



# CANDLER ELEMENTARY SCHOOL - PHASE 1

## PARTIAL ROOF REPLACEMENT PROJECT

BUNCOMBE COUNTY SCHOOLS  
 121 Candler School Road  
 Candler, NC 28715

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**Terracon**  
 Consulting Engineers and Scientists  
 2701 Westport Road  
 Charlotte, North Carolina  
 p: 704.594.1777  
 Project No. FH196127  
 Terracon NC License No.: F-0869  
 terracon.com

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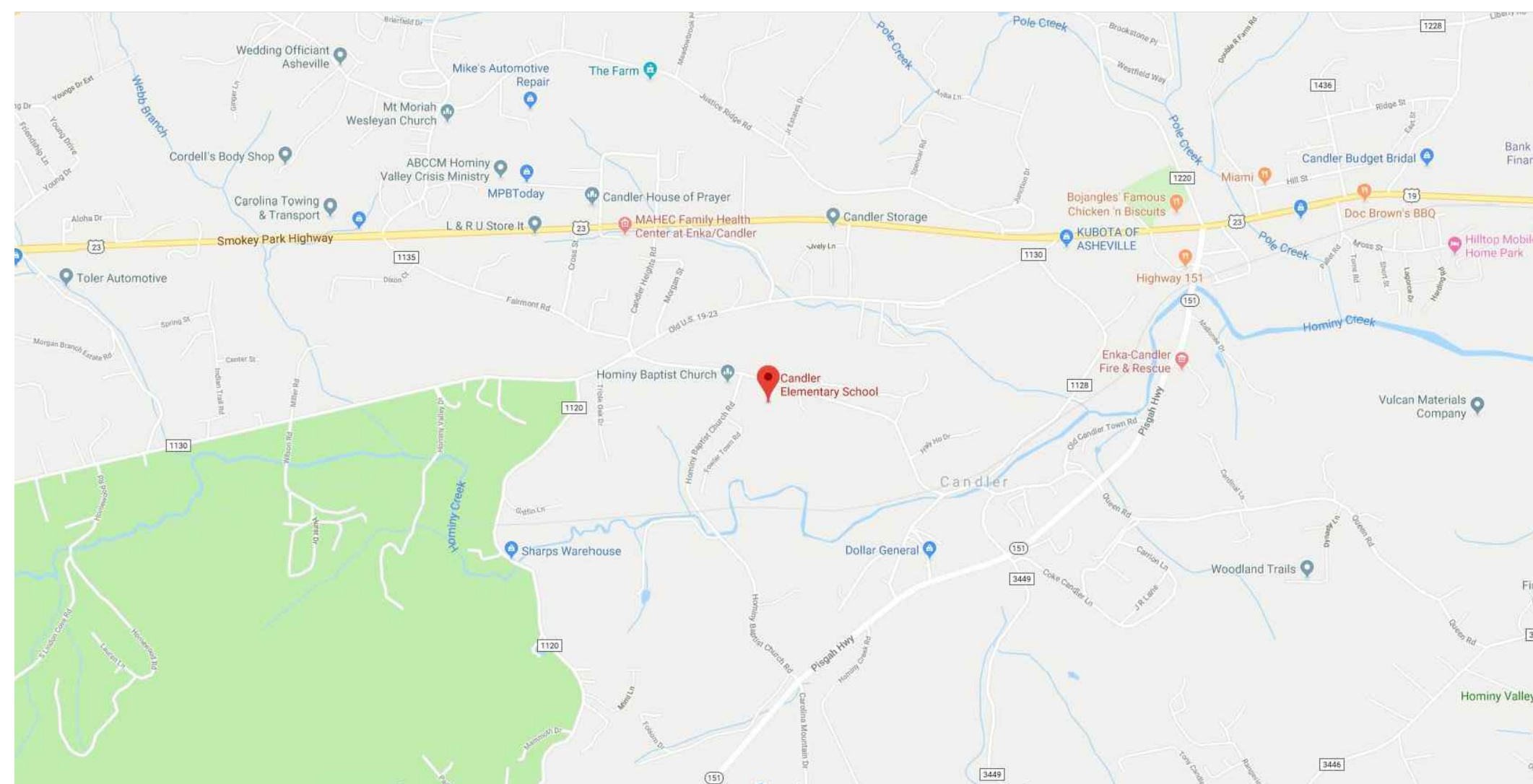


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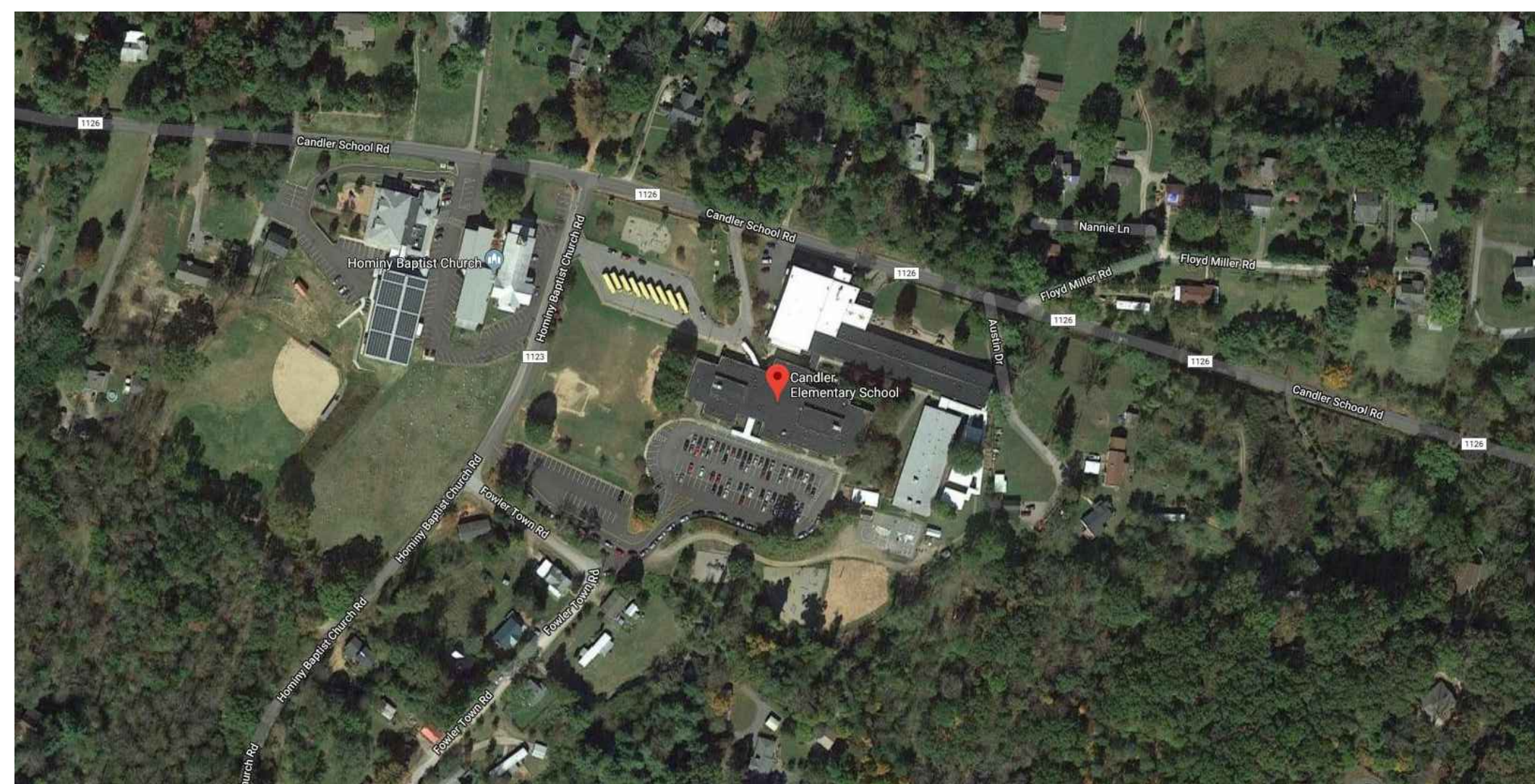
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### Project Location



VICINITY MAP

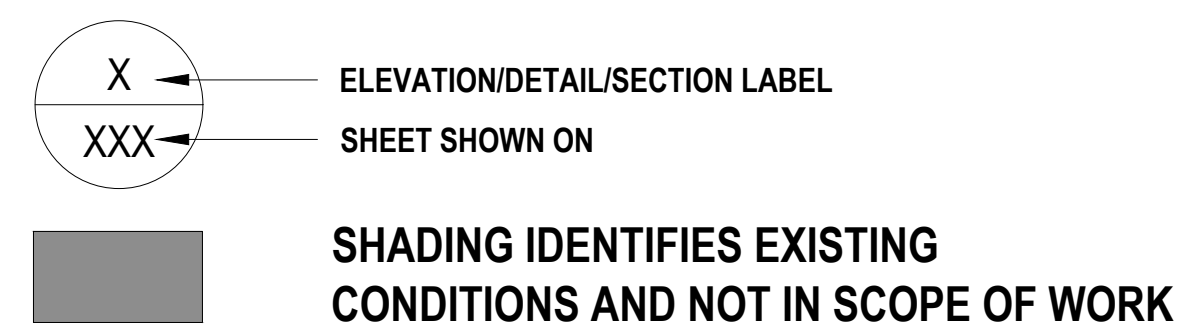


LOCATION MAP

### Abbreviations

MAX.	MAXIMUM
MIN.	MINIMUM
N.I.C	NOT IN CONTRACT
O.C.	ON CENTER
TYP.	TYPICAL
SIM.	SIMILAR

### Details / Elevations / Sections Identifier



### CLIENT

BUNCOMBE COUNTY SCHOOLS  
 175 Bingham Road  
 Asheville, North Carolina 28806

### ENGINEERING CONSULTANT

TERRACON CONSULTANTS, INC.  
 2701 Westport Road

### PROJECT CONTACT:

Jeff H. Poe Jr., PE, MSCE, RRC  
 Project Engineer/Facilities  
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 p: 704.594.8939

ISSUE DATE:

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ADDENDUM:

No. DATE DESCRIPTION:

PROJECT TEAM:

DESIGNED BY:

JHP

DRAWN BY:

IMM

APR REVIEWER:

VTN

TERRACON'S PROJECT NUMBER:

FH196127

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

G-101





**BUILDING DATA**

Construction Type:  I-A  I-B  II-A  II-B  III-A  III-B  
 IV  V-A  V-B  
Mixed construction:  No  Yes Types N/A

Sprinklers:  No  Yes  NFPA 13  NFPA 13R  NFPA 13D  
Standpipes:  No  Yes Class  I  II  III  Wet  Dry

Fire District:  No  Yes

Building Height: N/A Feet N/A Number of Stories  Unlimited per N/A

Mezzanine:  No  Yes  
High Rise:  No  Yes Central Reference Sheet # (if provided) N/A

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
6th Floor	N/A	N/A	N/A
5th Floor	N/A	N/A	N/A
4th Floor	N/A	N/A	N/A
3rd Floor	N/A	N/A	N/A
2nd Floor	N/A	N/A	N/A
Mezzanine	N/A	N/A	N/A
1st Floor	N/A	N/A	N/A
Basement	N/A	N/A	N/A
TOTAL	N/A	N/A	N/A

**STRUCTURAL DESIGN**

**DESIGN LOADS:**

Importance Factors: Wind ( $I_w$ ) N/A  
Snow ( $I_s$ ) N/A  
Seismic ( $I_e$ ) N/A

Live Loads: Roof N/A psf  
Mezzanine N/A psf  
Floor N/A psf

Snow Load: N/A psf

Wind Load: Basic Wind Speed 120 mph (ASCE-7-10)  
Exposure Category B  
Wind Base Shears (for MWFRS)  $V_x =$  N/A  $V_y =$  N/A

**SEISMIC DESIGN CATEGORY A**  
Compliance with Section 1616.4 only?  YES  NO

**SEISMIC DESIGN CATEGORY B, C, & D**  
Provide the following Seismic Design Parameters:  
Seismic Use Group N/A  
Spectral Response Acceleration  $S_{us}$  N/A %g  $S_{M1}$  N/A %g  
Site Classification N/A

Basic structural system (check one)  
 N/A Bearing Wall  N/A Dual w/Special Moment Frame  
 N/A Building Frame  N/A Dual w/Intermediate R/C or Special Steel  
 N/A Moment Frame  N/A Inverted Pendulum

Seismic base shear  $V_x =$  N/A  $V_y =$  N/A  
Analysis Procedure N/A Simplified N/A Equivalent Lateral Force N/A Modal  
Architectural, Mechanical, Components anchored?         

**LATERAL DESIGN CONTROLS:** Earthquake N/A Wind N/A

**SOIL BEARING CAPACITIES:**  
Field Test (provide copy of test report) N/A psf  
Presumptive Bearing capacity N/A psf  
Pile size, type, and capacity N/A

**SPECIAL APPROVALS**

Special approval: (Local Jurisdiction, Department of Insurance, SBCCI, ICC, etc., describe below)

A reduced R-value is desired due to low flashing heights at the windows below Roof Area A4.

**ENERGY SUMMARY**

**ENERGY REQUIREMENTS:**  
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If energy cost budget method, state the annual energy cost budget vs allowable annual energy cost budget.

**THERMAL ENVELOPE**

Method of Compliance:  Prescriptive  Performance  Energy Cost Budget

**Roof/ceiling Assembly (each assembly)**

Description of assembly  
U-Value of total assembly .05  
R-Value of insulation R-20  
Skylights in each assembly n/a  
U-Value of skylight           
total square footage of skylights in each assembly         

**Exterior Walls (each assembly)**

Description of assembly  
U-Value of total assembly           
R-Value of insulation           
Openings (windows or doors with glazing)  
U-Value of assembly shading coefficient projection factor           
low e required, if applicable           
Door R-Values         

**Walls adjacent to unconditioned space (each assembly)**

Description of assembly  
U-Value of total assembly           
R-Value of insulation           
Openings (windows or doors with glazing)  
U-Value of assembly shading coefficient projection factor           
low e required, if applicable           
Door R-Values         

**Walls below grade (each assembly)**

Description of Assembly  
U-Value of total assembly           
R-Value of insulation         

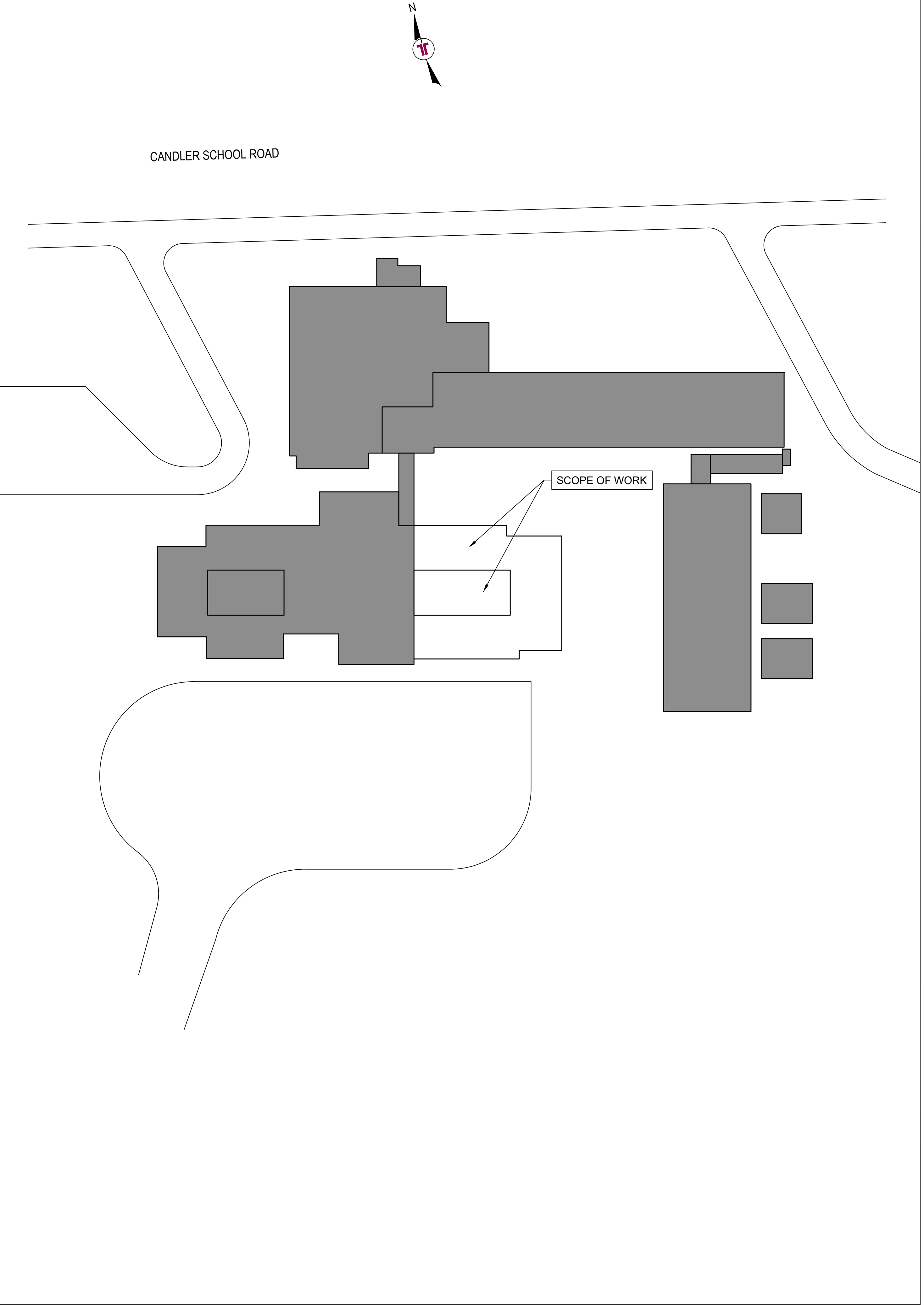
**Floors over unconditioned space (each assembly)**

Description of assembly  
U-Value of total assembly           
R-Value of insulation         

**Floors slab on grade**

Description of assembly  
U-Value of total assembly           
R-Value of insulation           
Horizontal/vertical requirement           
slab heated         

**KEY PLAN**



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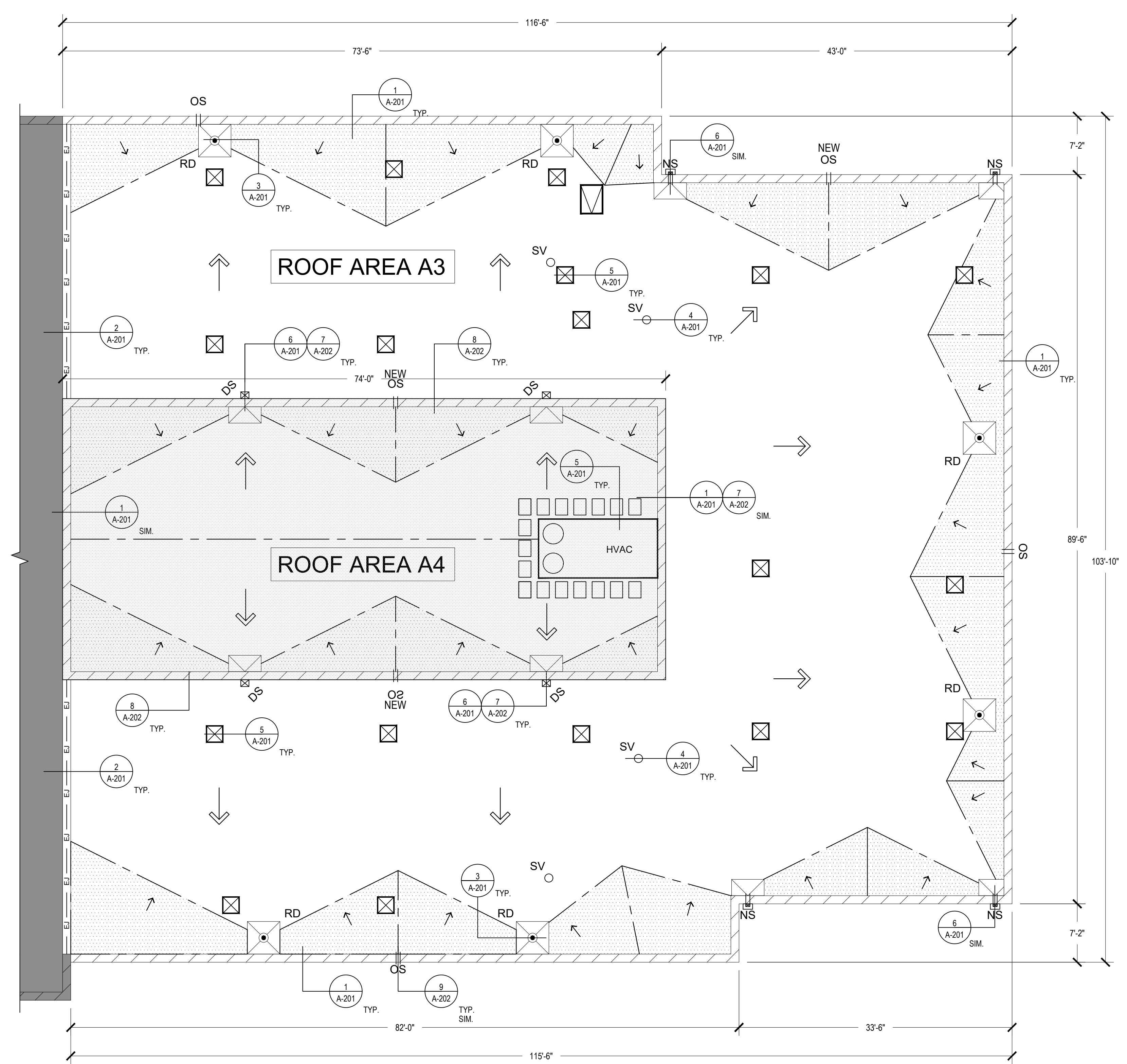
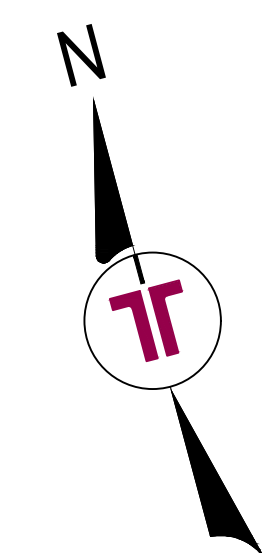
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PROJECT TEAM:  
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**JHP**  
DRAWN BY:  
**IMM**  
APR REVIEWER:  
**VTN**

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SHEET TITLE:  
**APPENDIX B & KEY PLAN**

SHEET NUMBER:  
**G-102**



1 ROOF PLAN  
1/8"=1'-0"  
0 4' 8' 16'

### LEGEND

	ALTERNATE #1
	SLOPE IN STRUCTURE
	SLOPE IN INSULATION
	PARAPET WALL
	EXPANSION JOINT
	NEW CRICKET
	EXISTING EQUIPMENT CURB
	EXISTING SANITARY VENT
	NEW ROOF DRAIN AND SUMP
	EXISTING ROOF HATCH
	EXISTING HVAC UNIT
	EXISTING OVERFLOW SCUPPER
	NEW OVERFLOW SCUPPER
	NEW THROUGH WALL SCUPPER
	EXISTING DOWNSPOUT
	NEW WALKPADS

### CODE SUMMARY

NORTH CAROLINA BUILDING CODE (2012 EDITION) AND ASCE 7-10

BASIC WIND SPEED	= 120 MPH
BUILDING CATEGORY	= III
EXPOSURE CATEGORY	= B
INTERNAL PRESSURE COEF.	= +/- .18

THE NEW ROOF SYSTEM SHALL BE DESIGNED AND CONSTRUCTED TO MEET THE FOLLOWING WIND UPLIFT PRESSURES:

1. INTERIOR ZONE	= -26 PSF
2. EDGE ZONE: 4'	= -43 PSF
3. CORNER ZONE: 4'x4'	= -65 PSF

- ### GENERAL NOTES
- CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS.
  - CONTRACTOR IS TO MAINTAIN POSITIVE DRAINAGE.
  - TAPERED EDGE STRIP IS NOT SHOWN FOR CLARITY.
  - ROOF DECK IS GENERALLY SLOPED AT 1/4" PER FOOT, UNLESS INDICATED OTHERWISE.
  - CONTRACTOR SHALL NOTIFY ENGINEER AS SOON AS POSSIBLE IF CONDITIONS ARE FOUND THAT INHIBIT OR ALTER THE PROPER INSTALLATION OF MATERIALS.

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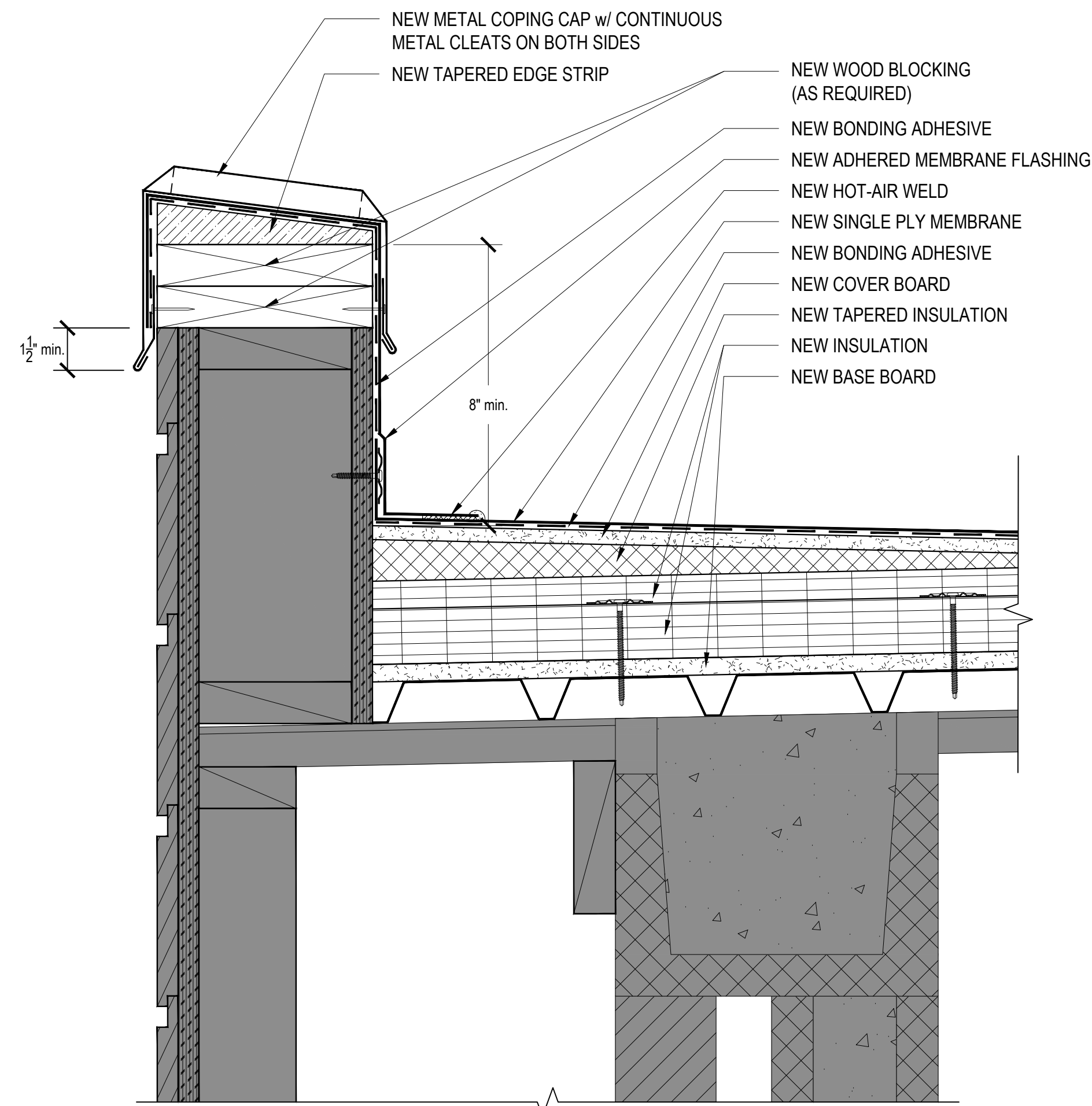
**ROOF PLAN**

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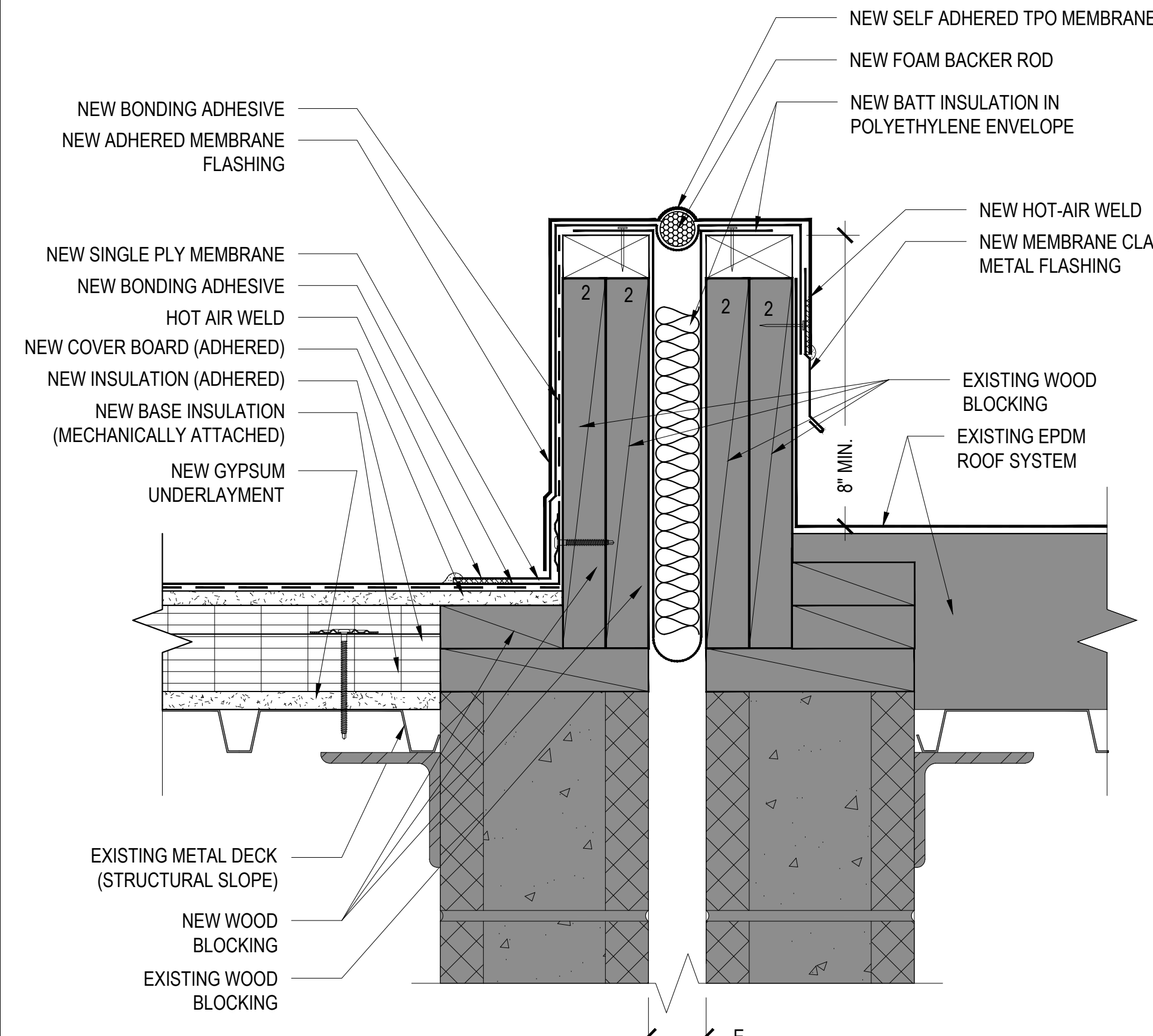
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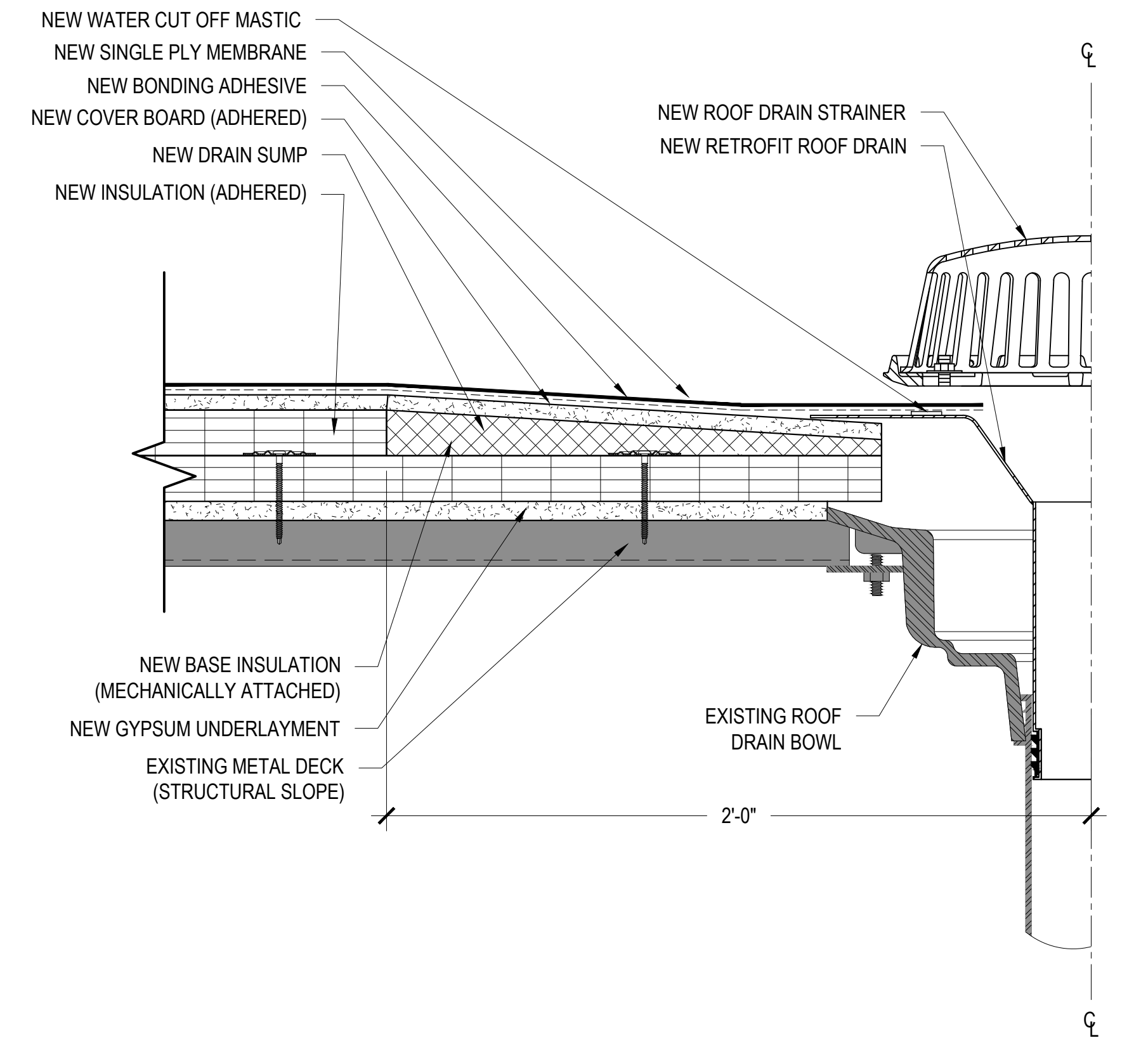




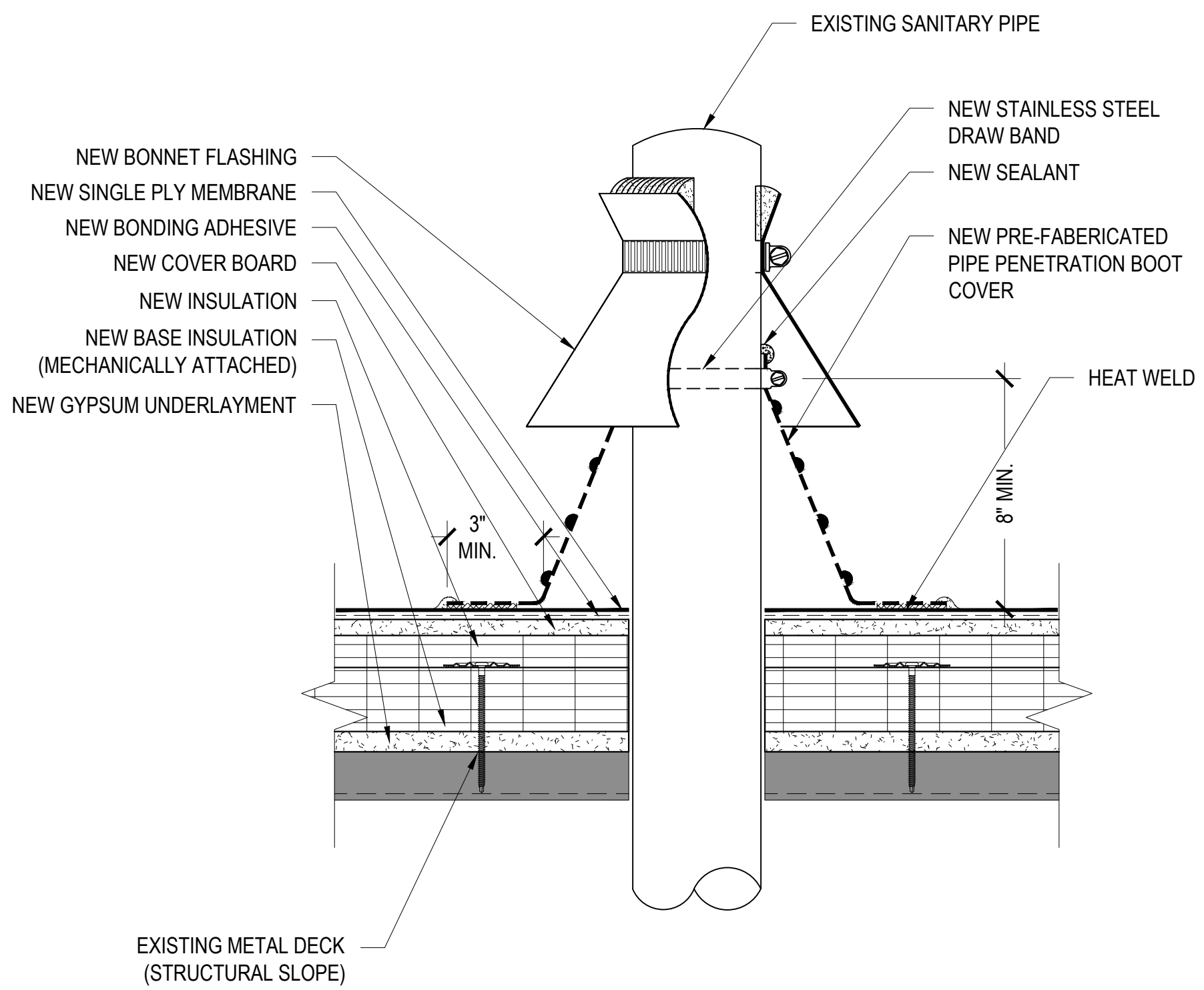
1 PARAPET WALL DETAIL  
3"=1'-0"



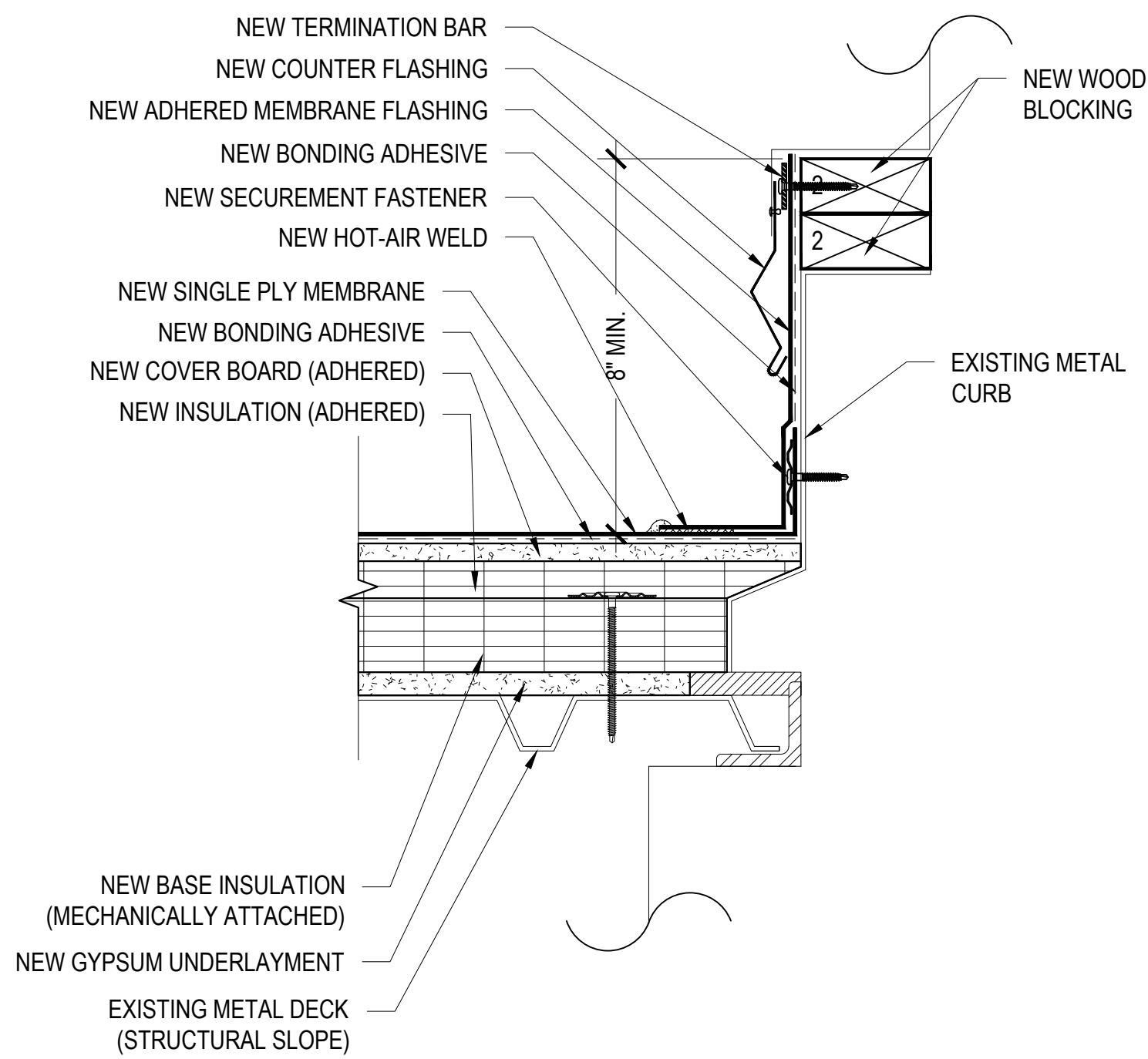
2 EXPANSION JOINT DETAIL  
3"=1'-0"



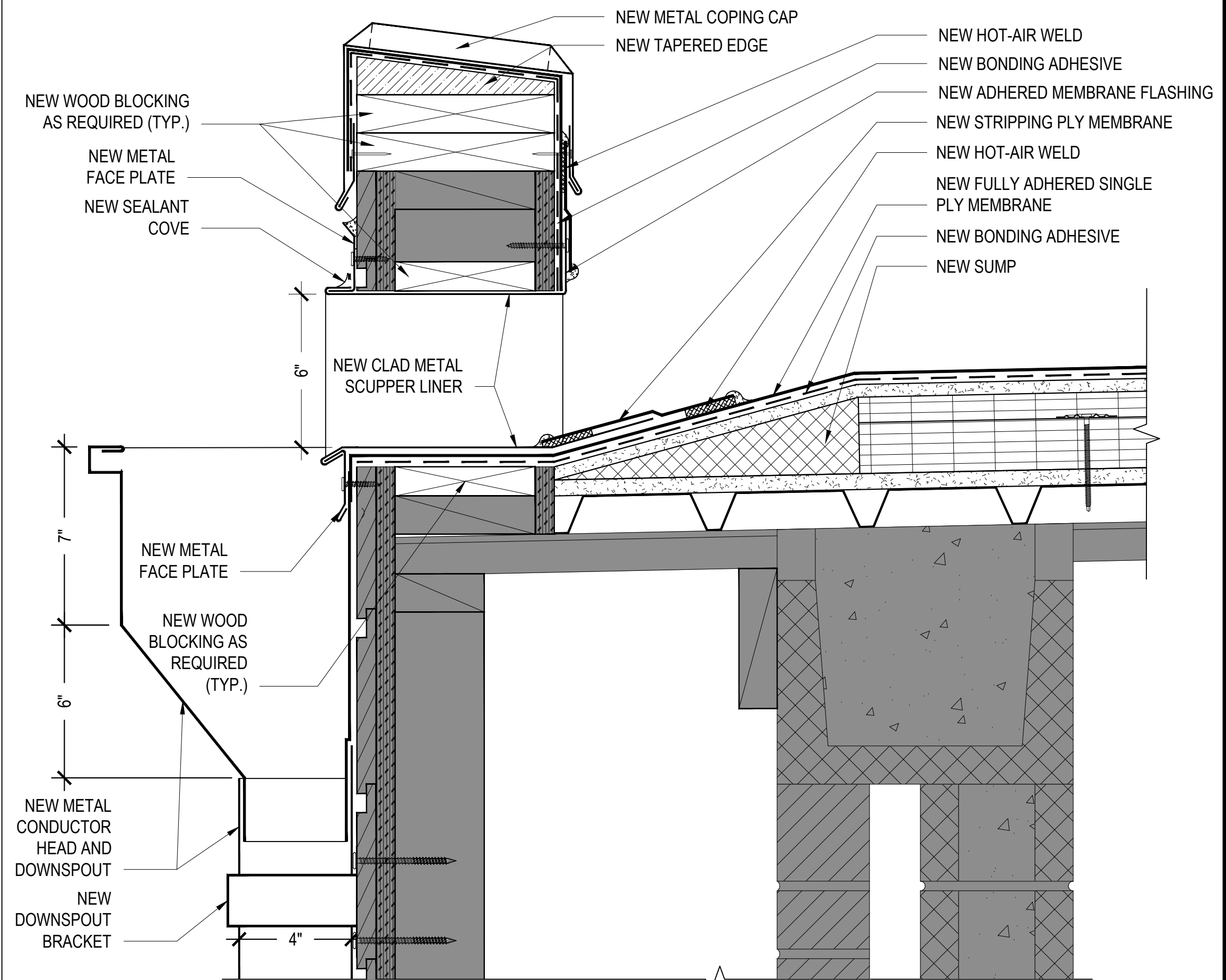
3 ROOF DRAIN DETAIL  
3"=1'-0"



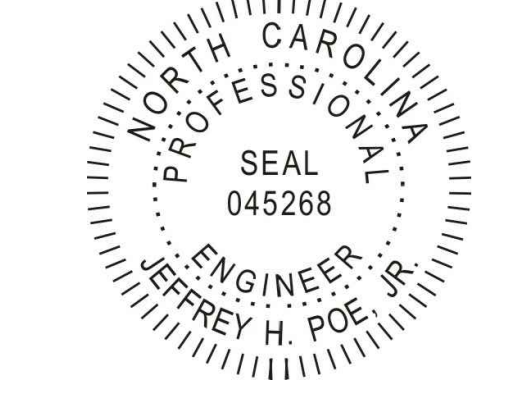
4 PIPE PENETRATION DETAIL  
3"=1'-0"



5 EQUIPMENT CURB DETAIL  
3"=1'-0"



6 THROUGH WALL SCUPPER DETAIL  
3"=1'-0"



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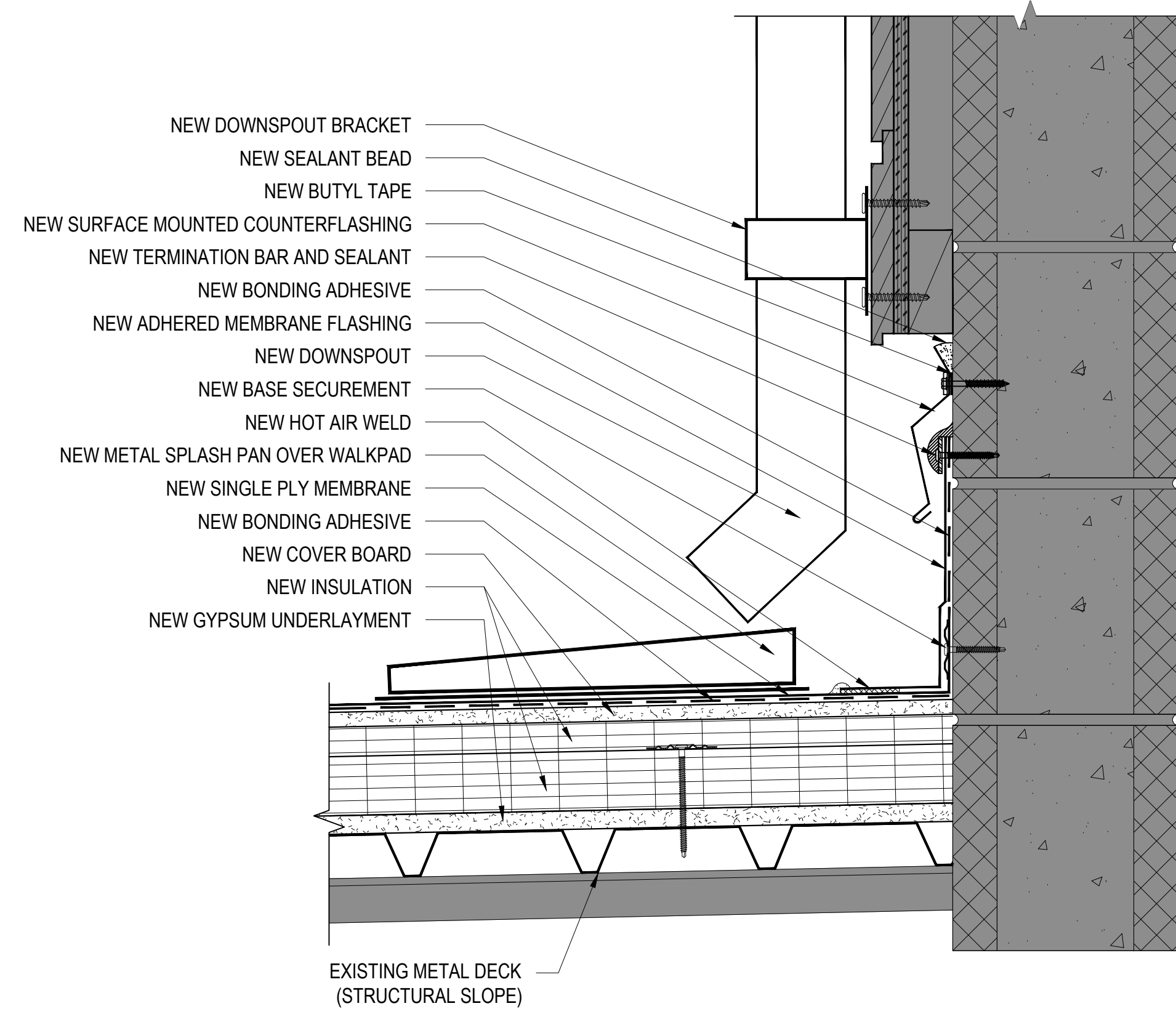
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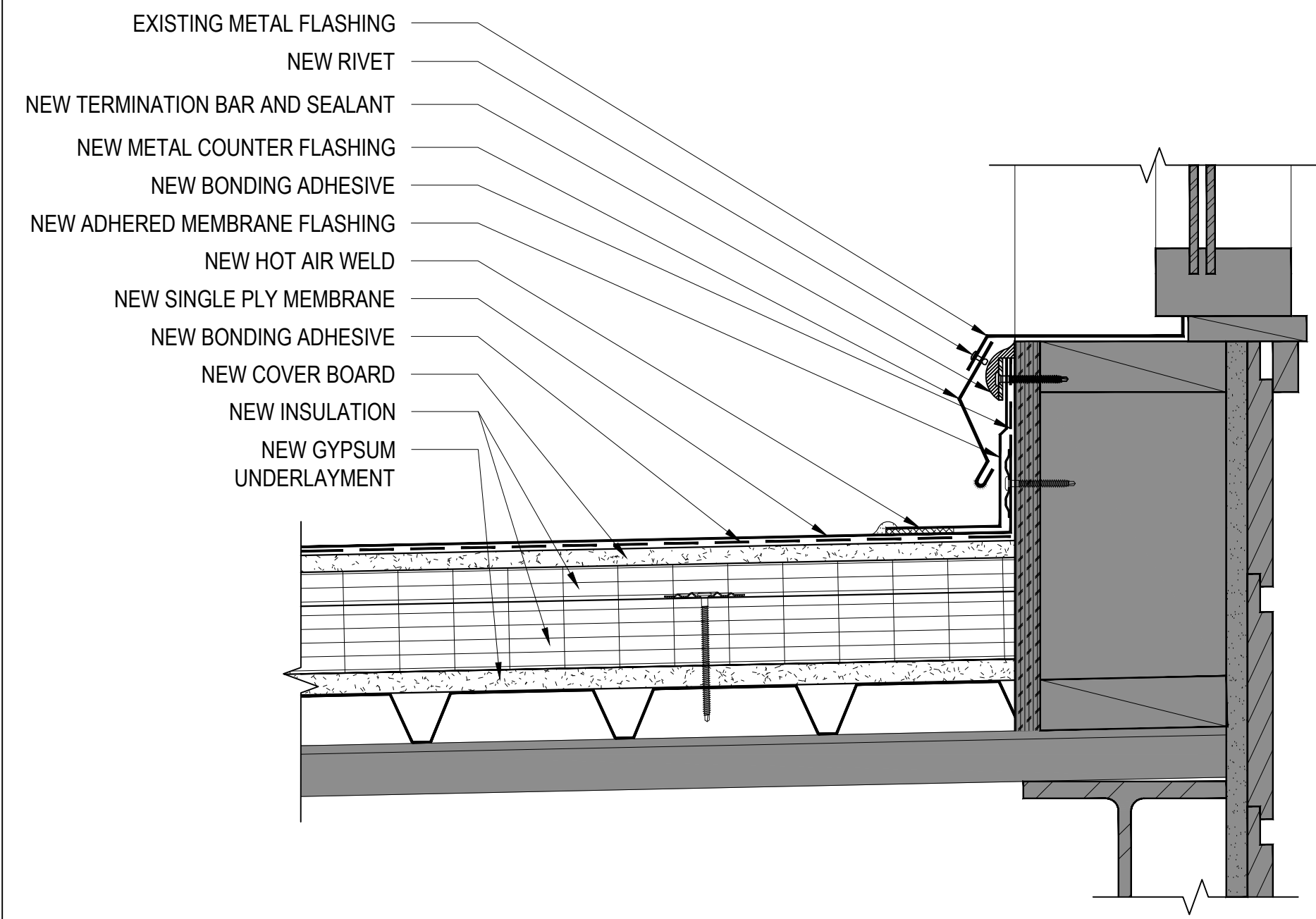
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**A-201**

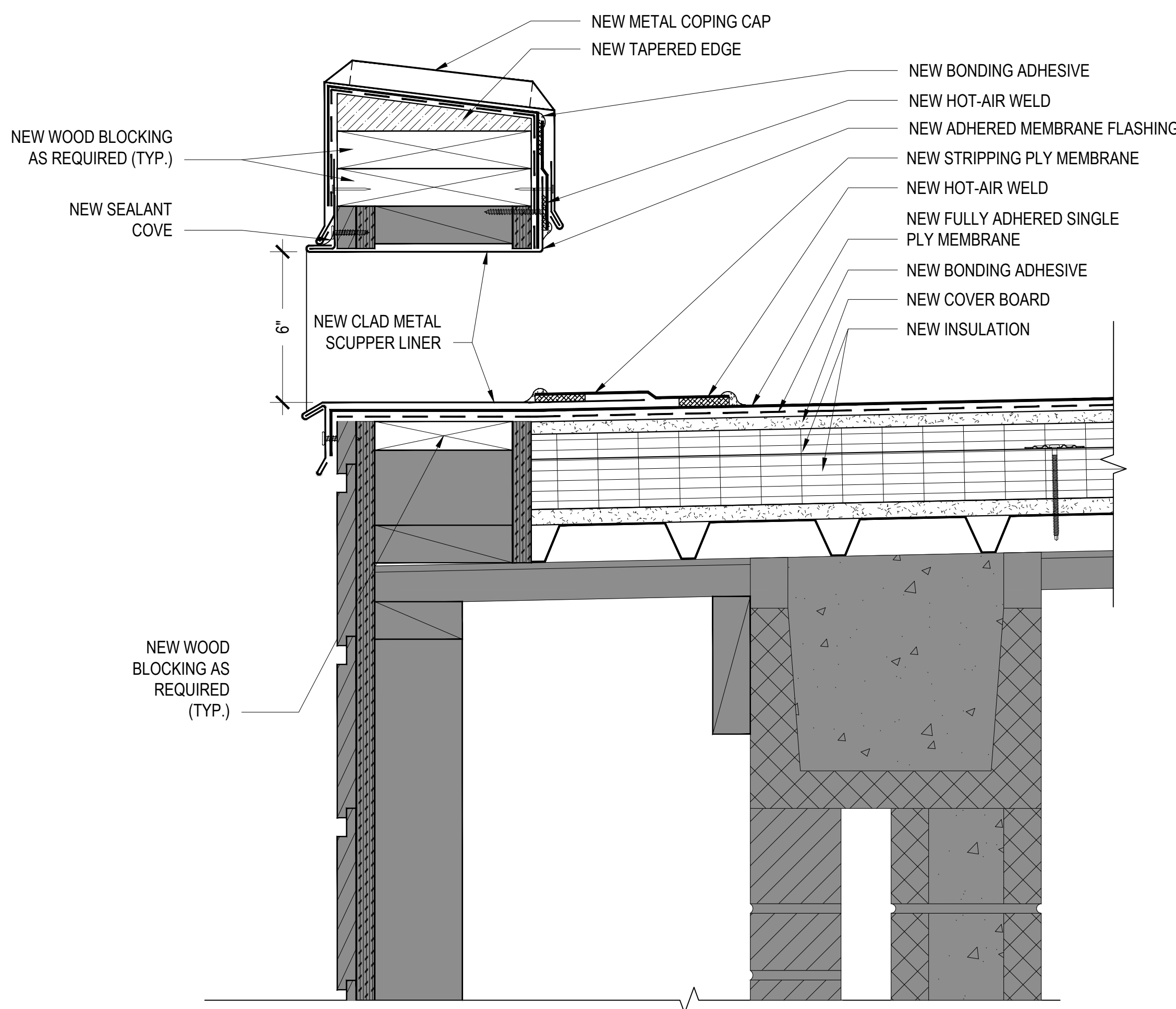




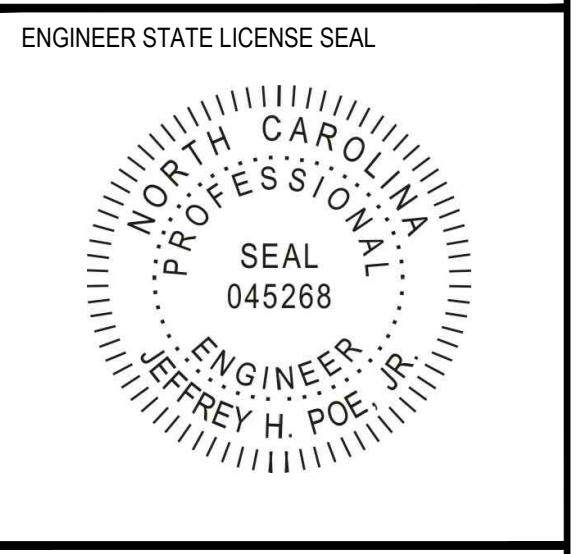
7 BASE FLASHING DETAIL  
3"=1'-0"



8 BASE FLASHING DETAIL  
3"=1'-0"



9 THROUGH WALL OVERFLOW SCUPPER DETAIL  
3"=1'-0"



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**DETAILS**

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**A-202**