MAX 3 PSF **ROOF SHINGLES** 3 PSF 2 PSF SHEATHING ROOF FRAMING 5 PSF 3 PSF <u>0 PSF</u> 7 PSF PIPING, DUCT, ETC.

ROOF LIVE LOAD - ALL AREAS GREATER OF 20 PSF MINIMUM OR SNOW LOAD 1ST FLOOR LIVE LOAD \_\_\_\_\_ 100 PSF 2ND FLOOR LIVE LOAD \_\_\_\_\_ 100 PSF

GROUND SNOW LOAD = 10 PSF (PITT CO.) SNOW LOAD IMPORTANCE FACTOR: I = 1.1SNOW EXPOSURE FACTOR = 1.0

ROOF SNOW LOAD = 7 PSF BASIC DESIGN ROOF SNOW LOAD = 7.7 PSF 1.4. WIND LOAD

BASIC WIND SPEED = 110 MPH (PITT CO.) WIND IMPORTANCE FACTOR: I = 1.15 (BLDG. CATEGORY I) (ASCE-7-05) WIND EXPOSURE CATEGORY: 'C' (ASCE-7-05)

WIND BASE SHEAR (FOR MWFRS): Vx = 20K Vy = 15K

INTERNAL PRESSURE COEFFICIENT: ±0.55 1.5. SEISMIC LOADS (N.C. STATE BLDG. CODE): SEISMIC IMPORTANCE FACTOR: I = 1.25

LATERAL LOAD RESISTANCE.

OCCUPANCY CATEGORY: COMPLIANCE WITH SECTION 1616.4 ONLY?

SEISMIC DESIGN CATEGORY:

A

B

X

C

MAPPED SPECTRAL RESPONSE ACCELERATION:

SMS 17.3 % g SMI 8.5 % g SPECTRAL RESPONSE COEFFICIENTS: SDS 18.5 % SD1 13.6 %

SEISMIC RESPONSE COEFFICIENT: Cs <u>0.154</u> RESPONSE MODIFICATION FACTOR, R 1.5 (ORDINARY PLAIN MASONRY SHEAR WALLS)
SITE CLASSIFICATION: A B C X D F

BASIC STRUCTURAL SYSTEM: X BEARING WALL \_\_\_\_ DUAL w/ SPECIAL MOMENT FRAME \_\_\_ BUILDING FRAME \_\_\_\_ DUAL w/ INTERMEDIATE R/C OR SPECIAL STEEL MOMENT FRAME \_\_\_\_\_ INVERTÉD PENDULUM

SEISMIC BASE SHEAR Vx = 10K Vy = 10KANALYSIS PROCEDURE: \_\_\_ SIMPLIFIED \_X EQUIVALENT LATERAL FORCE \_\_\_ MODAL ARCHITECTURAL, MECHANICAL COMPONENTS ANCHORED? \_\_\_ YES \_X NO LATERAL DESIGN CONTROL: \_\_\_ EARTHQUAKE \_X WIND

1.6. ALL DESIGN LOADS ARE PER NORTH CAROLINA STATE BUILDING CODE 2012 EDITION. 1.7. WIND LOADS CONTROL THE LATERAL LOAD DESIGN. THE BUILDING UTILIZES SHEAR WALLS FOR

MASONRY VENEER LINTEL SCHEDULE		
OPENING DIMENSION	ANGLE SIZE	ORIENTATION
0'-0" THRU 4'-0"	L 4 × 4 × 1/6	N/A
4'-1" THRU 6'-0"	L 4 x 4 x 3/8	N/A
6'-1" THRU 8'-0"	L6 x 4 x 5/16	LLV
8'-1" THRU 10'-0"	L6 x 4 x 3/8	LLV
10'-1" THRU 12'-0"	L7 x 4 x 3/8	LLV
_	_	_

- NOTES:

  1. PROVIDE LOOSE STEEL ANGLE LINTELS FOR ALL MASONRY VENEER OPENINGS, PER ABOVE DATA UNLESS NOTED
- 2. PROVIDE MINIMUM OF 8" BEARING FOR ALL LINTELS UNLESS NOTED OTHERWISE.

## **GENERAL STRUCTURAL NOTES:**

- 1.1. 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. 1.2. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING
- DRAWINGS FOR SLEEVES, CURBS, INSERTS OR OPENINGS NOT HEREIN INDICATED. 1.3. COORDINATE THESE DRAWINGS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND
- 1.4. VERIFY ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC., WITH EQUIPMENT SELECTED.
- 1.5. CONTRACTOR SHALL VERIFY ALL EXISTING CONSTRUCTION DIMENSIONS WHICH AFFECT NEW CONSTRUCTION PRIOR TO FABRICATING ANY REBAR, STEEL, TRUSSES, ETC.
- 1.6. DO NOT CUT, NOTCH, OR OTHERWISE MODIFY ANY STRUCTURAL MEMBERS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS WITHOUT APPROVAL OF THE ARCHITECT OR ENGINEER.
- 1.7. CUTTING OF STEEL MEMBERS AND INSTALLATION OF HOLES IN STEEL MEMBERS SHALL BE DONE BY CUTTING OR DRILLING. DO NOT USE TORCHES FOR CUTTING UNLESS APPROVED BY THE ARCHITECT OR
- 1.8. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF ALL SHORING REQUIRED TO SUPPORT NEW AND EXISTING STRUCTURAL ELEMENTS.

- 2. STRUCTURAL STEEL
  2.1. DETAILING OF STRUCTURAL STEEL CONNECTIONS, MUST BE CONSISTENT WITH RECOGNIZED, PUBLISHED METHODS, SUCH AS THE "AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION", "DETAILING FOR STEEL CONSTRUCTION", OR "VOLUME II CONNECTIONS MANUAL OF STEEL CONSTRUCTION".
- 2.2. MEMBERS AND CONNECTIONS NOT FULLY DEVELOPED ON THE CONTRACT DRAWINGS, AND CONNECTIONS FOR ANY PORTION OF THE STRUCTURE NOT SHOWN ON THE CONTRACT DRAWINGS, SHALL BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, AND DETAILED ON THE
- 2.3. ALTERNATIVE CONNECTION DETAILS, MAY BE SUBMITTED ON SHOP DRAWINGS BY THE CONTRACTOR ONLY IF ACCOMPANIED BY COMPLETE STRUCTURAL CALCULATIONS, PREPARED AND SEALED BY AN ENGINEER, LICENSED IN THE PROJECT'S JURISDICTION. FAILURE TO SUBMIT SUCH CALCULATIONS FOR REVIEW, CONCURRENT WITH SHOP DRAWING ERECTION PLANS AND DETAILS, WILL BE CAUSE FOR REJECTION OF THAT SUBMITTAL.
- 2.4. CALCULATIONS FOR DETAILS, MUST SHOW A RATIONAL ANALYSIS OF A COMPLETE LOAD PATH, INCLUDING LOCAL EFFECTS ON WEBS, FLANGES ETC., OF THE CONNECTED MEMBERS AND THE DEVICES
- (PLATES, SEATS, BRACKETS, BOLTS, WEBS, ETC.) AFFECTING ALL CONNECTIONS. 2.5. STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION, SHALL CONFORM TO THE "AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (MARCH 9, 2005), AND THE "AISC CODE OF
- STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (MARCH 18, 2005). 2.6. WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE. AWS D1.1. ELECTRODES FOR SHOP AND FIELD WELDS, SHALL BE CLASS E70XX. ALL WELDING SHALL BE DONE BY QUALIFIED, CERTIFIED WELDERS, PER THE ABOVE STANDARD.
- 2.7. SHOP AND FIELD TESTING OF WELDS AND BOLTS, SHALL BE PERFORMED AS OUTLINED IN THE
- 2.8. ALL FILLET WELDS SHALL BE A MINIMUM OF 1/4 INCH, UNLESS OTHERWISE NOTED. 2.9. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS, FOR THE WORK OF OTHER
- TRADES, WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER. 2.10. ALL STRUCTURAL STEEL WORK, SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL OF STEEL
- CONSTRUCTION" PUBLISHED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. 2.11. ALL STRUCTURAL STEEL SHAPES USED, SHALL BE IN ACCORDANCE WITH ASTM A992 SPECIFICATIONS (Fy = 50 KSI). ALL STRUCTURAL TUBING USED, SHALL BE IN ACCORDANCE WITH ASTM A500, GRADE B (Fy = 46 KSI). ALL PIPE USED, SHALL BE IN ACCORDANCE WITH ASTM A53 (Fy = 36 KSI). ALL MISCELLANEOUS STEEL USED, SHALL BE IN ACCORDANCE WITH ASTM A36 (Fy = 36 KSI).
- 2.12. ALL FIELD BOLTED CONNECTIONS, SHALL BE BEARING TYPE CONNECTIONS (THREADS INCLUDED IN THE SHEAR PLANE), WITH 34" DIAMETER, ASTM A325 HIGH STRENGTH BOLTS, UNLESS OTHERWISE NOTED
- 2.13. FOR ALL FLOOR AND ROOF OPENINGS, THE CONTRACTOR SHALL VERIFY OPENING LOCATIONS WITH EQUIPMENT SELECTED, AND MAKE ANY NECESSARY MODIFICATIONS AT NO ADDITIONAL COST. IT IS THE RESPONSIBILITY OF FABRICATOR, TO RECEIVE ALL NECESSARY INFORMATION, PRIOR TO
- 2.14. ALL STRUCTURAL STEEL WHICH IS TO BE SPRAYED WITH FIREPROOFING SHALL NOT BE PRIMED OR PAINTED. STEEL WHICH IS NOT SPRAYED WITH FIREPROOFING SHALL BE PRIMED AND PAINTED. DO NOT PAINT SURFACES TO BE EMBEDDED IN CONCRETE.
- 2.15. BEAM END CONNECTIONS, SHALL BE DESIGNED FOR A MINIMUM GRAVITY LOAD OF 50% U.D.L., PER THE "AISC MANUAL OF STEEL CONSTRUCTION, 9TH EDITION", UNLESS OTHERWISE INDICATED. 2.16. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED, TO ERECT AND

RESIST LATERAL MOVEMENT OF THE FRAME.

3.1. ALL STRUCTURAL WOOD MEMBERS SHALL BE No. 2 SOUTHERN YELLOW PINE, 19% MAXIMUM MOISTURE CONTENT, UNLESS OTHERWISE NOTED. INTERIOR NON BEARING PARTITIONS MAY BE No. 2 SPRUCE

HOLD THE ROOF FRAMING IN PROPER ALIGNMENT, UNTIL ALL ROOF SHEATHING IS IN PLACE, TO

- 3.2. ALL WOOD FRAMING, DIRECTLY EXPOSED TO WEATHER, OR IN DIRECT CONTACT WITH MASONRY, SOIL OR CONCRETE, SHALL BE PRESSURE TREATED, UNLESS OTHERWISE NOTED.
- 3.3. ALL LVL's, DIRECTLY EXPOSED TO WEATHER, OR IN DIRECT CONTACT WITH MASONRY, SOIL OR CONCRETE, SHALL BE EXTERIOR GRADE, UNLESS NOTED OTHERWISE.
- 3.4. ALL METAL CONNECTORS SHALL BE HOT DIP GALVANIZED. INSTALL ALL CONNECTORS PER THE MANUFACTURER'S RECOMMENDATIONS. METAL CONNECTOR DESIGNATIONS INDICATED ON PLANS, ARE FOR 'SIMPSON STRONG-TIE' ANCHORS. ANCHORS FROM OTHER MANUFACTURERS MAY BE USED. PROVIDED THEY HAVE EQUIVALENT STRENGTH.
- 3.5. ALL NAILED CONNECTIONS SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE BUILDING CODE TABLE 2304.9.1, - FASTENING SCHEDULE, UNLESS OTHERWISE NOTED
- FRAMING CONNECTIONS THAT ARE BOLTED OR SCREWED, SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD.
- 3.7. PROVIDE STUDS AND HEADERS AT ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS AS FOLLOWS, UNLESS OTHERWISE NOTED:

<u>OPENING WIDTH</u> 2 KING STUDS, 1 JACK STUD (2) 2 x 10 @ 2 x 4 WALL 0'-0" TO 6'-0" (3) 2 x 10 @ 2 x 6 WALL 6'-1" TO 8'-0" 2 KING STUDS, 2 JACK STUDS (2) 2 x 10 @ 2 x 4 WALL (3) 2 x 10 @ 2 x 6 WALL 8'-1" TO 12'-0" 3 KING STUDS, 2 JACK STUDS (2) 2 x 12 @ 2 x 4 WALL (3) 2 x 12 @ 2 x 6 WALL

# 4. WOOD DECKING/SHEATHING

- 4.1. WALL SHEATHING SHALL BE 15/32" PLYWOOD OR ORIENTED STRAND BOARD (OSB), UNLESS OTHERWISE NOTED. ATTACH WALL SHEATHING TO FRAMING WITH 8d NAILS @ 4" O.C. AT PANEL EDGES AND 12" O.C. AT INTERIOR MEMBERS. PROVIDE SOLID BLOCKING AT PANEL EDGES (48" O.C.)
- 4.2. ROOF SHEATHING SHALL BE 13/2" PLYWOOD OR ORIENTED STRAND BOARD (OSB), UNLESS OTHERWISE NOTED. ATTACH ROOF SHEATHING TO FRAMING WITH 10d NAILS @ 4" O.C. AT PANEL EDGES AND 12" O.C. AT INTERIOR MEMBERS. PROVIDE SOLID BLOCKING AT PANEL EDGES (48" O.C.).

# 5. PRE-ENGINEERED WOOD TRUSSES

- PRE-ENGINEERED TRUSSES SHALL BE DESIGNED, FABRICATED AND ERECTED, IN ACCORDANCE WITH TRUSS PLATE INSTITUTE (T.P.I.) SPECIFICATIONS.
- 5.2. PRE-ENGINEERED TRUSS MANUFACTURER SHALL DESIGN ALL TEMPORARY AND PERMANENT TRUSS BRACING, AND CLEARLY INDICATE ALL BRACING SIZES AND LOCATIONS ON THE SHOP DRAWINGS.
- 5.3. TRUSS HANGERS: AT EACH TRUSS END THAT DOES NOT HAVE A STANDARD BEARING CONNECTION, PROVIDE AN ENGINEERED CONNECTION THAT IS CAPABLE OF SUPPORTING THE REQUIRED REACTION.
- 5.4. COORDINATE TRUSS PROFILES AND OVERHANG DIMENSIONS WITH ARCHITECTURAL DRAWINGS. 5.5. HURRICANE ANCHORS SHALL BE SPECIFIED BY THE TRUSS MANUFACTURER UNLESS OTHERWISE NOTED.
- 5.6. THE CONTRACTOR SHALL SUBMIT TRUSS SHOP AND LAYOUT DRAWINGS FOR APPROVAL, PRIOR TO THE FABRICATION OF THE TRUSSES. ALL TRUSS DRAWINGS SHALL BE SEALED BY A NORTH CAROLINA
- PROFESSIONAL ENGINEER. 5.7. ALL PRE-ENGINEERED WOOD TRUSSES SHALL BE DESIGNED TO SUPPORT THE DEAD AND LIVE LOADS INDICATED AS FOLLOWS:

**UNIFORM LOADS:** TOP CHORD LIVE LOAD 20 PSF TOP CHORD DEAD LOAD 10 PSF BOTTOM CHORD DEAD LOAD 10 PSF

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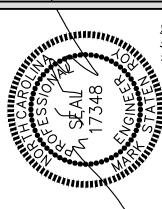
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STRUCTURAL SHEET INDEX		
SHEET NO.	SHEET TITLE	
S0.1	COVER SHEET, STRUCTURAL DESIGN CRITERIA, NOTES, AND SCHEDULES	
S1.1	DEMOLITION, ROOF AND CEILING FRAMING PLANS	
S1.2	ROOF PLAN	
S1.3	ELEVATIONS	
S2.1	SECTIONS	

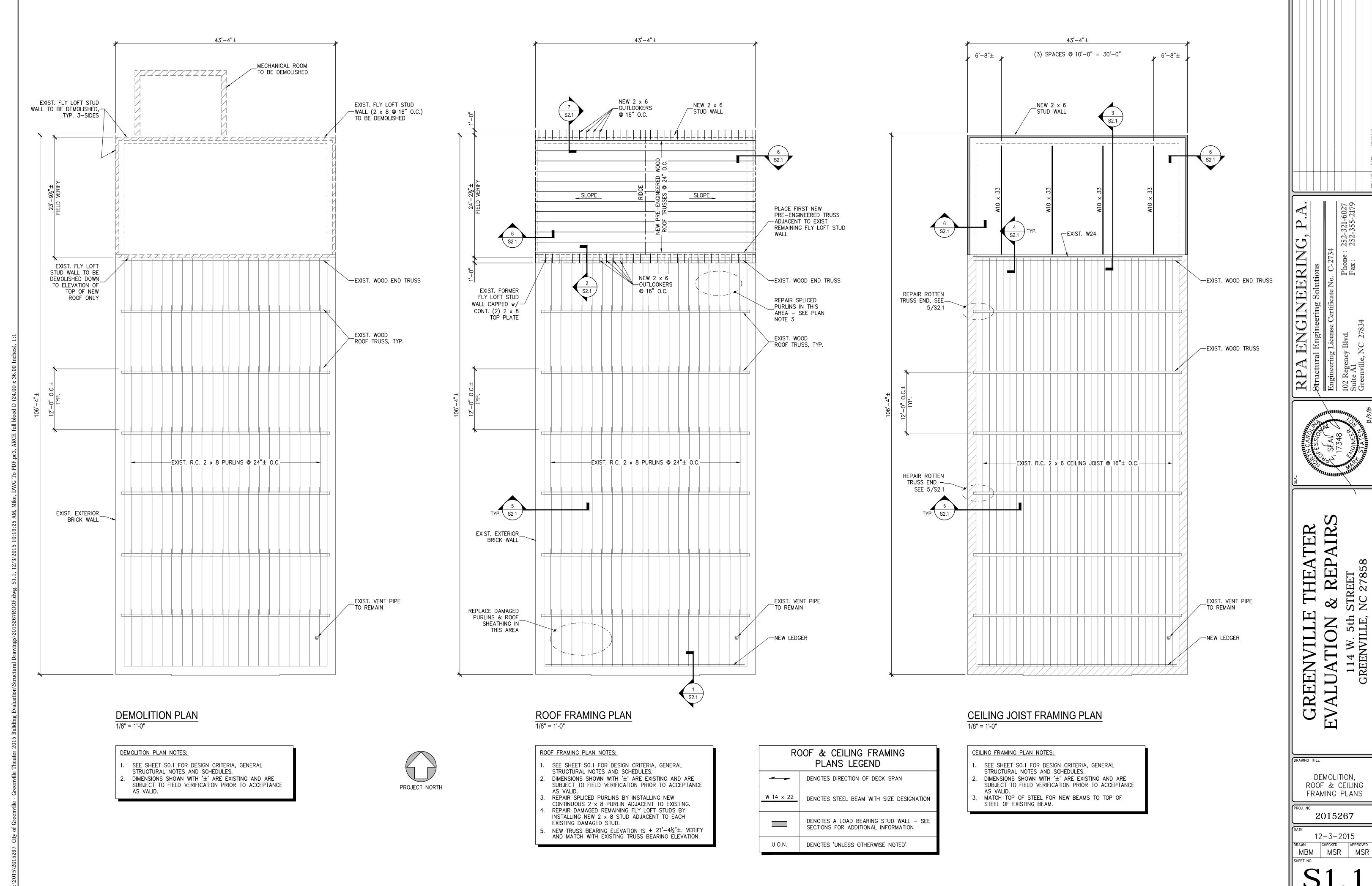
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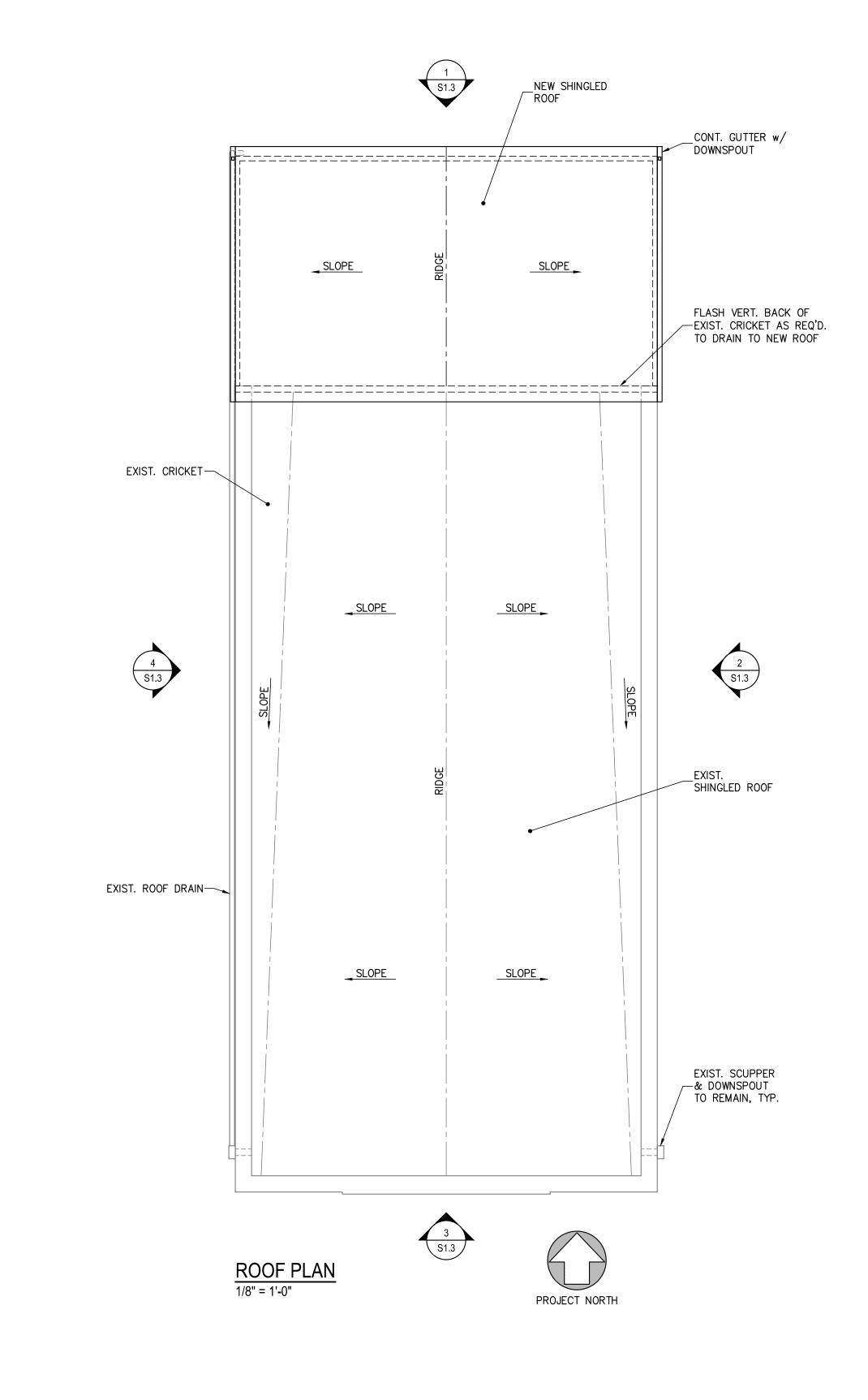
COVER SHEET. STRUCT. DESIGN CRITERIA, NOTES & SCHEDULES

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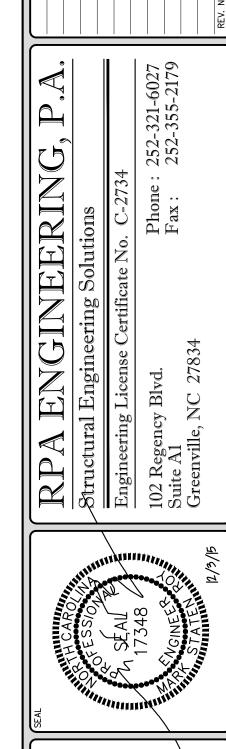
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ROOF PLAN

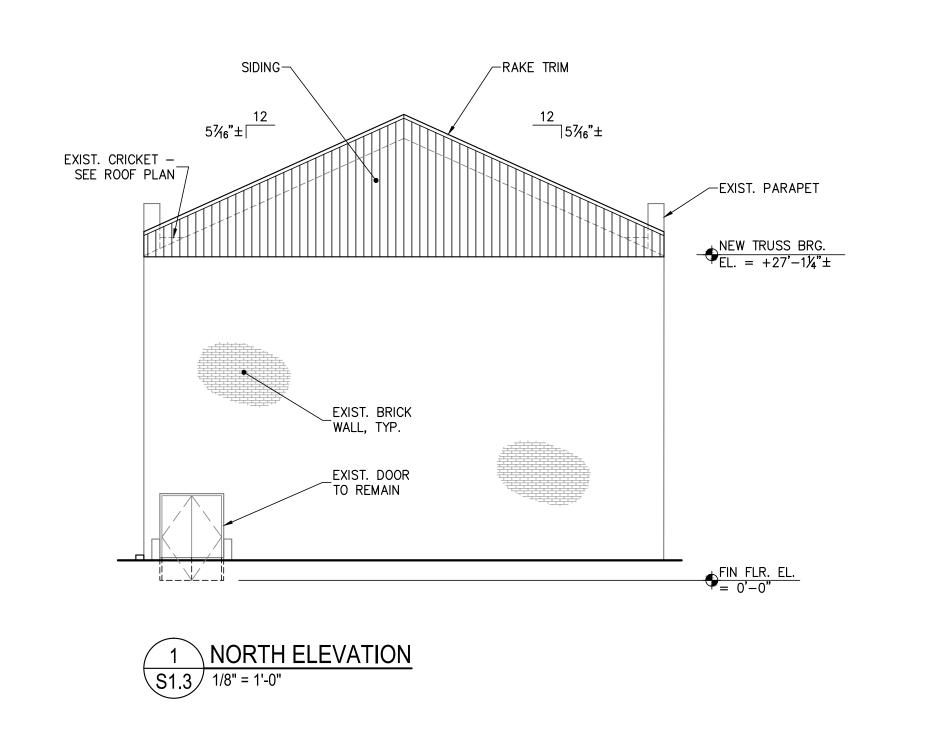
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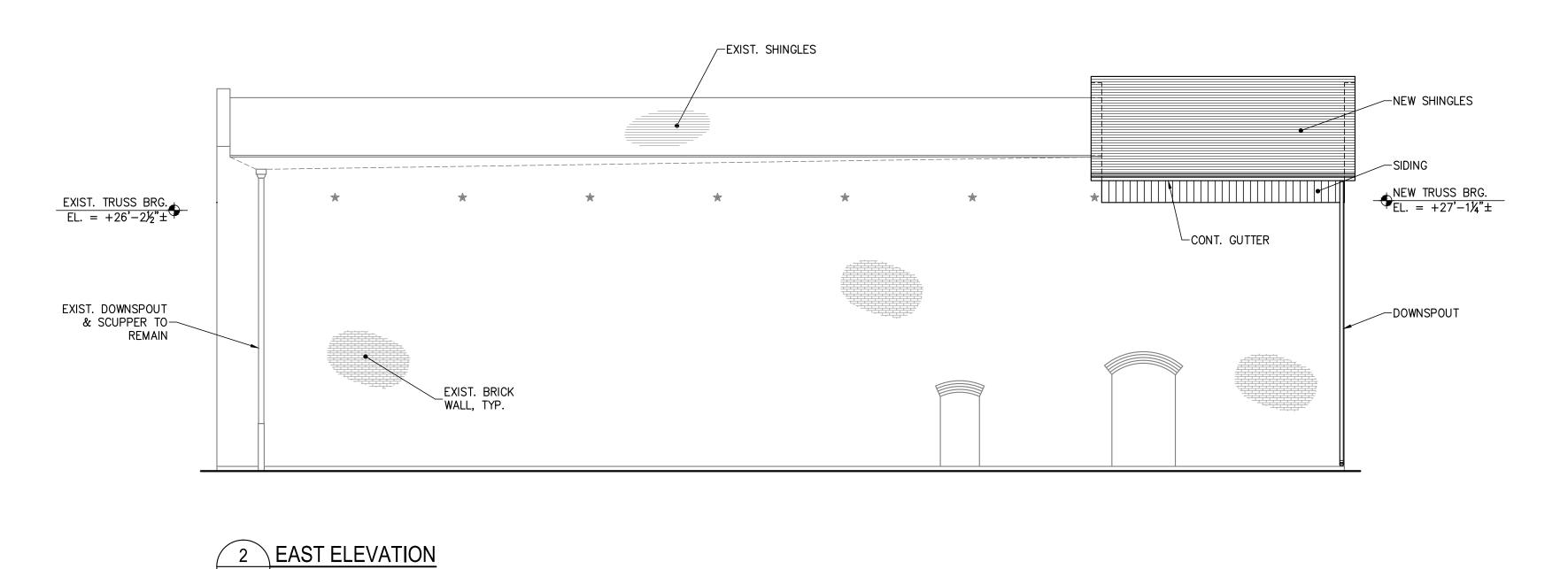
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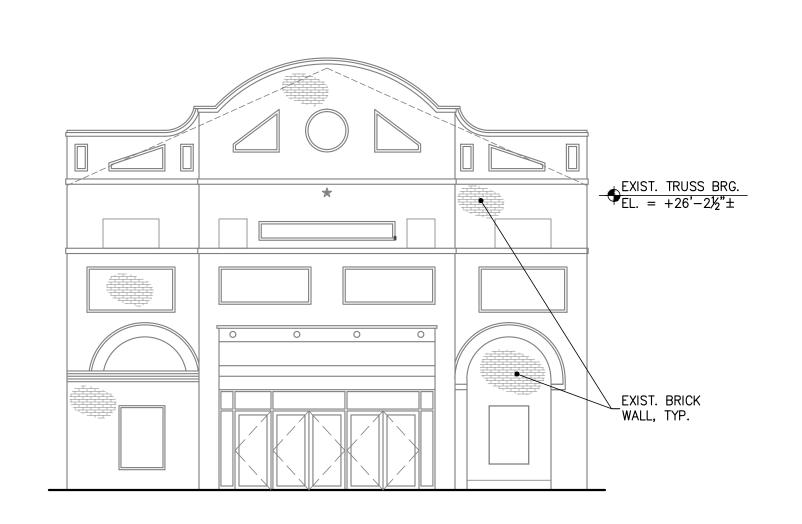
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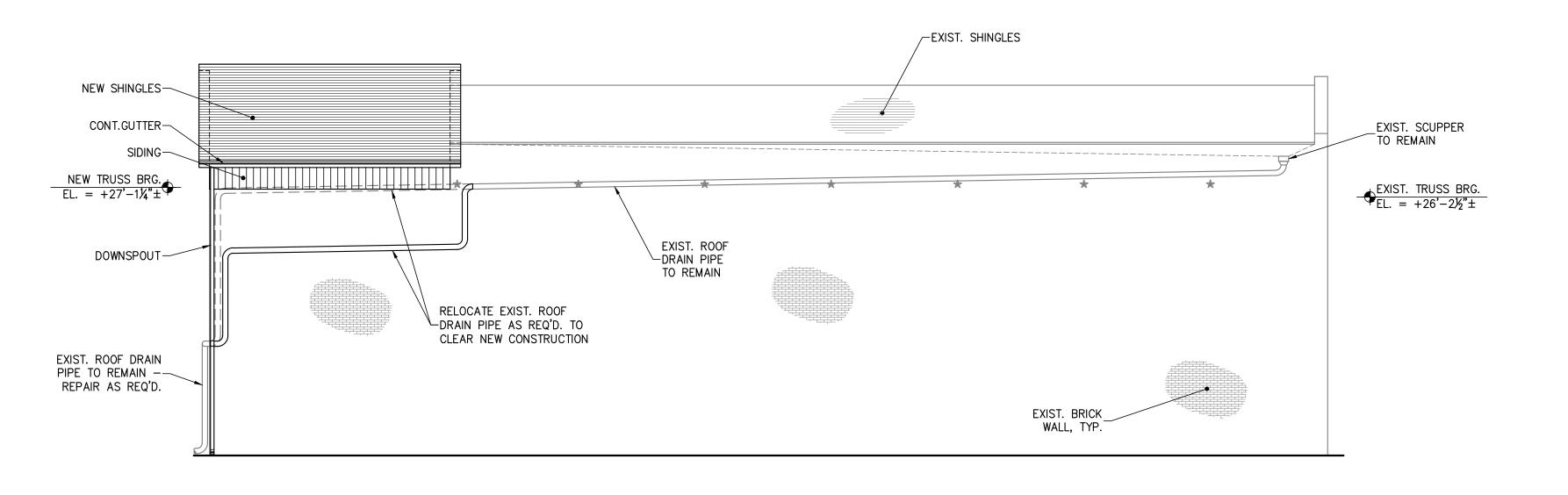
:\2015\2015267 City of Greenville







3 SOUTH ELEVATION S1.3 1/8" = 1'-0"



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4 WEST ELEVATION 51.3 1/8" = 1'-0"

S1.3 1/8" = 1'-0"



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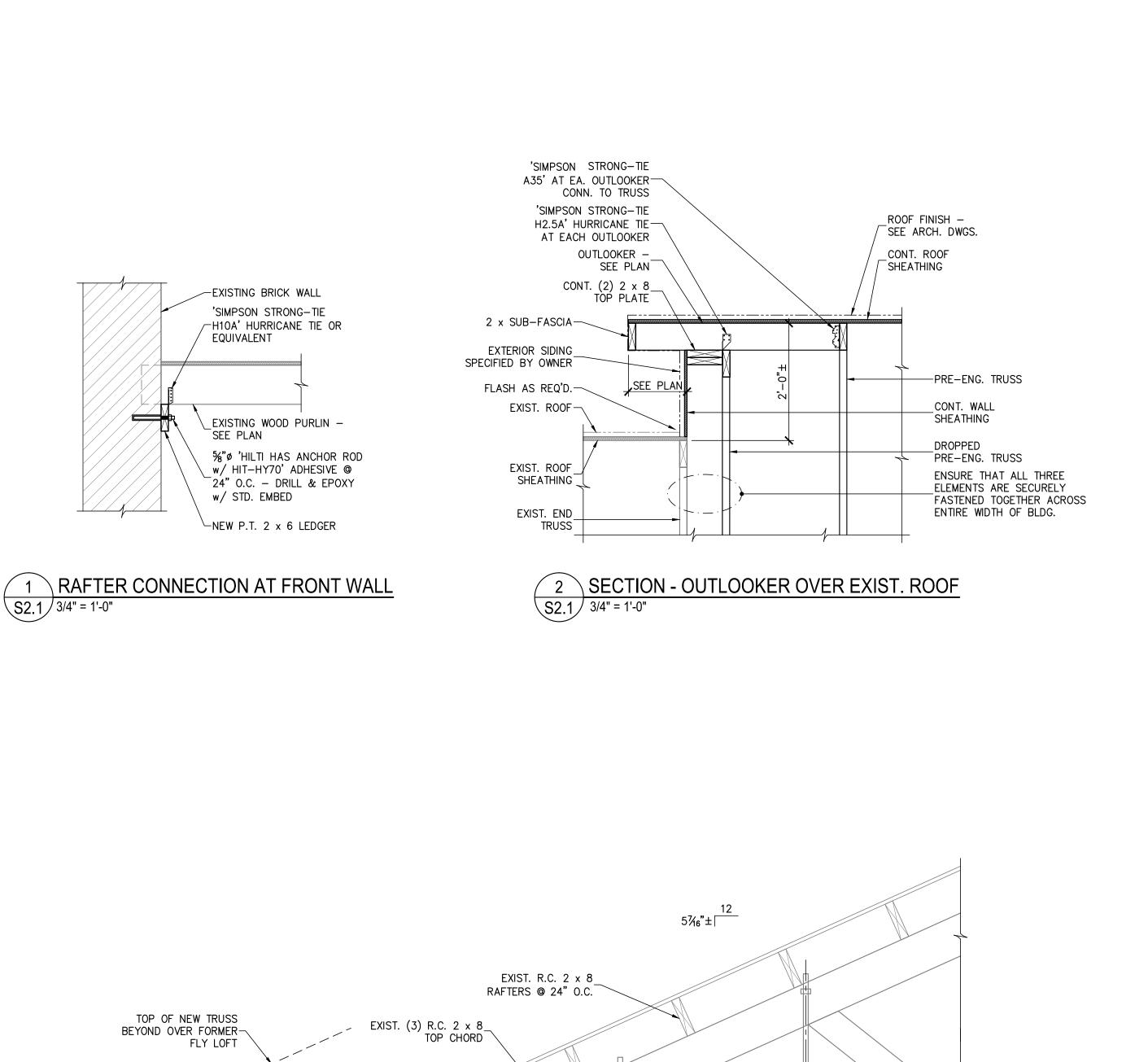
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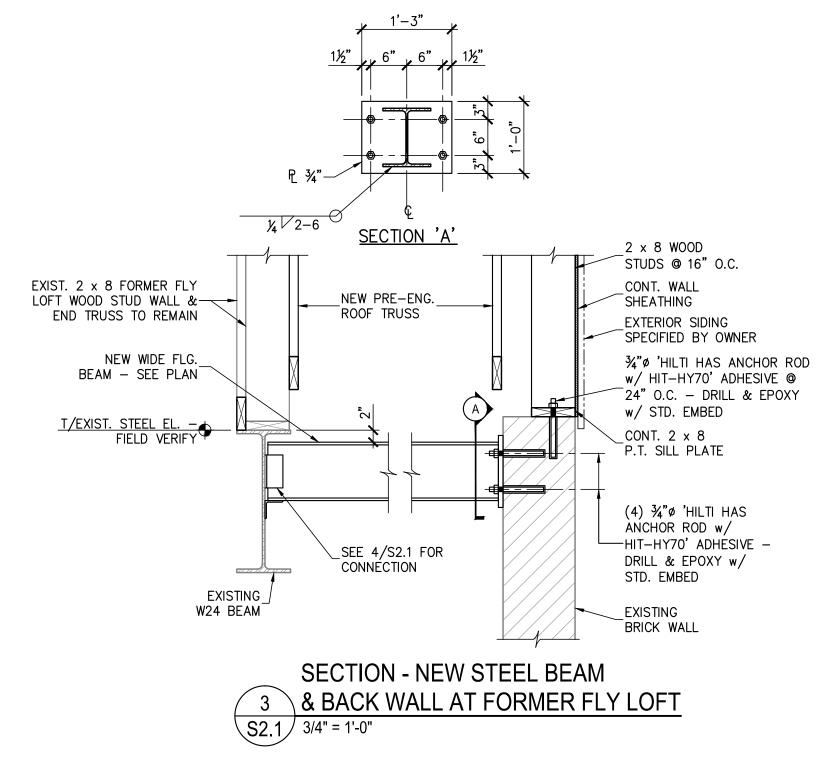
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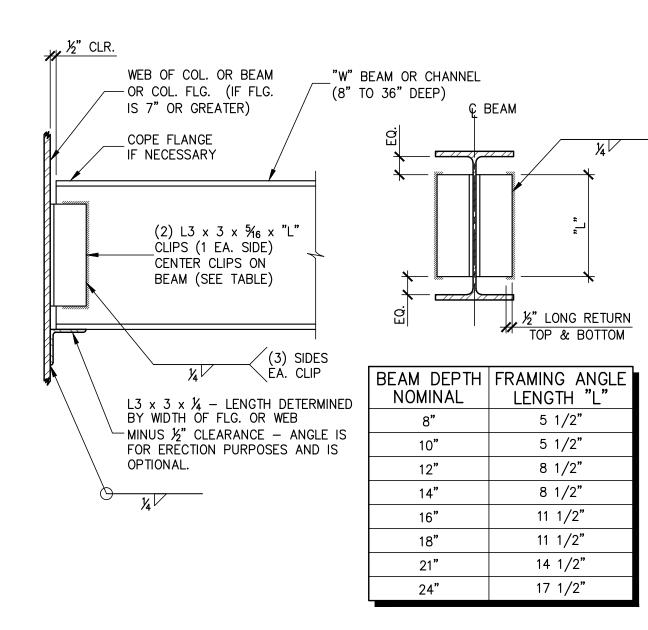
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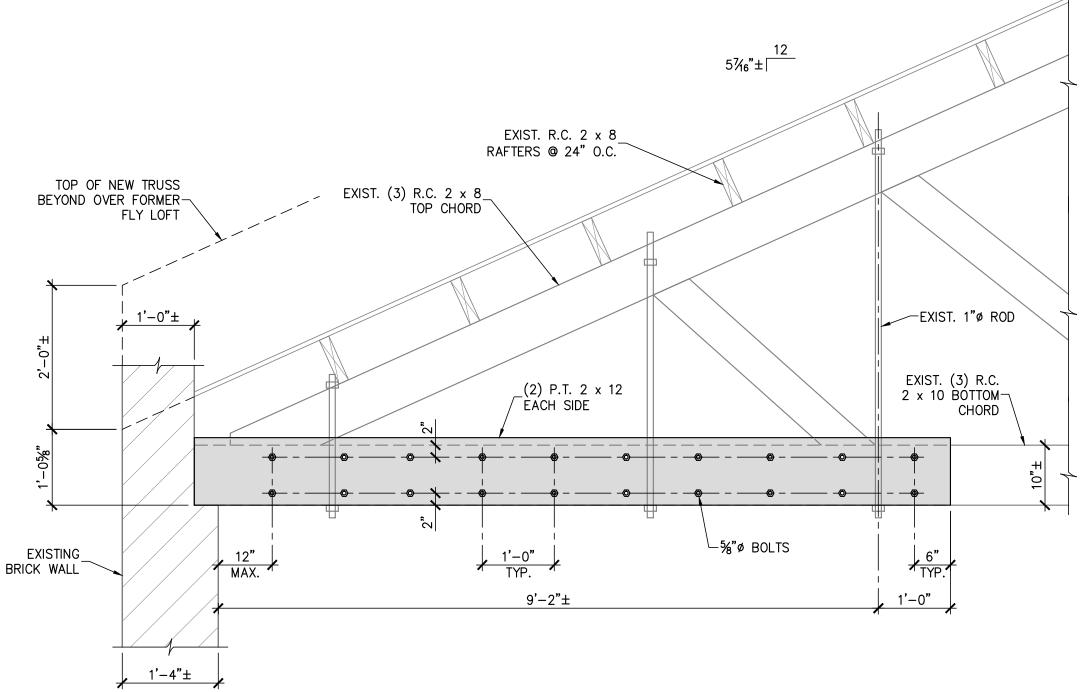




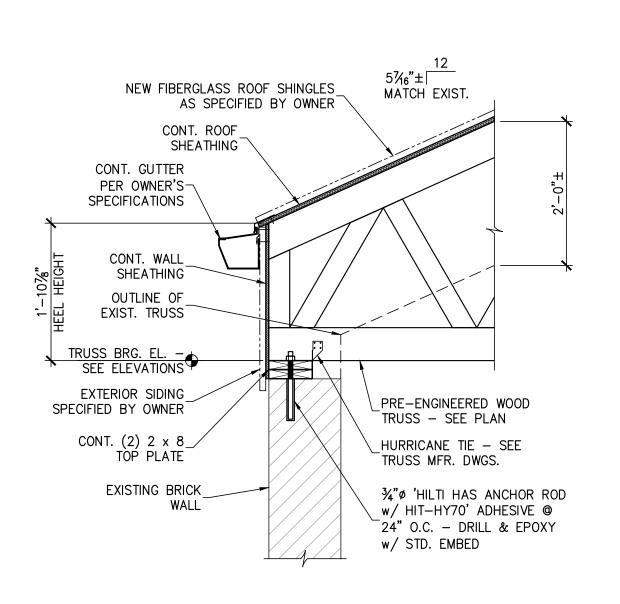
DETAIL - WELDED FRAMED

4 BEAM TO BEAM CONNECTION

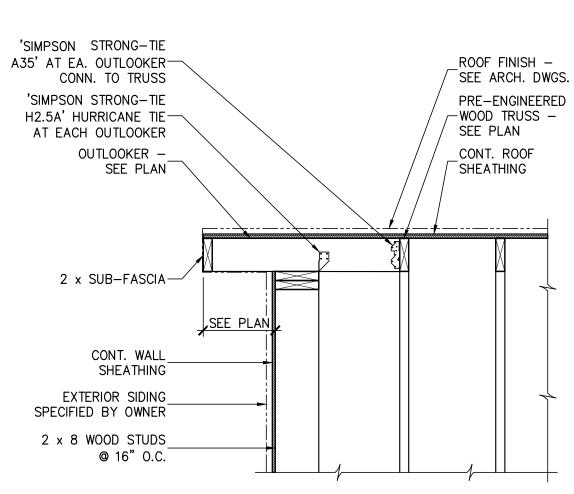
S2.1 1 1/2" = 1'-0"







6 SECTION - TRUSS BRG. AT WALL S2.1 3/4" = 1'-0"



7 SECTION - OUTLOOKER AT BACK ROOF S2.1 3/4" = 1'-0" ctural ENGINEERING, P.A.

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