

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

APPROVED
Limited building only review
Permit holder responsible for
full compliance with the code

04/24/2020

Barbara



Purchaser must verify all dimensions and conditions before beginning construction.

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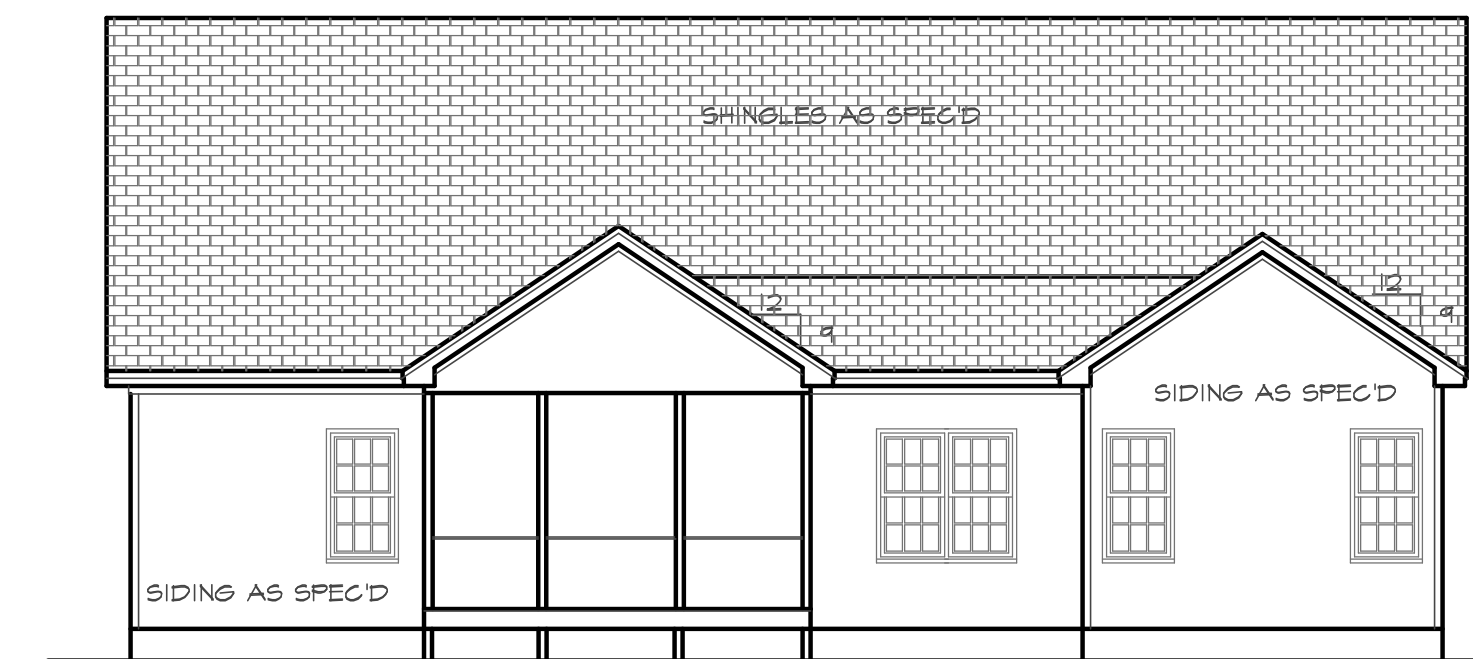
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FRONT ELEVATION

THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

NC (2018 NRC) | Wind | 115 - 120 mph



REAR ELEVATION

SCALE 1/8" = 1'0"

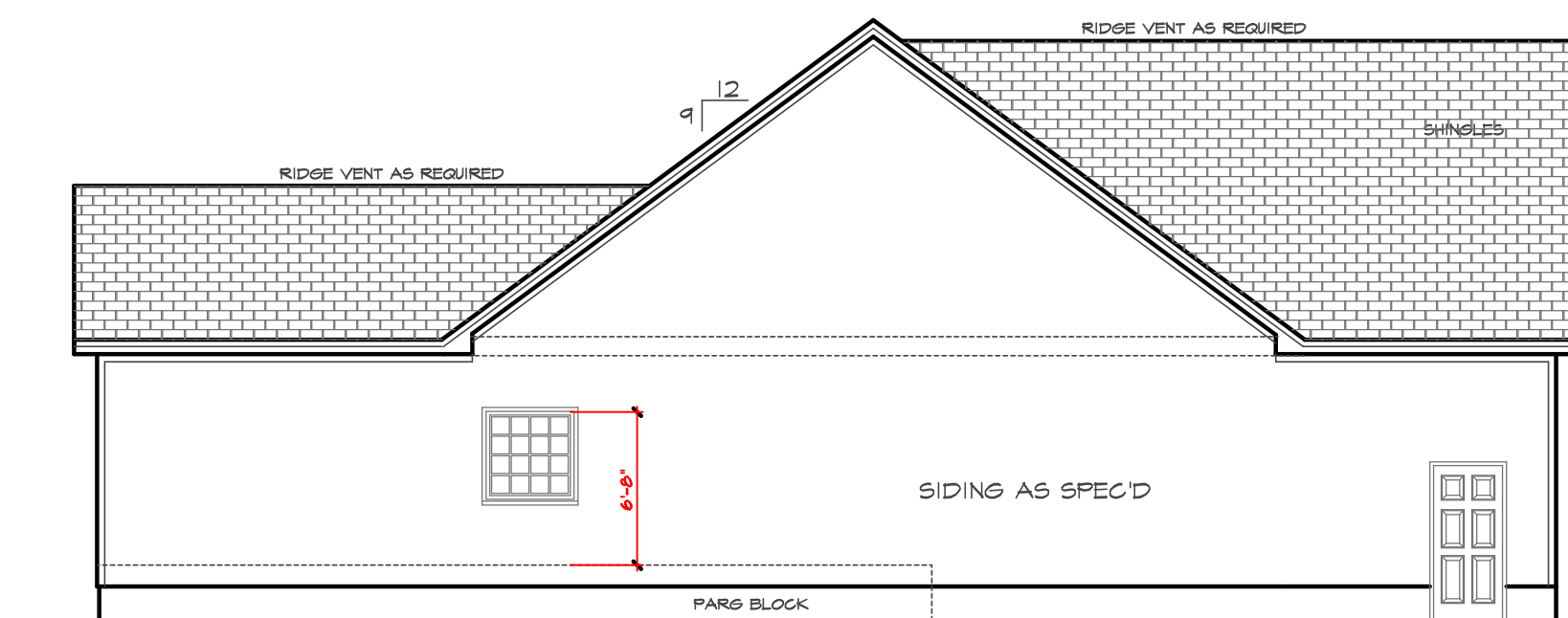
ATTIC VENTILATION:

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 500, PROVIDED AT LEAST 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.

GROSS ATTIC AREA TO BE VENTILATED 2341 SQ.FT.

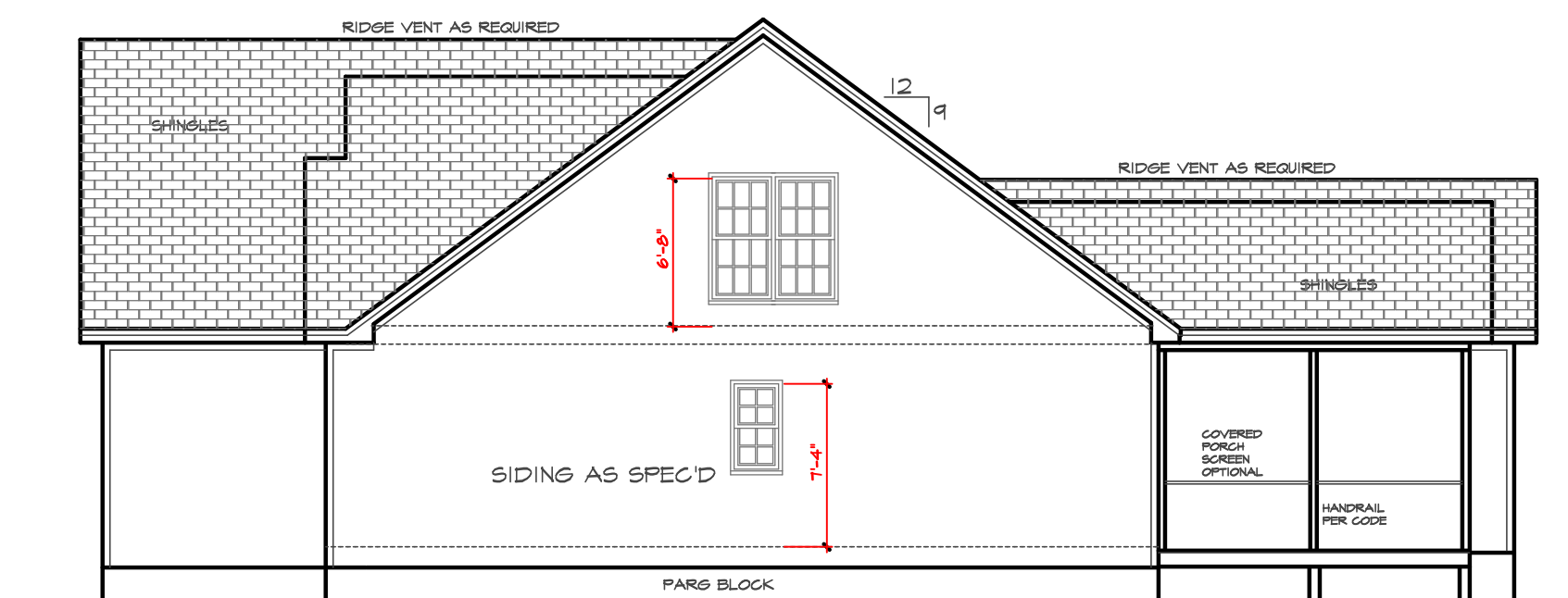
2341/500 = 4.68 SQ.FT. NET FREE AREA

50% OF VENTING MUST BE 3FT. ABOVE EAVE OR SOFFIT VENTS.



LEFT SIDE ELEVATION

SCALE 1/8" = 1'0"



RIGHT SIDE ELEVATION

SCALE 1/8" = 1'0"

DATE	REV	DATE	REV

LOT # 5148

DATE 3/11/2020

SCALE

PROJECT # 200303

The Ryecroft GARAGE LEFT
 www.midtowndesigns.com
 Phone: 919-783-8626
 Wendell NC 27591

FOUNDATION VENTING

SECTION R408 UNDER FLOOR SPACE

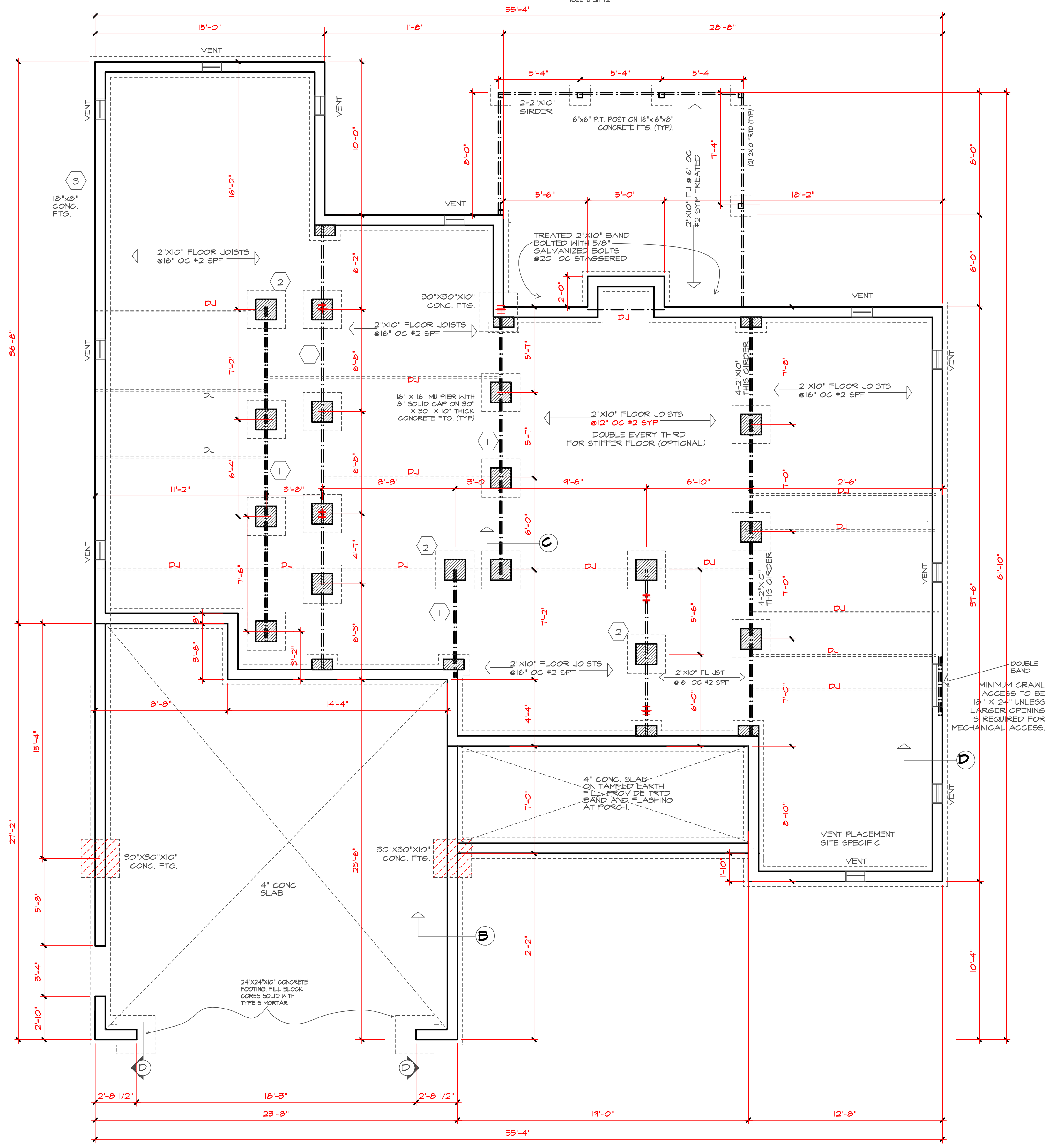
R408.1 Ventilation. The under-floor space between the bottom of the floor joists and the earth under any building (except for space occupied by a basement or cellar) shall be provided with ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet (0.67 m squared) of under-floor space area. One such ventilating opening shall be within 3 feet (914 mm) of each corner of solid building.

CRAWL AREA TO BE VENTED: 1635 SQ.FT.
163/1500 = 1.09 NET FREE VENTING AREA REQUIRED

R408.2 Ground Vapor Retarder. A minimum 6 mil polyethylene vapor retarder shall be installed to cover all earth in the crawl space with joints lapped not less than 12".

FOUNDATION STRUCTURAL NOTES:

- 1 (3) 2 x 10 SFF #2 GIRDER DROPPED, TYPICAL UNO.
 - 2 CONCRETE BLOCK PIER SIZE SHALL BE:
SIZE HOLLOW MASONRY SOLID MASONRY
8 x 16 UP TO 32' HIGH UP TO 8'-0" HIGH
12 x 16 UP TO 48' HIGH UP TO 11'-0" HIGH
16 x 16 UP TO 64' HIGH UP TO 12'-0" HIGH
24 x 24 UP TO 96' HIGH UP TO 12'-0" HIGH
WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.
 - 3 WALL FOOTING AS FOLLOWS:
DEPTH: 8" - UP TO 2-1/2 STORY
10" - 3 STORY
WIDTH: SIDING (OR EQUAL)
- 16" - UP TO 2-1/2 STORY
- 18" - 3 STORY
BRICK VENEER
- 16" - 1 STORY
- 20" - 2 STORY
- 24" - 3 STORY
- FOR FOUNDATION WALL HEIGHT AND BACKFILL REQUIREMENTS, REFER TO NORTH CAROLINA RESIDENTIAL CODE TABLE R404.1.1 (1 THRU 4).
NOTE: ASSUMED SOIL BEARING CAPACITY = 2000 PSF.
CONTRACTOR MUST VERIFY SITE CONDITIONS AND CONTACT SOILS ENGINEER IF MARGINAL OR UNSTABLE SOILS ARE ENCOUNTERED.
- ATTACH SILL PLATE WITH 1/2" dia. ANCHOR BOLTS AT 6'-0" CENTERS (7" EMBEDMENT) AND 12" FROM EACH PLATE END. (SECTION R 403.1.6)
- 4 ■ DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER. SOLID BLOCK ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO END, TYPICAL.
 - 5 ABBREVIATIONS:
'SJ' = SINGLE JOIST
'DJ' = DOUBLE JOIST
'TJ' = TRIPLE JOIST



FOUNDATION PLAN
SCALE 1/4" = 1'-0"

The Rycroft
GARAGE LEFT
 www.midtowndesigns.com

DATE	REV	DATE	REV

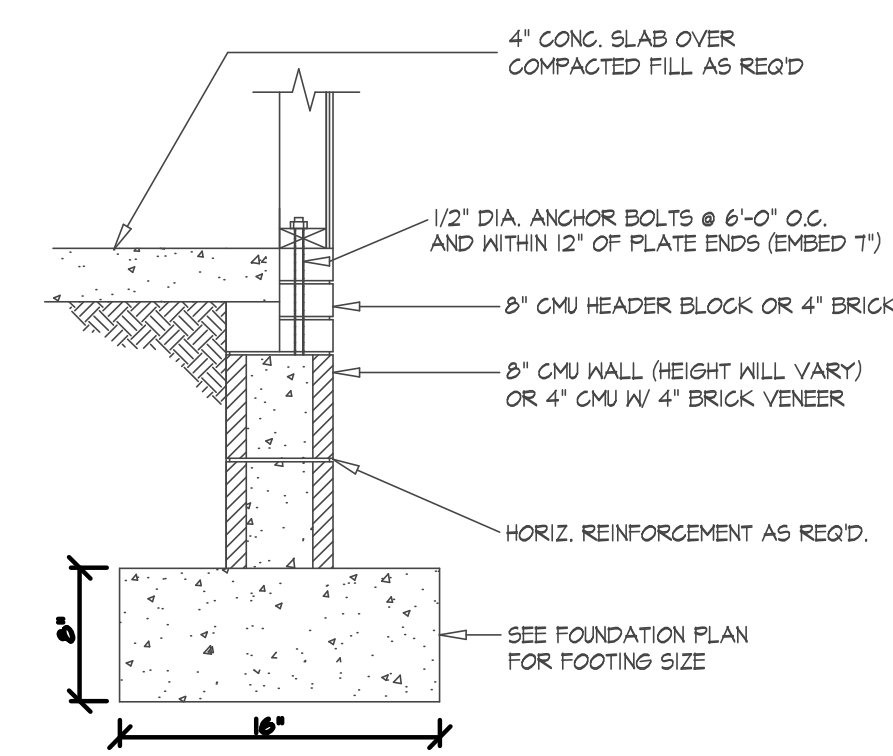
LOT # 5148
 DATE 3/15/2020
 SCALE
 PROJECT # 200303

FOUNDATION STRUCTURAL NOTES:

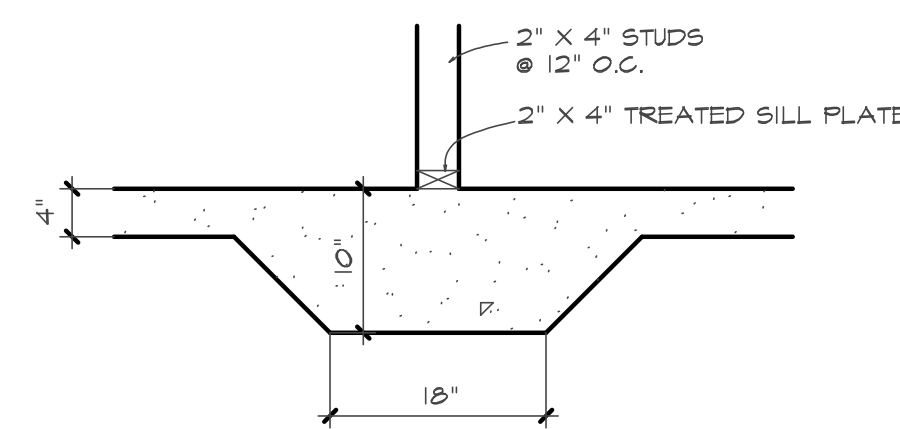
- 1 (3) 2 x 10 SFF #2 GIRDER DROPPED, TYPICAL UNO.
- 2 CONCRETE BLOCK PIER SIZE SHALL BE:

SIZE	HOLLOW MASONRY	SOLID MASONRY
8 x 16	UP TO 32' HIGH	UP TO 8'-0" HIGH
12 x 16	UP TO 48' HIGH	UP TO 11'-0" HIGH
16 x 16	UP TO 64' HIGH	UP TO 12'-0" HIGH
24 x 24	UP TO 96' HIGH	UP TO 12'-0" HIGH

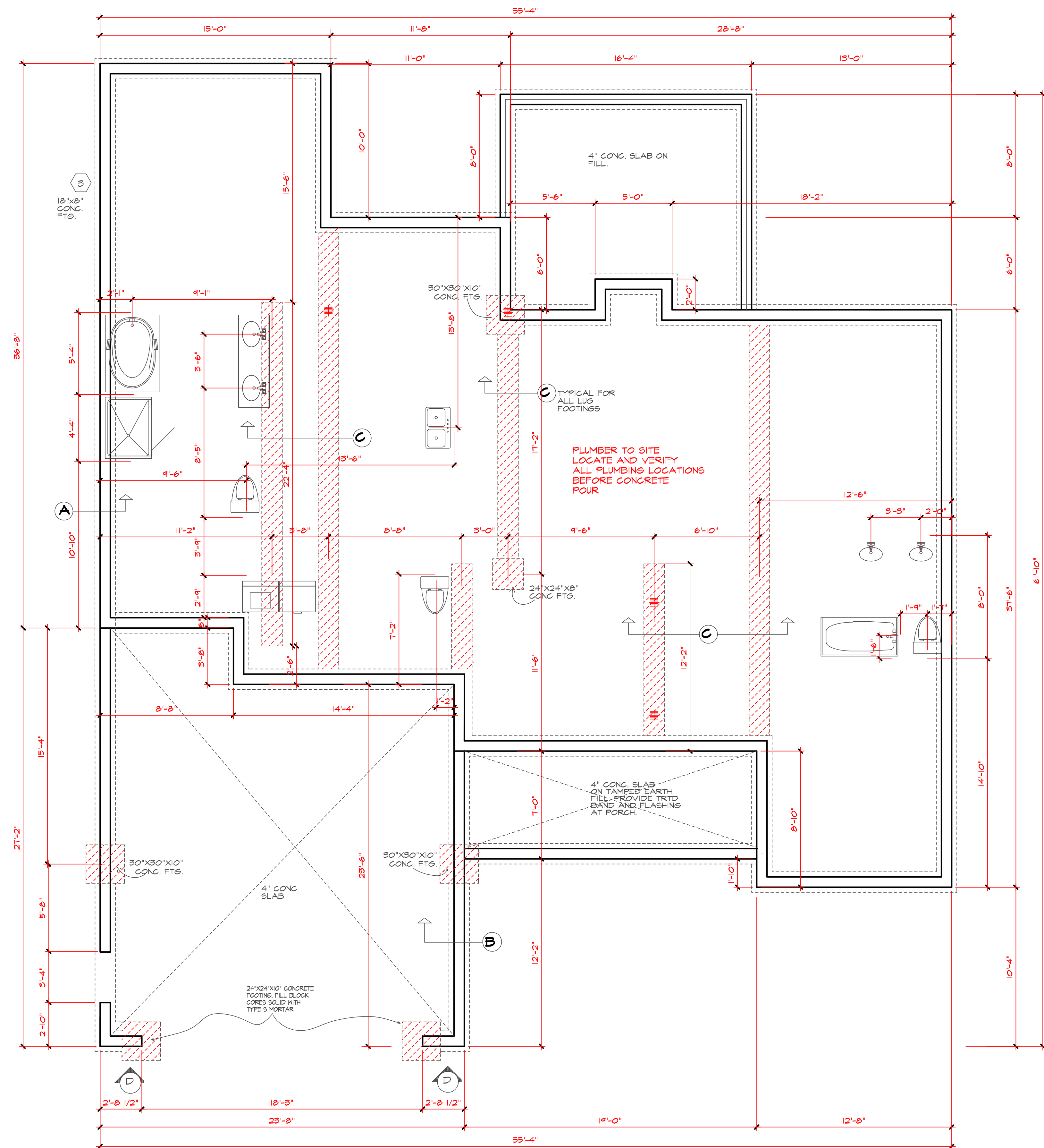
 WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.
- 3 WALL FOOTING AS FOLLOWS:
 DEPTH: 8" - UP TO 2-1/2 STORY
 10" - 3 STORY
 WIDTH: SIDING (OR EQUAL)
 - 16" - UP TO 2-1/2 STORY
 - 18" - 3 STORY
 BRICK VENEER
 - 16" - 1 STORY
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 4 ■ DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER SOLID BLOCK. ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO END, TYPICAL.
 5 ABBREVIATIONS:
 "SJ" = SINGLE JOIST
 "DJ" = DOUBLE JOIST
 "TJ" = TRIPLE JOIST



(A) SLAB FND. W/ STEM WALL
N.T.S.



SECTION (C) ELEVATION
THICKENED SLAB



STEM WALL FOUNDATION PLAN

SCALE 1/4" = 1'-0"

The Rycroft
GARAGE LEFT

DATE	REV	DATE	REV

DATE: 3/15/2020
SCALE: PROJECT #: 200303

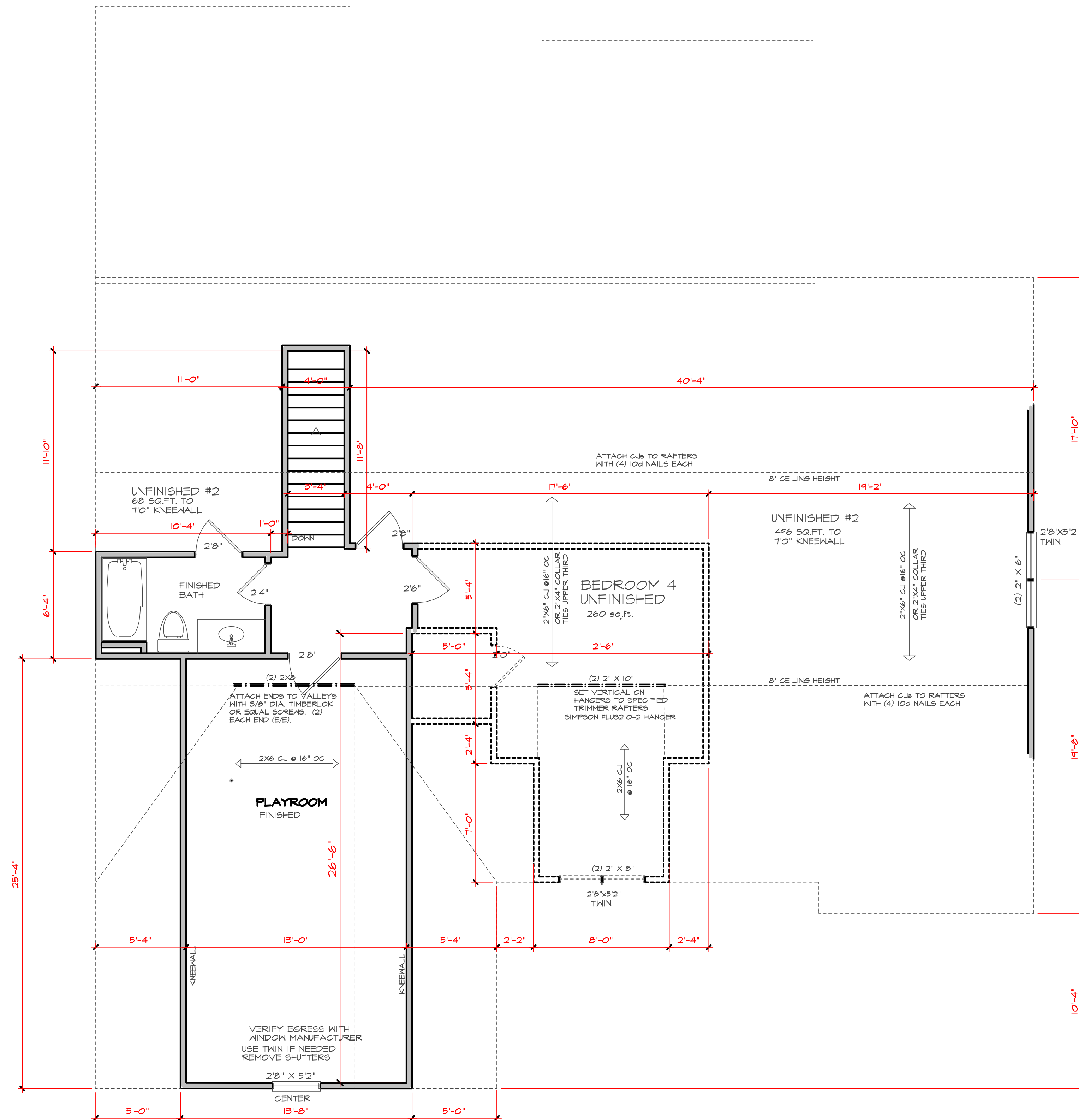
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SECOND FLOOR PLAN

SCALE 1/4" = 1'-0"

The Rycroft
GARAGE LEFT

DATE	REV	DATE	REV

LOT # 5148

DATE 3/11/2020

SCALE

PROJECT # 200303

Purchaser must verify all dimensions and conditions before beginning construction.

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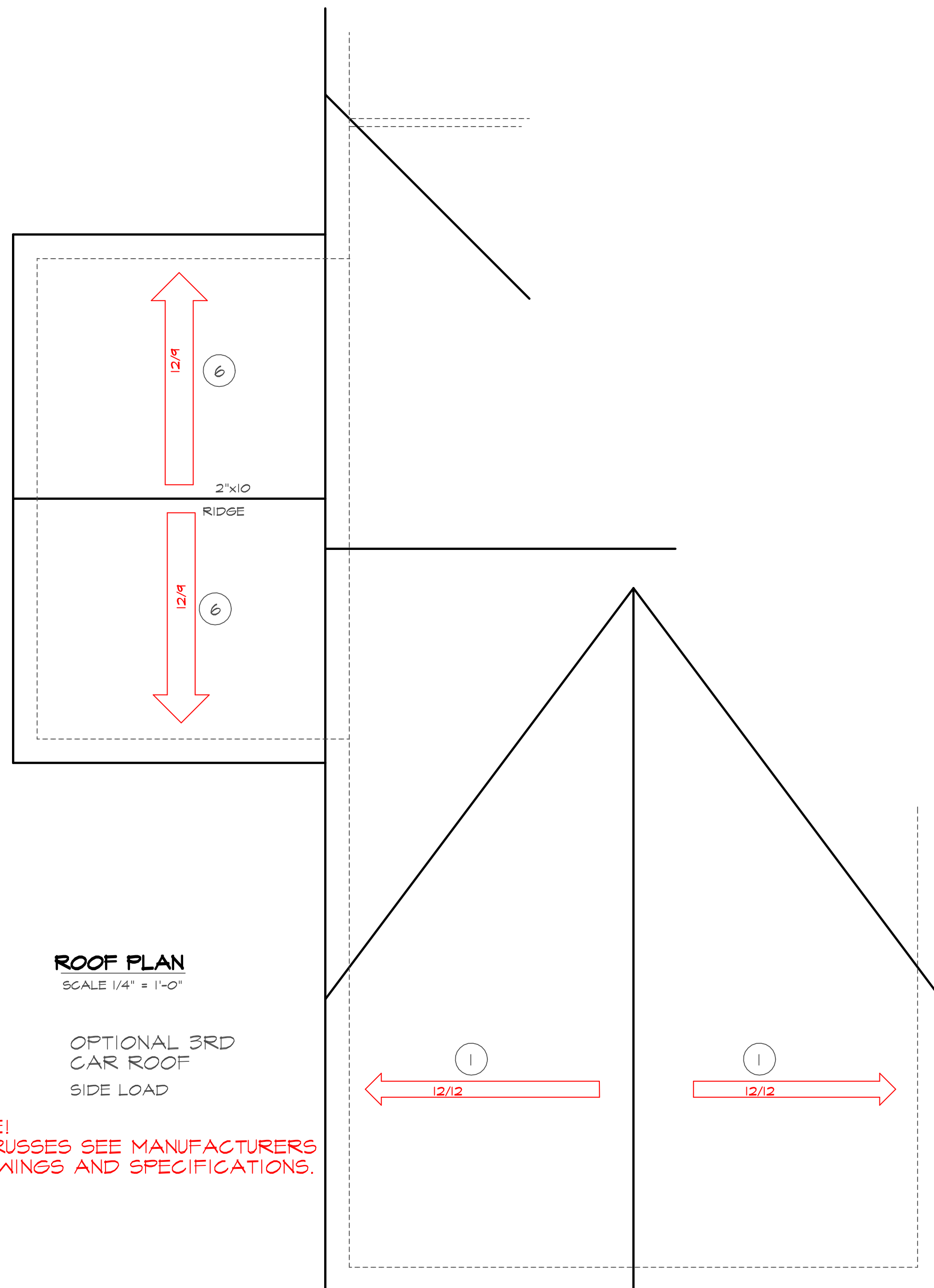
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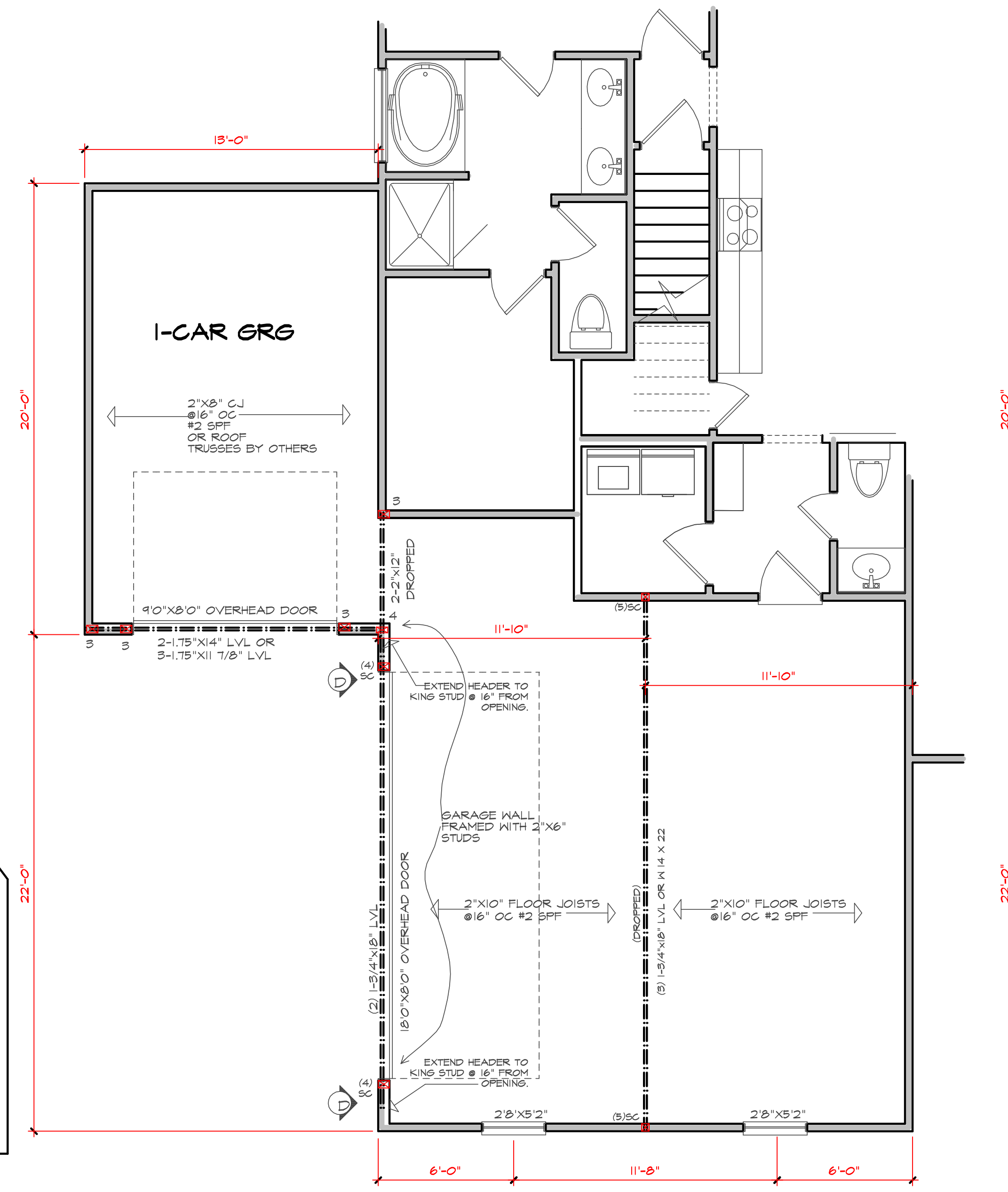
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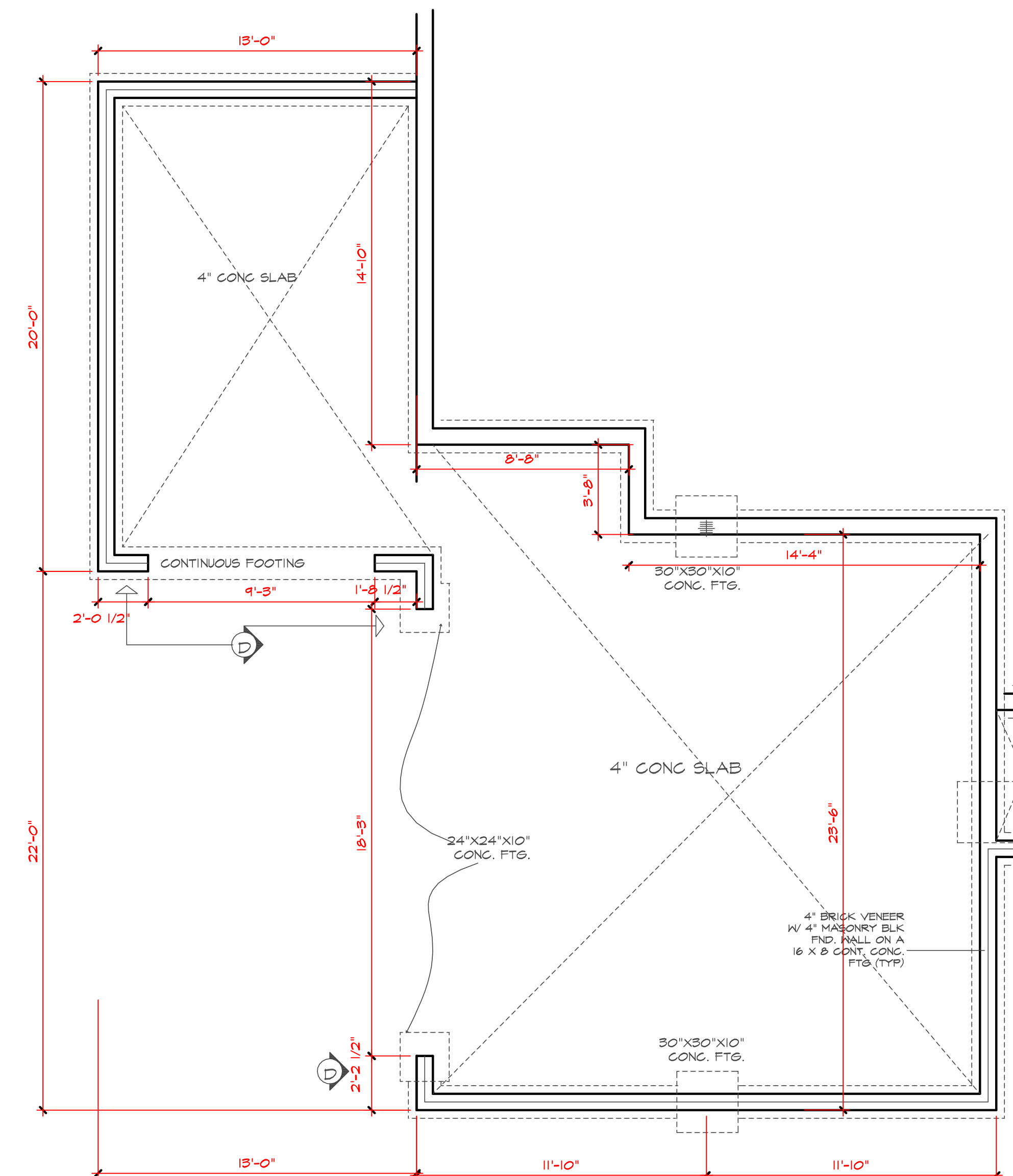
HANDRAIL NOT SHOWN
FRONT ELEVATION B
SCALE 1/4" = 10"



NOTE!
IF TRUSSES SEE MANUFACTURERS DRAWINGS AND SPECIFICATIONS.



SIDE LOAD OPTION WITH 3rd CAR



FOUNDATION SIDE LOAD 3 CAR

The Rycroft
GARAGE LEFT

DATE	REV	DATE	REV

LOTT	shb
DATE	3/18/2020
SCALE	
PROJECT #	200303

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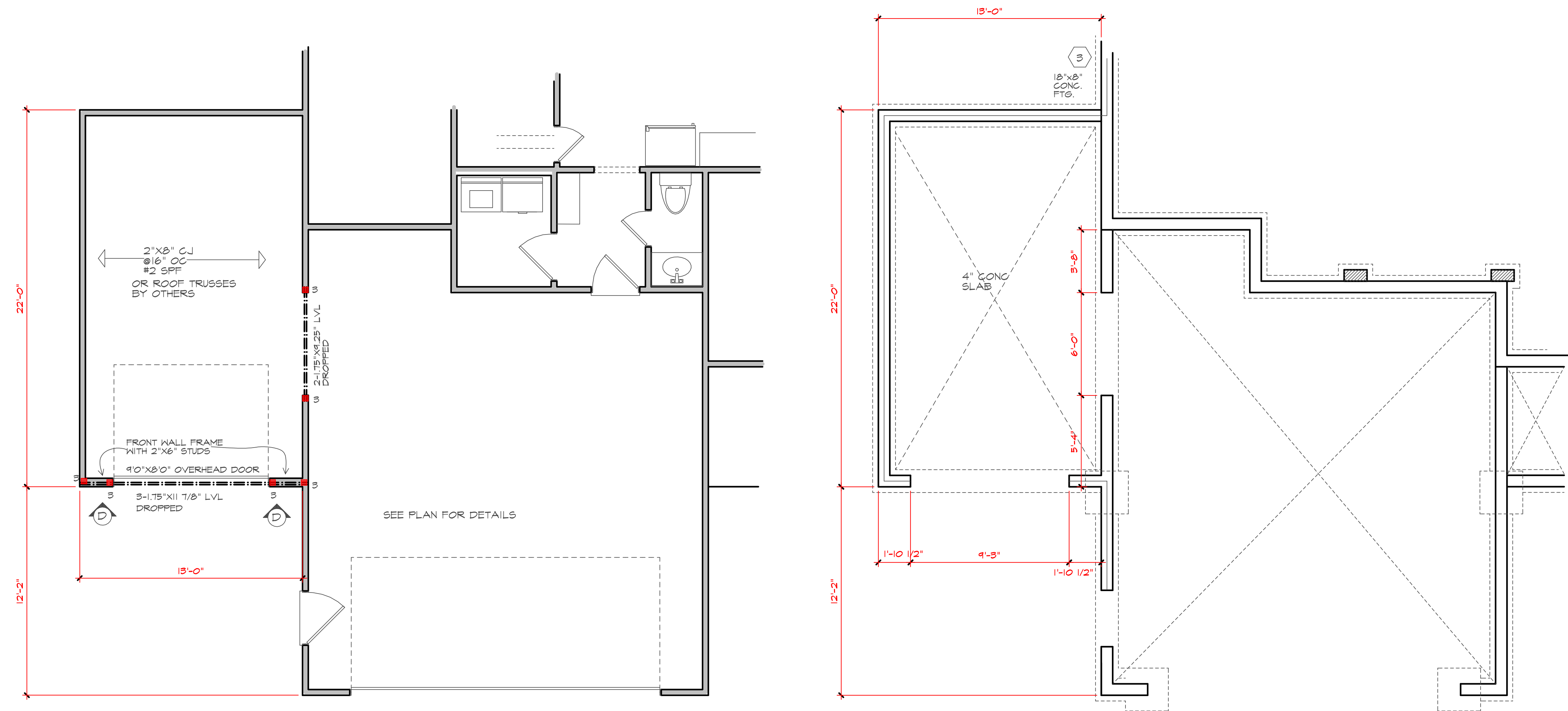
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OPTIONAL 3 CAR FRONT ELEVATION



3 CAR GARAGE OPTION

The Ryecroft
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DATE	REV	DATE	REV

LOT # 5148

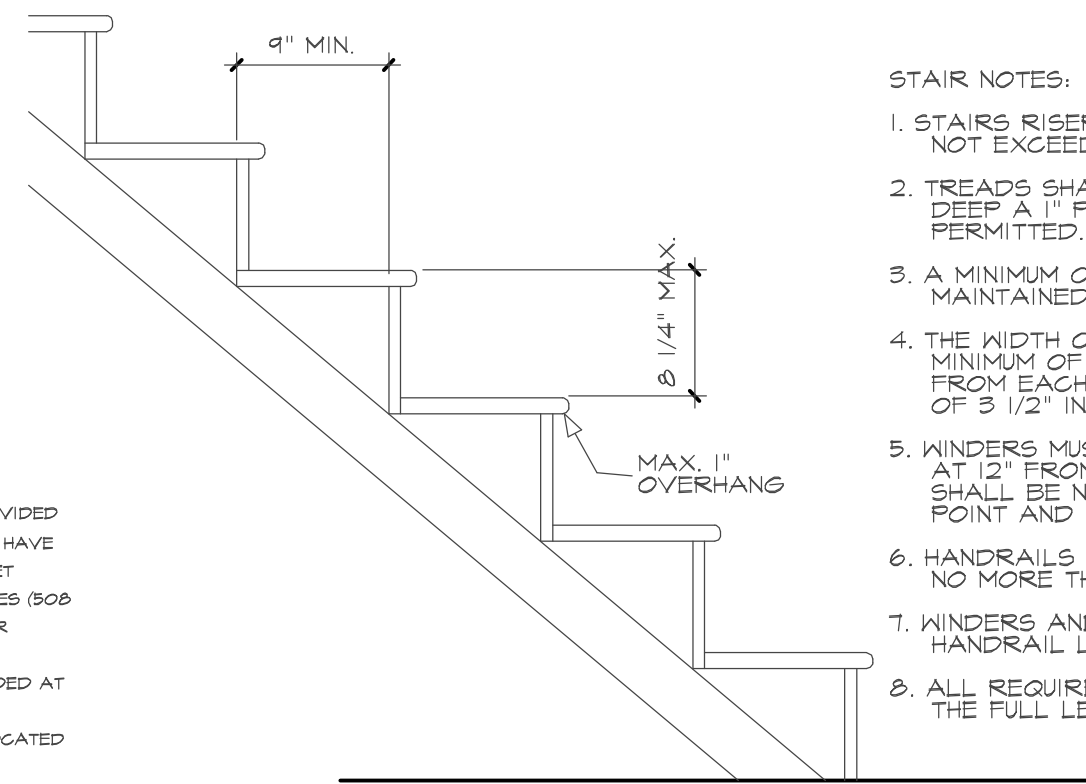
DATE 3/11/2020

SCALE

PROJECT # 200303

ATTIC ACCESS

SECTION R801
 R801.1 ATTIC ACCESS AN ATTIC ACCESS OPENING SHALL BE PROVIDED TO ATTIC AREAS THAT EXCEED 400 SQUARE FEET (37.16 M²) AND HAVE A VERTICAL HEIGHT OF 60 INCHES (1524 MM) OR GREATER. THE NET CLEAR OPENING SHALL NOT BE LESS THAN 20 INCHES BY 30 INCHES (508 MM BY 762 MM) AND SHALL BE LOCATED IN A HALLWAY OR OTHER READILY ACCESSIBLE LOCATION. A 30-INCH (762 MM) MINIMUM UNOBSTRUCTED HEADROOM IN THE ATTIC SPACE SHALL BE PROVIDED AT SOME POINT ABOVE THE ACCESS OPENING. SEE SECTION M505.1.5 FOR ACCESS REQUIREMENTS WHERE MECHANICAL EQUIPMENT IS LOCATED IN ATTICS.
 EXCEPTIONS:
 1. CONCEALED AREAS NOT LOCATED OVER THE MAIN STRUCTURE INCLUDING PORCHES, AREAS BEHIND KNEE WALLS, BARNERS, BAY WINDOWS, ETC. ARE NOT REQUIRED TO HAVE ACCESS.
 2. FALL DOWN STAIR TREADS, STRINGERS, HANDRAILS, AND HARDWARE MAY PROTRUDE INTO THE NET CLEAR OPENING.

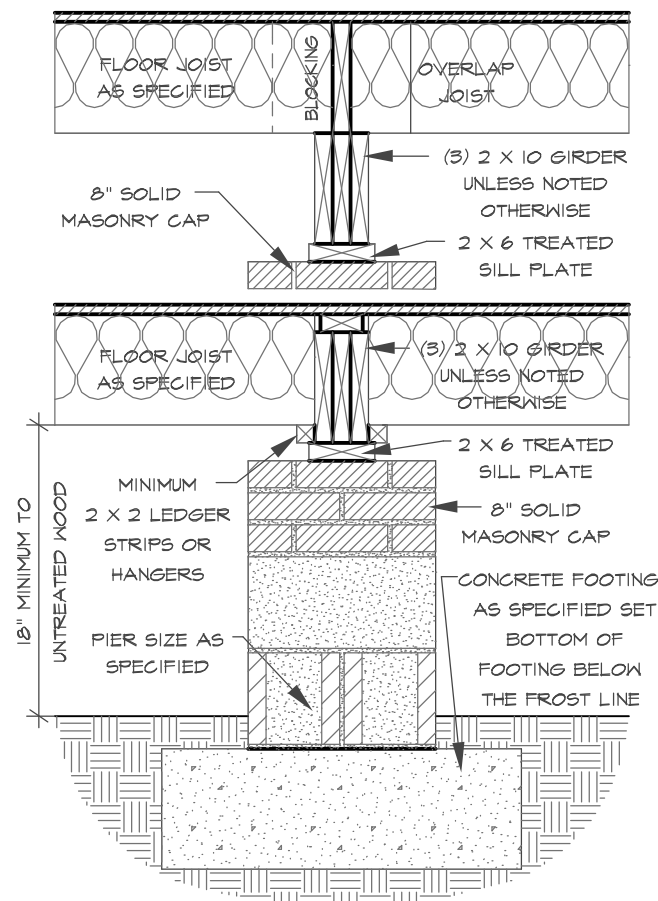


STAIR NOTES:

1. STAIR RISERS MUST BE UNIFORM AND NOT EXCEED 8 1/4".
2. TREADS SHALL NOT BE LESS THAN 10" DEEP & 1" PROJECTION OVER RISER IS PERMITTED.
3. A MINIMUM OF 6'8" HEADROOM MUST BE MAINTAINED AT ALL PLACES ON STAIR.
4. THE WIDTH OF THE STAIR SHALL BE A MINIMUM OF 3'0". HANDRAIL MAY PROJEKT FROM EACH SIDE OF STAIR A DISTANCE OF 3 1/2" INTO THE REQUIRED WIDTH.
5. HANDERS MUST BE A MINIMUM OF 9" IN WIDTH AT 12" FROM THE NARROWEST SIDE. TREAD SHALL BE NO NARROWER THAN 4" AT ANY POINT AND AVERAGE NO LESS THAN 9 INCHES.
6. HANDRAILS SHALL BE NO LESS THAN 3 1/2" AND NO MORE THAN 3 3/4" ABOVE TREAD NOSING.
7. HANDERS AND SPIRAL STAIRS SHALL HAVE THE HANDRAIL LOCATED ON THE OUTSIDE RADIUS.
8. ALL REQUIRED HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS.

STAIR DETAIL

NO SCALE



DROPPED / FLUSH PIER
 SCALE 3/4" = 1'-0"

DWELLING / GARAGE SEPARATION

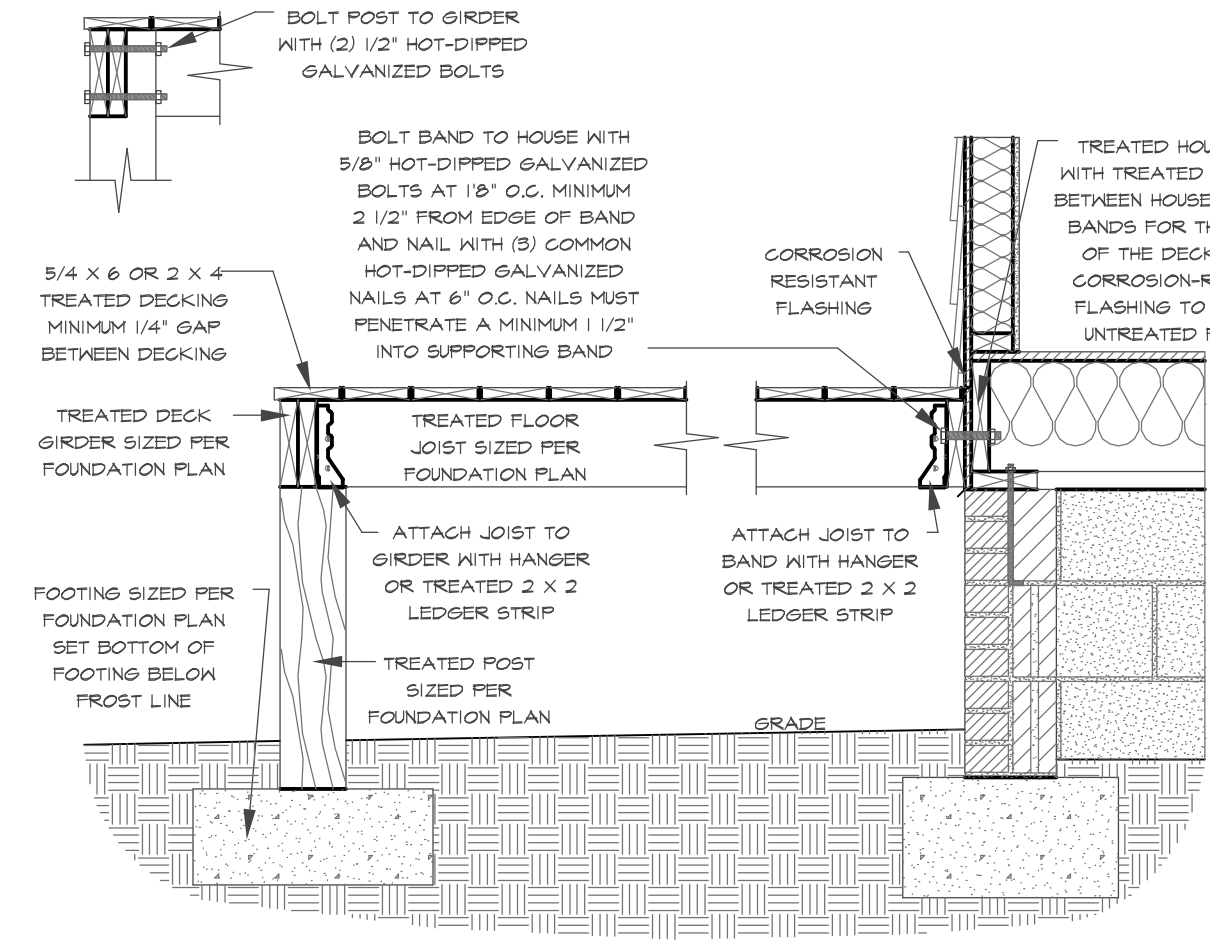
REFER TO SECTIONS R502.3, R502.6, AND R502.7
 WALLS. A MINIMUM 1/2" GYPSUM BOARD MUST BE INSTALLED ON ALL WALLS SUPPORTING FLOOR/CEILING ASSEMBLIES USED FOR SEPARATION REQUIRED BY THIS SECTION. STAIRS. A MINIMUM OF 1/2" GYPSUM BOARD MUST BE INSTALLED ON THE UNDERSIDE AND EXPOSED SIDES OF ALL STAIRWAYS.
 CEILING. A MINIMUM OF 1/2" GYPSUM MUST BE INSTALLED ON THE GARAGE CEILING IF THERE ARE NO HABITABLE ROOMS ABOVE THE GARAGE. IF THERE ARE HABITABLE ROOMS ABOVE THE GARAGE A MINIMUM OF 5/8" TYPE X GYPSUM BOARD MUST BE INSTALLED ON THE GARAGE CEILING.
 OPENING PENETRATIONS. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH SOLID WOOD DOORS NOT LESS THAN 1 3/8 INCHES (35 MM) IN THICKNESS, SOLID OR HONEYCOMB CORE STEEL DOORS NOT LESS THAN 1 3/8 INCHES (35 MM) THICK, OR 20-MINUTE FIRE-RATED DOORS.
 DUCT PENETRATIONS. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS OR CEILING SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAUGE (1.048 MM) SHEET STEEL OR OTHER APPROVED MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE.
 OTHER PENETRATIONS. PENETRATIONS THROUGH THE SEPARATION REQUIRED IN SECTION R502.4 SHALL BE PROTECTED AS REQUIRED BY SECTION R502.11, ITEM 4.

DECK BRACING

SECTION AM04
 AM04.1 DECK BRACING. DECKS SHALL BE BRACED TO PROVIDE LATERAL STABILITY. THE FOLLOWING ARE ACCEPTABLE MEANS TO PROVIDE LATERAL STABILITY.
 AM04.1.1. WHEN THE DECK FLOOR HEIGHT IS LESS THAN 4'-0" ABOVE FINISHED GRADE PER FIGURE AM04.1 AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION AM04, LATERAL BRACING IS NOT REQUIRED.
 AM04.1.2. 4 X 4 WOOD KNEE BRACES MAY BE PROVIDED ON EACH COLUMN IN BOTH DIRECTIONS. THE KNEE BRACES SHALL ATTACH TO EACH POST AT A POINT NOT LESS THAN 1/3 OF THE POST LENGTH FROM THE TOP OF THE POST, AND THE BRACES SHALL BE ANGLED BETWEEN 45 DEGREES AND 60 DEGREES FROM THE HORIZONTAL. KNEE BRACES SHALL BE BOLTED TO THE POST AND THE GIRDER/DOUBLE BAND WITH ONE 5/8 INCH HOT-DIPPED GALVANIZED BOLT WITH NUT AND WASHER AT BOTH ENDS OF THE BRACE PER FIGURE AM04.1.
 AM04.1.3. FOR FREE-STANDING DECKS WITHOUT KNEE BRACES OR DIAGONAL BRACING, LATERAL STABILITY MAY BE PROVIDED BY EMBEDDING THE POST IN ACCORDANCE WITH FIGURE AM04.2 AND THE FOLLOWING:

POST SIZE	MAX. TRIANGULAR AREA	MAX. POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER
4 X 4	48 SF	4'-0"	2'-6"	1'-0"
6 X 6	120 SF	6'-0"	3'-6"	1'-8"

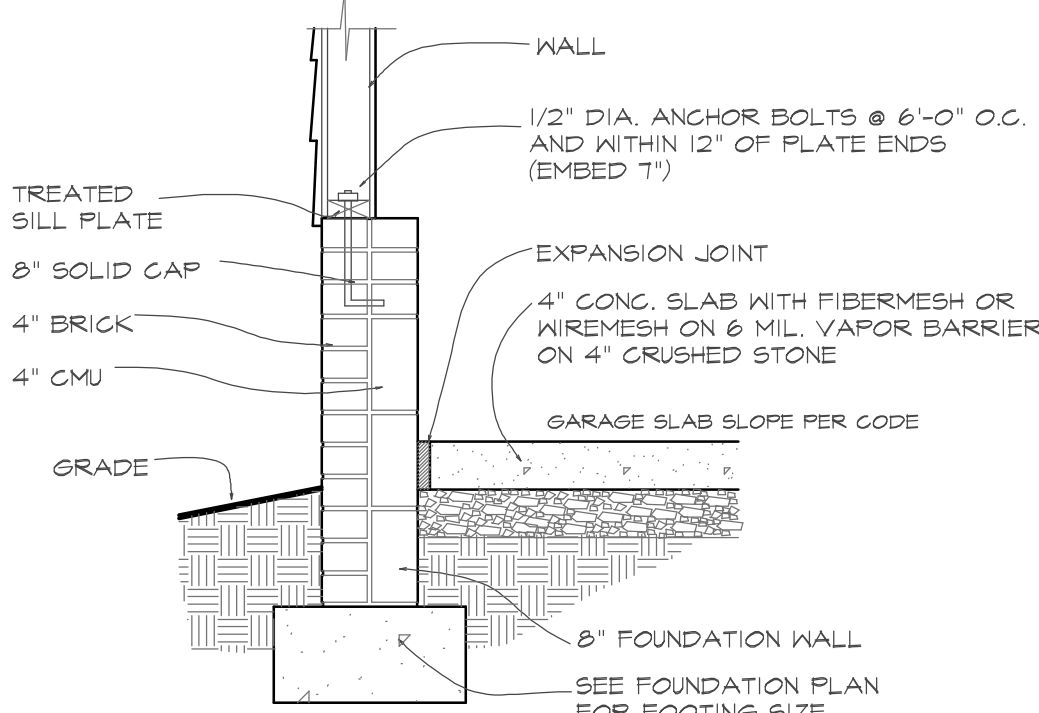
 AM04.1.4. 2 X 6 DIAGONAL VERTICAL CROSS BRACING MAY BE PROVIDED IN TWO PERPENDICULAR DIRECTIONS FOR FREE-STANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS. THE 2 X 6 SHALL BE ATTACHED TO THE POSTS WITH ONE 5/8 INCH HOT-DIPPED GALVANIZED BOLT WITH NUT AND WASHER AT EACH END OF EACH BRACING MEMBER PER FIGURE AM04.3.
 AM04.1.5. FOR EMBEDMENT OF PILES IN COASTAL REGIONS, SEE CHAPTER 45.



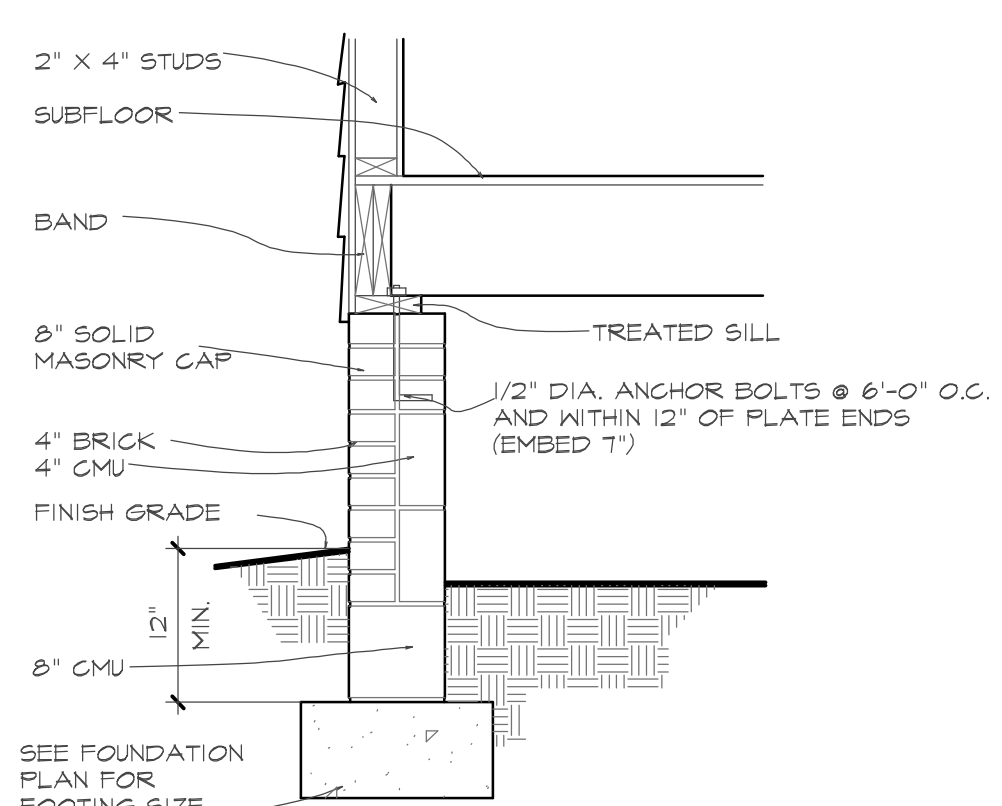
DECK ATTACHMENT DETAIL TO FRAMED WALL
 SCALE 3/4" = 1'-0"

STRUCTURAL NOTES

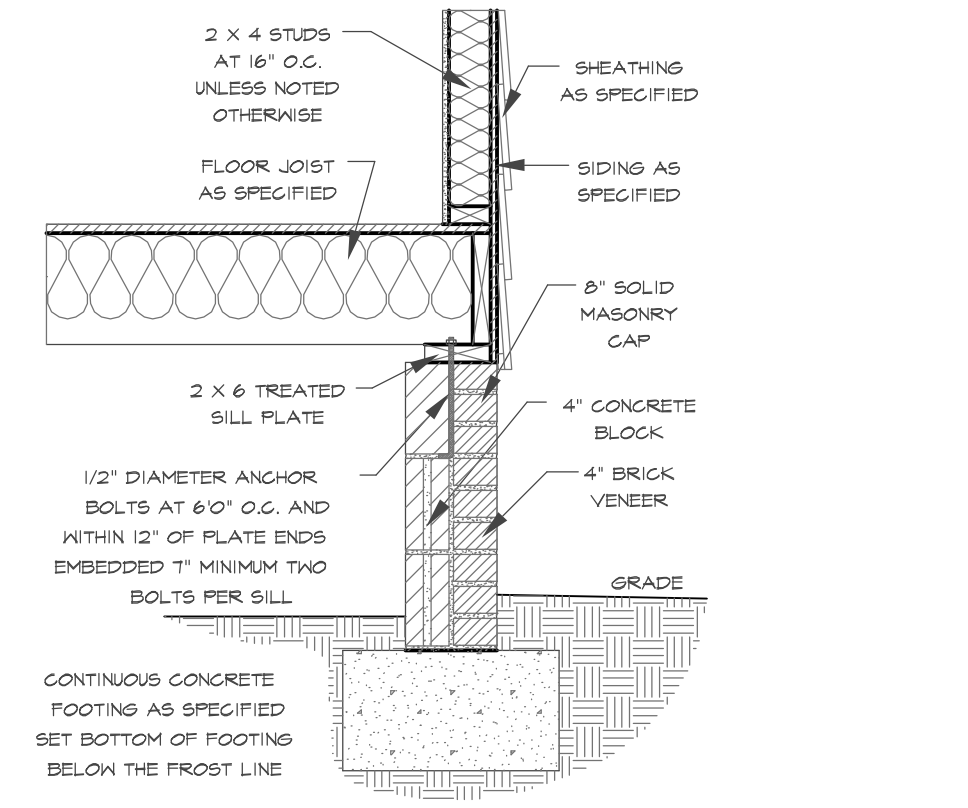
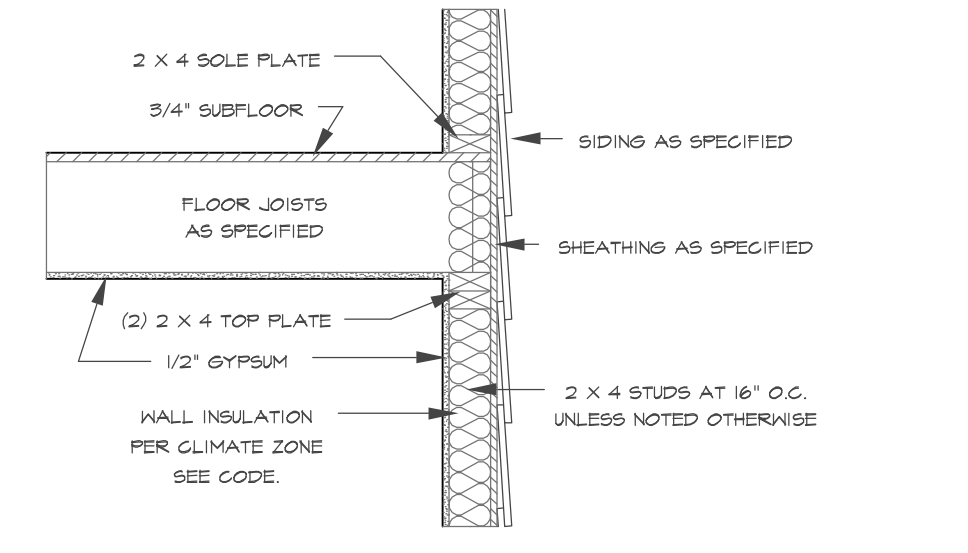
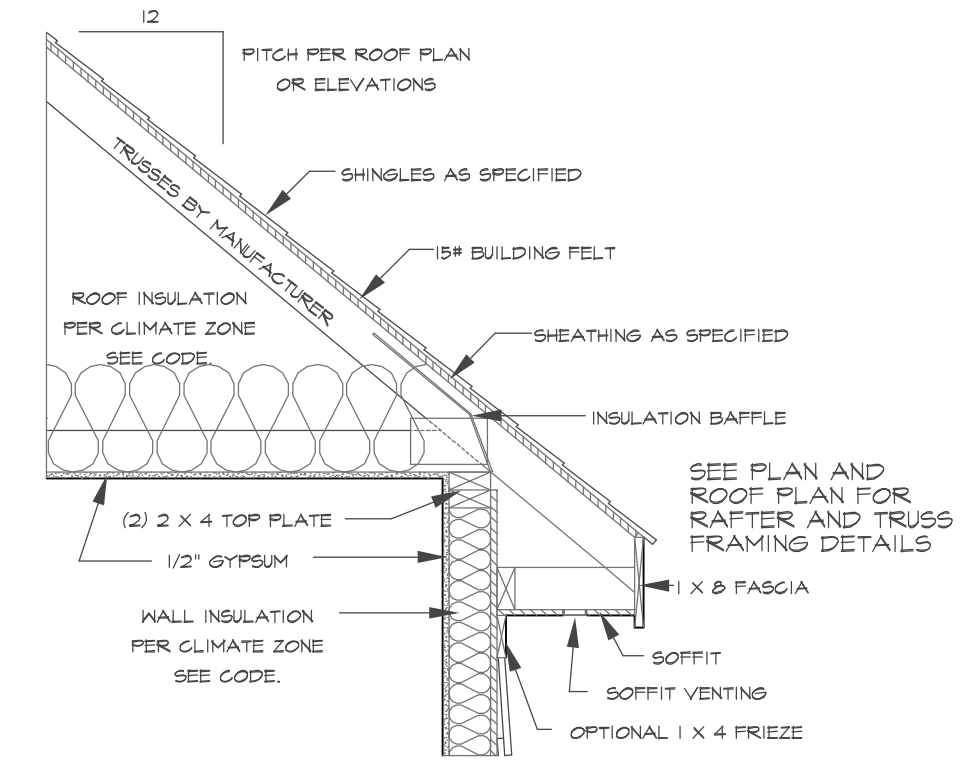
- 1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION (2015 IRC), PLUS ALL LOCAL CODES AND REGULATIONS.
 ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.
- 2) DESIGN LOADS SEE TABLE R301.3
- WIND SPEED. (REFER TO TABLE R301.2.4) VERIFY ZONE BEFORE CONSTRUCTION.
- 3) WALL BRACING. WALLS SHALL BE BRACED ALONG BRACED WALL LINES ACCORDING TO SECTION R602.10. THE AMOUNT, LOCATION AND CONSTRUCTION OF BRACING SHALL COMPLY WITH R602.10. NOTE THAT THE BRACING SHOWN ON THE PLANS IS BASED ON THE PRESCRIPTIVE BRACING REQUIREMENTS OF THE CODE AND SHALL BE VERIFIED AND/OR APPROVED BY THE CODE OFFICIAL.
- 4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 3 INCHES UNLESS NOTED OTHERWISE (NO). AIR ENTRAINMENT PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP.
- 5) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.
- 6) ALL FRAMING LUMBER SHALL BE SPF #27B @ 975 PSI UNLESS NOTED OTHERWISE (NO). ALL TREATED LUMBER SHALL BE SYP #2 (FB#75 PSI). PLATE MATERIAL MAY BE SPF #3 OR SYP #3 (FC#PERF) @ 425 PSI - MIN.
- 7) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS: (1) 2X4 STUD COLUMN FOR 6'-0" MAX. BEAM SPAN (NO). (2) 2X4 STUDS FOR BEAM SPAN GREATER THAN 6'-0" (NO).
- 8) L.V.L. SHALL BE LAMINATED VENEER LUMBER. FB#2600 PSI, FV#285 PSI, E#1400000 PSI, P.S.L. SHALL BE PARALLEL STRAND LUMBER. FB#2400 PSI, FV#290 PSI, E#2000000 PSI. L.S.L. SHALL BE LAMINATED STRAND LUMBER. FB#2250 PSI, FV#400 PSI, E#1550000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.
- 9) ALL ROOF TRUSSES AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
- 10) ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2 INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER & 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TIEING SHALL BE ASTM A502.
- 11) REBAR SHALL BE DEFORMED STEEL, ASTM#615, GRADE 60.
- 12) FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX) AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.
- 13) BRICK LINTELS SHALL BE 3 1/2"X3 1/2"X1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"X4"X5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 4'-0" (NO).
- 14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS SEE R301.2(6)



B) SECTION AT GARAGE SLAB



D) SECTION AT CRAWL



TYPICAL WALL SECTION
 SCALE 3/4" = 1'-0"

THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

HOUSE DESIGNED FOR 115 or 120 MPH EXPOSURE B
 ANCHOR BOLTS SHALL BE MINIMUM 1/2" DIAMETER & SHALL EXTEND A MINIMUM OF 7" INTO MASONRY OR CONCRETE. ANCHOR BOLTS TO BE NO MORE THAN 6" ON CENTER AND WITHIN 12" OF ALL CORNERS. THERE SHALL BE A MINIMUM OF TWO (2) ANCHOR BOLTS PER PLATE SECTION.
 MINIMUM VALUES FOR ENERGY COMPLIANCE ZONE 4A, 4 B. VERIFY ZONE BEFORE CONSTRUCTION

TABLE R902.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT*

CLIMATE ZONE	FENESTRATION U-FACTOR*	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC*	CEILING U-FACTOR	WOOD FRAME WALL U-FACTOR	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	SLAB SPACE WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.35	0.55	0.30	0.030	0.072	0.141	0.047	0.091 ^b	0	0.13
4	0.35	0.55	0.30	0.030	0.072	0.141	0.047	0.091 ^b	0	0.13
5	0.35	0.55	NR	0.030	0.061	0.082	0.033	0.059	0.065	0.065

TABLE R902.1.4 EQUIVALENT U-FACTORS*

CLIMATE ZONE	FENESTRATION U-FACTOR*	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.35	0.55	0.030	0.072	0.141	0.047	0.091 ^b	0.136
4	0.35	0.55	0.030	0.072	0.141	0.047	0.059	0.065
5	0.35	0.55	0.030	0.061	0.082	0.033	0.059	0.065

* Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.
 b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.07 in Climate Zone 3, 0.07 in Climate Zone 4 and 0.054 in Climate Zone 5.
 c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1.
 d. A maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note, and using the RES-check "U-A Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the U-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products actual U-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable products. Compliance for these substitute products shall be verified compared to the allowed substituted maximum U-value requirement and maximum SHGC requirement, as applicable.

Purchaser must verify all dimensions and conditions before beginning construction.
 MidTown Designs Inc. assumes no liability for contractors practices and procedures
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RESIDENCE FOR:
 DATE REV DATE REV
 1/16/2019
 SCALE

DATE REV DATE REV
 1/16/2019
 SCALE

DATE REV DATE REV
 1/16/2019
 SCALE

Detail Sheet



ROOF & FLOOR TRUSSES & BEAMS

Reilly Road Industrial Park
Fayetteville, N.C. 28309
Phone: (910) 864-8787
Fax: (910) 864-4444

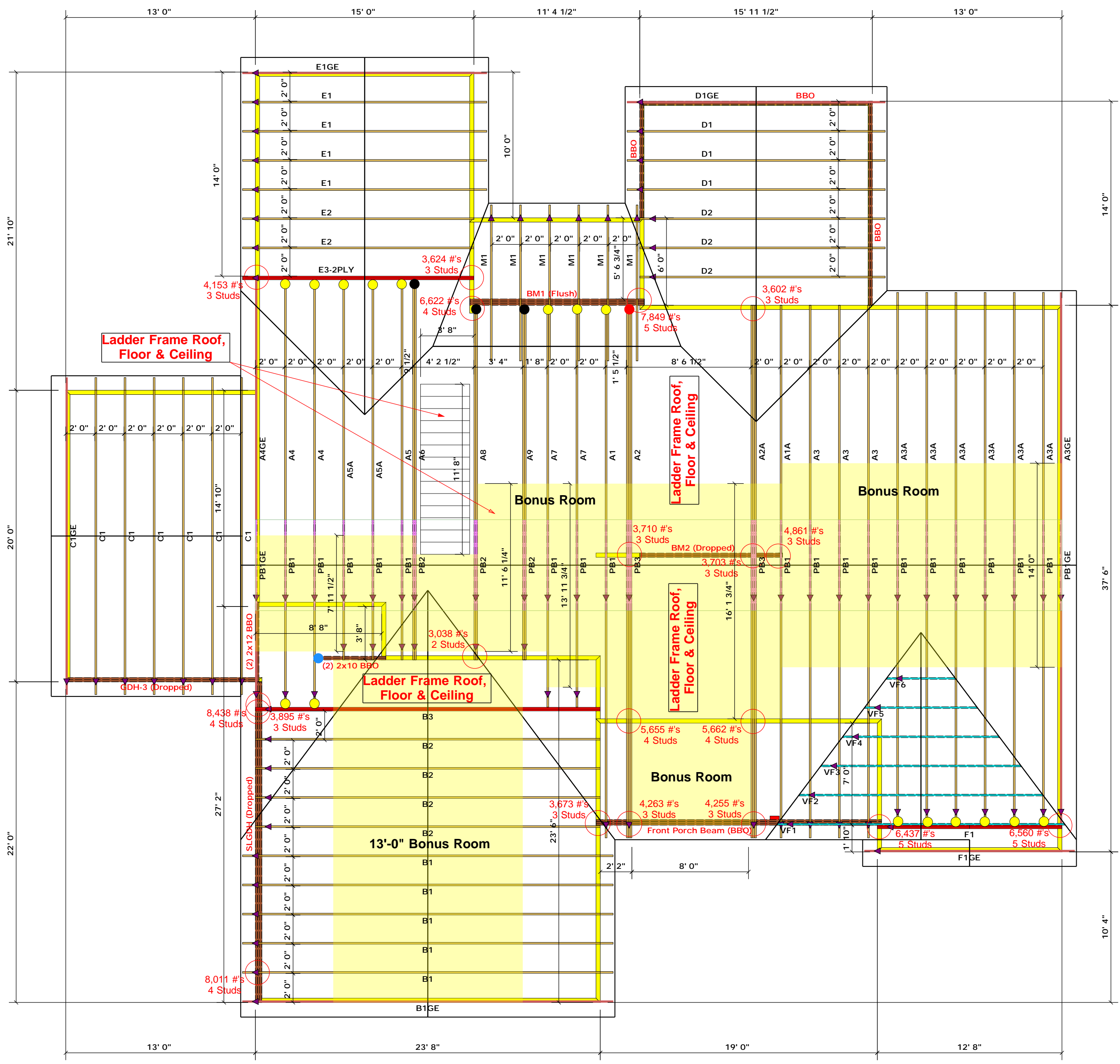
Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables (derived from the prescriptive Code requirements) to determine the minimum foundation size and number of wood studs required to support reactions greater than 3000# but not greater than 15000#. A registered design professional shall be retained to design the support system for any reaction that exceeds those specified in the attached Tables. A registered design professional shall be retained to design the support system for all reactions that exceed 15000#.

Signature **Christine Shivy**
Christine Shivy

LOAD CHART FOR JACK STUDS

(BASED ON TABLES ROEHLIC 6/13)

END REACTION (IP-TON)	REQ'D STUDS FOR 10' BY 10' HEADS	END REACTION (IP-TON)	REQ'D STUDS FOR 10' BY 10' HEADS
1700	1	2550	1
3400	2	5100	2
5100	3	7650	3
6800	4	10200	4
8500	5	12750	5
10200	6	15300	6
11900	7		
13600	8		
15300	9		



- = HUS26 (Qty. 10)
- = THD26-2 (Qty. 3)
- = THDH210-3 (Qty. 1)
- = HUS410 (Qty. 1)

PlotID	Length	Product	Plies	Net Qty
BM2 (Dropped)	10' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2
GDH-3 (Dropped)	13' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2
BM1 (Flush)	12' 0"	1-3/4"x 11-7/8" LVL Kerto-S	3	3
SLGDH (Dropped)	22' 0"	1-3/4"x 18" LVL Kerto-S	3	3
Front Porch Beam (BBO)	20' 0"	2x12 SP No.2	3	3

Truss Placement Plan SCALE: 3/16" = 1'-0"

▲ = Denotes Left End of Truss
(Reference Engineered Truss Drawing)

○ -- Denotes Reaction Greater than 3,000 lbs.
Reaction / # of Studs

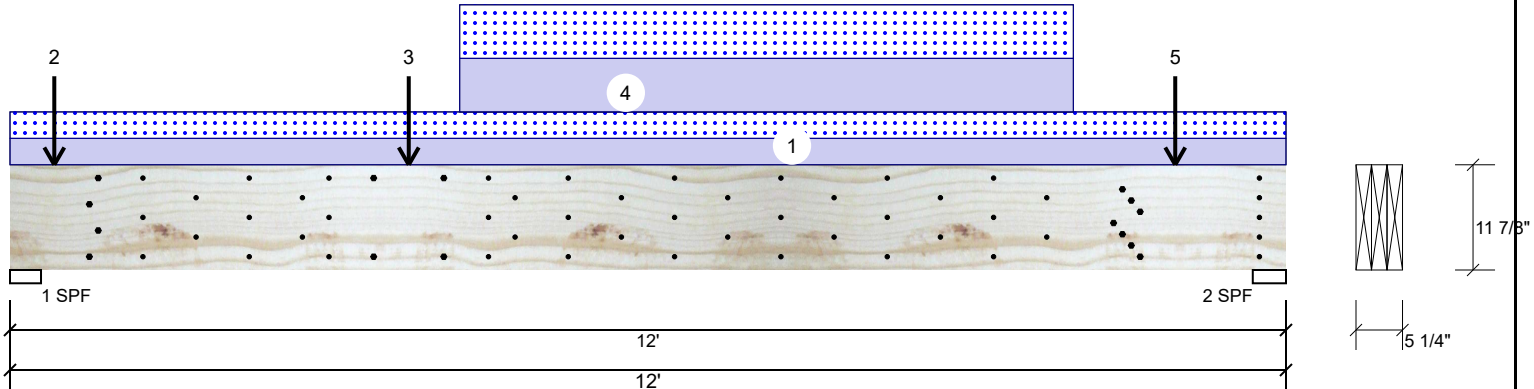
All Truss Reactions are Less than 3,000 lbs. Unless Noted Otherwise.

BUILDER	JOB NAME	PLAN	SEAL DATE	QUOTE #	JOB #
Southern Touch Homes	Lot 3 Fultz Farm	Rycroft	Seal Date	Quote #	J0420-1464
CITY / CO.	ADDRESS	MODEL	DATE REV.	DRAWN BY	SALES REP.
Harnett Co. / Harnett	Lot 3 Fultz Farm	Model	/ /	Christine Shivy	Lenny Norris

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the truss support structure including headers, beams, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult BCSI-B1 and BCSI-B3 provided with the truss delivery package or online @ sbcindustry.com.

BM1 Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	3
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	Yes
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	3352	3269	0	0
2	0	3966	3883	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	85%	3352 / 3269	6622	L	D+S
2 - SPF	3.750"	94%	3966 / 3883	7849	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16742 ft-lb	6' 15/16"	35719 ft-lb	0.469 (47%)	D+S	L
Unbraced	16742 ft-lb	6' 15/16"	16752 ft-lb	0.999 (100%)	D+S	L
Shear	7757 lb	10'9 1/8"	15295 lb	0.507 (51%)	D+S	L
LL Defl inch	0.151 (L/917)	6' 9/16"	0.288 (L/480)	0.520 (52%)	S	L
TL Defl inch	0.306 (L/452)	6' 9/16"	0.384 (L/360)	0.800 (80%)	D+S	L

Design Notes

- 1 Fasten all plies using 5 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 4 Simpson fasteners applied from a single side of the member use tip values where published.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top must be laterally braced at a maximum of 8' o.c.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Far Face	150 PLF	0 PLF	150 PLF	0 PLF	0 PLF	M1
2	Point	0-5-0		Near Face	1021 lb	0 lb	1021 lb	0 lb	0 lb	A8
3	Point	3-9-0		Near Face	773 lb	0 lb	773 lb	0 lb	0 lb	A9
4	Part. Uniform	4-2-12 to 10-0-0		Near Face	304 PLF	0 PLF	304 PLF	0 PLF	0 PLF	A7

Continued on page 2...

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

Manufacturer Info

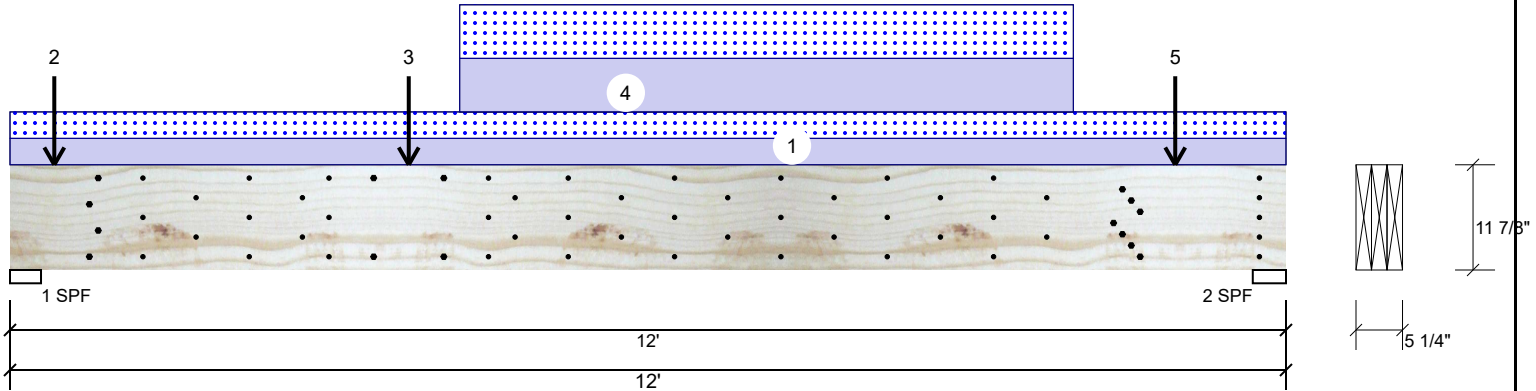
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BM1 Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
5	Point	10-11-8		Near Face	1804 lb	0 lb	1804 lb	0 lb	0 lb	A2
	Self Weight				14 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

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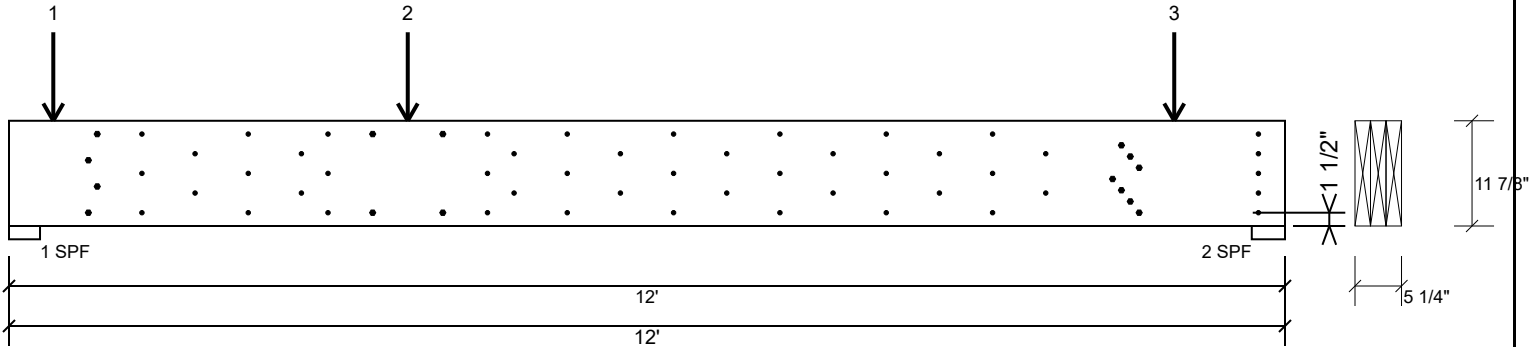
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BM1 Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 5 rows of 10d Box nails (.128x3") at 12" o.c. except for regions covered by concentrated load fastening. Nail from both sides. Maximum end distance not to exceed 6"

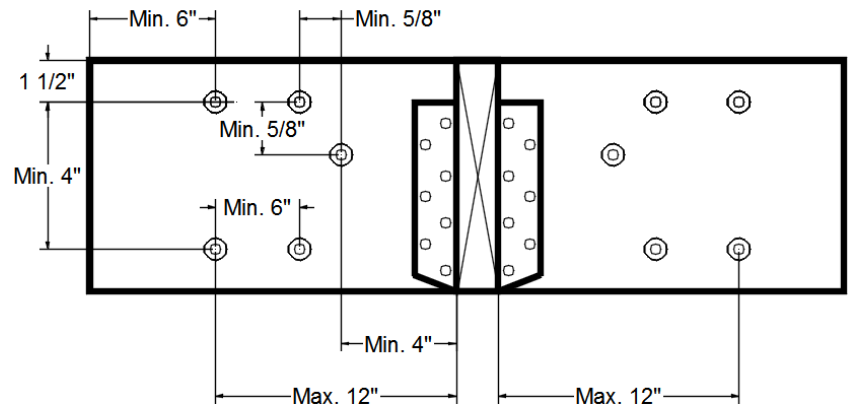
Capacity	86.1 %
Load	405.3 PLF
Yield Limit per Foot	470.6 PLF
Yield Limit per Fastener	94.1 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+S
Duration Factor	1.15

Concentrated Load

Fasten at concentrated side load at 0-5-0 with a minimum of (4) – SDW22500 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	91.1 %
Load	1361.3lb.
Total Yield Limit	1495.0 lb.
Cg	1.0000
Yield Limit per Fastener	373.8 lb.
Yield Mode	Lookup
Load Combination	D+S
Duration Factor	1.15

Min/Max fastener distances for Concentrated Side Loads



Concentrated Load

Fasten at concentrated side load at 3-9-0 with a minimum of (4) – SDW22500 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	68.9 %
Load	1030.7lb.
Total Yield Limit	1495.0 lb.
Cg	1.0000
Yield Limit per Fastener	373.8 lb.
Yield Mode	Lookup
Load Combination	D+S
Duration Factor	1.15

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

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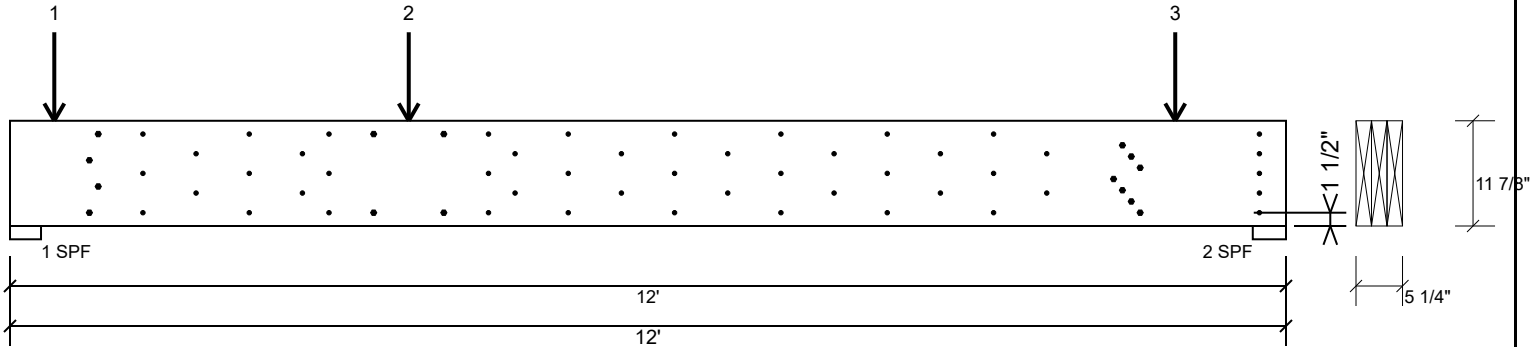
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BM1 Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



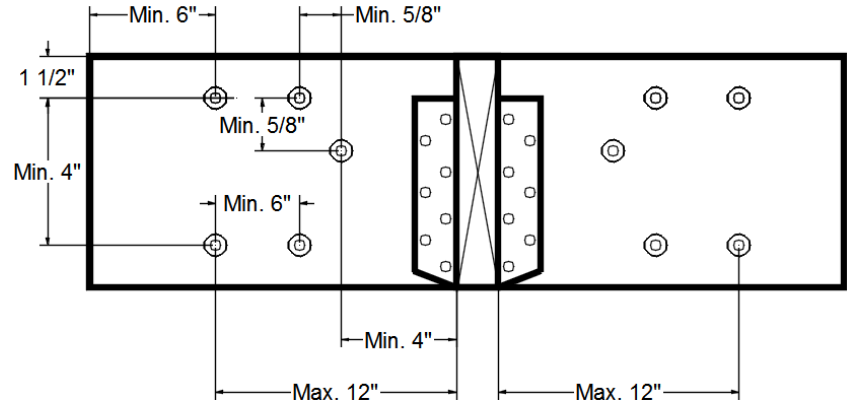
Multi-Ply Analysis

Concentrated Load

Fasten at concentrated side load at 10-11-8 with a minimum of (7) – SDW22500 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	91.9 %
Load	2405.3lb.
Total Yield Limit	2616.3 lb.
Cg	1.0000
Yield Limit per Fastener	373.8 lb.
Yield Mode	Lookup
Load Combination	D+S
Duration Factor	1.15

Min/Max fastener distances for Concentrated Side Loads



Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

Manufacturer Info

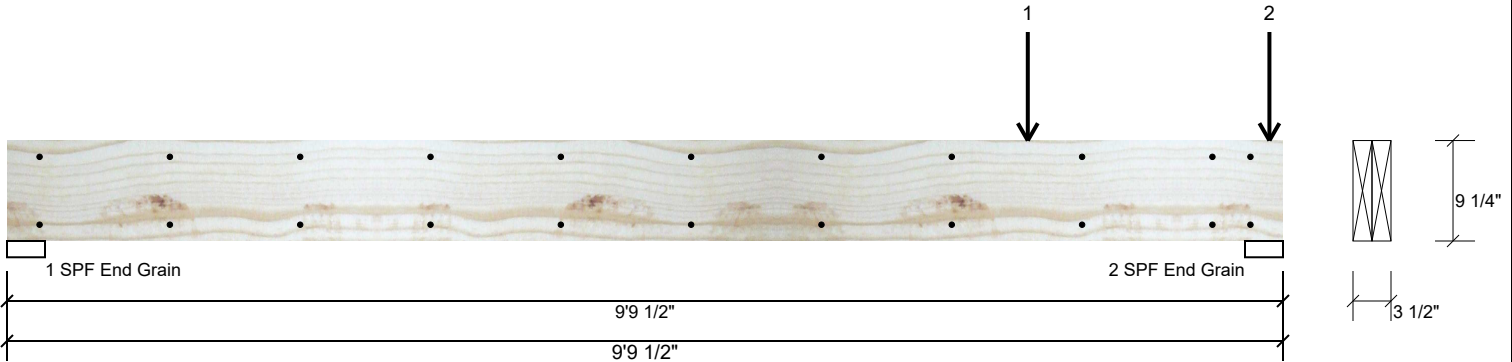
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BM2 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	378	343	0	0
2	0	2448	2413	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	7%	378 / 343	721	L	D+S
2 - SPF End Grain	3.500"	46%	2448 / 2413	4861	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5265 ft-lb	7'10"	14423 ft-lb	0.365 (37%)	D+S	L
Unbraced	5265 ft-lb	7'10"	7832 ft-lb	0.672 (67%)	D+S	L
Shear	3046 lb	8'9 1/2"	7943 lb	0.383 (38%)	D+S	L
LL Defl inch	0.070 (L/1597)	5'8 7/16"	0.233 (L/480)	0.300 (30%)	S	L
TL Defl inch	0.143 (L/783)	5'8 1/4"	0.311 (L/360)	0.460 (46%)	D+S	L

Design Notes

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Point	7-10-0		Top	1852 lb	0 lb	1852 lb	0 lb	0 lb	A2A
2	Point	9-8-4		Top	904 lb	0 lb	904 lb	0 lb	0 lb	A1A
	Self Weight				7 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

Manufacturer Info

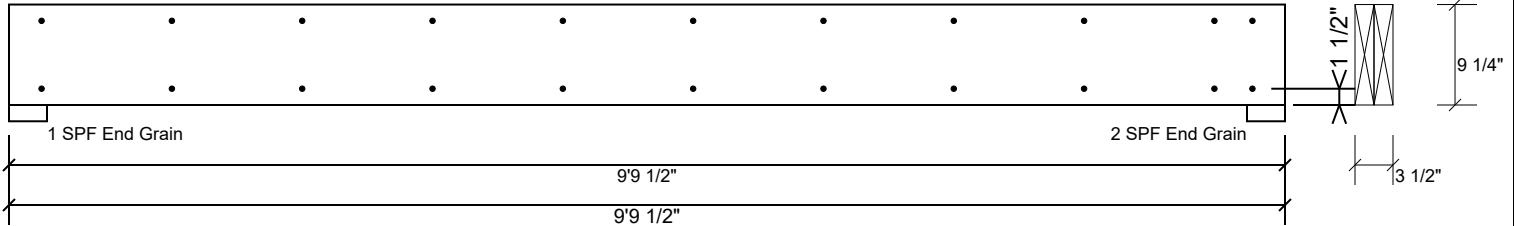
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BM2 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

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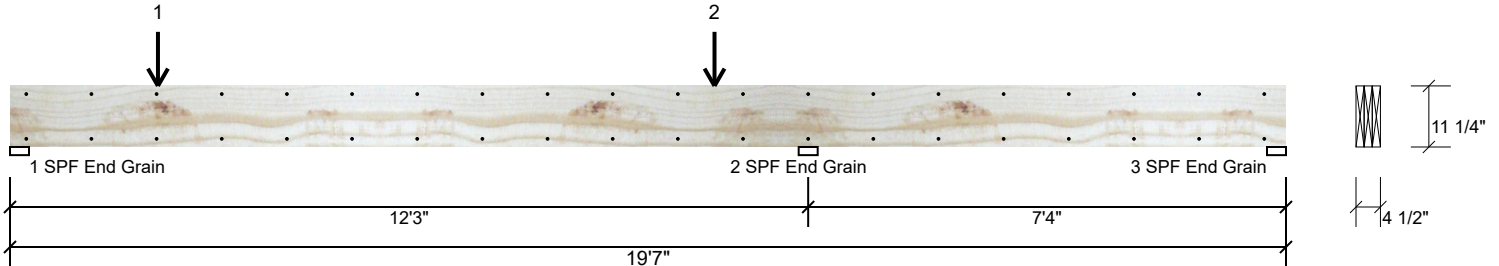
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Front Porch BBO SP #2 2.000" X 12.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	3
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	Yes
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1837	1837	0	0
2	0	2912	2912	0	0
3	0	(-417)	0 (-417)	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	41%	1837 / 1837	3673	L_	D+S
2 - SPF End Grain	3.500"	65%	2912 / 2912	5823	L_	D+S
3 - SPF End Grain	3.500"	0%	-417 / -418	-835 (-835)	L_	D+S(D+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-5929 ft-lb	12'3"	7846 ft-lb	0.756 (76%)	D+S	L_
Unbraced	-5929 ft-lb	12'3"	5936 ft-lb	0.999 (100%)	D+S	L_
Pos Moment	7499 ft-lb	2'3 1/4"	7846 ft-lb	0.956 (96%)	D+S	L_
Unbraced	7499 ft-lb	2'3 1/4"	7499 ft-lb	1.000 (100%)	D+S	L_
Shear	4989 lb	11'3 3/4"	6792 lb	0.734 (73%)	D+S	L_
LL Defl inch	0.093 (L/1550)	5'4 15/16"	0.301 (L/480)	0.310 (31%)	S	LL
TL Defl inch	0.186 (L/775)	5'4 15/16"	0.401 (L/360)	0.460 (46%)	D+S	LL

Design Notes

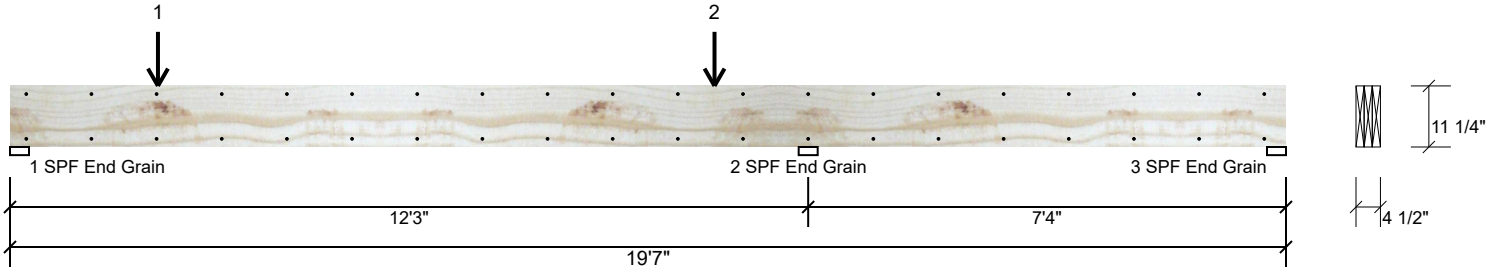
- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Tie-down connection required at bearing 3 for uplift 835 lb (Combination D+S, Load Case L_).
- 6 Top must be laterally braced at a maximum of 3'6" o.c.
- 7 Bottom must be laterally braced at a maximum of 8'4 1/8" o.c.
- 8 Lateral slenderness ratio based on single ply width.

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This design is valid until 1/8/2023

Front Porch BBO SP #2 2.000" X 12.000" 3-Ply - PASSED

Level: Level



ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Point	2-3-4		Top	2203 lb	0 lb	2203 lb	0 lb	0 lb	A2
2	Point	10-9-12		Top	2128 lb	0 lb	2128 lb	0 lb	0 lb	A2A

Manufacturer Info

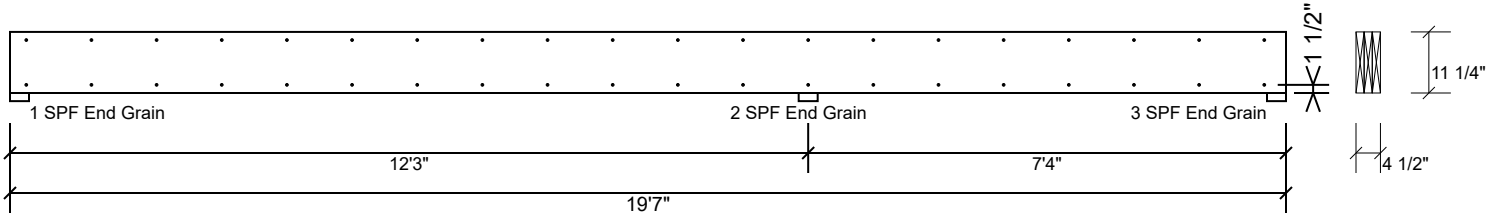
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This design is valid until 1/8/2023

Front Porch BBO SP #2 2.000" X 12.000" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed 6"

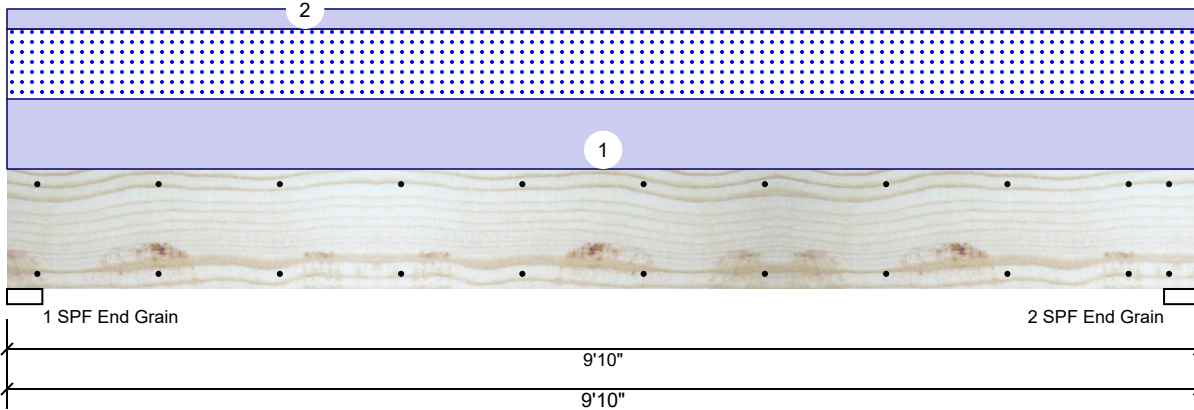
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	202.6 PLF
Yield Limit per Fastener	101.3 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

<p>Manufacturer Info</p>	<p>Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS</p>

This design is valid until 1/8/2023

GDH-3 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1378	1037	0	0
2	0	1378	1037	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	23%	1378 / 1037	2415	L	D+S
2 - SPF End Grain	3.500"	23%	1378 / 1037	2415	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5397 ft-lb	4'11"	22897 ft-lb	0.236 (24%)	D+S	L
Unbraced	5397 ft-lb	4'11"	9857 ft-lb	0.548 (55%)	D+S	L
Shear	1817 lb	1'2 5/8"	10197 lb	0.178 (18%)	D+S	L
LL Defl inch	0.044 (L/2559)	4'11"	0.234 (L/480)	0.190 (19%)	S	L
TL Defl inch	0.102 (L/1099)	4'11"	0.312 (L/360)	0.330 (33%)	D+S	L

Design Notes

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	211 PLF	0 PLF	211 PLF	0 PLF	0 PLF	C1
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Loads (Plywood / Siding, etc.)
	Self Weight				9 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

Manufacturer Info

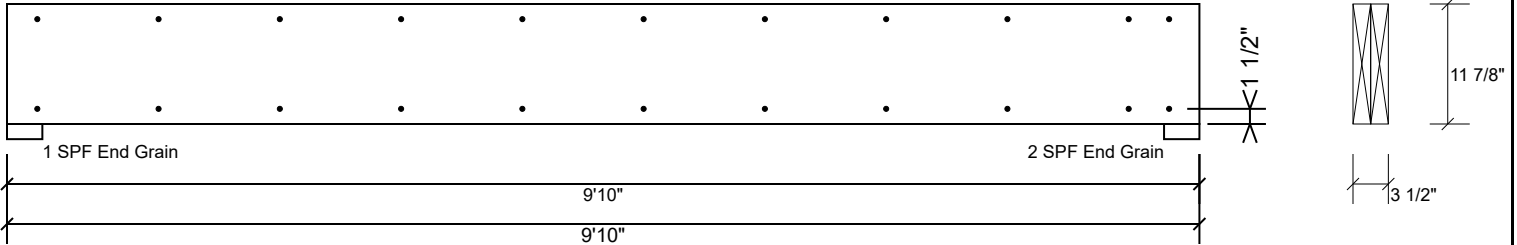
Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
 www.metsawood.com/us
 ICC-ES: ESR-3633

Comtech, Inc.
 1001 S. Reilly Road, Suite #639
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GDH-3 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

Manufacturer Info

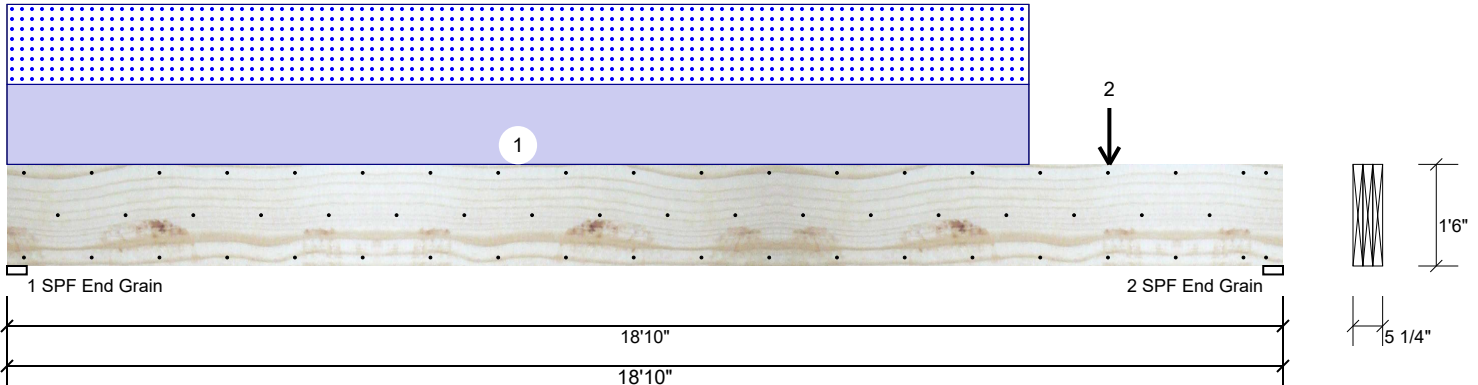
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 28314
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SLGDH Kerto-S LVL 1.750" X 18.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	4104	3907	0	0
2	0	4318	4120	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	50%	4104 / 3907	8011	L	D+S
2 - SPF End Grain	3.500"	53%	4318 / 4120	8438	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	37066 ft-lb	9'8 1/4"	77108 ft-lb	0.481 (48%)	D+S	L
Unbraced	37066 ft-lb	9'8 1/4"	37070 ft-lb	1.000 (100%)	D+S	L
Shear	8402 lb	17'1 3/8"	23184 lb	0.362 (36%)	D+S	L
LL Defl inch	0.240 (L/920)	9'6 3/16"	0.460 (L/480)	0.520 (52%)	S	L
TL Defl inch	0.492 (L/449)	9'6 3/16"	0.613 (L/360)	0.800 (80%)	D+S	L

Design Notes

- 1 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 5'3 3/4" o.c.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-0-0 to 15-1-0		Top	403 PLF	0 PLF	403 PLF	0 PLF	0 PLF	B1
2	Point	16-3-4		Top	1948 lb	0 lb	1948 lb	0 lb	0 lb	B3
	Self Weight				21 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

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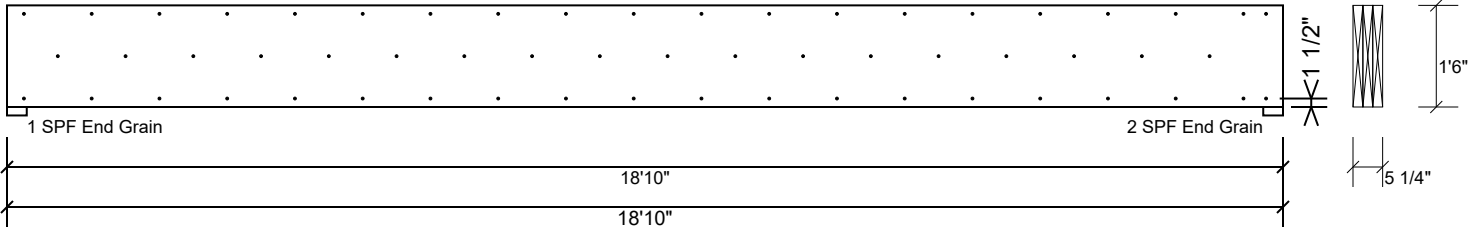
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SLGDH Kerto-S LVL 1.750" X 18.000" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed 6"

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
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