

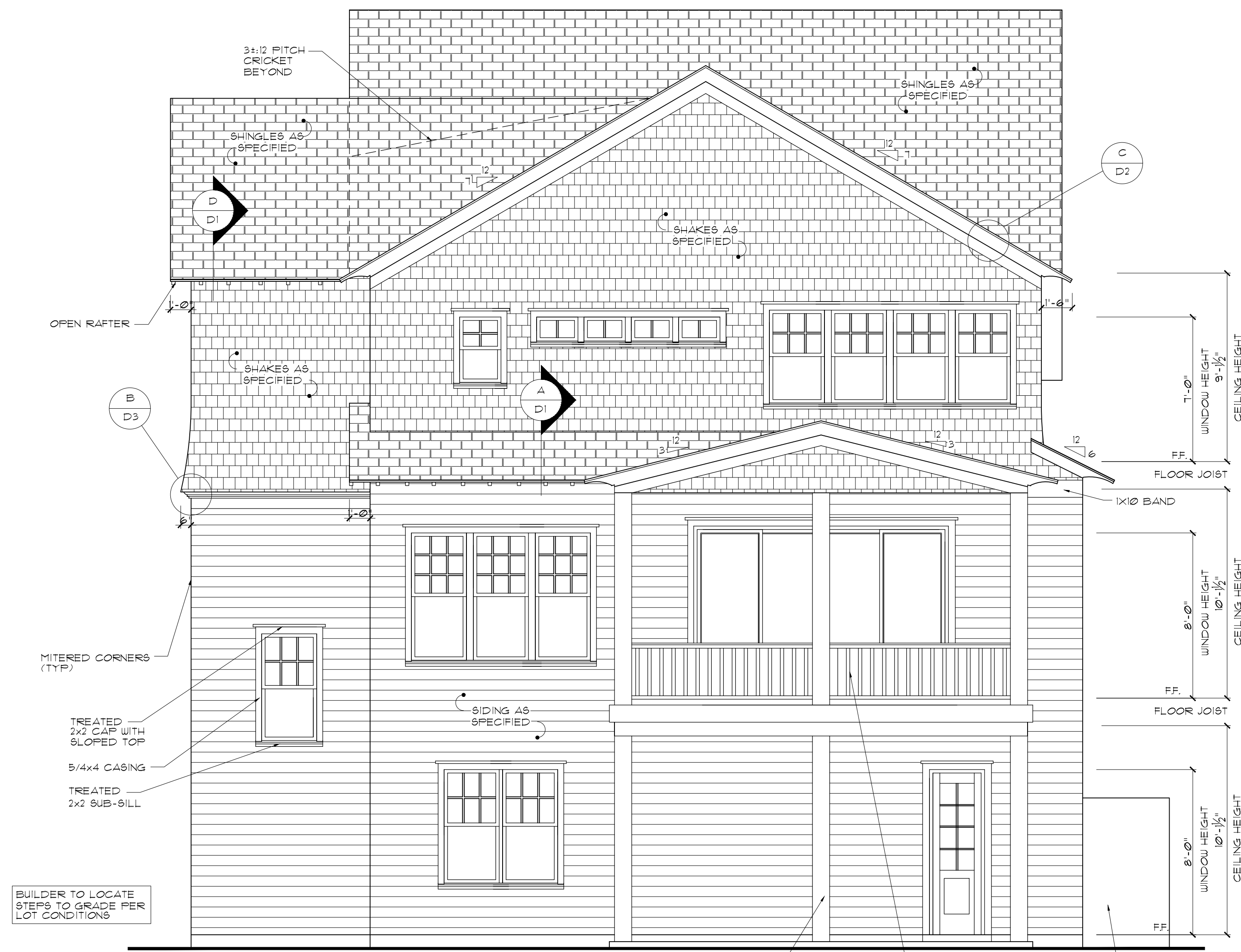
# RALEIGH CUSTOM HOMES

## 3312 THOMAS RD

DATE: 11/15/2016  
 DRAWN BY: KM  
 REVISION DATE:

**ELEVATIONS**

SHEET NO.  
A1



**REAR ELEVATION**  
SCALE: 1/4"=1'



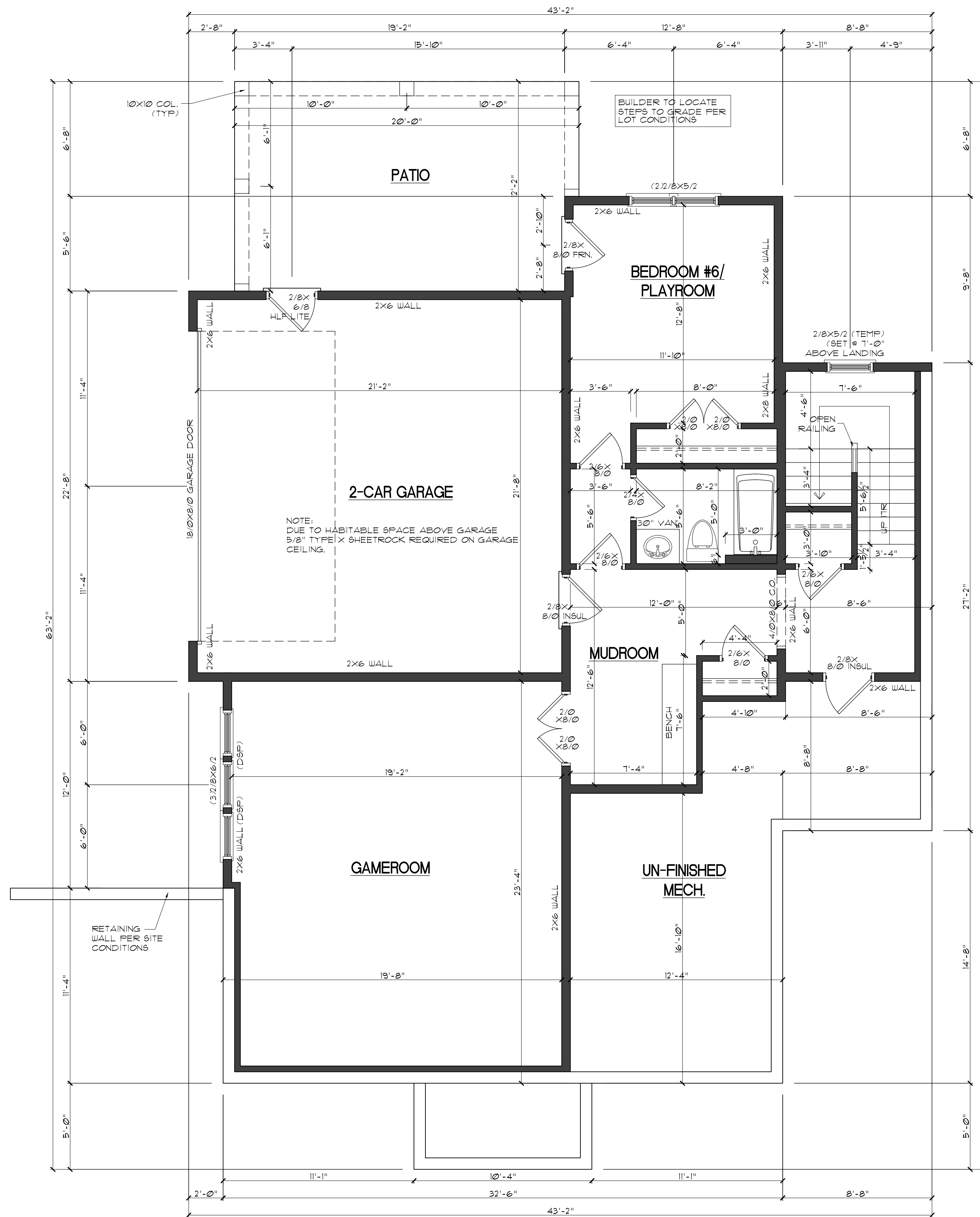
**RIGHT SIDE ELEVATION**  
SCALE: 1/4"=1'

**RALEIGH CUSTOM HOMES**  
**3312 THOMAS RD**

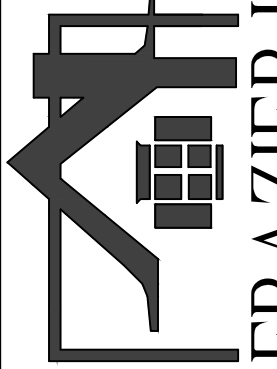
DATE: 11/15/2016  
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**ELEVATIONS**

SHEET NO.  
**A2**



**BASEMENT**  
SCALE: 1/4"=1'



www.frazierhomedesign.com  
**FRAZIER HOME DESIGN, LLC.**  
 900 RIDGEFIELD DR, SUITE 170  
 RALEIGH, NC 27609  
 OFFICE: (919)424-7245

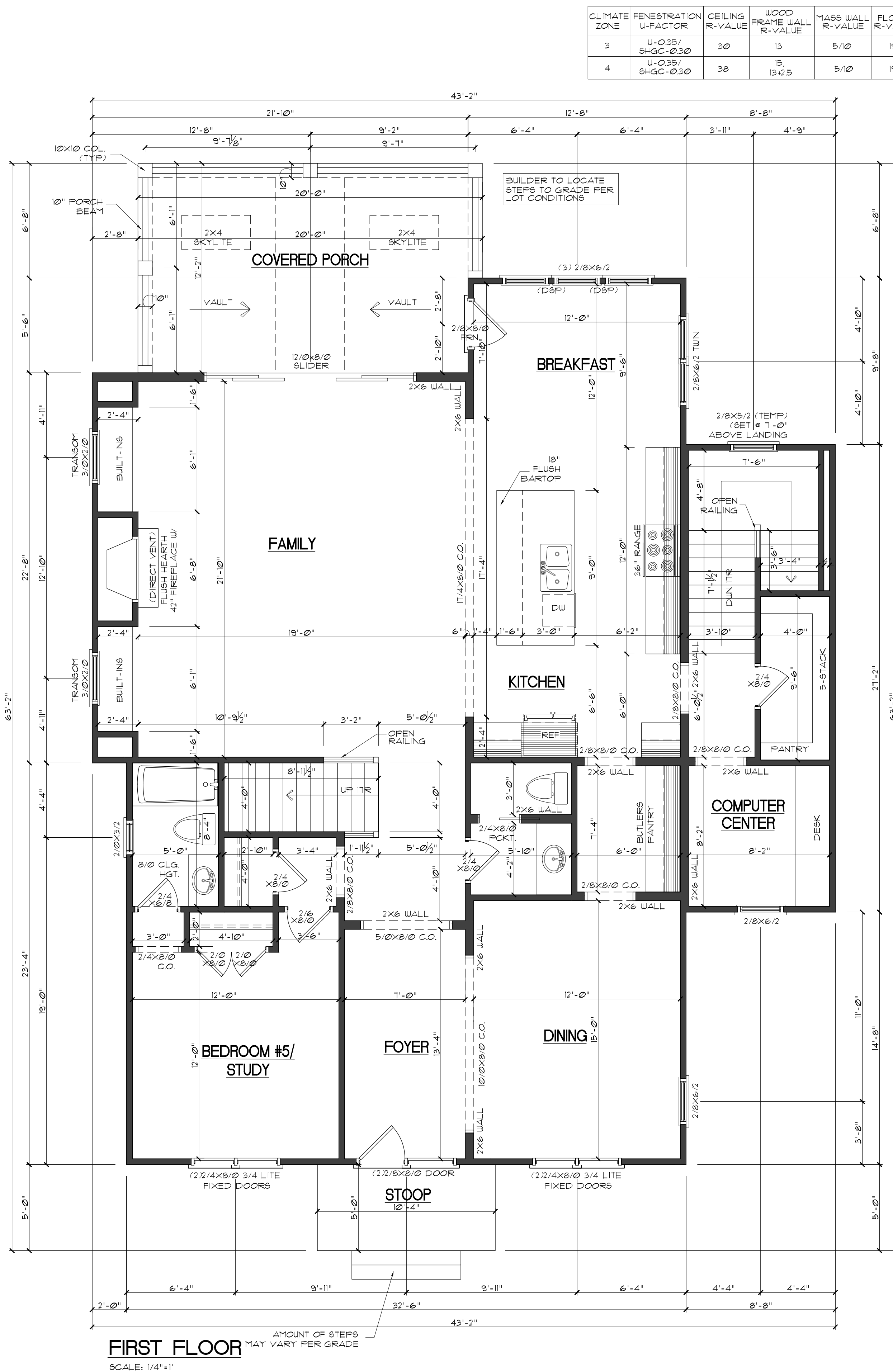
**RALEIGH CUSTOM HOMES**  
**3312 THOMAS RD**

DATE:	11/15/2016
DRAWN BY:	KM
REVISION DATE:	

**BASEMENT**

SHEET NO.

**A3**



CLIMATE ZONE	FENESTRATION U-FACTOR	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
3	U-0.35/ SHGC-0.30	3.0	13	5/10	19	10/13	0	5/13
4	U-0.35/ SHGC-0.30	3.8	15, 13.2.5	5/10	19	10/13	10.2 FT.	10/13

PLANS ARE DESIGNED TO MEET THE REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2012 EDITION

**GENERAL NOTES**

**WALLS:**  
 ALL WALLS ARE DRAIN 4" THICK UNO. ANGLED WALL ARE DRAIN 645° UNO.

**SMOKE DETECTORS:**  
 LOCATION AND NUMBER OF DETECTORS SHALL CONFORM TO NEC.

**EGRESS:**  
 ALL BEDROOMS MUST HAVE AT LEAST ONE WINDOW WHICH CONFORMS TO R-310 OF THE NC BLDG CODE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CHOSEN WINDOWS MEET EGRESS REQUIREMENTS AS MANUFACTURERS VARY.

**ATTIC ACCESS:**  
 MIN. ATTIC ACCESS SHALL BE PROVIDED BY BUILDER AND LOCATED ON SITE.

**WALL/CEILING HGT.**  
 WALL AND CEILING HEIGHT NOTES ARE BASED ON NOMINAL WALL SIZE. KNEE WALL HEIGHT LABELS FOR WALLS UNDER RAFTERS ASSUME AN EXTRA 2" FOR FURRING (IN HEATED SPACES) FOR INSULATION. THE WALL HEIGHT REFERS TO THE HGT. FROM THE FLOOR DECKING TO THE BOTTOM OF THE FURRING.

**FLOOR AREA:**

BASEMENT HTD. :	1005#
FIRST FLOOR HTD. :	1846#
SECOND FLOOR HTD. :	1653#
TOTAL SQ. FT. :	4504#
UN-FIN. BSMT. STOR./MECH. :	305#
PATIO :	240#
FRONT STOOP :	51#
COVERED PORCH :	241#
GARAGE :	484#

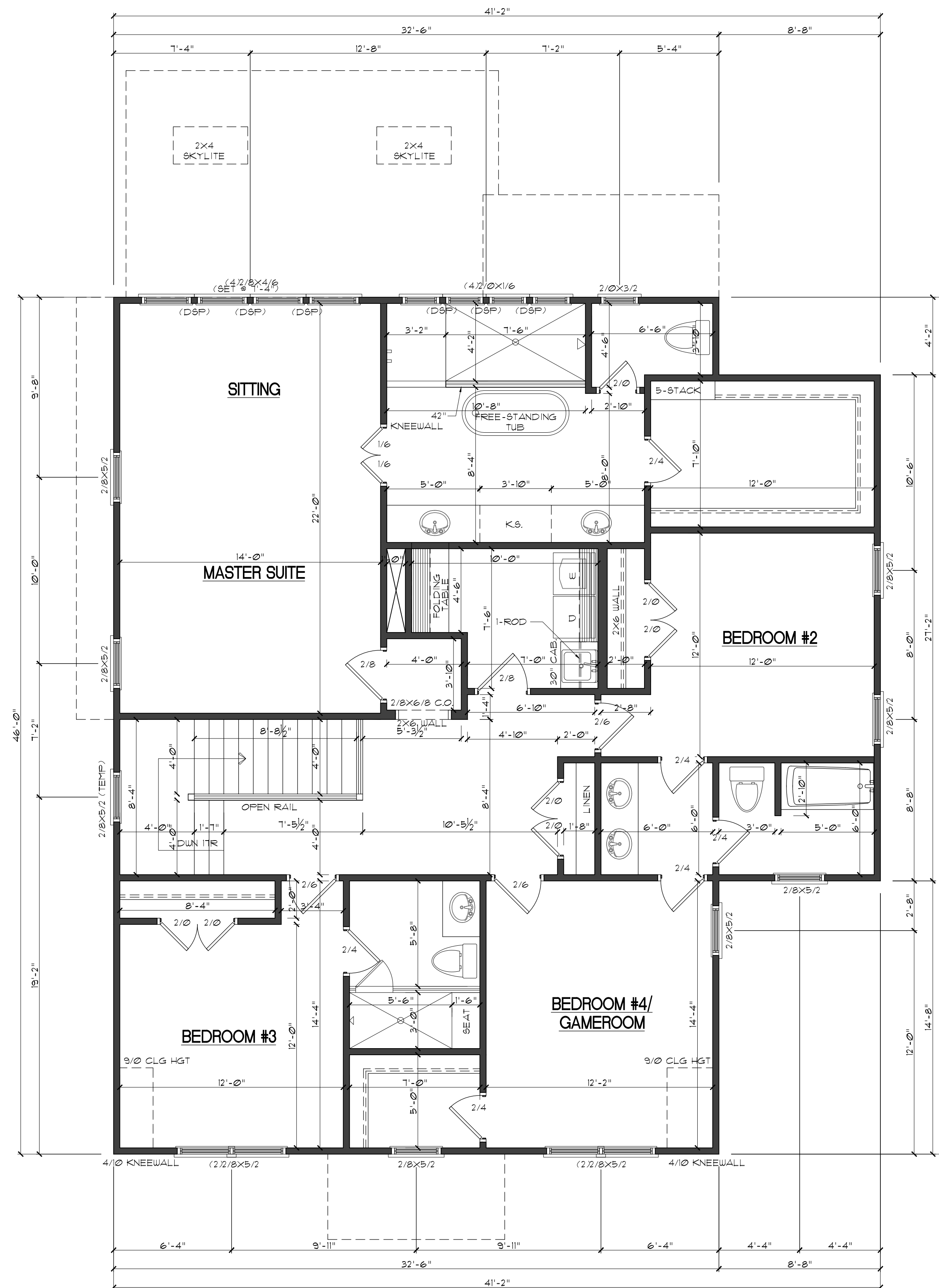
**FIRST FLOOR**  
 SCALE: 1/4"=1'  
 AMOUNT OF STEPS MAY VARY PER GRADE

**RALEIGH CUSTOM HOMES**  
**3312 THOMAS RD**

DATE: 11/15/2016  
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**FIRST FLOOR**

SHEET NO.  
**A4**



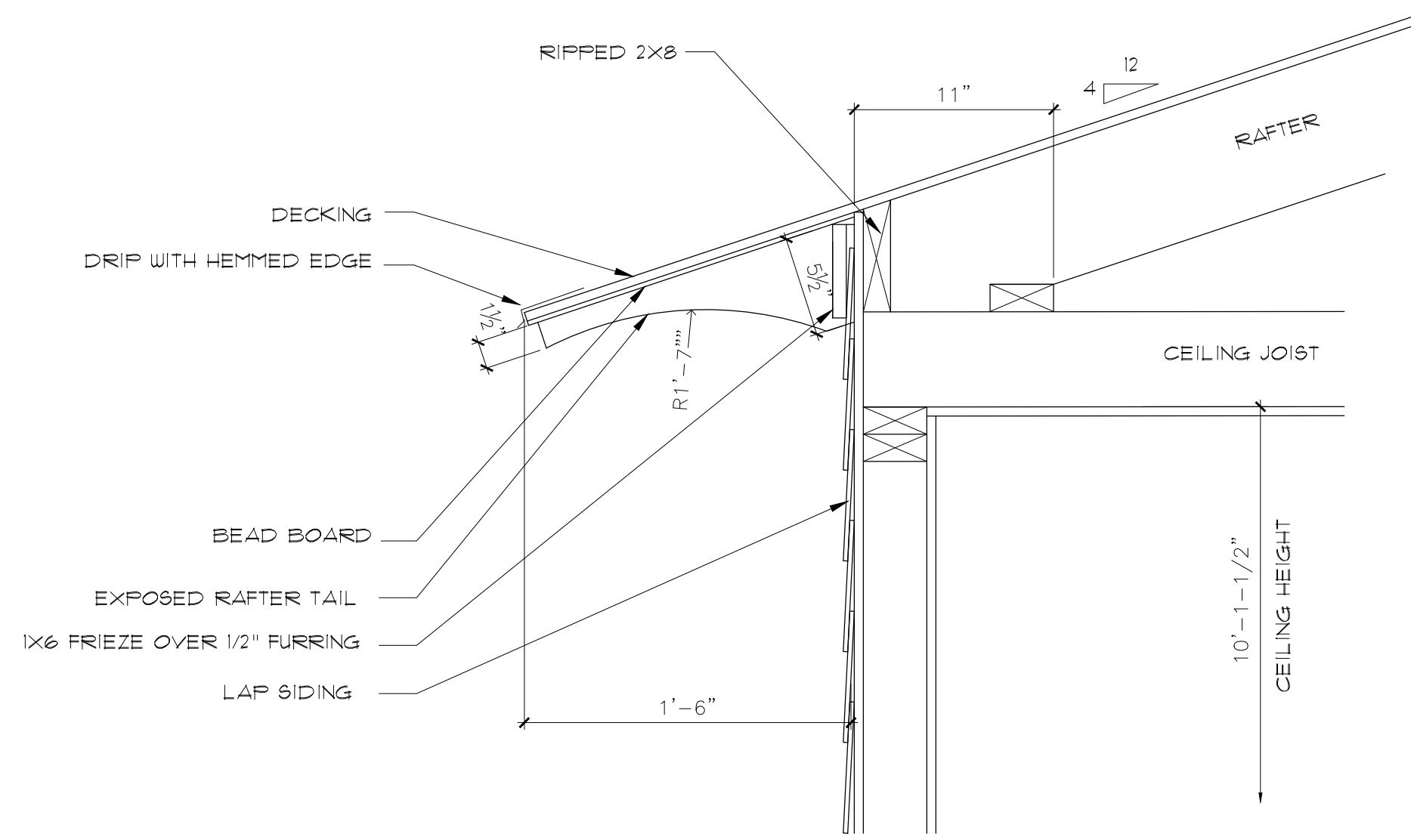
**SECOND FLOOR**  
SCALE: 1/4"=1'

**RALEIGH CUSTOM HOMES**  
**3312 THOMAS RD**

DATE: 11/15/2016  
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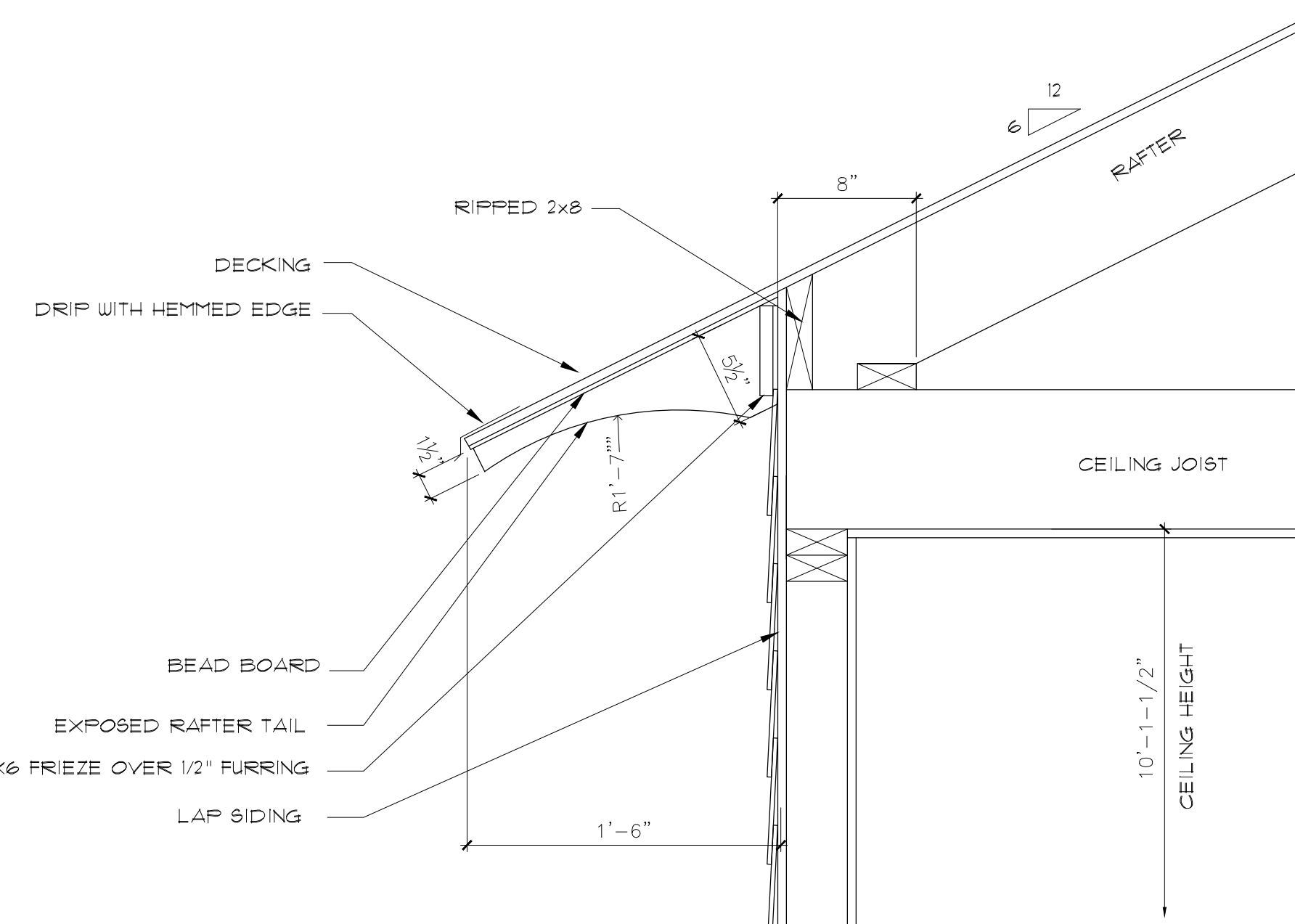
**SECOND FLOOR**

SHEET NO.  
**A4**



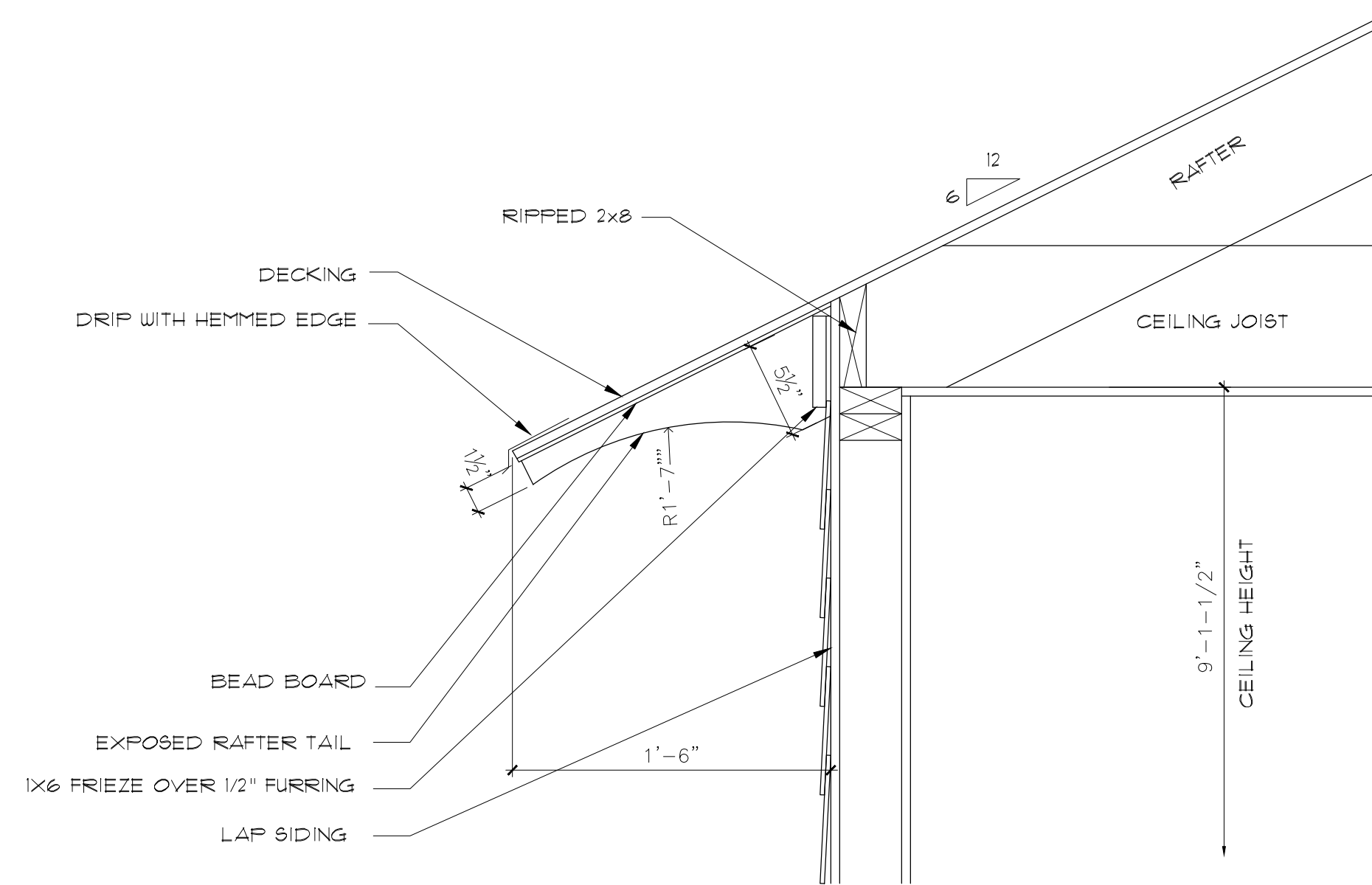
**EAVE DETAIL "A"**

SCALE: 1-1/2"=1'



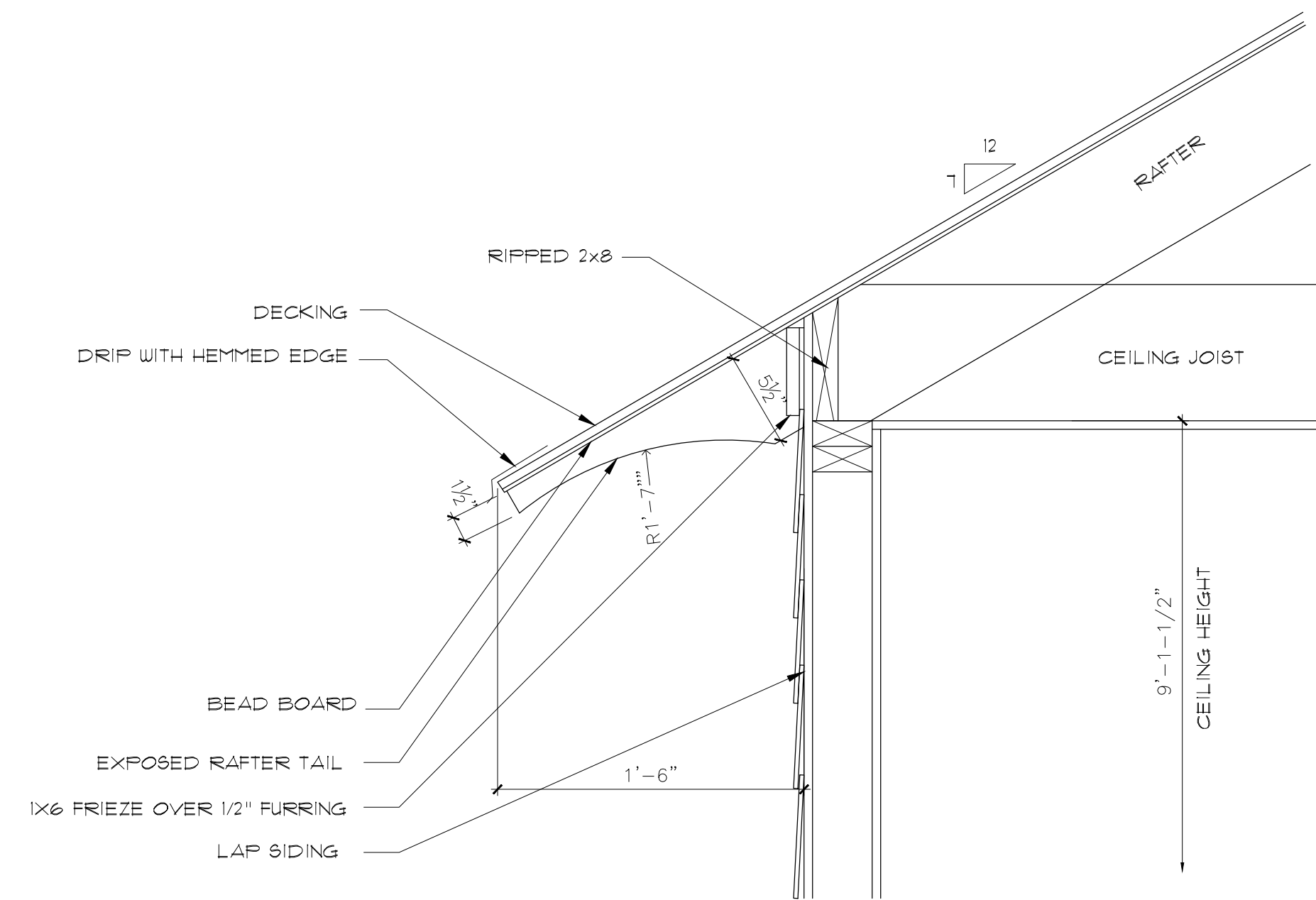
**EAVE DETAIL "B"**

SCALE: 1-1/2"=1'



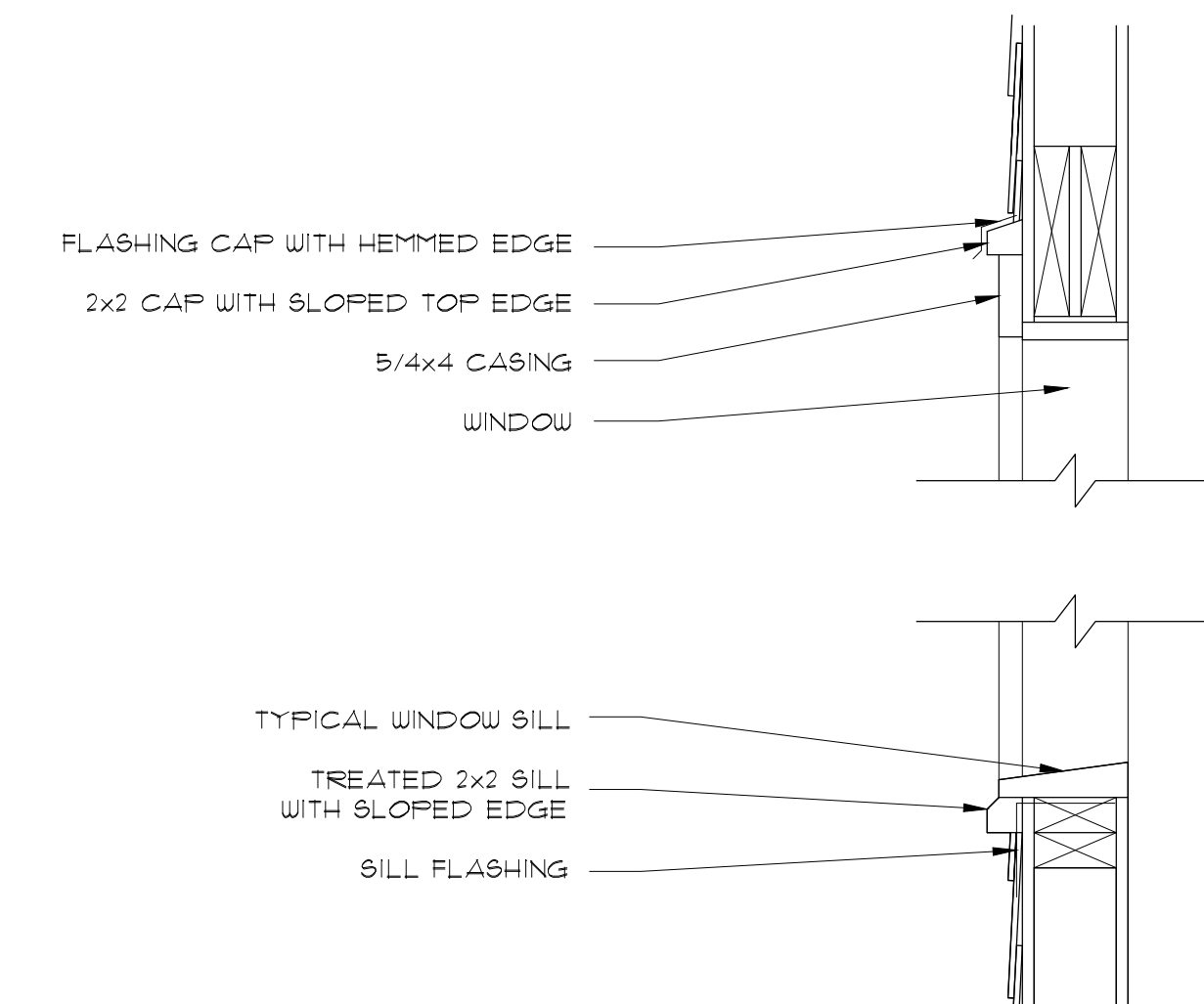
**EAVE DETAIL "C"**

SCALE: 1-1/2"=1'



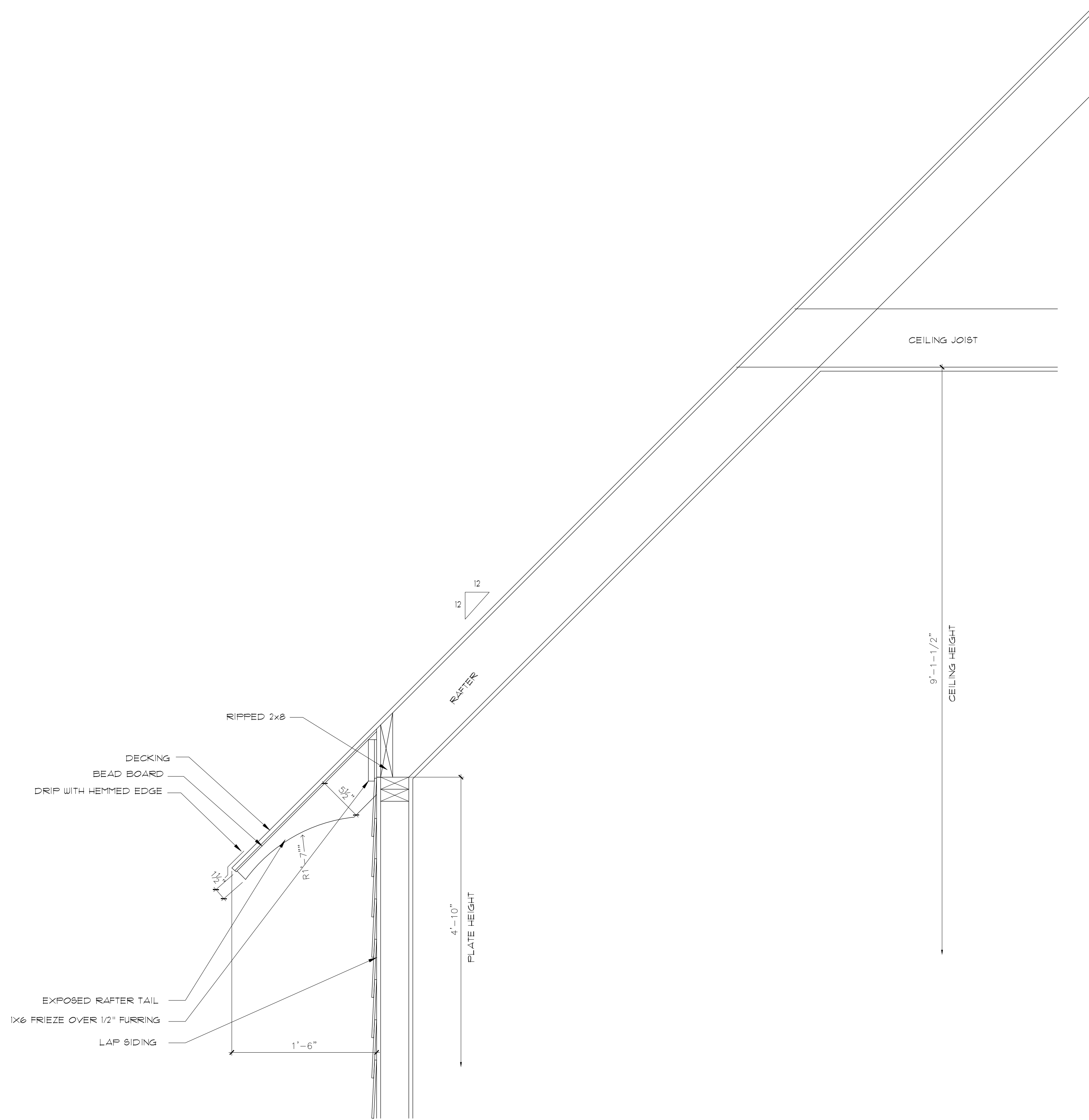
**EAVE DETAIL "D"**

SCALE: 1-1/2"=1'

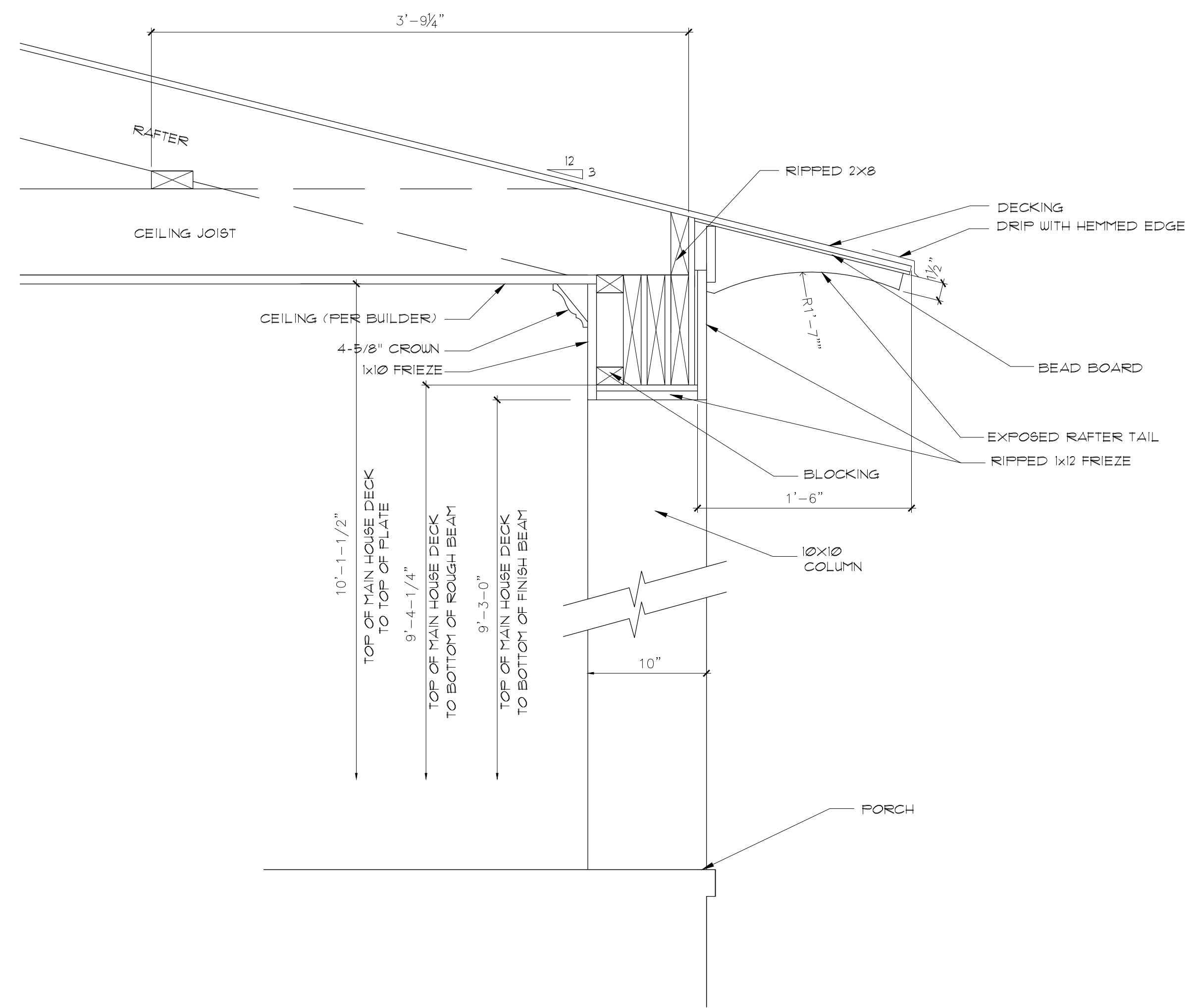


**TYPICAL WINDOW DETAIL @ HARDI**

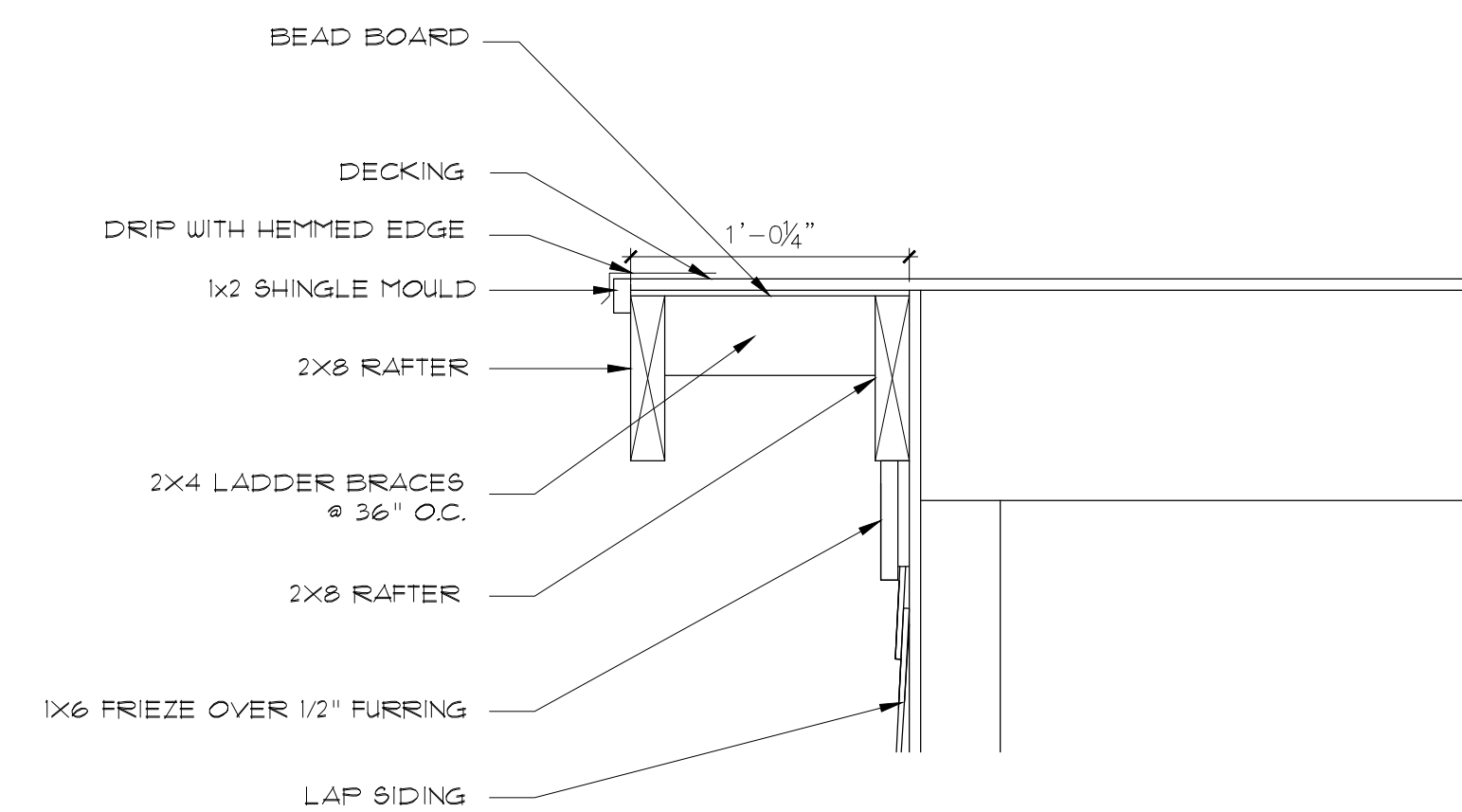
SCALE: 1-1/2"=1'



**EAVE DETAIL "A"**  
SCALE: 1-1/2"=1'



**PORCH DETAIL "B"**  
SCALE: 1-1/2"=1'



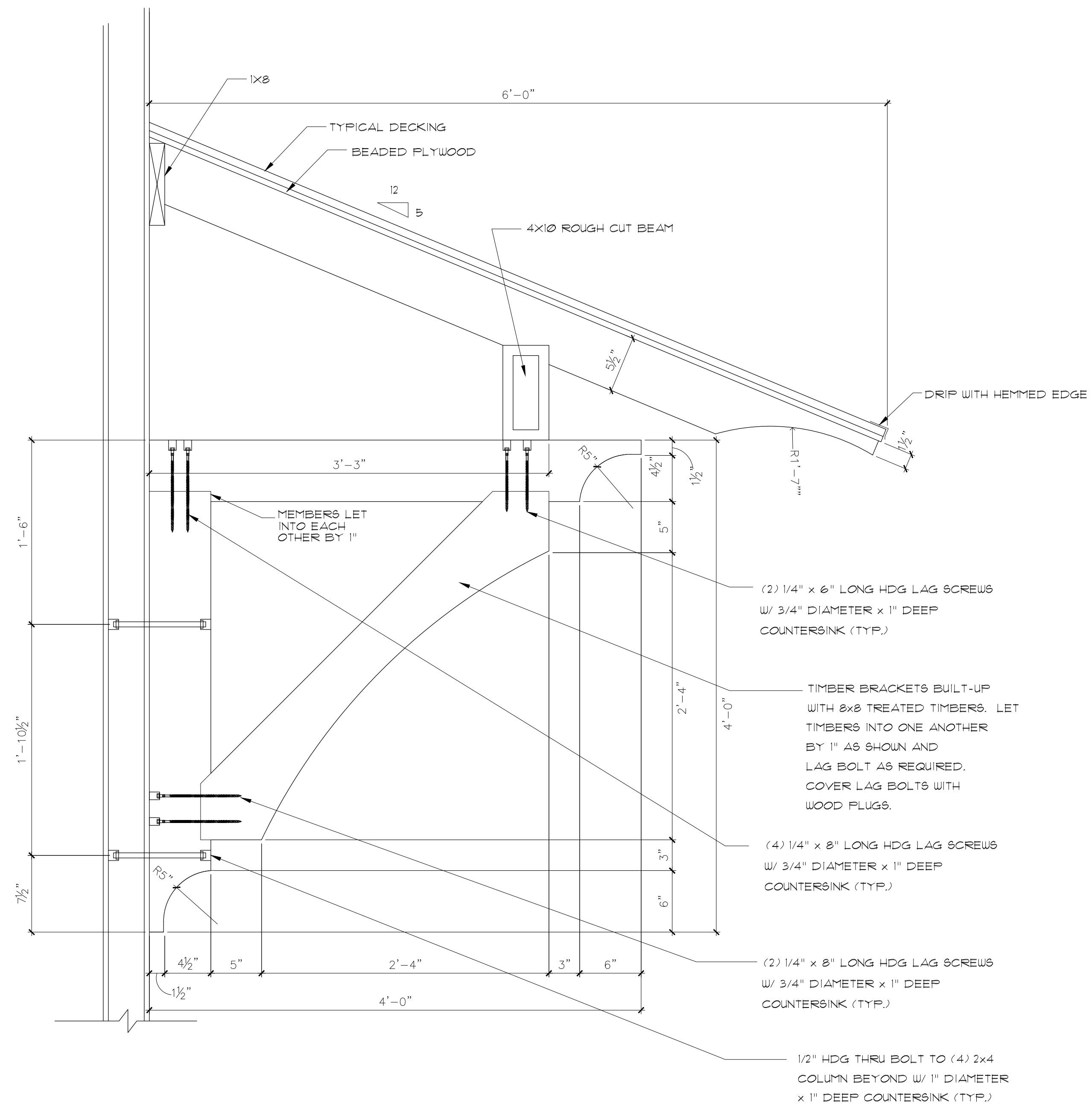
**RAKE DETAIL "C"**  
SCALE: 1-1/2"=1'

**RALEIGH CUSTOM HOMES**  
**3312 THOMAS RD**

DATE:	11/15/2016
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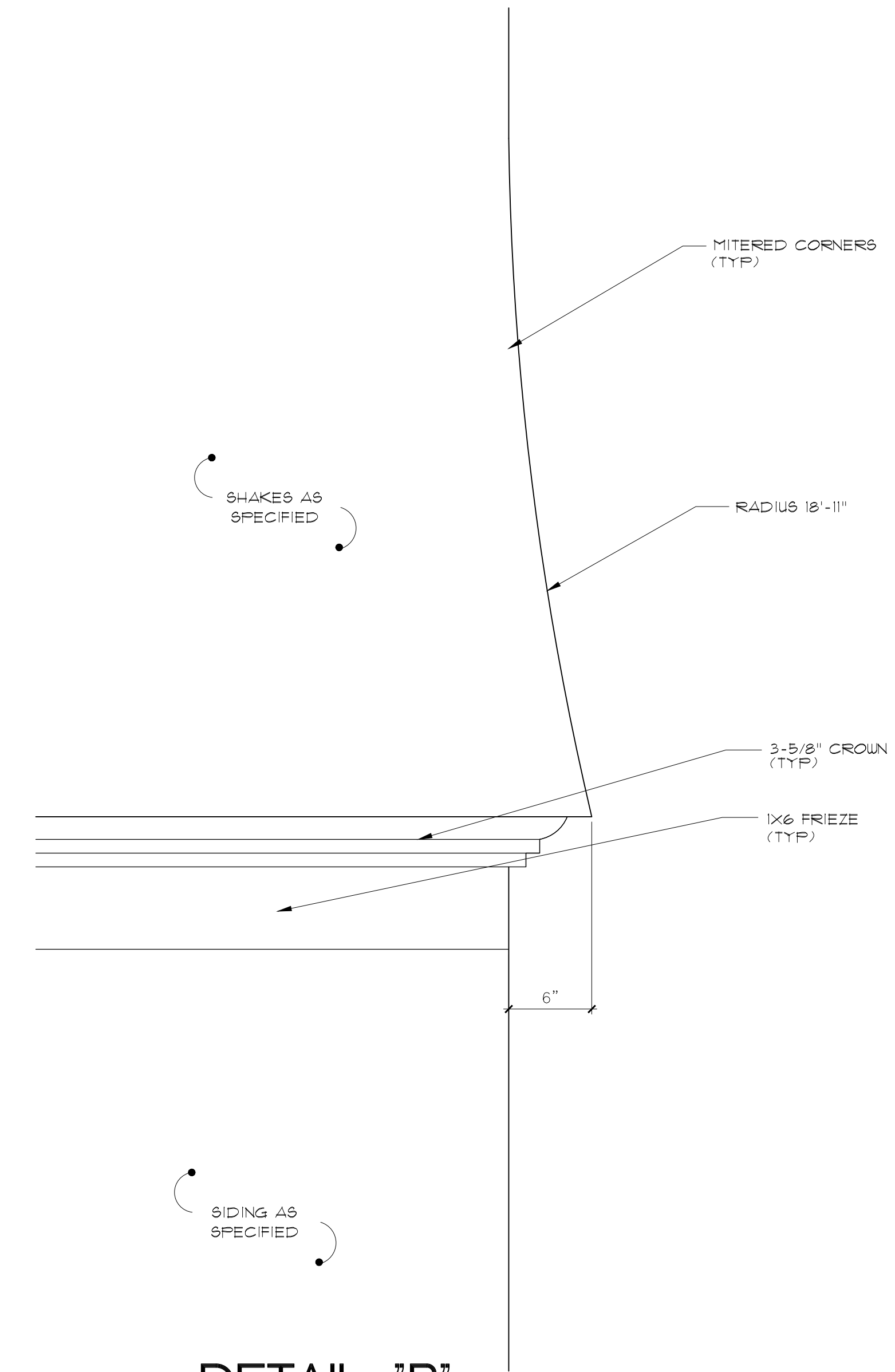
**DETAILS**

SHEET NO.  
**D2**



**PORCH DETAIL "A"**

SCALE: 1-1/2"=1'



**DETAIL "B"**

SCALE: 1-1/2"=1'

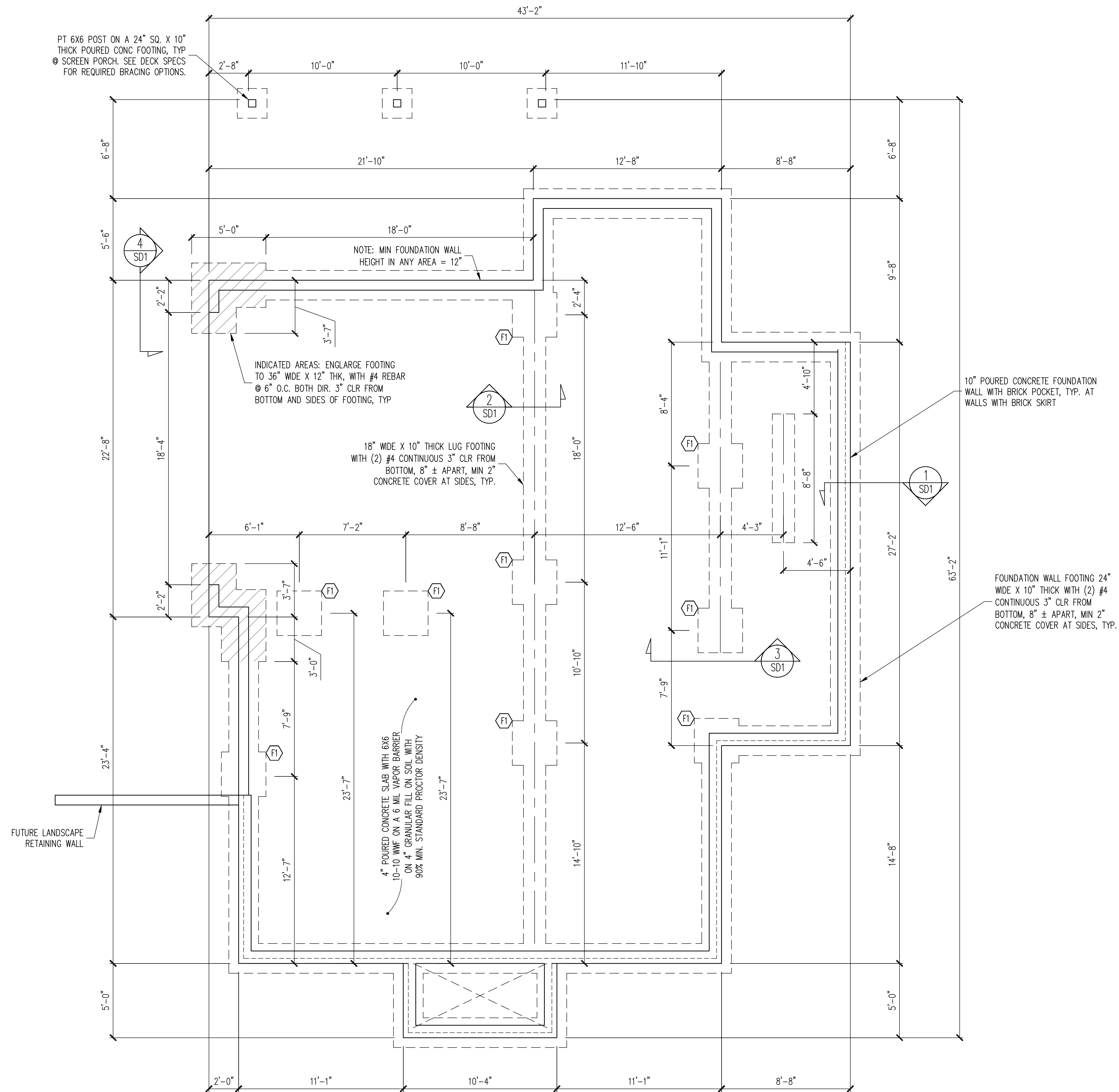
**RALEIGH CUSTOM HOMES**
  
**3312 THOMAS RD**

DATE: 11/15/2016
   
 DRAWN BY: KM
   
 REVISION DATE:

**DETAILS**

SHEET NO.
   
**D3**





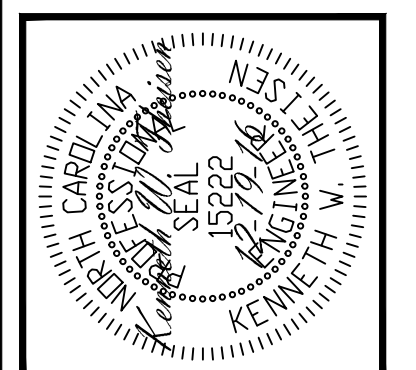
FOUNDATION PLAN  
1/4" = 1'-0"

FOUNDATION SCHEDULE

F1 12" THICK X 36" SQ. FOOTING WITH (4) #4 X 30" REBAR @ 9" O.C. BOTH DIRECTIONS 3" CLR FROM BOTTOM OF FOOTING

NOTES:  
-HEIGHT AND BACKFILL LIMITATIONS FOR FOUNDATION WALLS ARE TO BE GOVERNED BY THE NCSBC, LATEST EDITION.

STRUCTURAL ENGINEERS  
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Raleigh, North Carolina 27615  
(919) 844-1661 Fax (919) 844-1665

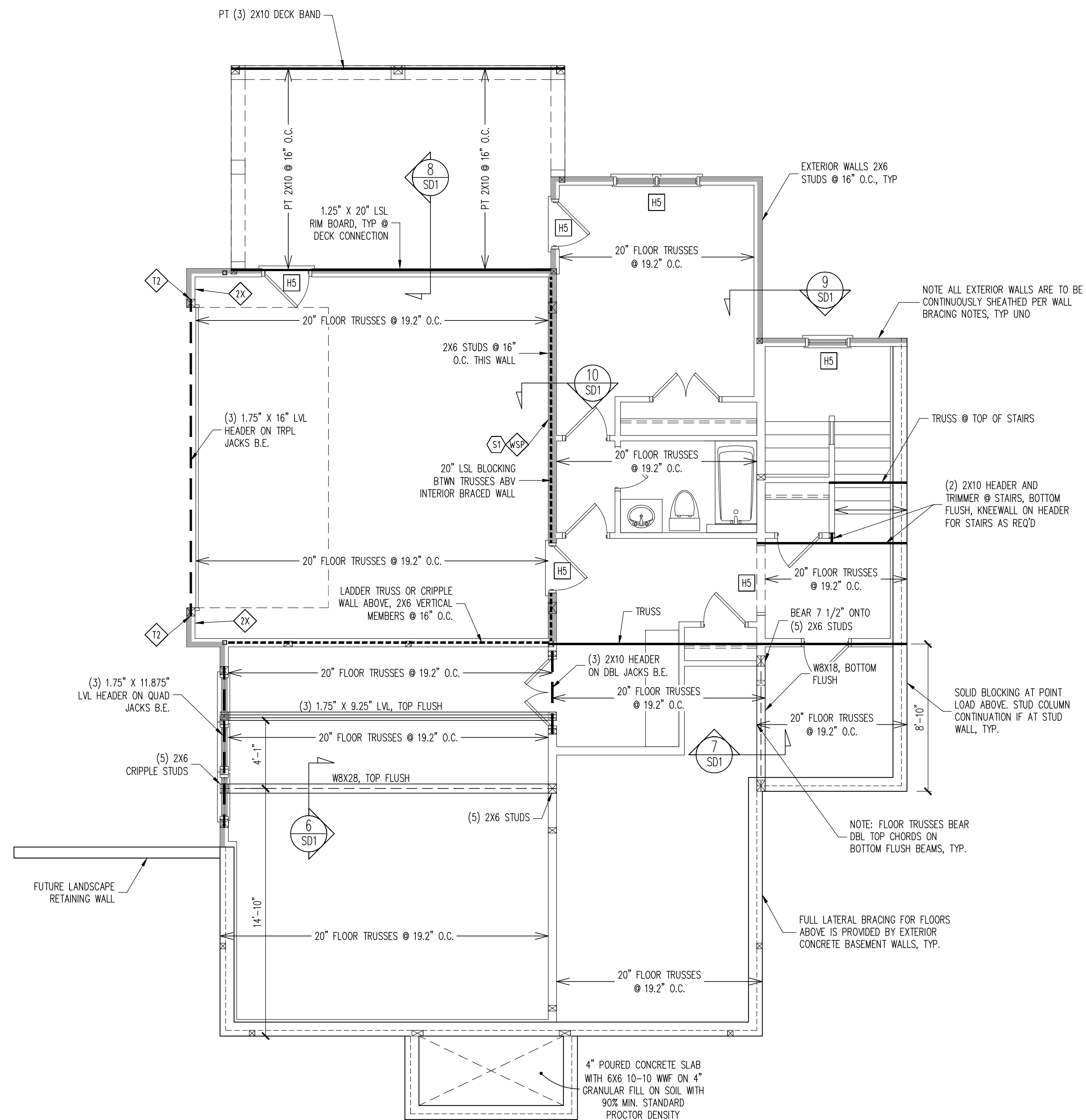


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CLIENT:	RALEIGH CUSTOM HOMES
SCOPE:	STRUCTURAL ADDENDUM
LOC:	3312 THOMAS RD.
ENG:	KWT/BDO
REV:	
DATE:	12-19-16

PROJECT NO.  
16-20-219

SHEET NO.  
S1  
1 of 7



**BASEMENT FRAMING PLAN**  
 WALLS AND CEILING  
 1/4" = 1'-0"

**WALL BRACING**

BASEMENT ONLY

ALL EXTERIOR STUD WALLS ARE TO BE CONTINUOUSLY SHEATHED WITH 7/16 APA RATED OSB NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD. BLOCKING AT HORIZONTAL JOINTS IN BRACED WALL LINES ONLY REQUIRED AT SHADED WALLS, UNO

SHADED WALLS:

WSP - INTERIOR BRACED WALL WITH 3/4" MIN. THICKNESS WOOD STRUCTURAL PANELING, (1) SIDE. ATTACH WSP TO STUD WALL WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD. BLOCK AT ALL PANEL EDGES.

2X - SHEATH BOTH SIDES OF STUD WALL WITH 7/16 APA RATED OSB, NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD.

T2 - SIMPSON LTT19 HOLDOWN SECURED AS UPLIFT DEVICE TO CORNER STUDS OR KING/JACKS STUDS. ATTACH TO FOUNDATION OR SLAB THROUGH P.T. SILL PLATE WITH 3/4" DIA. ANCHOR BOLT.

PROVIDED CONTINUOUS SHEATHING = 95' MIN.  
 -WALL BRACING IS BY ENGINEERED DESIGN AND NOT PRESCRIPTIVE PER SECTION 602.10 OF THE 2012 NRC. CONTINUOUS SHEATHING HAS BEEN PROVIDED, ALONG WITH ALTERNATIVE METHODS TO INSURE THE MINIMUM INTENT OF SECTION 602.10 OF THE 2012 NRC HAS BEEN MET AND EXCEEDED.

**FRAMING SCHEDULE**

BASEMENT ONLY

S1 BLOCKING OF EQUAL DEPTH IS REQUIRED ABOVE BRACED WALL. NAIL SUBFLOOR ABOVE TO BLOCKING WITH 8d NAILS @ 6" O.C. TOE NAIL BLOCKING ABOVE WALL TO TOP PLATE WITH 8d TOE NAILS @ 6" O.C. ATTACH SOLE PLATE TO SLAB BELOW WITH 1/4" TAPCONS @ 16" O.C., 1 1/2" EMBED. INTO SLAB

**REQUIRED STUDS FOR BEAM SUPPORT**

REFER TO SECTIONS 5.02 - 5.06 OF THE CONSTRUCTION SPECIFICATIONS FOR REQUIRED NUMBER OF STUDS FOR BEAM SUPPORT, TYP UNO.

**HEADER SCHEDULE**

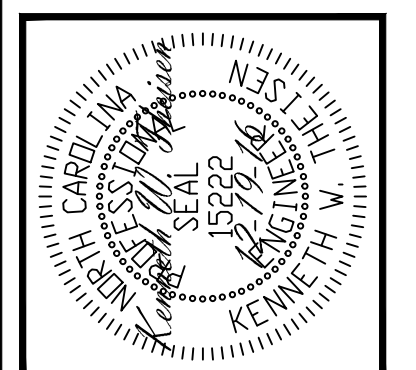
BASEMENT ONLY

- H1 SINGLE 2X4 TURNED FLAT (A)
- H2 (2) 2X4'S ON SINGLE JACKS (B)
- H3 (2) 2X10'S ON SINGLE JACKS (C)
- H4 (2) 1.75" X 9.25" LVL'S ON DBL JACKS
- H5 (3) 2X10'S ON SINGLE 2X6 JACKS B.E.
- H6 (3) 1.75" X 9.25" LVL'S ON DBL 2X6 JACKS

- (A) TYPICAL FOR INTERIOR NON LOAD BEARING WALLS ONLY, ROUGH OPENING 38" MAX.
- (B) TYPICAL FOR INTERIOR NON LOAD BEARING WALLS ONLY, ROUGH OPNG 38" TO 74" MAX.
- (C) TYPICAL FOR ALL CONDITIONS NOT LISTED IN (A) OR (B) UNO.

NOTES:  
 -HEADERS IN NON LOAD BEARING INTERIOR WALLS ARE NOT LABELED.

**STRUCTURAL ENGINEERS**  
 License No. C-3870  
 183 Wind Chime Court, Suite 100  
 Raleigh, North Carolina 27615  
 (919) 844-1661 Fax (919) 844-1665

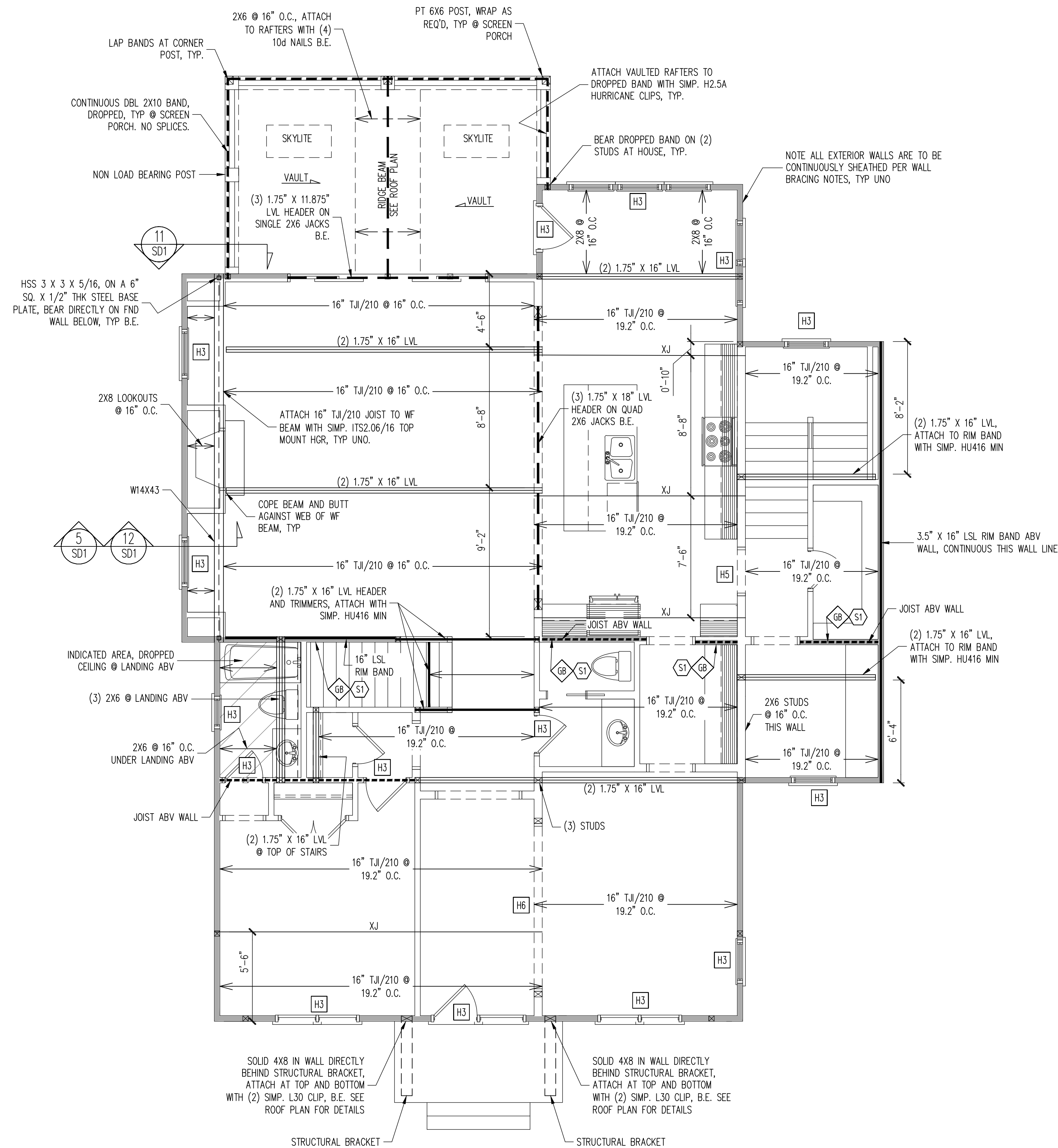


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CLIENT:	RALEIGH CUSTOM HOMES	ENG:	KWT/BDO	REV:	12-19-16
	SCOPE:		STRUCTURAL ADDENDUM		
LOC:	3312 THOMAS RD.	DATE:			

PROJECT NO.  
16-20-219

SHEET NO.  
S2



1ST FLOOR FRAMING PLAN

WALLS AND CEILING  
1/4" = 1'-0"

WALL BRACING

1ST FLOOR ONLY

ALL EXTERIOR STUD WALLS ARE TO BE CONTINUOUSLY SHEATHED WITH 7/16 APA RATED OSB NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD.

SINGLE JOIST, CONTINUOUS RIM JOIST, OR BLOCKING OF EQUAL DEPTH IS REQUIRED ABOVE AND BELOW ALL BRACED WALLS. NAIL SUBFLOOR ABOVE WALL TO BLOCKING WITH 8d NAILS @ 6" O.C. TOE NAIL BLOCKING ABOVE WALL TO TOP PLATE WITH 8d TOE NAILS @ 6" O.C. NAIL SOLE PLATE OF BRACED WALL TO BLOCKING BELOW WALL WITH (3) 16d NAILS @ 16" O.C. BLOCKING AT HORIZONTAL JOINTS IN BRACED WALL LINES ONLY REQUIRED AT SHADED WALLS, UNO

SHADED WALLS:

GB - INTERIOR BRACED WALL WITH GYPSUM BOARD. 1/2" GB BOTH SIDES OF WALL ATTACHED TO PANEL EDGES, INCLUDING TOP AND BOTTOM PLATES, AT 7" O.C.

-PROVIDED CONTINUOUS SHEATHING = 189" MIN.  
-WALL BRACING IS BY ENGINEERED DESIGN AND NOT PRESCRIPTIVE PER SECTION 602.10 OF THE 2012 NCR. CONTINUOUS SHEATHING HAS BEEN PROVIDED, ALONG WITH ALTERNATIVE METHODS TO INSURE THE MINIMUM INTENT OF SECTION 602.10 OF THE 2012 NCR HAS BEEN MET AND EXCEEDED.

REQUIRED STUDS FOR BEAM SUPPORT

REFER TO SECTIONS 5.02 - 5.06 OF THE CONSTRUCTION SPECIFICATIONS FOR REQUIRED NUMBER OF STUDS FOR BEAM SUPPORT, TYP UNO.

HEADER SCHEDULE

1ST FLOOR ONLY

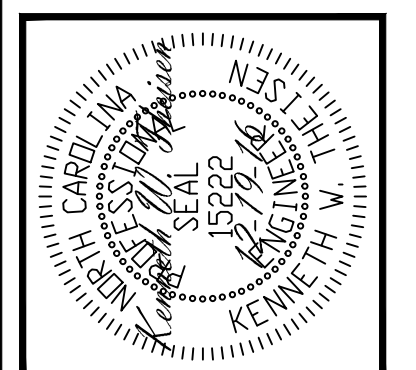
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- H4 (2) 1.75" X 9.25" LVL'S ON DBL JACKS
- H5 (3) 2X10'S ON SINGLE 2X6 JACKS B.E.
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Engineering Tech  
ASSOCIATES, P.A.

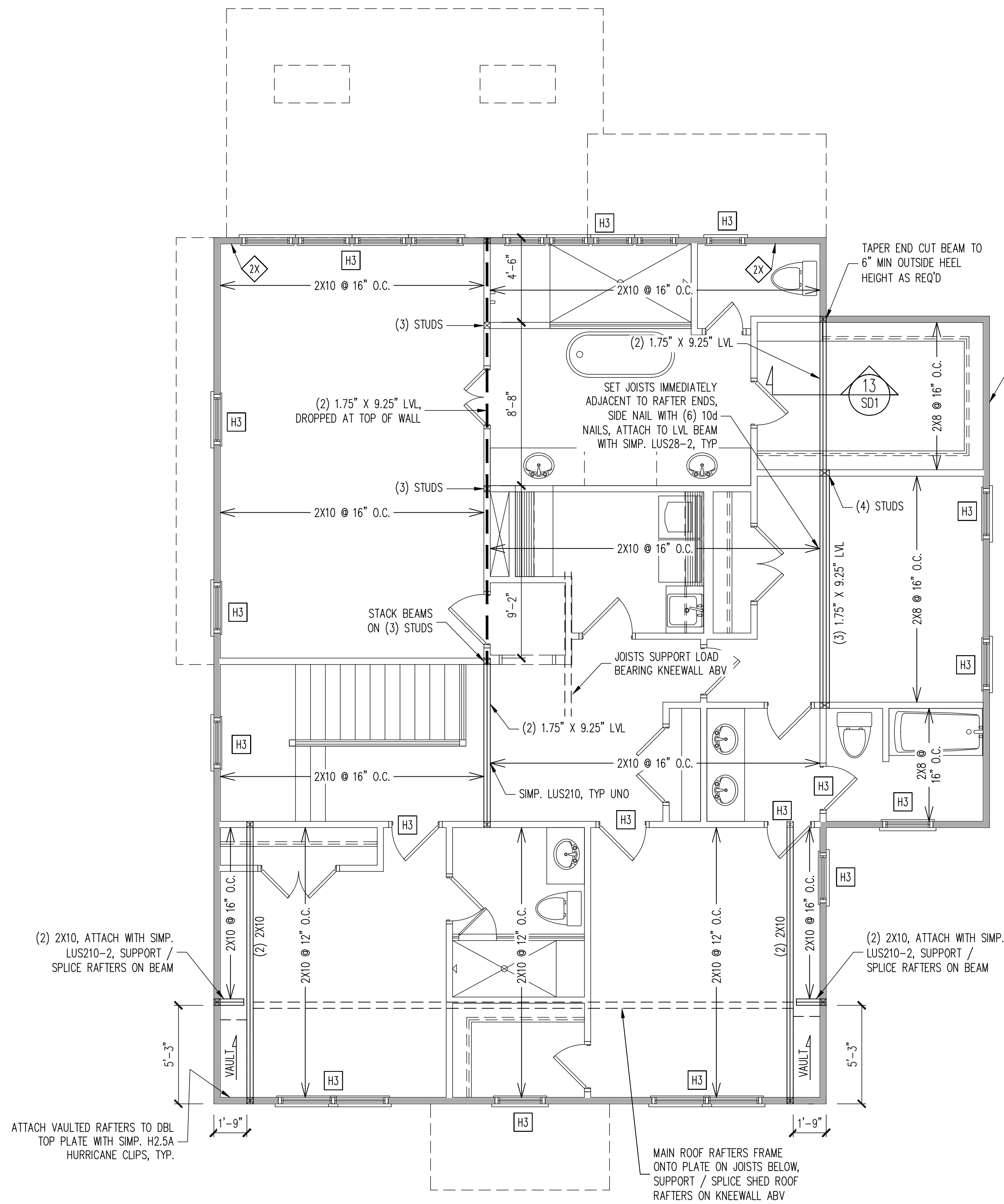


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SCOPE:	STRUCTURAL ADDENDUM	LOC:	3312 THOMAS RD.		

PROJECT NO.  
16-20-219

SHEET NO.  
S3



NOTE ALL EXTERIOR WALLS ARE TO BE CONTINUOUSLY SHEATHED PER WALL BRACING NOTES, TYP UNO

2ND FLOOR FRAMING PLAN  
WALLS AND CEILING  
1/4" = 1'-0"

**WALL BRACING**  
2ND FLOOR ONLY

ALL EXTERIOR STUD WALLS ARE TO BE CONTINUOUSLY SHEATHED WITH 7/16 APA RATED OSB NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD.

SINGLE JOIST, CONTINUOUS RIM JOIST, OR BLOCKING OF EQUAL DEPTH IS REQUIRED ABOVE AND BELOW ALL BRACED WALLS. NAIL SUBFLOOR ABOVE WALL TO BLOCKING WITH 8d NAILS @ 6" O.C. TOE NAIL BLOCKING ABOVE WALL TO TOP PLATE WITH 8d TOE NAILS @ 6" O.C. NAIL SOLE PLATE OF BRACED WALL TO BLOCKING BELOW WALL WITH (3) 16d NAILS @ 16" O.C. BLOCKING AT HORIZONTAL JOINTS IN BRACED WALL LINES ONLY REQUIRED AT SHADED WALLS, UNO

SHADED WALLS:



2X - SHEATH BOTH SIDES OF STUD WALL WITH 7/16 APA RATED OSB, NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD.

-PROVIDED CONTINUOUS SHEATHING = 173" MIN.  
-WALL BRACING IS BY ENGINEERED DESIGN AND NOT PRESCRIPTIVE PER SECTION 602.10 OF THE 2012 NCR. CONTINUOUS SHEATHING HAS BEEN PROVIDED, ALONG WITH ALTERNATIVE METHODS TO INSURE THE MINIMUM INTENT OF SECTION 602.10 OF THE 2012 NCR HAS BEEN MET AND EXCEEDED.

**REQUIRED STUDS FOR BEAM SUPPORT**

REFER TO SECTIONS 5.02 - 5.06 OF THE CONSTRUCTION SPECIFICATIONS FOR REQUIRED NUMBER OF STUDS FOR BEAM SUPPORT, TYP UNO.

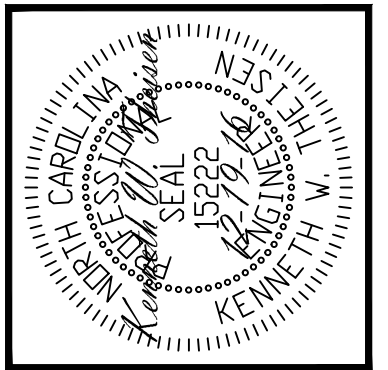
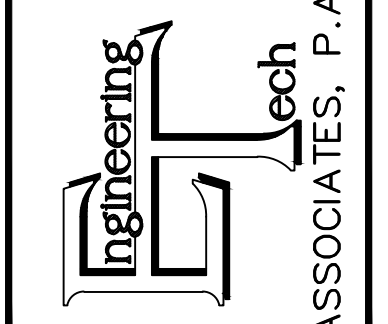
**HEADER SCHEDULE**  
2ND FLOOR ONLY

H1	SINGLE 2x4 TURNED FLAT (A)
H2	(2) 2x4'S ON SINGLE JACKS (B)
H3	(2) 2x10'S ON SINGLE JACKS (C)
H4	(2) 1.75" X 9.25" LVL'S ON DBL JACKS
H5	(3) 2x10'S ON SINGLE 2x6 JACKS B.E.
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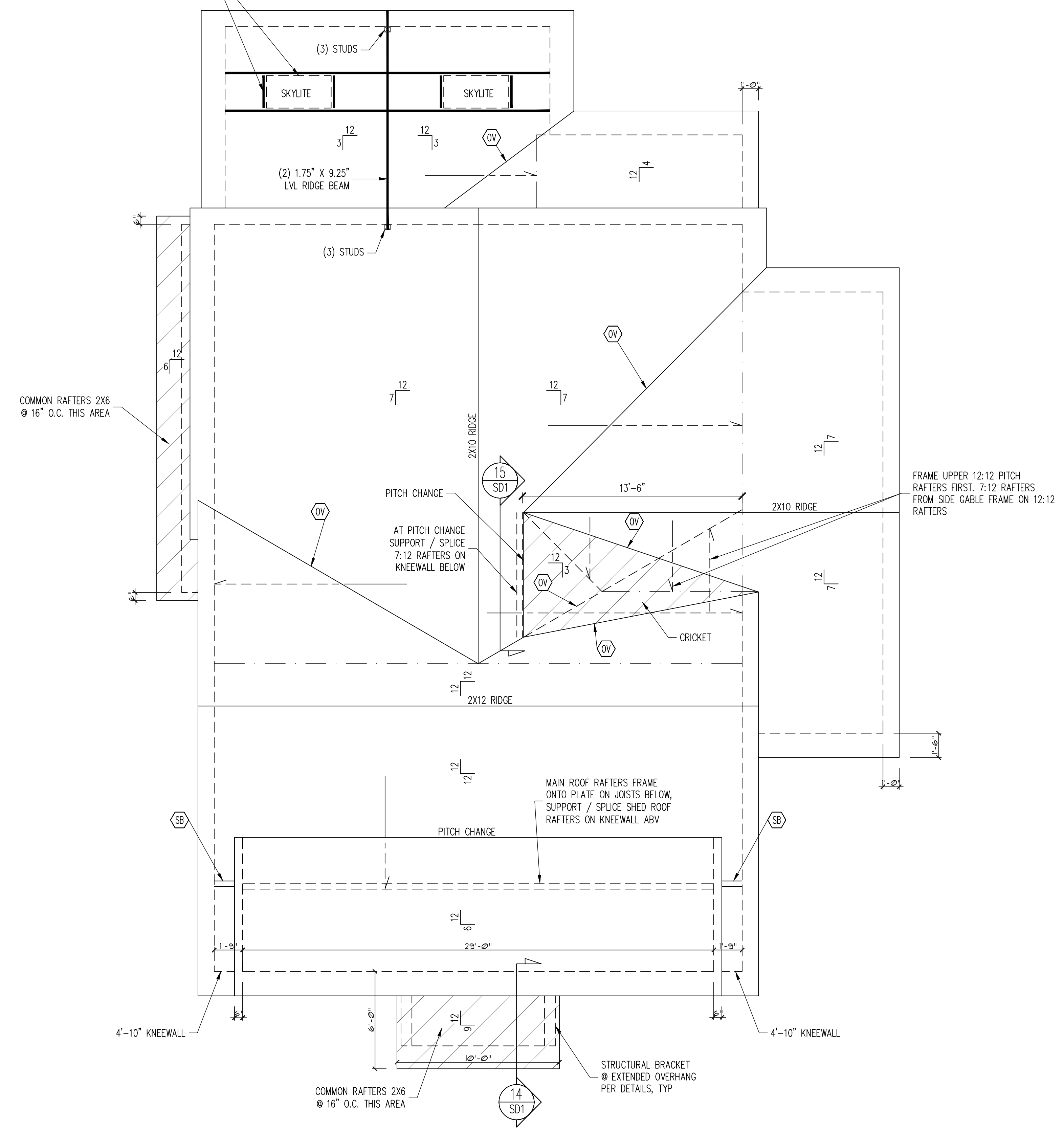
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S4

DBL 2X8 HEADERS AND TRIMMERS, ATTACH WITH SIMP. LUS28-2 HGR, TYP @ SKYLIGHT



FRAME UPPER 12:12 PITCH RAFTERS FIRST. 7:12 RAFTERS FROM SIDE GABLE FRAME ON 12:12 RAFTERS

MAIN ROOF RAFTERS FRAME ONTO PLATE ON JOISTS BELOW. SUPPORT / SPLICE SHED ROOF RAFTERS ON KNEEWALL ABV

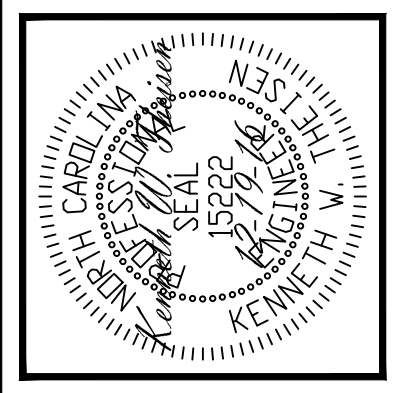
**FRAMING NOTES**  
 ROOF ONLY  
 -COMMON RAFTERS 2X8 @ 16" O.C. TYP U.N.O.  
 -COLLAR TIES 2X4 EVERY 3RD SET OF RAFTERS TYP U.N.O.  
 -VERIFY ALL ARCHITECTURAL OVERHANGS AND KNEEWALL HEIGHTS PRIOR TO CONSTRUCTION

**FRAMING SCHEDULE**  
 ROOF ONLY  
 OV OVERFRAME VALLEY ( 2X10 SLEEPER )  
 SB SUPPORT/SPLICE RAFTERS ON BEAM BELOW

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

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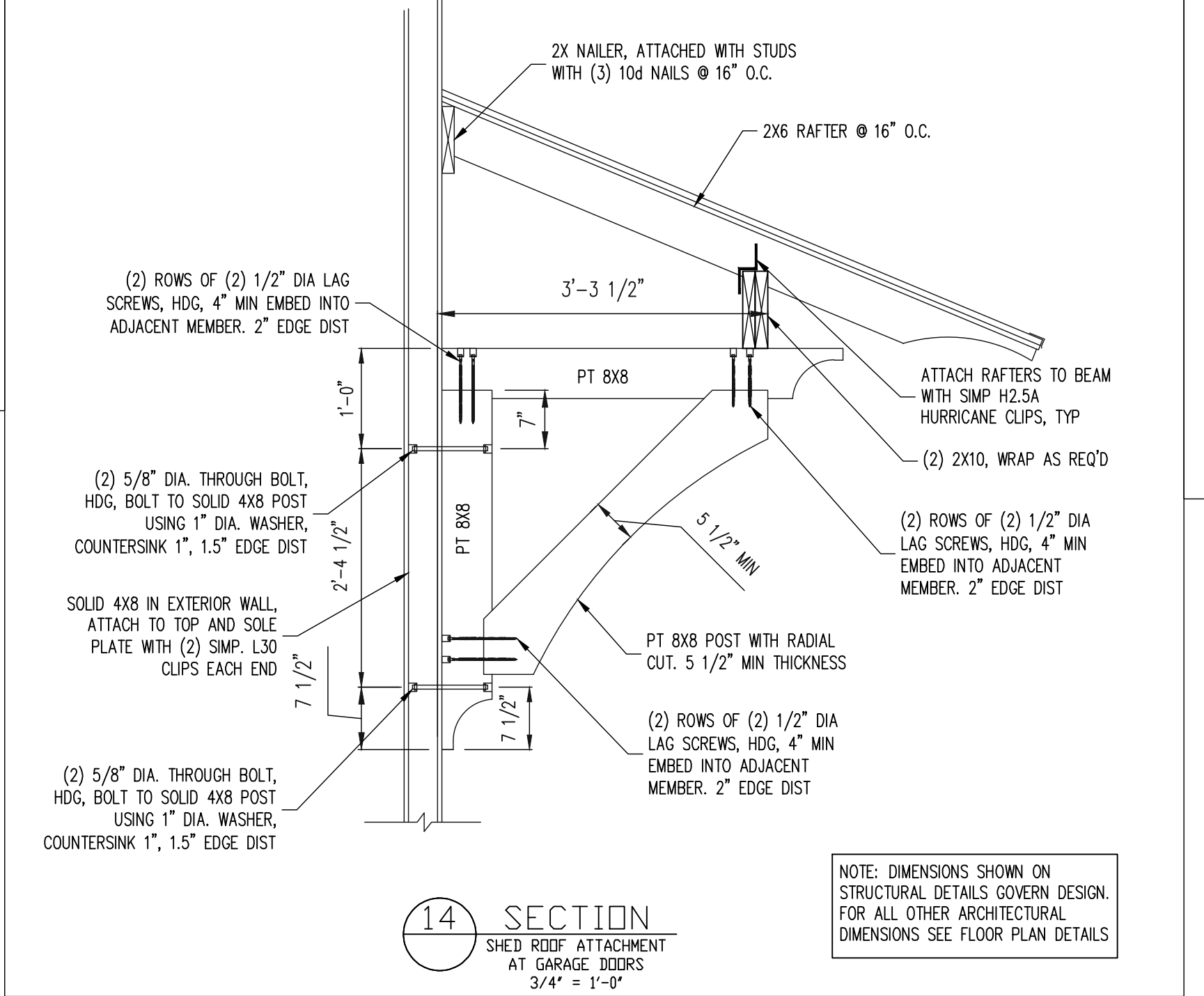
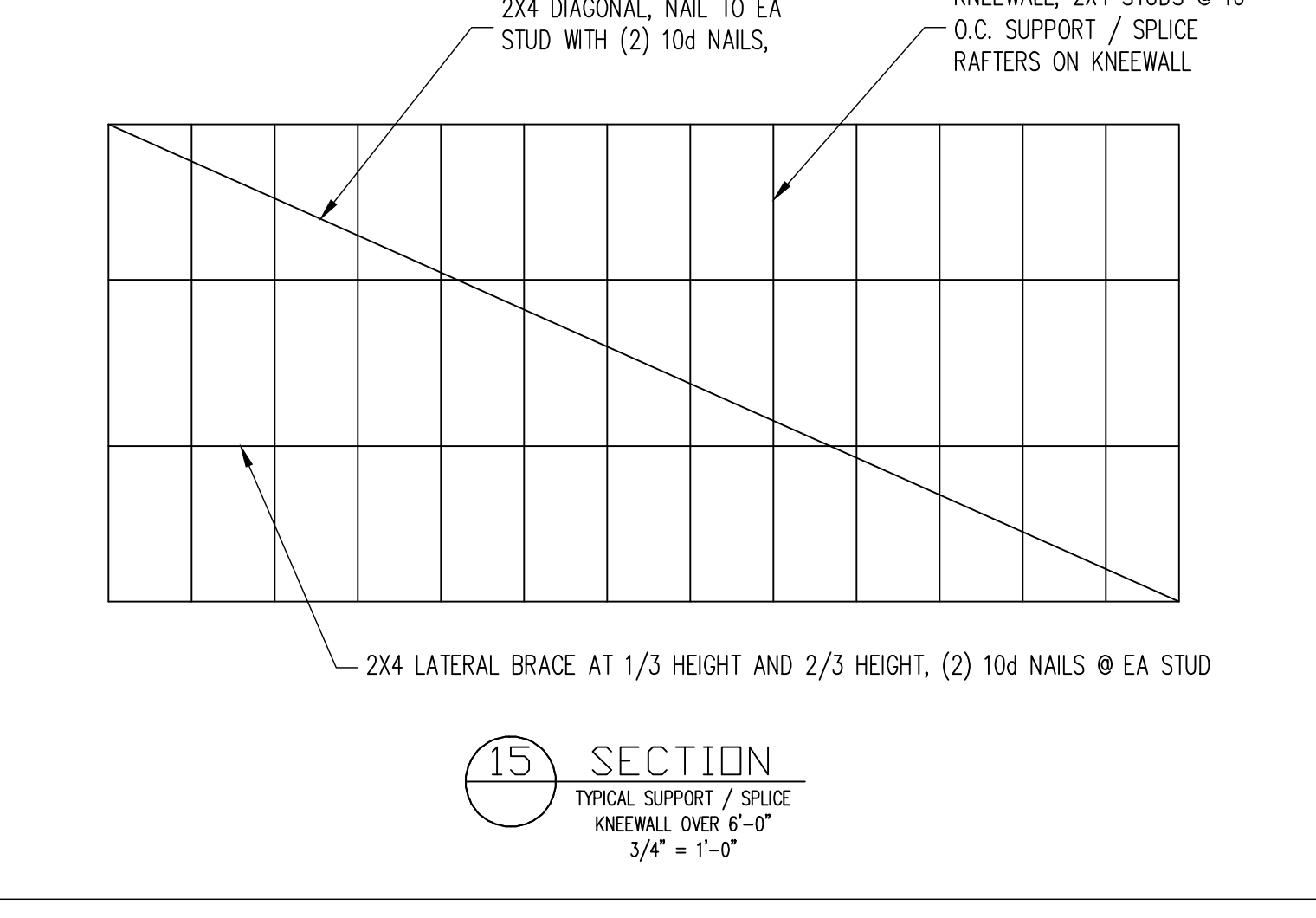
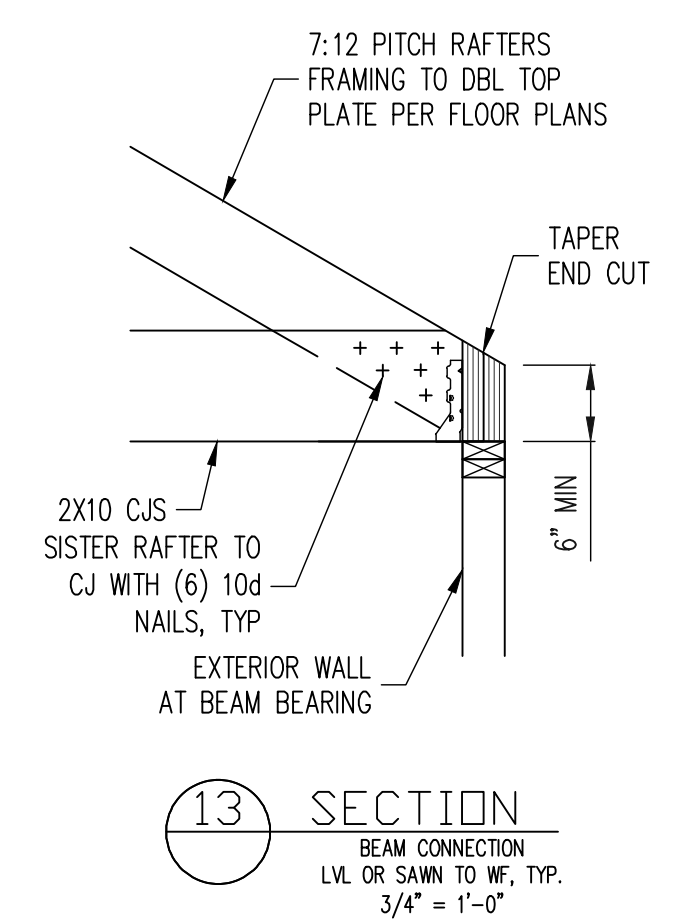
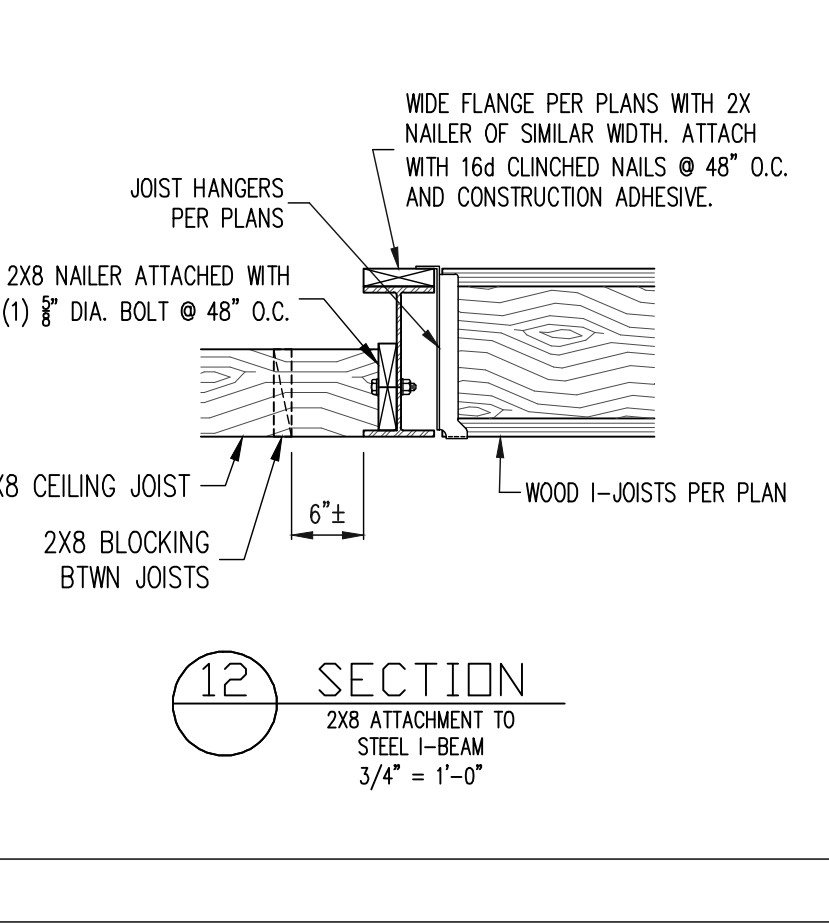
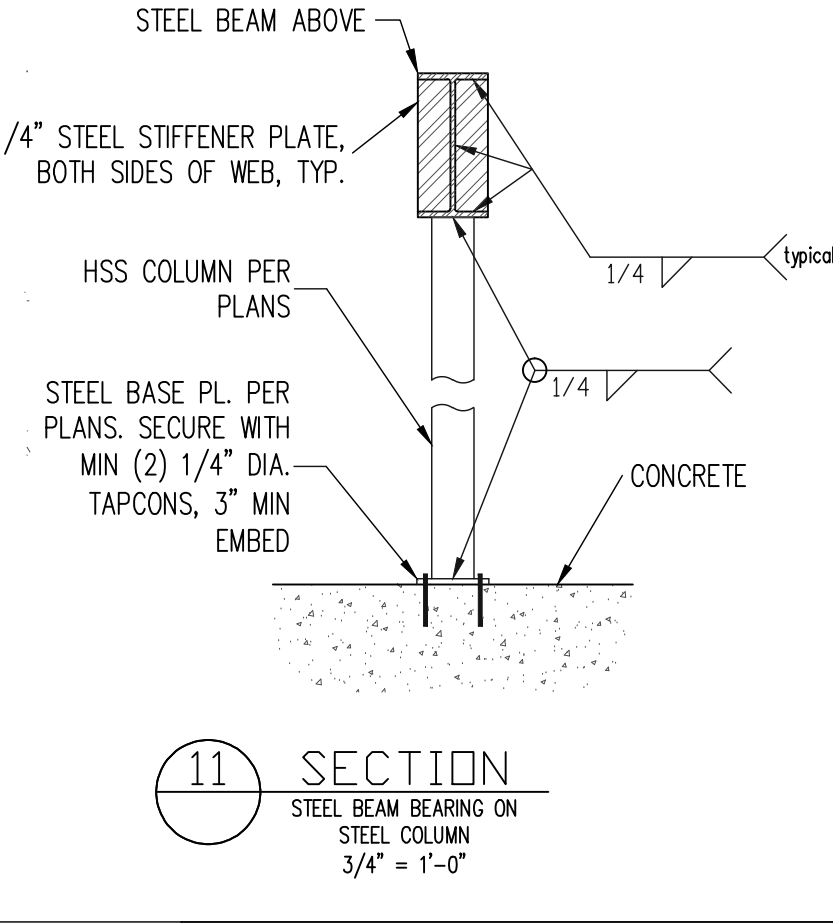
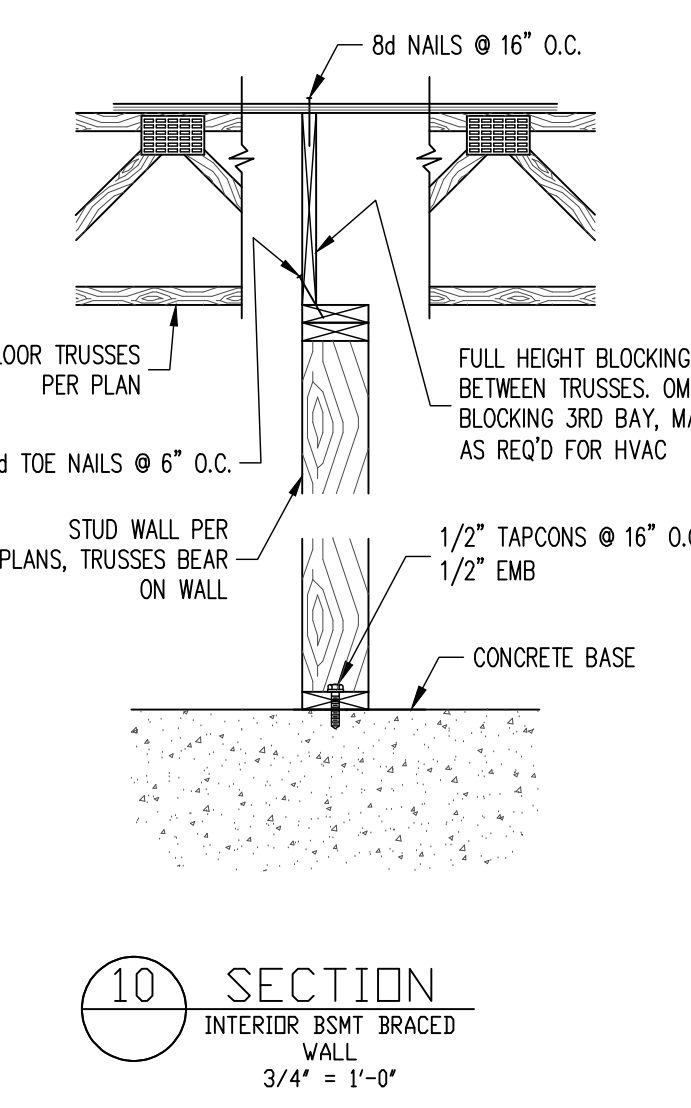
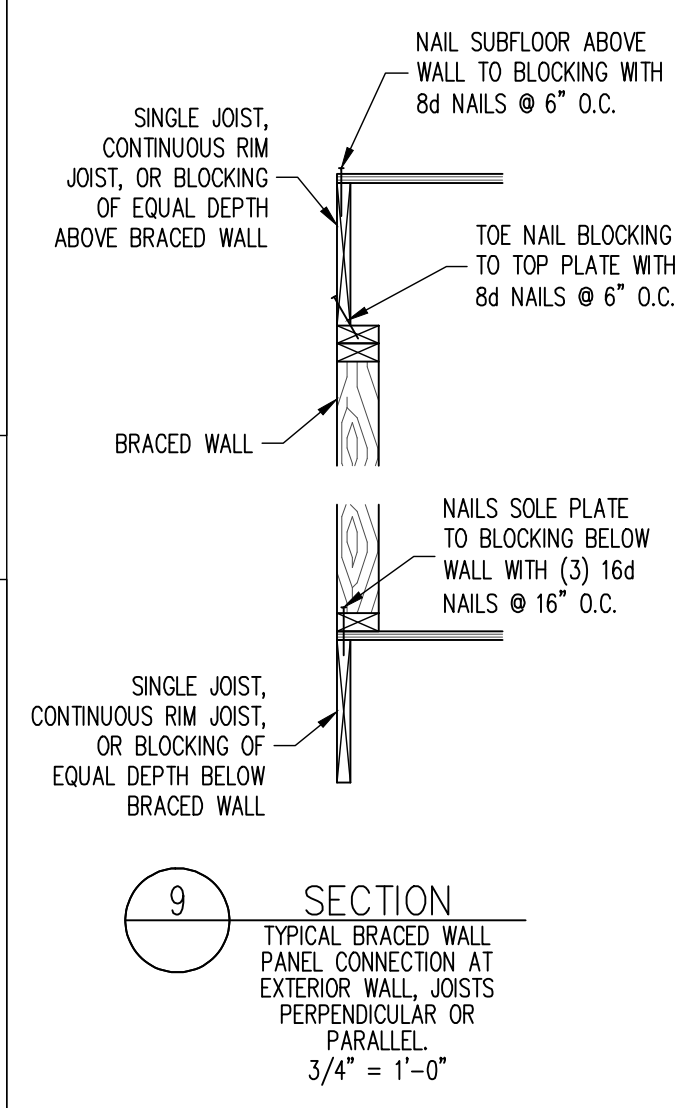
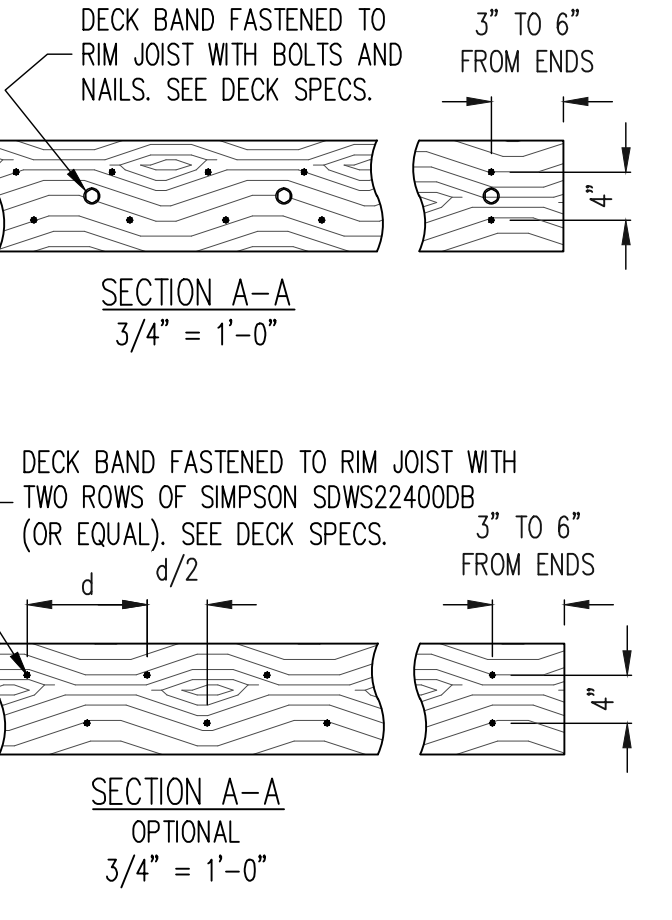
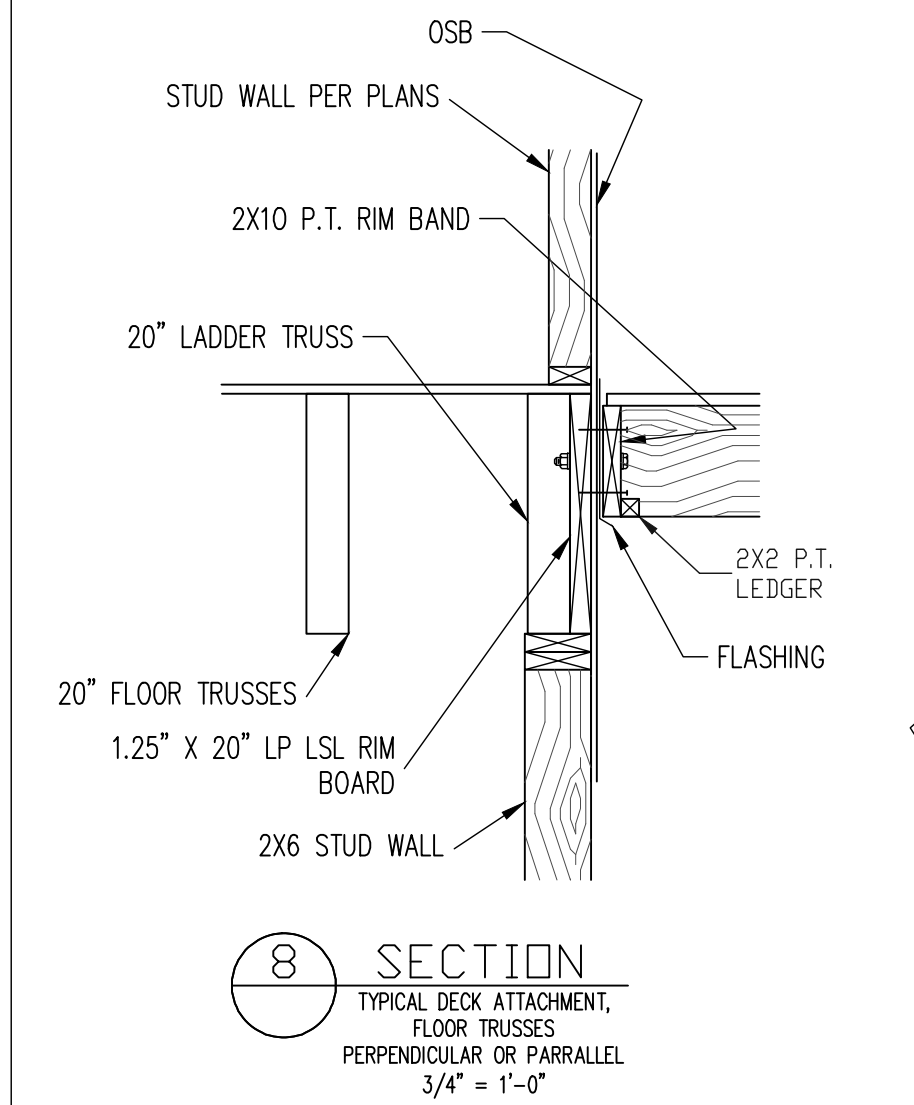
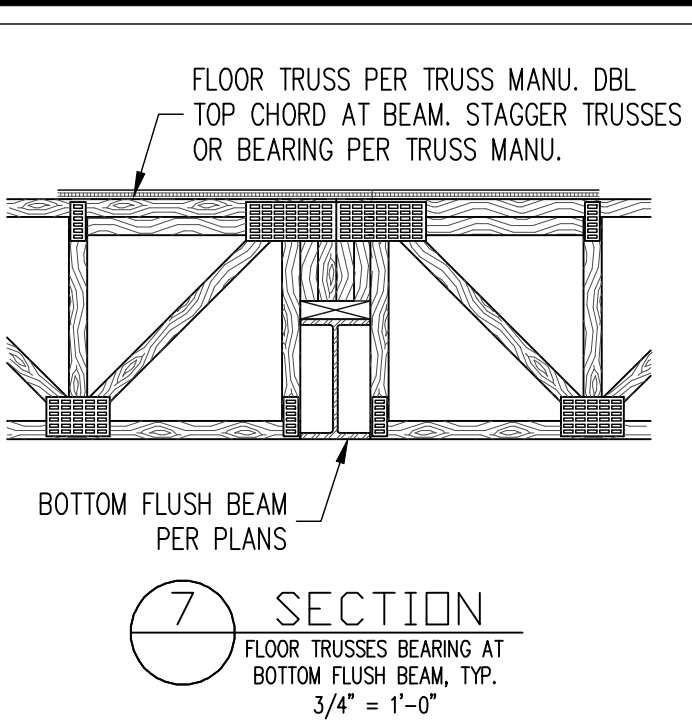
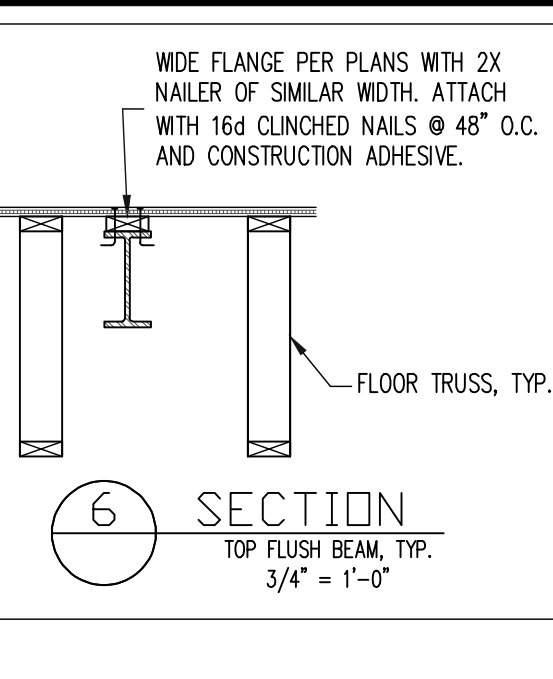
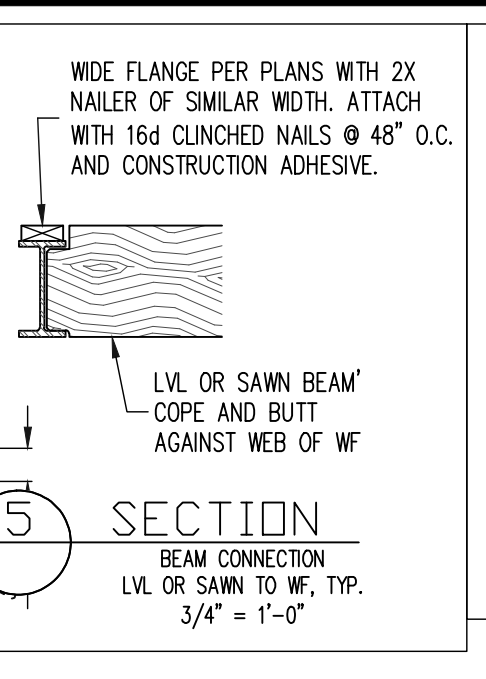
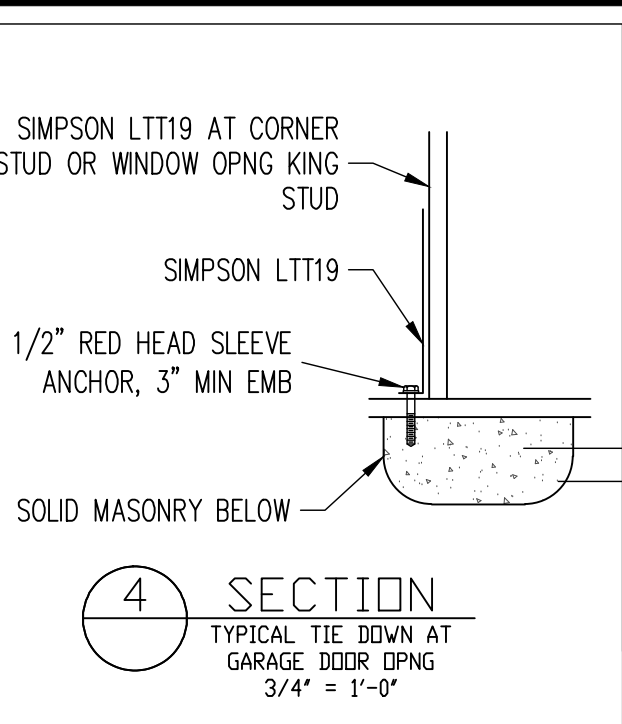
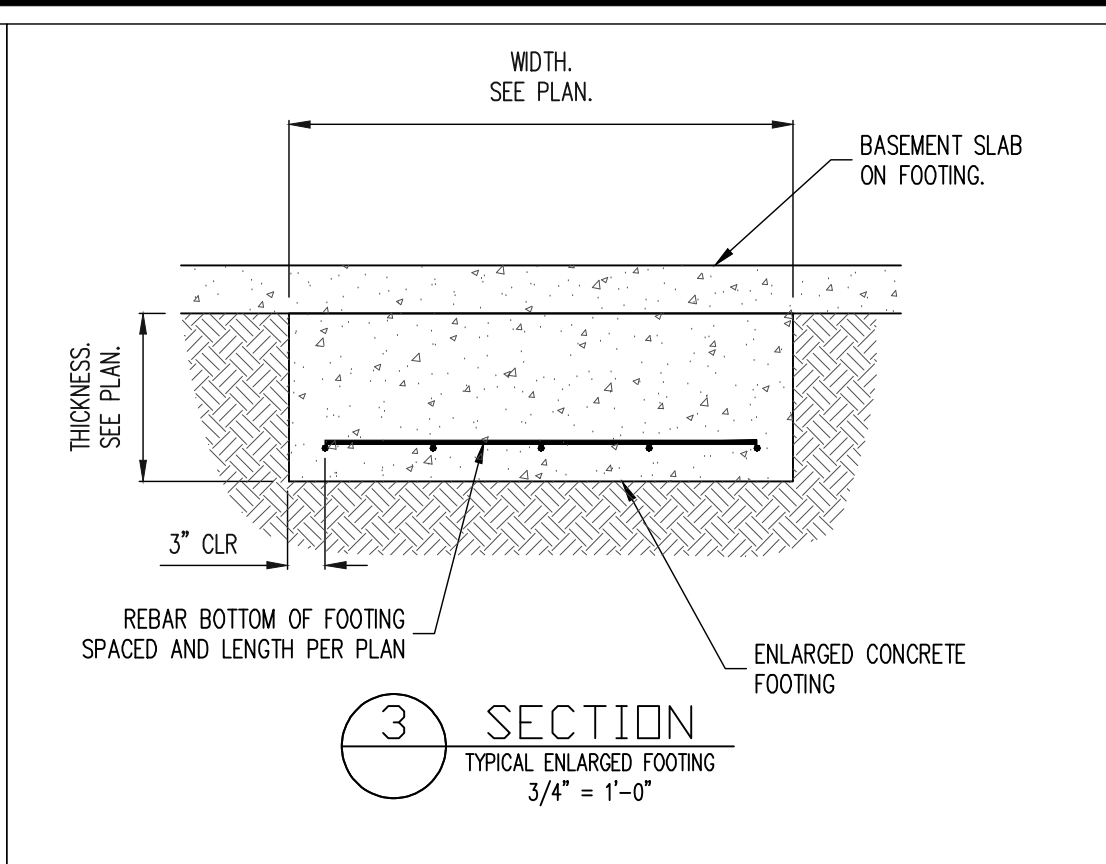
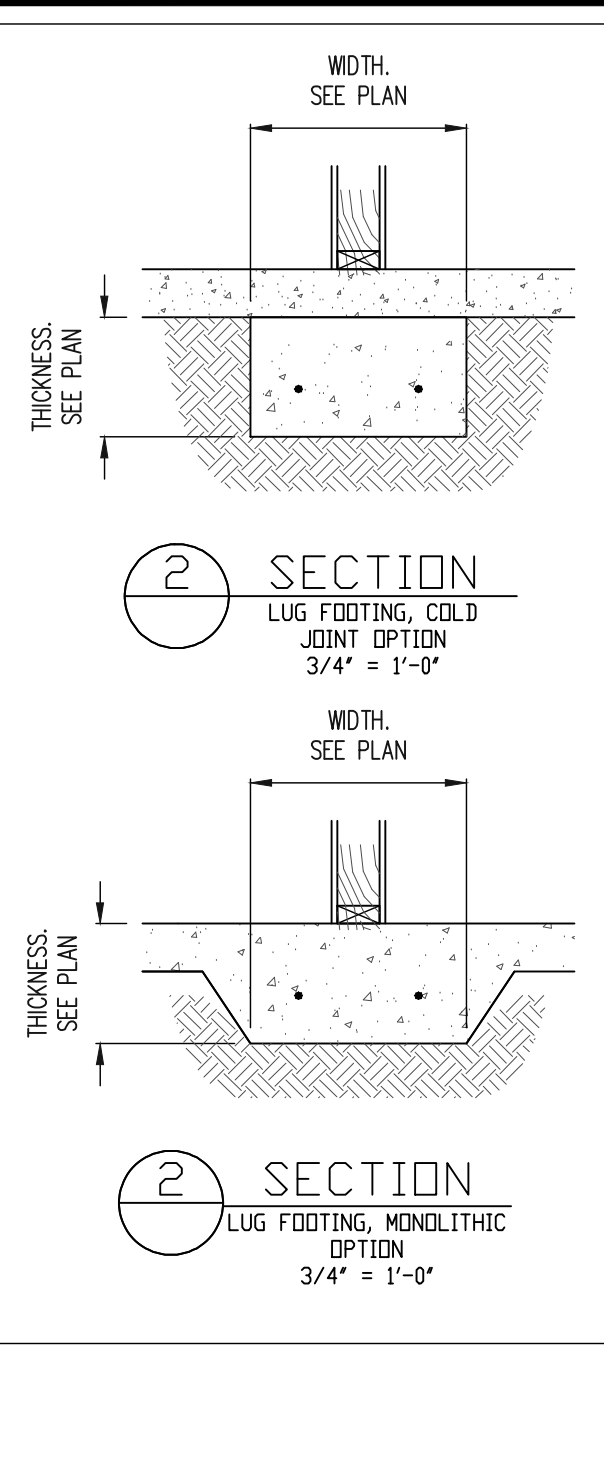
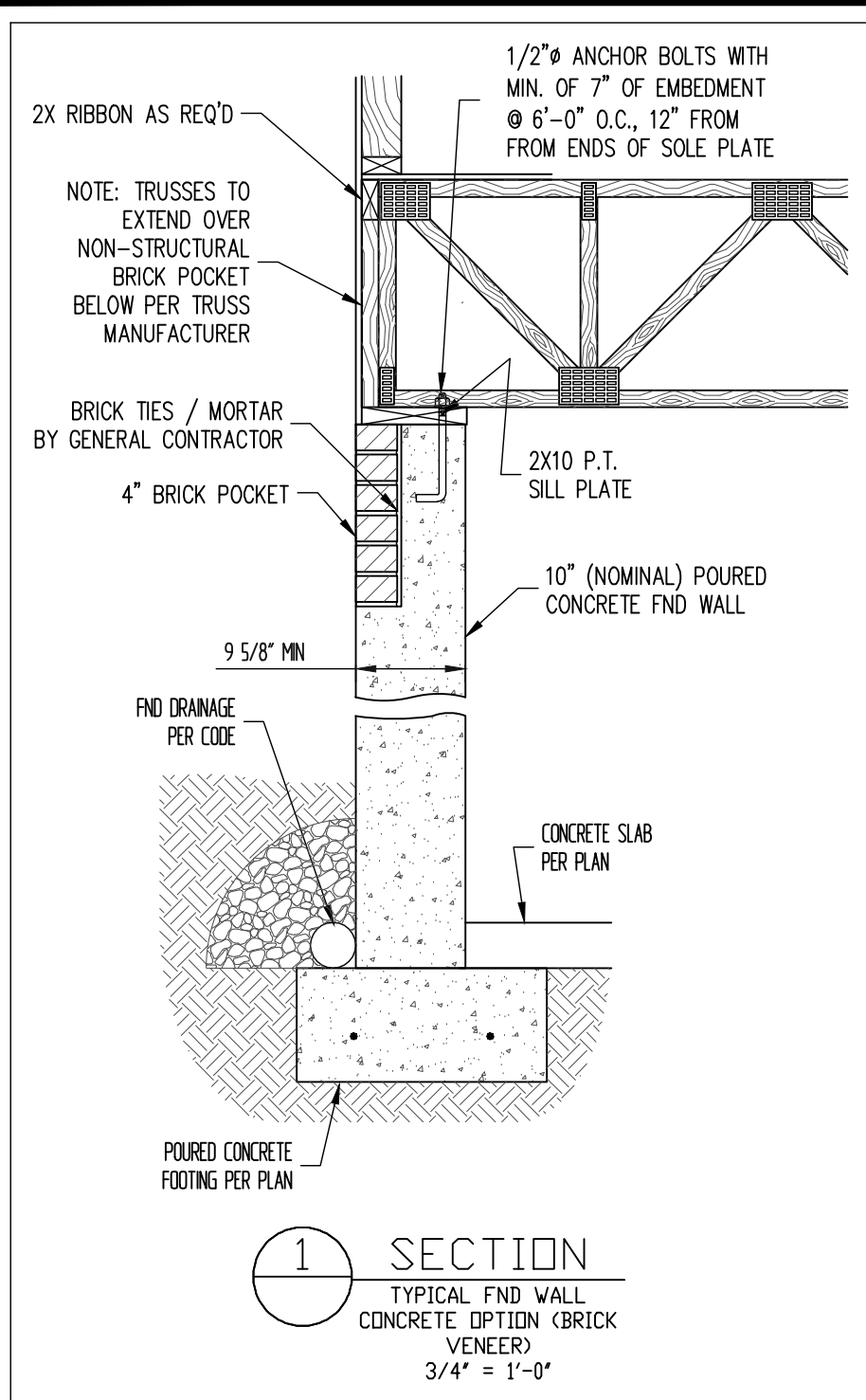


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CLIENT:	RALEIGH CUSTOM HOMES
SCOPE:	STRUCTURAL ADDENDUM
LOC:	3312 THOMAS RD.
ENG:	KWT/BDO
REV:	
DATE:	12-19-16

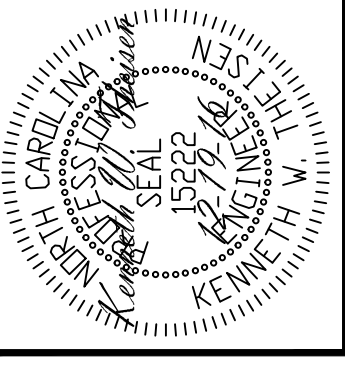
PROJECT NO.	16-20-219
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SHEET NO.	S5
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NOTE: DIMENSIONS SHOWN ON  
STRUCTURAL DETAILS GOVERN DESIGN.  
FOR ALL OTHER ARCHITECTURAL  
DIMENSIONS SEE FLOOR PLAN DETAILS

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SCOPE:	STRUCTURAL ADDENDUM	LOC:	3312 THOMAS RD.		

PROJECT NO.  
16-20-219

SHEET NO.  
SD1

## CONSTRUCTION SPECIFICATIONS

### PART 1: GENERAL

- 1.01 CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2012 EDITION.
- 1.02 STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
- 1.03 REINFORCED CAST IN PLACE CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH THE SPECIFICATIONS OF ACI 318, LATEST EDITION.
- 1.04 MASONRY CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS OF ACI 530-95, LATEST EDITION.
- 1.05 METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

### PART 2: DIMENSIONS

- 2.01 DIMENSIONS SHOWN SHALL GOVERN OVER SCALE ON THESE DRAWINGS.

### PART 3: DESIGN LOADS

- 3.01 DESIGN LOADS SHALL CONFORM WITH THE TABLE BELOW:

USE	LIVE LOAD (PSF)	DEAD LOAD (PSF)
BALCONIES, DECKS, ATTICS WITH FIXED STAIR ACCESS, DWELLING UNITS (INCLUDING SLEEPING ROOMS), ATTICS WITH FIXED STAIR ACCESS, STAIRS, FIRE ESCAPES	40	10
GARAGES (PASSENGER CARS ONLY)	50	--
ATTICS (NO STORAGE, LESS THAN 5' HEADROOM)	10	10
ATTICS (WITH STORAGE)	20	10
ROOF	20	10 (15 FOR VAULTS)

- NOTES:
- INDIVIDUAL STAIR TREADS ARE TO BE DESIGNED FOR THE UNIFORMLY DISTRIBUTED LIVE LOAD OR A 300 LB. CONCENTRATED LOAD ACTING OVER AN AREA OF 4 SQ. IN., WHICHEVER PRODUCES THE GREATER STRESS.
  - GUARD RAILS AND HAND RAILS ARE TO BE DESIGNED FOR A SINGLE CONCENTRATED LOAD OF 200 LB. APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP.
  - BUILDER TO VERIFY DEAD LOAD DOES NOT EXCEED 10 PSF WHEN HEAVY FLOOR OR ROOF FINISHES SUCH AS TILE OR SLATE ARE UTILIZED

- 3.02 INTERIOR WALLS: 5 PSF LATERAL.
- 3.03 BASIC WIND DESIGN VELOCITY OF 100 MPH.
- 3.04 LOAD DURATION FACTOR FOR ROOF STRUCTURAL MEMBERS IS 1.15.
- 3.05 SOIL BEARING CAPACITY 2000 PSF (PRESUMPTIVE).

### PART 4: MATERIALS

- 4.01 STRUCTURAL STEEL SQUARE AND RECTANGULAR TUBING SHALL CONFORM TO ASTM A500 GRADE B MINIMUM GRADE. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 MINIMUM GRADE TYP UNO.
- 4.02 REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60 TYP UNO
- 4.03 SOLID SAWN WOOD FRAMING DESIGN IS BASED ON NO. 2 SPRUCE PINE FIR FOR JOISTS, RAFTERS AND WOOD GIRDERS/BEAMS TYP UNO. STUDS SHALL BE SPRUCE PINE FIR NO.3 OR STUD GRADE TYP UNO.
- 4.04 LVL OR PSL MINIMUM ALLOWABLE DESIGN STRESSES ARE AS FOLLOWS:  
E = 1.9 X 10<sup>6</sup> PSI, F<sub>b</sub> = 2600 PSI, F<sub>v</sub> = 285 PSI, F<sub>c</sub> = 750 PSI
- 4.05 LSL MINIMUM ALLOWABLE DESIGN STRESSES ARE AS FOLLOWS:  
E = 1.3 X 10<sup>6</sup> PSI, F<sub>b</sub> = 1700 PSI, F<sub>v</sub> = 400 PSI, F<sub>c</sub> = 680 PSI
- 4.06 BOLTS SHALL CONFORM TO ASTM A307 MINIMUM GRADE TYP UNO
- 4.07 WELDING ELECTRODES SHALL BE E70XX
- 4.08 LUMBER IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWPA STANDARD C-15. ALL OTHER EXPOSED LUMBER SHALL BE TREATED IN ACCORDANCE WITH AWPA STANDARD C-2 OR BY ANY METHOD GIVING EQUAL PROTECTION. THE BUILDING CODE OFFICE MAY ALSO APPROVE A NATURAL DECAY RESISTANT WOOD PER SECTION 19-6(A)

- 4.09 CAST IN PLACE CONCRETE SHALL BE OF NORMAL WEIGHT AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS TYP UNO.
- 4.10 CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90 OR ASTM C 55.
- 4.11 MORTAR SHALL BE TYPE S CONFORMING TO ASTM C 476.
- 4.12 NAILS SHALL BE COMMON WIRE NAILS TYP UNO.
- 4.13 LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1-1981.

### PART 5: CONSTRUCTION

- 5.01 FLITCH PLATE BEAMS SHALL CONSIST OF A CONTINUOUS STEEL PLATE BOLTED BETWEEN TWO PIECES OF CONTINUOUS LUMBER AS SIZED ON THE PLANS. BOLT PIECES TOGETHER USING 1/2" Ø BOLTS SPACED AT 24" O.C. STAGGERED TOP TO BOTTOM OF THE BEAM. MAINTAIN A 2" EDGE DISTANCE. PLACE TWO BOLTS, ONE ABOVE THE OTHER, 6" FROM EACH END OF THE BEAM.
- 5.02 STEEL, LVL AND FLITCH PLATE BEAMS BEARING ON A STUD WALL PERPENDICULAR TO THE BEAM SHALL BEAR FULL WIDTH ON THE SUPPORTING WALL INDICATED AND SHALL BE SUPPORTED BY A MINIMUM OF THREE GANGED STUDS, OR A GANGED STUD COLUMN WITH A NUMBER OF STUDS SUCH THAT THE STUD COLUMN IS AT LEAST AS WIDE AS THE BEAM BEING SUPPORTED, WHICHEVER IS GREATER, TYP UNO.
- 5.03 STEEL, LVL AND FLITCH PLATE BEAMS BEARING ONTO THE END OF A STUD WALL PARALLEL TO THE BEAM SHALL BEAR A MINIMUM OF 4 1/2" ONTO THE WALL AND BE SUPPORTED BY A TRPL STUD GANGED COLUMN TYP UNO.
- 5.04 SOLID SAWN LUMBER GANGED BEAMS BEARING ON A STUD WALL PERPENDICULAR TO THE BEAM SHALL BEAR FULL WIDTH ON THE SUPPORTING WALL INDICATED (LESS 1 1/2" TO ALLOW FOR A CONTINUOUS RIM JOIST) AND SHALL BE SUPPORTED BY A GANGED STUD COLUMN THE SAME WIDTH AS THE BEAM TYP UNO.
- 5.05 SOLID SAWN LUMBER GANGED BEAMS BEARING ONTO THE END OF A STUD WALL PARALLEL TO THE BEAM SHALL BEAR A MINIMUM OF 3" ONTO THE WALL AND BE SUPPORTED BY A DBL STUD GANGED COLUMN TYP UNO.
- 5.06 EXTRA JOISTS OR SINGLE LVL MEMBERS OF 1.75" OR LESS WIDTH, BEARING ON A STUD WALL PERPENDICULAR TO THE BEAM SHALL BEAR ON THE WALL A MINIMUM OF 2" AND SHALL BE SUPPORTED BY ONE ADDITIONAL STUD.
- 5.07 SOLID SAWN LUMBER JOISTS THAT ARE GANGED TO FORM A BEAM SHALL HAVE ADJACENT MEMBERS IN THE BEAM NAILED TOGETHER WITH THREE ROWS OF 10d NAILS @ 16" O.C.
- 5.08 LVL MEMBERS THAT ARE GANGED TO FORM A BEAM SHALL HAVE ADJACENT MEMBERS IN THE BEAM FASTENED TOGETHER PER MANUFACTURERS RECOMMENDATIONS, TYP UNO
- 5.09 STUDS THAT ARE GANGED TO FORM A COLUMN SHALL HAVE ADJACENT STUDS WITHIN THE COLUMN NAILED TOGETHER WITH ONE ROW OF 10d NAILS AT 8" O.C. (TWO ROWS OF 10d NAILS @ 8" O.C., 3" APART, FOR 2X8 OR 2X10 STUDS) ALL COLUMNS SHALL BE CONTINUOUS DOWN TO THE FOUNDATION OR OTHER PROPERLY DESIGNED STRUCTURAL ELEMENT SUCH AS A BEAM. COLUMNS TRANSFERRING LOADS THROUGH FLOOR LEVELS SHALL BE SOLIDLY BLOCKED FOR THE FULL WIDTH OF THE STUD COLUMN WITHIN THE CAVITY FORMED BY THE FLOOR JOISTS.
- 5.10 STUD WALLS SHALL CONSIST OF 2X4 STUDS SPACED AT 16" O.C. UNO. STUDS SHALL BE CONTINUOUS FROM SOLE PLATE AT FLOOR TO DOUBLE TOP PLATE AT THE CEILING OR ROOF. NO INTERMEDIATE BANDS OR PLATES SHALL CAUSE DISCONTINUITIES IN A STUD WALL EXCEPT AS REQUIRED FOR DOOR OR WINDOW OPENINGS. THE KING STUDS FOR SUCH OPENINGS SHALL BE CONTINUOUS.
- 5.11 PILOT HOLES SHALL BE USED FOR LAG SCREW INSTALLATION AND SHALL BE BORED ACCORDING TO NDS SPECIFICATIONS.
- 5.12 ALL WELDING SHALL BE PERFORMED BY AN AWS CERTIFIED WELDER
- 5.13 ALL CONCRETE, INCLUDING CONCRETE FOR FOOTINGS, IS TO BE CAST IN PLACE, TYP UNO.
- 5.14 BOLTS AND LAG SCREWS USED FOR BOLTING WOOD MEMBERS SHALL HAVE STANDARD WASHERS INSTALLED FOR THE NUTS AND BOLT / SCREW HEADS

### PART 6: SUBSTITUTIONS

- 6.01 IN LIEU OF WELDED WIRE FABRIC IN SLABS: SYNTHETIC POLYPROPYLENE FIBRILLATED MICRO FIBERS, FIBER LENGTH 1 1/2", DOSAGE RATE 1 1/2 LBS/CU YD.
- 6.02 OTHER MATERIAL OR MEMBER SIZE SUBSTITUTIONS REQUIRE THE WRITTEN AUTHORIZATION OF THE DESIGNERS. UNAUTHORIZED DEVIATIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

## DECK SPECIFICATIONS

1. A DECK IS AN EXPOSED EXTERIOR WOOD FLOOR STRUCTURE WHICH MAY BE ATTACHED TO A STRUCTURE OR BE FREE STANDING. ROOFED PORCHES, OPEN OR SCREENED IN, MAY BE CONSTRUCTED USING THESE PROVISIONS.
2. SUPPORT POSTS SHALL BE SUPPORTED BY A FOOTING.
3. WHEN ATTACHED TO A STRUCTURE, THE STRUCTURE TO WHICH ATTACHED SHALL HAVE A TREATED WOOD BAND FOR THE LENGTH OF THE DECK, OR CORROSION RESISTANT FLASHING SHALL BE USED TO PREVENT MOISTURE FROM COMING IN CONTACT WITH THE UNTREATED FRAMING OF THE STRUCTURE. THE DECK BAND AND THE STRUCTURE BAND SHALL BE CONSTRUCTED IN CONTACT WITH EACH OTHER EXCEPT AT BRICK VENEER AND WHERE PLYWOOD SHEATHING IS REQUIRED AND PROPERLY FLASHED. SIDING SHALL NOT BE INSTALLED BETWEEN THE STRUCTURE AND THE DECK BAND. IF ATTACHED TO A BRICK VENEER STRUCTURE, NEITHER FLASHING NOR A TREATED BAND FOR THE BRICK STRUCTURE IS REQUIRED. IN ADDITION, THE TREATED DECK BAND SHALL BE CONSTRUCTED IN CONTACT WITH THE BRICK VENEER.
4. WHEN THE DECK IS SUPPORTED AT THE STRUCTURE BY ATTACHING THE DECK TO THE STRUCTURE, THE FOLLOWING ATTACHMENT SCHEDULES SHALL APPLY FOR ATTACHING THE DECK BAND TO THE STRUCTURE:

- A. ALL STRUCTURES EXCEPT BRICK VENEER STRUCTURES

	JOIST LENGTH	
	UP TO 8' MAX.	UP TO 16' MAX.
REQUIRED FASTENERS	ONE - 5/8" Ø BOLT @ 42" O.C. AND (2) ROWS OF 12d NAILS @ 8" O.C. OR TWO ROWS OF SIMPSON SDWS22400DB @ d = 32" O.C. STAGGERED	ONE - 5/8" Ø BOLT @ 20" O.C. AND (3) ROWS OF 12d NAILS @ 6" O.C. OR TWO ROWS OF SIMPSON SDWS22400DB @ d = 16" O.C. STAGGERED

- A. BRICK VENEER STRUCTURES

	JOIST LENGTH	
	UP TO 8' MAX.	UP TO 16' MAX.
REQUIRED FASTENERS	ONE - 5/8" Ø BOLT @ 28" O.C.	ONE - 5/8" Ø BOLT @ 16" O.C.

5. IF THE DECK BAND IS SUPPORTED BY A 1/2" MINIMUM MASONRY LEDGE ALONG THE FOUNDATION WALL, 5/8" Ø BOLTS SPACED @ 48" O.C. MAY BE USED FOR SUPPORT.
6. OTHER MEANS OF SUPPORT, SUCH AS JOIST HANGERS, MAY BE USED TO CONNECT DECK JOISTS TO A TREATED STRUCTURE BAND
7. GIRDERS SHALL BEAR DIRECTLY ON POSTS OR BE CONNECTED TO THE SIDES OF POSTS WITH 2 - 5/8" Ø BOLTS
8. FLOOR DECKING SHALL BE NO. 2 GRADE TREATED SOUTHERN PINE OR EQUIVALENT. THE MINIMUM FLOOR DECKING THICKNESS SHALL BE AS FOLLOWS:

JOIST SPAN	DECKING
12" O.C.	1" S4S
16" O.C.	1" T&G
24" O.C.	1 1/4" S4S
32" O.C.	2" S4S

9. MAXIMUM HEIGHT OF DECK SUPPORT POSTS IS AS FOLLOWS:

POST SIZE	MAX POST HEIGHT
4X4	8'
6X6	20'
ENGINEERED	20' +

- NOTES: 1) THIS TABLE IS BASED ON NO. 2 TREATED SOUTHERN PINE POSTS.  
2) THIS TABLE IS BASED ON A MAXIMUM TRIBUTARY AREA OF 128 SQ. FT.  
3) POST HEIGHT IS FROM TOP OF FOOTING TO BOTTOM OF GIRDER.

10. DECKS SHALL BE BRACED TO PROVIDE LATERAL STABILITY BY ONE OF THE FOLLOWING METHODS:

- A. WHEN THE DECK FLOOR HEIGHT IS LESS THAN 4'-0" AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION 4, LATERAL BRACING IS NOT REQUIRED.

- B. 4X4 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° AND 60° FROM THE HORIZONTAL. KNEE BRACES SHALL BE ATTACHED AT THE ENDS TO THE GIRDER AND THE POST WITH ONE - 5/8" Ø BOLT

- C. FOR FREE STANDING DECKS WITHOUT KNEE BRACES OR DIAGONAL BRACING, LATERAL STABILITY MAY BE PROVIDED BY EMBEDDING THE POSTS IN CONCRETE IN ACCORDANCE WITH THE FOLLOWING:

POST SIZE	TRIBUT. AREA	POST HEIGHT	EMB. DEPTH	CONC. DIAM.
4X4	48 SQ. FT.	4'-0"	2'-6"	1'-0"
6X6	120 SQ. FT.	6'-0"	3'-6"	1'-8"

- D. 2X6 DIAGONAL VERTICAL CROSS BRACING SHALL BE PROVIDED IN TWO PERPENDICULAR DIRECTIONS FOR FREE STANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS. THE BRACES SHALL BE ATTACHED TO THE POSTS WITH ONE - 5/8" Ø BOLT AT EACH END OF THE BRACE.

- NOTES: 1) ALL NAILS AND BOLTS ARE TO BE HOT DIPPED GALVANIZED.  
2) MINIMUM EDGE DISTANCE FOR BOLTS IS 2 1/2".  
3) NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF 1 1/2".

## NOTES

ALL WORK IS TO BE DONE IN STRICT ACCORDANCE WITH STATE AND LOCAL CODES. THE BUILDER IS RESPONSIBLE FOR REVIEWING PLANS PRIOR TO CONSTRUCTION. IF ENGINEERING SERVICES HAS BEEN PROVIDED THE BUILDER SHALL VERIFY THAT THE FOUNDATION AND STRUCTURAL PLANS HAVE BEEN SEALED BY AN ENGINEER REGISTERED BY THE STATE. IF THE PLANS HAVE NOT BEEN SIGNED AND SEALED, THE BUILDER SHALL IMMEDIATELY CONTACT ENGINEERING TECH BEFORE PROCEEDING FURTHER. ANY ERRORS DUE TO A FAILURE TO FOLLOW THE ABOVE PROCEDURES SHALL NOT BE THE RESPONSIBILITY OF ENGINEERING TECH. ALL FINAL SETS OF THE SAME PLAN ISSUED TO A BUILDER SHOULD BE REVIEWED FOR UNIFORMITY, ESPECIALLY IF PRIOR SETS OF PLANS HAVE BEEN ISSUED AS STUDY COPIES.

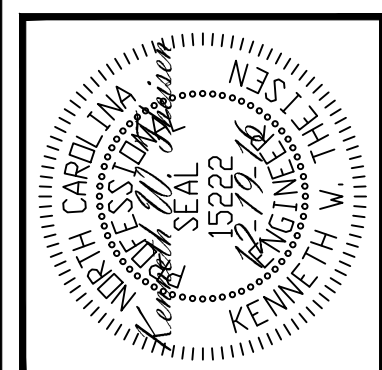
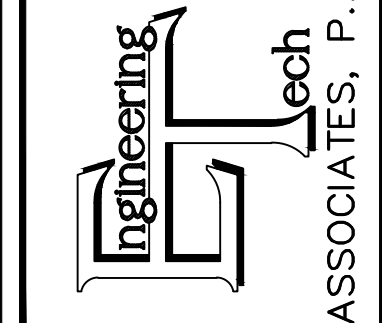
ENGINEERING TECH DOES NOT PERFORM FENESTRATION, ROOF VENT, OR ATTIC CALCULATIONS OR ANY OTHER AREA CALCULATIONS THAT ARE NOT RELATED TO STRUCTURAL ENGINEERING.

TRUSSES TO BE DESIGNED BY AN ENGINEER REGISTERED IN NORTH CAROLINA. FINAL TRUSS DRAWING SHOULD BE SUBMITTED TO ENGINEERING TECH ASSOCIATES, PA FOR REVIEW

## ABBREVIATIONS

ABV ABOVE	FND FOUNDATION	TJ TRIPLE JOIST
B. BOTH	FTG FOOTING	TYP TYPICAL
B.E. BOTH ENDS	HDG HOT DIPPED	TRPL TRIPLE
BTWN BETWEEN	GALV GALVANIZED	TSP TRIPLE STUD POCKET
CONC CONCRETE	HGR HANGER	UNO UNLESS NOTED
CS CONTINUOUS SHEATHING	LVL LAMINATED VENEER LUMBER	OTHERWISE
DIA DIAMETER	NTS NOT TO SCALE	XJ EXTRA JOIST
DBL DOUBLE	O.C. ON CENTER	
DJ DOUBLE JOIST	PSL PARALLEL STRAND LUMBER	
DSP DBL STUD POCKET	PT PRESSURE TREATED	
EQ EQUAL	QJ QUAD JOIST	
EA EACH	SP STUD POCKET	
FLG FLANGE	SQ SQUARE	
FL PL FLITCH PLATE		
FLR FLOOR		

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