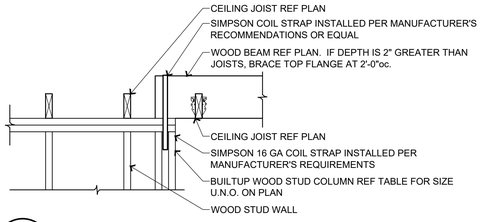
5 TYP. BEAM AT COLUMN

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



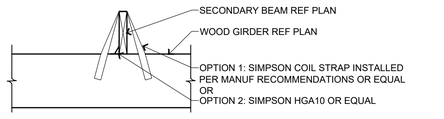
6 TYP WOOD BM PERP TO WALL

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



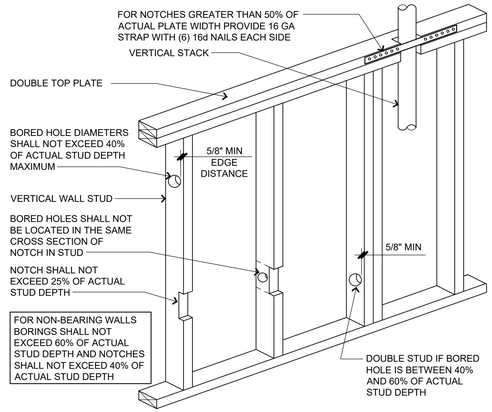
7 TYP WD BM PARALLEL TO WALL

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



8 WD BM BEARING ON WD BM

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

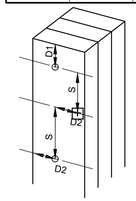


1 NOTCHING AND BORING WALLS

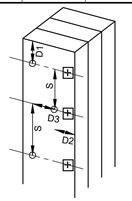
SCALE: 3/4" = 1'-0"

BUILT UP COLUMN NAILING SCHEDULE

BUILT UP COLUMN	BUILT UP SECTION	PATTERN	END DISTANCE	EDGE DISTANCE	ROW SPACING	NAIL SPACING	NAIL SIZE
			D1	D2	D3	S	
BC1	(2) 2x6	2	2 1/2"	1 1/2"	2 1/2"	9"	10d
BC2	(3) 2x6	2	3 1/2"	1 1/2"	2 1/2"	9"	30d
BC3	(4) 2x6	2	4"	1 1/2"	2 1/2"	9"	50d
BC4	(2) 2x4	1	2 1/2"	1"	---	6"	10d
BC5	(3) 2x4	1	3 1/2"	1 1/2"	---	8"	30d



PATTERN 1



PATTERN 2

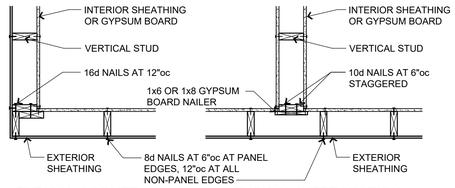
NOTE:
1. ADJACENT NAILS ARE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN.
2. CONTRACTOR MAY SUBSTITUTE 1/2"Ø BOLTS W/ METAL PLATE OR WASHER IN PLACE OF 30d & 50d NAILS.
3. CONTRACTOR SHALL PRE-DRILL STUDS W/ 1/8" DRILL BIT WHEN USING 30d & 50d NAILS TO PREVENT SPLITTING.
4. ALL BUILT UP COLUMNS SHALL EXTEND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

O---INDICATES NAILS DRIVEN FROM NEAR FACE

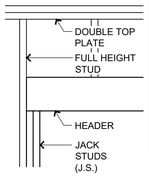
⊞---INDICATES NAILS DRIVEN FROM FAR FACE

2 BUILT UP COLUMN SCHEDULE

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



TYPICAL CORNER TYPICAL INTERSECTION



TYPICAL HEADER

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

NOTE:
1. NOT FOR OPEN WEB TRUSS SYSTEMS
2. MAXIMUM JOIST SPAN OF 18FT
3. HEADERS SUPPORT FLOOR LOADS ONLY, NO ROOF LOADS

3 TYP WALL FRAMING DETAILS

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

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N&S JOB NUMBER: 2023-2168

STATE OF MISSOURI
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ENGINEER
PE-E002016715
10/10/2023
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BILL FOWLER ARCHITECT
3601 W 122nd Terrace, Leawood, KS 66209
913 908 5363 / BWFOWLER@ME.COM
NCARB National Council Architectural Registration Boards

Project:
Woodland Glen Lot 57
The Woodbridge 1 1/2 Reverse

Location:
1509 SW Heartwood Dr.
Lee's Summit, MO

Client:
John Duggan
913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:
WBRG-WG57

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NO.	DATE	DESCRIPTION

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Standard Details, Schedules, & Notes

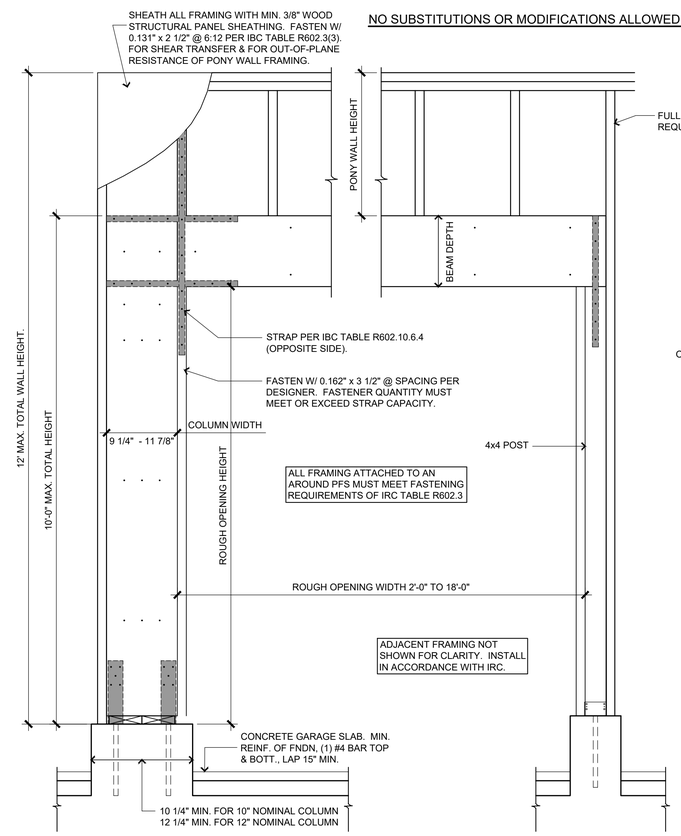
Sheet No:
S32

Date:
10/10/23

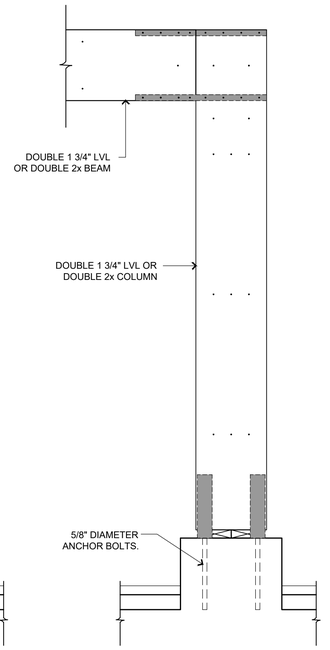
PERMIT SET

Printed:

NO SUBSTITUTIONS OR MODIFICATIONS ALLOWED ON THIS SITE-BUILT PORTAL FRAME.



SINGLE-WALL PORTAL INSTALLATION



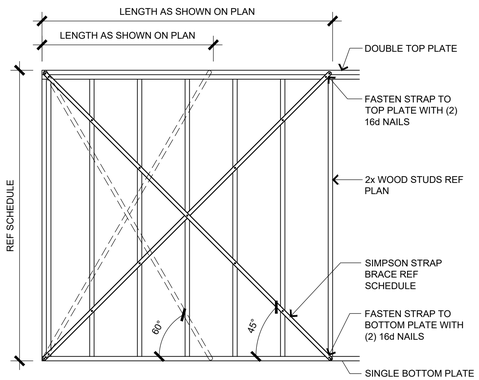
DOUBLE-WALL PORTAL INSTALLATION

NOTES:

1. THE STRONG-WALL SITE-BUILT PORTAL FRAME SYSTEM (PFS) IS APPLICABLE FOR USE UP TO A HEIGHT OF 10' MAX. THE HEIGHT IS PERMITTED TO BE INCREASED TO 12' WITH A 2' MAX PONY WALL. ALLOWABLE WALL-BRACING LENGTH MUST BE MULTIPLIED BY A 0.80 FACTOR.
2. MINIMUM HEADER DEPTHS FOR LVL AND SOLID SAWN ARE 11 7/8" AND 11 1/4" RESPECTIVELY.
3. SOLID SAWN COLUMNS MAY BE USED IN COMBINATION WITH LVL HEADER MATERIAL. WALL-BRACING LENGTH IS LIMITED TO THAT OF THE SOLID SAWN MATERIAL. SHIMS ILLUSTRATED IN LVL - SOLID SAWN DETAIL BELOW MUST BE USED FOR PROPER FRAMING ALIGNMENT.
4. FOR 10" NOMINAL DF/SF AND SPF/HF SYSTEMS CONSTRUCTED WITH SHIM AT HOLDOWN ONLY, VERTICAL LOAD IS LIMITED TO 2,500 LB.

2 SITE-BUILT PORTAL FRAME

SCALE: 1" = 1'-0"



3 INTERIOR BRACED WALL (LIB)

SCALE: N.T.S.

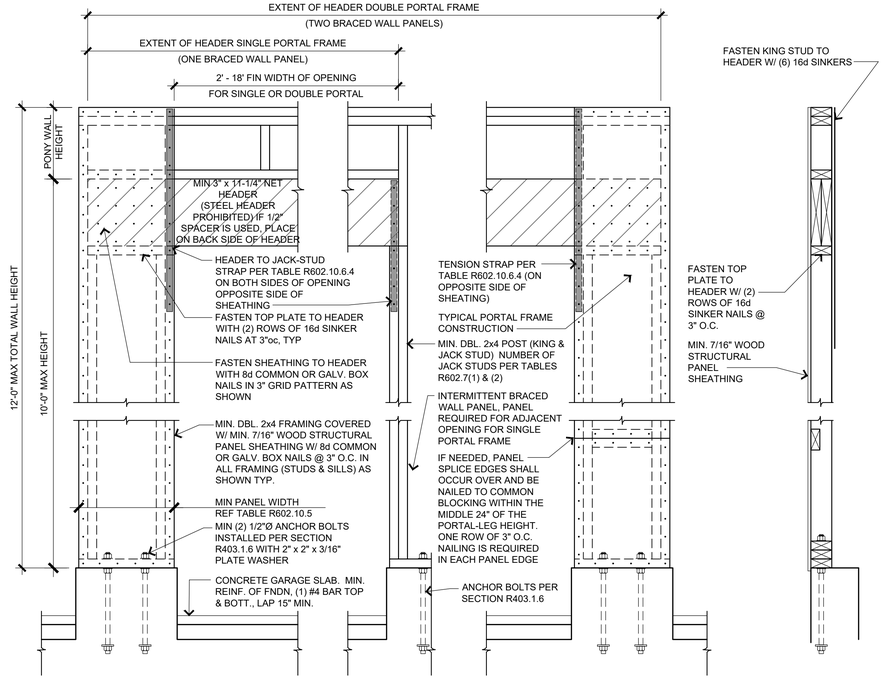
TABLE R602.10.5 - MINIMUM LENGTH OF BRACED WALL PANELS

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.

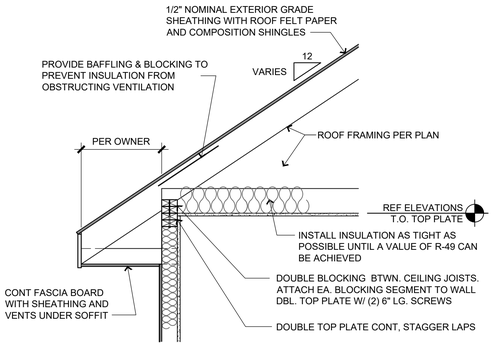
INTERIOR BRACED WALL SCHEDULE

SIMPSON MODEL NO.	STRAP LENGTH	WALL DIM'S HEIGHT x WIDTH	ANGLE FROM HORIZONTAL	FASTENERS PLATES	FASTENERS 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



1 PORTAL FRAME AT GARAGE (PFG - R602.10.6.3)

SCALE: 1" = 1'-0"



4 ALT. ROOF RAFTER BEARING

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

X-WALSEC02

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Project:

Woodland Glen Lot 57

The Woodbridge 1 1/2 Reverse

Location:
1509 SW Heartwood Dr.
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Client:
John Duggan
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Standard Details, Schedules, & Notes

Sheet No: **S33**

Date: **10/10/23**

PERMIT SET

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ROOF RAFTER SCHEDULE

GRADE	MEMBER SIZE / SPACING	MAX SPAN CEILING JSTS AT TOP PLATE	MAX SPAN H_C/H_R=0.16	MAX SPAN H_C/H_R=0.20	MAX SPAN H_C/H_R=0.25	MAX SPAN H_C/H_R=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).

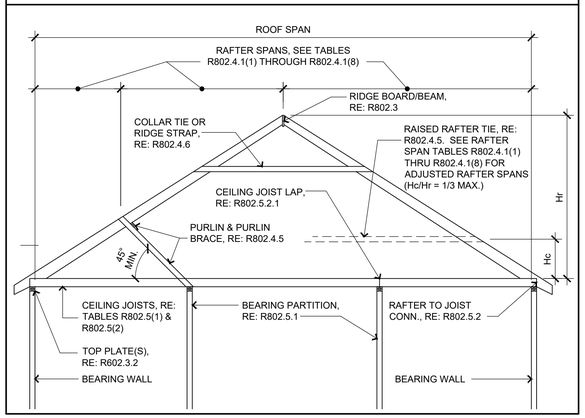


TABLE R802.5.2 RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS (a,b,c,d,e,g)

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
		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	12	15	6	11	15	20
	16	5	8	10	13	5	8	11	14	6	11	15	20	8	14	20	26
	24	7	11	15	19	7	11	16	21	9	16	23	30	12	21	30	39
4:12	12	3	5	6	8	3	5	6	8	4	6	9	11	5	8	12	15
	16	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	24	5	8	12	15	5	9	12	16	7	12	17	22	9	16	23	29
5:12	12	3	4	5	6	3	4	5	7	3	5	7	9	4	7	9	12
	16	3	5	6	8	3	4	7	9	4	7	9	12	5	9	12	16
	24	4	7	9	12	4	7	10	13	6	10	14	18	7	13	18	23
7:12	12	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	16	3	4	5	6	3	4	5	6	3	5	7	9	4	6	9	11
	24	3	5	7	9	3	5	7	9	4	7	10	13	5	9	13	17
9:12	12	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	16	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	24	3	4	6	7	3	4	6	7	3	6	8	10	4	7	10	13
12:12	12	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	5
	16	3	3	4	4	3	3	3	4	3	4	6	8	3	6	8	10
	24	3	4	4	5	3	3	4	6	3	4	6	8	3	6	8	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.

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" × 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
2	Ceiling joists to top plate	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	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" × 0.128"); or 3-16d common (3-1/2" × 0.162"); or 4-3" × 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" × 20 ga. ridge strap to rafter	4-10d box (3" × 0.128"); or 3-10d common (3" × 0.148"); or 4-3" × 0.131" nails	Face nail each rafter
6	Rafter or roof truss to plate	3-16d box nails (3-1/2" × 0.135"); or 3-10d common nails (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss(i)
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam	4-16d (3-1/2" × 0.135"); or 3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	Toe nail
		3-16d box (3-1/2" × 0.135"); or 2-16d common (3-1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	End nail
	Wall		
8	Stud to stud (not at braced wall panels)	16d common (3-1/2" × 0.162")	24" o.c. face nail
		10d box (3" × 0.128"); or 3" × 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" × 0.135"); or 3" × 0.131" nails	12" o.c. face nail
		16d common (3-1/2" × 0.162")	16" o.c. face nail
10	Built-up header (2" to 2" header with 1/2" spacer)	16d common (3-1/2" × 0.162")	16" o.c. each edge face nail
		16d box (3-1/2" × 0.135")	12" o.c. each edge face nail
11	Continuous header to stud	5-8d box (2-1/2" × 0.113"); or 4-8d common (2-1/2" × 0.131"); or 4-10d box (3" × 0.128")	Toe nail
12	Top plate to top plate	16d common (3-1/2" × 0.162")	16" o.c. face nail
		10d box (3" × 0.128"); or 3" × 0.131" nails	12" o.c. face nail
13	Double top plate splice	8-16d common (3-1/2" × 0.162"); or 12-16d box (3-1/2" × 0.135"); or 12-10d box (3" × 0.128"); or 12-3" × 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" × 0.162")	16" o.c. face nail
		16d box (3-1/2" × 0.135"); or 3" × 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" × 0.135"); or 2-16d common (3-1/2" × 0.162"); or 4-3" × 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" × 0.113"); or 3-16d box (3-1/2" × 0.135"); or 4-8d common (2-1/2" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	Toe nail
		3-16d box (3-1/2" × 0.135"); or 2-16d common (3-1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	End nail
17	Top plates, laps at corners and intersections	3-10d box (3" × 0.128"); or 2-16d common (3-1/2" × 0.162"); or 3-3" × 0.131" nails	Face nail
18	1" brace to each stud and plate	3-8d box (2-1/2" × 0.113"); or 2-8d common (2-1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2 staples 1-3/4"	Face nail
19	1" × 6" sheathing to each bearing	3-8d box (2-1/2" × 0.113"); or 2-8d common (2-1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., 1-3/4" long	Face nail
20	1" × 8" and wider sheathing to each bearing	3-8d box (2-1/2" × 0.113"); or 3-8d common (2-1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3 staples, 1" crown, 16 ga., 1-3/4" long	Face nail
		Wider than 1" × 8" 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 4 staples, 1" crown, 16 ga., 1-3/4" long	
	(continued)		

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER (a)(b)(c)	SPACING AND LOCATION
	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
		8d common (2-1/2" × 0.131"); or 10d box (3" × 0.128"); or 3" × 0.131" nails	6" o.c. toe nail
23	1" × 6" subfloor or less to each joist	3-8d box (2-1/2" × 0.113"); or 2-8d common (2-1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., 1-3/4" long	Face 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") 4-10d 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 4-10d 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)	SPACING OF FASTENERS: 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 RSRS-01 (2-3/8" × 0.113") nail (roof)(j)	6	12(f)
31	19/32" – 1"	8d common nail (21/2" × 0.131"); or RSRS-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

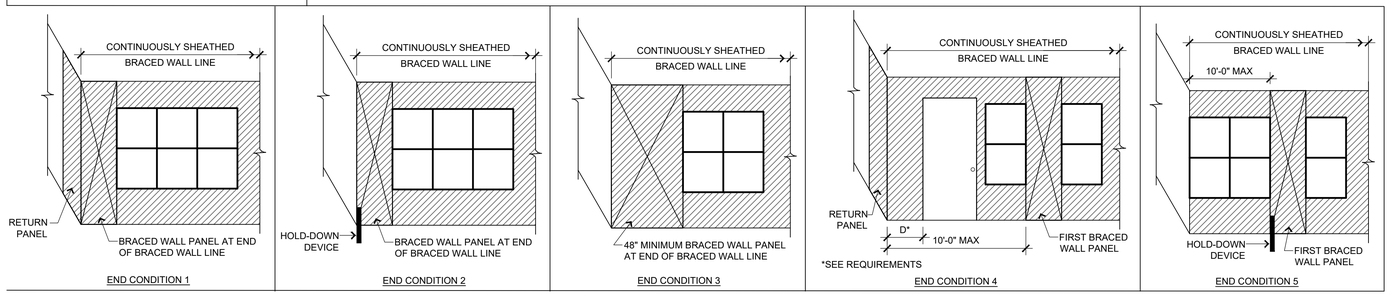
a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
b. Staples are 16 gage 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 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 at floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies 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. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.

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

SCALE: NTS

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North Kansas City, MO 64116
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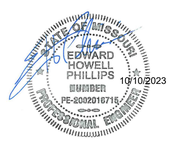

BILL FOWLER ARCHITECT

3601 W 122nd Terrace, Leawood, KS 66209
913 908 5363 / BWFOWLER@ME.COM

NCARB National Council Architectural Registration Boards

Project:

Woodland Glen Lot 57

The Woodbridge 1 1/2 Reverse

Location:
1509 SW Heartwood Dr.
Lee's Summit, MO

Client:
John Duggan
913 498 3536 / jduggan@ks-dsdlaw.com

BFA No:

WBRG-WG57

Revisions

NO.	DATE	DESCRIPTION

Sheet Name:
Standard Details, Schedules, & Notes

Sheet No: **S34**

Date: **10/10/23**

PERMIT SET

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