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SAB **SW HOOK** 

42762 11/05/2021 DATE:

2023

NO.	ISSUE/REVISION	Revision Date
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PLANS DRAWN BY OTHERS

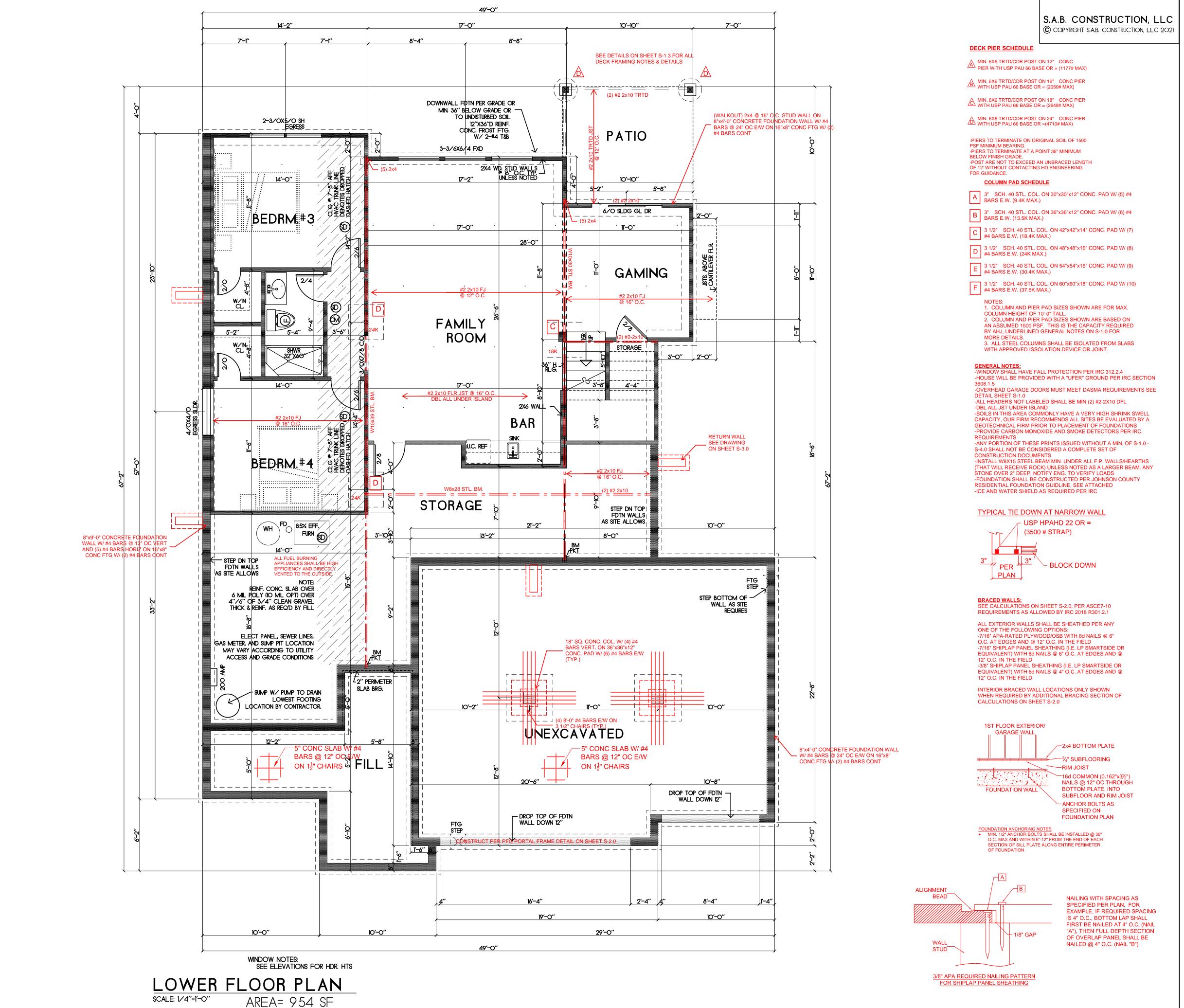
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REAR DECK

UN-FINISHED BASEMENT

108 SF

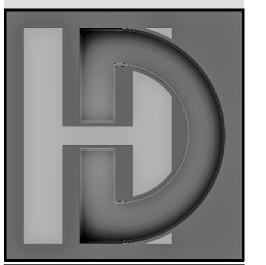
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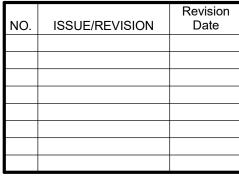
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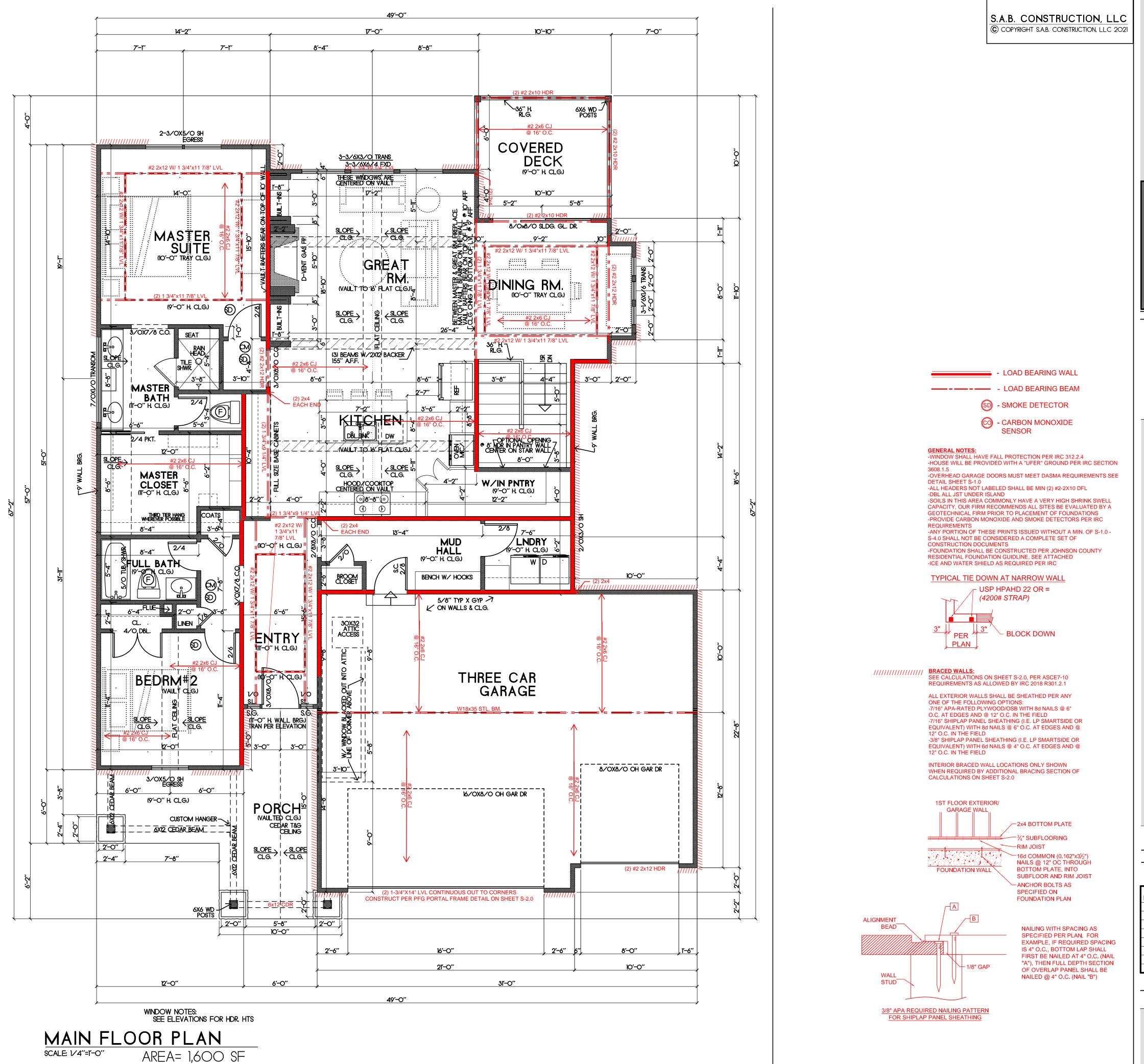
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PLANS DRAWN BY OTHERS

**S-0.2** 



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PLANS DRAWN BY OTHERS

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ROOF PLAN SCALE: 1/8"=1'-0"

SEE SHT A5 FOR ROOF FRAMING

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UNLESS NOTED

12" OVERHANG

UNLESS NOTED

6/12 ROOF PITCH FRONT TO BACK

10/12 ROOF PITCH SIDE TO SIDE





PURLINS ARE 2x6 MIN. ALL PURLINS STRUTS SHALL HAVE A MAXIMUM UNBRACED

CONFIGURATION AND PER THE FOLLOWING CHART

PURLIN STRUT	MAX PURLIN STRUT LENGTH
(2) 2x4	8'-0"
(1) 2x4 & (1) 2x6	12'-0"
(1) 2x6 & (1) 2x8	20'-0"
(2) 2x6 & (1) 2x8	30'-0"
CONSULT ARCH./ENGR.	>30'-0"

SEE DETAILS 1, 5, 6, 7, 11, 12, 13, & 14 ON S-1.2

\_\_\_ - PURLIN

ROOF DESIGNED FOR LIGHT ROOF COVERING 30PSF TOTAL LOAD [10PSF DL, 20PSF LL (SL)]

RAFTERS (DOUG-FIR, OR EQUAL): SEE SPAN CHARTS BELOW

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	11'-11"
#2-2x6	@16" O.C.	14'-1"
#2-2x8	@24" O.C.	15'-1"
#2-2x8	@16" O.C.	18'-5"
#2-2x10	@24" O.C.	18'-5"
#2-2x10	@16" O.C.	22'-6"

CREATER THAN CODE

GREATER THAN C	ODE	
RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	8'-6"
#2 <b>-</b> 2x6	@16" O.C.	9'-9"
#2 <b>-</b> 2x8	@24" O.C.	11'-3"
#2 <b>-</b> 2x8	@16" O.C.	12'-9"
#2-2x10	@24" O.C.	14'-3"
#2-2x10	@16" O.C.	16'-3"

DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD VAULTS TO BE 2x10 DEPTH

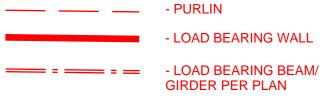
ALL RIDGES, HIPS, AND VALLEYS NOT MARKED SHALL BE (1)

NOMINAL SIZE LARGER THAN THE INTERSECTING RAFTERS

PURLIN STRUTS ARE AT 4'-0" O.C. PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL LENGTH OF 8'-0" PURLINS STRUTS SHALL BE CONSTRUCTED IN A "T"

PURLIN STRUT	MAX PURLIN STRUT LENGT
(2) 2x4	8'-0"
(1) 2x4 & (1) 2x6	12'-0"
(1) 2x6 & (1) 2x8	20'-0"
(2) 2x6 & (1) 2x8	30'-0"
CONSULT ARCH /FNGR	>30'-0"

FOR ROOF FRAMING AND INSULATION OPTIONS

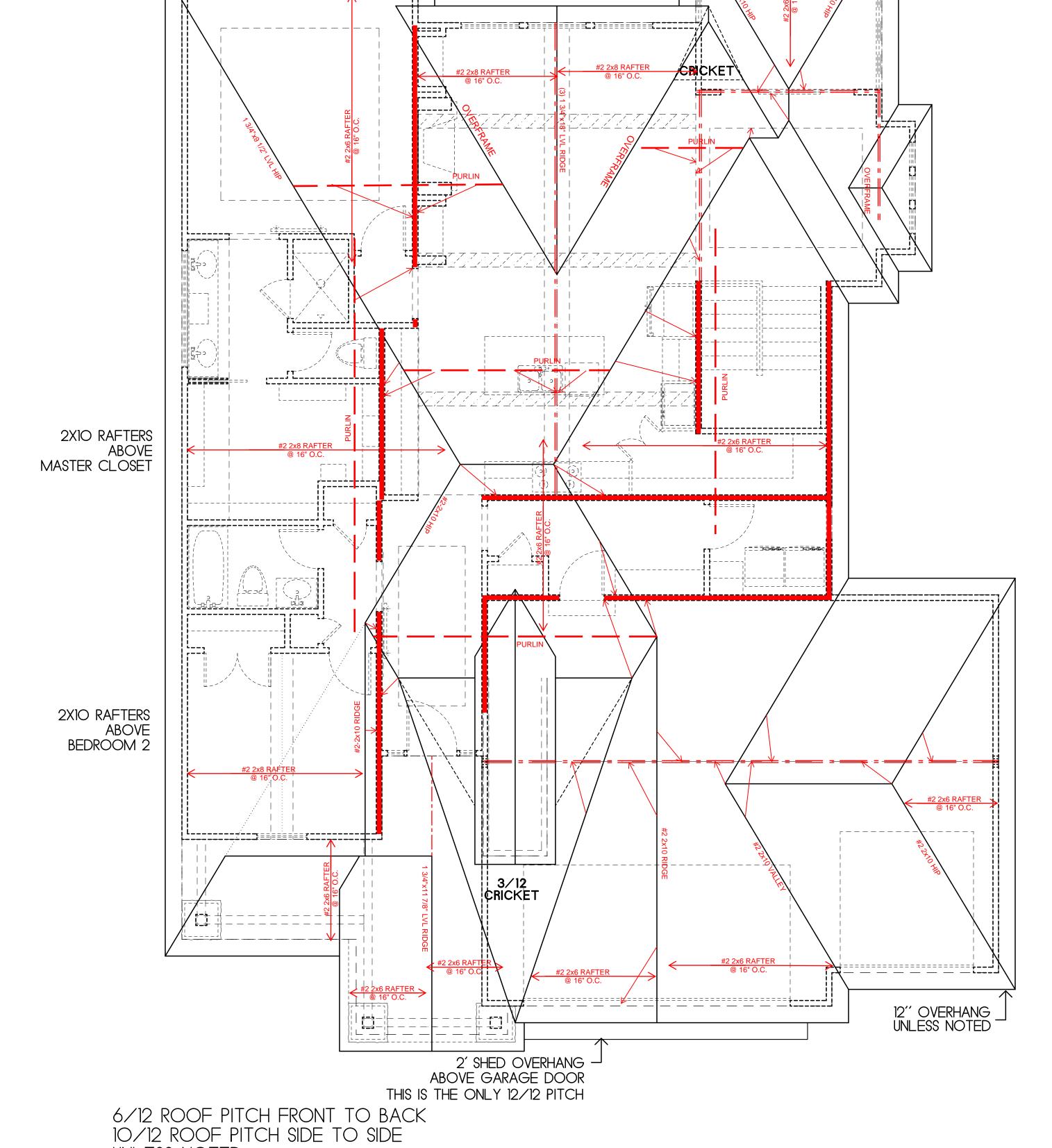


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UNLESS NOTED

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

ROOF FRAMING PLAN

#### **ALLOWABLE LOADS FOR PNEUMATIC OR MECHANICALLY DRIVEN NAILS AND STAPLES**

	NAIL GUN PENETRATION ALLOWABLE LOADS (IN POUNDS)		DS)				
FASTENER DESCRIPTION	NAILS/	WIRE GA.	REQUIRED INTO MAIN MEMBER FOR LATERAL	LATERAL STRENGTH		WITHDRAWAL STRENGTH	
DEGORII HON	WIRE DIA.		STRENGTH (IN.)	SP	DF/L	SP	DF/L
16 GA. STAPLE	.063	16	1	51		36	32
15 GA. STAPLE	.072	15	1	64		42	37
14 GA. STAPLE	.080	14	1	75		46	41
6d COOLER NAIL	000	40	,	40			00
6d SINKER NAIL	.092	13	1	46		27	23
6d BOX NAIL							
6d CASING NAIL	.099	12-1/2	1-1/8	61	55	31	24
7d COOLER NAIL							
6d COMMON NAIL							
8d COOLER NAIL							
8d SINKER NAIL	.113	11-1/2	1-1/4	79	72	35	28
8d BOX NAIL							
8d CASING NAIL		<u>L</u> _					
6d RING SHANK NAIL							
6d SCREW SHANK NAIL	.120	11	1-3/8	89	81	41	32
8d RING SHANK NAIL	.120	11				41	
8d SCREW SHANK NAIL							
10d Cooler Nail		.128 10-1/2	1-1/2	89 81	81	36	31
10d Sinker Nail	.128						
12d Short	1						
10d Box Nails							
12d Box Nails	.128	10-1/2	1-1/2	101	93	40	31
10d Casing Nails							
8d Common Nails	.131	10 1/4	1 1/0	106	97	41	22
16d Short	.131	10-1/4	4 1-1/2	106	91	41	32
12d Sinkers	.135	10	1-1/2	113	103	42	33
16d Box Nails	.135	10	1-1/2	113	103	42	
10d Ring Shank Nails							
10d Screw Shank Nails	.135	10	1-5/8	113	103	46	36
12d Ring Shank Nails							
12d Screw Shank Nails							
10d Common Nails				128	118 46		
12d Common Nails							
16d Sinker Nails	.148	9	1-5/8			36	
20d Box Nails							
30d Box Nails							
16d Ring Shank Nails	.148	9	1-3/4	128	118	50	40
16d Screw Shank Nails	. 140		1-0/4	120	110	30	70
16d Common Nails	.162	8	1-3/4	154	141	50	40
40d Box Nails	02		1-3/4	104	141	50	40
20d Ring Shank Nails	.177	7	2-1/8	178	163	59	47
20d Screw Shank Nails		7	2-1/0	1,70			
20d Sinker Nails	.177	7	2-1/8	178	163	54	43
20d Common Nails	.148	9	2-1/8	170	166	59	47
00 d Ointen Neile	I .140	l	Z-1/U	I ''	100		l <sup></sup> '

## SHEATHING SCHEDULE

30d Sinker Nails

ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED

BUILDING COMPONENT	MATERIAL	FASTENING		
ROOF SHEATHING	7/16" PLYWOOD	16 GA X 1 3/4" STAPLES @ 6" OC EDGES & 12" OC IN FIELD		
1001 SHEATHING	1x 4 #3 FURRING	1/2" CROWN STAPLES		
ELOOP CHEATHING	3/4" T&G YELLOW	14 GA X 1 3/4" STAPLES @ 6" OC EDGES & 12" OC IN FIELD		
FLOOR SHEATHING PINE PLYWOOD		12.5 GA X 1 1/2" RING OR SCREW SHANK NAILS @ 6" OC EDGES & 12" OC IN FIELD		
WALL COVERING	1/2" GYPSUM SHEATHING	6D COMMON NAILS: 1 5/8" GALVANIZED STAPLES; 1 1/4" SCREWS, TYPE W OR S @ 4" OC EDGES & 8" OC IN FIELD		
CEILING COVERING	1/2" GYPSUM SHEATHING	7" OC NAILED / 12" OC SCREWED W/ 13GA, 1 3/8" LONG, 19/64" HEAD; 0.098 Ø, 1 1/4" LONG, ANG-RINGED; 5D COOLER NAIL, 0.086 Ø, 1 5/8" LONG, 15/64" HEAD; OR GYP BD NAIL, 0.086 Ø, 1 5/8" LONG, 19/64" HEAD		
EXTERIOR WALL	7/16" APA RATED SHEATHING	8D COMMON NAILS @ 6" OC EDGES & 12" OC IN THE FIELD		
SHEATHING	RATED PANEL SIDING, RATED 16" O.C. 7/16" THICK	8D BOX OR SINKER NAILS @ 6" OC EDGES & 12" OC IN THE FIELD		

### FRAME FASTENING SCHEDULE

BUILDING COMPONENT	FASTEN TO	FASTEN WITH
	RIDGE / VALLEY / HIP	TOENAIL W/ (4) 16D, FACENAIL W/ (3) 16
D.4.5.T.5.D.0	PLATE	TOENAIL W/ (3) 10D
RAFTERS	LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS	FACENAIL W/ (3) 16D
	COLLAR TIE TO RAFTERS	FACENAIL W/ (3) 10D
	TOP PLATE	TOENAIL W/ (3) 8D @ EACH END
0511 1010 1010 70	WHERE CLG JST RUN PARALLEL TO RAFTERS FAC	ENAIL TO RAFTERS W/ (3) 10D MINIMUM
CEILING JOISTS	LAPS OVER PARTITIONS	FACENAIL W/ (3) 10D
	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	TOENAIL W/ (3) 8D
	BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS	10D @ 32" OC STAGGERED, TOP & BOTTOM, OPPOSITE SIDES
BEAMS	BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES	(2) ROWS @ 12" OC
	BUILT-UP HEADER, TWO PIECES W/ 1/2" SPACER	16D @16" OC ALONG EDGES
	BUILT-UP HEADER, TWO PIECES, NO 1/2" SPACER	3" x 0.131" NAILS @ 12" OC ALONG EDG
	BEARING	TOENAIL W/ (2) 18D @ EACH END
	RIM JOIST TO SILL OR TOP PLATE	TOENAIL W/ 8D COMMON OR 10D BO
FLOOR JOISTS	JOIST TO SILL OR GIRDER	TOENAIL W/ (3) 8D
	JOIST TO RIM JOIST	FACENAIL W/ (3) 16D
	BRIDGING TO JOIST	TOENAIL W/ (2) 8D
	I-JOIST TO BEARING PLATE	TOENAIL W/ (2) 8D - ONE INTO EACH SID LEAST 1 1/2" FROM THE END
	RIM JOIST TO I-JOIST	FACENAIL W/ (2) 10D BOX NAILS - ONE IN EACH FLANGE
	SOLE PLATE TO LSL RIM BOARD	16D BOX NAILS @ 12" OC
	SINGLE JOIST HANGERS *	10D FACENAILS AND TOENAILS
	DOUBLE JOIST HANGERS *	16D FACENAILS AND TOENAILS
	TOP & SOLE PLATE TO STUD	END NAIL W/ (2) 16D
	STUD TO SOLE AND TOP PLATE	TOENAIL W/ (4) 8D
	DOUBLE TOP PLATES	FACENAIL W/ 16D @ 16" OC
	DOUBLE TOP PLATE LAP SPLICE	FACENAIL W/ (8) 16D
	TOP PLATE LAPS & INTERSECTIONS	FACENAIL W/ (2) 16D
	DOUBLE STUDS	FACENAIL W/ 16D @ 24" OC
	BUILT-UP CORNER STUDS	FACENAIL W/ 16D - 2 ROWS @ 24" OC
	STEEL "X" BRACING	FACENAIL W/ (2) 16D IN EACH TOP & BOTTOM PLATE & (1) 8D PER STUD
WALLS	SOLE PLATE TO JOIST OR BLOCKING	FACENAIL W/ 16D @ 16" OC
	SOLE PLATES TO JOIST OR BLOCKING AT BRACED WALL LINES, PERPENDICULAR TO FRAMING	FACENAIL W/ (3) 16D @ 16" OC ALONO BRACED WALL PANEL
	TOP PLATE TO JOIST OR BLOCKING AT BW LINES, PERPENDICULAR TO FRAMING	TOENAIL W/ 8D @ 6" OC ALONG BRACED WALL PANEL
	SOLE PLATES TO JOIST OR BLOCKING AT BW LINES PARALLEL TO FRAMING, BLOCKING @ 16" OC	FACENAIL W/ (3) 16D @ 16" OC ALONG I PANEL & AT EACH BLOCK
	TOP PLATE TO JOIST OR BLOCKING AT BW LINES, PARALLEL TO FRAMING, BLOCKING @ 16" OC	TOENAIL W/ 8D @ 6" OC ALONG BW PANEL & AT EACH BLOCK
	NON-STRUCT. SIDING OVER STRUCT. SHEATHING	(1) 6D BOX NAIL IN EACH STUD
	FIBER CEMENT PLANK SIDING	(1) 6D GALVANIZED NAIL IN EACH STU
	WINDOW INSTALLATION NAILING	1 3/4" - 2" ROOFING NAILS @ 12" OC MA

JOIST HANGER NOTES: 1) NO JOIST HANGER NAILS ALLOWED FOR TOENAILS, 2) NO GUN NAILS OR SCREWS ALLOWED IN CONNECTORS, 3) TOENAILS SHALL ALWAYS BE A FULL 3" OR 3.5" NAIL

COLUMN CONNECTION TO STEEL BEAMS SHALL BE WITH A CLIP POST CAP WITH ALL FOUR TAB EARS BENT AROUND THE BOTTOM FLANGE OF THE BEAM. FOR A BEARING PLATE, FOUR HOLES SHALL BE DRILLED IN THE BOTTOM FLANGE OF THE STEEL BEAM TO MATCH THE HOLE PATTERN OF THE PLATE. 1/2"x2" BOLTS SHOULD THEN BE INSTALLED WITH A FLAT WASHER, LOCK WASHER, AND A NUT IN EACH OF THE HOLES. THE POST CAP MAY BE WELDED TO THE STEEL BEAM IN ACCORDANCE WITH AWS D1.1-92 AS AN ALTERNATIVE, AND WOULD NEED TO BE INSPECTED BY AN AWS-CERTIFIED

#### **DUCT SEALING METHOD, PER IRC2018 W1103.3.2**

N1103.2.2 (R403.2.2) SEALING (MANDATORY) DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION M1601.4.1 OF THIS CODE.

#### 1. AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT

BUILDING THERMAL ENVELOPE.

- 2. WHERE A DUCT CONNECTION IS MADE THAT IS PARTIALLY INACCESSIBLE, THREE SCREWS OR RIVETS SHALL BE
- EQUALLY SPACED ON THE EXPOSED PORTION OF THE JOINT SO AS TO PREVENT A HINGE EFFECT. 3. CONTINUOUSLY WELDED AND LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS IN DUCTS OPERATING AT STATIC PRESSURE LESS THAN 2 INCHES OF WATER COLUMN (500 Pa) PRESSURE CLASSIFICATION SHALL NOT REQUIRE ADDITIONAL CLOSURE SYSTEMS.
- DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING: 1. POST CONSTRUCTION TEST: TOTAL LEAKAGE SHALL NOT BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100FT<sup>2</sup> (9.29m<sup>2</sup>) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE
- TAPED OR OTHERWISE SEALED DURING THE TEST. 2. ROUGH-IN TEST: TOTAL AIR LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100FT2 (9.29m2) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL AIR LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM (85 L/MIN) PER 100FT<sup>2</sup> (9.29m<sup>2</sup>) OF CONDITIONED FLOOR AREA. EXCEPTION: THE TOTAL LEAKAGE IS NOT REQUIRED FOR DUCTS AND AIR HANDLERS LOCATED ENTIRELY WITHIN THE

1. PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE. IECC AS ADOPTED BY AHJ, AND ALL AMENDMENTS AS ADOPTED BY THE AHJ, IF ANY CHANGES OR DEVIATIONS ARE MADE FROM THESE PLANS THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY AND THE ENGINEER TO EVALUATE THE CHANGES AND MAKE ANY APPROPRIATE MODIFICATIONS TO THE PLANS. 2. WHERE DISCREPANCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FOR THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY.

3. THE CONTRACTUAL OBLIGATION OF THESE PLANS IS TO PROVIDE THE OWNER/BUILDER AND THE AHJ WITH A SET OF PLANS THAT MEET AHJ AND CODE REQUIREMENTS FOR A SINGLE SITE CONSTRUCTION PROJECT. UNLESS REQUESTED BY OUR CLIENT, CODE/AHJ MINIMUM DESIGNS WILL BE UTILIZED. ALSO, UNLESS REQUESTED BY THE OWNER, OUR FIRM CAN NOT AND WILL NOT BE AUTHORIZED TO VISIT THE SITE TO EVALUATE THE SITE OR ANY CONSTRUCTION FOR THIS PROJECT. IMPLEMENTATION OF ALTERNATES TO THE DESIGNS INCLUDING BUT NOT LIMITED TO PIER DESIGNS, FOUNDATION ALTERATIONS, OR ANY STRUCTURAL CHANGES NOT PROVIDED BY HD ENGINEERING OR A PROFESSIONAL REFERRED BY HD ENGINEERING SHALL RELEASE HD ENGINEERING FROM ALL LIABILITY ASSOCIATED WITH THIS DESIGN. 4. OUR FIRM HIGHLY RECOMMENDS THAT ANY SITE WITH GREATER THAN A 15% GRADE, ANY SITE WHERE A PREVIOUS STRUCTURE WAS LOCATED, OR ANY SITE WITH POTENTIAL FILL MATERIAL OR A POTENTIAL SOIL BEARING CAPACITY BELOW 1500 PSF SHOULD BE EVALUATED BY OUR FIRM OR AN HD ENGINEERING REFERRED

GEOTECHNICAL FIRM PRIOR TO PLACING FOOTINGS. THE ATTACHED PLANS HAVE BEEN DESIGNED WITH THE UNDERSTANDING THAT OUR FIRM HAS NOT AND CAN NOT VISIT OR INSPECT THE SITE WITHOUT WRITTEN CONSENT/REQUEST OF THE OWNER/BUILDER. DUE TO THIS FACT OUR FIRM CAN ONLY DESIGN THE ATTACHED PLANS TO CERTAIN CODE REQUIREMENTS WHICH ARE DETAILED THROUGHOUT THE PLAN AND ATTACHED DETAIL SHEETS, IF THE OWNER DESIRES GREATER THAN CODE DESIGNS THAT REQUEST MUST BE MADE CLEARLY AND IN WRITING PRIOR TO ENGINEERING OF THE PLAN.

5. DUE TO THE WIDE VARIETY OF SOIL CONDITIONS IN OUR AREA AND THE WIDE VARIETY OF PLASTICITY INDEX AND SOIL BEARING CAPACITIES OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY HD ENGINEERING OR AN HD ENGINEERING REFERRED GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF ANY "STANDARD" FOUNDATIONS .

THE FOUNDATION DESIGN SHALL COMPLY WITH THE ENFORCING JURISDICTION RESIDENTIAL FOUNDATION STANDARD IN LIEU OF ENGINEERING REPORT

REQUIREMENTS BASED ON ACTUAL SITE CONDITIONS 2. FOUNDATION WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406.

3. PROVIDE A MINIMUM 4" PERFORATED DRAIN AROUND USABLE SPACE BELOW GRADE OR OTHER EQUIVALENT MATERIALS PER IRC SECTION 405.1. THE PIPE SHALL BE COVERED WITH NOT LESS THAN 6" OF WASHED GRAVEL OR CRUSHED ROCK. THE DRAIN SHALL DAYLIGHT TO THE EXTERIOR BELOW THE FLOOR LEVEL OR TERMINATE IN A MINIMUM 20 GALLON SUMP PIT.

4. FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF. 5. FOOTINGS SHALL BE A MIN. OF 16" WIDE AND 8" DEEP W/ (2) #4 BARS CONTINUOUS, LOCATED A MIN. OF 3" CLEAR FROM BOTTOM. FOOTINGS SHALL BE A MINIMUM OF 36"

BELOW GRADE FOR FROST PROTECTION. 6. COLUMN PADS SHALL BE A MINIMUM OF 24"X24"X8" WITH (3) #4 BARS EACH WAY.

7. FOUNDATION WALLS SHALL BE A MINIMUM 8" THICK W/ MINIMUM #4 BARS @ 24" O.C. HORIZONTAL AND VERTICAL W/ THE TOP BAR WITHIN 8" OF THE TOP OF THE WALL UNLESS NOTED OTHERWISE ON PLAN.

8. REINFORCEMENT SHALL LAP A MINIMUM OF 24" 9. INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.

- 10. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE BY A SEPARATION
- 11. CONCRETE FLOOR SLABS ON GRADE, SHALL BE A MINIMUM 4" THICK OVER A MINIMUM 4" BASE OF SAND, GRAVEL, OR CRUSHED STONE. BASEMENT SLABS SHALL HAVE A MIN. 6 MIL POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" SHALL BE PLACED BETWEEN THE FLOOR SLAB AND THE BASE COURSE
- 12. FLOOR SLABS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER A SEPARATE ENGINEERING 13. BASEMENT FOUNDATION SILL PLATES SHALL BE BOLTED TO THE FOUNDATION W/ A MINIMUM OF 1/2" ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND
- SPACED NOT MORE THAN 3' ON CENTER AND WITHIN 12" OF EACH END PIECE PER IRC SECTION R403.1.6. 14. FOUNDATION WINDOW WELLS FOR SECONDARY MEANS OF EGRESS SHALL PROVIDE A MINIMUM 3'X3' HORIZONTAL AREA. 15. THE BASE OF ALL FOOTING EXCAVATIONS SHOULD BE FREE OF ALL WATER AND LOOSE MATERIAL PRIOR TO PLACING CONCRETE. CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATING SO THAT EXCESSIVE DRYING OR DISTURBANCE OF BEARING MATERIALS DOES NOT OCCUR. SHOULD THE MATERIALS AT BEARING
- LEVEL BECOME EXCESSIVELY DRY OR SATURATED. WE RECOMMEND THAT THE AFFECTED MATERIAL BE REMOVED PRIOR TO PLACING CONCRETE 16. IT IS RECOMMENDED THAT ALL FOOTING EXCAVATIONS BE EVALUATED AND TESTED BY A GEOTECHNICAL ENGINEER IMMEDIATELY PRIOR TO PLACEMENT OF FOUNDATION CONCRETE. UNSUITABLE AREAS IDENTIFIED AT THIS TIME SHOULD BE CORRECTED. CORRECTIVE PROCEDURES WOULD BE DEPENDENT UPON CONDITIONS ENCOUNTERED AND MAY INCLUDE DEEPENING OF FOUNDATION ELEMENTS, OR UNDERCUTTING OF UNSUITABLE MATERIALS AND REPLACEMENT WITH ENGINEERED FILL.

#### STAIRWAY NOTES:

- 1. STAIRWAYS SHALL PROVIDE A MAXIMUM 7 3/4" RISE AND MIN. 10" RUN. 2. PROVIDE MINIMUM 36" GUARDRAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES AND BALCONIES. MINIMUM 34" GUARDRAILS ON THE OPEN SIDES OF STAIRWAYS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW. GUARDRAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL PATTERNS THAT DO NOT
- 3. EACH STAIRWAY OF 3 OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE THREADS. 4. HANDRAILS SHALL HAVE A CIRCULAR CROSS-SECTION OF 1 1/4" MINIMUM TO 2" MAXIMUM OR OTHER APPROVED GRASPABLE SHAPE PER IRC SECTION R311.7.8.5 5. PROVIDE A MINIMUM 6'-8" OF HEADROOM CLEARANCE IN STAIRWAYS.
- 6. ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON
- 7. WINDERS SHALL PROVIDE A MINIMUM TREAD OF AT LEAST 6" AT ANY POINT WITHIN CLEAR WIDTH OF STAIRS. WINDER TREAD PROPORTION TO COMPLY WITH IRCR311.7.5.2.1.

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 S.F. AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36"

2. IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24 INCHES OF THE FINISHED FLOOR.

#### FRAMING NOTES:

1. ALL LUMBER SIZES ARE FOR DOUGLAS FIR-LARCH UNLESS OTHERWISE NOTED.

2. ALL HEADERS TO BE A MINIMUM OF (2) #2-2X10'S UNLESS OTHERWISE NOTED. 3. BLOCK CANTILEVERS, DOOR JAMBS, AND OVER BEAMS.

4. ALL HEADERS/BEAMS TO BEAR ON A MINIMUM OF (1) 2X4 POSTS UNLESS NOTED OTHERWISE.

- 5. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE 6. WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES SHALL BE PROVIDED AT A MAXIMUM OF 4' CENTERS TO
- TRANSFER LATERAL LOADS ON THE WALL TO THE FLOOR DIAPHRAGM. THE BLOCKING SHALL BE SECURELY NAILED TO THE JOISTS AND FLOORING. NAIL JOISTS AND BLOCKING TO SILL PLATE WITH (4) 10D NAILS. 7. IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S), NAIL 2X4'S FLAT AT 4' CENTERS WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING, INSTALLED
- UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2X4'S TO THE SILL PLATE WITH (4) 10D NAILS. 8. ALL SILLS AND SLEEPERS SUPPORTED ON CONCRETE OR MASONRY AND FURRING ATTACHED TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT
- 9. JOISTS UNDER BEARING PARTITIONS SHALL BE SIZED TO CARRY THE DESIGN LOAD IN ACCORDANCE WITH IRC SECTION R502.4. 10. JOISTS FRAMING FROM OPPOSITE SIDES OVER BEARING SUPPORTS SHALL LAP A MINIMUM OF 3" AND SHALL BE NAILED TOGETHER WITH A MINIMUM 10D FACE NAILS.
- 11. JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR ON MINIMUM 2"X2" LEDGER STRIPS. 12. HEADER AND TRIMMERS SHALL BE OF SUFFICIENT CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3' FROM THE TRIMMER JOIST BEARING. WHEN THE HEADER SPAN EXCEEDS 4', THE HEADER AND TRIMMER SHALL BE DOUBLED. 13. JOISTS AT SUPPORTS SHALL BE SUPPORTED LATERALLY AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" NOMINAL THICKNESS OR BY ATTACHMENT
- TO A HEADER, BAND OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION.
- 14. ALL WALL COVERINGS TO COMPLY WITH IRC SECTION 702 AND 703 15. ALL RAFTER / COLLAR TIES TO COMPLY WITH IRC SECTIONS 804
- 16. ALL RAFTERS TO HAVE 2x4 COLLAR TIES @ 48" OC IN UPPER 1/3 OF DISTANCE BETWEEN CEILING AND ROOF
- 17. BLOCKING BETWEEN JOISTS UNDER A PERPENDICULAR LOAD-BEARING WALL IS NOT REQUIRED 18. BOTTOM OF ALL FLOOR ASSEMBLIES SHALL BE PROVIDED WITH A 1/2" GYPSUM WALLBOARD MEMBRANE (IF REQUIRED BY LOCAL CODE)
- 19. I-JOIST AND FLOOR TRUSS SYSTEMS SHALL BE FIRE PROTECTED PER IRC AS ADOPTED BY AHJ 20. STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF/ CEILING DIAPHRAGM PER IRC 602.3

. CONCRETE SHALL BE AIR-ENTRAINED (5%-7%) WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI FOR BASEMENT AND INTERIOR FLOOR SLABS, 3000 PSI FOR BASEMENT AND FOUNDATION WALLS AND 3500 PSI FOR PORCHES, CARPORTS AND GARAGE FLOOR SLABS.

1. PROVIDE ONE WINDOW FOR EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 S.F. WITH A MINIMUM OPENABLE HEIGHT OF 24" AND WIDTH OF 21". IN ADDITION, THE OPENABLE PORTION OF EGRESS WINDOWS SHALL NOT EXCEED 44" ABOVE THE ADJOINING FLOOR OR PERMANENT STEP. 2. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA AND ON EACH FLOOR INCLUDING BASEMENTS. ALARMS SHALL BE

INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING. 3. PROVIDE CARBON MONOXIDE ALARMS AS REQUIRED PER IRC. CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA. WHERE FUEL-BURNING APPLIANCES ARE LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED IN THE BEDROOM.

#### 1. THE GARAGE FLOOR SHALL SLOPE TOWARDS THE GARAGE DOORWAYS OR SLOPE TO A TRENCH OR UNTRAPPED DRAIN THAT DISCHARGES DIRECTLY TO THE EXTERIOR

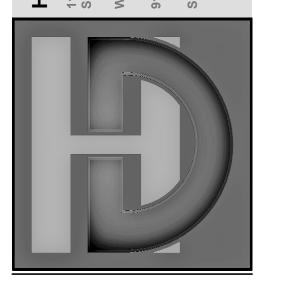
- ABOVE GRADE. 2. DOORS BETWEEN THE GARAGE AND DWELLING - MINIMUM 1 3/8" SOLID WOOD, SOLID OR HONEY-COMBED CORE STEEL DOOR NOT LESS THAN 1 3/8" THICK, OR 20 -MINUTE FIRE - RATED EQUIPPED WITH SELF CLOSING DEVICE PER IRC2018 R302.5.1..
- 3. GARAGE VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115-MPH 3-SECOND GUST LOADING PER DASMA 108 AND ASTM E 330-96 PER IRC2018 R301.2.1 4. THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY MINIMUM 5/8" GYPSUM BOARD APPLIED TO THE GARAGE SIDE. WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE, THE FLOOR CEILING ASSEMBLY SHALL BE PROTECTED WITH MINIMUM 5/8" TYPE X GYPSUM BOARD ON THE GARAGE CEILING. WHERE
- A FLOOR/CEILING SPACE IS PROVIDED ABOVE THE GARAGE COLUMNS AND BEAMS SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED WITH 5/8" GYPSUM BOARD 5. GARAGE DOOR H-FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL JAMBS RUNNING FROM FLOOR TO CEILING ATTACHED WITH 1 3/4"X.120" NAILS AT 7" CENTERS STAGGERED WITH (7) 3 1/4"X.120" NAILS THRU THE JAMB INTO THE HEADER, MINIMUM 2X8 HEADER
- FOR ATTACHMENT OF COUNTER BALANCE SYSTEM. 6. ANY ATTACHED GARAGE TO THE MAIN HOUSE SHALL BE PROVIDED WITH A SINGLE HEAT DETECTOR. HEAT DETECTOR SHALL BE HARDWIRED AND INTERCONNECTED

### WITH THE HOUSEHOLD SMOKE ALARM SYSTEM. HEAT DETECTOR SHALL BE LISTED FOR THE AMBIENT ENVIRONMENT AND INSTALLED PER MANF. INSTRUCTIONS.

1. BUILDING ENVELOPE INSULATION SHALL COMPLY WITH IRC TABLE N1102.1.1 OR THE 2018 IECC. 2. BUILDING THERMAL ENVELOPE IS REQUIRED TO BE SEALED PER 2018 IRC N1102.4.1 & TABLE N1102.4.1.1.

I. ENCLOSED ATTICS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATING OPENINGS SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE MESH, WITH 1/8" TO 1/4" OPENINGS. THE TOTAL FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF SPACE VENTILATED, EXCEPT WHERE THE VENTILATORS AREA LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED THE REQUIRED AREA MAY BE REDUCED TO 1/300.

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11/05/2021 DATE: CHECKED BY: CLS

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NO.	ISSUE/REVISION	Revision Date

**GENERAL NOTES** 

## **TABLE R602.3(1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS**

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF a,b,c FASTENER	SPACING OF FASTENERS
1	DI OCKING DETWEEN JOISTS OF PAETERS TO TOP DI ATE TOE NAIL	<b>ROOF</b> 4-8D BOX (2 1/2" X 0.113")	TOE NAIL
•	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE, TOE NAIL	3-8D (2 1/2" X 0.113") 3-10D (3"X0.128")	
2	CEILING JOISTS TO PLATE, TOE NAIL	3-3"X 0.131" NAILS	PER JOIST, TOE NAIL
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (SEE SECTION R802.5.2 AND TABLE R802.52	4-10D BOX (3"X 0.128") 3-16D COMMON (3 1/2"X 0.162") 4-3"X 0.131"NAILS	FACE NAIL
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) SEE SECTION R802.5.2 AND TABLE R802.5.2)	TABLE R802.5.2	FACE NAIL
5	COLLAR TIE TO RAFTER, FACE NAIL OR 1 1/4" X 20GA. RIDGE STRAP TO RAFTER	4-10D BOX (3" X 0.128") 3-10D COMMON (3" X 0.148") 4-3" X 0.131" NAILS	FACE NAILS EACH RAFTER
6	RAFTER OR ROOF TRUSS TO PLATE	3-16D BOX NAILS (3 1/2" X0.135") 3-10D COMMON NAILS (3" X 0.148" 4-10D BOX (3" X 0.128" 4-3" X0.131" NAILS	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS <sup>1</sup>
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR ROOF	4-16D(3 1/2" X 0.135"); OR 3-10D COMMON (3" X 0.148") 4-10D BOX (3" X 0.128"); OR 4-3" X 0.131" NAILS	TOE NAIL
·	RAFTER TO MINIMUM 2" RIDGE BEAM	3-16D(3 1/2" X0.135"); OR 2-16D COMMON (3 1/2" X0.162") 3-10D BOX (3" X 0.128"); OR 3-3" X 0.131" NAILS	, , , , , , , , , , , , , , , , , , , ,
		WALL	
8	STUD TO STUD (NOT BRACED WALL PANELS)	16D (3 1/2" X 0.162")	24" OC FACE NAIL
	, , , , , , , , , , , , , , , , , , ,	10D BOX (3" X 0.128"); OR 3" X 0.131" NAILS	16" OC FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16D BOX (3 1/2" X 0.135"); OR 3" X 0.131" NAILS	12" OC FACE NAIL
<del>-</del>	<u> </u>	16D COMMON (3 1/2" X 0.162")	16" OC FACE NAIL
10	BUILT-UP HEADER (2" TO 2" HEADER WITH 1/2" SPACER)	16D COMMON (3 1/2" X 0.162")	16" OC EACH EDGE FACE NAIL
10		16D BOX (3 1/2" X 0.135")	12" OC EACH EDGE FACE NAIL
11	CONTINUOUS HEADER TO STUD	5-8D BOX (2 1/2" X 0.113") or 4-8D COMMON (2 1/2" X 0.131") 4-10D BOX (3" X 0.128")	TOE NAIL
12	TOP PLATE TO TOP PLATE	16D COMMON (3 1/2" X 0.162")	16" OC FACE NAIL
12	TOP PLATE TO TOP PLATE	10D BOX (3" X 0.128") OR 3" X 0.131" NAILS	12" OC FACE NAIL
13	DOUBLE TOP PLATE SPLICE	8-16D COMMON (3 1/2" X 0.162"); or 12-16D BOX (3 1/2" X 0.135"); or 12-10D BOX (3" X 0.128"); or 12-3" X 0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOI (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
1.1	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING	16D COMMON (3 1/2" X 0.162")	16" OC FACE NAIL
14	(NOT AT BRACED WALL PANELS	16D BOX (3 1/2" X 0.135"); OR 3" X 0.131" NAILS	12" OC FACE NAIL
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS	3-16D BOX (3 1/2" X 0.135"); or 2-16D COMMON (3 1/2" X0.162"); or 4-3" X 0.131" NAILS	3, 2, OR 4 EACH 16" OC FACE NAIL
16	TOP OR BOTTOM PLATE TO STUD	4-8D BOX (2 1/2" X 0.113"); or 3-16D BOX (3 1/2" X0.135"); or 4-8D COMMON (2 1/2" X0.131");or 4-10D BOX (3" X0.128"); or 3-3" X 0.131" NAILS	TOE NAIL
		3-16D BOX (3 1/2" X 0.135"); or 2-16D COMMON (3 1/2" X0.162"); or 3-10D BOX (3" X0.128");or 3-3" X 0.131" NAILS	END NAIL
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10D BOX (3" X 0.128"); or 2-16D COMMON (3 1/2" X0.162"); or 3-3" X 0.131" NAILS	FACE NAIL
18	1" BRAVE TO EACH STUD AND PLATE	3-8D BOX (2 1/2" X 0.113"); or 2-8D COMMON (2 1/2" X0.131") or 2-10D BOX (3" X 0.128"); or 2 STAPLES 1 3/4"	FACE NAIL
19	1" X 6" SHEATHING TO EACH BEARING	3-8D BOX (2 1/2" X 0.113"); or 2-8D COMMON (2 1/2" X0.131") or 2-10D BOX (3" X 0.128"); or 2 STAPLES 1" CROWN, 16GA., 1 3/4" LONG	FACE NAIL
20	1" X 8" AND WIDER SHEATHING TO EACH BEARING	3-8D BOX (2 1/2" X 0.113"); or 3-8D COMMON (2 1/2" X0.131") or 3-10D BOX (3" X 0.128"); or 3 STAPLES, 1" CROWN, 16GA., 1 3/4" LONG	FACE NAIL
		WIDER THAN 1" X 8" 4-8D BOX (2 1/2" X 0.113"); or 3-8D COMMON (2 1/2" X0.131") or 3-10D BOX (3" X 0.128"); or 4 STAPLES, 1" CROWN, 16GA., 1 3/4" LONG	TAGETORIE
		FLOOR	
21	JOIST TO SILL, TOP PLATE OR GIRDER	4-8D BOX (2 1/2" X 0.113"); or 3-8D COMMON (2 1/2" X0.131") or 3-10D BOX (3" X 0.128"); or 3-3" X 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" X 0.113") 8D COMMON (2 1/2" X 0.131"); or 10D BOX(3" X0.128") or 3-3" X 0.131" NAILS	4" OC TOE NAIL 6" OC TOE NAIL
23	1" X 6" SUBFLOOR OR LESS TO EACH JOIST	3-8D BOX (2 1/2" X 0.113"); or 2-8D COMMON (2 1/2" X0.131") or 3-10D BOX (3" X 0.128"); or 2 STAPLES, 1" CROWN, 16GA., 1 3/4" LONG	FACE NAIL
24	2" SUBFLOOR TO JOIST OR GIRDER	3-16D BOX (3 1/2" X 0.135"); or 2-16D COMMON (3 1/2" X0.162")	BLIND AND FACE NAIL
25	2" PLANKS (PLANK & BEAM-FLOOR AND ROOF)	3-16D BOX (3 1/2" X 0.135"); or 2-16D COMMON (3 1/2" X0.162")	AT EACH BEARING, FACE NAIL
26	BAND OR RIM JOIST TO JOIST	3-16D COMMON (3 1/2" X 0.162"); or 4-10D BOX (3" X0.128") or 4-3" X 0.131" NAILS; or 4-3" X 14GA. STAPLES, 7/16" CROWN	END NAIL  NAIL EACH LAYER AS FOLLOWS: 32" (
27	BUILT-UP GIRDERS AND BEAMS, 2-INCH LUMBER LAYERS	20D COMMON (4" X 0.192"); or  10D BOX (3" X 0.128"); or 3" X 0.131" NAILS  AND: 2-20D COMMON (4" X 0.192"); or	AT TIP AND BOTTOM AND STAGGERE 24" OC FACE NAIL AT TOP AND BOTTO STAGGERED ON OPPOSITE SIDES
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3-10D BOX (3" X 0.128; or 3-3" X 0.131" NAILS  4-16D BOX (3 1/2" X 0.135"): or  3-26D COMMON (3 1/2" X 0.162"); or  4-10D BOX (3" X 0.128"); or 4-3" X 0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NA
		2-10D BOX (3" X 0.128"): or 2-8D COMMON	EACH END, TOE NAIL

. 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 CEILING JOIST TO TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE. THE TOE NAIL ON THE OPPOSITE

#### **CONTINUED TABLE R602.3(1)** FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF a,b,c	SPACING OF FASTENERS					
IIEW	FASTENER		EDGES (INCHES)h	INTERMEDIATE c, e SUPPORTS (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"X 0.113" NAIL (SUBFLOOR, WALL) i 8D COMMON (2 1/2" X 0.131 NAIL (ROOF); or RSRS-01 (2 3/8" X 0.113" NAIL (ROOF) j	6	12 f				
31	19/32" - 1"	8D COMMON NAIL (2 1/2" X 0.131; or RSRS-01; 2 3/8" X 0.113) NAIL ROOF j	6	12 f				
32	1 1/8" - 1 1/4"	10D COMMON NAIL (3" X 0.148) NAIL; or 8D (2 1/2" X 0.131") DEFORMED NAIL	6	12				
	יס	THER WALL SHEATHING <sup>9</sup>						
33	1/2" STRUCTURAL CELLULOSE FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOF NAIL, 7/16" HEAD DIAMETER, OR 1 1/4" LONG 16GA. STAPLE WITH 7/16" OR 1" CROWN	3	6				
34	25/32" STRUCTURAL CELLULOSE FIBERBOARD SHEATHING	1 3/4" GALVANIZED ROOF NAIL, 7/16" HEAD DIAMETER, OR 1 1/2" LONG 16GA. STAPLE WITH 7/16" OR 1" CROWN	3	6				
35	1/2" GYPSUM SHEATHING <sup>d</sup>	1 1/2" GALVANIZED ROOF NAIL, STAPLE GALVANIZED, 11/2" LONG; 1 1/4" SCREWS, TYPE W or S	7	7				
36	5/8" GYPSUM SHEATHING <sup>d</sup>	1 3/4" GALVANIZED ROOF NAIL; STAPLE GALVANIZED, 1 5/8" LONG; 1 5/8" SCREWS, TYPE W or S	7	7				
	WOOD STRUCTURAL PANELS, CO	MBINATION SUBFLOOR UNDERLAYMENT TO FRAMING						
37	3/4" AND LESS	6D DEFORMED (2" X 0.120") NAIL OR 8D COMMON (2 1/2" X 0.131") NAIL	6	12				
38	7/8" - 1"	8D COMMON (2 1/2" X 0.131") NAIL OR 8D DEFORMED (2 1/2" X 0.120") NAIL	6	12				
39	1 1/8" - 1 1/4"	10D COMMON (3" X 0.148") NAIL OR 8D DEFORMED (2 1/2" X 0.120") NAIL	6	12				

For SI: 1 inch = 25.4mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi = 6.895 MPa.

## TABLE R 602.3(5) SIZE, HEIGHT, AND SPACING OF WOOD STUDS

	BEARING WALLS					NON-BEARING WALLS	
STUD SIZE (IN)	LATERALLY UNSUPPORTED STUD HEIGHT <sub>a</sub> (feet)	MAXIMUM SPACING WHERE SUPPORTING A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY, ONLY (inches)	MAXIMUM SPACING WHERE SUPPORTING ONE FLOOR, PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (inches)	MAXIMUM SPACING WHERE SUPPORTING TWO FLOORS, PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (inches)	MAXIMUM SPACING WHERE SUPPORTING ONE FLOOR HEIGHT a (inches)	LATERALLY UNSUPPORTED STUD HEIGHT a (feet)	LATERALLY UNSUPPORTED STUD HEIGHT (feet)
2x3 <sup>b</sup>						10	16
2x4	10	24 <sub>c</sub>	16 c		24	14	24
3x4	10	24	24	16	24	14	24
2x5	10	24	24		24	16	24
2x6	10	24	24	16	24	20	24

a. LISTED HEIGHTS ARE DISTANCES BETWEEN POINTS OF LATERAL SUPPORT PLACED PERPENDICULAR TO THE PLANE OF THE WALL. BEARING WALL SHALL BE SHEATHED ON NOT LESS THAN ONE SIDE OR BRIDGING SHALL BE INSTALLED NOT GREATER THAN 4 FEET APART MEASURED VERTICALLY FROM EITHER END OF THE STUD. INCREASES IN UNSUPPORTED HEIGHT ARE PERMITTED WHERE IN COMPLIANCE WITH EXCEPTION 2 OF SECTION R602.3.1 OR DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING

c. A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2X4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE

DESCRIPTION OF RUIL DING ELEMENTS	NUMBER AND TYPE OF a,b,c	SPACING OF FASTENERS		
DESCRIPTION OF BUILDING ELEMENTS	FASTENER	EDGES (INCHES)h	INTERMEDIATE c, e SUPPORTS (INCHES)	
	R WALL SHEATHING TO FRAMING AND PARTICLEBOARD W. CTURAL PANEL EXTERIOR WALL SHEATHING TO WALL FRA			
3/8"- 1/2"	6D COMMON (2"X 0.113" NAIL (SUBFLOOR, WALL) i 8D COMMON (2 1/2" X 0.131 NAIL (ROOF); or RSRS-01 (2 3/8" X 0.113" NAIL (ROOF) j	6	12 f	
19/32" - 1"	8D COMMON NAIL (2 1/2" X 0.131; or RSRS-01; 2 3/8" X 0.113) NAIL ROOF j	6	12 f	
1 1/8" - 1 1/4"	10D COMMON NAIL (3" X 0.148) NAIL; or 8D (2 1/2" X 0.131") DEFORMED NAIL	6	12	
C	OTHER WALL SHEATHING <sup>g</sup>			
TRUCTURAL CELLULOSE FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOF NAIL, 7/16" HEAD DIAMETER, OR 1 1/4" LONG 16GA. STAPLE WITH 7/16" OR 1" CROWN	3	6	
TRUCTURAL CELLULOSE FIBERBOARD SHEATHING	1 3/4" GALVANIZED ROOF NAIL, 7/16" HEAD DIAMETER, OR 1 1/2" LONG 16GA. STAPLE WITH 7/16" OR 1" CROWN	3	6	
1/2" GYPSUM SHEATHING <sup>d</sup>	1 1/2" GALVANIZED ROOF NAIL, STAPLE GALVANIZED, 11/2" LONG; 1 1/4" SCREWS, TYPE W or S	7	7	
5/8" GYPSUM SHEATHING <sup>d</sup>	1 3/4" GALVANIZED ROOF NAIL; STAPLE GALVANIZED, 1 5/8" LONG; 1 5/8" SCREWS, TYPE W or S	7	7	
WOOD STRUCTURAL PANELS, C	OMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
3/4" AND LESS	6D DEFORMED (2" X 0.120") NAIL OR 8D COMMON (2 1/2" X 0.131") NAIL	6	12	
7/Ω" 1"	8D COMMON (2 1/2" X 0.131") NAIL OR	6	12	

	BEARING WALLS					NON-BEARING WALLS	
STUD SIZE (IN)	LATERALLY UNSUPPORTED STUD HEIGHT <sub>a</sub> (feet)	MAXIMUM SPACING WHERE SUPPORTING A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY, ONLY (inches)	MAXIMUM SPACING WHERE SUPPORTING ONE FLOOR, PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (inches)	MAXIMUM SPACING WHERE SUPPORTING TWO FLOORS, PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (inches)	MAXIMUM SPACING WHERE SUPPORTING ONE FLOOR HEIGHT a (inches)	LATERALLY UNSUPPORTED STUD HEIGHT a (feet)	LATERALLY UNSUPPORTED STUD HEIGHT (feet)
2x3 <sup>b</sup>						10	16
2x4	10	24 c	16 c		24	14	24
3x4	10	24	24	16	24	14	24
2x5	10	24	24		24	16	24
2x6	10	24	24	16	24	20	24

#### FOR SI: 1 INCH = 25.4mm, 1 FOOT = 304.8mm

MIN. DESIGN REQUIREMENTS

## MINIMUM MECHANICAL EQUIPMENT EFFICIENCY VALUES BY COMPONENT, PER IRC2018 N1103.6.1

FAN LOCATION	AIR FLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY CFM/WATT	AIR FLOW RATE MAXIMUM (CFM)
HRV OR ERV	ANY	1.2 CFM/WATT	ANY
RANGE HOOD	ANY	2.8 CFM/WATT	ANY
IN-LINE FAN	ANY	2.8 CFM/WATT	ANY
BATHROOM UTILITY FAN	10	1.4 CFM/WATT	<90
BATHROOM UTILITY FAN	90	2.8 CFM/WATT	ANY

## CATHEDRAL / VAULTED CEILING **FRAMING AND INSULATION**

MINIMUM R-38 INSULATION REQUIRED, SEE DETAIL 14/S-1.2

WHERE THE CEILING IS APPLIED DIRECTLY TO THE BOTTOM OF THE RAFTERS, A MINIMUM 1" AIR SPACE SHALL BE PROVIDED BETWEEN THE TOP OF THE INSULATION AND THE SHEATHING FOR VENTILATION (R806.3) NOTE: RAFTER SIZES SPECIFIED ON PLANS ARE THE MINIMUM REQUIRED FOR STRUCTURAL PURPOSES ONLY.

IF FULL RAFTER DEPTH IS NOT ADEQUATE FOR MINIMUM INSULATION VALUE, RAFTER SIZES WILL NEED TO BE INCREASED, OR ADEQUATE FURRING SHALL BE USED TO OBTAIN THE MINIMUM JOIST DEPTH FOR THE REQUIRED INSULATION. IN ADDITION, IF THE RAFTER SIZE IS INCREASED IT SHALL BE VERIFIED THAT THE RIDGE BE A MINIMUM OF ONE NOMINAL SIZE LARGER THAN THE RAFTERS BEING RECEIVED. (SEE CHART BELOW)

MAXIMUM INSULATION VALUE	2x6	2x8	2x10	2x12
1" AIR SPACE (FIBERGLASS)	R-13, 3 1/2"	R-19, 6 1/4"	CONDENSED R-38, 8 1/4"	R-38, 10 1/4"

#### MINIMUM INSULATION & FENSTRATION VALUES BY COMPONENT, PER IRC2018 N1102.1.2

CLIMATE ZONE	FENSTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED SHGC FENSTRATION	INSULATED METAL DOOR U-VALUE	INSULATED WOOD DOOR U-VALUE	CEILING R-VALUE	WOOD FRAMED WALL R-VALUE	FLOOR R-VALUE		SLAB R-VALUE & DEPTH		DUCTWORK OVER OUTSIDE R-VALUE	•
4 EXCEPT MARINE	0.32	0.55	0.40	0.60	0.50	49	20 OR 13 CAV. +5	19	10 CONTINUOUS OR 13 CAVITY	R-10, 2 FT.	10 CONTINUOUS OR 13 CAVITY	8	6

NOTES: 1) BUILDING THERMAL ENVELOPE IS REQUIRED TO BE SEALED WITH AN AIR BARRIER AS PER N1102.4.1 OF THE 2018 IRC 2) RECESSED LIGHTING SHALL BE SEALED TO PREVENT LEAKAGE BETWEEN THE CONDITIONED SPACE AND UNCONDITIONED SPACE 3) ALL DUCTS, AIR HANDLERS, FILTER BOXES, AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED AS PER N1103.2 OF THE 2018 IRC

PLANS SHALL RELIEVE HD ENGINEERING & DESIGN OF ALL RESPONSIBILITIES OF THE CONSEQUENCES.

NAILS FOR SHANK DIAMETERS LARGER THANK 0.142 INCH BUT NOT LARGER THANK 0.177 INCH, AND 100 KSI FOR SHANK DIAMETER OF 0.142 INCH OR LESS. RESIDENTIAL CONSTRUCTION AND A THOROUGH UNDERSTANDING OF THE INTERNATIONAL RESIDENTIAL CODE (IRC). THE CONTRACTOR WARRANTS TO HD ENGINEERING & DESIGN THAT HE POSSESSES THE PARTICULAR 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) FOR REGIONS HAVING BASIC WIND SPEED OF 110 MPH OR GREATER, 8D DEFORMED (2 1/2" X 0.120) NAILS SHALL BE USED FOR ATTACHING PLYWOOD AND WOOD STRUCTURAL PANEL ROOF SHEATHING TO FRAMING WITHIN MINIMUM 48-INCHES DISTANCE FROM GABLE END WALLS, IF MEAN ROOF DESIGN 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 HEIGHT IS MORE THAN 25 FEET, UP TO 35 FEET MAXIMUM.
g. FOR REGIONS HAVING BASIC WIND SPEED OF 100 MPH OR LESS, NAILS FOR ATTACHING WOOD STRUCTURAL PANEL ROOF SHEATHING TO GABLE END WALL FRAMING SHALL BE SPACED 6 INCHES ON CENTER. WHEN BASIC WIND SPEED IS GREATER THAN 100 MPH, NAILS FOR ATTACHING PANEL ROOF SHEATHING TO INTERMEDIATE SUPPORTS SHALL BE SPACED 6 INCHES ON CENTER FOR MINIMUM 48-INCH DISTANCE FROM RIDGES, EAVES AND GABLE END WALLS; AND 4 INCHES ON CENTER TO GABLE END WALL FRAMING.
h. GYPSUM SHEATHING SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH GA 253. FIBERBOARD SHEATHING SHALL CONFORM TO ASTM C 208. CHANGES MADE FROM THE PLANS WITHOUT THE CONSENT OF HD ENGINEERING & DESIGN 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 i. SPACING OF FASTENERS ON FLOOR SHEATHING PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRE BLOCKING AND AT ALL FLOOR PERIMETERS ONLY. SPACING OF FASTENERS ON ROOF SHEATHING PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING. BLOCKING OF ROOF OR FLOOR SHEATHING PANEL EDGES PERPENDICULAR TO THE FRAMING MEMBERS OR SOLID BLOCKING.

OR HOMEOWNER FOR CONSTRUCTION OF ANY ASPECT OF THE PROJECT, HD ENGINEERING & DESIGN OR A QUALIFIED ENGINEER SHALL IMMEDIATELY BE RETAINED. FAILURE TO NOTIFY US OF THESE NEEDS OR OF CHANGES TO THE

## **DESIGN LOADS (PSF)**

THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS

THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS					
AREA	MIN DEAD LOAD	MIN LIVE LOAD			
EXTERIOR BALCONIES	10	60			
DECKS, STAIRS	10	40			
CEILING JOISTS / ATTICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE 3:12 OR LESS	10	10			
CEILING JOISTS / ATTICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE OVER 3:12	10	10			
CEILING JOISTS / ATTICS WITH STORAGE - DOOR PULL DOWN LADDER ACCESS	10	20			
ROOMS: NON-SLEEPING	10	40			
ROOMS: SLEEPING	10	30			
ROOF: LIGHT ROOF COVERING	10	20			
ROOF: HEAVY ROOF COVERING / CONCRETE / TILE / SLATE	20	20			
GUARDRAILS, HANDRAILS	200# LL	NORMAL			

ROOF COVERING MATERIAL (TILE, CONCRETE, SLATE, ETC.) SHALL NOT ED UNLESS 20 PSF DEAD LOAD AND HEAVY ROOF IS NOTED ON THE PLAN. IF HEAVY ROOFING IS TO BE USED AND NOT NOTED ON THE ROOF NOTIFY ENGINEER PRIOR TO ANY CONSTRUCTION. INCLUDING DATION AND SITE WORK. IF THE PLAN HAS BEEN DESIGNED FOR HEAVY LOADS IT WILL BE NOTED IN THE ROOF NOTES ON THE ROOF PLAN.

## **COLUMN SCHEDULE**

BASED ON FOOTING SIZE (ASSUME 1500 PSF SOIL)

PAD SIZE	REINFORCEMENT	COL. MIN.	COL. TYPE	MAX. LOAD
24x24x12	(4) #4 BARS E/W	3"	SCH40	6K
30x30x12	(5) #4 BARS E/W	3"	SCH40	9.4K
36x36x12	(6) #4 BARS E/W	3"	SCH40	13.5K
42x42x14	(7) #4 BARS E/W	3 1/2"	SCH40	18.4K
48x48x16	(8) #4 BARS E/W	3 1/2"	SCH40	24.0K
54x54x16	(9) #4 BARS E/W	3 1/2"	SCH40	30.4K
60x60x18	(10) #4 BARS E/W	3 1/2"	SCH40	37.5K

COLUMN CONNECTION TO STEEL BEAMS SHALL BE WITH A CLIP POST CAP WITH ALL FOUR TAB EARS BENT AROUND THE BOTTOM FLANGE OF THE BEAM. FOR A BEARING PLATE, FOUR HOLES SHALL BE DRILLED IN THE BOTTOM FLANGE OF THE STEEL BEAM TO MATCH THE HOLE PATTERN OF THE PLATE. 1/2" X 2" BOLTS SHOULD THEN BE INSTALLED WITH A FLAT WASHER, LOCK WASHER, AND A NUT IN EACH OF THE HOLES. THE POST CAP MAY BE WELDED TO THE STEEL BEAM IN ACCORDANCE WITH AWS D1.1-92 AS AN ALTERNATIVE, AND WOULD NEED TO BE INSPECTED BY AN AWS-CERTIFIED INSPECTOR.

## **ENGINEERED LUMBER**

	F <sub>b</sub> (psi)	E (psi)	F <sub>v</sub> (psi)
LVL	2600	1.8x10	285
GLULAM	2400	1.8x10	190
PARALAM	2600	2.0x10	290

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ELONGINING TO HD ENGINEERII

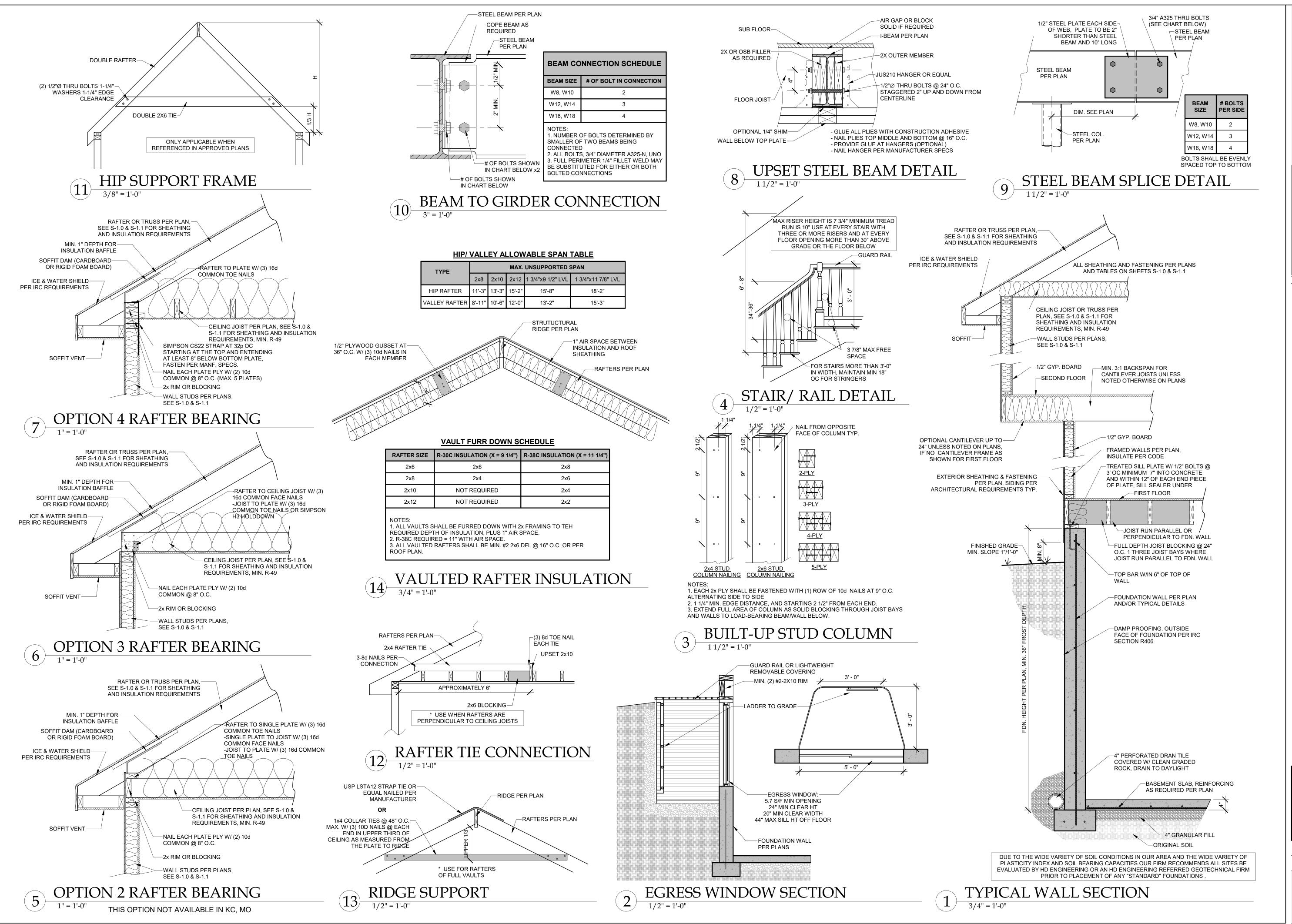
SEMINATION. OR DUPLICATION O

NO.	ISSUE/REVISION	Revision Date

**GENERAL NOTES** 

AS NOTED FOR PLAN REVIEW LEE'S SUMMIT, MISSOURI 11/30/2021

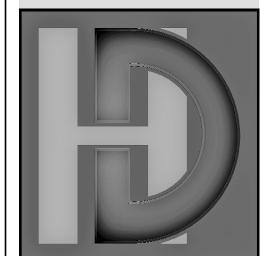
INCREASED TO 2X6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.



ENGINEER S. COM

ENGINE

THIS DOCUMENT CONTAINS





SAB HOMES, INC.
SOLAIA HF025
HOOK FARM DR. LEE'S SUMMIT,

D#: 42762

DATE: 11/05/2021

CHECKED BY: CLS

NO. ISSUE/REVISION Revision Date

FRAMING SECTIONS

S-1.2

IGINEERING & DESIGN
RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
11/30/2021

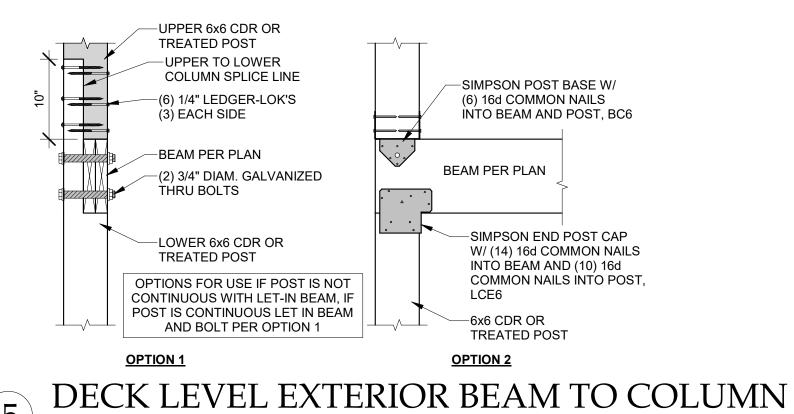
**CANNOT PASS A 4" SPHERE** 

THE BOTTOM RAIL AND FLOOR

BETWEEN BALUSTERS OR

# TREADS OVERHANGE 5" EACH SIDE (3) STRINGERS 36" OC THE DECK LEVEL INTERIOR BEAM TO COLUMN

TOP OF EACH STRINGER IS-



-UPPER 6x6 CDR OR

-UPPER TO LOWER

-(6) 1/4" LEDGER-LOK'S

COLUMN SPLICE LINE

-(2) 3/4" DIAM. GALVANIZED

OPTIONS FOR USE IF POST IS NOT

CONTINUOUS WITH LET-IN BEAM, IF POST

IS CONTINUOUS LET IN BEAM AND BOLT

PER OPTION 1

TREATED POST

(3) EACH SIDE

-BEAM PER PLAN

-LOWER 6x6 CDR OR

TREATED POST

THRU BOLTS

#### SIMPSON LS900 GUSSET ANGLES OR EQUIVALENT, NAILED TO BOTH SIDES OF DOUBLED JOISTS OR DOUBLED WOOD I-JOISTS WITH 12 - N10 NAILS 1X4 TREATED SPACER-NAILED TO THE HOUSE -DOUBLED 2X10'S OR DOUBLED I-RIM W/ (3) - 16d NAILS JOISTS AT 16" OC WITH SOLID **BLOCKING BETWEEN EACH JOIST** 2x TREATED LEDGER-OVER FOUNDATION WALL 2'-0" (OR PER PLAN) TREATED DECK JOIST--FOUNATION OR FRAMED WALLS PER PLAN, INSULATE PER CODE 1/2" CORROSION RESISTANT LAG-SCREWS OR BOLT MUST PENETRATE HOUSE RIM SEE R507.9.1.3(1) THIS SHEET

## DECK LEDGER TO CANTILEVER

# **TABLE IRC2018 R507.9.1.3(1)** DECK LEDGER CONNECTION TO BAND JOIST (DECK LIVE LOAD = 40 PSF, DECK HEAD LOAD = 10 PSF, SNOW LOAD ≤ 40 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 d, e						
1/2" LAG SCREW WITH 15/32" MAX. SHEATHING <sup>c,d</sup>	30	23	18	15	13	11	10
1/2" DIAM. BOLT WITH 15/32" MAX. SHEATHING <sup>d</sup>	36	36	34	29	24	21	19
1/2" DIAM. BOLT WITH 15/32" MAX. SHEATHING & 1/2" STACKED WASHERS <sup>e</sup>	36	36	29	24	21	18	16

For SI: 1 inch = 25.4mm, 1 foot = 304.8mm, 1 pound per square foot = 0.0479 kPa

a. Ledges shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.

b. Snow load shall not be assumed to act concurrently with live load. c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

d. Sheathing shall be wood structural panel or solid sawn lumber.

e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard lumber or foam sheathing. Up to 1/2" thinckness of stacked washers shall be permitted to substitute for you to 1/2" of allowable sheathing thickness where combined with wood structural panel or lumbers sheathing.

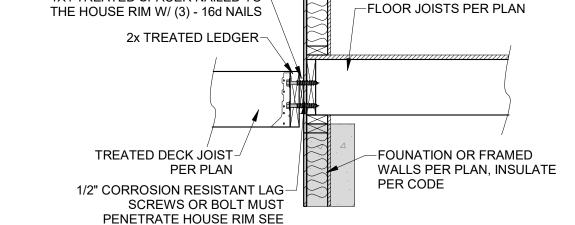
## TABLE IRC2018 R507.9.1.3(2) PLACEMENT OF LAG SCEWS AND BOLT IN **DECK LEDGERS AND BAND JOISTS**

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS						
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING		
LEDGER <sup>a</sup>	2 inches <sup>d</sup>	3/4 inches	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>		
BAND JOIST <sup>c</sup>	3/4 inches	2 inches	2 inches	1 5/8 inches <sup>b</sup>		

For SI: 1 inch = 25.4mm. a. Lag screws of bolts shal lbe staggered from the top to the bottom along the horizontal run of the deck

ledger in accordance with Figure R507.9.1.3(1) b. Maximum 5 inces

c. For engineered rim joists, the manufacturer's recommendations shall govern. d. The minimum distances from bottom row of lag screws or bolts to the top of the ledger shall be in accordance with Figure R507.9.1.3(1)



DECK LEDGER ATTACHMENT

R507.2 THIS SHEET

1X4 TREATED SPACER NAILED TO-

-6x6 CDR OR TREATED POST OR POST PER PLAN LET IN BEAM PER DETAILS THIS SHEET BEAM PER PLAN -SIMPSON LUS SERIES OR **EQUIVALENT FACE MOUNT** JOIST HANGER, TYP. AT EACH JOIST, 2x TREATED FLOOR JOISTS PER PLAN -SIMPSON LUC SERIES OR **EQUIVALENT CONCEALED** FLANGE JOIST HANGER -DECK JOIST OR BEAM PER PLAN

DECK CORNER COLUMN

(DO NOT LET-IN TO COLUMN)

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-UPPER 6x6 CDR OR

SIMPSON POST BASE W/ (6) 16d COMMON NAILS

**INTO BEAM AND POST, BC6** 

-SIMPSON POST CAP W/ (14) 16d

COMMON NAILS INTO BÈAM

AND (10) 16d COMMON NAILS

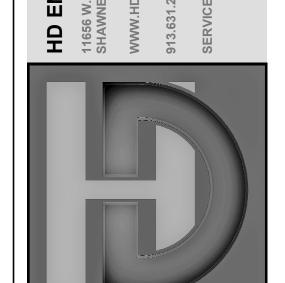
INTO PÓST, AC6

TREATED POST

-6x6 CDR OR

TREATED POST

BEAM PER PLAN

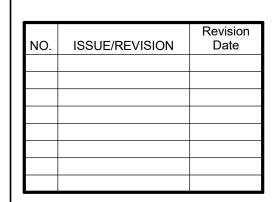




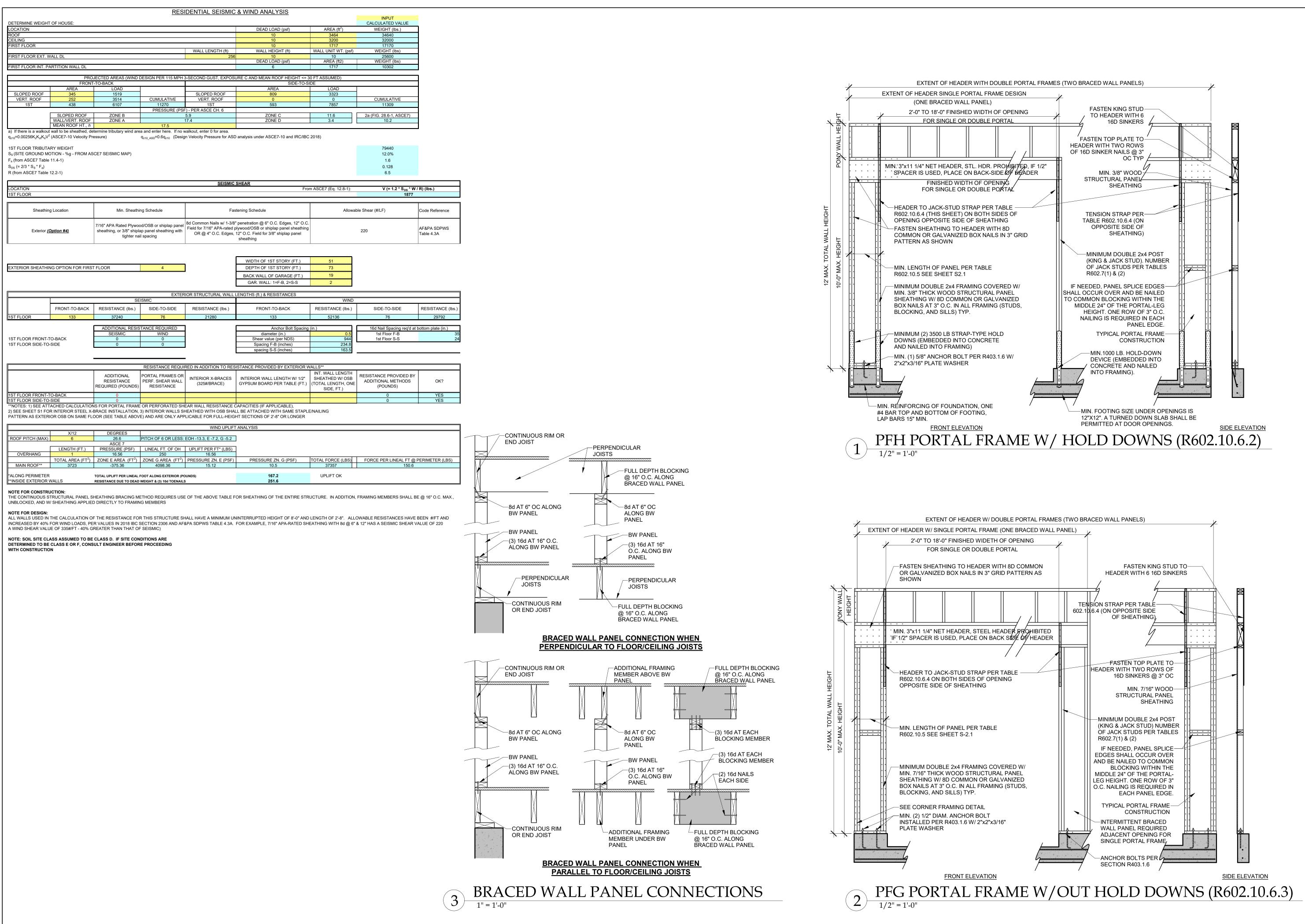
HOOK SAB

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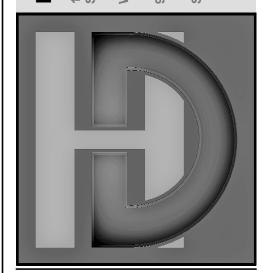
DECK DETAILS

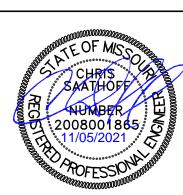


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6 W. 75TH STREET
WNEE, KS 66214
W.HDENGINEERS.COM





INC. E'S SUMMIT, MO

SW HOOK FARM DR. LEE'S

STRUCTURAL DETAILS & NOTES

: 42762

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Revision
Date

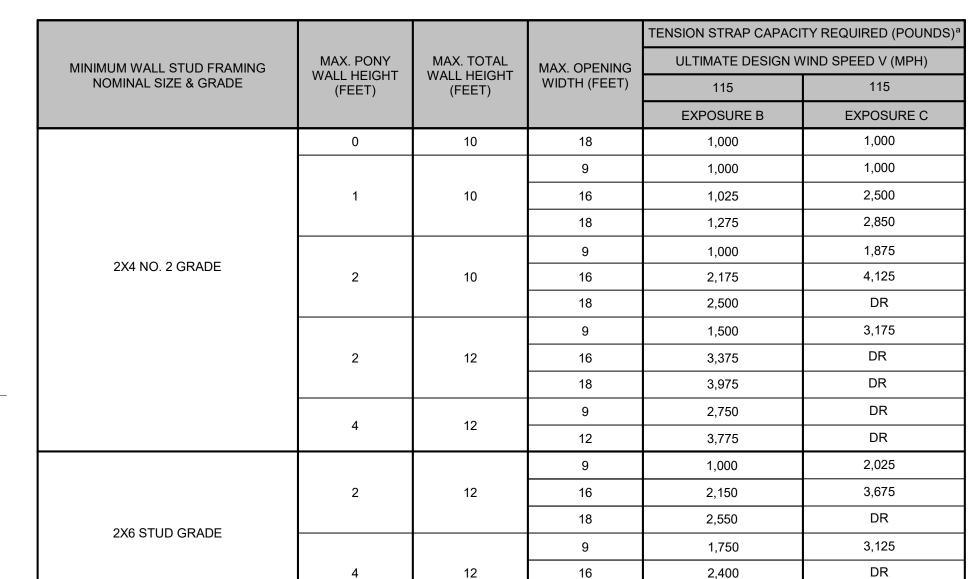
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BRACED WALL NOTES & DETAILS

**S-2.0** 

INEERING & DESIGN
RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
11/30/2021

## TENSION STRAP CAPACITY REQUIRED FOR RESISTING WIND PRESSURES PERPENDICULAR TO METHOD PFH, PFG AND CS-PF **BRACED WALL PANELS IRC2018 TABLE R602.10.6.4**



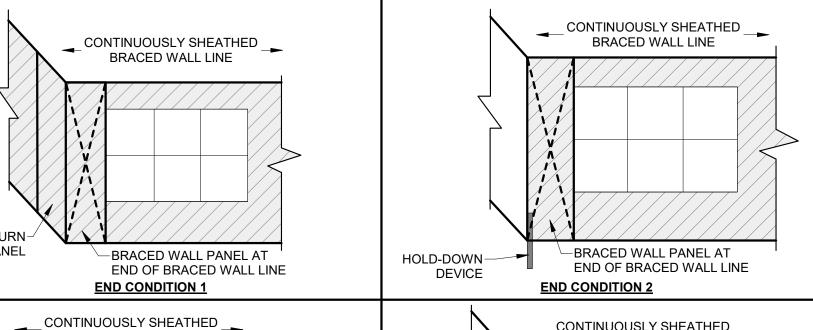
a. DR = DESIGN REQUIRED b. STRAP SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

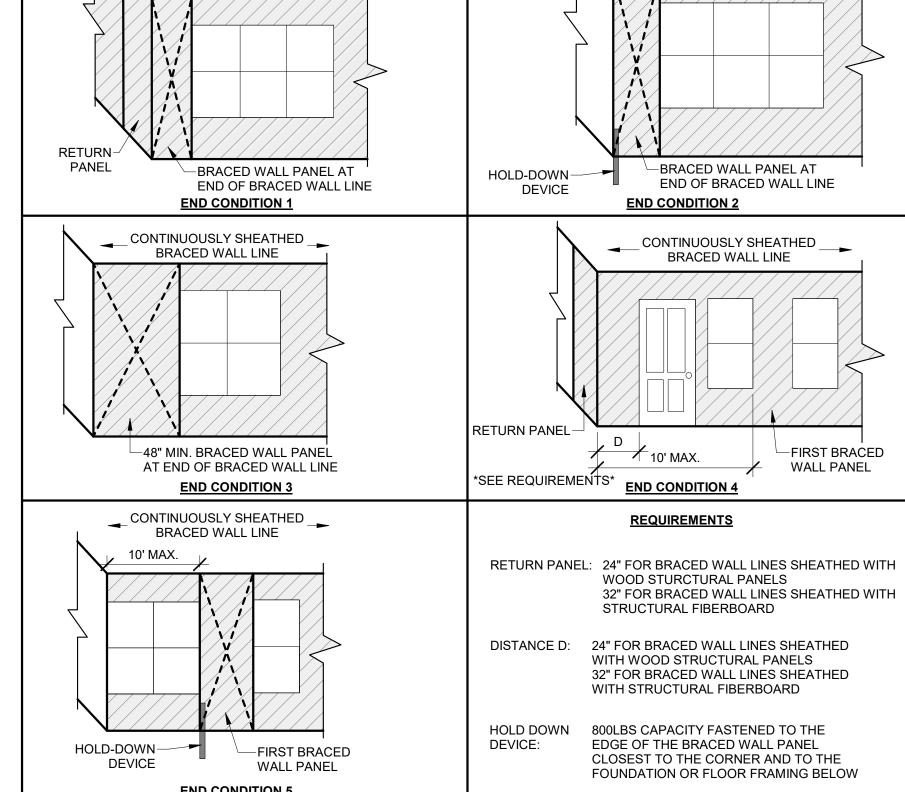
## **END WALL CONDITIONS**

FOR CONTINUOUSLY SHEATHED BRACED WALL LINES

3,800

DR





**END CONDITION 5** TOENAIL EACH FLOOR/CEILING JOIST-OF DIAPHRAGM TO PLATE BELOW

WITH MIN. (3) 8d NAILS OR (2) 18d NAILS

CEILING/FLOOR DIAPHRAGM PER PLAN CEILING/FLOOR JOISTS @ 16" OC WITH PLYWOOD OR GYPSUM DIAPHRAGM ATTACHED PER PLAN

-BLOCKING BETWEEN JOISTS ABOVE WALL, TOENAILED TO WALL W/ (3) 8d NAILS

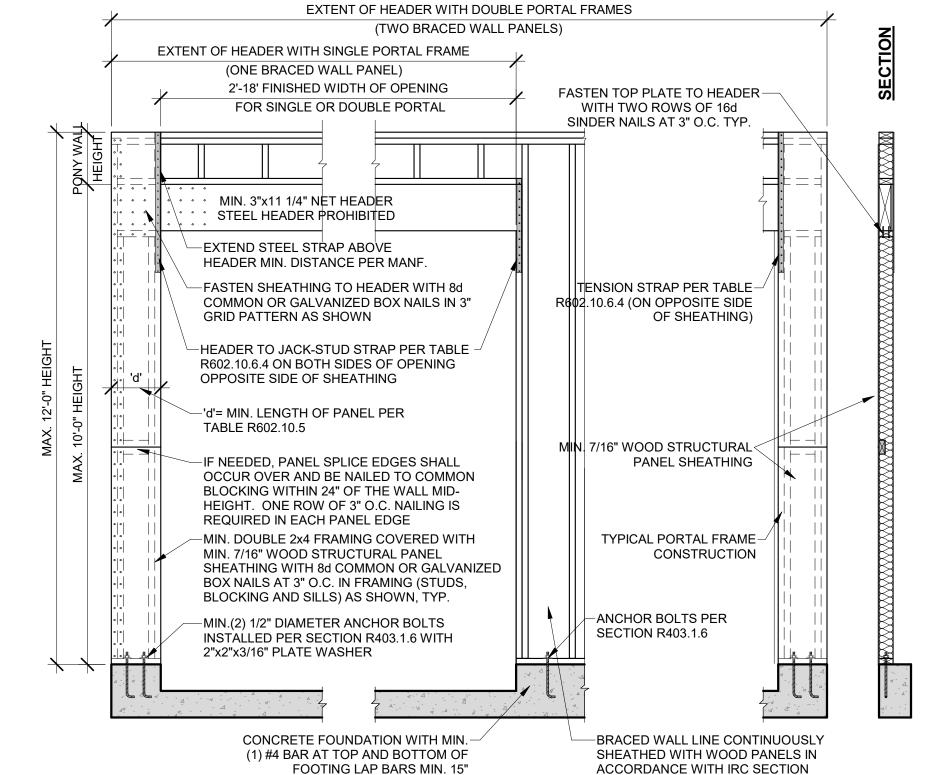
DIAPHRAGM CONNECTION TO INTERIOR WALL

## FRONT ELEVATION

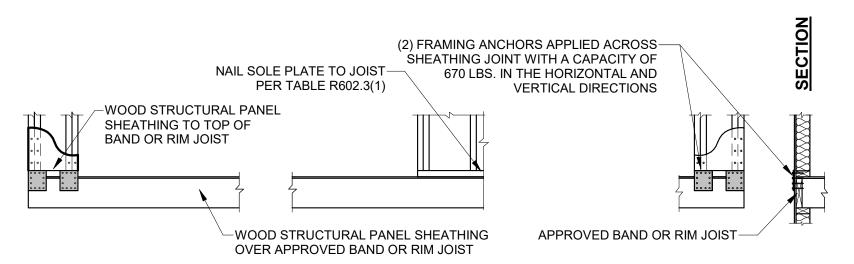
GB BRACING

·1/2† GYPSUM BOARD W/ NO6 - 1 1/4" TYPE "W" OR "S" \$CREWS @

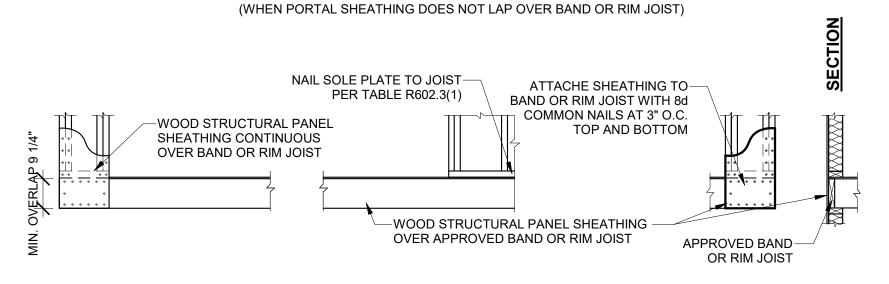
MIN. 410" GYP BOARD BOTH SIDES



## **OVER CONCRETE OR MASONRY BLOCK FOUNDATION**



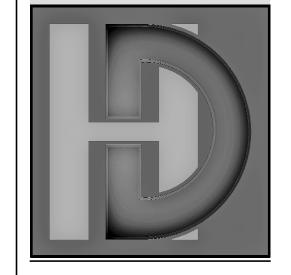
## **OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION**



#### **OVER RAISED WOOD FLOOR - OVERLAP OPTION** (WHEN PORTAL SHEATHING LAPS OVER BAND OR RIM JOIST)

CS-PF

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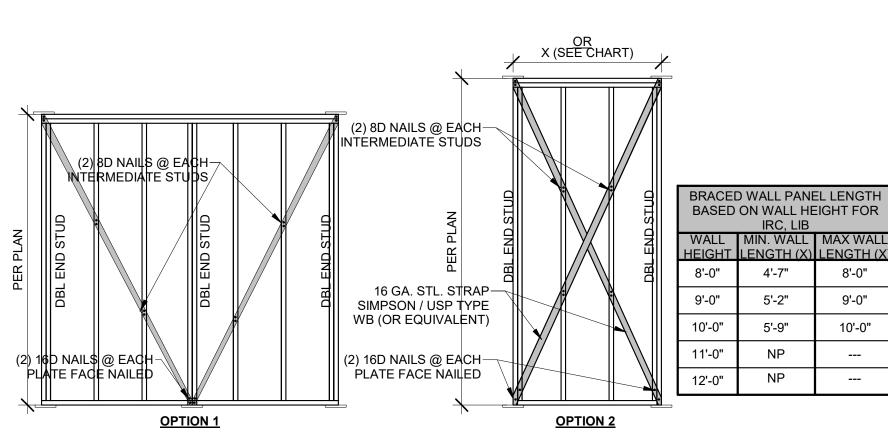
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BRACED WALLS NOTES & DETAILS

AS NOTED FOR PLAN REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 11/30/2021



LIB BRACING

FOR IRC CODE PRESCRIPTIVE METHOD

#### TABLE R602.10.5 MINIMUM LENGTH OF BRACED MALL DANELS

	METHOD		MINIMUN	LENGTH	(INCHES)	a	CONTRIBUTING	
METHOD (SEE TABLE R602.10.4)		WALL HEIGHT				CONTRIBUTING LENGTH (INCHES)		
		8 FEET	9 FEET	10 FEET	11 FEET	12 FEET		
DWB,WSP,SFB,PBS,PCP,HPS,BV-WSP		48	48	48	53	58	ACTUAL <sup>b</sup>	
GB		48	48	48	53	58	DOUBLE SIDED = ACTUAL SINGLE SIDED=.5xACTUAL	
LIB		55	62	69	NP	NP	ACTUAL <sup>b</sup>	
A D) 4/	SDC A, B, AND C ULTIMATE DESIGN WIND SPEED<140	28	32	34	38	42	40	
ABW	SDC $D_0$ , $D_1$ , $D_2$ ULTIMATE DESIGN WIND SPEED<140	32	32	34	NP	NP	48	
PFH	SUPPORTING ROOF ONLY	16	16	16	NOTE C	NOTE C	48	
PFN	SPTNG. ONE STORY & ROOF	24	24	24	NOTE C	NOTE C	48	
	PFG	24	27	30	NOTE D	NOTE D	1.5 x ACTUAL <sup>b</sup>	
	CS-G	24	27	30	33	36	ACTUAL <sup>b</sup>	
	CS-PF	16	18	20	NOTE E	NOTE E	ACTUAL <sup>b</sup>	
	ADJACENT CLEAR OPENING HEIGHT (INCHES)							
	≤64	24	27	30	33	36		
	68	26	27	30	33	36		
	72	27	27	30	33	36		
	76	30	29	30	33	36		
	80	32	30	30	33	36		
	84	35	32	32	33	36		
	88	38	35	33	33	36		
	92	43	37	35	35	36		
CS-WSP,	96	48	41	38	36	36	ACTUAL <sup>b</sup>	
CS-SFB	100	-	44	40	38	38	AOTOAL	
	104	-	49	43	40	39		
	108	-	54	46	43	41		
	112	-	-	50	45	43		
	116	-	-	55	48	45		
	120	-	-	60	52	48		
	124	-	-	-	56	51		
	128	-	-	-	61	54		
	132	-	-	-	66	58		
	136	-	-	-	-	62		
Ī	140	-	-	-	-	66		
	144	-	-	-	-	72		

a. LINEAR INTERPOLATION SHALL BE PERMITTED b. USE THE ACTUAL LENGTH WHEN IT IS GREATER THAN OR EQUAL TO THE MINIMUM LENGTH

 d. MAX. HEADER HEIGHT FOR PFH IS 10' IN ACCORDANCE WITH R602.10.6.2, WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL.
 d. MAX. OPENING HEIGHT FOR PFG IS 10' IN ACCORDANCE WITH R602.10.6.3, WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL. e. MAX. OPENING HEIGHT FOR CS-PF IS 10' IN ACCORDANCE WITH R602.10.6.4, WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL.

#### **BRACED WALL PRESCRIPTIVE METHOD:**

CONTINOUS EXTERIOR SHEATHING (CS-WSP) PER WSP METHOD (BELOW) UNLESS OTHERWISE

#### **EXTERIOR BRACED WALL METHOD: (SEE ON THIS SHEET)**

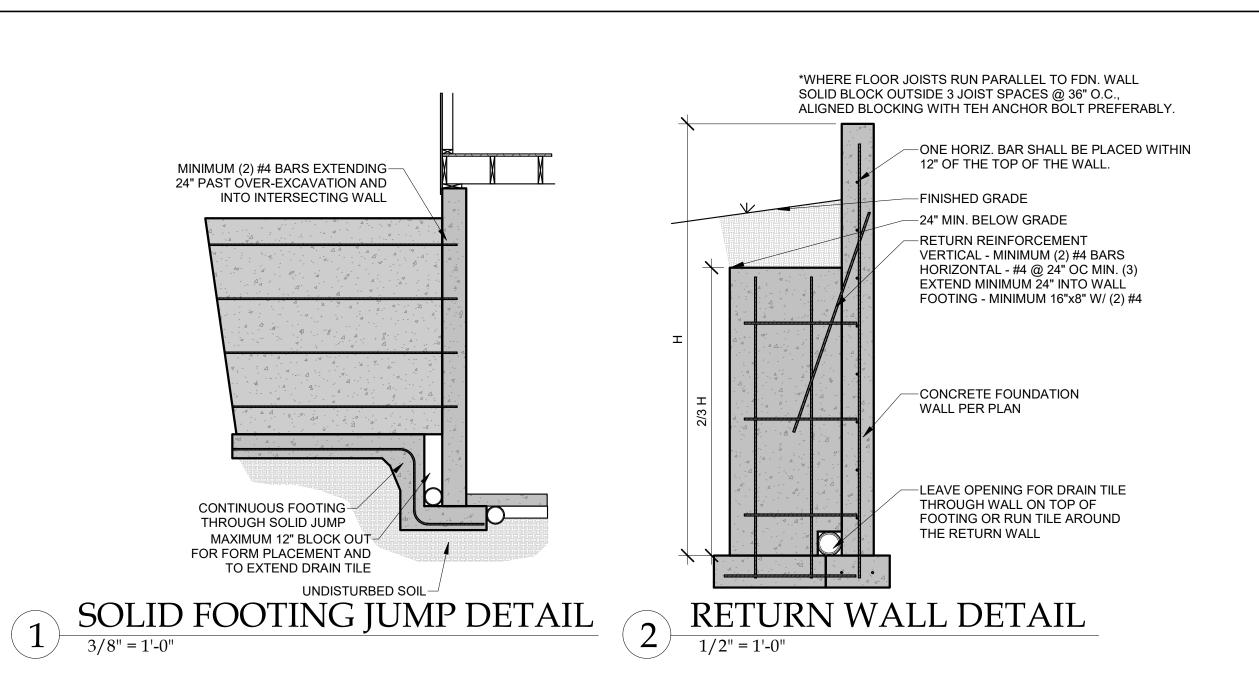
WSP METHOD: WOOD STRUCUTRAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" O.C. STUD SPACING WITH 6d NAILS COMMON NAILS @ 6" O.C. EDGES AND 12" O.C. FIELD OR SHEATHING THICKNESS NOT LESS THANK 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" O.C. SPACING WITH 8d COMMON NAILS @ 6" O.C. EDGES AND 12" O.C. IN FIELD (NOTE: FRAMING MEMBERS 16" O.C. MAX, UNBLOCKED, AND W/ SHEATHING APPLIED DIRECTLY TO FRAMING

#### INTERIOR BRACED WALLS (SEE ON THIS SHEET)

1/2" MINIMUM GYPSUM BOARD OVER STUDS SPACED @ 24" MAXIMUM FASTENED W/ #6- 1 1/4" TYPE "W" OR "S" DRYWALL SCREWS @ 7" O.C. EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES)

MEMBERS).

· <u>LIB METHOD:</u>
1X4 WOOD FASTENED W/ (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUIVALENT) STL. X-BRACE(S) @ 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUDS FASTENED PER MANUF. SPECS.



-WALKOUT WALL PER PLAN,

-1/2" BOLTS @ 3' OC MINIMUM

-EXTEND #4 VERTICAL BARS 20"

OVERDIG REBAR ,—#4 BARS @ 12" O.C. E.W.,

EXTEND MIN. 24" BEYOND

OVERDIG LINE,

4" GRANULAR FILL

M/N. R-10 RIGID INSULATION FOR

LINE OF OVERDIG

FILL MATERIAL

AMIN. OF 2'-0" BELOW SLAB

MINIMUM INTO SLAB, TIE TO

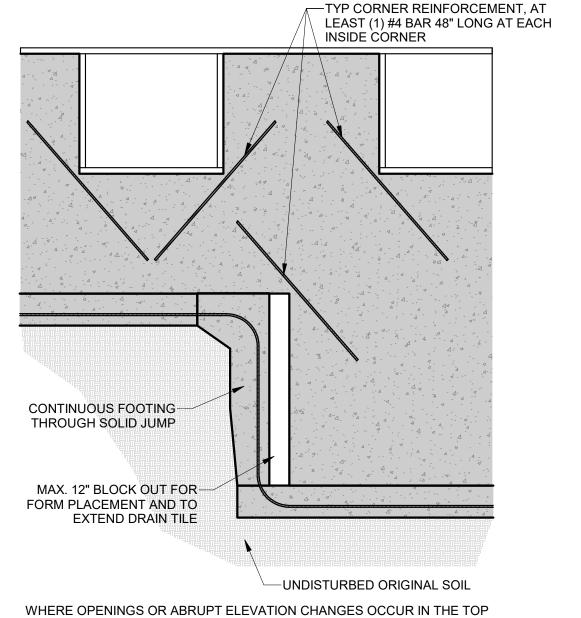
INSULATE PER CODE

7" INTO CONCRETE AND

PIECE OF PLATE

FINISHED GRADE-

WITHIN 12" OF EACH END



OR BOTTOM OF THE WALL AT LEAST ONE #4 BAR 48" LONG SHALL BE DIAGONALLY AS CLOSE A PRACTICAL TO THE CORNER

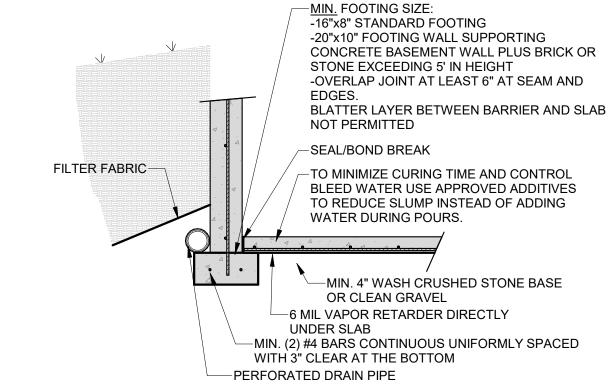
THE TOP, PLACE THE FIRST RETURN NOT MORE THAN 8' FROM THE LOW END OF THE STEP.

RETURN WALL IS NOT SUPPORTED AT THE TOP, PLACE THE FIRST RETURN NOT MORE THAN 8' FROM THE LOW END OF THE STEP.

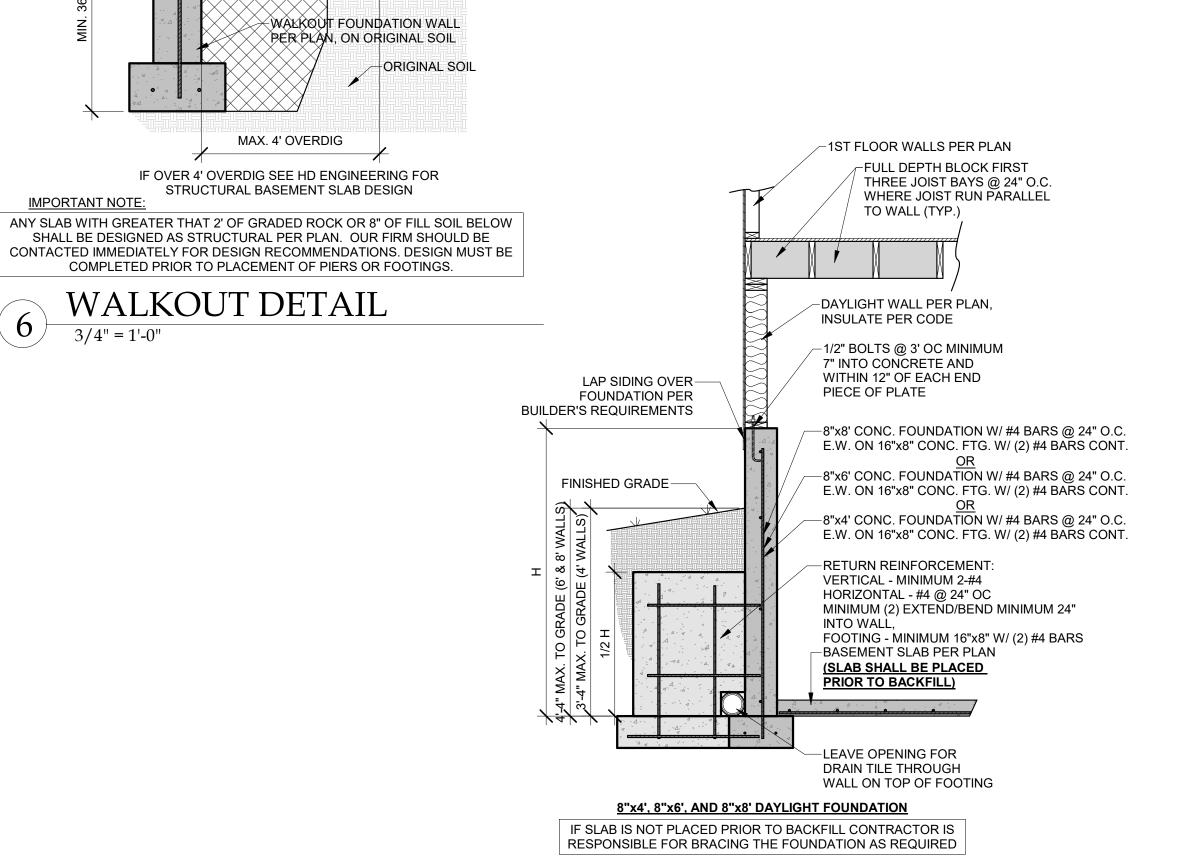
RETURN WALL PLACEMENT

3/16" = 1'-0"

REINFORCEMENT AT CORNERS AND STEPS







UNRESTRAINED FOUNDATION WALL

	9" TUIC	K WALL	10"	THICK W	۸۱۱
CONCRETE STRENGTH	8'	9'	8'	9'	10
3000 PSI/ 40 KSI	16	12	24	16	12
3500 PSI/ 40 KSI	16	12	24	24	12
3000 PSI/ 60 KSI	24	16	24	20	16
3500 PSI/ 60 KSI	24	16	24	24	16
HORIZONTAL REINFORCEMENT**	24	16	24	24	

\* CONCRETE SHALL HAVE AIR ENTRAINMENT OF 5-7%.

\* MINIMUM REQUIREMENT FOR VERTICAL REBAR IN PLAIN CONCRETE WALLS IS #4 @ 36" ON CENTER (ACI 332).

\* VERTICAL BARS SHALL BE CONTINUED UP TO WITHIN 8" OF THE TOP OF THE WALL.

\* REBAR SHALL BE POSITIONED AT THE TENSION FACE OF THE WALL (2" FROM THE INSIDE

\* REINFORCEMENT SHALL LAP A MINIMUM OF 24 INCHES AT ENDS, SPLICES, AND AROUND

CORNERS.

\*\* #4 BARS @ 24" ON CENTER.

\*\* #4 BAR WITHIN 12 OF TOP A

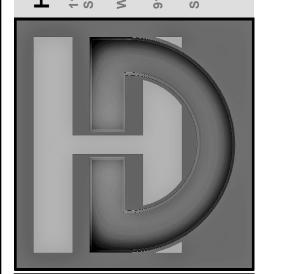
\*\* #4 BAR WITHIN 12 OF TOP AND BOTTOM OF WALL.

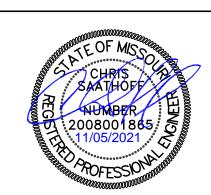
\*\* MINIMUM GRADE 40 (40ksi) STEEL (PER ACI 332).

\*\* HORIZONTAL REINFORCEMENT SHALL BE INSTALLED ON THE COMPRESSION SIDE (SOIL SIDE) OF THE VERTICAL REINFORCEMENT

DETAILS PROVIDED ARE DERIVED FROM JOHNSON COUNTY RESIDENTIAL FOUNDATION GUIDELINE

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SAB HOMES, INC.
SOLAIA HF025
SW HOOK FARM DR. LEE'S SUMMIT,

HD#: 42762

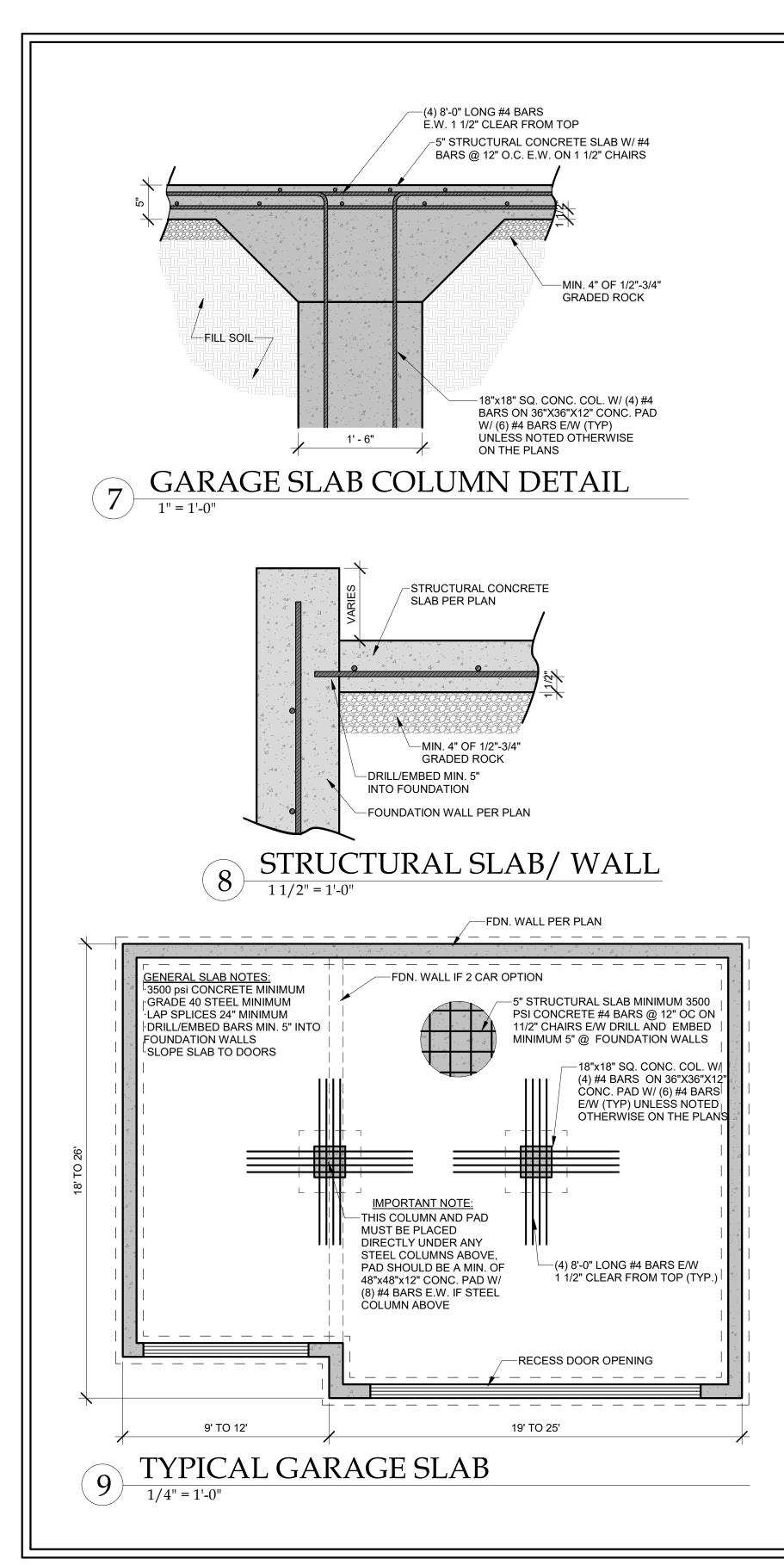
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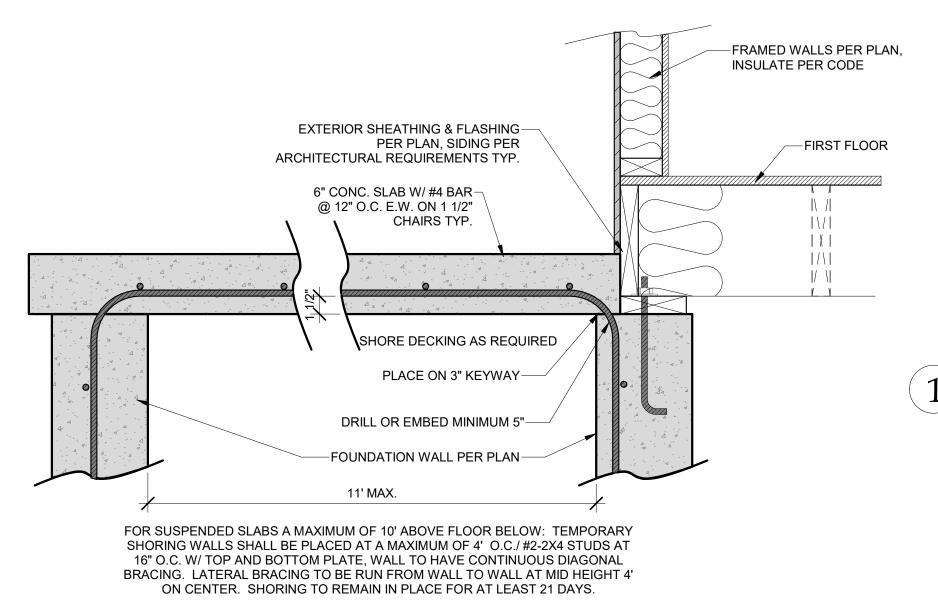
NO.	ISSUE/REVISION	Revision Date

CONCRETE DETAILS

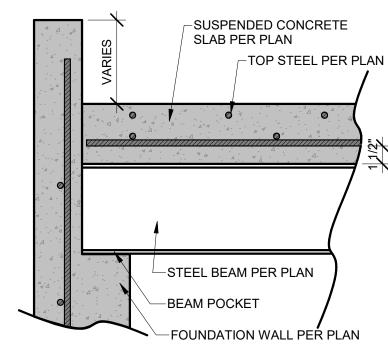
S-3.0



HD ENGINEERING STRUCTURAL
GARAGE SLAB DETAILS

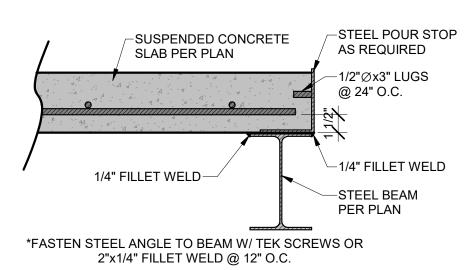


6 SUSPENDED PORCH STOOP SLAB

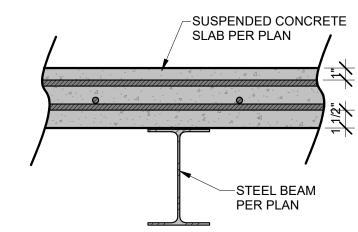


SUSPENDED SLAB BEAM/WALL CONNECTION

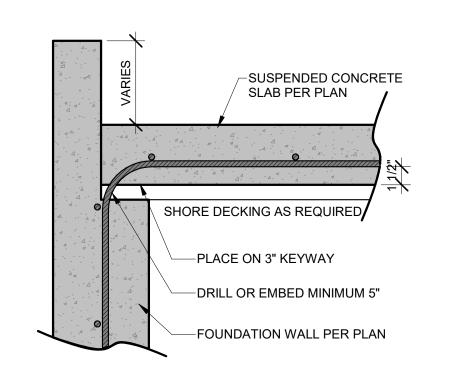
1 1/2" = 1'-0"



2 SUSPENDED SLAB POUR STOP

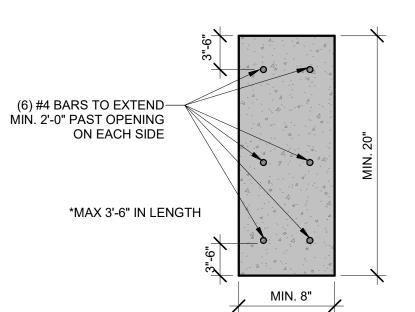


3 SUSPENDED SLAB/STEEL BEAM CROSS SECTION
1 1/2" = 1'-0"



4 SUSPENDED SLAB/WALL CONNECTION

1 1/2" = 1'-0"



5 CONCRETE HEADER DETAIL

1 1/2" = 1'-0"

IMPORTANT NOTE:

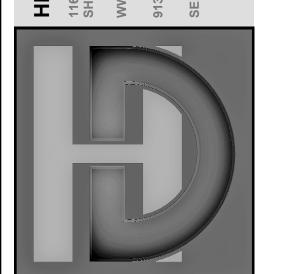
-FOR SUSPENDED SLABS A MAXIMUM OF 10' ABOVE FLOOR BELOW: TEMPORARY SHORING WALLS SHALL BE PLACED AT A MAXIMUM OF 4'
O.C./#2-2X4 STUDS AT 16" O.C. W/ TOP AND BOTTOM PLATE, WALL TO HAVE CONTINUOUS DIAGONAL BRACING. LATERAL BRACING TO BE
RUN FROM WALL TO WALL AT MID HEIGHT 4' ON CENTER. SHORING TO REMAIN IN PLACE FOR AT LEAST 21 DAYS.
-ANY CAST IN PLACE SLABS FORMED MORE THAN 10' ABOVE THE FLOOR BELOW SHALL HAVE A SITE SPECIFIC SHORING DESIGN DONE. OUR
FIRM SHOULD BE CONSULTED FOR THIS DESIGN ONCE FOUNDATION WALLS ARE IN PLACE TO EVALUATE ALL FIELD CONDITIONS. IT SHOULD
BE NOTED THAT FAILURE TO HAVE AN ADEQUATE SHORING DESIGN CAN RESULT IN FORM COLAPSE AND/OR CATASTROPHIC FAILURE.

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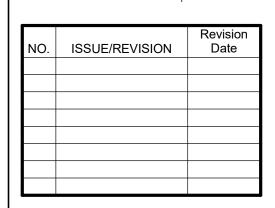
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SOLAIA HF025 2023 SW HOOK FARM DR. LEE'S S

HD#: 42762

DATE: 11/05/2021

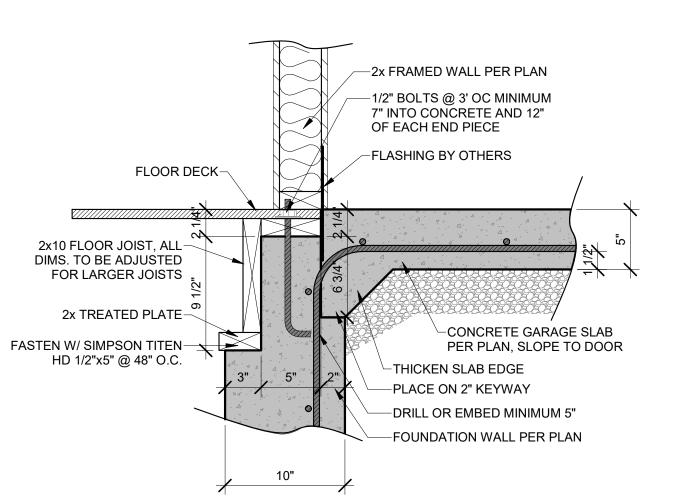
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SUSPENDED SLAB DETAILS

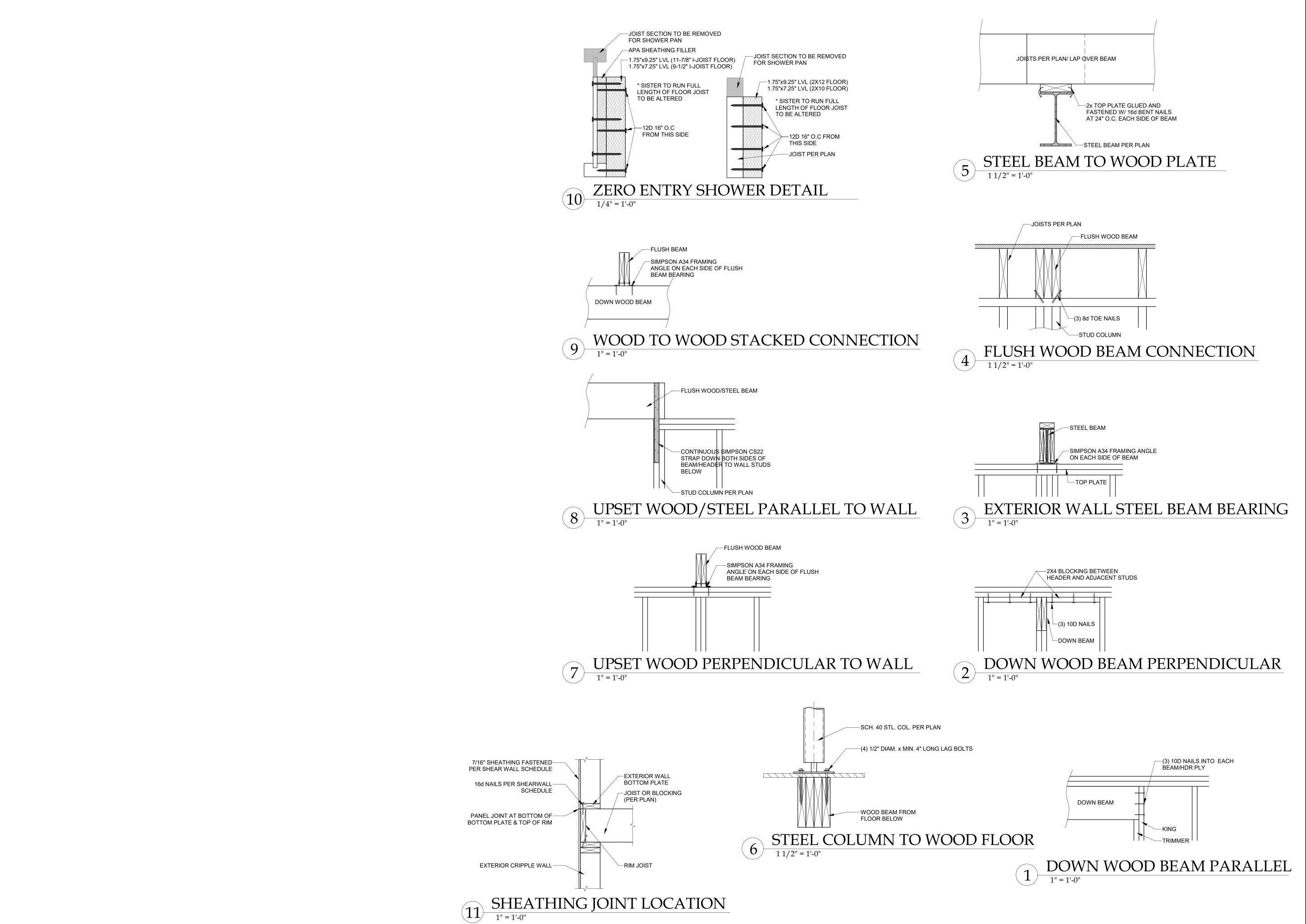
S-3.1

GINEERING & DESIGN
RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
11/30/2021

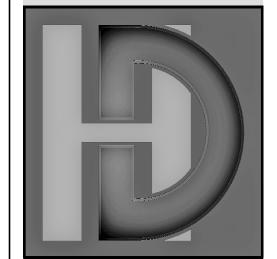


ZERO ENTRY GARAGE DETAIL

10
11/2" = 1'-0"



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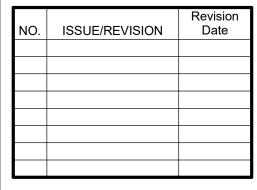
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HD#: 42762

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GENERAL DETAILS

**S-4.0** 

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