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SAB CONSTRUCTION, LLC
RUSTIC RIVIERA
2022 SW RED BARN LN., LEE'S SUMMIT, M

HD#: 43666

DATE: 03/30/2022

CHECKED BY: CLS

NO.	ISSUE/REVISION	Revision Date
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PLANS DRAWN BY OTHERS

S-0.1

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FOUNDATION PLAN AREA= 1,260 SF SCALE: 1/4"=1"-0"

WINDOW NOTES: SEE ELEVATIONS FOR HDR. HTS

#### **DECK PIER SCHEDULE**

 MIN. 6X6 TRTD/CDR POST ON 12" CONC
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 O PIER WITH USP PAU 66 BASE OR = (1177# MAX)

MIN. 6X6 TRTD/CDR POST ON 16" CONC PIER WITH USP PAU 66 BASE OR = (2050# MAX)

MIN. 6X6 TRTD/CDR POST ON 18" CONC PIER WITH USP PAU 66 BASE OR = (2649# MAX)

△ MIN. 6X6 TRTD/CDR POST ON 24" CONC PIER WITH USP PAU 66 BASE OR =(4710# MAX)

PIERS TO TERMINATE ON ORIGINAL SOIL OF 1500 PSF MINIMUM BEARING. ·PIERS TO TERMINATE AT A POINT 36" MINIMUM POST ARE NOT TO EXCEED AN UNBRACED LENGTH OF 12' WITHOUT CONTACTING HD ENGINEERING FOR GUIDANCE.

-ALL TREATED WOOD SHALL BE SYP #2 OR ·ALL EXTERIOR STEEL SHALL BE GALVANIZED OR WRAPPED/SEALED WEATHER TIGHT, ALL FASTENERS SHALL BE RATED FOR APPROPRIATE

#### **COLUMN PAD SCHEDULE**

A 3" SCH. 40 STL. COL. ON 30"x30"x12" CONC. PAD W/ (5) #4 BARS E.W. (9.4K MAX.)

B 3" SCH. 40 STL. COL. ON 36"x36"x12" CONC. PAD W/ (6) #4 BARS E.W. (13.5K MAX.)

C 3 1/2" SCH. 40 STL. COL. ON 42"x42"x14" CONC. PAD W/ (7) #4 BARS E.W. (18.4K MAX.)

D 3 1/2" SCH. 40 STL. COL. ON 48"x48"x16" CONC. PAD W/ (8) #4 BARS E.W. (24K MAX.)

B 3 1/2" SCH. 40 STL. COL. ON 54"x54"x16" CONC. PAD W/ (9) #4 BARS E.W. (30.4K MAX.)

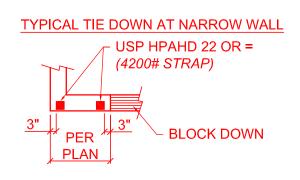
F 3 1/2" SCH. 40 STL. COL. ON 60"x60"x18" CONC. PAD W/ (10) #4 BARS E.W. (37.5K MAX.)

1. COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAX. COLUMN HEIGHT OF 10'-0" TALL.

2. COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED 1500 PSF. THIS IS THE CAPACITY REQUIRED BY AHJ, UNDERLINED GENERAL NOTES ON S-1.0 FOR

3. ALL STEEL COLUMNS SHALL BE ISOLATED FROM SLABS WITH APPROVED ISSOLATION DEVICE OR JOINT.

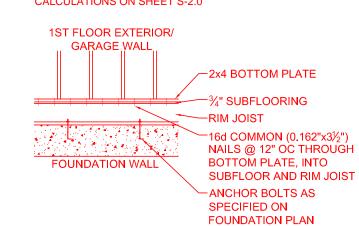
-WINDOW SHALL HAVE FALL PROTECTION PER IRC 312.2.4 -HOUSE WILL BE PROVIDED WITH A "UFER" GROUND PER IRC SECTION -OVERHEAD GARAGE DOORS MUST MEET DASMA REQUIREMENTS SEE DETAIL SHEET S-1.0 -ALL HEADERS NOT LABELED SHALL BE MIN (2) #2-2X10 DFL -DBL ALL JST UNDER ISLAND -SOILS IN THIS AREA COMMONLY HAVE A VERY HIGH SHRINK SWELL CAPACITY, OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY A GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF FOUNDATIONS -PROVIDE CARBON MONOXIDE AND SMOKE DETECTORS PER IRC -ANY PORTION OF THESE PRINTS ISSUED WITHOUT A MIN. OF S-1.0 -S-4.0 SHALL NOT BE CONSIDERED A COMPLETE SET OF CONSTRUCTION DOCUMENTS -FOUNDATION WALLS SHALL BE CONSTRUCTED PER JOHNSON COUNTY RESIDENTIAL FOUNDATION GUIDLINE, SEE ATTACHED -ICE AND WATER SHIELD AS REQUIRED PER IRC



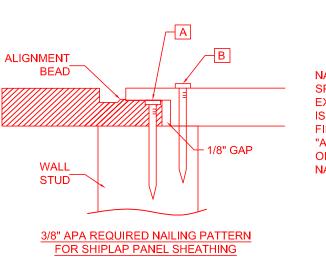
#### BRACED WALLS: SEE CALCULATIONS ON SHEET S-2.0, PER ASCE7-10 REQUIREMENTS AS ALLOWED BY IRC 2018 R301.2.1

ALL EXTERIOR WALLS SHALL BE SHEATHED PER ANY ONE OF THE FOLLOWING OPTIONS:
-7/16" APA-RATED PLYWOOD/OSB WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD .7/16" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD 3/8" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 6d NAILS @ 4" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD

INTERIOR BRACED WALL LOCATIONS ONLY SHOWN WHEN REQUIRED BY ADDITIONAL BRACING SECTION OF CALCULATIONS ON SHEET S-2.0



FOUNDATION ANCHORING NOTES
 MIN. 1/2" ANCHOR BOLTS SHALL BE INSTALLED @ 36"
 O.C. MAX AND WITHIN 6"-12" FROM THE END OF EACH SECTION OF SILL PLATE ALONG ENTIRE PERIMETER



NAILING WITH SPACING AS SPECIFIED PER PLAN. FOR EXAMPLE, IF REQUIRED SPACING IS 4" O.C., BOTTOM LAP SHALL FIRST BE NAILED AT 4" O.C. (NAIL "A"), THEN FULL DEPTH SECTION OF OVERLAP PANEL SHALL BE NAILED @ 4" O.C. (NAIL "B")

PLANS DRAWN BY OTHERS

AS NOTED ON PLANS REVIEW
Development Services
LEE'S SUMMIT, MISSOURI

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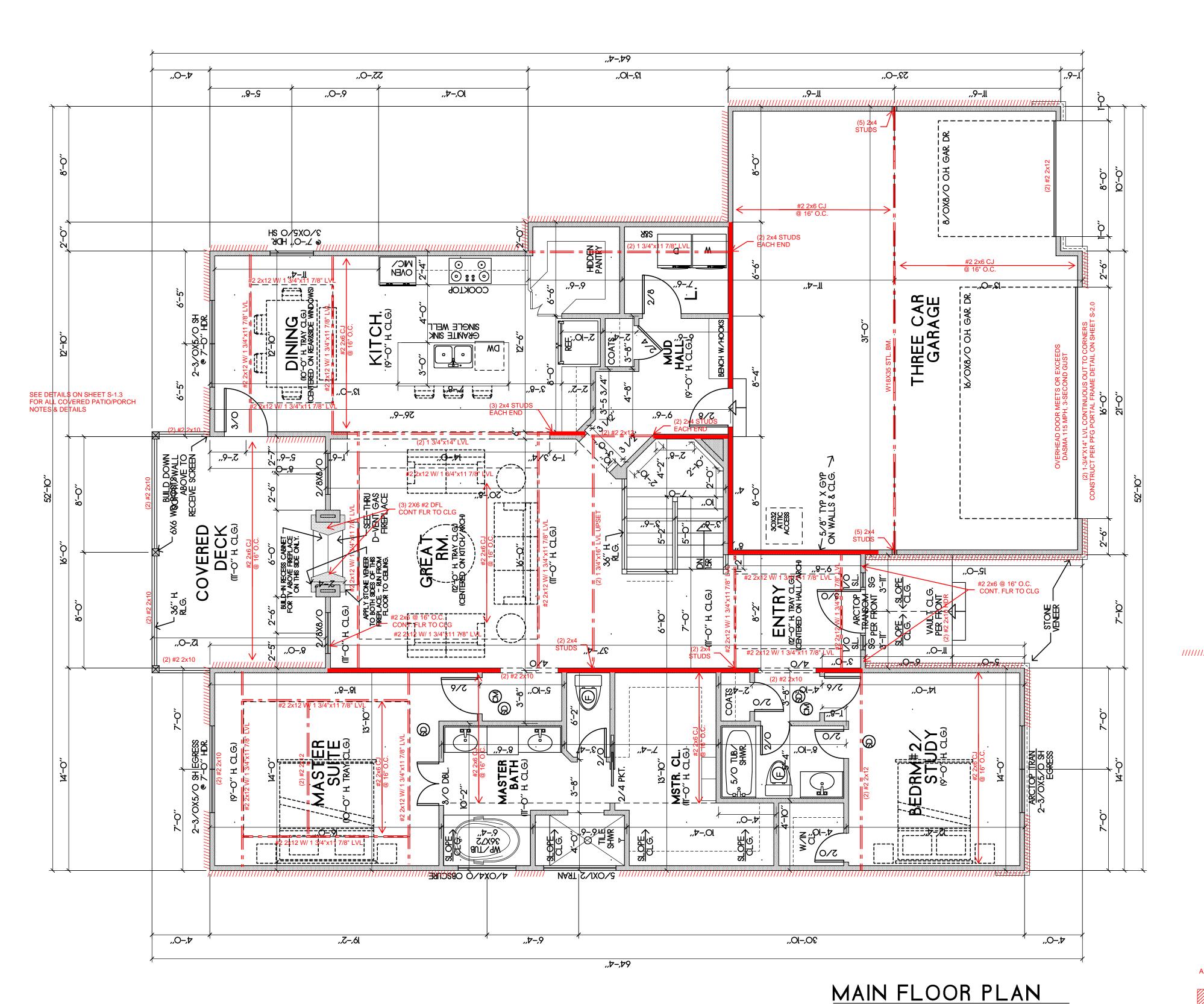
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ISSUE/REVISION

03/30/2022

2022



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

WINDOW NOTES: SEE ELEVATIONS FOR HDR. HTS

- LOAD BEARING WALL 

SD - SMOKE DETECTOR

CO - CARBON MONOXIDE SENSOR

GENERAL NOTES:
-WINDOW SHALL HAVE FALL PROTECTION PER IRC 312.2.4 -HOUSE WILL BE PROVIDED WITH A "UFER" GROUND PER IRC SECTION -OVERHEAD GARAGE DOORS MUST MEET DASMA REQUIREMENTS SEE OVERHEAD GARAGE DOORS MOST MEET DASMA REQUIREMENTS SEEDETAIL SHEET S-1.0

-ALL HEADERS NOT LABELED SHALL BE MIN (2) #2-2X10 DFL

-DBL ALL JST UNDER ISLAND
-SOILS IN THIS AREA COMMONLY HAVE A VERY HIGH SHRINK SWELL
CAPACITY, OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY A GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF FOUNDATIONS -PROVIDE CARBON MONOXIDE AND SMOKE DETECTORS PER IRC -ANY PORTION OF THESE PRINTS ISSUED WITHOUT A MIN. OF S-1.0 -S-4.0 SHALL NOT BE CONSIDERED A COMPLETE SET OF

TYPICAL TIE DOWN AT NARROW WALL - USP HPAHD 22 OR = (4200# STRAP) ─ BLOCK DOWN

PLAN

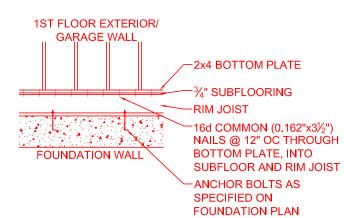
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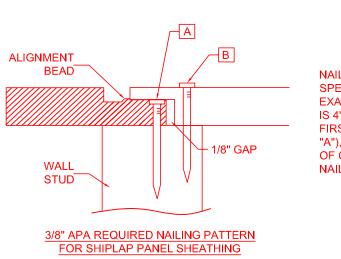
ALL EXTERIOR WALLS SHALL BE SHEATHED PER ANY ONE OF THE FOLLOWING OPTIONS:

·7/16" APA-RATED PLYWOOD/OSB WITH 8d NAILS @ 6"
O.C. AT EDGES AND @ 12" O.C. IN THE FIELD

·7/16" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD 12" O.C. IN THE FIELD ·3/8" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 6d NAILS @ 4" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD

INTERIOR BRACED WALL LOCATIONS ONLY SHOWN WHEN REQUIRED BY ADDITIONAL BRACING SECTION OF CALCULATIONS ON SHEET S-2.0





NAILING WITH SPACING AS SPECIFIED PER PLAN. FOR EXAMPLE, IF REQUIRED SPACING IS 4" O.C., BOTTOM LAP SHALL FIRST BE NAILED AT 4" O.C. (NAI "A"), THEN FULL DEPTH SECTION OF OVERLAP PANEL SHALL BE NAILED @ 4" O.C. (NAIL "B")

PLANS DRAWN BY OTHERS

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NSTRUCT RUSTIC RIVIER BARN LN., LEE **SW RED** 2022

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43666 03/30/2022 DATE:

CHECKED BY: CLS ISSUE/REVISION

AS NOTED ON PLANS REVIEW
Development Services
LEE'S SUMMIT, MISSOURI

ROOF FRAMING PLAN
SCALE: 1/4"=1'-0"

#### NOTES

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

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

#### CODE MINIMUM

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"
HOTE CODE LAND		

NOTE: CODE MINIMUM L/240 DEFLECTION

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

VAULTS TO BE 2x10 DEPTH

DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD

ALL RIDGES, HIPS, AND VALLEYS NOT MARKED SHALL BE (1) NOMINAL SIZE LARGER THAN THE INTERSECTING RAFTERS

#### PURLINS ARE 2x6 MIN. PURLIN STRUTS ARE AT 4'-0" O.C.

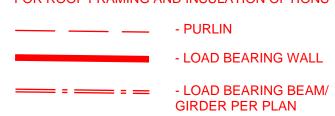
PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL ALL PURLINS STRUTS SHALL HAVE A MAXIMUM UNBRACED LENGTH OF 8'-0"

PURLINS STRUTS SHALL BE CONSTRUCTED IN A "T" 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"

-EACH END OF STRUT SHALL BE FASTENED WITH MIN.
(3) 8d OR (2) 16d NAILS
-RIDGE BRACES ARE SAME AS PURLIN BRACES;
SPACING, SIZE, CONFIGURATION, AND INSTALLATION
(SEE PURLIN BRACE NOTE ABOVE)
-HIP AND VALLEY BRACES ARE THE SAME AS PURLINS
SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)

SEE DETAILS 1, 5, 6, 7, 11, 12, 13, & 14 ON S-1.2 FOR ROOF FRAMING AND INSULATION OPTIONS



#### SEE DETAIL 12/S-1.2 FOR RAFTER TIE CONNECTION FOR CLG JOISTS PERPENDICULAR TO HIP RAFTERS

ALL RIDGES, HIPS, & VALLEYS SHALL BE FASTENED TO EXTERIOR WALLS, BEAMS, OR LOAD BEARING WALL TOP PLATE PER FRAME FASTENING SCHEDULE ON S-1.0, AND PER R802.11, ALL UPLIFT OVER 200# SHALL BE FASTENED AS SHOWN ON THIS PLAN SHEET

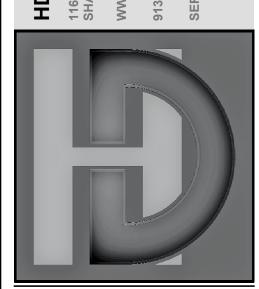
ALL RAFTERS SHALL BE FASTENED TO TOP PLATE WITH (3) 10d COMMON NAILS

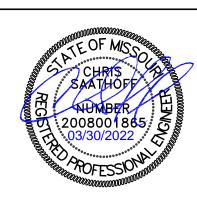
IF ADDITIONAL HOLD DOWN STRAP REQUIRED: X=UPLIFT FORCE (POUNDS), REQUIRED SIMPSON HOLD-DOWN

SIMPSON STRAP FASTENED TO STRUCTURAL HIP, VALLEY, OR RIDGE AND STRUT SUPPORT. MUST ALSO STRAP BOTTOM END OF STRUT TO BEAM/WALL BELOW WITH SAME SIZE STRAP

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B CONSTRUCTION, L. RUSTIC RIVIERA
SW RED BARN LN., LEE'S SUMMIT

#: 43666

2022

DATE: 03/30/2022

CHECKED BY: CLS

NO.	ISSUE/REVISION	Revision Date

PLANS DRAWN BY OTHERS

**S-0.4** 

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

	NAIL GUN		PENETRATION	A	LLOWABLE L	OADS (POUND	S)
FASTENER DESCRIPTION	NAILS/ WIRE	WIRE GAGE	REQUIRED INTO MAIN MEMBER FOR LATERAL	LATERAL STRENGTH		WITHDRAWAL STRENGTH	
DECORN HON	DIAMETER		STRENGTH (INCHES)	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							
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	1						
6d COMMON NAIL							
8d COOLER NAIL	1						
8d SINKER NAIL	.113	11-1/2	1-1/4	79	72	35	28
8d BOX NAIL	1						20
8d CASING NAIL	1						
6d RING SHANK NAIL							
6d SCREW SHANK NAIL	_						
8d RING SHANK NAIL	.120	11	1-3/8	89	81	41	32
8d SCREW SHANK NAIL	1						
10d COOLER NAIL	400	10-1/2	1-1/2	89 81	01	36	24
10d SINKER NAIL	.128				81	36	31
12d SHORT							
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	1-1/2	106	97	41	32
16d SHORT							
12d SINKERS	.135	10	1-1/2	113	103	42	33
16d BOX NAILS							
10d RING SHANK NAILS							
10d SCREW SHANK NAILS	.135	10	1-5/8	113	103	46	36
12d RING SHANK NAILS				110		40	30
12d SCREW SHANK NAILS							
10d COMMON NAILS							
12d COMMON NAILS	]						
16d SINKER NAILS	.148	9	1-5/8	128	118	46	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	<u></u>	1-0/4	120	110	30	+0
16d COMMON NAILS	160	0	4 2/4	151	111	E0	40
40d BOX NAILS	.162	8	1-3/4	154	141	50	40
20d RING SHANK NAILS	477	-	0.4/0	470	400	50	47
20d SCREW SHANK NAILS	.177	7	2-1/8	178	163	59	47
20d SINKER NAILS	.177	7	2-1/8	178	163	54	43
20d COMMON NAILS							
204 CINICED NAILS	.148	9	2-1/8	170	166	59	47

## MINIMUM SHEATHING REQUIREMENTS

BUILDING COMPONENT	MATERIAL
ROOF SHEATHING	7/16" PLYWOOD
ROOF SHEATHING	1 x 4 #3 FURRING
FLOOR SHEATHING	3/4" T&G YELLOW PINE PLYWOOD
WALL COVERING	1/2" GYPSUM SHEATHING
CEILING COVERING	1/2" GYPSUM SHEATHING
EXTERIOR WALL	7/16" APA RATED SHEATHING
SHEATHING	RATED PANEL SIDING, RATED 16" O.C. 7/16" THICK

ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED REFER TO TABLE R602.3(1) ON S-1.1 FOR FASTENING SCHEDULE

#### HIP/ VALLEY ALLOWABLE SPAN TABLE

TYPE	MAX. UNSUPPORTED SPAN					
ITE	2x8	2x10	2x12	1 3/4"x9 1/2" LVL	1 3/4"x11 7/8" LVL	
HIP RAFTER	11'-3"	13'-3"	15'-2"	15'-8"	18'-2"	
VALLEY RAFTER	8'-11"	10'-6"	12'-0"	13'-2"	15'-3"	

#### FRAME FASTENING SCHEDULE

RAFTERS  CEILING JOISTS  BEAMS	RIDGE / VALLEY / HIP  PLATE  LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS  COLLAR TIE TO RAFTERS  TOP PLATE  WHERE CLG JST RUN PARALLEL TO RAFTERS FACI  LAPS OVER PARTITIONS  BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER  BEARING	FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
CEILING JOISTS —	LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS  COLLAR TIE TO RAFTERS  TOP PLATE  WHERE CLG JST RUN PARALLEL TO RAFTERS FACI  LAPS OVER PARTITIONS  BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	FACENAIL W/ (3) 16D  FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D @ EACH END  ENAIL TO RAFTERS W/ (3) 10D MINIMUM  FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
CEILING JOISTS —	COLLAR TIE TO RAFTERS  TOP PLATE  WHERE CLG JST RUN PARALLEL TO RAFTERS FACI  LAPS OVER PARTITIONS  BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D @ EACH END  ENAIL TO RAFTERS W/ (3) 10D MINIMUM  FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
- -	TOP PLATE  WHERE CLG JST RUN PARALLEL TO RAFTERS FACI  LAPS OVER PARTITIONS  BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	TOENAIL W/ (3) 8D @ EACH END  ENAIL TO RAFTERS W/ (3) 10D MINIMUM  FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
- -	WHERE CLG JST RUN PARALLEL TO RAFTERS FACI LAPS OVER PARTITIONS  BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	ENAIL TO RAFTERS W/ (3) 10D MINIMUM  FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
- -	LAPS OVER PARTITIONS  BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	FACENAIL W/ (3) 10D  TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
- -	BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE  BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	TOENAIL W/ (3) 8D  10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
	BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
BEAMS	OPPOSITE SIDES, (2) @ EACH END PLUS  BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	BOTTOM, OPPOSITE SIDES  (2) ROWS @ 12" O.C.  16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
BEAMS	NAIL OPPOSITE SIDES  BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER  BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	16D @ 16" O.C. ALONG EDGES  3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
	BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
	·		
	BEARING	TOPM 14/1/20 1	
		TOENAIL W/ (2) 18D @ EACH END	
	RIM JOIST TO SILL OR TOP PLATE	TOENAIL W/ 8D COMMON OR 10D BOX @ 6" O.C.	
	JOIST TO SILL OR GIRDER	TOENAIL W/ (3) 8D	
	JOIST TO RIM JOIST	FACENAIL W/ (3) 16D	
	BRIDGING TO JOIST	TOENAIL W/ (2) 8D	
FLOOR JOISTS	I-JOIST TO BEARING PLATE	TOENAIL W/ (2) 8D - ONE INTO EACH SIDE AT LEAST 1 1/2" FROM THE END	
	RIM JOIST TO I-JOIST	FACENAIL W/ (2) 10D BOX - ONE INTO EACH FLANGE	
	SOLE PLATE TO LSL RIM BOARD	16D BOX @ 12" O.C.	
	SINGLE JOIST HANGERS*	10D FACENAILS AND TOENAILS	
	DOUBLE JOIST HANGERS*	16D FACENAILS AND TOENAILS	
	TOP AND 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" O.C.	
	DOUBLE TOP PLATE LAP SPLICE	FACENAIL W/ (8) 16D	
	TOP PLATE LAPS AND INTERSECTIONS	FACENAIL W/ (2) 16D	
	DOUBLE STUDS	FACENAIL W/ 16D @ 24" O.C.	
	BUILT-UP CORNER STUDS	FACENAIL W/ 16D - 2 ROWS @ 24" O.C.	
	STEEL "X" BRACING	FACENAIL W/ (2) 16D IN EACH TOP AND BOTTOM PLATE AND (1) 8D PER STUD	
一	SOLE PLATE TO JOIST OR BLOCKING	FACENAIL W/ 16D @ 16" O.C.	
WALLS	SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PERPENDICULAR TO FRAMING	FACENAIL W/ (3) 16D @ 16" O.C. ALONG BRACED WALL PANEL	
	TOP PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PERPENDICULAR TO FRAMING	TOENAIL W/ 8D @ 6" O.C. ALONG BRACED WALL PANEL	
	SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PARALLEL TO FRAMING, BLOCKING @ 16" O.C.	FACENAIL W/ (3) 16D @ 16" O.C. ALONG BRACED WALL PANEL AND AT EACH BLOCK	
	TOP PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PARALLEL TO FRAMING, BLOCKING @ 16" O.C.	TOENAIL W/ 8D @ 6" O.C. ALONG BRACED WALL PANEL AND AT EACH BLOCK	
	NON-STRUCT. SIDING OVER STRUCT. SHEATHING	(1) 6D BOX IN EACH STUD	
	FIBER-CEMENT PLANK SIDING	(1) 6D GALVANIZED IN EACH STUD	
	WINDOW INSTALLATION NAILING	1 <sup>3</sup> / <sub>4</sub> " - 2" ROOFING NAILS @ 12" O.C. MAX.	

NO JOIST HANGER NAILS ALLOWED FOR TOENAILS.

NO GUN NAILS OR SCREWS ALLOWED IN CONNECTORS. 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" 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.

#### **DUCT SEALING METHOD, PER 2018 IRC 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 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

**EXCEPTION:** THE TOTAL LEAKAGE IS NOT REQUIRED FOR DUCTS AND AIR HANDLERS LOCATED ENTIRELY WITHIN

PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE, ICC AS ADOPTED BY AHJ, AND ALL AMENDMENTS AS ADOPTED BY THE AHJ. IF ANY CHANGES MAKE ANY APPROPRIATE MODIFICATIONS TO THE PLANS

WHERE DISCREPANCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FOR THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY. 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. 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. DUE TO THE WIDE VARIETY OF SOIL CONDITIONS, PLASTICITY INDEXES, AND SOIL BEARING CAPACITIES IN OUR AREA, 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. FOUNDATION WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406.

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.

FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS, LOCATED A MINIMUM OF 3" CLEAR FROM THE BOTTOM. FOOTINGS SHALL BE A COLUMN PADS SHALL BE A MINIMUM OF 24"x24"x8" WITH (3) #4 BARS EACH WAY.

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

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

FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE BY A SEPARATION

CONCRETE FLOOR SLABS ON GRADE SHALL BE A MINIMUM OF 4" THICK OVER A MINIMUM 4" BASE OF SAND, GRAVEL, OR CRUSHED STONE. BASEMENT SLABS SHALL HAVE A MINIMUM 6 MIL POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" AND SHALL BE PLACED BETWEEN THE FLOOR SLAB FLOOR SLABS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER A SEPARATE ENGINEERING DESIGN.

BASEMENT FOUNDATION SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH MINIMUM 1/2" DIAMETER ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 3' ON CENTER AND WITHIN 12" OF EACH END OF THE PLATE SECTION PER IRC SECTION R403.1.6. FOUNDATION WINDOW WELLS FOR SECONDARY MEANS OF EGRESS SHALL PROVIDE A MINIMUM 3'x3' HORIZONTAL AREA.

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.

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 THE DEEPENING OF FOUNDATION ELEMENTS, OR THE UNDERCUTTING OF UNSUITABLE MATERIALS AND REPLACEMENT WITH ENGINEERED FILL.

STAIRWAYS SHALL PROVIDE A MAXIMUM 7 3/4" RISE AND A MINIMUM 10" RUN. PROVIDE MINIMUM 36" GUARDRAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES, AND BALCONIES. PROVIDE 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 ALLOW PASSAGE OF A 4" DIAMETER SPHERE

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 TREADS. HANDRAILS SHALL HAVE A CIRCULAR CROSS-SECTION OF 1 1/4" MINIMUM TO 2" MAXIMUM OR ANOTHER APPROVED GRASPABLE SHAPE PER IRC SECTION R311.7.8.5. PROVIDE A MINIMUM 6'-8" OF HEADROOM CLEARANCE IN STAIRWAYS.

ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON THE

WINDERS SHALL PROVIDE A MINIMUM TREAD OF 6" AT ANY POINT WITHIN CLEAR WIDTH OF STAIRS. WINDER TREAD PROPORTION IS TO COMPLY WITH IRC SECTION R311.7.5.2.1.

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".

IN DWELLING UNITS WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24" 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" DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24" OF THE FINISHED FLOOR.

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

ALL HEADERS ARE TO BE A MINIMUM OF (2) #2 2x10'S UNLESS NOTED OTHERWISE. BLOCK CANTILEVERS, DOOR JAMBS, AND OVER BEAMS.

ALL HEADERS/BEAMS ARE TO BEAR ON A MINIMUM OF (2) 2x4 POSTS UNLESS NOTED OTHERWISE

INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES SHALL BE PROVIDED AT A MAXIMUM OF 4' ON CENTER 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. IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S), NAIL 2x4'S FLAT AT 4' ON CENTER 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. ALL SILLS AND SLEEPERS SUPPORTED ON CONCRETE OR MASONRY AND FURRING ATTACHED TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT MATERIALS.

JOISTS UNDER BEARING PARTITIONS SHALL BE SIZED TO CARRY THE DESIGN LOAD IN ACCORDANCE WITH IRC SECTION R502.4. JOISTS FRAMING FROM OPPOSITE SIDES OVER BEARING SUPPORTS SHALL LAP A MINIMUM OF 3" AND SHALL BE NAILED TOGETHER WITH MINIMUM 10D FACE NAILS.

TO A HEADER, BAND, OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION.

JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR ON MINIMUM 2"x2" LEDGER STRIPS. 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. JOISTS AT SUPPORTS SHALL BE SUPPORTED LATERALLY AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" IN NOMINAL THICKNESS OR BY ATTACHMENT

ALL WALL COVERINGS ARE TO COMPLY WITH IRC SECTIONS 702 AND 703.

ALL RAFTER / COLLAR TIES ARE TO COMPLY WITH IRC SECTION 802.

ALL RAFTERS ARE TO HAVE 2x4 COLLAR TIES @ 48" O.C. IN THE UPPER 1/3 OF DISTANCE BETWEEN THE CEILING AND ROOF BLOCKING BETWEEN JOISTS UNDER A PERPENDICULAR LOAD-BEARING WALL IS NOT REQUIRED.

THE BOTTOM OF ALL FLOOR ASSEMBLIES SHALL BE PROVIDED WITH A 1/2" GYPSUM WALLBOARD MEMBRANE (IF REQUIRED BY LOCAL CODE).

I-JOIST AND FLOOR TRUSS SYSTEMS SHALL BE FIRE PROTECTED PER IRC AS ADOPTED BY AHJ. STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF / CEILING DIAPHRAGM PER IRC SECTION 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.

#### EMERGENCY EGRESS AND RESCUE NOTES:

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.

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.

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.

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

DOORS BETWEEN THE GARAGE AND DWELLING - MINIMUM 1 3/8" THICK SOLID WOOD, MINIMUM 1 3/8" THICK SOLID OR HONEY-COMB-CORE STEEL DOOR, OR 20-MINUTE FIRE-RATED EQUIPPED WITH A SELF-CLOSING DEVICE PER IRC SECTION R302.5.1.

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 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"

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"x0.120" NAILS AT 7" ON CENTER STAGGERED WITH (7) 3 1/4"x0.120" NAILS THROUGH THE JAMB INTO THE HEADER, MINIMUM 2x8 HEADER FOR ATTACHMENT OF THE COUNTER BALANCE SYSTEM.

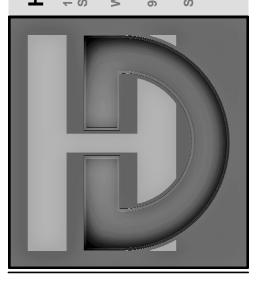
ANY ATTACHED GARAGE TO THE MAIN HOUSE SHALL BE PROVIDED WITH A SINGLE HEAT DETECTOR. THE HEAT DETECTOR SHALL BE HARDWIRED AND INTERCONNECTED WITH THE HOUSEHOLD SMOKE ALARM SYSTEM. THE HEAT DETECTOR SHALL BE LISTED FOR THE AMBIENT ENVIRONMENT AND INSTALLED PER

BUILDING ENVELOPE INSULATION SHALL COMPLY WITH IRC TABLE N1102.1.2 OR THE 2018 IECC. (SEE S-6.0 FOR MORE DETAILS)

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 1/150th OF THE AREA OF SPACE VENTILATED. WHERE THE VENTILATORS ARE LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED, THE

THIS DOCUMENT CONTAIN CONFIDENTIAL INFORMATION ELONGINING TO HD ENGINEER UNAUTHORIZED USE, DISCLOSUR

ANY OF THE INFORMATION AINED HEREIN MAY RESULT IN LIABILITY UNDER APPLICABLE LAW.





# N A S

43666 03/30/2022

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NO.	ISSUE/REVISION	Revision Date

GENERAL NOTES

**AS NOTED ON PLANS REVIEW** 

#### TABLE R602.3(1) FASTENING SCHEDULE

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>	SPACING AND LOCATION						
	4-8D BOX (2 1/2" x 0.113"); OR								
2	BLOCKING BETWEEN CEILING JOISTS OR RAFTERS TO TOP PLATE  CEILING JOISTS TO PLATE	3-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 3-10D BOX (3" x 0.128"); OR	TOE NAIL  PER JOIST, TOE NAIL						
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER	3-3" x 0.131" NAILŚ 4-10D BOX (3" x 0.128"); OR 3-16D COMMON (3 ½" x 0.162"); OR	FACE NAIL						
4	PARTITIONS (SEE SECTION R802.5.2 AND TABLE R802.5.2)  CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT)	4-3" x 0.131" NAILS  TABLE R802.5.2	FACE NAIL						
5	(SEE SECTION R802.5.2 AND TABLE R802.5.2)  COLLAR TIE TO RAFTER, FACE NAIL OR 1 1/4" x 20 GA, RIDGE STRAP TO RAFTER	4-10D BOX (3" x 0.128"); OR 3-10D COMMON (3" x 0.148"); OR	FACE NAIL EACH RAFTER						
		4-3" x 0.131" NAILS  3-16D BOX NAILS (3 1/2" x 0.135"); OR 3-10D COMMON NAILS (3" x 0.148"); OR	2 TOE NAILS ON ONE SIDE AND 1 TOE						
6	RAFTER OR ROOF TRUSS TO PLATE	4-10D BOX (3" x 0.128"); OR 4-3" x 0.131" NAILS 4-16D (3 1/2" x 0.135"); OR 3-10D COMMON (3" x 0.148"); OR	NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS <sup>i</sup> TOE NAIL						
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR ROOF RAFTER TO MINIMUM 2" RIDGE BEAM	4-10D BOX (3" x 0.128"); OR 4-3" x 0.131" NAILS  3-16D BOX (3 1/2" x 0.135"); OR 2-16D COMMON (3 1/2" x 0.162"); OR 3-10D BOX (3" x 0.128"); OR 3-3" x 0.131" NAILS	END NAII						
		WALL							
8	STUD TO STUD (NOT BRACED WALL PANELS)	16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162")	24" O.C. FACE NAIL						
		10D BOX (3" x 0.128"); OR 3" x 0.131" NAILS	16" O.C. FACE NAIL						
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 3" x 0.131" NAILS	12" O.C. FACE NAIL						
	,	16D COMMON (3 1/2" x 0.162")	16" O.C. FACE NAIL						
10	BUILT-UP HEADER (2" TO 2" HEADER WITH 1/2" SPACER)	16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162")	16" O.C. EACH EDGE FACE NAIL						
		16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135")	12" O.C. EACH EDGE FACE NAIL						
11	CONTINUOUS HEADER TO STUD	5-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR 4-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 4-10D BOX (3" x 0.128")	TOE NAIL						
12	TOP PLATE TO TOP PLATE	16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162")	16" O.C. FACE NAIL						
12	TOT TEATE TO TOT TEATE	10D BOX (3" x 0.128"); OR 3" x 0.131" NAILS							
13	DOUBLE TOP PLATE SPLICE	8-16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162"); OR 12-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 12-10D BOX (3" x 0.128"); OR 12-3" x 0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)						
	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING	16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162")	16" O.C. FACE NAIL						
14	(NOT AT BRACED WALL PANELS)	16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 3" x 0.131" NAILS	12" O.C. FACE NAIL						
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (AT BRACED WALL PANEL)	3-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 2-16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162"); OR 4-3" x 0.131" NAILS	3 EACH 16" O.C. FACE NAIL 2 EACH 16" O.C. FACE NAIL 4 EACH 16" O.C. FACE NAIL						
16	TOP OR BOTTOM PLATE TO STUD	4-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR 3-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 4-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 4-10D BOX (3" x 0.128"); OR 4-3" x 0.131" NAILS	TOE NAIL						
10	TOT CIVED TOWN EXTENDED	3-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 2-16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x	END NAIL						
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	0.162"); OR 3-10D BOX (3" x 0.128"); OR 3-3" x 0.131" NAILS  3-10D BOX (3" x 0.128"); OR  2-16D COMMON (3 1/2" x 0.162"); OR	FACE NAIL						
18	1" BRACE TO EACH STUD AND PLATE	3-3" x 0.131" NAILS  3-8D BOX (2 ½" x 0.113"); OR  2-8D COMMON (2 ½" x 0.131"); OR	FACE NAIL						
		2-10D BOX (3" x 0.128"); OR 2 STAPLES 1 <sup>3</sup> / <sub>4</sub> " 3-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR							
19	1" x 6" SHEATHING TO EACH BEARING	2-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 2-10D BOX (3" x 0.128"); OR 2 STAPLES, 1" CROWN, 16 GA., 1 <sup>3</sup> / <sub>4</sub> " LONG	FACE NAIL						
20	1" x 8" AND WIDER SHEATHING TO EACH BEARING	3-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR 3-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 3-10D BOX (3" x 0.128"); OR 3 STAPLES, 1" CROWN, 16 GA., 1 <sup>3</sup> / <sub>4</sub> " LONG	FACE NAIL						
		WIDER THAN 1" x 8"  4-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR 3-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 3-10D BOX (3" x 0.128"); OR 4 STAPLES, 1" CROWN, 16 GA., 1 <sup>3</sup> / <sub>4</sub> " LONG							
		FLOOR							
21	JOIST TO SILL, TOP PLATE OR GIRDER	4-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR 3-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 3-10D BOX (3" x 0.128"); OR	TOE NAIL						
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE	3-3" x 0.131" NAILS 8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113")	4" O.C. TOE NAIL						
	(ROOF APPLICATIONS ALSO)	8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 10D BOX (3" x 0.128"); OR 3" x 0.131" NAILS  3-8D BOX (2 <sup>1</sup> / <sub>2</sub> " x 0.113"); OR	6" O.C. TOE NAIL						
23	1" x 6" SUBFLOOR OR LESS TO EACH JOIST	2-8D COMMON (2 <sup>1</sup> / <sub>2</sub> " x 0.131"); OR 3-10D BOX (3" x 0.128"); OR 2 STAPLES, 1" CROWN, 16 GA., 1 <sup>3</sup> / <sub>4</sub> " LONG	FACE NAIL						
FLOOR									
	·	3-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR	BLIND AND FACE NAIL						
24	2" SUBFLOOR TO JOIST OR GIRDER	2-16D COMMON (3 ½" x 0.162")							
24 25	2" SUBFLOOR TO JOIST OR GIRDER 2" PLANKS (PLANK & BEAM-FLOOR AND ROOF)	3-16D BOX (3 ½" x 0.135"); OR 2-16D COMMON (3 ½" x 0.162")	AT EACH BEARING, FACE NAIL						
		3-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR	AT EACH BEARING, FACE NAIL  END 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" x 0.162")  3-16D COMMON (3 1/2" x 0.162"); OR 4-10D BOX (3" x 0.128"); OR 4-3" x 0.131" NAILS; OR 4-3" x 14 GA. STAPLES, 7/16" CROWN  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	END NAIL  NAIL EACH LAYER AS FOLLOWS: 32" O.C. AT TOP AND BOTTOM AND STAGGERED.  24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES						
25	2" PLANKS (PLANK & BEAM-FLOOR AND ROOF)  BAND OR RIM JOIST TO JOIST	3-16D BOX (3 <sup>1</sup> / <sub>2</sub> " x 0.135"); OR 2-16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162")  3-16D COMMON (3 <sup>1</sup> / <sub>2</sub> " x 0.162"); OR 4-10D BOX (3" x 0.128"); OR 4-3" x 0.131" NAILS; OR 4-3" x 14 GA. STAPLES, <sup>7</sup> / <sub>16</sub> " CROWN  20D COMMON (4" x 0.192"); OR  10D BOX (3" x 0.128"); OR 3" x 0.131" NAILS	END NAIL  NAIL EACH LAYER AS FOLLOWS: 32" O.C. AT TOP AND BOTTOM AND STAGGERED.  24" O.C. FACE NAIL AT TOP AND BOTTOM						

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

- NAILS ARE SMOOTH-COMMON, BOX OR DEFORMED SHANKS EXCEPT WHERE OTHERWISE STATED. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS SHOWN: 80 KSI FOR
- SHANK DIAMETER OF 0.192 INCH (20D COMMON NAIL), 90 KSI FOR SHANK DIAMETERS LARGER THAN 0.142 INCH BUT NOT LARGER THAN 0.177 INCH, AND 100 KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LESS. STAPLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7/16-INCH ON DIAMETER CROWN WIDTH.
- NAILS SHALL BE SPACED AT NOT MORE THAN 6 INCHES ON CENTER AT ALL SUPPORTS WHERE SPANS ARE 48 INCHES OR GREATER. FOUR-FOOT BY 8-FOOT OR 4-FOOT BY 9-FOOT PANELS SHALL BE APPLIED VERTICALLY.
- SPACING OF FASTENERS NOT INCLUDED IN THIS TABLE SHALL BE BASED ON TABLE R602.3(2). FOR WOOD STRUCTURAL PANEL ROOF SHEATHING ATTACHED TO GABLE END ROOF FRAMING AND TO INTERMEDIATE SUPPORTS WITHIN 48 INCHES OF ROOF EDGES AND RIDGES, NAILS SHALL BE SPACED AT 6 INCHES ON CENTER WHERE THE
- ULTIMATE DESIGN WIND SPEED IS LESS THAN 130 MPH AND SHALL BE SPACED 4 INCHES ON CENTER WHERE THE ULTIMATE DESIGN WIND SPEED IS 130 MPH OR GREATER BUT LESS THAN 140 MPH.

  GYPSUM SHEATHING SHALL CONFORM TO ASTM C1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH GA 253. FIBERBOARD SHEATHING SHALL CONFORM TO ASTM C208. SPACING OF FASTENERS ON FLOOR SHEATHING PANEL EDGES APPLIES TO PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING AND AT FLOOR PERIMETERS ONLY. SPACING OF FASTENERS ON ROOF SHEATHING PANEL EDGES APPLIES TO PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING. BLOCKING OF ROOF OR FLOOR SHEATHING PANEL EDGES PERPENDICULAR TO THE FRAMING MEMBERS NEED NOT BE PROVIDED EXCEPT AS
- REQUIRED BY OTHER PROVISIONS OF THIS CODE. FLOOR PERIMETER SHALL BE SUPPORTED BY FRAMING MEMBERS OR SOLID BLOCKING.

  WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE, PROVIDE TWO TOE NAILS ON ONE SIDE OF THE RAFTER AND TOE NAILS FROM THE CEILING JOIST TO TOP PLATE IN
- ACCORDANCE WITH THIS SCHEDULE. THE TOE NAIL ON THE OPPOSITE SIDE OF THE RAFTER SHALL NOT BE REQUIRED. RSRS-01 IS A ROOF SHEATHING RING SHANK NAIL MEETING THE SPECIFICATIONS IN ASTM F1667.

## **CONTINUED TABLE R602.3(1) FASTENING SCHEDULE**

		August 200 - 100 -	SPACING OF FASTENERS						
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>	EDGES (INCHES)h	INTERMEDIATE SUPPORTS <sup>c, e</sup> (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 <i>EXTERIOR</i> WALL SHEATHING TO WALL FRAMING]								
30	<sup>3</sup> / <sub>8</sub> " - <sup>1</sup> / <sub>2</sub> "	6D COMMON (2" x 0.113") NAIL (SUBFLOOR, WALL) <sup>i</sup> 8D COMMON (2 ¹/₂" x 0.131") NAIL (ROOF); OR RSRS-01 (2 ³/₃" x 0.113") NAIL (ROOF)	6	12 <sup>f</sup>					
31	<sup>19</sup> / <sub>32</sub> " - 1"	8D COMMON NAIL (2 1/2" x 0.131"); OR RSRS-01 (2 3/8" x 0.113") NAIL (ROOF)	6	12 <sup>f</sup>					
32	1 1/8" - 1 1/4"	10D COMMON (3" x 0.148") NAIL; OR 8D (2 ½" x 0.131") DEFORMED NAIL	6	12					
OTHER WALL SHEATHING®									
33	1/2" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 <sup>1</sup> / <sub>2</sub> " GALVANIZED ROOFING NAIL, <sup>7</sup> / <sub>16</sub> " HEAD DIAMETER, OR 1 <sup>1</sup> / <sub>4</sub> " LONG 16 GA. STAPLE WITH <sup>7</sup> / <sub>16</sub> " OR 1" CROWN	3	6					
34	<sup>25</sup> / <sub>32</sub> " STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 3/4" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1 1/2" LONG 16 GA. STAPLE WITH 7/16" OR 1" CROWN	3	6					
35	1/2" GYPSUM SHEATHING <sup>d</sup>	1 1/2" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1 1/2" LONG; 1 1/4" SCREWS, TYPE W OR S	7	7					
36	5/8" GYPSUM SHEATHING <sup>d</sup>	1 3/4" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1 5/8" LONG; 1 5/8" SCREWS, TYPE W OR S	7	7					
	WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING								
37	<sup>3</sup> / <sub>4</sub> " AND LESS	6D DEFORMED (2" x 0.120") NAIL; OR 8D COMMON (2 1/2" x 0.131") NAIL	6	12					
38	<sup>7</sup> / <sub>8</sub> " - 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") NAÎL; OR 8D DEFORMED (2 ½" x 0.120") NAÎL	6	12					

## **TABLE R602.3(2) ALTERNATE ATTACHMENTS TO TABLE R602.3(1)**

NOMINAL MATERIAL		SPACING° OF FASTENERS				
THICKNESS (INCHES)	DESCRIPTION <sup>a, b</sup> OF FASTENER AND LENGTH (INCHES)	EDGES (INCHES) INTERMEDIATE SUPPORTS (INC				
WOOD STRUCTL	RAL PANELS SUBFLOOR, ROOF <sup>9</sup> AND WALL SHEATHING TO FRAMING AND PARTI	 CLEBOARD WALL SI	I HEATHING TO FRAMING <sup>f</sup>			
	STAPLE 15 GA. 1 <sup>3</sup> / <sub>4</sub>	4	8			
UP TO <sup>1</sup> / <sub>2</sub>	0.097 - 0.099 NAIL 2 <sup>1</sup> / <sub>4</sub>	3	6			
-	STAPLE 16 GA. 1 <sup>3</sup> / <sub>4</sub>	3	6			
	0.113 NAIL 2	3	6			
<sup>19</sup> / <sub>32</sub> AND <sup>5</sup> / <sub>8</sub>	STAPLE 15 AND 16 GA. 2	4	8			
-	0.097 - 0.099 NAIL 2 <sup>1</sup> / <sub>4</sub>	4	8			
	STAPLE 14 GA. 2	4	8			
	STAPLE 15 GA. 1 <sup>3</sup> / <sub>4</sub>	3	6			
<sup>23</sup> / <sub>32</sub> AND <sup>3</sup> / <sub>4</sub>	0.097 - 0.099 NAIL 2 <sup>1</sup> / <sub>4</sub>	4	8			
-	STAPLE 16 GA. 2	4	8			
	STAPLE 14 GA. 2 <sup>1</sup> / <sub>4</sub>	4	8			
-	0.113 NAIL 2 <sup>1</sup> / <sub>4</sub>	3	6			
1	STAPLE 15 GA. 2 <sup>1</sup> / <sub>4</sub>	4	8			
-	0.097 - 0.099 NAIL 2 <sup>1</sup> / <sub>2</sub>	4	8			
NOMINAL MATERIAL		SP	ACING° OF FASTENERS			
THICKNESS (INCHES)	DESCRIPTION <sup>a, b</sup> OF FASTENER AND LENGTH (INCHES)	EDGES (INCHES)	BODY OF PANEL <sup>d</sup> (INCHES)			
	FLOOR UNDERLAYMENT; PLYWOOD-HARDBOARD-PARTICLEBOARD <sup>f</sup> -					
	1 ECON GRUENEATHIERT, I ETWOOD-HARDBOARD-I ARTICLEBOARD-					
	FIBER-CEMENT					
	FIBER-CEMENT 3D, CORROSION-RESISTANT, RING SHANK NAILS	3	6			
	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN		6			
1/4	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT	3				
<sup>1</sup> / <sub>4</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE) STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS	3 3	6			
1/4	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)	3 3 8	6 8			
-	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD	3 3 8	6 8			
1/ <sub>4</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)	3 3 8 8	6 8 8			
-	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM	3 3 8 8	6 8 8			
<sup>1</sup> / <sub>4</sub> AND <sup>5</sup> / <sub>16</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 <sup>1</sup> / <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM	3 3 8 8 8	6 8 8 6 5			
<sup>1</sup> / <sub>4</sub> AND <sup>5</sup> / <sub>16</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 ¹/ <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 ¹/ <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 ¹/ <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 ¹/ <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 ¹/ <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 ¹/ <sub>2</sub> GA. (0.099") SHANK DIAMETER	3 3 8 8 8	6 8 8 8 6 5 8 <sup>e</sup>			
<sup>1</sup> / <sub>4</sub> AND <sup>5</sup> / <sub>16</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 <sup>1</sup> / <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER	3 3 8 8 8 3 2 6 6	6 8 8 8 6 5 8 <sup>e</sup> 8			
<sup>1</sup> / <sub>4</sub> AND <sup>5</sup> / <sub>16</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 <sup>1</sup> / <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 <sup>1</sup> / <sub>2</sub> STAPLE 16 GA.1 <sup>1</sup> / <sub>2</sub>	3 3 8 8 8 3 2 6 6	6 8 8 8 6 5 8 <sup>e</sup> 8			
<sup>1</sup> / <sub>4</sub> AND <sup>5</sup> / <sub>16</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 <sup>1</sup> / <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 <sup>1</sup> / <sub>2</sub> HARDBOARD <sup>f</sup>	3 3 8 8 8 3 2 6 6 6	6 8 8 8 6 5 8 <sup>e</sup> 8			
1/ <sub>4</sub> AND <sup>5</sup> / <sub>16</sub> 11/ <sub>32</sub> , <sup>3</sup> / <sub>8</sub> , <sup>15</sup> / <sub>32</sub> AND <sup>1</sup> / <sub>2</sub> 19/ <sub>32</sub> , <sup>5</sup> / <sub>8</sub> , <sup>23</sup> / <sub>32</sub> AND <sup>3</sup> / <sub>4</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 <sup>1</sup> / <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 <sup>1</sup> / <sub>2</sub> HARDBOARD <sup>f</sup> 1 <sup>1</sup> / <sub>2</sub> LONG RING-GROOVED UNDERLAYMENT NAIL	3 8 8 8 3 2 6 6 6	6 8 8 8 6 5 8 <sup>e</sup> 8 8			
1/ <sub>4</sub> AND <sup>5</sup> / <sub>16</sub> 11/ <sub>32</sub> , <sup>3</sup> / <sub>8</sub> , <sup>15</sup> / <sub>32</sub> AND <sup>1</sup> / <sub>2</sub> 19/ <sub>32</sub> , <sup>5</sup> / <sub>8</sub> , <sup>23</sup> / <sub>32</sub> AND <sup>3</sup> / <sub>4</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE) STAPLE 18 GA., 7/8 LONG, 3/4 CROWN (FINISHED FLOORING OTHER THAN TILE)  1 1/4 LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 1/4 LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., 7/8, 3/16 CROWN WIDTH  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  1 1/2 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 1/2  HARDBOARD  1 1/2 LONG RING-GROOVED UNDERLAYMENT NAIL  4D CEMENT-COATED SINKER NAIL	3 8 8 8 3 2 6 6 6	6 8 8 8 6 5 8 <sup>e</sup> 8 8			
1/ <sub>4</sub> AND 5/ <sub>16</sub> 11/ <sub>32</sub> , 3/ <sub>8</sub> , 15/ <sub>32</sub> AND 1/ <sub>2</sub> 19/ <sub>32</sub> , 5/ <sub>8</sub> , 23/ <sub>32</sub> AND 3/ <sub>4</sub> 0.200	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., 7/8 LONG, 3/4 CROWN (FINISHED FLOORING OTHER THAN TILE)  1 1/4 LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 1/4 LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., 7/8, 3/16 CROWN WIDTH  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  1 1/2 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 1/2  HARDBOARD  1 1/2 LONG RING-GROOVED UNDERLAYMENT NAIL  4D CEMENT-COATED SINKER NAIL  STAPLE 18 GA., 7/8 LONG (PLASTIC COATED)	3 8 8 8 3 2 6 6 6	6 8 8 8 6 5 8 <sup>e</sup> 8 8			
1/ <sub>4</sub> AND <sup>5</sup> / <sub>16</sub> 11/ <sub>32</sub> , <sup>3</sup> / <sub>8</sub> , <sup>15</sup> / <sub>32</sub> AND <sup>1</sup> / <sub>2</sub> 19/ <sub>32</sub> , <sup>5</sup> / <sub>8</sub> , <sup>23</sup> / <sub>32</sub> AND <sup>3</sup> / <sub>4</sub>	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., 7/8 LONG, 3/4 CROWN (FINISHED FLOORING OTHER THAN TILE)  1 1/4 LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 1/4 LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., 7/8, 3/16 CROWN WIDTH  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  1 1/2 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 1/2  HARDBOARD  1 1/2 LONG RING-GROOVED UNDERLAYMENT NAIL  4D CEMENT-COATED SINKER NAIL  STAPLE 18 GA., 7/8 LONG (PLASTIC COATED)  PARTICLEBOARD	3 8 8 8 8 6 6 6 6 3	6 8 8 8 6 5 8 <sup>e</sup> 8 8			
1/ <sub>4</sub> AND <sup>5</sup> / <sub>16</sub> 11/ <sub>32</sub> , <sup>3</sup> / <sub>8</sub> , <sup>15</sup> / <sub>32</sub> AND <sup>1</sup> / <sub>2</sub> 19/ <sub>32</sub> , <sup>5</sup> / <sub>8</sub> , <sup>23</sup> / <sub>32</sub> AND <sup>3</sup> / <sub>4</sub> 0.200	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG, <sup>3</sup> / <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 <sup>1</sup> / <sub>4</sub> LONG x. 121 SHANK x. 375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 <sup>1</sup> / <sub>4</sub> LONG, NO. 8 x. 375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> , <sup>3</sup> / <sub>16</sub> CROWN WIDTH  1 <sup>1</sup> / <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 <sup>1</sup> / <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 <sup>1</sup> / <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 <sup>1</sup> / <sub>2</sub> HARDBOARD <sup>1</sup> 1 <sup>1</sup> / <sub>2</sub> LONG RING-GROOVED UNDERLAYMENT NAIL  STAPLE 18 GA., <sup>7</sup> / <sub>8</sub> LONG (PLASTIC COATED)  PARTICLEBOARD  4D RING-GROOVED UNDERLAYMENT NAIL	3 3 8 8 8 8  3 2 6 6 6 6 3 3	6 8 8 8 6 5 8 <sup>e</sup> 8 8 8			
1/ <sub>4</sub> AND 5/ <sub>16</sub> 11/ <sub>32</sub> , 3/ <sub>8</sub> , 15/ <sub>32</sub> AND 1/ <sub>2</sub> 19/ <sub>32</sub> , 5/ <sub>8</sub> , 23/ <sub>32</sub> AND 3/ <sub>4</sub> 0.200	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE) STAPLE 18 GA., 7/ <sub>8</sub> LONG, 3/ <sub>4</sub> CROWN (FINISHED FLOORING OTHER THAN TILE)  1 1/ <sub>4</sub> LONG x. 121 SHANK x. 375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 1/ <sub>4</sub> LONG, NO. 8 x375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 1/ <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 1/ <sub>2</sub> GA. (0.099") SHANK DIAMETER STAPLE 18 GA., 7/ <sub>8</sub> , 3/ <sub>16</sub> CROWN WIDTH  1 1/ <sub>4</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 1/ <sub>2</sub> GA. (0.099") SHANK DIAMETER  1 1/ <sub>2</sub> RING OR SCREW SHANK NAIL-MINIMUM 12 1/ <sub>2</sub> GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 1/ <sub>2</sub> HARDBOARD  1 1/ <sub>2</sub> LONG RING-GROOVED UNDERLAYMENT NAIL  STAPLE 18 GA., 7/ <sub>8</sub> LONG (PLASTIC COATED)  PARTICLEBOARD  4D RING-GROOVED UNDERLAYMENT NAIL  STAPLE 18 GA., 7/ <sub>8</sub> LONG, 3/ <sub>16</sub> CROWN	3 3 8 8 8 8  3 2 6 6 6 6 3 3 3 3 3	6 8 8 8 6 5 8 <sup>e</sup> 8 8 8			
1/ <sub>4</sub> AND <sup>5</sup> / <sub>16</sub> 11/ <sub>32</sub> , <sup>3</sup> / <sub>8</sub> , <sup>15</sup> / <sub>32</sub> AND <sup>1</sup> / <sub>2</sub> 19/ <sub>32</sub> , <sup>5</sup> / <sub>8</sub> , <sup>23</sup> / <sub>32</sub> AND <sup>3</sup> / <sub>4</sub> 0.200	FIBER-CEMENT  3D, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE) STAPLE 18 GA., 7/8 LONG, 3/4 CROWN (FINISHED FLOORING OTHER THAN TILE)  1 1/4 LONG x .121 SHANK x .375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAINLESS STEEL) ROOFING NAILS (FOR TILE FINISH)  1 1/4 LONG, NO. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)  PLYWOOD  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 18 GA., 7/8, 3/16 CROWN WIDTH  1 1/4 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  1 1/2 RING OR SCREW SHANK NAIL-MINIMUM 12 1/2 GA. (0.099") SHANK DIAMETER  STAPLE 16 GA.1 1/2  HARDBOARD  1 1/2 LONG RING-GROOVED UNDERLAYMENT NAIL  STAPLE 18 GA., 7/8 LONG (PLASTIC COATED)  PARTICLEBOARD  4D RING-GROOVED UNDERLAYMENT NAIL  STAPLE 18 GA., 7/8 LONG, 3/16 CROWN  6D RING-GROOVED UNDERLAYMENT NAIL	3 3 8 8 8 8 3 2 6 6 6 6 3 3 3 3 6	6 8 8 8 6 5 8 8 8 8 6 6 6 6			

- NAIL IS A GENERAL DESCRIPTION AND SHALL BE PERMITTED TO BE T-HEAD, MODIFIED ROUND HEAD OR ROUND HEAD. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16-INCH ON DIAMETER EXCEPT AS NOTED.
- NAILS OR STAPLES SHALL BE SPACED AT NOT MORE THAN 6 INCHES ON CENTER AT ALL SUPPORTS WHERE SPANS ARE 48 INCHES OR GREATER. NAILS OR STAPLES SHALL BE SPACED AT NOT MORE THAN 12 INCHES ON CENTER AT INTERMEDIATE
  - FASTENERS SHALL BE PLACED IN A GRID PATTERN THROUGHOUT THE BODY OF THE PANEL.
    FOR 5-PLY PANELS, INTERMEDIATE NAILS SHALL BE SPACED NOT MORE THAN 12 INCHES ON CENTER EACH WAY.
- HARDBOARD UNDERLAYMENT SHALL CONFORM TO CPA/ANSI A135.4

  SPECIFIED ALTERNATE ATTACHMENTS FOR ROOF SHEATHING SHALL BE PERMITTED WHERE THE ULTIMATE DESIGN WIND SPEED IS LESS THAN 130 MPH. FASTENERS ATTACHING WOOD STRUCTURAL PANEL ROOF SHEATHING TO GABLE END WALL
- FRAMING SHALL BE INSTALLED USING THE SPACING LISTED FOR PANEL EDGES.
  FIBER-CEMENT UNDERLAYMENT SHALL CONFORM TO ASTM C1288 OR ISO 8336, CATEGORY C.

#### **DESIGN LOADS (PSF)**

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 1	NORMAL

HEAVY ROOF COVERING MATERIAL (TILE, CONCRETE, SLATE, ETC.) SHALL NOT BE USED UNLESS 20 PSF DEAD LOAD AND HEAVY ROOF IS NOTED ON THE ROOF PLAN. IF HEAVY ROOFING IS TO BE USED AND IS NOT NOTED ON THE ROOF PLAN, NOTIFY ENGINEER PRIOR TO ANY CONSTRUCTION, INCLUDING FOUNDATION AND SITE WORK. IF THE PLAN HAS BEEN DESIGNED FOR HEAVY ROOF 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
24"x24"x12"	(4) #4 BARS E/W	3"	SCH40	6K
30"x30"x12"	(5) #4 BARS E/W	3"	SCH40	9.4K
36"x36"x12"	(6) #4 BARS E/W	3"	SCH40	13.5K
42"x42"x14"	(7) #4 BARS E/W	3 1/2"	SCH40	18.4K
48"x48"x16"	(8) #4 BARS E/W	3 1/2"	SCH40	24.0K
54"x54"x16"	(9) #4 BARS E/W	3 1/2"	SCH40	30.4K
60"x60"x18"	(10) #4 BARS E/W	3 1/2"	SCH40	37.5K
	24"x24"x12" 30"x30"x12" 36"x36"x12" 42"x42"x14" 48"x48"x16" 54"x54"x16"	24"x24"x12" (4) #4 BARS E/W 30"x30"x12" (5) #4 BARS E/W 36"x36"x12" (6) #4 BARS E/W 42"x42"x14" (7) #4 BARS E/W 48"x48"x16" (8) #4 BARS E/W 54"x54"x16" (9) #4 BARS E/W	PAD SIZE       REINFORCEMENT       MIN.         24"x24"x12"       (4) #4 BARS E/W       3"         30"x30"x12"       (5) #4 BARS E/W       3"         36"x36"x12"       (6) #4 BARS E/W       3"         42"x42"x14"       (7) #4 BARS E/W       3 1/2"         48"x48"x16"       (8) #4 BARS E/W       3 1/2"         54"x54"x16"       (9) #4 BARS E/W       3 1/2"	PAD SIZE         REINFORCEMENT         MIN.         TYPE           24"x24"x12"         (4) #4 BARS E/W         3" SCH40           30"x30"x12"         (5) #4 BARS E/W         3" SCH40           36"x36"x12"         (6) #4 BARS E/W         3" SCH40           42"x42"x14"         (7) #4 BARS E/W         3 1/2" SCH40           48"x48"x16"         (8) #4 BARS E/W         3 1/2" SCH40           54"x54"x16"         (9) #4 BARS E/W         3 1/2" SCH40

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**

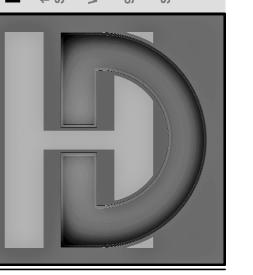
MIN. DESIGN REQUIREMENTS

	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

**BUILDER'S PLANS:** THE TERM "BUILDER'S PLANS" REFERS TO A CERTAIN LEVEL OF DEVELOPMENT OF THE DRAWINGS. AS THE NAME IMPLIES, THESE PLANS REQUIRE THAT THE CONTRACTOR POSSESSES COMPETENCE IN RESIDENTIAL CONSTRUCTION AND A THOROUGH UNDERSTANDING OF THE INTERNATIONAL RESIDENTIAL CODE (IRC). THE CONTRACTOR WARRANTS TO HD ENGINEERING & DESIGN THAT THEY POSSESSES THE PARTICULAR COMPETENCE AND SKILL IN CONSTRUCTION NECESSARY TO BUILD THIS PROJECT WITHOUT FULL ENGINEERING AND DESIGN SERVICES, AND FOR THAT REASON THE CONTRACTOR OR HOME OWNER HAS RESTRICTED THE SCOPE OF PROFESSIONAL SERVICES. THE CONSTRUCTION DOCUMENTS PROVIDED BY THE LIMITED SERVICES SHALL BE TERMED "BUILDER'S PLANS" IN RECOGNITION OF THE CONTRACTOR'S SOPHISTICATION. ALTHOUGH HD ENGINEERING & 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 TO HD ENGINEERING. CONSTRUCTION MAY REQUIRE THAT THE CONTRACTOR ADAPT THE "BUILDER'S PLANS" TO THE FIELD CONDITIONS ENCOUNTERED AND MAKE LOGICAL ADJUSTMENTS IN FIT, FORM, DIMENSION AND QUANTITY. CHANGES MADE FROM THE PLANS WITHOUT THE CONSENT OF 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 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 PLANS SHALL RELIEVE HD ENGINEERING & DESIGN OF ALL RESPONSIBILITIES OF THE CONSEQUENCES.

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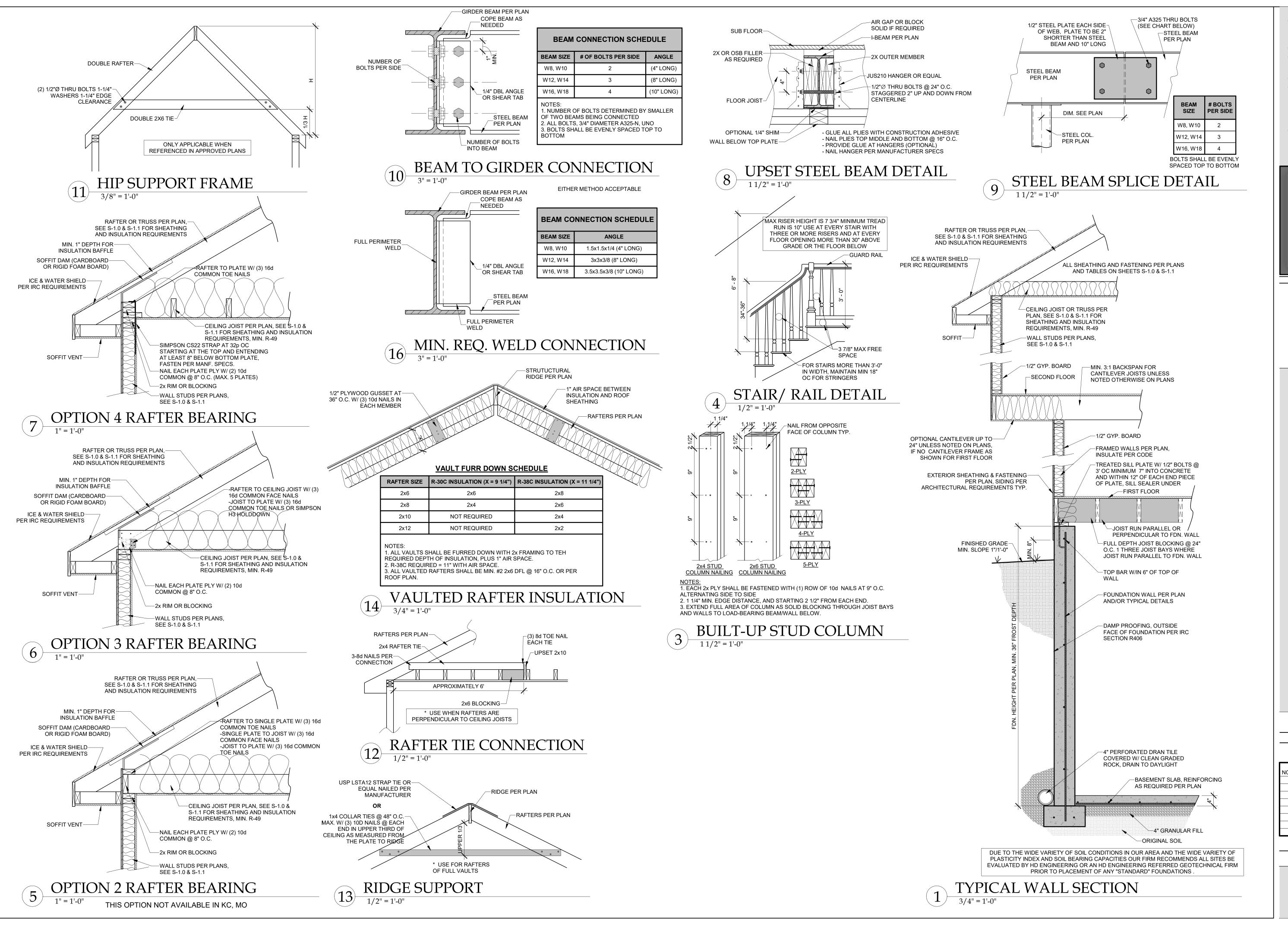
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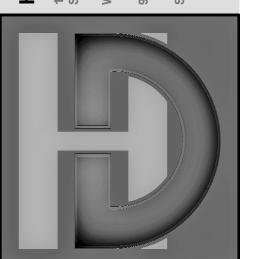
**GENERAL NOTES** 

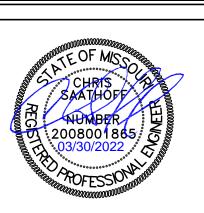
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VICE@HDENGINEERS.COM





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D#: 43666

DATE: 03/30/2022

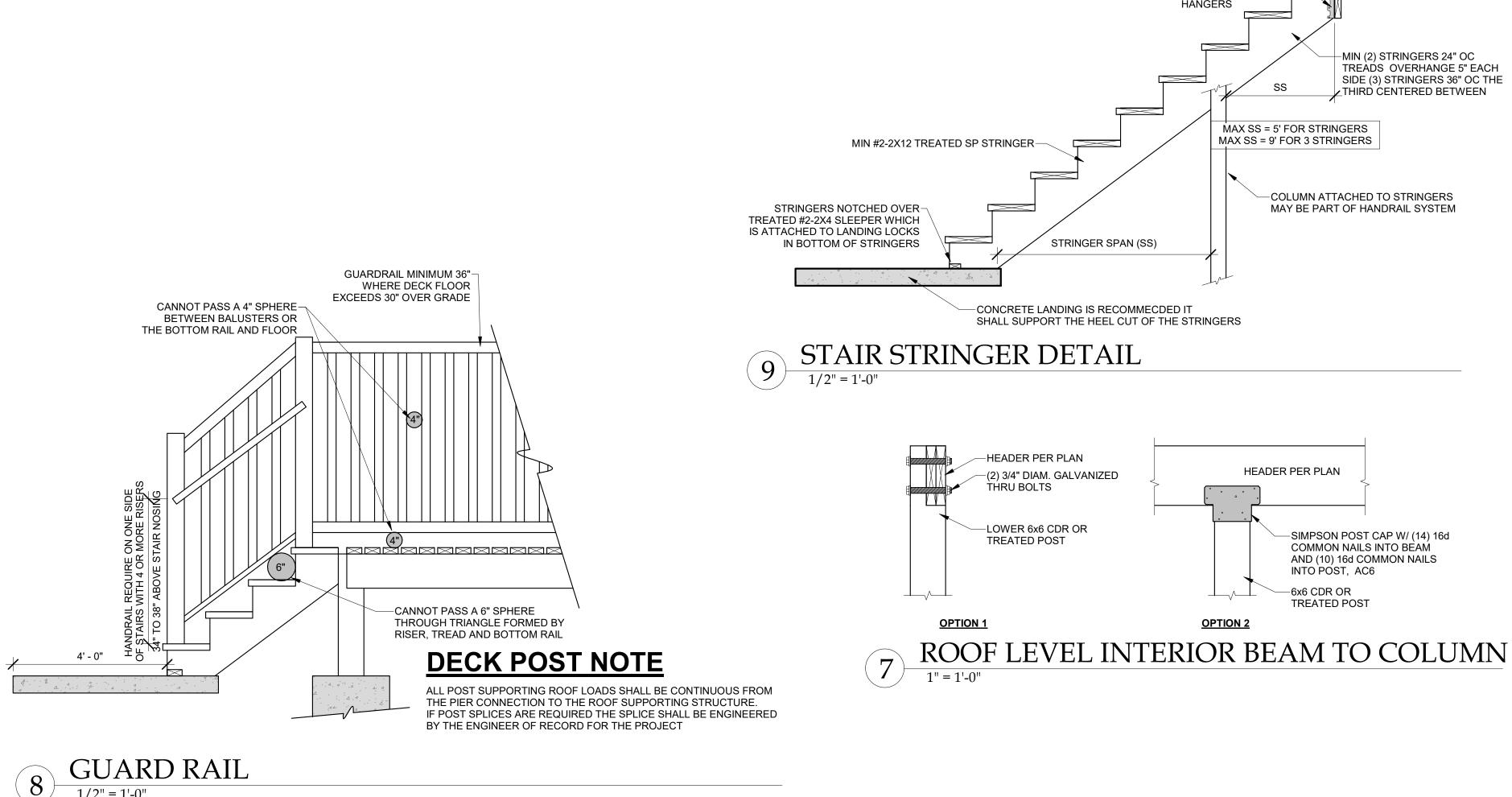
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FRAMING SECTIONS

S-1.2

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## **TABLE IRC2018 R507.9.1.3(1)** DECK LEDGER CONNECTION TO BAND JOIST a.b (DECK LIVE LOAD = 40 PSF, DECK HEAD LOAD = 10 PSF, SNOW LOAD < 40 PSF)

TOP OF EACH STRINGER IS-TOE-NAILED (TYP) AND

ON ONE SIDE, OR SLOPED

SUPPORTED BY SIMPSON LS70

**GUSSET ANGLE OR EQUIVALENT** 

/											
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 <sup>d, e</sup>										
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.

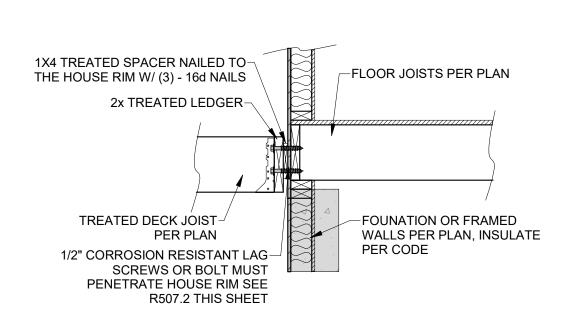
## **TABLE IRC2018 R507.9.1.3(2)** PLACEMENT OF LAG SCEWS AND BOLT IN **DECK LEDGERS AND BAND JOISTS**

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 °	3/4 inches	2 inches	2 inches	1 5/8 inches <sup>b</sup>					

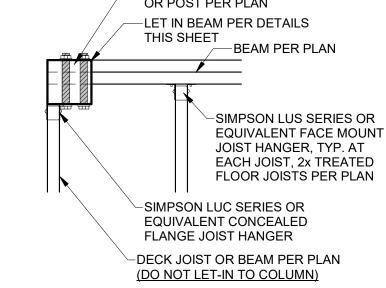
For SI: 1 inch = 25.4mm. a. Lag screws of bolts shal lbe staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1)

b. Maximum 5 inces c. For engineered rim joists, the manufacturer's recommendations shall govern.

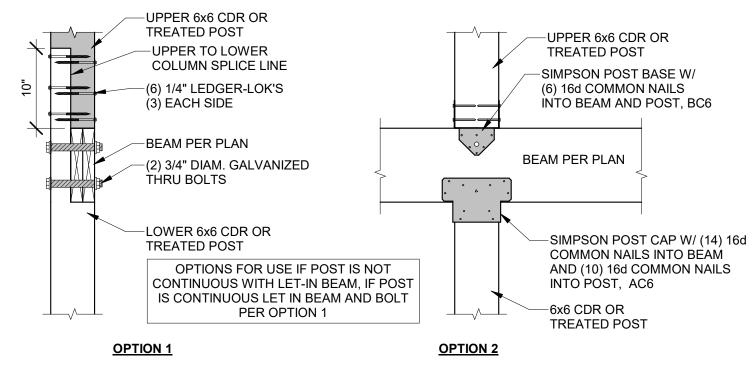
d. The minimum distances from bottom row of lag screws or bolts to the top of the ledger shall be in accordance with Figure R507.9.1.3(1)



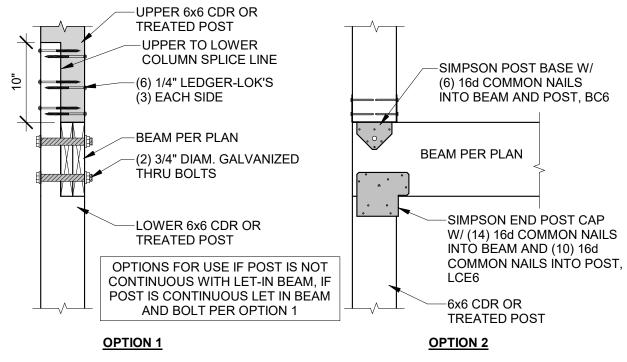
DECK LEDGER ATTACHMENT



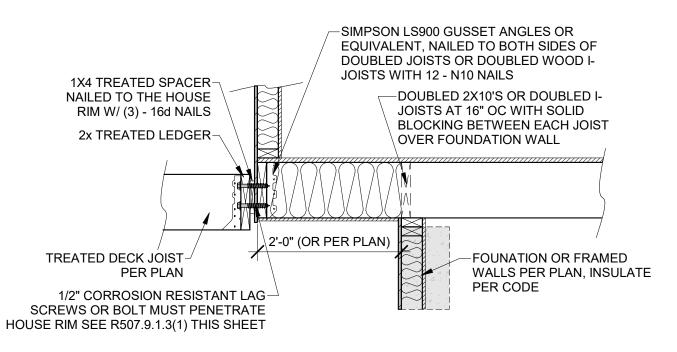
DECK CORNER COLUMN



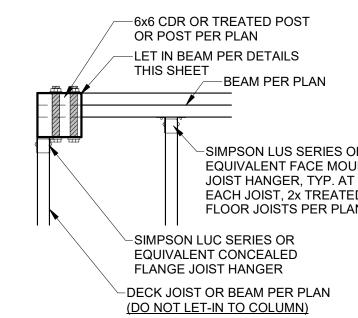
DECK LEVEL INTERIOR BEAM TO COLUMN



DECK LEVEL EXTERIOR BEAM TO COLUMN



## DECK LEDGER TO CANTILEVER



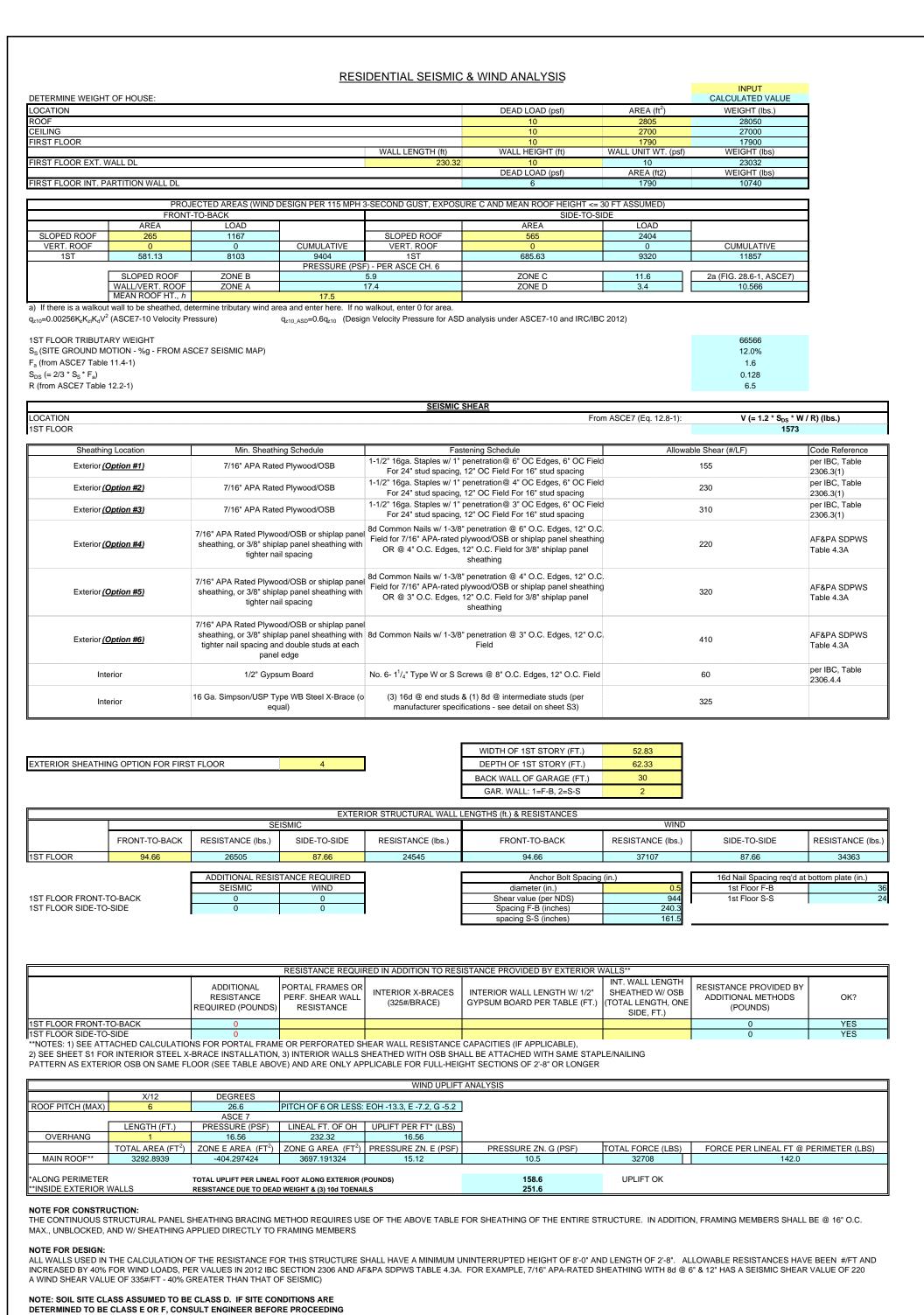
DECK DETAILS

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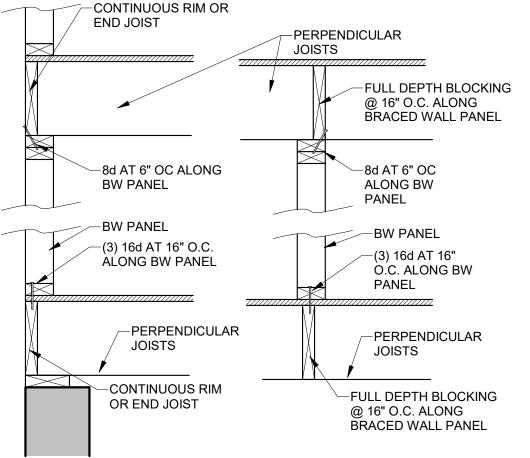
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WITH CONSTRUCTION



#### -CONTINUOUS RIM OR —ADDITIONAL FRAMING FULL DEPTH BLOCKING **END JOIST** MEMBER ABOVE BW @ 16" O.C. ALONG PANEL **BRACED WALL PANEL** -8d AT 6" OC ALONG -8d AT 6" OC (3) 16d AT EACH ALONG BW **BLOCKING MEMBER BW PANEL** PANEL —(3) 16d AT EACH -BW PANEL -BW PANEL BLOCKING MEMBER -(3) 16d AT 16" O.C. -(3) 16d AT 16" **ALONG BW PANEL** -(2) 16d NAILS O.C. ALONG BW EACH SIDE PANEL -CONTINUOUS RIM -ADDITIONAL FRAMING FULL DEPTH BLOCKING OR END JOIST MEMBER UNDER BW @ 16" O.C. ALONG PANEL BRACED WALL PANEL

**BRACED WALL PANEL CONNECTION WHEN** 

PERPENDICULAR TO FLOOR/CEILING JOISTS

BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING JOISTS

BRACED WALL PANEL CONNECTIONS

Min. 3"x11 1/4" NET HEADER, STL. HDR. PROHIBITED, IF 1/2" MIN. 3/8" WOOD 7 SPACER IS USED, PLACE ON BACK-SIDE OF WEADER STRUCTURAL PANEL FINISHED WIDTH OF OPENING FOR SINGLE OR DOUBLE PORTAL -HEADER TO JACK-STUD STRAP PER TABLE R602.10.6.4 (THIS SHEET) ON BOTH SIDES OF **TENSION STRAP PER-**OPENING OPPOSITE SIDE OF SHEATHING TABLE R602.10.6.4 (ON OPPOSITE SIDE OF -FASTEN SHEATHING TO HEADER WITH 8D SHEATHING) COMMON OR GALVANIZED BOX NAILS IN 3" GRID PATTERN AS SHOWN -MINIMUM DOUBLE 2x4 POST (KING & JACK STUD). NUMBER OF JACK STUDS PER TABLES -MIN. LENGTH OF PANEL PER TABLE R602.7(1) & (2) R602.10.5 SEE SHEET S2.1 -MINIMUM DOUBLE 2x4 FRAMING COVERED W/ IF NEEDED, PANEL SPLICE EDGES-MIN. 3/8" THICK WOOD STRUCTURAL PANEL SHALL OCCUR OVER AND BE NAILED TO COMMON BLOCKING WITHIN THE SHEATHING W/8D COMMON OR GALVANIZED BOX NAILS AT 3" O.C. IN ALL FRAMING (STUDS, MIDDLE 24" OF THE PORTAL-LEG BLOCKING, AND SILLS) TYP. HEIGHT. ONE ROW OF 3" O.C. NAILING IS REQUIRED IN EACH PANEL EDGE. -MINIMUM (2) 3500 LB STRAP-TYPE HOLD TYPICAL PORTAL FRAME-DOWNS (EMBEDDED INTO CONCRETE CONSTRUCTION AND NAILED INTO FRAMING) -MIN.1000 LB. HOLD-DOWN -MIN. (1) 5/8" ANCHOR BOLT PER R403.1.6 W/ DEVICE (EMBEDDED INTO 2"x2"x3/16" PLATE WASHER CONCRÈTE AND NAILED INTO FRAMING). -MIN. RÉINFORCING OF FOUNDATION, ONE -MIN. FOOTING SIZE UNDER OPENINGS IS #4 BAR TOP AND BOTTOM OF FOOTING, 12"X12". A TURNED DOWN SLAB SHALL BE LAP BARS 15" MIN. PERMITTED AT DOOR OPENINGS. FRONT ELEVATION SIDE ELEVATION PFH PORTAL FRAME W/ HOLD DOWNS (R602.10.6.2)

EXTENT OF HEADER WITH DOUBLE PORTAL FRAMES (TWO BRACED WALL PANELS)

FASTEN KING STUD-

TO HEADER WITH 6

FASTEN TOP PLATE TO-HEADER WITH TWO ROWS

OF 16D SINKER NAILS @ 3"

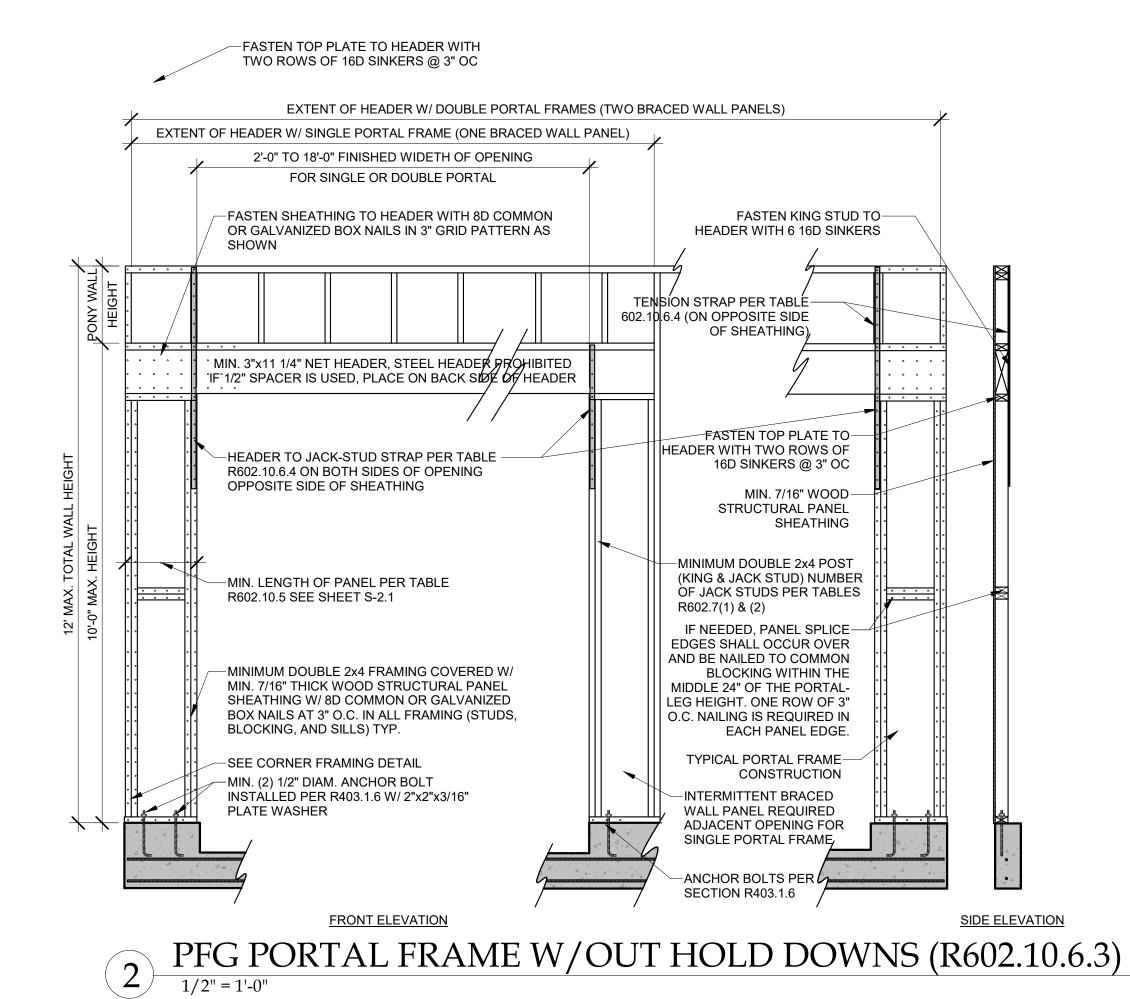
16D SINKERS

OC TYP 🕹

EXTENT OF HEADER SINGLE PORTAL FRAME DESIGN
(ONE BRACED WALL PANEL)

2'-0" TO 18'-0" FINISHED WIDTH OF OPENING

FOR SINGLE OR DOUBLE PORTAL



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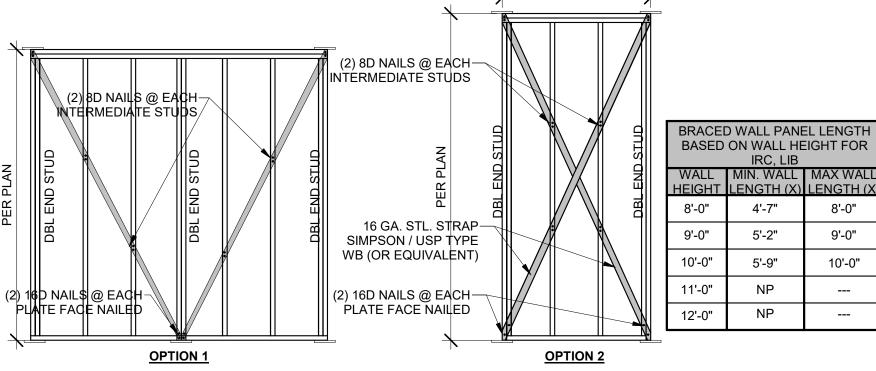
NO. ISSUE/REVISION Revision Date

BRACED WALL NOTES & DETAILS

S-2.0

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# 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



# FOR IRC CODE PRESCRIPTIVE METHOD TABLE R602.10.5 MINIMUM LENGTH OF BRACED

LIB BRACING

	<u>V</u>	VAL	L P	ANE	<u>LS</u>		
	_		MINIMUM	LENGTH	(INCHES)	a	
	METHOD (SEE TABLE R602.10.4)	WALL HEIGHT					CONTRIBUTING LENGTH (INCHES)
	(022 17.522 17002.170.4)	8 FEET	9 FEET	10 FEET	11 FEET	12 FEET	(11101120)
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>
4514/	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
	SUPPORTING ROOF ONLY	16	16	16	NOTE C	NOTE C	48
PFH	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	NOTONE
	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	
	140	-	-	-	-	66	
		ī	ī	l	Ī		

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

72

#### EXTERIOR BRACED WALL METHOD: (SEE ON THIS SHEET) WSP METHOD: WOOD STRUCKTRAL BANKS SHEATHING WITH A THICKNESS NOT

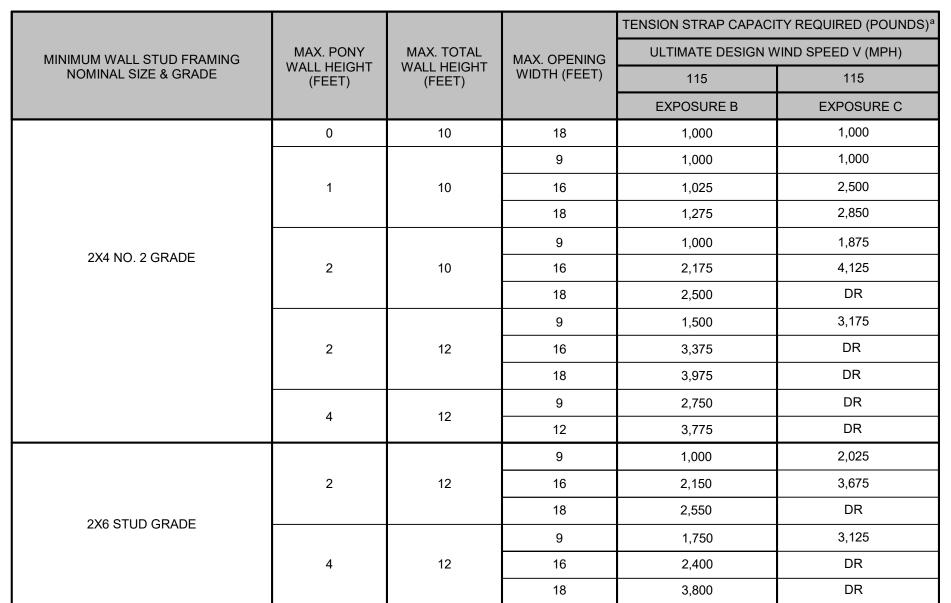
WOOD STRUCUTRAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" O.C. STUD SPACING WITH 6d NAILS COMMON NAILS @ 6" O.C. EDGES AND 12" O.C. FIELD OR SHEATHING THICKNESS NOT LESS THANK 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" O.C. SPACING WITH 8d COMMON 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 MEMBERS).

#### 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)

#### LIB METHOD:

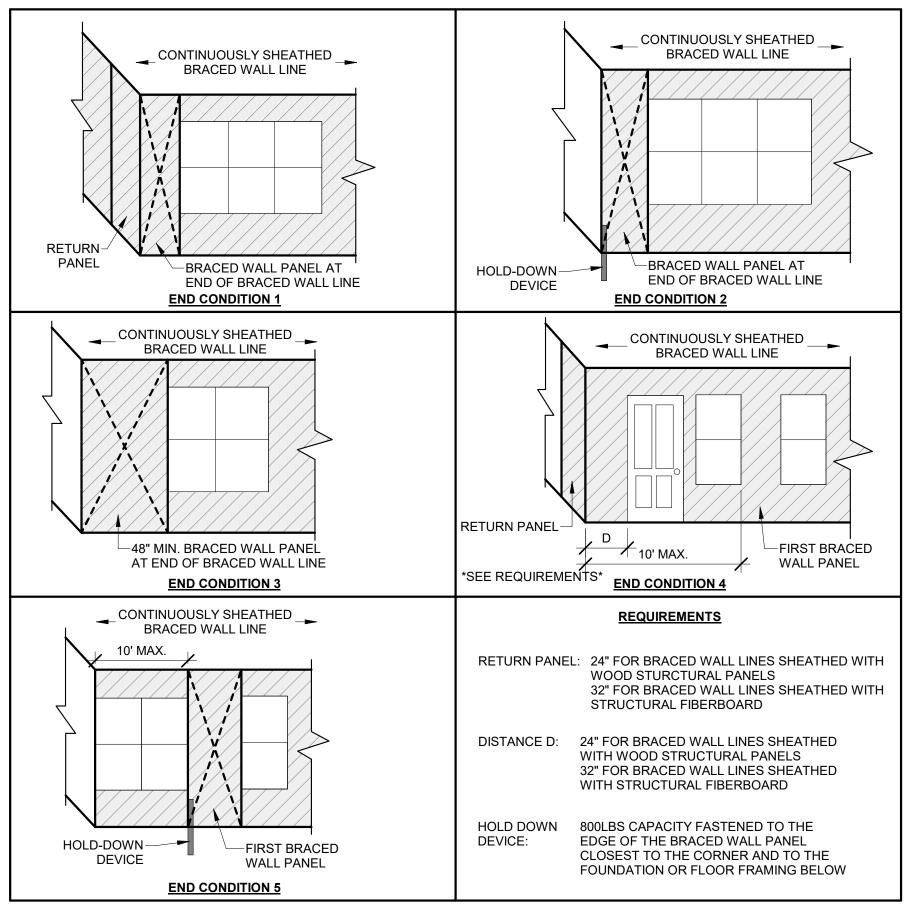
1X4 WOOD FASTENED W/ (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUIVALENT) STL. X-BRACE(S) @ 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUDS FASTENED PER MANUF. SPECS.

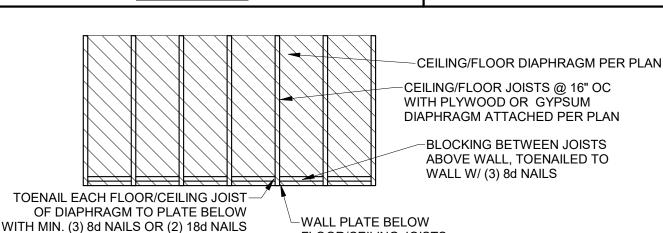


a. DR = DESIGN REQUIREDb. STRAP SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

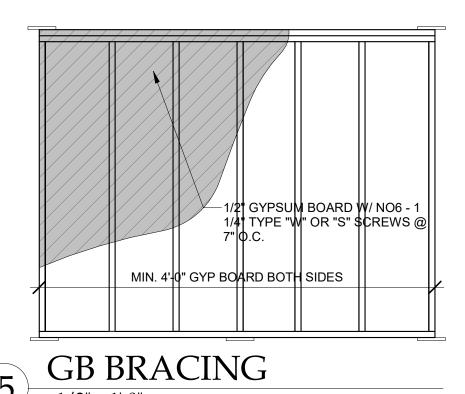
## **END WALL CONDITIONS**

#### FOR CONTINUOUSLY SHEATHED BRACED WALL LINES



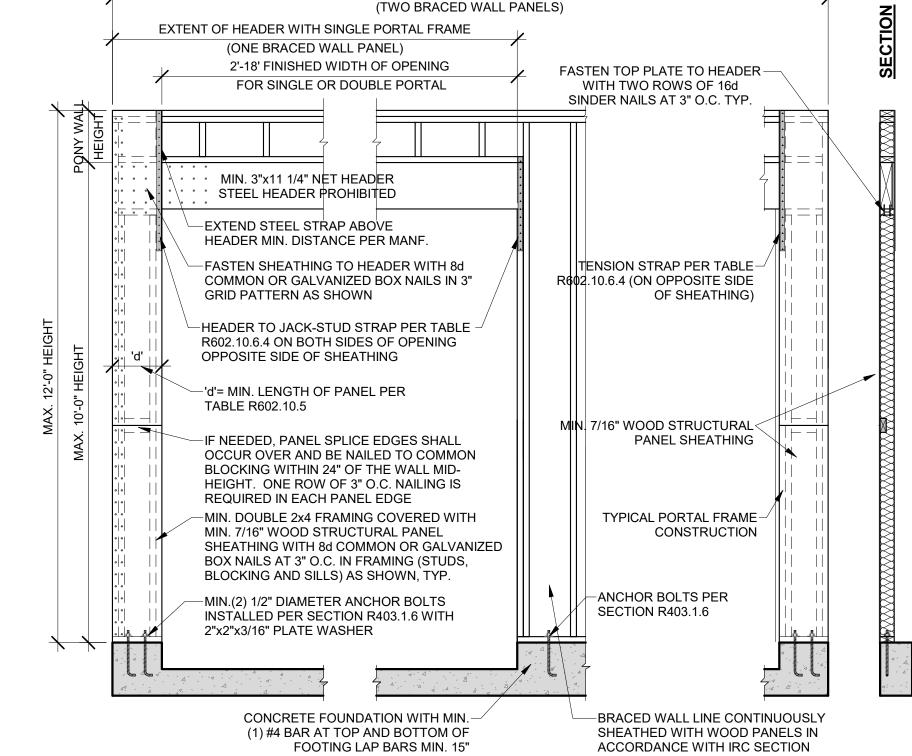


## 1 DIAPHRAGM CONNECTION TO INTERIOR WALL

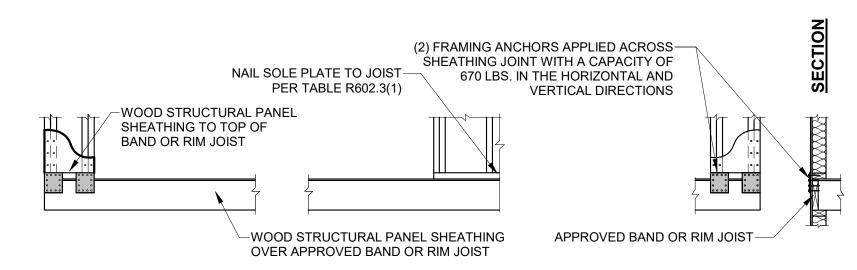


#### **FRONT ELEVATION**

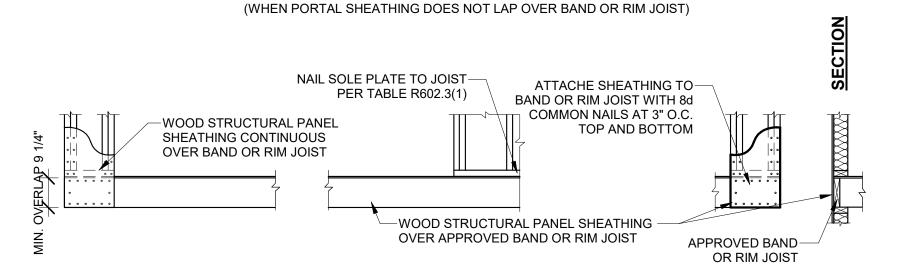
EXTENT OF HEADER WITH DOUBLE PORTAL FRAMES



#### OVER CONCRETE OR MASONRY BLOCK FOUNDATION

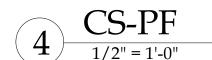


#### **OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION**



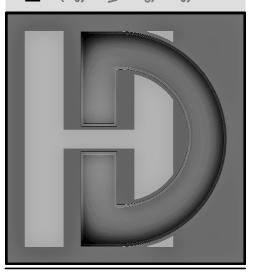
## **OVER RAISED WOOD FLOOR - OVERLAP OPTION**

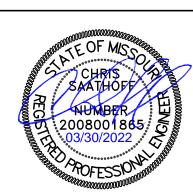
(WHEN PORTAL SHEATHING LAPS OVER BAND OR RIM JOIST)



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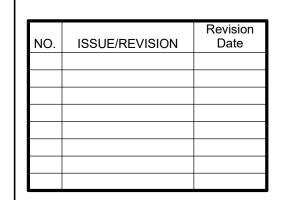
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S SW RED BARN LN., LEE'S SUMMIT,

HD#: 43666

DATE: 03/30/2022

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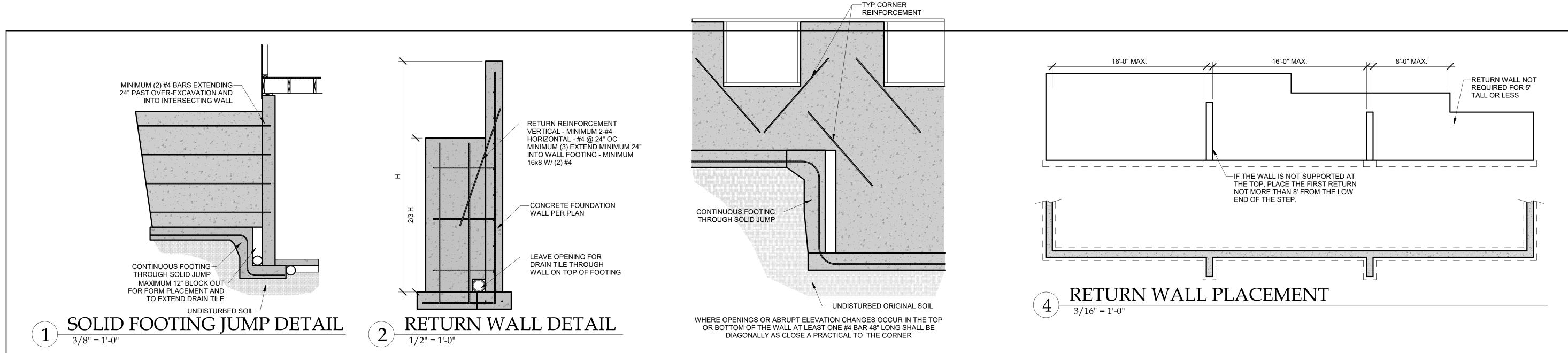
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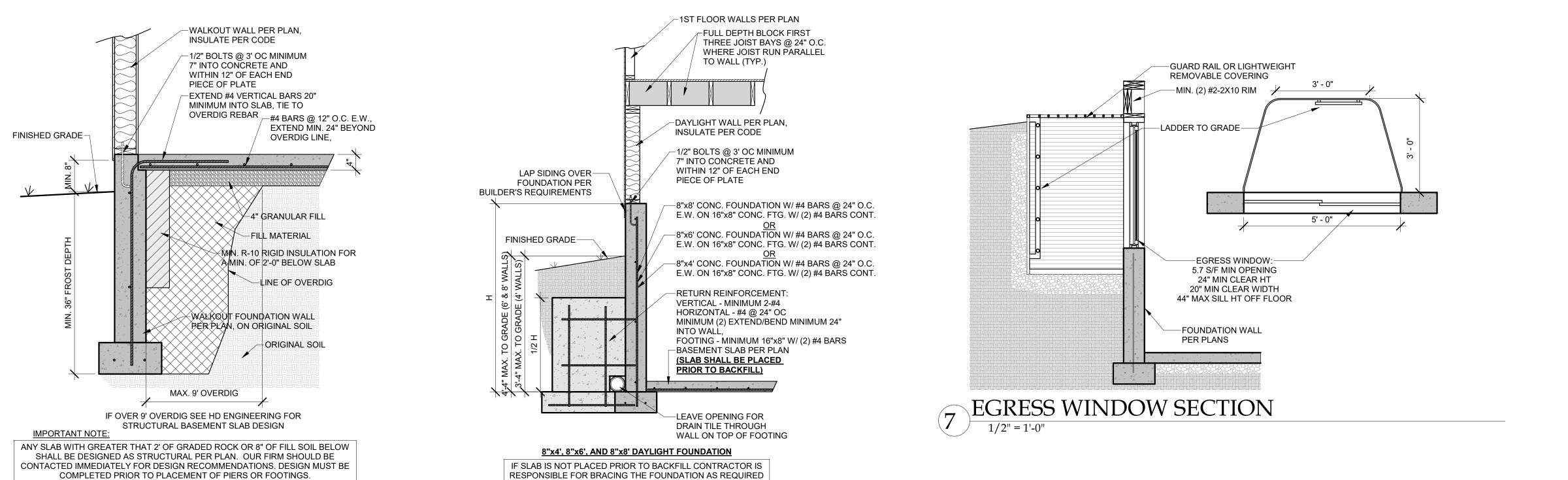
BRACED WALLS NOTES & DETAILS

**S-2.1** 

RELEASE FOR
020 HD ENGRISHING RESIDENT ON
AS NOTED ON PLANS REVIEW
Development Services
LEE'S SUMMIT, MISSOURI



# 3 REINFORCEMENT AT CORNERS AND STEPS



UNRESTRAINED FOUNDATION WALL

WALKOUT DETAIL

MIN. FOOTING SIZE: -16"x8" STANDARD FOOTING -20"x10" FOOTING WALL SUPPORTING CONCRETE BASEMENT WALL PLUS BRICK OR STONE EXCEEDING 5' IN HEIGHT -OVERLAP JOINT AT LEAST 6" AT SEAM AND EDGES. BLATTER LAYER BETWEEN BARRIER AND SLAB NOT PERMITTED  SEAL/BOND BREAK TO MINIMIZE CURING TIME AND CONTROL BLEED WATER USE APPROVED ADDITIVES TO REDUCE SLUMP INSTEAD OF ADDING WATER DURING POURS.  MIN. 4" WASH CRUSHED STONE BASE OR CLEAN GRAVEL 6 MIL VAPOR RETARDER DIRECTLY UNDER SLAB MIN. (2) #4 BARS CONTINUOUS UNIFORMLY SPACED
\ \ UNDER SLAB

Q	FOUNDATION FOOTINGS	
O	1/2" = 1'-0"	

WITH 3" CLEAR AT THE BOTTOM

— PERFORATED DRAIN PIPE

CONCRETE CERENCELL	8" THIC	K WALL	10"	THICK W	ALL
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

CONCRETE SHALL HAVE AIR ENTRAINMENT OF 5-7%.

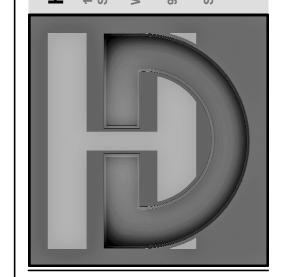
\* MINIMUM REQUIREMENT FOR VERTICAL REBAR IN PLAIN CONCRETE WALLS IS #4 @ 36" ON \* VERTICAL BARS SHALL BE CONTINUED UP TO WITHIN 8" OF THE TOP OF THE WALL.

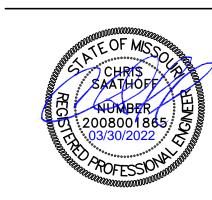
\* REBAR SHALL BE POSITIONED AT THE TENSION FACE OF THE WALL (2" FROM THE INSIDE \* REINFORCEMENT SHALL LAP A MINIMUM OF 24 INCHES AT ENDS, SPLICES, AND AROUND CORNERS.

\*\* #4 BARS @ 24" ON CENTER. \*\* #4 BAR WITHIN 12 OF TOP 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

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2022 43666 03/30/2022 DATE:

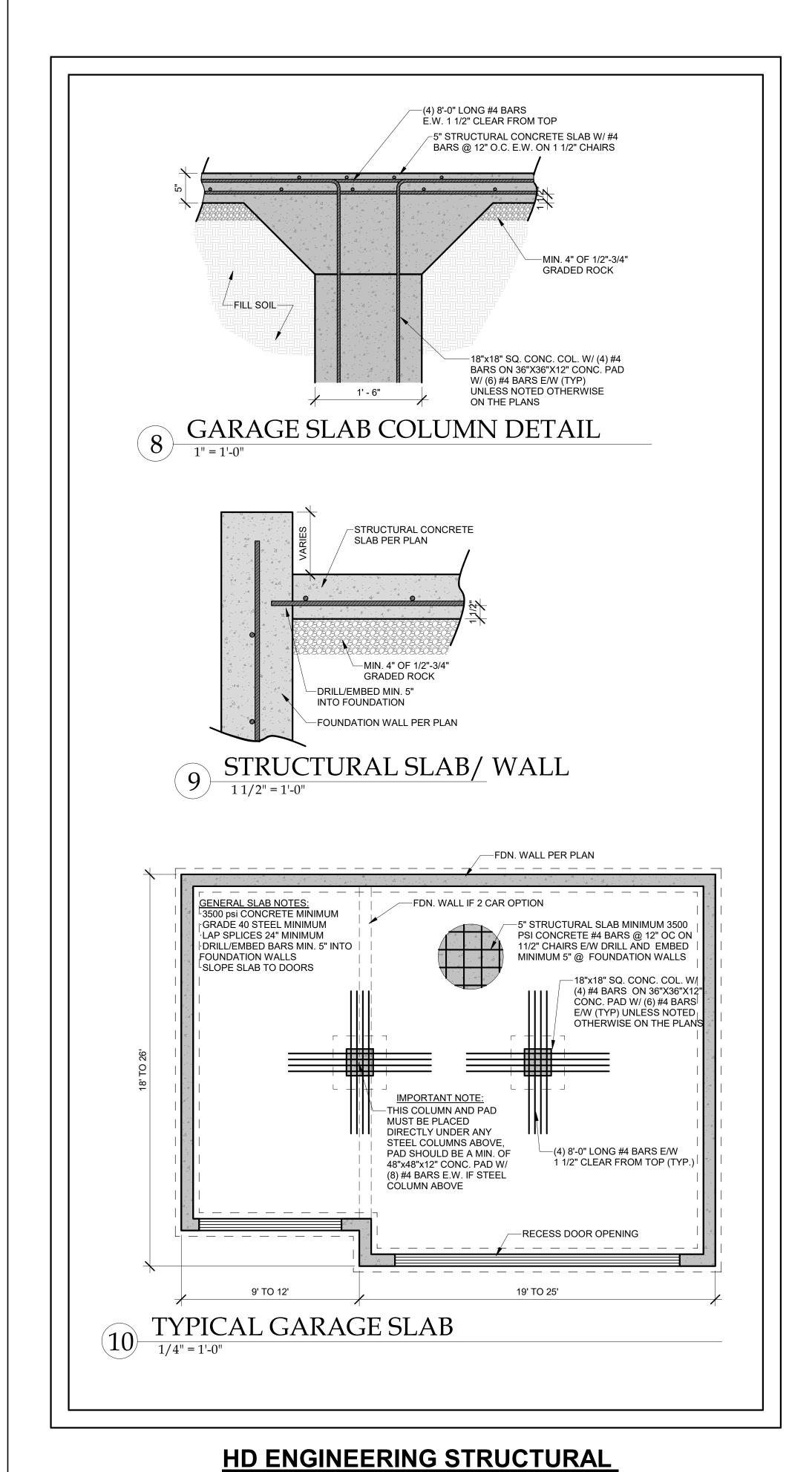
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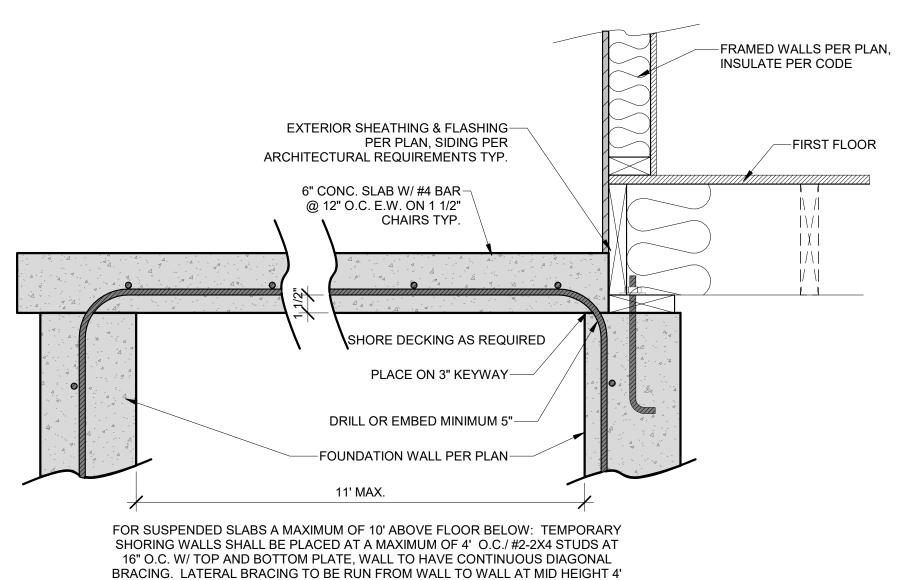
NO.	ISSUE/REVISION	Revision Date

CONCRETE DETAILS

AS NOTED ON PLANS REVIEW
Development Services
LEE'S SUMMIT, MISSOURI

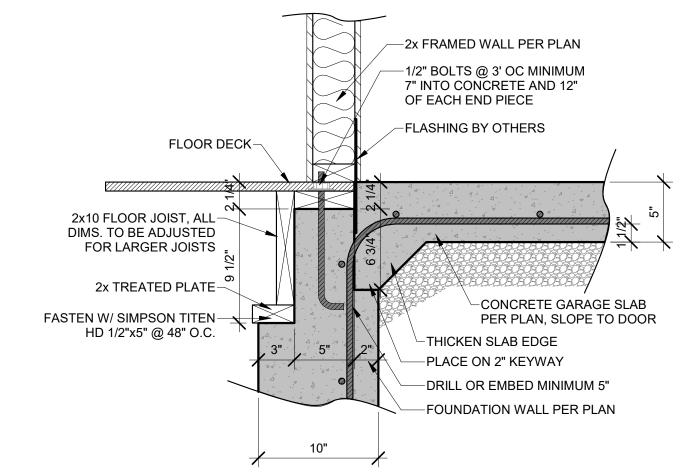


**GARAGE SLAB DETAILS** 



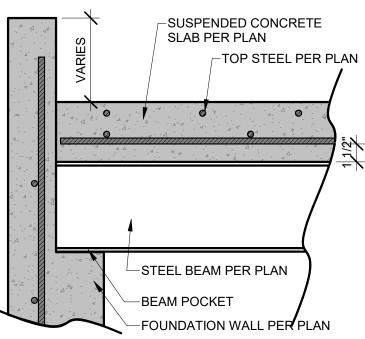
SUSPENDED PORCH STOOP SLAB

ON CENTER. SHORING TO REMAIN IN PLACE FOR AT LEAST 21 DAYS.



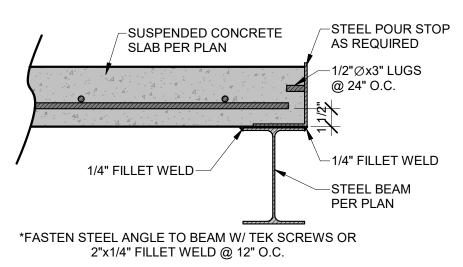
ZERO ENTRY GARAGE DETAIL

1 1/2" = 1'-0"



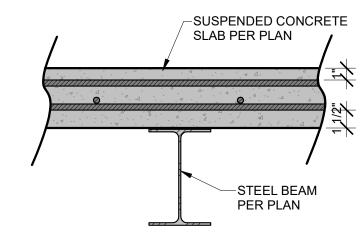
SUSPENDED SLAB BEAM/WALL CONNECTION

1 1/2" = 1'-0"



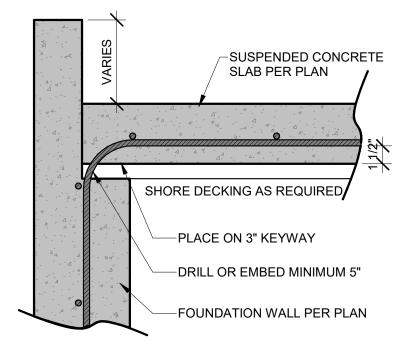
SUSPENDED SLAB POUR STOP

1 1/2" = 1'-0"



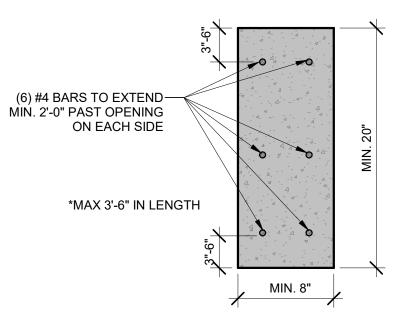
SUSPENDED SLAB/STEELBEAM CROSS SECTION

1 1/2" = 1'-0"



SUSPENDED SLAB/WALL CONNECTION

11/2" = 1'-0"



CONCRETE HEADER DETAIL

IN 1/2" = 1'-0"

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.

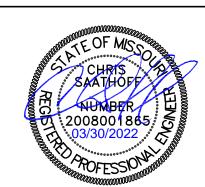
-ANY CAST IN PLACE SLABS FORMED MORE THAN 10' ABOVE THE FLOOR BELOW SHALL HAVE A SITE SPECIFIC SHORING DESIGN DONE. OUR
FIRM SHOULD BE CONSULTED FOR THIS DESIGN ONCE FOUNDATION WALLS ARE IN PLACE TO EVALUATE ALL FIELD CONDITIONS. IT SHOULD



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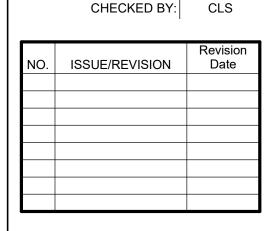
LIABILITY UNDER APPLICABLE LAW.



TION, LLC.
RA
E'S SUMMIT, MO

STRUCTURAL DETAILS & NOTES

1D#: 43666 DATE: 03/30/2022



SUSPENDED SLAB DETAILS

S-3.1

RELEASE FOR
2020 HD ENGRISH REVIEW ON AS NOTED ON PLANS REVIEW
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LEE'S SUMMIT, MISSOURI

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

١.	VALUES BELOW ARE PER 2018 IECC, ACTUAL VALUES MAY VARY BASED ON ALTERNATE ENERGY COMPLIANCE PATH CHOSEN (IN JURISDITIONS WHERE ALTERNATIVE PATHS ARE AVAILABLE)													
	CLIMATE ZONE	FENSTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED SHGC FENSTRATION		INSULATED WOOD DOOR U-VALUE		WOOD FRAMED WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL 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

#### TABLE R602.3(5) SIZE, HEIGHT AND SPACING OF WOOD STUDS

			NON-BEARING WALLS				
STUD SIZE (INCHES)	LATERALLY UNSUPPORTED STUD HEIGHT <sup>a</sup> (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 <sup>a</sup> (INCHES)	LATERALLY UNSUPPORTED STUD HEIGHT <sup>a</sup> (FEET)	MAXIMUM SPACING (INCHES)
2 x 3 <sup>b</sup>						10	16
2 x 4	10	24°	16°		24	14	24
3 x 4	10	24	24	16	24	14	24
2 x 5	10	24	24		24	16	24
2 x 6	10	24	24	16	24	20	24

LISTED HEIGHTS ARE DISTANCES BETWEEN POINTS OF LATERAL SUPPORT PLACED PERPENDICULAR TO THE PLANE OF THE WALL. BEARING WALLS 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 PRACTICE. SHALL NOT BE USED IN EXTERIOR WALLS A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2 x 4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE INCREASED TO 2 x 6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE

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

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

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.

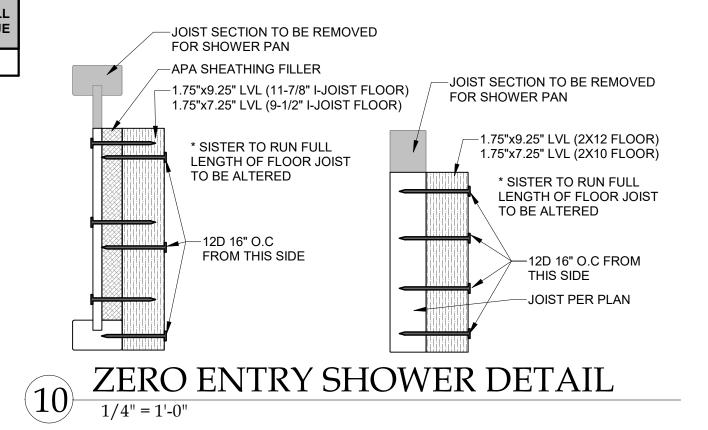
IF FULL RAFTER DEPTH IS NOT ADEQUATE FOR MINIMUM INSULATION VALUE, RAFTER SIZES WILL NEED TO BE INCREASED, OR ADEQUATE FURRING SHALL BE USED TO OBTAIN THE MINIMUM JOIST DEPTH FOR THE REQUIRED INSULATION. IN ADDITION, IF THE RAFTER SIZE IS INCREASED IT SHALL BE VERIFIED THAT THE RIDGE BE A MINIMUM OF ONE NOMINAL SIZE

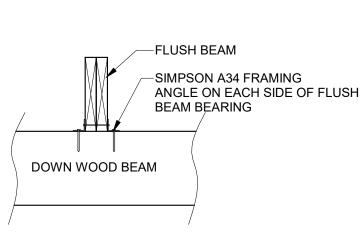
LARGER THAN THE RAFTERS BEING RECEIVED. (SEE CHART BELOW) 2x12 MAXIMUM INSULATION VALUE 1" AIR SPACE (FIBERGLASS) CONDENSED R-38, 8 1/4"

## TABLE N1103.6.1 (R403.6.1) WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACYa

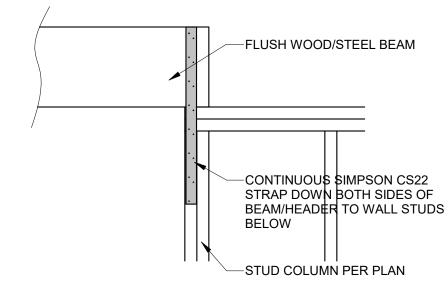
FAN LOCATION	AIR FLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY (CFM/WATT)	AIR FLOW RATE MAXIMUM (CFM)	
HRV OR ERV	ANY	1.2 CFM/WATT	ANY	
RANGE HOODS	ANY	2.8 CFM/WATT	ANY	
IN-LINE FAN	ANY	2.8 CFM/WATT	ANY	
BATHROOM, UTILITY ROOM	10	1.4 CFM/WATT	< 90	
BATHROOM, UTILITY ROOM	90	2.8 CFM/WATT	ANY	

WHEN TESTED IN ACCORDANCE WITH HVI STANDARD 916.

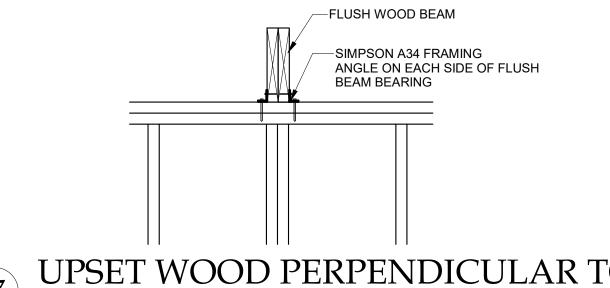




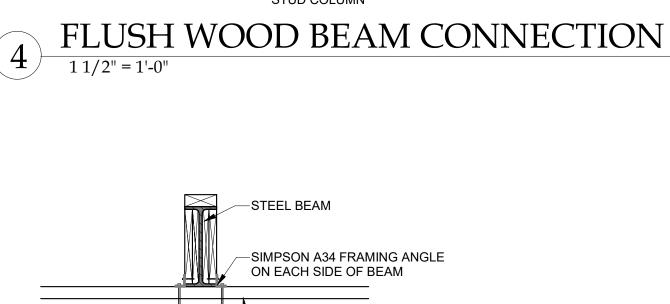
WOOD TO WOOD STACKED CONNECTION



UPSET WOOD/STEEL PARALLEL TO WALL



UPSET WOOD PERPENDICULAR TO WALL



TOP PLATE

EXTERIOR WALL STEEL BEAM BEARING

JOI\$TS PER PLAN/ LAP OVER BEAM

-FLUSH WOOD BEAM

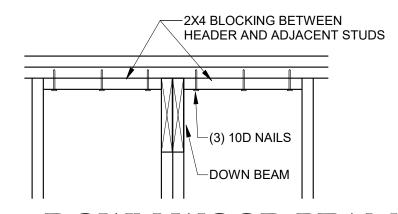
-2x TOP PLATE GLUED AND

STEEL BEAM PER PLAN

STEEL BEAM TO WOOD PLATE

FASTENED W/ 16d BENT NAILS

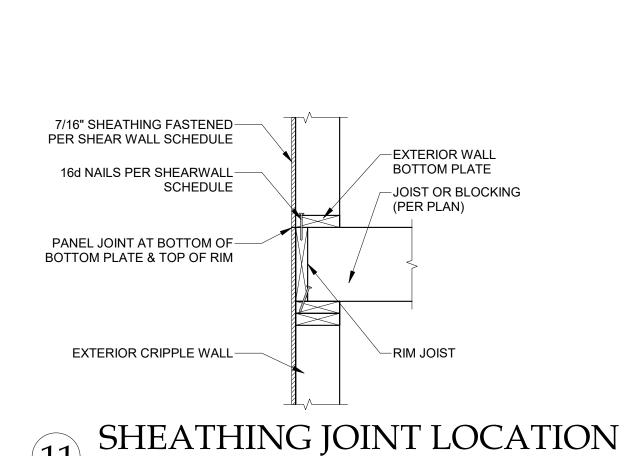
AT 24" O.C. EACH SIDE OF BEAM

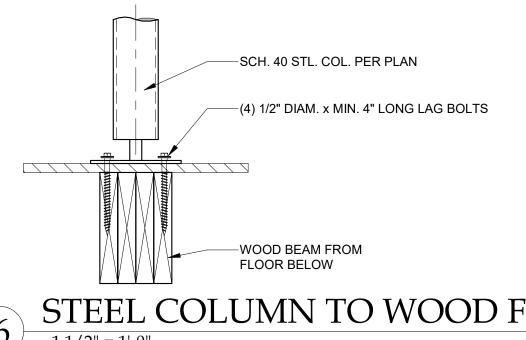


DOWN WOOD BEAM PERPENDICULAR

-(3) 10D NAILS INTO EACH

BÉAM/HDR PLY

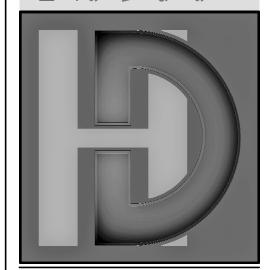




**DOWN BEAM** STEEL COLUMN TO WOOD FLOOR

DOWN WOOD BEAM PARALLEL

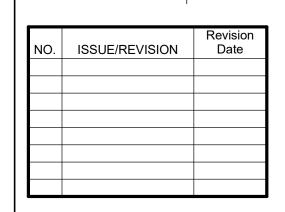
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