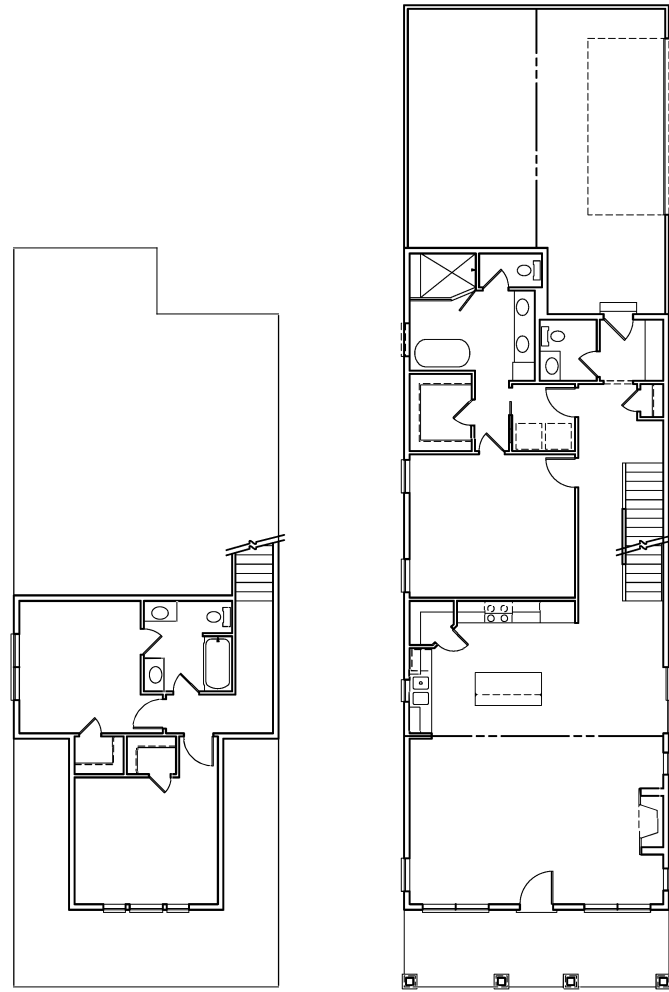


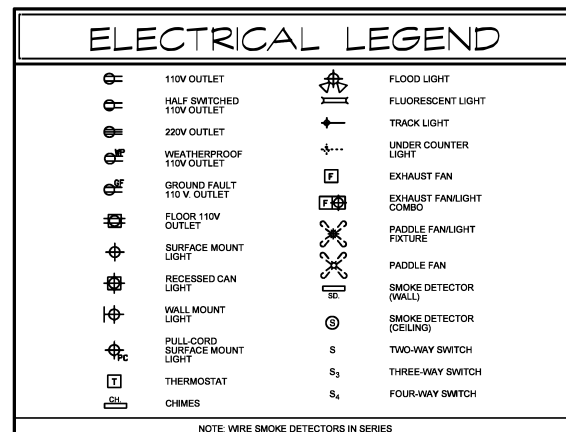
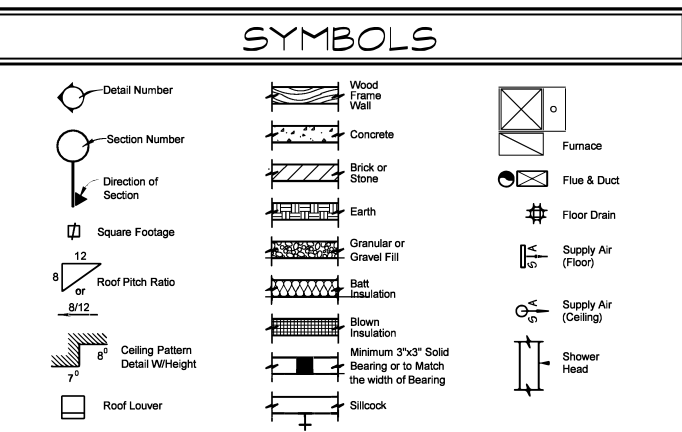
GENERAL NOTES & DESIGN CRITERIA



ALL CONSTRUCTION WILL MEET THE REQUIREMENTS OF THE 2018 IRC AND 2017 NEC

WALK THROUGH DOOR @ GARAGE TO HOUSE WILL HAVE SELF CLOSING HARDWARE

ALL EGRESS WINDOW WELLS WILL HAVE DRAINS TO DRAIN TILE SYSTEM

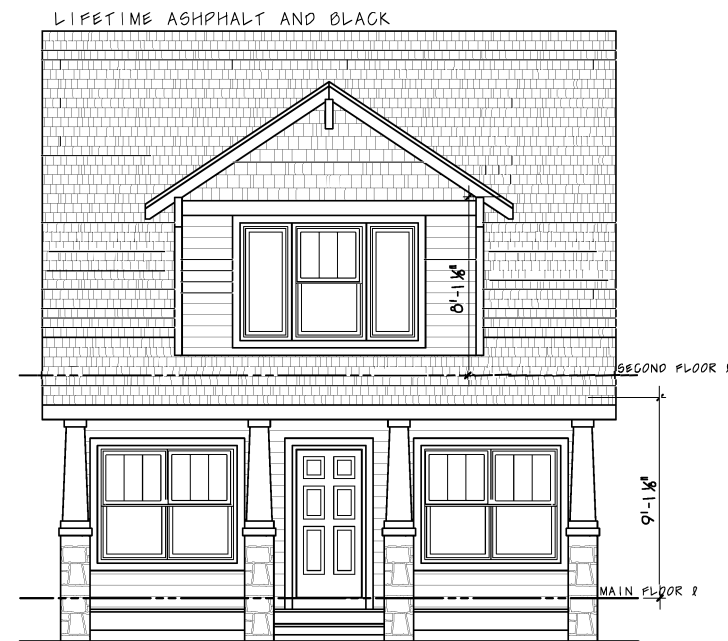


ABBREVIATIONS

A/C	Air Conditioner	DISH	Dishwasher	INSUL	Insulation	PROJ	Projection	TRAP	Trap
ADJ	Adjustable	DN	Down	INT	Interior	RAD	Radius	U.L.	Unexcavated
AWN	Awing	DRY	Dryer	JST	Joist	RAFTS	Rafters	UNEX	Unexcavated
BLDG	Building	EA	Each	LVL	Laminated Veneer Lumber	REFRIG	Refrigerator	WASH	Washer
BSMT	Basement	ENT	Entertainment	LN	Linen	RM	Room	WD	Wood
BTM	Bottom	EXP	Exposure	MAX	Maximum	SEC	Second	WH	Water Heater
BTW	Between	EXT	Exterior	MBR	Master Bedroom	SHWR	Shower	W.W.M.	Welded Wire Mesh
CANT	Can't	FIN	Finished	MICRO	Microwave	S.L.	Side Lias		
C.J.	Ceiling Joist	F.J.	Floor Joist	MIN	Minimum	SPP	Sump Pump Pit	@	At
CLG	Ceiling	FLOR	Fluorescent	MISC	Miscellaneous	STA	Stationary	Line	Line
CEIL	Ceiling	FTG	Footing	O.C.	On Center	STD	Standard	2W	Two Wide
CMU	Concrete Masonry Unit	GALV	Galvanized	O.H.D.	Overhead Door	STL	Steel	3W	Three Wide
C.O.	Cased Opening	GARB	Garbage Disposal	OPNG	Opening	STRUCT	Structural	4W	Four Wide
CONC	Concrete	G & N	Glue & Nailed	PC	Pull Chord	T.C.	Tongue & Groove	W	With
DBL	Double	G.L.	Glulam Header	PICT	Picture	T & G	Tongue & Groove		Diameter
DH	Double Hung	HDR	Header	POLY	Polyethylene	TRANS	Transom		

ARTIST CONCEPTION ONLY

ARTWORK NOT TO SCALE



FRONT ELEVATION

SCALE: 1/4" = 1'-0" LIFETIME ASPHALT AND BLACK

LP PANEL SIDE & BACKWALLS - FRONT & LAP SMART SIDING



1/3/2022 - UPDATED PLANS PER TRUSS LAYOUT

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402-210-4369
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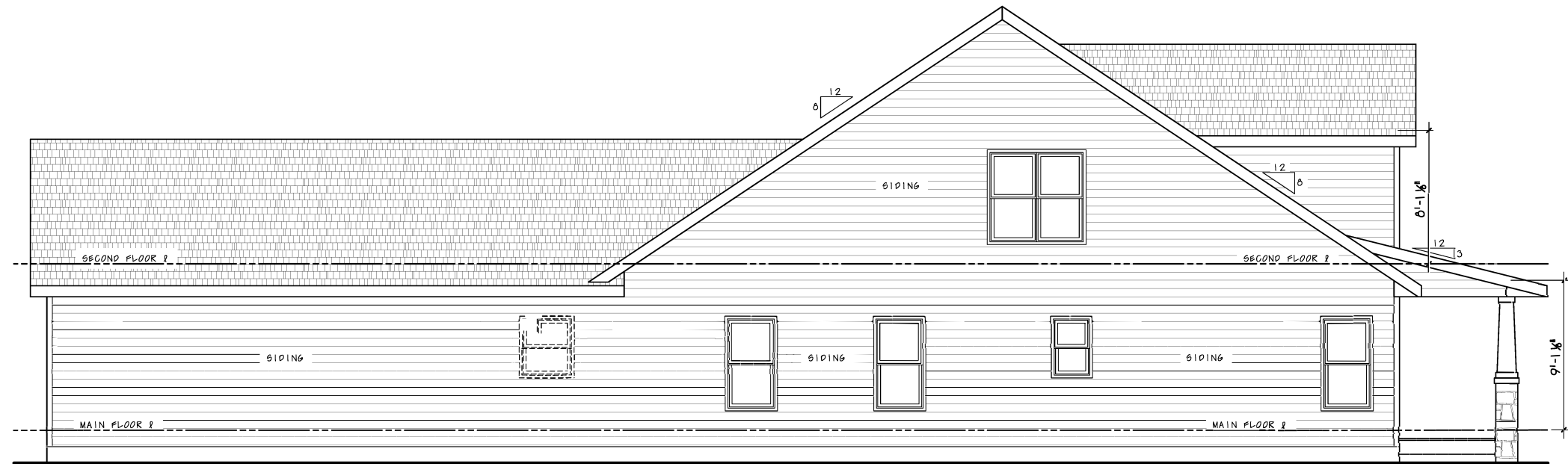
Omaha, Nebraska
1-402-210-4369

Side-load garage
NT 403
Revised: 6-18-21

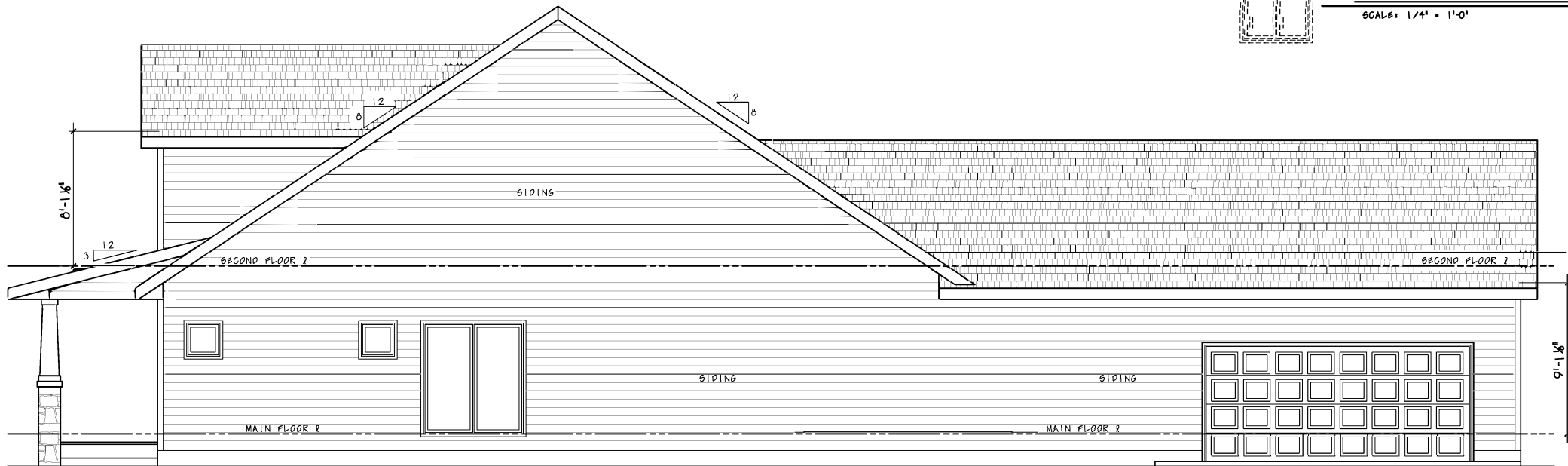
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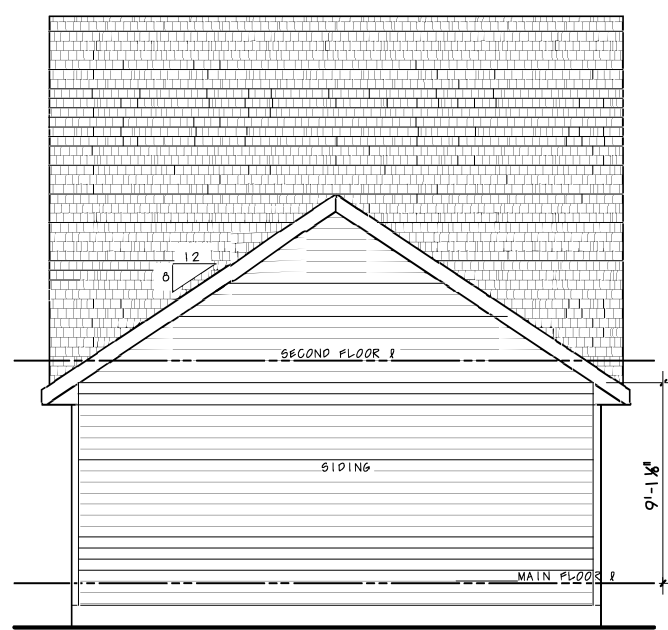
RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW Development Services LEE'S SUMMIT, MISSOURI



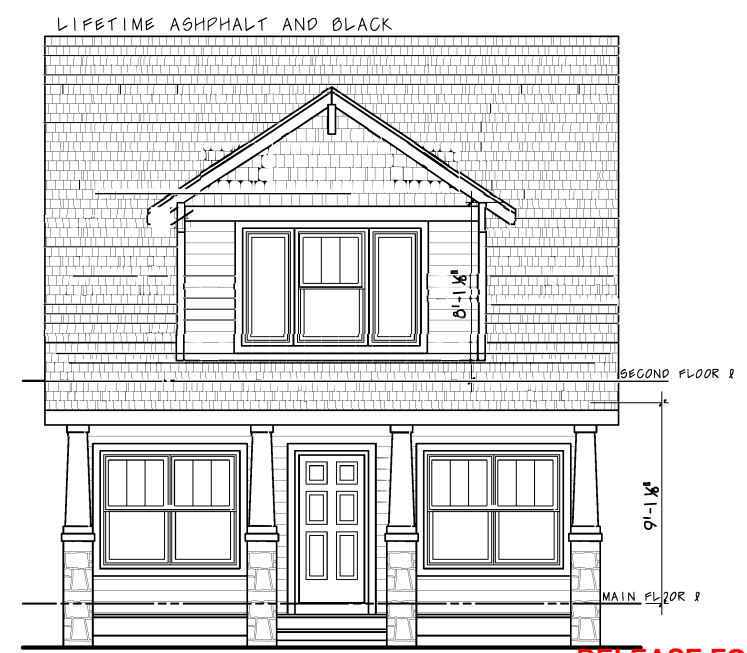
LEFT SIDE ELEVATION
SCALE: 1/4" = 1'-0"



RIGHT SIDE ELEVATION
SCALE: 1/4" = 1'-0"



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



FRONT ELEVATION
SCALE: 1/4" = 1'-0"
LIFETIME ASPHALT AND BLACK
LP PANEL SIDE & BACK
FRONT 8" LAP SMART SIDING



1/3/2022 - UPDATED PLANS PER TRUSS LAYOUT

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402-210-4369
planpro1@cox.net

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Omaha, Nebraska
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sideload garage
NT 403
Revised: 6-18-21

Plan No.

Sheet No.

2

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

STRUCTURAL NOTES:
 - ALL UNMARKED HEADERS MIN (2)#2-2x10
 - ALL HEADERS AND BEAMS MIN #2 GRADE DFL (OR EQ.)
 - █ = BEARING WALL

BRACED WALL METHODOLOGY

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/4" WITH MINIMUM SPAN RATING OF 240 FOR 16" O.C. STUD SPACING WITH 8d COMMON NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD OR SHEATHING THICKNESS NOT LESS THAN 1/2" WITH MINIMUM SPAN RATING OF 240 FOR 24" O.C. SPACING WITH 8d COMMON NAILS AT 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 (REF 2/S4.0):

GB METHOD: 1/2" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1 1/2" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" O.C. EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)
 OR
 LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

XXXX = EXTERIOR BRACED WALLS, MIN 4'-0" PANEL, UNLESS NOTED OTHERWISE

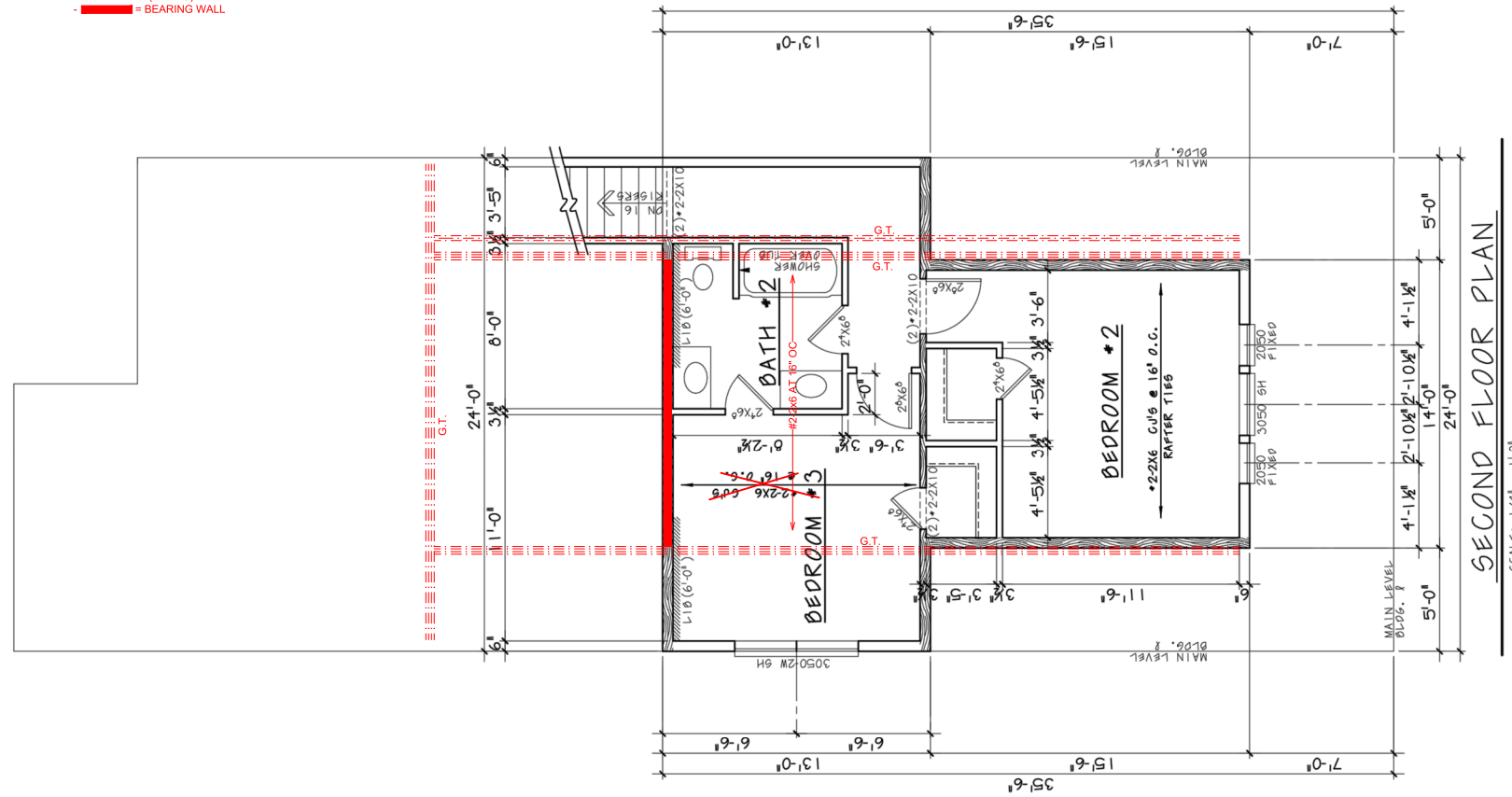
///// = INTERIOR BRACED WALLS (REF 2/S4.0)

EC = END CONDITION (REF 2/S4.1 FOR CONTINUOUS SHEATHED BRACED WALL END CONDITIONS)

STRUCTURAL NOTES:

- ALL UNMARKED HEADERS MIN (2)#2-2x10

- ALL HEADERS AND BEAMS MIN #2 GRADE DFL (OR EQ.)
 - █ = BEARING WALL

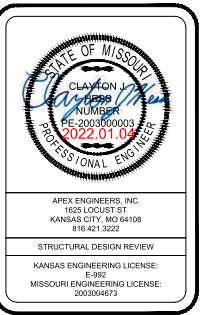


NOTE: ALL SECOND FLOOR WALLS ARE 0'-1 1/2" HIGH UNLESS NOTED OTHERWISE

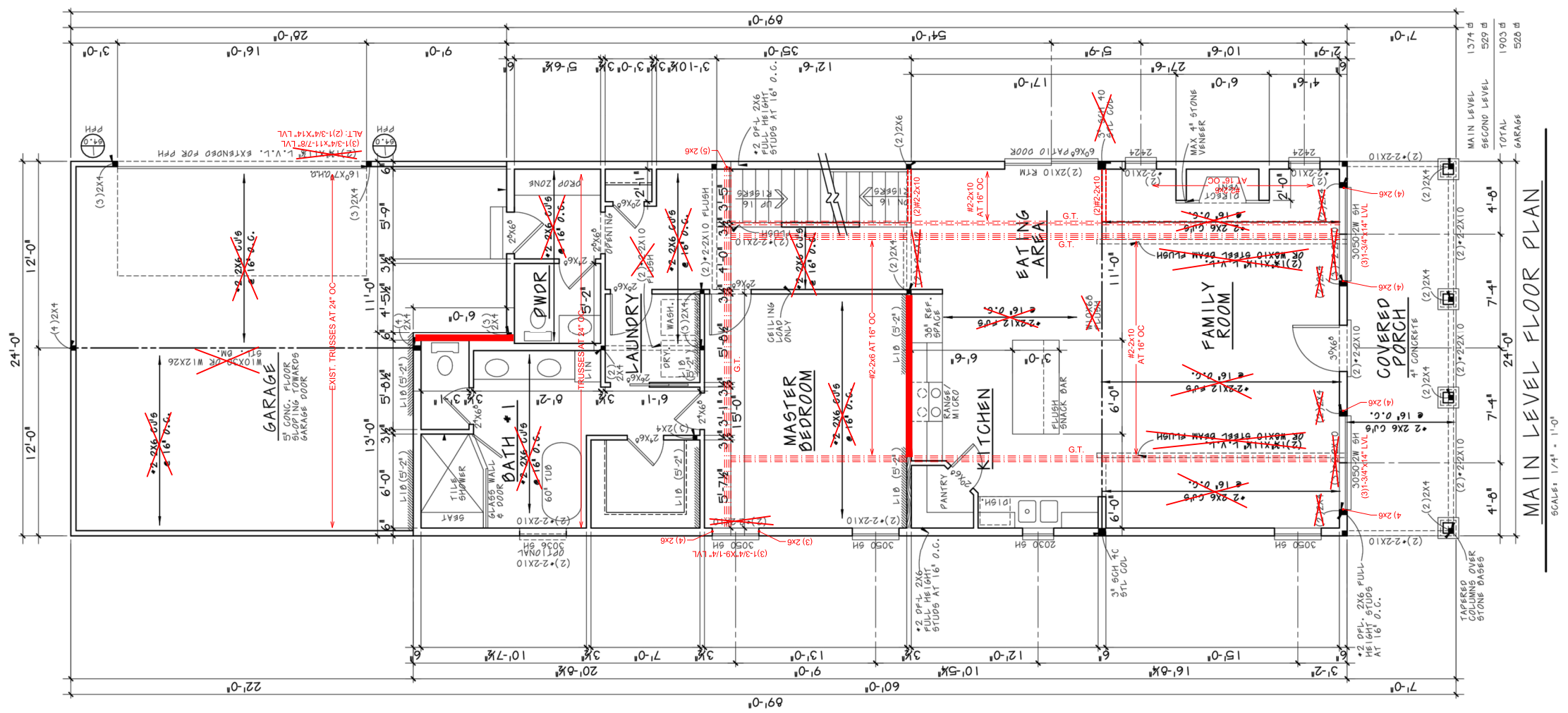
NOTE: ALL EXTERIOR WALLS ARE 6" (5#) STUD - X SHEATHING) ALL INTERIOR WALLS ARE 3/4" UNLESS OTHERWISE SHOWN

NOTE: ALL ANGLED WALLS ARE @ 45°

RAFTER TIE CONNECTION: FASTEN EVERY CEILING JOIST TO EVERY RAFTER WITH (3) 16D NAILS @ EACH END OF JOIST



1/3/2022 - UPDATED PLANS PER TRUSS LAYOUT



NOTE: ALL MAIN FLOOR WALLS ARE 0'-1 1/2" HIGH UNLESS NOTED OTHERWISE

NOTE: ALL EXTERIOR WALLS ARE 6" (5#) STUD - X SHEATHING) ALL INTERIOR WALLS ARE 3/4" UNLESS OTHERWISE SHOWN

NOTE: ALL ANGLED WALLS ARE @ 45°

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Omaha, Nebraska
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Sideload garage
NT 403
 Revised: 5-24-21

Plan No.

Sheet No.

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

4

ROOF FRAMING NOTES

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

ROOF SYSTEM IS DESIGNED TO MEET REQUIREMENTS
OF IRC 802

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

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC	11'-7"
#2-2x6	AT 16" OC	14'-2"
#2-2x8	AT 24" OC	14'-8"
#2-2x8	AT 16" OC	17'-11"
#2-2x10	AT 24" OC	17'-10"
#2-2x10	AT 16" OC	21'-11"

NOTE: CODE MINIMUM ALLOWS FOR A RAFTER DEFLECTION OF L/180 TOTAL LOAD

HIGHER PERFORMANCE

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC	8'-6"
#2-2x6	AT 16" OC	9'-6"
#2-2x8	AT 24" OC	11'-3"
#2-2x8	AT 16" OC	12'-6"
#2-2x10	AT 24" OC	14'-3"
#2-2x10	AT 16" OC	16'-3"

APEX ENGINEERS, INC. RECOMMENDED
DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD

*RIDGE BOARDS ARE (UNLESS OTHERWISE NOTED)
#2-2x10 UP TO 8:12 PITCH
#2-2x12 OVER 8:12 PITCH

*ALL HIP AND VALLEYS ARE (UNLESS OTHERWISE NOTED)
#2-2x10 UP TO 8:12 PITCH
#2-2x12 OVER 8:12 PITCH

*PURLINS ARE 2x6 MIN

- PURLIN STRUTS ARE AT 4'-0" OC

- PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS
THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL

- ALL PURLIN STRUTS SHALL HAVE A MAX UNBRACED
LENGTH OF 8'-0"

- PURLIN STRUTS SHALL BE CONSTRUCTED IN A "T"
CONFIGURATION AND PER THE FOLLOWING CHART:

CONSTRUCTION AND PER THE FOLLOWING CHART:

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TRUSS ROOF NOTES: (BY OTHERS)

1) DESIGNED FOR LIGHT ROOF COVERING
TOP CHORD:
LIVE LOAD/SNOW LOAD (PSF): 20
DEAD LOAD (PSF): 10
BOTTOM CHORD:
DEAD LOAD (PSF): 10

2) ALL EXTERIOR HEADERS SHALL BE MIN. (2) #2-2x10
UNLESS OTHERWISE NOTED

3) CONSULT ENGINEER IF TRUSSES BEAR ON INTERIOR
WALLS SHOWN AS NON-LOAD BEARING ON APPROVED
PRINTS.

4) MIN. (4) 2x4 BELOW EACH BEARING POINT OF EACH
GIRDER TRUSS, UNLESS OTHERWISE NOTED

5) PROVIDE 2x SOLID BLOCKING SUPPORT BELOW ALL
POINT LOADS CONTINUOUS TO BEARING STRUCTURE
AND/OR FOUNDATION BELOW.

6) ROOF IS ENGINEERED TO COMPLY WITH IRC 802.
AT EACH TRUSS BEARING POINT USE UPLIFT
CONNECTORS PER TABLE BELOW UNLESS NOTED
OTHER WISE, INSTALL PER MANUFACTURER'S
SPECIFICATIONS.

7) **LBS OF UPLIFT** **CONNECTOR**
000-495 (1) H2.5A
495-990 (2) H2.5A
990-1245 (1) HTS20

← = ASSUMED ROOF TRUSS FRAMING DIRECTION
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← = ASSUMED ROOF TRUSS FRAMING DIRECTION
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--- = ASSUMED GIRDER TRUSS LOCATION
--- = ASSUMED INTERIOR LOAD BEARING WALLS.

COLUMN & PIER PAD SCHEDULE (REF. 5/S2.0)

COLUMN MARK	PAD SIZE	REINFORCEMENT	COLUMN SIZE	COLUMN TYPE
A	30" x 30" x 12"	(4) #4 BAR E.W.	3" NOMINAL	SCHEDULE 40 STEEL PIPE (P.Y. = 38 LBS/MIN)
B	36" x 36" x 12"	(4) #4 BAR E.W.	3" NOMINAL	
C	42" x 42" x 12"	(5) #4 BAR E.W.	3" NOMINAL	
D	48" x 48" x 12"	(6) #4 BAR E.W.	3" NOMINAL	
E	54" x 54" x 16"	(8) #4 BAR E.W.	3 1/2" NOMINAL (4" OD)	
F	60" x 60" x 16"	(10) #4 BAR E.W.	3 1/2" NOMINAL (4" OD)	

1. COLUMN & PAD SIZES SHOWN ARE FOR MAXIMUM COLUMN HEIGHT OF 10'-0".
REQUIRES SEPARATE ENGRD DESIGN IF GREATER THAN 10'-0" TALL.

2. COLUMN & PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM
ALLOWABLE SOIL BEARING CAPACITY OF 2,000psf.

COLUMN & PIER SCHEDULE

MARK	COLUMN SIZE	PIER DIA.
A	6x6	12"
B	6x6	16"
C	6x6	18"
D	6x6	24"
E	6x6	28"

1. ALL PIERS TO BEAR ON ORIGINAL, UNDISTURBED SOIL OF 2,000psf BEARING
CAPACITY OR FILL COMPACTED AND TESTED TO
CONFORM TO THE RECOMMENDATIONS OF
A GEOTECHNICAL ENGINEER.

2. PIERS SHALL EXTEND BELOW THE FROST
LINE: MIN. DEPTH OF 36" BELOW GRADE.

3. POST SHALL BE TREATED OR CEDAR WITH
SIMPSON ABU66 POST BASE

DETAIL REFERENCES

- 1 S2.0 TYPICAL FOUNDATION WALL DETAIL
- 2 S2.0 TYPICAL "UNRESTRAINED" FOUNDATION WALL DETAIL
- 3 S2.0 TYPICAL DEAD MAN DETAIL
- 4 S2.0 FOUNDATION WALL JUMP DETAIL



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Carl Cuozzo Designs Inc.
7504 S 95th Street
La Vista, NE 68128
402-210-4369
planpro1@cox.net

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518 NW Main St.
Lee's Summit, MO

Omaha, Nebraska
402-210-4369
planpro1@cox.net

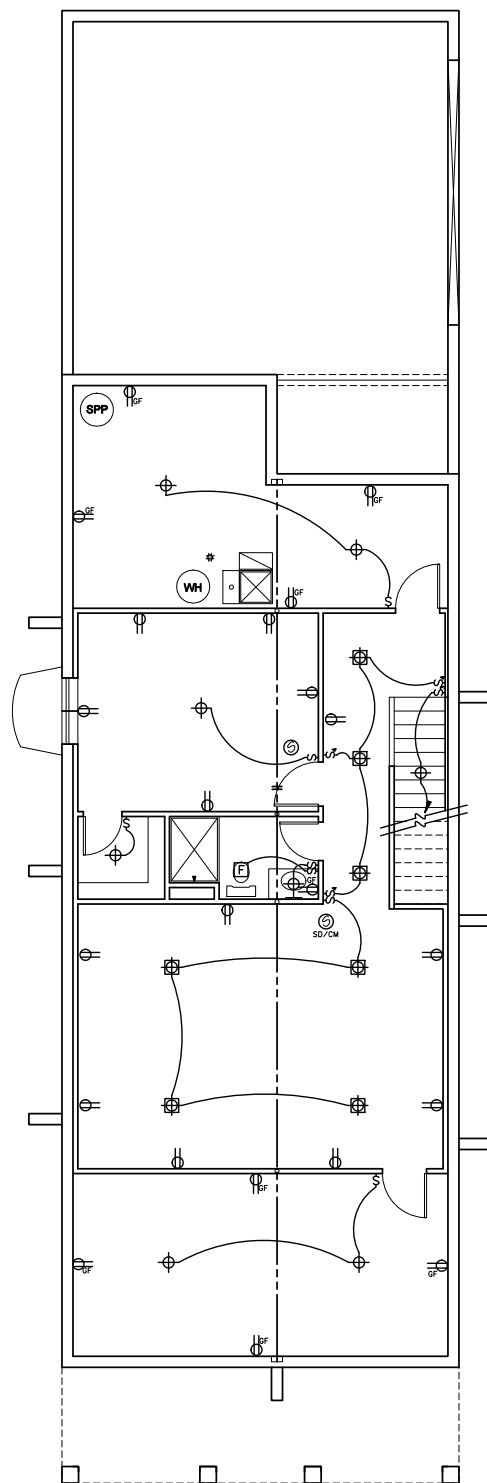
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NT 403
Revised: 6-18-21

Plan No.

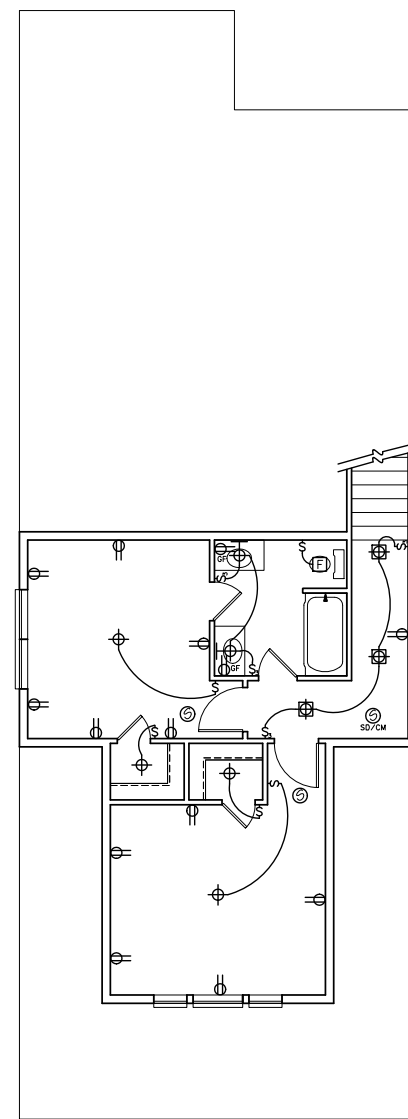
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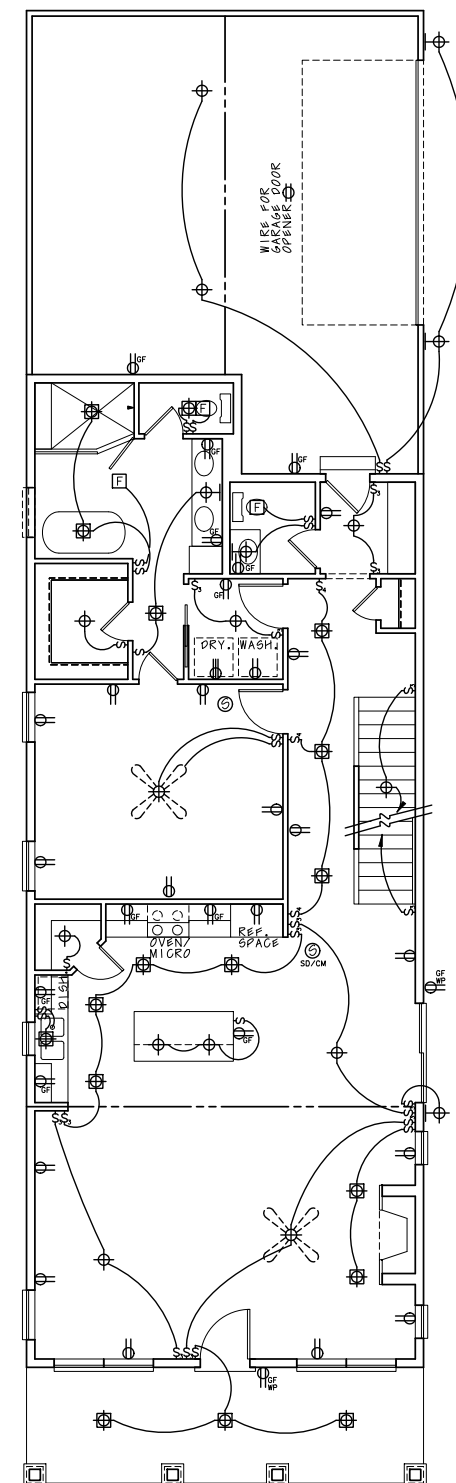
RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW
Development Services
LEE'S SUMMIT, MISSOURI



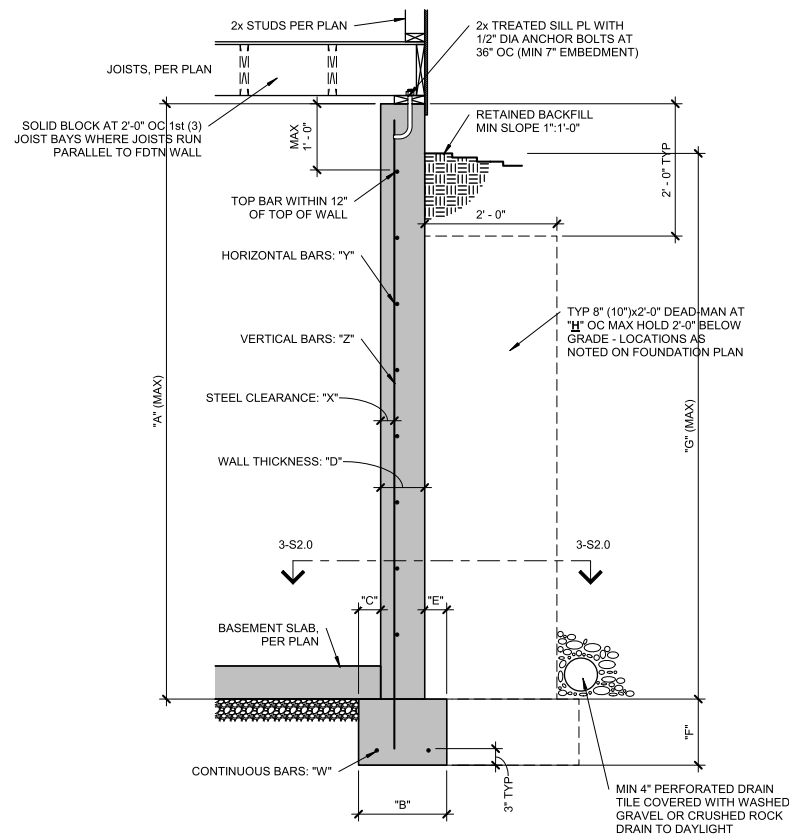
FOUNDATION ELECTRICAL
SCALE: 3/16" = 1'-0"



SECOND FLOOR ELECTRICAL
SCALE: 3/16" = 1'-0"



MAIN LEVEL ELECTRICAL
SCALE: 3/16" = 1'-0"



CONCRETE DIMENSIONS

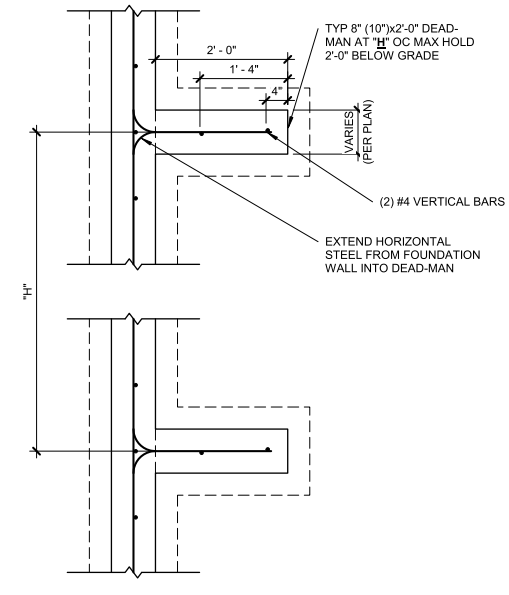
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
8'-0"	1'-4"	4"	8"	4"	8"	7'-6"	20'-0"
9'-0"	1'-4"	4"	8"	4"	8"	8'-6"	20'-0"
10'-0"	1'-8"	5"	10"	5"	10"	9'-6"	20'-0"

REINFORCING BARS (GRADE 40 BARS)

"W"	"X"	"Y"	"Z"
(2) #4	2 1/2"	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	2 1/2"	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	2 1/2"	#4 BARS AT 18" OC	#4 BARS AT 18" OC

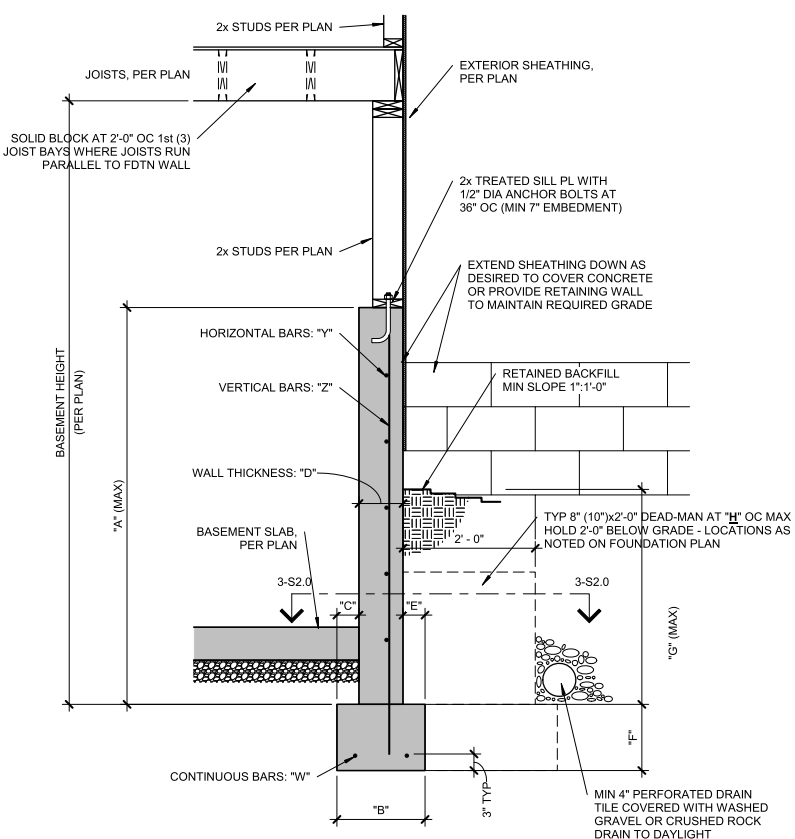
- NOTES:
- DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE: A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
 - VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.
 - BURIED CONCRETE FOUNDATION WALLS UP TO 9'-0" TALL MAY BE 8" NOMINAL THICKNESS WITH #4 BARS AT 24" OC BOTH WAYS OVER 16"x8" CONCRETE FOOTINGS WITH (2) #4 BARS CONTINUOUS, UNLESS OTHERWISE REQUIRED BY ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS.
 - WALL WILL NOT ACHIEVE FULL STRENGTH UNTIL FIRST FLOOR DECK AND BASEMENT SLAB HAVE BEEN PLACED.

1 TYPICAL FOUNDATION WALL DETAIL
S2.0 | 3/4" = 1'-0"



- NOTES:
- MIN 3000 PSI FOOTING COMPRESSIVE CONCRETE STRENGTH.
 - MIN 3000 PSI WALL COMPRESSIVE CONCRETE STRENGTH.
 - AIR ENTRAINED BETWEEN 5% & 7% OF CONCRETE VOLUME.
 - GRADE 40 REINFORCING STEEL UNLESS OTHERWISE NOTED.
 - LAP SPICES 24" MIN.
 - WALL SHALL BE BACK-FILLED WITH CLEAN, LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL. ON-SITE MATERIAL MAY BE USED IF DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER.
 - ASSUMED 2,000 PSF BEARING (TO BE VERIFIED BY GEOTECHNICAL ENGINEER).

3 TYPICAL DEAD-MAN SECTION
S2.0 | 3/4" = 1'-0"



CONCRETE DIMENSIONS

"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	20'-0"
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	20'-0"
9'-0"	1'-8"	5"	8"	4"	8"	4'-4"	20'-0"

REINFORCING BARS (GRADE 40 BARS)

"W"	"X"	"Y"	"Z"
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC

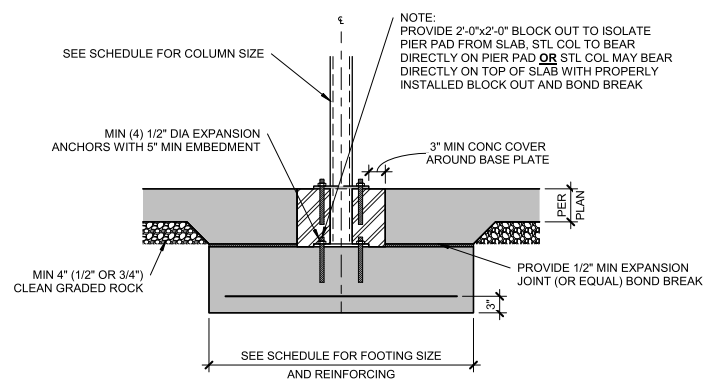
- NOTES:
- DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE: A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
 - VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.
 - THE BASEMENT SLAB IS AN INTEGRAL PART OF THE 'UNRESTRAINED' FOUNDATION WALL DESIGN THEREFORE, IF THE WALL IS BACKFILLED PRIOR TO PLACEMENT OF THE BASEMENT SLAB, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BRACING THE WALL UNTIL THE BASEMENT SLAB HAS BEEN PLACED.

2 TYPICAL 'UNRESTRAINED' FOUNDATION WALL DETAIL
S2.0 | 3/4" = 1'-0"

COLUMN AND PIER PAD SCHEDULE

COLUMN MARK	PAD SIZE	REINFORCING	COL SIZE	COL TYPE
▲	30"x30"x12"	(4) #4 BARS E-W	3" NOMINAL	STEEL COLUMN (F _y = 36 ksi MIN)
▲	36"x36"x12"	(4) #4 BARS E-W	3" NOMINAL	STEEL COLUMN (F _y = 36 ksi MIN)
▲	42"x42"x12"	(5) #4 BARS E-W	3" NOMINAL	STEEL COLUMN (F _y = 36 ksi MIN)
▲	48"x48"x12"	(6) #4 BARS E-W	3" NOMINAL	STEEL COLUMN (F _y = 36 ksi MIN)
▲	54"x54"x16"	(8) #4 BARS E-W	3 1/2" NOMINAL (F _y = 36 ksi MIN)	STEEL COLUMN (F _y = 36 ksi MIN)
▲	60"x60"x16"	(10) #4 BARS E-W	3 1/2" NOMINAL (F _y = 36 ksi MIN)	STEEL COLUMN (F _y = 36 ksi MIN)

- NOTES:
- COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAXIMUM COLUMN HEIGHT OF 10'-0". REQUIRES SEPARATE ENGINEERED DESIGN IF GREATER THAN 10'-0".
 - COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.



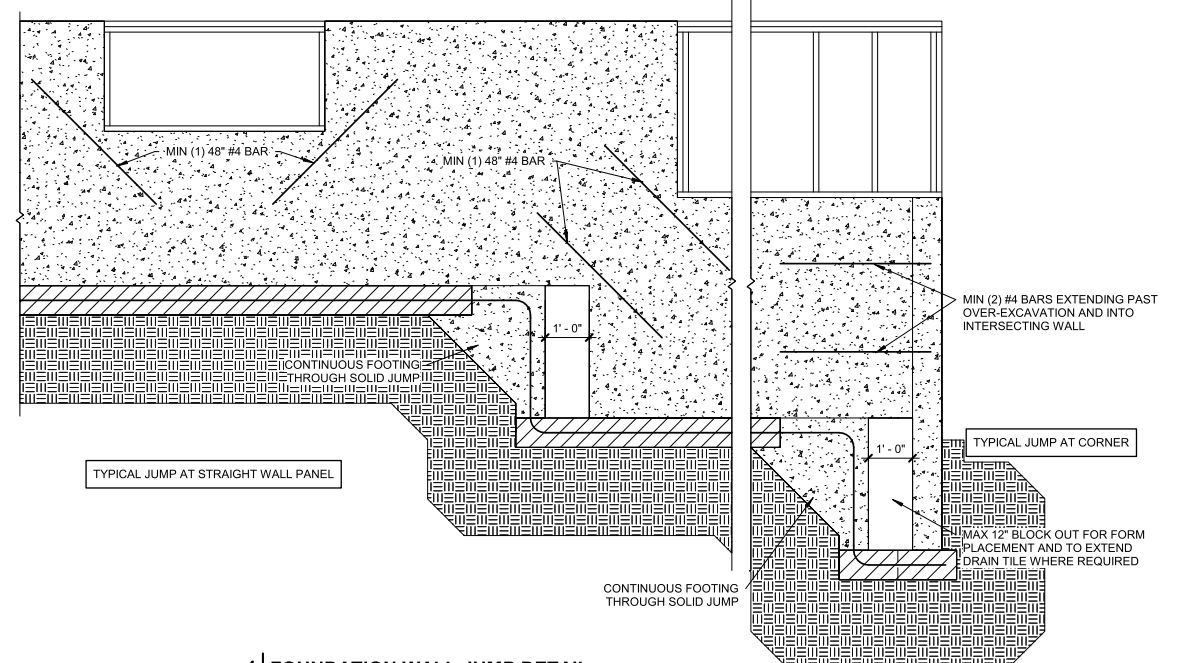
5 COLUMN PAD DETAIL
S2.0 | 3/4" = 1'-0"

EXPANSIVE SOILS DISCLAIMER:

THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.

APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATIONS BE EVALUATED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY FOUNDATION ELEMENTS. GEOTECHNICAL INVESTIGATION AND/OR TESTING IS NOT A SERVICE PROVIDED OR OFFERED BY APEX.

APEX HAS NOT BEEN RETAINED TO DETERMINE THE EXPANSIVE SOIL CHARACTERISTICS OF THE SUBGRADE SOIL AND THEREFORE CANNOT BE HELD RESPONSIBLE FOR THE VOLUMETRIC CHANGES OF THE SOIL (INCLUDING BELOW THE BASEMENT SLAB). BY USE OF THESE PLANS WITHOUT AN ACCOMPANYING GEOTECHNICAL ENGINEERING REPORT, APEX SHALL NOT BE HELD LIABLE FOR ANY FUTURE MOVEMENT AND/OR DIFFERENTIAL MOVEMENT OF THE PROPOSED STRUCTURE AND THE POSSIBLE DAMAGE THAT MAY BE CAUSED AS A RESULT OF SUCH MOVEMENT. DAMAGE FROM EXPANSIVE SOILS AND/OR SETTLEMENT CAN RESULT IN AMONGST OTHER THINGS, THE FOLLOWING: BASEMENT SLAB HEAVE, SHEETROCK CRACKS, WINDOWS AND DOOR BECOMING OUT OF PLUMB AND STICKING AND/OR NOT OPENING, DAMAGE TO TILE, MOULDING, AND OTHER COSMETIC FINISHES.



4 FOUNDATION WALL JUMP DETAIL
S2.0 | 1/2" = 1'-0"

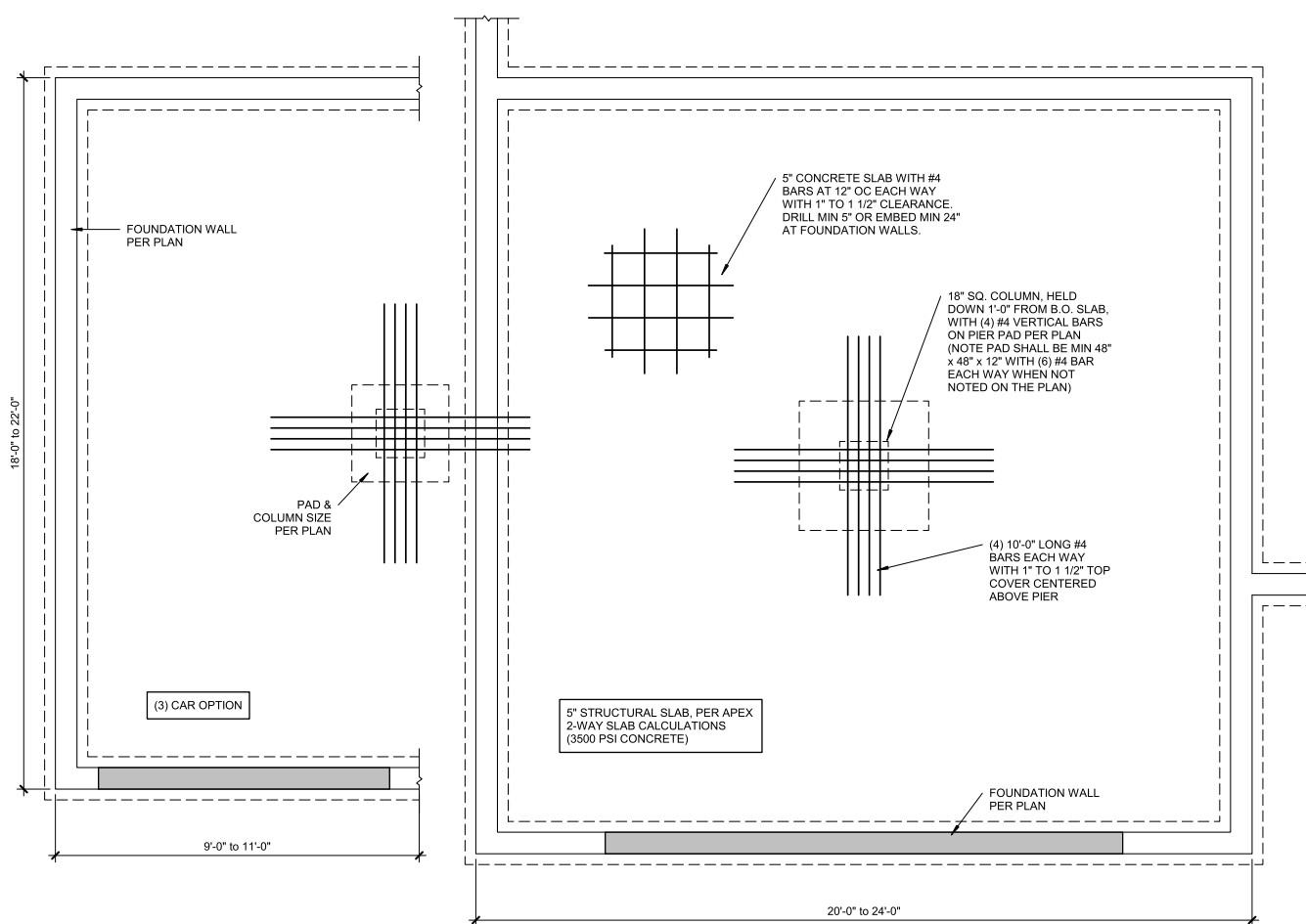


PROJECT: 518 NW MAIN STREET, LEES SUMMIT
CLIENT: HOUSE AND RENNER

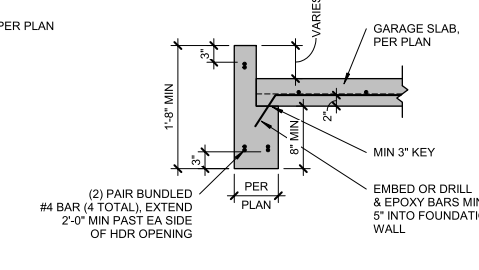
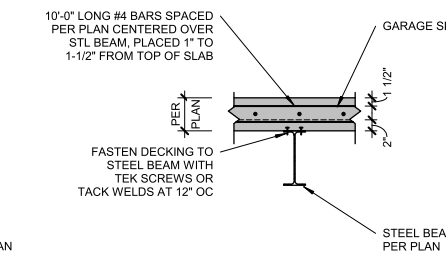
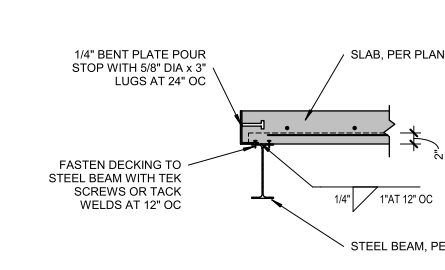
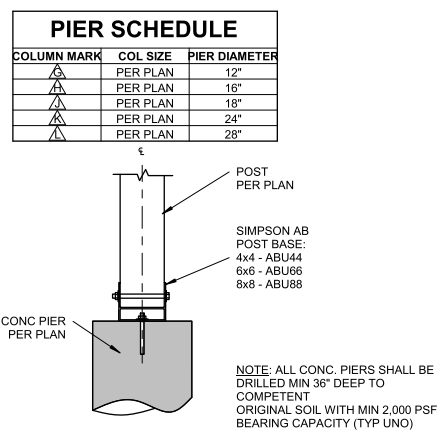
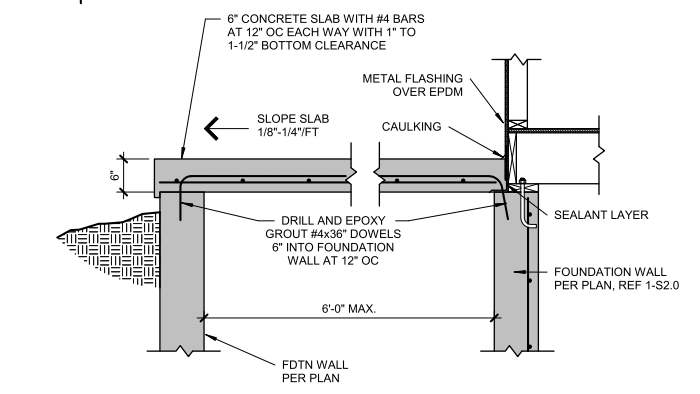
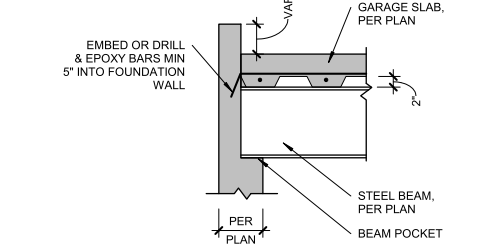
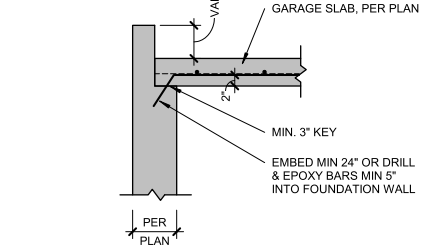
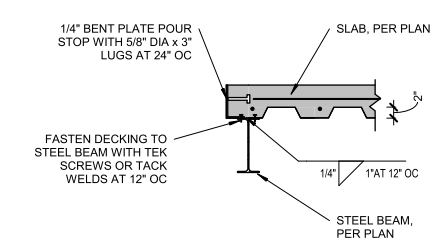
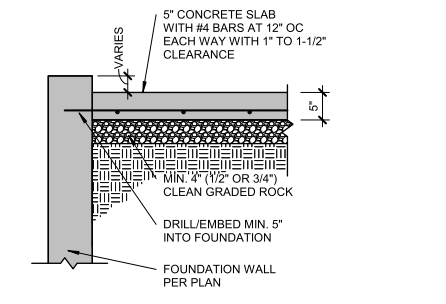
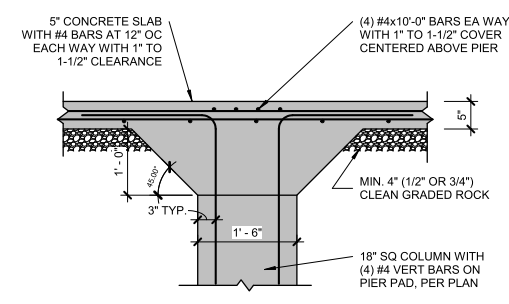
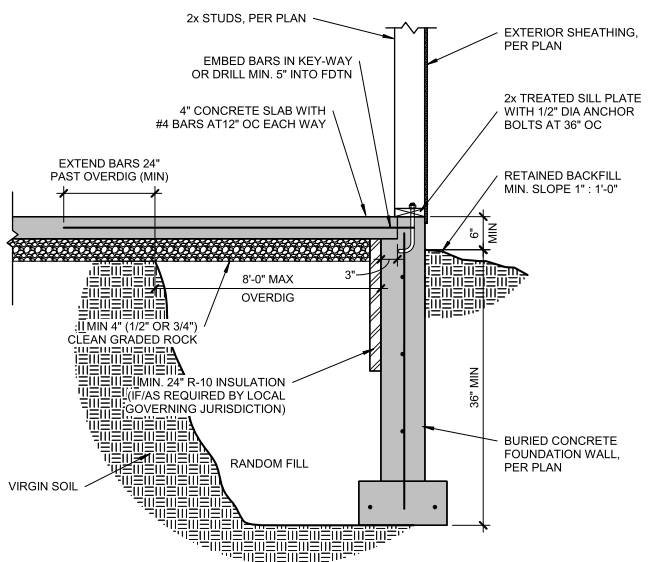
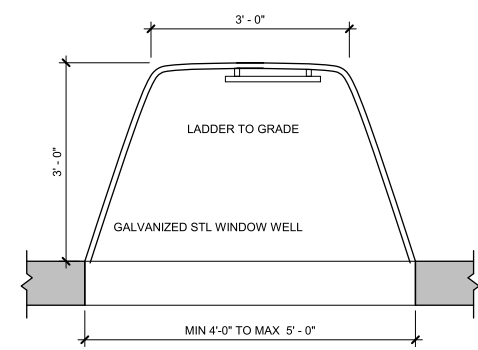
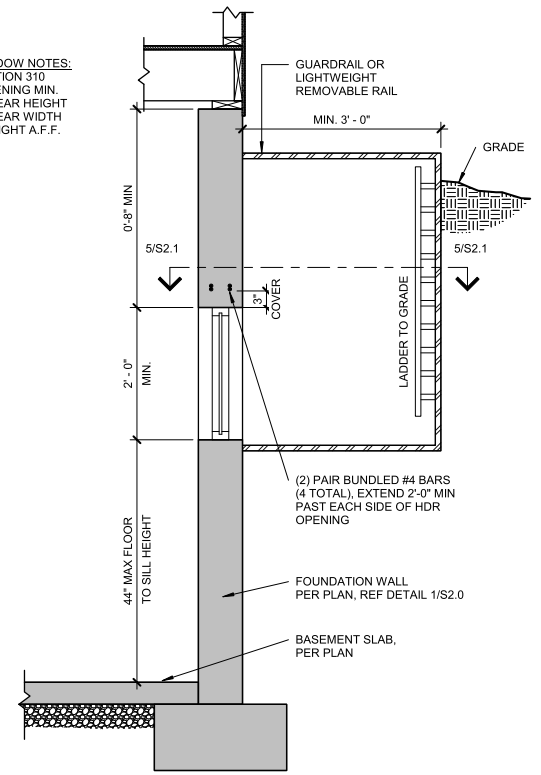
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DRAWN BY: jae
CHECKED BY: BDC
SUBMITTAL DATE: 2022.01.03

DATE	#	COMMENTS

RELEASE FOR CONSTRUCTION AS NOTED ON PLANS FOR REVIEW Development Solutions LEE'S SUMMIT, MISSOURI



EGRESS WINDOW NOTES:
PER IRC SECTION 310
1. 5.7 S.F. OPENING MIN.
2. 24" MIN. CLEAR HEIGHT
3. 20" MIN. CLEAR WIDTH
4. 44" MAX HEIGHT A.F.F.



TYPICAL SUSPENDED SLAB DETAIL

STEEL DECKING NOTES:

- MINIMUM 1-1/2" BEARING
- FASTEN TO SUPPORT STEEL WITH 5/8" VISIBLE PUDDLE WELDS AT EDGE RIBS AND 12" CENTERS ALONG END BEARING
- FASTEN SIDE LAPS AND PERIMETER EDGES AT 36" CENTERS WITH #10 TEK SCREWS OR 5/8" PUDDLE WELDS
- MAX UNSUPPORTED CONSTRUCTION SPAN 6'-0", UNO ON PLANS BY APEX

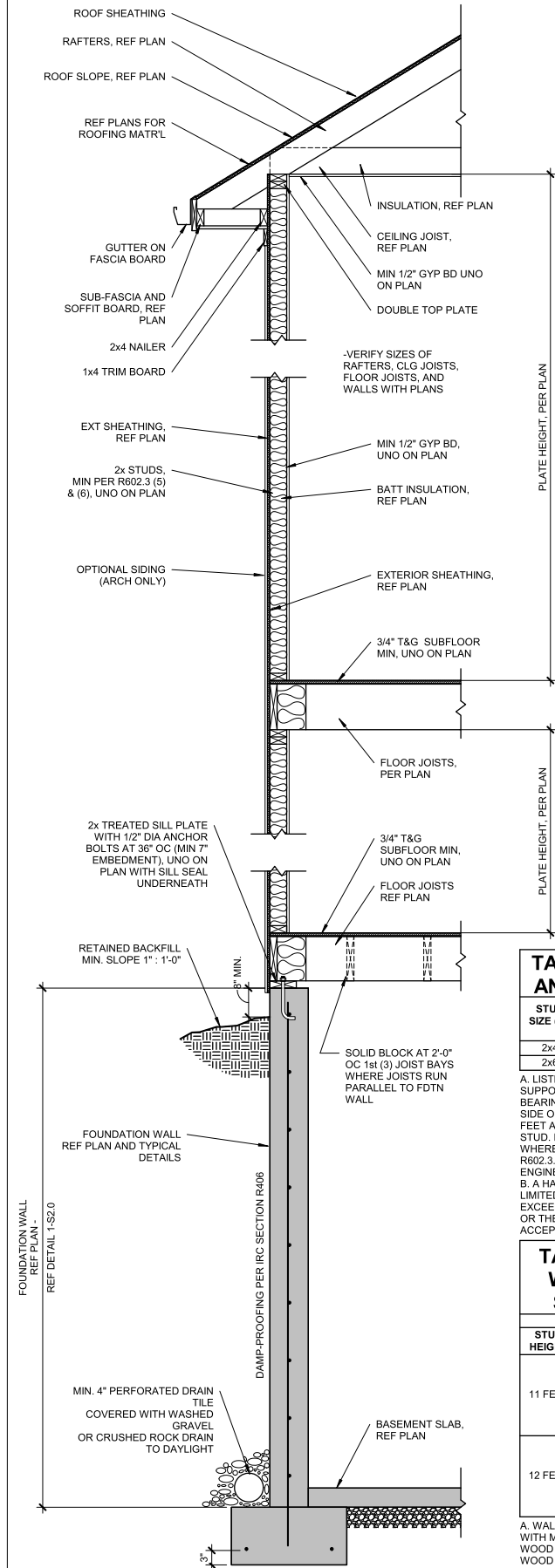


TABLE R602.3 (5) - SIZE, HEIGHT, AND SPACING OF WOOD STUDS

STUD SIZE (IN)	LATERALLY UNSUPPORTED STUD HEIGHT ¹	STRUCTURE SUPPORTED		
		ROOF ONLY	ROOF AND (1) FLOOR	ROOF AND (2) FLOORS
2x4	10 FEET	24" OC ²	16" OC ²	N/A
2x6	10 FEET	24" OC	24" OC	16" OC

A. 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 THE COMPLIANCE WITH EXCEPTION 2 OF SECTION R602.3.1 OR DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

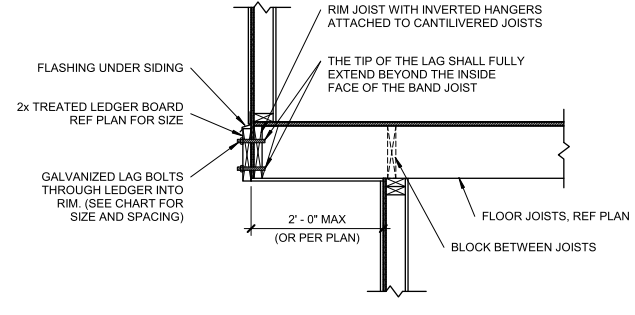
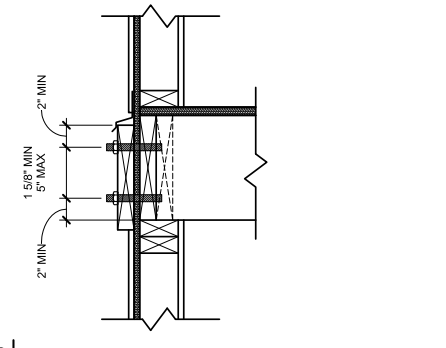
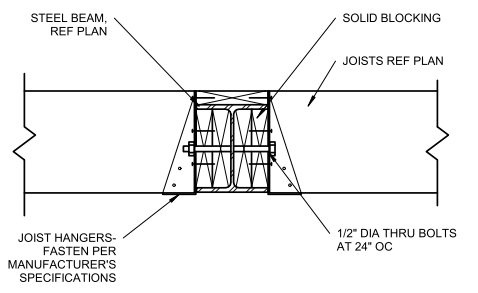
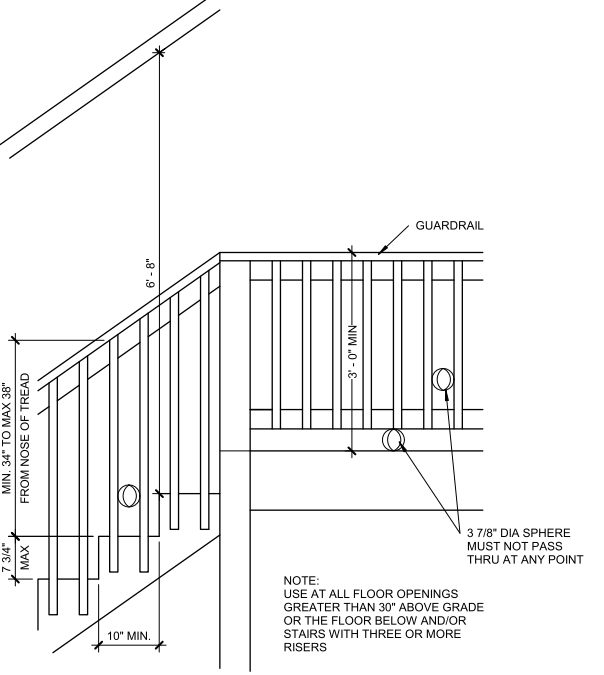
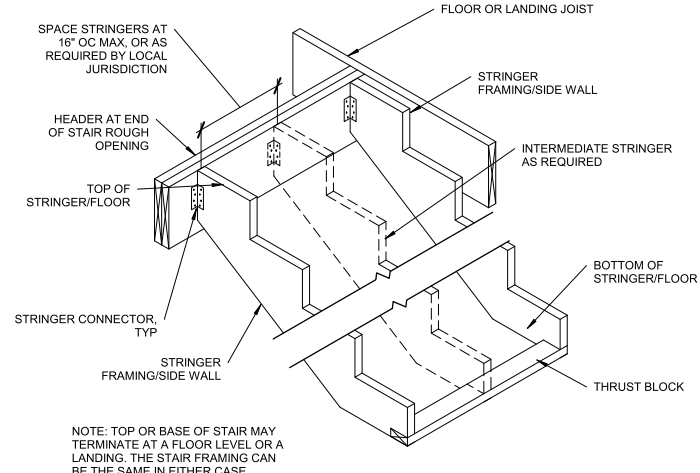
B. A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2x4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE INCREASED TO 2x6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

TABLE R602.3 (6) - ALTERNATE WOOD BEARING WALL STUD SIZE, HEIGHT AND SPACING

STUD HEIGHT	SUPPORTING	ULTIMATE DESIGN WIND SPEED = 115 MPH		
		STUD SPACING	12 FEET	24 FEET
11 FEET	ROOF ONLY	12 IN	2x4	2x4
		16 IN	2x4	2x4
	ROOF AND ONE FLOOR	12 IN	2x4	2x6
		16 IN	2x6	2x6
12 FEET	ROOF ONLY	12 IN	2x4	2x4
		16 IN	2x4	2x6
	ROOF AND ONE FLOOR	12 IN	2x4	2x6
		16 IN	2x6	2x6

A. WALL STUDS NOT EXCEEDING 16" OC SHALL BE SHEATHED WITH MINIMUM 1/2" GYPSUM BOARD ON THE INTERIOR AND 3/8" WOOD STRUCTURAL PANEL SHEATHING ON THE EXTERIOR. WOOD STRUCTURAL PANEL SHEATHING SHALL BE ATTACHED WITH 8d (2.5" x 0.131") NAILS NOT GREATER THAN 6" OC ALONG PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS, AND ALL PANEL JOINTS SHALL OCCUR OVER STUDS OR BLOCKING.

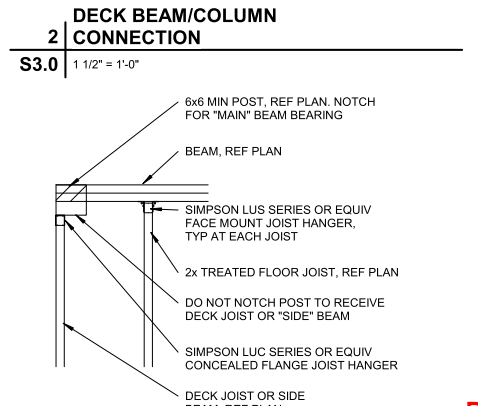
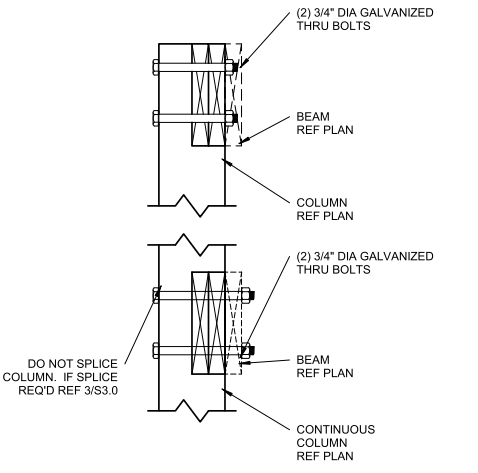
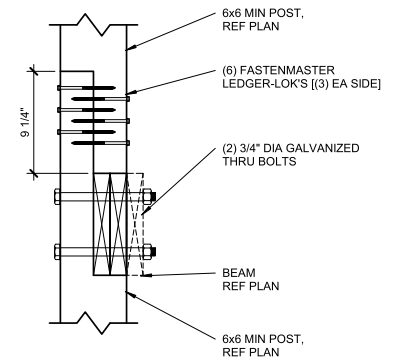
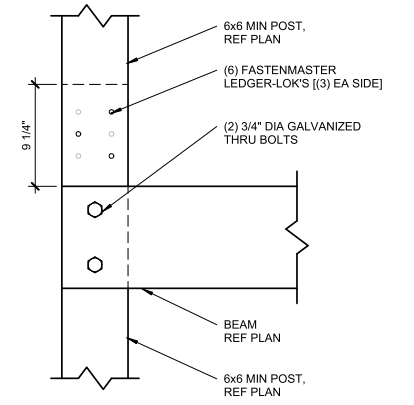
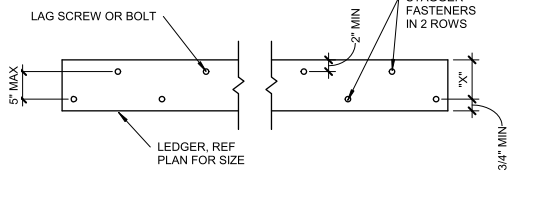
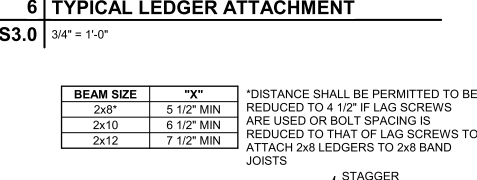
B. THE MAXIMUM SPAN IS APPLICABLE TO BOTH SINGLE AND MULTIPLE SPAN ROOF AND FLOOR CONDITIONS. THE ROOF ASSEMBLY SHALL NOT CONTAIN A HABITABLE ATTIC.



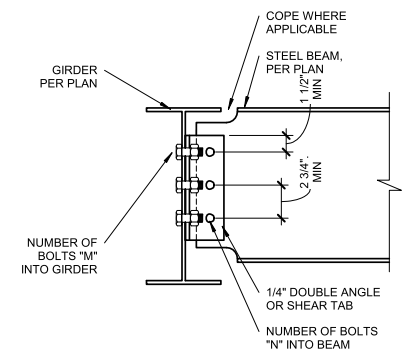
DECK LEDGER ATTACHMENT CHART

DECK JOIST SPAN	1/2" DIA LAG SPACING	EQUIVALENT SPACING FOR 16" OC JOIST BAYS
UP TO 10'-0"	16" OC	N/A
10'-1" TO 12'-0"	15" OC	16" OC DBL EVERY OTHER
12'-1" TO 14'-0"	13" OC	16" OC DBL EVERY OTHER
14'-1" TO 16'-0"	11" OC	16" OC DBL EVERY JOIST BAY
16'-1" TO 18'-0"	10" OC	16" OC DBL EVERY JOIST BAY

NOTE: CHART IS APPLICABLE ONLY WHEN DECK IS SHOWN ON APPROVED PLAN.



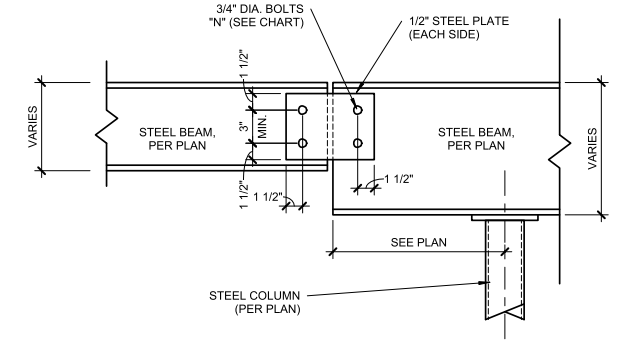
DATE	COMMENTS



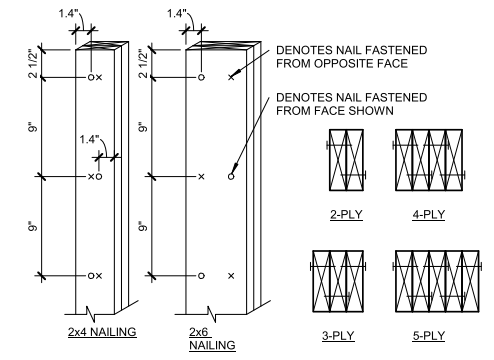
3 BEAM TO GIRDER CONNECTION
S3.1 1 1/2" = 1'-0"

BEAM CONNECTION SCHEDULE		
BEAM SIZE	# OF BOLTS "N"	# OF BOLTS "M"
W8, W10	2	4
W12, W14	3	6
W16, W18	4	8

NOTES:
1. THESE CONNECTIONS ARE TYPICAL, UNO.
2. NUMBER OF BOLTS IN UPSET BEAM CONNECTIONS DETERMINED BY SMALLER OF TWO BEAMS AT CONNECTION.
3. ALL AROUND 1/4" FILLET WELD MAY BE SUBSTITUTED FOR EITHER BOLTED CONNECTION.
4. ALL BOLTS, 3/4" DIAMETER, A325-N, UNO.

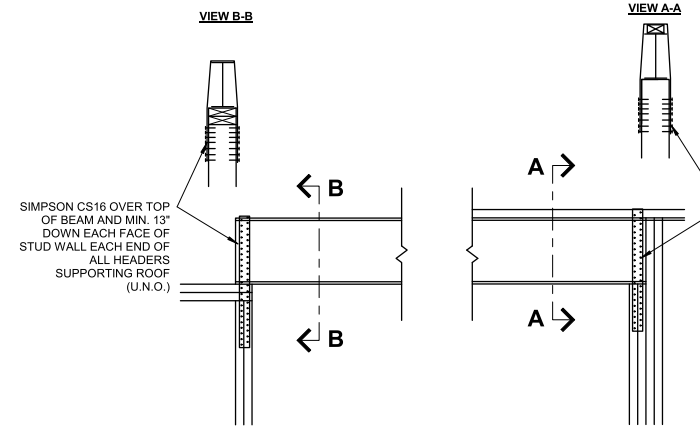


2 BEAM SPLICE DETAIL
S3.1 1 1/2" = 1'-0"

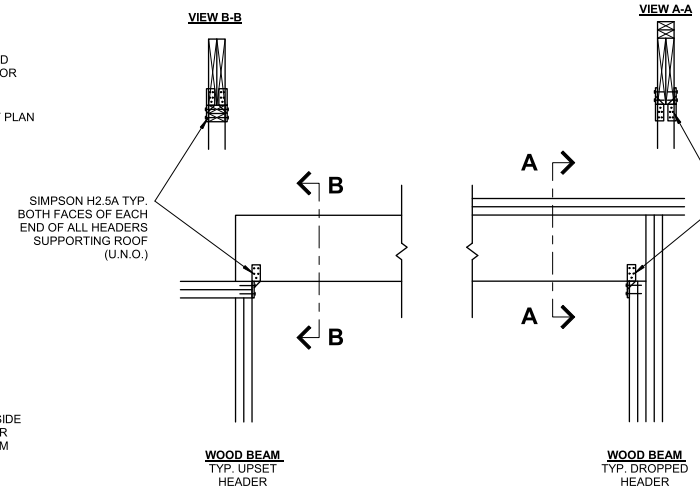


- NOTES:
1. EACH 2x PLY SHALL BE FASTENED WITH (1) ROW OF 10d NAILS AT 9" OC, ALTERNATING SIDE TO SIDE.
2. 1.4" MIN EDGE DISTANCE, AND STARTING 2 1/2" FROM EACH END.
3. EXTEND FULL AREA OF COLUMN AS SOLID BLOCKING THROUGH JOIST BAYS AND WALLS TO LOAD-BEARING BEAM/WALL BELOW

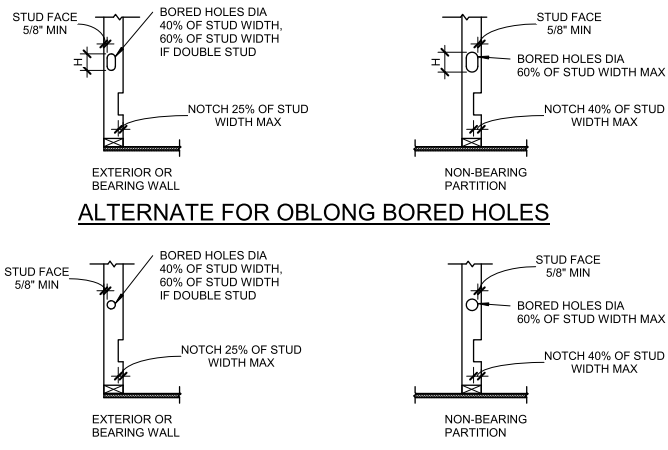
1 BUILT-UP STUD COLUMN
S3.1 1 1/2" = 1'-0"



4 DRILLING & NOTCHING DETAIL
S3.1 3/4" = 1'-0"



5 ROOF SUPPORTING BEAM HOLD DOWN
S3.1 3/4" = 1'-0" (COMPLIANCE WITH IRC R602.11)



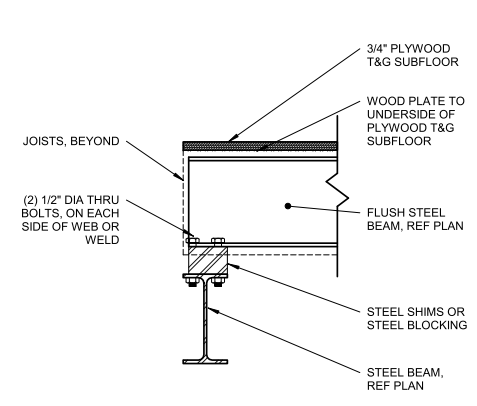
WALL SIZE	BORED HOLE SIZE		WALL NOTCH	
	STUDS LOAD BEARING OR EXTERIOR WALL	NON LOAD BEARING WALL	LOAD BEARING WALL	NON LOAD BEARING WALL
2x4	40%	60%	25%	40%
(2) 2x4	1 3/8"	2 1/8"	7/8"	1 3/8"
2x6	2 1/4"	2 1/8"	3 15/16"	1 3/8"
(2) 2x6	-	3 5/16"	1 3/8"	2 1/4"
2x8	2 7/8"	-	4 3/8"	1 13/16"
(2) 2x8	-	4 3/8"	4 3/8"	2 7/8"

PLATES:
TOP AND BOTTOM PLATE HOLE, CUT OR NOTCH THAT IS 50% MORE OF WIDTH MUST BE REPAIRED USING 16 GA (MIN) METAL TIE THAT IS AT LEAST 1-1/2" WIDE IF WALL IS A SHEAR WALL IT MUST BE REPAIRED USING HARDY FRAME SADDLE (HFS).

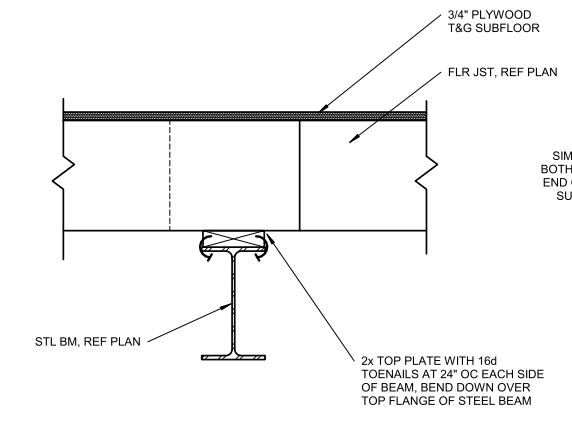
WALL SIZE	HOLE SIZE	VERTICAL HOLE SIZE (H)
2x4	1 3/4"	D+1/2" AT Lvl 1&2
2x6	2 3/4"	D+1" AT Lvl 3
2x8	3 5/8"	D+1 1/4" AT Lvl 4
		D+1 1/2" AT Lvl 5

NOTE:
SEE SECTION R602.6 AND FIGURES R602.6.1 AND R602.6.2

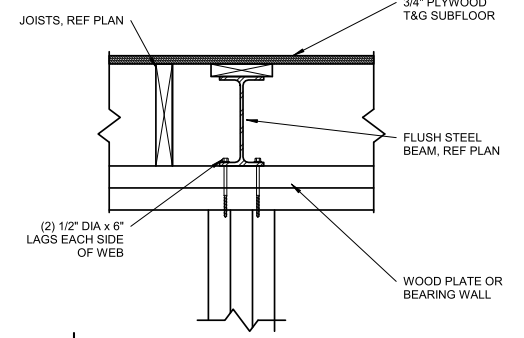
4 DRILLING & NOTCHING DETAIL
S3.1 3/4" = 1'-0"



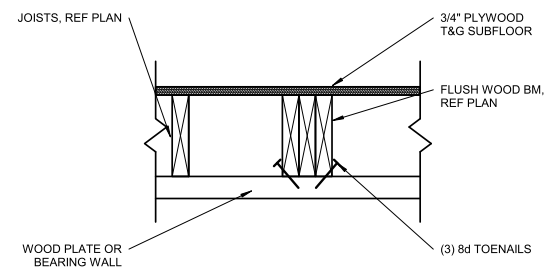
9 FLUSH STEEL BEAM TO STEEL BEAM
S3.1 1 1/2" = 1'-0"



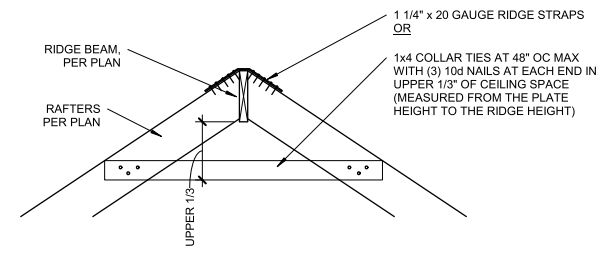
8 WOOD PLATE TO STEEL BEAM CONNECTION
S3.1 1 1/2" = 1'-0"



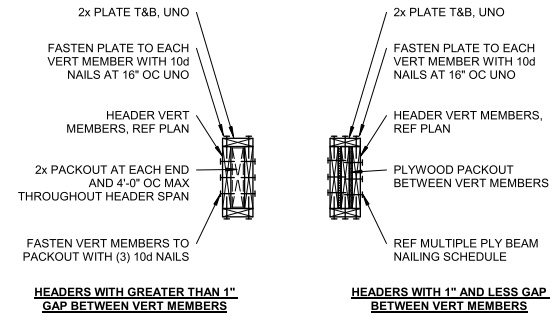
7 FLUSH STEEL BEAM CONNECTION
S3.1 1 1/2" = 1'-0"



6 FLUSH WOOD BEAM CONNECTION
S3.1 1 1/2" = 1'-0"



12 RIDGE BEAM DETAIL
S3.1 3/4" = 1'-0"



11 TYPICAL WOOD HEADER DETAIL
S3.1 NOT TO SCALE

2 - PLY	3 - PLY	4 - PLY
(3) ROWS OF 16d x 3-1/2" NAILS AT 6" OC	(3) ROWS OF 16d x 3-1/2" NAILS AT 4" OC	(2) ROWS OF 1/2" DIA. A307 THRU-BOLTS AT 12" OC STAGGERED

NOTES:
1. NAILING SHOWN APPLIES UNLESS SPECIFICALLY NOTED IN DETAILS.
2. SPACE NAILS EVENLY THROUGHOUT DEPTH OF BEAM.

10 MULTIPLE PLY BEAM NAILING SCHEDULE
S3.1 NOT TO SCALE



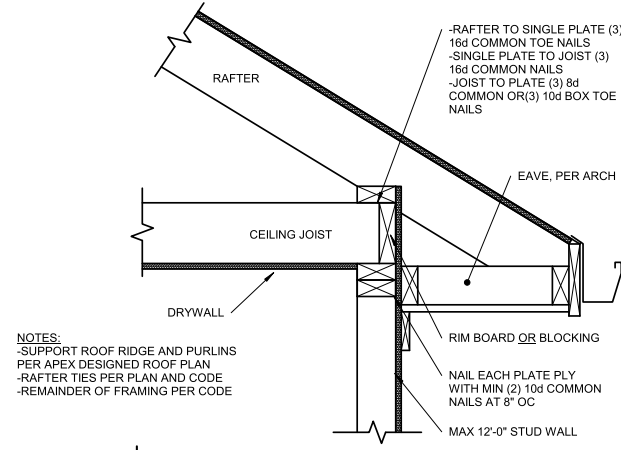
10 MULTIPLE PLY BEAM NAILING SCHEDULE
S3.1 NOT TO SCALE

UPLIFT CONNECTION SCHEDULE

OVERHANG SPAN: 1'-1" TO 1'-9"			
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
12" OC	SIMPSON H2.5A	(1) AT 24" OC	(1) AT 24" OC
16" OC	SIMPSON H2.5A	(1) AT 32" OC	(1) AT 16" OC
24" OC	SIMPSON H2.5A	(1) AT 24" OC	(1) AT 24" OC
OVERHANG SPAN: 1'-10" TO 2'-6"			
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
12" OC	SIMPSON H2.5A	(1) AT 12" OC	(1) AT 12" OC
16" OC	SIMPSON H2.5A	(1) AT 16" OC	(2) AT 16" OC
24" OC	SIMPSON H2.5A	(2) AT 24" OC	(2) AT 24" OC
OVERHANG SPAN: 2'-7" TO 3'-9"			
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
12" OC	SIMPSON H2.5A	(2) AT 12" OC	(2) AT 12" OC
16" OC	SIMPSON H2.5A	(2) AT 16" OC	(2) AT 16" OC
24" OC	SIMPSON H2.5A	(2) AT 24" OC	N/A

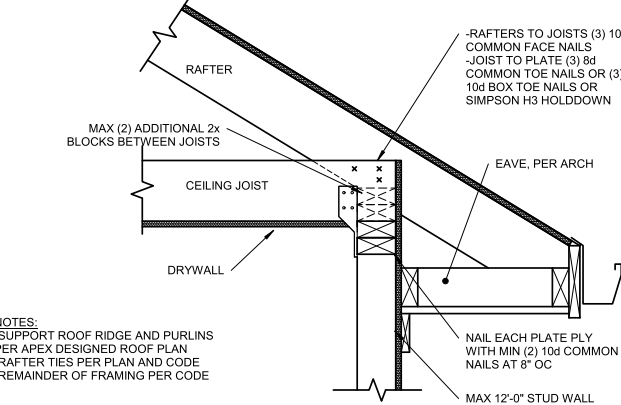
OVERHANG SPAN	MIN BACKSPAN LENGTH
≤1'-0"	1'-0"
1'-1" to 2'-0"	EQUALS OVERHANG SPAN
≥2'-1"	OVERHANG SPAN X2

NOTES:
-CHART IS ONLY APPLICABLE IF NO RAFTER BEAM SHOWN ON PLAN.
-CONTACT EOR IF OVERHANG LENGTH EXCEEDS CHART OPTIONS.
-ALTERNATE, REF BARGE RAFTER DETAIL FOR OVERHANGS 1'-0" OR LESS.



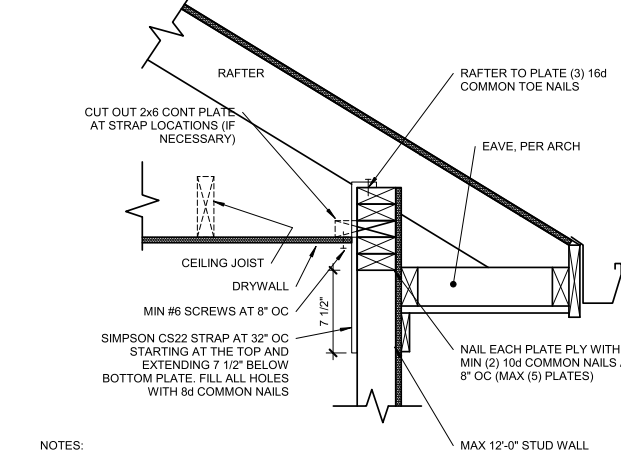
9 OPTIONAL RAFTER BEARING

S3.2 1 1/2" = 1'-0"



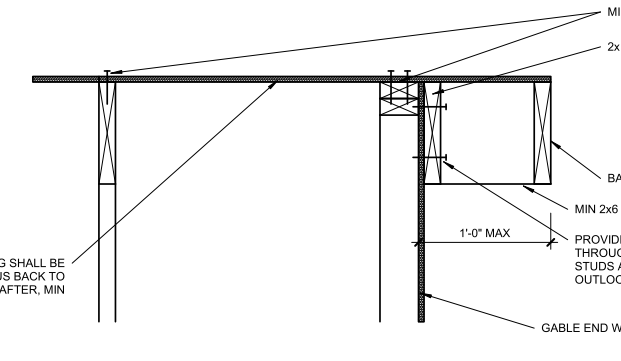
8 OPTIONAL RAFTER BEARING

S3.2 1 1/2" = 1'-0"



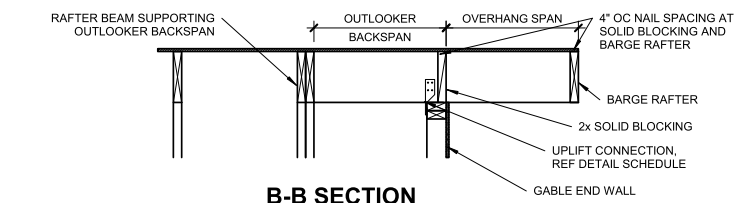
7 OPTIONAL RAFTER BEARING

S3.2 1 1/2" = 1'-0"

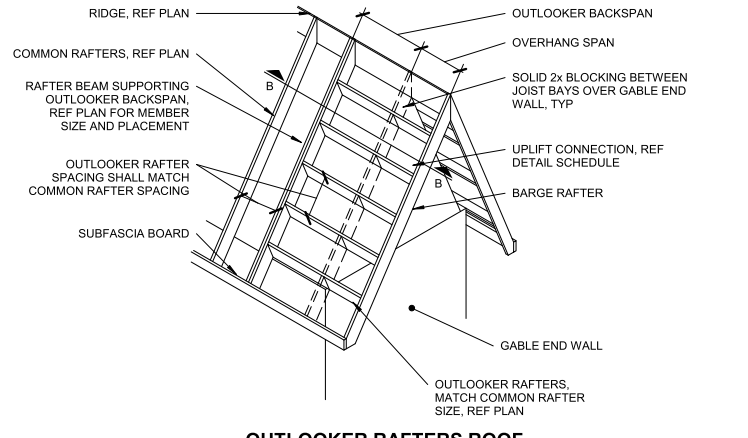


6 OPTIONAL OVERHANG 1'-0" OR LESS

S3.2 1 1/2" = 1'-0"



B-B SECTION



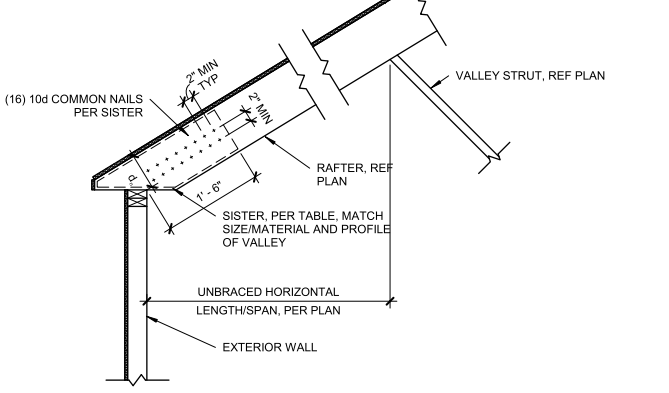
5 OUTLOOKER RAFTERS ROOF FRAMING

S3.2 NOT TO SCALE

REQUIRED NUMBER OF SISTER PLIES

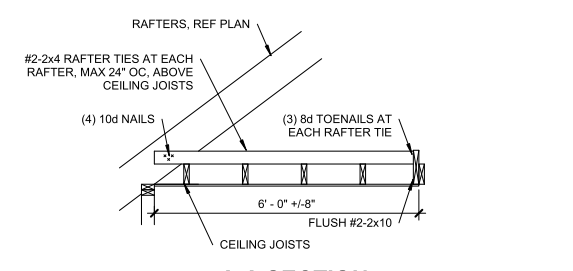
LIGHT ROOF						
# OF SISTER PLIES	2x VALLEY			LVL VALLEY		
	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE
0	4'-8"	6'-2"	7'-11"	0	8'-8"	11'-5"
1	9'-5"	-	-	1	-	-
2	-	N/A	N/A	2	N/A	N/A
HEAVY ROOF						
# OF SISTER PLIES	2x VALLEY			LVL VALLEY		
	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE	RAFTER SIZE
0	3'-6"	4'-7"	5'-11"	0	6'-6"	8'-7"
1	7'-1"	9'-3"	-	1	13'-1"	-
2	-	-	N/A	2	-	N/A

*VALLEYS OF A LENGTH GREATER THAN THAT FOUND IN THE CELL ABOVE ARE CONTROLLED BY BENDING. APPLY THE NUMBER OF SISTER PLIES CORRESPONDING TO THIS ROW.
1. THIS TABLE IS INTENDED TO BE USED IN CONJUNCTION WITH THE STAMPED ENGINEERED PLANS AS THEY ARE DRAWN BY APEX. BRACING LOCATIONS SHALL DETERMINE HORIZONTAL, UNSUPPORTED SPAN FROM VALLEY BEARING AND BE USED TO DETERMINE THE NUMBER OF SISTERS REQUIRED. BRACING LOCATIONS ARE NOT TO BE INFERRED USING THIS TABLE.
2. TABLE VALUES ARE BASED ON A DEPTH OF MEMBER REMAINING, d, EQUAL TO THE DEPTH OF THE RAFTERS. IF d IS OBSERVED TO BE LESS THAN THE DEPTH OF THE RAFTER, THE VALLEY WILL NEED TO BE EITHER REPLACED OR ANALYZED BY APEX.
3. TABLE VALUES ARE VALID FOR TAPERED CUTS ONLY. REF DETAIL 4/S3.2.
4. IF MULTIPLY VALLEY IS SPECIFIED ON PLAN TREAT EACH ADDITIONAL PLY AS A SISTER PLY WHEN LOOKING UP MAX SPAN.
5. MAX 14'-0" HORIZONTAL RAFTER SPAN IN BOTH DIRECTIONS FROM VALLEY.
6. ALL HIPS ARE DESIGNED TO BE CONTROLLED BY BENDING. SHEAR AT BEARING WITH MIN 5 1/2" DEPTH DOES NOT CONTROL DESIGN.

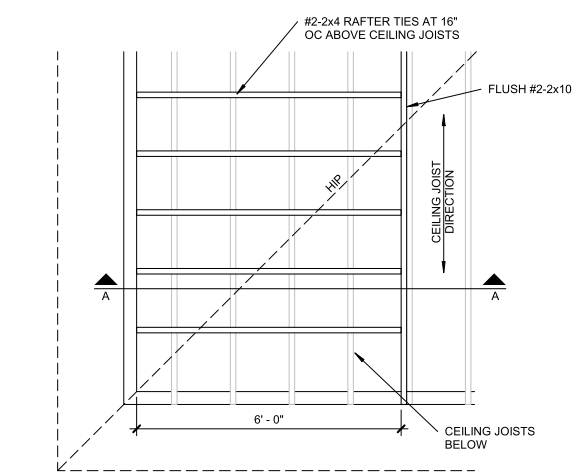


4 TAPERED VALLEY

S3.2 3/4" = 1'-0"

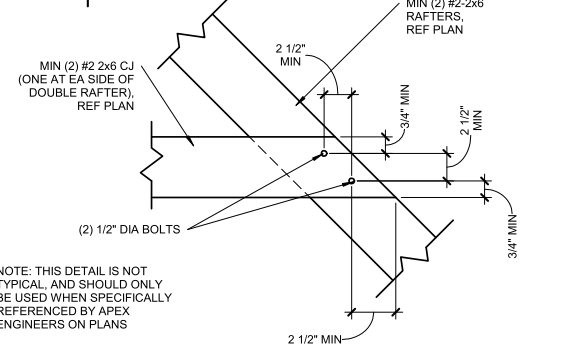


A-A SECTION



3 ROOF WITH PERP CEILING JOISTS

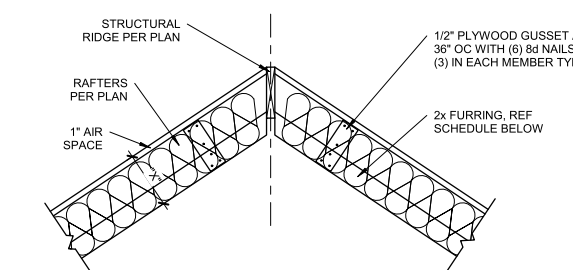
S3.2 1/2" = 1'-0"



NOTE: THIS DETAIL IS NOT TYPICAL, AND SHOULD ONLY BE USED WHEN SPECIFICALLY REFERENCED BY APEX ENGINEERS ON PLANS

2 BOLTED RAFTER HIP CONNECTION

S3.2 1 1/2" = 1'-0"



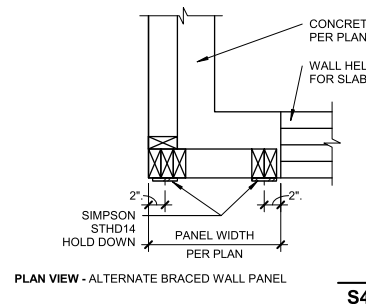
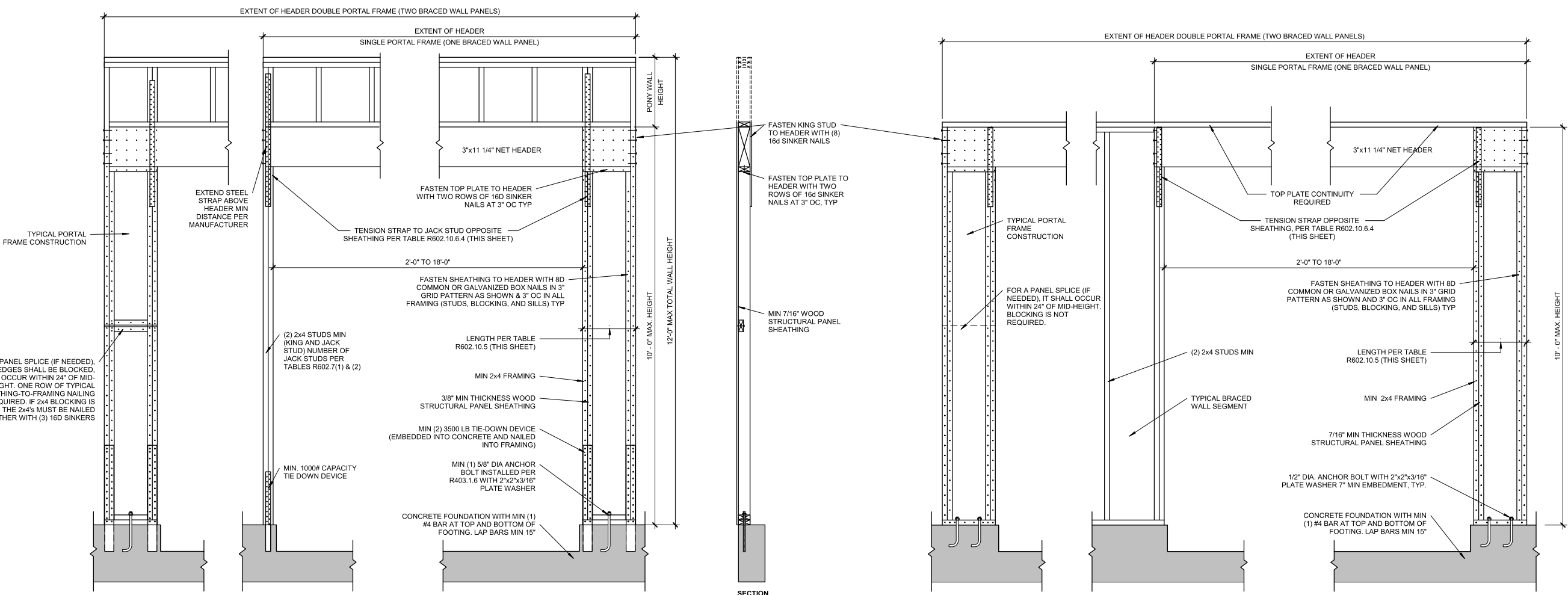
FURR OUT SCHEDULE

RAFTER SIZE	R-30C INSULATION (X=9 1/4")	R-38C INSULATION (X=11 1/4")
2x6	2x6	2x8
2x8	2x4	2x6
2x10	NOT REQUIRED	2x4
2x12	NOT REQUIRED	REQUIRED

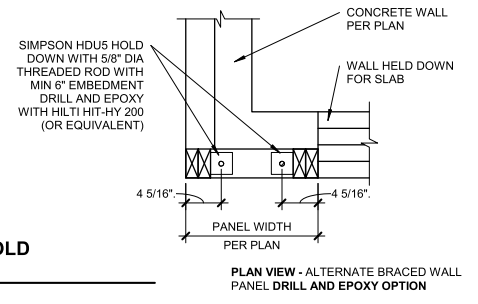
NOTES:
1. ALL VAULTED RAFTERS SHALL BE #2-2x6 DF-L, MINIMUM, AT 16" OC, PER SPAN CHART, UNLESS NOTED OTHERWISE.
2. ALL VAULTS SHALL BE FURRED DOWN WITH 2x FRAMING TO THE REQUIRED DEPTH OF INSULATION, PLUS 1" AIR SPACE.
3. R-30C INSULATION = 8 1/4" THICK
4. R-38C INSULATION = 10 1/4" THICK
5. INSULATION REQUIREMENTS MAY BE REDUCED TO R30 IF ROOF/CEILING ASSEMBLY DOES NOT ALLOW SUFFICIENT SPACE BUT IS LIMITED TO VAULTED CEILING AREAS THAT ARE LESS THAN 500 SQUARE FEET OR 20 PERCENT OF THE TOTAL INSULATED CEILING AREA, WHICHEVER IS LESS. (PER N1102.2.2)

1 VAULTED RAFTER INSULATION FURR OUT

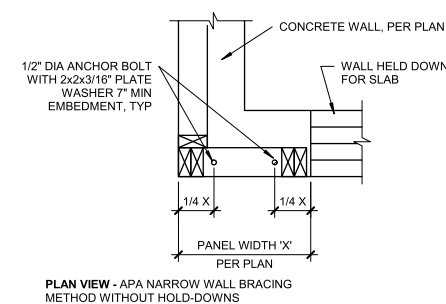
S3.2 3/4" = 1'-0"



1
PORTAL FRAME WITH HOLD DOWNS (METHOD PFH)
S4.0 3/4" = 1'-0" (PER IRC R602.10.6.2)



1
PORTAL FRAME AT GARAGE DOOR WITHOUT HOLD DOWNS (METHOD PFG)
S4.0 3/4" = 1'-0" (ALT ALLOWED AT GARAGE DOOR ONLY) (PER IRC R602.10.6.3)



1
PORTAL FRAME AT GARAGE DOOR WITHOUT HOLD DOWNS (METHOD PFG)
S4.0 3/4" = 1'-0" (ALT ALLOWED AT GARAGE DOOR ONLY) (PER IRC R602.10.6.3)

TABLE R602.10.5 (PARTIAL)

MINIMUM LENGTH OF BRACED WALL PANELS

METHOD	MIN LENGTH (INCHES)			
	8 FEET	9 FEET	10 FEET	12 FEET
A SUPPORTING ROOF ONLY	16	16	16	16
B ONE STORY AND ROOF	24	24	24	24
PFG	24	27	30	30

NOTE: MAX HEADER HEIGHT IS 10'-0", BUT WALL HEIGHT SHALL BE PERMITTED TO BE INCREASED TO 12'-0" WITH PONY WALL

TABLE R602.10.6.4

TENSION CAPACITY STRAP TABLE

MIN WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAX PONY WALL HEIGHT (FEET)	MAX TOTAL WALL HEIGHT (FEET)	MAX OPENING WIDTH (FEET)	TENSION STRAP CAPACITY REQ (LBS)
				115 MPH, EXP B
2x4 #2 GRADE	0	10	18	1,000
				9
	1	10	18	1,025
				9
	2	10	18	2,175
				16
2	12	18	1,500	
			16	3,375
4	12	18	2,750	
			16	3,775
2x6 STUD GRADE	2	12	16	1,000
				16
	2	12	18	2,550
				9
	4	12	16	2,400
				18

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING (CS-WSP) PER WSP METHOD (BELOW) UNLESS OTHERWISE NOTED ON THE PLAN

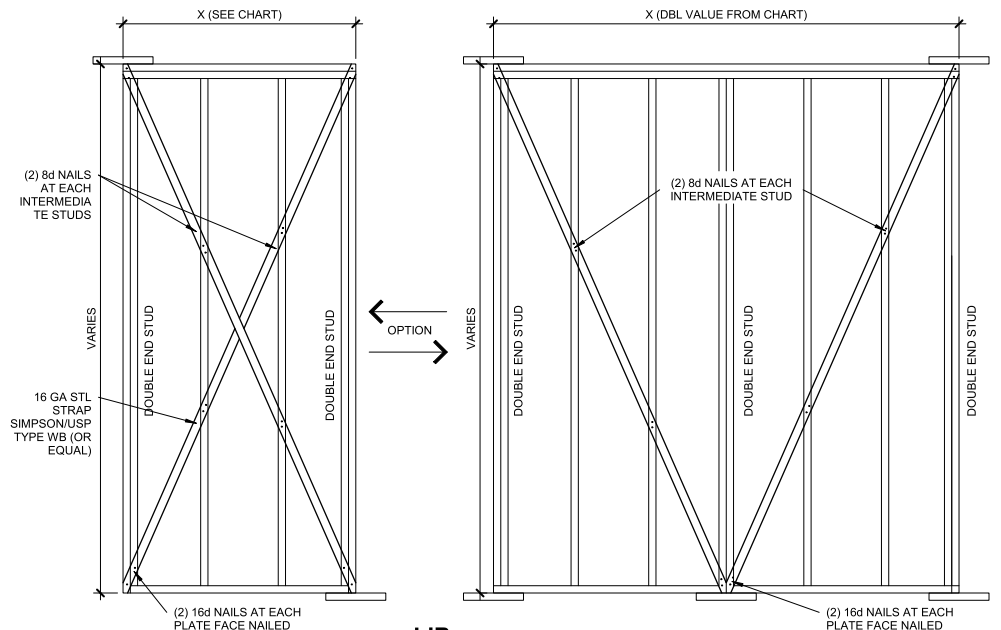
XXXX EXTERIOR BRACED WALLS:
WSP METHOD:
WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX, UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

///// INTERIOR BRACED WALLS (REF 2/S4.0):
GB METHOD:
1/2" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED WITH #6 - 1 1/4" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)
OR
LIB METHOD:
1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL X-BRACES AT 45° TO 60° ANGLES, MAXIMUM 16" OC STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS

BRACED WALL PANEL SCHEDULE

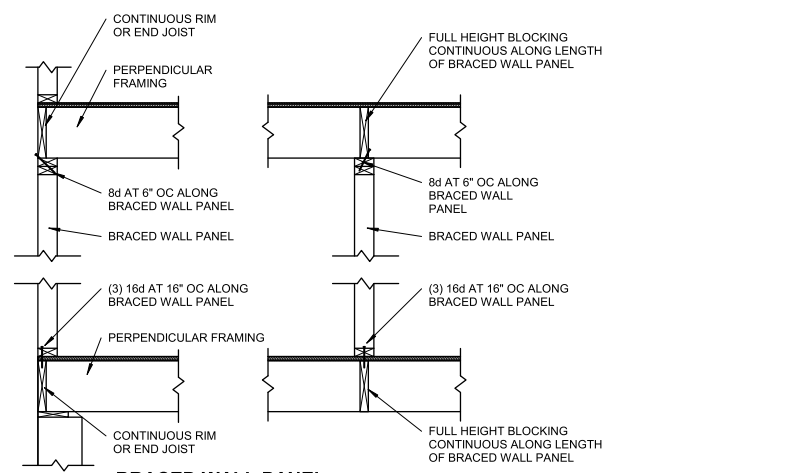
WALL HEIGHT	MIN WALL LENGTH (X)	MAX WALL LENGTH (X)
8'-0"	4'-7"	8'-0"
9'-0"	5'-2"	9'-0"
10'-0"	5'-9"	10'-0"
11'-0"	NP	-
12'-0"	NP	-

NOTE: BRACED WALL PANEL LENGTHS BASED ON WALL HEIGHT FOR IRC, LIB

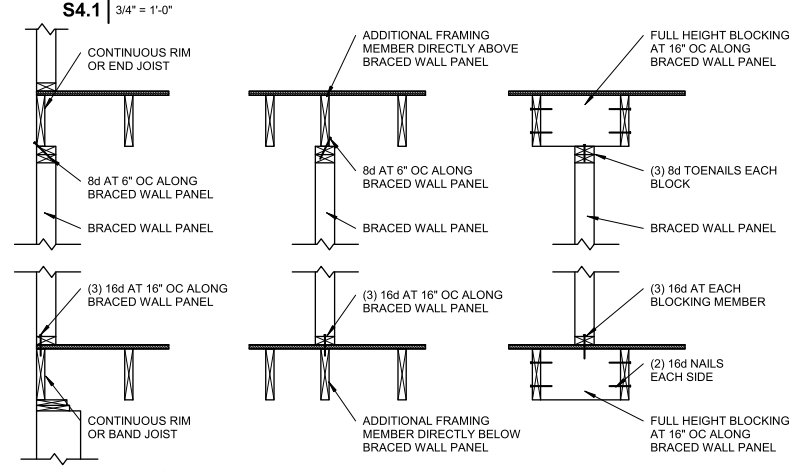


2
BRACED WALL PANEL-IRC METHODS LIB AND GB
S4.0 3/4" = 1'-0"

DATE	REVISION	COMMENTS

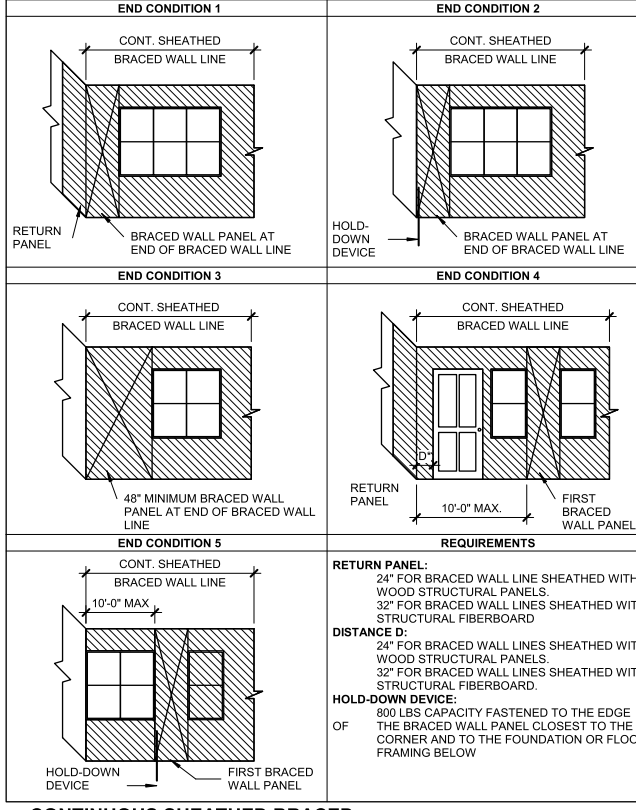


BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING
S4.1 3/4" = 1'-0"

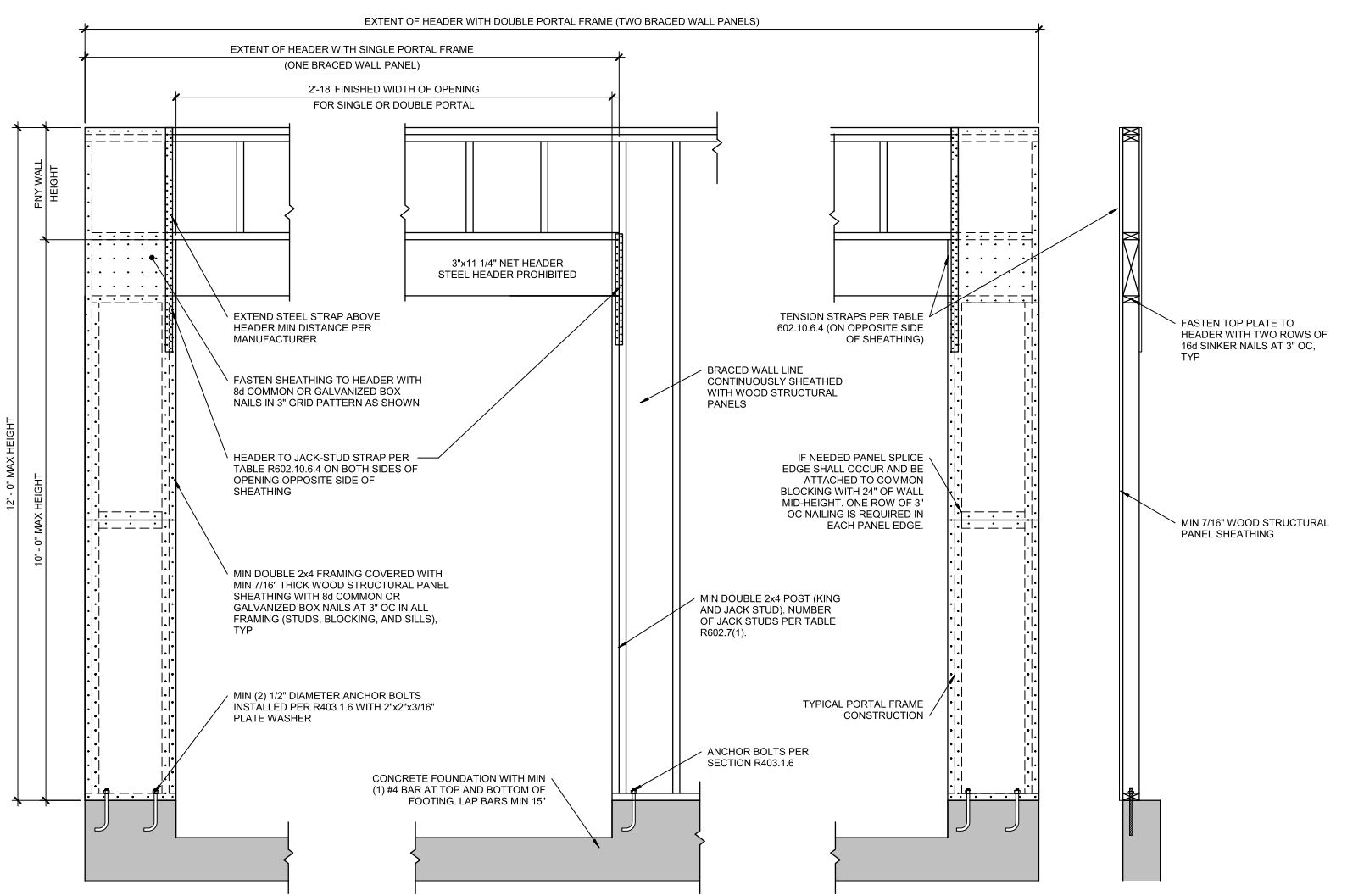


BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING
S4.1 3/4" = 1'-0"

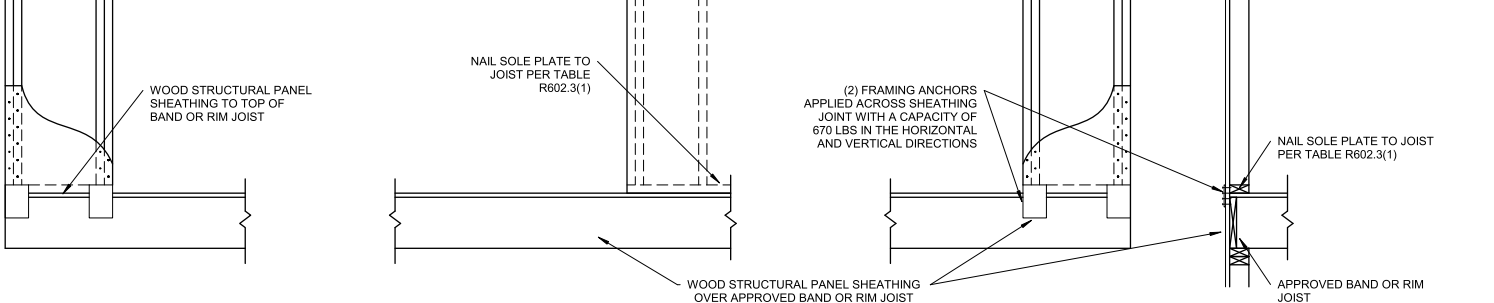
CONT. SHEATHED BRACED WALL END CONDITIONS



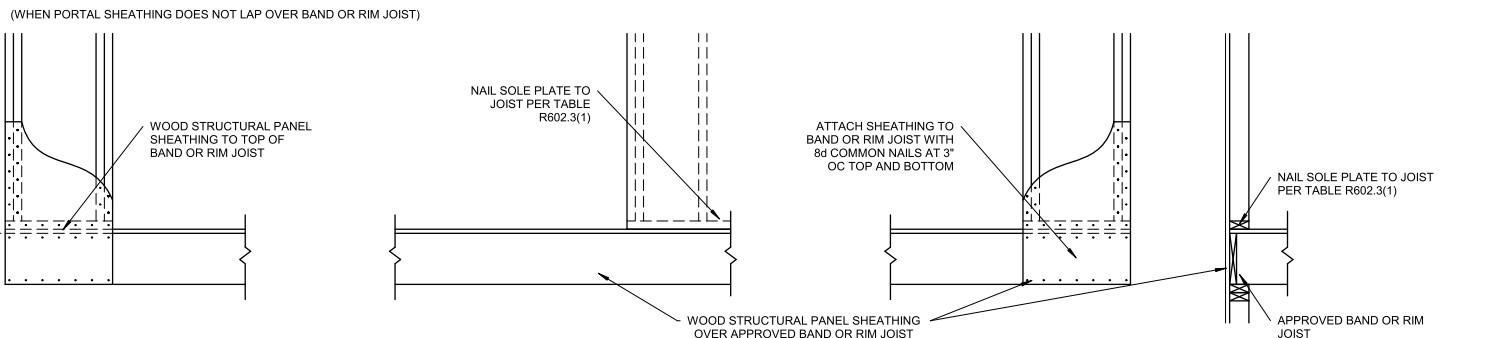
CONTINUOUS SHEATHED BRACED WALL END CONDITIONS
S4.1 NOT TO SCALE (COMPLIANCE WITH IRC R602.10.7)



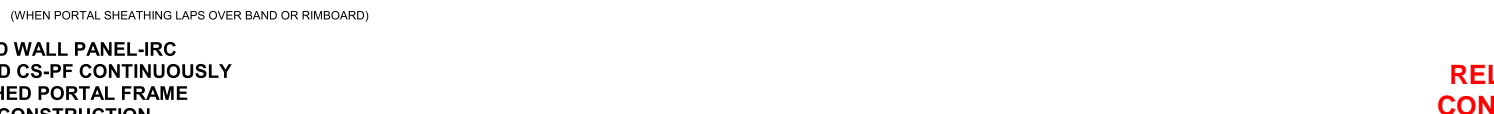
OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISE WOOD FLOOR - FRAMING ANCHOR OPTION
(WHEN PORTAL SHEATHING DOES NOT LAP OVER BAND OR RIM JOIST)



OVER RAISE WOOD FLOOR - OVERLAP OPTION
(WHEN PORTAL SHEATHING LAPS OVER BAND OR RIMBOARD)



BRACED WALL PANEL-IRC METHOD CS-PF CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION
S4.1 3/4" = 1'-0" (PER IRC R602.10.6.4)

RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW
Development Solutions
LEE'S SUMMIT, MISSOURI