

PLANS AUTHORIZED FOR CONSTRUCTION  
CITY OF RALEIGH DEVELOPMENT SERVICES DEPARTMENT

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all the legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This authorization is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law

[illegible]

Architectural drawing of the left side elevation of a house. The drawing shows a two-story structure with a gabled roof, multiple windows, and a brick foundation. Key features include a 3-5/8 inch crown, 1x6 fascia, 1x6 frieze, and a line of roof beyond. The drawing also shows a 2x4 handrail with 2x2 pickets, a 2x2 cap with sloped top, treated 2x2 sub-sill, 5/4x4 casing, 5/4x4 trim, and mitered corners. The existing grade is 382.1' and the average wall height is 382.4'. The drawing is labeled "LEFT SIDE ELEVATION" and "SCALE: 1/4"=1'".

THIS SIDE WALL IS 10.0' FROM THE SIDE SETBACK  
SO THE AVG. WALL HEIGHT CAN BE 30.0' MAX.

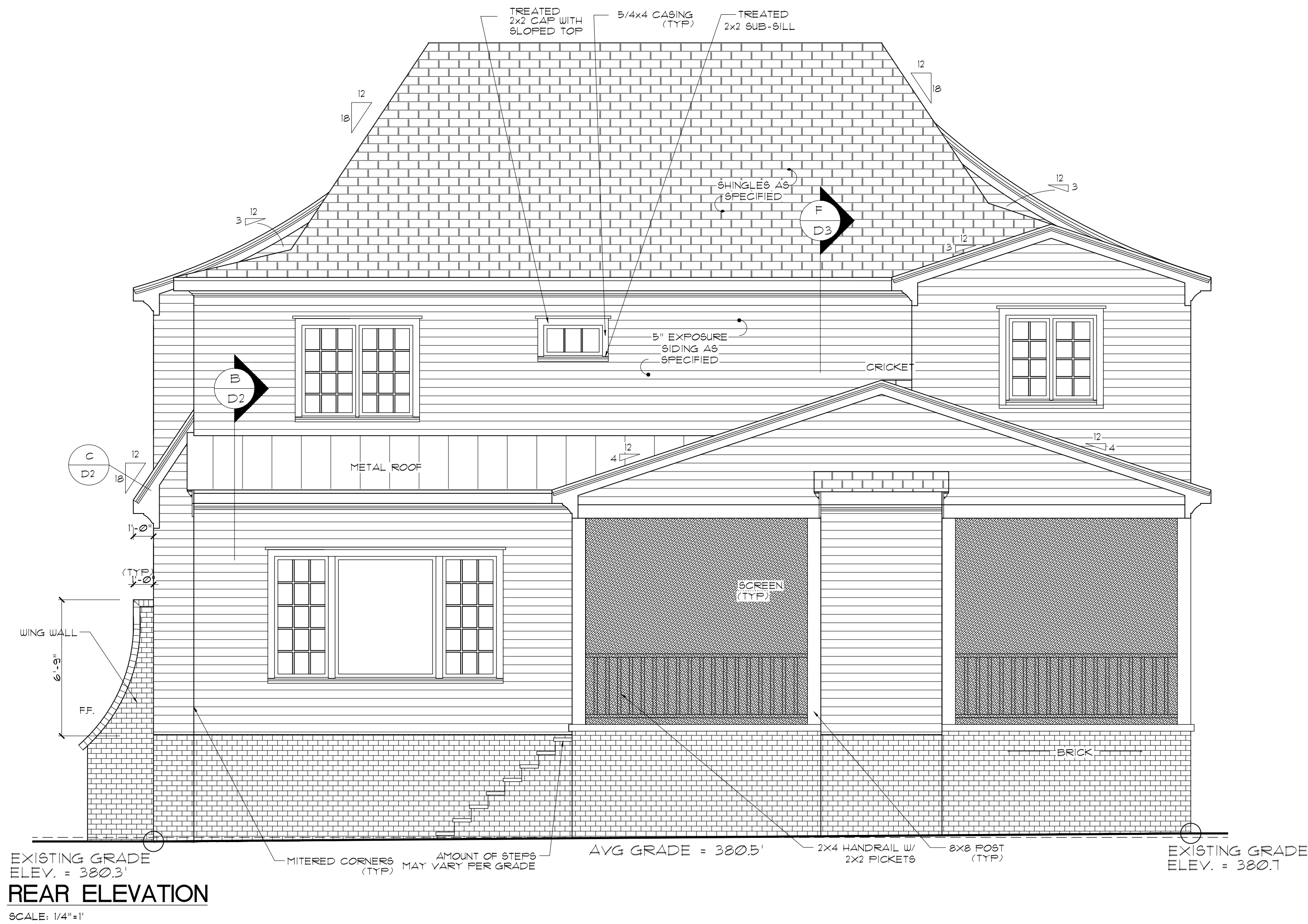
VENTILATION MAY BE REDUCED 50% WHEN  
VENTILATORS ARE USED AT LEAST 3'-0"  
ABOVE THE CORNICE VENTS.

35'-10 1/8"  
OVERALL ROOF HEIGHT

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

SHEET NO. **A1**

BLDR-012552-2022 Final Plan Set.pdf



REAR ELEVATION  
SCALE: 1/4"=1'



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

**RALEIGH CUSTOM HOMES**  
**2101 GRESHAM LAKE**

DATE: 01/26/2022  
DRAWN BY: ML/RA/CSH  
REVISION DATE: 04/20/2022

ELEVATION

SHEET NO.

A2

| CLIMATE PENETRATION ZONE | CEILING R-VALUE   | WOOD FLOOR R-VALUE | MASS WALL R-VALUE | FLOOR R-VALUE | BASEMENT WALL R-VALUE | SUB CRAWL SPACE R-VALUE |
|--------------------------|-------------------|--------------------|-------------------|---------------|-----------------------|-------------------------|
| 3                        | U-0.35/<br>R-2.50 | 13                 | 5/10              | 19            | 10/13                 | 0                       |
| 4                        | U-0.30/<br>R-3.00 | 15                 | 5/10              | 19            | 10/13                 | 10/13                   |



FIRST FLOOR  
SCALE: 1/4" = 1'

CRAWL SPACE VENTILATION:  
1706 SQ. FT. / 150' = 18.04 SQ. FT. REQ.  
1804 SQ. FT. / 41 PER VENT = 38 VENTS REQ.  
NOTE: WHERE AN APPROVED VAPOR BARRIER IS INSTALLED OVER GROUND SURFACE THE REQUIRED VENTILATION MAY BE REDUCED BY 50%.

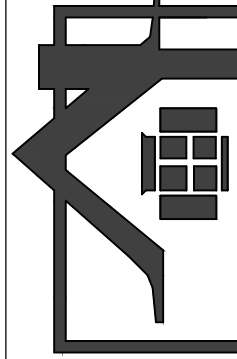
PLANS ARE DESIGNED TO MEET THE REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION

GENERAL NOTES:  
WALLS:  
ALL WALLS ARE DRAWN 4" THICK UNLESS NOTED OTHERWISE.  
SMOKE DETECTORS:  
SMOKE DETECTORS SHALL CONFORM TO NEC.  
EGRESS:  
ALL BEDROOMS MUST HAVE AT LEAST ONE WINDOW WHICH MEETS THE REQUIREMENTS OF THE NC BLDG CODE IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CHOSEN WINDOWS MEET THE 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 KNEE WALL HEIGHT LABELS FOR WALLS UNDER RAFTERS AS SHOWN ON PLAN. (2" SPACING IN HEATED SPACES) FOR INSULATION, THE WALL HEIGHT REFERS TO THE HGT. FROM FINISHED FLOOR TO THE BOTTOM OF THE RAFTERS.

FLOOR AREA:  
FIRST FLOOR LTD. = 2706 sq. ft.  
SECOND FLOOR LTD. = 2504 sq. ft.  
TOTAL SQ. FT. = 5210 sq. ft.  
SCREENED PORCH = 48 sq. ft.  
3-CAR GARAGE = 940 sq. ft.

# RALEIGH CUSTOM HOMES

## 2101 GRESHAM LAKE



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RALEIGH, NC 27609  
OFFICE: (919) 424-7245

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
| DRAWN BY:      | ML/RA/CSH  |
| REVISION DATE: | 04/20/2022 |
| FIRST FLOOR    |            |
| SHEET NO.      | A3         |



SECOND FLOOR  
SCALE: 1/4"=1'

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
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| SECOND FLOOR   |            |
| SHEET NO.      | A4         |

RALEIGH CUSTOM HOMES  
2101 GRESHAM LAKE



RALEIGH, NC 27609  
OFFICE: (919)-424-7245

RALEIGH CUSTOM HOMES  
2101 GRESHAM LAKE

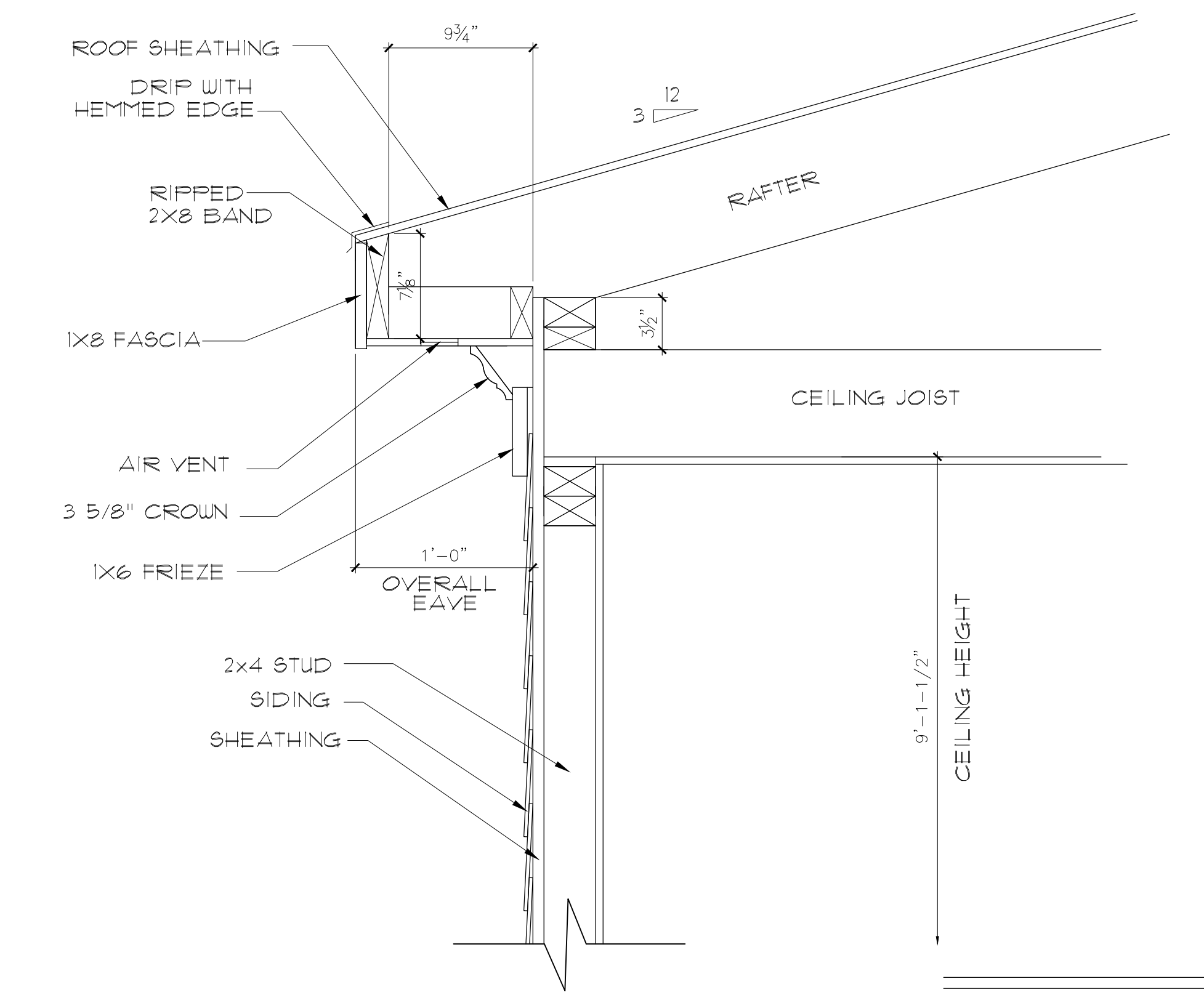
BLDR-012552-2022 Final Plan Set.pdf

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
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## DETAILS

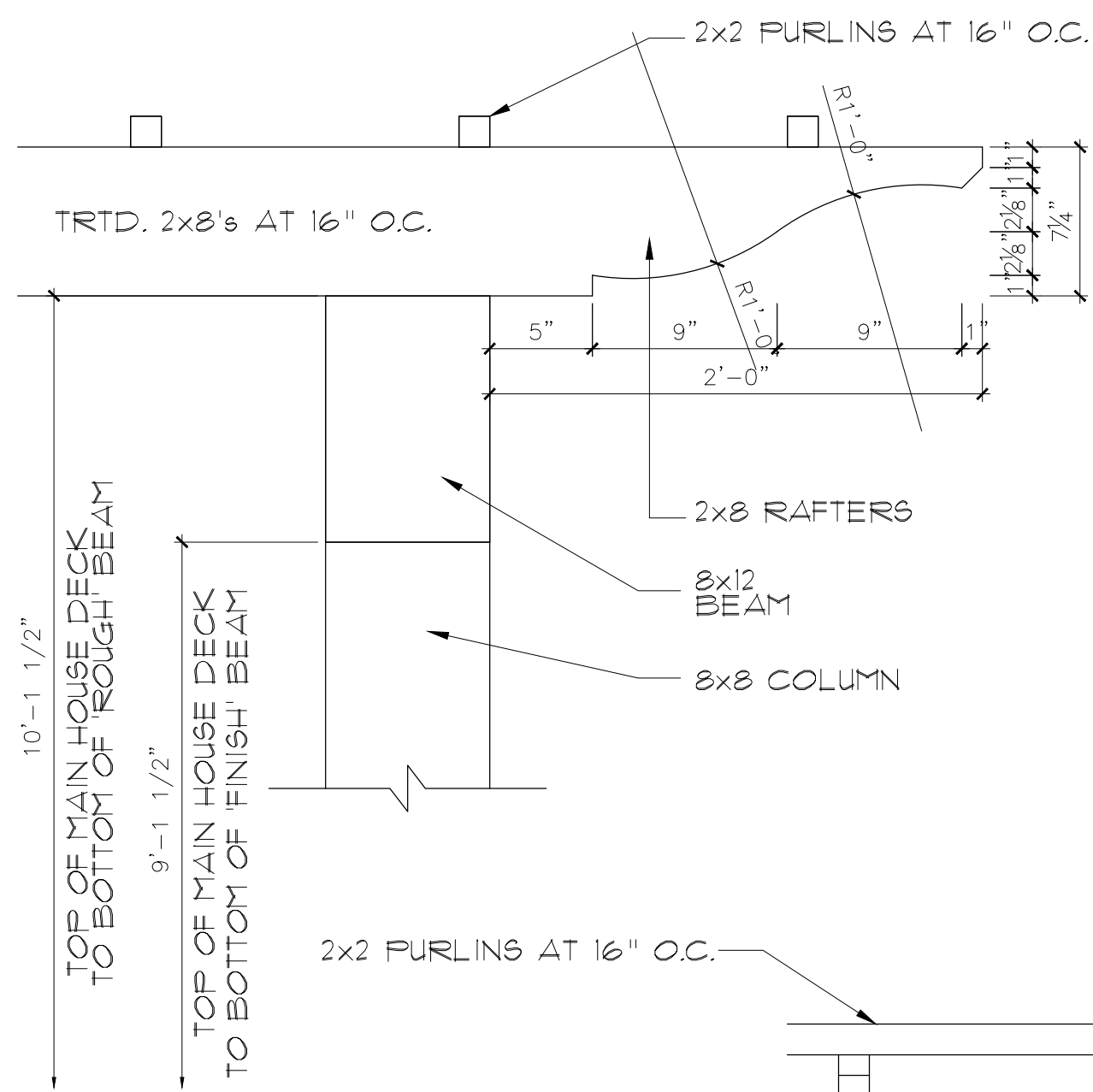
SHEET NO.

D1



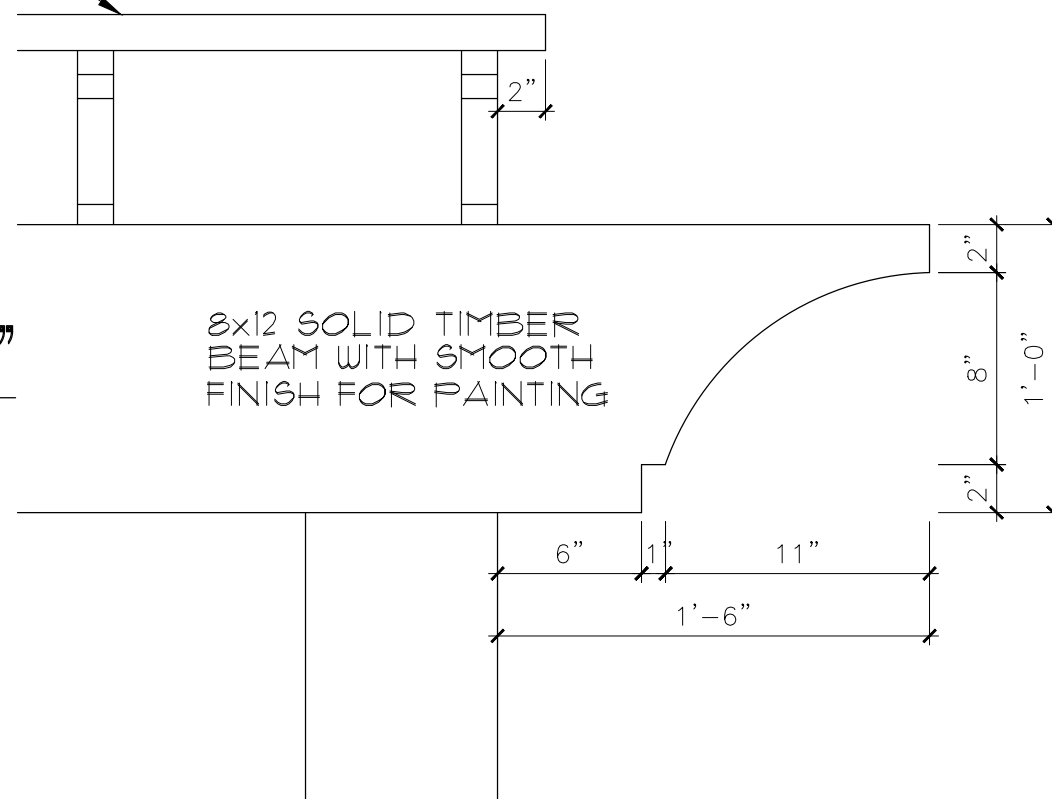
EAVE DETAIL "A"

SCALE: 1-1/2"=1'



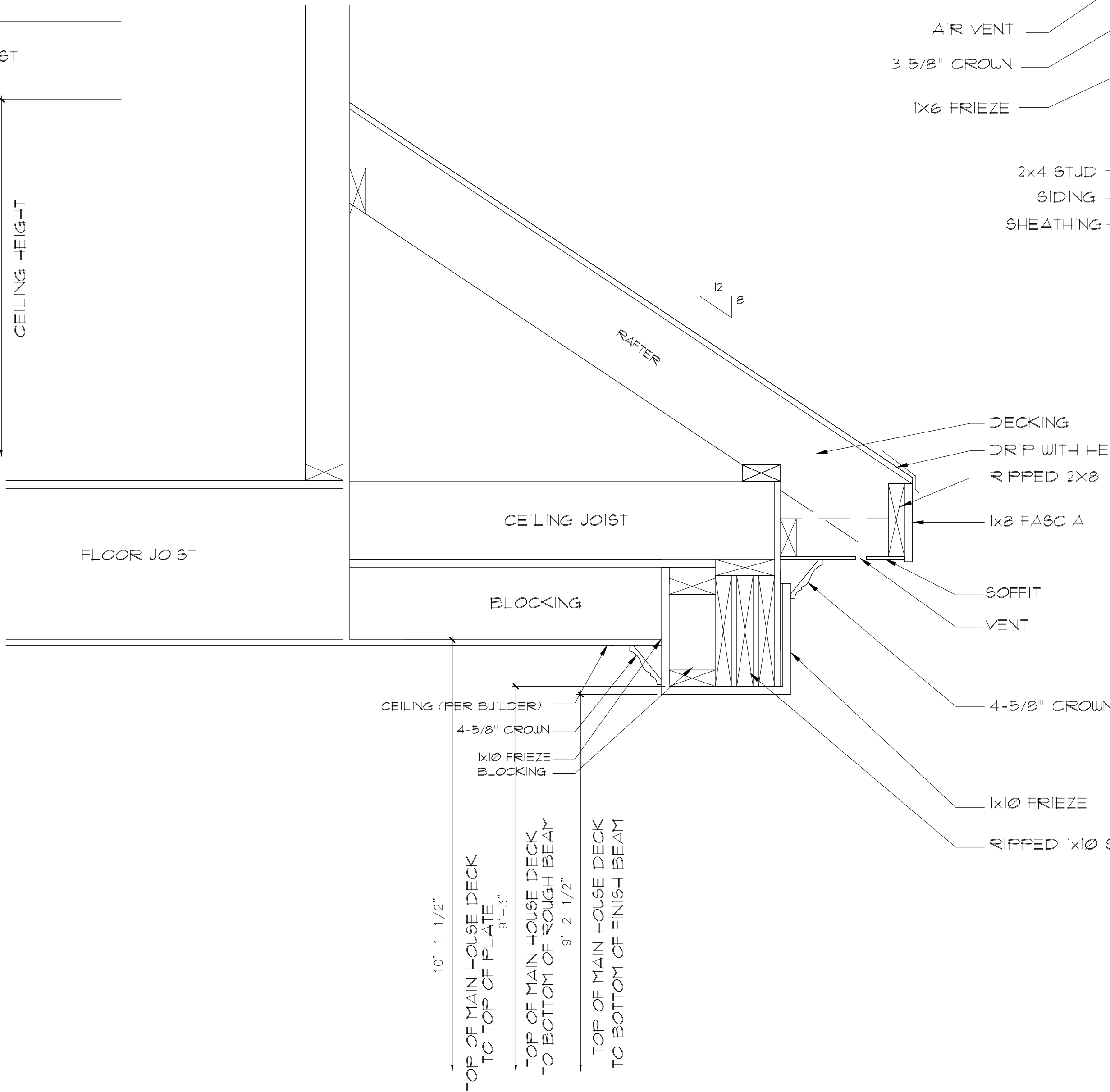
PERGOLA DETAIL "C"

SCALE: 1-1/2"=1'



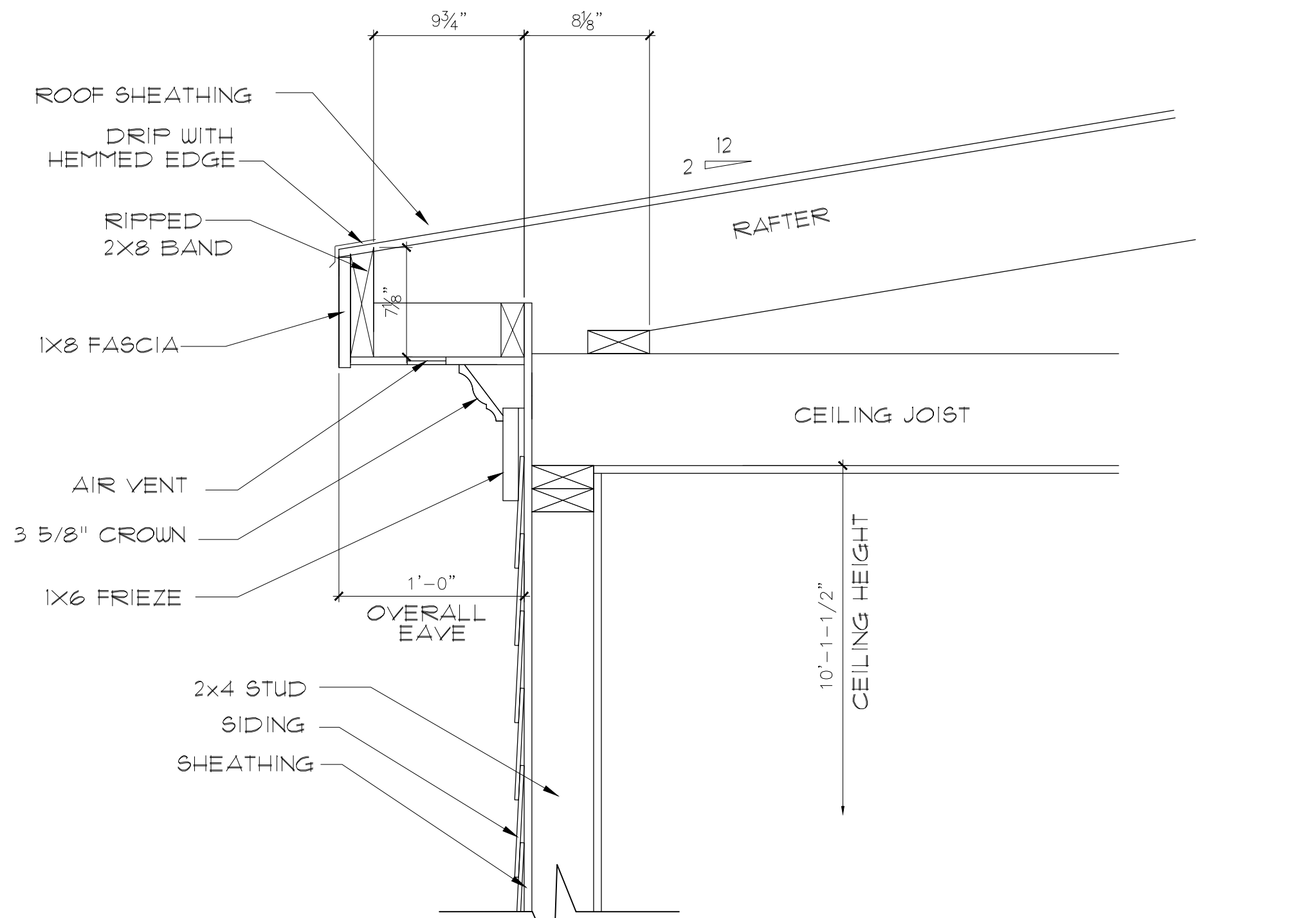
FRONT PORCH DETAIL-"D"

SCALE: 1-1/2"=1'



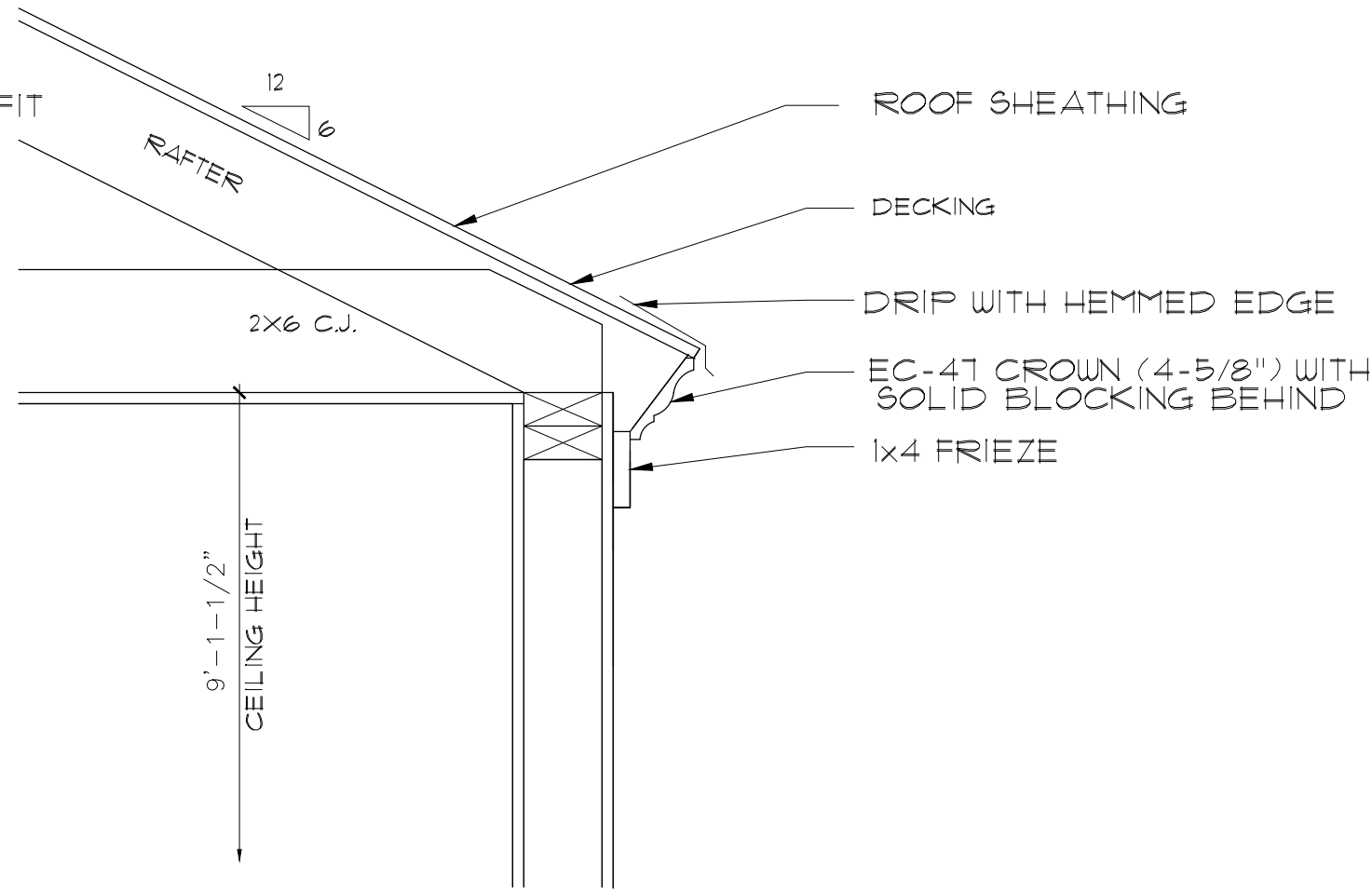
DORMER DETAIL- "E"

SCALE: 1-1/2"=1'



EAVE DETAIL "B"

SCALE: 1-1/2"=1'



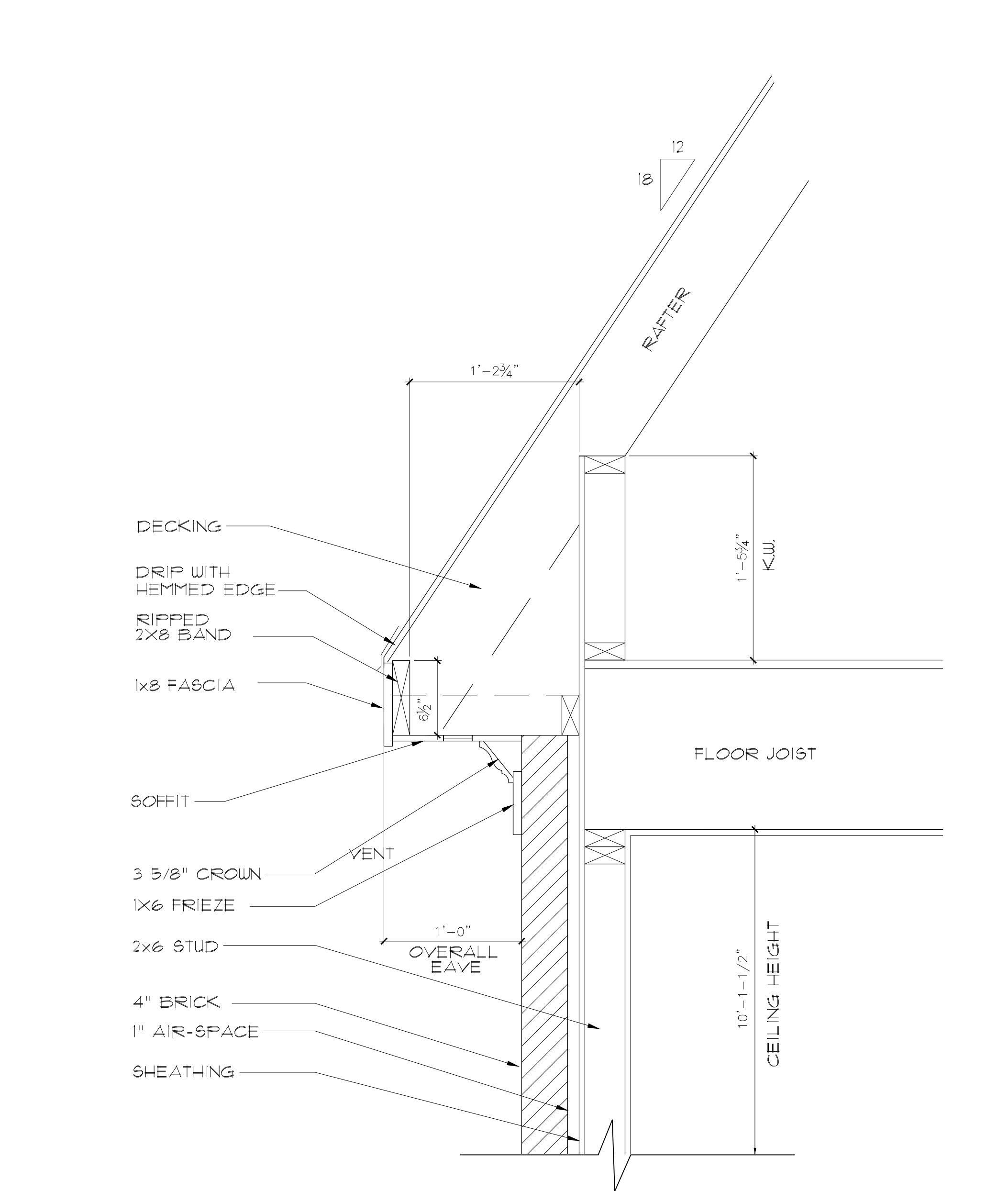
**RALEIGH CUSTOM HOMES**  
**2101 GRESHAM LAKE**

|                |            |
|----------------|------------|
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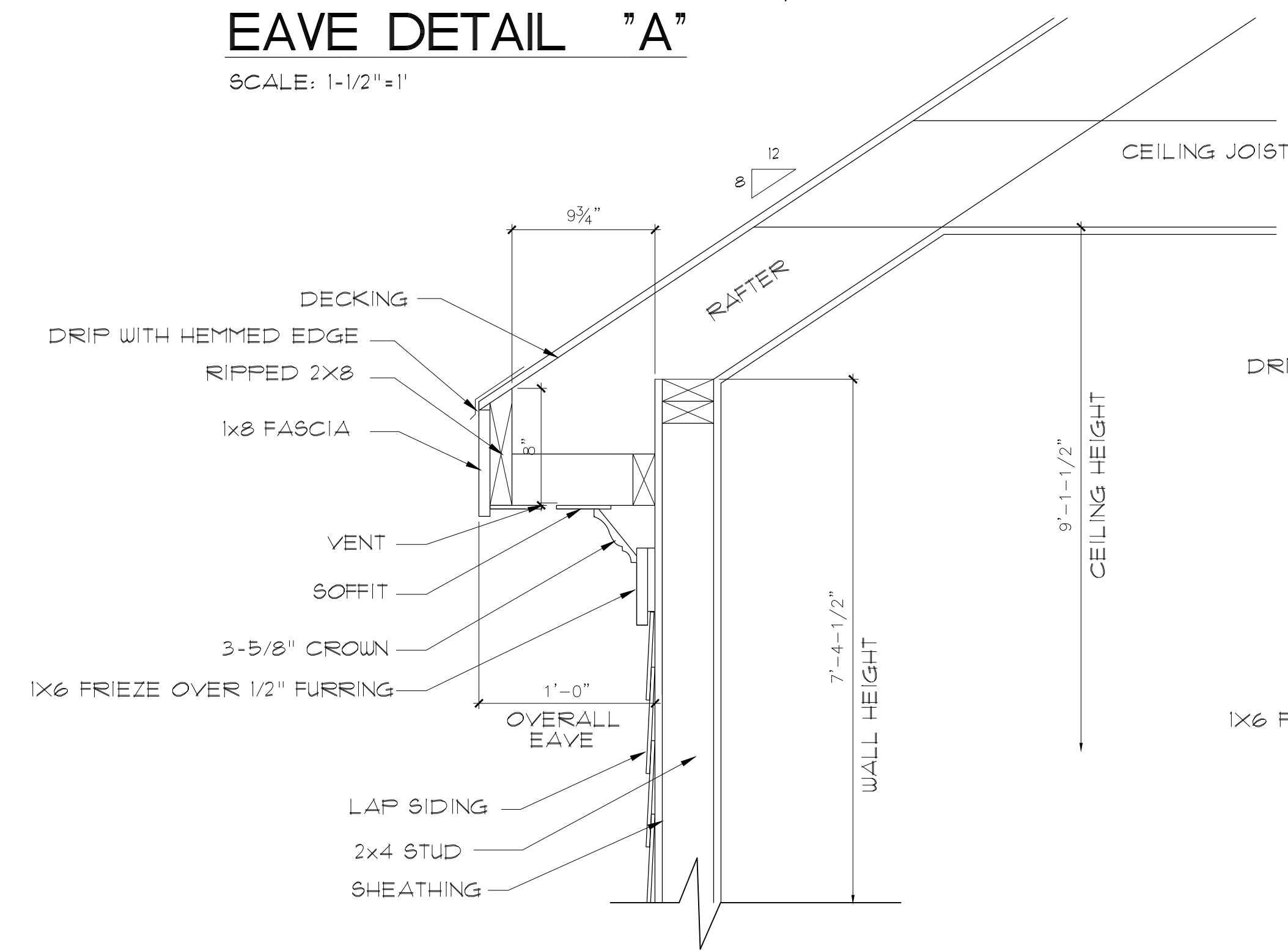
DETAILS

SHEET NO.

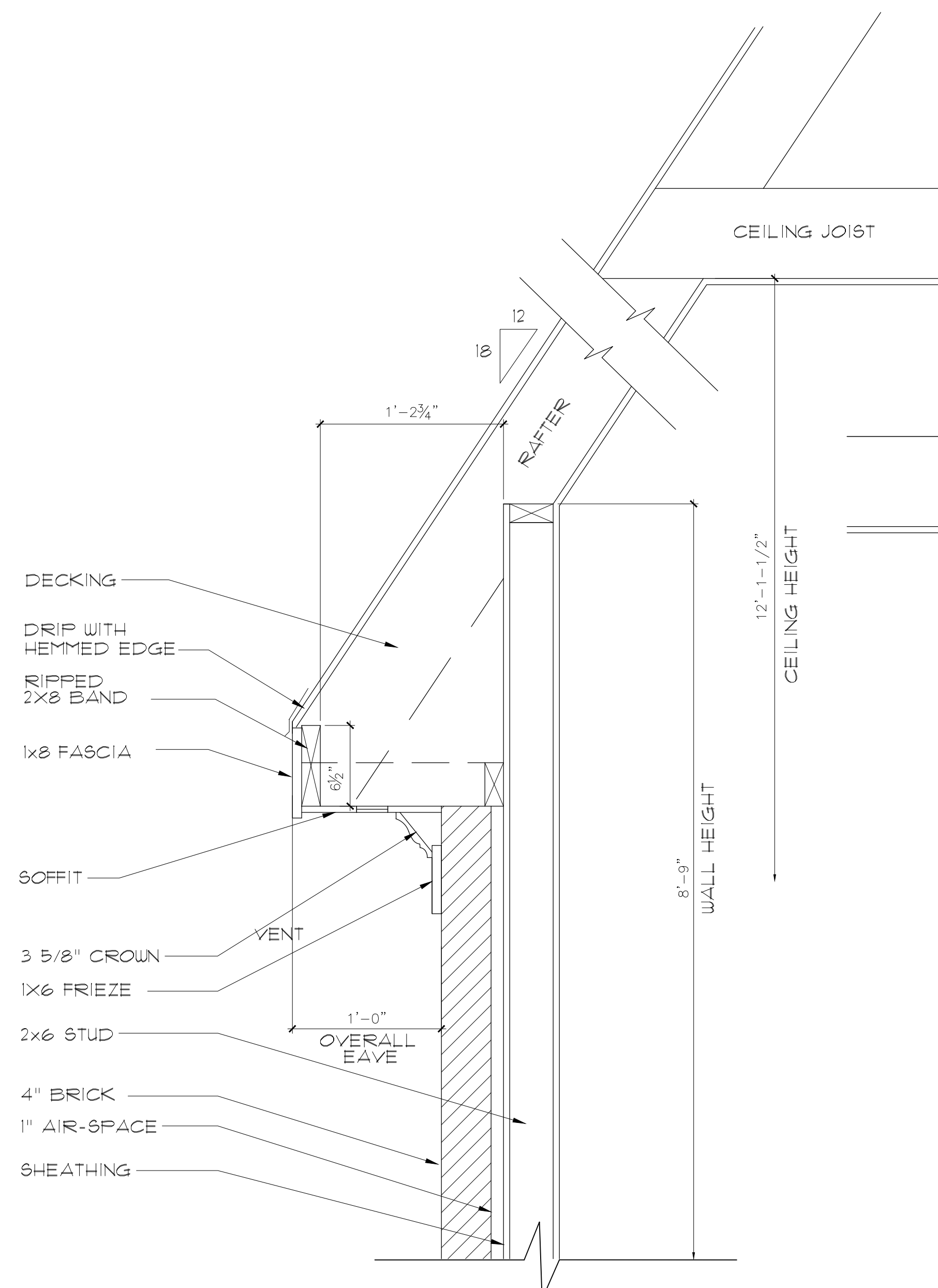
D2



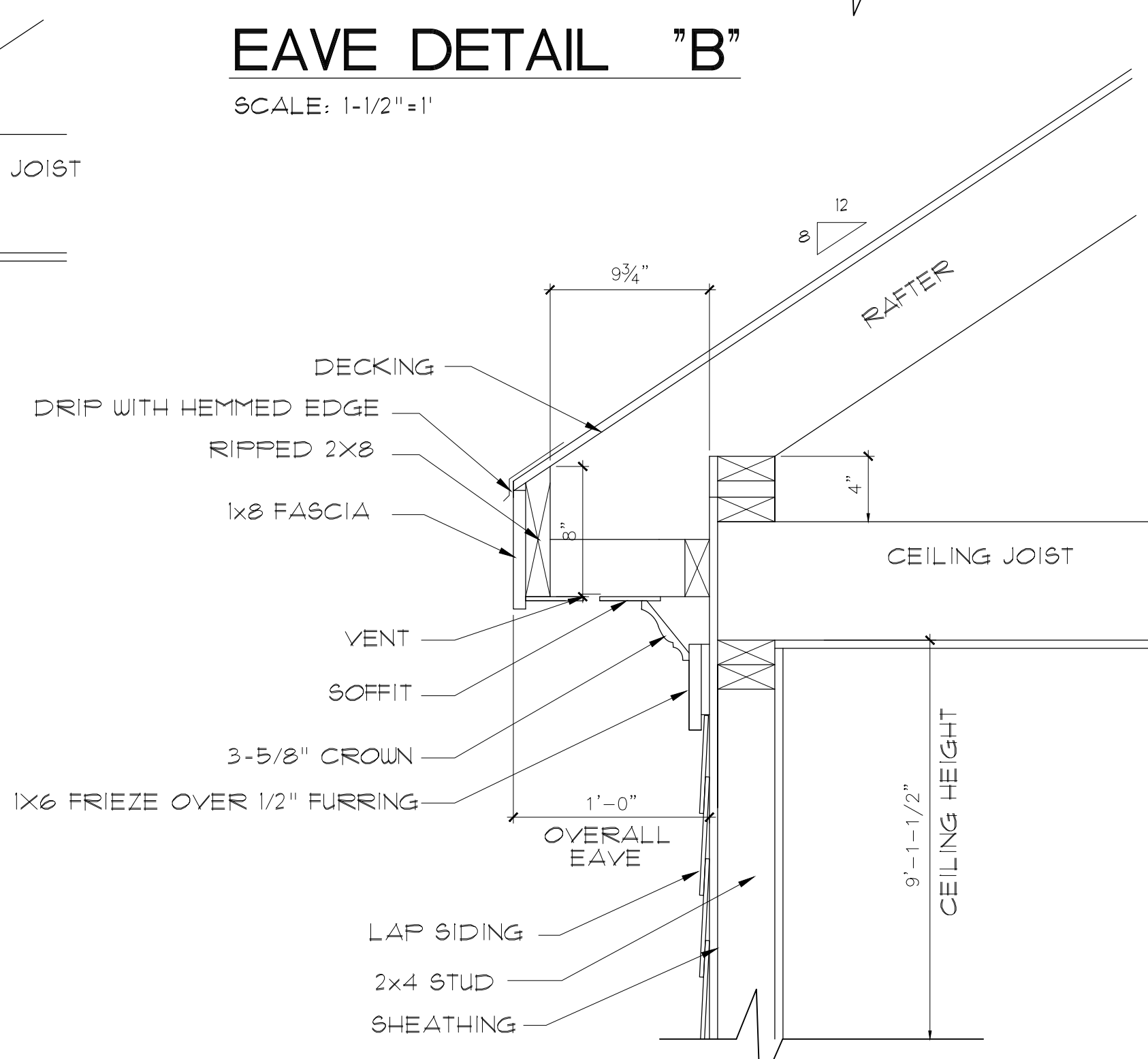
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SCALE: 1-1/2"=1'



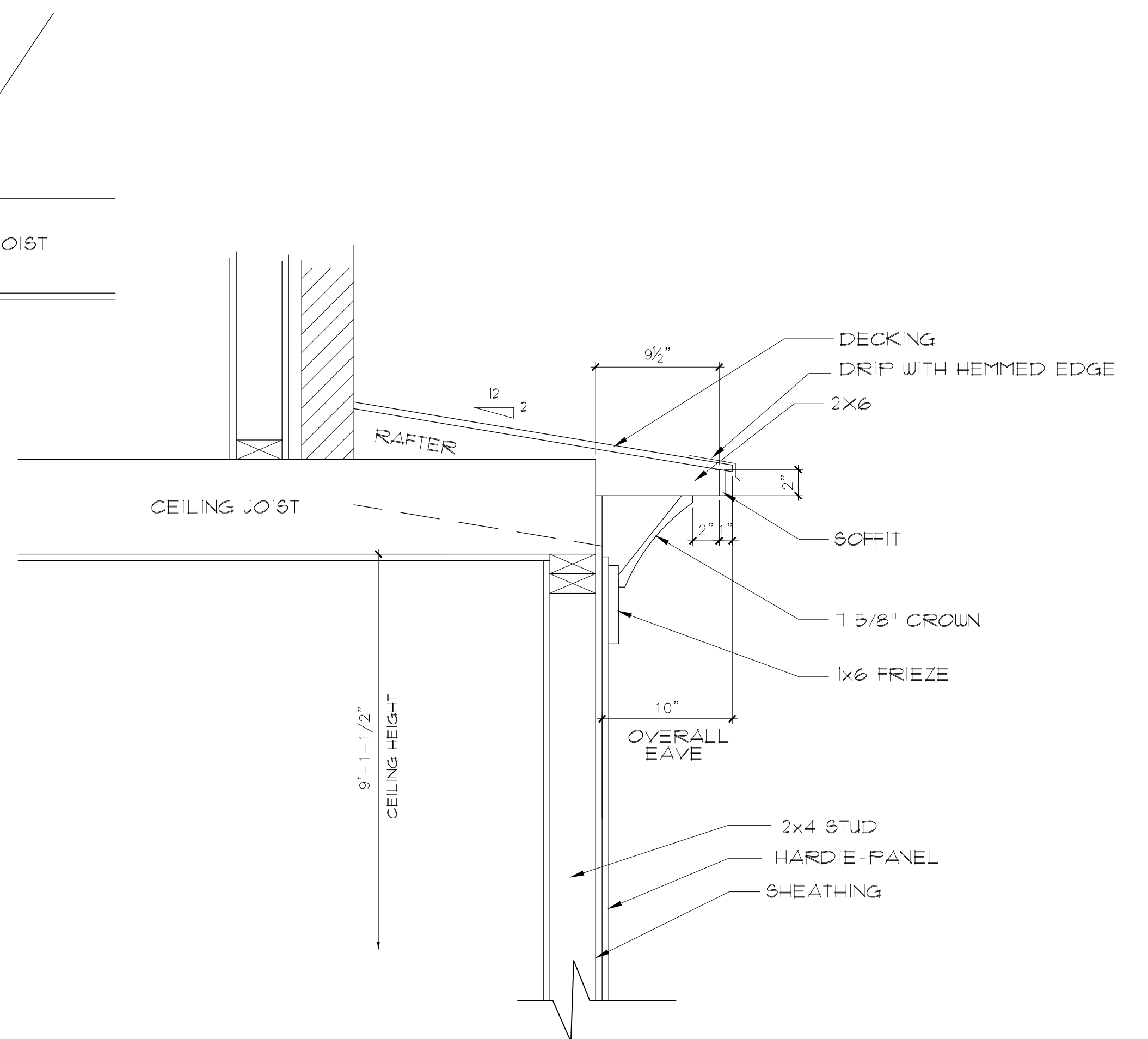
EAVE DETAIL "D"  
SCALE: 1-1/2"=1'



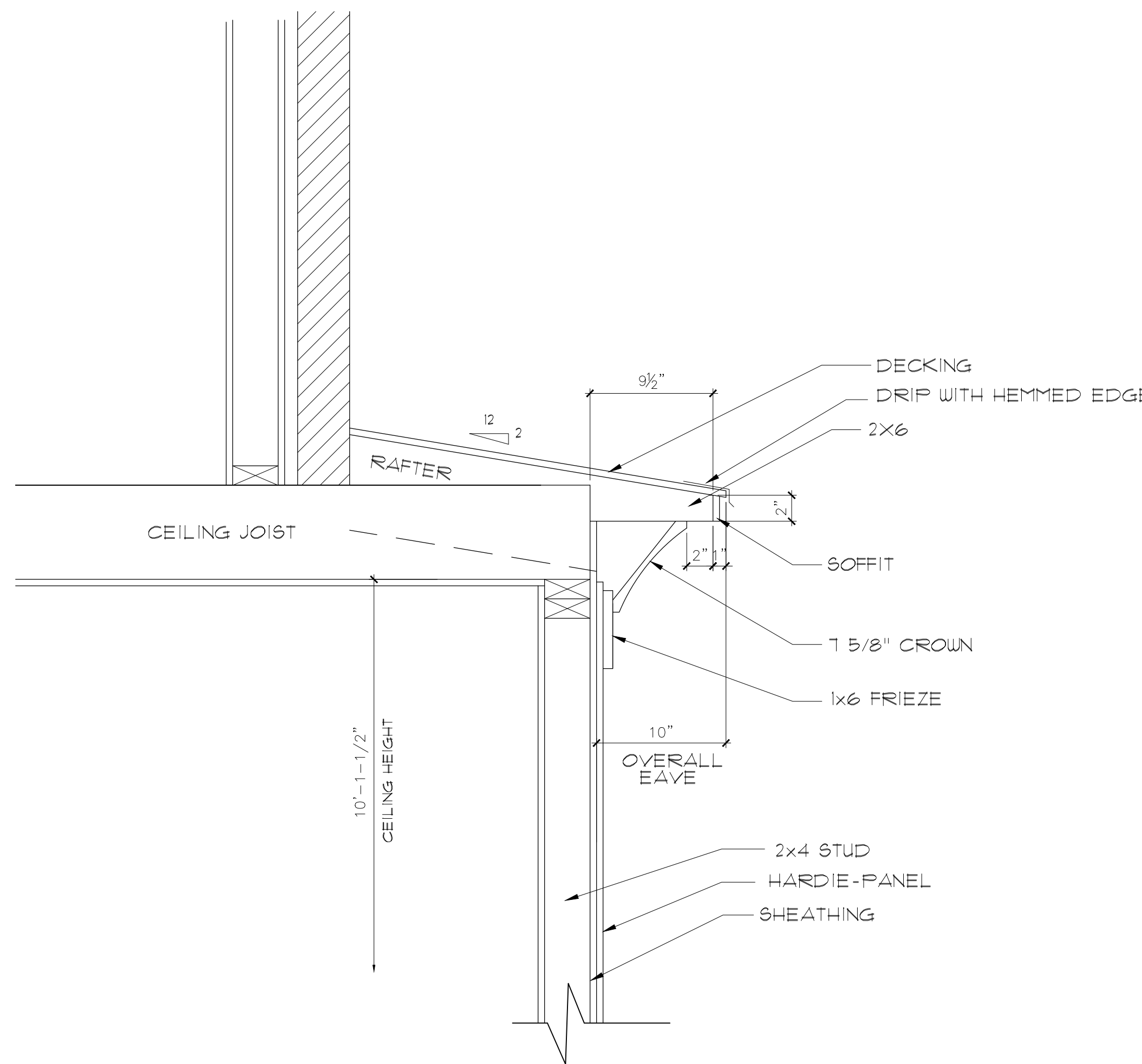
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SCALE: 1-1/2"=1'



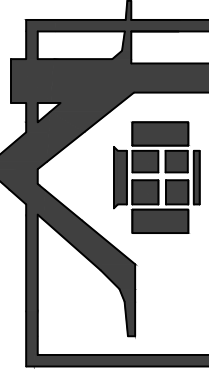
EAVE DETAIL "F"  
SCALE: 1-1/2"=1'



EAVE DETAIL "C"  
SCALE: 1-1/2"=1'



EAVE DETAIL "E"  
SCALE: 1-1/2"=1'



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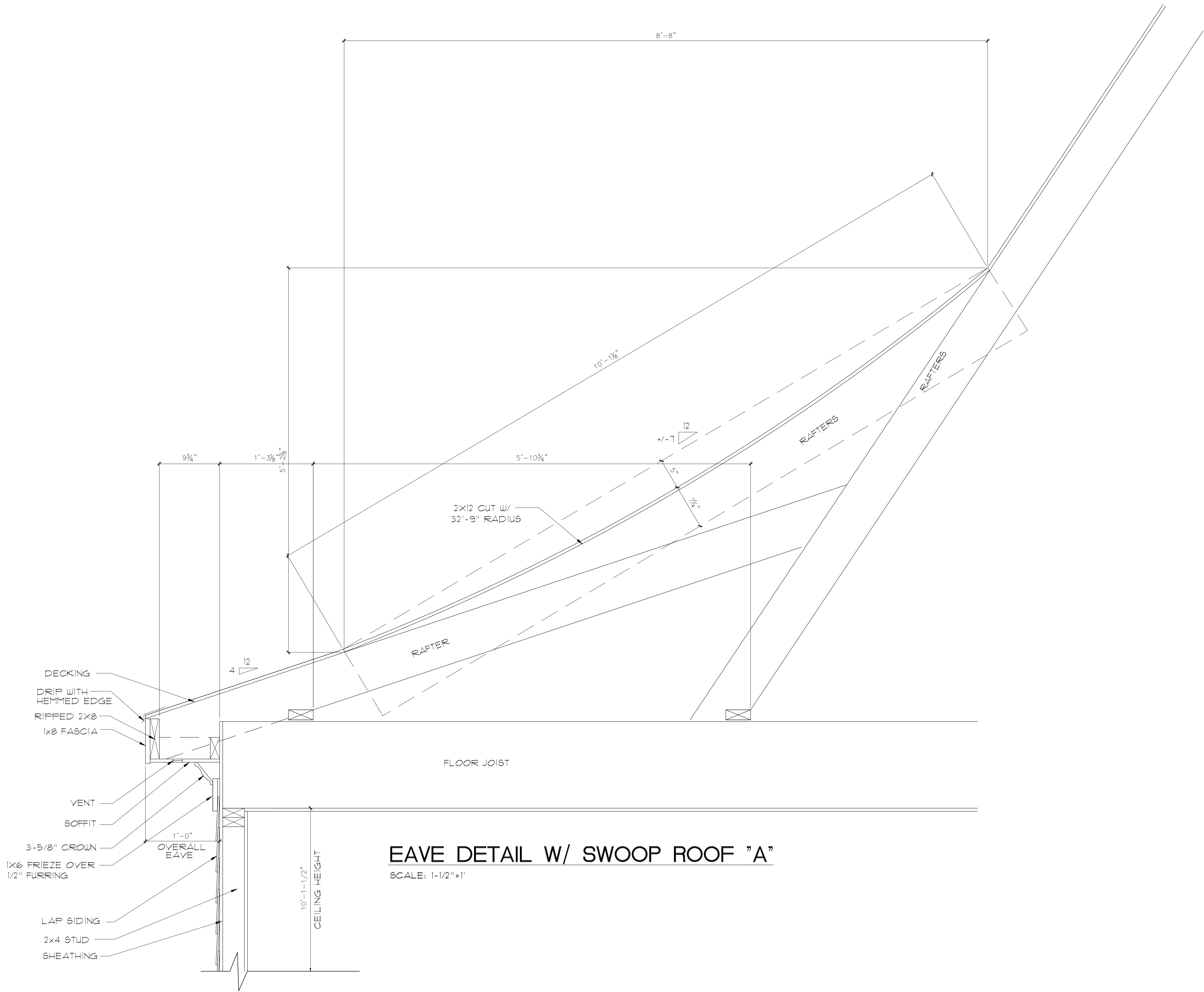
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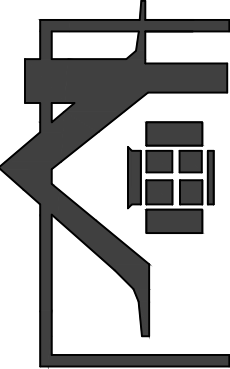
RALEIGH CUSTOM HOMES

2101 GRESHAM LAKE

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
| DRAWN BY:      | ML/RA/CSH  |
| REVISION DATE: | 04/20/2022 |
| DETAILS        |            |
| SHEET NO.      | D3         |



EAVE DETAIL W/ SWOOP ROOF "A"  
SCALE: 1-1/2"=1'



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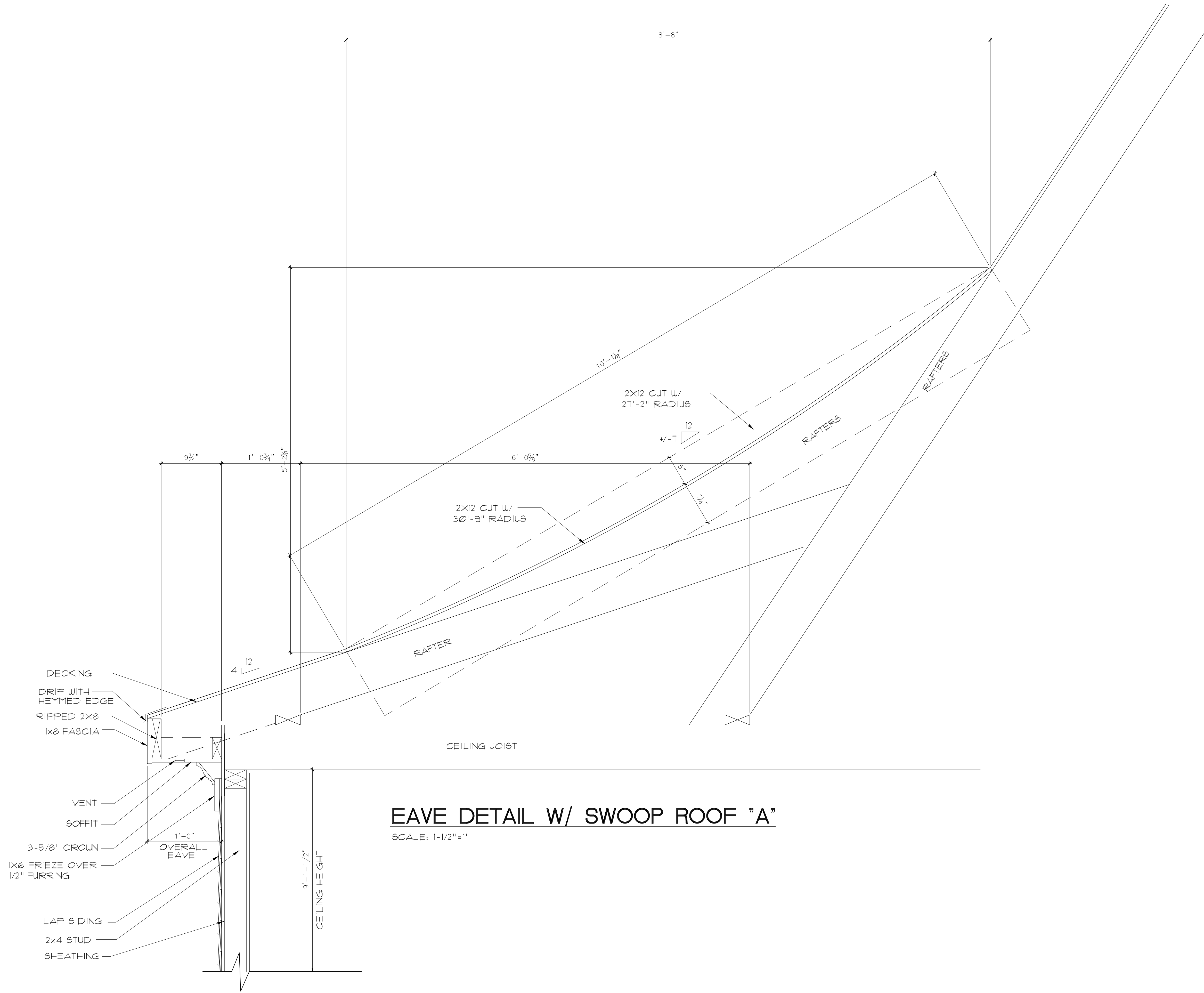
RALEIGH CUSTOM HOMES  
2101 GRESHAM LAKE

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
| DRAWN BY:      | ML/RA/CSH  |
| REVISION DATE: | 04/20/2022 |

DETAILS

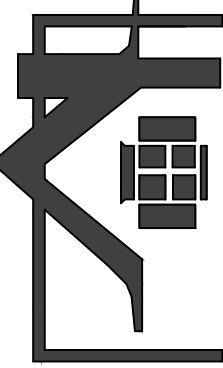
SHEET NO.

D4



EAVE DETAIL W/ SWOOP ROOF "A"

SCALE: 1-1/2"=1'



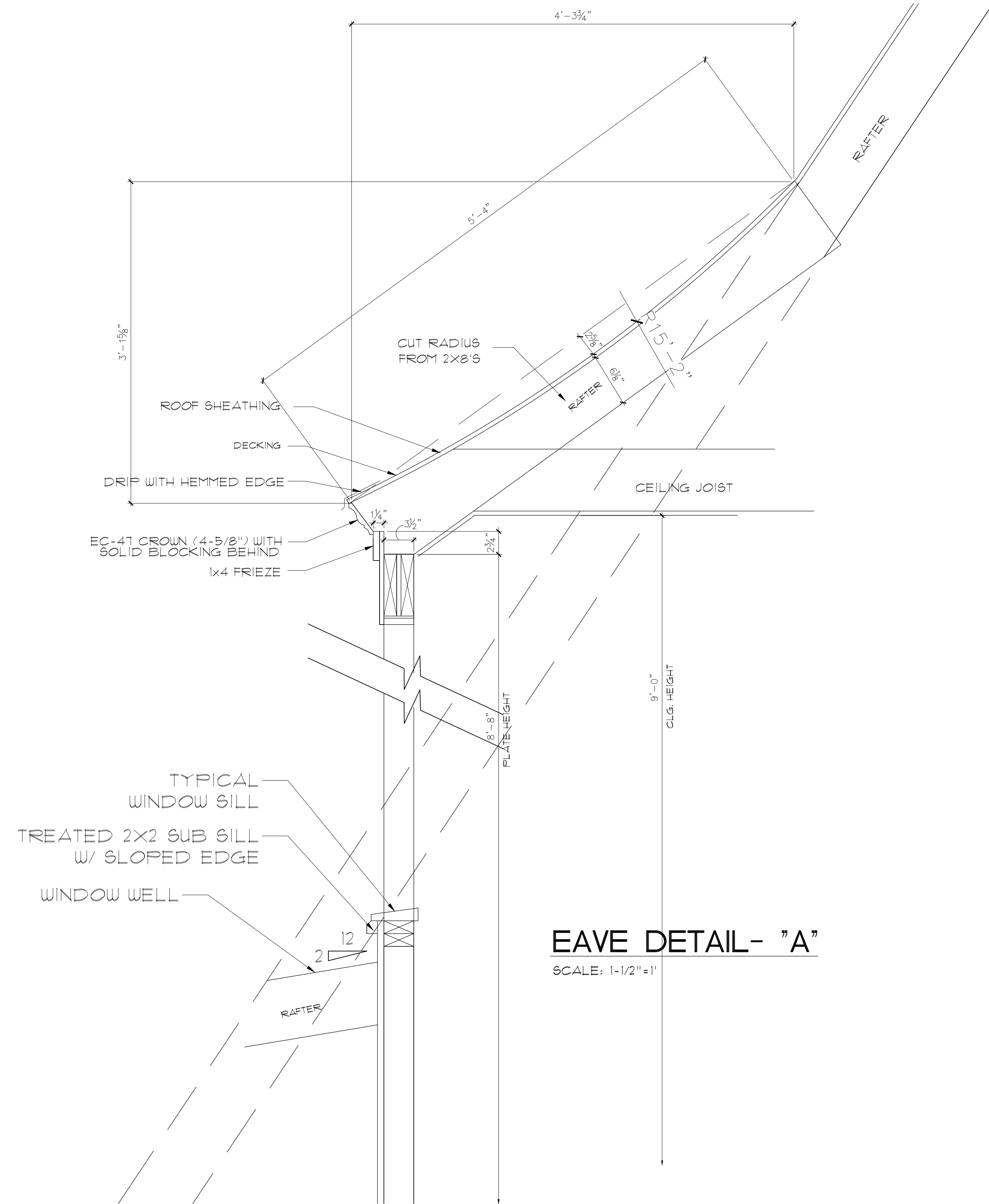
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RALEIGH CUSTOM HOMES  
2101 GRESHAM LAKE

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
| DRAWN BY:      | ML/RA/CSH  |
| REVISION DATE: | 04/20/2022 |

DETAILS

SHEET NO.  
D5



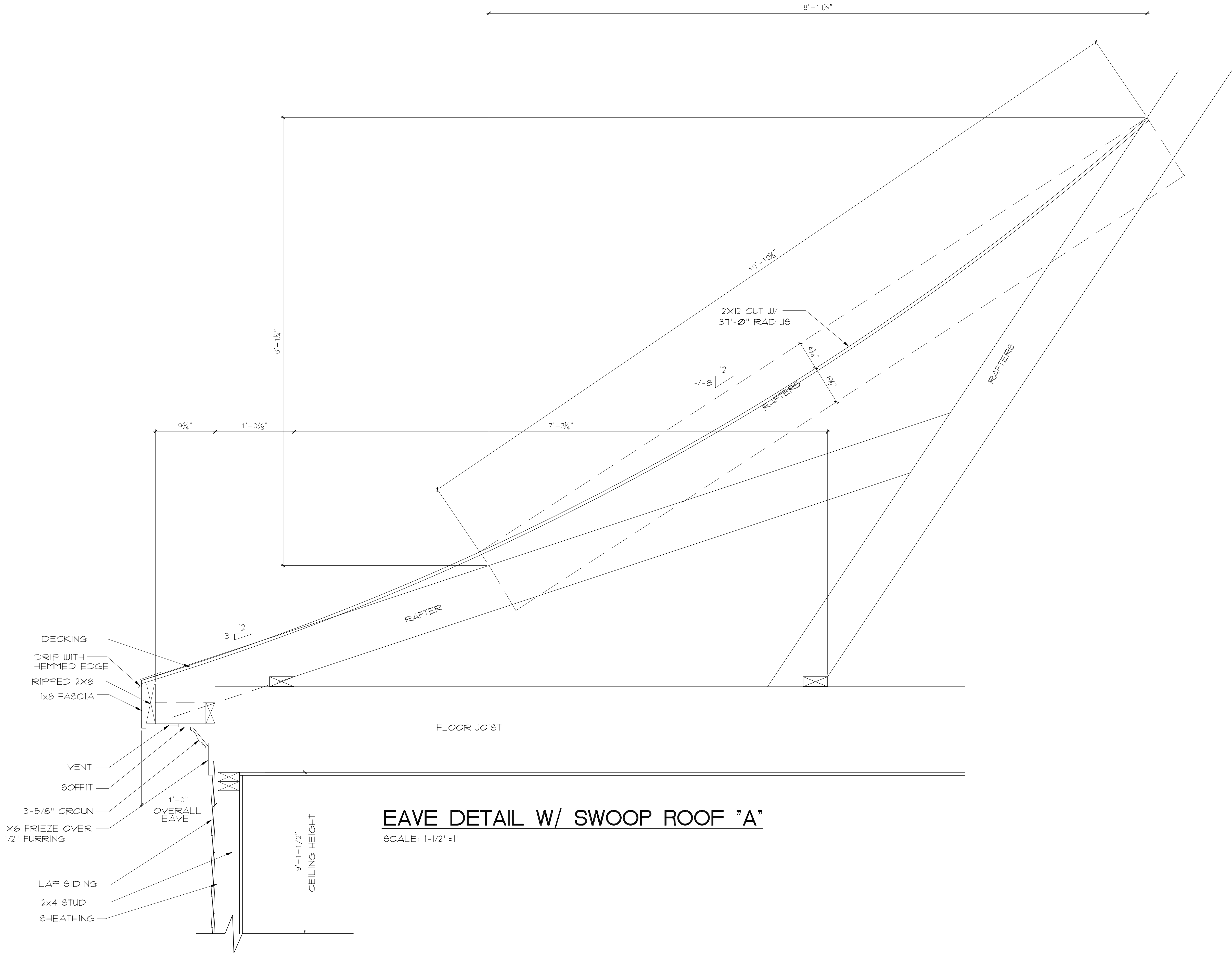
EAVE DETAIL - "A"  
SCALE: 1-1/2"=1'

**RALEIGH CUSTOM HOMES**  
**2101 GRESHAM LAKE**

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
| DRAWN BY:      | ML/RA/CSH  |
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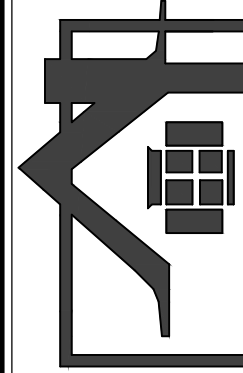
DETAILS

SHEET NO.  
**D6**



EAVE DETAIL W/ SWOOP ROOF "A"

SCALE: 1-1/2"=1'



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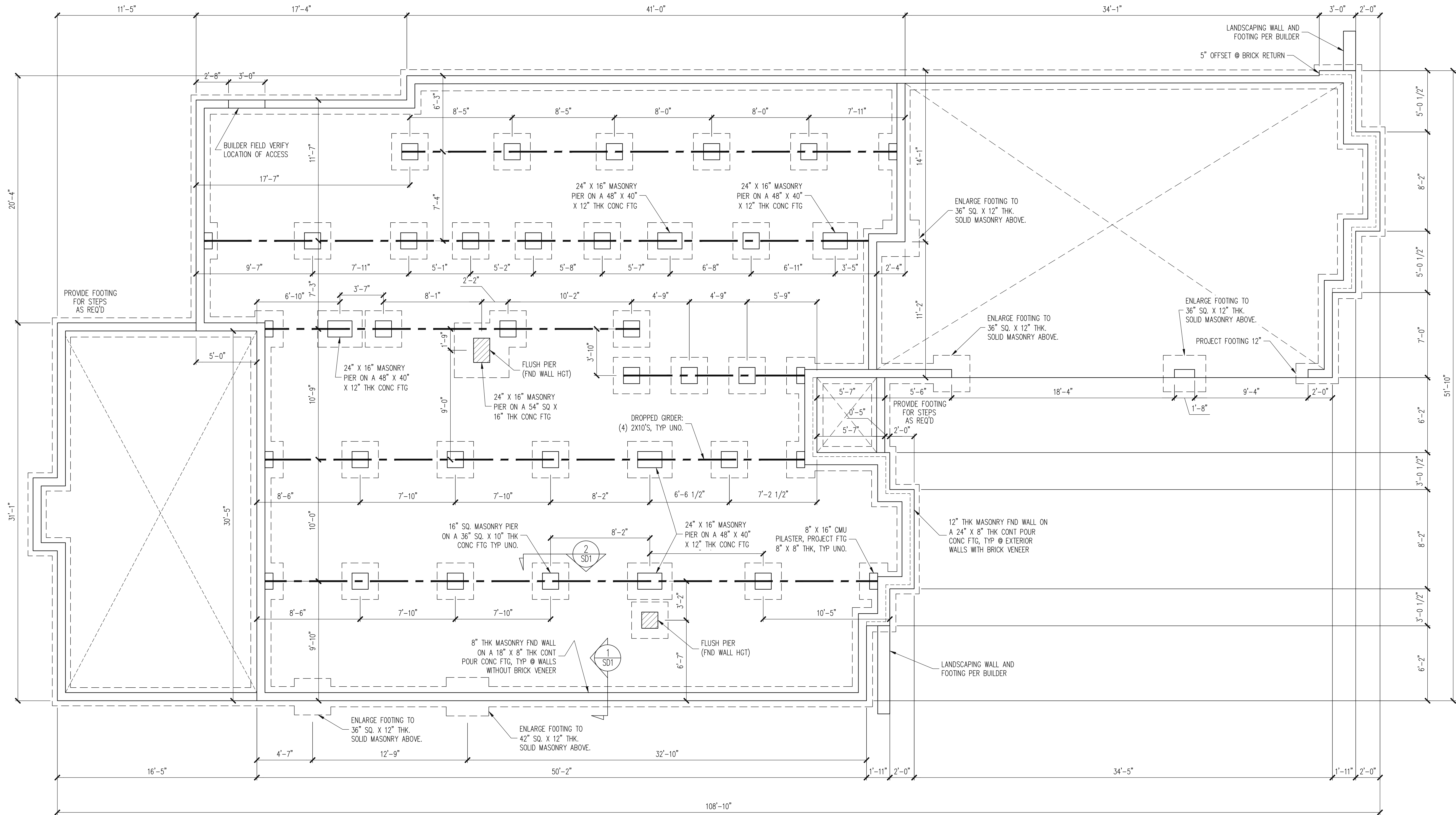
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RALEIGH CUSTOM HOMES

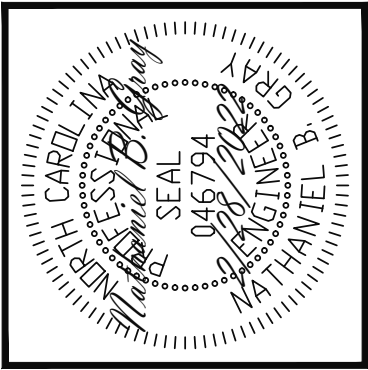
2101 GRESHAM LAKE

|                |            |
|----------------|------------|
| DATE:          | 01/26/2022 |
| DRAWN BY:      | ML/RA/CSH  |
| REVISION DATE: | 04/20/2022 |
| DETAILS        |            |
| SHEET NO.      | D7         |



NOTES:  
-HEIGHT AND BACKFILL LIMITATIONS FOR  
FOUNDATION WALLS ARE TO BE GOVERNED  
BY THE NCSBC, LATEST EDITION.  
-FIBER MESH REINFORCED CONCRETE MAY BE  
USED IN LIEU OF WELDED WIRE FABRIC. SEE  
SECTION 6.01 OF THE CONSTRUCTION  
SPECIFICATIONS FOR ALLOWABLE  
SUBSTITUTION DETAILS.

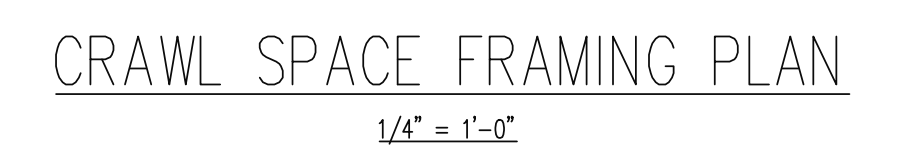
FOUNDATION PLAN  
1/4" = 1'-0"

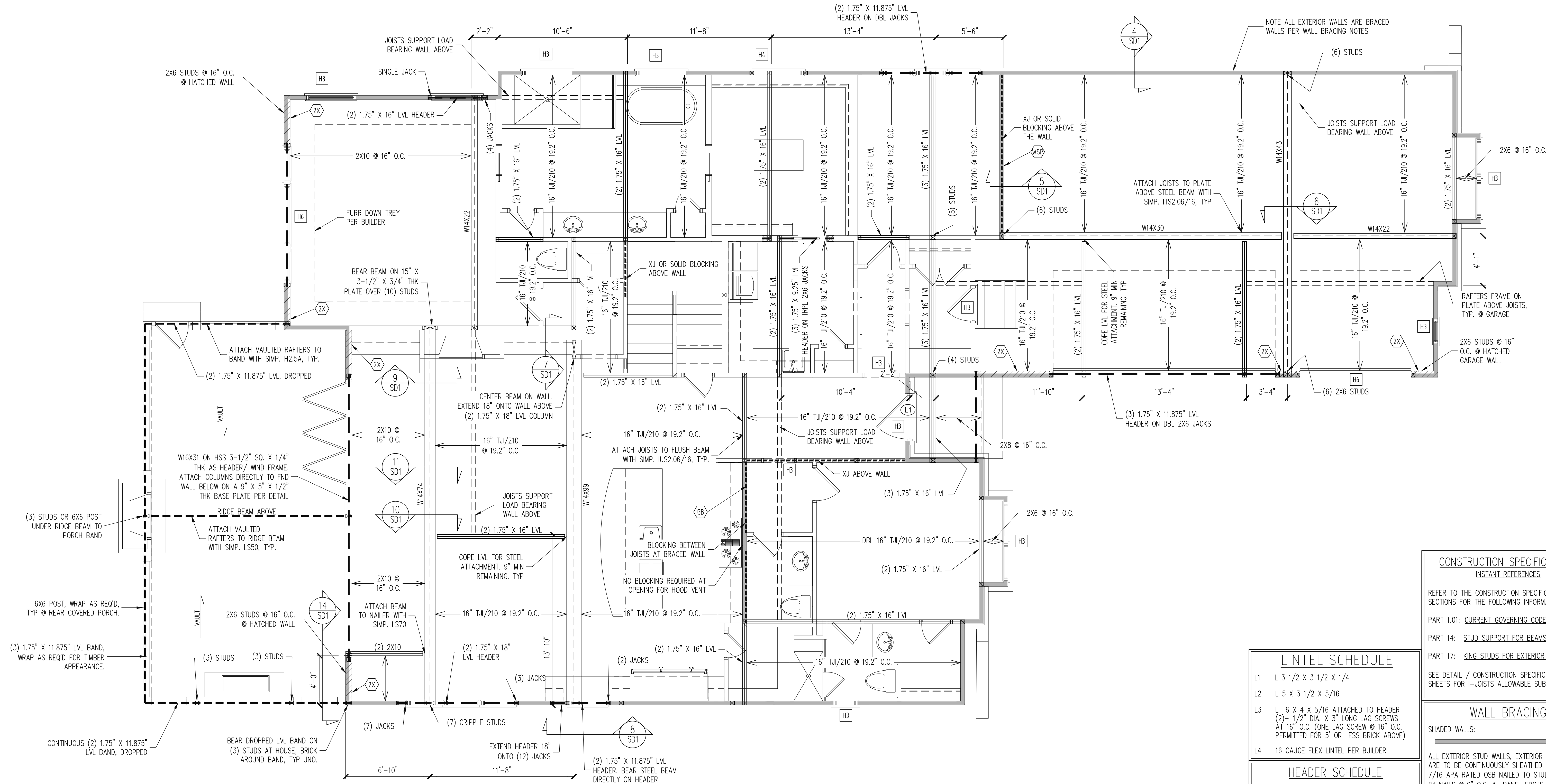


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|                      |                     |                 |
|----------------------|---------------------|-----------------|
| RALEIGH CUSTOM HOMES |                     |                 |
| SCOPE                | STRUCTURAL ADDENDUM |                 |
| LOT #:               | 2101 GRESHAM LAKE   | ENG: NIBC       |
|                      |                     | REV:            |
|                      |                     | DATE: 2/28/2022 |

|             |  |
|-------------|--|
| PROJECT NO. |  |
| 22-20-028   |  |
| SHEET NO.   |  |
| S1          |  |
| 1 of 6      |  |





| <u>LINTEL SCHEDULE</u> |                                                                                                                                                            |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L1                     | L 3 1/2 X 3 1/2 X 1/4                                                                                                                                      |
| L2                     | L 5 X 3 1/2 X 5/16                                                                                                                                         |
| L3                     | L 6 X 4 X 5/16 ATTACHED TO HEADER<br>(2)- 1/2" DIA. X 3" LONG LAG SCREWS<br>AT 16" O.C. (ONE LAG SCREW @ 16" O.C.<br>PERMITTED FOR 5' OR LESS BRICK ABOVE) |
| L4                     | 16 GAUGE FLEX LINTEL PER BUILDER                                                                                                                           |

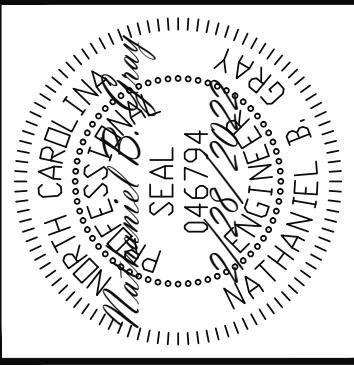
| <u>HEADER SCHEDULE</u>                                                    |                                                                                 |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 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                                                  |
| H6                                                                        | (3) 1.75" X 9.25" LVL'S ON DBL 2X6 JACKS                                        |
| -----                                                                     |                                                                                 |
| (A)                                                                       | TYPICAL FOR INTERIOR NON LOAD BEARING<br>WALLS ONLY, ROUGH OPENING 38" MAX.     |
| (B)                                                                       | TYPICAL FOR INTERIOR NON LOAD BEARING<br>WALLS ONLY, ROUGH OPNG 38" TO 74" MAX. |
| (C)                                                                       | TYPICAL FOR ALL CONDITIONS NOT LISTED<br>IN (A) OR (B) UNO.                     |
| NOTES:<br>-HEADERS IN NON LOAD BEARING INTERIOR<br>WALLS ARE NOT LABELED. |                                                                                 |

| CONSTRUCTION SPECIFICATIONS                                                          |  |  |  |
|--------------------------------------------------------------------------------------|--|--|--|
| INSTANT REFERENCES                                                                   |  |  |  |
| REFER TO THE CONSTRUCTION SPECIFICATIONS SECTIONS FOR THE FOLLOWING INFORMATION:     |  |  |  |
| PART 1.01: CURRENT GOVERNING CODE                                                    |  |  |  |
| PART 14: STUD SUPPORT FOR BEAMS                                                      |  |  |  |
| PART 17: KING STUDS FOR EXTERIOR WALLS                                               |  |  |  |
| SEE DETAIL / CONSTRUCTION SPECIFICATIONS SHEETS FOR I-JOISTS ALLOWABLE SUBSTITUTIONS |  |  |  |

| WALL BRACING                                                                                                                                                                                           |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| SHADED WALLS:                                                                                                                                                                                          |  |  |  |
| ALL EXTERIOR STUD WALLS, EXTERIOR SIDE, 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.                       |  |  |  |
| WSP - ONE SIDE OF INTERIOR WALL OR INSIDE OF EXTERIOR WALL WITH 3/8" MIN. THICKNESS WOOD STRUCTURAL PANELING, ATTACH WSP TO STUD WALL WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD. |  |  |  |
| GB - INTERIOR BRACED WALL. 1/2" GB SECURED PER TABLE R602.10.2 OF THE 2018 NGBRC. (FASTENERS @ 7" O.C.) BOTH SIDES OF WALL, OR (FASTENERS @ 4" O.C.) ONE SIDE OF WALL AT STAIRS                        |  |  |  |
| 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.                                                          |  |  |  |
| NOTES:<br>PROVIDED CONTINUOUS SHEATHING = 304" MIN.                                                                                                                                                    |  |  |  |
| REFERENCE PART 16.02 OF CONSTRUCTION SPECIFICATIONS FOR GENERAL WIND BRACING INFORMATION.                                                                                                              |  |  |  |

1ST FLOOR FRAMING PLAN

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

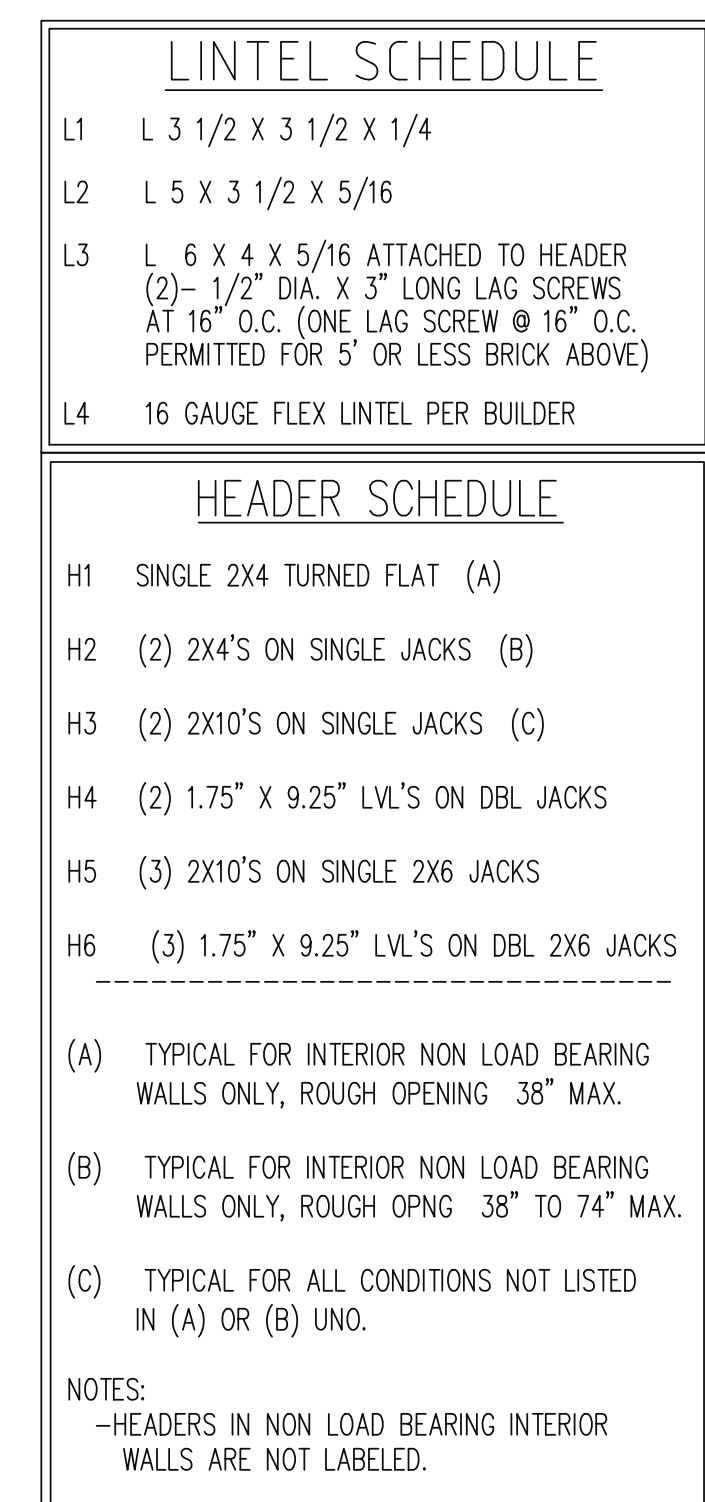


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| RALEIGH CUSTOM HOMES |                   |      |      |
|----------------------|-------------------|------|------|
| STRUCTURAL ADDENDUM  |                   |      |      |
| SCOPE                | LOT #:            | ENG: | REV: |
|                      | 2701 GRESHAM LAKE | NBG  |      |

| PROJECT NO. |  |
|-------------|--|
| 22-20-028   |  |

| SHEET NO. |  |
|-----------|--|
| S3        |  |
| 3 of 6    |  |



| CONSTRUCTION SPECIFICATIONS                                                                                                                                                                          |                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| INSTANT REFERENCES                                                                                                                                                                                   |                                      |
| REFER TO THE CONSTRUCTION SPECIFICATIONS SECTIONS FOR THE FOLLOWING INFORMATION:                                                                                                                     |                                      |
| PART 1.01:                                                                                                                                                                                           | <u>CURRENT GOVERNING CODE</u>        |
| PART 14:                                                                                                                                                                                             | <u>STUD SUPPORT FOR BEAMS</u>        |
| PART 17:                                                                                                                                                                                             | <u>KING STUDS FOR EXTERIOR WALLS</u> |
| SEE DETAIL / CONSTRUCTION SPECIFICATIONS SHEETS FOR I-JOISTS ALLOWABLE SUBSTITUTIONS                                                                                                                 |                                      |
| WALL BRACING                                                                                                                                                                                         |                                      |
| SHADED WALLS:                                                                                                                                                                                        |                                      |
| <hr/> <hr/>                                                                                                                                                                                          |                                      |
| <p>ALL EXTERIOR STUD WALLS, EXTERIOR SIDE, 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.</p> <p>-----</p> |                                      |
| <p>NOTES:</p> <p>PROVIDED <u>CONTINUOUS SHEATHING = 2B1" MIN.</u></p>                                                                                                                                |                                      |
| <p>REFERENCE PART 16.02 OF CONSTRUCTION SPECIFICATIONS FOR GENERAL WIND BRACING INFORMATION.</p>                                                                                                     |                                      |

2ND FLOOR FRAMING PLAN

WALLS AND CEILING

1/4" = 1'-0"



**Engineering Tech**  
**ASSOCIATES, P.A.**  
**STRUCTURAL ENGINEERS**  
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188 Wind Chime Court, Suite 101  
Raleigh, North Carolina 27615  
(919) 844-1661 Fax: (919) 844-1665  
(919) 844-1661

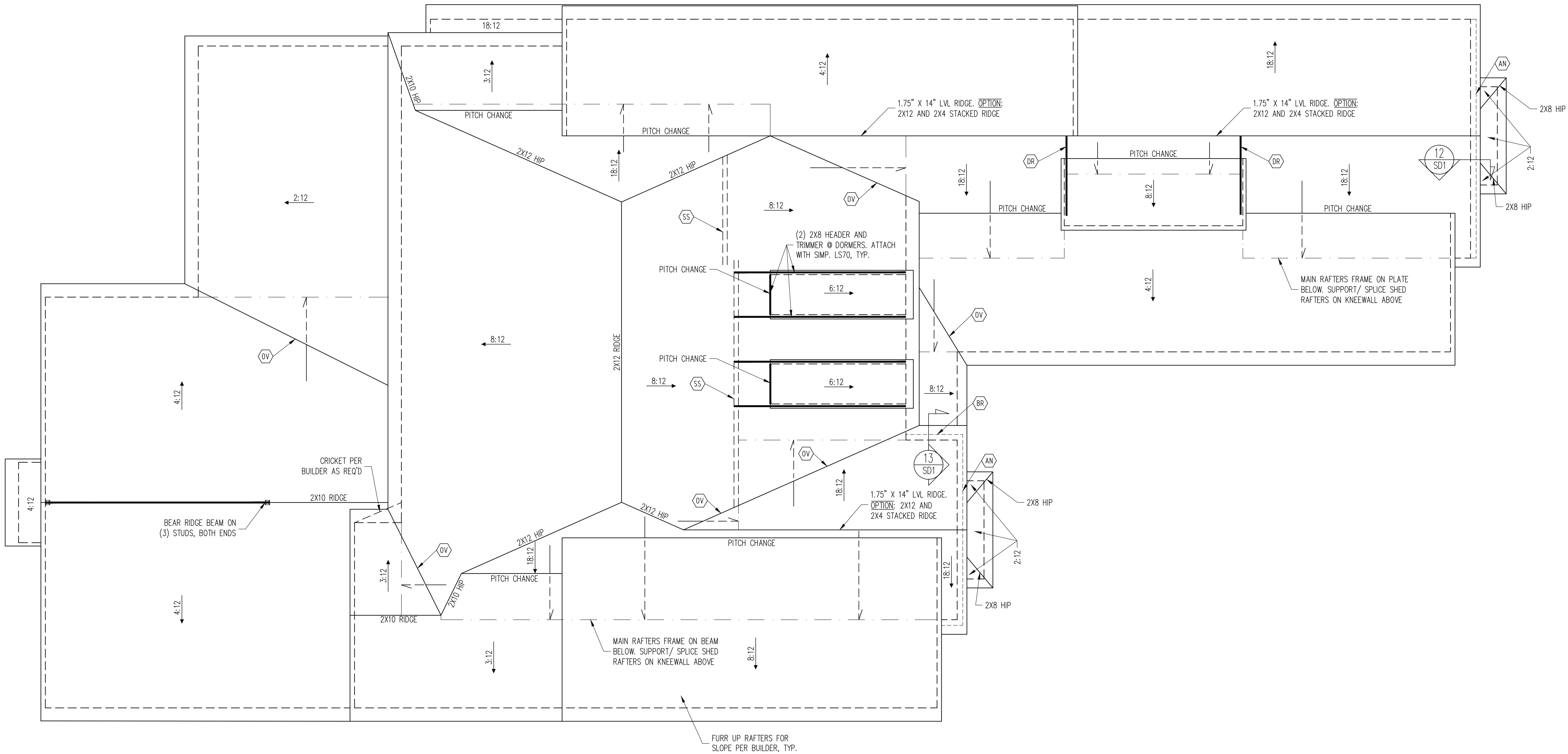
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|                      |                   |
|----------------------|-------------------|
| RALEIGH CUSTOM HOMES |                   |
| STRUCTURAL ADDENDUM  |                   |
| SCOPE                |                   |
| LOT #:               | 2107 GRESHAM LAKE |
|                      | ENG: NRG          |
|                      | REV:              |
|                      | DATE: 2/7/2022    |

|             |
|-------------|
| PROJECT NO. |
| 22-20-028   |

|           |
|-----------|
| SHEET NO. |
| S4        |
| 4 of 6    |

DATE 2/28/2022



| 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 KNEEWALL HEIGHTS, ARCHITECTURAL OVERHANGS, AND ROOF PITCHES PRIOR TO CONSTRUCTION |                                                                 |
| FRAMING SCHEDULE                                                                              |                                                                 |
| ROOF ONLY                                                                                     |                                                                 |
| AN                                                                                            | SUPPORT BRICK VENEER WITH ANGLE ATTACHED TO MODIFIED STUD WALL  |
| BR                                                                                            | SUPPORT BRICK VENEER PER SECT.703.7 OF THE NCR, LATEST EDITION. |
| DR                                                                                            | DOUBLE RAFTER                                                   |
| OV                                                                                            | OVERFRAME VALLEY ( 2X10 SLEEPER )                               |
| SS                                                                                            | SUPPORT/SPUCE RAFTERS ON KNEEWALL BELOW                         |

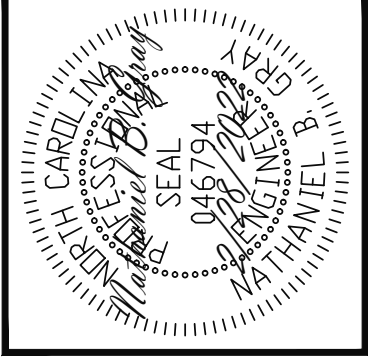
ROOF FRAMING PLAN  
1/4" = 1'-0"

|                      |                   |
|----------------------|-------------------|
| RALEIGH CUSTOM HOMES |                   |
| STRUCTURAL ADDENDUM  |                   |
| SCOPE                | 2701 GRESHAM LAKE |
| LOT #:               |                   |
| ENG:                 | NBG               |
| REV:                 |                   |
| DATE:                | 2/28/2022         |

|             |
|-------------|
| PROJECT NO. |
| 22-20-028   |

|           |
|-----------|
| SHEET NO. |
| S5        |
| 5 of 6    |

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**CONSTRUCTION SPECIFICATIONS**

**PART 1: GENERAL**

1.01 CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.

1.02 DIMENSIONS SHOWN SHALL GOVERN OVER SCALE ON THESE DRAWINGS.

1.05 METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR, WHO SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

**PART 2: DESIGN LOADS**

2.01 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 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 OF 40 PSF OR A 300 LB. CONCENTRATED LOAD ACTING OVER AN AREA OF 4 SQ. INCHES, WHICHEVER PRODUCES THE GREATER STRESS.  
- BUILDER TO VERIFY DEAD LOAD DOES NOT EXCEED 10 PSF WHEN HEAVY FLOOR OR ROOF FINISHES SUCH AS TILE OR SLATE ARE UTILIZED. NOTIFY ENGINEERING UNDER THESE CONDITIONS.

2.02 INTERIOR WALLS: 5 PSF LATERAL.

2.03 BASIC WIND DESIGN VELOCITY OF 120 MPH.

2.04 SOIL BEARING CAPACITY 2000 PSF (PRESUMPTIVE).

**PART 3: STRUCTURAL STEEL**

3.01 WIDE FLANGE BEAMS AND TEE SECTIONS SHALL CONFORM TO ASTM A992 MINIMUM GRADE.

3.02 SQUARE AND RECTANGULAR TUBING SHALL CONFORM TO ASTM A500 GRADE B MINIMUM GRADE.

3.03 STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, TYPE S, MINIMUM GRADE.

3.04 ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 MINIMUM GRADE.

3.05 STRUCTURAL STEEL CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.

**PART 4: WELDING**

4.01 WELDING ELECTRODES SHALL BE E70XX AND ALL WELDING SHALL BE PERFORMED BY AN AWS CERTIFIED WELDER.

**PART 5: CONCRETE AND SLABS ON GRADE**

5.01 CAST IN PLACE CONCRETE SHALL BE OF NORMAL WEIGHT, 6% AIR ENTRAINMENT, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS TYP UNO. ALL CONCRETE, INCLUDING CONCRETE FOR FOOTINGS, IS TO BE CAST IN PLACE, TYP UNO.

5.02 REINFORCED CAST IN PLACE CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH THE SPECIFICATIONS OF ACI 318, LATEST EDITION.

5.03 SLABS ON GRADE, IF ANY, SHALL CONTAIN SYNTHETIC POLYPROPYLENE FIBRILLATED MICRO FIBERS, FIBER LENGTH 1 1/2", DOSAGE RATE 1 1/2 LBS/100 SQ. YD. SLAB TO BE PLACED ON A 6 MIL VAPOR BARRIER OR 4" MIN GRANULAR FILL ON SOIL WITH 90% MIN STANDARD PROCTOR DENSITY. VAPOR BARRIER MAY BE OMITTED FOR SLABS NOT IN ENCLOSED AREAS.

**PART 6: REBAR AND WIRE REINFORCEMENT**

6.01 REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60 TYP UNO.

6.02 LAP SPLICES SHALL BE CLASS B AS DEFINED BY ACI 318, TYP UNO.

6.03 WIRE REINFORCEMENT SHALL BE 9 GA AND SHALL CONFORM TO ASTM A1064.

**NOTES**

THE BUILDER IS RESPONSIBLE FOR REVIEWING PLANS PRIOR TO CONSTRUCTION. THE BUILDER SHALL IMMEDIATELY CONTACT THE ENGINEER OF RECORD (EOR) BEFORE PROCEEDING IF THE FOLLOWING CONDITIONS ARE NOTED BEFORE OR DURING CONSTRUCTION:

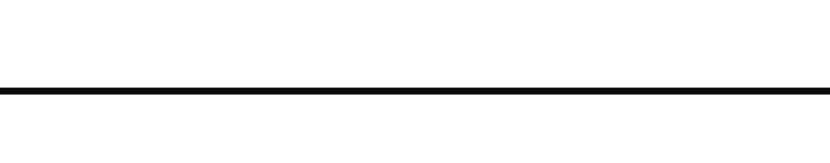
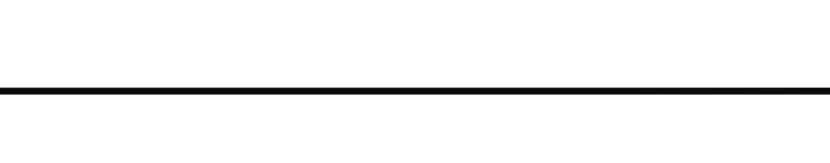
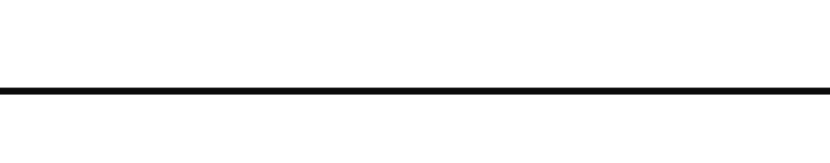
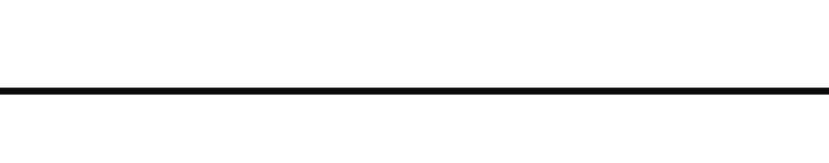
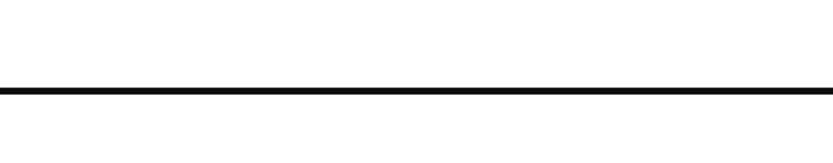
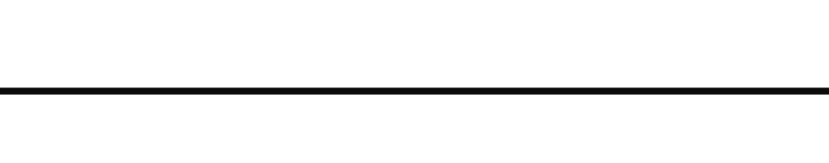
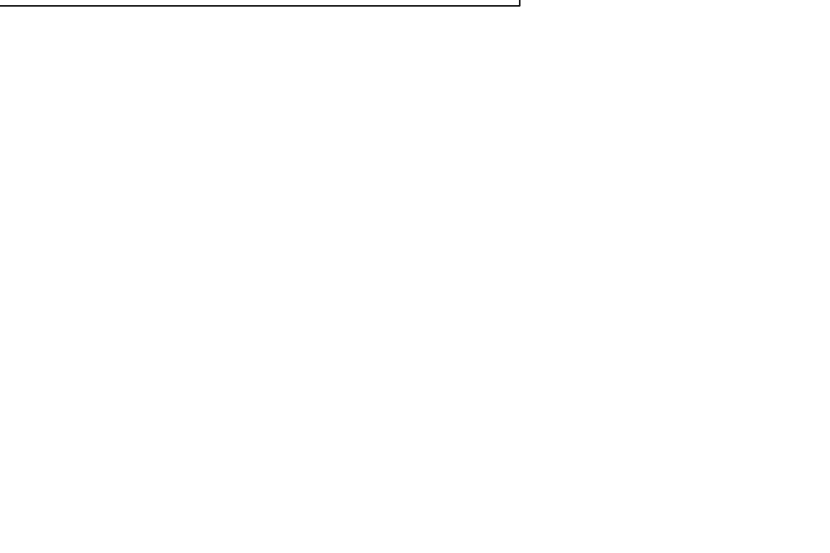
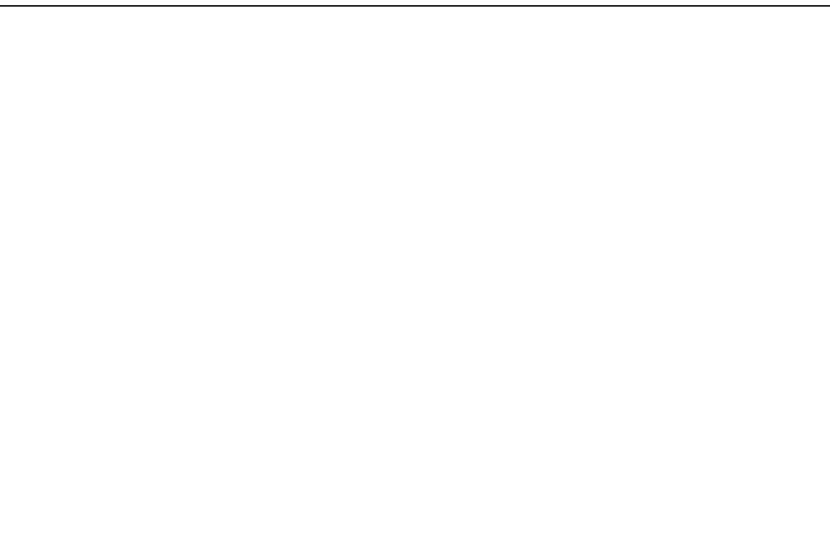
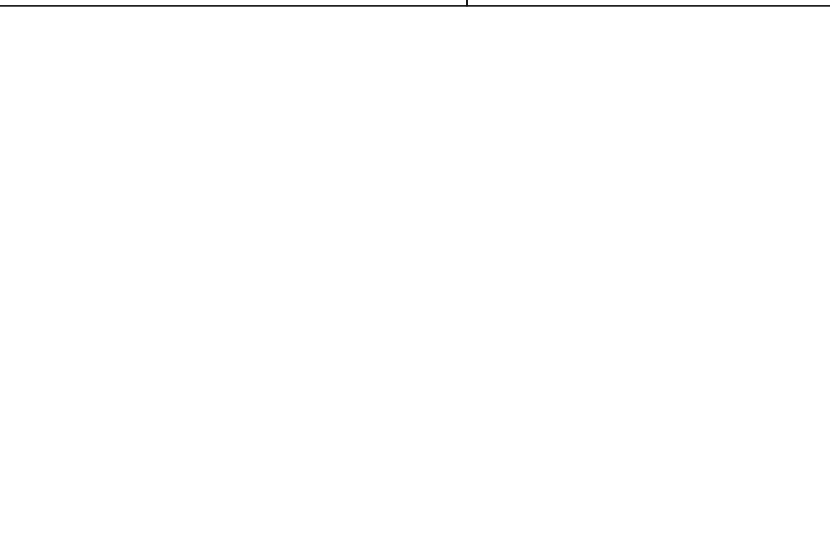
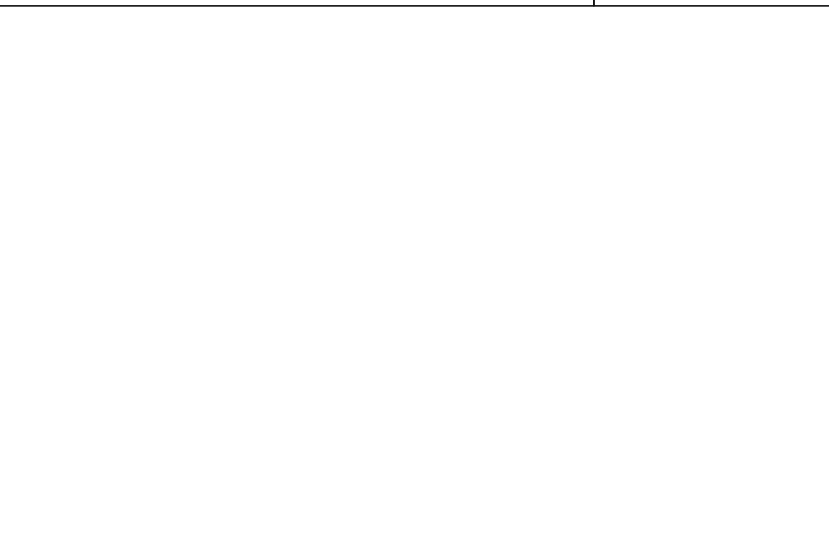
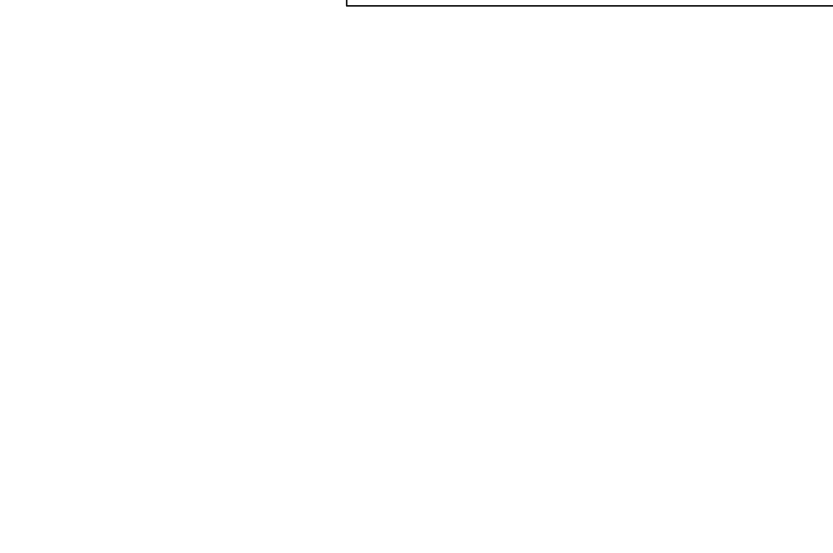
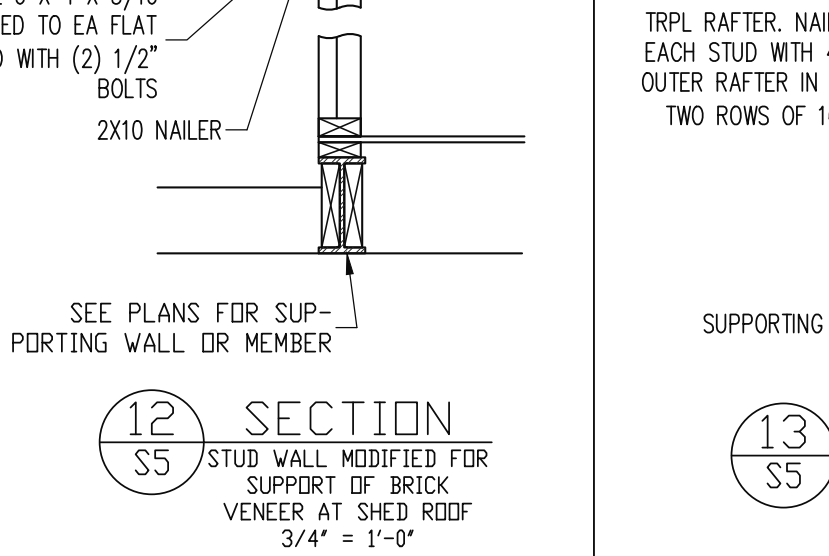
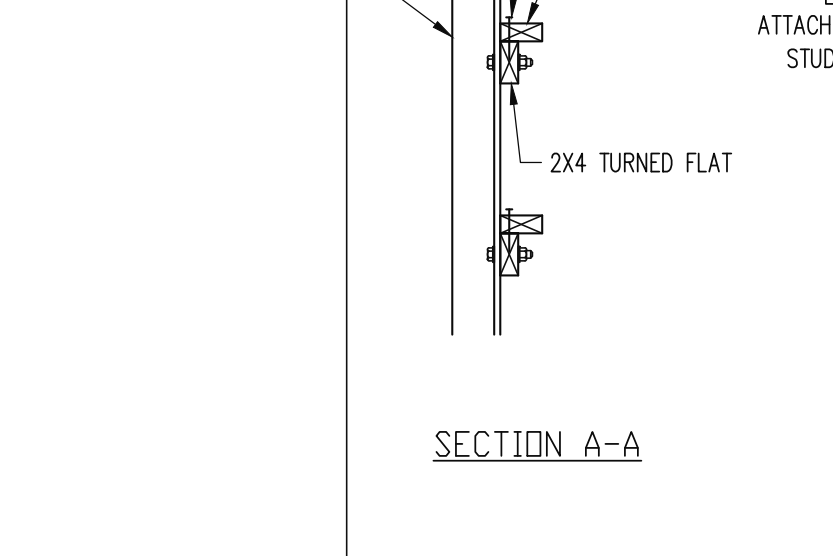
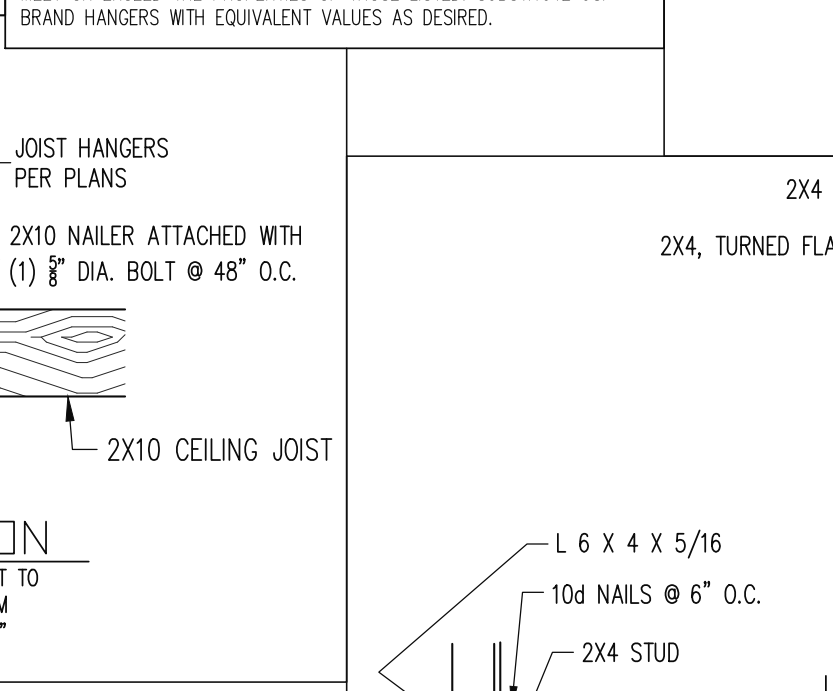
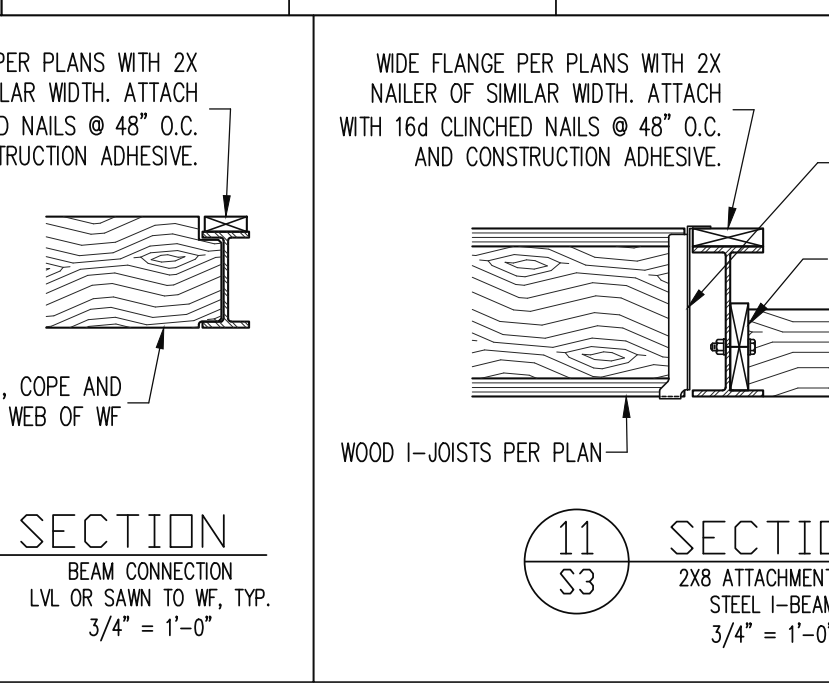
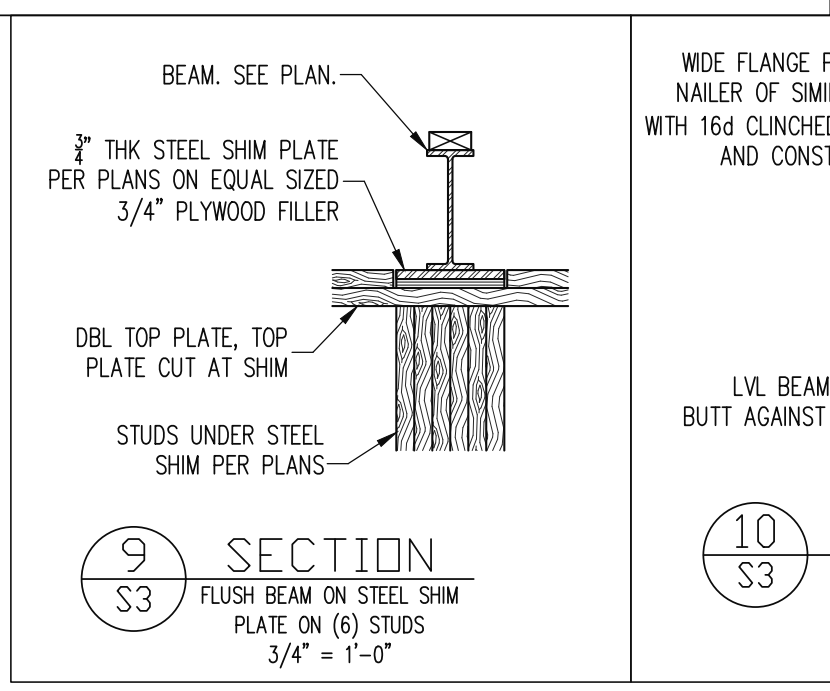
1) THE WORKING PLANS DO NOT BEAR THE SEAL OF THE EOR

2) THE PLANS CONTAIN DISCREPANT OR INCOMPLETE INFORMATION

ANY ERRORS DUE TO A FAILURE TO FOLLOW THE ABOVE PROCEDURES SHALL NOT BE THE RESPONSIBILITY OF THE EOR. FURTHERMORE, IT IS THE RESPONSIBILITY OF THE BUILDER TO ENSURE THAT ANY REVISIONS ISSUED BY THE EOR ARE PROMPTLY DISTRIBUTED TO THE SUBCONTRACTORS.

THE EOR DOES NOT PERFORM PENETRATION OR VENTING CALCULATIONS OR ANY OTHER CALCULATIONS THAT ARE NOT DIRECTLY RELATED TO STRUCTURAL ENGINEERING.

ROOF AND FLOOR TRUSSES TO BE DESIGNED BY AN ENGINEER REGISTERED BY THE STATE. FINAL TRUSS DRAWING SHOULD BE SUBMITTED TO THE EOR FOR REVIEW



**PART 7: MASONRY**

7.01 CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 AND C55, NORMAL WEIGHT, FM = 1500 PSI MIN.

7.02 CLAY MASONRY UNITS SHALL CONFORM TO ASTM C62-17 GRADE SW.

7.03 MORTAR SHALL BE TYPE S. MORTAR AND GROUT SHALL CONFORM TO ASTM C476, MIN COMPRESSIVE STRENGTH OF 2000 PSI.

7.04 MASONRY CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS OF ACI 530.

7.05 LADDER WIRE REINFORCEMENT SHALL CONFORM TO ASTM A951. 6" MIN LAPS FOR CONTINUOUS WALL APPLICATIONS.

**PART 8: BOLTS AND LAG SCREWS**

8.01 BOLTS SHALL CONFORM TO ASTM A307 MINIMUM GRADE. TYP UNO. INSTALL STANDARD STEEL WASHERS (ASTM F844-07a) FOR THE NUT / BOLT HEAD WHEN BOLTING WOOD MEMBERS.

8.02 LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B9.2.1-1997. PILOT HOLES SHALL BE USED FOR LAG SCREW INSTALLATION AND SHALL BE BORED ACCORDING TO NDS SPECIFICATIONS. INSTALL STANDARD STEEL WASHERS (ASTM F844-07a) FOR SCREW HEAD.

8.03 ANCHOR RODS AND BOLTS SHALL CONFORM TO ASTM F1554-15 GRADE 36 UNO. BENT ANCHOR BOLTS SHALL HAVE A 2" MIN HOOK UNO.

**PART 9: DRIVEN FASTENERS**

9.01 NAILS, SPIKES AND STAPLES SHALL CONFORM TO ASTM F 1667-05. NAILS ARE TO BE COMMON WIRE OR BOX.

**PART 10: DIMENSIONAL LUMBER**

10.01 SOLID SAWN WOOD FRAMING DESIGN IS BASED ON NO. 2 SPRUCE PINE FIR OR SYP #2 FOR JOISTS, RAFTERS, GIRDERS, BEAMS, STUDS, ETC.

**PART 11: ENGINEERED LUMBER**

11.01 LVL OR PSL MINIMUM ALLOWABLE DESIGN STRESSES ARE AS FOLLOWS:  
E = 1.3 x 10<sup>6</sup> PSI, F<sub>b</sub> = 2600 PSI, F<sub>v</sub> = 285 PSI, F<sub>c</sub> = 750 PSI  
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

11.02 LVL OR PSL MEMBERS MAY BE RIPPE FROM DEEPER MEMBERS TO MATCH THE MEMBER DEPTH SPECIFIED IN THE PLANS.

**PART 12: PRESSURE TREATED LUMBER**

12.01 LUMBER IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE PRESSURE TREATED IN ACCORDANCE WITH APMFA STANDARD C-15. ALL OTHER EXPOSED LUMBER SHALL BE TREATED IN ACCORDANCE WITH APMFA STANDARD C-2 OR BY ANY METHOD GIVING EQUAL PROTECTION. THE BUILDING CODE OFFICE MAY ALSO APPROVE A NATURAL DRY RESISTANT WOOD PER SECTION 19-6(a).

**PART 13: STEEL FLUTCH PLATE BEAMS**

13.01 FLUTCH 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" ± 2" FROM EACH END OF THE BEAM.

**PART 14: STUD SUPPORTS FOR BEAMS**

14.01 STEEL, ENGINEERED LUMBER, AND FLUTCH PLATE BEAMS BEARING ON A STUD WALL SHALL BEAR AS FOLLOWS:

1-WHEN THE BEAM IS PERPENDICULAR TO, OR SKewed RELATIVE TO THE WALL, 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 TRUE WIDTH OF THE BEAM BEING SUPPORTED. WHICHEVER IS GREATER, TYP UNO. FOR THE SKEWED CONDITION PARTICULAR CARE SHALL BE TAKEN TO ENSURE STUD COLUMN IS CENTERED ON THE BEAM.

2-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 TRIPLE STUD GANGED COLUMN, TYP UNO.

14.02 DIMENSIONAL LUMBER BEAMS BEARING ON A STUD WALL SHALL BEAR AS FOLLOWS:

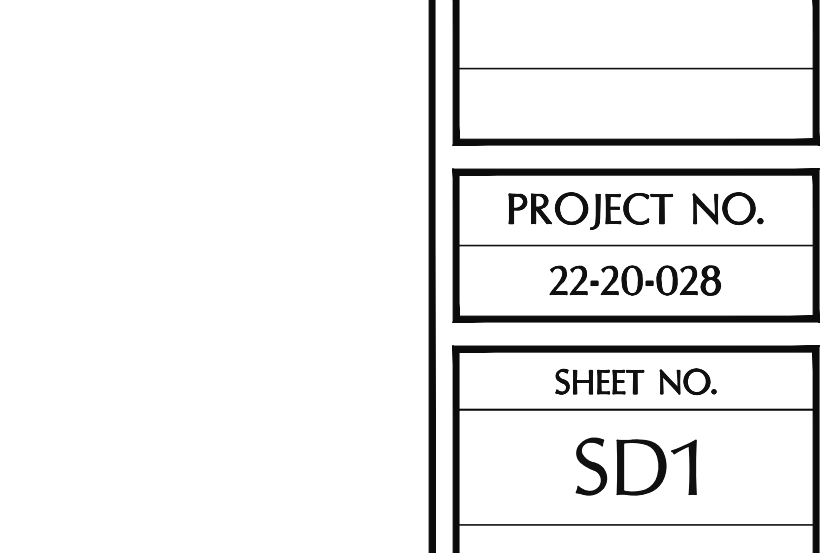
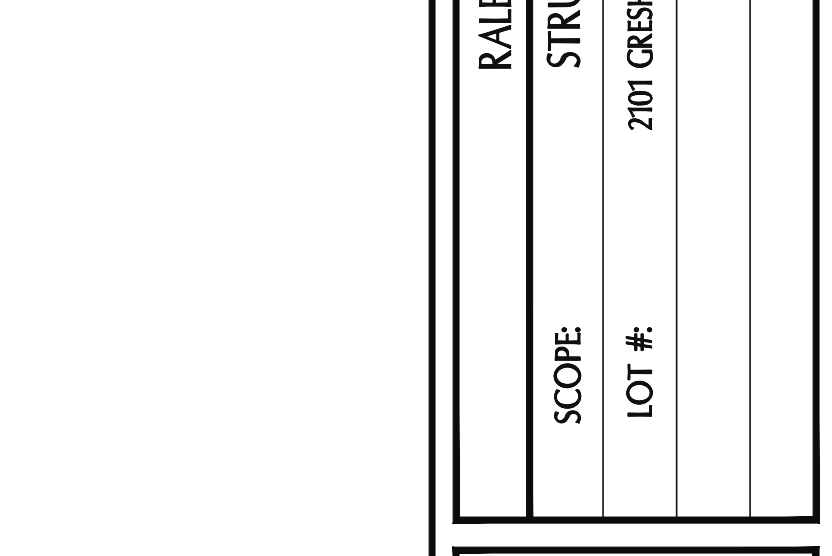
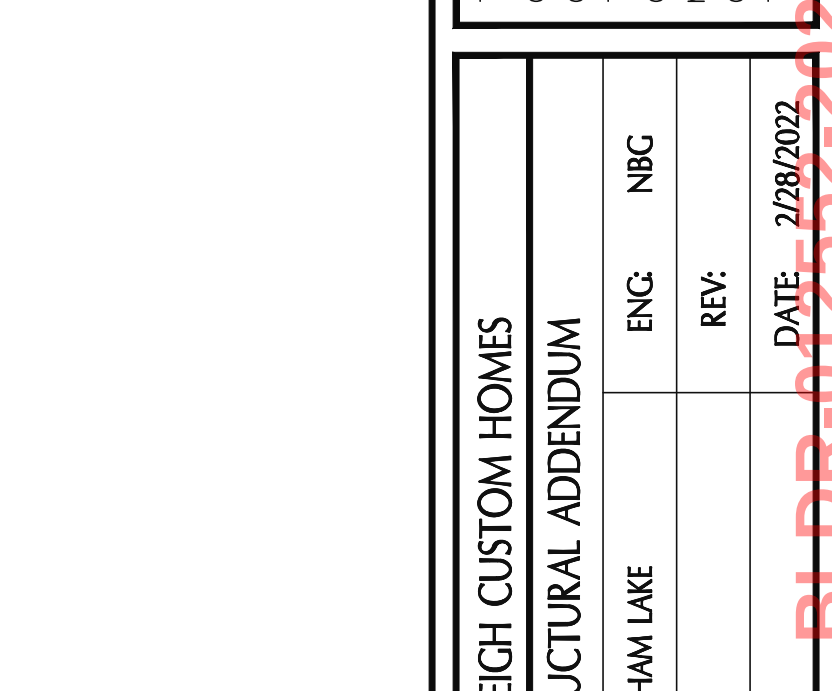
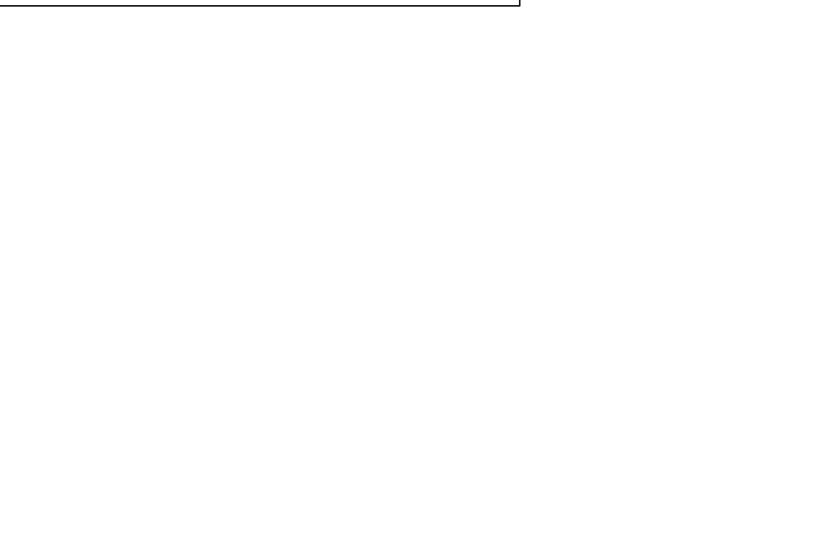
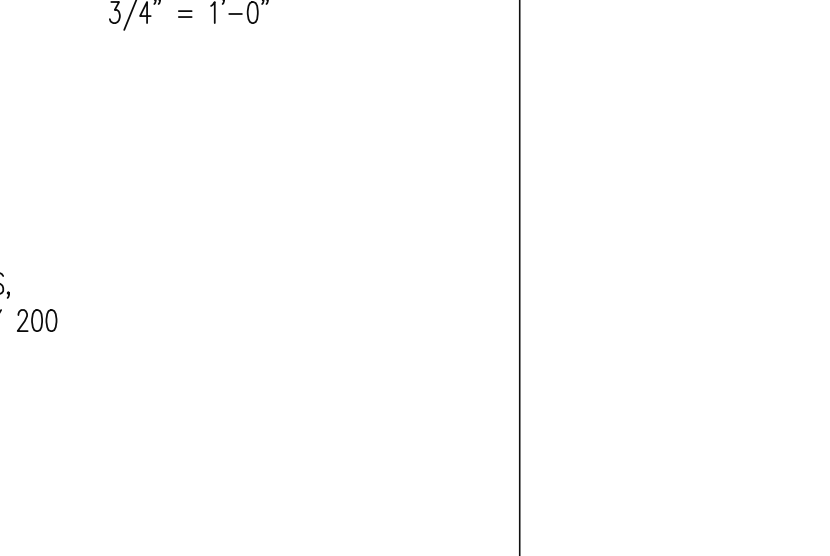
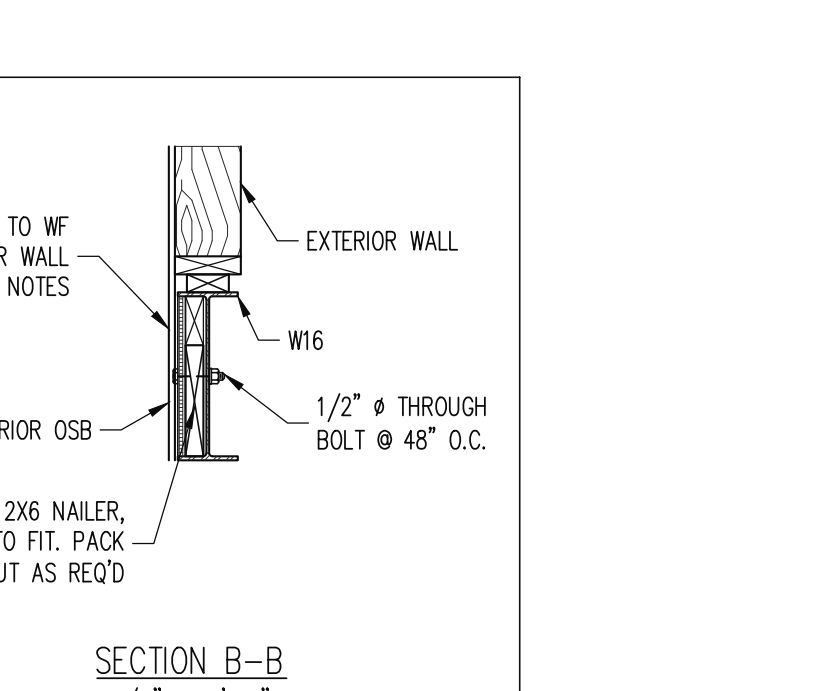
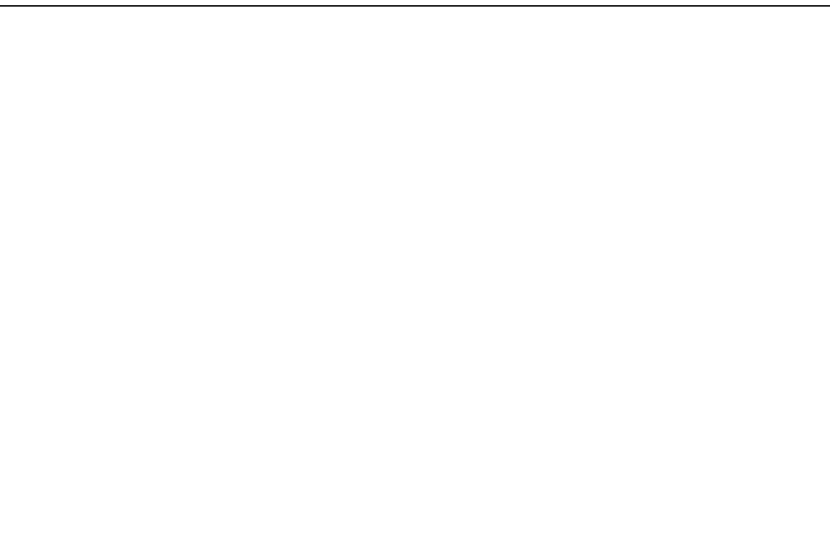
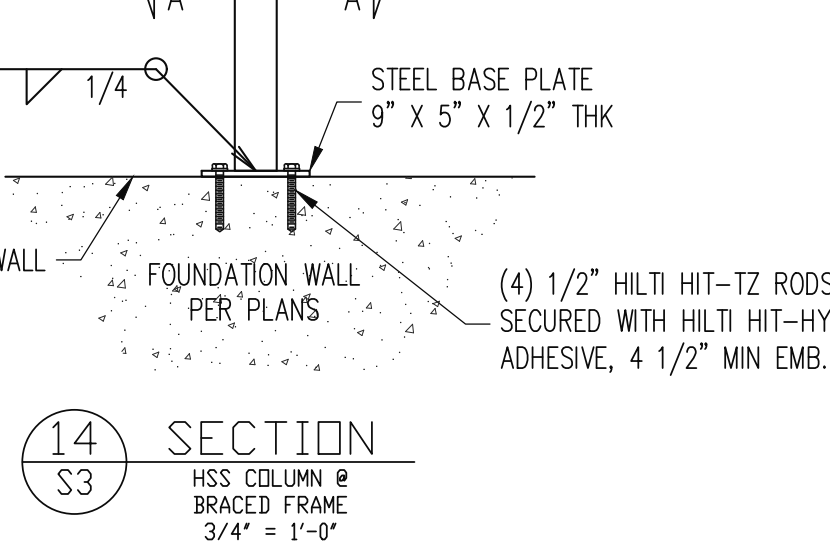
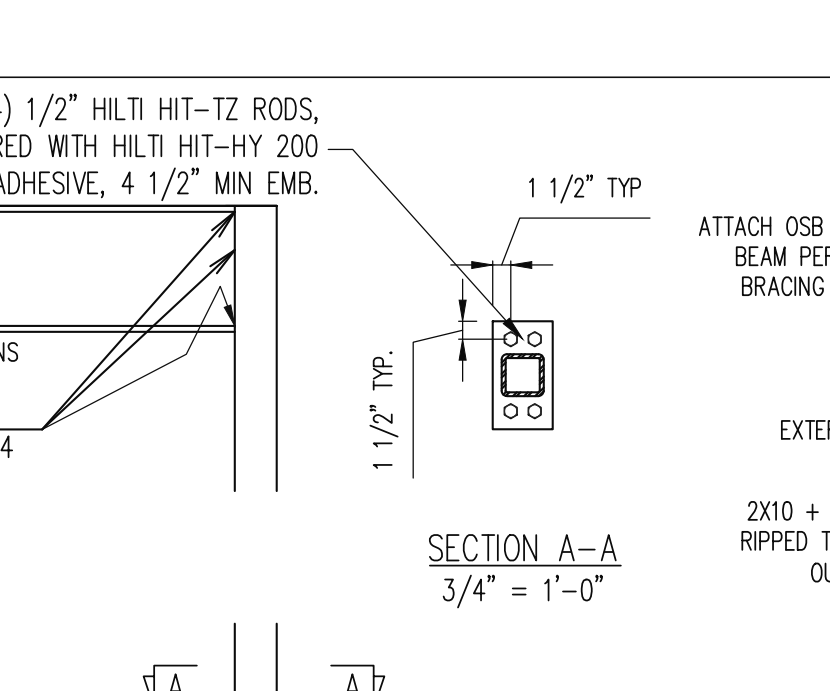
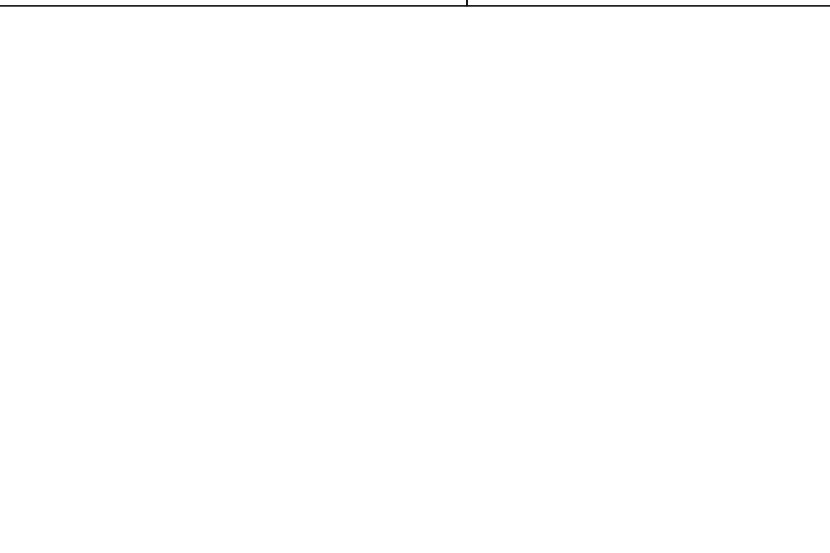
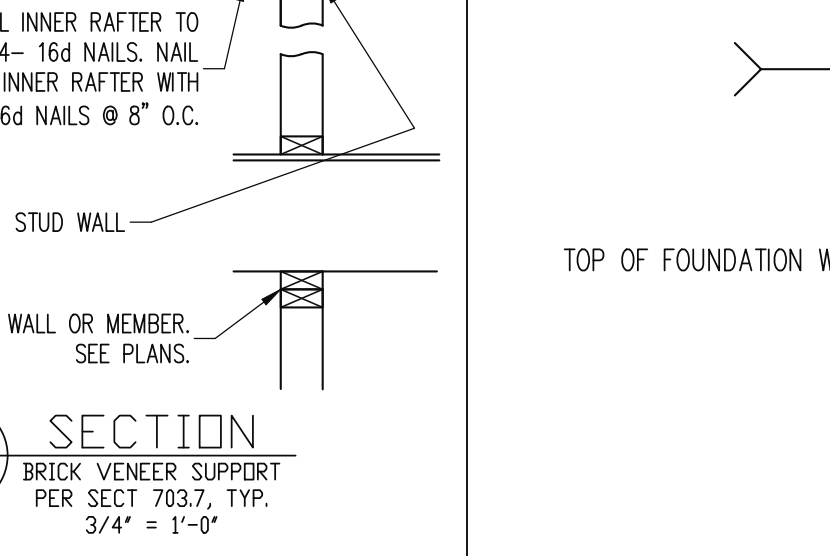
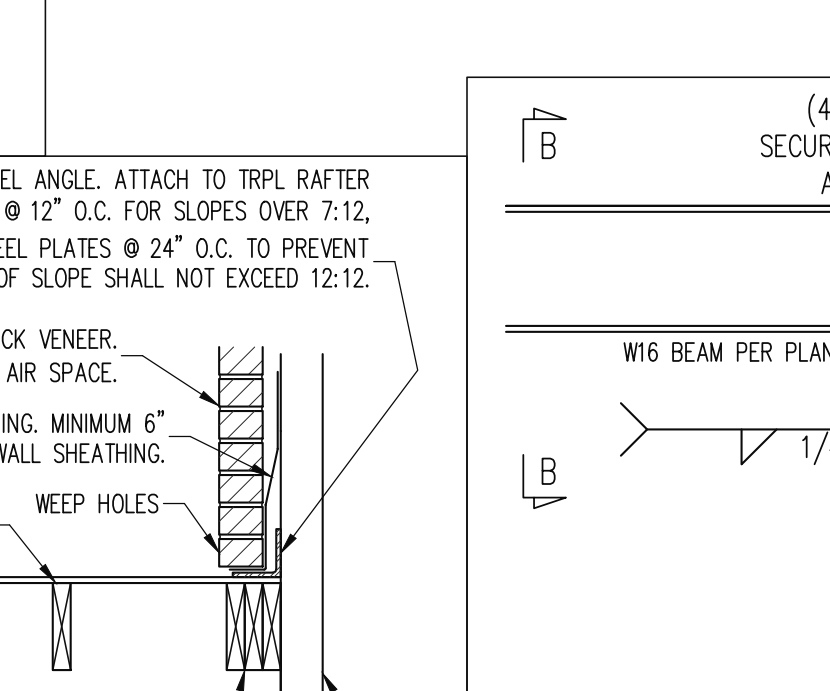
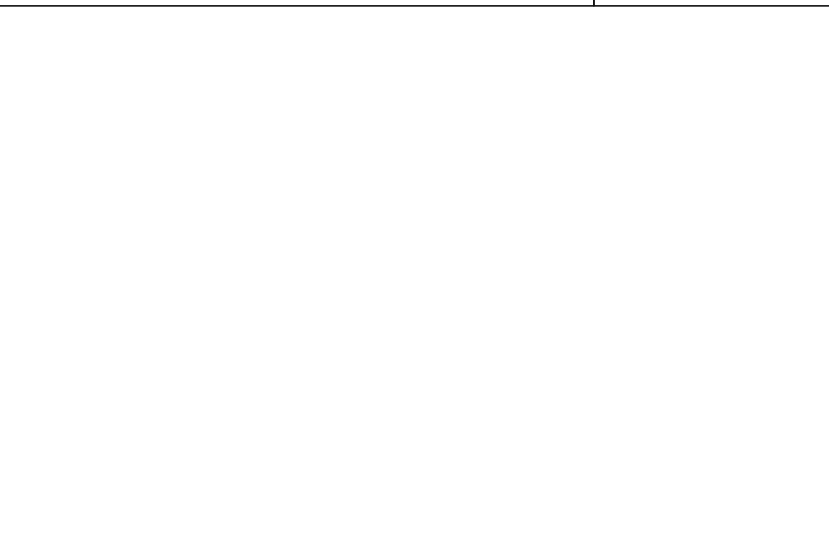
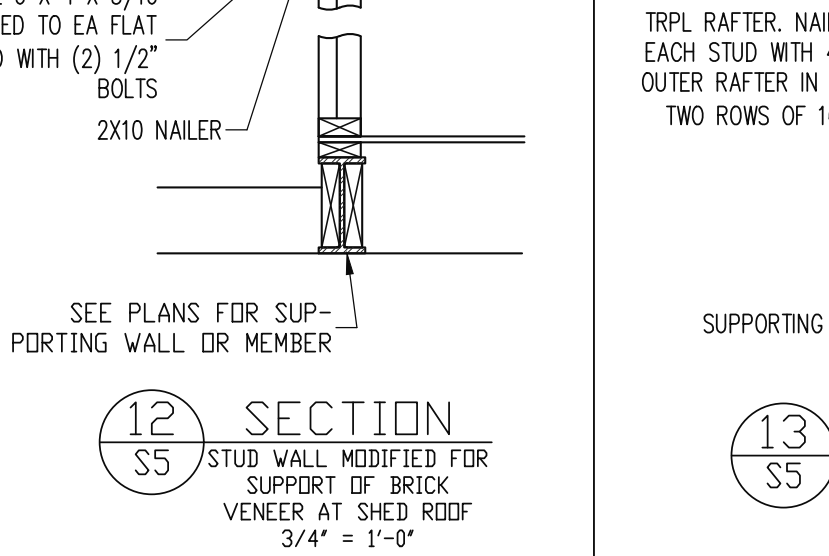
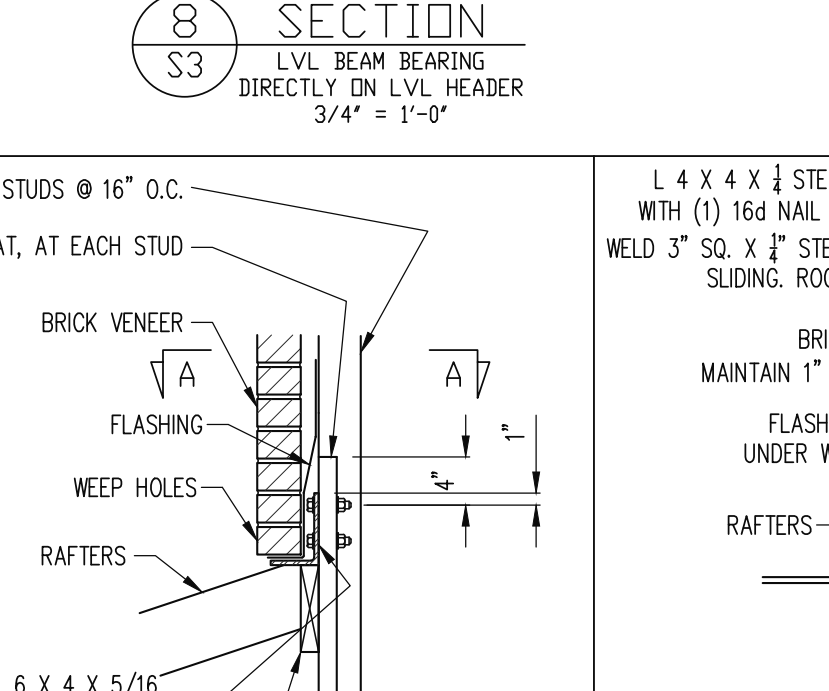
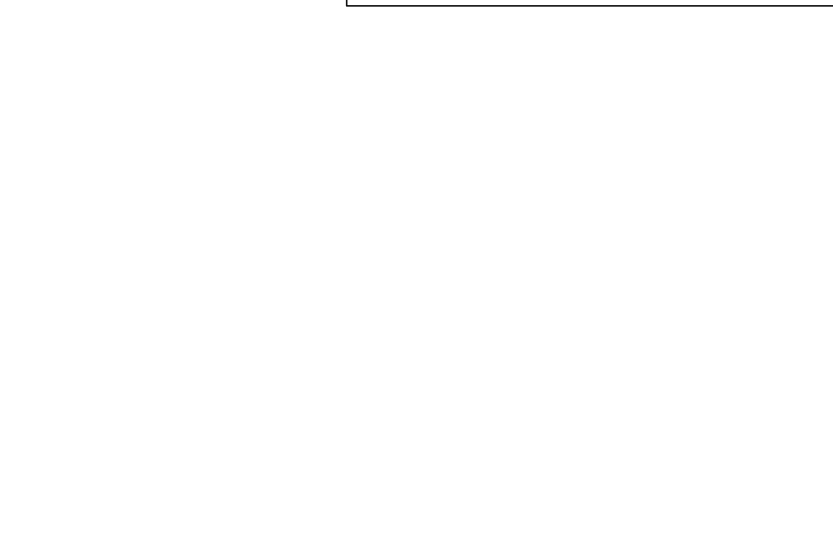
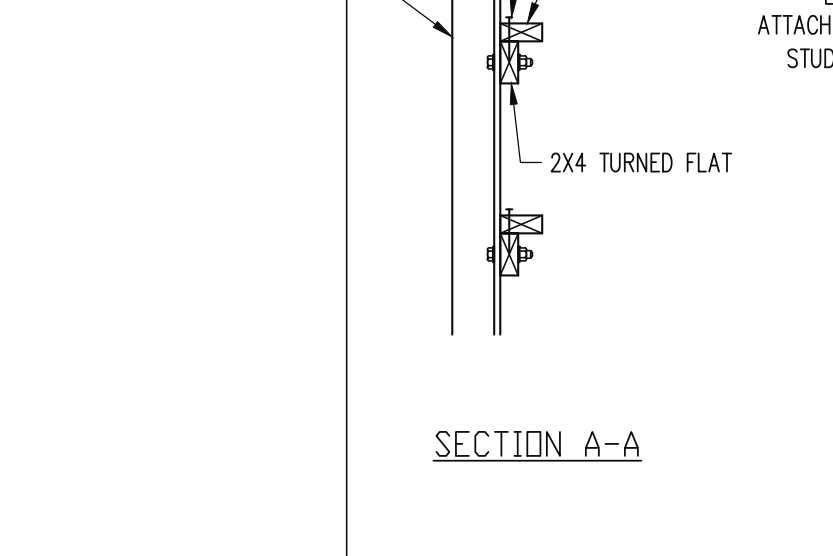
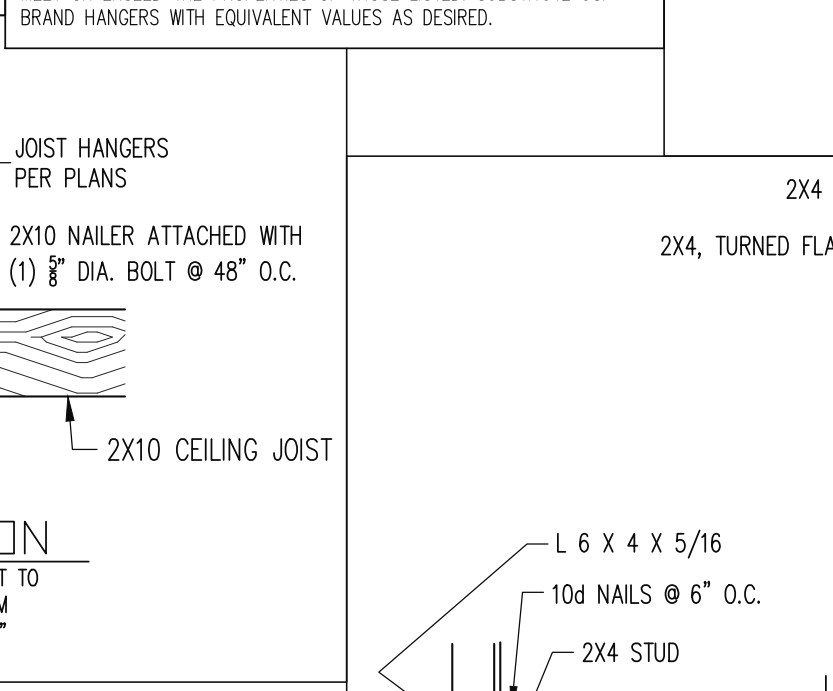
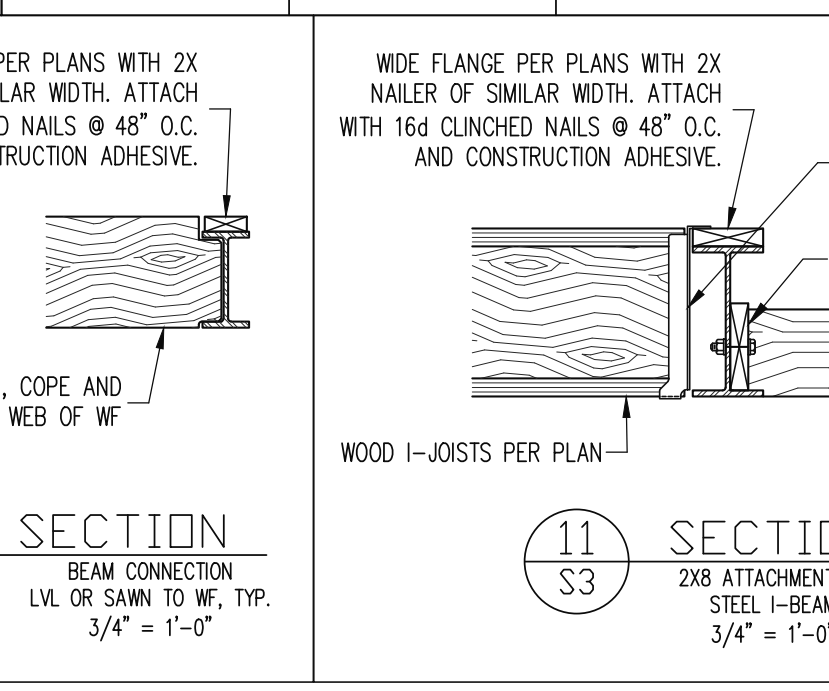
1-WHEN THE BEAM IS PERPENDICULAR TO, OR SKewed RELATIVE TO THE WALL, THE BEAM SHALL BEAR FULL WIDTH ON THE SUPPORTING WALL INDICATED LESS 1 1/2" TO ALLOW FOR A CONTINUOUS RIM JOIST WHERE APPLICABLE) AND SHALL BE SUPPORTED BY A

**ABBREVIATIONS**

| ABV   | ABOVE                |
|-------|----------------------|
| B     | BOTH                 |
| B.T.M | BETWEEN              |
| CIP   | CAST IN PLACE        |
| CONC  | CONCRETE             |
| CS    | CONTINUOUS SHEATHING |
| DA    | DIAMETER             |
| DBL   | DOUBLE               |
| DJ    | DOUBLE JOIST         |
| DSP   | DBL STUD POCKET      |
| EQ    | EQUAL                |
| EA    | EACH                 |
| FLG   | FLANGE               |
| FL PL | FLUTCH PLATE         |
| FIR   | FLOOR                |

| FND  | FOUNDATION              |
|------|-------------------------|
| FTG  | FOOTING                 |
| HDR  | HOT DIPPED              |
| GLV  | GALVANIZED              |
| HGR  | HANGER                  |
| LVL  | LAMINATED VENEER LUMBER |
| NTS  | NOT TO SCALE            |
| O.C. | ON CENTER               |
| PSL  | PARALLEL STRAND LUMBER  |
| PT   | PRESSURE TREATED        |
| QJ   | QUAD JOIST              |
| SP   | STUD POCKET             |
| SQ   | SQUARE                  |

| TJ                                  | TYPICAL                |
|-------------------------------------|------------------------|
| TJ <td>TYPICAL</td>                 | TYPICAL                |
| TRP <td>TRIPLE</td>                 | TRIPLE                 |
| TSP <td>TRIPLE STUD POCKET</td>     | TRIPLE STUD POCKET     |
| UNO <td>UNLESS NOTED OTHERWISE</td> | UNLESS NOTED OTHERWISE |
| XJ <td>EXTRA JOIST</td>             | EXTRA JOIST            |



**PART 15: NAILING OF MULTIPLE WOOD BEAMS**

15.01 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. FOR 2X8 OR 2X10 STUDS) ALL COLUMNS SHALL BE CONTINUOUS DOWN TO THE FOUNDATION OR OTHER PROPERLY DESIGNED STRUCTURAL ELEMENT SUCH AS A BEAM COLUMN. 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.

15.02 LVL MEMBERS THAT ARE GANGED TO FORM A BEAM SHALL HAVE ADJACENT MEMBERS IN THE BEAM FASTENED TOGETHER PER MANUFACTURERS RECOMMENDATIONS, TYP UNO.

**PART 16: WALL FRAMING AND BRACING**

16.01 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, TYP UNO.

**MAX ALLOWABLE WALL HEIGHTS** FOR EXTERIOR STUD WALLS, WITH SOLE PLATE AND DBL TOP PLATE AND 7/16" OSB EXTERIOR BRACING AND ROW OF 2X4 / 2X6 PURLINS AT 8' HEIGHT (AND AT 16' HEIGHT FOR TALL WALLS), TYP UNO:  
2X4 @ 16" O.C.: 11'-1 1/2"  
2X6 @ 16" O.C.: 17'-2"  
2X4 @ 12" O.C.: 12'-1 1/2"  
2X6 @ 12" O.C.: 18'-8"  
DBL 2X4 @ 16" O.C.: 13'-4"  
DBL 2X6 @ 16" O.C.: 21'-0"

16.02 FOR WALL BRACING THE FOLLOWING SHALL APPLY:  
-BLOCKING AT UNSUPPORTED PANEL EDGES IS REQUIRED TYP UNO.  
-WALL BRACING IS BY ENGINEERED DESIGN AND NOT PREScriptive PER SECTION 602.10 OF THE 2018 NIRC. CONTINUOUS SHEATHING HAS BEEN PROVIDED, ALONG WITH ALTERNATIVE METHODS TO INSURE THE MINIMUM INTENT OF SECTION 602.10 OF THE 2018 NIRC HAS BEEN MET AND EXCEEDED.  
-BRACED WALL PANELS SHALL BE FASTENED IN ACCORDANCE WITH TABLE 602.3(1) TO PROVIDE CONTINUOUS PANEL UPLIFT RESISTANCE AND COMPLIANCE WITH NIRC602.3.5 AND 602.11 UNLESS NOTED OTHERWISE ON STRUCTURAL PLANS.  
-MAY SUBSTITUTE WEP FOR BR  
-SINGLE JOIST, CONTINUOUS RIM JOIST, OR BLOCKING OF EQUAL DEPTH IS REQUIRED ABOVE AND BELOW ALL BRACED WALLS. NAIL BLOCKING ABOVE WALL TO TOP PLATE WITH 16d LVL NAILS @ 6" O.C. NAIL SIDE OF BRACED WALL TO BLOCKING BELOW WITH (3) 16d NAILS @ 16" O.C. BLOCKING AT HORIZONTAL JOINTS IN BRACED WALL LINES ONLY REQUIRED AT SHADDED WALLS, UNO.

**PART 17: KING STUDS**

17.01 KING STUDS FOR OPENINGS IN EXTERIOR WALLS SHALL BE AS FOLLOWS:

| NUMBER OF KING STUDS |       |       |       |        |        |        |
|----------------------|-------|-------|-------|--------|--------|--------|
| MAX OPENING WIDTH    | 5'-0" | 6'-0" | 8'-0" | 12'-0" | 17'-0" | 21'-0" |
| STUD SIZE            | 2x4   | 1     | 2     | 3      | 4      | 5      |
|                      | 2x6   | 1     | 1     | 1      | 1      | 2      |

**PART 18: SUBSTITUTIONS**

18.01 MATERIAL OR MEMBER SIZE SUBSTITUTIONS OR PLAN DEVIATIONS REQUIRE THE WRITTEN AUTHORIZATION OF THE DESIGNERS. UNAUTHORIZED DEVIATIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

**PART 19: OWNERSHIP OF STRUCTURAL DESIGN**

19.01 THE STRUCTURAL DESIGN OF THIS PLAN IS THE PROPERTY OF ENGINEERING TECH ASSOCIATES (ETA). THESE PLANS ARE FOR THE ONE TIME USE AT THE LOCATION INDICATED AND FOR THE CLIENT LISTED. ETA ASSUMES NO LIABILITY FOR THESE PLANS IF THEY ARE REPRODUCED, IN WHOLE OR IN PART, FOR CONSTRUCTION AT ANY OTHER LOCATION WITHOUT WRITTEN PERMISSION FROM ETA.

