



HD ENGINEERING
& DESIGN, INC.
www.hdengineers.com
11656 W. 75TH STREET
SHAWNEE, KS 66214
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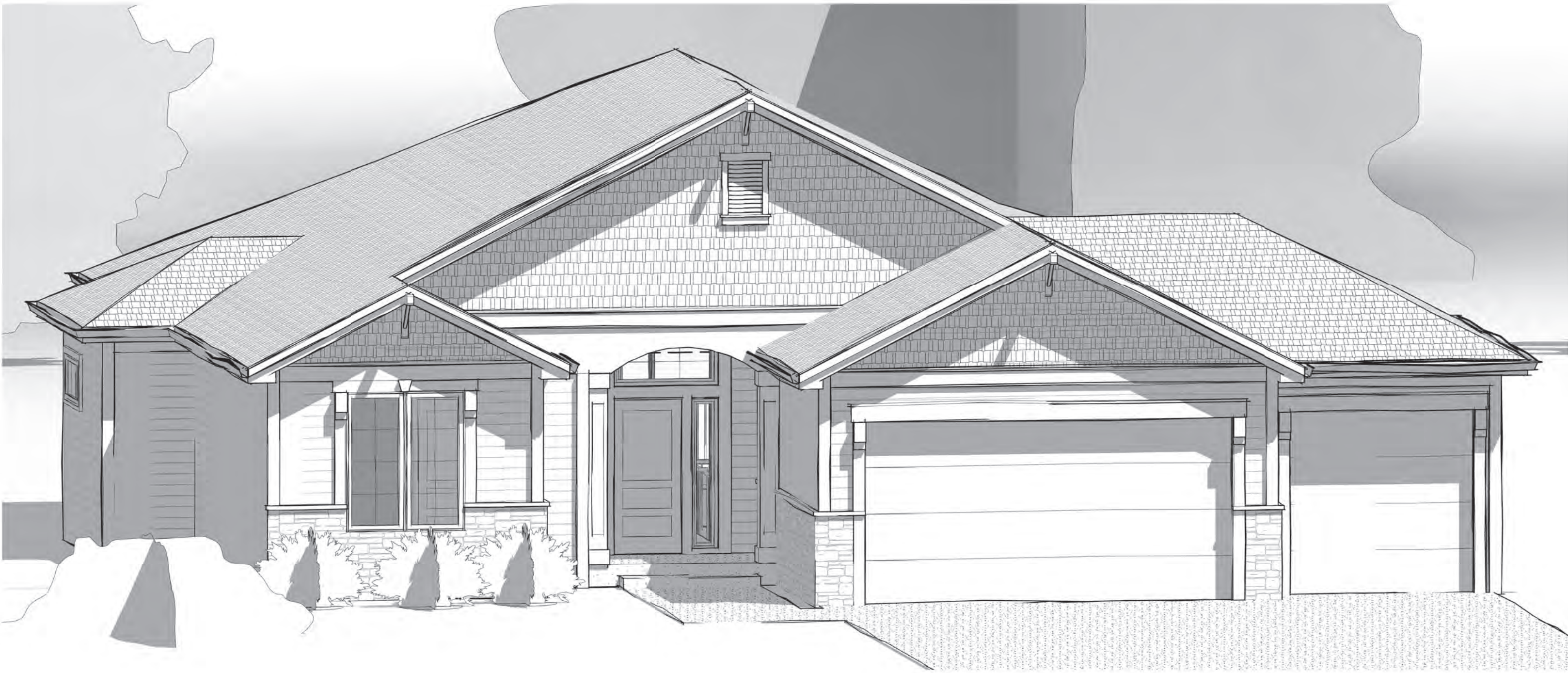
KS. COA. #E1312
MO. COA. #2006034946-F

FIRST CHOICE CUSTOM HOMES

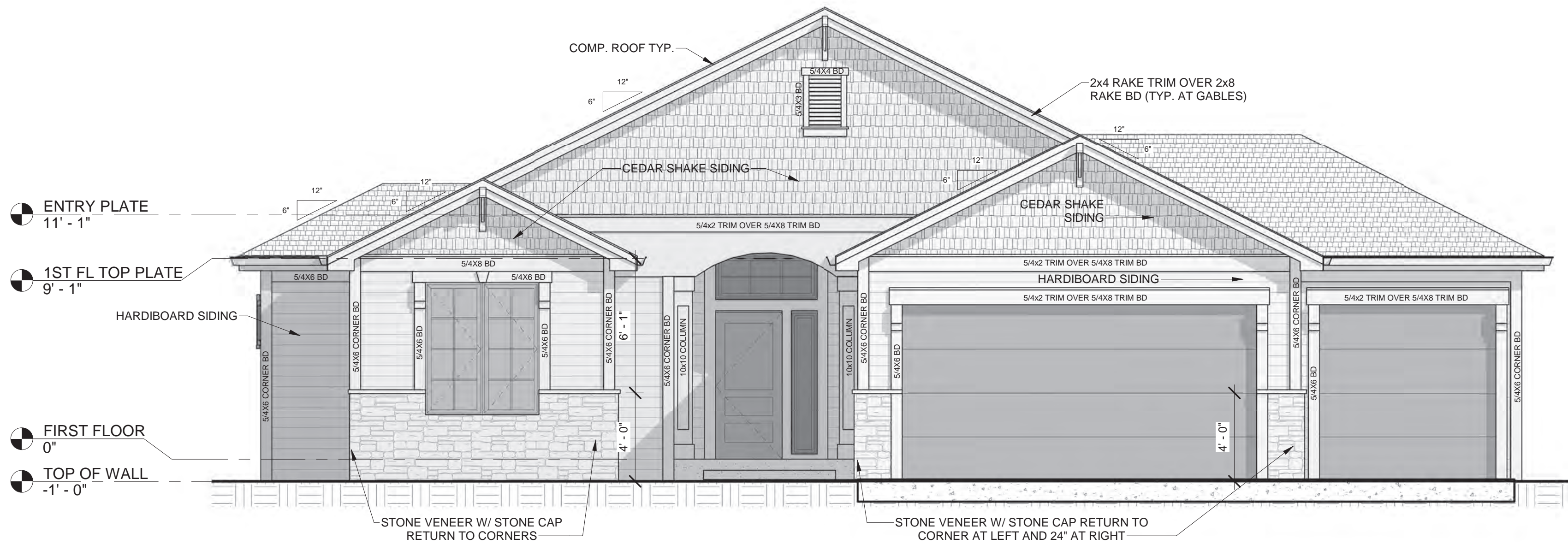
MCKINLEY COTTAGE, 1627 SW Blackstone Place

LEE'S SUMMIT, MO

ELEVATION OPTION A



2 3D VIEW

1 FRONT ELEVATION
1/4" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/22/2020

REVISION TABLE

NO.	DESCRIPTION

Date: 3/23/2020

HD #: 38982

Drawn By: PJH

Reviewed By: CLS

FRONT
ELEVATION

SHEET NUMBER:

1A

SQUARE FOOTAGE

COVERED DECK	175 SF
FINISHED BASEMENT	1216 SF
FIRST FLOOR	1562 SF
FRONT STOOP	45 SF
GARAGE	426 SF
UNFINISHED BASEMENT	345 SF



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FIRST CHOICE CUSTOM HOMES

MCKINLEY COTTAGE, 1627 SW Blackstone Place
LEE'S SUMMIT, MO

THIS PLAN HAS BEEN DESIGNED TO
CONFORM WITH THE 2018 IRC

COLUMN PAD SCHEDULE

- | | |
|----------|--|
| A | 3" SCH. 40 STEEL COL. ON 30"x30"x12" CONCRETE PAD W/ (5) #4 BARS EACH WAY (9.4K MAX) |
| B | 3" SCH. 40 STEEL COL. ON 36"x36"x12" CONCRETE PAD W/ (6) #4 BARS EACH WAY (13.5K MAX) |
| C | 3" SCH. 40 STEEL COL. ON 42"x42"x14" CONCRETE PAD W/ (7) #4 BARS EACH WAY (18.4K MAX) |
| D | 3-1/2" SCH. 40 STEEL COL. ON 48"x48"x16" CONCRETE PAD W/ (8) #4 BARS EACH WAY (24.0K MAX) |
| E | 3-1/2" SCH. 40 STEEL COL. ON 54"x54"x16" CONCRETE PAD W/ (9) #4 BARS EACH WAY (30.4K MAX) |
| F | 3-1/2" SCH. 40 STEEL COL. ON 60"x60"x18" CONCRETE PAD W/ (10) #4 BARS EACH WAY (37.5K MAX) |

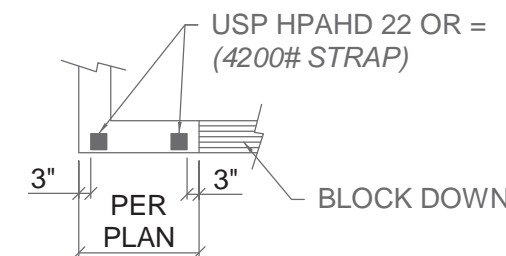
DECK PIER SCHEDULE

- | | |
|----------|---|
| A | MIN. 6X6 TRTD/CDR POST ON 12" Ø CONC PIER WITH USP PAU 66 BASE OR = (1570# MAX) |
| B | MIN. 6X6 TRTD/CDR POST ON 16" Ø CONC PIER WITH USP PAU 66 BASE OR = (2787# MAX) |
| C | MIN. 6X6 TRTD/CDR POST ON 18" Ø CONC PIER WITH USP PAU 66 BASE OR = (3535# MAX) |
| D | MIN. 6X6 TRTD/CDR POST ON 24" Ø CONC PIER WITH USP PAU 66 BASE OR = (6283# MAX) |
- PIERS TO TERMINATE ON ORIGINAL SOIL OF 1500 PSF MINIMUM BEARING.
 - PIERS TO TERMINATE AT A POINT 36" MINIMUM BELOW FINISH GRADE.
 - POST ARE NOT TO EXCEED AN UNBRACED LENGTH OF 12' WITHOUT CONTACTING HD ENGINEERING FOR GUIDANCE.

GENERAL NOTES:

- WINDOW SHALL HAVE FALL PROTECTION PER IRC 312.2.4
- HOUSE WILL BE PROVIDED WITH A "UFER" GROUND PER IRC SECTION 3608.1.5
- ALL TALL STUD WALLS TO BE CONSTRUCTED PER TABLE R602.3.1 ON SHEET S-2.0 ANY STUD WALL OVER 10 FEET TALL IS TO BE A CONTINUOUS STUD WALL
- OVERHEAD GARAGE DOORS MUST MEET DASMA 90 MPH REQUIREMENTS
- ALL HEADERS NOT LABELED SHALL BE MIN (2) #2-2X10 DFL
- DBL ALL JST UNDER ISLAND
- INSTALL W8X15 STEEL BEAM MIN. UNDER ALL F.P. WALLS/HEARTH (THAT WILL RECEIVE ROCK) UNLESS NOTED AS A LARGER BEAM. ANY STONE OVER 2" DEEP, NOTIFY ENG. TO VERIFY LOADS

TYPICAL TIE DOWN AT NARROW WALL



LEGEND / NOTES:

- LOAD BEARING WALL
- LOAD BEARING BEAM
- USP HPAHD 22 OR EQUAL 4200# STRAP
- SD - SMOKE DETECTOR
- CM - CARBON MONOXIDE DETECTOR

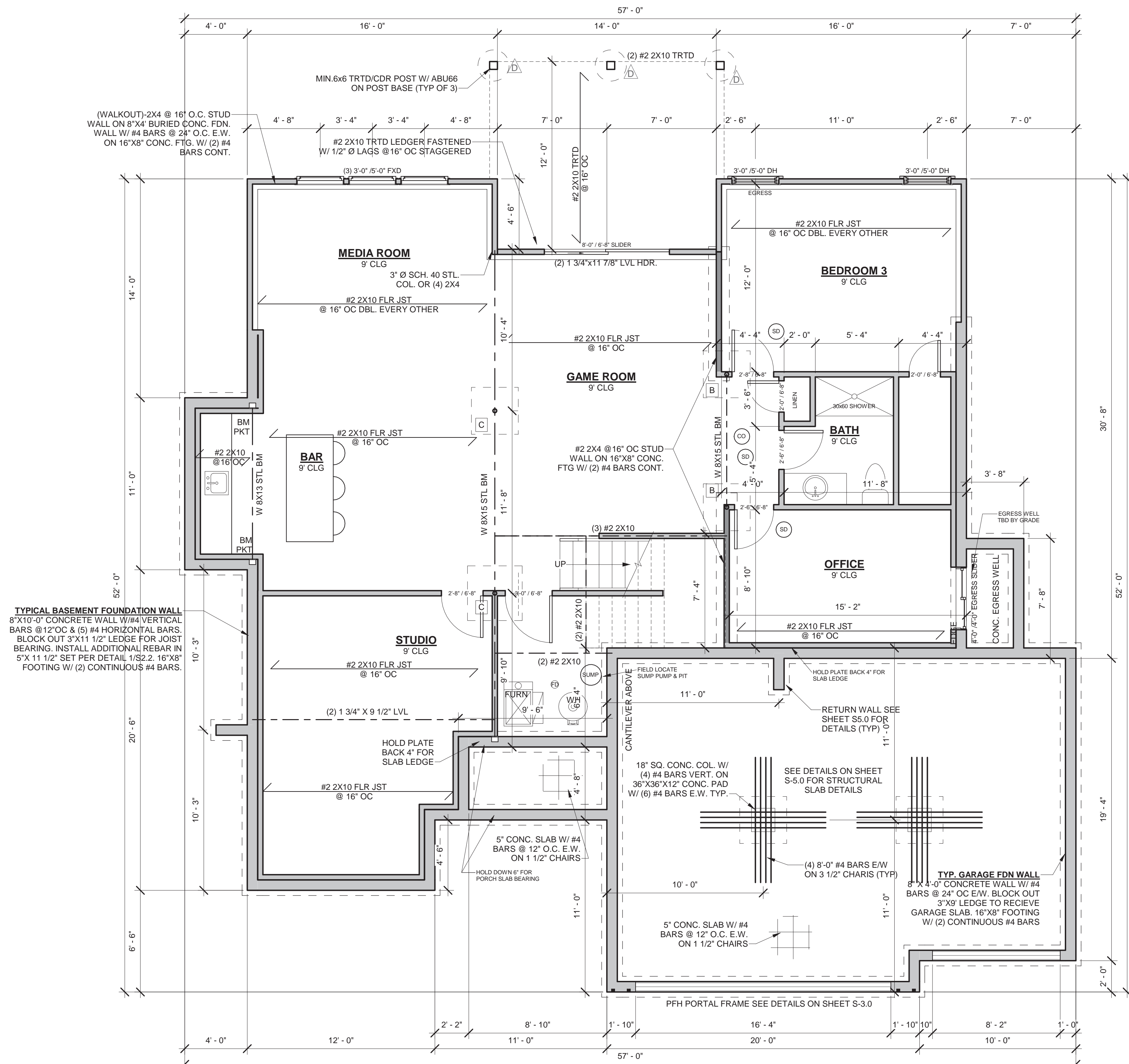
REVISION TABLE

NO.	DESCRIPTION	DATE

Date: 3/23/2020
HD #: 38982
Drawn By: PJH
Reviewed By: CLS

FOUNDATION PLAN

SHEET NUMBER
RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
COUNTS ADMINISTRATION
LEE'S SUMMIT, MISSOURI
6/4/22/2020



1 FOUNDATION PLAN

1/4" = 1'-0"

FIRST CHOICE CUSTOM HOMES
1627 SW BLACKSTONE PL., LEE'S SUMMIT, MO

Combustion Air			
Per IRC 2018 G2407.5.1			
Fuel Burning Appliance #1	Furnace	100000	Btu/h
Fuel Burning Appliance #2		50000	Btu/h
Fuel Burning Appliance #3		NA	Btu/h
Total Btu/h		150000	Btu/h
Area of Usable Space		72	sq. ft
Ceiling Heigh in Usuable Space (no sheetrock)		9	ft
Required Volume of Air = Total Btu/h * (50 cu.ft./1000 Btu/h)			
		= 7500	cu.ft.
Required Area of Usable Space		833 sq.ft.	
Standard Method Work?		BAD	
Combustion Air Transfer Grille			
Per IRC 2018 G2407.5.3.1			
Required Opening Free Space = 1 sq.in./1000 Btu/h			
	=	160 in.sq.	
Size of Grill(s) to be used	=	(2) 14"X8"	
Note: If Fuel Burning Appliances are enclosed, (1) opening is required within 12" of floor and (1) opening is required within 12" of top of enclosure			

HD Engineering & Design, Inc.



RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI

04/22/2020

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TO CONFORM WITH THE 2018 IRC



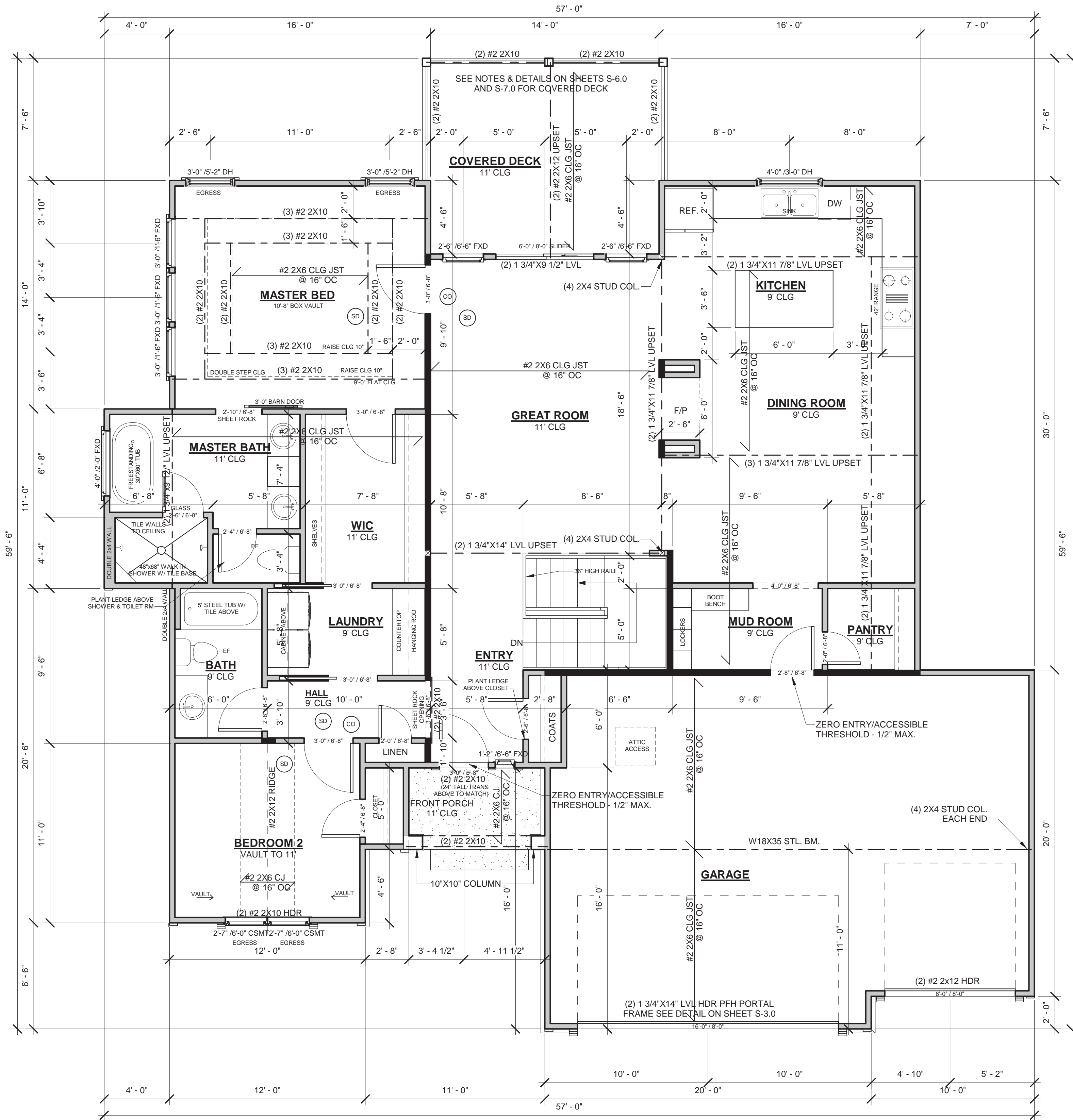
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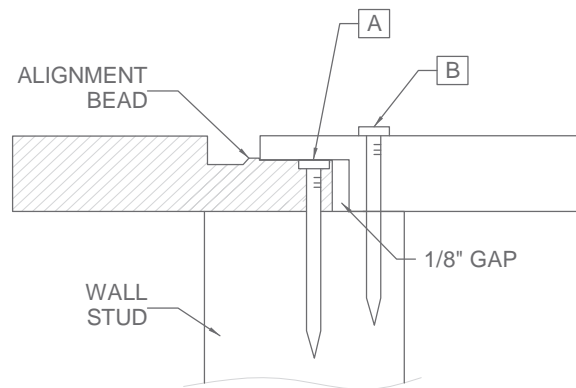
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FIRST CHOICE CUSTOM HOMES

MCKINLEY COTTAGE, 1627 SW Blackstone Place
LEE'S SUMMIT, MO



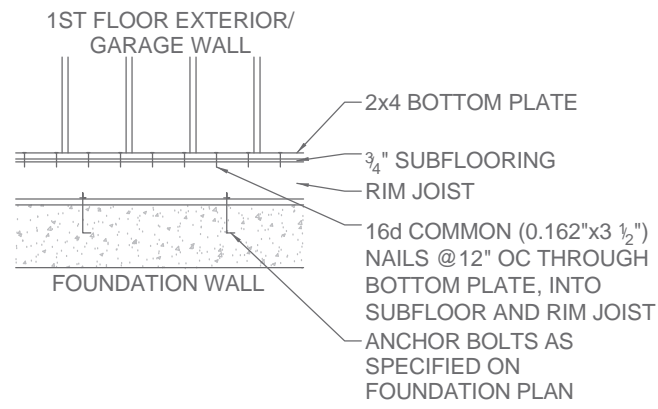
SEE S-6.0 & S-7.0 FOR ALL DECK
FRAMING NOTES AND DETAILS



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')

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 OF FOUNDATION



GENERAL NOTES:
-WINDOW SHALL HAVE FALL PROTECTION PER IRC
312.2.4
-HOUSE WILL BE PROVIDED WITH A "UFER"
GROUND PER IRC SECTION 3608.1.5
-ALL TALL STUD WALLS TO BE CONSTRUCTED PER
TABLE R602.3.1 ON SHEET S-2.0
-OVERHEAD GARAGE DOORS MUST MEET DASHA
90 MPH REQUIREMENTS

ALL TALL STUD WALLS TO BE
CONSTRUCTED PER TABLE
R602.3.1 ON SHEET S-2.0

BRACED WALLS:
SEE CALCULATIONS ON SHEET S-3.0, PER ASCET-10
REQUIREMENTS AS ALLOWED BY IRC 2012 R301.2.1

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

- 3/8" APA-RATED PLYWOOD/OSB WITH 8d NAILS @ 6" O.C. AT
EDGES AND @ 12" O.C. IN THE FIELD
- 3/4" 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

LEGEND / NOTES:

- LOAD BEARING WALL
- LOAD BEARING BEAM
- (SD) - SMOKE DETECTOR
- (CM) - CARBON MONOXIDE
DETECTOR

1 FIRST FLOOR PLAN

1/4" = 1'-0"

REVISION TABLE	

Date: 3/23/2020
HD #: 38982
Drawn By: PJH
Reviewed By: CLS

FIRST FLOOR
PLAN
SHEET NUMBER
RELEASE FOR CONSTRUCTION
AS SHOWN ON PLANS REVIEW
COUNTY ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/22/2020



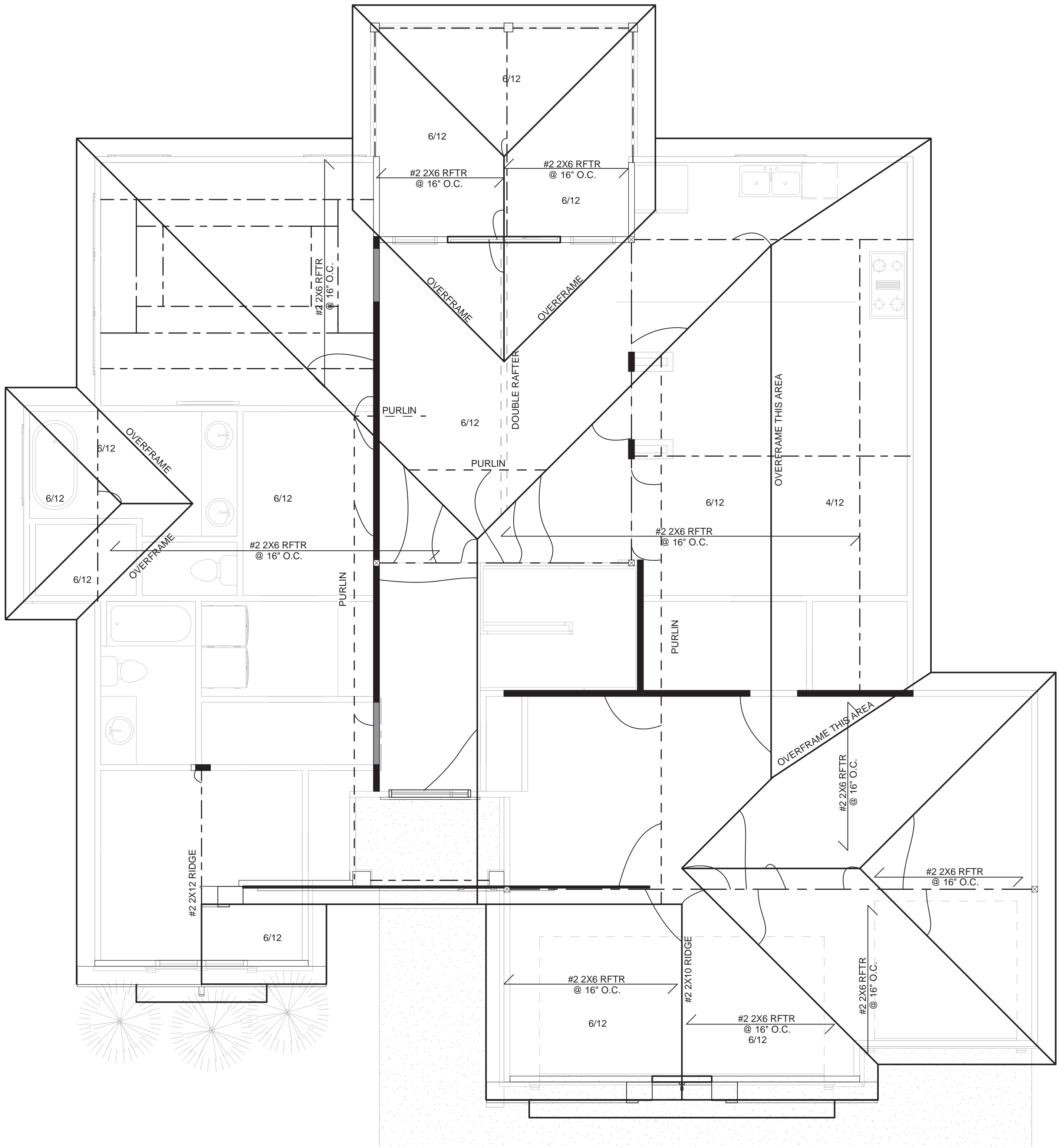
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FIRST CHOICE CUSTOM HOMES
MCKINLEY COTTAGE, 1627 SW Blackstone Place
LEE'S SUMMIT, MO

ELEVATION OPTION A



1 ROOF PLAN
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'-9"
#2-2x6	@16" O.C.	14'-1"
#2-2x8	@24" O.C.	14'-10"
#2-2x8	@16" O.C.	18'-2"
#2-2x10	@24" O.C.	18'-2"
#2-2x10	@16" O.C.	22'-3"

NOTE: CODE MINIMUM L/240 DEFLECTION

GREATER THAN CODE		
RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	8'-0"
#2-2x6	@16" O.C.	9'-9"
#2-2x8	@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"

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

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

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

GENERAL NOTES:
-WINDOW SHALL HAVE FALL PROTECTION PER IRC
312.2.4
-HOUSE WILL BE PROVIDED WITH A "UFER"
GROUND PER IRC SECTION 3608.1.5
-ALL TALL STUD WALLS TO BE CONSTRUCTED PER
TABLE R602.3.1 ON SHEET S-2.0
-OVERHEAD GARAGE DOORS MUST MEET DASHA
90 MPH REQUIREMENTS

LEGEND / NOTES:

- LOAD BEARING WALL
- - - - - LOAD BEARING BEAM
- - - - - PURLIN

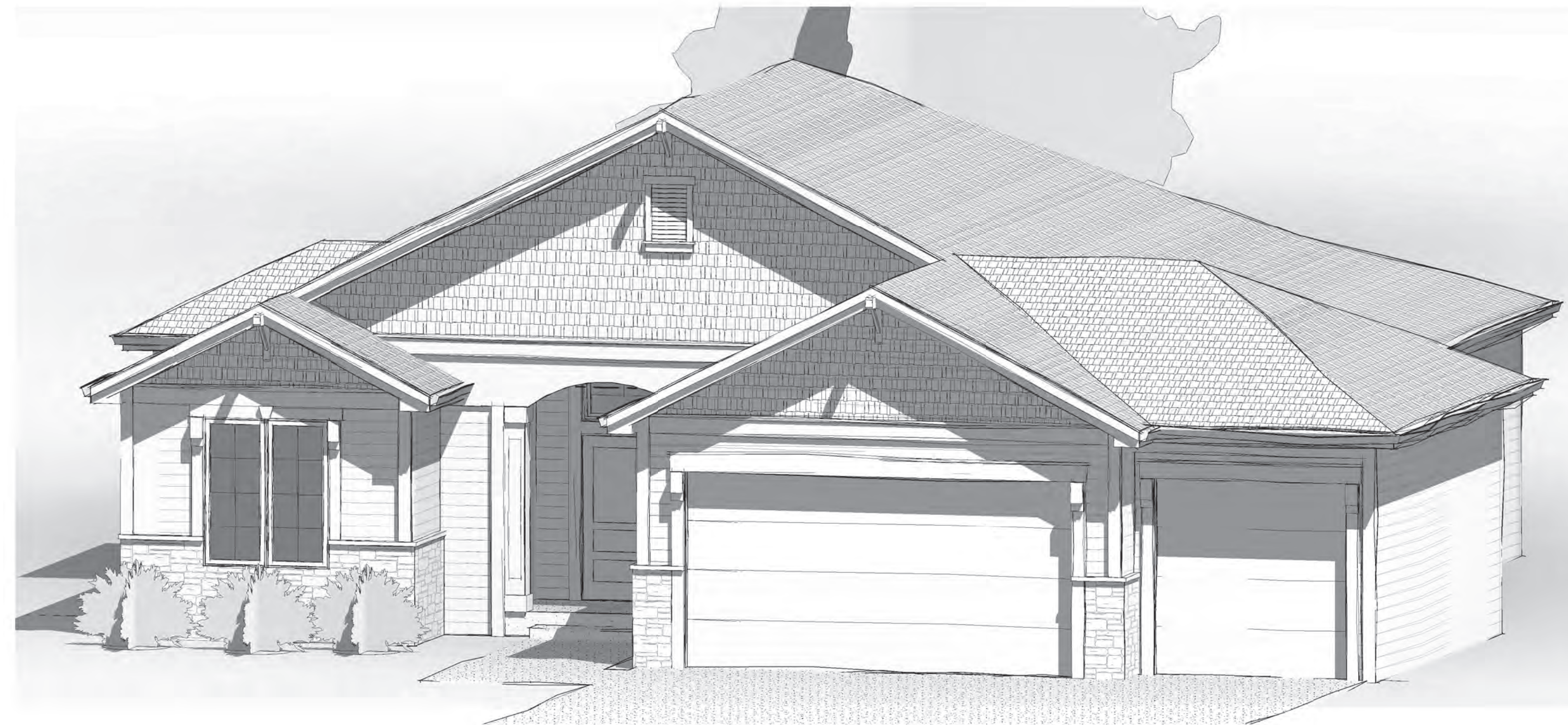
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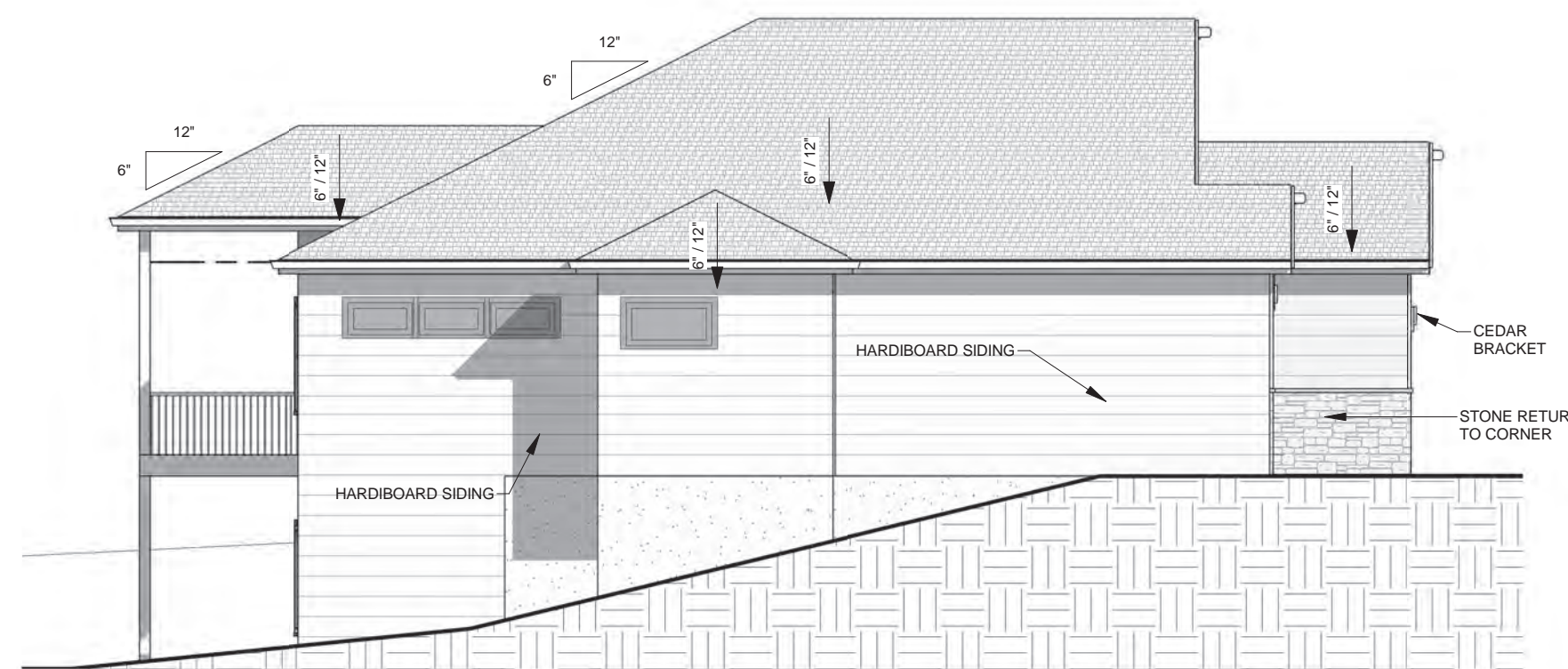
Date: 3/23/2020
HD #: 38982
Drawn By: PJH
Reviewed By: CLS

ROOF PLAN

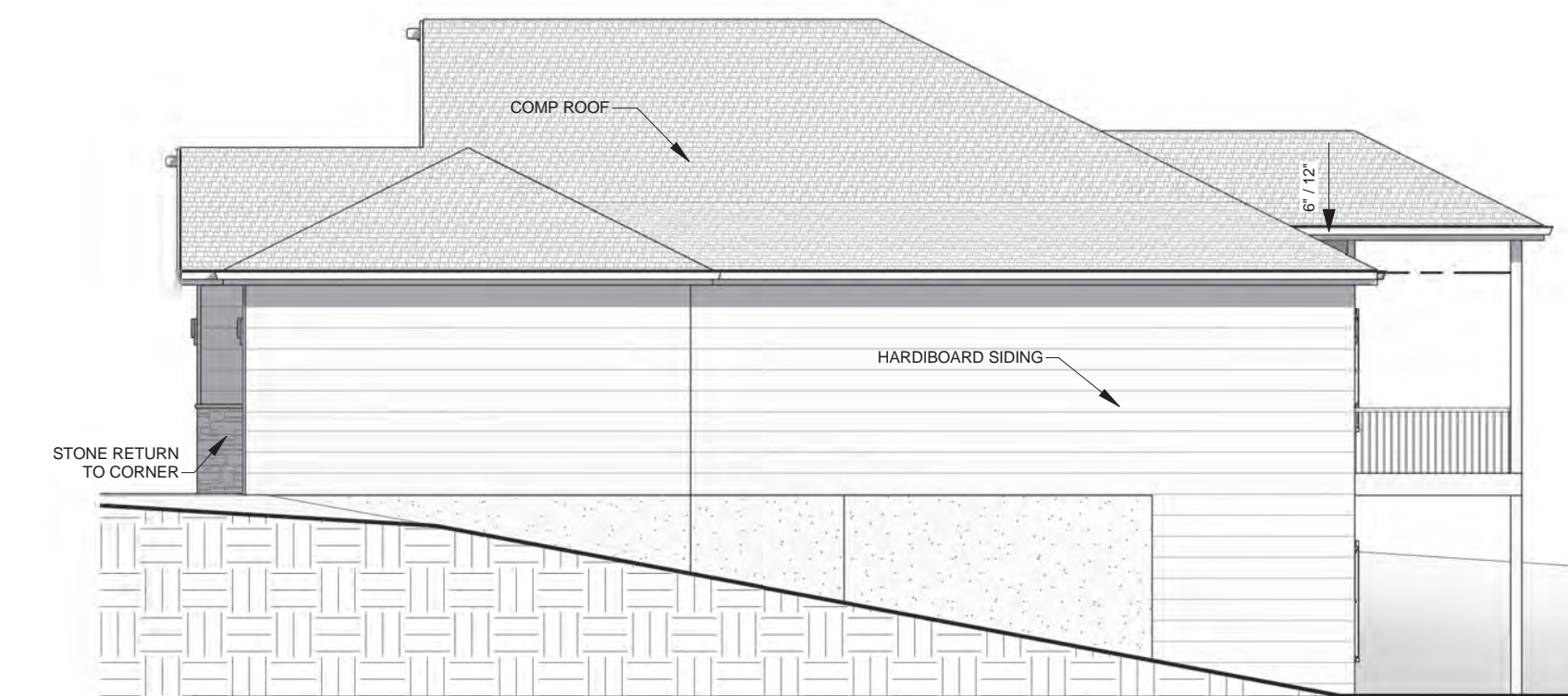
SHEET NUMBER:
47A
RELEASE FOR CONSTRUCTION
NOT FOR PLANS REVIEW
NOT FOR ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/22/2020



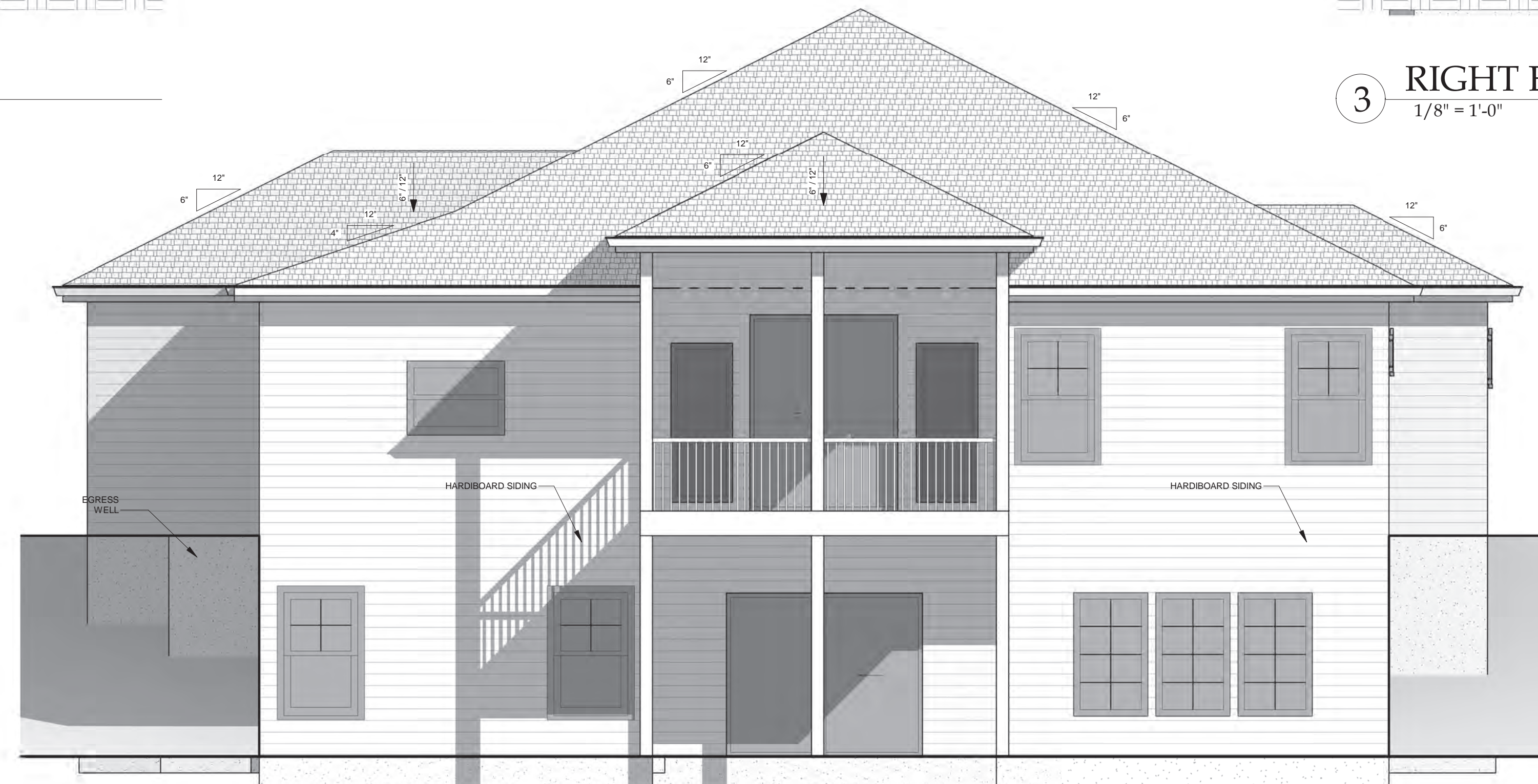
1 PERSPECTIVE



2 LEFT ELEVATION
1/8" = 1'-0"



3 RIGHT ELEVATION
1/8" = 1'-0"



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



ELEVATION OPTION A

FIRST CHOICE CUSTOM HOMES

MCKINLEY COTTAGE, 1627 SW Blackstone Place

LEE'S SUMMIT, MO

[illegible]

Date:	3/23/2020
HD #:	38982
Drawn By:	PJH
Reviewed By:	CLS

ELEVATIONS

SHEET NUMBER:
5A
RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/22/2020

GENERAL NOTES:

1. PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE, 2018 IECC, AND ALL AMENDMENTS AS ADOPTED BY THE AHJ. IF ANY CHANGES OR DEVIATIONS ARE MADE FROM THESE PLANS THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY AND THE ENGINEER TO EVALUATE THE CHANGES AND MAKE ANY APPROPRIATE MODIFICATIONS TO THE PLANS.
2. WHERE DISCREPANCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FOR THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY.
3. THE CONTRACTUAL OBLIGATION OF THESE PLANS IS TO PROVIDE THE OWNER/BUILDER AND THE AHJ WITH A SET OF PLANS THAT MEET AHJ AND CODE REQUIREMENTS FOR A SINGLE SITE CONSTRUCTION PROJECT. UNLESS REQUESTED BY OUR CLIE, CODE/AHJ MINIMUM DESIGNS WILL BE UTILIZED. ALSO, UNLESS REQUESTED BY THE OWNER, OUR FIRM CAN NOT AND WILL NOT BE AUTHORIZED TO VISIT THE SITE TO EVALUATE THE SITE OR ANY CONSTRUCTION FOR THIS PROJECT. IMPLEMENTATION OF ALTERNATES TO THE DESIGNS INCLUDING BUT NOT LIMITED TO PIER DESIGNS, FOUNDATION ALTERATIONS, OR ANY STRUCTURAL CHANGES NOT PROVIDED BY HD ENGINEERING OR A PROFESSIONAL REFERRED BY HD ENGINEERING SHALL RELEASE HD ENGINEERING FROM ALL LIABILITY ASSOCIATED WITH THIS DESIGN.
4. OUR FIRM HIGHLY RECOMMENDS THAT ANY SITE WITH GREATER THAN A 15% GRADE, ANY SITE WHERE A PREVIOUS STRUCTURE WAS LOCATED, OR ANY SITE WITH 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.
5. DUE TO THE WIDE VARIETY OF SOIL CONDITIONS IN OUR AREA AND THE WIDE VARIETY OF PLASTICITY INDEX AND SOIL BEARING CAPACITIES OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY HD ENGINEERING OR AN HD ENGINEERING REFERRED GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF ANY "STANDARD" FOUNDATIONS.

FOUNDATION NOTES:

1. THE FOUNDATION DESIGN SHALL COMPLY WITH THE ENFORCING JURISDICTION RESIDENTIAL FOUNDATION STANDARD IN LIEU OF ENGINEERING REPORT REQUIREMENTS BASED ON ACTUAL SITE CONDITIONS.
2. FOUNDATION WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406.
3. PROVIDE A MINIMUM 4" PERFORATED DRAIN AROUND USABLE SPACE BELOW GRADE OR OTHER EQUIVALENT MATERIALS PER IRC SECTION 405.1. THE PIPE SHALL BE COVERED WITH NOT LESS THAN 6" OF WASHED GRAVEL OR CRUSHED ROCK. THE DRAIN SHALL DAYLIGHT TO THE EXTERIOR BELOW THE FLOOR LEVEL OR TERMINATE IN A MINIMUM 20 GALLON SUMP PIT.
4. FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.
5. FOOTINGS SHALL BE A MIN. OF 16" WIDE AND 8" DEEP W/ (2) #4 BARS CONTINUOUS, LOCATED A MIN. OF 3" CLEAR FROM BOTTOM. FOOTINGS SHALL BE A MINIMUM OF 36" BELOW GRADE FOR FROST PROTECTION.
6. COLUMN PADS SHALL BE A MINIMUM OF 24"x24"x8" WITH (3) #4 BARS EACH WAY.
7. FOUNDATION WALLS SHALL BE A MINIMUM 8" THICK W/ MINIMUM #4 BARS @ 24" O.C. HORIZONTAL AND VERTICAL W/ THE TOP BAR WITHIN 8" OF THE TOP OF THE WALL UNLESS NOTED OTHERWISE ON PLAN.
8. REINFORCEMENT SHALL LAP A MINIMUM OF 24"
9. INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
10. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE BY A SEPARATION OF 3".
11. CONCRETE FLOOR SLABS ON GRADE, SHALL BE A MINIMUM 4" THICK OVER A MINIMUM 4" BASE OF SAND, GRAVEL, OR CRUSHED STONE. BASEMENT SLABS SHALL HAVE A MIN. 6 MIL POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" SHALL BE PLACED BETWEEN THE FLOOR SLAB AND THE BASE COURSE.
12. FLOOR SLABS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER A SEPARATE ENGINEERING DESIGN.
13. BASEMENT FOUNDATION SILL PLATES SHALL BE BOLTED TO THE FOUNDATION W/ A MINIMUM OF 1/2" ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 3' ON CENTER AND WITHIN 12" OF EACH END PIECE PER IRC SECTION R403.1.6.
14. FOUNDATION WINDOW WELLS FOR SECONDARY MEANS OF EGRESS SHALL PROVIDE A MINIMUM 3'X3' HORIZONTAL AREA.
15. THE BASE OF ALL FOOTING EXCAVATIONS SHOULD BE FREE OF ALL WATER AND LOOSE MATERIAL PRIOR TO PLACING CONCRETE. CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATING SO THAT EXCESSIVE DRYING OR DISTURBANCE OF BEARING MATERIALS DOES NOT OCCUR. SHOULD THE MATERIALS AT BEARING LEVEL BECOME EXCESSIVELY DRY OR SATURATED, WE RECOMMEND THAT THE AFFECTED MATERIAL BE REMOVED PRIOR TO PLACING CONCRETE.
16. IT IS RECOMMENDED THAT ALL FOOTING EXCAVATIONS BE EVALUATED AND TESTED BY A GEOTECHNICAL ENGINEER IMMEDIATELY PRIOR TO PLACEMENT OF FOUNDATION CONCRETE. UNSUITABLE AREAS IDENTIFIED AT THIS TIME SHOULD BE CORRECTED. CORRECTIVE PROCEDURES WOULD BE DEPENDENT UPON CONDITIONS ENCOUNTERED AND MAY INCLUDE DEEPENING OF FOUNDATION ELEMENTS, OR UNDERCUTTING OF UNSUITABLE MATERIALS AND REPLACEMENT WITH ENGINEERED FILL.

STAIRWAY NOTES:

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

GLAZING NOTES:

1. GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE OF APPROVED SAFETY GLAZING MATERIALS. GLASS IN STORM DOORS, INDIVIDUAL FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARCH OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR, WALLS ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS AND WHIRLPOLS, GLAZING IN FIXED OR OPERABLE PANELS EXCEEDING 9 S.F. AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36"
2. IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24 INCHES OF THE FINISHED FLOOR.

FRAMING NOTES:

1. ALL LUMBER SIZES ARE FOR DOUGLAS FIR-LARCH UNLESS OTHERWISE NOTED.
2. ALL HEADERS TO BE A MINIMUM OF (2) #2-2X10'S UNLESS OTHERWISE NOTED.
3. BLOCK CANTILEVERS, DOOR JAMBS, AND OVER BEAMS.
4. ALL HEADERS/BEAMS TO BEAR ON A MINIMUM OF (2) 2X4 POSTS UNLESS NOTED OTHERWISE.
5. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE.
6. WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES SHALL BE PROVIDED AT A MAXIMUM OF 4' CENTERS TO TRANSFER LATERAL LOADS ON THE WALL TO THE FLOOR DIAPHRAGM. THE BLOCKING SHALL BE SECURELY NAILED TO THE JOISTS AND FLOORING. NAIL JOISTS AND BLOCKING TO SILL PLATE WITH (4) 10D NAILS.

7. IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S) , NAIL 2X4'S FLAT AT 4' CENTERS WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING, INSTALLED UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2X4'S TO THE SILL PLATE WITH (4) 10D NAILS.
8. ALL SILLS AND SLEEPERS SUPPORTED ON CONCRETE OR MASONRY AND FURRING ATTACHED TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT MATERIALS.
9. JOISTS UNDER BEARING PARTITIONS SHALL BE SIZED TO CARRY THE DESIGN LOAD IN ACCORDANCE WITH IRC SECTION R502.4.
10. JOISTS FRAMING FROM OPPOSITE SIDES OVER BEARING SUPPORTS SHALL LAP A MINIMUM OF 3" AND SHALL BE NAILED TOGETHER WITH A MINIMUM 10D FACE NAILS.
11. JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR ON MINIMUM 2"x2" LEDGER STRIPS.
12. HEADER AND TRIMMERS SHALL BE OF SUFFICIENT CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3' FROM THE TRIMMER JOIST BEARING. WHEN THE HEADER SPAN EXCEEDS 4', THE HEADER AND TRIMMER SHALL BE DOUBLED.
13. JOISTS AT SUPPORTS SHALL BE SUPPORTED Laterally AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" NOMINAL THICKNESS OR BY ATTACHMENT TO A HEADER, BAND OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION.
14. ALL WALL COVERINGS TO COMPLY WITH IRC SECTION 702 AND 703
15. ALL RAFTER / COLLAR TIES TO COMPLY WITH IRC SECTIONS 804
16. ALL RAFTERS TO HAVE 2x4 COLLAR TIES @ 48" OC IN UPPER 1/3 OF DISTANCE BETWEEN CEILING AND ROOF
17. BLOCKING BETWEEN JOISTS UNDER A PERPENDICULAR LOAD-BEARING WALL IS NOT REQUIRED
18. BOTTOM OF ALL FLOOR ASSEMBLIES SHALL BE PROVIDED WITH A 1/2" GYPSUM WALLBOARD MEMBRANE (IF REQUIRED BY LOCAL CODE)
19. I-JOIST AND FLOOR TRUSS SYSTEMS SHALL BE FIRE PROTECTED PER IRC AS ADOPTED BY AHJ
20. STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF/ CEILING DIAPHRAGM PER IRC 602.3

CONCRETE NOTES:

1. 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:

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

GARAGE NOTES:

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

MECHANICAL/INSULATION:

1. BUILDING ENVELOPE INSULATION SHALL COMPLY WITH IRC TABLE N1102.1.1 OR THE 2018 IECC. (SEE S-6.0 FOR MORE DETAILS)

VENTILATION:

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

SHEATHING SCHEDULE

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

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

FRAME FASTENING SCHEDULE

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

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

DESIGN LOADS (PSF)

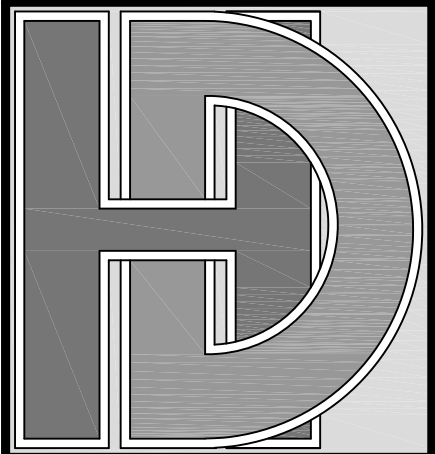
THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS

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 NORMAL	

ENGINEERED LUMBER

MIN DESIGN REQUIREMENTS

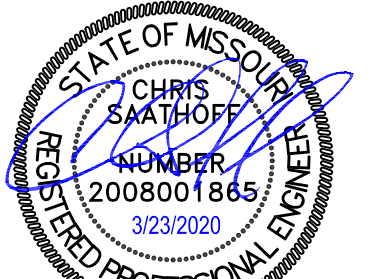
	F _e (psi)	E (psi)	F _v (psi)
LVL	2600	1.8x10 ⁶	285
GLULAM	2400	1.8x10 ⁶	190
PARALLAM	2600	2.0x10 ⁶	290



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KS. COA. # E1312
MO. COA. # 2006034946-F

FIRST CHOICE CUSTOM HOMES
1627 SW BLACKSTONE PLACE
MCKINLEY COTTAGE LEE'S SUMMIT, MO
STRUCTURAL DETAILS

REVISION TABLE

NO.	DATE	DESCRIPTION

Date: 3/23/2020
HD #: 38982
Drawn by: AWH
Reviewed by: CLS

STRUCTURAL DETAILS

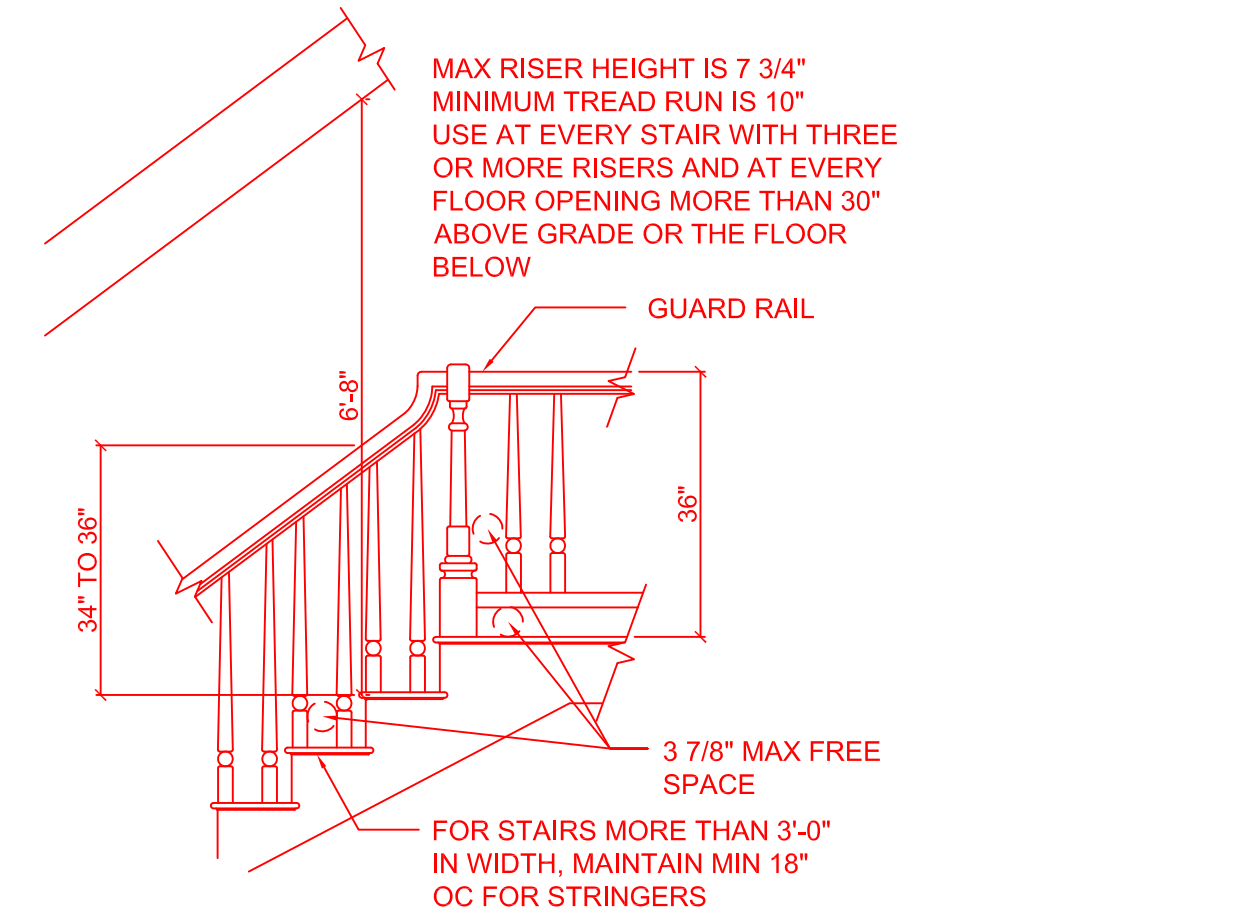
RELEASE FOR CONSTRUCTION
SHEET NUMBER
S-1-0
NOTED ON PLANS REVIEW
CODES ADMINISTRATION
COUNTY OF MISSOURI
04/22/2020

TABLE R 602.3(5) SIZE, HEIGHT, AND SPACING OF WOOD STUDS							
STUD SIZE (INCHES)	BEARING WALLS				NONBEARING WALLS		
	LATERALLY UNRESTRICTED STUD HEIGHT (INCHES)	MAXIMUM SPACING WHERE SUPPORTING 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 PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (INCHES)	LATERALLY UNRESTRICTED STUD HEIGHT + (INCHES)	MAXIMUM SPACING (INCHES)	
2 X 3 ^D	—	—	—	—	10	16	
2 X 4	10	24 c	16 c	—	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

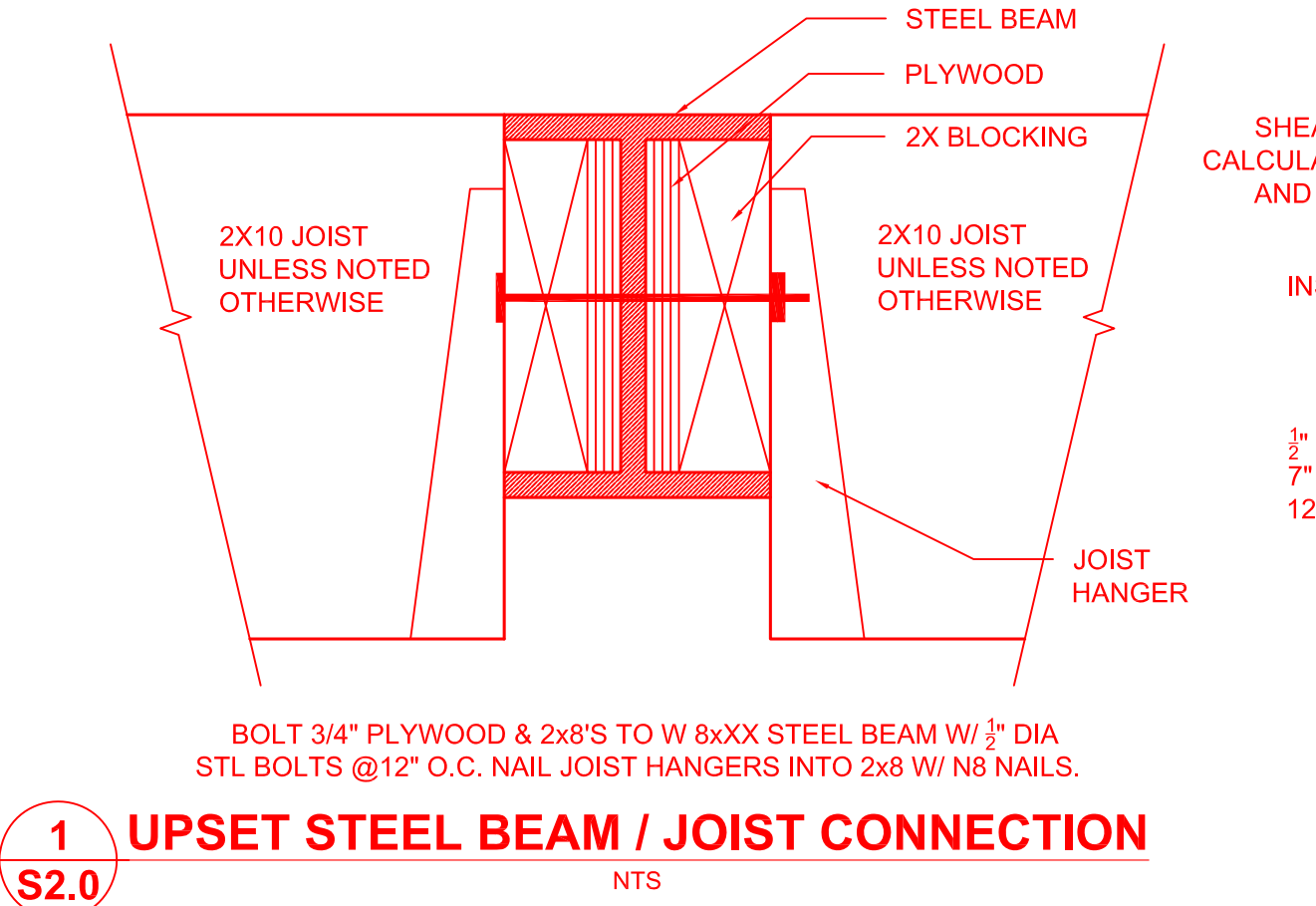
- FOR SI: 1 INCH = 25.4mm, 1 FOOT = 304.8mm
- a. LISTED HEIGHTS ARE DISTANCES BETWEEN POINTS OF LATEAL SUPPORT PLACED PERPENDICULAR TO THE PLANE OF THE WALL. BEARING WALL SHALL BE SHEATHED ON NOT LESS THAN ONE SIDE OR BRIDGING SHALL BE INSTALLED NOT GREATER THAN 4 FEET APART MEASURED VERTICALLY FROM EITHER END OF THE STUD. INCREASES IN UNSUPPORTED HEIGHT ARE PERMITTED WHERE IN COMPLIANCE WITH EXCEPTION 2 OF SECTION R602.3.1 OR DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES.
- b. SHALL NOT BE USED IN EXTERIOR WALLS
- c. A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2X4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE INCREASED TO 2X6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

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 WAHER, 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.

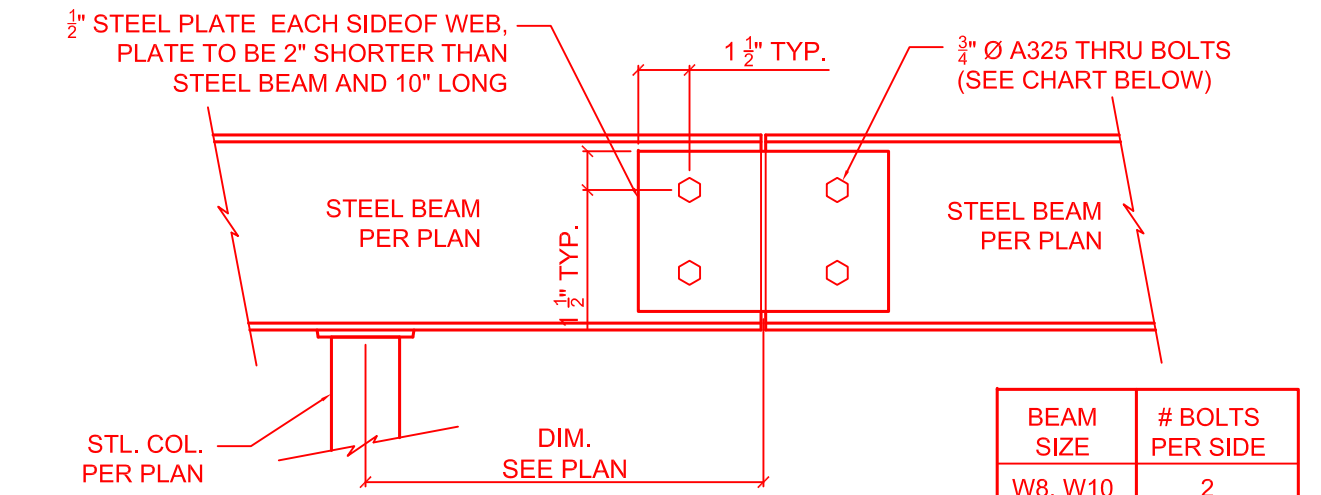
COLUMN SCHEDULE BASED ON FOOTING SIZE (ASSUME 1500 PSF SOIL)				
PAD SIZE	REINFORCEMENT	COL MIN	COL TYPE	MAX LOAD
24x24x12	(4) #4 BARS E/W	3"	SCH40	6K
30x30x12	(5) #4 BARS E/W	3"	SCH40	9.4K
36x36x12	(6) #4 BARS E/W	3"	SCH40	13.5K
42x42x14	(7) #4 BARS E/W	3"	SCH40	18.4K
48x48x16	(8) #4 BARS E/W	3"	SCH40	24.0K
54x54x16	(9) #4 BARS E/W	3½"	SCH40	30.4K
60x60x18	(10) #4 BARS E/W	3½"	SCH40	37.5K



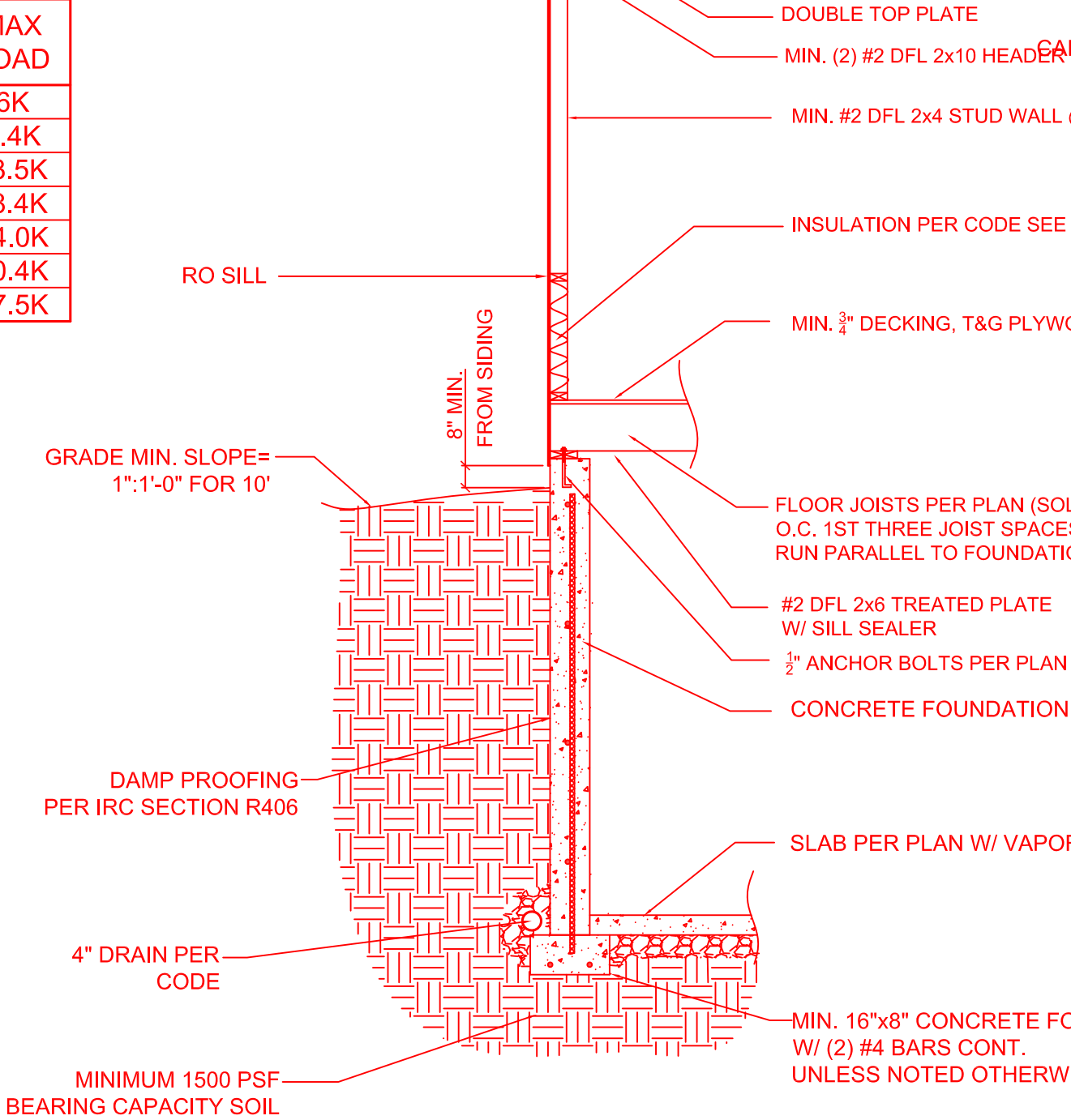
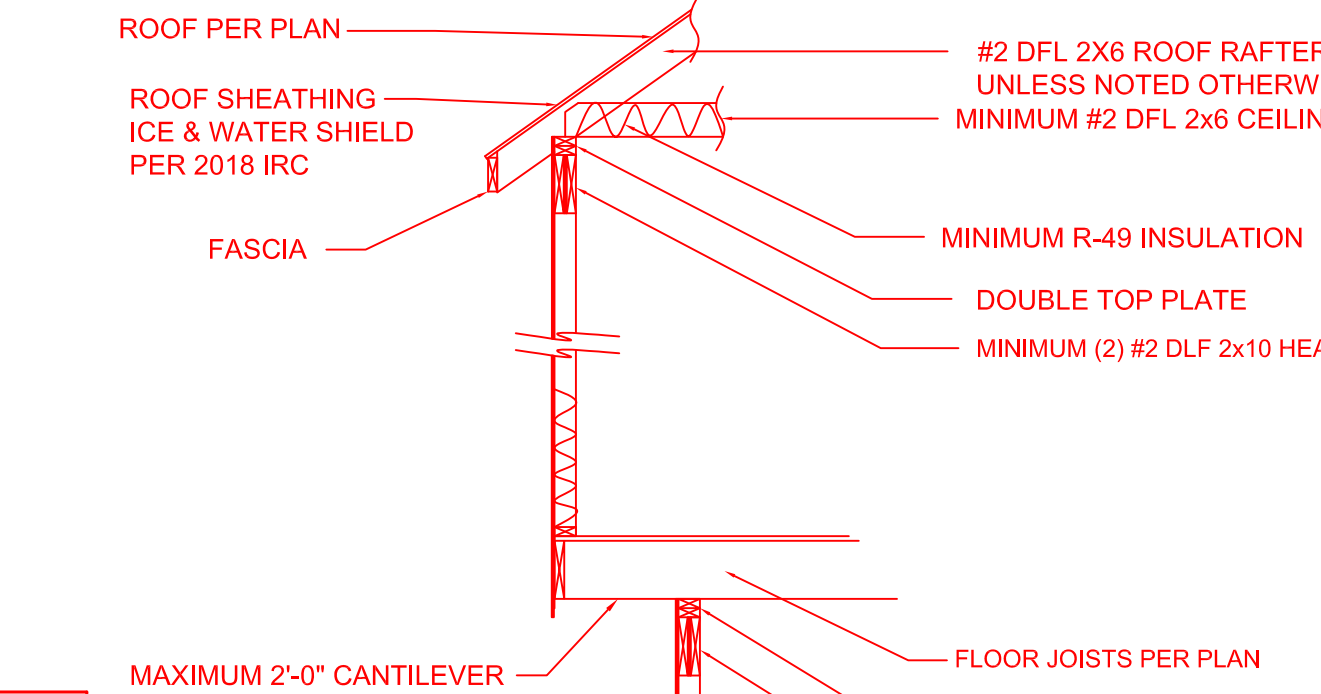
6 STAIR / RAIL DETAIL
NTS
S2.0



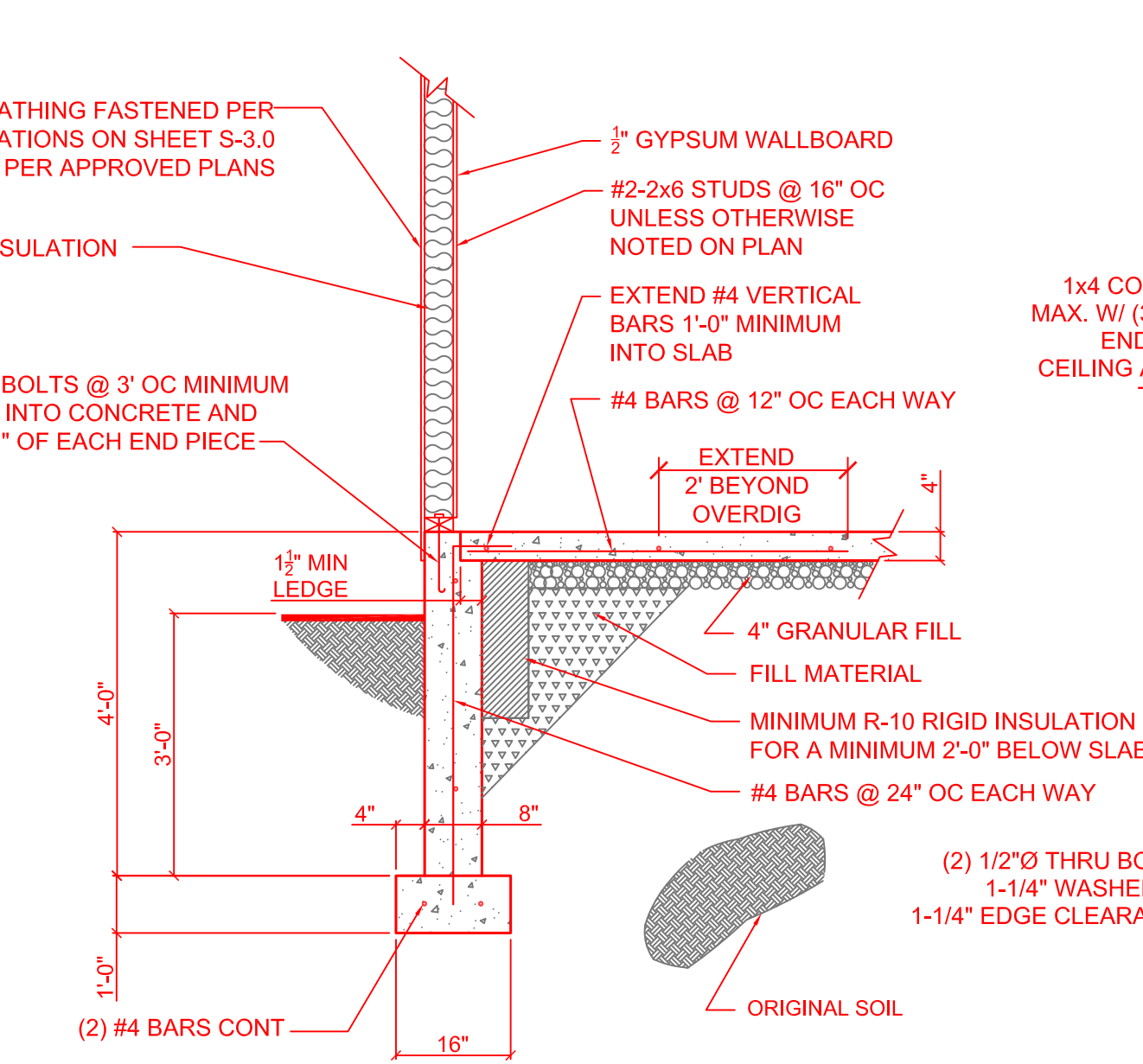
1 UPSET STEEL BEAM / JOIST CONNECTION
NTS
S2.0



9 STEEL BEAM SPICE DETAIL
NTS
S2.0

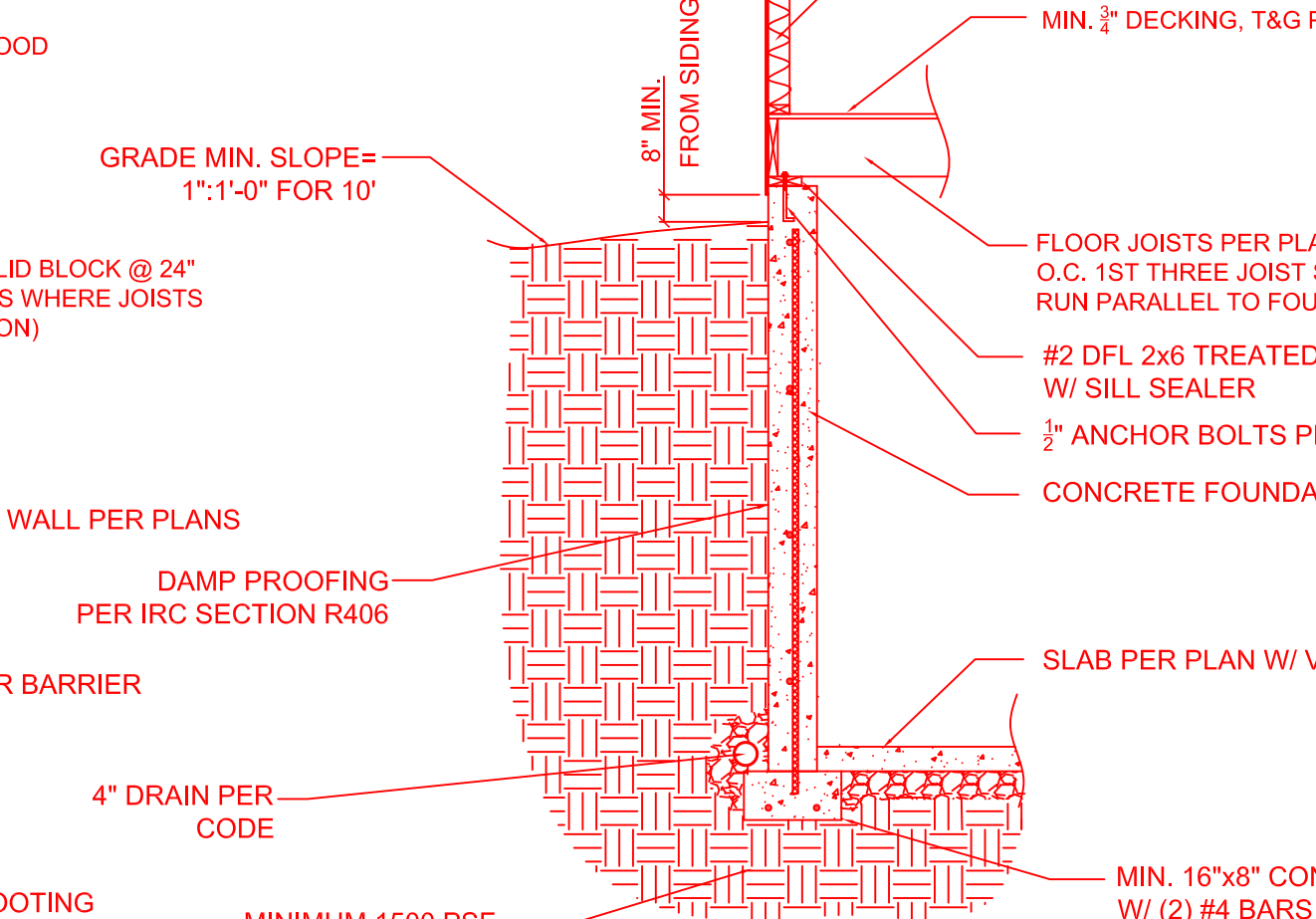
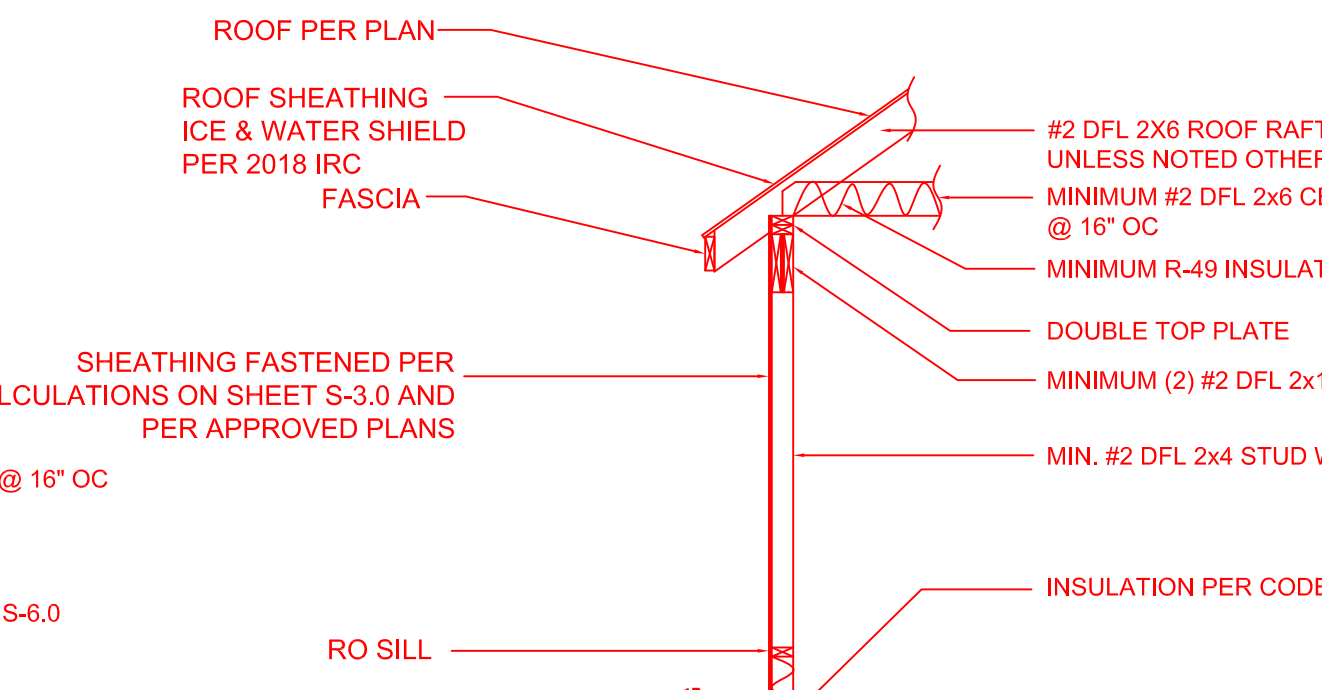


7 TYPICAL EXTERIOR CANTILEVER WALL SECTION
NTS
S2.0

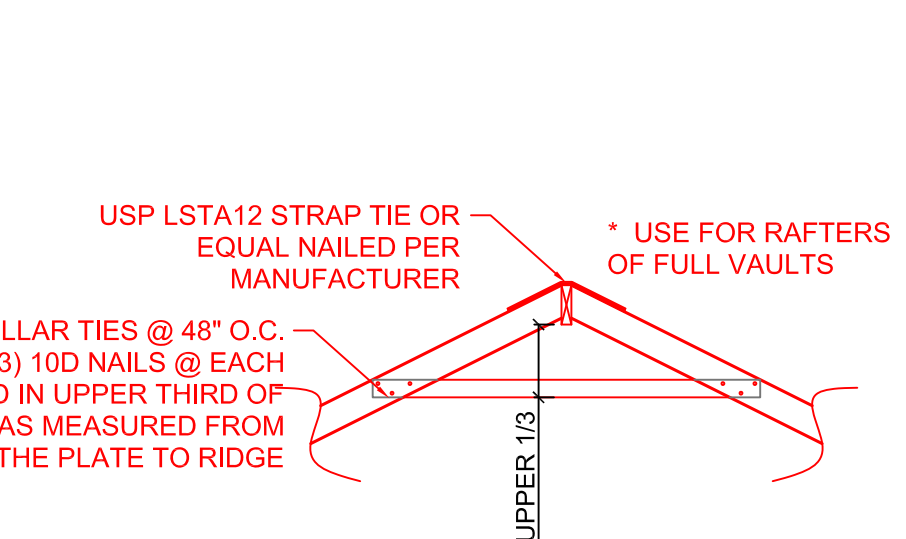


2 WALK-OUT BASEMENT FLOOR SLAB
NTS
S2.0

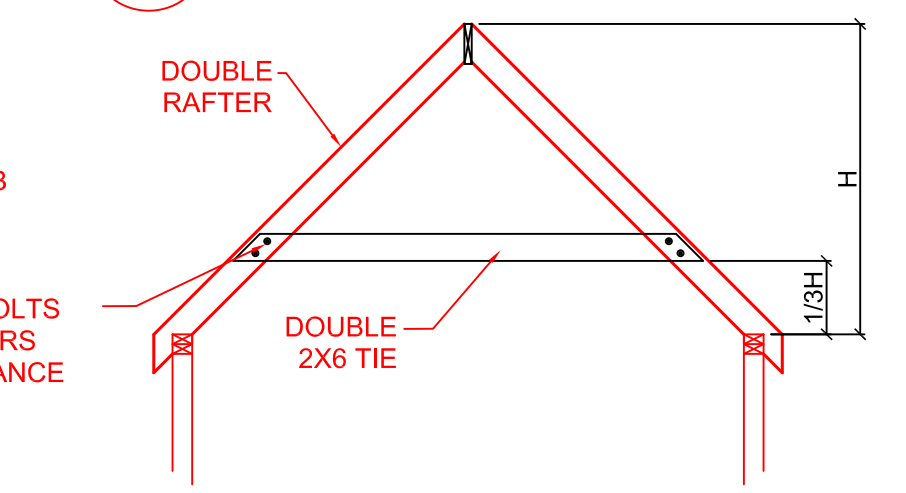
ANY SLAB WITH GREATER THAT 2' OF GRADED ROCK OR 8" OF FILL SOIL BELOW SHALL BE DESIGNED AS STRUCTURAL PER PLAN. OUR FIRM SHOULD BE CONTACTED IMMEDIATELY FOR DESIGN RECOMMENDATIONS.



8 TYPICAL EXTERIOR WALL SECTION
NTS
S2.0

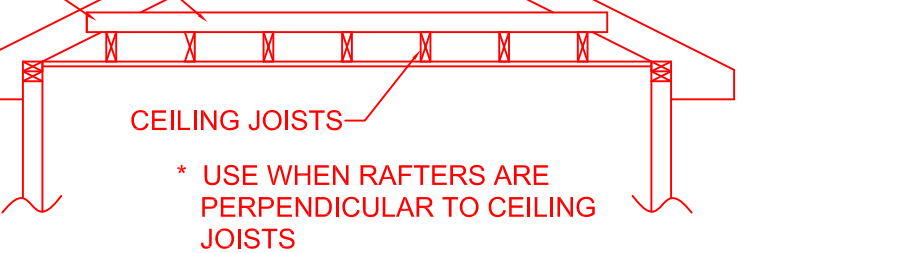


3 RIDGE/RAFTER SUPPORT DETAIL*
NTS
S2.0

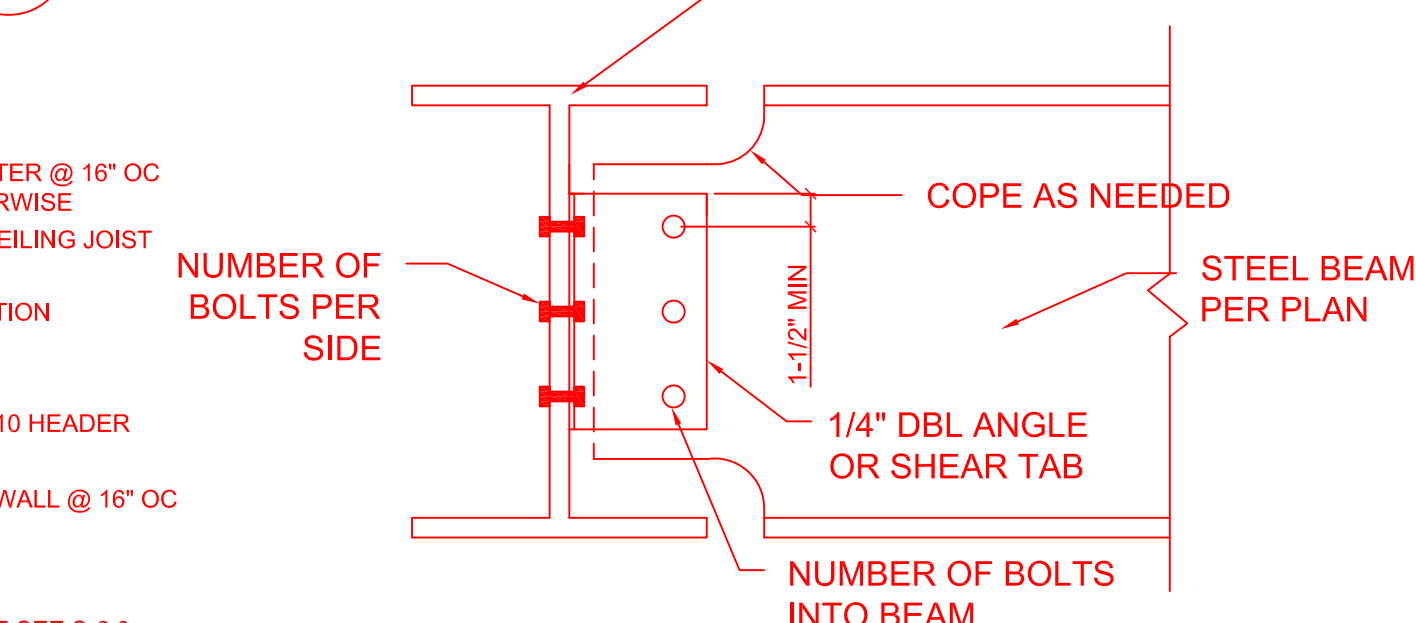


4 HIP SUPPORT FRAME
NTS
S2.0

ONLY APPLICABLE WHEN REFERENCED IN APPROVED PLANS

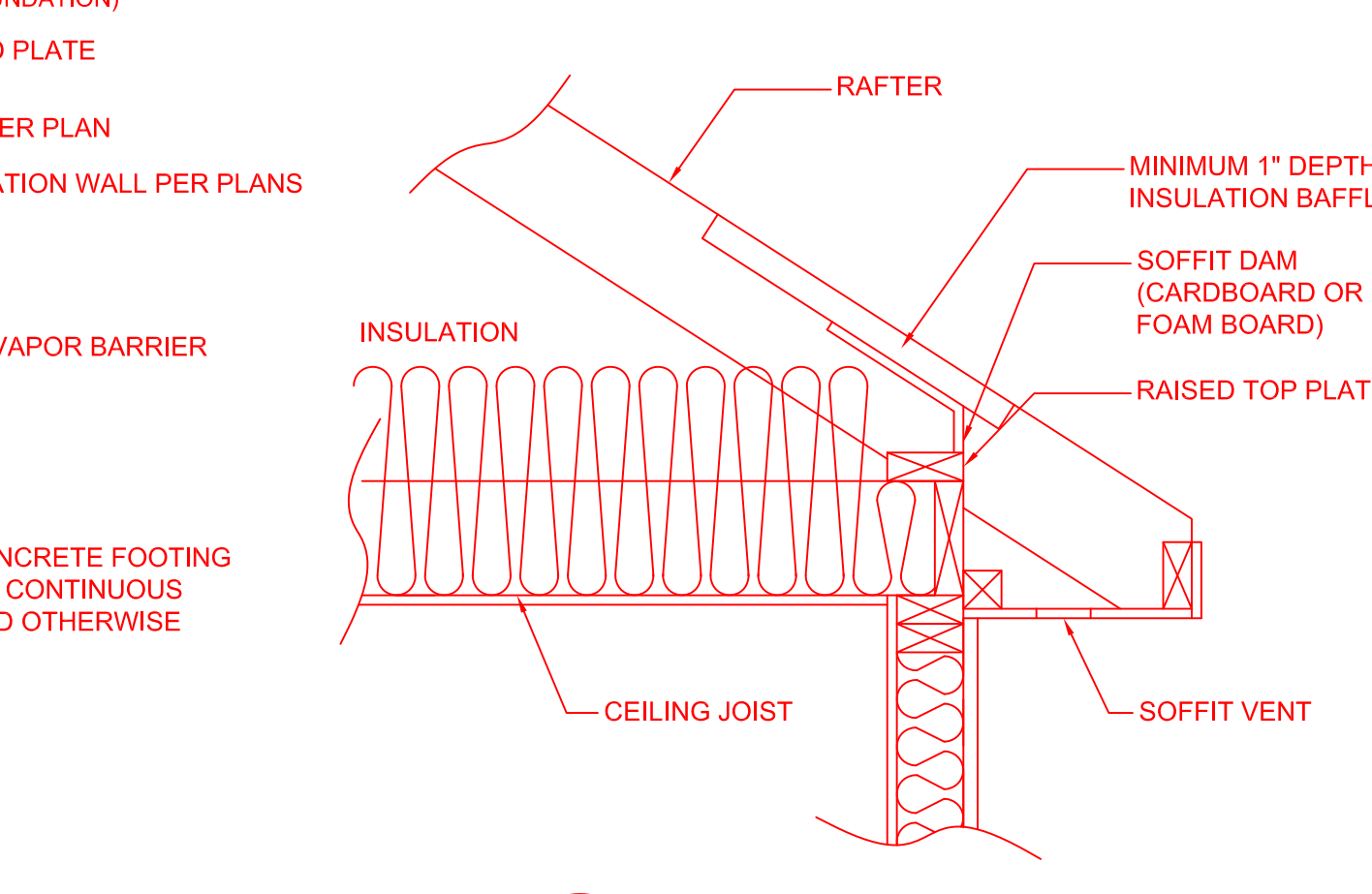


5 RAFTER TIE CONNECTION*
NTS
S2.0

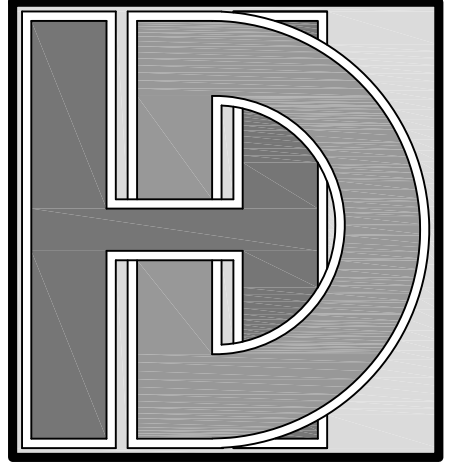


10 BEAM TO GIRDER CONNECTION
NTS
S2.0

BEAM SIZE	# BOLTS PER SIDE
W8, W10	2
W12, W14	3
W16, W18	4



11 RAFTER ON RAISED TOP PLATE
NTS
S2.0



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FIRST CHOICE CUSTOM HOMES
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STRUCTURAL DETAILS

REVISION TABLE

Date:	3/23/2020
HD #:	38982
Drawn by:	AWH
Reviewed by:	CLS

STRUCTURAL DETAILS

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IS NOTED ON PLAN REVIEW

CODES ADMINISTRATION

LEE'S SUMMIT, MISSOURI

S-2.0

04/22/2020



FIRST CHOICE CUSTOM HOMES
1627 SW BLACKSTONE PLACE
MCKINLEY COTTAGE LEE'S SUMMIT, MO
STRUCTURAL DETAILS

STRUCTURAL DETAILS

SHEET NUMBER: **RELEASE FOR CONSTRUCTION**
AS NOTED ON PLANS REVIEW
S-3.0
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/22/2020



DR = DESIGN REQUIRED

ALLOWABLE LOADS FOR PNEUMATIC OR MECHANICALLY DRIVEN NAILS AND STAPLES

FASTENER DESCRIPTION	NAIL GUN NAILS/ WIRE DIA.	WIRE GA.	PENETRATION REQUIRED INTO MAIN MEMBER FOR LATERAL STRENGTH (IN.)	ALLOWABLE LOADS (IN POUNDS)			
				LATERAL STRENGTH		WITHDRAWAL STRENGTH	
				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	.092	13	1	46		27	23
6d SINKER NAIL							
6d BOX NAIL	.099	12-1/2	1-1/8	61	55	31	24
6d CASING NAIL							
7d COOLER NAIL	.113	11-1/2	1-1/4	79	72	35	28
6d COMMON NAIL							
8d COOLER NAIL							
8d SINKER NAIL							
8d BOX NAIL	.120	11	1-3/8	89	81	41	32
8d CASING NAIL							
6d RING SHANK NAIL							
6d SCREW SHANK NAIL							
8d RING SHANK NAIL	.128	10-1/2	1-1/2	89	81	36	31
8d SCREW SHANK NAIL							
10d Cooler Nail							
10d Sinker Nail							
12d Short	.128	10-1/2	1-1/2	101	93	40	31
10d Box Nails							
10d Casing Nails							
8d Common Nails							
16d Short	.131	10-1/4	1-1/2	106	97	41	32
12d Sinkers							
16d Box Nails							
10d Ring Shank Nails							
10d Screw Shank Nails	.135	10	1-5/8	113	103	46	36
12d Ring Shank Nails							
12d Screw Shank Nails							
10d Common Nails							
12d Common Nails	.148	9	1-5/8	128	118	46	36
16d Sinker Nails							
20d Box Nails							
30d Box Nails							
16d Ring Shank Nails	.148	9	1-3/4	128	118	50	40
16d Screw Shank Nails							
16d Common Nails							
40d Box Nails							
20d Ring Shank Nails	.177	7	2-1/8	178	163	59	47
20d Screw Shank Nails							
20d Sinker Nails							
20d Common Nails							
30d Sinker Nails	.148	9	2-1/8	170	166	59	47

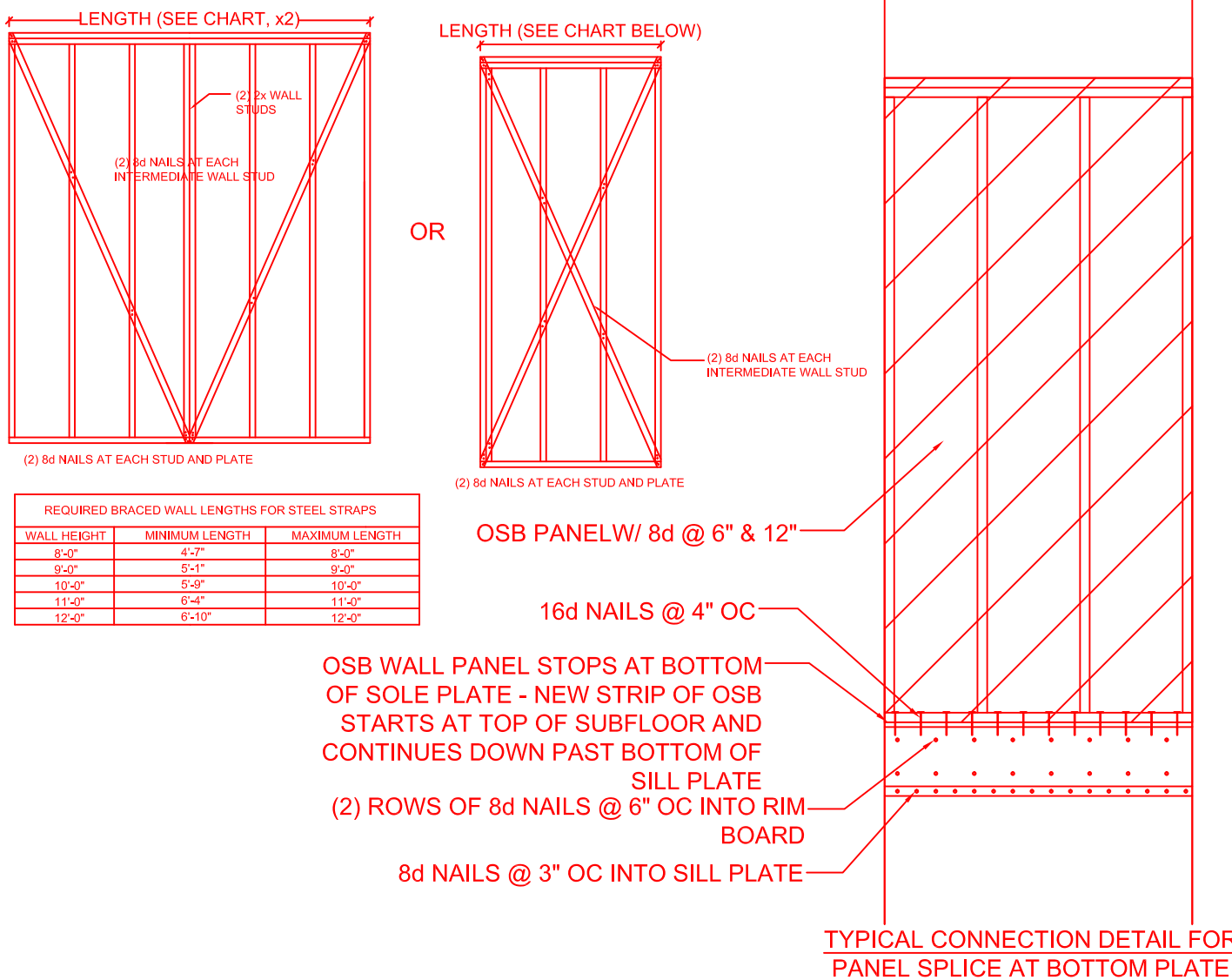
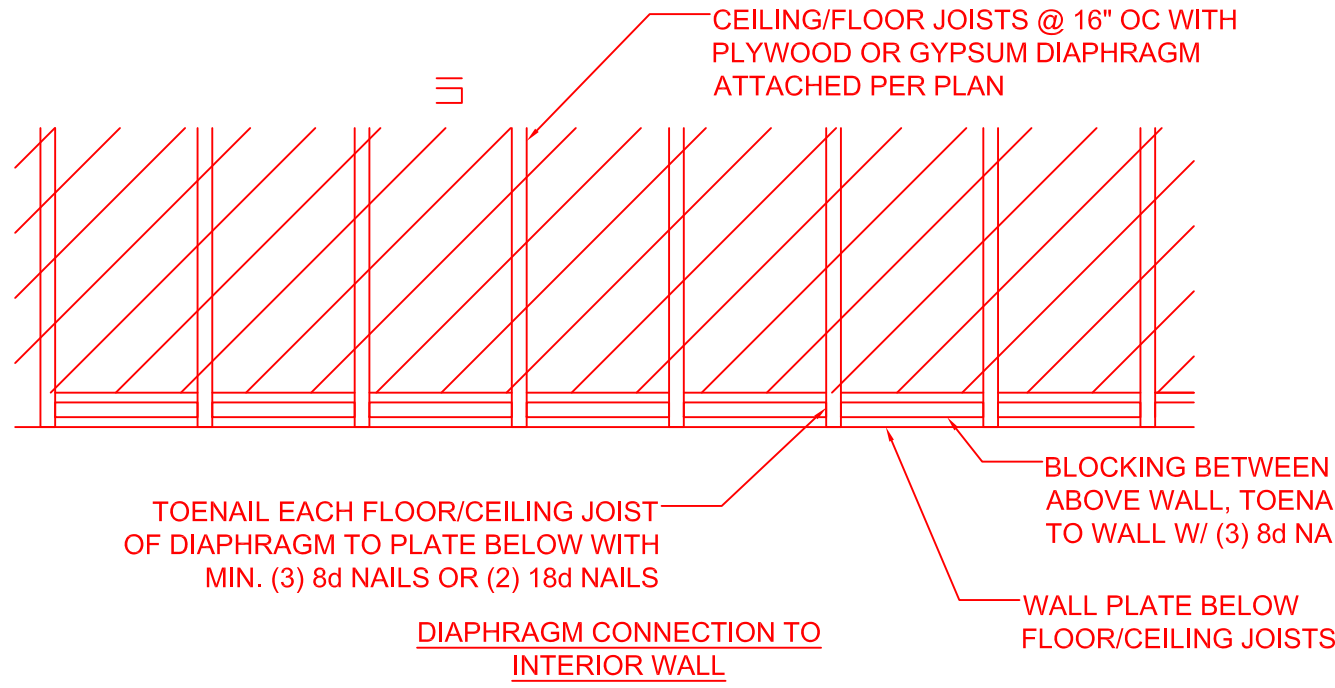


TABLE R602.10.5 MINIMUM LENGTH OF BRACED WALL PANELS


METHOD (SEE TABLE R602.10.4)		MINIMUM LENGTH * (INCHES)					CONTRIBUTING LENGTH (INCHES)
		WALL HEIGHT					
		8 FEET	9 FEET	10 FEET	11 FEET	12 FEET	
DWB,WSP,SFB,PBS,PCP,HPS,BV-WSP		48	48	48	53	58	ACTUAL ^a
GB		48	48	48	53	58	DOUBLE SIDED = ACTUAL SINGLE SIDED=.5xACTUAL
LIB		55	62	69	NP	NP	ACTUAL ^b
ABW	SDC A, B, AND C ULTIMATE DESIGN WIND SPEED<140	28	32	34	38	42	48
	SDC D, D, ULTIMATE DESIGN WIND SPEED<140	32	32	34	NP	NP	
PFH	SUPPORTING ROOF ONLY	16	16	16	NOTE C	NOTE C	48
	SPTNG. ONE STORY & ROOF	24	24	24	NOTE C	NOTE C	48
PFG		24	27	30	NOTE D	NOTE D	1.5 x ACTUAL ^c
CS-G		24	27	30	33	36	ACTUAL ^a
CS-PF		16	18	20	NOTE E	NOTE E	ACTUAL ^b
CS-WSP, CS-SFB	ADJACENT CLEAR OPENING HEIGHT (INCHES)						ACTUAL ^b
	≤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	
	96	48	41	38	36	36	
	100	-	44	40	38	38	
	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	
	144	-	-	-	-	72	

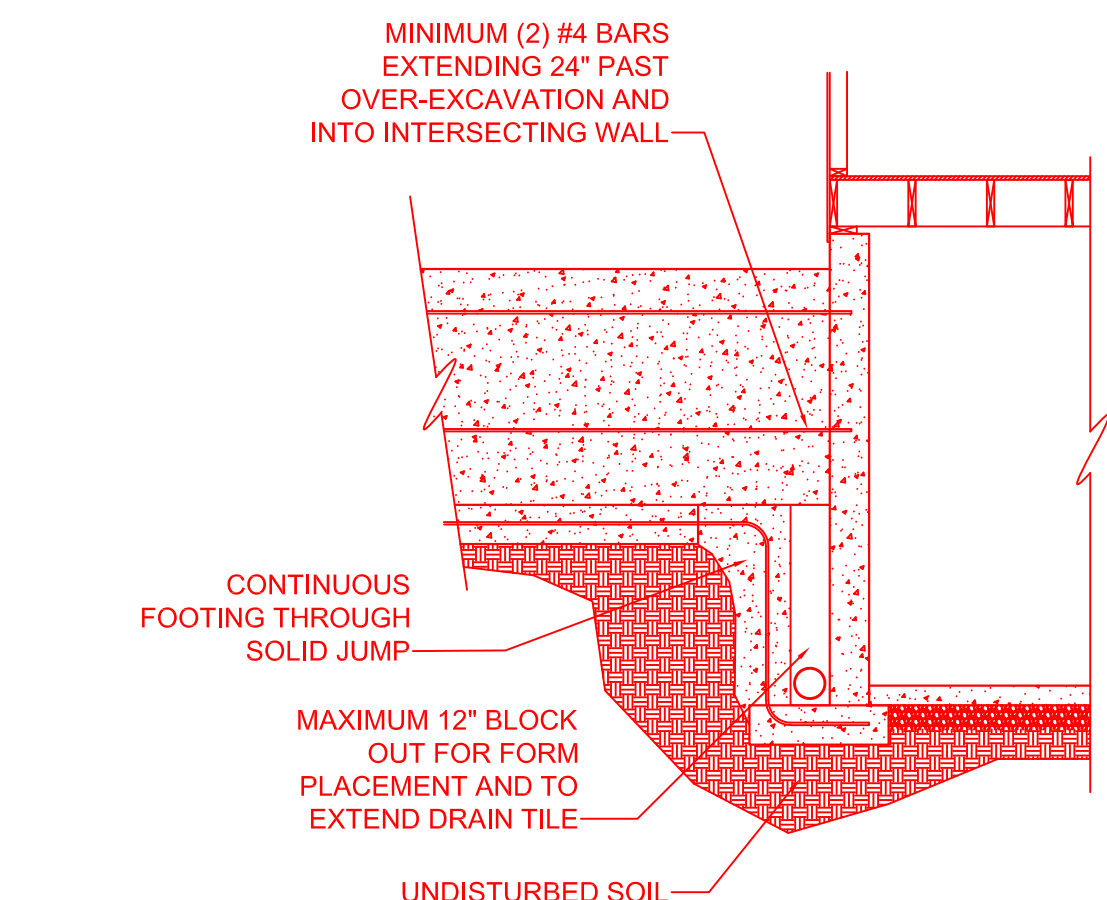
- a. LINEAR INTERPOLATION SHALL BE PERMITTED
- b. USE THE ACTUAL LENGTH WHEN IT IS GREATER THAN OR EQUAL TO THE MINIMUM LENGTH
- c. MAX. HEADER HEIGHT FOR PFH IS 10' IN ACCORDANCE WITH R602.10.6.2, WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL.
- d. MAX. OPENING HEIGHT FOR PFG IS 10' IN ACCORDANCE 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.



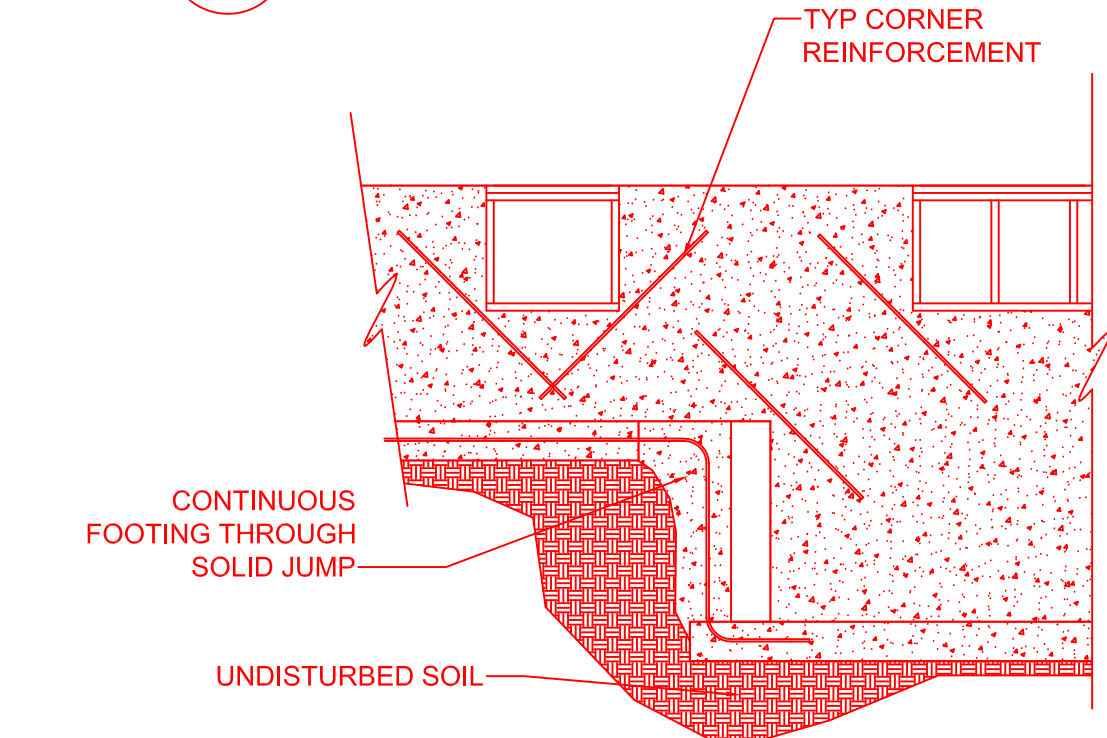
- FOR Sft: 1 INCH= 25.4 MM, 1 FOOT= 304.8 MM, 1 MILE PER HOUR =0.447 M/S; 1 KSI= 6.895 MPa
- A. ALL NAILS ARE SMOOTH-COMMON, BOX OR DEFORMED SHANKS EXCEPT WHERE OTHERWISE STATED. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS SHOWN: 80 KSI FOR SHANK DIAMETER OF 0.192 INCH (20D COMMON), NAILS FOR SHANK DIAMETERS LARGER THAN 0.142 INCH BUT NOT LARGER THAN 0.177 INCH, AND 100 KSI FOR SHANK DIAMETER OF 0.142 INCH OR LESS.
- B. STAPLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7/16 - INCH ON DIAMETER CROWN WIDTH.
- C. NAILS SHALL BE SPACED AT NOT MORE THAN 6 INCHES ON CENTER AT ALL SUPPORTS WHERE SPANS ARE 48 INCHES OR GREATER.
- D. FOUR-FOOT BY 8-FOOT OR 4-FOOT BY 9-FOOT PANELS SHALL BE APPLIED VERTICALLY.
- E. SPACING OF FASTENERS NOT INCLUDED IN THIS TABLE SHALL BE BASED ON TABLE R602.3(2).
- F. FOR REGIONS HAVING BASIC WIND SPEED OF 110 MPH OR GREATER, 8D DEFORMED (2" X 0.120) NAILS SHALL BE USED FOR ATTACHING PLYWOOD AND WOOD STRUCTURAL PANEL ROOF SHEATHING TO FRAMING WITHIN MINIMUM 48-INCHES DISTANCE FROM GABLE END WALLS, IF MEAN ROOF HEIGHT IS MORE THAN 25 FEET, UP TO 35 FEET MAXIMUM.
- G. FOR REGIONS HAVING BASIC WIND SPEED OF 100 MPH OR LESS, NAILS FOR ATTACHING WOOD STRUCTURAL PANEL ROOF SHEATHING TO GABLE END WALL FRAMING SHALL BE SPACED 6 INCHES ON CENTER, WHEN BASIC WIND SPEED IS GREATER THAN 100 MPH, NAILS FOR ATTACHING PANEL ROOF SHEATHING TO INTERMEDIATE SUPPORTS SHALL BE SPACED 6 INCHES ON CENTER FOR MINIMUM 48-INCH DISTANCE FROM RIDGES, EAVES AND GABLE END WALLS; AND 4 INCHES ON CENTER TO GABLE END WALL FRAMING.
- H. GYPSUM SHEATHING SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH GA 253. FIBERBOARD SHEATHING SHALL CONFORM TO ASTM C 208.
- I. SPACING OF FASTENERS ON FLOOR SHEATHING PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRE BLOCKING AND AT ALL FLOOR PERIMETERS ONLY. SPACING OF FASTENERS ON ROOF SHEATHING PANEL EDGES 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.
- J. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE, PROVIDE TWO TOE NAILS ON ONE SIDE OF THE RAFTER AND TOE NAILS FROM CEILING JOIST TO TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE. THE TOE NAIL ON THE OPPOSITE SIDE OF THE RAFTER SHALL NOT BE REQUIRED.

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

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{a,b,c}	SPACING OF FASTENERS	
ROOF				
1	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE, TOE NAIL	4-8D BOX (2 3/4" X 0.113") 3-8D (2" X 0.113") 3-10D (3"X0.128") 3-3"x 0.131" NAILS	TOE NAIL	
2	CEILING JOISTS TO PLATE, TOE NAIL		PER JOIST, TOE NAIL	
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (SEE SECTION R802.5.2 AND TABLE R802.5.2)	4-10D BOX (3"x 0.128") 3-16D COMMON (3" X 0.162") 4-3"x 0.131"NAILS	FACE NAIL	
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) SEE SECTION R802.5.2 AND TABLE R802.5.2	TABLE R802.5.2	FACE NAIL	
5	COLLAR TIE TO RAFTER, FACE NAIL OR 1 1/2" X 20GA. RIDGE STRAP TO RAFTER	4-10D BOX (3" X 0.128") 3-16D COMMON (3" X 0.148") 4-3" X 0.131" NAILS	FACE NAILS EACH RAFTER	
6	RAFTER OR ROOF TRUSS TO PLATE	3-16D BOX NAILS (3" X 0.135) 3-10D COMMON NAILS (3" X 0.148) 4-10D BOX (3" X 0.128) 4-3" X 0.131" NAILS	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS	
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR ROOF RAFTER TO MINIMUM 2" RIDGE BEAM	4-16D(3" X 0.135); OR 3-16D COMMON (3" X 0.148) 4-10D BOX (3" X 0.128); OR 4-3" X 0.131" NAILS 3-16D(3" X 0.135); OR 2-16D COMMON (3" X 0.162) 3-10D BOX (3" X 0.128); OR 3-3" X 0.131" NAILS	TOE NAIL	
WALL				
8	STUD TO STUD (NOT BRACED WALL PANELS)	16D (3" X 0.162) 10D BOX (3" X 0.128); OR 3" X 0.131" NAILS	24" OC FACE NAIL	
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16D BOX (3 1/2" X 0.135); OR 3" X 0.131" NAILS 16D COMMON (3" X 0.162)	12" OC FACE NAIL	
10	BUILT-UP HEADER (2" TO 2" HEADER WITH 1/2" SPACER)	16D COMMON (3" X 0.162) 16D BOX (3 1/2" X 0.135)	16" OC EACH EDGE FACE NAIL	
11	CONTINUOUS HEADER TO STUD	5-8D BOX (2" X 0.113) or 4-8D COMMON (2" X 0.131) 4-10D BOX (3" X 0.128)	TOE NAIL	
12	TOP PLATE TO TOP PLATE	16D COMMON (3" X 0.162) 10D BOX (3" X 0.128) OR 3" X 0.131" NAILS	16" OC FACE NAIL	
13	DOUBLE TOP PLATE SPLICE	8-16D COMMON (3 1/2" X 0.135); OR 12-16D BOX (3 1/2" X 0.135); OR 12-10D BOX (3" X 0.128); OR 12-3" X 0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLIC LENGTH EACH SIDE OF END JOINT)	
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16D COMMON (3" X 0.162) 16D BOX (3 1/2" X 0.135); OR 3" X 0.131" NAILS	16" OC FACE NAIL	
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	3-16D BOX (3 1/2" X 0.135); OR 2-16D COMMON (3 1/2" X 0.162); OR 4-3" X 0.131" NAILS	3 EACH 16" OC FACE NAIL 2 EACH 16" OC FACE NAIL 4 EACH 16" OC FACE NAIL	
16	TOP OR BOTTOM PLATE TO STUD	4-8D BOX (2" X 0.113); or 3-16D BOX (3" X 0.128); or 4-8D COMMON (2" X 0.131) or 4-10D BOX (3" X 0.128); OR 3-3" X 0.131" NAILS 3-16D BOX (3" X 0.135); or 2-16D COMMON (3" X 0.162); OR 4-3" X 0.131" NAILS	TOE NAIL	
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10D BOX (3" X 0.128); or 2-16D COMMON (3" X 0.162); OR 3-3" X 0.131" NAILS	FACE NAIL	
18	1" BRAVE TO EACH STUD AND PLATE	3-8D BOX (2" X 0.113); or 2-8D COMMON (2" X 0.131) OR 2-10D BOX (3" X 0.128); OR 2 STAPLES 1 1/2"	FACE NAIL	
19	1" X 6" SHEATHING TO EACH BEARING	3-8D BOX (2" X 0.113); or 2-8D COMMON (2" X 0.131) OR 2-10D BOX (3" X 0.128); OR 2 STAPLES 1" CROWN, 16GA., 1 1/2" LONG	FACE NAIL	
20	1" X 8" AND WIDER SHEATHING TO EACH BEARING	3-8D BOX (2" X 0.113); or 2-8D COMMON (2" X 0.131) OR 2-10D BOX (3" X 0.128); OR 2 STAPLES 1" CROWN, 16GA., 1 1/2" LONG 4-8D BOX (2" X 0.113); or 3-8D COMMON (2" X 0.131) OR 3-10D BOX (3" X 0.128); OR 4 STAPLES, 1" CROWN, 16GA., 1 1/2" LONG	FACE NAIL	
FLOOR				
21	JOIST TO SILL, TOP PLATE OR GIRDER	4-8D BOX (2 3/4" X 0.113); or 3-8D COMMON (2 3/4" X 0.131); or 3-10D BOX (3" X 0.128); or 3-3" X 0.131" NAILS	TOE NAIL	
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8D BOX (2" X 0.113) 8D COMMON (2" X 0.131); or 10D BOX (3" X 0.128) or 3-3" X 0.131" NAILS	4" OC TOE NAIL	
23	1" X 6" SUBFLOOR OR LESS TO EACH JOIST	3-8D BOX (2 3/4" X 0.113); or 2-8D COMMON (2 3/4" X 0.131); or 3-10D BOX (3" X 0.128); or 2 STAPLES, 1" CROWN, 16GA., 1 1/2" LONG	FACE NAIL	
24	2" SUBFLOOR TO JOIST OR GIRDER	3-16D BOX (3 1/2" X 0.135); or 2-16D COMMON (3 1/2" X 0.162)	BLIND AND FACE NAIL	
25	2" PLANKS (PLANK & BEAM-FLOOR AND ROOF)	3-16D BOX (3 1/2" X 0.135); or 2-16D COMMON (3 1/2" X 0.162)	AT EACH BEARING, FACE NAIL	
26	BAND OR RIM JOIST TO JOIST	3-16D COMMON (3 1/2" X 0.162); or 4-10D BOX (3" X 0.128); or 4-3" X 0.131" NAILS; or 4-3" X 14GA. STAPLES, 1 1/2" CROWN	END NAIL	
27	BUILT-UP GIRDERS AND BEAMS, 2-INCH LUMBER LAYERS	20D COMMON (4" X 0.192); or 10D BOX (3" X 0.128); or 3" X 0.131" NAILS AND: 3-20D COMMON (4" X 0.192); or 3-10D BOX (3" X 0.128); or 3-3" X 0.131" NAILS	NAIL EACH LAYER AS FOLLOWS: 32" OC AT TOP AND BOTTOM AND STAGGERED 24" OC FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES	
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16D BOX (3 1/2" X 0.135); or 3-20D COMMON (3" X 0.162); or 4-10D BOX (3" X 0.128); OR 4-3" X 0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL	
29	BRIDGING OR BLOCKING TO JOIST	2-10D BOX (3" X 0.128); or 2-8D COMMON (2 1/2" X 0.131") or 2-3" X 0.131" NAILS	EACH END, TOE NAIL	
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{a,b,c}	SPACING OF FASTENERS	
WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING (SEE TABLE R602.3(3) FOR WOOD STRUCTURAL PANEL EXTERIOR WALL SHEATHING TO WALL FRAMING)			EDGES (INCHES) ^d	INTERMEDIATE SUPPORTS (INCHES) ^{d,e}
		8D COMMON (2 3/4" X 0.113" NAIL (SUBFLOOR, WALL)) 8D COMMON (2 3/4" X 0.131" NAIL (ROOF)) OR RRS-01 (2 3/4" X 0.131" NAIL, ROOF)	6"	12"
31	$\frac{19}{32}$ " - 1"	8D COMMON NAIL (2" X 0.131) or RRS-01 (2" X 0.131) NAIL ROOF	6"	12"
32	$1\frac{1}{8}$ " - $1\frac{1}{4}$ "	10D COMMON NAIL (3" X 0.148) NAIL or 8D (2" X 0.131) DEFORMED NAIL	6"	12"
OTHER WALL SHEATHING ^f				
33	$\frac{1}{2}$ " STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOF NAIL, 5" HEAD DIAMETER, OR 1" LONG 16GA. STAPLE WITH 5/16" OR 1" CROWN	3	6
34	$\frac{5}{8}$ " STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOF NAIL, 5" HEAD DIAMETER, OR 1" LONG 16GA. STAPLE WITH 5/16" OR 1" CROWN	3	6
35	$\frac{1}{2}$ " GYPSUM SHEATHING ^g	1 1/2" GALVANIZED ROOF NAIL, STAPLE OR GALVANIZED, 1" LONG; 1 1/2" SCREWS, TYPE W or S	7	7
36	$\frac{1}{2}$ " GYPSUM SHEATHING ^g	1 1/2" GALVANIZED ROOF NAIL, STAPLE GALVANIZED, 1" LONG; 1 1/2" SCREWS, TYPE W or S	7	7
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING				
37	$\frac{1}{2}$ " AND LESS	8D DEFORMED (2" X 0.120") NAIL OR 8D COMMON (2 3/4" X 0.131") NAIL	6	12
38	$\frac{3}{4}$ " - 1"	8D COMMON (2 3/4" X 0.131) NAIL OR 8D DEFORMED (2 3/4" X 0.120) NAIL	6	12
39	$1\frac{1}{8}$ " - $1\frac{1}{4}$ "	10D COMMON (3" X 0.148") NAIL OR 8D DEFORMED (2 3/4" X 0.120") NAIL	6	12

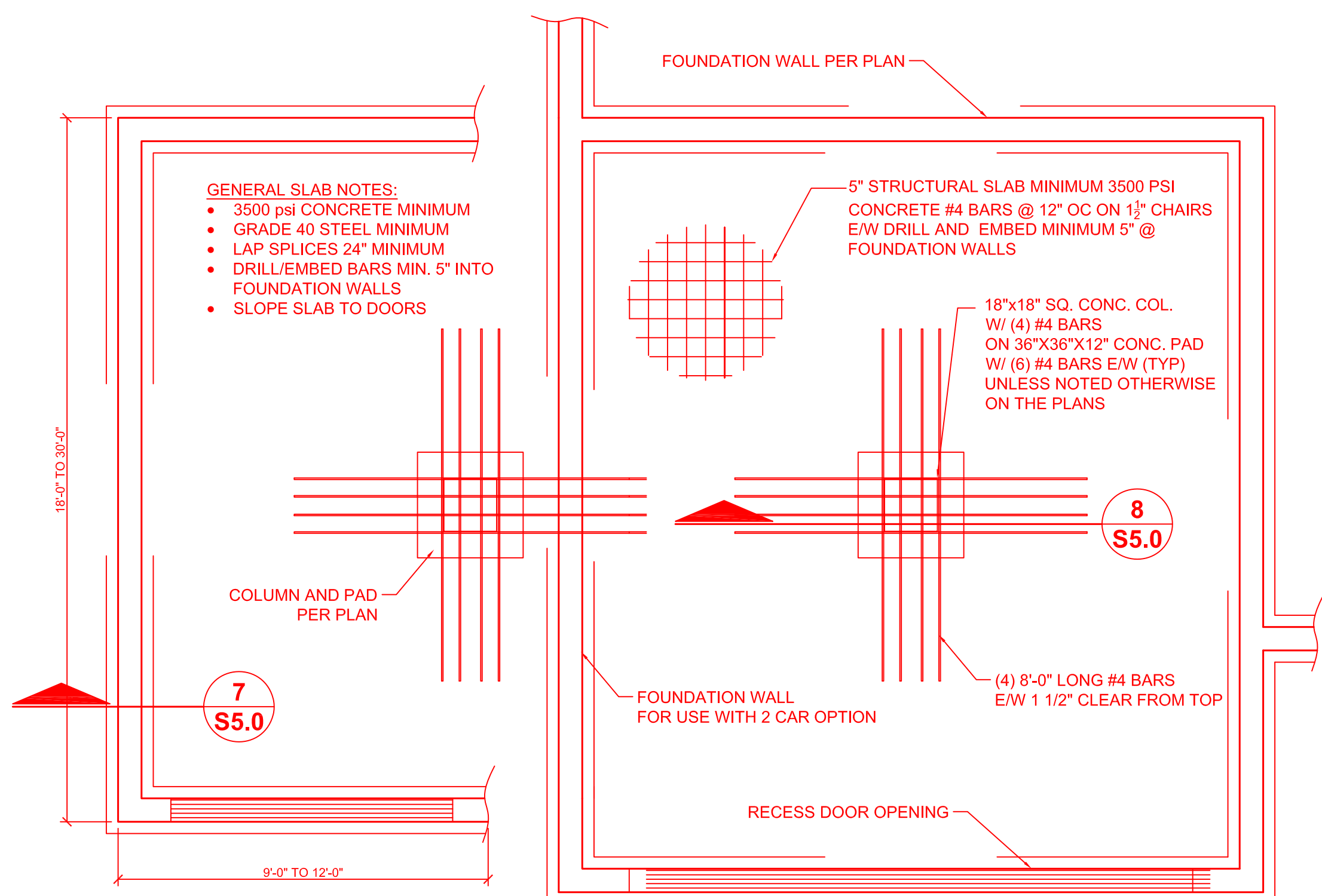


1
S5.0
SOLID FOOTING JUMP DETAIL
NTS



2
S5.0
RETURN WALL DETAIL
NTS

3
S5.0
REINFORCEMENT AT CORNERS AND STEPS
NTS



4
S5.0
RETURN WALL PLACEMENT
NTS

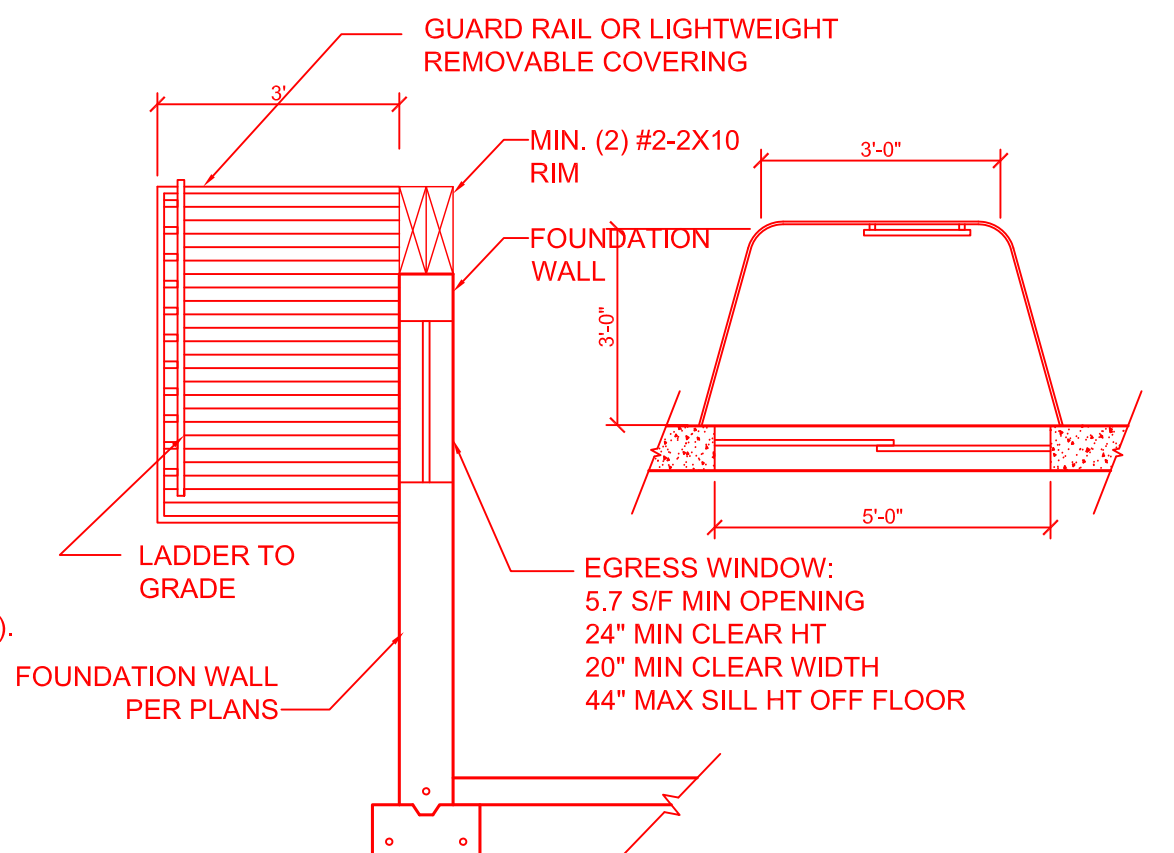
7
S5.0
THIRD CAR SLAB OPTION
NTS

9
S5.0
TYPICAL GARAGE SLAB
NTS

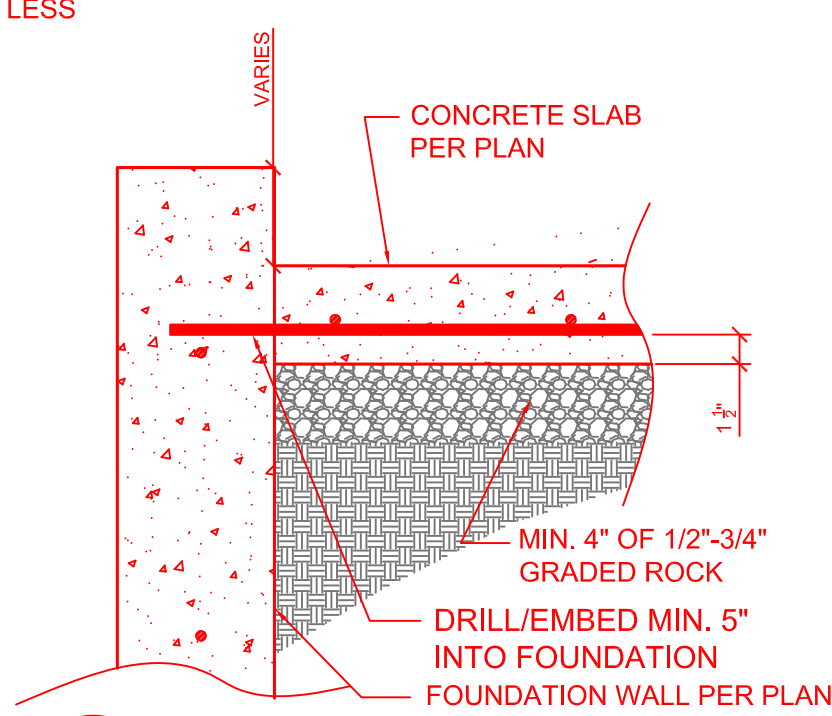
FOUNDATION WALL REINFORCEMENT					
VERTICAL REINFORCEMENT SPACING* 60 PSF SOIL; 40 & 60 KSI STEEL					
CONCRETE STRENGTH	8" THICK WALL		10" THICK WALL		
	8'	9'	8'	9'	10'
3000 PSI/ 40 KSI	16	12	24	16	12
3500 PSI/ 40 KSI	16	12	24	24	12
3000 PSI/ 60 KSI	24	16	24	20	16
3500 PSI/ 60 KSI	24	16	24	24	16
HORIZONTAL REINFORCEMENT**					
ONE BAR 12" FROM TOP OF WALL; MAX. SPACING 24" O.C.					
	4-#4	5-#4	4-#4	5-#4	6-#4

* CONCRETE SHALL HAVE AIR ENTRAINMENT OF 5-7%.
* MINIMUM REQUIREMENT FOR VERTICAL REBAR IN PLAIN CONCRETE WALLS IS #4 @ 36" ON CENTER (ACI 332).
* VERTICAL BARS SHALL BE CONTINUED UP TO WITHIN 8" OF THE TOP OF THE WALL.
* REBAR SHALL BE POSITIONED AT THE TENSION FACE OF THE WALL (2" FROM THE INSIDE FACE).
* REINFORCEMENT SHALL LAP A MINIMUM OF 24 INCHES AT ENDS, SPLICES, AND AROUND CORNERS.

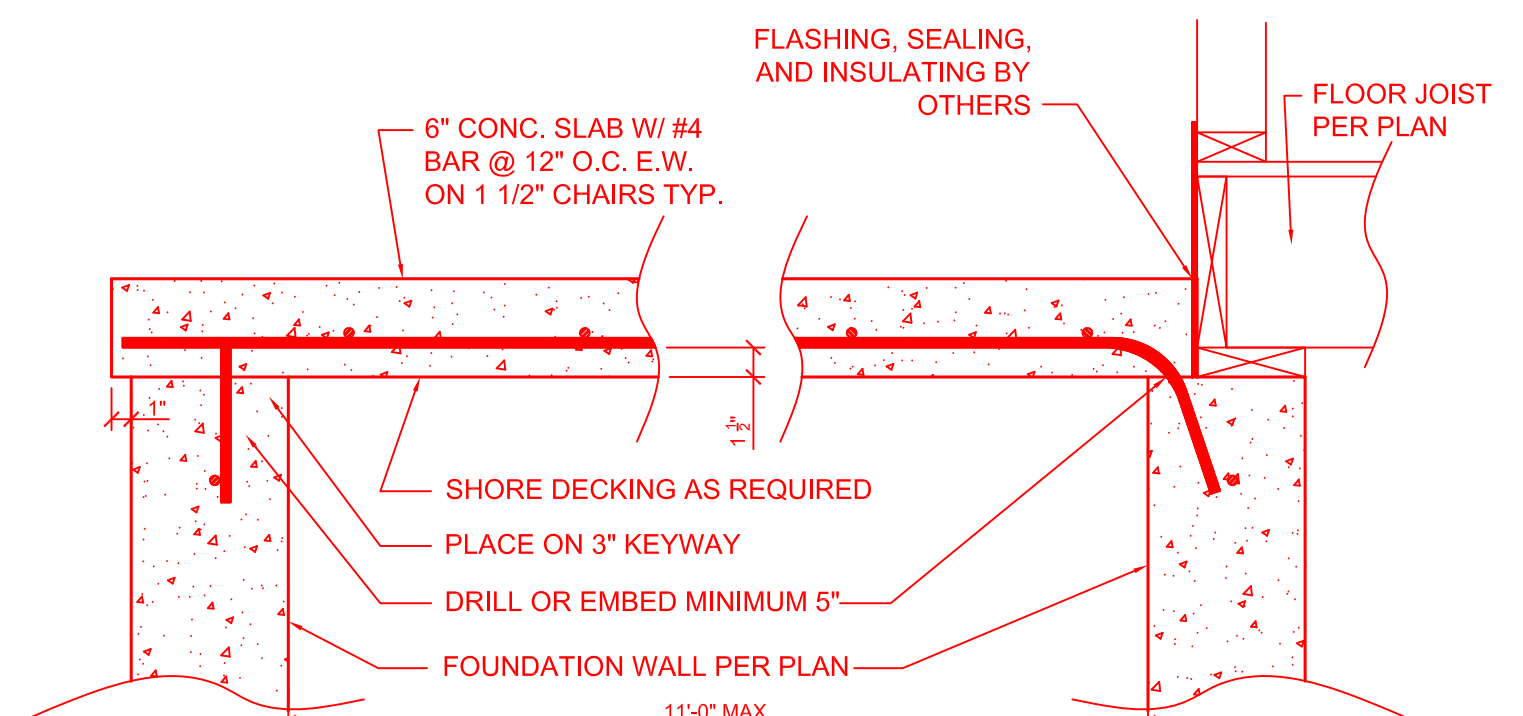
** #4 BARS @ 24" ON CENTER.
** #4 BAR WITHIN 12 OF TOP AND BOTTOM OF WALL.
** MINIMUM GRADE 40 (40ksi) STEEL (PER ACI 332).
** HORIZONTAL REINFORCEMENT SHALL BE INSTALLED ON THE COMPRESSION SIDE (SOIL SIDE) OF THE VERTICAL REINFORCEMENT



6
S5.0
EGRESS WINDOW DETAIL
NTS

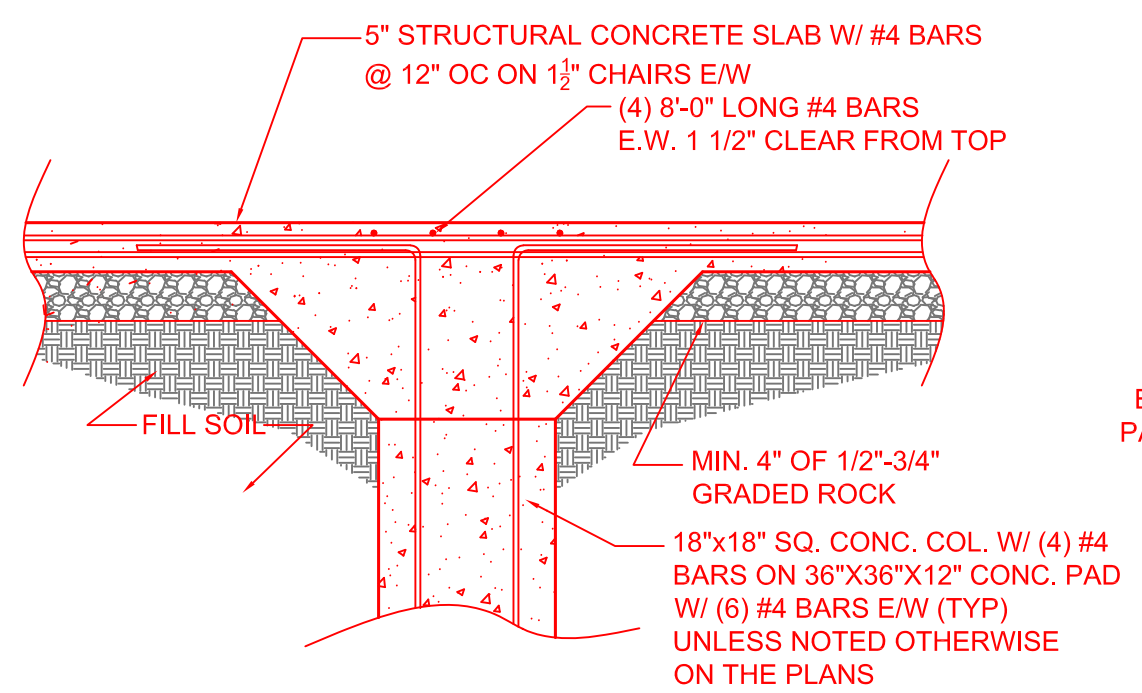


7
S5.0
STRUCTURAL SLAB / WALL CONNECTION
NTS

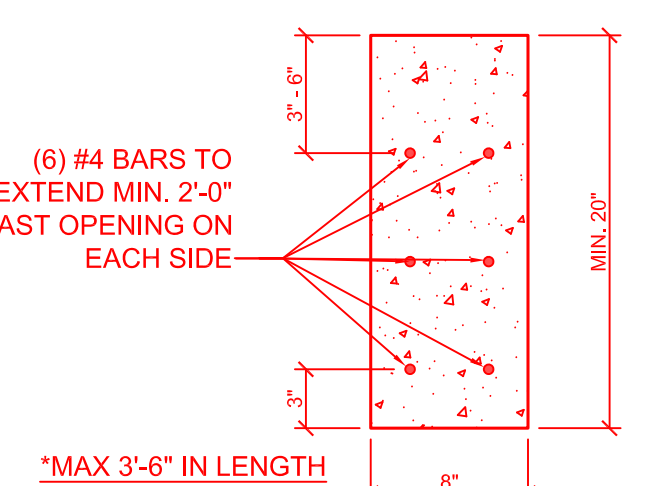


10
S5.0
SUSPENDED PORCH STOOP SLAB
SCALE: N.T.S.

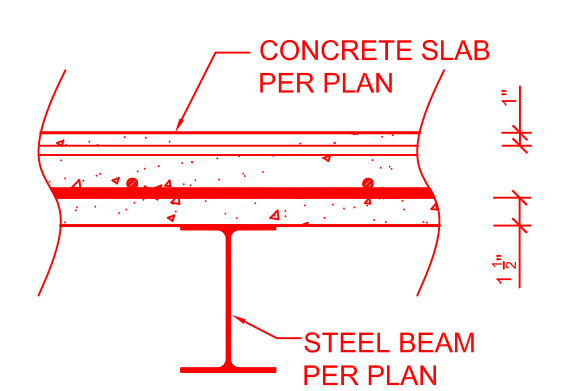
FOR SUSPENDED SLABS A MAXIMUM OF 10' ABOVE FLOOR BELOW: TEMPORARY SHORING WALLS SHALL BE PLACED AT A MAXIMUM OF 4' O.C./ #2-2X4 STUDS AT 16" O.C. W/ TOP AND BOTTOM PLATE, WALL TO HAVE CONTINUOUS DIAGONAL BRACING. LATERAL BRACING TO BE RUN FROM WALL TO WALL AT MID HEIGHT 4' ON CENTER. SHORING TO REMAIN IN PLACE FOR AT LEAST 21 DAYS.



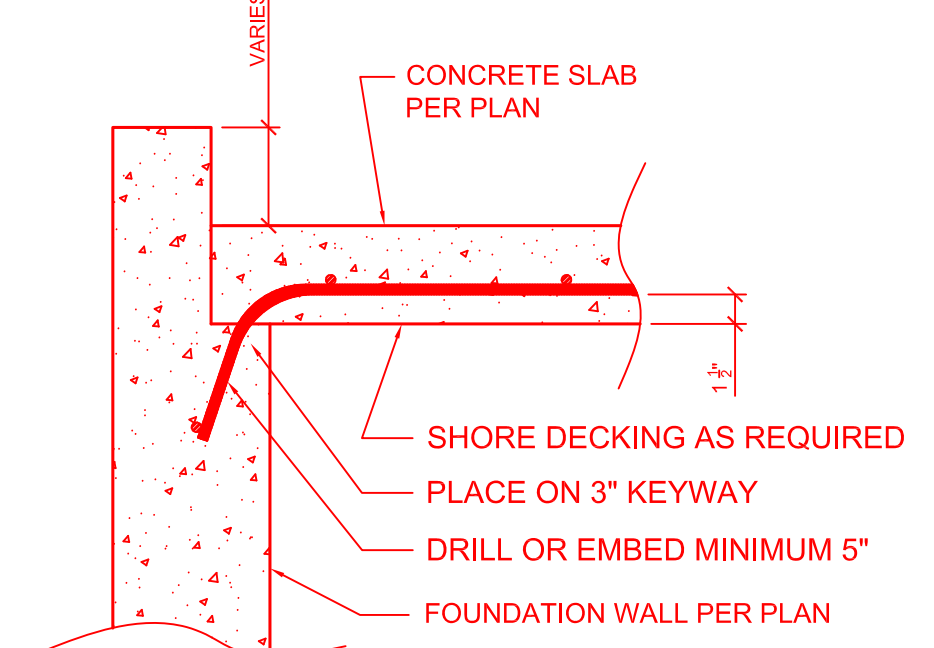
8
S5.0
STRUCTURAL GARAGE COLUMN DETAIL
NTS



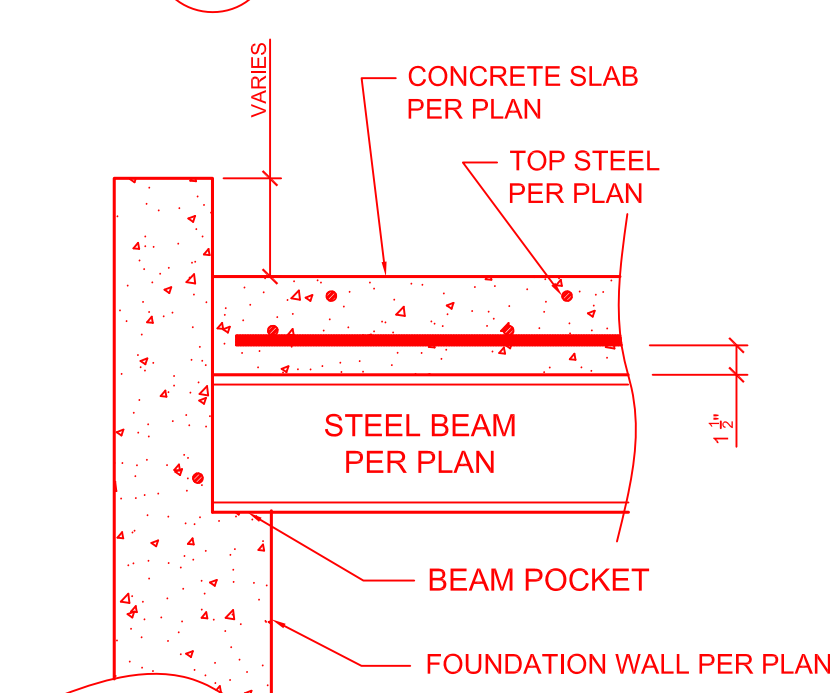
11
S5.0
CONCRETE HEADER DETAIL
NTS



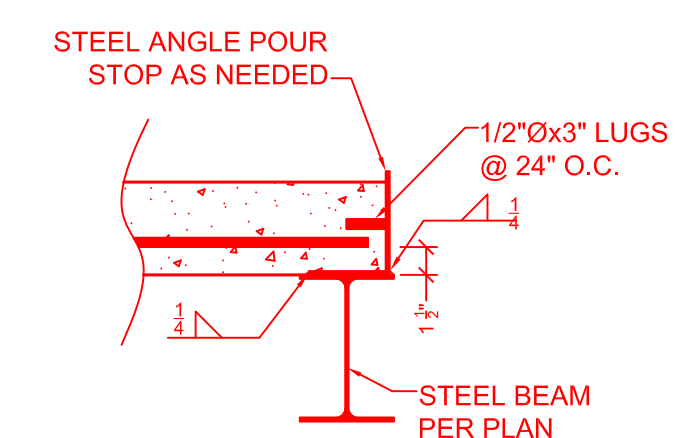
12
S5.0
SUSPENDED SLAB/ STEEL BEAM CROSS SECTION
NTS



13
S5.0
SUSPENDED SLAB / WALL CONNECTION
NTS

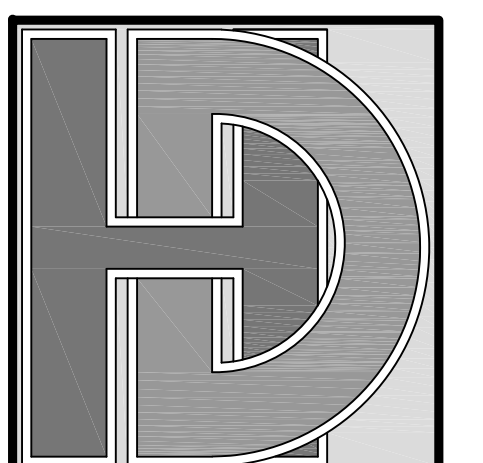


14
S5.0
SUSPENDED SLAB BEAM/WALL SECTION
NTS



15
S5.0
SUSPENDED SLAB POUR STOP CROSS SECTION
NTS

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.



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KS. COA. # E1312
MO. COA. # 2006034946-F

FIRST CHOICE CUSTOM HOMES
1627 SW BLACKSTONE PLACE
MCKINLEY COTTAGE LEE'S SUMMIT, MO
STRUCTURAL DETAILS

REVISION TABLE	

Date: 3/23/2020
HD #: 38982
Drawn by: AWH
Reviewed by: CLS

STRUCTURAL DETAILS
SHEET NUMBER
S5.0
RELEASE FOR CONSTRUCTION
IS NOT FOR PLAN REVIEW
CODE ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/22/2020

2. THE SUBFLOOR IS FASTENED TO THE I-JOISTS PER THE SHEATHING SCHEDULE ON THIS SHEET
3. ANCHOR BOLTS ARE INSTALLED AS REQUIRED BY CODE
4. A SOLID RM JOIST IS PLACED AND FASTENED FLUSH WITH THE OUTSIDE FACE OF THE FOUNDATION WALL
5. THE UNINTERRUPTED FOUNDATION WALL SECTION FOR THE 8'-0" HEIGHT FOUNDATION WALLS DOES NOT EXCEED 16 FEET IN LENGTH OR, IF GREATER THAN 16 FEET IN LENGTH, PILASTERS MUST BE INSTALLED ON THE INSIDE OR OUTSIDE OF THE FOUNDATION WALL AT A MAXIMUM OF 16'-0" OC