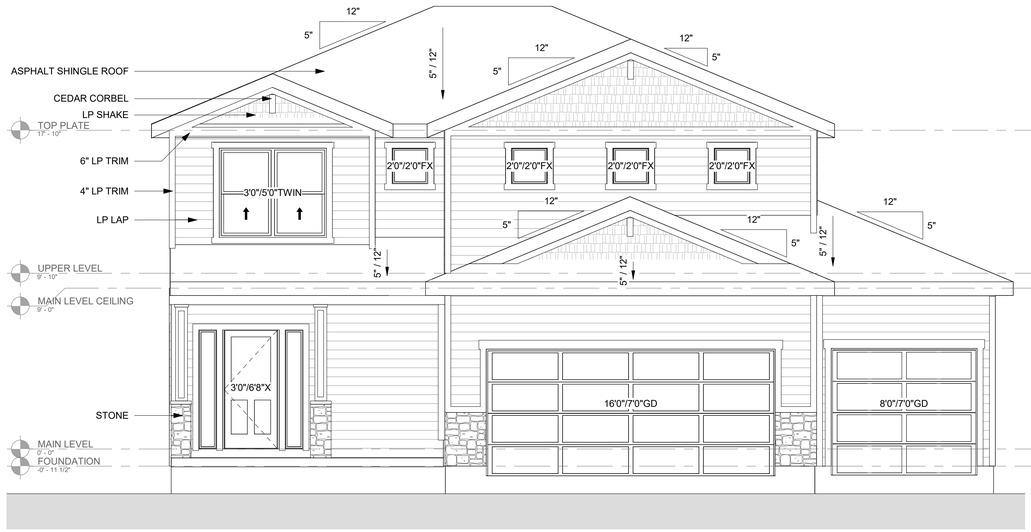
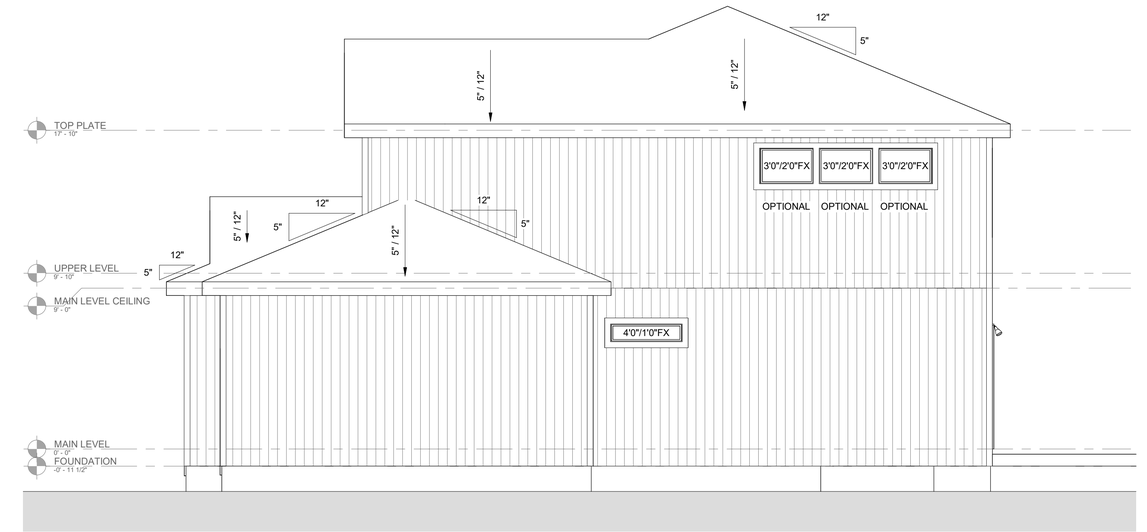
ELEVATION NOTES

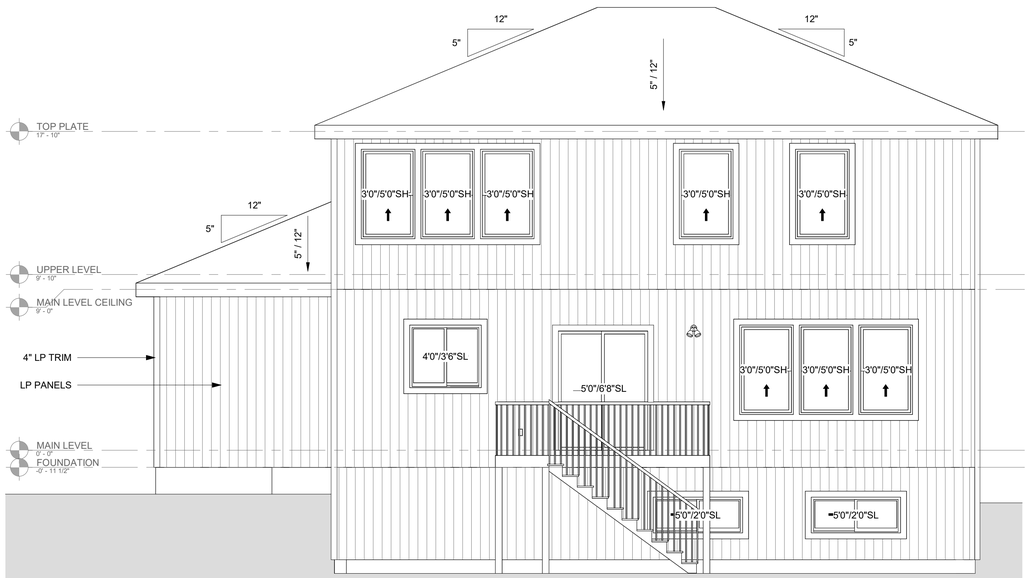
GRADE IS APPROXIMATE AND SHOWN FOR REFERENCE ONLY.
CONTRACTOR TO VERIFY SITE CONDITIONS.



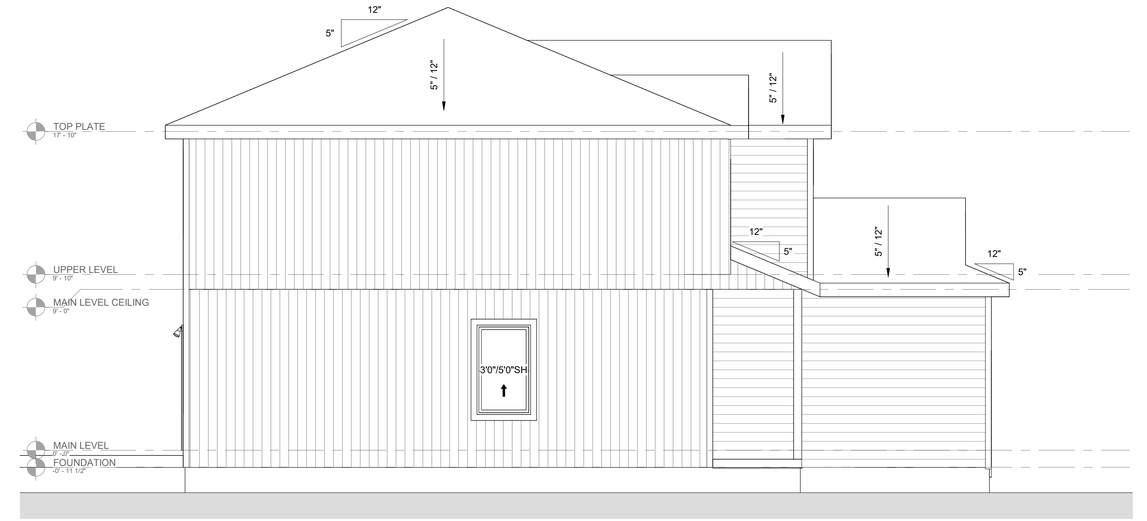
5 FRONT- CRAFTSMAN OPT 3RD BAY
1/4" = 1'-0"



2 LEFT - 3RD BAY
1/4" = 1'-0"



1 BACK - DAYLIGHT 3RD BAY
1/4" = 1'-0"



4 RIGHT
1/4" = 1'-0"

BUILDING SQUARE FOOTAGE (SQFT)

MAIN LEVEL CONDITIONED SPACE TOTAL	921
UPPER LEVEL CONDITIONED SPACE TOTAL	1105
CONDITIONED SPACE TOTAL (SQ FT)	**2026**
LOWER LEVEL UNCONDITIONED SPACE TOTAL	898
GARAGE TOTAL	469
PORCHES AND DECKS TOTAL	74
UNCONDITIONED SPACE TOTAL (SQ FT)	**1141**

TABLE OF CONTENTS

AVITAL HOMES
ALL PATHS LEAD HOME

AVITAL HOMES (816)914-7128

EVERSTEAD
ENGINEERING & DESIGN

STATE OF MISSOURI
HANNAH CHRISTINE JONES
NUMBER PE-2023046346
03/04/2024
PROFESSIONAL ENGINEER

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LEE'S SUMMIT, MO 64064
EVERSTEAD.COM (816)399-4901

AVITAL HOMES LLC
SERENITY - CRAFTSMAN
1
4416 SW GRINDSTONE CIR
LEES SUMMIT, MO 64082

REVISIONS
1 - 03/04/2024

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SCALE As indicated

GENERAL PLAN NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.
2. ALL DIMENSIONS ARE FROM FACE OF STUD U.N.O.
3. MINIMUM DOUBLE JOIST UNDER INTERIOR NON-LOAD BEARING WALLS.
4. CANTILEVERS, OVER BEAMS, AND DOOR JAMBS SHALL BE BLOCKED.
5. CEILING JOISTS SHALL BE 2x6 @ 16" O.C. U.N.O.
6. WALL CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IMPOSED ACCORDING TO IRC R301.
7. EXTERIOR WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH IRC 602 & FIGURES R602.3(1) AND R602.3(2).
8. ANY WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY (OR THE FURRING THEY ARE ATTACHED TO) SHALL BE OF DECAY RESISTANT MATERIAL.
9. INTERIOR NON-LOAD BEARING WALLS SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE UNLESS THE INTERIOR NON-LOAD BEARING WALL RESTS DIRECTLY ON A FOOTING.
10. SOLID BLOCKING BETWEEN JOISTS AT 48" O.C. AND EXTEND BLOCKING ONE JOIST BAY PAST EACH SIDE OF KITCHEN ISLAND
11. DOUBLE JOIST UNDER KITCHEN ISLAND AND TUBS
12. ALL JOIST HANGERS TO BE SIMPSON LUS HANGERS UNO

INTERIOR LOAD BEARING WALL

WALL BRACING NOTES:

1. WALL BRACING IS DESIGNED IN ACCORDANCE WITH IRC R602.10
2. BRACING METHODS SHALL BE PER PLAN AND SHALL BE CONSTRUCTED IN CONFORMANCE WITH 2018 IRC R602.10.4 AND R602.10.5
3. FOR METHOD CS-WSP STRUCTURAL PANEL SHEATHING SHALL BE INSTALLED ON ALL SHEATHABLE SURFACES ON ONE SIDE OF THE BRACED WALL LINE INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS. END CONDITIONS SHALL MEET THE REQUIREMENTS OF R602.10.7 AND DETAIL 9-S400.
4. ALL HORIZONTAL PANEL JOINTS SHALL OCCUR OVER AND BE NAILED TO COMMON FRAMING OR BLOCKING WITH AN APPROPRIATE PANEL EDGE-NAILING SCHEDULE IN ACCORDANCE WITH IRC R602.10.4.4
5. INTERIOR FINISH OF EXTERIOR WALLS SHALL BE MINIMUM 1/2" GYPSUM BOARD INSTALLED ON THE INTERIOR SIDE.

BRACING METHODS

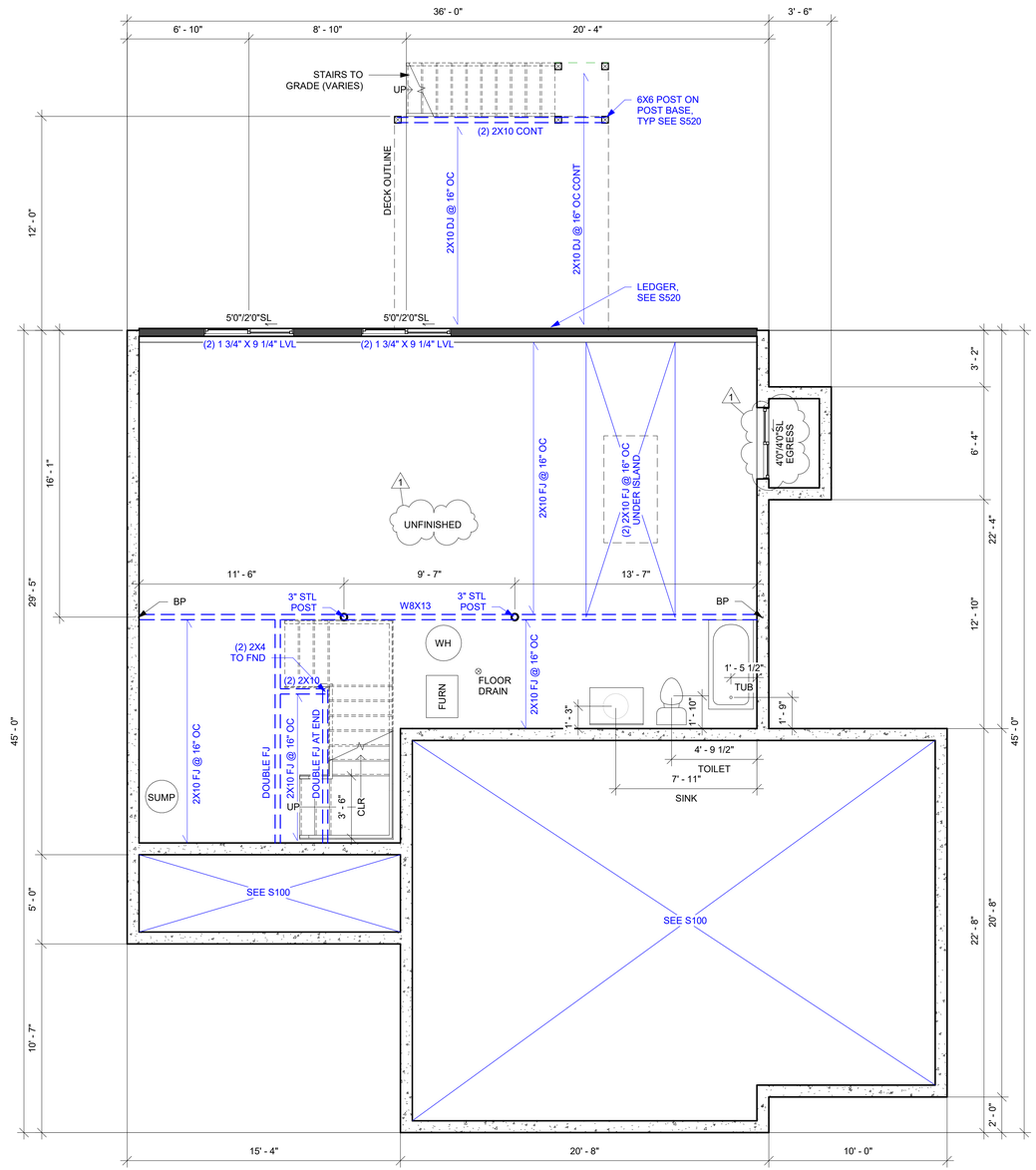
BRACING CS-PF PER IRC R602.10.6.4

BRACING CS-WSP PER IRC R602.10

BRACING WSP PER IRC R602.10 (INCLUDES PARTIAL PANELS PER IRC R602.10.5.2)

BRACING LIB PER IRC R602.10
MINIMUM LIB LENGTH PER 2018 IRC TABLE R602.10.5:
- 55" - 8' TALL WALL HEIGHT
- 62" - 9' TALL WALL HEIGHT
- 69" - 10' TALL WALL HEIGHT

BRACING PFH PER IRC R602.10.6.2



2 PLAN VIEW - LOWER LEVEL STRUC
DAYLIGHT 3RD BAY
1/4" = 1'-0"

CONSTRUCTION NOTES - NEW CONSTRUCTION

1. ALL INTERIOR WALL DIMENSIONS ARE MEASURED TO THE INSIDE FACE OF STUD U.N.O.
2. ALL EXTERIOR WALL DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF STUD U.N.O.
3. ALL STRUCTURAL BEAMS ARE MEASURED TO THE CENTER OF THE MEMBER.
4. NEW DOORS AND WINDOWS ARE TAGGED IN INCHES
5. ALL CRITICAL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR.
6. STRUCTURAL BEAMS ARE SHOWN ON ARCHITECTURAL PLANS FOR REFERENCE ONLY. SEE STRUCTURAL PLANS FOR SPECIFICATION.
7. ALL TOILETS TO BE INSTALLED WITH A MINIMUM OF 15" O.C. CLEARANCE ON EACH SIDE OF TOILET.
8. ALL TOILETS TO HAVE 21" CLEARANCE AT FRONT OF TOILET.
9. ALL SINKS TO HAVE 21" CLEARANCE AT FRONT OF SINK.
10. ALL SHOWERS TO HAVE 24" CLEARANCE AT OPENING.

LOWER LEVEL WINDOW SCHEDULE

Count	Type Mark	Head Height
1	4'0"/4'0"SL	7' - 0"
2	5'0"/2'0"SL	7' - 0"

LOWER LEVEL DOOR SCHEDULE

Count	Type Mark	Comments
3	2'4"/6'8"	Closet/Bath
2	2'6"/6'8"	<varies>
1	3'0"/6'8"	Mechanical
1	3'0"/6'8"CO	Casements

WALL LEGEND - NEW CONSTRUCTION

FOUNDATION WALL

NEW INTERIOR PARTITION

NEW EXTERIOR WALL

IRC TABLE N1102.1.2 (R402.1.2) INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (PARTIAL) AND ENERGY CONSERVATION CODE COMPLIANCE

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING AND ATTICS R-VALUE	VAULTS R-VALUE	WOOD FRAME WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE	DUCTWORK R-VALUE
4 EXCEPT MARINE	.32	.55	.40	49	49	20 OR 13+5H	19	10/13	10, 2 FT	10/13	8

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LOWER LEVEL PLAN

G200

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SCALE As indicated

GENERAL PLAN NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.
2. ALL DIMENSIONS ARE FROM FACE OF STUD U.N.O.
3. MINIMUM DOUBLE JOIST UNDER INTERIOR NON-LOAD BEARING WALLS.
4. CANTILEVERS, OVER BEAMS, AND DOOR JAMBS SHALL BE BLOCKED.
5. CEILING JOISTS SHALL BE 2x6 @ 16" O.C. U.N.O.
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INTERIOR LOAD BEARING WALL

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5. INTERIOR FINISH OF EXTERIOR WALLS SHALL BE MINIMUM 1/2" GYPSUM BOARD INSTALLED ON THE INTERIOR SIDE.

BRACING METHODS

BRACING CS-PF PER IRC R602.10.6.4

BRACING CS-WSP PER IRC R602.10

BRACING WSP PER IRC R602.10 (INCLUDES PARTIAL PANELS PER IRC R602.10.5.2)

BRACING LIB PER IRC R602.10
MINIMUM LIB LENGTH PER 2018 IRC TABLE R602.10.5:
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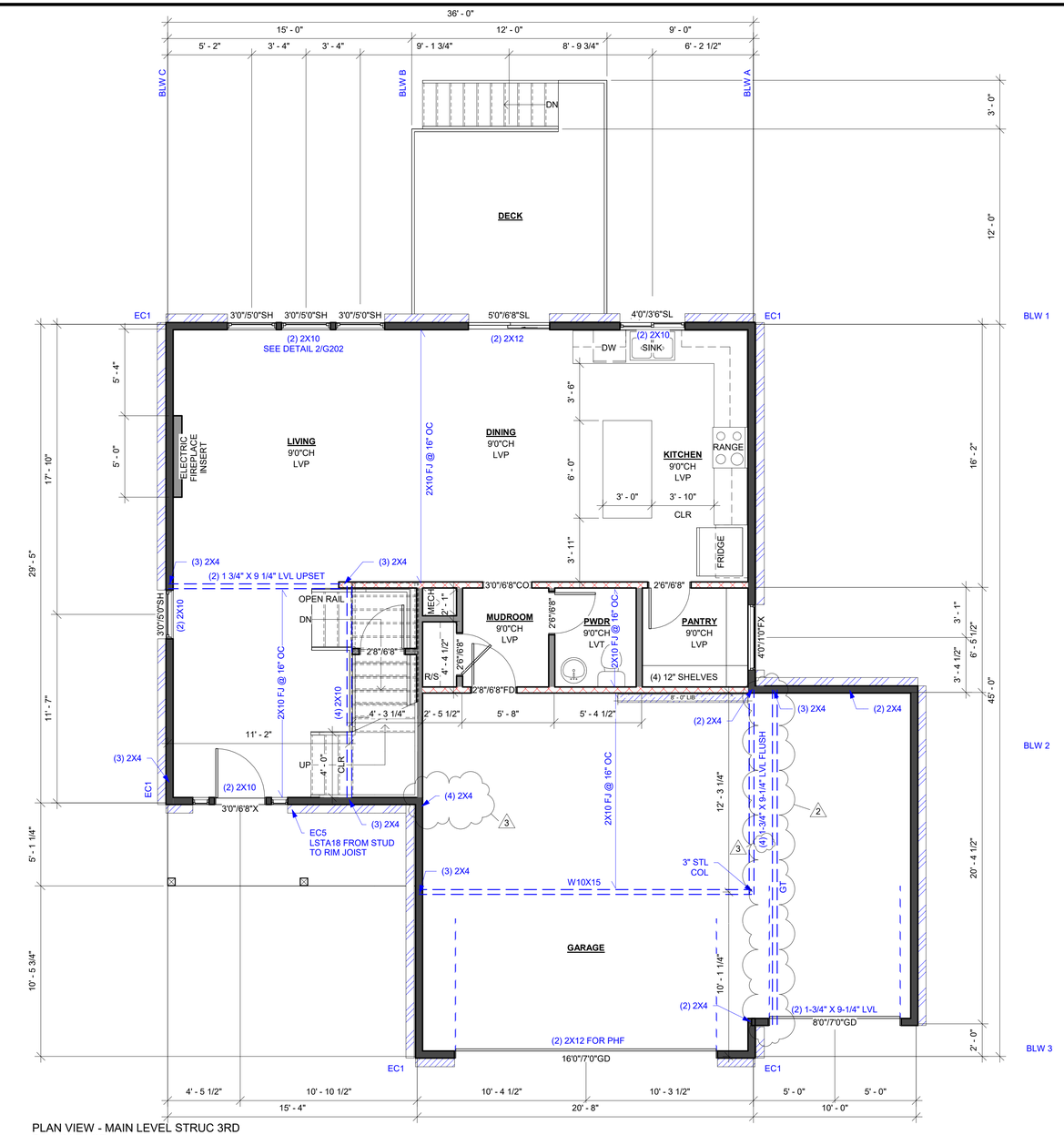
BRACING PFH PER IRC R602.10.6.2



PLAN VIEW - MAIN LEVEL STRUC 3RD BAY GARAGE
1/4" = 1'-0"

CONSTRUCTION NOTES - NEW CONSTRUCTION

1. ALL INTERIOR WALL DIMENSIONS ARE MEASURED TO THE INSIDE FACE OF STUD U.N.O.
2. ALL EXTERIOR WALL DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF STUD U.N.O.
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8. ALL TOILETS TO HAVE 21" CLEARANCE AT FRONT OF TOILET.
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10. ALL SHOWERS TO HAVE 24" CLEARANCE AT OPENING.

WALL LEGEND - NEW CONSTRUCTION

- FOUNDATION WALL
- NEW INTERIOR PARTITION
- NEW EXTERIOR WALL

MAIN LEVEL WINDOW SCHEDULE

Count	Type Mark	Head Height
2	1'0"/6'8"FX	6' - 8"
4	3'0"/5'0"SH	7' - 0"
1	4'0"/1'0"FX	7' - 0"
1	4'0"/3'6"SL	7' - 0"

MAIN LEVEL DOOR SCHEDULE

Count	Type Mark	Comments
3	2'6"/6'8"	<varies>
1	2'8"/6'8"	
1	2'8"/6'8"FD	Garage Entry
1	3'0"/6'8"CO	Casements
1	3'0"/6'8"X	Front Entry
1	5'0"/6'8"SL	Dining Door
1	16'0"/7'0"GD	Garage Door

IRC TABLE N1102.1.2 (R402.1.2) INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (PARTIAL) AND ENERGY CONSERVATION CODE COMPLIANCE

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING AND ATTICS R-VALUE	VAULTS R-VALUE	WOOD FRAME WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE	DUCTWORK R-VALUE
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NUMBER PE-2023046346
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PROFESSIONAL ENGINEER

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LEES SUMMIT, MO 64082

REVISIONS
1 - 03/04/2024
2 - 04/01/2024
3 - 04/04/2024

MAIN LEVEL PLAN

G201

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SCALE	As indicated

GENERAL PLAN NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.
2. ALL DIMENSIONS ARE FROM FACE OF STUD U.N.O.
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11. DOUBLE JOIST UNDER KITCHEN ISLAND AND TUBS
12. ALL JOIST HANGERS TO BE SIMPSON LUS HANGERS UNO

INTERIOR LOAD BEARING WALL

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BRACING METHODS

BRACING CS-PF PER IRC R602.10.6.4

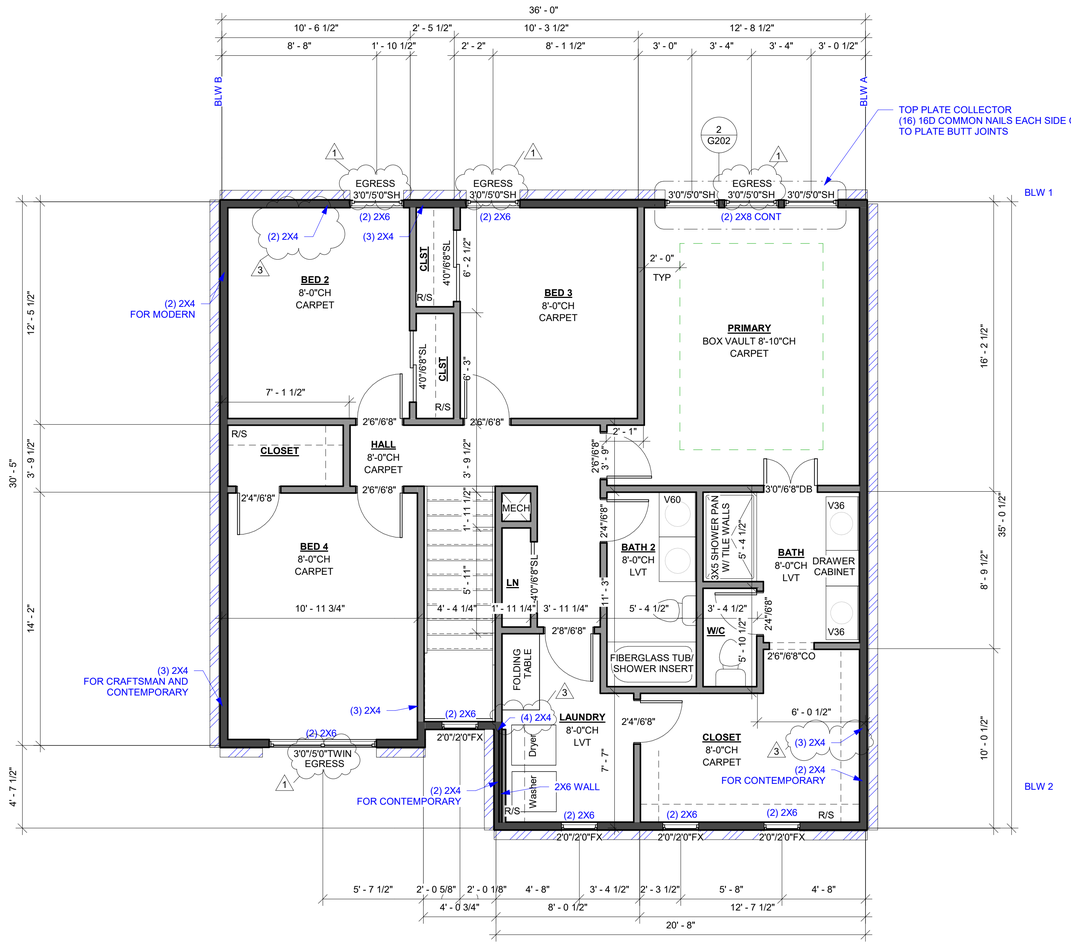
BRACING CS-WSP PER IRC R602.10

BRACING WSP PER IRC R602.10 (INCLUDES PARTIAL PANELS PER IRC R602.10.5.2)

BRACING LIB PER IRC R602.10
MINIMUM LIB LENGTH PER 2018 IRC TABLE R602.10.5:
- 55" - 8' TALL WALL HEIGHT
- 62" - 9' TALL WALL HEIGHT
- 69" - 10' TALL WALL HEIGHT

BRACING PFH PER IRC R602.10.6.2

2 TYP 3-WINDOW FRAMING
1/2" = 1'-0"



1 PLAN VIEW - UPPER LEVEL STRUC
1/4" = 1'-0"

CONSTRUCTION NOTES - NEW CONSTRUCTION

1. ALL INTERIOR WALL DIMENSIONS ARE MEASURED TO THE INSIDE FACE OF STUD U.N.O.
2. ALL EXTERIOR WALL DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF STUD U.N.O.
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4. NEW DOORS AND WINDOWS ARE TAGGED IN INCHES
5. ALL CRITICAL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR.
6. STRUCTURAL BEAMS ARE SHOWN ON ARCHITECTURAL PLANS FOR REFERENCE ONLY. SEE STRUCTURAL PLANS FOR SPECIFICATION.
7. ALL TOILETS TO BE INSTALLED WITH A MINIMUM OF 15" O.C. CLEARANCE ON EACH SIDE OF TOILET.
8. ALL TOILETS TO HAVE 21" CLEARANCE AT FRONT OF TOILET.
9. ALL SINKS TO HAVE 21" CLEARANCE AT FRONT OF SINK.
10. ALL SHOWERS TO HAVE 24" CLEARANCE AT OPENING.

UPPER LEVEL WINDOW SCHEDULE		
Count	Type Mark	Head Height
4	2'0"/2'0"FX	7' - 0"
3	3'0"/2'0"FX	7' - 0"
5	3'0"/5'0"SH	7' - 0"
1	3'0"/5'0"TWIN	7' - 0"

UPPER LEVEL DOOR SCHEDULE		
Count	Type Mark	Comments
4	2'4"/6'8"	<varies>
4	2'6"/6'8"	Bedrooms
1	2'6"/6'8"CO	Casements
1	2'8"/6'8"	Landry
1	3'0"/6'8"DB	P.Bath
3	4'0"/6'8"SL	Closet

WALL LEGEND - NEW CONSTRUCTION

FOUNDATION WALL

NEW INTERIOR PARTITION

NEW EXTERIOR WALL

IRC TABLE N1102.1.2 (R402.1.2) INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (PARTIAL) AND ENERGY CONSERVATION CODE COMPLIANCE

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING AND ATTICS R-VALUE	VAULTS R-VALUE	WOOD FRAME WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE	DUCTWORK R-VALUE
4 EXCEPT MARINE	.32	.55	.40	49	49	20 OR 13+5H	19	10/13	10, 2 FT	10/13	8

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REVISIONS
1 - 03/04/2024
3 - 04/04/2024

UPPER LEVEL PLAN

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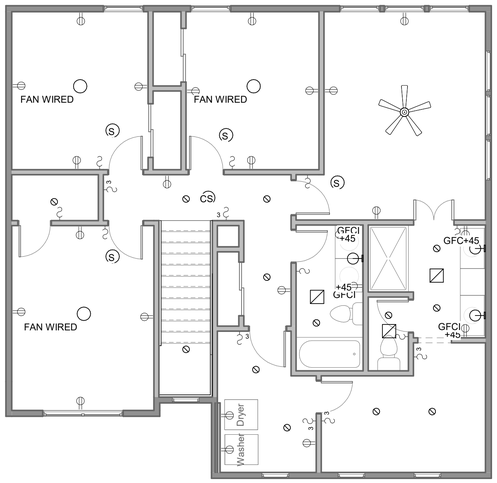
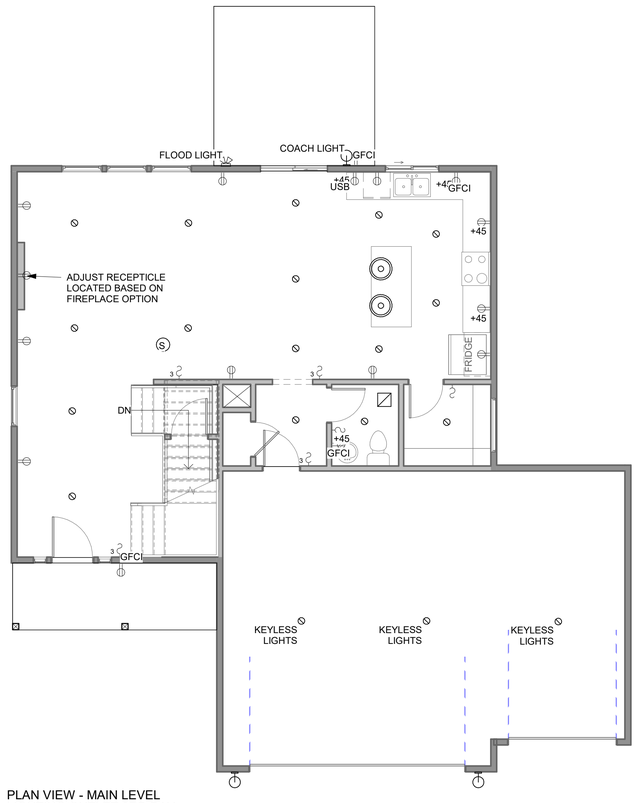
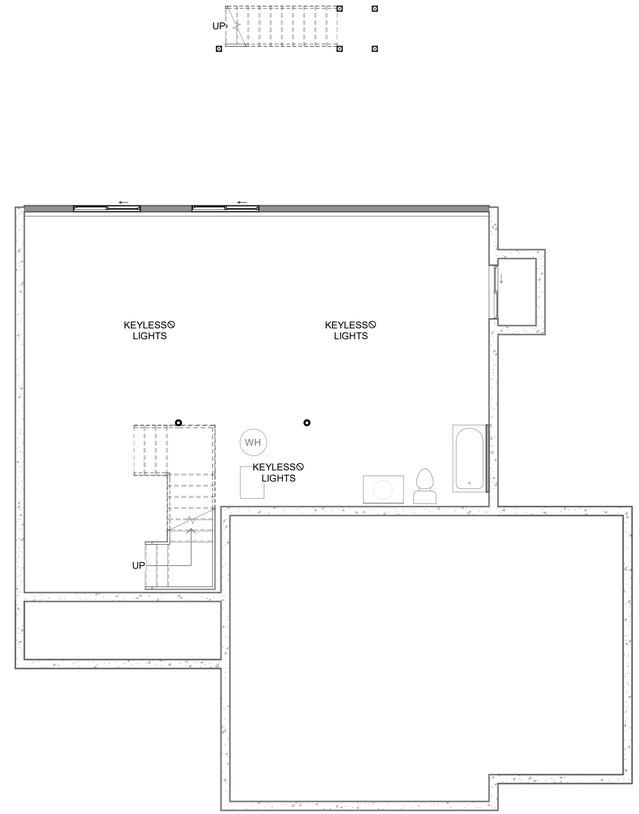


PLAN VIEW - UPPER LEVEL
LIGHTING/OUTLET
3/16" = 1'-0"



PLAN VIEW - MAIN LEVEL
LIGHTING/OUTLET 3RD BAY
3/16" = 1'-0"



PLAN VIEW - LOWER LEVEL
UNFINISHED LIGHTING/OUTLET
DAYLIGHT 3RD BAY Copy 1
3/16" = 1'-0"

LIGHTING + OUTLET:

- RECESSED LIGHT
- SURFACE MOUNT LIGHT FIXTURE
- EXHAUST FAN
- PENDANT LIGHT
- VANITY SCONCE
- CEILING FAN
- SMOKE DETECTOR
- CARBON/SMOKE DETECTOR
- DUPLEX RECPTICAL
- SINGLE WAY SWITCH
- TWO WAY SWITCH

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REVISIONS
1 - 03/04/2024

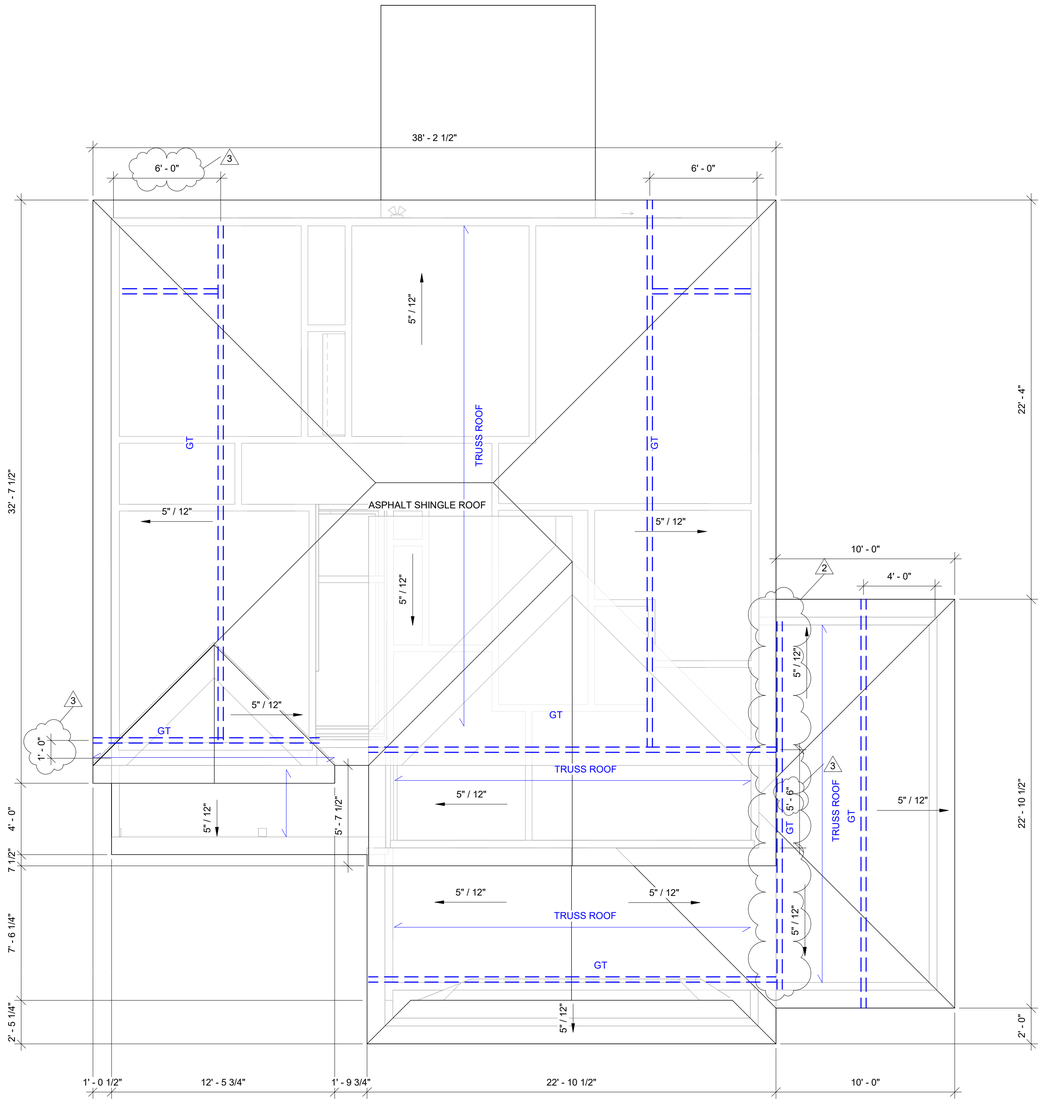
LIGHTING/OUTLET LOCATIONS

G203

DATE 3/4/2024 3:59:23 PM
SCALE As indicated

TRUSS FRAMED ROOF NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.
2. PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.
3. WOOD TRUSSES SHALL BE IN ACCORDANCE WITH IRC 802.10.
4. CONSULT ENGINEER IF TRUSSES BEAR ON INTERIOR WALLS SHOWN AS NON-LOAD BEARING ON APPROVED PRINTS.
5. MIN. (6) 2x4 OR (6) 2x6 (TO MATCH WALL) BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED.
6. ROOF COVERING SHALL BE ASPHALT SHINGLES AND SHALL COMPLY WITH IRC 2018 SECT. R905.2
7. MINIMUM ROOF SLOPE FOR ASPHALT SHINGLES SHALL BE 2:12.
8. ROOF SLOPES IN BETWEEN 4:12 AND 2:12 SHALL REQUIRE DOUBLE UNDERLAYMENT IN ACCORDANCE WITH IRC 2018 TABLE R905.1.1(2)



1 ROOF PLAN - CRAFTSMAN 3RD BAY
1/4" = 1'-0"

AVITAL HOMES
ALL PATHS LEAD HOME

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EVERSTEAD
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STATE OF MISSOURI
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REVISIONS
1 - 03/04/2024
2 - 04/01/2024
3 - 04/04/2024

ROOF PLAN

G300

DATE 4/4/2024 3:30:50 PM
SCALE As indicated

A. GENERAL NOTES IRC 2018

A.1 PLANS SHALL COMPLY WITH 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) WITH AMENDMENTS AS ADOPTED BY THE APPROPRIATE GOVERNING JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IF ANY CHANGES OR DEVIATIONS FROM THE PLAN ARE MADE DURING CONSTRUCTION. THE ENGINEER OF RECORD MAY REQUIRE REVISED DRAWING OR CALCULATIONS AT ITS DISCRETION. IF DISCREPANCIES ARE IDENTIFIED THE MOST CONSERVATIVE SPECIFICATION SHALL APPLY.

A.2 LOADING ASSUMPTIONS

DEAD

ROOF	10 PSF UNO
ROOF + CEILING (NO STORAGE)	15 PSF
ROOF + CEILING (STORAGE)	20 PSF
CEILING JOISTS (STORAGE)	10 PSF
EXTERIOR BALCONY / DECK	10 PSF
INTERIOR FLOOR (MAIN FLOOR)	15 PSF
INTERIOR FLOOR (UPPER FLOORS)	10 PSF
8" THICK MASONRY WALL	96 PSF
6" THICK MASONRY WALL	72 PSF
EXTERIOR LIGHT FRAMED WOOD WALLS	15 PSF
INTERIOR LIGHT FRAMED WOOD WALLS	10 PSF
(INTERIOR WALLS INCLUDED IN 15 PSF DEAD LOAD)	

LIVE

ROOF LIVE LOAD	20 PSF
FLOOR LIVE LOAD	40 PSF (HABITABLE)
GARAGE	50 PSF WITH 2000 LB POINT LOAD
STORAGE	20 PSF (UNINHABITABLE)
GUARDRAIL:	
CONTINUOUS LINEAR	50 PLF
MAXIMUM POINT	200 LBS

SNOW

GROUND SNOW LOAD	20 PSF

WIND

VELOCITY	115 MPH
EXPOSURE CATEGORY	B

B. SOIL AND SITE ASSUMPTIONS

B.1 FOUNDATION DESIGN ASSUMES MINIMUM SOIL BEARING FOR THE SITE OF 1,500 PSF (2,000 PSF FOR KANSAS CITY, MO) UNLESS OTHERWISE NOTED. CONTRACTOR TO VISUALLY INSPECT THE SITE OR PROVIDE GEOTECHNICAL INVESTIGATION TO VERIFY MINIMUM ACCEPTABLE SOIL CONDITIONS FOR CL (SILTY CLAY) AS DEFINED BY 2018 IRC. THE CONTRACTOR IS RESPONSIBLE FOR ANY SOIL CONDITION THAT DOES NOT MEET THE MINIMUM REQUIREMENTS AND FOR CONTACTING THE ENGINEER OF RECORD.

B.2 ACCESSORY STRUCTURES WITH AN EAVE HEIGHT LESS THAN 10'-0" AND AN AREA LESS THAN 600 FT MAT PROVIDE A MINIMUM SOIL COVER OF 12 INCHES MEASURED FROM THE BOTTOM OF CONCRETE.

B.3 LATERAL SOIL PRESSURES UNLESS OTHERWISE NOTED

ACTIVE	60 PSF
AT REST	100 PSF

B.4 SITE GRADING SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE AT A MINIMUM OF 0.5% (6" IN THE FIRST 10'-0"). ALTERNATE APPROACHES MAY BE APPROVED IF THE ALTERNATE DESIGN IS EQUIVALENT IN EFFECTIVENESS AND PERFORMANCE, AND PROVIDES FOR POSITIVE SITE DRAINAGE.

C. FOUNDATION NOTES

C.1 FOUNDATION ANCHORAGE (IRC R403.1.6)

- SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WALL WITH A MINIMUM ½" DIAMETER ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE.
- BOLTS SHALL BE SPACED NO GREATER THAN 6'-0" O.C.
- THERE SHALL BE A MINIMUM OF TWO BOLTS PER PLATE SECTION, WITH A BOLT PLACED WITHIN 12" AND NOT CLOSER THAN 7 BOLT DIAMETERS OF THE END OF EACH PLATE SECTION.
- A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE. (NOTE: 7" EMBEDMENT + 1-1/2" SILL PLATE + 3/4" FOR NUT AND WASHER EQUALS A 9-1/4" LONG BOLT).
- WALL BRACING METHODS (IRC R602) MAY REQUIRE ADDITIONAL ANCHORAGE.

C.2 CONCRETE SLABS

- CONCRETE SLABS PLACED ON FILL MATERIAL WHICH SHALL BE COMPARED TO ENSURE UNIFORM SUPPORT OF THE SLAB AND SHALL NOT EXCEED 24" OF COMPACTED GRANULATED MATERIAL (SAND OR GRAVEL) OR 8" OF EARTH:
  - THIS MAY OCCUR AT GARAGE FLOOR FILLS, OR OVER EXCAVATED AREAS UNDER FLOOR SLABS.
  - THE DESIGN AND INSTALLATION DETAILS IN THIS DOCUMENT (WHERE APPLICABLE BASED ON SIZE AND SPACING LIMITATIONS) MAY BE USED IN LIEU OF PROVIDING A SEPARATE DESIGN.
  - STRUCTURAL SLABS EXCEEDING THE SPANS AND CONDITIONS OF THE APPROVED DETAILS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.
- SLABS AT MAX 4'-0" OVER-DIG ADJACENT T0 FOUNDATION WALL:
  - WHERE SOIL IS EXCAVATED FOR A MAXIMUM DIMENSION OF 4'-0" HORIZONTALLY ADJACENT TO A FOUNDATION WALL, THE STANDARD OVER-DIG DETAIL MAY BE USED IN LIEU OF A COMPLETE STRUCTURAL SLAB.
  - SEE "TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAX 4'-0" OVER-DIG" DETAIL.

C.3 VAPOR RETARDER / BARRIER (IRC R506.2.3)

- A 6 MILLIMETER POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED A MINIMUM OF 6" IS REQUIRED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR PREPARED SUBGRADE, (NOT REQUIRED FOR GARAGE SLABS OR DETACHED UNHEATED ACCESSORY BUILDINGS).

C.4 FOOTINGS

- THE BOTTOM OF ALL FOOTINGS SHALL EXTEND NOT LESS THAN 36" BELOW GRADE FOR FROST PROTECTION (IRC R403.1.4).
- FOOTINGS FOR FREESTANDING ACCESSORY STRUCTURES WITH AN AREA OF 600 SQ. FT. OR LESS AND AN EAVE HEIGHT OF 10'-0" OR LESS SHALL EXTEND BELOW GRADE A MINIMUM OF 12".
- EXTERIOR WALLS, BEARING WALLS, COLUMNS AND PIERS SHALL BE SUPPORTED ON CONTINUOUS SOLID MASONRY OR CONCRETE FOOTINGS, OR APPROVED STRUCTURAL SYSTEM TO SAFELY SUPPORT THE IMPOSED LOADS AND SHALL BE SIZED AND REINFORCED IN ACCORDANCE WITH THIS STANDARD OR SHALL BE ENGINEERED DESIGN.
- FOOTINGS UNDER FOUNDATION WALLS SHALL BE CONTINUOUS AROUND THE STRUCTURE AND FROM ONE LEVEL TO THE NEXT.
- THE CONTINUOUS TRANSITIONS BETWEEN FOOTINGS AT DIFFERENT LEVELS ENCLOSING USABLE SPACE SHALL BE MADE BY APPROVED SOLID JUMPS OR SUPPORT SYSTEMS TO PROVIDE SAFE SUPPORT OF THE STRUCTURE.
- SEE "TYPICAL FOOTING/FOUNDATION WALLS/STANDARD SLAB AT MAXIMUM 4" OVER-DIG" AND "FOOTING JUMP" DETAILS.

C.5 CONCRETE

- ALL CONCRETE CONSTRUCTION SHOULD CONFORM TO ACI 318-14 (OR ACI 332) OR 2018 IRC.
- THE MINIMUM CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE AS SPECIFIED IN IRC TABLE R402.2.

C.5 CONCRETE (CONT.)

- CONCRETE MIX TO UTILIZE A MAXIMUM WATER-CEMENT MATERIALS RATIO OF 0.45 FOR ALL APPLICATIONS. ADMIXTURES SHALL NOT CONTAIN ANY CHLORIDES.
- CONCRETE POURED AGAINST AN EXISTING SURFACE SHOULD BE ROUGHENED TO A MINIMUM OF 1/4 INCH AMPLITUDE.
- REBAR PLACEMENT SHALL BE AS FOLLOWS:
  - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3.0 IN CLR
  - CONCRETE EXPOSED TO EARTH OR WEATHER 1.5 IN CLR
  - NOT EXPOSED TO WEATHER OR GROUND
    1) SLABS, WALLS, JOISTS 3/4 IN CLR
    2) BEAMS, COLUMNS 1.5 IN CLR
- CONCRETE MIX DESIGN SHALL BE 6% (±1%) AIR-ENTRAINED FOR GARAGE SLABS, FOOTINGS, WALLS, OR FLATWORK EXPOSED TO WEATHER
- SHORING AND SUPPORTING FORMWORK SHALL NOT BE REMOVED FROM HORIZONTAL MEMBERS BEFORE CONCRETE STRENGTH REACHES 70% OF STRENGTH DETERMINED BY CYLINDERS OR 28 DAYS.
- ALL FOUNDATION WALLS ENCLOSING BELOW GRADE SPACE SHALL BE DAMPPROOFED. THE DAMPPROOFING SHALL EXTEND FROM THE EDGE OF THE FOOTING TO THE FINISHED GRADE. (IRC R406.1)

C.6 CONCRETE WALLS WITH REINFORCEMENT STEEL

- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 40.
- SMOOTH BARS OR WELDED WIRE FABRIC SHALL CONFORM TO ASTM 185.
- 90 DEG. HOOK SHOWN IN DRAWINGS SHALL BE STANDARD PER ACI 318-14.
  - STRAIGHT EXTENSION LENGTH = 12X BAR DIA.
  - BEND DIAMETER = 12X BAR DIA.
- HOOKED DOWELS:
  - HOOKED DOWELS FROM FOUNDATIONS TO WALL SHALL BE PROVIDED TO MATCH VERTICAL WALL REINFORCING AND EXTENDED TO 3" CLEAR FROM BOTTOM OF FOUNDATION.
  - HOOKED DOWELS MATCH SLAB REINFORCING FROM SLAB TO WALLS OR SLAB TO FOUNDATION.
- PROVIDE (2) - #5 BARS AROUND PERIMETER OF ALL SUSPENDED SLABS.
- WHERE SPLICES ARE NECESSARY IN REINFORCEMENT, THE LENGTH OF LAP SPLICE SHALL BE IN ACCORDANCE WITH TABLE R608.5.4(1) AND FIGURE R608.5.4(1). THE MAXIMUM GAP BETWEEN NONCONTACT PARALLEL BARS AT A LAP SPLICE SHALL NOT EXCEED THE SMALLER OF ONE-FIFTH THE REQUIRED LAP LENGTH AND 6 INCHES (152MM) [SEE FIGURE R608.5.4.(1)].
- TOP HORIZONTAL REINFORCEMENT SHALL BE PLACED WITHIN 12" FROM THE TOP OF THE WALL.
- HORIZONTAL WALL REINFORCEMENT SHALL TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK

C.7 COLD WEATHER CONCRETE

- COLD WEATHER IS DEFINED AS THREE CONSECUTIVE DAYS WHERE THE AVERAGE DAILY TEMPERATURE DROPS BELOW 40 DEGREES FAHRENHEIT AND NOT ABOVE 50 DEGREES FAHRENHEIT FOR MORE THAN HALF OF ANY ONE OF THOSE THREE DAYS.
- COLD WEATHER CONCRETE WORK SHALL CONFORM TO ACI 306.
- ALL MATERIALS AND EQUIPMENT REQUIRED FOR PROTECTION SHALL BE AVAILABLE AT THE PROJECT SITE BEFORE COLD WEATHER CONCRETING BEGINS.
- THE CONCRETE MIX DESIGN PROVIDED BY THE SUPPLIER SHALL AT A MINIMUM REACH THE AVERAGE 28 DAY MIX DESIGN COMPRESSIVE STRENGTH IN MINIMUM 72 HOURS OR 2000 PSI – WHICHEVER IS GREATER.
- THE TEMPERATURE OF CONCRETE AT PLACEMENT SHALL BE A MINIMUM OF 55 DEGREES FAHRENHEIT .
- THE MINIMUM CONCRETE TEMPERATURE AT THE TIME OF MIXING SHALL NOT BE BELOW 65 DEGREES FAHRENHEIT.
- ALL SNOW, ICE AND FROST MUST BE REMOVED PRIOR TO PLACING CONCRETE.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR CONCRETE AGAINST FREEZING AND MAINTAIN A CONCRETE TEMPERATURE OF 55 DEGREES FAHRENHEIT FOR A 72 HOUR PERIOD AFTER CONCRETE PLACEMENT. THIS MAY BE ACHIEVED WITH THE USE OF INSULATING BLANKETS AND/OR THE USE OF TEMPORARY HEATERS.
- GROUND TEMPERATURE AT THE TIME OF PLACEMENT OF SLAB OR FOOTINGS SHALL NOT BE LESS THAN 35 DEGREES FAHRENHEIT.
- INSULATION, FORMS AND HEATERS MAY BE REMOVED AFTER 72 HOURS .
- MAINTAIN ADEQUATE PROTECTION OF SUB GRADE AND ADEQUATE DRAINAGE AWAY FROM EXPOSED CONCRETE ELEMENT TO PREVENT FREEZING.

C.8 FOOTNOTES

- VERTICAL REINFORCEMENT FOR CONCRETE WALLS THAT ARE NOT FULL HEIGHT AND FOR REINFORCEMENT SPACED 24" O.C. MAY BE PLACED IN THE MIDDLE OF THE WALL. OTHER WALLS SHALL HAVE VERTICAL REINFORCEMENT PLACED AS FOLLOWS:
  - 8" WALL – MINIMUM 2" FROM TENSION FACE
  - 10" WALL – MINIMUM 6-3/4" FROM THE OUTSIDE FACE
  - EXTEND BARS TO WITHIN 8" OF THE TOP OF THE WALL
- HORIZONTAL REINFORCEMENT:
  - ONE BAR SHALL BE PLACED WITHIN 12" OF THE TOP OF THE WALL
  - OTHER BARS SHALL BE EQUALLY SPACED WITH SPACING NOT TO EXCEED 24" O.C.
  - HORIZONTAL BARS SHOULD BE AS CLOSE TO THE TENSION FACE AS POSSIBLE (INTERIOR); AND BEHIND THE VERTICAL REINFORCEMENT (I.E. 2" FROM INSIDE FACE)
  - SUPPLEMENTAL REINFORCEMENT AT CORNERS – PLACE 1 #4 REBAR 48" LONG AT 45 DEGREE ANGLE AT CORNERS OF OPENINGS. PLACE REINFORCEMENT WITHIN 6" OF THE EDGE OF INSIDE CORNERS.
- AT MASONRY LEDGES THE MINIMUM WALL THICKNESS SHALL BE 3-1/2". LEDGES SHALL NOT EXCEED A DEPTH OF MORE THAN 24" BELOW THE TOP OF THE WALL FOR WALL THICKNESS LESS THAN 4". PROVIDE #4 BARS AT MAXIMUM 24" O.C. TO WITHIN 8" OF THE TOP OF THE WALL.
- STRAIGHT WALLS MORE THAN 5'-0" TALL AND MORE THAN 16-0"' LONG SHALL BE PROVIDED WITH EXTERIOR BRACED RETURN WALLS. WALL LENGTH SHALL BE MEASURED USING INSIDE THE SHORTEST DIMENSION BETWEEN INTERSECTING WALLS (SEE TYPICAL DEAD MAN SECTION).

MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE PER TABLE R402.2

TYPE OR LOCATION OF CONCRETE CONSTRUCTION	MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c) FOR SEVER WEATHERING POTENTIAL
BASEMENT WALLS, FOUNDATIONS AND OTHER CONCRETE NOT EXPOSED TO THE WEATHER	2,500
BASEMENT SLABS AND INTERIOR SLABS ON GRADE, EXCEPT GARAGE FLOOR SLABS	2,500
BASEMENT WALLS, FOUNDATION WALLS, EXTERIOR WALLS AND OTHER VERTICAL CONCRETE WORK EXPOSED TO THE WEATHER	3,000
PORCHES, CARPORT SLABS AND STEPS EXPOSED TO THE WEATHER,AND GARAGE FLOOR SLABS	3,500
SUSPENDED SLABS	4,000

D. FRAMING/STRUCTURE

D.1 FRAMING NOTES

- ALL TREATED LUMBER SIZES ARE #2 TREATED SOUTHERN YELLOW PINE UNLESS OTHERWISE NOTED.
- ALL NON TREATED LUMBER OR ROT RESISTANT SIZES ARE DOUGLAS FIR-LARCH #2 UNLESS OTHERWISE NOTED.
- ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR-LARCH (2) 2X10 ON LOAD BEARING WALLS.
- ALL HEADERS/BEAMS TO BEAR ON A MINIMUM OF (2) 2X4 JACK STUDS UNO. KING STUDS SHALL BE PROVIDED AT ALL HEADERS IN ACCORDANCE WITH IRC TABLE R602.7.5.
- DOUBLE JOIST UNDER PARALLEL INTERIOR NON-LOAD BEARING WALLS.
- CANTILEVERS, OVER BEAMS AND DOOR JAMBS SHALL BE BLOCKED.
- ANY WOOD MEMBER IN CONTACT WITH CONCRETE OR MASONRY (OR THE FURRING THEY ARE ATTACHED TO) SHALL BE OF DECAY RESISTANT MATERIAL.
- IN BEARING WALLS, STUDS WHICH ARE NOT MORE THAN 10'-0" FEET IN LENGTH SHALL BE SPACED NOT MORE THAN IS SPECIFIED IN IRC TABLE R602.3(5) FOR THE CORRESPONDING STUD SIZE. THOSE STUDS GREATER THAN 10'-0" FEET IN LENGTH SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT.
- ALL WOOD STRUCTUAL PANELS SHALL CONFORM TO THE MOST CURRENT APPLICABLE SPECIFICATION AND SUPPLEMENTS OF THE APA OR EQUIVALENT. ALL PANEL END JOINTS SHALL OCCUR OVER SUPPORTS AND SHALL BE STAGGERED ONE HALF PANEL LENGTH FROM ADJACENT PANELS. PROVIDE 1/8" INCH SPACE AT PANEL ENDS. WOOD STRUCTURAL PANEL MOISTURE CONTENT SHALL BE LESS THEN OR EQUAL TO 16%.
- ALL STRUCTURAL FRAMING MEMBERS SHALL BE AS FOLLOWS UNO:
  - 2X4 OR 2X6 EXTERIOR WALLS AS PERMITTED BY CODE: DOUGLAS FIR-LARCH #2 (DF-L #2) OR BETTER.
  - EXTERIOR WALLS TO BE CONTINUOUSLY SHEATHED WITH MIN. 7/16" OSB
  - EXTERIOR OSB SHEATHING TO BE FASTENED WITH 8D COMMON NAILS; 6" O. C. AT PANEL EDGES, 12" O. C. IN THE FIELD.
  - 2X4 OR 2X6 INTERIOR LOAD BEARING WALLS DF-L #2 OR BETTER.
  - LOAD BEARING, BRACED, AND SHEAR WALLS, REQUIRE A DOUBLE TOP PLATE. THE TOP PLY BEING FIELD APPLIED WITH A MIN. 24" LAP SPLICE
  - FIELD APPLIED LAP SPLICED TOP PLATE: DF-L #2 OR BETTER
  - LOAD BEARING HEADERS PER HEADER SCHEDULE OR AS SHOWN ON FRAMING PLANS.
  - LOAD BEARING HEADERS TO BE FABRICATED WITH THE HEADER AT THE UNDER SIDE OF THE TOP PLATE WITH CRIPPLE FRAMING BELOW AS NEEDED UNO.
  - INTERIOR NON LOAD BEARING WALLS: DF-L #2 STUD GRADE OR BETTER
  - DOUBLE TOP PLATE IS NOT REQUIRED FOR INTERIOR NON LOAD BEARING WALLS
  - HEADER CRIPPLE SPACING CAN BE 24" O. C. REGARDLESS OF WALL STUD SPACING FOR NON LOAD BEARING WALLS
  - CRIPPLE FRAMING NOT REQUIRED ABOVE OR BELOW OPENINGS WHERE THE VERTICAL CLEAR HEIGHT IS 22" OR LESS FOR NON-LOAD BEARING WALLS.
- ALL LUMBER IN CONTACT WITH MASONRY OR OTHERWISE EXPOSED TO WEATHERING TO BE PRESSURE TREATED (PT).
  - FIELD APPLIED SILL PLATE: PT DF-L #2
  - BOTTOM (SOLE) PLATE IN CONTACT WITH MASONRY: PT DF-L #2
- ALL PRESSURE TREATED WOOD SHALL BE PRESSURE TREATED WITH WATER-BORNE PRESERVATIVES. PRESSURE TREATMENT SHALL COMPLY WITH THE REQUIREMENTS OF AWPB, C2, LP-22, AND IRC SECTION R317. ALL LUMBER < 8" ABOVE THE FINISHED GRADE SHALL BE PRESSURE TREATED.
- FASTENERS, INCLUDING NUTS AND WASHERS, FOR PRESSURE TREATED WOOD SHALL BE HOT-DIPPED, ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. COATING TYPES AND WEIGHTS FOR CONNECTORS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE IN ACCORDANCE WITH THE CONNECTOR MANUFACTURER'S RECOMMENDATIONS. IN THE ABSENCE OF MANUFACTURER'S RECOMMENDATIONS, A MIN. OF ASTM A653 TYPE G185 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED. FOR EXCEPTIONS, REFER TO R317.3.1.

ENGINEERED LUMBER MIIMUM DESIGN REQUIREMENTS			
	F_b (PSI)	E (PSI)	F_v (PSI)
LVL	3100	$1.9X10^6$	285
DOUGLAS FIR-LARCH	900	$1.6X10^6$	180
GLU-LAM	2400	$1.8X10^6$	230

D.2 STRUCTURAL STEEL

- STEEL DESIGN, FABRICATION, AND ERECTION SHALL CONFORM WITH AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
- STEEL PIPE COLUMNS SHALL BE A MINIMUM OF SCHEDULE 40.
- STEEL GRADE AND SPECIFICATION SHALL BE AS FOLLOWS:
  - HOLLOW STRUCTURAL SECTIONS: ASTM A500 (F_Y = 46 KSI)
  - CHANNELS, PLATES, ANGLES, AND COLUMNS: ASTM A36 (F_Y = 36 KSI)
  - WIDE FLANGES: ASTM A992 (F_Y = 50 KSI)
  - STEEL PIPE COLUMN ASTM A53 GR.B (F_Y = 35 KSI)
  - ANCHOR RODS: ASTM F1554 (F_Y = 36 KSI)
- BOLTS SHALL CONFORM TO ASTM A307
- WELDING SHALL CONFORM TO THE AWS CODES FOR BUILDING CONSTRUCTION. WELDING SHALL BE PERFORMED IN ACCORDANCE TO WELDING PROCEDURE SPECIFICATIONS (WPS) AS REQUIRED IN AWS D1.1. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER-METAL MANUFACTURER.
- WELDS SHALL USE E70XX ELECTRODES AND A MINIMUM OF 3/16" SIZE UNLESS NOTED OTHERWISE.
- ALL WELDS SPECIFIED AS FIELD WELDS MAY BE SHOP WELDED AT THE CONTRACTOR'S OPTION IF ERECTION CAN STILL BE EXECUTED.

E. GLAZING

- GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC 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 OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE FLOOR.
  - GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF THE STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES ABOVE THE LANDING AND WITHIN A 60 IN HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED A HAZARDOUS LOCATION.
  - GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS, AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE.
- WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH IRC R312.2.

F. STAIRWAYS

- STAIRWAYS SHALL PROVIDE A MAXIMUM 7-3/4" RISE AND A MINIMUM 10" RUN.
- REQUIRED GUARD RAILS AT OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, PORCHES, BALCONIES, OR LANDINGS, SHALL NOT BE LESS THAN 36" HIGH MEASURED VERTICALLY ABOVE THE ADJACENT WALKING SURFACE.
  - EXCEPTION (1): GUARD RAILS ON THE OPEN SIDES OF STAIRS SHALL HAVE A HEIGHT NOT LESS THAN 34" MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING EDGES OF THE TREADS.
  - EXCEPTION (2): WHERE THE TOP OF THE GUARD ALSO SERVES AS A HANDRAIL ON THE OPEN SIDES OF STAIRS, THE TOP OF THE GUARD SHALL NOT BE LESS THAN 34" AND NOT MORE THAN 38" MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING EDGES OF THE TREADS.
- GUARD RAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OF ORNAMENTAL PATTERNS THAT DO NOT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER.
- EACH STAIRWAY OF FOUR OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS.
- HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1-1/4" TO 2" OR OTHER APPROVED GRASPABLE SHAPE PER IRC R311.7.8.5.
- MINIMUM 6'-8" OF HEADROOM CLEARANCE IS REQUIRED IN STAIRWAYS.
- ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH ½" GYPSUM BOARD ON ENCLOSURE PER IRC R302.7.

G. GARAGES

- THE GARAGE FLOOR SHALL SLOPE 1/8" PER 12" TO DRAIN OR VEHICLE ENTRY DOORWAYS.
- DOORS BETWEEN THE GARAGE AND THE DWELLING TO BE: SELF CLOSING, MINIMUM 1-3/8" SOLID CORE OR HONEYCOMBED STEEL DOOR, AND AT LEAST 20 MINUTE FIRE RATED.
- THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY A MINIMUM 1/2" GYPSUM BOARD APPLIED TO THE GARAGE SIDE WHERE A FLOOR/CEILING SPACE IS PROVIDED ABOVE.
- THE GARAGE COLUMNS AND BEAMS SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED WITH 1/2" GYPSUM BOARD OR EQUIVALENT.
- WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE FLOOR/CEILING ASSEMBLY SHALL BE PROTECTED WITH A MINIMUM 5/8" TYPE "X" GYPSUM BOARD ON THE GARAGE CEILING.
- GARAGE DOOR AND FRAME – THE "H" FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2X6 VERTICAL JAMBS RUNNING FROM THE FLOOR TO CEILINGS, ATTACHED WITH 1-3/4" X 0.120" NAILS AT 7" O.C. STAGGERED WITH (7) 3-1/4" X 0.120" NAILS THROUGH THE JAMB INTO THE HEADER, 2X8 HEADER (MINIMUM) FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.
- GARAGE VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115 MPH WIND LOAD REQUIREMENT OF DASMA 108 AND ASTM E330-96 (IRC R301.2.1).

H. ROOF

- THE ROOF IS DESIGNED FOR 20 PSF GROUND SNOW LOAD (MINIMUM).
- PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.
- ROOF IS ENGINEERED TO COMPLY WITH IRC R802.
- ROOF TO BE ASPHALT SHINGLES UNO AND SHALL COMPLY WITH IRC 2018 SECT. R905.2
- MINIMUM ROOF SLOPE FOR ASPHALT SHINGLES SHALL BE 2:12.
- ROOF SLOPES IN BETWEEN 2:12 AND 4:12 SHALL REQUIRE DOUBLE UNDERLAYMENT IN ACCORDANCE WITH IRC 2018 SECTION R905.2.2:

  "APPLY A 19-INCH (483MM) STRIP OF UNDERLAYMENT FELT PARALLEL TO AND STARTING AT THE EAVES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. STARTING AT THE EAVE, APPLY 36-INCH-WIDE (914 MM) SHEETS OF UNDERLAYMENT, OVERLAPPING SUCCESSIVE SHEETS 19 INCHES (483MM), AND FASTENED SUFFICIENTLY TO HOLD IN PLACE. END LAPS SHALL BE 4-INCH (102MM) AND SHALL BE OFFSET BY 6 FEET (1829 MM). DISTORTIONS IN THE UNDERLAYMENT SHALL NOT INTERFERE WITH THE ABILITY OF THE SHINGLES TO SEAL."

I. SAFETY REQUIREMENTS

I.1 EMERGENCY EGRESS AND RESCUE

- PROVIDE ONE WINDOW FROM EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SQ. FT. WITH A MINIMUM OPENABLE HEIGHT OF 24" AND WIDTH OF 20".
- BASEMENT EGRESS TO MEET THE REQUIREMENTS OF IRC R310.

I.2 SMOKE AND CARBON MONOXIDE SAFETY (PER IRC R314)

- PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA AND ON EACH FLOOR INCLUDING BASEMENTS.
- SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING.
- CARBON MONOXIDE DETECTORS SHALL BE INSTALLED AS REQUIRED PER IRC R315.

J. ENERGY REQUIREMENTS

- LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER IRC N1102.4.5.
- PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER IRC N1103.1.1.
- AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER IRC N1103.3.2.1.
- *BUILDING* FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS.
- HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER IRC N1103.4.
- ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER IRC M1504.3.
- MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM AS REQUIRED PER IRC M1503.6.
- AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER IRC M1601.6 ENERGY CONSERVATION.

K. ABBREVIATIONS

- AFF: ABOVE FINISHED FLOOR
- CLR: CLEAR
- EFF: EFFECTIVE
- EFP: EQUIV FLUID PRESSURE
- EOR: ENGINEER OF RECORD
- EQUIV: EQUIVALENT
- MAX: MAXIMUM
- MIN: MINIMUM
- NTS: NOT TO SCALE
- O.C.: ON CENTER
- PCF: POUNDS PER CUBIC FOOT
- PLF: POUNDS PER LINER FOOT
- PSF: POUNDS PER SQUARE FOOT
- PSI: POUNDS PER SQUARE INCH
- UNO: UNLESS NOTED OTHERWISE
- FV: FIELD VERIFY

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STRUCTURAL GENERAL NOTES

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FOUNDATION NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE (IRC).
2. FOOTING ELEVATION TO BE DETERMINED BASED ON FINAL GRADE: ALL FOOTINGS MEET OR EXCEED MINIMUM FROST DEPTH OF 36".
3. SOIL BEARING CAPACITY SHALL BE MINIMUM 1500 PSF.
4. REFER TO SHEET S000 FOR MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE.
5. REQUIRED AIR ENTRAINMENT SHALL BE 5-7% AS SPECIFIED IN IRC TABLE R402.2.
6. FOUNDATION WALLS SHALL BE DAMPPROOFED PER IRC R406.
7. FOUNDATION DRAINAGE WILL BE IN ACCORDANCE WITH IRC R405.
8. ALL INTERIOR FOOTINGS OF LOAD BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
9. STEEL COLUMNS SHALL BE A MINIMUM OF SCHEDULE 40.
10. ALL ANCHOR BOLTS SHALL NOT BE SPACED MORE THAN 3' O.C. AND BE EMBEDDED INTO THE CONCRETE A MINIMUM OF 7".
11. BASEMENT EGRESS SHALL COMPLY WITH IRC R310.
12. FOR NEW CONSTRUCTION, AN ACCESSIBLE CONNECTION POINT TO BE PROVIDED TO A 20 FOOT CONCRETE ENCASED ELECTRODE (FOOTING REBAR) FOR THE ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR (UFER GROUND).

CRAWL SPACE NOTES:

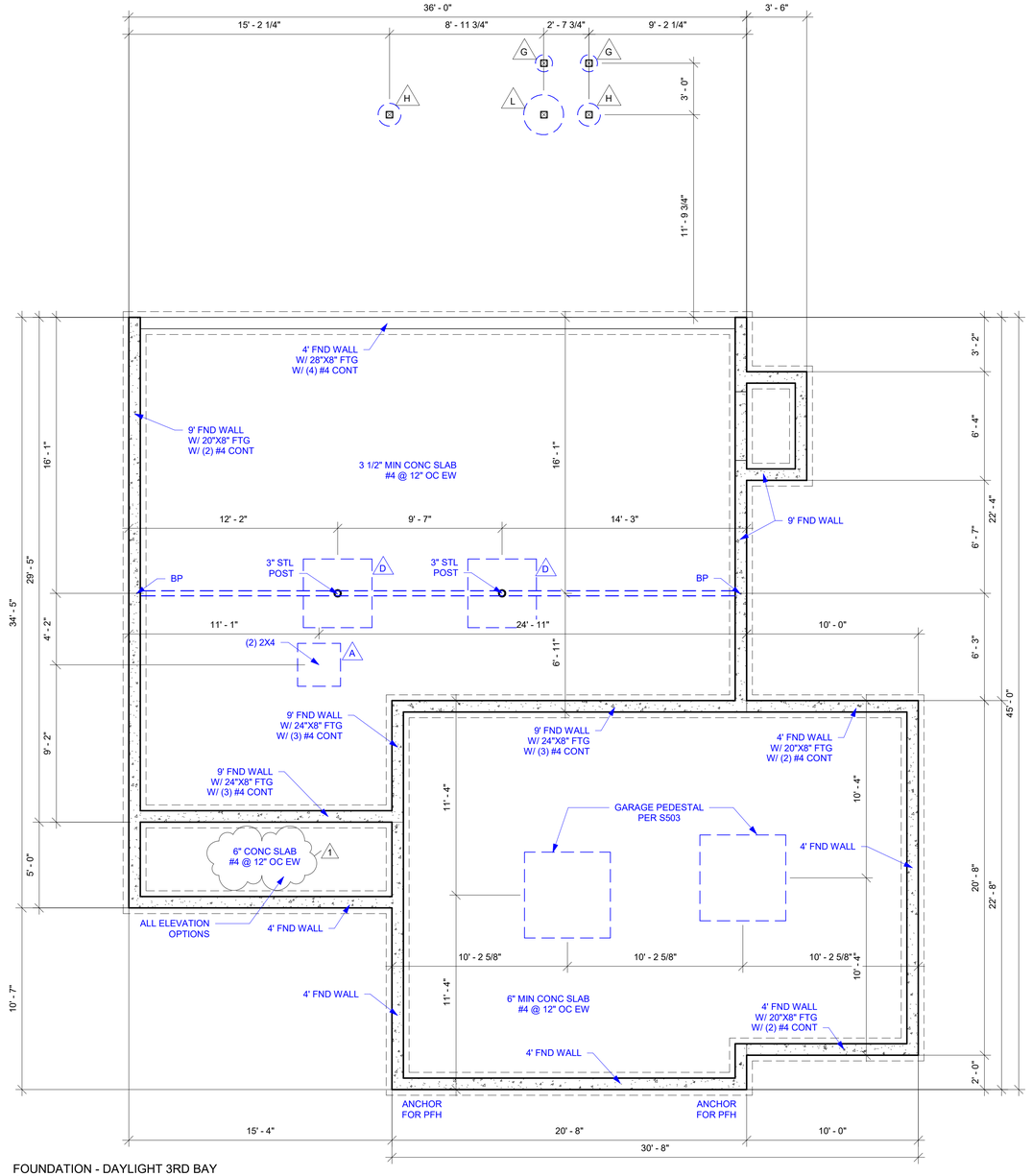
1. UNDER-FLOOR SPACE SHALL CONFORM TO 2018 IRC SECTION R408
2. PER 2018 IRC R408.3 UNDER-FLOOR VENTILATION IS NOT REQUIRED WHERE:
   - EXPOSED EARTH IS COVERED W/ CONTINUOUS CLASS 1 VAPER RETARDER.
   - JOINTS SHALL OVERLAP 6" AND SHALL BE SEALED OR TAPED.
   - EDGES OF VAPER RETARDER SHALL EXTEND 6" UP STEM WALL AND PERIMETER WALL INSULATED IN ACCORDANCE WITH SECT N1103.3.1
   - CONTINUOUSLY OPERATED MECHANICAL EXHAUST VENTILATION AT A RATE EQUAL TO 1 CUBIC FOOT PER MINUTE (0.47 L/s) FOR EACH 50 SQUARE FEET OF CRAWL SPACE FLOOR AREA.
3. UNDER-FLOOR ACCESS SHALL BE PROVIDED AND SHALL BE A MINIMUM OF 18"x24" OPENING.
4. ALL WALLS OVER 10' SHALL BE DOUGLAS FIR-LARCH #2 2x4 STUDS FULL HEIGHT CONTINUOUS UNO.
5. ALL WALLS OVER 12' SHALL BE DOUGLAS FIR-LARCH #2 (M-12) LUMBER 2x6 STUDS FULL HEIGHT CONTINUOUS.

FOUNDATION WALL AND FOOTING TABLE (3000 PSI CONCRETE AND 40 KSI REBAR PLACED 2" FROM INSIDE TENSION FACE)				
WALL TYPE	NOMINAL WALL THICKNESS	VERTICAL SPACING AND SIZE	HORIZONTAL SPACING AND SIZE	FOOTING SPECIFICATION U.N.O. ON PLANS
3'-6" TRENCH FOOTING	16"	#4 BARS @18" O.C.	(2) #4 BARS TOP & BOT. CONT.	16" x 8" CONC. FTG. W/ (2) #4 BARS CONT.
< 6'-0" WALL	8"	#4 BARS @36" O.C.	#4 BARS @ 24" O.C.	
8'-0" WALL		#4 BARS @16" O.C.		
9'-0" WALL		#4 BARS @12" O.C.		
10'-0" WALL		#4 BARS @8" O.C.		
11'-0" WALL	10"	#4 BARS @9" O.C.		24" x 12" CONC. FTG. W/ (3) #4 BARS CONT.
12'-0" WALL	10"	#4 BARS @6" O.C.		

ISOLATED FOOTINGS AND COLUMN PADS				
SYM	PIER PAD SIZE	DEPTH	MINIMUM REINFORCEMENT GRADE 40 KSI STEEL	SCHEDULE 40 STEEL COLUMN, MIN FY = 35 KSI
A	30"x30"	1'-0"	(5) #4 BAR E.W.	3" DIAMETER
B	36"x36"	1'-0"	(6) #4 BAR E.W.	3" DIAMETER
C	42"x42"	1'-2"	(7) #4 BAR E.W.	3" DIAMETER
D	48"x48"	1'-4"	(8) #4 BAR E.W.	3" DIAMETER
E	54"x54"	1'-4"	(9) #4 BAR E.W.	3.5" DIAMETER
F	60"x60"	1'-6"	(10) #4 BAR E.W.	3.5" DIAMETER

ISOLATED FOOTINGS AND COLUMN PADS			
SYM	PIER DIAMETER	DEPTH	MINIMUM REINFORCEMENT GRADE 40 KSI STEEL
G	12"	3'-0"	(4) VERTICAL #4
H	16"	3'-0"	(4) VERTICAL #4
J	18"	3'-0"	(4) VERTICAL #4
K	24"	3'-0"	(4) VERTICAL #4
L	28"	3'-0"	(4) VERTICAL #4

*DENOTES STEEL COLUMN NOT REQUIRED
COLUMN AND PAD SIZES ARE FOR A MAXIMUM COLUMN HEIGHT OF 10'. COLUMNS GREATER THAN 10' REQUIRE A SEPARATE ENGINEERED DESIGN. FOOTINGS A-F SPACING OF 6" O.C. WITH 3" CLEAR COVER.



FOUNDATION - DAYLIGHT 3RD BAY GARAGE
2 1/4" = 1'-0"

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FOUNDATION PLAN

S100

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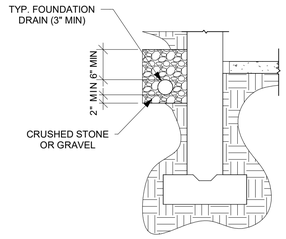
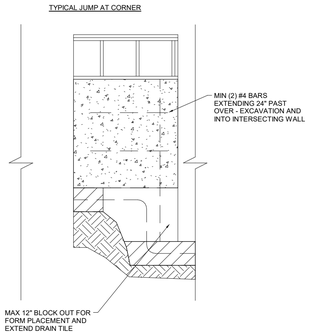
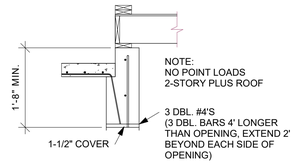


INSTALLATION OF A CONTINUOUS FOUNDATION DRAIN IS REQUIRED WHERE HABITABLE OR USABLE SPACE FOR ANY PORTION OF THE STRUCTURE IS LOCATED BELOW GRADE. THE FOUNDATION DRAIN SHALL BE AT OR BELOW THE AREA BEING PROTECTED. DRAINAGE TILE SHALL BE PLACED WITH POSITIVE OR NEUTRAL SLOPE TO MINIMIZE THE ACCUMULATION OF DEPOSITS IN THE DRAINAGE PIPE. PLACEMENT OF DRAIN TILE DIRECTLY ON TOP OF THE FOOTING IS ACCEPTABLE. [IRC R405], SEE "TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAXIMUM 4' OVERDIG" AND "FOUNDATION DRAIN DETAIL AT RAISED SLAB" DIAGRAMS FOR DETAILS.

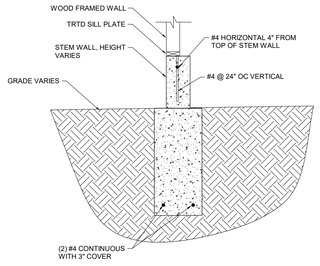
1 FOUNDATION DRAIN AND RAISED SLAB DETAIL
NTS



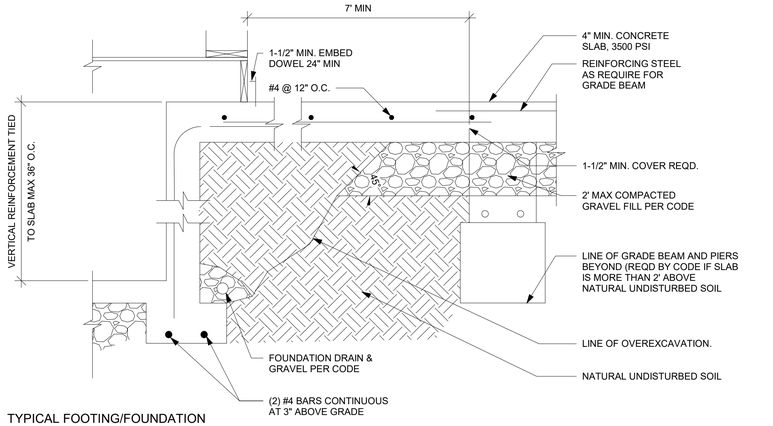
4 FOUNDATION WALL JUMP DETAIL 2
NTS



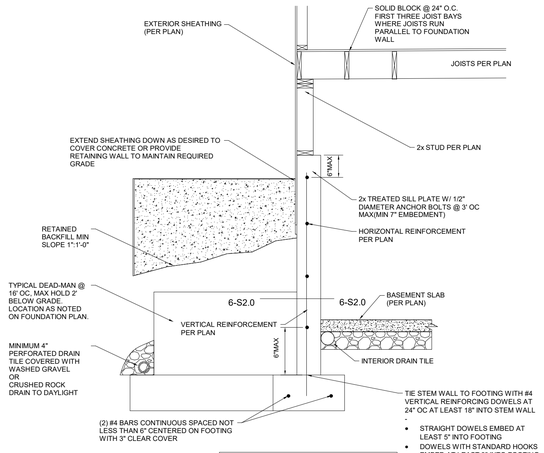
3 6' MAXIMUM OPENING HEADER DETAIL
NTS



12 TRENCH FOOTING WITH STEM WALL
NTS



5 TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAX 4 OVERDIG
NTS



CONCRETE DIMENSIONS			
"A"	"B"	"C"	"D"
4'-0"	1'-4"	4"	3'-4"
6'-0"	1'-4"	4"	4'-4"
9'-0"	1'-8"	5"	4'-4"

DIMENSIONS SHOWN ARE FOR THE MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE DEAD-MAN INSTALLATION. A MINIMUM 2' RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.

VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.

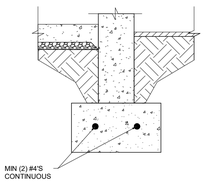
THE BASEMENT SLAB IS AN INTEGRAL PART OF THE "UNRESTRAINED" FOUNDATION WALL DESIGN. THEREFORE IF THE WALL IS BACKFILLED PRIOR TO PLACEMENT OF THE BASEMENT SLAB, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BRACING THE WALL UNTIL THE BASEMENT SLAB HAS BEEN PLACED.

2 TYPICAL "UNRESTRAINED" FOUNDATION WALL DETAIL
NTS

6 TYPICAL WALL SECTION DETAIL
NTS

APPLIES TO BASEMENT SLABS WITH FLOOR SURFACE LESS THAN 12" BELOW GRADE

7 SLAB INSULATION DETAIL FOR TRENCH FOOTING WITH STEM WALL
NTS



13 FOOTING DETAIL
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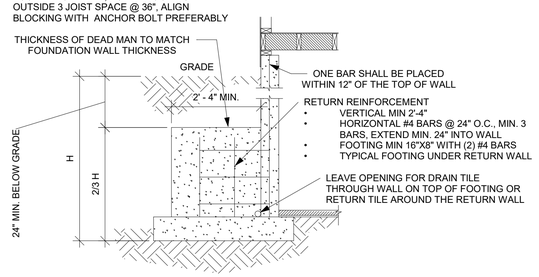

9 TYPICAL DEAD MAN DETAIL
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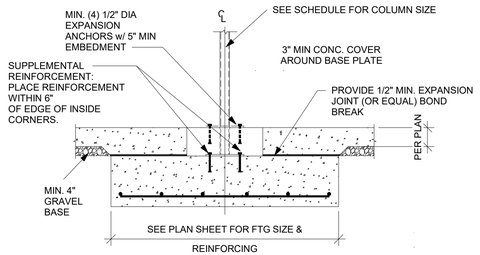
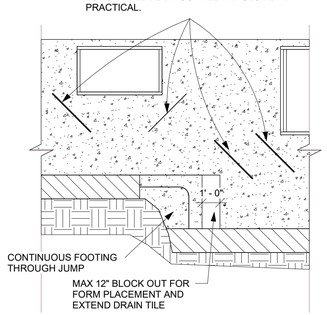
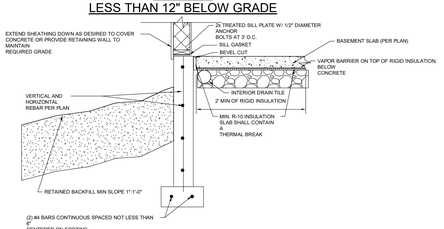


10 TYPICAL COLUMN PAD DETAIL
NTS



11 FOUNDATION WALL JUMP DETAIL
NTS

APPLIES TO BASEMENT SLABS WITH FLOOR SURFACE LESS THAN 12" BELOW GRADE



8 SLAB INSULATION DETAIL FOR STEM WALL AND FOOTING
NTS

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FOUNDATION DETAILS

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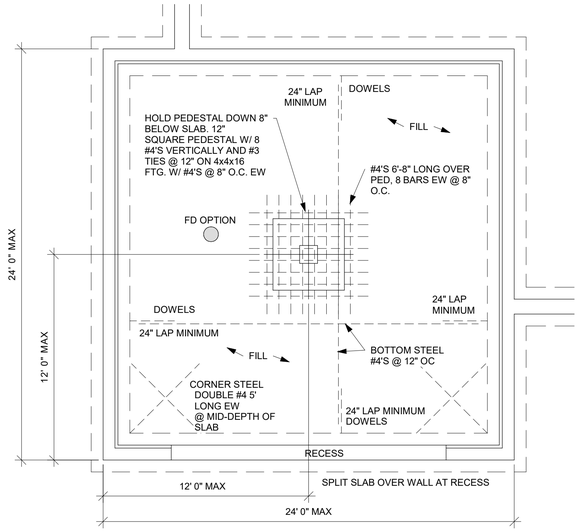
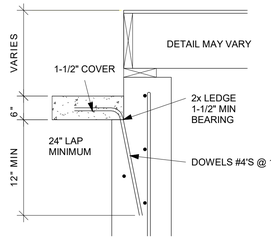


1 2 CAR GARAGE SLAB ON FILL DETAIL
NTS



2 SLAB AT WALL DETAIL
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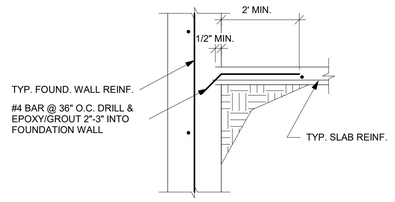

3 ALT. SLAB CONNECTION DETAIL
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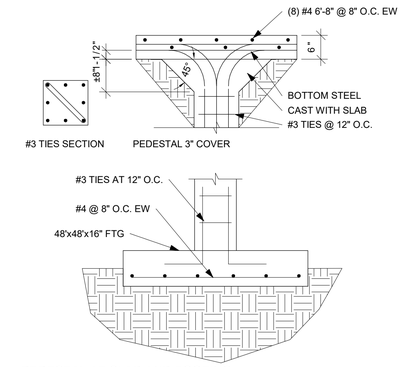
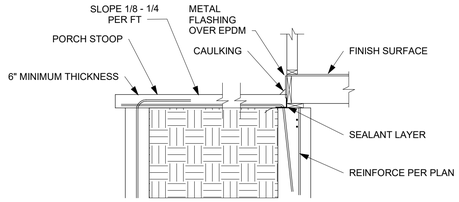


4 PEDESTAL AT SLAB AND FOOTING DETAIL
NTS

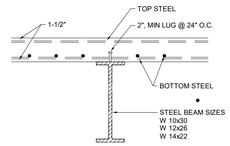


ELEVATED PORCH SLABS SPANNING 6' OR LESS IN ANY ONE DIRECTION CAN BE CONSTRUCTED AS FOLLOWS:

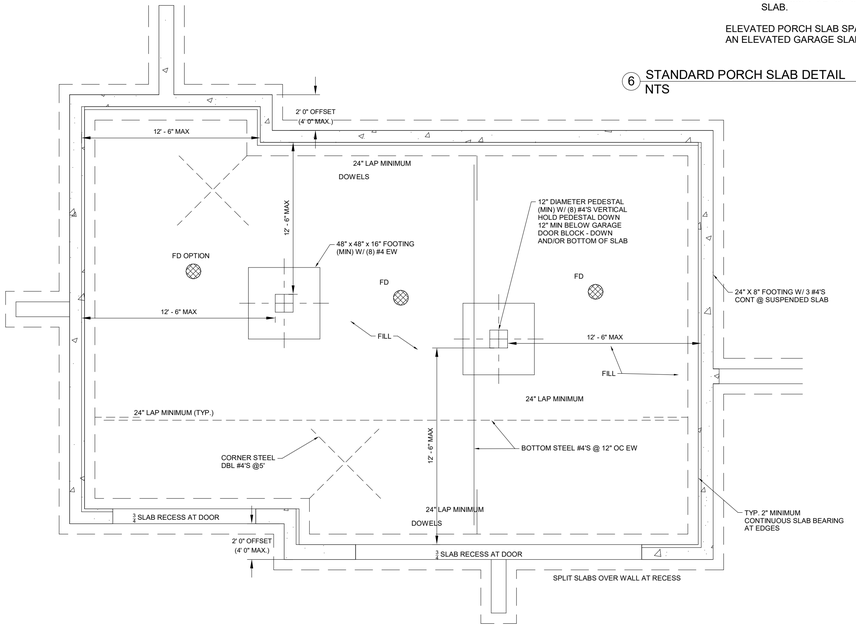
- MAX SPAN OF 6'
- MINIMUM THICKNESS OF 6"
- #4 BARS AT 12" O.C. EACH WAY
- MINIMUM 1-1/2" OF CONTINUOUS BEARING AT THE EDGES FO THE SLAB.

ELEVATED PORCH SLAB SPANNING GREATER THAN 6' SHALL BE TREATED AS AN ELEVATED GARAGE SLAB.

6 STANDARD PORCH SLAB DETAIL
NTS



7 SLAB OVER BEAM
1/4" = 1'-0"



5 3-CAR GARAGE SLAB ON FILL DETAIL
NTS

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GARAGE/SLAB DETAILS

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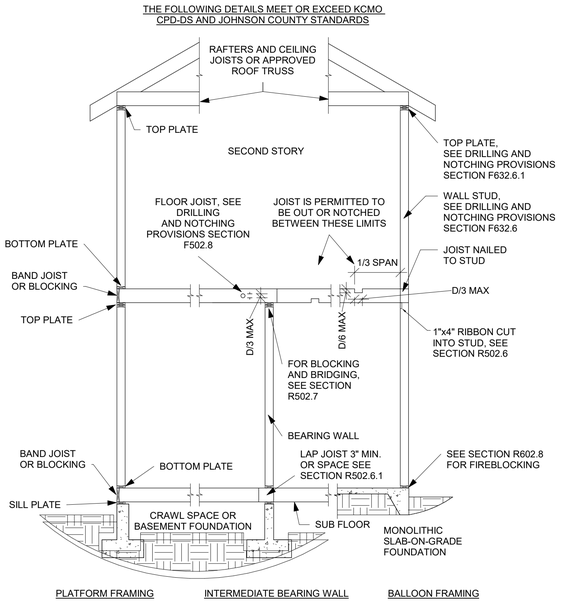
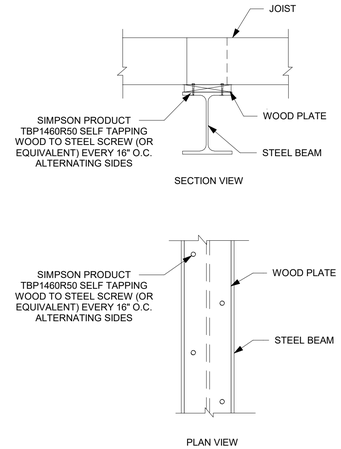
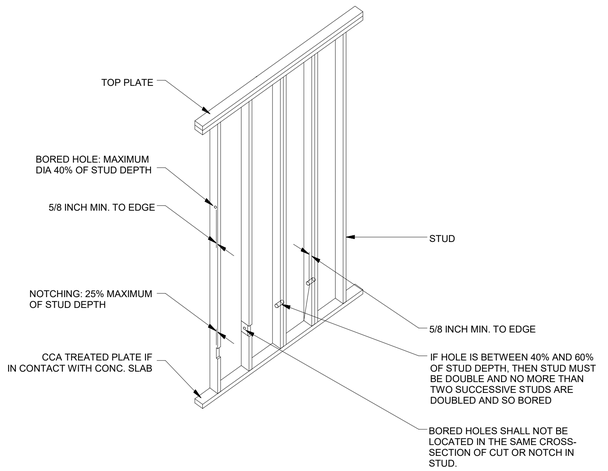


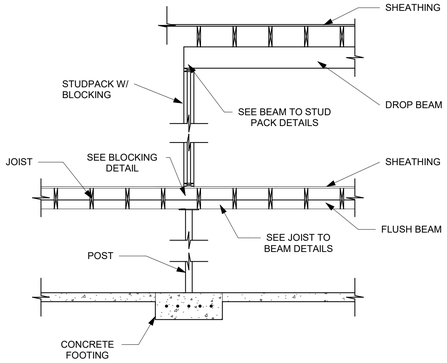
7 TYPICAL WALL, FLOOR, AND ROOF FRAMING DETAIL
NTS



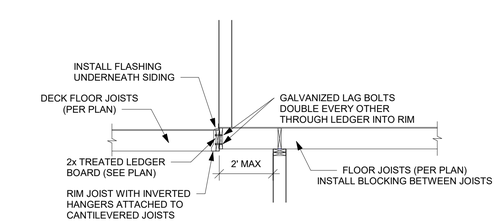
8 WOOD PLATE TO STEEL BEAM CONNECTION DETAIL
NTS



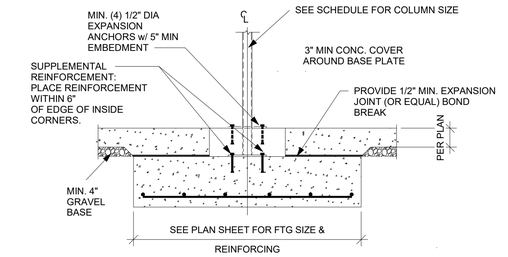
6 TYPICAL WALL NOTCHING DETAIL
NTS



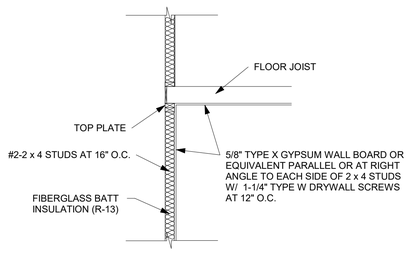
2 POST TO BEAM DETAIL
NTS



1 CANTILEVERED LEDGER DETAIL
NTS



4 TYPICAL COLUMN PAD DETAIL1
NTS



3 GARAGE FIRE SEPERATION DETAIL
NTS

REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES IRC TABLE 602.3(3) (PARTIAL)							
MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (IN)	MAX WALL STUD SPACING	PANEL NAIL SPACING		ULTIMATE DESIGN WIND SPEED, V ULT (MPH)
SIZE	PENETRATION (IN)				EDGES (IN O.C.)	FIELD (IN O.C.)	B
6d COMMON	1.5	24/0	3/8	16	6	12	140
8d COMMON	1.75	24/16	7/16	16	6	12	170
				24	6	12	140

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ENGINEERING & DESIGN

STATE OF MISSOURI
HANNAH CHRISTINE JONES
NUMBER PE-2023046346
03/04/2024
PROFESSIONAL ENGINEER

EVERSTEAD
3741 NE TROON DRIVE, SUITE 200
LEE'S SUMMIT, MO 64064
EVERSTEAD.COM (816)399-4901

AVITAL HOMES LLC
SERENITY - CRAFTSMAN
4416 SW GRINDSTONE CIR
LEES SUMMIT, MO 64082

REVISIONS
1 - 03/04/2024

FRAMING STANDARDS

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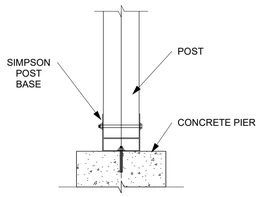
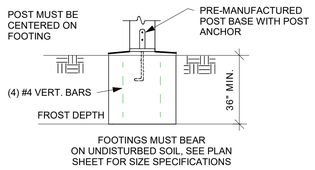


1 POST BASE DETAIL
NTS



2 DECK PIER FOOTING DETAIL
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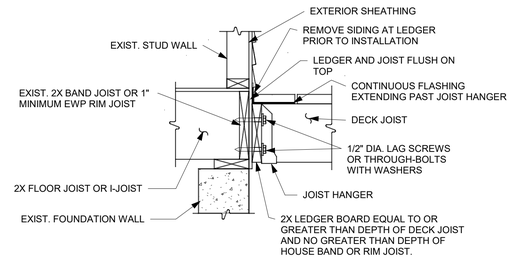

3 LEDGER BOARD TO BAND BOARD DETAIL
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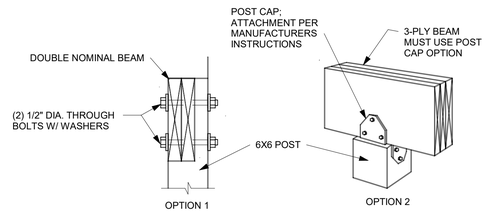

4 TYPICAL POST TO BEAM ATTACHMENT DETAIL
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STEEL DECK - SUSPENDED SLABS

1. STEEL DECK QUALITY, FABRICATION, DELIVERY, INSTALLATION AND ATTACHMENT SHALL COMPLY WITH THE PROVISIONS OF THE STEEL DECK INSTITUTE, SDI.

2. STEEL ROOF DECK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS:
   - WIDE RIB CONFIGURATION
   - 1.5" DEPTH
   - 24GA DESIGN THICKNESS
   - MAXIMUM SINGLE SPAN OF 4'-8" OR CONTINUOUS SPAN OF 5'-10"
   - GALVANIZE PER ASTM A653 OR SHOP PRIME PER ASTM A1008
   - ATTACH STEEL ROOF DECK TO SUPPORTS WITH #12 TEK AT 18" O.C.
   - ATTACH STEEL ROOF DECK SIDELAPS WITH #10 TEK OR CRIMP/BUTTON PUNCH AT 36" O.C., WHICHEVER IS SMALLER

3. CONTRACTOR AND/OR DECK MANUFACTURER SHALL FURNISH ALL NECESSARY DECK CLOSURE ACCESSORIES TO PROVIDE A FINISHED SURFACE FOR THE APPLICATION OF ROOF INSULATION AND ROOF COVERING.

4. STEEL FLOOR DECK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS:

STEEL DECK - SUSPENDED SLABS

1. STEEL DECK QUALITY, FABRICATION, DELIVERY, INSTALLATION, AND ATTACHMENT SHALL COMPLY WITH THE PROVISIONS OF THE STEEL DECK INSTITUTE, SDI.

2. CONTRACTOR AND/OR DECK MANUFACTURER SHALL FURNISH ALL NECESSARY DECK CLOSURE ACCESSORIES TO PROVIDE A FINISHED SURFACE FOR THE APPLICATION OR ROOF INSULATION AND ROOF COVERING.

3. STEEL FLOOR DECK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS:
   - 2" COMPOSITE DECK WITH 6" TOTAL SLAB THICKNESS
   - 19GA DESIGN THICKNESS
   - MAXIMUM SINGLE SPAN DURING CONSTRUCTION OF 8', 2 SPAN OF 10'-1", OR 3 SPAN OF 10'-5"
   - MAXIMUM SPAN SHALL NOT EXCEED 12.5'
   - PROVIDE W2.1xW2.1 WELDED WIRE MESH OR #4 @ 12" O.C. EACH WAY, PROVIDE 2" REBAR COVER MEASURED FROM TOP OF THE SLAB
   - MINIMUM BEARING LENGTH AT EDGE SUPPORTS IS 2"
   - MINIMUM BEARING LENGTH AT INTERIOR SUPPORTS IS 4"
   - ATTACH STEEL COMPOSITE FLOOR DECK TO SUPPORTS WITH 5/8" ARC PUDDLE WELDS AT 12" O.C. MECHANICAL FASTENERS EITHER POWDER ACTUATED, PNEUMATICALLY DRIVEN, OR SCREWS MAY BE USED IN LIEU OF WELDING PROVIDED THEY ARE APPROVED
   - ATTACH STEEL ROOF DECK SIDELAPS WITH #10 TEK OR CRIMP/BUTON PUNCH AT 36" O.C. OR MID-SPAN, WHICHEVER IS SMALLER

4. CONTRACTGOR AND/OR DECK MANUFACTURER SHALL FURNISH ALL NECESSARY POUR STOPS, COLUMN CLOSURES, END PLATES, AND COVER PLATES AS NEEDED.

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DECK DETAILS

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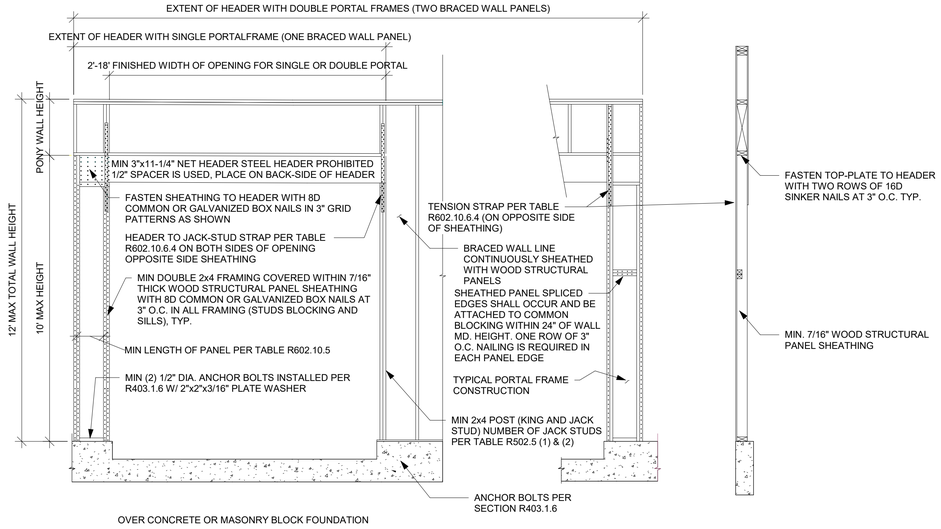

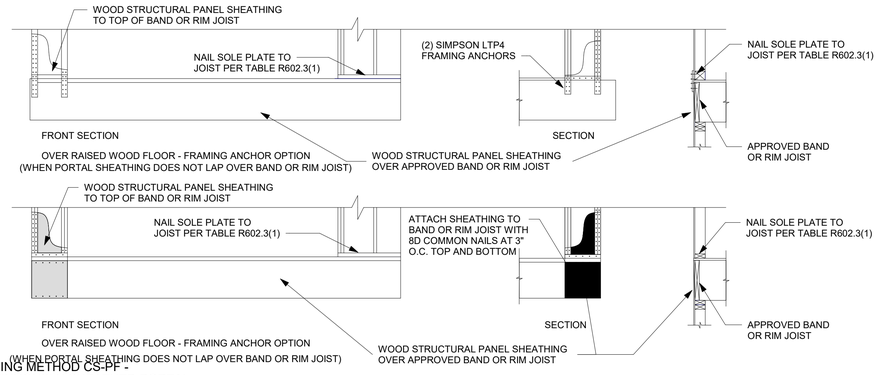

2 BRACING METHOD CS-PF - CONTINUOUSLY SHEATHED PORTAL FRAME PANEL DETAIL
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3 BRACING METHOD PFH - PORTAL FRAME WITH HOLD DOWNS DETAIL
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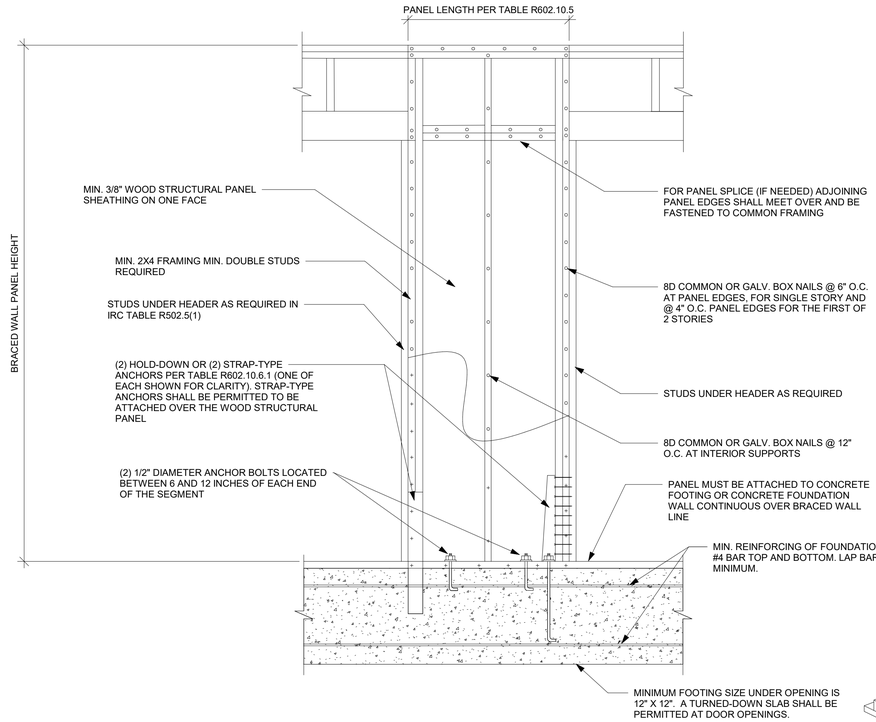

4 BRACING METHOD ABW - ALTERNATE BRACED WALL PANEL DETAIL
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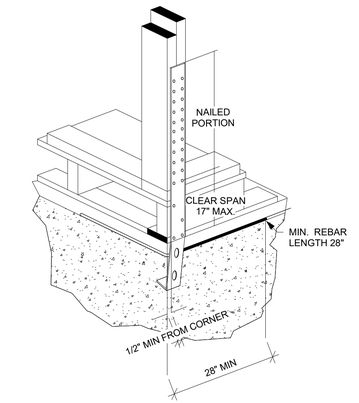

5 TYPICAL STHD14RJ CORNER INSTALLATION DETAIL
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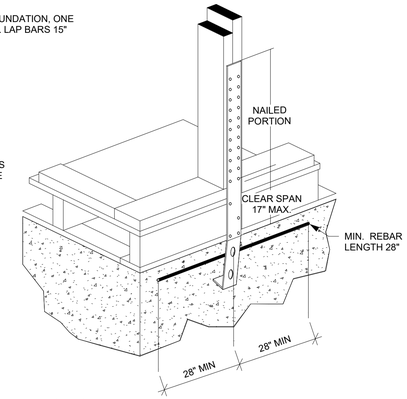

6 TYPICAL STHD14RJ MID-WALL INSTALLATION DETAIL
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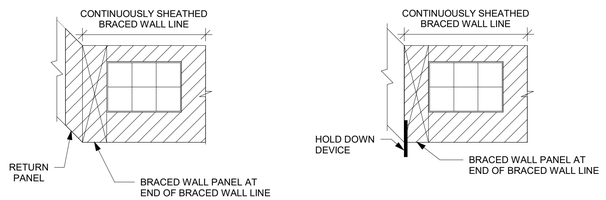

REQUIREMENTS:

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 # CAPACITY FASTENED TO THE EDGE OF THE BRACED WALL PANEL CLOSEST TO THE CORNER AND TO THE FOUNDATION OR FLOOR FRAMING BELOW

1 CONTINUOUSLY SHEATHED END CONDITIONS
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MINIMUM LENGTH OF BRACED WALL PANELS TABLE R602.10.5 (PARTIAL)

METHOD		MINIMUM LENGTH (INCHES) WALL HEIGHT		
		8 FEET	9 FEET	10 FEET
PFH	SUPPORTING ROOF ONLY	16	16	16
	SUPPORTING ONE STORY AND ROOF	24	24	24
PFG		24	27	30
CS-PF		16	18	20
CS-WSP	ADJACENT CLEAR OPENING HEIGHT (INCHES)			
	LESS THAN OR EQUAL TO 64	24	27	30

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BRACING DETAILS

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BRACING METHODS TABLE R602.10.4 (PARTIAL)			
METHODS, MATERIAL	MINIMUM THICKNESS	CONNECTION CRITERIA	
		FASTENERS	SPACING
WSP - WOOD STRUCTURAL PANEL AND CS-WSP CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL	3/8" PANEL W/ MINIMUM 24/0 STRUCTURAL PANEL SPAN RATING	6d COMMON NAILS (2.0" x .113") W/ MINIMUM 1.5" PENETRATION	6" EDGES, 12" FIELD
	7/16" PANEL W/ MINIMUM 24/16 STRUCTURAL PANEL SPAN RATING	8d COMMON NAILS (2.5" x .131") W/ MINIMUM 1.75" PENETRATION	6" EDGES, 12" FIELD
PFH - PORTAL FRAME WITH HOLD-DOWNS	3/8"	SEE DETAIL ON THIS PAGE	SEE DETAIL ON THIS PAGE
PFG - PORTAL FRAME AT GARAGE	3/8"	SEE IRC SECTION R602.10.6.3	SEE IRC SECTION R602.10.6.3
LIB LET-IN-BRACING	1x4 WOOD OR APPROVED METAL STRAPS AT 45 TO 60 DEGREE ANGLES FOR MAX 16" STUD SPACING	WOOD: 2-8d COMMON NAILS OR 3-8d (2-1/2" LONG x .113" DIA.) NAILS	WOOD: PER STUD AND TOP AND BOTTOM PLATES
		SIMPSON WB/WBC INSTALLED IN "X" PAIRS OR IN OPPOSING "V" FASHION AND FASTENED W/ (2) 16d COMMON NAILS FOR PLATE AND (1) 8d COMMON NAIL FOR STUDS	METAL: PER STUD AND TOP AND BOTTOM PLATES
GB-GYPSUM BOARD	1/2"	1/2" INTERIOR SHEATHING W/ STUDS AT 16" O.C.: 13 GAGE, 1-3/8" LONG, 19/64" HEAD;. 098" DIA., 1-1/4" LONG, ANNULAR-RINGED; 5d COOLER NAIL, .086" DIA., 1-5/8" LONG, 15/64" HEAD; OR GYPSUM BOARD NAIL, .086" DIA. 1-5/8" LONG, 9/32" HEAD PER TABLE R702.3.5 (SEE TABLE FOR OTHER PANEL THICKNESS OPTIONS)	FOR ALL BRACED WALL PANEL LOCATIONS: 7" EDGES (INCLUDING TOP AND BOTTOM PLATES) 7" FIELD
		EXTERIOR 1/2" SHEATHING: 1-1/2" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-1/2" LONG; 1-1/4" SCREWS, TYPE W OR S PER TABLE R602.3(1)	
		EXTERIOR 5/8" SHEATHING: 1-3/4" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-5/8" LONG; 1-5/8" SCREWS, TYPE W OR S PER TABLE R602.3(1)	

TABLE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS				
MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS (INCHES)				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
LEDGER	2	3/4	2	1-5/8 MIN. 5 MAX
BAND JOIST	3/4	2	2	1-5/8 MIN 5 MAX

TABLE R507/2 FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER 2" NOMINAL SOLID SAWN SPRUCE-PINE-FIR BAND JOIST (DECK LIVE LOAD = 40PSF, DECK DEAD LOAD = 10 PSF)							
JOIST SPAN	6' AND LESS	6'1 TO 8'	8'1 TO 10'	10'1 TO 12'	12'1 TO 14'	14'1 TO 16'	16'1 TO 18'
CONNECTION DETAILS	ON CENTER SPACING OF FASTENERS						
1/2" DIAMETER LAG SCREW WITH 15/32" MAX SHEATHING	30	23	18	15	13	11	10
1/2" DIAMETER BOLT WITH 15/32" MAX SHEATHING	36	36	34	29	24	21	19
1/2" DIAMETER BOLT WITH 15/32" MAX SHEATHING AND 1/2" STACKED WASHERS	36	36	29	24	21	18	16

DESCRIPTION OF BUILDING MATERIALS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION OF FASTENERS
ROOF		
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	4-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	TOE NAIL
CEILING JOISTS TO PLATE	4-8d BOX (2-1/2"x0.131") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10 BOX (3"x0.128") OR 3-3"x0.131" NAILS	TOE NAIL
CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER LAPS OVER PARTITIONS	4-10d BOX (3"x0.128") OR 3-16d COMMON (3-1/2"x0.162") OR 4-3"x0.131" NAILS	FACE NAIL
COLLAR TIE TO RAFTER, FACE NAIL OR 1-1/4"x20 GAGE RIDGE STRAP	4-10d BOX (3"x0.128") OR 3-10d COMMON (3"x0.148") OR 4-3"x0.131" NAILS	FACE NAIL EACH RAFTER
RAFTER OR ROOF TRUSS TO TOP PLATE, TOE NAIL	4-16d BOX (3-1/2"x0.135") OR 3-10d COMMON (3"x0.148") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS	4-16d BOX (3-1/2"x0.135") OR 3-10d COMMON (3"x0.148") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	TOE NAIL
	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	END NAIL
WALL		
STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3-1/2"x0.162")	24" O.C. FACE NAIL
	10d BOX (3"x0.128") OR 3"x0.131" NAIL	16" O.C. FACE NAIL
STUD TO STUD AND ABUTTING STUDS AT INTERSECTION WALL CORNERS (AT BRACED WALL PANELS)	16d BOX (3-1/2"x0.135") OR 3"x0.131" NAIL	12" O.C. FACE NAIL
	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
BUILT-UP HEADER, TWO PIECES WITH 1/2" SPACER	16d COMMON (3-1/2"x0.162")	16" O.C. EACH EDGE FACE NAIL
	16d BOX (3-1/2"x0.135")	12" O.C. EACH EDGE FACE NAIL
CONTINUOUS HEADER TO STUD	5-8d BOX (2-1/2"x0.113") OR 4-8d COMMON (2-1/2"x0.131") OR 4-10d BOX (3"x0.128")	TOE NAIL
TOP PLATE TO TOP PLATE	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
	10d BOX (3"x0.128") OR 3"x0.131" NAIL	12" O.C. FACE NAIL
DOUBLE TOP PLATE SPLICE	8-16d COMMON (3-1/2"x0.162") OR 12-16d BOX (3-1/2"x0.135") OR 12-10d BOX (3"x0.128") OR 12-3"x0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING (NOT BRACED WALL PANELS)	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
	-16d BOX (3-1/2"x0.135") OR 3"x0.131" NAIL	12" O.C. FACE NAIL
BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING (AT BRACED WALL PANELS)	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162") OR 4-3"x0.131" NAILS	3 EACH 16" O.C. FACE NAIL 2 EACH 16" O.C. FACE NAIL 4 EACH 16" O.C. FACE NAIL
TOP OR BOTTOM PLATE TO STUD	4-8d BOX (2-1/2"x0.113") OR 3-16d BOX (3-1/2"x0.135") OR 4-8d COMMON (2-1/2"x0.131") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	TOE NAIL
	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	END NAIL
TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10d BOX (3"x0.128") OR 2-16d COMMON (3-1/2"x0.162") OR 3-3"x0.131" NAILS	FACE NAIL
1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2-1/2"x0.113") OR 2-8d COMMON (2-1/2"x0.131") OR 2-10d BOX (3"x0.128") OR 2 STAPLES 1-3/4"	FACE NAIL
1"x6" SHEATHING TO EACH BEARING	3-8d BOX (2-1/2"x0.113") OR 2-8d COMMON (2-1/2"x0.131") OR 2-10d BOX (3"x0.128") OR 2 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL
1"x8" AND WIDER SHEATHINGTO EACH BEARING	3-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 3 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL
	WIDER THAN 1"x8": 4-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 4 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	

DESCRIPTION OF BUILDING MATERIALS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION OF FASTENERS
FLOOR		
JOIST TO SILL, TOP PLATE, OR GIRDER	4-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	TOE NAIL
RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8d BOX (2-1/2"x0.113")	4" O.C. TOE NAIL
	8d COMMON (2-1/2"x0.131") OR 10d BOX (3"x0.128") OR 3"x0.131" NAIL	6" O.C. TOE NAIL
1"x6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2-1/2"x0.113") OR 2-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 2 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL
2" SUBFLOOR TO JOIST OR GIRDER	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162")	BLIND AND FACE NAIL
2" PLANKS (PLANK & BEAM-FLOOR & ROOF)	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162")	AT EACH BEARING FACE NAIL
BAND OR RIM JOIST TO JOIST	3-16d COMMON (3-1/2"x0.162") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS OR 4 3"x14 GA. STAPLES, 7/16" CROWN	END NAIL
BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON (3"x0.128")	NAIL EACH LAYER AS FOLLOWS: 32" O.C AT TOP END AND BOTTOM AND STAGGERED.
	10d BOX (3"x0.128") OR 3"x0.131" NAIL	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	AND: 2-20d COMMON (4"x0.192") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE
LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16d BOX (3-1/2"x0.135") OR 3-16d COMMON (3-1/2"x0.162") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL
BRIDGING OR BLOCKING TO JOIST	2-10d BOX (3"x0.128") OR 2-8d COMMON (2-1/2"x0.131") OR 2-3"x0.131" NAILS	EACH END, TOE NAIL

DESCRIPTION OF BUILDING MATERIALS	NUMBER AND TYPE OF FASTENER	EDGES (IN)	INTERMEDIATE SUPPORTS (IN)
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]			
3/8" - 1/2"	6d COMMON (2"x0.113") NAIL (SUBFLOOR, WALL) OR 8d COMMON (2-1/2"x0.131") NAILS (ROOF) OR RSRS-01 (2-3/8"x0.113") NAIL (ROOF)	6	12
19/32" - 1"	8d COMMON NAIL (2-1/2"x0.131") OR RSRS-01 (2-3/8"x0.113") NAIL (ROOF)	6	12
1-1/8" - 1-1.4"	10d COMMON (3"x0.148") NAIL OR 8d (2-1/2"x0.131") DEFORMED NAIL	6	12
OTHER WALL SHEATHING			
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
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
1/2" GYPSUM INTERIOR COVERING (R702.3.5)	1-1/2" GALVANIZED ROOFING NAIL: STAPLE GALVANIZED, 1-1/2" LONG; 1-1/4" SCREWS, TYPE "W" OR "S"	7	7
5/8" GYPSUM INTERIOR COVERING (R702.3.5)	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			
3/4" AND LESS	6d DEFORMED (2"x0.120") NAIL OR 8d COMMON (2-1/2"x0.131") NAIL	6	12
7/8" - 1"	8d COMMON (2-1/2"x0.131") NAIL OR 8d DEFORMED (2-1/2"x0.120") NAIL	6	12
1-1/8" - 1-1/4"	10d COMMON (3"x0.148") NAIL OR 8d DEFORMED (2-1/2"x0.120") NAIL	6	12

EVERSTEAD
ENGINEERING & DESIGN

STATE OF MISSOURI
HANNAH CHRISTINE JONES
NUMBER PE-2023046346
03/04/2024
PROFESSIONAL ENGINEER

EVERSTEAD
3741 NE TROON DRIVE, SUITE 200
LEE'S SUMMIT, MO 64064
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AVITAL HOMES LLC
SERENITY - CRAFTSMAN
4416 SW GRINDSTONE CIR
LEES SUMMIT, MO 64082

REVISIONS
1 - 03/04/2024

FASTENING SCHEDULE

S550

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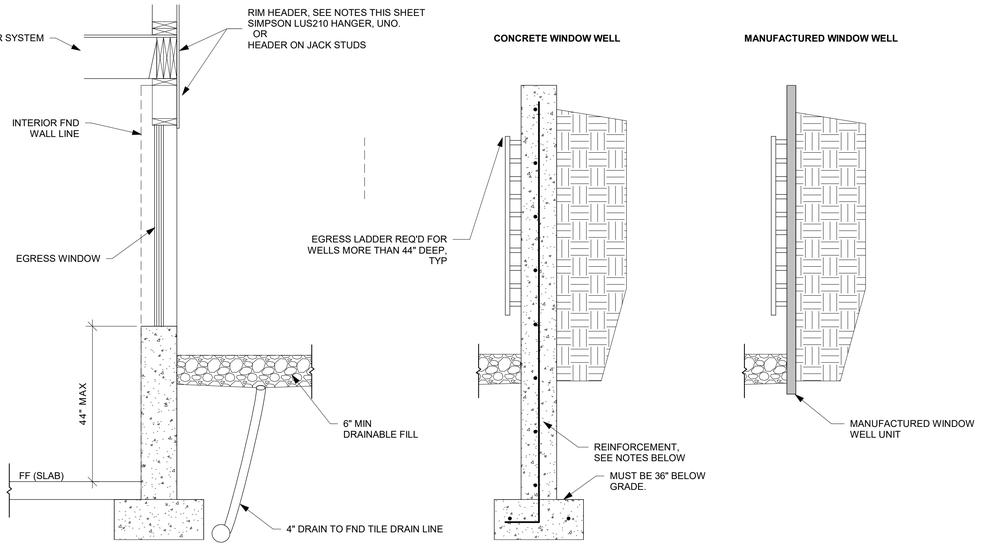
SCALE 1/4" = 1'-0"

GENERAL NOTES

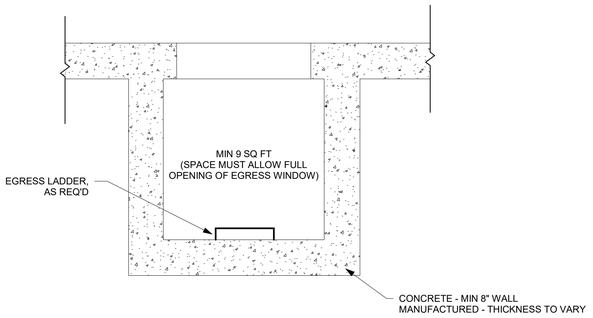
1. ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.
2. THE INFORMATION PROVIDED ON THIS PLAN SHEET IS DESIGNED AND REVIEWED IN ACCORDANCE WITH THE IRC.
3. CONCRETE WINDOW WELLS SHALL BE MINIMUM 3000 PSI COMPRESSIVE STRENGTH.
4. ASSUMED SOIL MINIMUM BEARING CAPACITY 1500 PSF.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS AND DIMENSIONS CRITICAL FOR CONSTRUCTION OF NEW WORK.
6. MEANS AND METHODS OF CONTRUCTION ARE OUT OF SCOPE OF THE DESIGN PROVIDED.
7. TEMPORARY SUPPORTS SHALL BE INSTALLED BEFORE REMOVAL OF LOAD BEARING STRUCTURES.
8. DIMENSIONAL LUMBER SHALL BE MINIMUM DOUGLAS FIR LARCH NO. 2.
9. LVL BEAMS SHALL HAVE MINIMUM 2.0E AND 3100F_b
10. STEEL POST COLUMNS SHALL BE MINIMUM SCHEDULE 40, Fy=35KSI.
11. MINIMUM HEADERS
    A. ASSUMES LOADING FOR BUILDING WITH MAXIMIMUM WIDTH OF 36 FT (ROOF WITH 30PSF SNOW LOADS, CEILING, AND TWO FLOORS W/ CENTER BEARING) PER TABLE R602.7(1)

HEADER	MAX CLEAR SPAN	MIN JACK STUDS
(2) 2X10	4'-0"	2
(3) 2X10	5'-1"	2
(2) 2X12	4'-9"	3
(3) 2X12	5'-11"	2
(2) 1.75X9.25 LVL	7'-6"	3
(2) 1.75X11.25 LVL	9'-3"	3



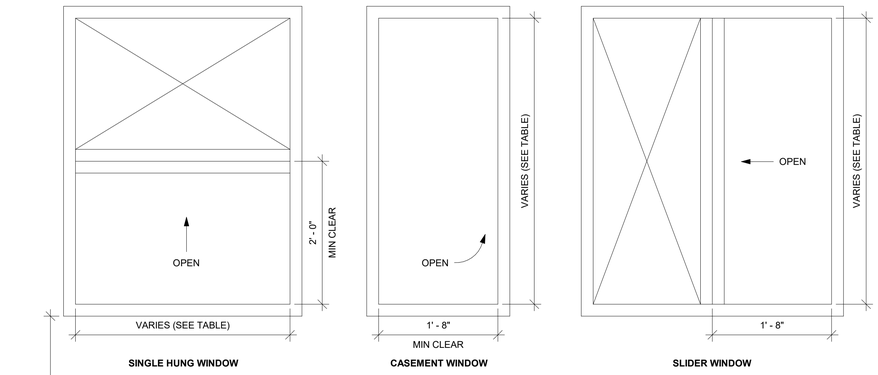
NOTES:
1. WINDOW WELL MUST MEET REQUIREMENT IN R310.2.6 OF THE IRC AND LOCALLY ADOPTED CODE
2. CONCRETE WINDOW WELL
   - A. INTALLED WITH NEW FOUNDATION
     - a. POUR WINDOW WELL MONOLITHICALLY WITH ADJACENT FND WALL.
     - b. REINFORCEMENT
       - MATCH ADJACENT WALL REINFORCEMENT, SEE PLANS
   - B. INSTALLED TO EXISTING FOUNDATION
     - a. REINFORCEMENT
       - #4 BAR @ 12" OC EW IN WALLS
       - DRILL AND EXPOY HOR BAR INTO EX FND, MIN 6" EMBEDMENT INTO EX FND WALL.
       - (2) #4 BAR CONT IN WALL FTG.
     - b. SEAL WHERE NEW CONCRETE IS POURED AGAINST EX FND WITH MASTIC STRIPS OR OTHER WATER STOP MATERIAL.
3. MANUFACTURED WINDOW WELL
   - A. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   - B. COORDINATE DEPTH OF WELL WITH WINDOW AND MANUFACTURER REQUIREMENTS.

SECTION



PLAN

WINDOW WELL FOR EGRESS (NTS)



NOTES

1. EGRESS WINDOWS MUST CONFORM TO R310 OF THE 2018 IRC
   - A. MIN CLEAR OPENING
     - a. ABOVE GRADE FLOOR NOT LESS THAN 5.7 SQ FT PER R310.2.1
     - b. AT OR BELOW GRADE NOT LESS THAN 5.0 SF FT PER 310.2.1
   - B. MIN NET CLEAR HEIGHT SHALL BE NOT LESS THAN 2 FT
   - C. MIN NET CLEAR WIDTH SHALL BE NOT LESS THAN 20 INCH
2. MINIMUM WINDOW SIZES SHOWN BELOW ARE SPECIFIC TO THE MANUFACTURER AND VINYL WINDOW MODEL NUMBER LISTED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WINDOW SIZES WITH THE SELECTED MANUFACTURER, WINDOW FRAMING MATERIAL, AND STYLE.

MANUFACTURER	MODEL	SINGLE HUNG	CASEMENT	SLIDER
ANDERSON	200 SERIES	36X60	--	--
ANDERSON	400 SERIES	--	36X40	48X40
JELD-WEN	V-2500	36X60	--	48X48
JELD-WEN	V-4500	--	36X48	--
PELLA	250 SERIES	36X60	36X42	--
PELLA	150 SERIES	--	--	48X48

WINDOW EGRESS (NTS)

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EGRESS WINDOWS

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SCALE As indicated