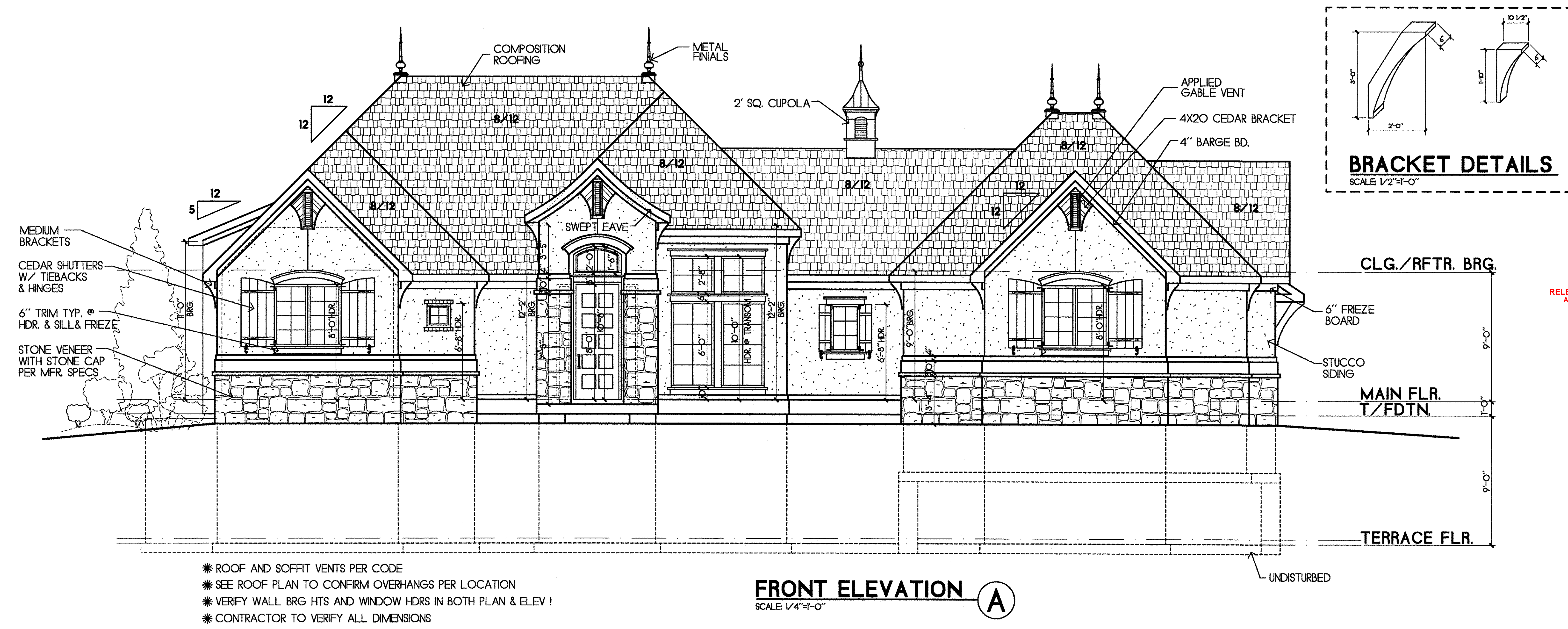
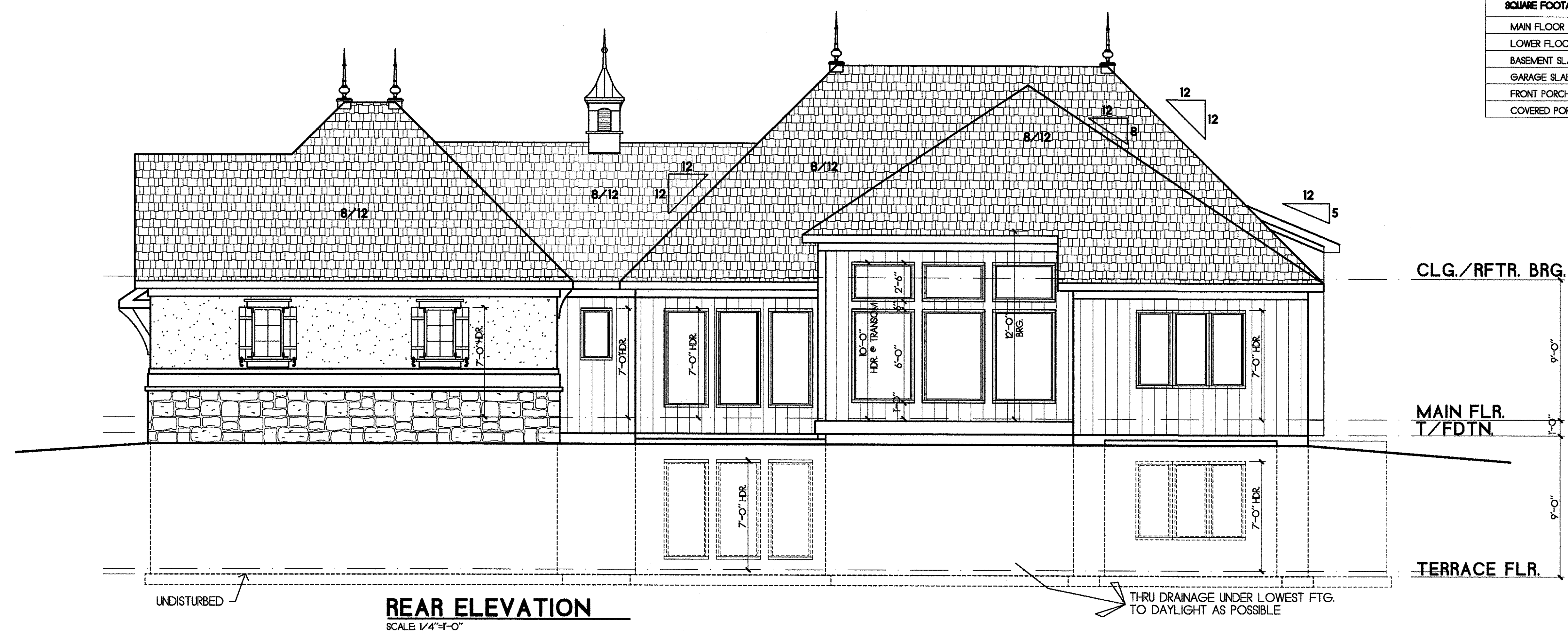


SQUARE FOOTAGE SUMMARY:	
MAIN FLOOR FINISH	1968 SF
LOWER FLOOR FINISH	1275 SF
BASEMENT SLAB	1637 SF
GARAGE SLAB	760 SF
FRONT PORCH	42 SF
COVERED PORCH	174 SF

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C: (816) 686-5900
O: (816) 984-2012



- * ROOF AND SOFFIT VENTS PER CODE
- * SEE ROOF PLAN TO CONFIRM OVERHANGS PER LOCATION
- * VERIFY WALL BRG HTS AND WINDOW HDRS IN BOTH PLAN & ELEV !
- * CONTRACTOR TO VERIFY ALL DIMENSIONS

STRUCTURAL REVIEW

HD ENGINEERING & DESIGN

11656 W. 75TH ST V: 913-631-2222
SHAWNEE, KS F: 800-780-6608
66214
SERVICE@HDENGINEERS.COM
HD: 39041 DATE: 4/13/2020

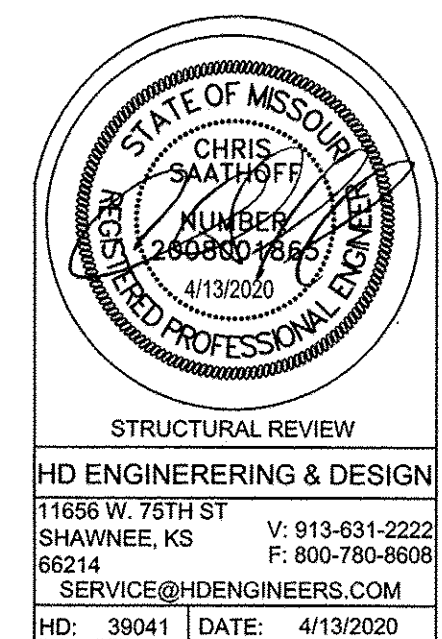
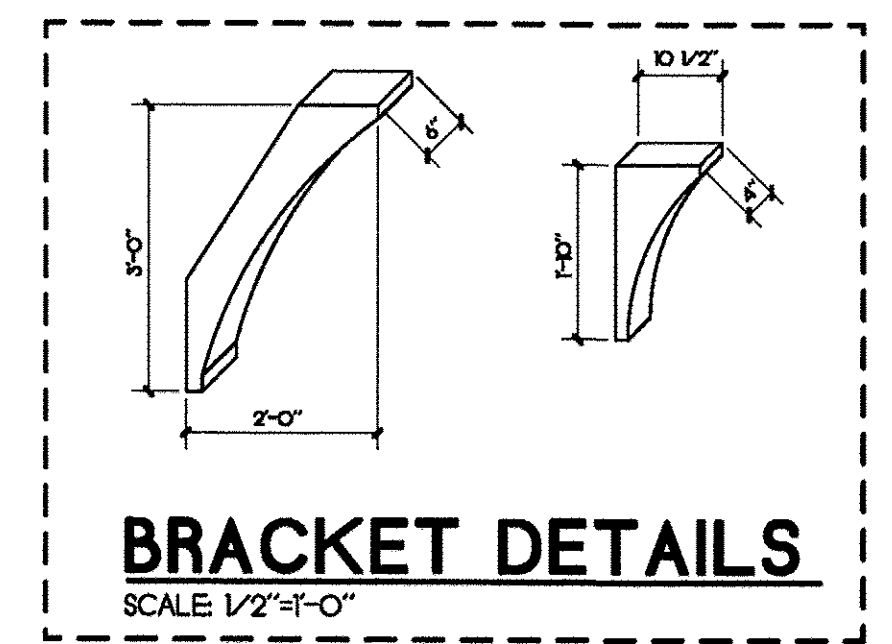
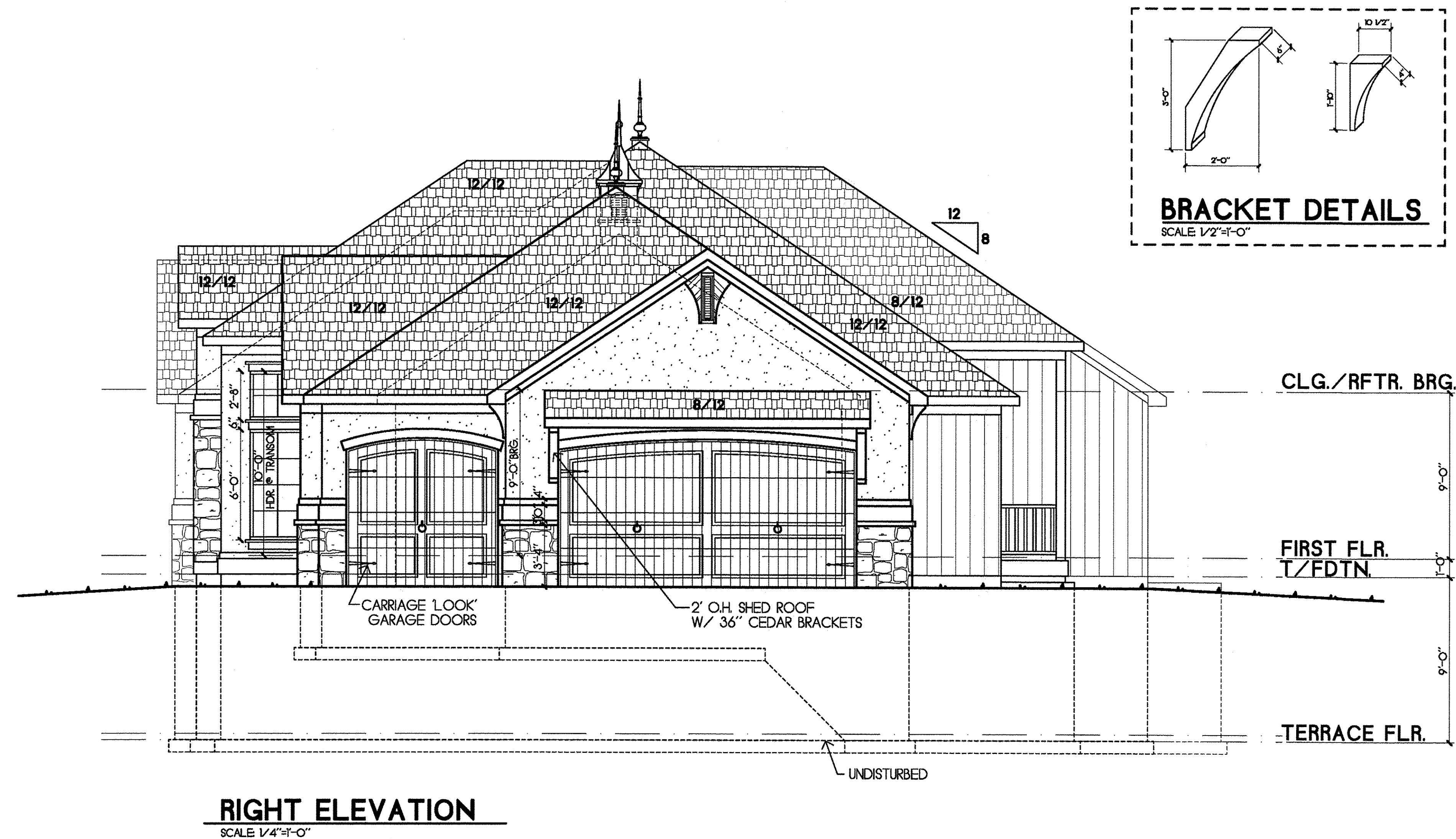
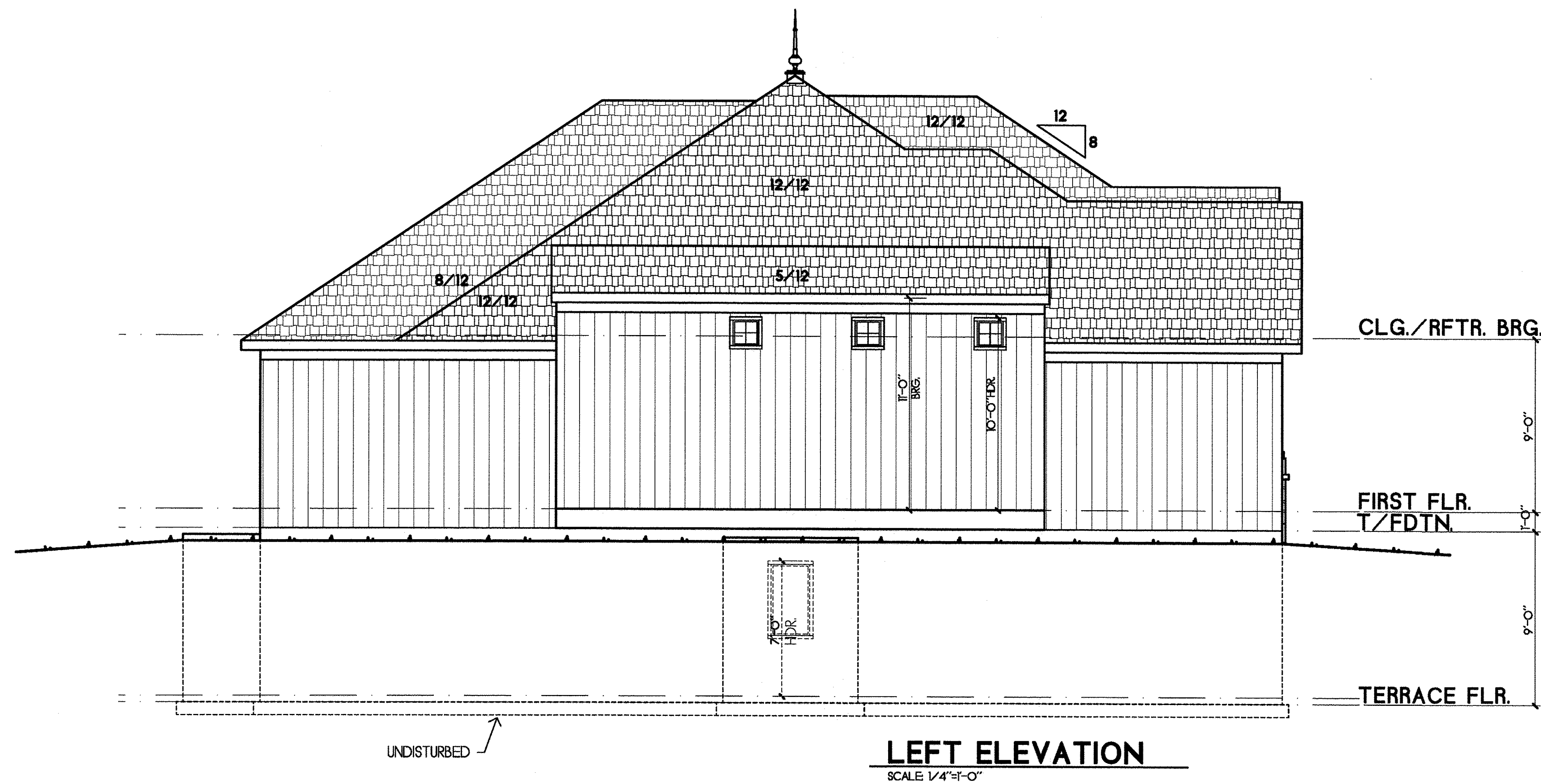
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THE LANCASTER REVERSE 1.5 PLAN
LOT 293, PARK RIDGE 4TH PLAT
1866 NE PARK RIDGE DRIVE, LSMO

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RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEES SUMMIT, MISSOURI
04/24/2020

REVISIONS:

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LOT 293, PARK RIDGE 4TH PLAT
1866 NE PARK RIDGE DRIVE, LSMO

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CODE ADMINISTRATION
LIFE SUBMIT, MISSOURI
04/24/2020

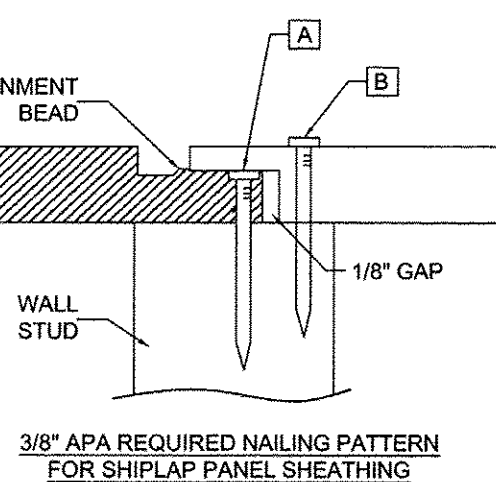
GENERAL NOTES:
- WINDOW SHALL HAVE FALL PROTECTION PER IRC 312.2.4
- HOUSE WILL BE PROVIDED WITH A "UFER" GROUND PER IRC SECTION 3608.1.5
- ALL TALL STUD WALLS TO BE CONSTRUCTED PER TABLE R602.3.1 ON SHEET S-2.0 ANY STUD WALL OVER 10 FEET TALL IS TO BE A CONTINUOUS STUD WALL
- OVERHEAD GARAGE DOORS MUST 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/HEARTHES (THAT WILL RECEIVE ROCK) UNLESS NOTED AS A LARGER BEAM. ANY STONE OVER 2" DEEP, NOTIFY ENG. TO VERIFY LOADS
- FOUNDATION SHALL BE CONSTRUCTED PER JOHNSON COUTY RESIDENTIAL FOUNDATION GUIDELINE, SEE ATTACHED
- SOILS IN THIS AREA COMMONLY HAVE A VERY HIGH SHRINK SWELL CAPACITY, OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY A GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF FOUNDATIONS
- ANY PORTION OF THESE PRINTS ISSUED WITHOUT A MIN. OF S-1.0 - S-6.0 SHALL NOT BE CONSIDERED A COMPLETE SET OF CONSTRUCTION DOCUMENTS



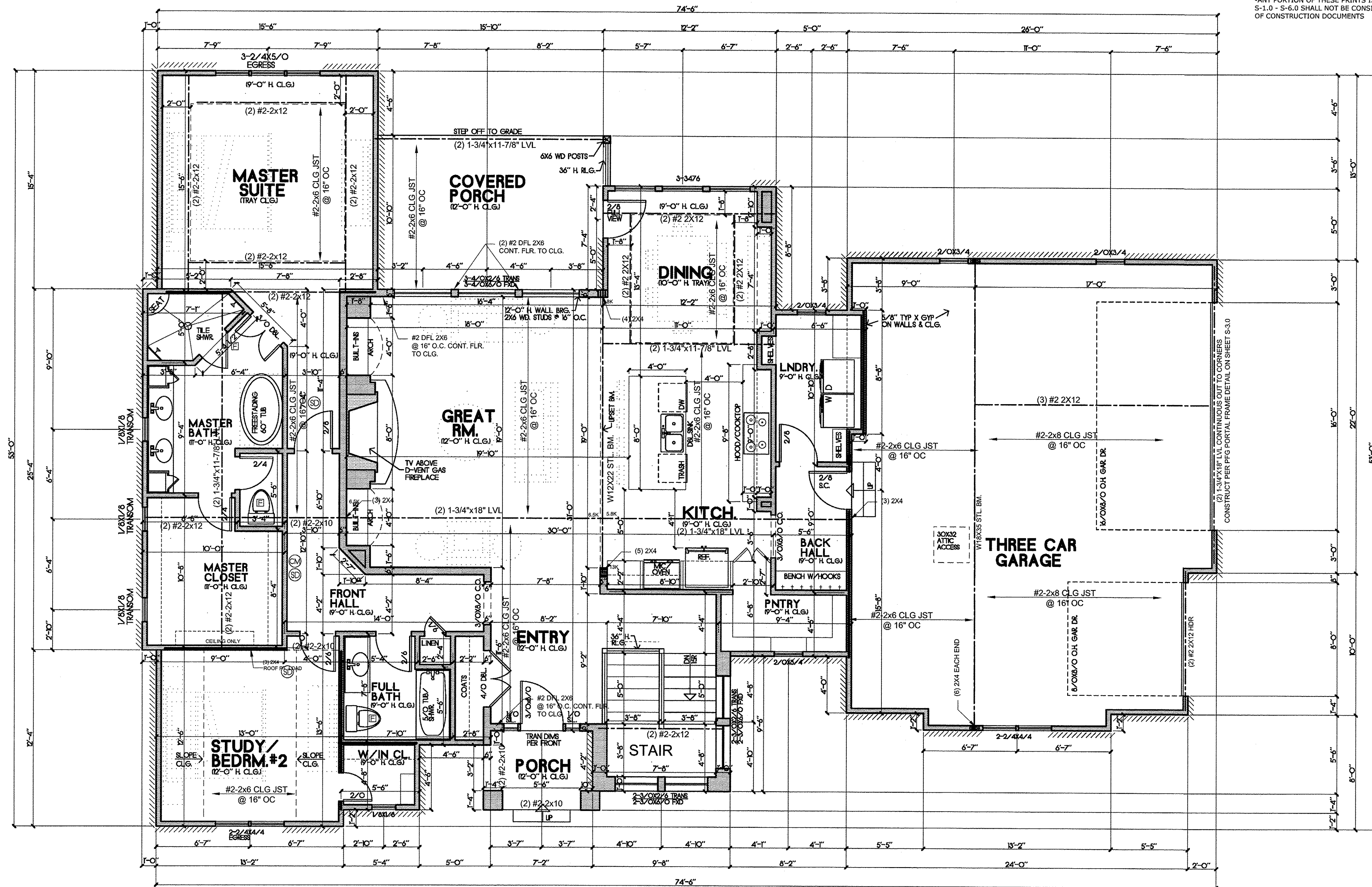
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HD ENGINEERING & DESIGN
11656 W. 75TH ST
SHAWNEE, KS
66214
SERVICE@HDENGINEERS.COM
HD: 39041 DATE: 4/13/2020

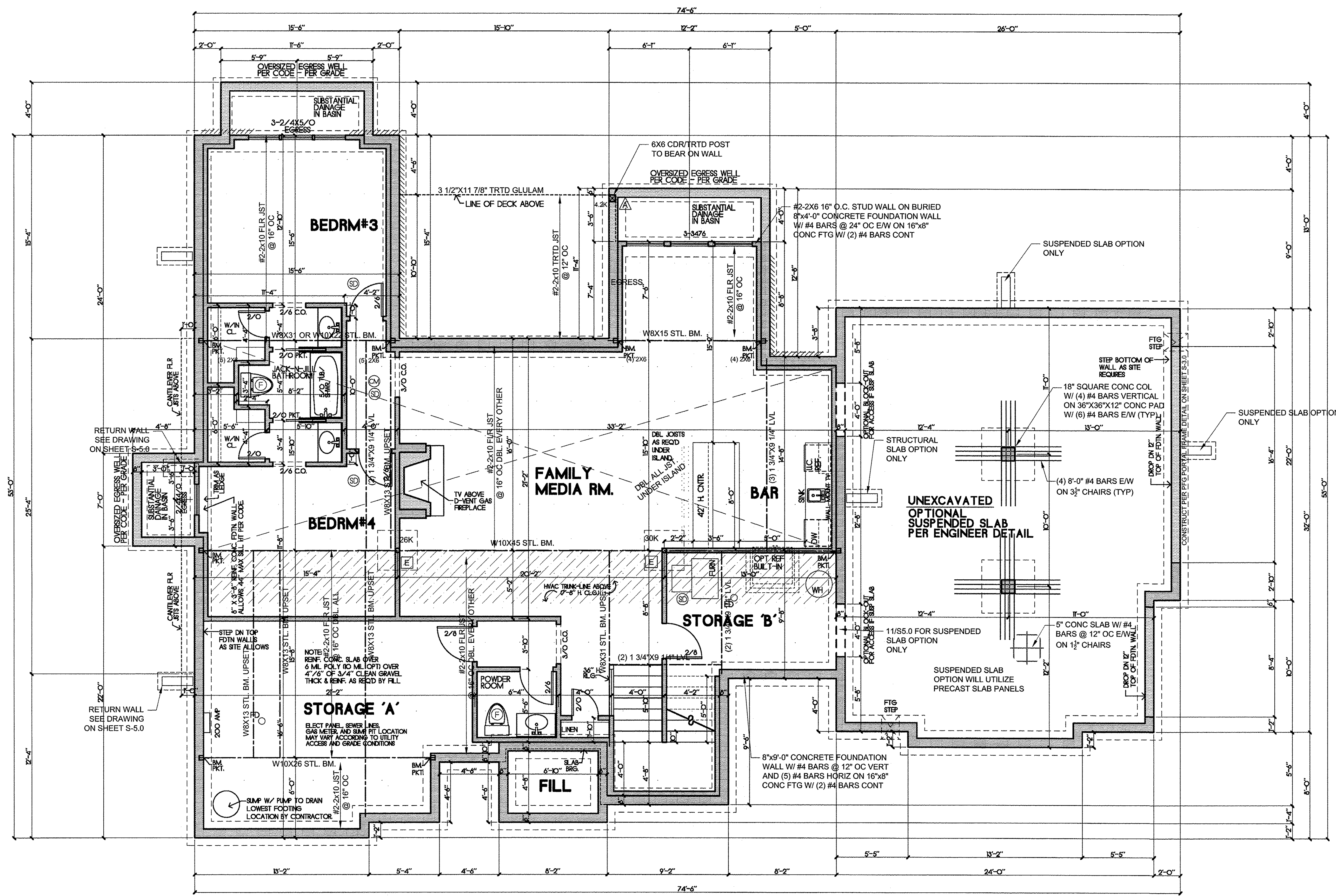
WINDOW NOTES:
SEE ELEVATIONS FOR HDR. HTS
MAIN FLOOR PLAN
SCALE 1/4"=1'-0"
AREA= 1,968 SF

— LOAD BEARING WALL
— LOAD BEARING BEAM



BRACED WALLS:
SEE CALCULATIONS ON SHEET S-3.0, PER ASCE7-10 REQUIREMENTS AS ALLOWED BY IRC 2018 R301.2.1
ALL EXTERIOR WALLS SHALL BE SHEATHED PER ANY ONE OF THE FOLLOWING OPTIONS:
• 7/8" APA-RATED PLYWOOD/OSB WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD
• 7/8" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD
• 3/4" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 6d NAILS @ 4" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD

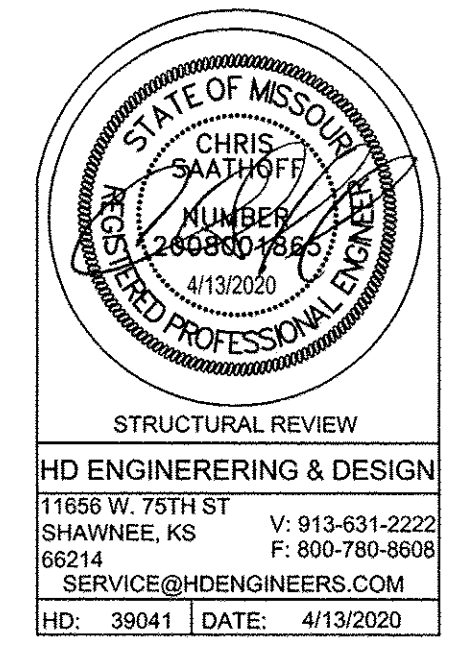
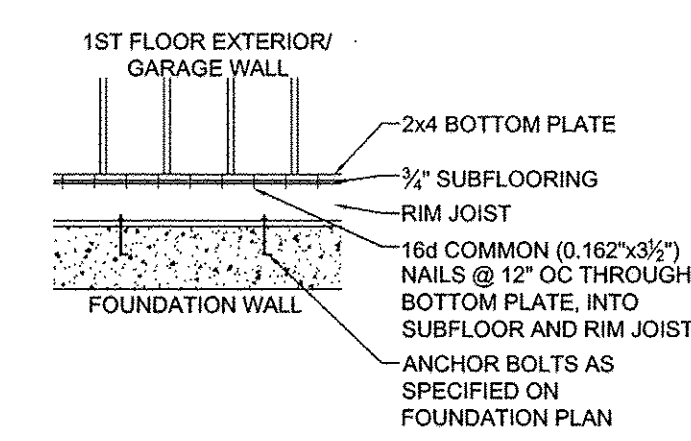




LOWER FLOOR PLAN
SCALE: 1/4"=1'-0" AREA= 1,275 SF

— LOAD BEARING WALL
— LOAD BEARING BEAM

- DECK PIER SCHEDULE**
- MIN. 6X6 TRTD/CDR POST ON 12" Ø CONC PIER WITH USP PAU 66 BASE OR = (1177# MAX)
 - MIN. 6X6 TRTD/CDR POST ON 16" Ø CONC PIER WITH USP PAU 66 BASE OR = (2050# MAX)
 - MIN. 6X6 TRTD/CDR POST ON 18" Ø CONC PIER WITH USP PAU 66 BASE OR = (2649# MAX)
 - MIN. 6X6 TRTD/CDR POST ON 24" Ø CONC PIER WITH USP PAU 66 BASE OR = (4710# MAX)
- PIERS TO TERMINATE ON ORIGINAL SOIL OF 1500 PSF MINIMUM BEARING.
- PIERS TO TERMINATE AT A POINT 36" MINIMUM BELOW FINISH GRADE.
- POST ARE NOT TO EXCEED AN UNBRACED LENGTH OF 25' WITHOUT CONTACTING HD ENGINEERING FOR GUIDANCE.
- 3" Ø SCH. 40 STEEL COL. ON 36"x36"x12" CONCRETE PAD W/ (6) #4 BARS EACH WAY (13.5K MAX)
- 3" Ø SCH. 40 STEEL COL. ON 42"x42"x14" CONCRETE PAD W/ (7) #4 BARS EACH WAY (18.4K MAX)
- 3-1/2" Ø SCH. 40 STEEL COL. ON 48"x48"x16" CONCRETE PAD W/ (8) #4 BARS EACH WAY (24.0K MAX)
- 3-1/2" Ø SCH. 40 STEEL COL. ON 54"x54"x16" CONCRETE PAD W/ (9) #4 BARS EACH WAY (30.4K MAX)
- 3-1/2" Ø SCH. 40 STEEL COL. ON 60"x60"x18" CONCRETE PAD W/ (10) #4 BARS EACH WAY (37.5K MAX)
- 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



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THE LANCASTER REVERSE 1.5 PLAN
LOT 293, PARK RIDGE 4TH PLAT
1886 NE PARK RIDGE DRIVE, LSMO

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KC Architecture
KANSAS CITY, MISSOURI
C. (86) 686-5900
O. (86) 984-202

PLEASE FOR CONSTRUCTION
AS NOTED IN PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
04/24/2020

REVISIONS:

KC Architecture

KANSAS CITY, MISSOURI
C. (866) 686-5900
O. (816) 994-2012

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THE LANCASTER REVERSE 1.5 PLAN
LOT 293, PARK RIDGE 4TH PLAT
1866 NE PARK RIDGE DRIVE, LSMO

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JEEVEE COMMIT, MISSOURI
04/24/2020

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	@18" O.C.	14'-1"
	#2-2x8	@24" O.C.	14'-10"
	#2-2x8	@18" O.C.	18'-2"
	#2-2x10	@24" O.C.	18'-2"
	#2-2x10	@18" O.C.	22'-3"

NOTE: CODE MINIMUM L/240 DEFLECTION

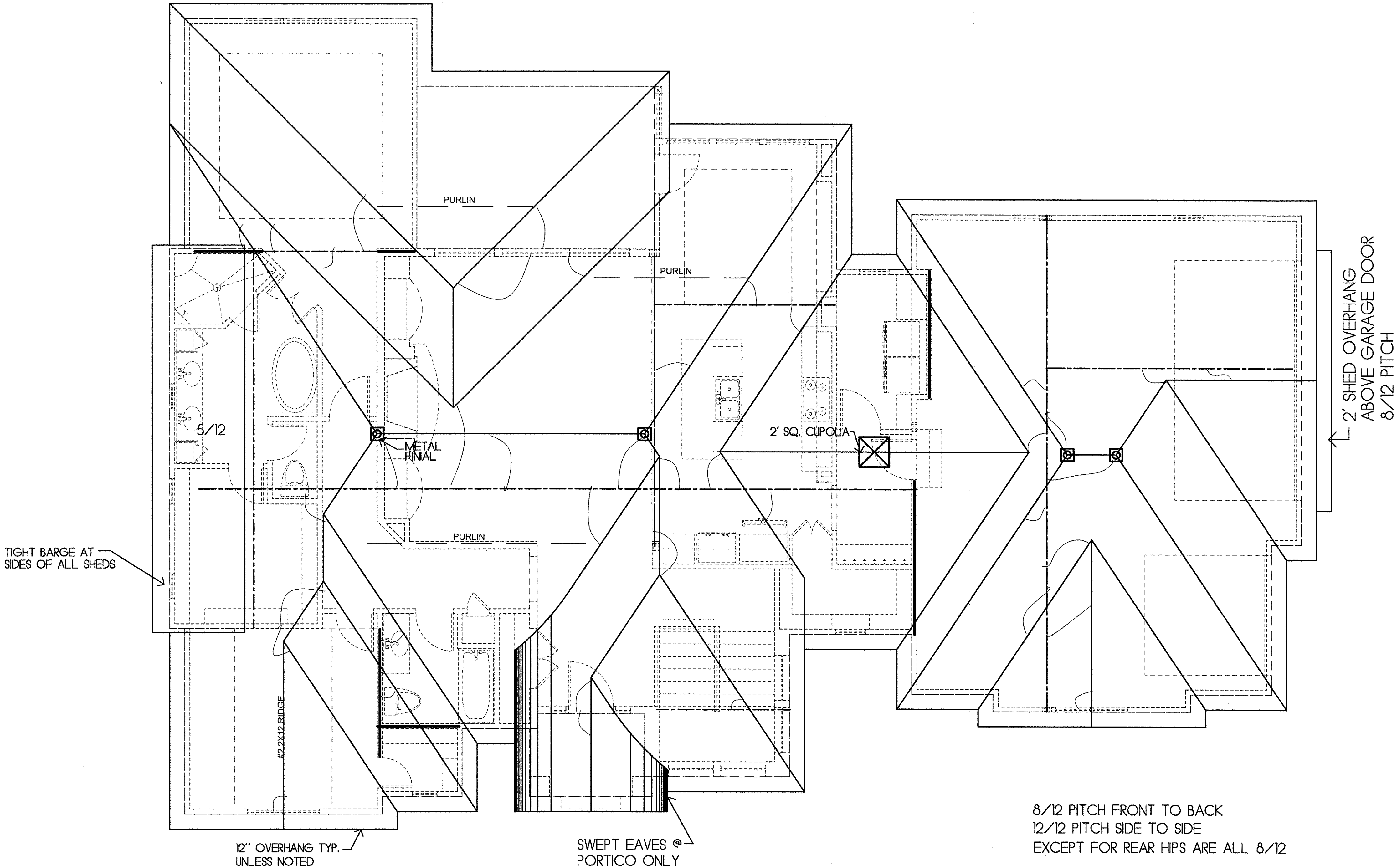
GREATER THAN CODE	RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
	#2-2x6	@24" O.C.	8'-6"
	#2-2x6	@18" O.C.	9'-9"
	#2-2x8	@24" O.C.	11'-3"
	#2-2x8	@18" O.C.	12'-9"
	#2-2x10	@24" O.C.	14'-3"
	#2-2x10	@18" O.C.	16'-3"

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"



8/12 PITCH FRONT TO BACK
12/12 PITCH SIDE TO SIDE
EXCEPT FOR REAR HIPs ARE ALL 8/12

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

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

STATE OF MISSOURI
CHRIS
3-AY1987
NUMBER
260960-166
4/13/2020
REGISTERED PROFESSIONAL ENGINEER

STRUCTURAL REVIEW
HD ENGINEERING & DESIGN
11656 W. 75TH ST
SHAWNEE, KS 66214
V: 913-631-2222
F: 800-780-8608
SERVICE@HDEngineers.COM
HD: 39041 | DATE: 4/13/2020

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 STANDARDS, THE ENGINEER AND ARCHITECT SHALL NOTIFY THE APPROPRIATE AUTHORITY AND THE ENGINEER TO EVALUATE THE CHANGES AND MAKE THE APPROPRIATE MODIFICATIONS TO THE PLANS.
2. WHERE THERE IS A DISCREPANCY BETWEEN THE SET OF STANDARD DETAILS, NOTES FOR THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY.
3. THE CONTRACTUAL OBLIGATION OF THESE PLANS IS TO PROVIDE THE OWNER/BUILDER AND THE AHJ WITH A SET OF PLANS THAT MEET AHJ AND CODE REQUIREMENTS FOR A SINGLE SITE CONSTRUCTION PROJECT. UNLESS REQUESTED BY OUR CLIENT, CODE/AHJ MINIMUM DESIGNS WILL BE UTILIZED. ALSO, UNLESS REQUESTED BY THE OWNER, OUR FIRM CAN NOT AND WILL NOT BE AUTHORIZED TO VISIT THE SITE TO EVALUATE THE SITE OR ANY CONSTRUCTION FOR THIS PROJECT. THE FIRM'S DESIGN SHALL BE LIMITED TO THE DESIGN PRIOR TO COMMENCEMENT OF EXCAVATIONS, 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 BY OUR FIRM PRIOR TO COMMENCEMENT OF EXCAVATIONS.
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.

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 OF 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 12" ANCHORS BOLTED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 16" ON CENTER AND WITHIN 12" OF EACH END PIECE PER IRC SECTION R403.1.6.
14. FOUNDATION WINDOW WALLS 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. IF NOT 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.

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. ON STAIRWAY OF 3 OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS.
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 6" AT ANY POINT WITHIN CLEAR WIDTH OF STAIRS. WINDER TREAD PROPORTION TO COMPLY WITH IRC R311.7.5.2.1.

1. GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE AS PROVIDED 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 TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS AND WHIRLPools, GLAZING IN FIXED OR OPERABLE PANELS EXCEEDING 9 SF. 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 OR GRADE. IF THE WINDOW IS LOCATED ABOVE A BELOW GRADE SECTION 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.

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 TIED TO THE FOUNDATION WALLS, OR TO THE MAIN BEARING WALLS, 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 NAIL 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 SLOD 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 THE CODE IN RS02-4.
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 ½" 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

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.

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.

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" 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 15-MINUTE FIRE-RESISTANCE RATING PER DASHMA 108 AND ASTM E 330-99 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.

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

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.

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 @ 8" 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; ØD 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, 3/16" THICK	8D BOX OR SINKER NAILS @ 6" OC EDGES & 12" OC IN THE FIELD

BUILDING COMPONENT	FASTEN TO	FASTEN W/
RAFTERS	RIDGE / VALLEY / HIP	TOENAIL W/ (4) 16D FACENAIL W/ (3) 16D
	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
BEAMS	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
	BUILT-UP HEADER, TWO PIECES W/ ½" SPACER	16D @ 16" OC ALONG EDGES
	BUILT-UP HEADER, TWO PIECES, NO ½" SPACER	3" x 0.131" NAILS @ 12" OC ALONG EDGES
FLOOR JOISTS	BEARING	TOENAIL W/ (2) 18D @ EACH END
	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 1½" 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 TONAILS
WALLS	TOP & SOLE PLATE TO STUD	END NAIL W/ (2) 16D
	STUD TO SOLE AND TOP PLATE	TOENAIL W/ (4) 8D
	DOUBLE TOP PLATES	FACENAIL W/ 16D @ 16" OC
	DOUBLE TOP PLATE LAP SPLICE	FACENAIL W/ (8) 16D
	TOP PLATE LAPS & INTERSECTIONS	FACENAIL W/ (2) 16D
	DOUBLE STUDS	FACENAIL W/ 16D @ 24" OC
	BUILT-UP CORNER STUDS	FACENAIL W/ 16D - 2 ROWS @ 24" OC
	STEEL "X" BRACING	FACENAIL W/ (2) 16D IN EACH TOP & BOTTOM PLATE & (1) 8D PER STUD
	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	¾" - 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 3½" NAIL

COLUMN CONNECTION TO STEEL BEAMS SHALL BE WITH A CLIP POST CAP WITH ALL FOUR TABS EMBEDDED 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.

THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS

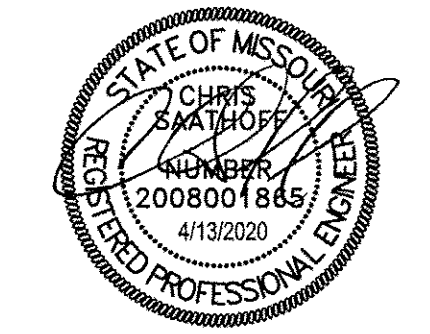
AREA	MIN DEAD LOAD	MIN LIVE LOAD
EXTERIOR BALCONIES	10	60
DECKS, STAIRS	10	40
CEILING JOISTS / ATTICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE 3:12 OR LESS	10	10
CEILING JOISTS / ATTICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE OVER 3:12	10	10
CEILING JOISTS / ATTICS WITH STORAGE - DOOR PULL DOWN 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	

MIN DESIGN REQUIREMENTS

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

**HD ENGINEERING
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www.hdengineers.com
11656 W 75TH ST
SHAWNEE, KS 66214
V: 913-631-2222
F: 800-780-8608

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

CAPITAL CONSTRUCTION
LANCASTER REV 1.5 LOT 293 PARK RIDGE
1866 NE PARK RIDGE DR LEE'S SUMMIT, MO
STRUCTURAL DETAILS

REVISION TABLE

Date:	4/13/2020
HD #:	39041
Drawn by:	AWH
Reviewed by:	CLS

STRUCTURAL DETAILS

SHEET NUMBER: **RELEASE FOR CONSTRUCTION**
AS NOTED ON PLANS REVIEWED
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
S-1.0
04/24/2020

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 ONE FLOOR PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (inches)	MAXIMUM SPACING WHERE SUPPORTING TWO FLOORS PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (inches)	LATERALLY UNRESTRICTED STUD HEIGHT (feet)	MAXIMUM SPACING (inches)
2 x 3 ^b	—	—	—	—	10	16
2 x 4	10	24 c	16 c	—	24	14
3 x 4	10	24	24	16	24	24
2 x 5	10	24	24	—	24	16
2 x 6	10	24	24	16	24	20

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.

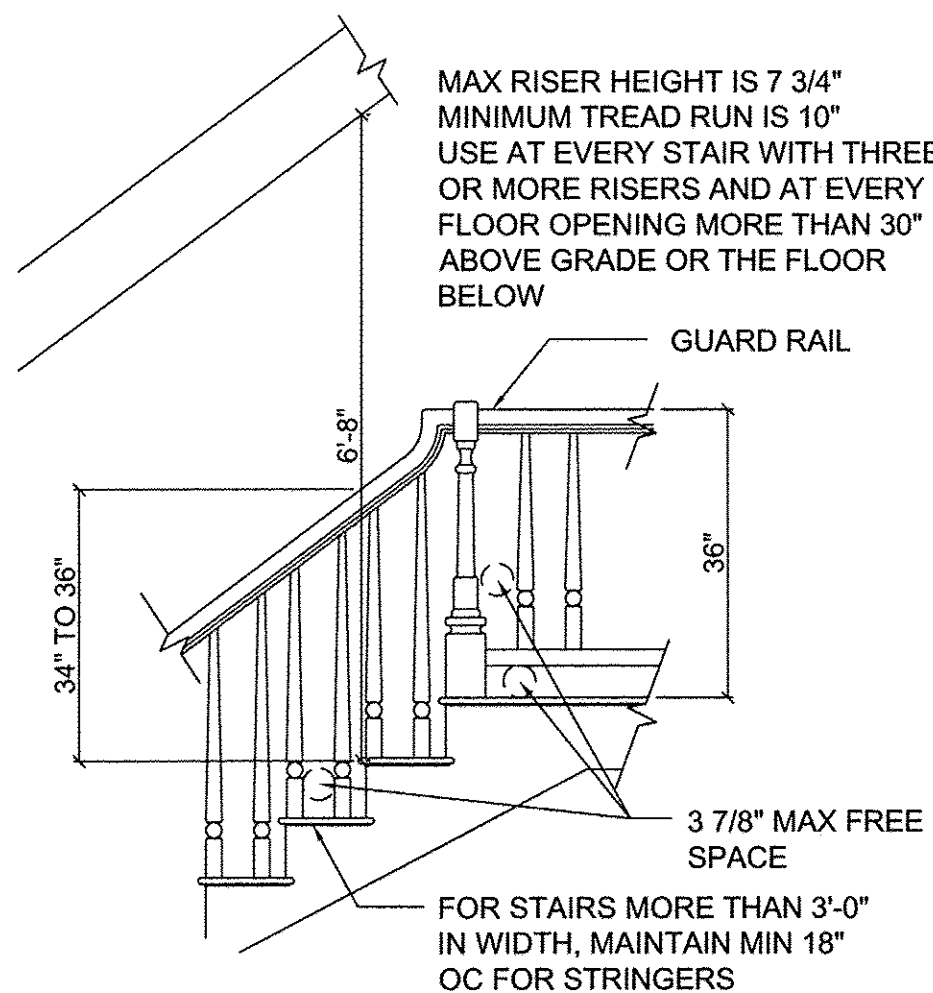
b. SHALL NOT BE USED IN EXTERIOR WALLS

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.

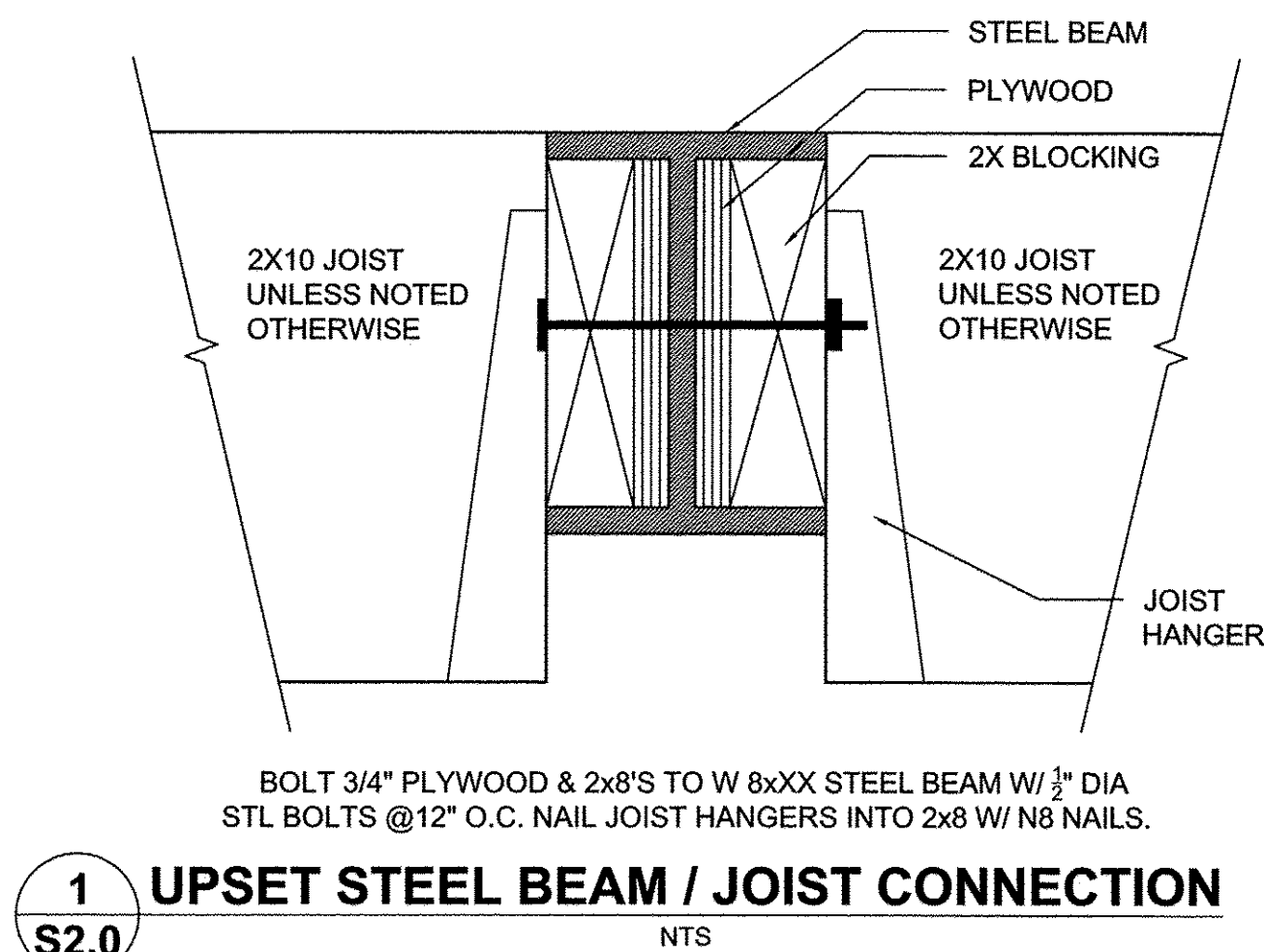
COLUMN SCHEDULE

BASED ON FOOTING SIZE (ASSUME 1500 PSF SOIL)

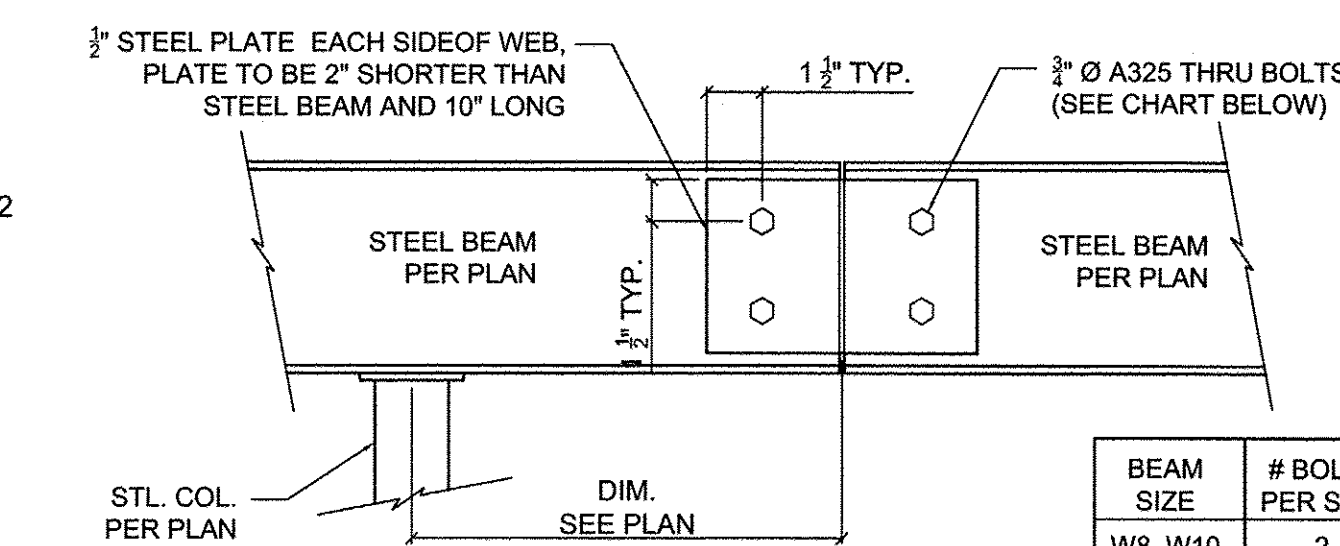
PAD SIZE	REINFORCEMENT	COL MIN	COL TYPE	MAX LOAD
24x24x12	(4) #4 BARS E/W	3"	SCH40	6K
30x30x12	(5) #4 BARS E/W	3"	SCH40	9.4K
36x36x12	(6) #4 BARS E/W	3"	SCH40	13.5K
42x42x14	(7) #4 BARS E/W	3"	SCH40	18.4K
48x48x16	(8) #4 BARS E/W	3"	SCH40	24.0K
54x54x16	(9) #4 BARS E/W	3 1/2"	SCH40	30.4K
60x60x18	(10)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



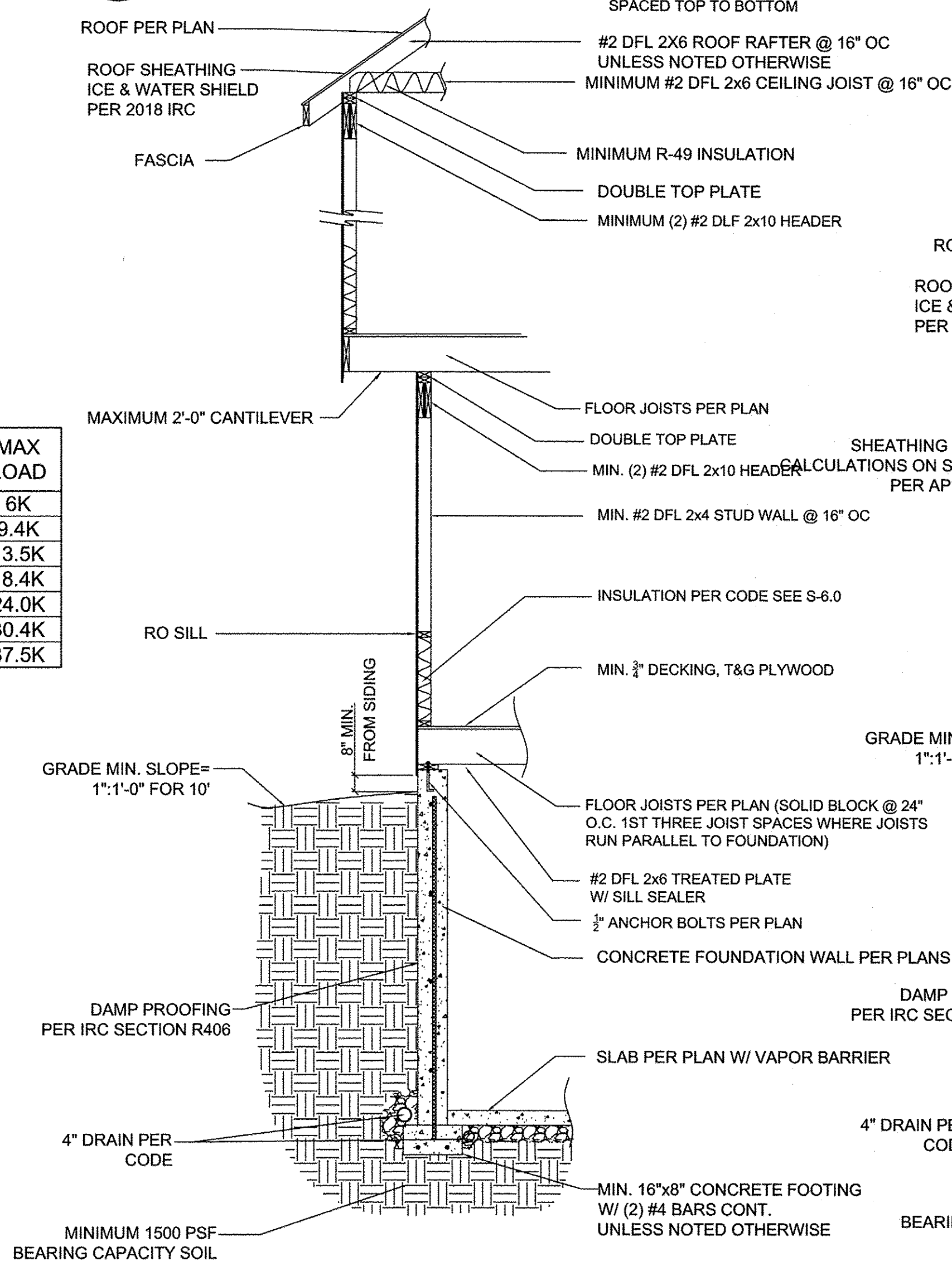
6 STAIR / RAIL DETAIL
NTS



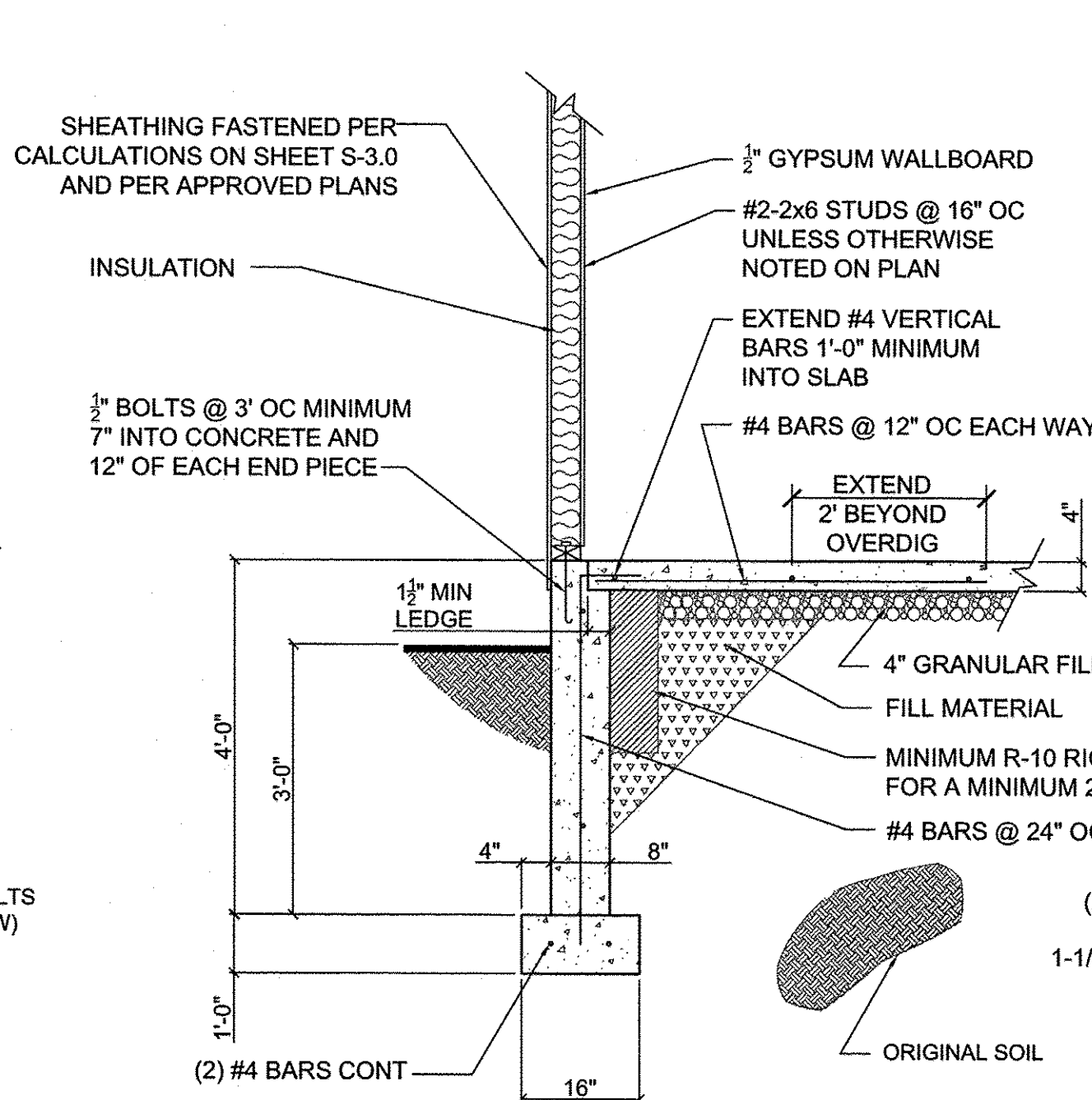
1 UPSET STEEL BEAM / JOIST CONNECTION
NTS



9 STEEL BEAM SPLICE DETAIL
NTS

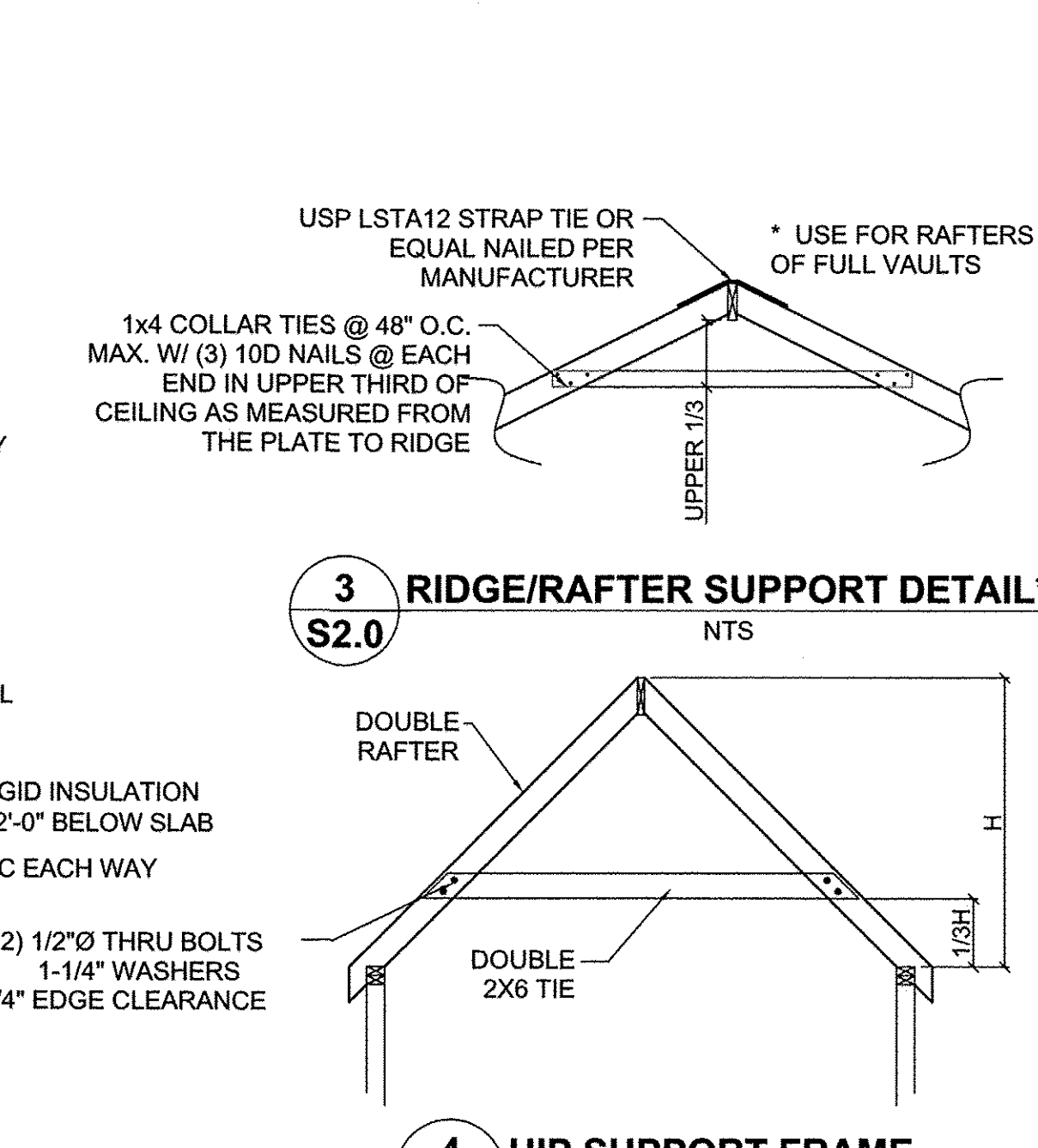


7 TYPICAL EXTERIOR CANTILEVER WALL SECTION
NTS

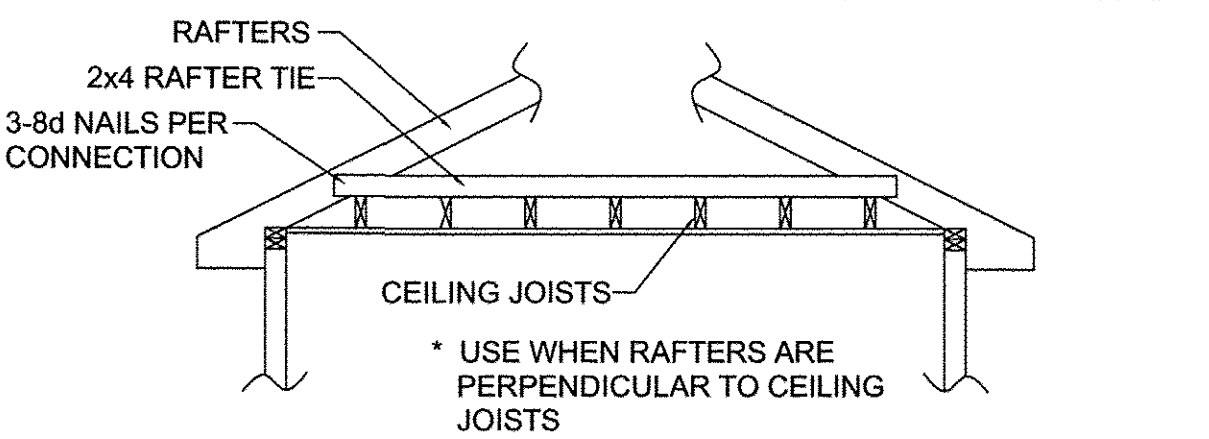


2 WALK-OUT BASEMENT FLOOR SLAB
NTS

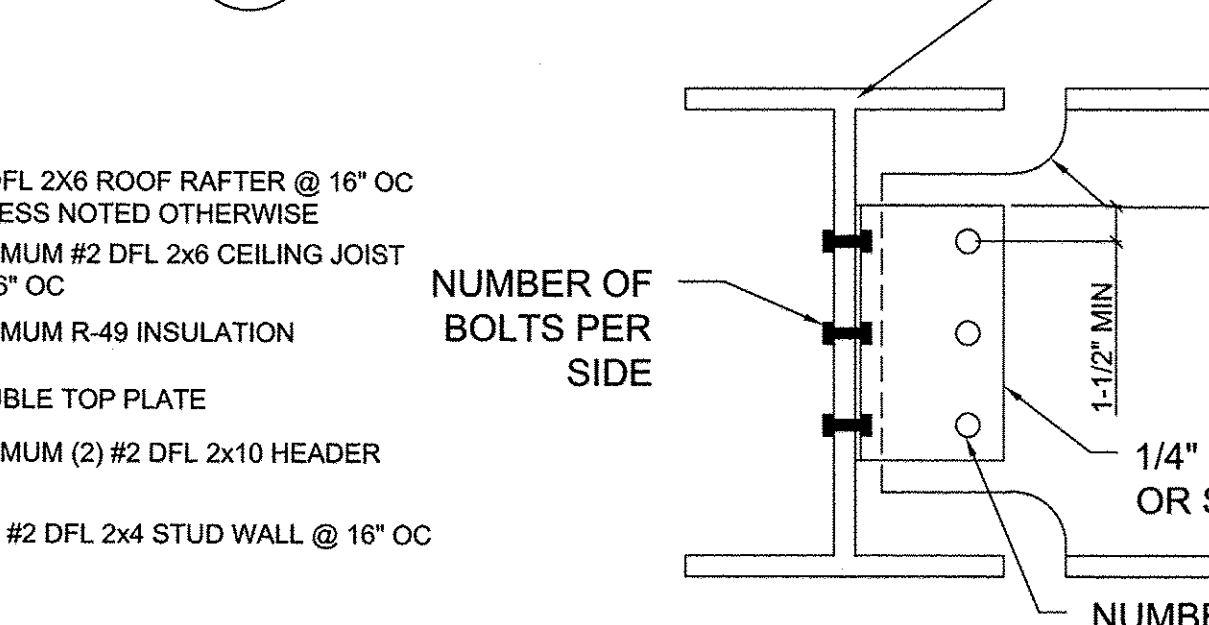
ANY SLAB WITH GREATER THAN 2' OF GRADED ROCK OR 8" OF FILL SOIL BELOW SHALL BE DESIGNED AS STRUCTURAL PER PLAN. OUR FIRM SHOULD BE CONTACTED IMMEDIATELY FOR DESIGN RECOMMENDATIONS.



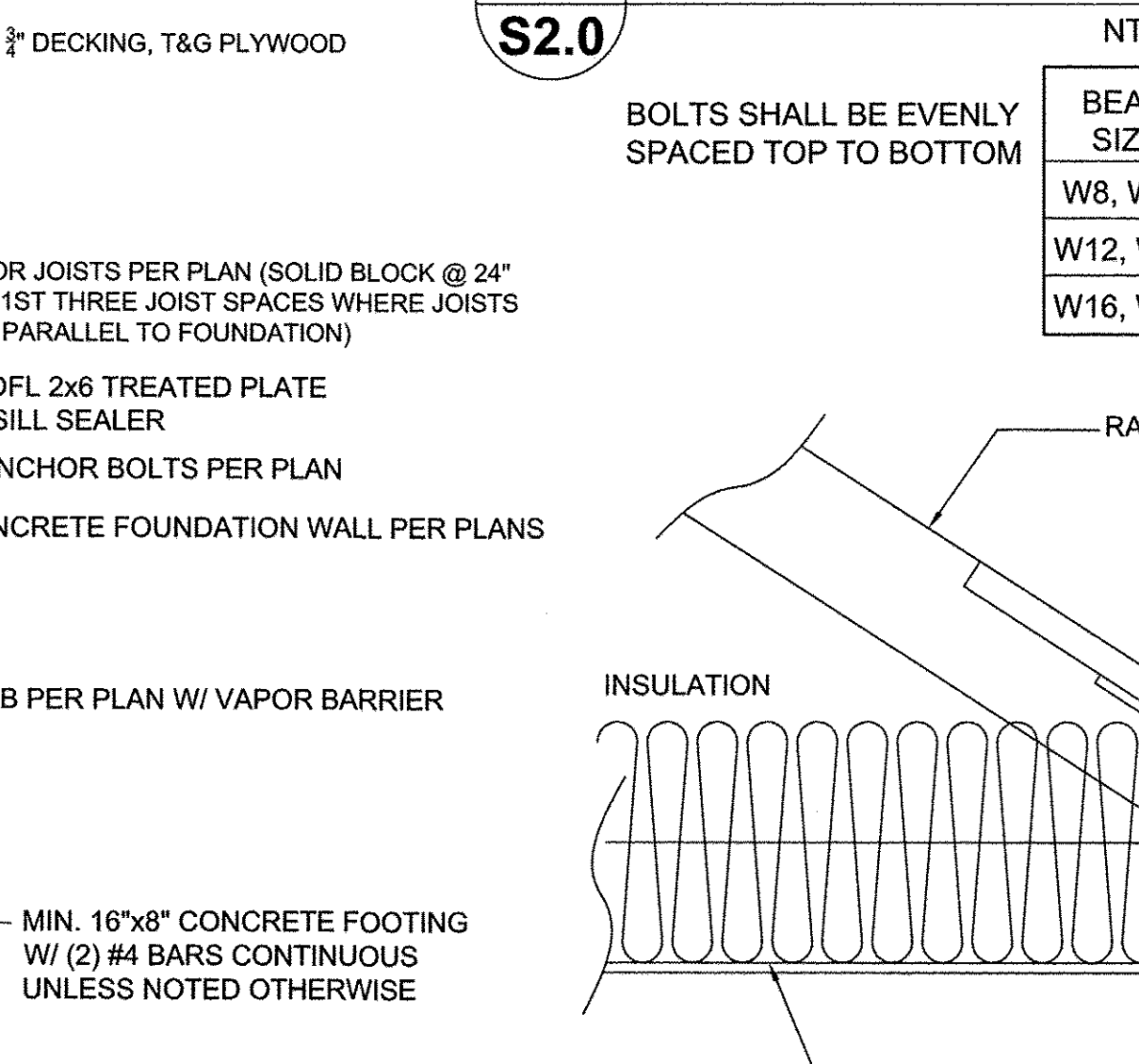
3 RIDGE/RAFTER SUPPORT DETAIL *
NTS



4 HIP SUPPORT FRAME
NTS



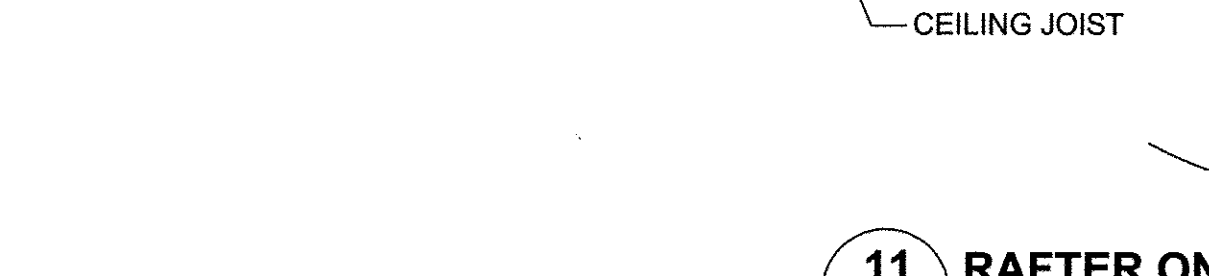
5 RAFTER TIE CONNECTION *
NTS



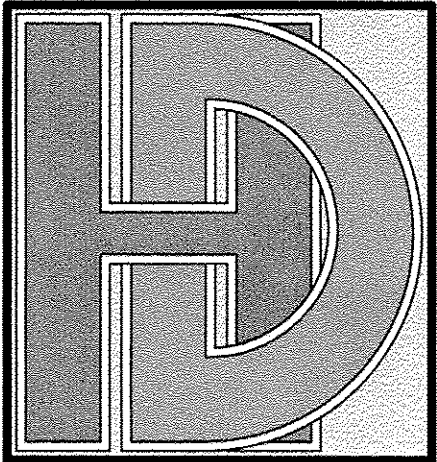
10 BEAM TO GIRDER CONNECTION
NTS



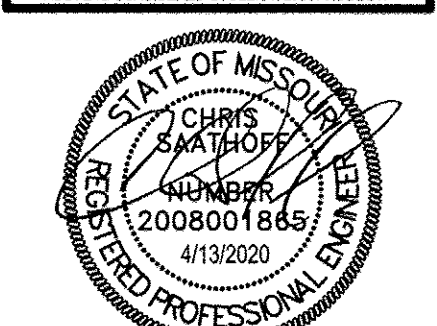
8 TYPICAL EXTERIOR WALL SECTION
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11 RAFTER ON RAISED TOP PLATE
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www.hdengineers.com
11655 W 75th ST
SHAWNEE, KS 66214
V: 913-631-2222
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CAPITAL CONSTRUCTION
LANCASTER REV 1.5 LOT 293 PARK RIDGE
1866 NE PARK RIDGE DR LEE'S SUMMIT, MO
STRUCTURAL DETAILS

REVISION TABLE

NO.	DATE	DESCRIPTION

Date: 4/13/2020
HD #: 39041
Drawn by: AWH
Reviewed by: CLS

STRUCTURAL DETAILS

SHEET NUMBER FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
COES ADMINISTRATION
JEFFERSON, MISSOURI
S-2-20
04/24/2020

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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							
6d CASING NAIL	.099	12-1/2	1-1/8	61	55	31	24
7d COOLER NAIL							
6d COMMON NAIL							
8d COOLER NAIL	.113	11-1/2	1-1/4	79	72	35	28
8d SINKER NAIL							
8d BOX NAIL							
8d CASING NAIL	.120	11	1-3/8	89	81	41	32
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	.128	10-1/2	1-1/2	101	93	40	31
12d Short							
10d Box Nails							
12d Box Nails	.131	10-1/4	1-1/2	106	97	41	32
10d Casing Nails							
8d Common Nails							
16d Short	.135	10	1-1/2	113	103	42	33
12d Sinkers							
16d Box Nails							
10d Ring Shank Nails	.148	9	1-5/8	128	118	46	36
10d Screw Shank Nails							
12d Ring Shank Nails							
12d Screw Shank Nails	.177	7	2-1/8	178	163	59	47
10d Common Nails							
12d Common Nails							
16d Sinker Nails	.177	7	2-1/8	178	163	54	43
20d Box Nails							
30d Box Nails							
16d Ring Shank Nails	.177	7	2-1/8	178	163	54	43
16d Screw Shank Nails							
40d Box Nails							
20d Ring Shank Nails	.177	7	2-1/8	178	163	54	43
20d Screw Shank Nails							
20d Sinker Nails							
30d Common Nails	.148	9	2-1/8	170	166	59	47
20d Sinker Nails							
30d Sinker Nails							

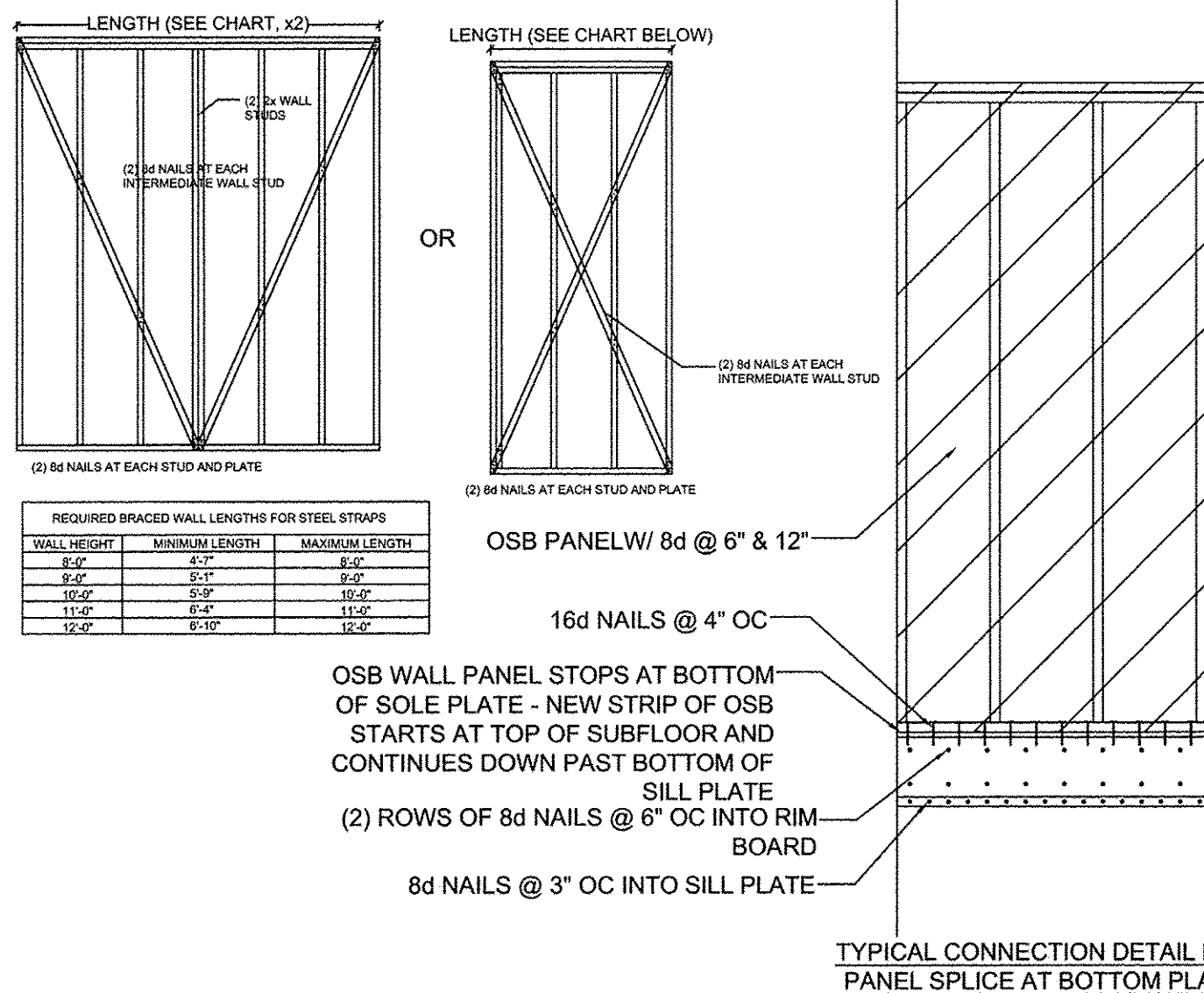
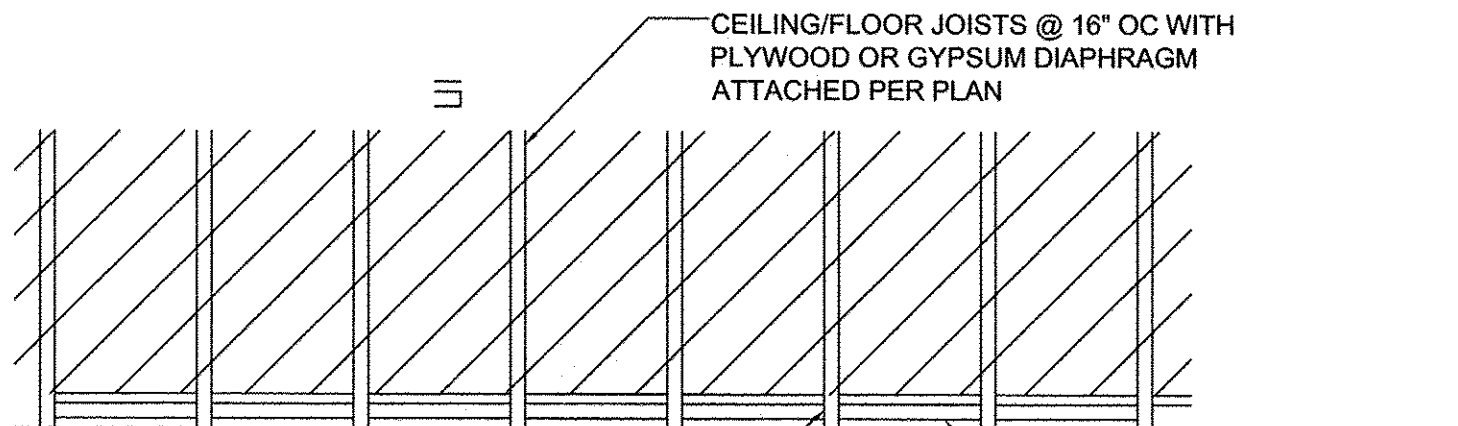


TABLE R602.10.5 MINIMUM LENGTH OF BRACED WALL PANELS

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 ⁵
GB		48	48	48	53	58	DOUBLE SIDED = ACTUAL SINGLE SIDED=.5xACTUAL
LIB		55	62	69	NP	NP	ACTUAL ⁵
ABW	SDC A, B, AND C ULTIMATE DESIGN WIND SPEED<140	28	32	34	38	42	48
	SDC D, 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 ⁵
CS-G		24	27	30	33	36	ACTUAL ⁵
CS-PF		16	18	20	NOTE E	NOTE E	ACTUAL ⁵
CS-WSP, CS-SFB	ADJACENT CLEAR OPENING HEIGHT (INCHES)						ACTUAL ⁵
	≤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		

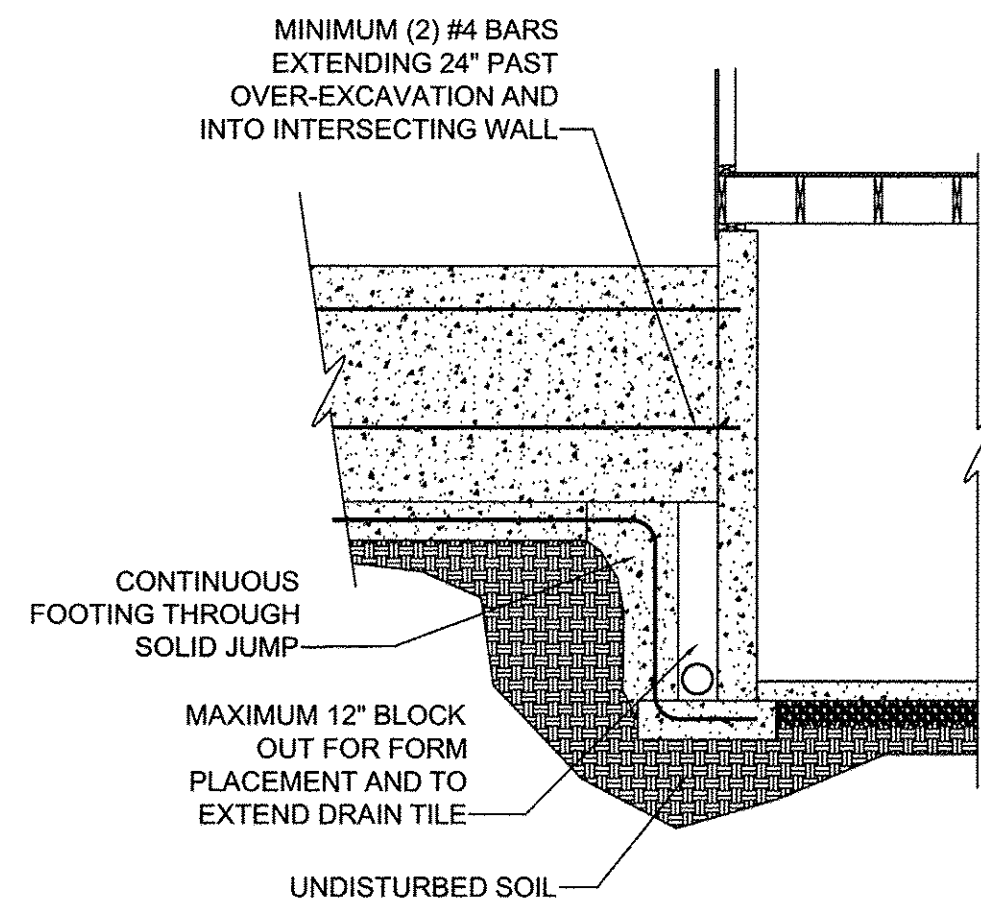
- a. LINEAR INTERPOLATION SHALL BE PERMITTED
- b. USE THE ACTUAL LENGTH WHEN IT IS GREATER THAN OR EQUAL TO THE MINIMUM LENGTH
- c. MAX. HEADER HEIGHT FOR PFH IS 10' IN ACCORDANCE WITH R602.10.6.2, WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL
- d. MAX. OPENING HEIGHT FOR PFG IS 10' IN ACCORDANCE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



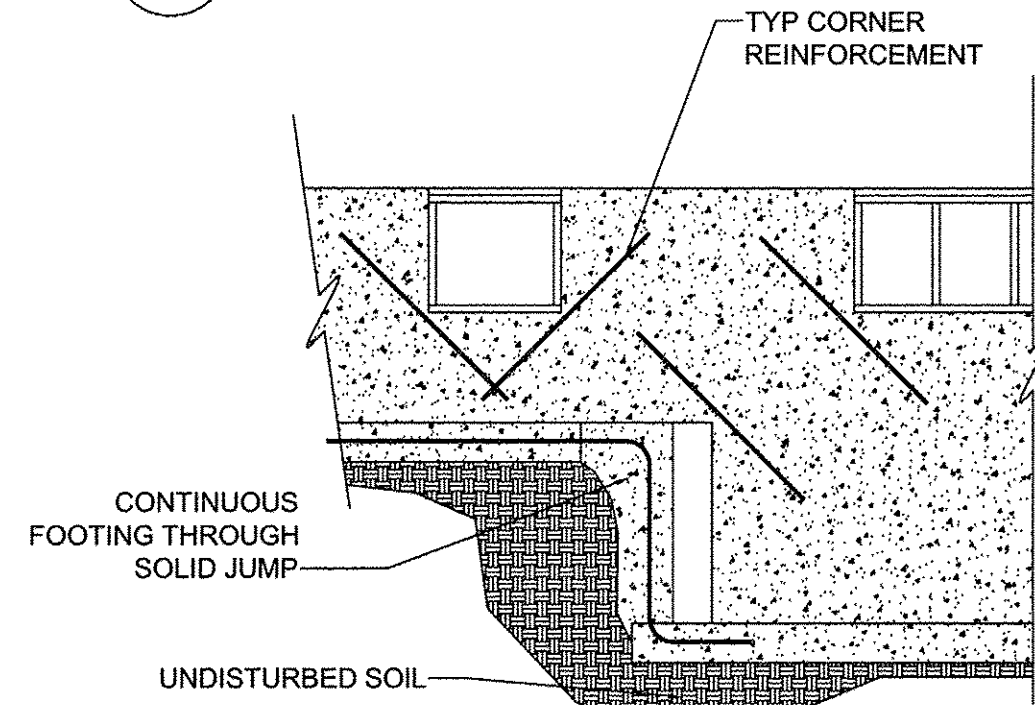
- FOR SI: 1 INCH = 25.4 MM, 1 FOOT = 304.8 MM, 1 MILE PER HOUR = 0.447 M/S; 1 KSI = 6.895 MPa
- A. ALL NAILS ARE SMOOTH-COMMON, BOX OR DEFORMED SHANKS EXCEPT WHERE OTHERWISE STATED. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS SHOWN: 80 KSI FOR 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 1/2" X 0.120") NAILS SHALL BE USED FOR ATTACHING PLYWOOD AND WOOD STRUCTURAL PANEL ROOF SHEATHING TO FRAMING WITHIN MINIMUM 48-INCHES DISTANCE FROM GABLE END WALLS, IF MEAN ROOF 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

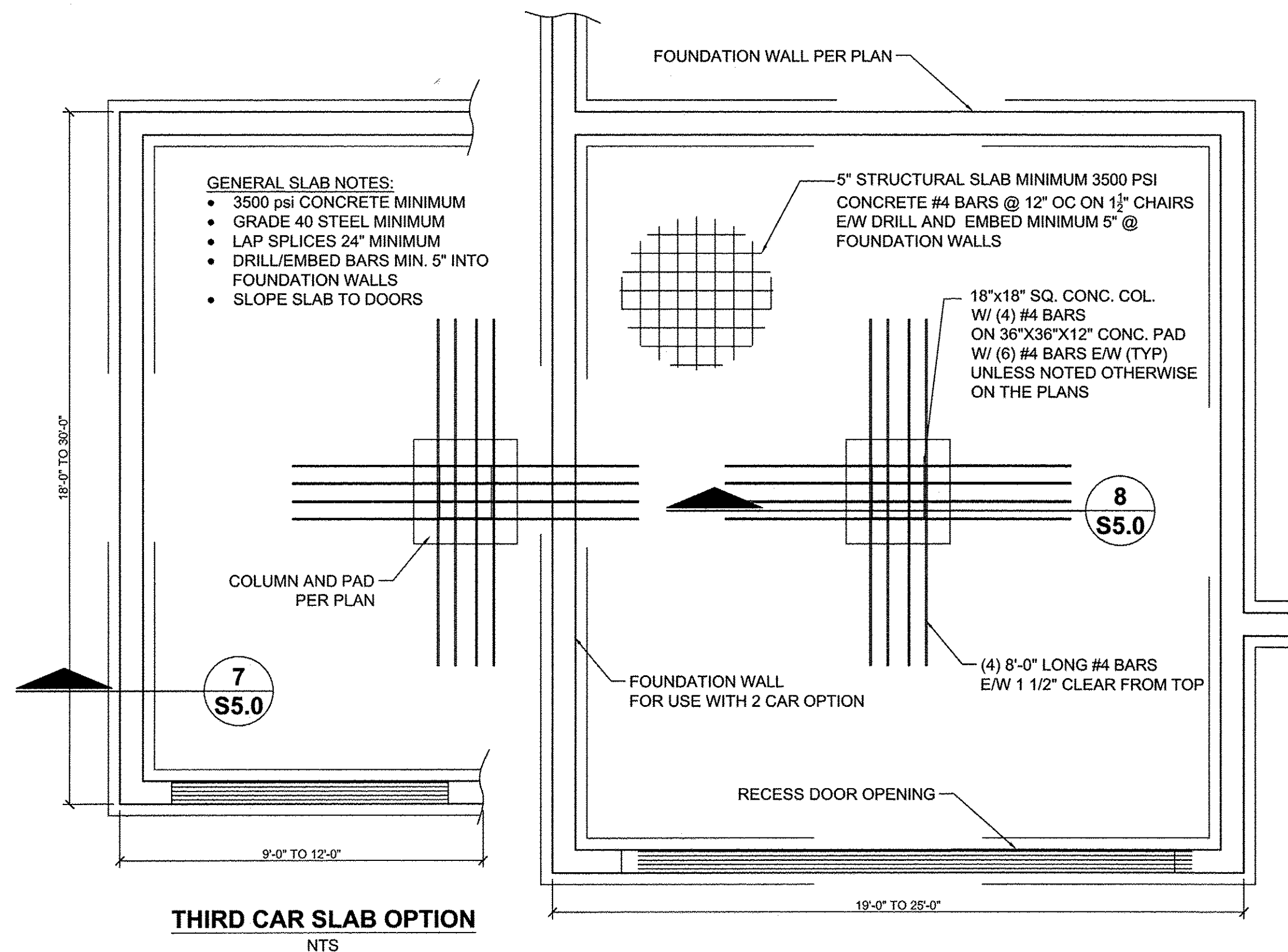
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{ASD}	SPACING OF FASTENERS	
ROOF				
1	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE, TOE NAIL	4-8D BOX (2 1/2" X 0.113") 3-8D (2 1/2" X 0.113") 3-10D (2 1/2" X 0.128") 3-3" X 0.131" NAILS	TOE NAIL	
2	CEILING JOISTS TO PLATE, TOE NAIL	4-10D BOX (3 1/2" X 0.128") 3-16D COMMON (3 1/2" X 0.162") 4-3" X 0.131" NAILS	PER JOIST, TOE NAIL	
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (SEE SECTION R602.5.2 AND TABLE R602.5.2)		FACE NAIL	
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) (SEE SECTION R602.5.2 AND TABLE R602.5.2)	TABLE R602.5.2	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") 3-10D COMMON (3" X 0.148") 4-3" X 0.131" NAILS	FACE NAILS EACH RAFTER	
6	RAFTER OR ROOF TRUSS TO PLATE	3-16D BOX NAILS (3 1/2" 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 1/2" X 0.135); OR 3-10D COMMON (3" X 0.148") 4-10D BOX (3" X 0.128); OR 4-3" X 0.131" NAILS 3-16D (3 1/2" X 0.135); OR 2-16D COMMON (3 1/2" 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 1/2" 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 1/2" X 0.162")	16" OC FACE NAIL 12" OC FACE NAIL	
10	BUILT-UP HEADER (2" TO 2" HEADER WITH 1/2" SPACER)	16D COMMON (3 1/2" X 0.162") 16D BOX (3 1/2" X 0.135)	16" OC EACH EDGE FACE NAIL 12" OC EACH EDGE FACE NAIL	
11	CONTINUOUS HEADER TO STUD	5-8D BOX (2 1/2" X 0.113); OR 4-8D COMMON (2 1/2" X 0.131") 4-10D BOX (2" X 0.128")	TOE NAIL	
12	TOP PLATE TO TOP PLATE	16D COMMON (3 1/2" X 0.162") 10D BOX (3" X 0.128); OR 3" X 0.131" NAILS	16" OC FACE NAIL 12" OC FACE NAIL	
13	DOUBLE TOP PLATE SPLICE	8-16D COMMON (3 1/2" X 0.162); OR 12-16D BOX (3 1/2" X 0.135); OR 12-10D BOX (3" X 0.128); OR 12-3" X 0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE 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 1/2" X 0.162") 16D BOX (3 1/2" X 0.135); OR 3" X 0.131" NAILS	16" OC FACE NAIL 12" OC FACE NAIL	
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	4-8D BOX (2 1/2" X 0.113"); OR 3-16D BOX (2 1/2" X 0.135); OR 4-8D COMMON (2 1/2" X 0.131"); OR 3-10D BOX (3" X 0.128); OR 4-3" X 0.131" NAILS	TOE NAIL	
16	TOP OR BOTTOM PLATE TO STUD	3-16D BOX (3 1/2" X 0.135); OR 2-16D COMMON (3 1/2" X 0.162); OR 3-10D BOX (3" X 0.128); OR 3-3" X 0.131" NAILS	END NAIL	
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10D BOX (3" X 0.128); OR 2-16D COMMON (3 1/2" X 0.162); OR 3-3" X 0.131" NAILS	FACE NAIL	
18	1" BRACE TO EACH STUD AND PLATE	3-8D BOX (2 1/2" X 0.113); OR 2-8D COMMON (2 1/2" X 0.131); OR 2-10D BOX (2" X 0.128); OR 2 STAPLES 1 1/2" LONG	FACE NAIL	
19	1" X 6" SHEATHING TO EACH BEARING	3-8D BOX (2 1/2" X 0.113); OR 2-8D COMMON (2 1/2" X 0.131); OR 2-10D BOX (2" 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 1/2" X 0.113); OR 3-8D COMMON (2 1/2" X 0.131); OR 3-10D BOX (3" X 0.128); OR 4 STAPLES, 1" CROWN, 16GA., 1 1/2" LONG WIDER THAN 1" X 6"	FACE NAIL	
FLOOR				
21	JOIST TO SILL, TOP PLATE OR GIRDER	4-8D BOX (2 1/2" X 0.113); OR 3-8D COMMON (2 1/2" 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 1/2" X 0.113) 8D COMMON (2 1/2" X 0.131); OR 10D BOX (3" X 0.128); OR 3-3" X 0.131" NAILS	4" OC TOE NAIL 6" OC TOE NAIL	
23	1" X 6" SUBFLOOR OR LESS TO EACH JOIST	3-8D BOX (2 1/2" X 0.113); OR 2-8D COMMON (2 1/2" 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 3-16D 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 0.162); OR 10D BOX (3" X 0.128); OR 3" X 0.131" NAILS AND: 2-20D COMMON (4" X 0.162); OR 3-10D BOX (3" X 0.128); OR 3-3" X 0.131" NAILS	NAIL EACH LAYER AS FOLLOWS: 32" OC AT TIP AND BOTTOM AND STAGGERED ON OPPOSITE SIDES 24" OC FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES	
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-8D BOX (2 1/2" X 0.113); OR 3-8D COMMON (2 1/2" X 0.131); OR 3-10D BOX (3" X 0.128); OR 2-16D COMMON (3 1/2" X 0.162); OR 4-10D BOX (3" X 0.128); OR 4-3" X 0.131" NAILS	FACE NAIL AT END AND AT EACH SPACE	
29	BRIDGING OR BLOCKING TO JOIST	2-10D BOX (2" X 0.128); OR 2-8D COMMON (2 1/2" X 0.131); OR 2-3" X 0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL EACH END, TOE NAIL	
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{ASD}	SPACING OF FASTENERS	
WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING (SEE TABLE R602.3(3) FOR WOOD STRUCTURAL PANEL EXTERIOR WALL SHEATHING TO WALL FRAMING)				
30	3/8" - 1/2"	6D COMMON (2 1/2" X 0.113") NAIL (SUBFLOOR, WALL) 8D COMMON (2 1/2" X 0.131") NAIL (ROOF); OR RSRS-01 (2 1/2" X 0.113") NAIL (ROOF)	6	12"
31	1/2" - 1"	8D COMMON NAIL (2 1/2" X 0.131); OR RSRS-01 (2 1/2" X 0.113") NAIL (ROOF)	6	12"
32	1 1/8" - 1 1/4"	10D COMMON NAIL (3" X 0.148) NAIL; OR 8D (2 1/2" X 0.131") DEFORMED NAIL	6	12"
OTHER WALL SHEATHING				
33	1/2" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOF NAIL, 1/2" HEAD DIAMETER, OR 1 1/2" LONG 16GA. STAPLE WITH 1/2" OR 1" CROWN	3	6
34	5/8" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOF NAIL, 1/2" HEAD DIAMETER, OR 1 1/2" LONG 16GA. STAPLE WITH 1/2" OR 1" CROWN	3	6
35	3/2" GYPSUM SHEATHING	1 1/2" GALVANIZED ROOF NAIL, STAPLE GALVANIZED, 1 1/2" LONG; 1 1/2" SCREWS, TYPE W or S	7	7
36	5/8" GYPSUM SHEATHING	1 1/2" GALVANIZED ROOF NAIL, STAPLE GALVANIZED, 1 1/2" LONG; 1 1/2" SCREWS, TYPE W or S	7	7
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING				
37	3/8" AND LESS	6D DEFORMED (2" X 0.120") NAIL OR 8D COMMON (2 1/2" X 0.131") NAIL	6	12
38	3/8" - 1"	8D COMMON (2 1/2" X 0.131") NAIL OR 8D DEFORMED (2 1/2" X 0.120") NAIL	6	12
39	1 1/8" - 1 1/4"	10D COMMON (3" X 0.148) NAIL OR 8D DEFORMED (2 1/2" X 0.120") NAIL	6	12



1 SOLID FOOTING JUMP DETAIL
S5.0 NTS

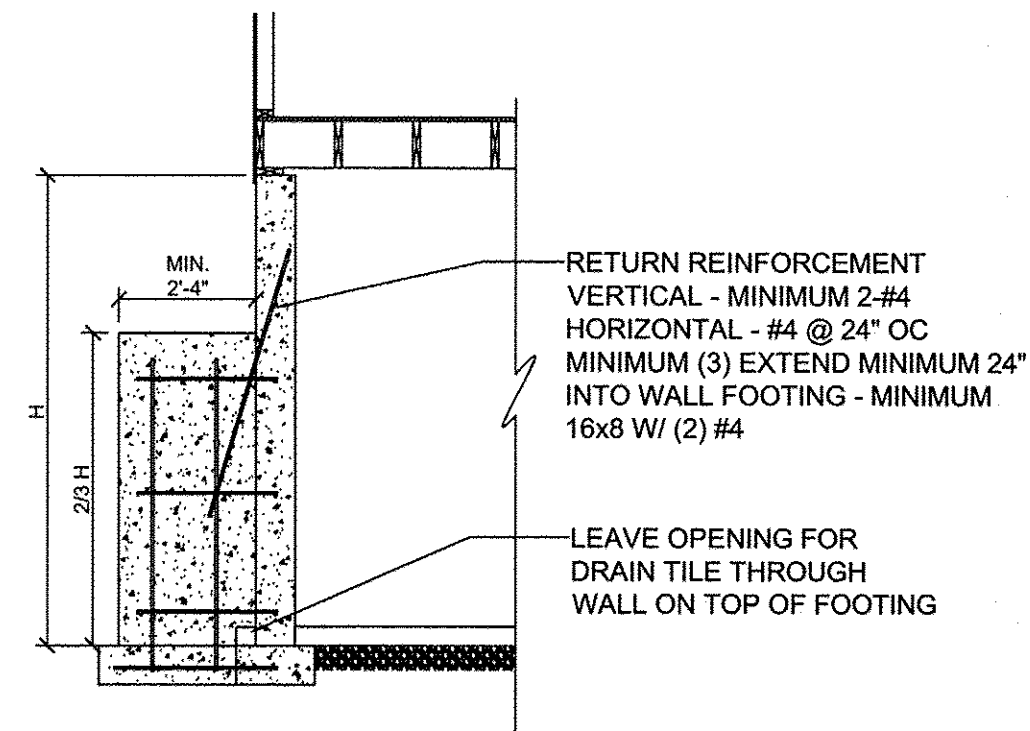


3 REINFORCEMENT AT CORNERS AND STEPS
S5.0 NTS

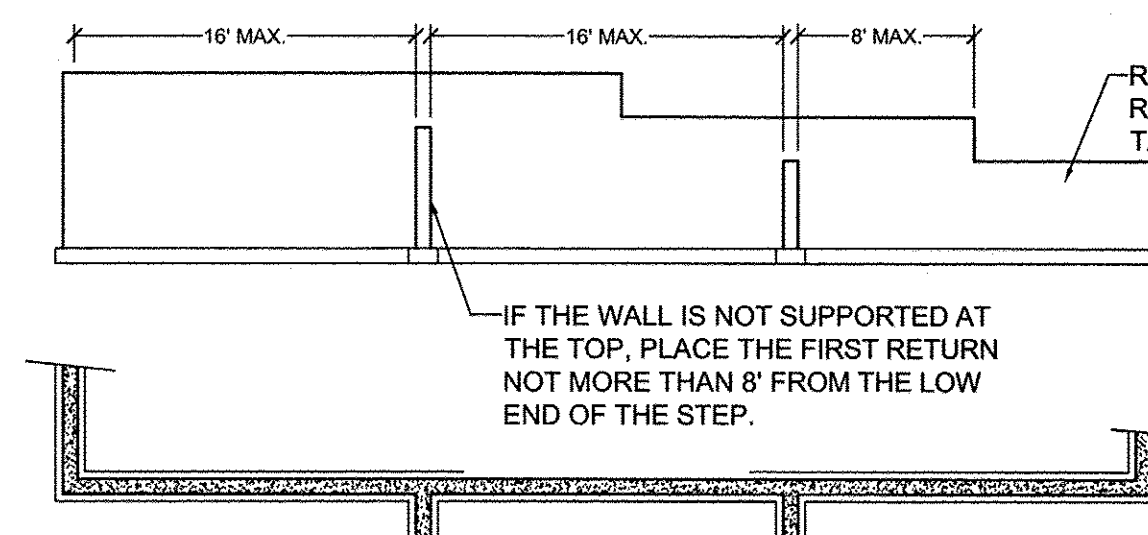


THIRD CAR SLAB OPTION
NTS

9 TYPICAL GARAGE SLAB
S5.0 NTS



2 RETURN WALL DETAIL
S5.0 NTS



4 RETURN WALL PLACEMENT
S5.0 NTS

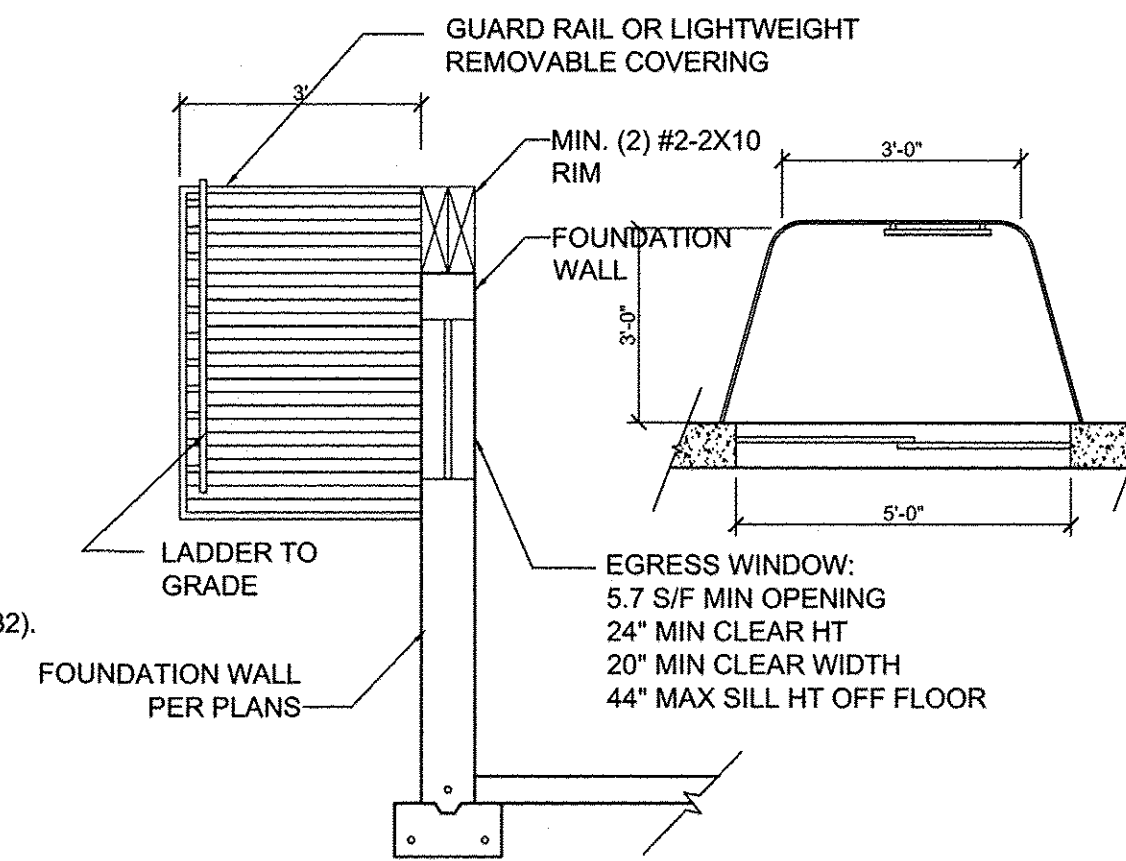
FOUNDATION WALL REINFORCEMENT

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

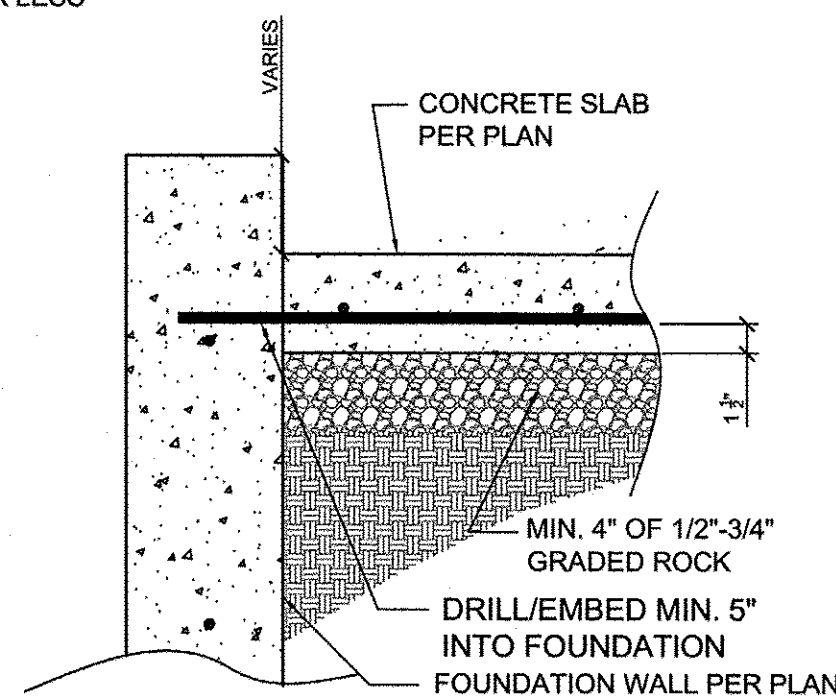
HORIZONTAL REINFORCEMENT**					
ONE BAR 12" FROM TOP OF WALL; MAX. SPACING 24" O.C.					
	4-#4	5-#4	4-#4	5-#4	6-#4

* 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.

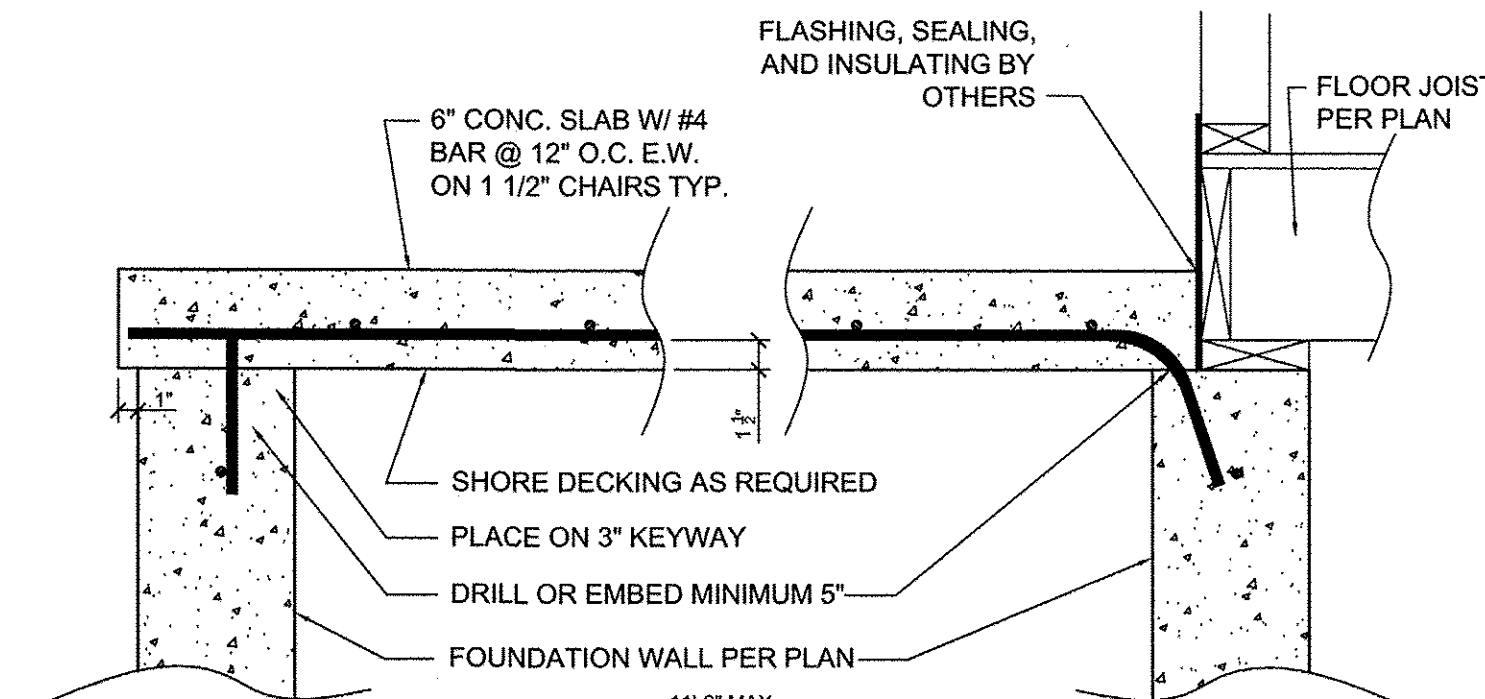
** #4 BARS @ 24" ON CENTER.
 ** #4 BAR WITHIN 12 OF TOP AND BOTTOM OF WALL.
 ** MINIMUM GRADE 40 (40ksi) STEEL (PER ACI 332).
 ** HORIZONTAL REINFORCEMENT SHALL BE INSTALLED ON THE COMPRESSION SIDE (SOIL SIDE) OF THE VERTICAL REINFORCEMENT



6 EGRESS WINDOW DETAIL
S5.0 NTS

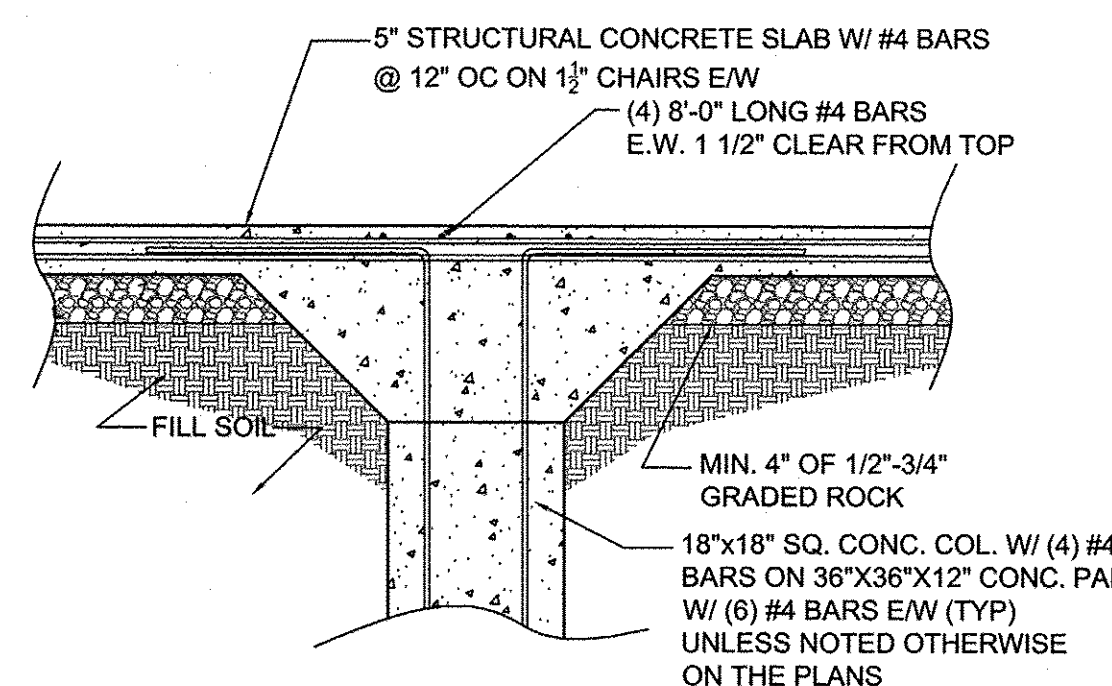


7 STRUCTURAL SLAB / WALL CONNECTION
S5.0 NTS

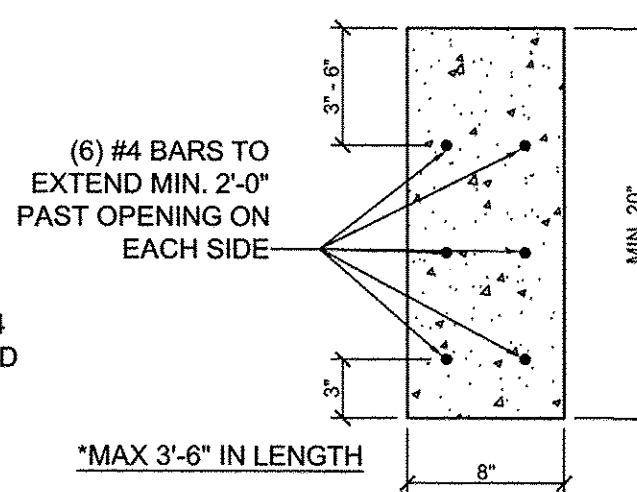


10 SUSPENDED PORCH STOOP SLAB
S5.0 SCALE: N.T.S.

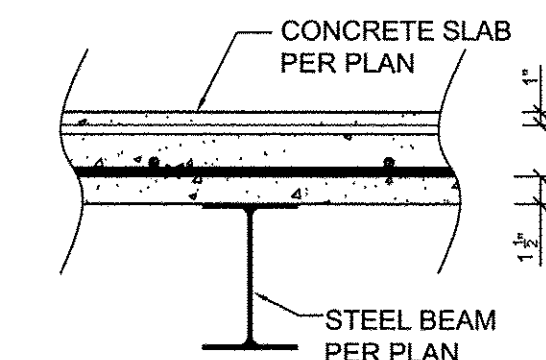
FOR SUSPENDED SLABS A MAXIMUM OF 10' ABOVE FLOOR BELOW: TEMPORARY SHORING WALLS SHALL BE PLACED AT A MAXIMUM OF 4' O.C./ #2-2X4 STUDS AT 16" O.C. W/ TOP AND BOTTOM PLATE. WALL TO HAVE CONTINUOUS DIAGONAL BRACING. LATERAL BRACING TO BE RUN FROM WALL TO WALL AT MID HEIGHT 4' ON CENTER. SHORING TO REMAIN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



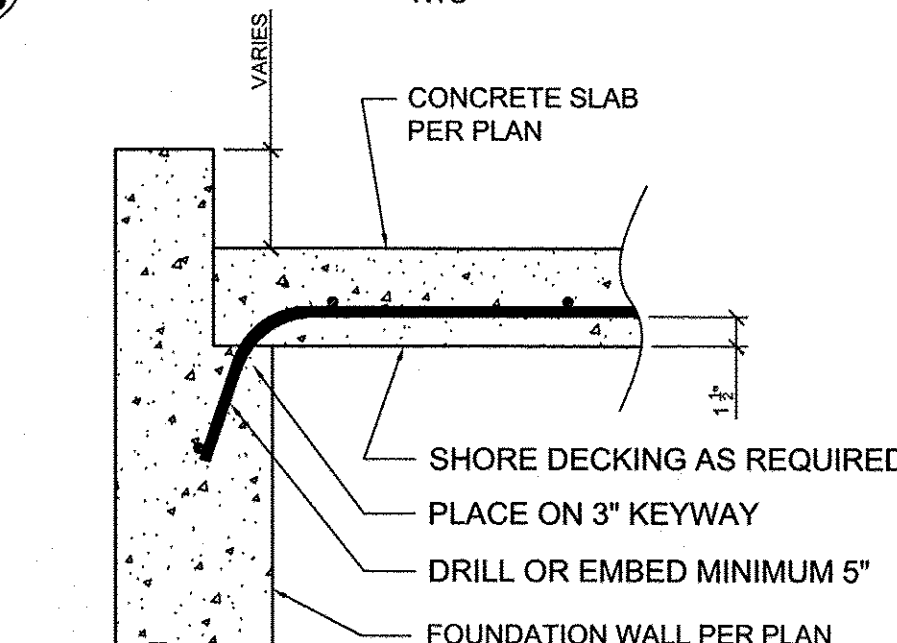
8 STRUCTURAL GARAGE COLUMN DETAIL
S5.0 NTS



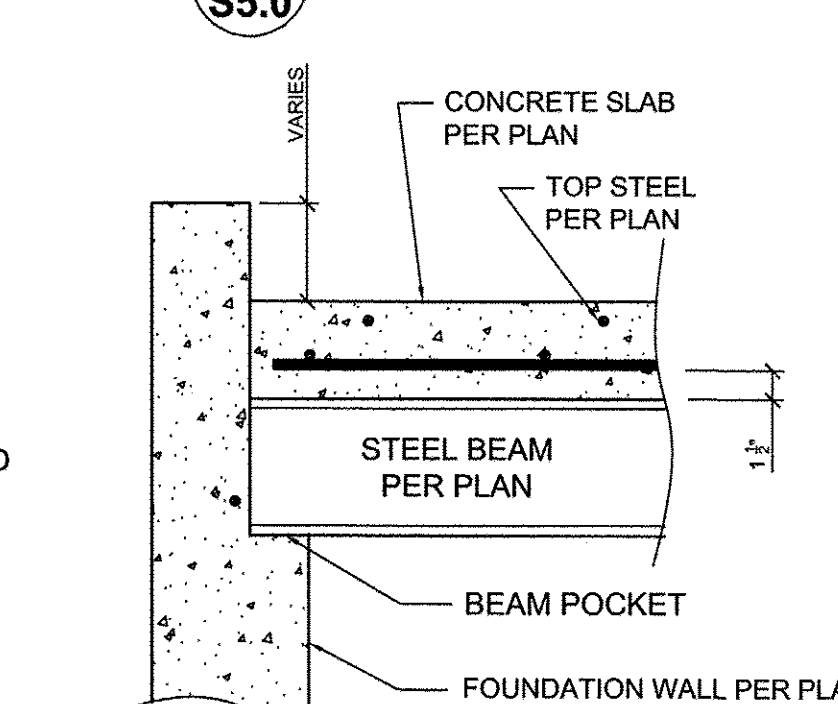
11 CONCRETE HEADER DETAIL
S5.0 NTS



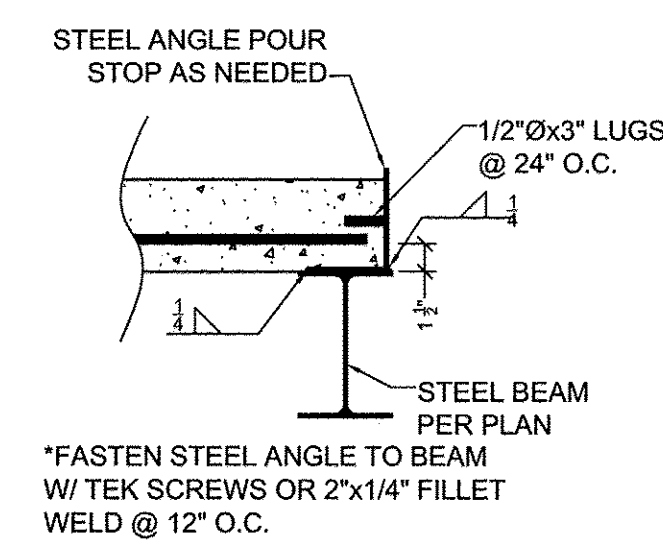
12 SUSPENDED SLAB / STEEL BEAM CROSS SECTION
S5.0 NTS



13 SUSPENDED SLAB / WALL CONNECTION
S5.0 NTS

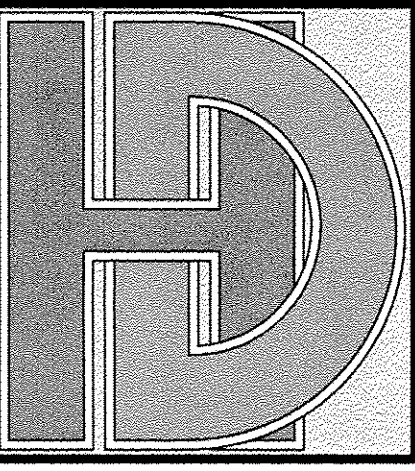


14 SUSPENDED SLAB BEAM/WALL SECTION
S5.0 NTS

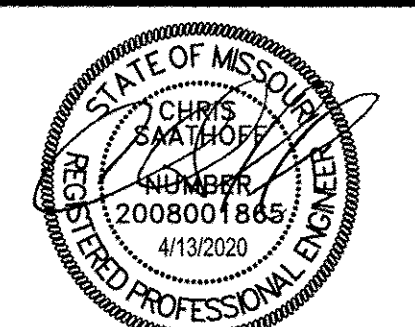


15 SUSPENDED SLAB POUR STOP CROSS SECTION
S5.0 NTS

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.



HD ENGINEERING & DESIGN, INC.
www.hdengineers.com
11656 W 75TH ST
SHAWNEE, KS 66214
V: 913-631-2222
F: 800-780-8608
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KS. COA. # E1312
MO. COA. # 2006034946-F

CAPITAL CONSTRUCTION
LANCASTER REV 1.5 LOT 293 PARK RIDGE
1866 NE PARK RIDGE DR LEE'S SUMMIT, MO
STRUCTURAL DETAILS

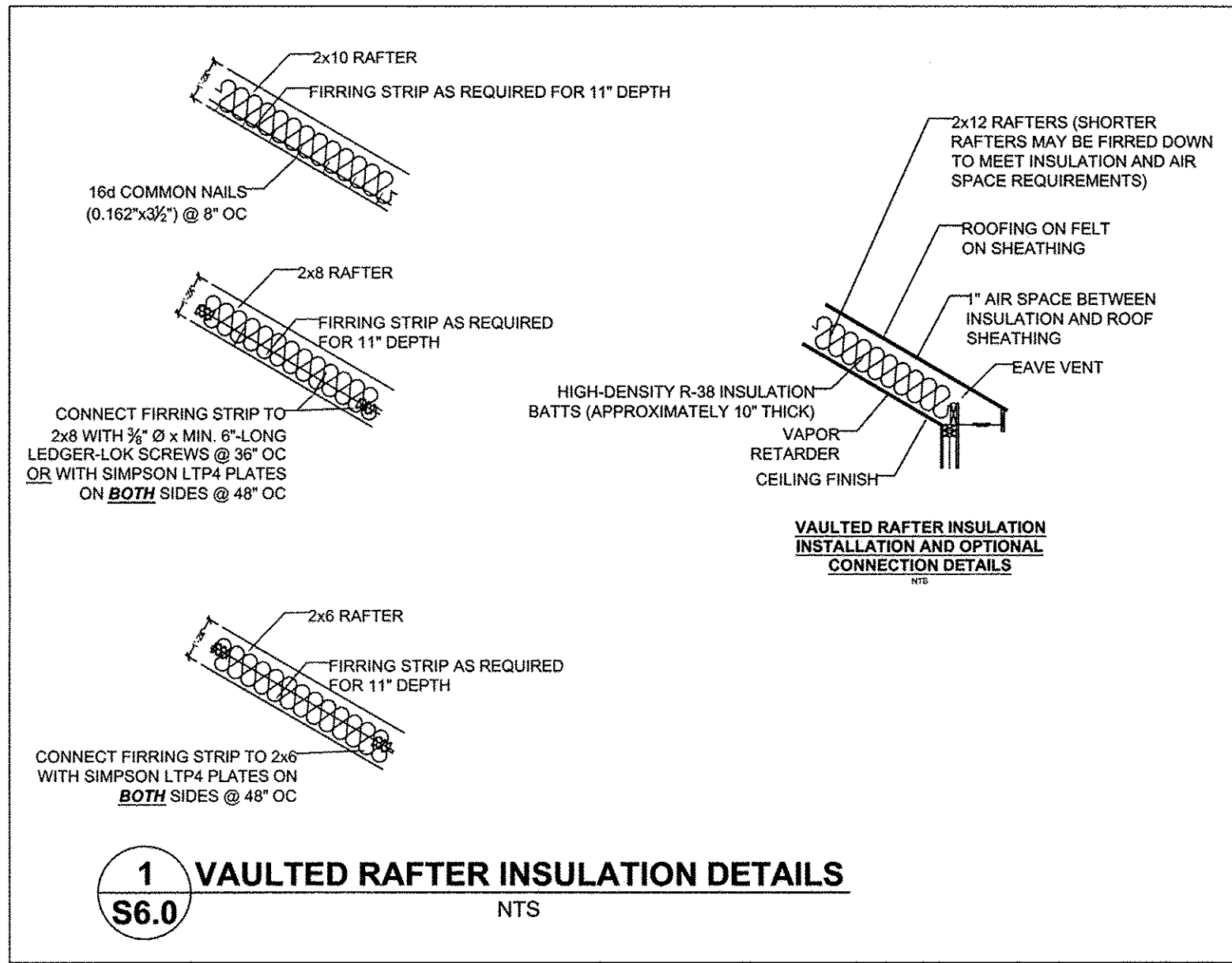
REVISION TABLE

NO.	DATE	DESCRIPTION

Date: 4/13/2020
 HD #: 39041
 Drawn by: AWH
 Reviewed by: CLS

STRUCTURAL DETAILS

SHEET NO. 1 OF 1
 FOR CONSTRUCTION
 AS NOTED ON PLANS REVIEW
 CODES ADMINISTRATION
 JEFFERSON COUNTY, MISSOURI
 04/24/2020



CATHEDRAL / VAULTED CEILING FRAMING AND INSULATION				
MINIMUM R-38 INSULATION REQUIRED				
WHERE THE CEILING IS APPLIED DIRECTLY TO THE BOTTOM OF THE RAFTERS, A MINIMUM 1" AIR SPACE SHALL BE PROVIDED BETWEEN THE TOP OF THE INSULATION AND THE SHEATHING FOR VENTILATION (R806.3)				
NOTE: RAFTER SIZES SPECIFIED ON PLANS ARE THE MINIMUM REQUIRED FOR STRUCTURAL PURPOSES ONLY.				
BUILDER TO VERIFY: IF FULL RAFTER DEPTH IS NOT ADEQUATE FOR MINIMUM INSULATION VALUE, RAFTER SIZES WILL NEED TO BE INCREASED, OR ADEQUATE FURRING SHALL BE USED TO OBTAIN THE MINIMUM JOIST DEPTH FOR THE REQUIRED INSULATION. IN ADDITION, IF THE RAFTER SIZE IS INCREASED IT SHALL BE VERIFIED THAT THE RIDGE BE A MINIMUM OF ONE NOMINAL SIZE LARGER THAN THE RAFTERS BEING RECEIVED. (SEE CHART BELOW)				
MAXIMUM INSULATION VALUE	2x6	2x8	2x10	2x12
1" AIR SPACE (FIBERGLASS)	R-13 3 1/2"	R-19 6 1/4"	CONDENSED R-38 8 1/4"	R-38 10 1/4"

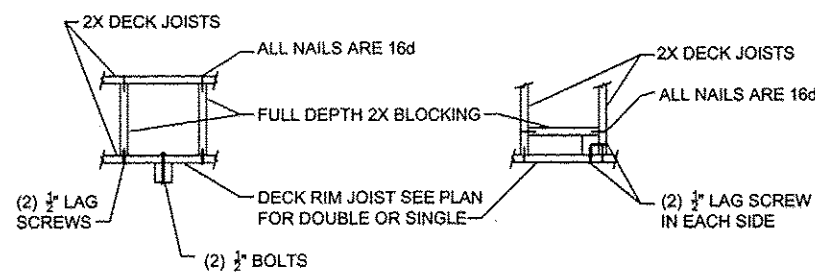
MINIMUM INSULATION & FENSTRATION VALUES BY COMPONENT, PER IRC2018 N1102.1.2

CLIMATE ZONE	FENSTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED SHGC FENSTRATION	INSULATED METAL DOOR U-VALUE	INSULATED WOOD DOOR U-VALUE	CEILING R-VALUE	WOOD FRAMED WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE	DUCTWORK OVER OUTSIDE R-VALUE	DUCTWORK (ALL OTHER) R-VALUE
4 EXCEPT MARINE	0.32	0.55	0.40	0.60	0.50	49	15	19	10 CONTINUOUS OR 13 CAVITY	R-10 2 FT.	10 CONTINUOUS OR 13 CAVITY	8	6

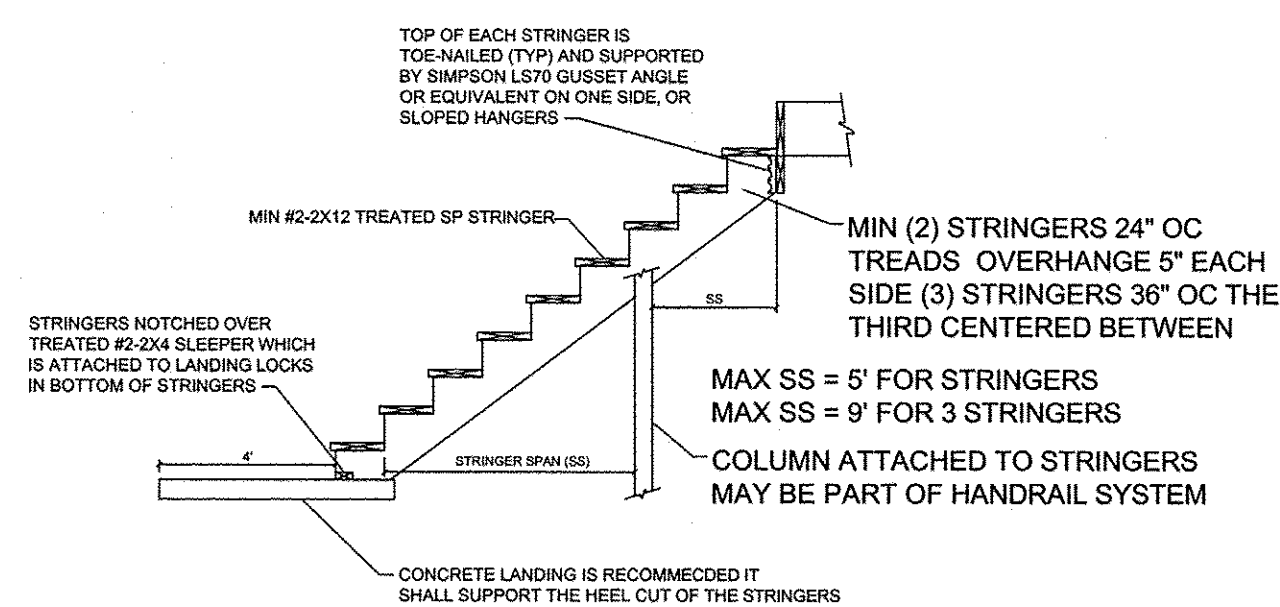
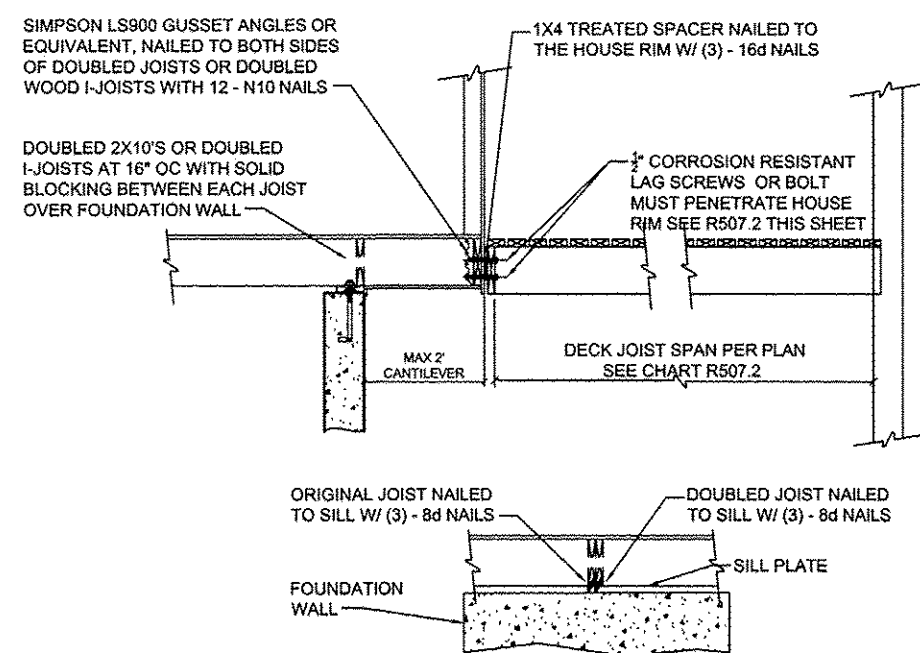
MINIMUM MECHANICAL EQUIPMENT EFFICIENCY VALUES BY COMPONENT, PER IRC2018 N1103.6.1

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

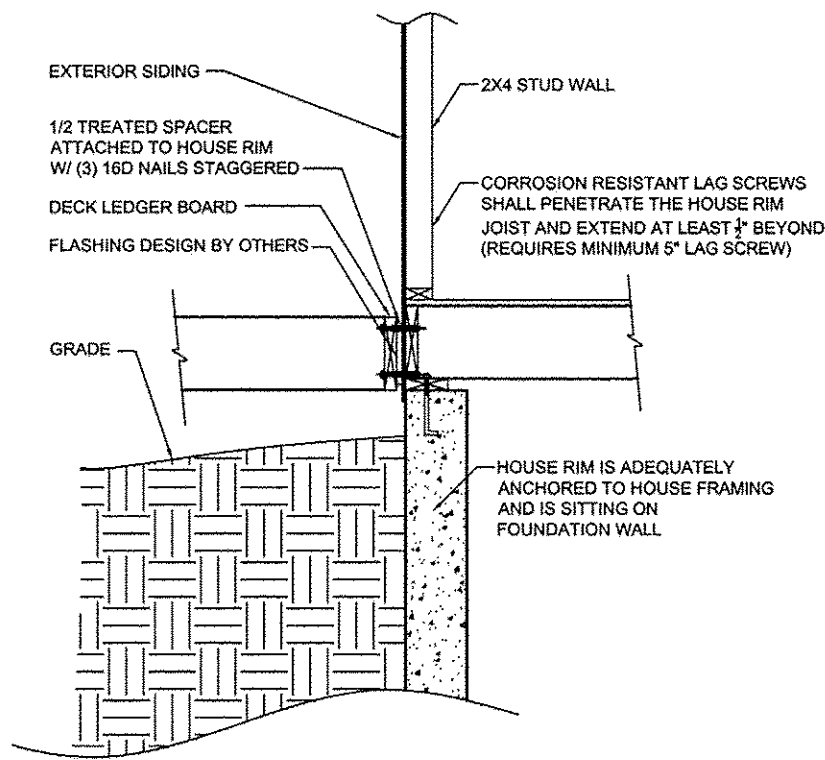
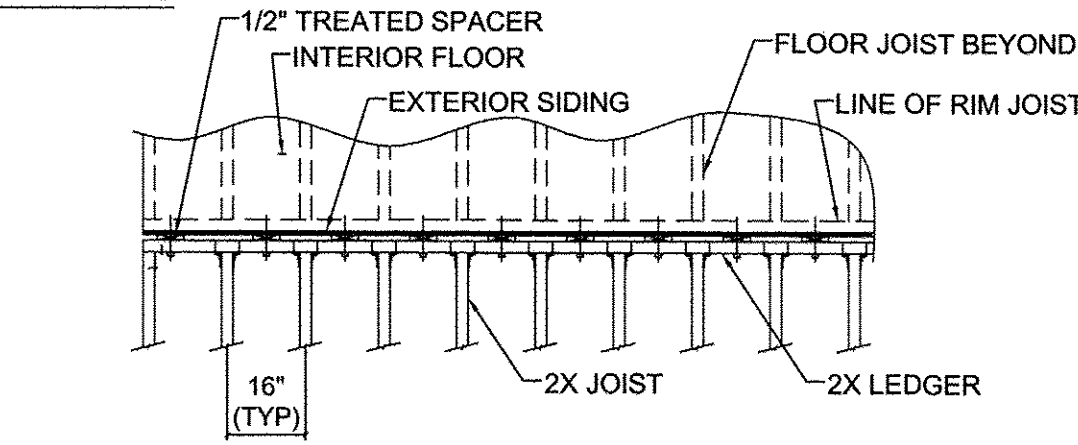
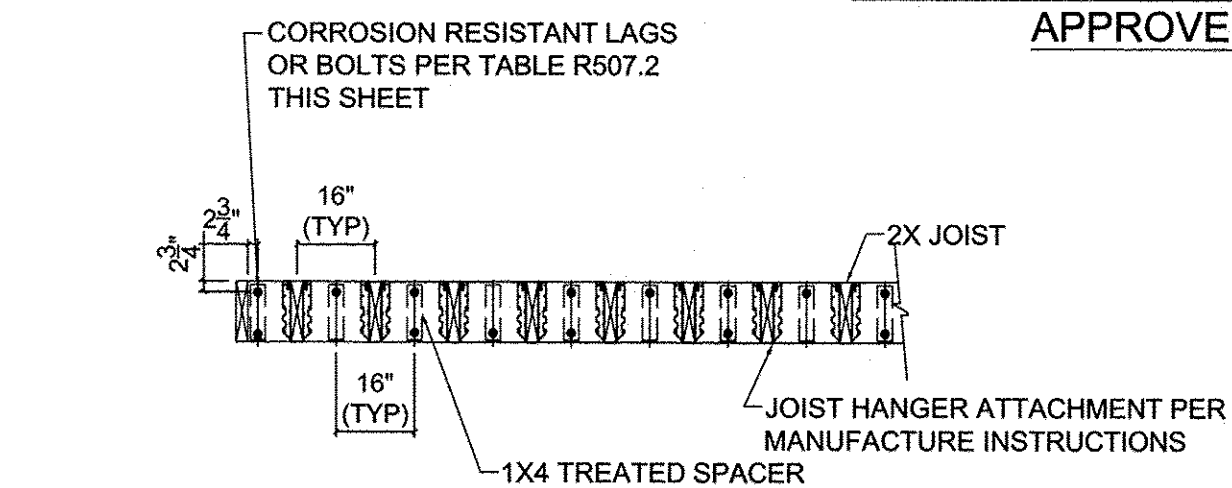
For SI: 1 cubic foot per min = 28.3 L/min.
a. When tested in accordance with HVI Standard 916.



- NOTES:
- BUILDING THERMAL ENVELOPE IS REQUIRED TO BE SEALED WITH AN AIR BARRIER AS PER N1102.4.1 OF THE 2012 IRC
 - RECESSED LIGHTING SHALL BE SEALED TO PREVENT LEAKAGE BETWEEN THE CONDITIONED SPACE AND UNCONDITIONED SPACE
 - ALL DUCTS, AIR HANDLERS, FILTER BOXES, AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED AS PER N1103.2 OF THE 2012 IRC



DECK DETAILS ARE ONLY APPLICABLE WHEN DECK IS SHOWN AND DESIGNED ON APPROVED PLANS



DECK POST NOTE

ALL POST SUPPORTING ROOF LOADS SHALL BE CONTINUOUS FROM THE PIER CONNECTION TO THE ROOF SUPPORTING STRUCTURE. IF POST SPLICES ARE REQUIRED THE SPLICE SHALL BE ENGINEERED BY THE ENGINEER OF RECORD FOR THE PROJECT

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

JOIST SPAN	6' AND LESS	6'-1" TO 8'	8'-1" TO 10'	10'-1" TO 12'	12'-1" TO 14'	14'-1" TO 16'	16'-1" TO 18'
CONNECTION DETAILS	ON-CENTER SPACING OF FASTENERS**						
1/2" LAG SCREW WITH 15/32" MAX. SHEATHING**	30	23	18	15	13	11	10
1/2" DIAM. BOLT WITH 15/32" MAX. SHEATHING*	36	36	34	29	24	21	19
1/2" DIAM. BOLT WITH 15/32" MAX. SHEATHING & 1/2" STACKED WASHERS*	36	36	29	24	21	18	16

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

- a. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.
b. Snow load shall not be assumed to act concurrently with live load.
c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
d. Sheathing shall be wood structural panel or solid sawn lumber.
e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard lumber or foam sheathing. Up to 3/4 inch thickness of stacked washers shall be permitted to substitute for you to 3/4 inch of allowable sheathing thickness where combined with wood structural panel or lumbers sheathing.

TABLE IRC2018 R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLT IN DECK LEDGERS ADN BAND JOISTS

	MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS			
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
LEDGER*	2 inches*	3/4 inches	2 inches*	1 3/8 inches*
BAND JOIST*	3/4 inches	2 inches	2 inches*	1 3/8 inches*

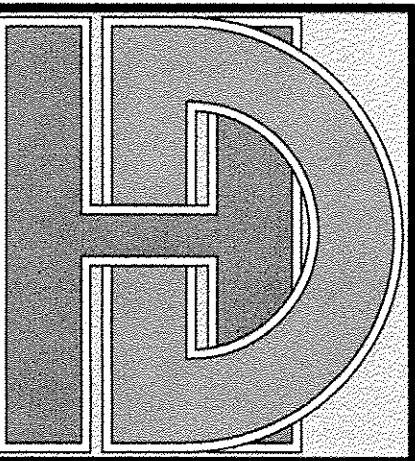
- For SI: 1 inch = 25.4mm.
a. Lag screws of bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1)
b. Maximum 5 inches
c. For engineered rim joists, the manufacturer's recommendations shall govern.
d. The minimum distances from bottom row of lag screws or bolts to the top of the ledger shall be in accordance with Figure R507.9.1.3(1)

DUCT SEALING METHOD, PER IRC2018 W1103.3.2

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

EXCEPTIONS:

- AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT SEALS.
 - WHERE A DUCT CONNECTION IS MADE THAT IS PARTIALLY INACCESSIBLE, THREE SCREWS OR RIVETS SHALL BE EQUALLY SPACED ON THE EXPOSED PORTION OF THE JOINT SO AS TO PREVENT A HINGE EFFECT.
 - CONTINUOUSLY WELDED AND LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS IN DUCTS OPERATING AT STATIC PRESSURE LESS THAN 2 INCHES OF WATER COLUMN (500 Pa) PRESSURE CLASSIFICATION SHALL NOT REQUIRE ADDITIONAL CLOSURE SYSTEMS.
 - DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING:
 - POSTCONSTRUCTION TEST: TOTAL LEAKAGE SHALL NOT BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100FT² (9.29m²) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST.
 - ROUGH-IN TEST: TOTAL AIR LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100FT² (9.29m²) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL AIR LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM (85 L/MIN) PER 100FT² (9.29m²) OF CONDITIONED FLOOR AREA.
- EXCEPTION: THE TOTAL LEAKAGE IS NOT REQUIRED FOR DUCTS AND AIR HANDLERS LOCATED ENTIRELY WITHIN THE BUILDING THERMAL ENVELOPE.



HD ENGINEERING & DESIGN, INC.
www.hdenigneers.com
11656 W 75TH ST
SHAWNEE, KS 66214
V: 913-631-2222
F: 800-790-8608

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

CAPITAL CONSTRUCTION
LANCASTER REV 1.5 LOT 293 PARK RIDGE
1866 NE PARK RIDGE DR LEE'S SUMMIT, MO
STRUCTURAL DETAILS

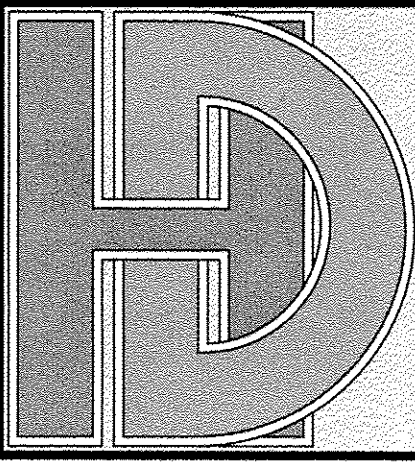
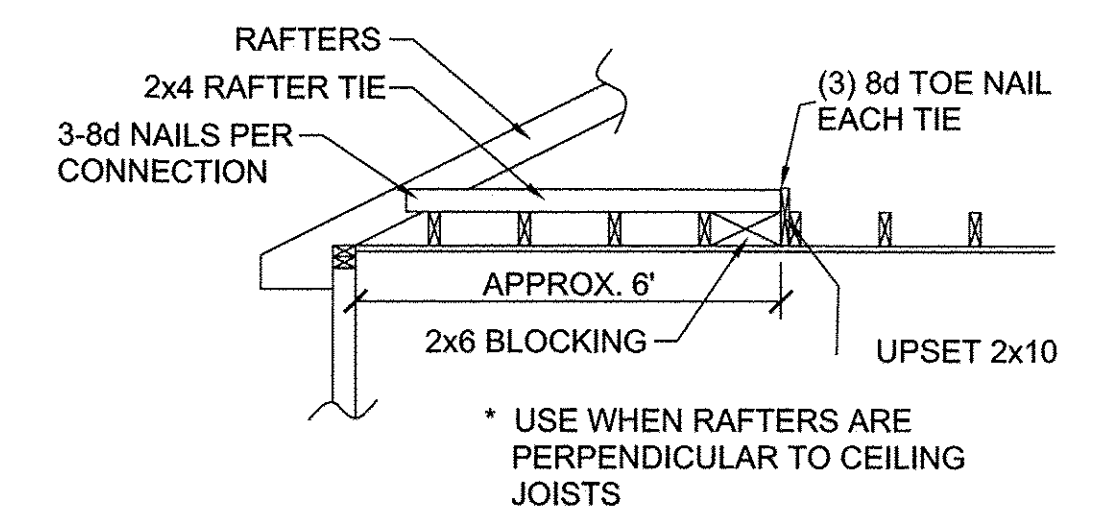
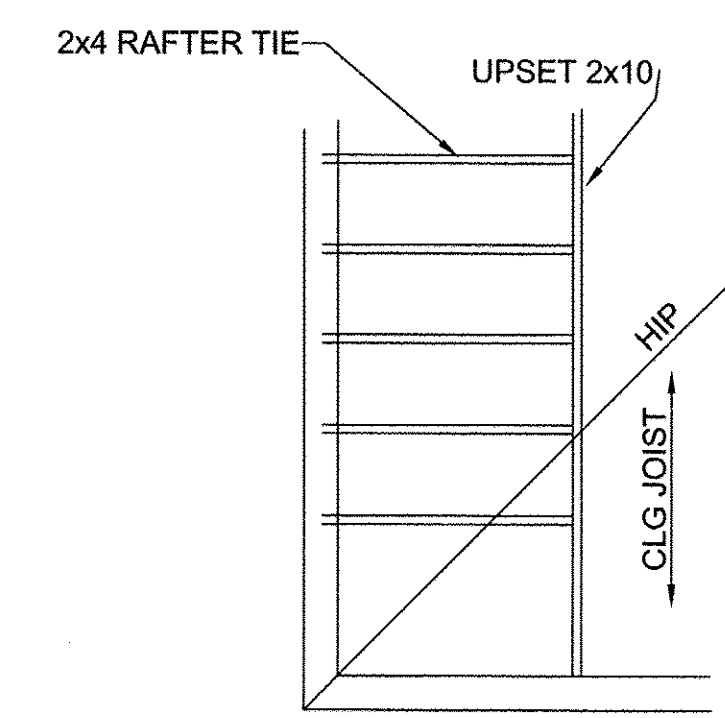
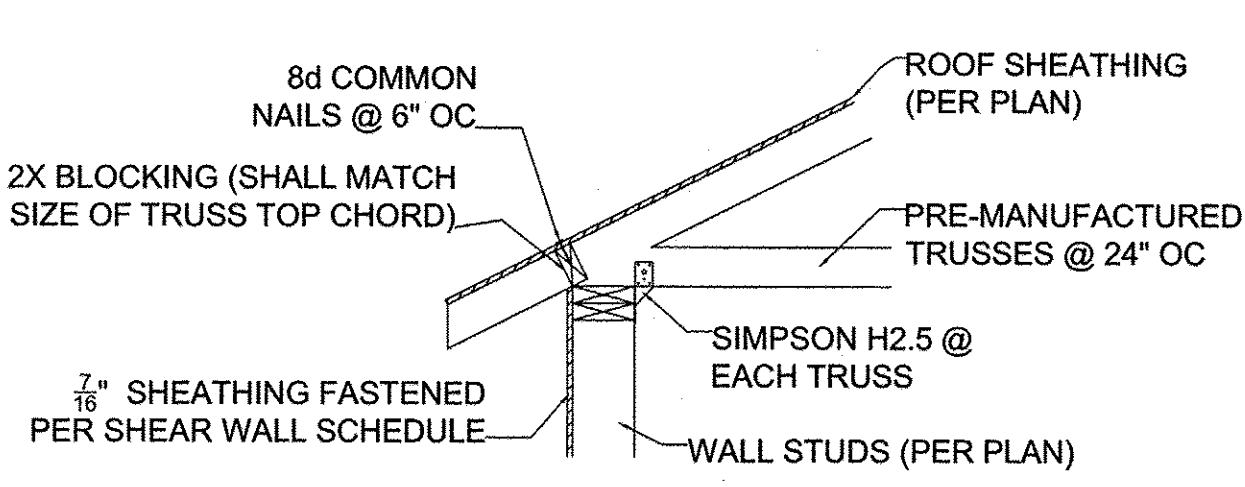
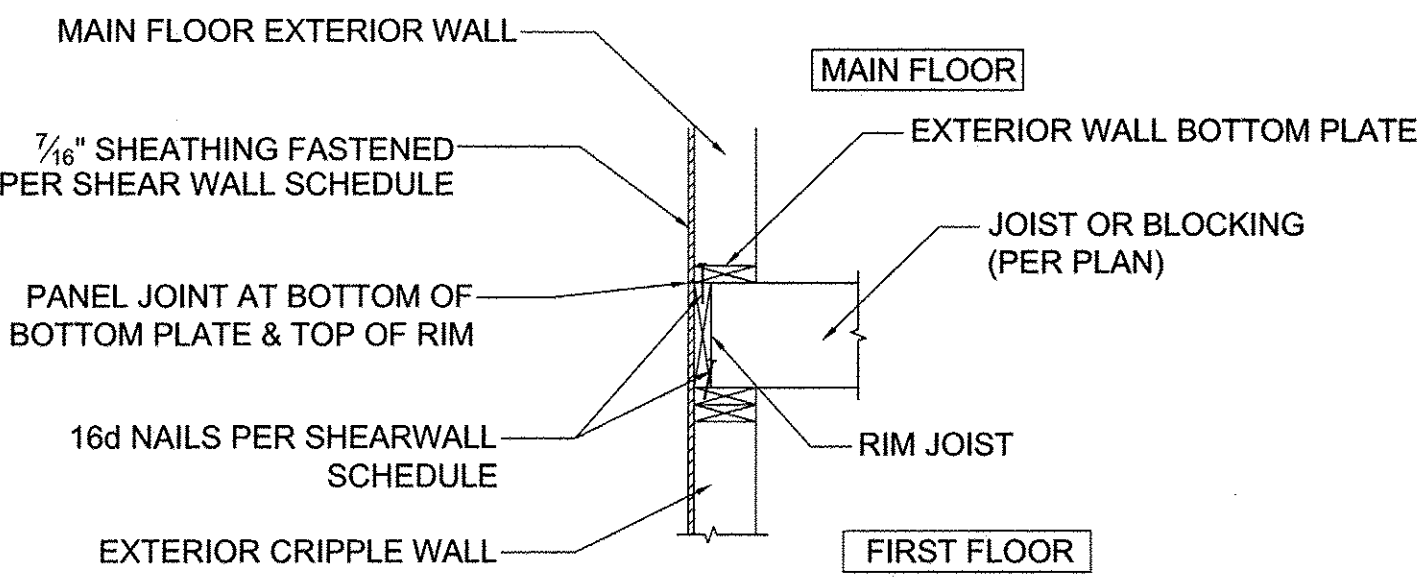
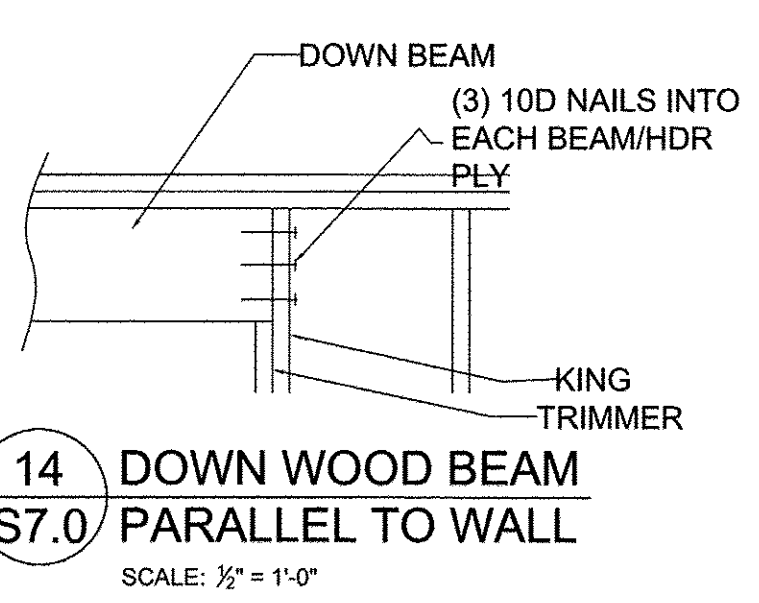
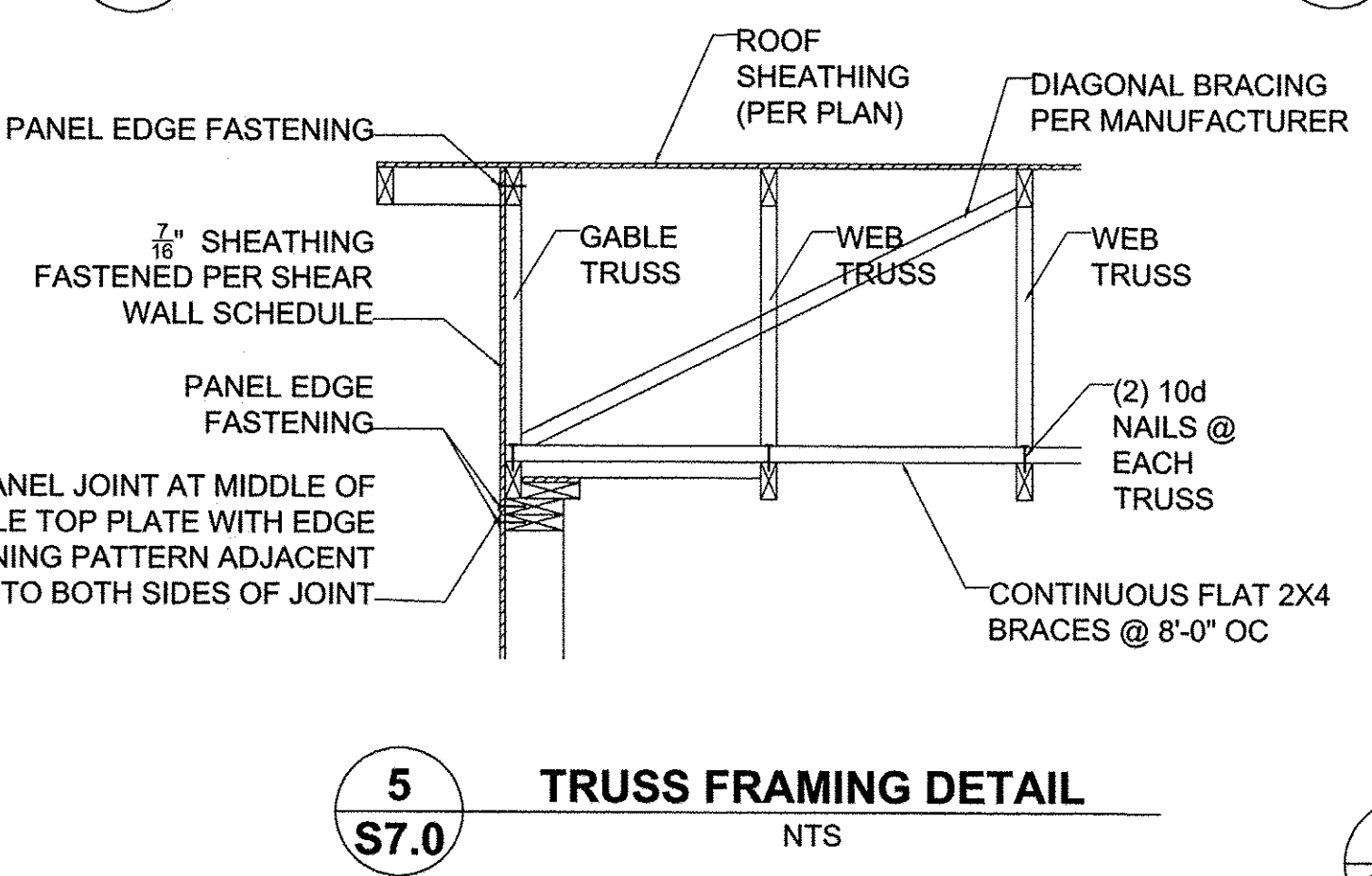
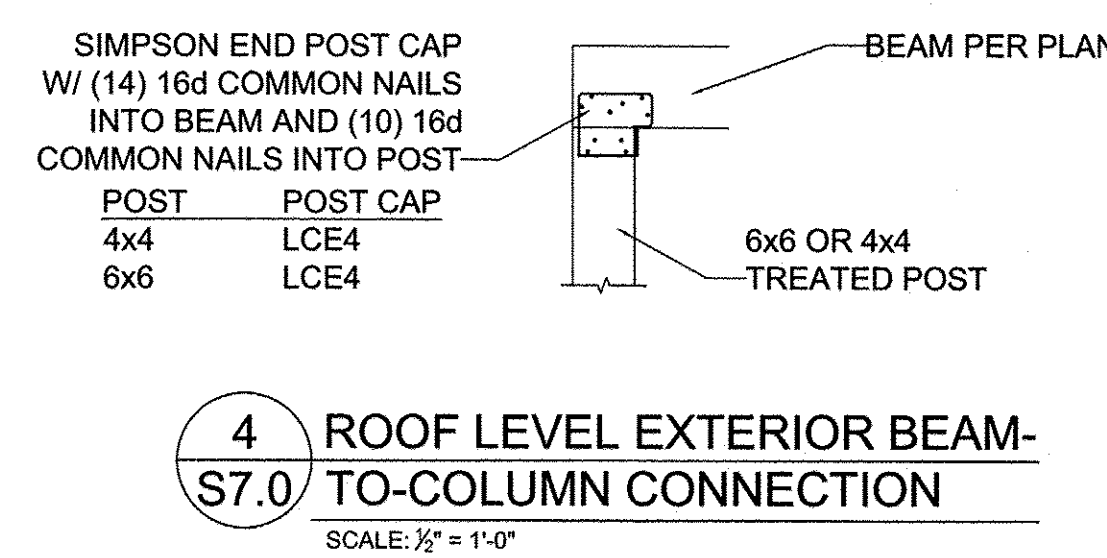
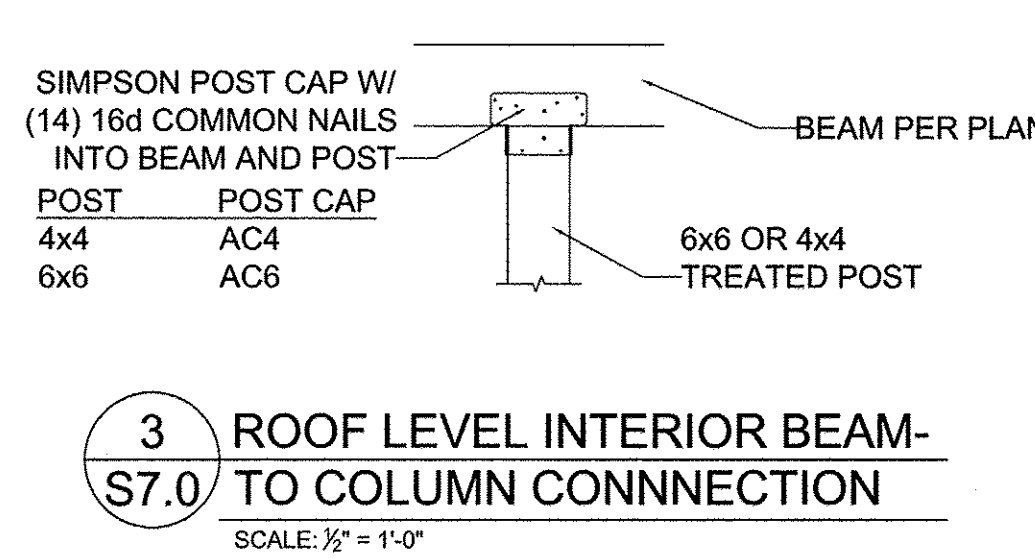
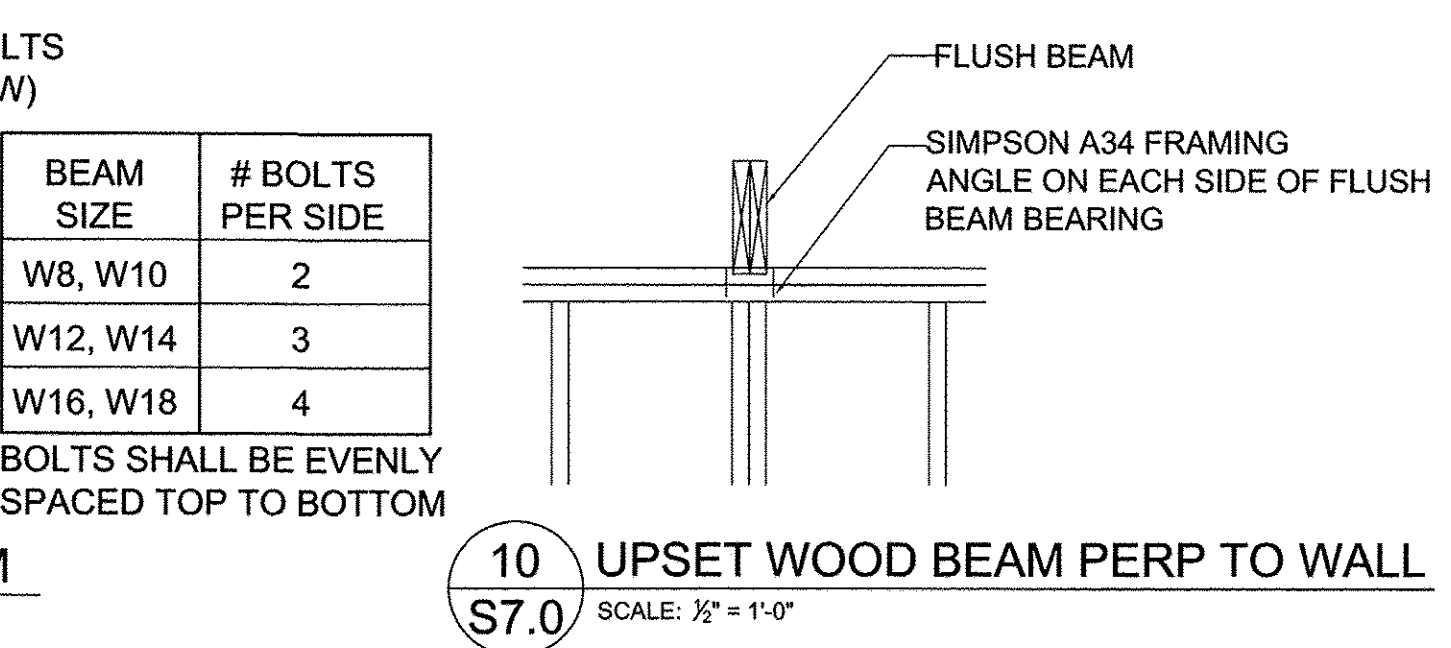
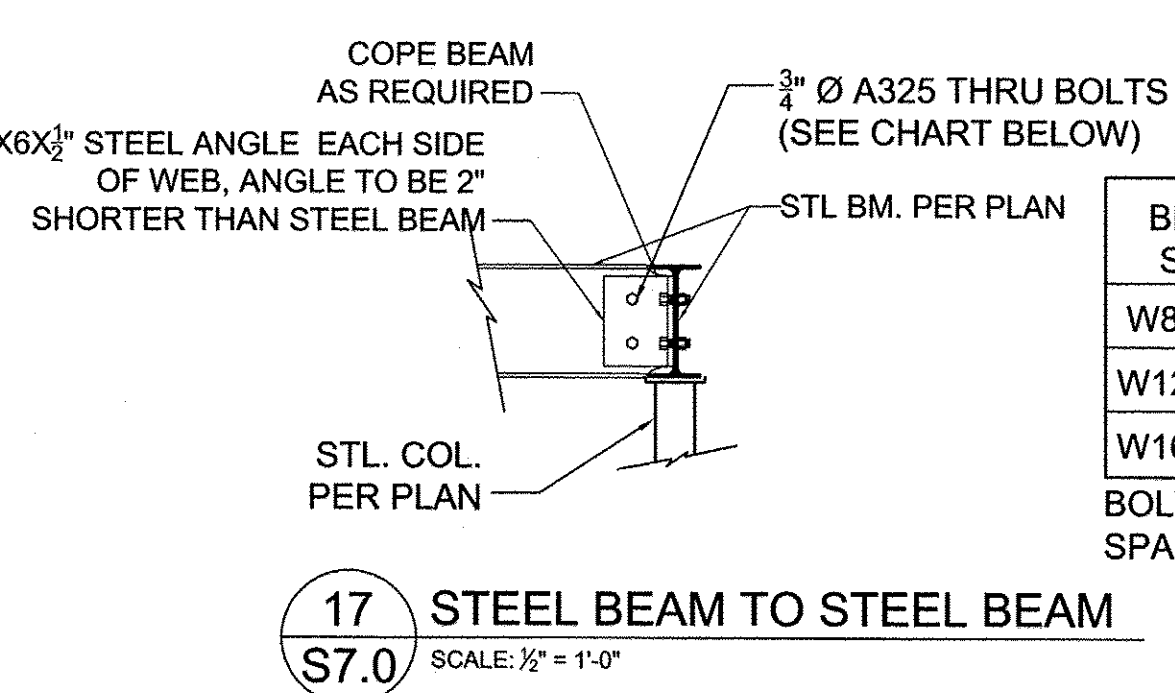
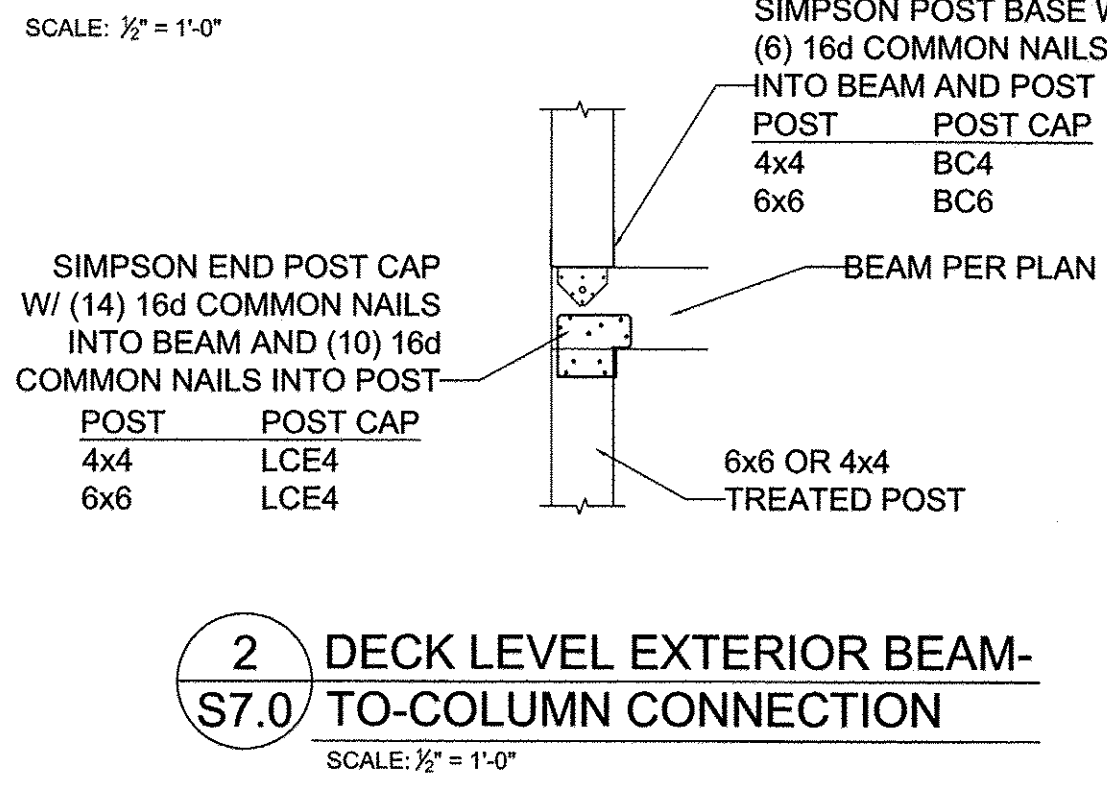
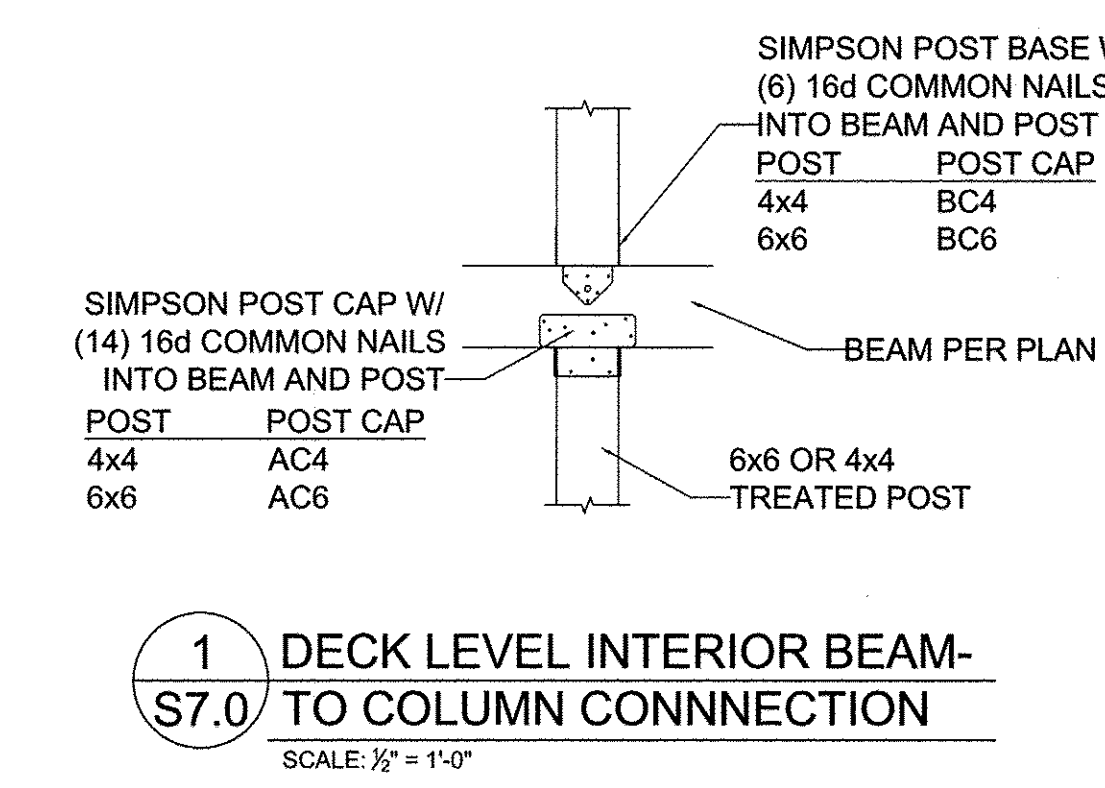
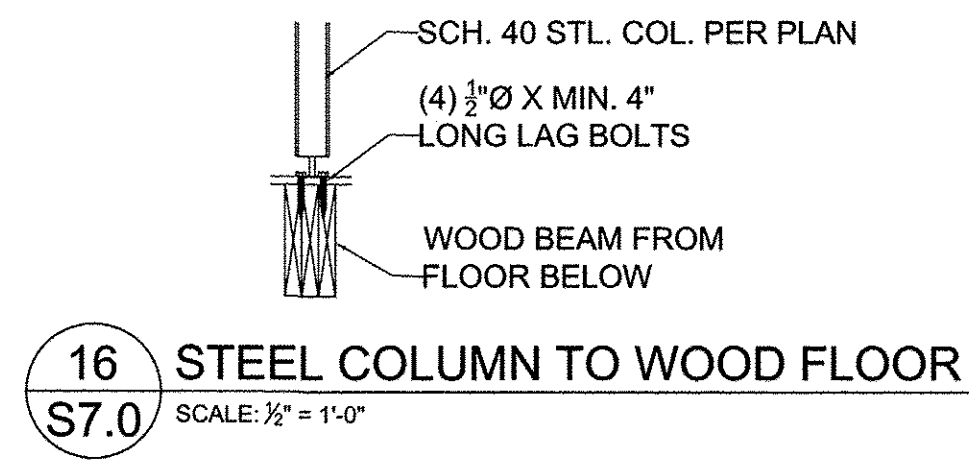
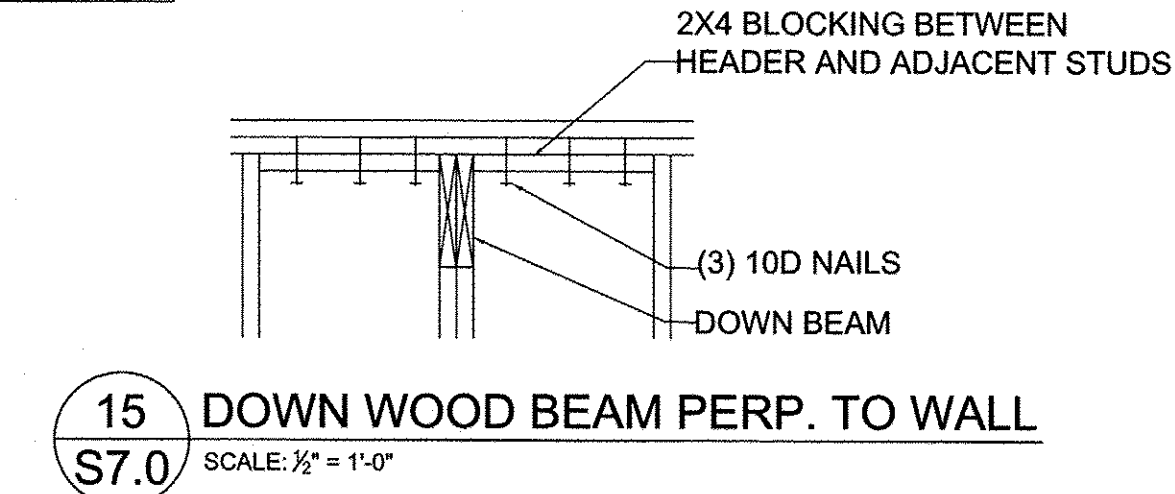
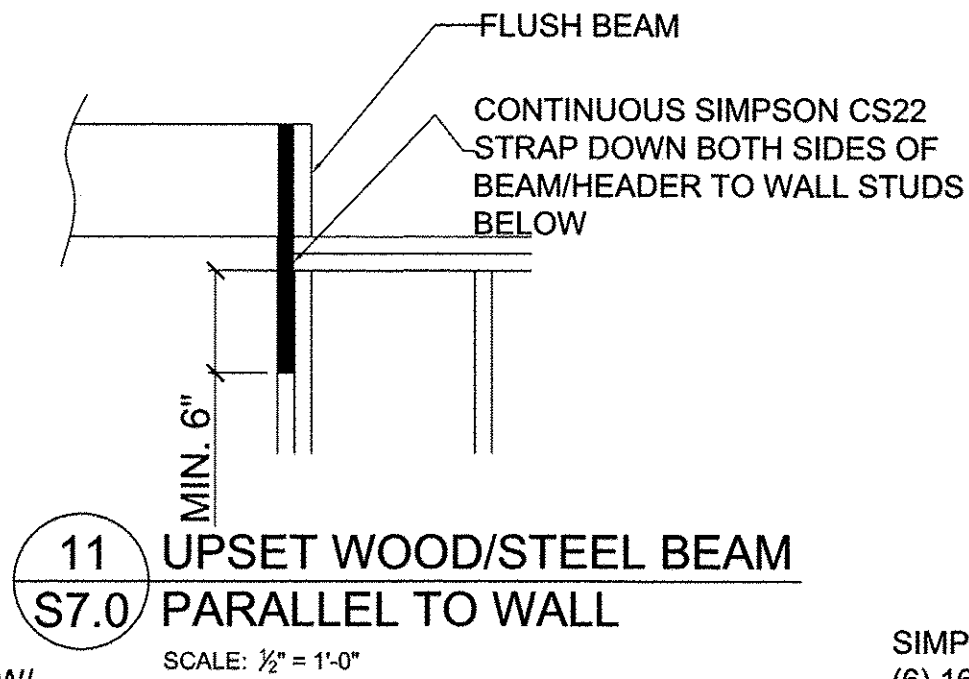
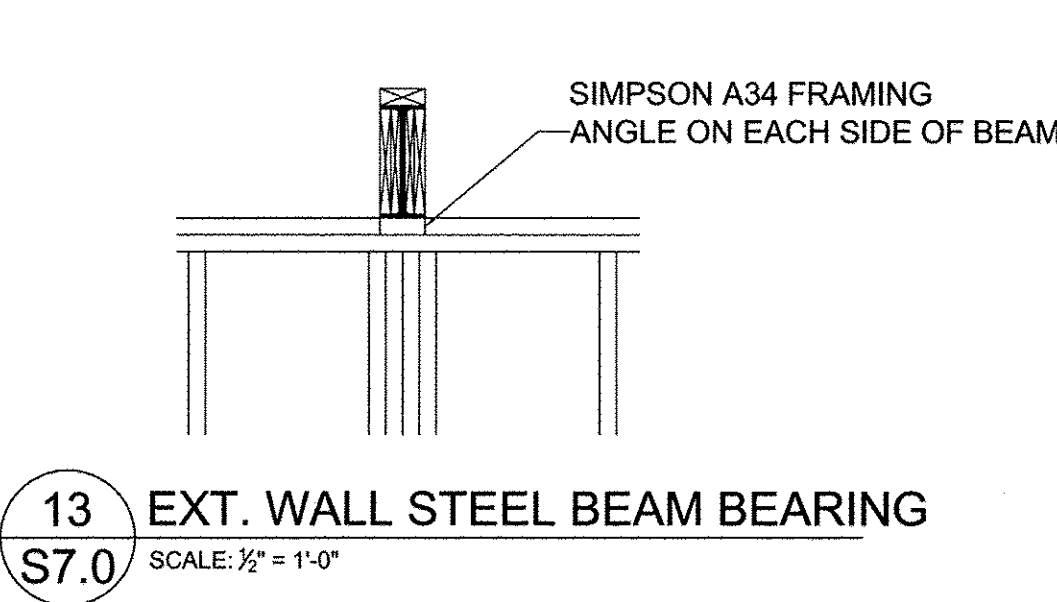
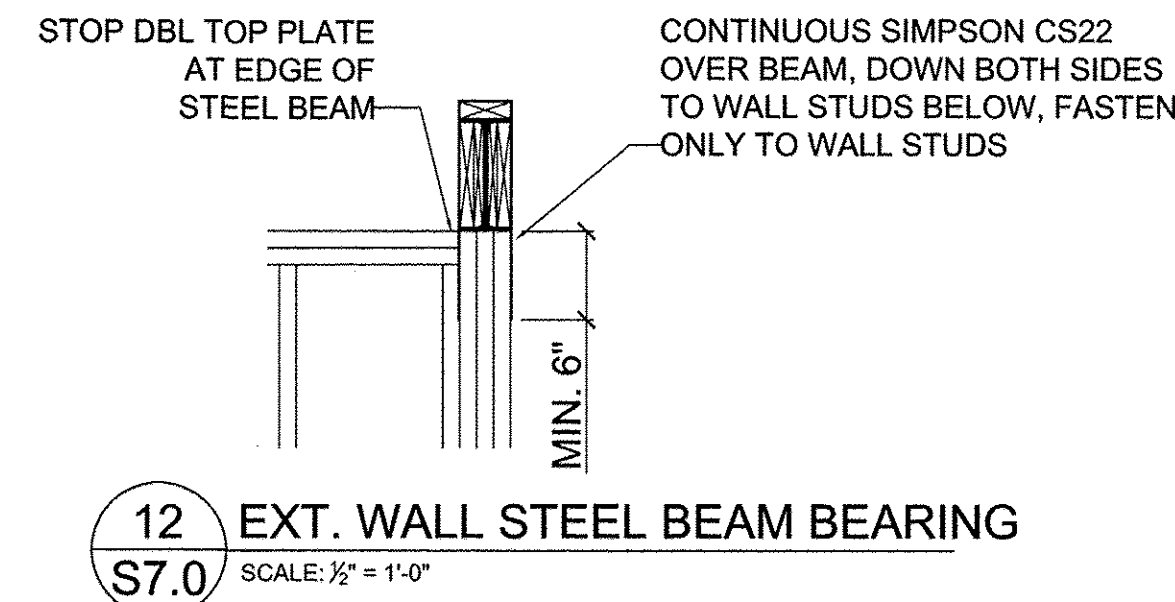
REVISION TABLE

Date: 4/13/2020
HD #: 39041
Drawn by: AWH
Reviewed by: CLS

STRUCTURAL DETAILS
SHEET NUMBER: 56.0
RELEASE FOR CONSTRUCTION
AS NOTED ON THIS REVIEW
CITY ADMINISTRATION
PLANNING & ZONING DEPARTMENT
4/24/2020

9 WOOD BEAM ON TOP OF OTHER

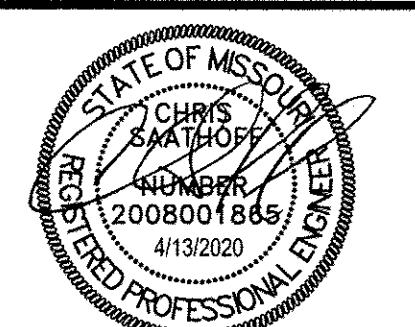
S7.0 SCALE: 1/2" = 1'-0"



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Date: 4/13/2020
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Reviewed by: CLS

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SHEET NUMBER:
RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEWED
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
S-7.0
04/24/2020