

ROOF RETROFIT STRUCTURAL SYSTEM NOTES:

- ALL NEW C4x4x16 GA. (C1) RETROFIT COLUMNS SHALL BE INSTALLED DIRECTLY OVER NEW OR EXISTING STRUCTURAL BEAMS OR JOISTS. DO NOT INSTALL ANY NEW RETROFIT COLUMNS ON DECK ELEMENTS ALONE. LOCATIONS AND SIZES OF EXISTING ROOF STRUCTURE BEAMS AND JOISTS HAVE BEEN DETERMINED FROM EXISTING BUILDING DRAWINGS AND/OR FIELD INSPECTION. FIELD VERIFY ALL LOCATIONS AND CONDITIONS PRIOR TO INSTALLATION OF NEW RETROFIT COLUMNS.
- REMOVE ALL EXISTING GRAVEL BALLAST AND ROOFING FROM THE EXISTING ROOF DECKS AT BUILDINGS A AND B PRIOR TO THE INSTALLATION OF THE NEW RETROFIT SYSTEM. REMOVE ALL EXISTING GRAVEL BALLAST, ROOFING, AND INSULATION BOARD FROM EXISTING STEEL ROOF DECK AT BUILDING C PRIOR TO THE INSTALLATION OF THE NEW RETROFIT SYSTEM. REFER TO ARCH. DRAWINGS FOR DEMOLITION AND INSTALLATION OF NEW COVER BOARD AND MEMBRANE ROOFING AT ALL BUILDINGS.
- SET ALL BASE TRACK CHANNELS IN A GENEROUS BED OF PLASTIC ROOFING CEMENT WHICH COVERS THE ENTIRE AREA OF THE BASE OF THE CHANNEL IN CONTACT WITH THE NEW MEMBRANE ROOF.
- FURNISH STANDARD CUT WASHERS AND HEX NUTS TOP AND BOTTOM OF ALL 1/2"x8" BOLTS/ALL-THREAD ROOFS.

RETROFIT COLUMN LEGEND:
C1-A
C4x4x16 GA. COLUMN
BASE ATTACHMENT
DETAIL TYPE PER 25100

2 ROOF RETROFIT COLUMN BASE ATTACHMENT DETAILS

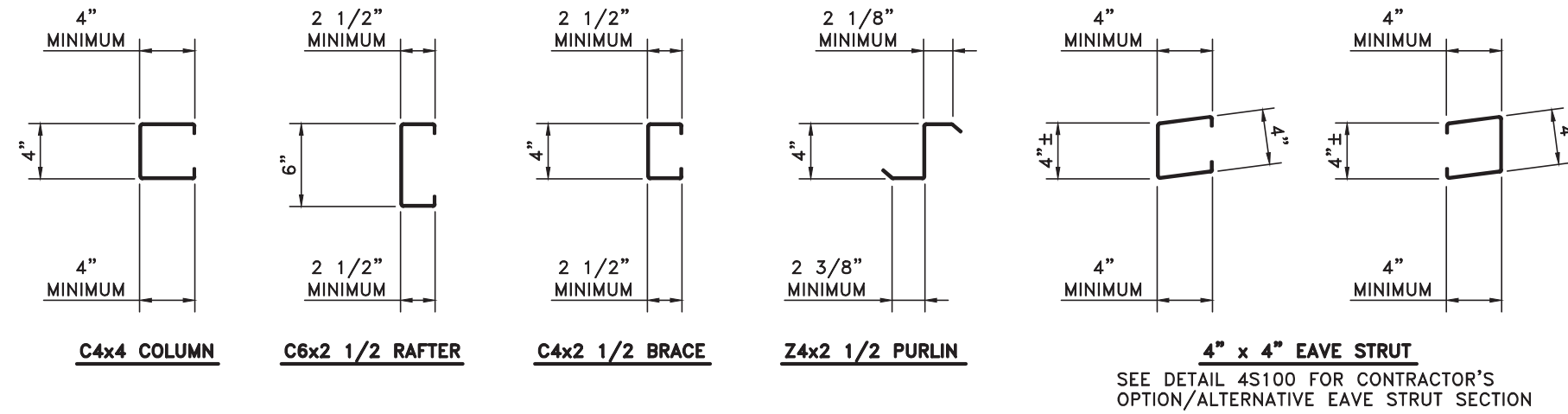
1" = 1'-0"
RE: 1S300, 1S301, 1S302

MINIMUM ALLOWABLE SECTION PROPERTIES

| SECTION | WEIGHT (plf) | AREA (sq.in.) | lxx (in.4) | Sxx (in.3) | lyy (in.3) | Syy (in.3) |
|-------------------------|--------------|---------------|------------|------------|------------|------------|
| C4x4x16 GA. COLUMN | 2.55 | 0.75 | 2.21 | 1.10 | 1.63 | 0.69 |
| C6x2 1/2x16 GA. RAFTER | 2.35 | 0.69 | 3.90 | 1.30 | 0.61 | 0.36 |
| C4x2 1/2x16 GA. BRACE | 1.96 | 0.58 | 1.53 | 0.77 | 0.53 | 0.34 |
| Z4x2 1/2x16 GA. PURLIN | 1.96 | 0.58 | 1.52 | 0.74 | 1.07 | 0.37 |
| 4"x4"x16 GA. EAVE STRUT | 2.50 | 0.72 | 2.10 | 1.05 | 1.55 | 0.65 |
| C4x5 1/2x16 GA. COLUMN | 2.35 | 0.69 | 1.98 | 0.99 | 1.18 | 0.69 |

NOTES:

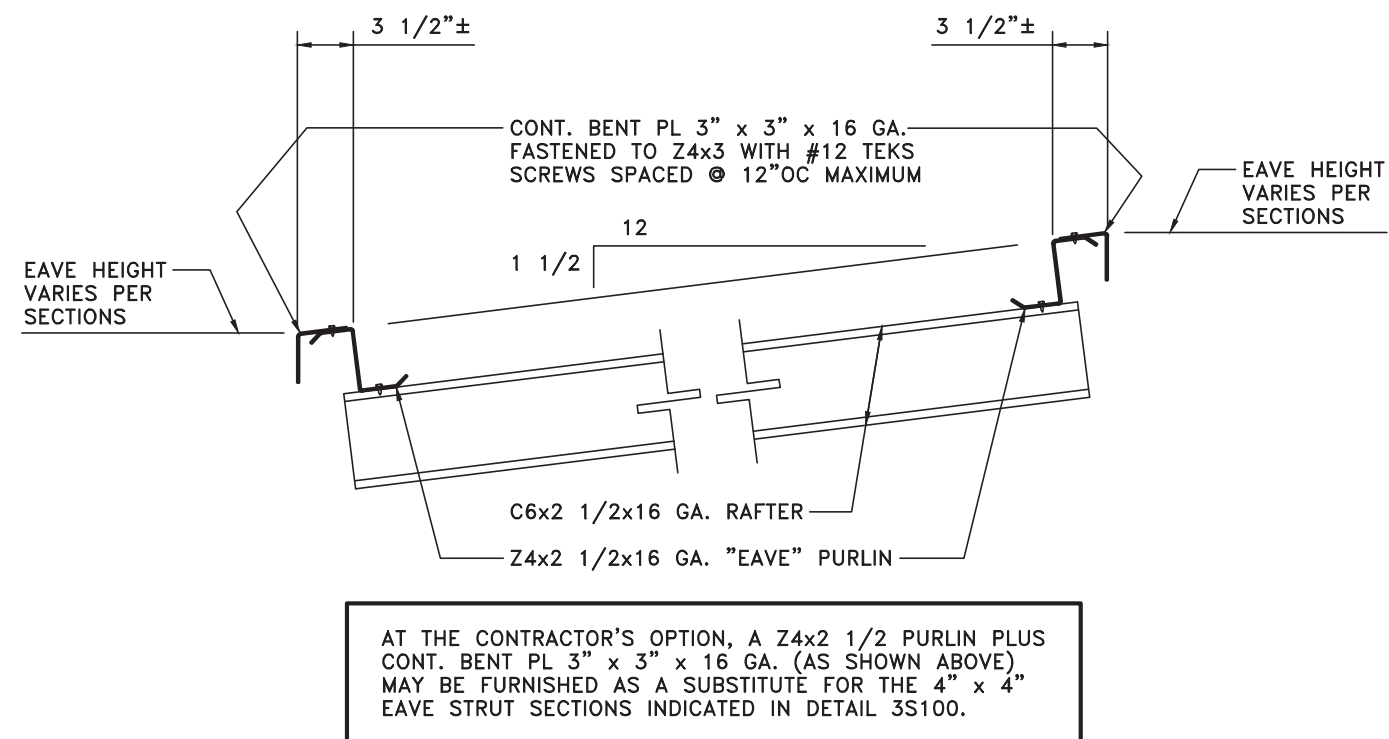
- LIGHTGAUGE STRUCTURAL SECTIONS DERIVED FROM THE LIGHT GAGE STRUCTURAL STEEL FRAMING SYSTEM DESIGN HANDBOOK.
- ALL CEE, ZEE, AND EAVE STRUT SECTIONS SHALL BE A1011 HSLAS GRADE 55 CLASS 1 STEEL OR A553 SS GRADE 55 STEEL MATERIAL.
- IT IS THE CONTRACTOR'S OPTION TO USE THE C4x3 1/2x16 GA. SECTION ABOVE AS A SUBSTITUTE FOR THE C4x4x16 GA. SECTION IF THE C4x4 SECTION IS UNAVAILABLE.



SEE DETAIL 4S100 FOR CONTRACTOR'S OPTION/ALTERNATIVE EAVE STRUT SECTION

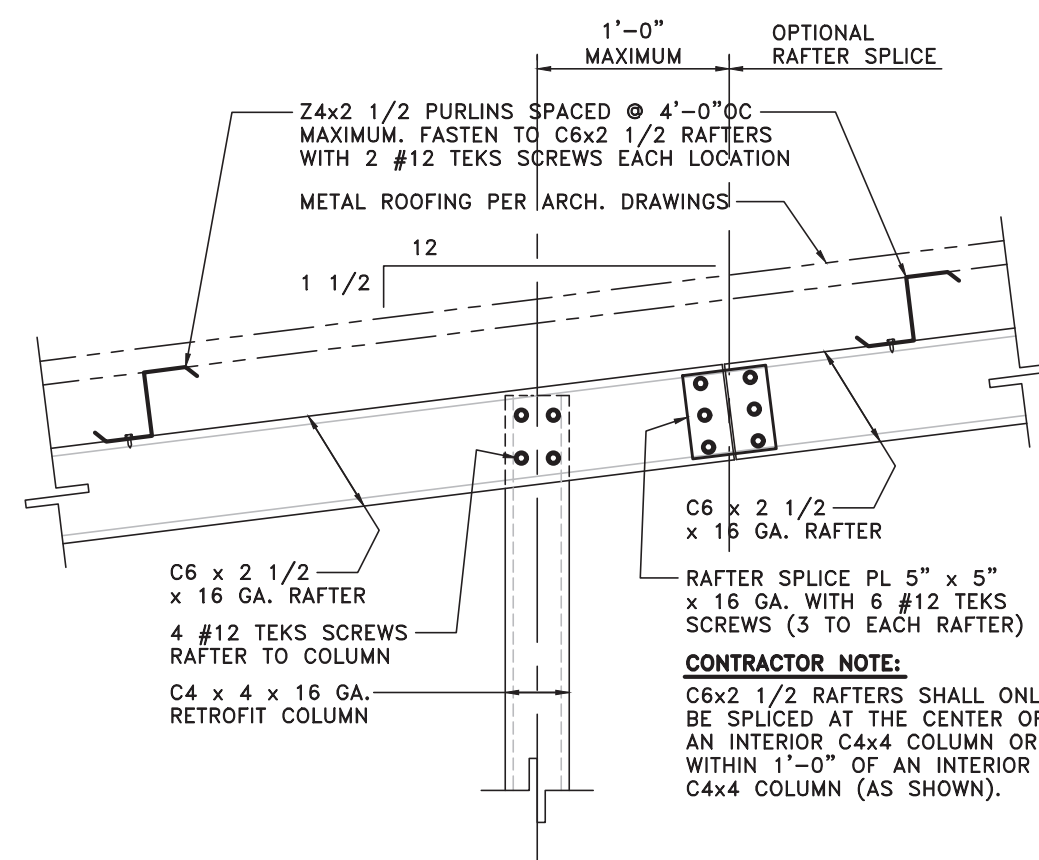
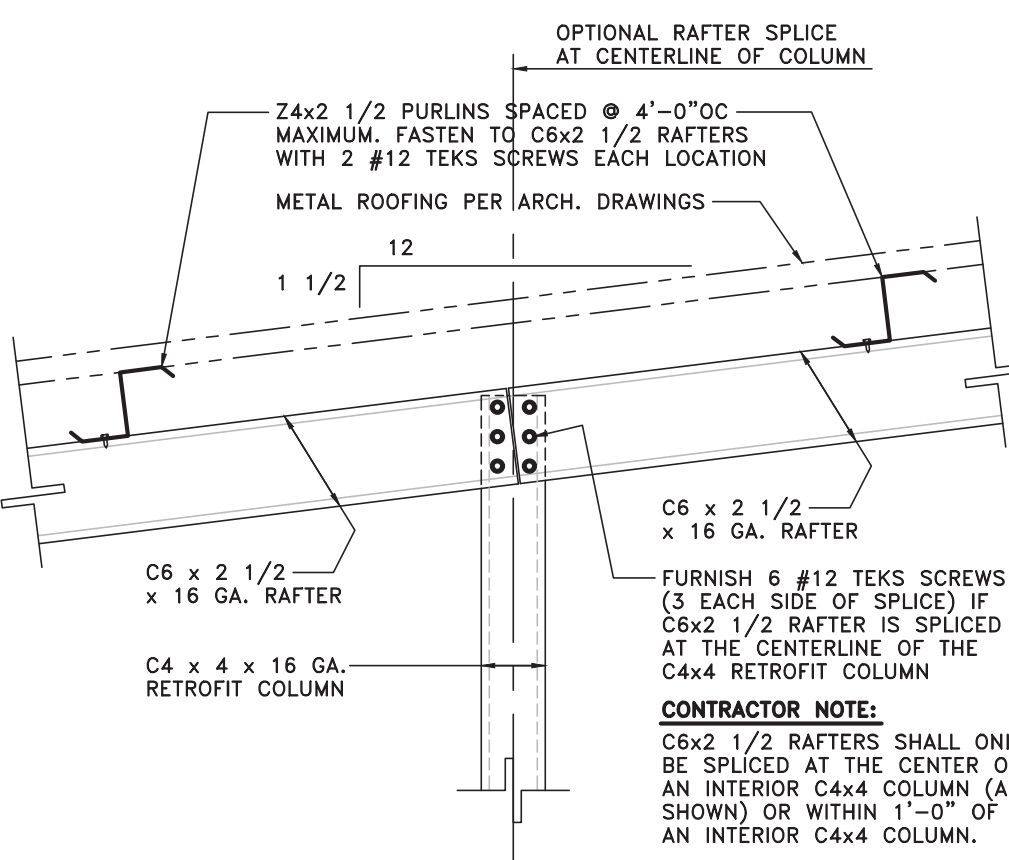
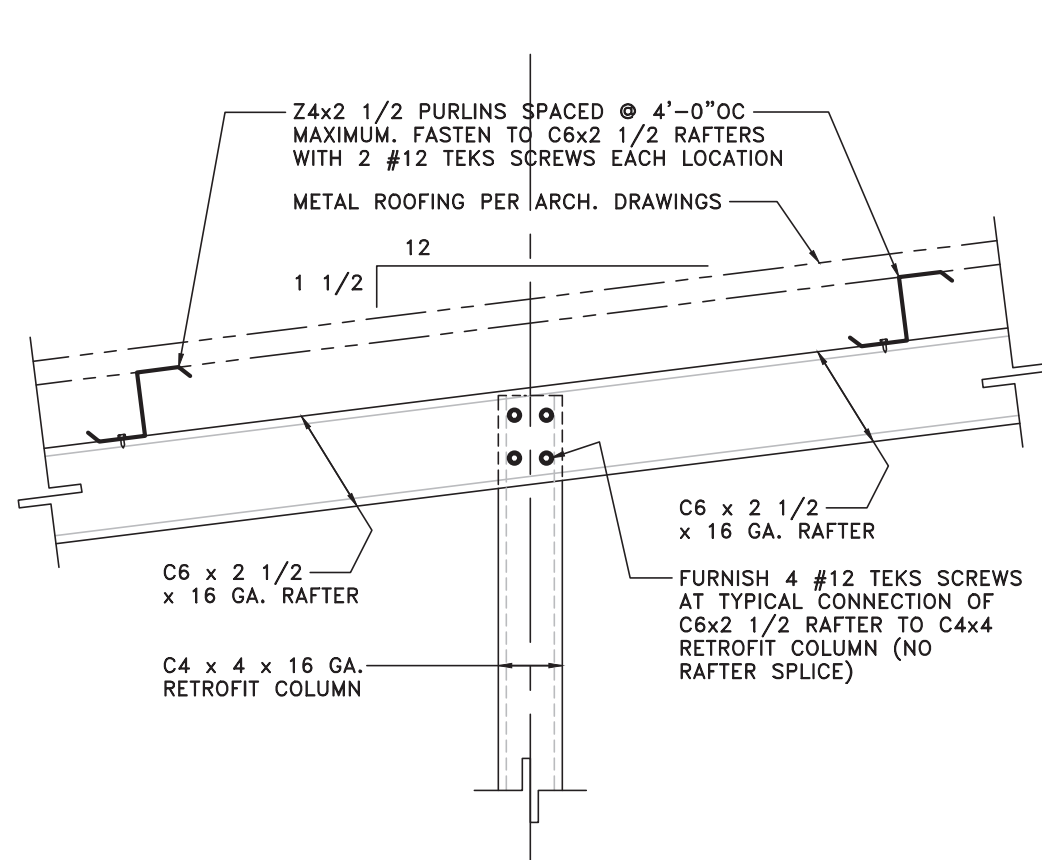
3 ROOF RETROFIT STRUCTURAL COMPONENT MINIMUM ALLOWABLE SECTION PROPERTIES

1" = 1'-0"
RE: 1S300, 1S301, 1S302, 1S400, 1S401, 1S402



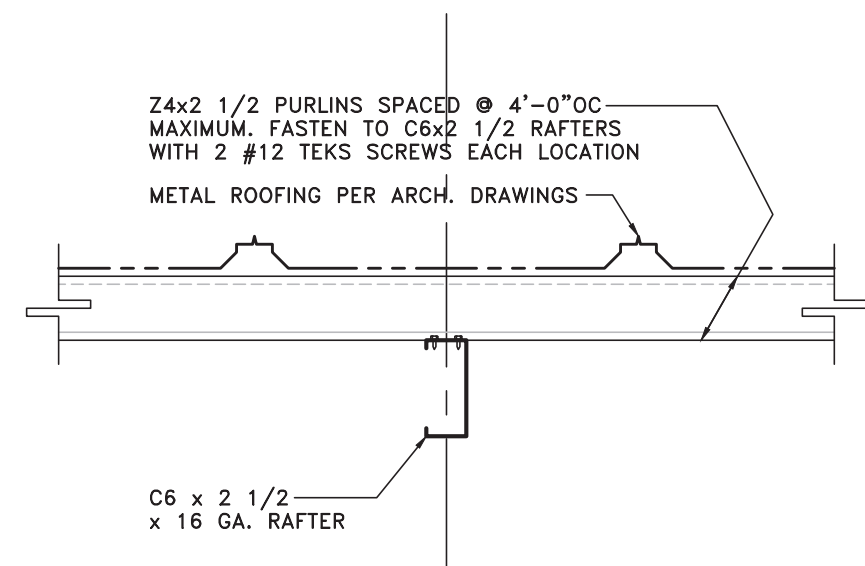
4 EAVE STRUT SECTION ALTERNATIVE

1" = 1'-0"
RE: 1S300, 1S301, 1S302, 1S400, 1S401, 1S402



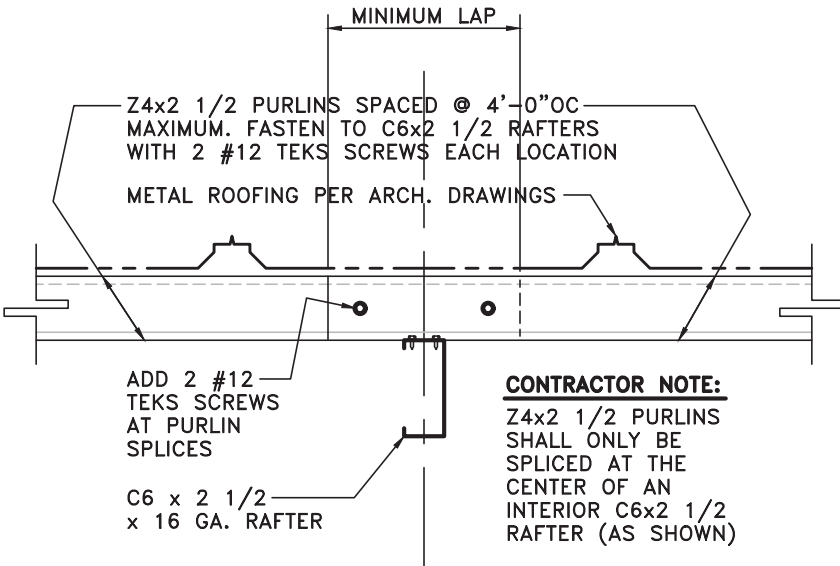
5 TYPICAL C6x2 1/2 RAFTER CONNECTION DETAIL

1" = 1'-0"
RE: 1S400, 1S401, 1S402



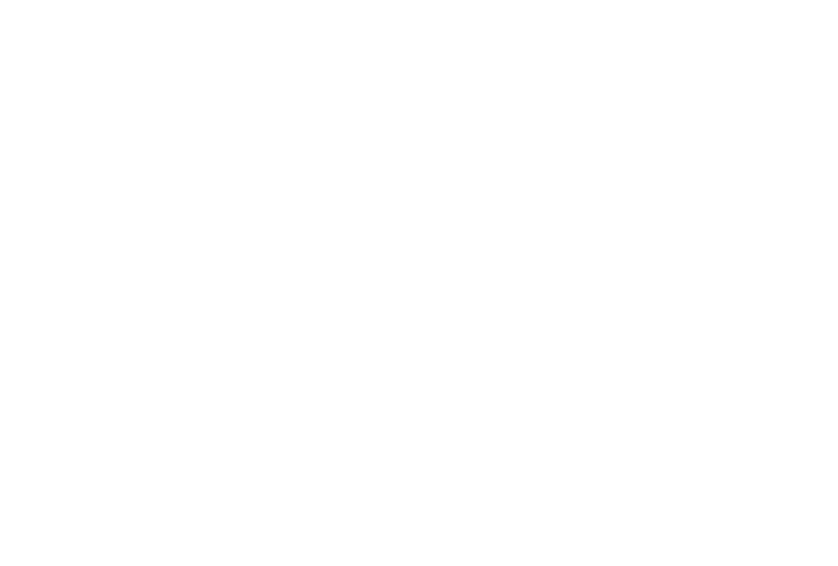
6 C6x2 1/2 RAFTER SPLICE DETAIL

1" = 1'-0"
RE: 1S400, 1S401, 1S402



7 C6x2 1/2 RAFTER SPLICE DETAIL

1" = 1'-0"
RE: 1S400, 1S401, 1S402



8 TYPICAL Z4x2 1/2 PURLIN CONNECTION DETAIL

1" = 1'-0"
RE: 1S400, 1S401, 1S402



9 Z4x2 1/2 PURLIN SPLICE DETAIL

1" = 1'-0"
RE: 1S400, 1S401, 1S402



1 GENERAL STRUCTURAL NOTES:

RE: ALL STRUCTURAL SHEETS

- REFER TO PROJECT SPECIFICATIONS FOR DETAILED DESCRIPTION OF MATERIALS AND METHODS TO BE USED IN THIS PROJECT.
- DETAILS AND CONNECTIONS WHICH ARE SHOWN BY THE STRUCTURAL DRAWINGS IN SPECIFIC LOCATIONS SHALL APPLY IN SIMILAR FORM FOR ALL OTHER SIMILAR CONDITIONS UNLESS OTHERWISE SHOWN.
- EXISTING DIMENSIONS, CONDITIONS, AND STRUCTURAL SIZES SHOWN WERE TAKEN FROM THE ORIGINAL BUILDING DESIGN DRAWINGS AND OWNER FURNISHED SITE SURVEYS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING DIMENSIONS, CONDITIONS, STEEL ELEVATIONS, AND STRUCTURAL MEMBER SIZES WHICH AFFECT THE NEW CONSTRUCTION IN ANY MANNER, AT THE JOB SITE. DISCREPANCIES OR VARIANCES FROM THOSE INDICATED SHALL BE REPORTED TO THE ARCHITECT FOR RESOLUTION PRIOR TO FABRICATION OF ANY MATERIAL FOR THE PROJECT. THERE WILL BE NO EXTRA COMPENSATION FOR MINOR ADJUSTMENTS.
- AT THE BEGINNING OF CONSTRUCTION, A COMPLETE ON THE GROUND LAYOUT OF ALL PROPOSED NEW CONSTRUCTION SHALL BE MADE BY THE CONTRACTOR. HE SHALL DETERMINE THE DIMENSIONAL TYP OF THE NEW CONSTRUCTION WITH THE EXISTING BUILDINGS AT ALL POINTS OF CONTACT BETWEEN THE NEW AND OLD CONSTRUCTION. HE SHALL REPORT ALL VARIANCES AND DISCREPANCIES TO THE ARCHITECT FOR RESOLUTION AND ADJUSTMENT BEFORE CONTINUING WITH THE WORK. THERE WILL BE NO EXTRA COMPENSATION FOR MINOR DIMENSIONAL ADJUSTMENTS.
- STRUCTURAL STEEL PER AISC STANDARD SPECIFICATIONS AND ASTM A36. W-SHAPES SHALL BE ASTM A992 (Fy = 50 ksi). PIPE SHAPES SHALL BE ASTM A 501, 36 KSI YIELD, OR ASTM A 500, GRADE B OR C. TUBE SHAPES (HSS) SHALL BE ASTM A400, GRADE B. SHOP CONNECTIONS - WELDED; FIELD CONNECTIONS - HIGH STRENGTH BOLTED OR WELDED AS DETAILED. USE 3/4" A325X STANDARD FRAMED CONNECTIONS UNLESS OTHERWISE DETAILED.
- REFER TO ARCHITECTURAL DRAWINGS FOR MISCELLANEOUS STEEL ITEMS, LADDERS, LINTELS, ETC., WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
- LIGHT GAGE METAL SUB-STRUCTURAL FRAMING FOR ROOFS SHALL CONFORM TO SPECIFICATIONS SECTION D54000, COLD FORMED METAL FRAMING, THE ARCHITECTURAL AND STRUCTURAL DRAWINGS, AND THE APPLICABLE STANDARD X SHEET DETAILS INCLUDED IN THE PROJECT MANUAL. FULLY COORDINATE DETAILS BETWEEN STRUCTURAL, STEEL, AND LIGHT GAGE METAL FRAMING WHERE CONNECTIONS BETWEEN THE TWO ARE REQUIRED. REFER TO DETAIL 3S100 FOR MINIMUM CEE SECTION, ZEE SECTION, AND EAVE STRUT MATERIAL AND SECTION PROPERTY REQUIREMENTS.

DESIGN CRITERIA:

ROOF LIVE LOAD: 20 PSF, PER IBC 2021, Table 1607.1.
ROOF LIVE LOAD REDUCTION IS BASED ON IBC 2021, Section 1607.14.2.1 ORDINARY ROOFS, AWNINGS AND CANOPIES.

WIND: Basic Design Wind Speed V(h) = 120 miles per hour (mph), per IBC 2021, Figure 1609.3(2)
Risk Category III, per IBC 2021, Table 1604.5
Exposure Category B (per IBC 2021, Section 1609.4)
Internal Pressure Coefficient Cpi = +/- 0.18 (Enclosed Building) (per ASCE 7-16 Figure 26.13-1)

Components and Cladding (per ASCE 7-16, Chapter 30)
LOCATION - ROOF - Exposure Area = 10 square feet
Zone 1 Pnet = -37.6 psf or +8.6 psf
Zone 2 Pnet = -49.6 psf or +8.6 psf
Zone 3 Pnet = -67.6 psf or +8.6 psf

LOCATION - WALL - Exposure Area = 10 square feet
Zone 4 Pnet = -25.6 psf or +23.6 psf
Zone 5 Pnet = -31.6 psf or +23.6 psf
LOCATION - OVERHANG - Exposure Area = 10 square feet
Zone 1 Pnet = -37.6 psf
Zone 2 Pnet = -49.6 psf
Zone 3 Pnet = -67.6 psf

LOCATION - ROOF - Exposure Area = 20 square feet
Zone 1 Pnet = -35.6 psf or +8.6 psf
Zone 2 Pnet = -46.6 psf or +8.6 psf
Zone 3 Pnet = -61.6 psf or +8.6 psf
LOCATION - WALL - Exposure Area = 20 square feet
Zone 4 Pnet = -24.6 psf or +22.6 psf
Zone 5 Pnet = -29.6 psf or +22.6 psf
LOCATION - OVERHANG - Exposure Area = 20 square feet
Zone 1 Pnet = -36.6 psf
Zone 2 Pnet = -46.6 psf
Zone 3 Pnet = -61.6 psf

LOCATION - ROOF - Exposure Area = 50 square feet
Zone 1 Pnet = -31.6 psf or +8.6 psf
Zone 2 Pnet = -42.0 psf or +8.6 psf
Zone 3 Pnet = -52.6 psf or +8.6 psf
LOCATION - WALL - Exposure Area = 50 square feet
Zone 4 Pnet = -23.2 psf or +21.2 psf
Zone 5 Pnet = -28.6 psf or +21.2 psf
LOCATION - OVERHANG - Exposure Area = 50 square feet
Zone 1 Pnet = -35.6 psf
Zone 2 Pnet = -49.6 psf
Zone 3 Pnet = -69.6 psf

LOCATION - ROOF - Exposure Area = 100 square feet
Zone 1 Pnet = -29.6 psf or +7.6 psf
Zone 2 Pnet = -38.6 psf or +7.6 psf
Zone 3 Pnet = -46.6 psf or +7.6 psf
LOCATION - WALL - Exposure Area = 100 square feet
Zone 4 Pnet = -21.6 psf or +20.0 psf
Zone 5 Pnet = -24.6 psf or +20.0 psf

LOCATION - ROOF - Exposure Area = 500 square feet
Zone 1 Pnet = -23.6 psf or +7.6 psf
Zone 2 Pnet = -23.6 psf or +7.6 psf
Zone 3 Pnet = -23.6 psf or +7.6 psf
LOCATION - WALL - Exposure Area = 500 square feet
Zone 4 Pnet = -21.6 psf or +20.0 psf
Zone 5 Pnet = -24.6 psf or +20.0 psf

SNOW LOAD: GROUND SNOW LOAD Pg = 5 PSF PER IBC 2021, FIGURE 1608.2(2).

SEISMIC: PER IBC 2021 AND ASCE 7-16

Risk Category III, per IBC 2021, Table 1604.5, ASCE 7-16, Table 1.5-1
SEISMIC IMPORTANCE FACTOR I = 1.25, per ASCE 7-16, Table 1.5-2
Ss (acceleration parameter 0.2 sec) = 0.103
S1 (acceleration parameter 1 sec) = 0.055
SEISMIC DESIGN CATEGORY B

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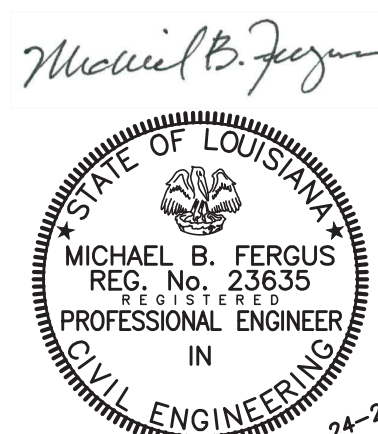
IMPROVEMENTS TO
J.I. BARRON ELEMENTARY SCHOOL
PINEVILLE, LA

Pineville, Louisiana

GENERAL STRUCTURAL NOTES, ROOF RETROFIT SECTIONS AND DETAILS

REVISIONS:

DATE: SEPTEMBER 2025
JOB NUMBER: 2025-02



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