

## SECTION 16750

### ASSISTIVE LISTENING DEVICE SYSTEMS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. All sections of Division 16 apply to this section.

##### 1.2 SUMMARY

- A. This section includes requirements for furnishing and installing a complete and operating Assistive Listening System (ALS).

##### 1.3 DEFINITIONS - NOT APPLICABLE

##### 1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specifications Sections.
  - 1) Product data: submit manufacturers data sheet including specifications, installation instructions, and general recommendations for each piece of equipment specified.
  - 2) Wiring diagrams, detailing wiring for power, signal, and control, differentiating clearly between manufacturer-installed wiring and field-installed wiring
  - 3) Dimensioned shop drawings showing transmitters, amplifiers, sensors, and other equipment installation locations, and wiring.
  - 4) Area of Coverage plan showing that all parts of the auditorium are covered.
  - 5) Maintenance data for materials and products, for inclusion in Operating and Maintenance Manual specified in Division 1. Provide complete manual material concurrently with system submittal. Update manual throughout project and provide as-built manual at project close-out. Include instructions for basic troubleshooting, preventive maintenance and cleaning of all equipment supplied.
  - 6) Product data for batteries and identify as alkaline type or rechargeable type.
  - 7) Maintenance recommendations for product batteries.

- 8) As built drawings indicating typical locations of all devices, sensors, emitters, transmitters and amplifiers. Provide additional details of any systems that are not installed in the typical manner.
- 9) Submit shop drawings for fabrication and erection of specialty signs. Include plans, elevations and large-scale details of sign wording and lettering layout. Show anchorages and accessory items. Furnish location template drawings for items supported or anchored to permanent construction

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: All work shall be done by expert technicians qualified in the field with knowledge of systems and detailed requirements for fine tuned performance. Workmanship shall comply with standard professional broadcast practice concerning grounding, shielding, cable dressing, cable termination and equipment mounting. All mounting holes shall be utilized for any equipment.
- B. Electrical component standard: provide work complying with applicable requirements of city of Chicago electrical code.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in factory containers. Store in clean, dry space in original containers. Protect products during construction from unintentional damage. Handle carefully to avoid damage.

#### 1.7 FUNCTION

- A. The system shall transmit via "FM" frequencies to the receiver units.
- B. The transmitter (FM) shall receive an output signal from the existing public address system.
- C. The system shall be capable of connecting to the existing public address system.
- D. Provide the minimum number of receivers to be hearing aid compatible complying with requirements of Chicago Building Code.

#### 1.8 WARRANTY

- A. All electronic equipment shall be new and of current model. Systems shall be guaranteed for a period of two (2) years from the date of completion against defective materials, inferior workmanship or improper installation adjustment.
- B. Guarantee shall cover all parts and labor.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:
  - 1. Audio Enhancement (Riverton, Utah)
  - 2. Comtek (Salt Lake City, Utah)
  - 3. Phonic Ear (Petaluma, California)
  - 4. Telex (Minneapolis, Minnesota)
  - 5. Williams Sound (Eden Prairie, Minnesota)

### 2.2 COMPONENTS FM SYSTEM

- A. Transmitter: The transmitter shall be microprocessor controlled with push button configuration. It shall have an operating range of up to 1000 feet. It shall have 10 wideband and 7 non-standard wideband channels operating on a frequency of 250MH2 minimum.
- B. The transmitter front panel shall have a push button controlled LCD digital display. There shall be three pre-configured (selectable) application presents: Hearing Assist, Music and Voice. The audio level shall be adjustable by push button control. There shall be a 10 LED array showing +9 to -18 at 3dB intervals. It shall have push button control for monitoring source audio or transmitted audio. It shall have an input overload indicator. It shall have an “on” indicator and power button.

### 2.3 CABLE

- A. Provide Class 2, or better loudspeaker and sensor wiring.
- B. Cables shall be marked with commercial wire markers and shall be designated with the architectural room number or description of the area served by the circuit.

### 2.4 RECEIVERS

- A. The receiver shall be encased in, polycarbonate impact-resistant plastic with a hinged door for battery installation. The receiver shall be a body-pack type and include a detachable belt-clip for hands-free operation. The receiver shall have a 3.5 mm mono phone jack and accommodate low-impedance mono earphones, headphones and neckloops telecoil couplers. The receiver shall have combination volume control and power on/off rotator dial, and a green LED power “on” indicator. The LED power “on” indicator shall illuminate red to indicate low battery power. There shall be a screwdriver adjustable tuning pot accessible through the batter door. There shall be a side selection switch located through the batter door for choosing Alkaline or NiMH battery operation. There shall be drop-in charger contracts on the bottom of the receiver unit. The receiver shall be filed adjustable by internal turning cold. The receiver shall operate 100 hours when using 1.5 V AA Alkaline batteries, and 50 hours when using 1.5 V NiMH

rechargeable AA Batteries. The receiver shall provide a maximum output of 35mW at 16 Ohms with an earbud-type earphone. The system's signal-to-noise ratio shall be 65 dB at 10 $\mu$ V. The receiver shall have a sensitivity of 2 $\mu$ V at 12 dB Sinad.

- B. The receiver shall have a selection of optional listening devices, including earbuds, headphones and inductive loops.
- C. Per Chicago Building Code provide a number of assistive listening receivers to be hearing aid compatible and provide and install interior signage informing general public of their availability. Location per plans.

### PART 3 - EXECUTION

#### 3.1 WIRING

- A. Provide interconnection to existing sound system and proper wiring.
- B. Provide power and wiring for all devices. Wiring shall be installed in raceways. Raceways installed in public areas shall be wiremold surface raceway.
- C. Reference Division 16 section "Conductors and Cables" for additional wiring requirements.

#### 3.2 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Verify field measurements are as shown on drawings as instructed by manufacturer.
- C. Provide the specified system in a complete and operating condition with all necessary materials and labor to fulfill the requirements and the intent of the specifications.
- D. Verify that required utilities are available, in proper locations, and ready for use.
- E. Verify and coordinate mounting height and exact locations of all mounting brackets with architectural details and elevations prior to installation.

#### 3.3 INSTALLATION OF AUDIO ENHANCEMENT SYSTEMS

- A. Install each system shown as indicated, in an accordance with equipment manufactures instructions, and with recognized industry practice, to ensure that system equipment comprise with requirements. Comply with requirements of NEC and applicable portions of NECA's "Standard of Installation" practices.
- B. Provide each individual system with a receiver / amplifier, teacher microphone, external sensors as required, speakers as required (minimum 4) and all cable necessary. Before rough in test each application for sensors and speakers required. Install sensors as required for complete coverage in all parts of the space. Coordinate the number of speakers required with the

reflected ceiling needs. Provide a back box for each speaker and verify all support requirements.

- C. Coordinate with other electrical work, including cable/wire, raceways, electrical boxes and fittings, as appropriate to interface installation with other systems work.
- D. Equipment Check-Out: Provide equipment checkout by a factory trained and authorized technician before energizing circuits. Make final connections under technician's direction.
- E. Locate transmitters / emitters in room for proper coverage. Quantity of transmitters / emitters shall be provided for proper coverage.

### 3.4 SYSTEM INTERCONNECTION

- A. Provide system electronic components in existing sound system for system interconnection.

### 3.5 CLEANING

- A. The contractor shall remove all paint spatters, spots, dirt, debris and foreign substances from the equipment. Clean equipment and devices internally and externally using methods and materials recommended by the manufacturer. Replace stained or improperly painted wall plates or devices. Remove labels that are not permanent.

### 3.6 COMMISSIONING, OWNER TRAINING, AND DEMONSTRATION

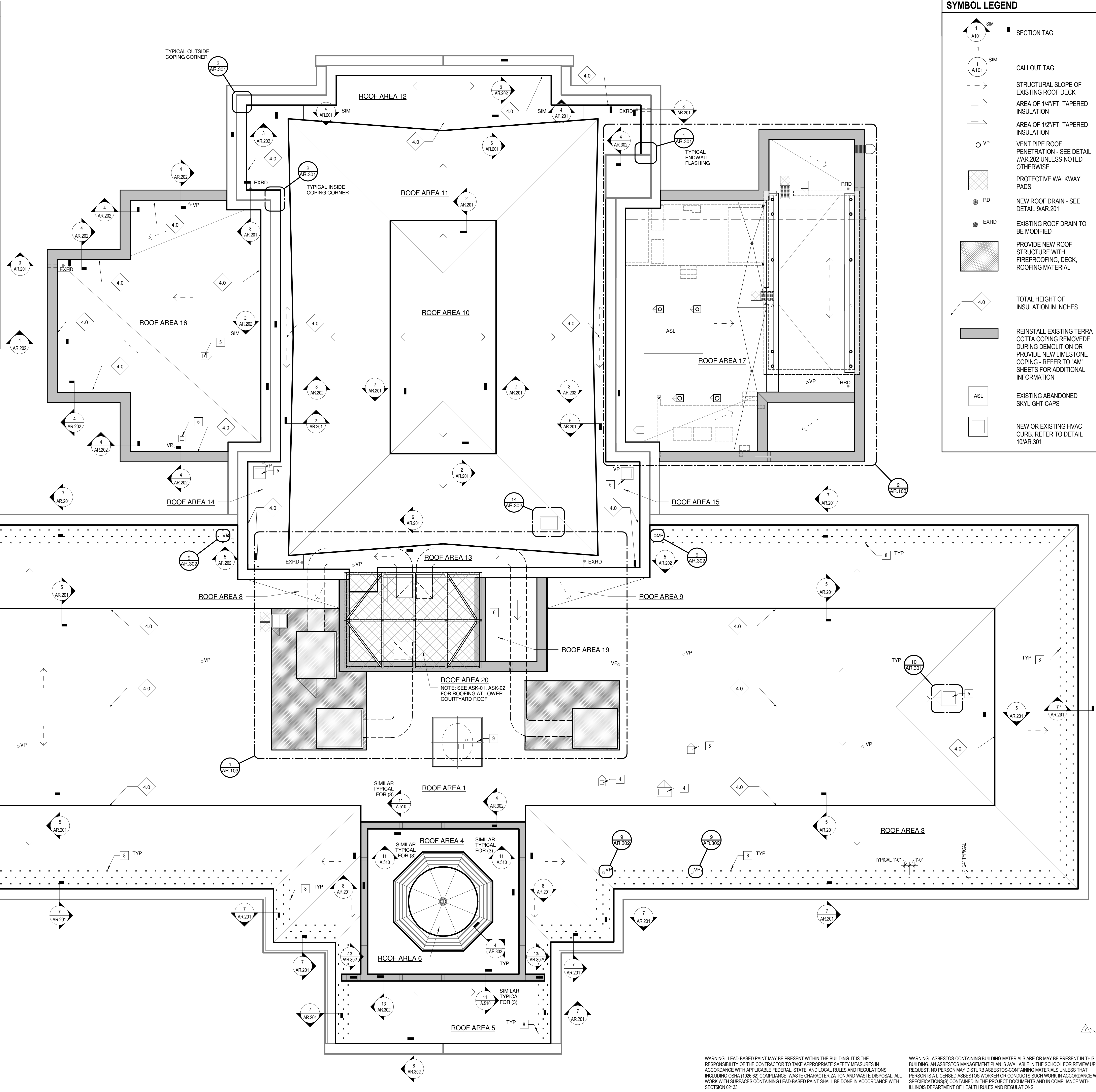
- A. Provide Owner Training of the basic principles of the ALS as well as the operation of the receivers, coupling devices, how to turn the system on and off, how to handle malfunctioning devices, other accessories and options as applies such as battery handling and or charging devices, collection and storage of the receivers for a given event including collateral handling options to loan of a receiver and disposing / replacing earbud tips.
- B. Provide sign-off's evidencing completion of Owner Training Sessions. Specifically list on the Training Form each of the components discussed above for staff to sign off.
- C. Provide (3) copies of a separate bound training manual.
- D. Demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed retesting.
- E. Employ manufacturer's field representative to demonstrate system operation to owner's personnel.
- F. Conduct walking tour of project and describe function, operation, and maintenance of each component as well as proof testing each component.
- G. Use submitted operation and maintenance manual as reference during demonstration and training.

CPS Control Rev: 2\_12/21/07  
Project Rev: A\_11/21/11

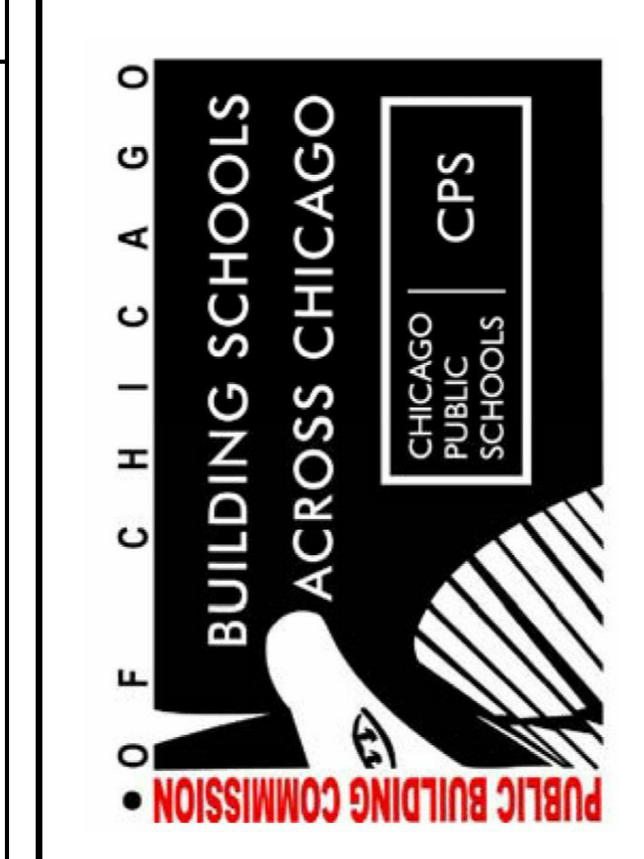
END OF SECTION 16750

- GENERAL NOTES**
- EXISTING ROOFING MATERIALS TO BE REMOVED CAREFULLY SO AS NOT TO DAMAGE THE EXISTING ROOF DECK.
  - ALL EXISTING ROOF PENETRATIONS INCLUDING ROOF CURBS AND VENT PIPES ARE TO BE EXTENDED AS REQUIRED, TO BE A MINIMUM OF 14" ABOVE THE ROOF MEMBRANE SURFACE.
  - ALL INSULATION JOINTS BOTH VERTICAL AND HORIZONTAL ARE TO BE STAGGERED.
- PLUMBING NOTES**
- ANY BUILDING COMPONENTS REMOVED OR DAMAGED DURING THE INSTALLATION OF THE NEW DRAINS AND DRAIN PIPES SHALL BE PATCHED TO MATCH EXISTING.
  - ALL NEW AND REPLACEMENT ROOF DRAINS TO HAVE THEIR BOWLS INSULATED.
  - ALL HORIZONTAL AND VERTICAL DRAIN PIPES TO BE INSULATED. ALL DRAIN PIPES PASSING THRU WALLS, SOFFITS, OR THE LIKE SHALL HAVE ESCHEMOR PLATES ON BOTH SIDES.
  - ALL EXPOSED DRAIN PIPE INSULATION TO BE PAINTED.
  - ALL DISTURBED AREAS TO BE PATCHED TO MATCH EXISTING.
  - ROD ALL ROOF DRAINS PRIOR TO START OF CONSTRUCTION AND FOLLOWING THE COMPLETION OF CONSTRUCTION.
- FLASHING NOTES**
- THE FOLLOWING NOTES APPLY TO METAL FLASHING CONDITIONS.
- ALL METAL FLASHING FLANGES ARE TO BE SET IN ROOF CEMENT.
  - FIELD VERIFY ALL CONDITIONS PRIOR TO SUBMITTING SHOP DRAWINGS.
  - ISOMETRIC DRAWINGS ARE DIAGRAMATIC.
  - ALL SCREW ANCHOR LOCATIONS TO HAVE PRE-DRILLED 5/16" PLOT HOLES.
  - NON-EXPOSED NAIL FASTENERS TO BE 1-1/2" RING SHANK ROOFING NAILS.
  - NON-EXPOSED SCREW ANCHORS INTO WOOD TO BE 1-1/4" X 3/16" TAPCONS WITH CUMASEAL CORROSION RESISTIVE COATING AND NEOPRENE WASHERS.
  - EXPOSED SCREW FASTENERS INTO SHEET METAL TO BE 3/4" X 3/16" STAINLESS STEEL SCREWS WITH NEOPRENE WASHERS.
  - FIELD VERIFY ALL CONDITIONS PRIOR TO FABRICATION.
  - REFER TO DETAIL 7AR.301 FOR COUNTERFLASHING LAP JOINT.
  - REFER TO DETAILS 5AR.301 AND 6AR.301 FOR HORIZONTAL AND VERTICAL JOINTS AT METAL COPINGS.
  - ALL JOINTS AT WOOD BLOCKING SHALL BE MITERED. REFER TO DETAIL 4AR.301.
- PLAN NOTES**
- PROVIDE TELESCOPING SAFETY POST AT EXISTING ATTIC ACESSES LADDER. SEE 8A511 FOR DETAIL. SEE 1A.132 FOR LOCATIONS.
  - PROVIDE NEW PROTECTIVE WALKWAY PADS.
  - PROVIDE NEW METAL BRD SCREEN.
  - PROVIDE FLASHING AT NEW PREMANUFACTURED ROOF CURBS.
  - PROVIDE CURB EXTENSION.
  - PATCH OPENING IN ROOF DECK AT REMOVED MECHANICAL UNIT.
  - REINSTALL EXISTING ROOF HATCH.
  - PROVIDE NEW SNOW RETENTION CLIPS.
  - REINSTALL EXISTING SATELLITE DISH. RECONNECT EXISTING POWER AND DATA.
  - EXISTING ROOF-MOUNTED CONDUIT. PROVIDE PIPE SUPPORT CURBS AT MAXIMUM 8'-0" O.C. REFER TO DETAIL 2AR.302.

- ROOF CONSTRUCTION NOTES**
- REFER TO THE PROJECT SPECIFICATIONS FOR ACCEPTABLE MATERIALS AND INSTALLATION REQUIREMENTS.
- ROOF AREA 1** 1.4, 7.14, 15, 16, 17, 18: CLAY TILE DECK  
+873.2 SF, 598SF, 633.5 SF, 494.5 SF, 446 SF, 17950.8 SF, 2416.1 SF, 184.5 SF.
- 2 PLY VAPOR RETARDER/TEMPORARY ROOF.
  - PROVIDE NEW HVAC ROOF CURBS.
  - RAISE EXISTING PLUMBING VENTS AND ROOF CURBS.
  - (2) LAYERS OF 2" RIGID POLYISOCYANURATE INSULATION - SET IN HOT ASPHALT.
  - TAPERED RIGID POLYISOCYANURATE INSULATION SUMPS AND SADDLES - SET IN HOT ASPHALT.
  - 1/2" COVER BOARD - SET IN HOT ASPHALT.
  - MODIFIED BITUMEN ROOF SYSTEM - SET IN HOT ASPHALT.
  - SHEET METAL FLASHINGS.
- ROOF AREA 2** 2.3, 5, 11: CLAY TILE DECK  
+4503.8 SF, 4515.1 SF, 578.5 SF, 4486.0 SF
- 2" NAILBASE INSULATION.
  - SELF ADHERED ICE AND WATER SHIELD.
  - 30# ROOFING FELT.
  - ASPHALT SHINGLES.
  - SHEET METAL FLASHINGS.
- ROOF AREA 6**: EXISTING COPPER ROOF TO REMAIN.
- ROOF AREA 8, 9**: WOOD FRAMED SADDLES  
+57.3 SF, 65.7 SF
- 2" NAILBASE INSULATION.
  - SELF ADHERED ICE AND WATER SHIELD.
  - FLAT SCAM COPPER SADDLE SYSTEM.
  - SHEET METAL FLASHINGS.
- ROOF AREA 10**: WOOD DECK  
+249.2 SF, 515.2 SF
- 3/4" TREATED PLYWOOD SHEATHING.
  - 2" NAILBASE INSULATION.
  - SELF ADHERED ICE AND WATER SHIELD.
  - 30# ROOFING FELT.
  - ASPHALT SHINGLES.
  - SHEET METAL FLASHINGS.
- ROOF AREA 12**: WOOD DECK  
+249.2 SF, 515.2 SF
- 3/4" TREATED PLYWOOD SHEATHING.
  - SAME AS ROOF AREAS 1, 4, 7, 14, 15, 16, 17, 18 ABOVE.
- ROOF AREA 19**: 20: METAL DECK
- 2 PLY VAPOR RETARDER/TEMPORARY ROOF.
  - (2) LAYERS OF 2" RIGID POLYISOCYANURATE INSULATION - SET IN HOT ASPHALT.
  - TAPERED RIGID POLYISOCYANURATE INSULATION SUMPS AND SADDLES - SET IN HOT ASPHALT.
  - 1/2" COVER BOARD - SET IN HOT ASPHALT.
  - MODIFIED BITUMEN ROOF SYSTEM - SET IN HOT ASPHALT.
  - SHEET METAL FLASHINGS.



- SYMBOL LEGEND**
- SECTION TAG
  - CALLOUT TAG
  - STRUCTURAL SLOPE OF EXISTING ROOF DECK
  - AREA OF 1/4" FT. TAPERED INSULATION
  - AREA OF 1/2" FT. TAPERED INSULATION
  - VENT PIPE ROOF PENETRATION - SEE DETAIL 7/AR.202 UNLESS NOTED OTHERWISE
  - PROTECTIVE WALKWAY PADS
  - NEW ROOF DRAIN - SEE DETAIL 9/AR.201
  - EXISTING ROOF DRAIN TO BE MODIFIED
  - PROVIDE NEW ROOF STRUCTURE WITH FIREPROOFING, DECK, ROOFING MATERIAL
  - TOTAL HEIGHT OF INSULATION IN INCHES
  - REINSTALL EXISTING TERRA COTTA COPING REMOVE DURING DEMOLITION OR PROVIDE NEW LIMESTONE COPING - REFER TO "AM" SHEETS FOR ADDITIONAL INFORMATION
  - EXISTING ABANDONED SKYLIGHT CAPS
  - NEW OR EXISTING HVAC CURB. REFER TO DETAIL 10/AR.301



**Henderson Elementary School Renovations Phase II**

5660 S. Wolcott Avenue  
Chicago, IL 60636

CHICAGO PUBLIC SCHOOLS  
CITY OF CHICAGO, ILLINOIS

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Chicago, IL

**CYLA**  
Landscape Architect  
Oak Park, IL

Issuance

NO.	DESCRIPTION	DATE
1	Phase 1 - Toilet Rooms	06/01/11
2	Issued for Permits - Phase I	06/09/11
3	100% DD - Phase II	06/24/11
4	60% CD - Phase II	09/23/11
5	90% CD - Phase II	10/21/11
6	Issued for Bid	11/08/11
7	Addendum 1	11/28/11

DATE OF ISSUE: 11-28-2011  
PBC Project Name: Henderson Elem.School Ren. Phase II  
PBC Contract No.: 05813  
Legat Project No.: 211060.00

Roof Plan

**AR.102**  
ISSUED FOR BID

**1 ROOF PLAN**  
1/8" = 1'-0"

NO.	DESCRIPTION	DATE
1	Phase 1 - Toilet Rooms	06/01/11
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Roof Enlarged Plans

**AR.103**  
ISSUED FOR BID

**GENERAL NOTES**

- EXISTING ROOFING MATERIALS TO BE REMOVED CAREFULLY SO AS NOT TO DAMAGE THE EXISTING ROOF DECK.
- ALL EXISTING ROOF PENETRATIONS INCLUDING ROOF CURBS AND VENT PIPES ARE TO BE EXTENDED, AS REQUIRED, TO BE A MINIMUM OF 14" ABOVE THE ROOF MEMBRANE SURFACE.
- ALL INSULATION JOINTS BOTH VERTICAL AND HORIZONTAL ARE TO BE STAGGERED.

**PLUMBING NOTES**

- ANY BUILDING COMPONENTS REMOVED OR DAMAGED DURING THE INSTALLATION OF THE NEW DRAINS AND DRAIN PIPES SHALL BE PATCHED TO MATCH EXISTING.
- ALL NEW AND REPLACEMENT ROOF DRAINS TO HAVE THEIR BOWS INSULATED.
- ALL HORIZONTAL AND VERTICAL DRAIN PIPES TO BE INSULATED.
- ALL DRAIN PIPES PASSING THRU WALLS, SOFFITS, OR THE LIKE SHALL HAVE ESCUTCHEON PLATES ON BOTH SIDES.
- ALL EXPOSED DRAIN PIPE INSULATION TO BE PAINTED.
- ALL DISTURBED AREAS TO BE PATCHED TO MATCH EXISTING.
- ROOF ALL ROOF DRAINS PRIOR TO START OF CONSTRUCTION AND FOLLOWING THE COMPLETION OF CONSTRUCTION.

**FLASHING NOTES**

THE FOLLOWING NOTES APPLY TO METAL FLASHING CONDITIONS.

- ALL METAL FLASHING FLANGES ARE TO BE SET IN ROOF CEMENT.
- FIELD VERIFY ALL CONDITIONS PRIOR TO SUBMITTING SHOP DRAWINGS.
- ISOMETRIC DRAWINGS ARE DIAGRAMATIC.
- ALL SCREW ANCHOR LOCATIONS TO HAVE PRE-DRILLED 5/16" PILOT HOLES.
- NON-EXPOSED NAIL FASTENERS TO BE 1-1/2" RING SHANK ROOFING NAILS.
- NON-EXPOSED SCREW ANCHORS INTO WOOD TO BE 1-1/4" X 3/16" TAPCONS WITH CUMASEAL CORROSION RESISTIVE COATING AND NEOPRENE WASHERS.
- EXPOSED SCREW FASTENERS INTO SHEET METAL TO BE 3/4" X 3/16" STAINLESS STEEL SCREWS WITH NEOPRENE WASHERS.
- FIELD VERIFY ALL CONDITIONS PRIOR TO FABRICATION.
- REFER TO DETAIL 7AR.301 FOR COUNTERFLASHING LAP JOINT.
- REFER TO DETAILS 5AR.301 AND 6AR.301 FOR HORIZONTAL AND VERTICAL JOINTS AT METAL COPINGS.
- ALL JOINTS AT WOOD BLOCKING SHALL BE MITERED. REFER TO DETAIL 4AR.301.

**ROOF CONSTRUCTION NOTES**

REFER TO THE PROJECT SPECIFICATIONS FOR ACCEPTABLE MATERIALS AND INSTALLATION REQUIREMENTS.

ROOF AREA 1,4,7,14,15,16,17,18: CLAY TILE DECK  
+5873.2 SF, 5985F, 633.5 SF, 494.5 SF, 446 SF, 17950.8 SF, 2416.1 SF, 184.8 SF.

- 2 PLY VAPOR RETARDER/TEMPORARY ROOF.
- PROVIDE NEW HVAC ROOF CURBS.
- RAISE EXISTING PLUMBING VENTS AND ROOF CURBS.
- (2) LAYERS OF 2" RIGID POLYISOCYANURATE INSULATION - SET IN HOT ASPHALT.
- TAPERED RIGID POLYISOCYANURATE INSULATION SUMPS AND SADDLES - SET IN HOT ASPHALT.
- 1/2" COVER BOARD - SET IN HOT ASPHALT.
- MODIFIED BITUMEN ROOF SYSTEM - SET IN HOT ASPHALT.
- SHEET METAL FLASHINGS.

ROOF AREA 2,3,5,11: CLAY TILE DECK  
+4503.6 SF, 4515.1 SF, 579.5 SF, 486.0 SF.

- 2" NALBASE INSULATION
- SELF-ADHERED ICE AND WATER SHIELD.
- 30# ROOFING FELT.
- ASPHALT SHINGLES.
- SHEET METAL FLASHINGS.

ROOF AREA 6: EXISTING COPPER ROOF TO REMAIN.

ROOF AREA 8,9: WOOD FRAMED SADDLES  
+57.3 SF, 65.7 SF.

- 2" NALBASE INSULATION
- SELF-ADHERED ICE AND WATER SHIELD
- FLAT SEAM COPPER SADDLE SYSTEM
- SHEET METAL FLASHINGS

ROOF AREA 10: WOOD DECK

- 3/4" TREATED PLYWOOD SHEATHING
- 2" NALBASE INSULATION
- SELF-ADHERED ICE AND WATER SHIELD
- 30# ROOFING FELT
- ASPHALT SHINGLES
- SHEET METAL FLASHINGS

ROOF AREA 12,13: WOOD DECK  
+249.2 SF, 315.3 SF.

- 3/4" TREATED PLYWOOD SHEATHING.
- SAME AS ROOF AREAS 1,4,7,14,15,16,17,18 ABOVE

ROOF AREA 19,20: METAL DECK

- 2 PLY VAPOR RETARDER/TEMPORARY ROOF.
- (2) LAYERS OF 2" RIGID POLYISOCYANURATE INSULATION - SET IN HOT ASPHALT.
- TAPERED RIGID POLYISOCYANURATE INSULATION SUMPS AND SADDLES - SET IN HOT ASPHALT.
- 1/2" COVER BOARD - SET IN HOT ASPHALT.
- MODIFIED BITUMEN ROOF SYSTEM - SET IN HOT ASPHALT.
- SHEET METAL FLASHINGS.

**PLAN NOTES**

- PROVIDE TELESCOPING SAFETY POST AT EXISTING ATTIC ACCESS LADDER. SEE 8AS1 FOR DETAIL. SEE 10A.132 FOR LOCATIONS.
- PROVIDE NEW PROTECTIVE WALKWAY PADS.
- PROVIDE NEW METAL BIRD SCREEN.
- PROVIDE FLASHING AT NEW PREMANUFACTURED ROOF CURBS.
- PROVIDE CURB EXTENSION.
- PATCH OPENING IN ROOF DECK AT REMOVED MECHANICAL UNIT.
- REINSTALL EXISTING ROOF HATCH.
- PROVIDE NEW SNOW RETENTION CLIPS.
- REINSTALL EXISTING SATELLITE DISH. RECONNECT EXISTING POWER AND DATA.
- EXISTING ROOF-MOUNTED CONDUIT. PROVIDE PIPE SUPPORT CURBS AT MAXIMUM 8'-0" O.C. REFER TO DETAIL 2AR.302.

**SYMBOL LEGEND**

SECTION TAG

CALLOUT TAG

STRUCTURAL SLOPE OF EXISTING ROOF DECK

AREA OF 1/4" FT. TAPERED INSULATION

AREA OF 1/2" FT. TAPERED INSULATION

VENT PIPE ROOF PENETRATION - SEE DETAIL 7AR.202 UNLESS NOTED OTHERWISE

PROTECTIVE WALKWAY PADS

NEW ROOF DRAIN - SEE DETAIL 9AR.201

EXISTING ROOF DRAIN TO BE MODIFIED

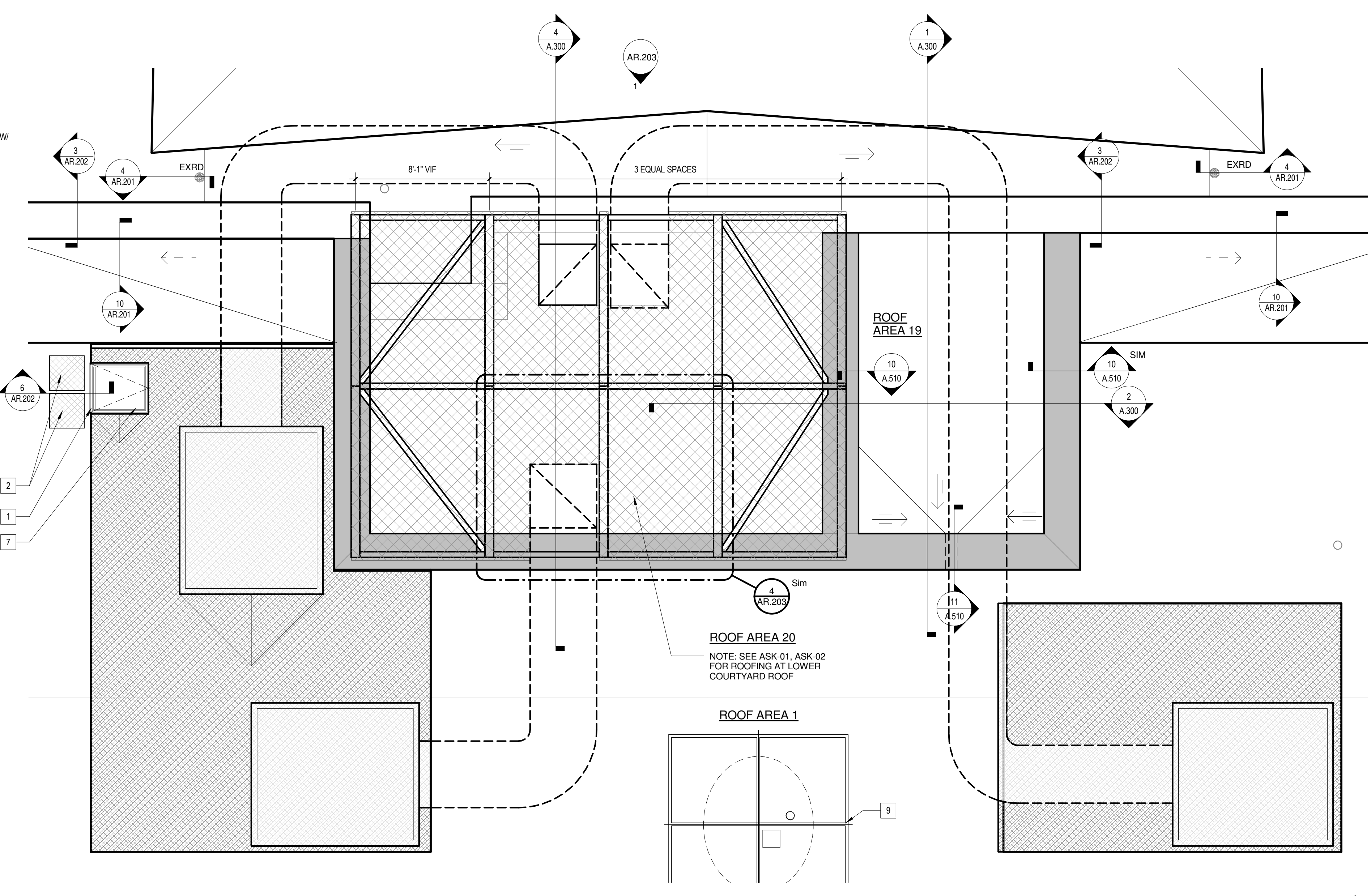
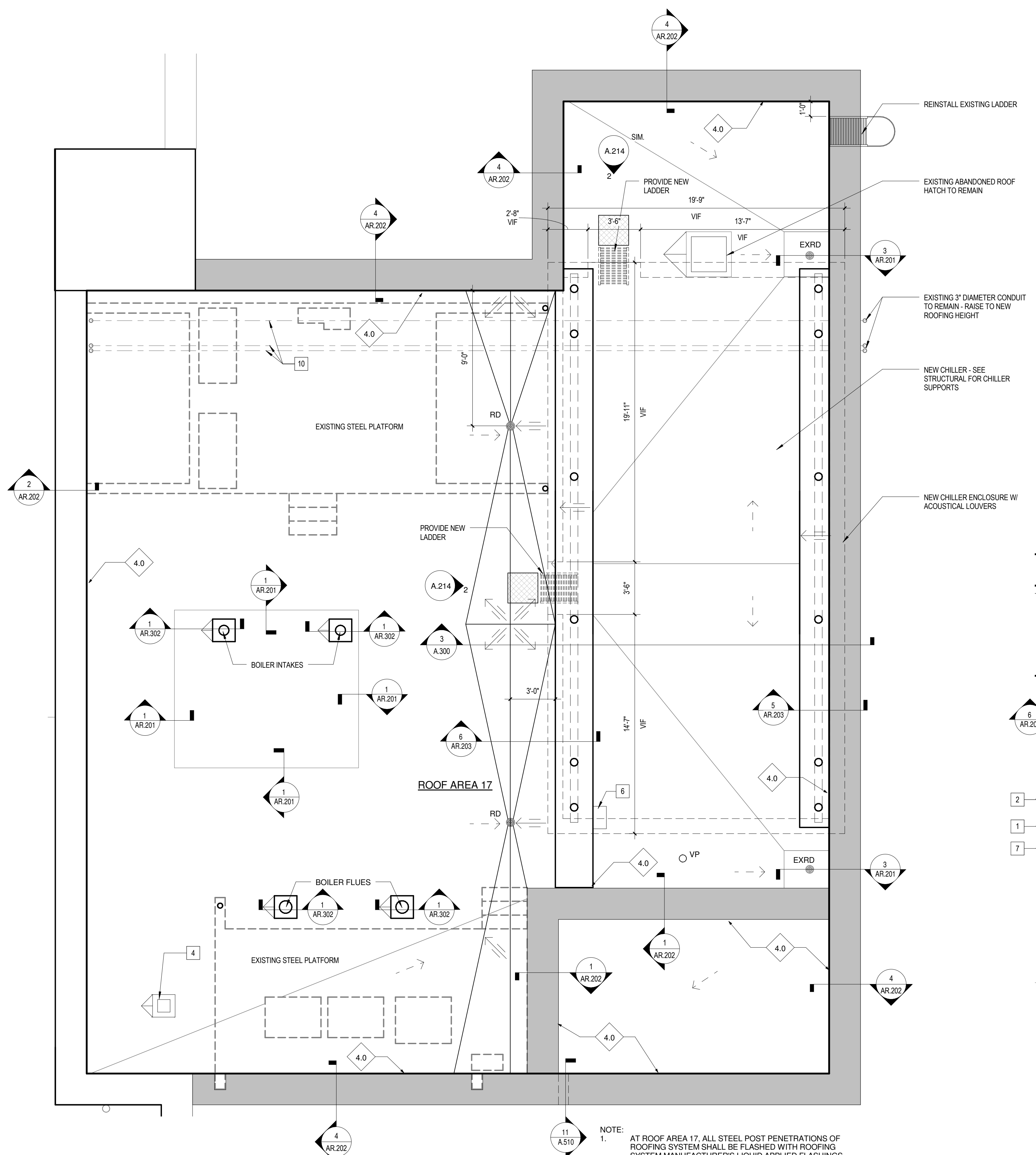
PROVIDE NEW ROOF STRUCTURE WITH FIREPROOFING DECK, ROOFING MATERIAL

TOTAL HEIGHT OF INSULATION IN INCHES

REINSTALL EXISTING TERRA COTTA COPING REMOVED DURING DEMOLITION OR PROVIDE NEW LIMESTONE COPING - REFER TO "AM" SHEETS FOR ADDITIONAL INFORMATION

EXISTING ABANDONED SKYLIGHT CAPS

NEW OR EXISTING HVAC CURB. REFER TO DETAIL 10AR.301



2 Callout of P - Roof Plan - Phase II  
1/4" = 1'-0"

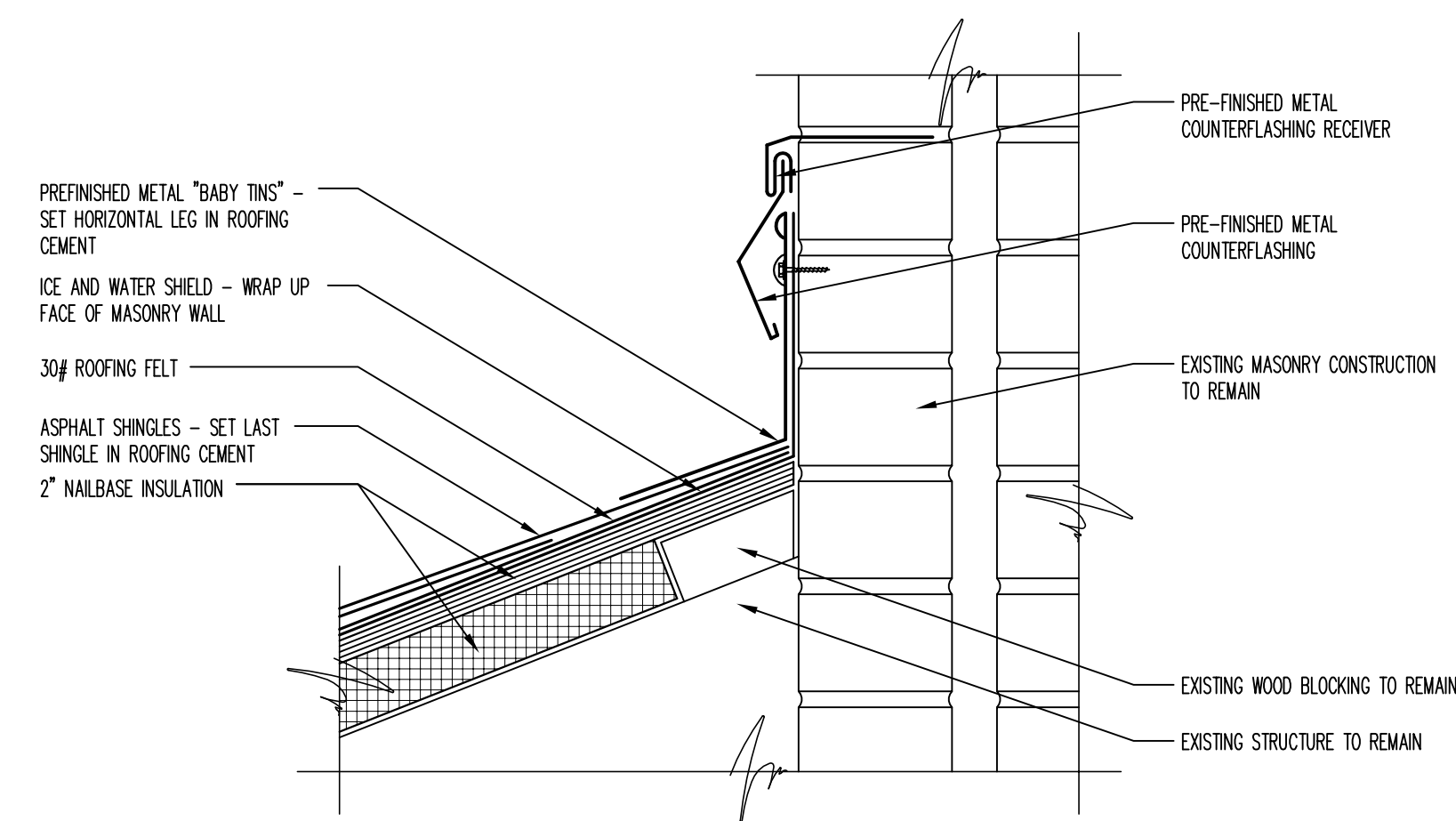
1 ENLARGED ROOF PLAN - COURTYARD  
1/4" = 1'-0"

NOTE:  
1. AT ROOF AREA 17, ALL STEEL POST PENETRATIONS OF ROOFING SYSTEM SHALL BE FLASHED WITH ROOFING SYSTEM MANUFACTURER'S LIQUID APPLIED FLASHINGS.

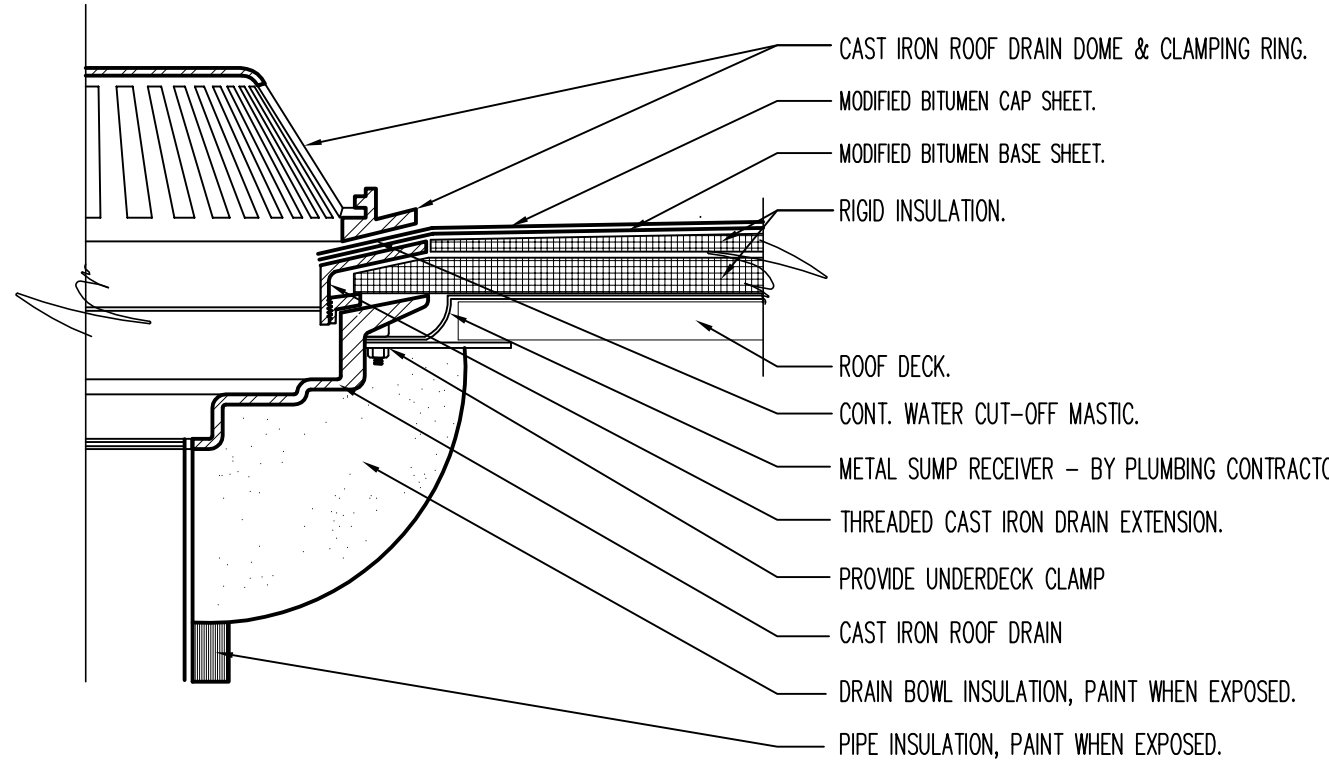
WARNING: LEAD-BASED PAINT MAY BE PRESENT WITHIN THE BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS INCLUDING OSHA (1926.62) COMPLIANCE, WASTE CHARACTERIZATION AND WASTE DISPOSAL. ALL WORK WITH SURFACES CONTAINING LEAD-BASED PAINT SHALL BE DONE IN ACCORDANCE WITH SECTION 02133.

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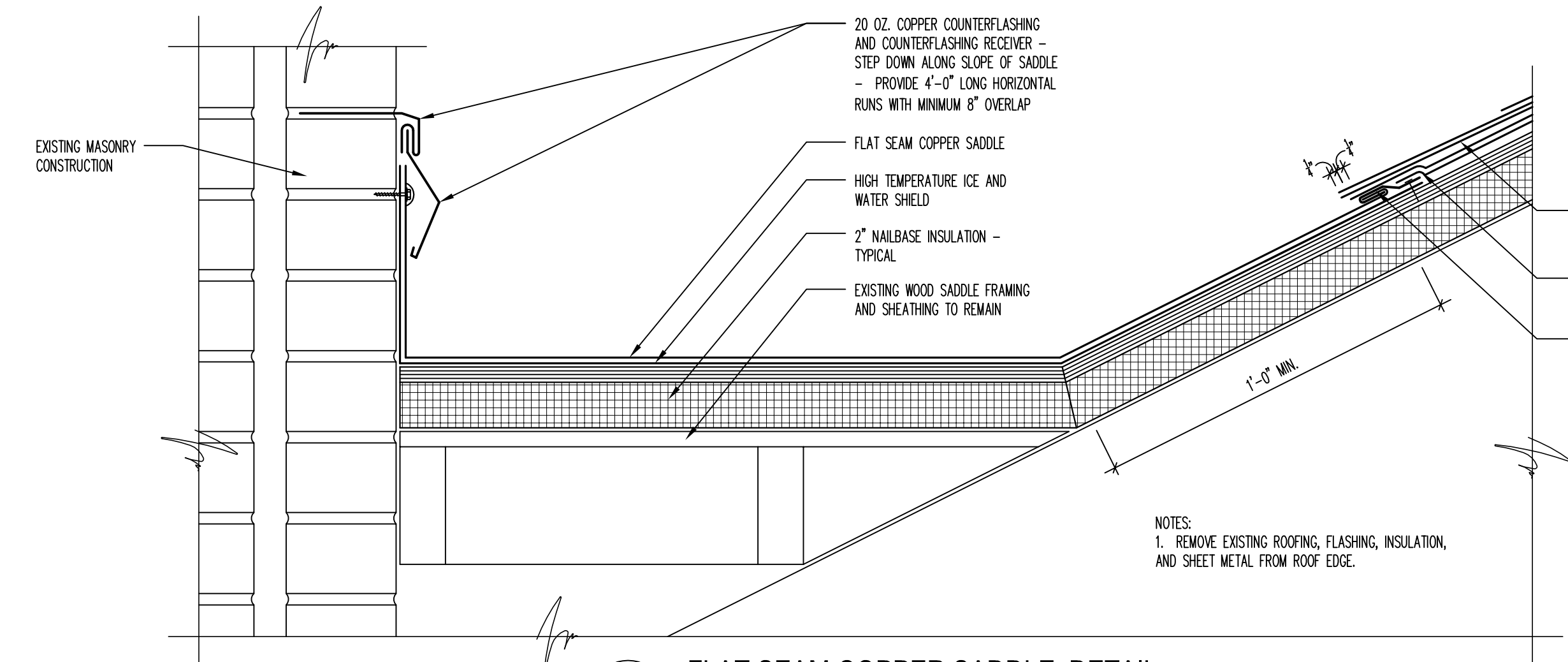




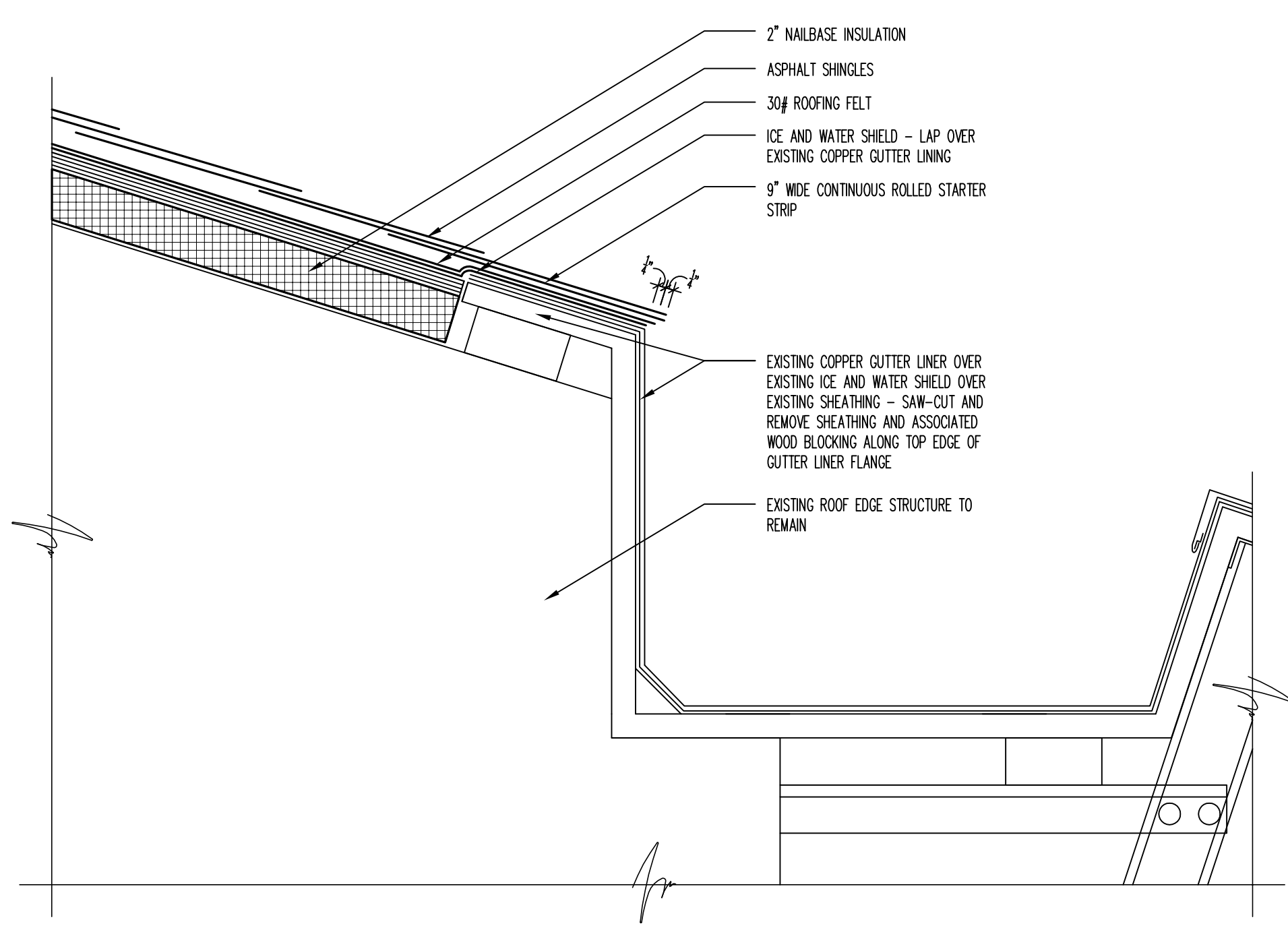
8 ROOF TERMINATION DETAIL  
3" = 1'-0"



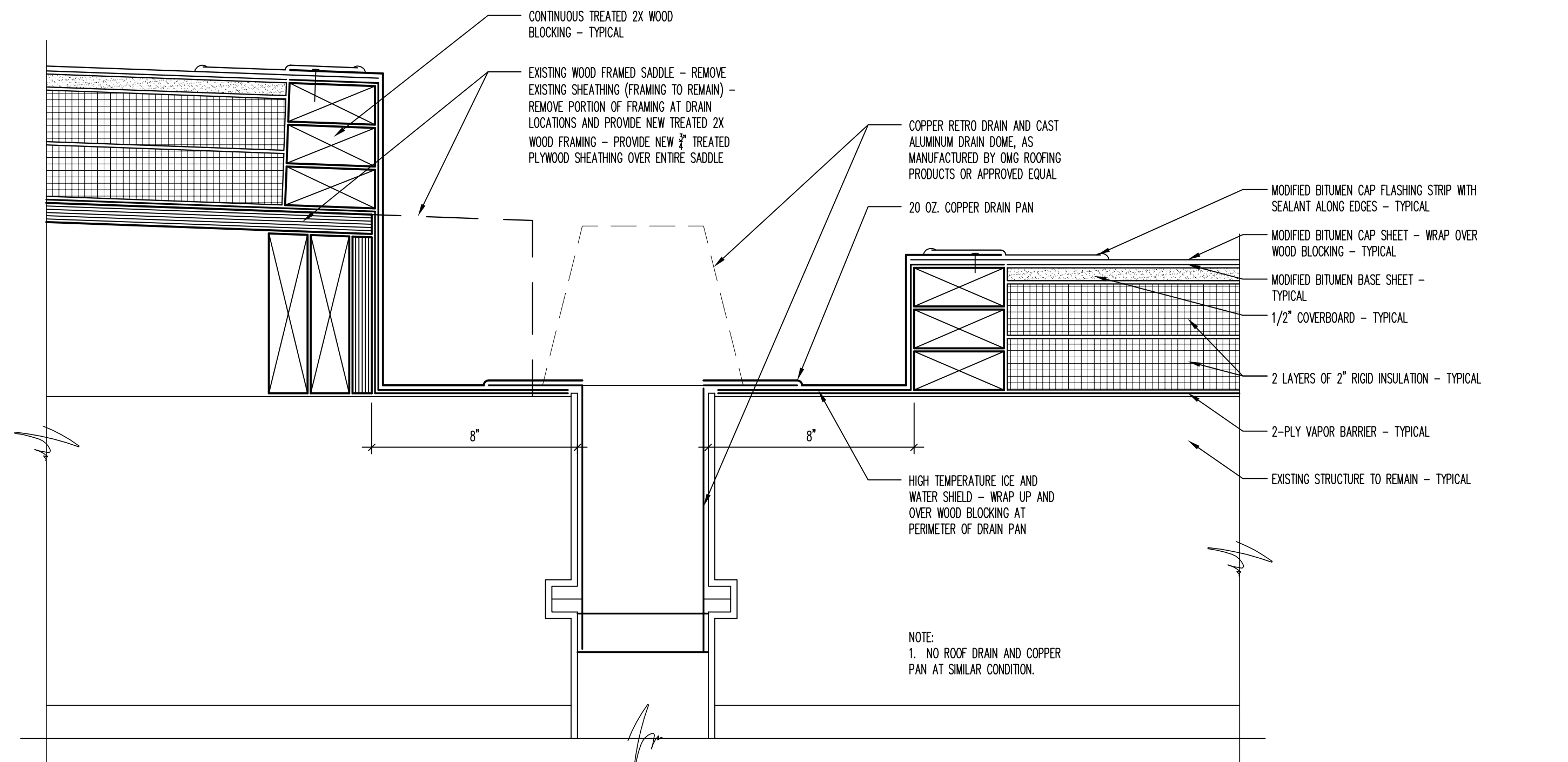
9 ROOF DRAIN DETAIL  
1 1/2" = 1'-0"



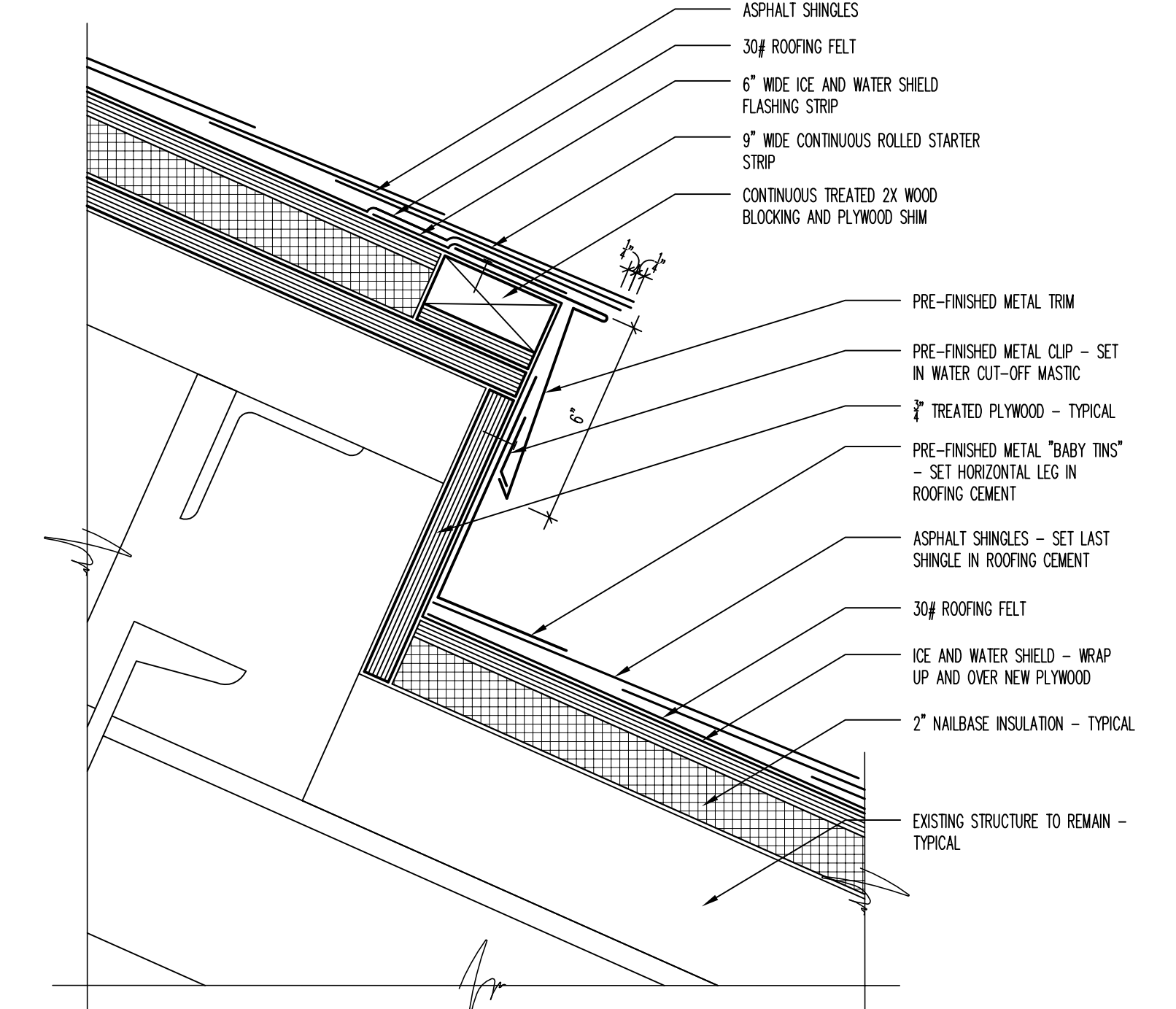
10 FLAT SEAM COPPER SADDLE DETAIL  
3" = 1'-0"



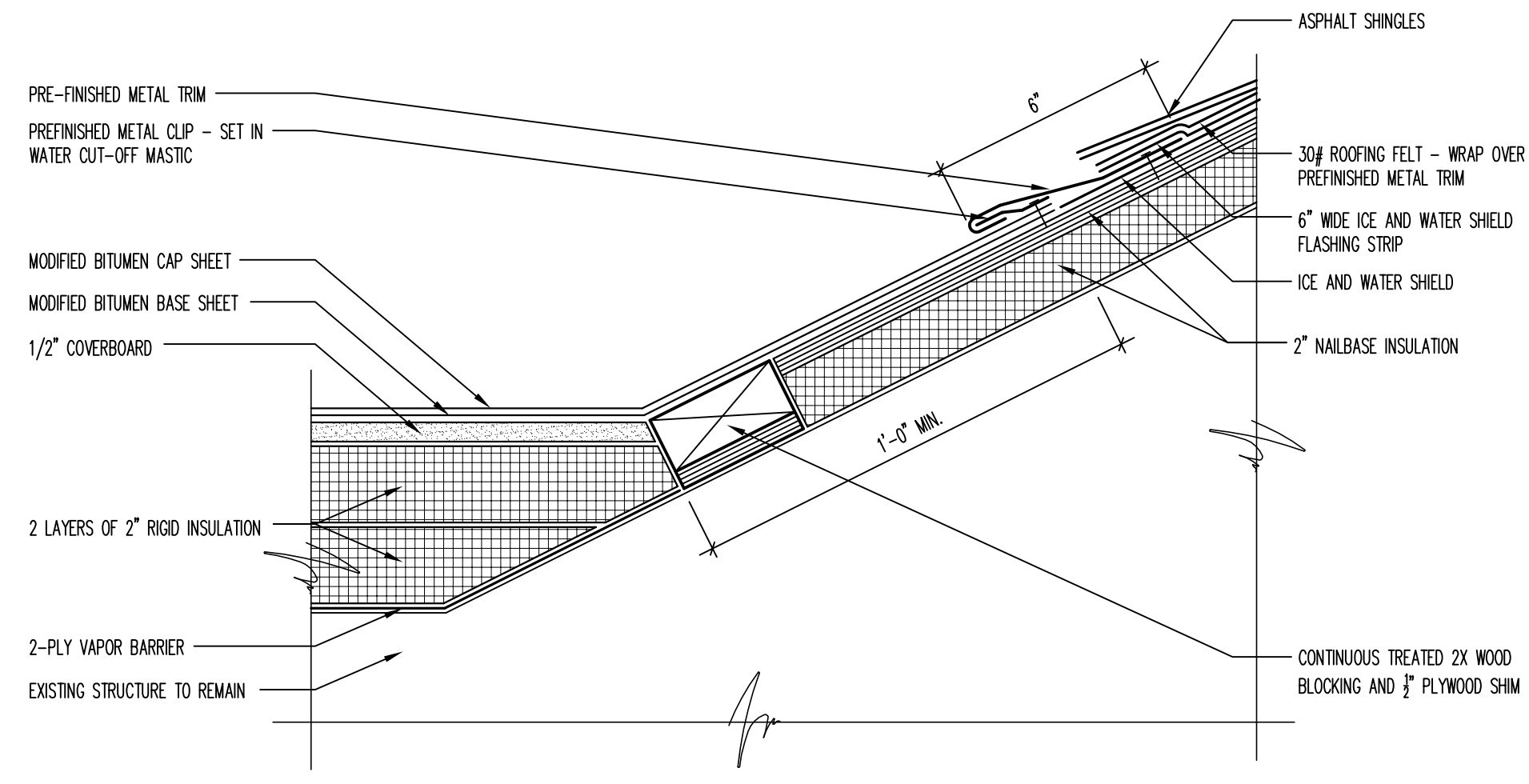
7 EXISTING GUTTER EDGE DETAIL  
3" = 1'-0"



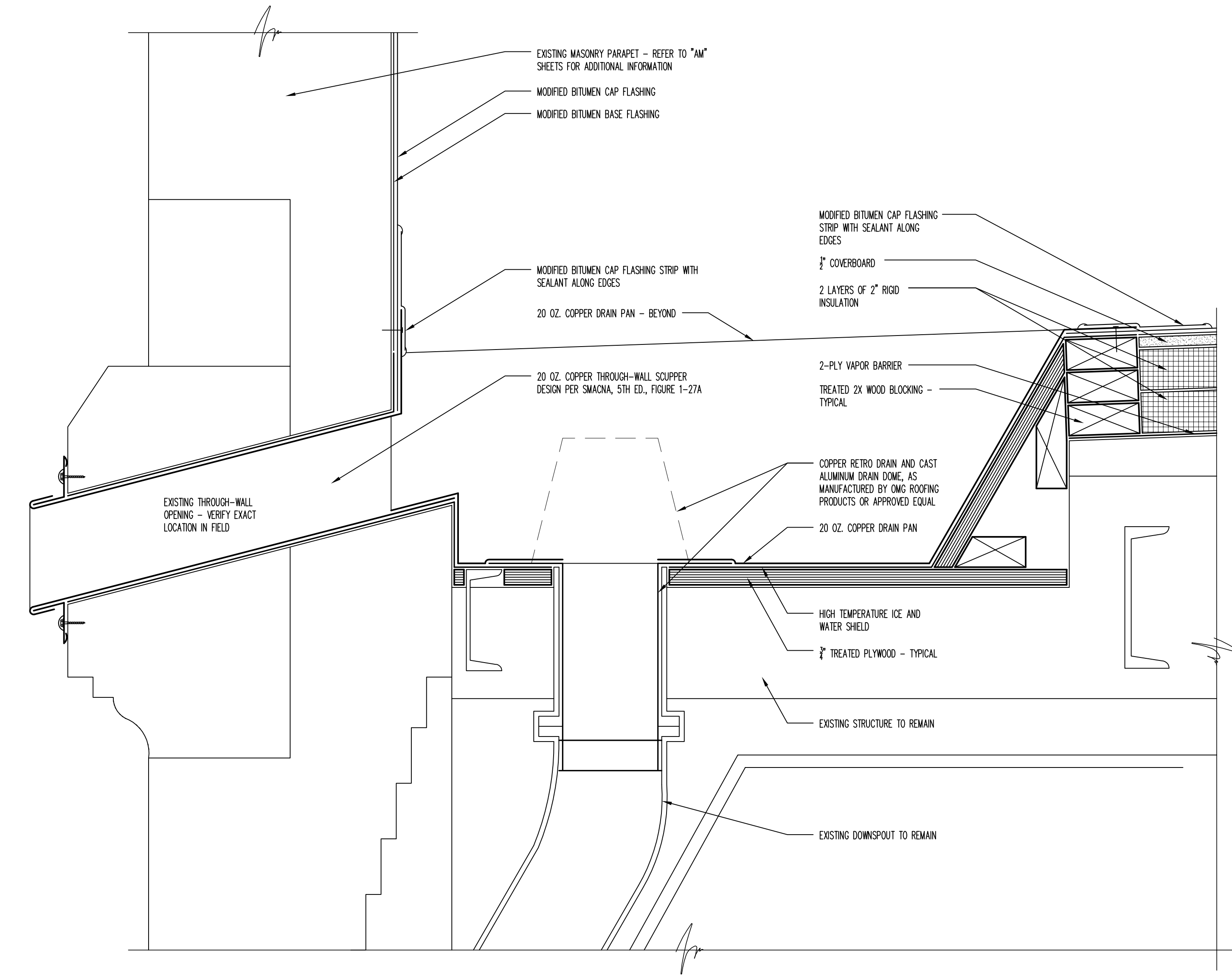
4 GYM ROOF TRANSITION DETAIL  
3" = 1'-0"



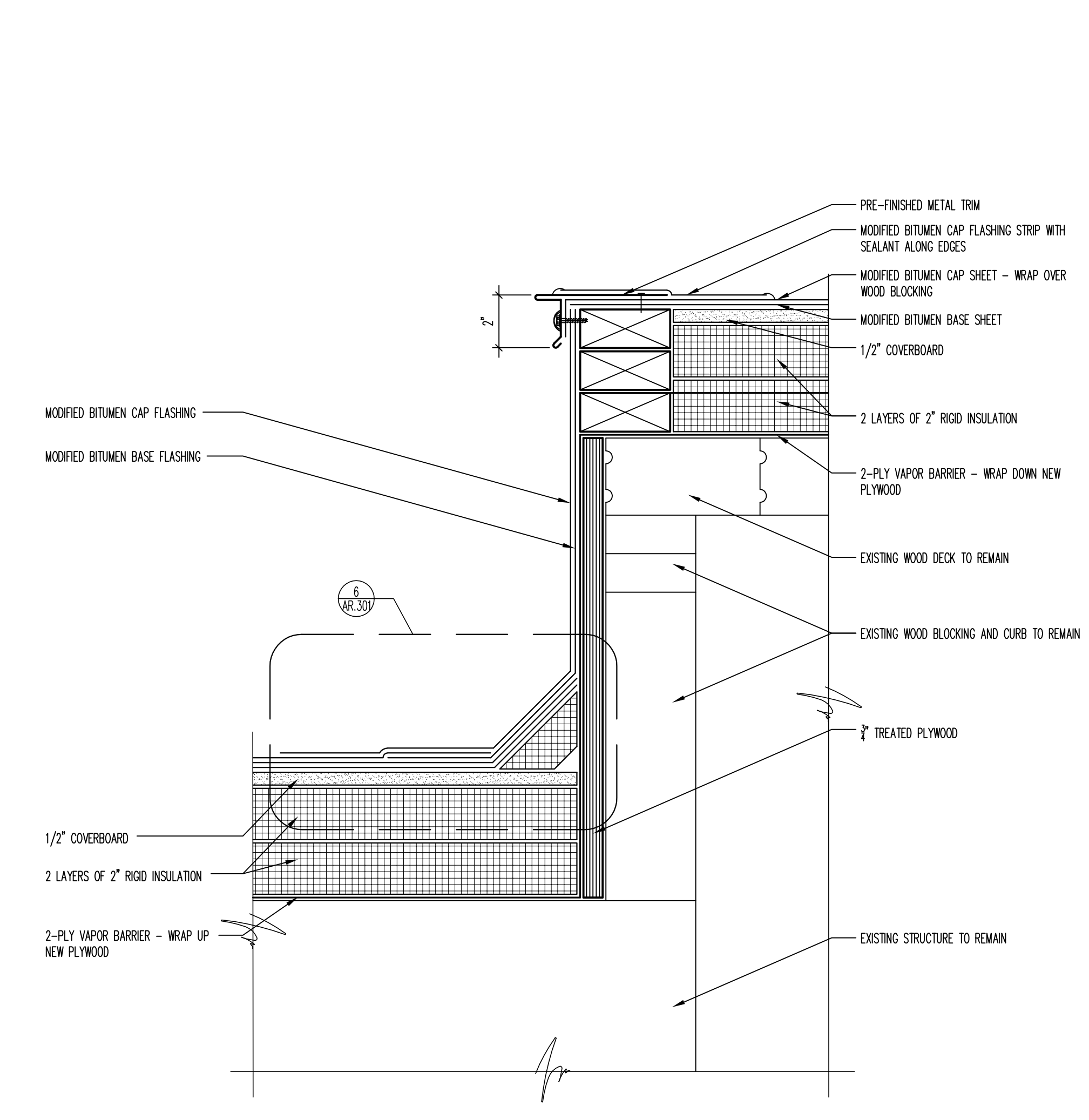
2 ABANDONED SKYLIGHT DETAIL - GYM  
3" = 1'-0"



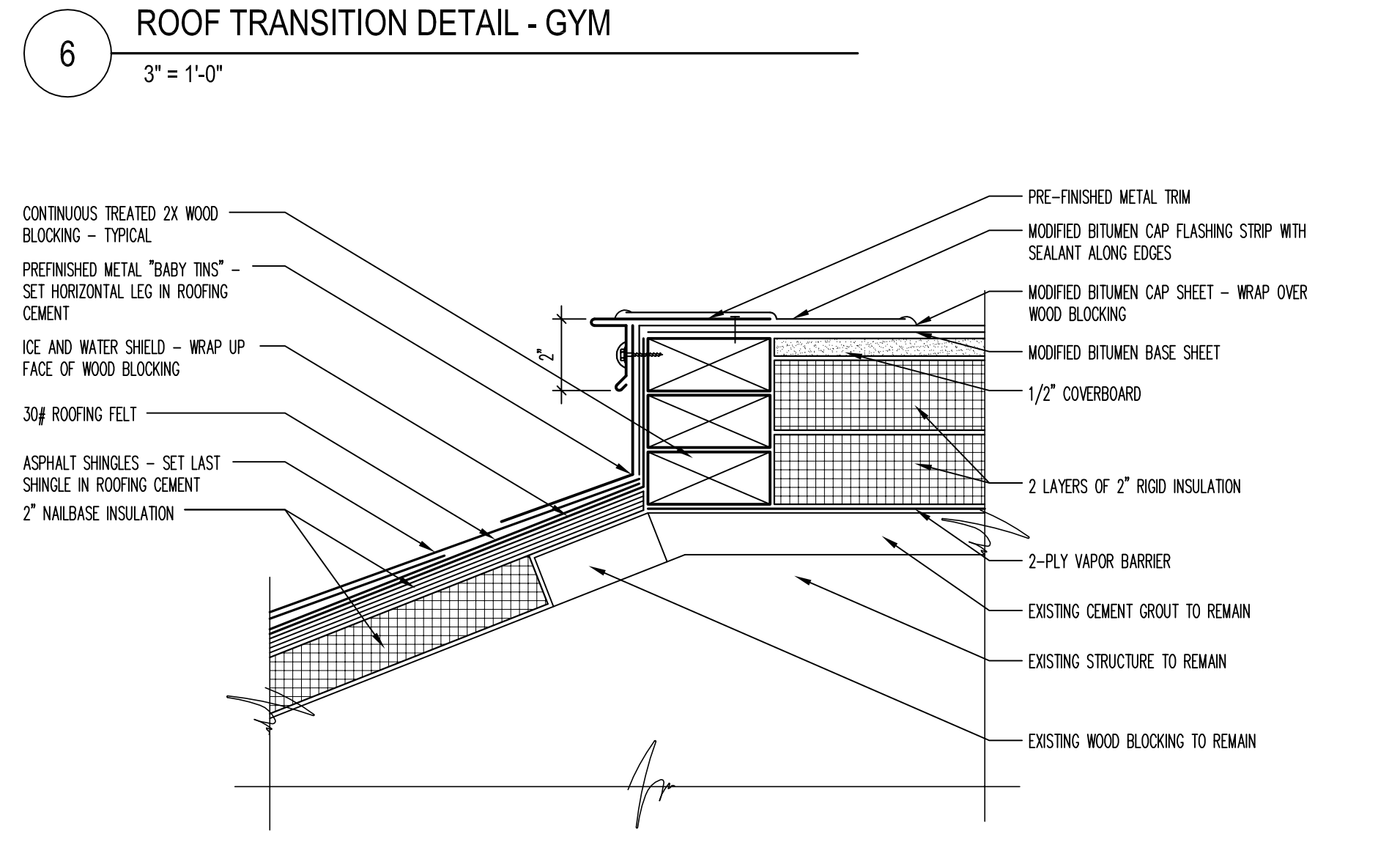
6 ROOF TRANSITION DETAIL - GYM  
3" = 1'-0"



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



1 ABANDONED SKYLIGHT DETAIL - BOILER ROOM  
3" = 1'-0"



5 ROOF TRANSITION DETAIL  
3" = 1'-0"

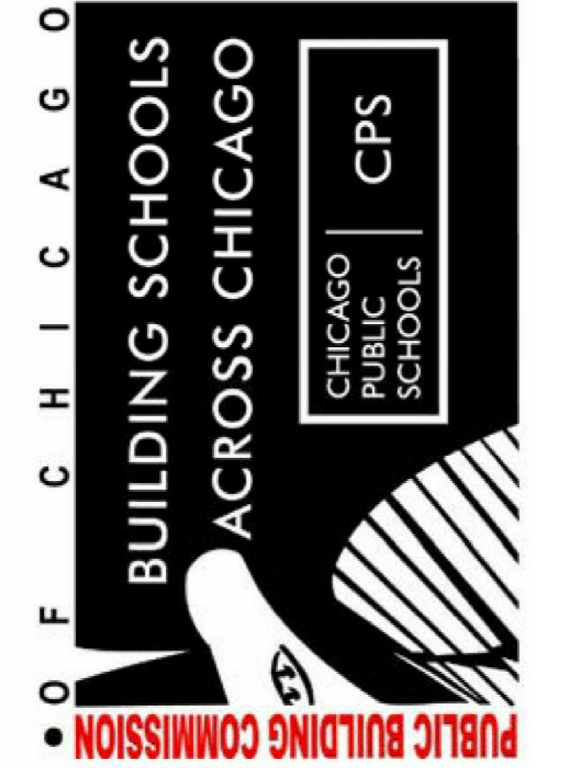
NOTES:  
1. SLIGHTLY BEVEL TOP EDGE OF BASE INSULATION AND INSERT UNDER DRAIN EXTENSION RING. TIGHTEN EXTENSION RING SO THAT TOP OF SAME IS FLUSH WITH TOP OF BASE INSULATION.  
2. CUT TOP INSULATION LAYER PERPENDICULAR TO DRAIN CLAMPING RING - DO NOT BEVEL.  
3. INSTALL 30"x30", 4 LBS. LEAD FLASHING AT DRAIN FRINGE AND DRY BOTH SIDES PRIOR TO INSTALLATION IN ROOFING MASTIC. INSTALL 2 LAYERS OF MODIFIED FLASHING.

NOTES:  
1. REMOVE EXISTING ROOFING, FLASHING, INSULATION, AND SHEET METAL FROM ROOF EDGE.

NOTE:  
1. NO ROOF DRAIN AND COPPER PAN AT SIMILAR CONDITION.

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Henderson Elementary School Renovations Phase II

5650 S. Wolcott Avenue  
Chicago, IL 60636  
CHICAGO PUBLIC SCHOOLS  
CITY OF CHICAGO, JAVIER RAMOS DANIEL

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Architect of Record

651 W. Washington Blvd., Suite 1  
Chicago, IL 60661  
P: 312.258.9595  
F: 312.258.1555  
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Onyx Architectural Serv., Inc.  
Architectural Consultant  
Chicago, IL

Terra Engineering LTD.  
Civil Engineering Consultant  
Chicago, IL

RME  
Structural Engineering Consultant  
Chicago, IL

CCJM  
MEP Engineering Consultant  
Chicago, IL

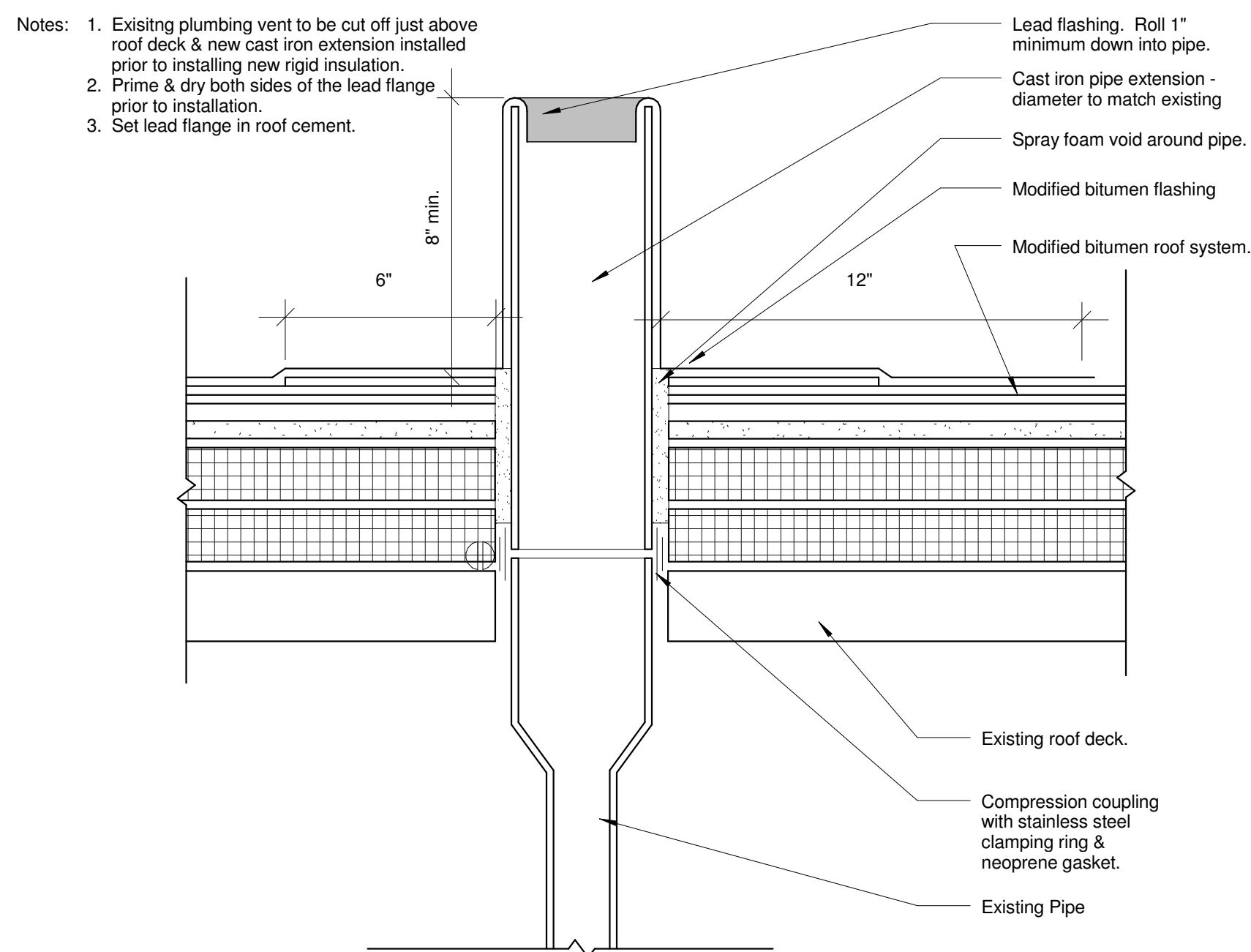
CYLA  
Landscape Architect  
Oak Park, IL

ISSUANCE	DESCRIPTION	DATE
1	Phase 1 - Toilet Rooms	06/01/11
2	Issued for Permits - Phase I	06/09/11
3	100% DD - Phase II	06/24/11
4	60% CD - Phase II	09/23/11
5	90% CD - Phase II	10/21/11
6	Issued for Bid	11/08/11
7	Addendum 1	11/28/11

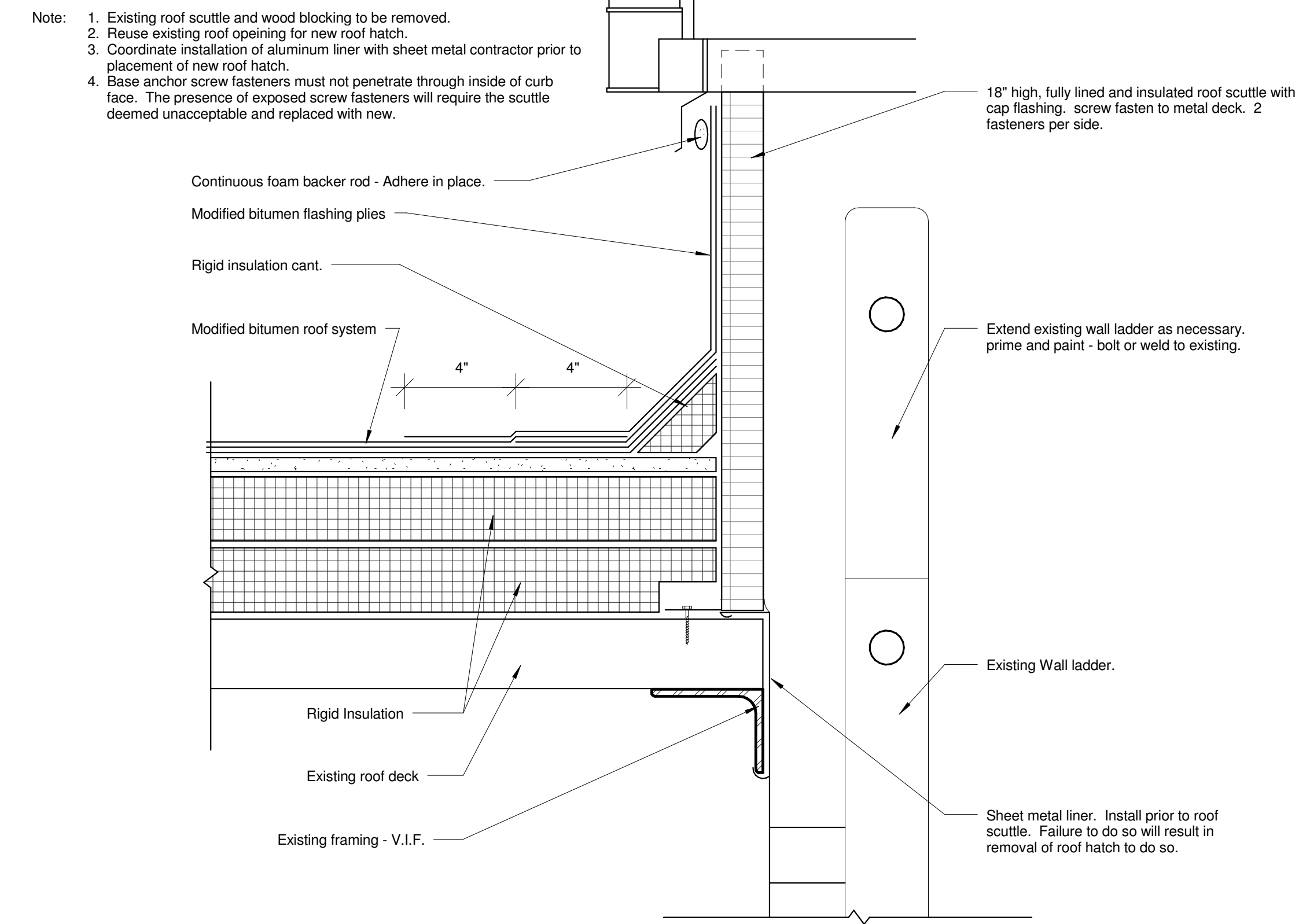
DATE OF ISSUE: 11-28-2011  
PBC Project Name: Henderson Elem School Ren, Phase II  
PBC Contract No.: 05813  
Legat Project No.: 211060.00

Roof Details

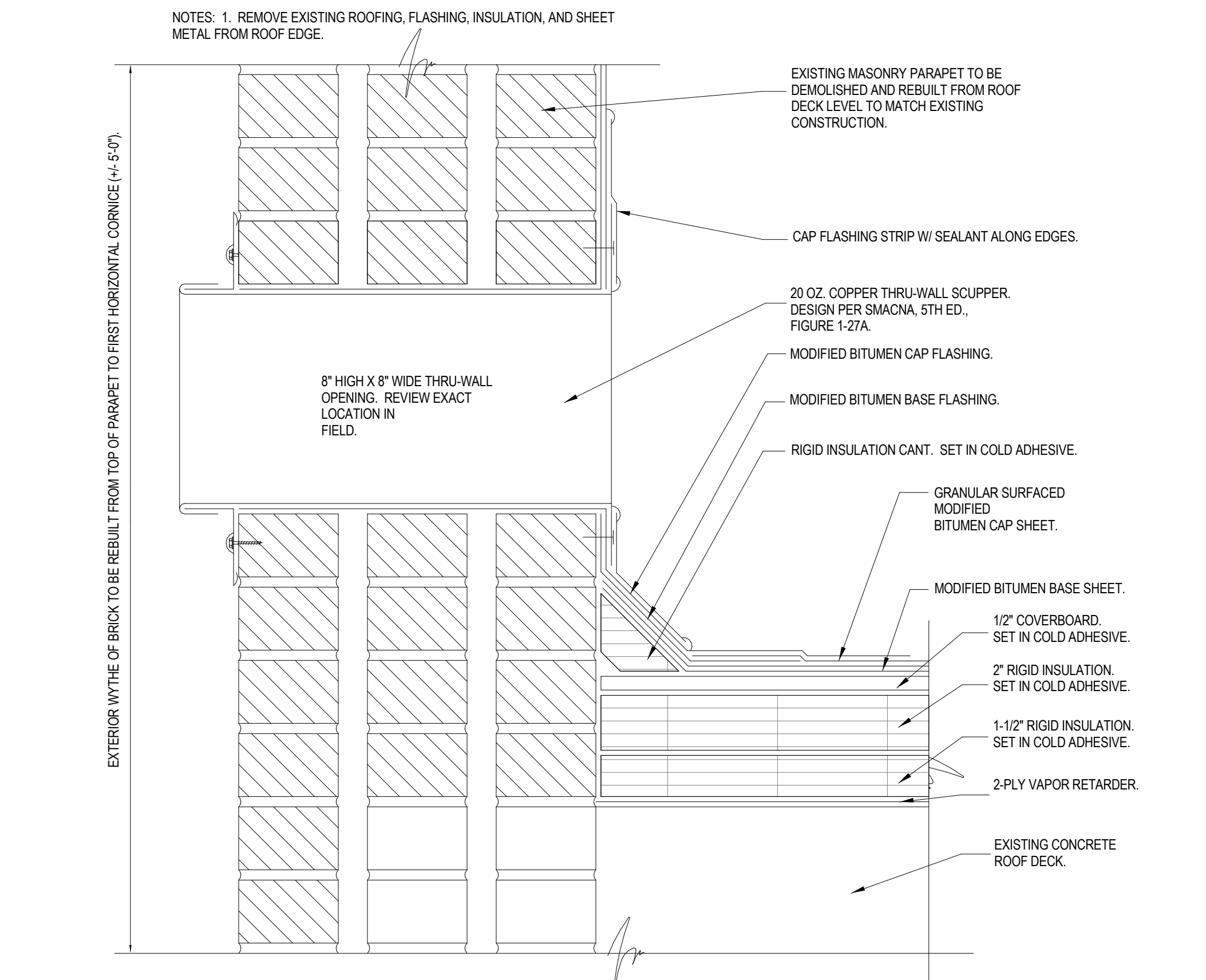
AR.201  
ISSUED FOR BID



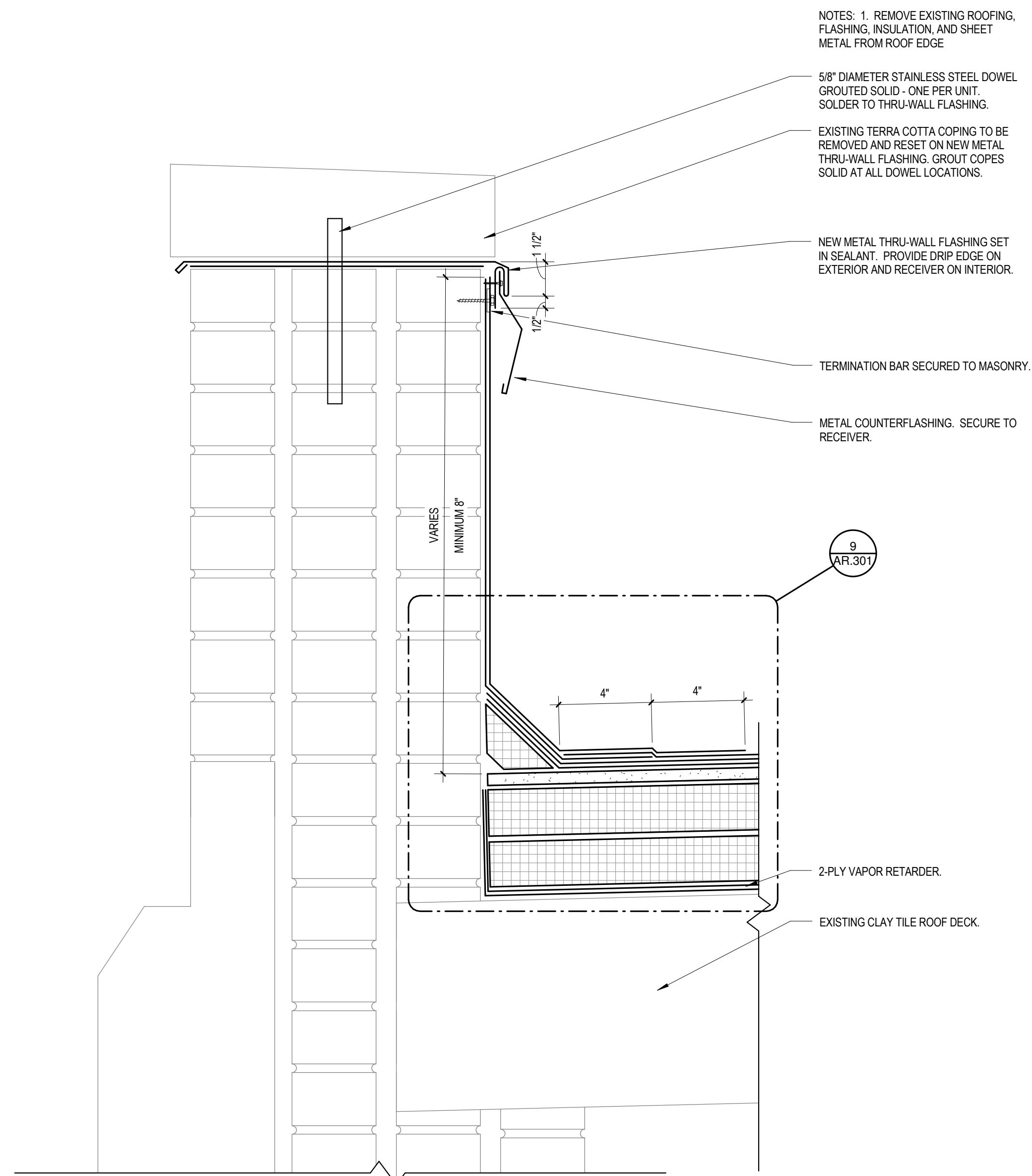
**7 VENT PIPE EXTENSION DETAIL**  
3" = 1'-0"



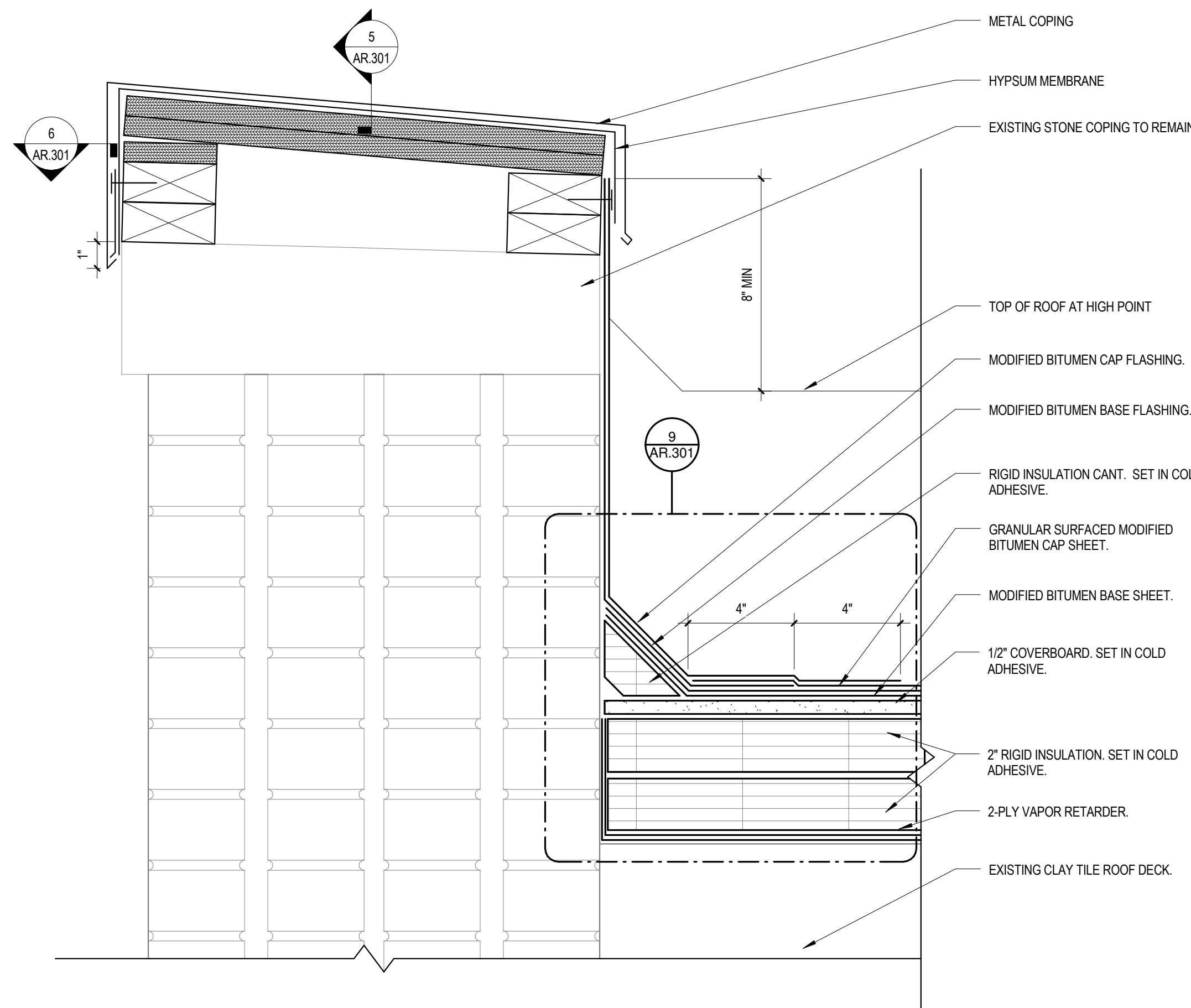
**6 ROOF HATCH DETAIL**  
3" = 1'-0"



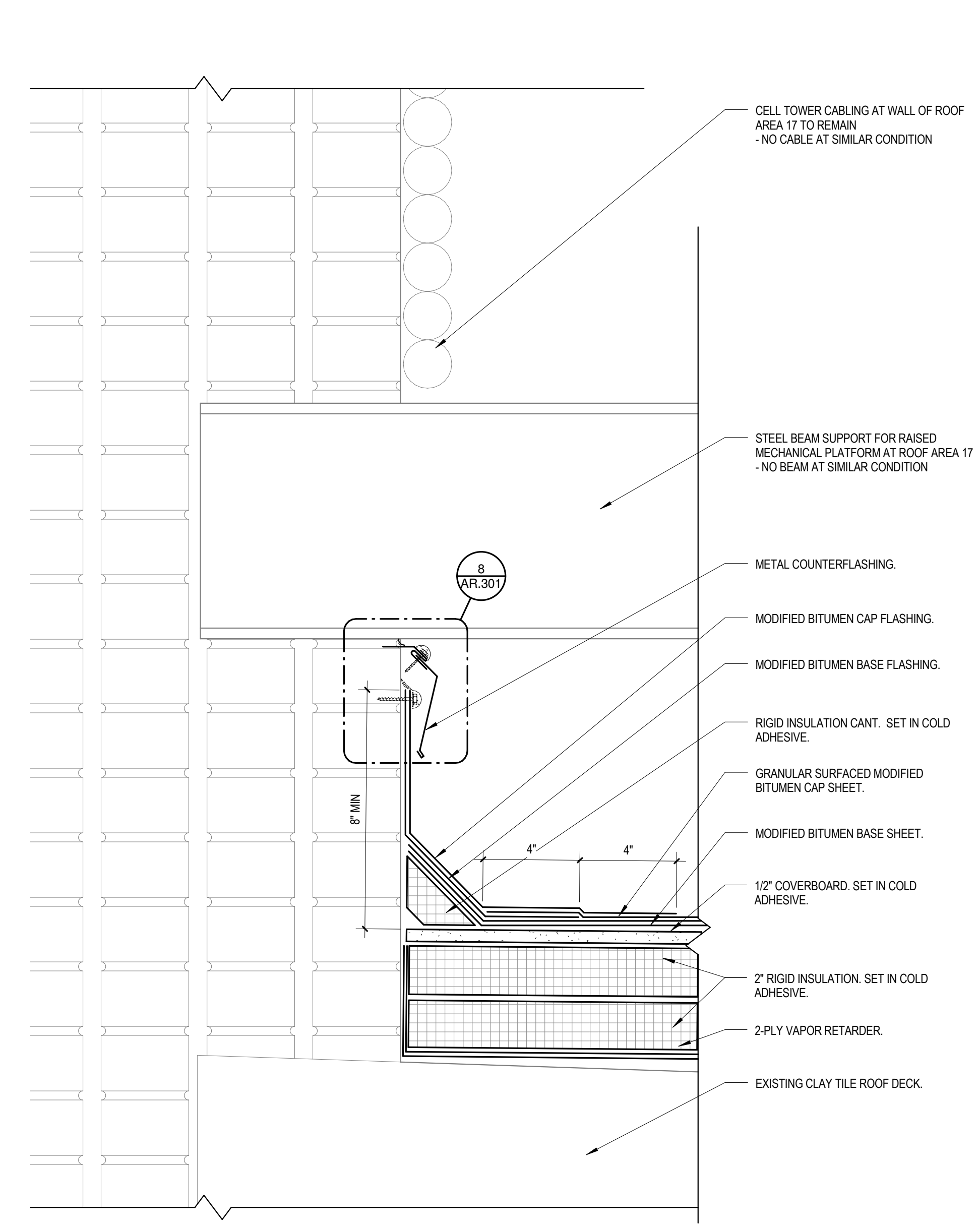
**5 OVERFLOW SCUPPER DETAIL**  
3" = 1'-0"



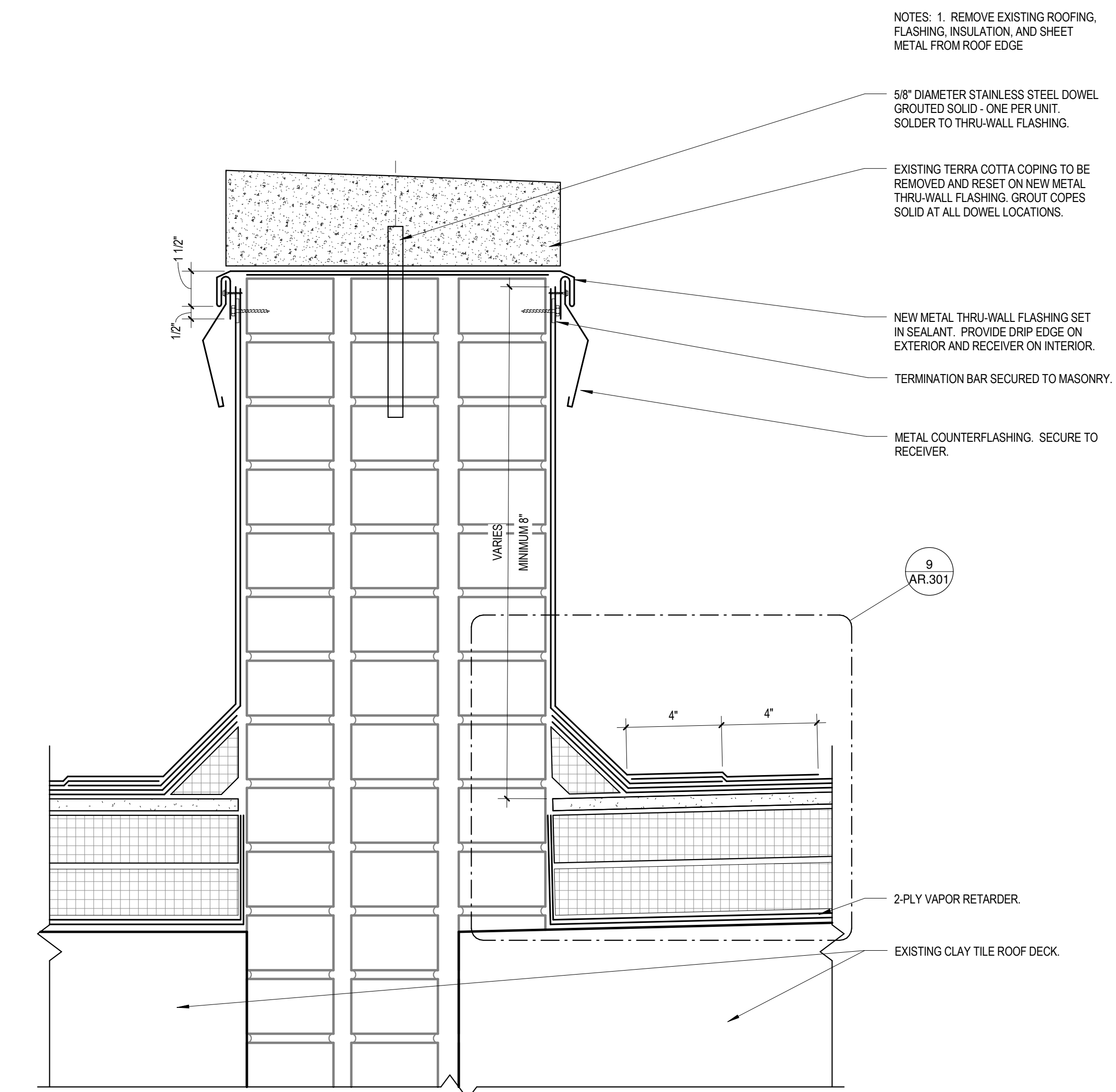
**4 ROOF EDGE DETAIL**  
3" = 1'-0"



**3 ROOF EDGE DETAIL**  
3" = 1'-0"



**2 ROOF TERMINATION DETAIL**  
3" = 1'-0"



**1 ROOF EDGE DETAIL**  
3" = 1'-0"

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NO.	DESCRIPTION	DATE
1	Phase 1 - Toilet Rooms	06/01/11
2	Issued for Permits - Phase I	06/09/11
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7	Addendum 1	11/28/11

DATE OF ISSUE: 11-28-2011  
PBC Project Name: Henderson Elem. School Ren. Phase II  
PBC Contract No.: 05813  
Legat Project No.: 211060.00

**Henderson Elementary School  
 Renovations Phase II**

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 CHICAGO PUBLIC SCHOOLS  
 CITY OF CHICAGO, IAN/R/RAH/EMMUEL

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Structural Engineering Consultant  
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**CCJM**

MEP Engineering Consultant  
 Chicago, IL

**CYLA**

Landscape Architect  
 Oak Park, IL

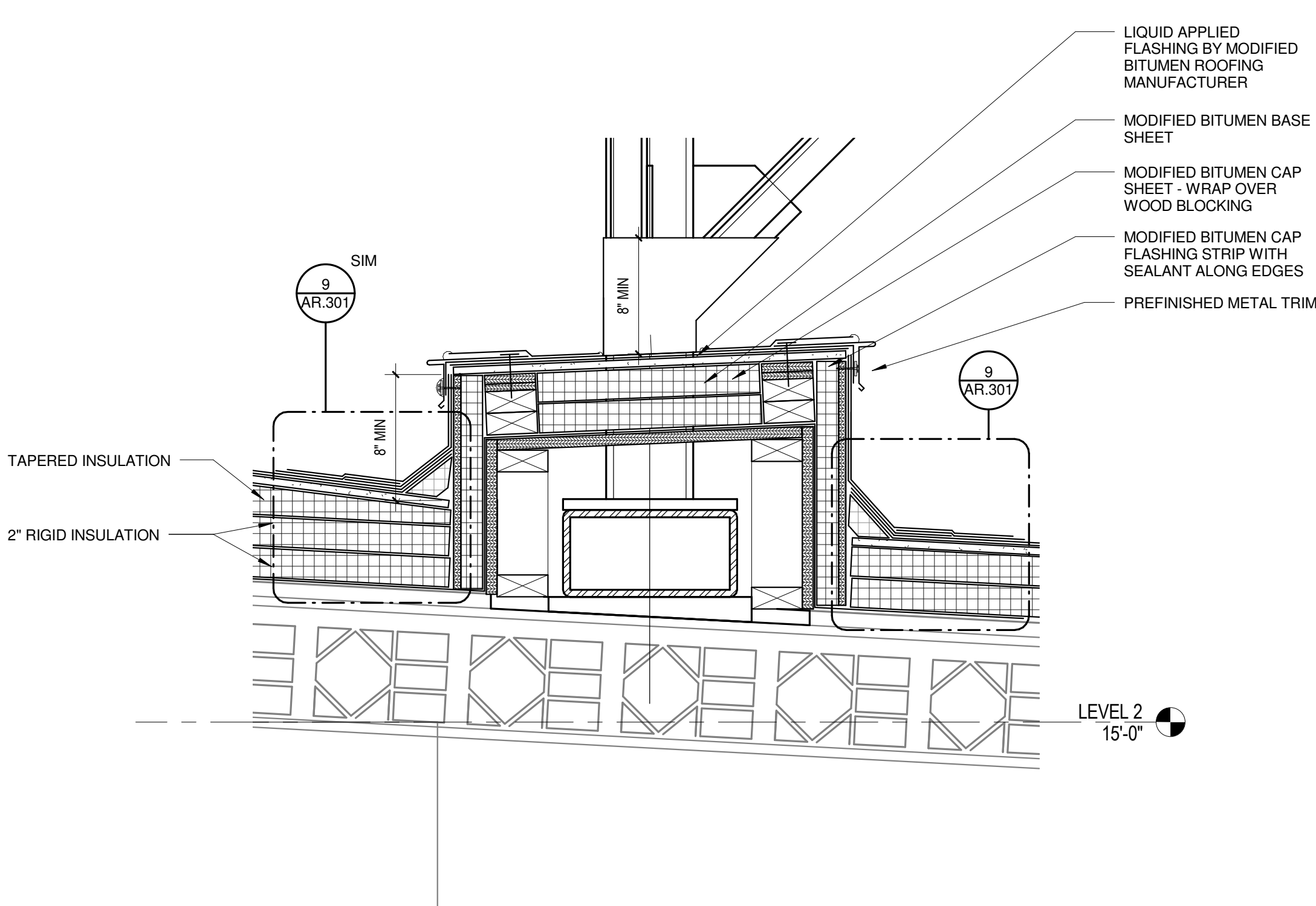
Issuance

NO.	DESCRIPTION	DATE
1	Preliminary Issuance - Phase I	05/16/11
2	Issued for Permits - Phase I	06/09/11
3	100% DD - Phase II	06/24/11
4	60% CD - Phase II	09/23/11
5	90% CD - Phase II	10/21/11
6	Issued for Bid	11/08/11
7	Addendum 1	11/28/11

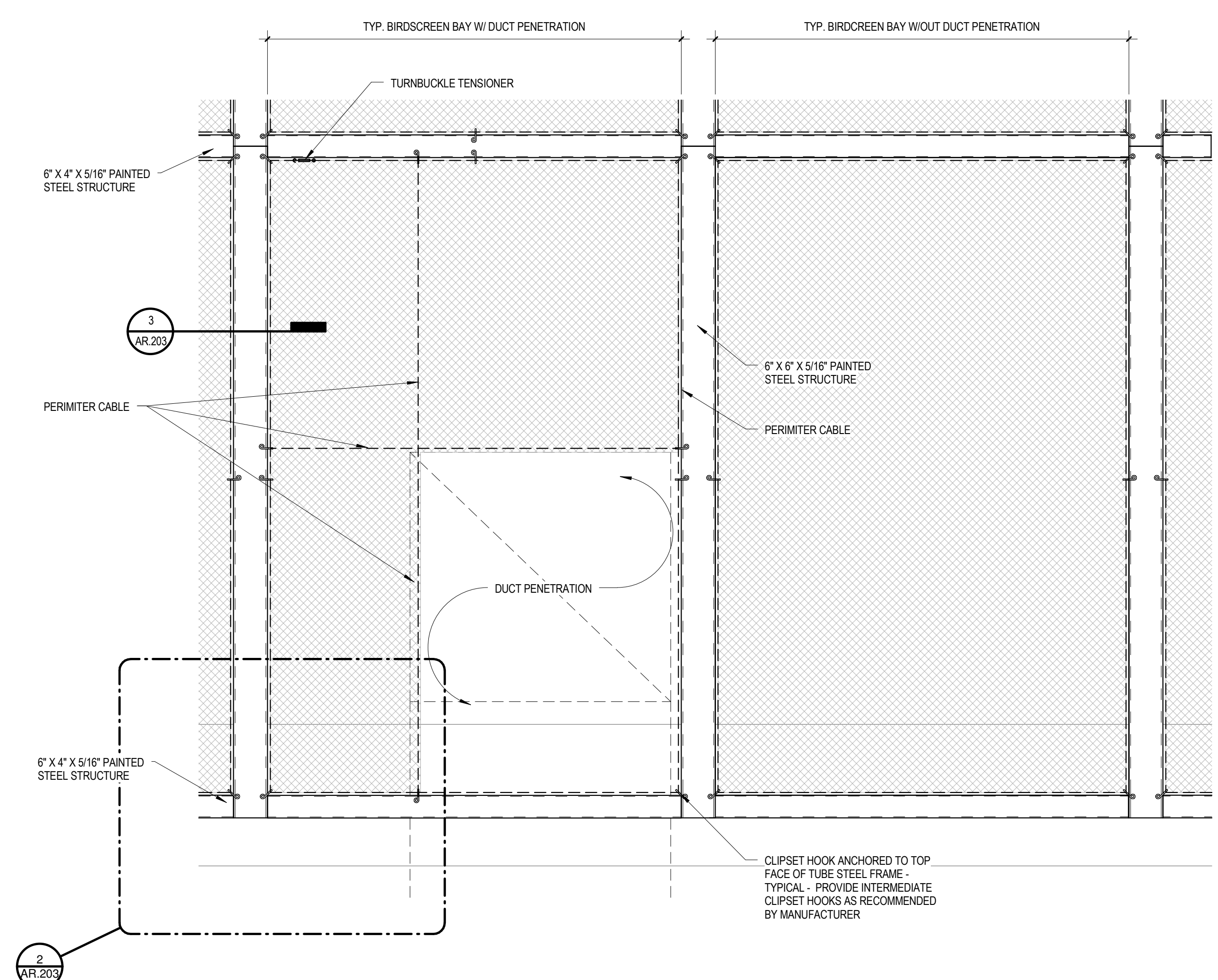
DATE OF ISSUE: 11-28-2011  
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 PBC Contract No.: 05813  
 Legat Project No.: 211060.00

**Bird Screen and Chiller Enclosure Details**

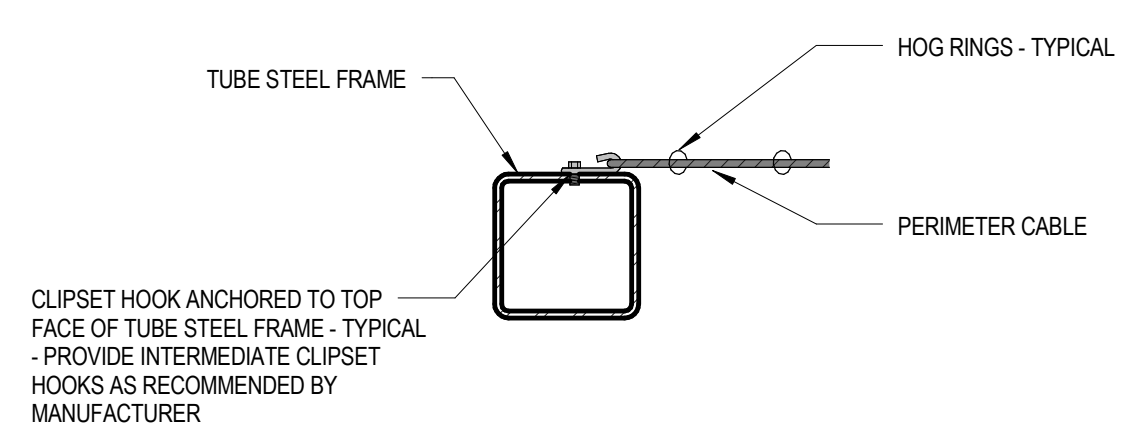
**AR.203**  
 ISSUED FOR BID



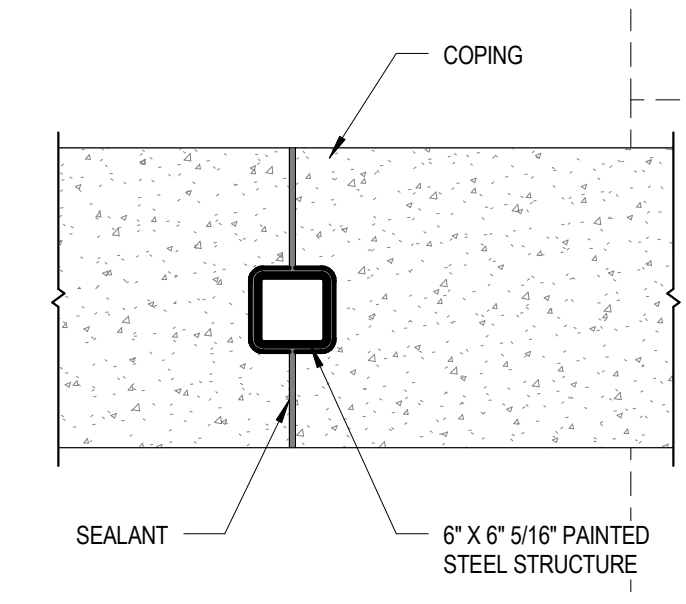
**6 ROOF DETAIL AT CHILLER - SOUTH**  
 1 1/2" = 1'-0"



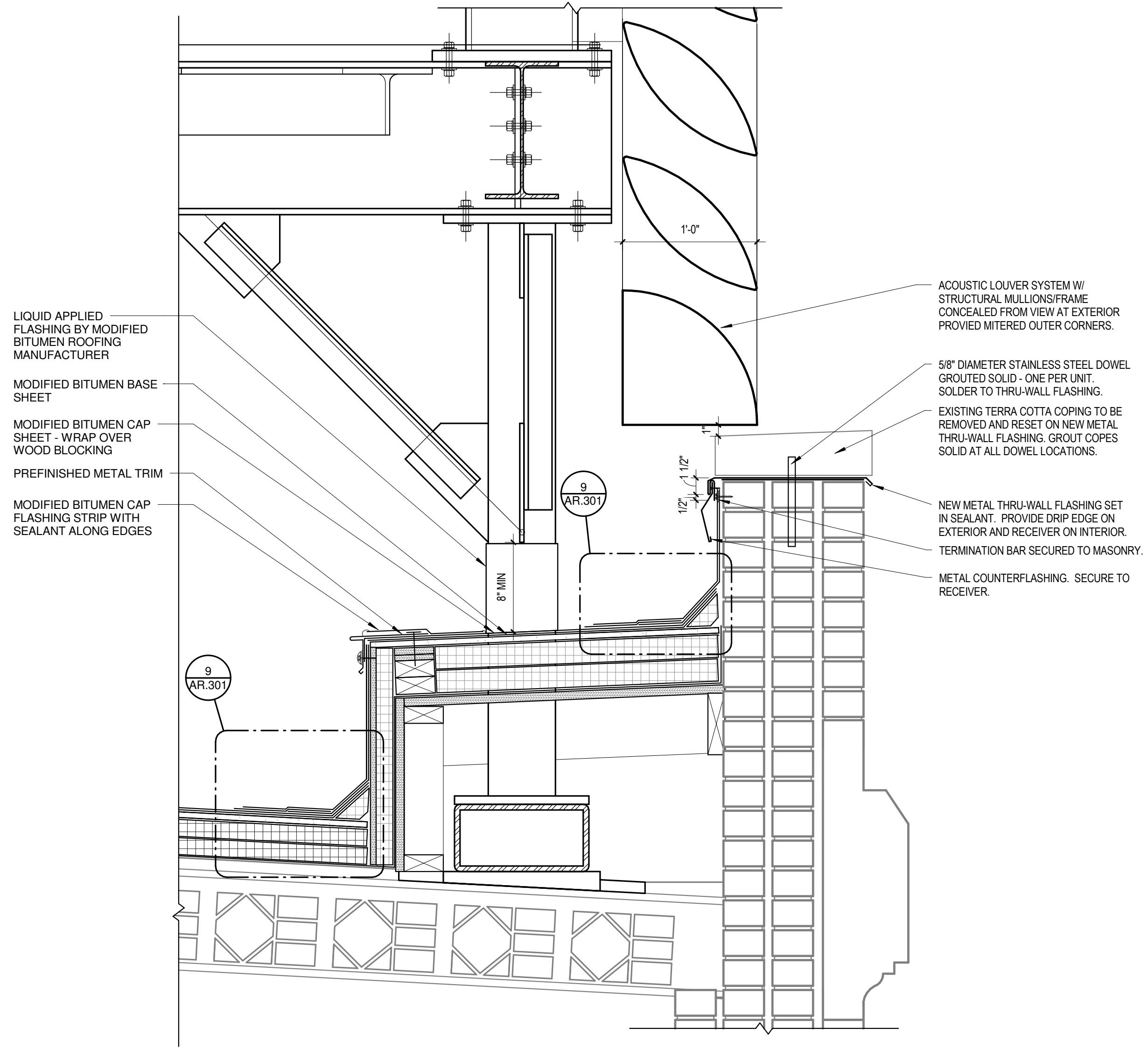
**4 ENLARGED PLAN - TYPICAL BIRD SCREEN BAY**  
 3/4" = 1'-0"



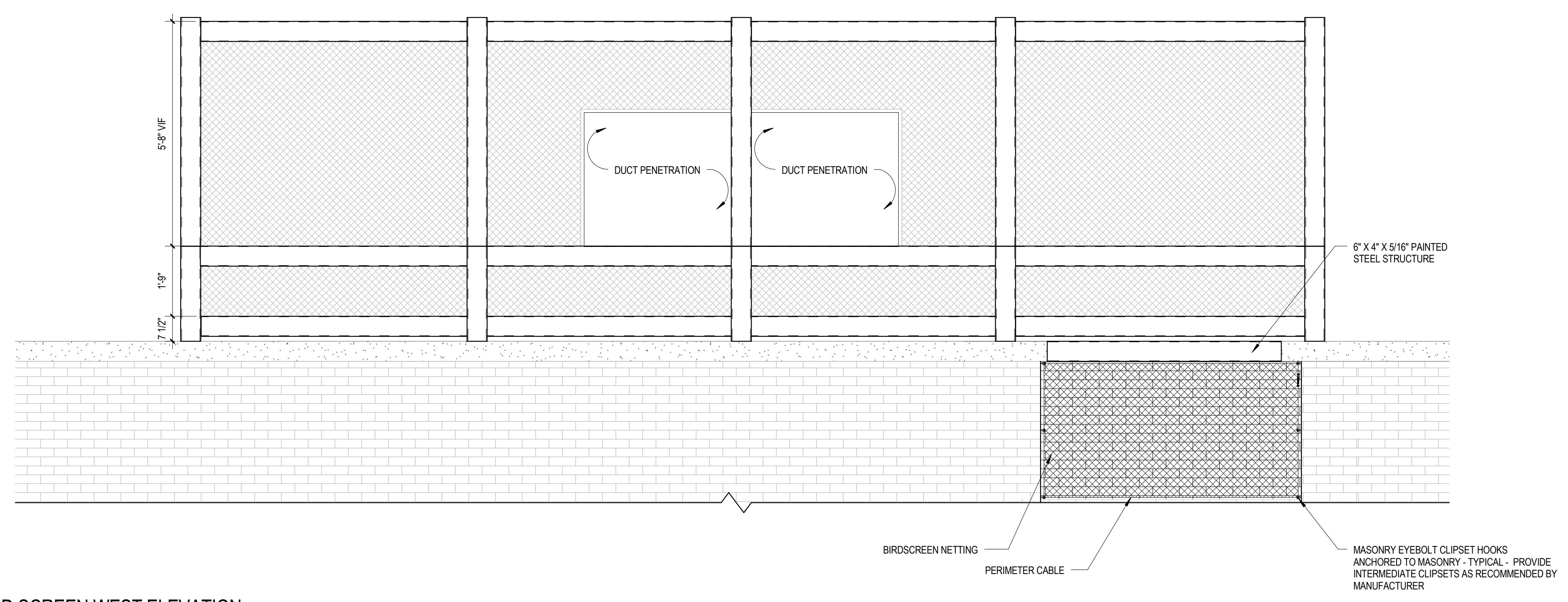
**3 TUBE STEEL SECTION**  
 1 1/2" = 1'-0"



**2 COPING SEALANT**  
 3/4" = 1'-0"



**5 ROOF DETAIL AT CHILLER - NORTH**  
 1 1/2" = 1'-0"



**1 BIRD SCREEN WEST ELEVATION**  
 1/2" = 1'-0"

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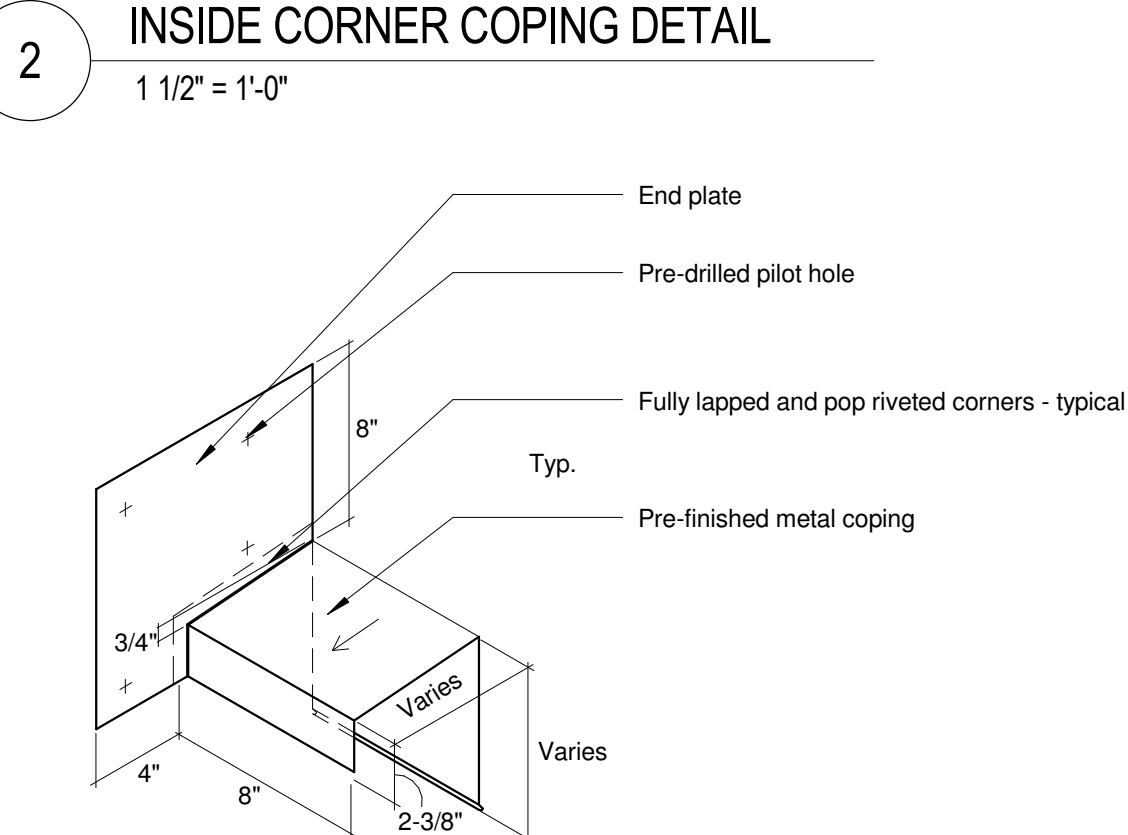
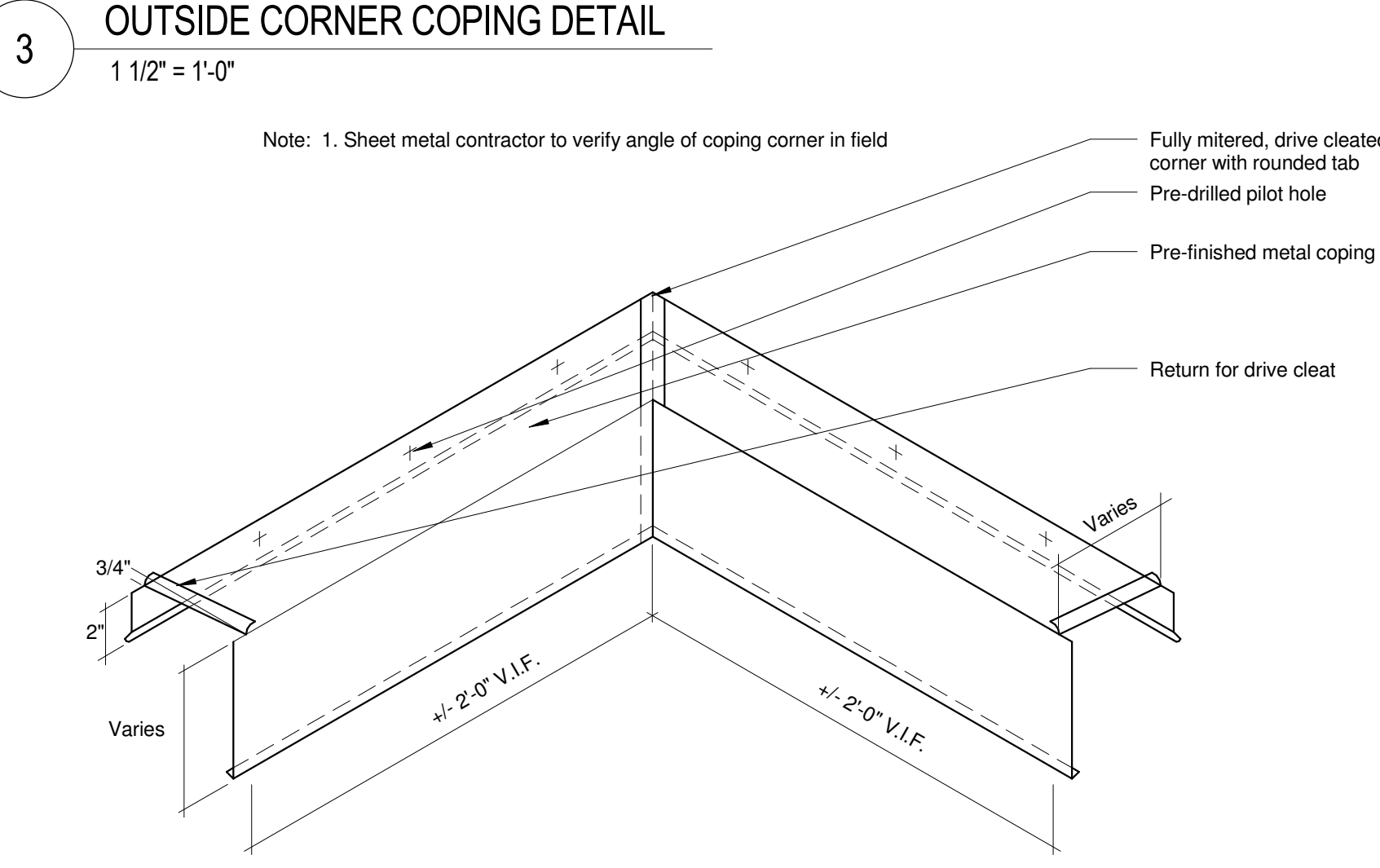
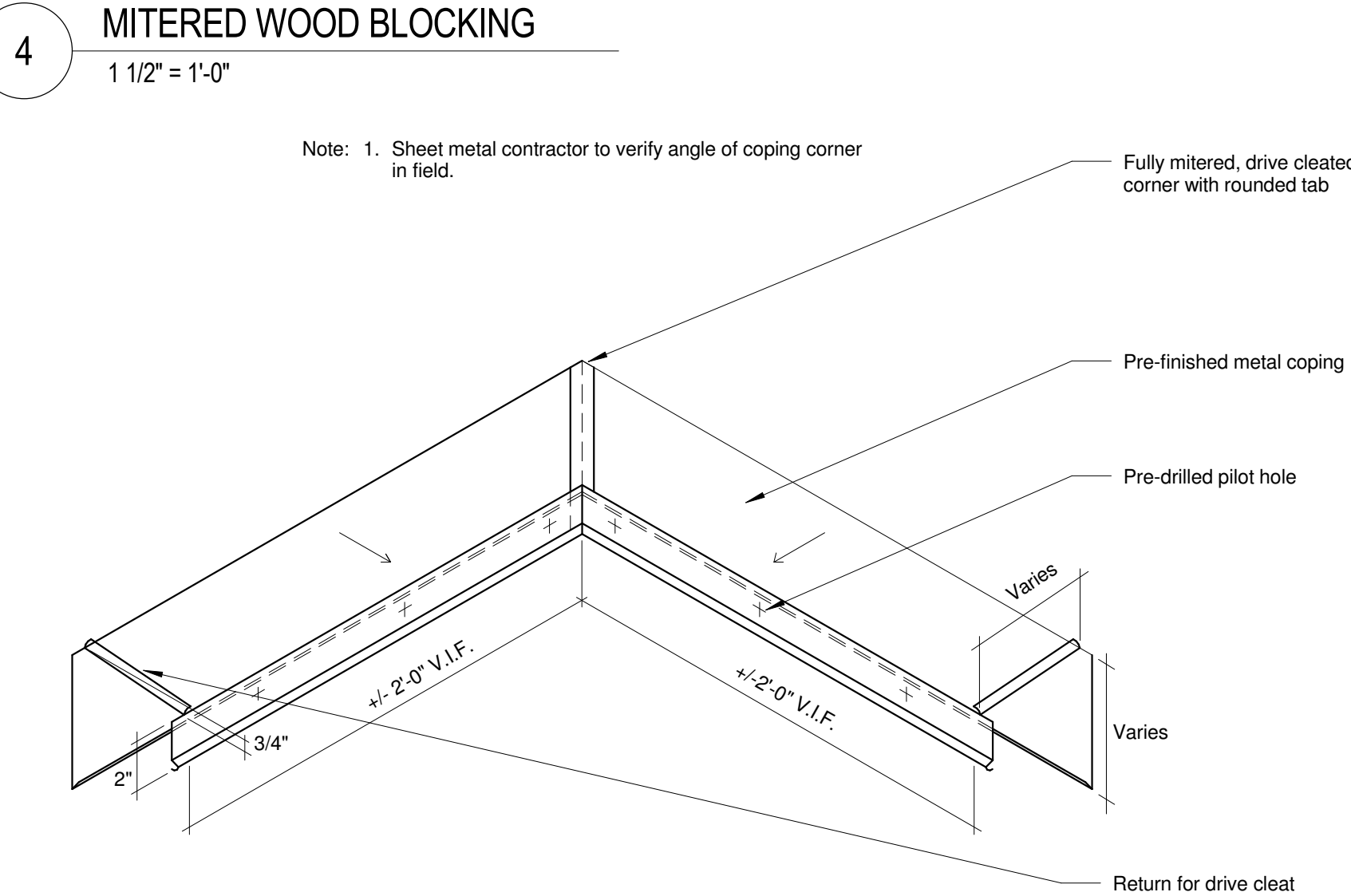
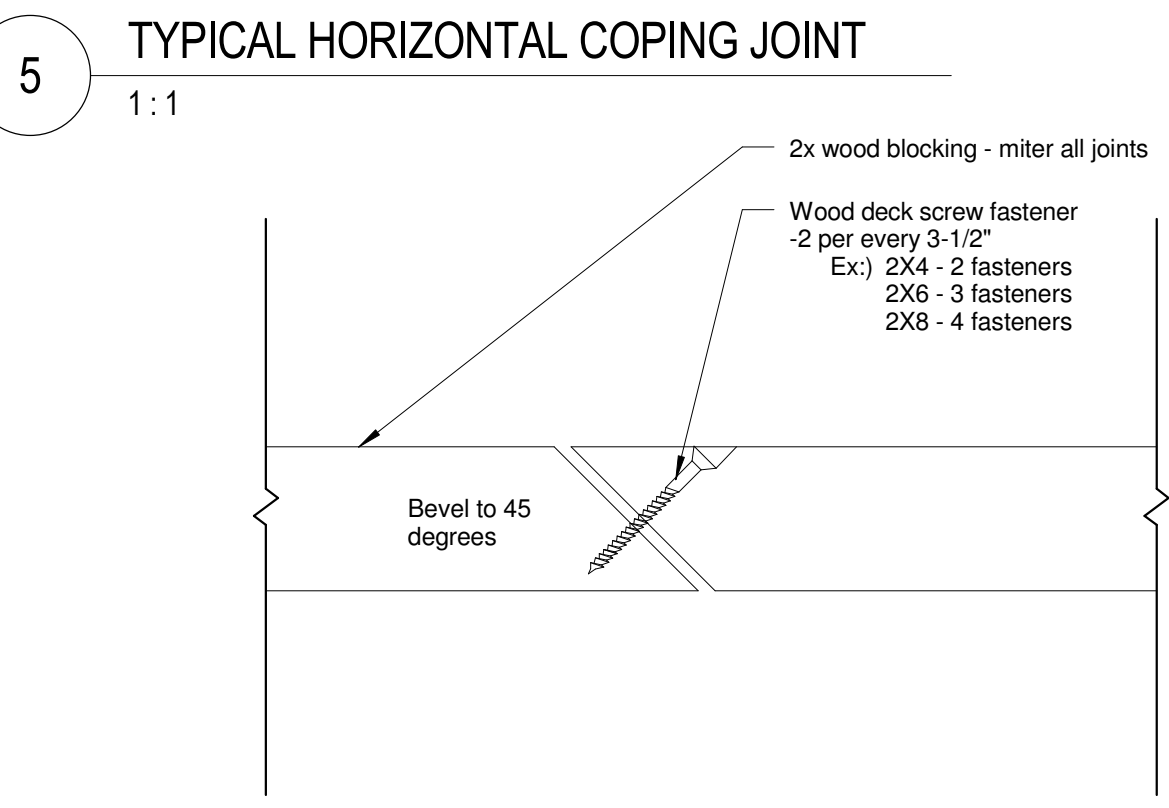
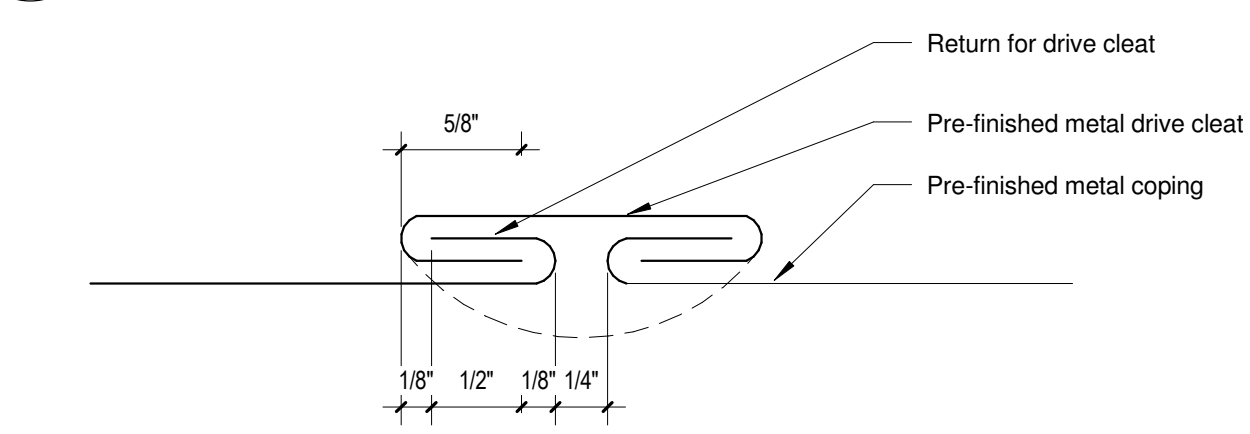
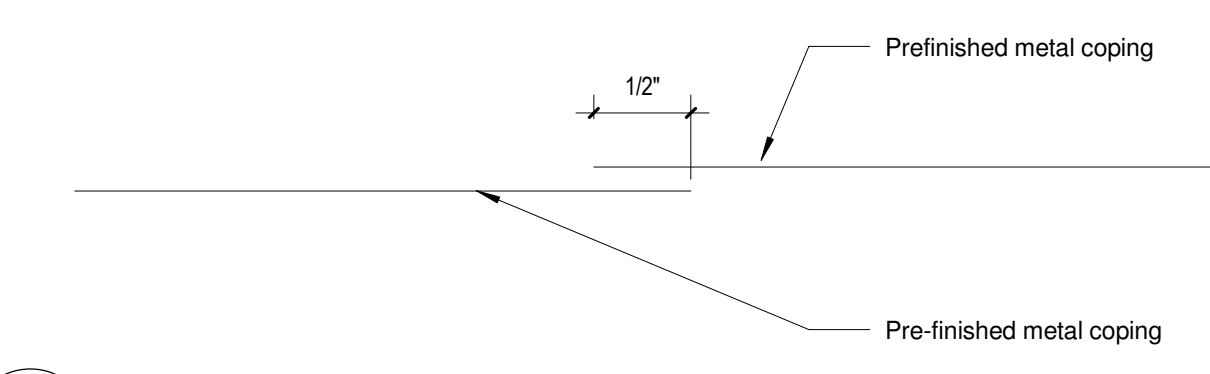
NO.	DESCRIPTION	DATE
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7	Addendum 1	11/28/11

DATE OF ISSUE: 11-28-2011  
 PBC Project Name: Henderson Elem.School Ren. Phase II  
 PBC Contract No.: 05813  
 Legat Project No.: 211060.00

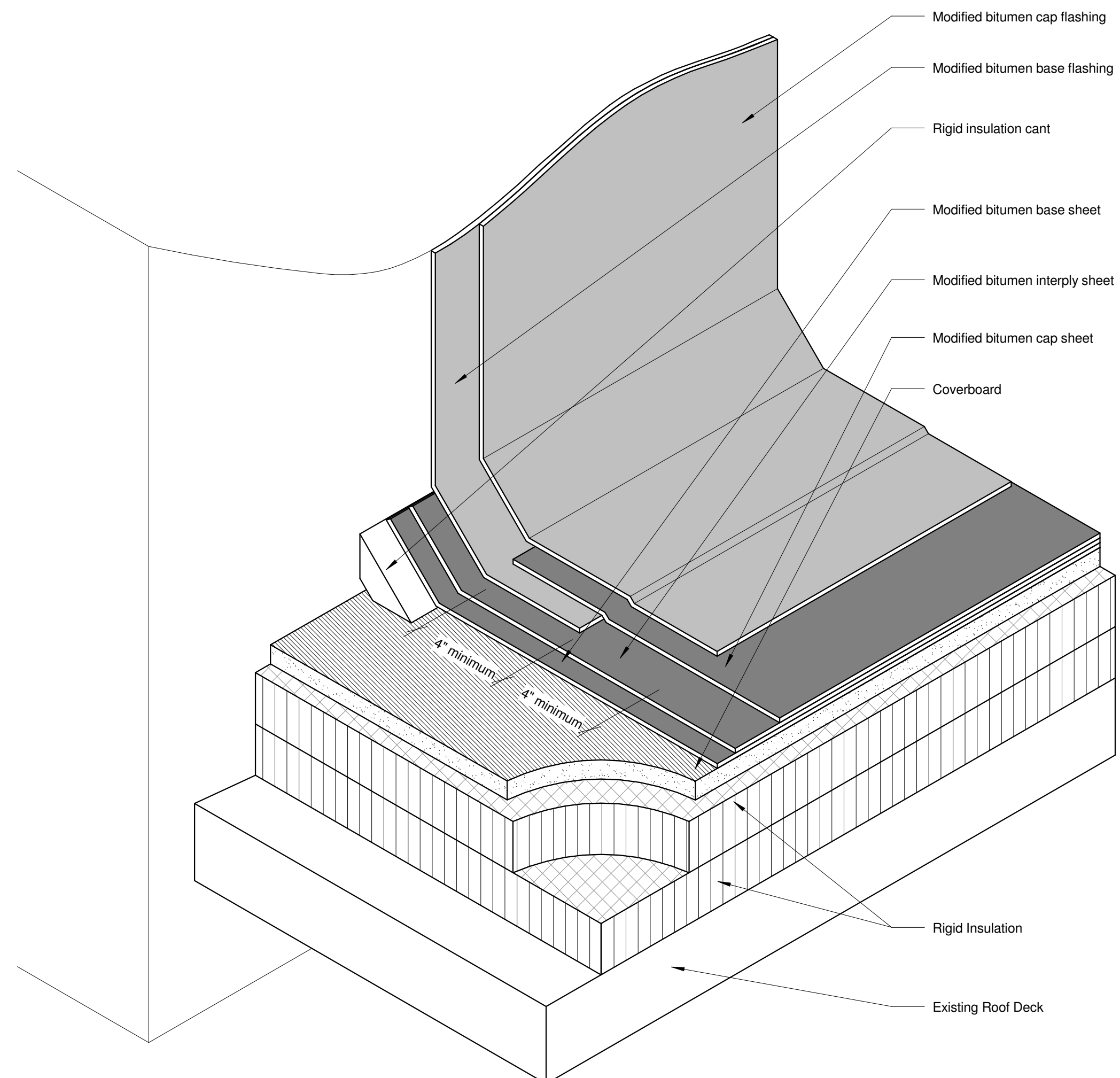
Typical Coping and Flashing Details

AR.301

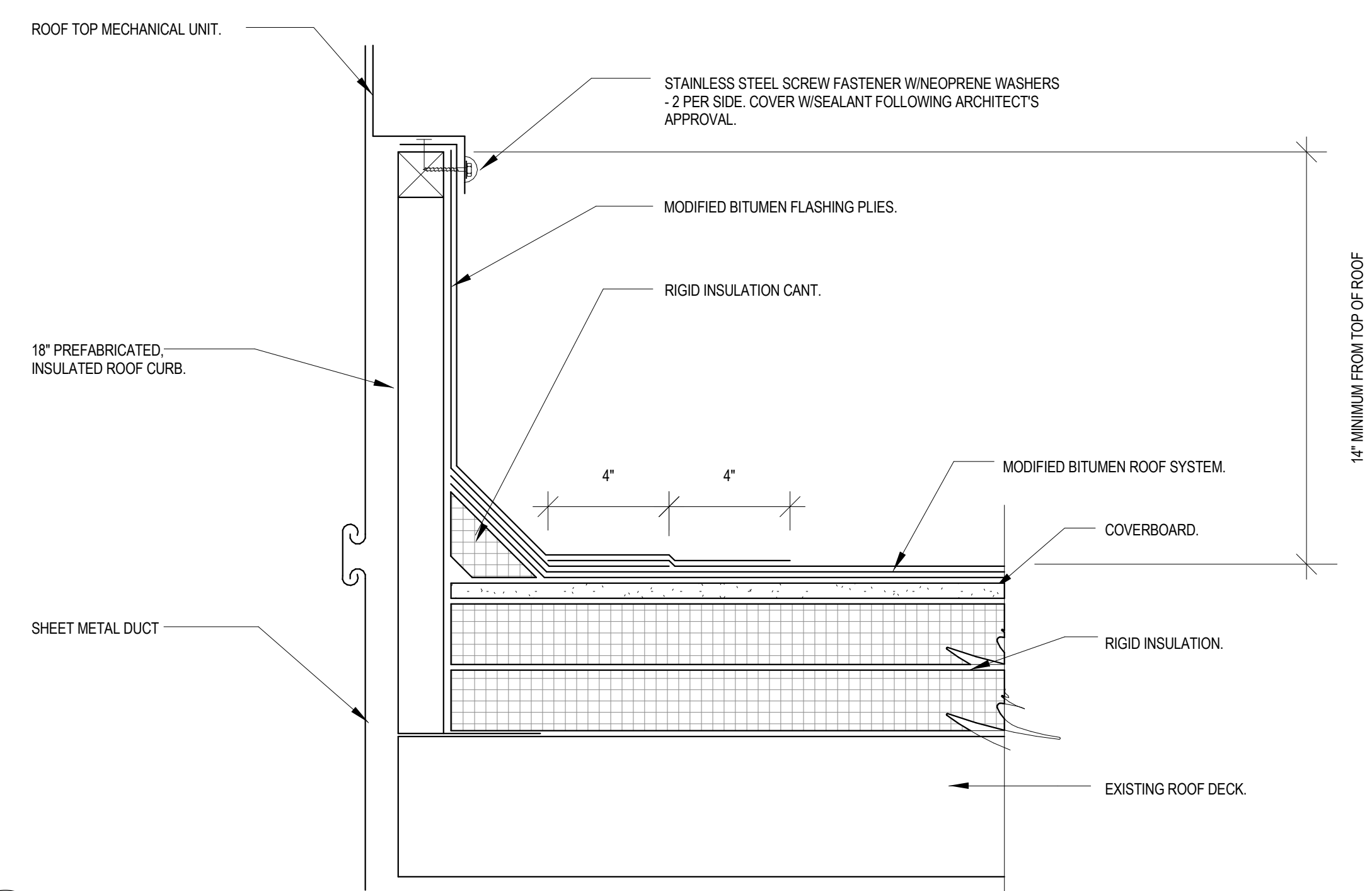
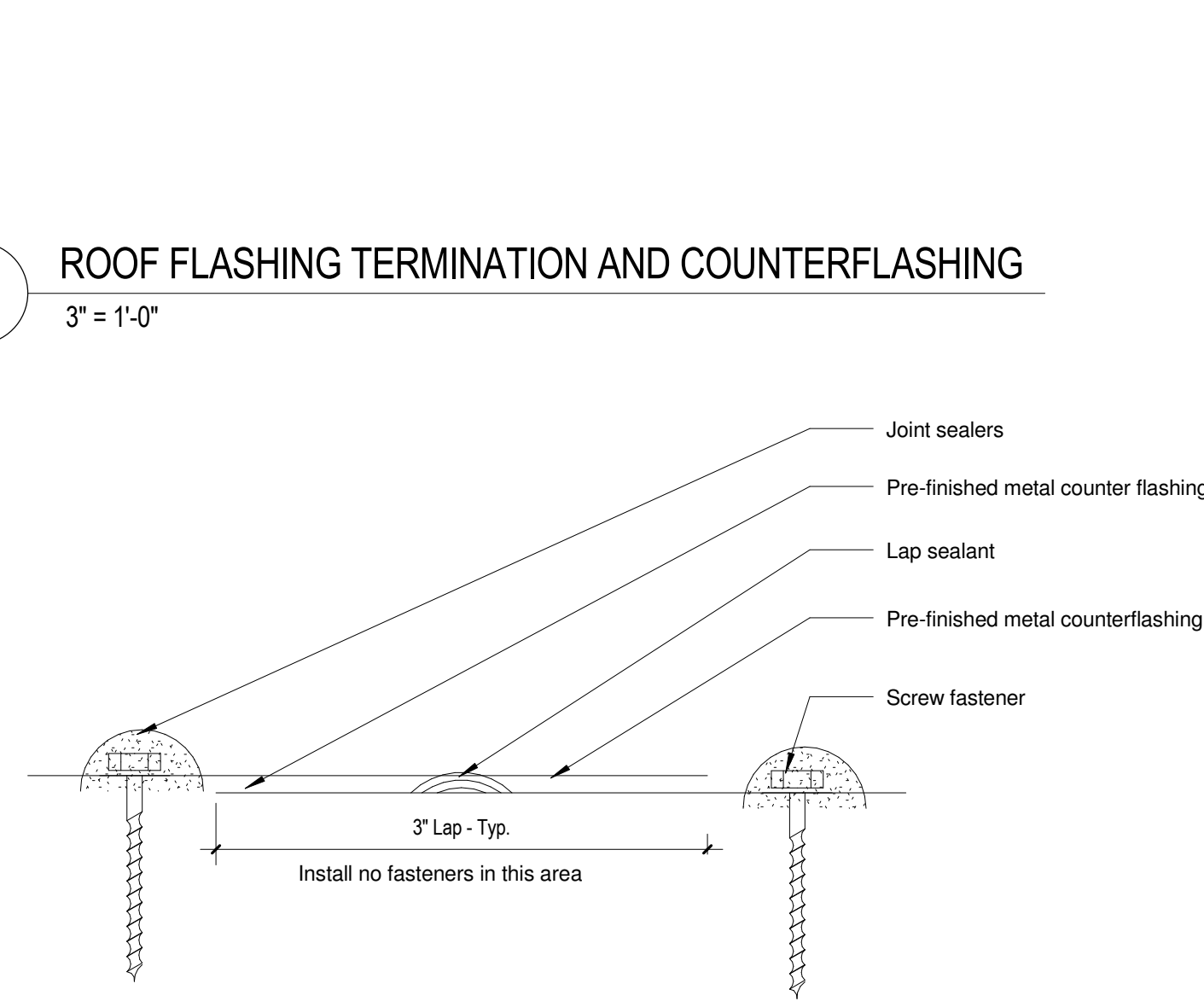
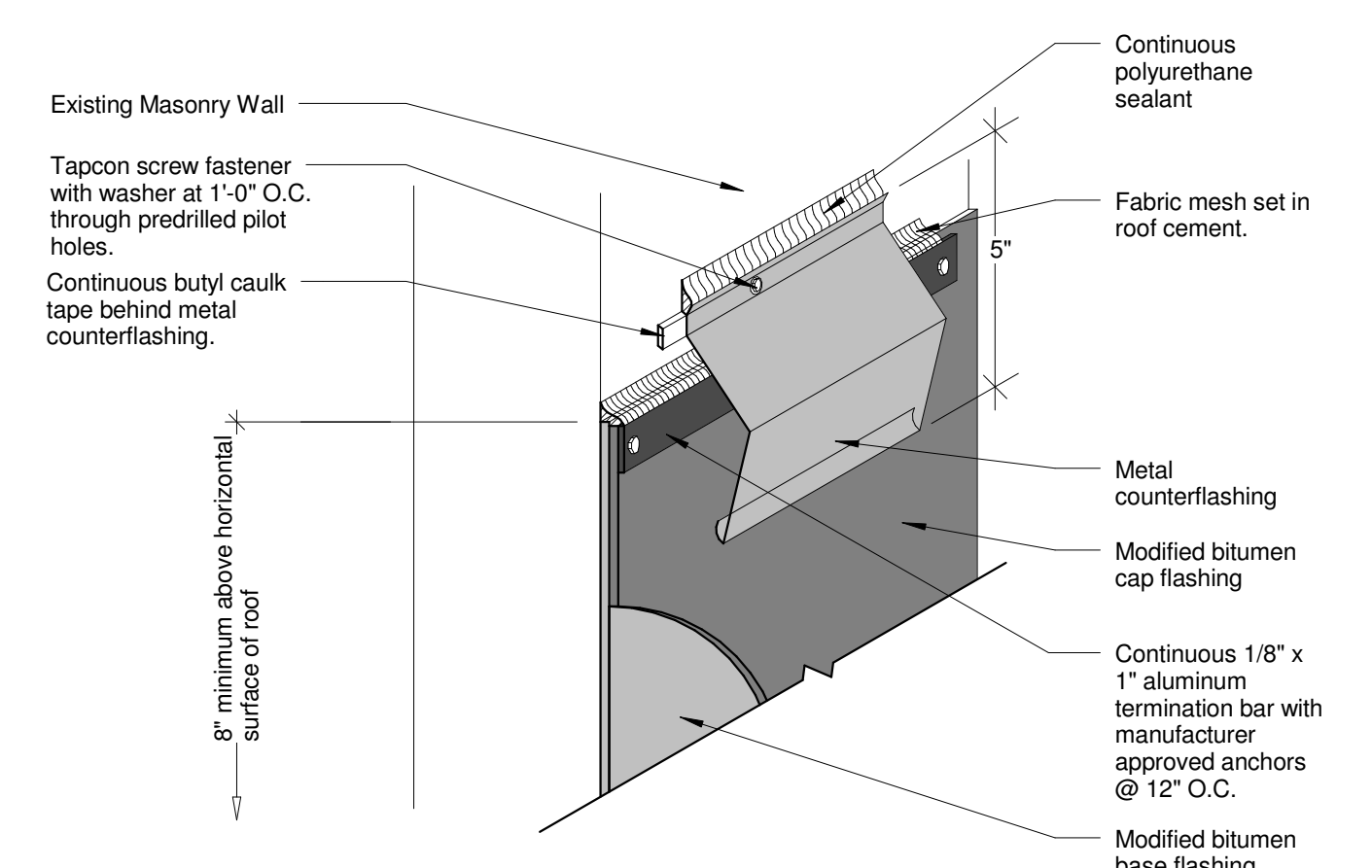
ISSUED FOR BID



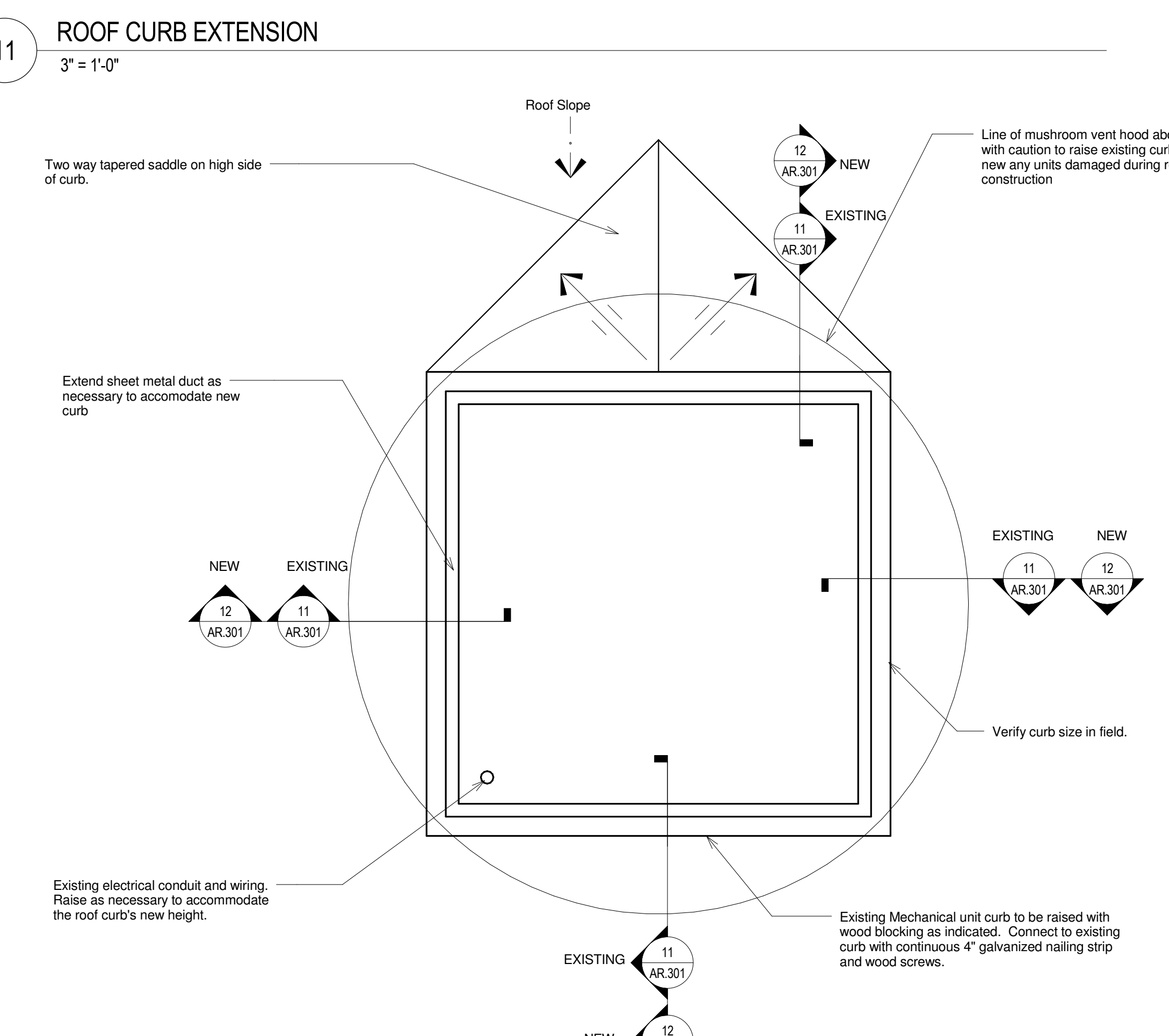
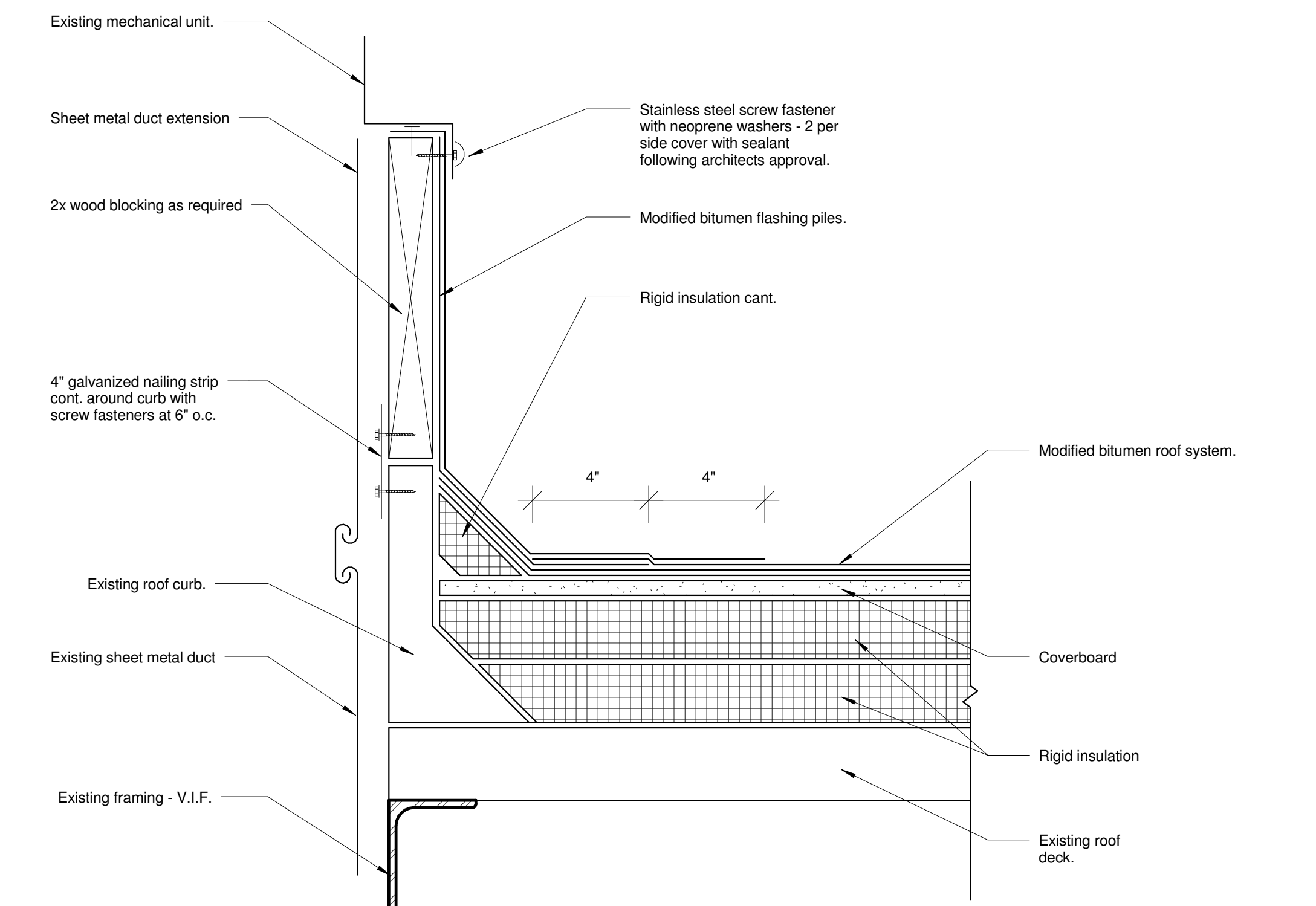
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**Designer Notes:** 1. Field verify location of any through-wall flashing and/or weep holes.  
 2. Coordinate note #3 with roof system design.  
**Note:** 1. Termination bar and counterflashing are to be installed horizontally across masonry wall. Coordinate height of flashings so that at highest point of insulation, the top of the flashing is 8" minimum above the surface of the roof membrane and with the roof edge termination at the wall.  
 2. Termination bar must be installed on same day as cap flashing.  
 3. Do not cover existing through-wall flashing or weep holes - notify architect if observed.



**Notes:** 1. Remove all B.U.R. flashing from roof curb.  
 2. Raise existing roof top unit with caution. Extend electrical wiring, conduit, and sheet metal ducts as necessary to attain required height. Replace with new any units damaged during reroofing construction.



Existing electrical conduit and wiring. Raise as necessary to accommodate the roof curb's new height.  
 Existing Mechanical unit curb to be raised with wood blocking as indicated. Connect to existing curb with continuous 4" galvanized nailing strip and wood screws.

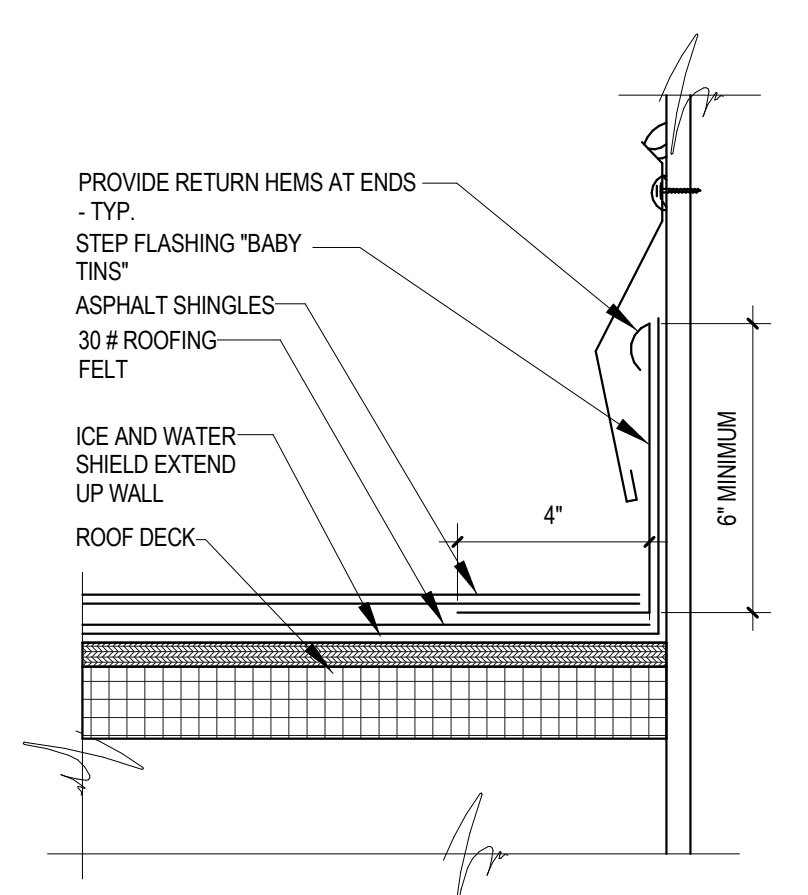
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 PBC Contract No.: 05813  
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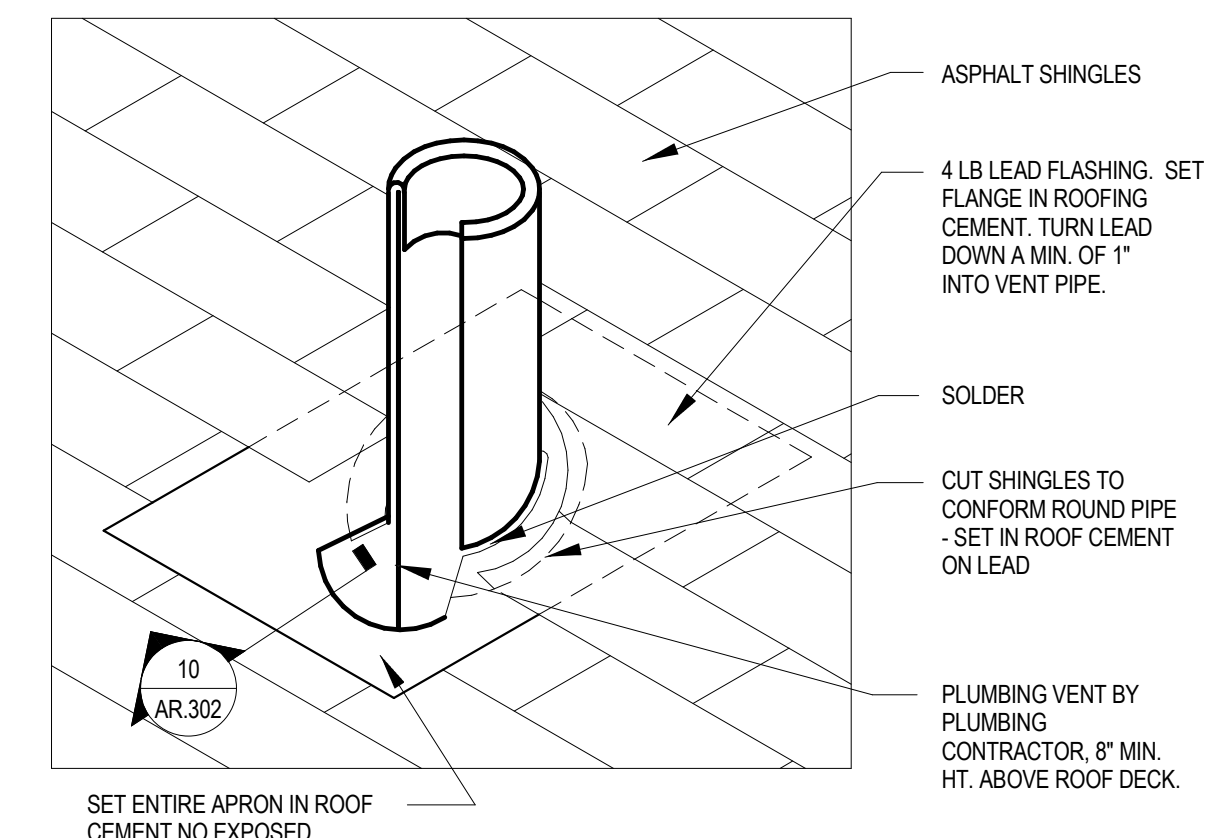
Typical Roofing Details

AR.302

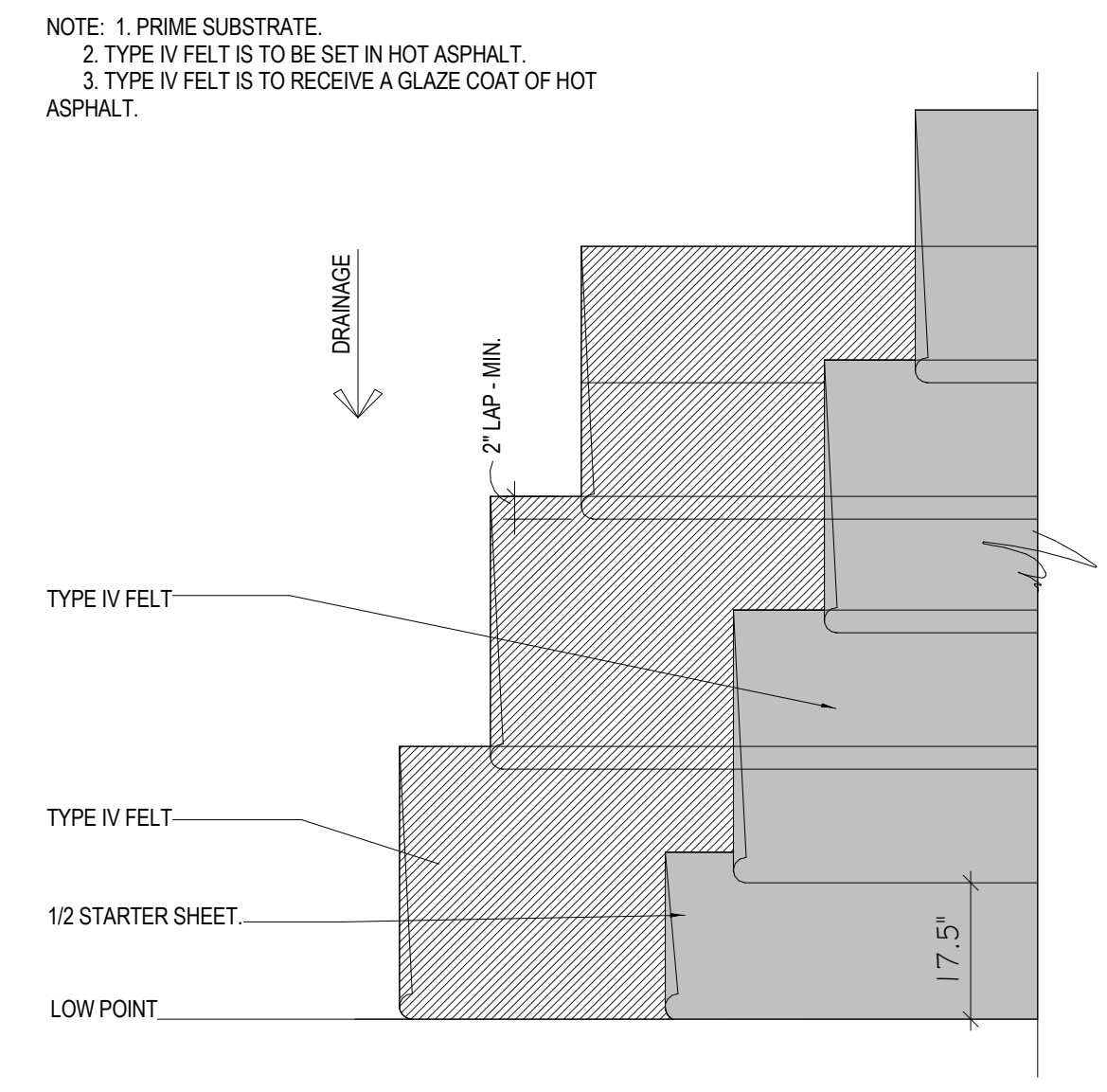
ISSUED FOR BID



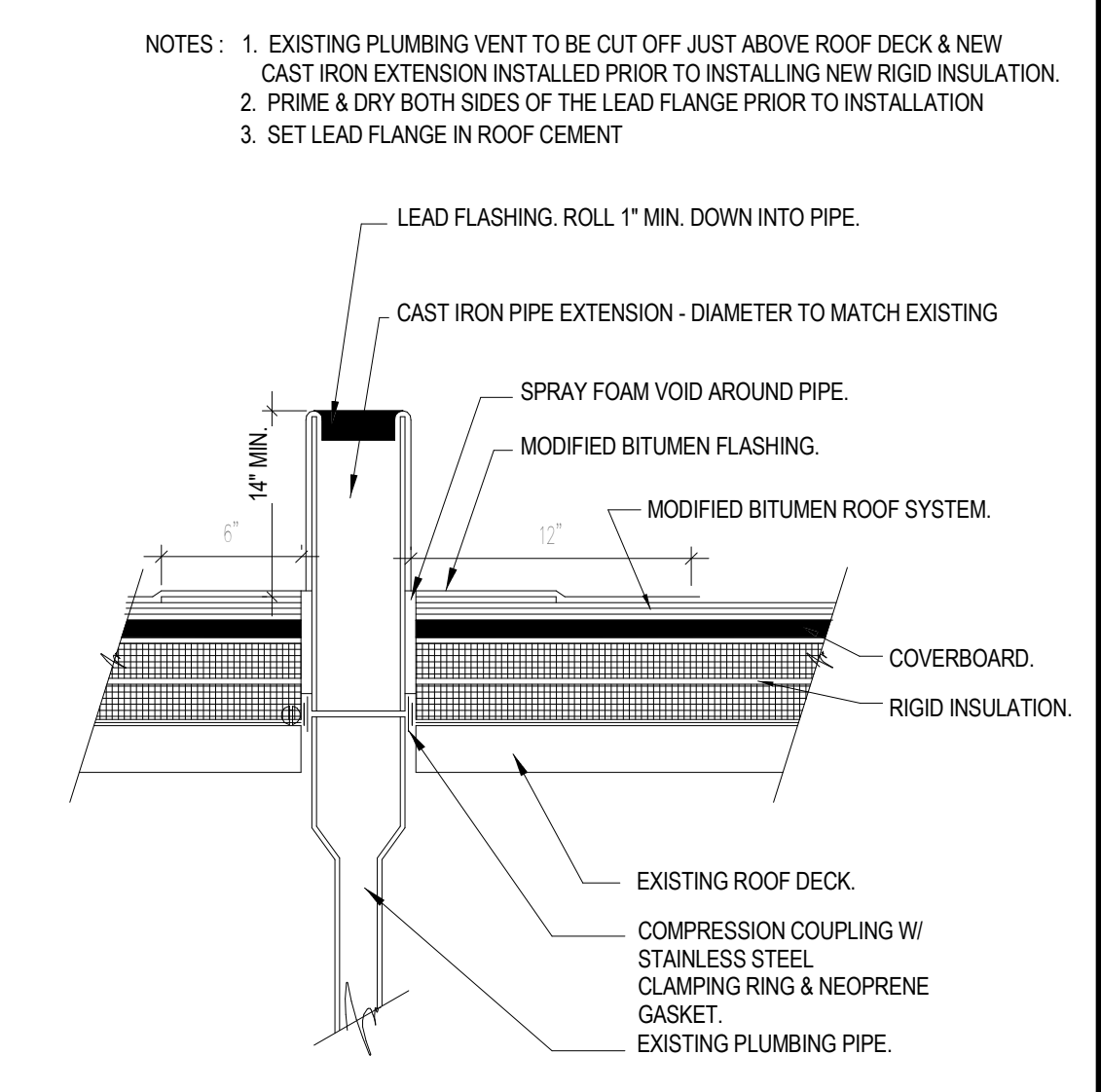
13 ASPHALT SHINGLE ROOF - WALL FLASH DETAIL  
3" = 1'-0"



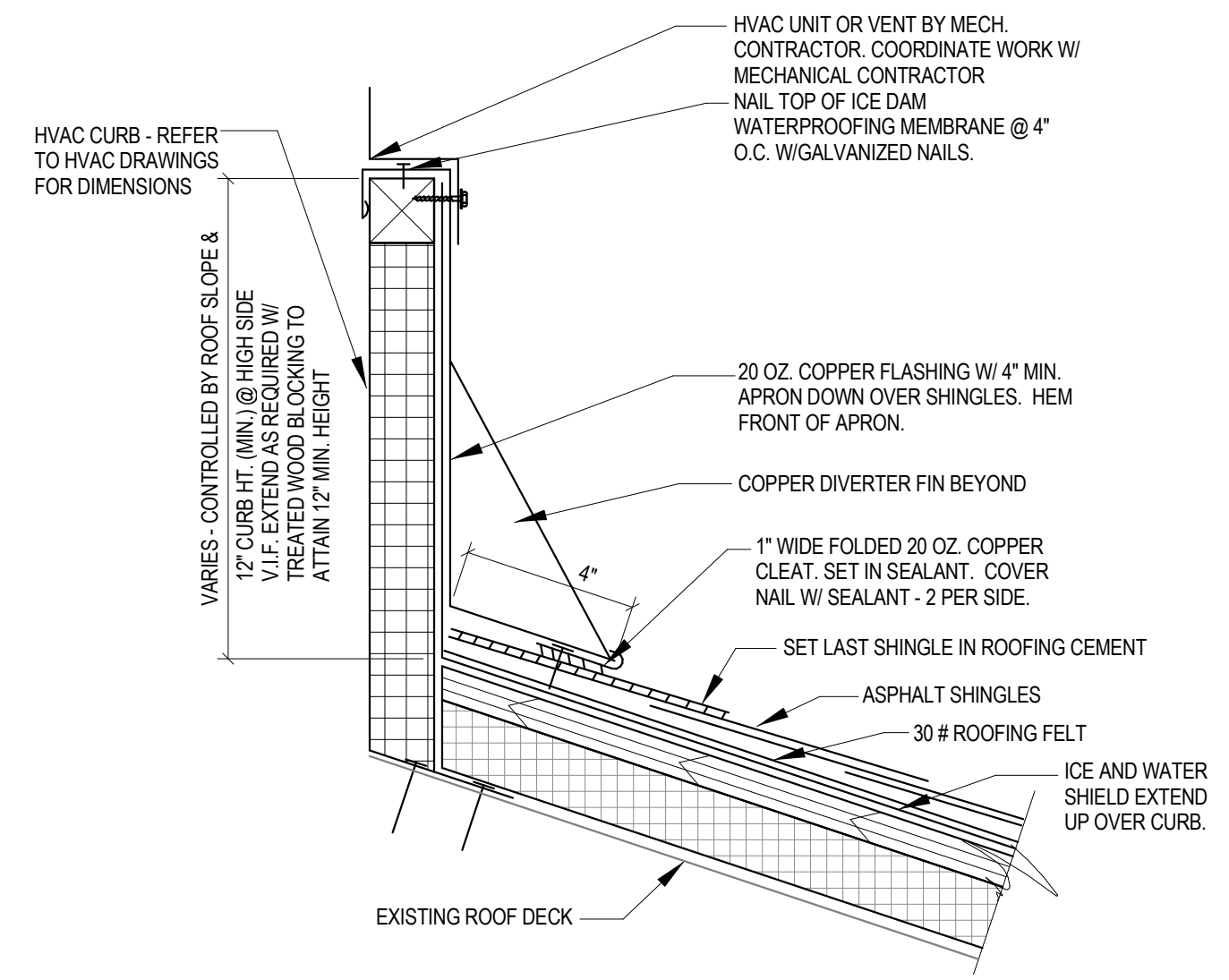
9 ASPHALT SHINGLE ROOF - PLUMBING VENT DETAIL  
3" = 1'-0"



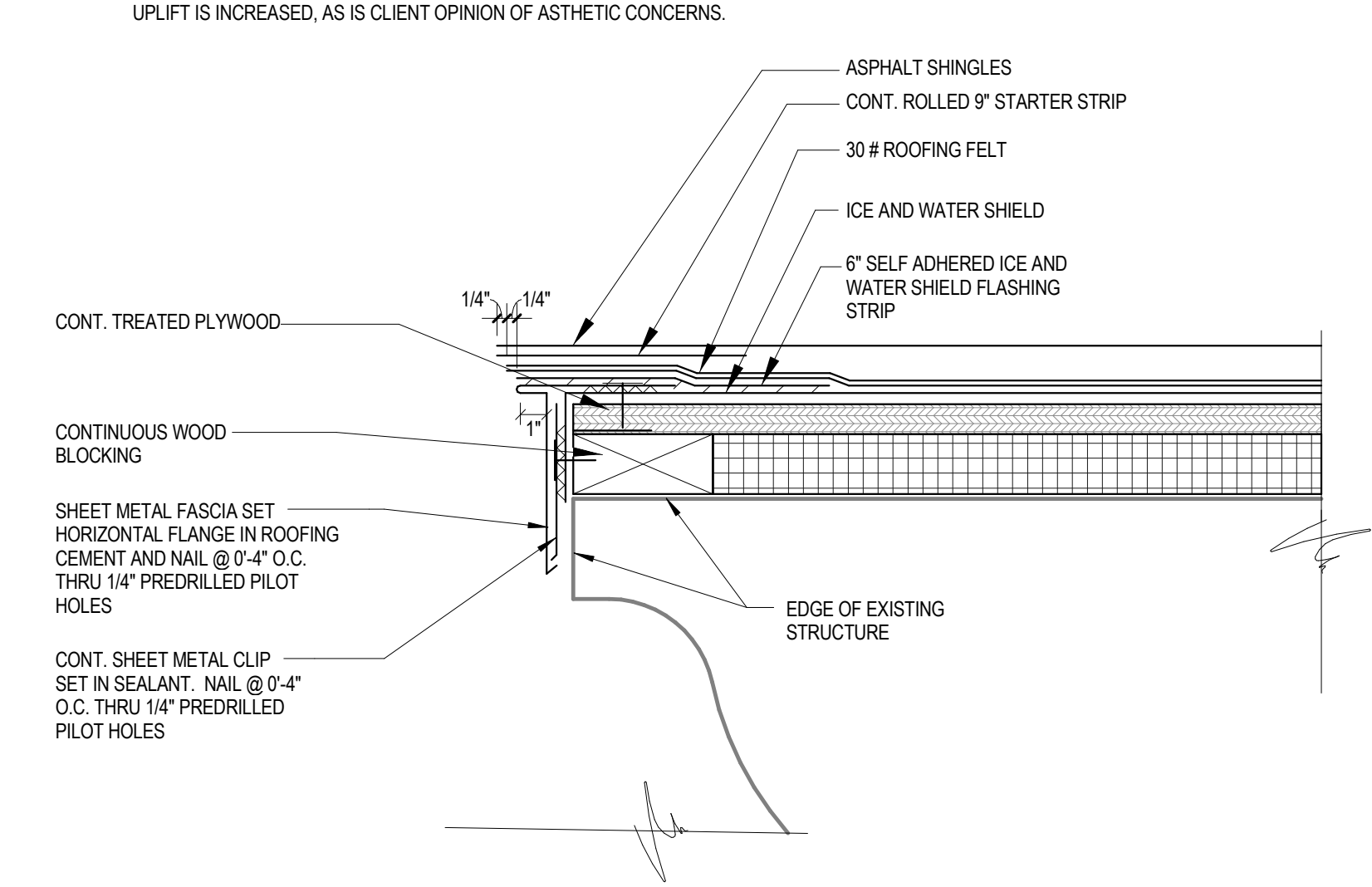
5 2-PLY VAPOR RETARDER / TEMPORARY ROOF DETAIL  
1 1/2" = 1'-0"



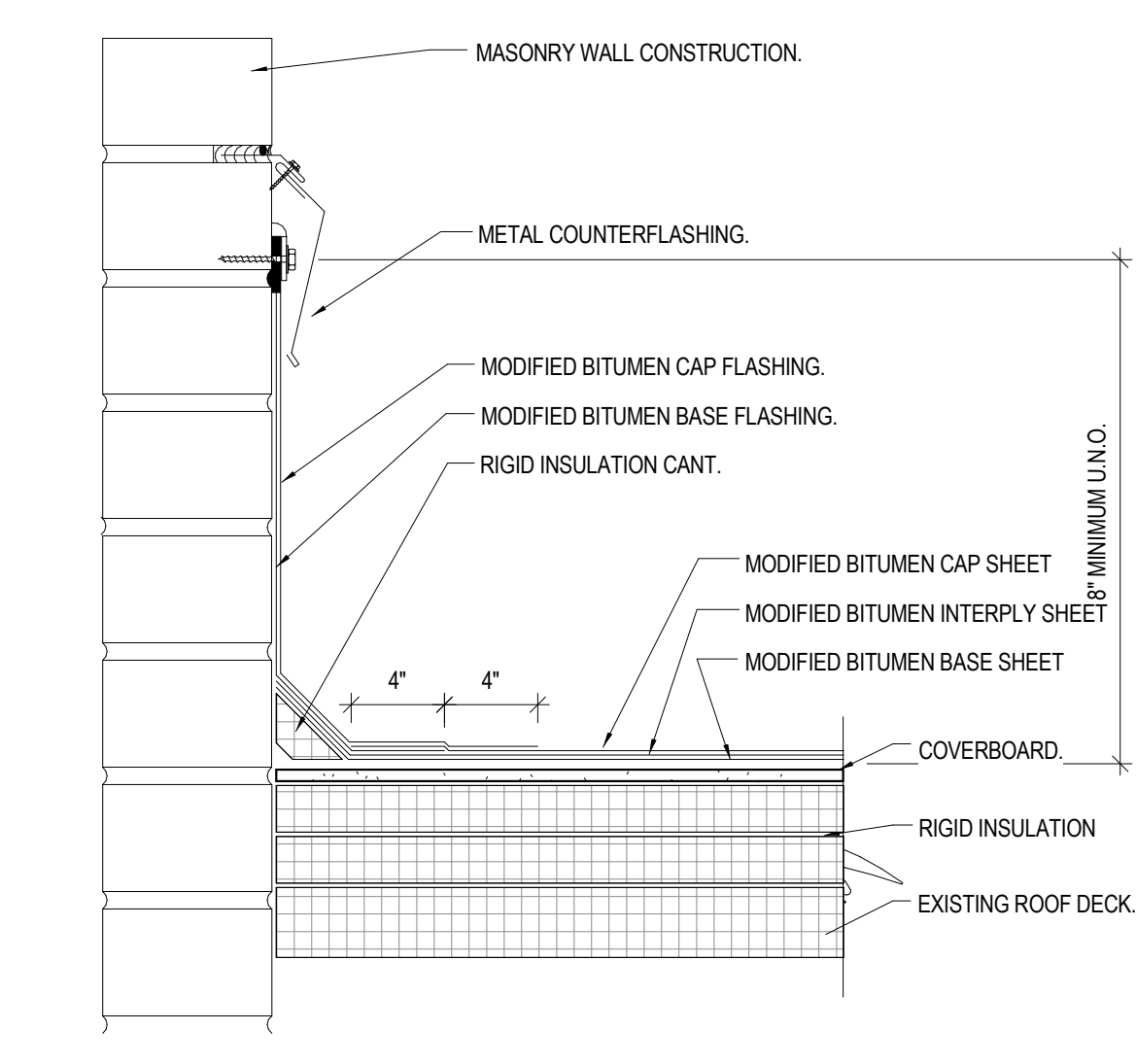
3 VENT PIPE EXTENSION DETAIL  
1 1/2" = 1'-0"



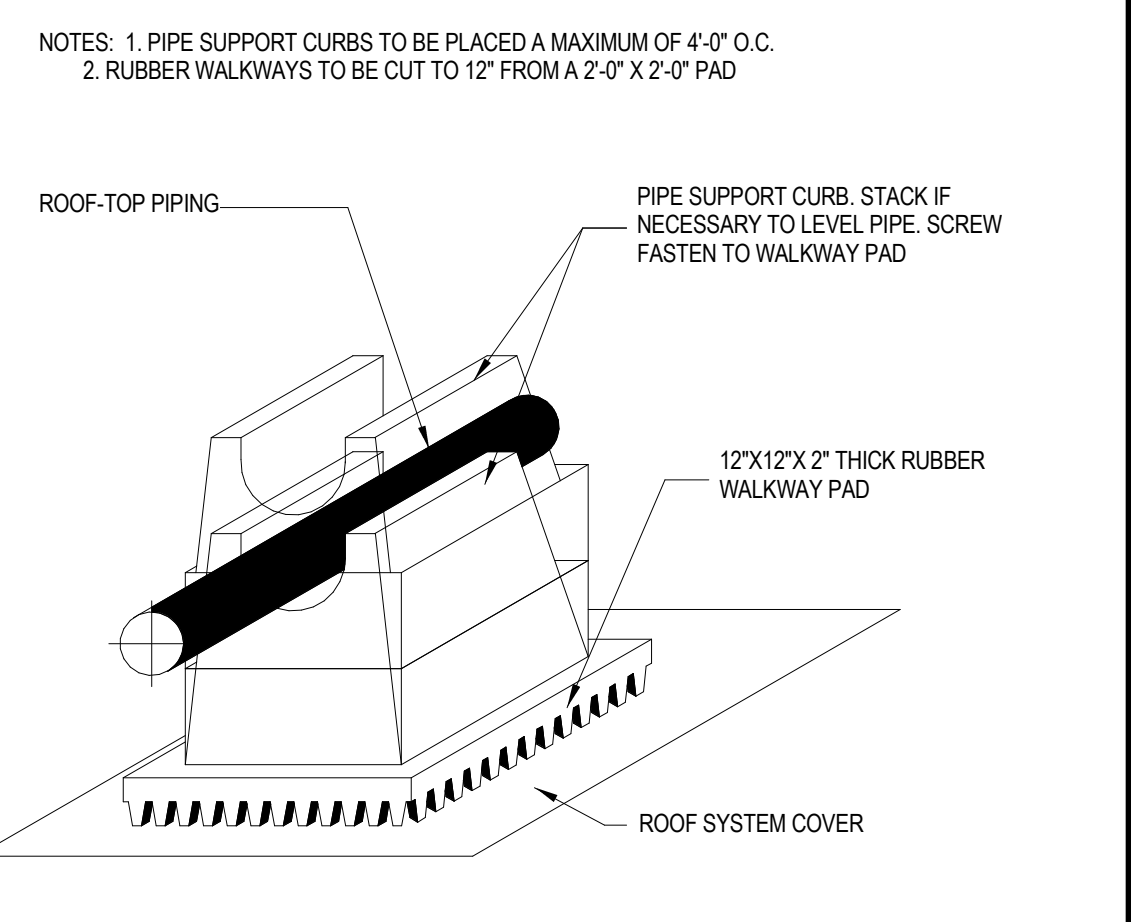
12 ASPHALT SHINGLE ROOF - CURB SECTION AT LOW SIDE  
3" = 1'-0"



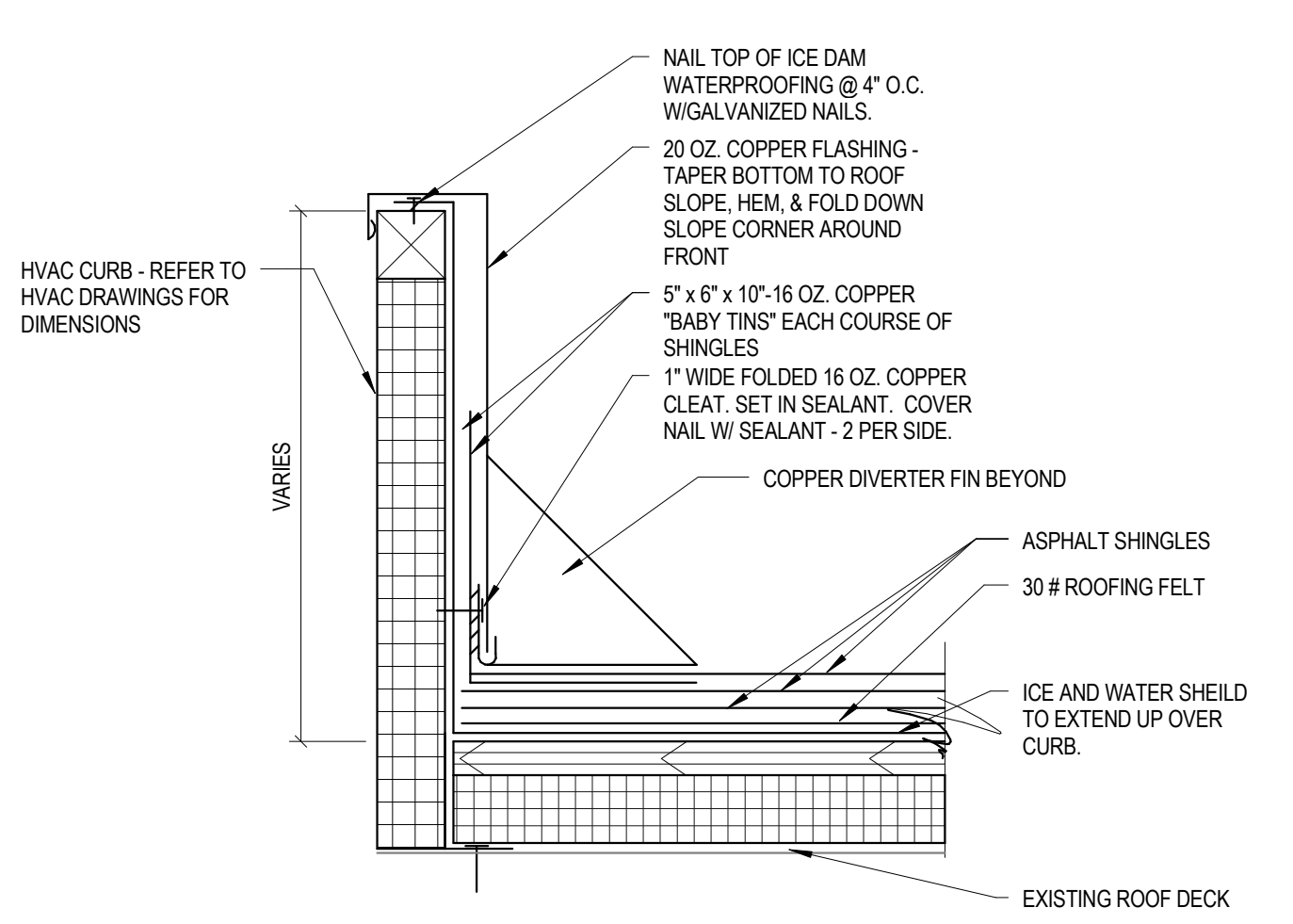
8 ASPHALT SHINGLE ROOF - RAKE EDGE DETAIL  
3" = 1'-0"



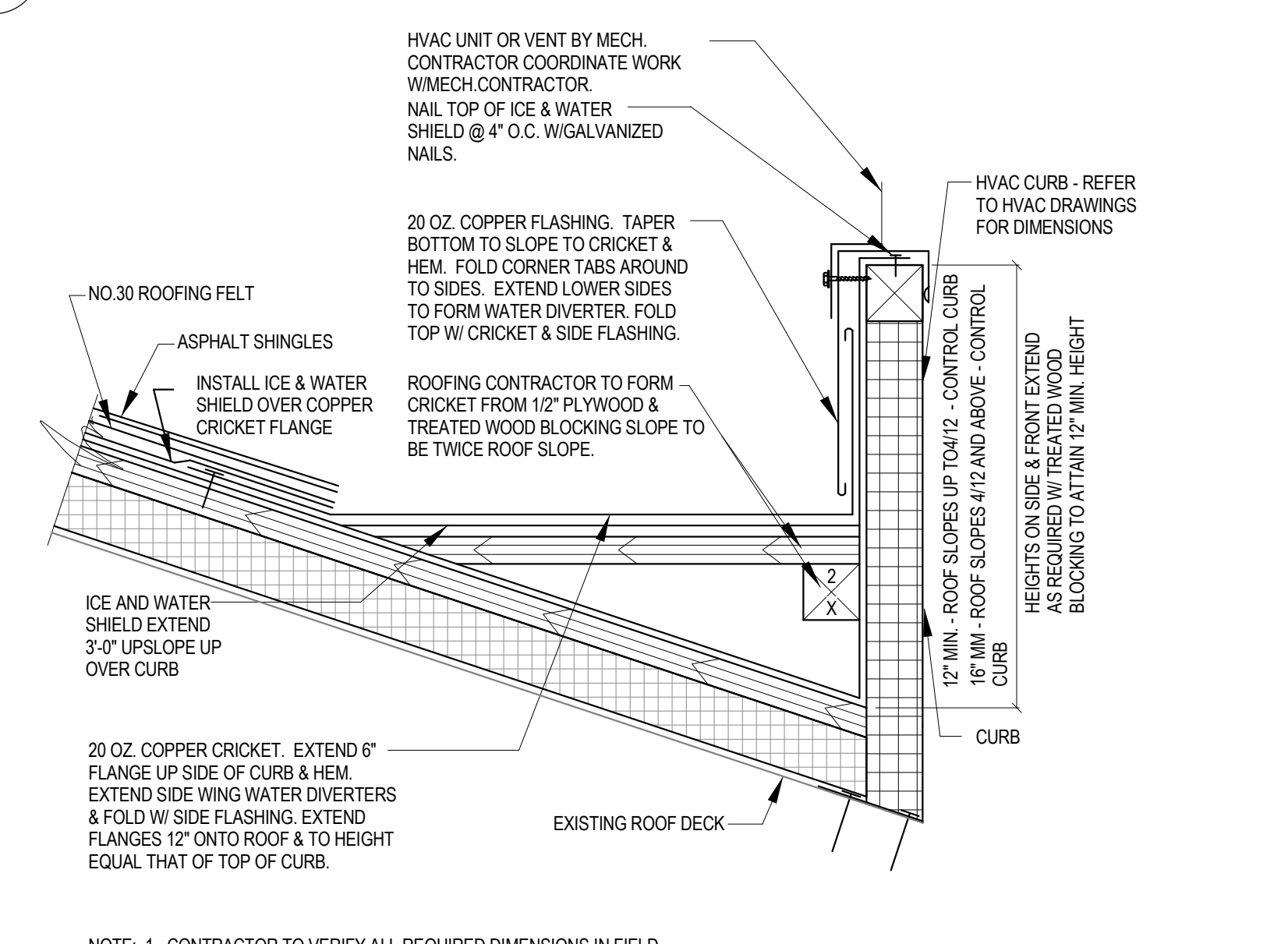
4 ROOF TERMINATION DETAIL  
1 1/2" = 1'-0"



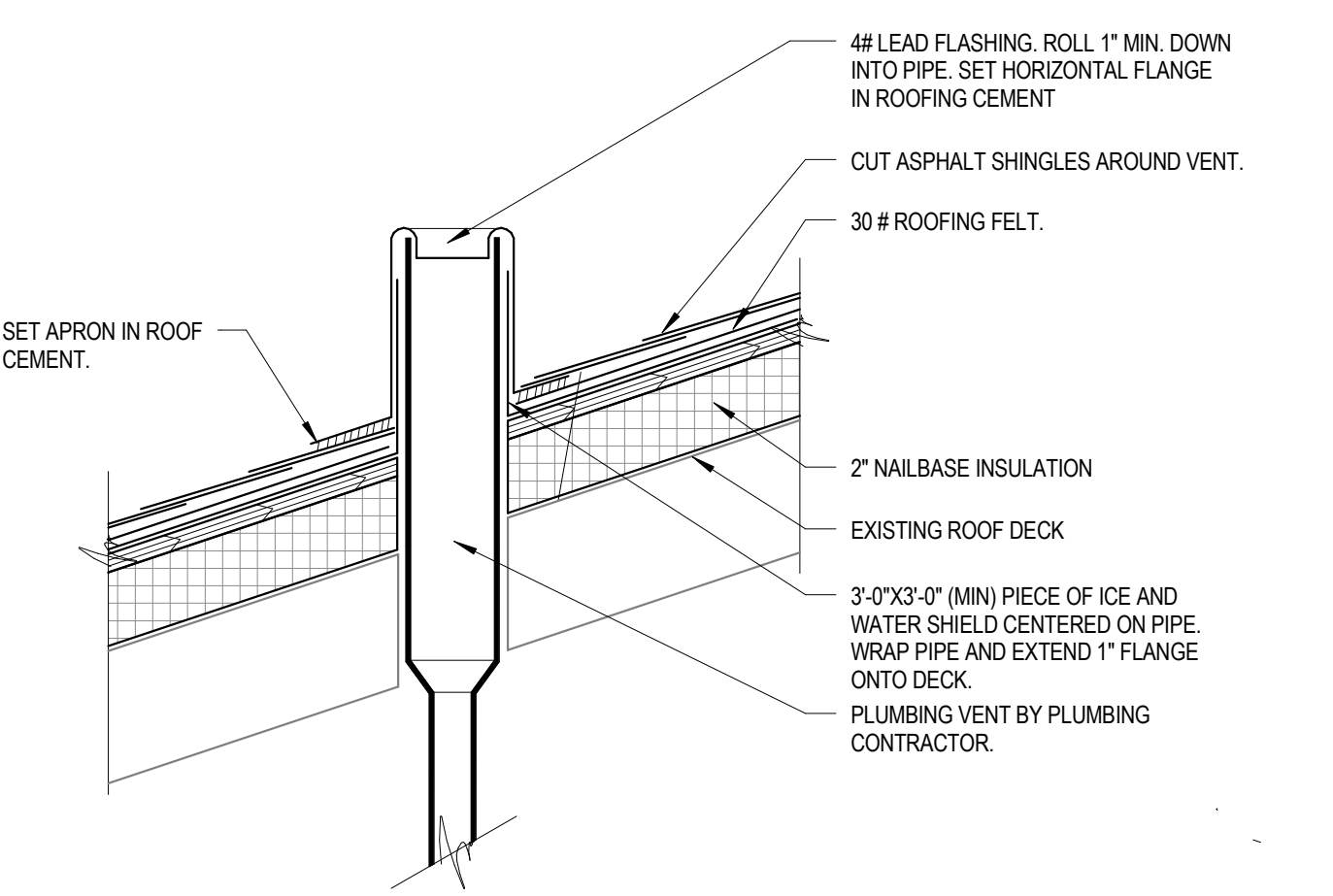
2 PIPE SUPPORT CURB DETAIL  
1 1/2" = 1'-0"



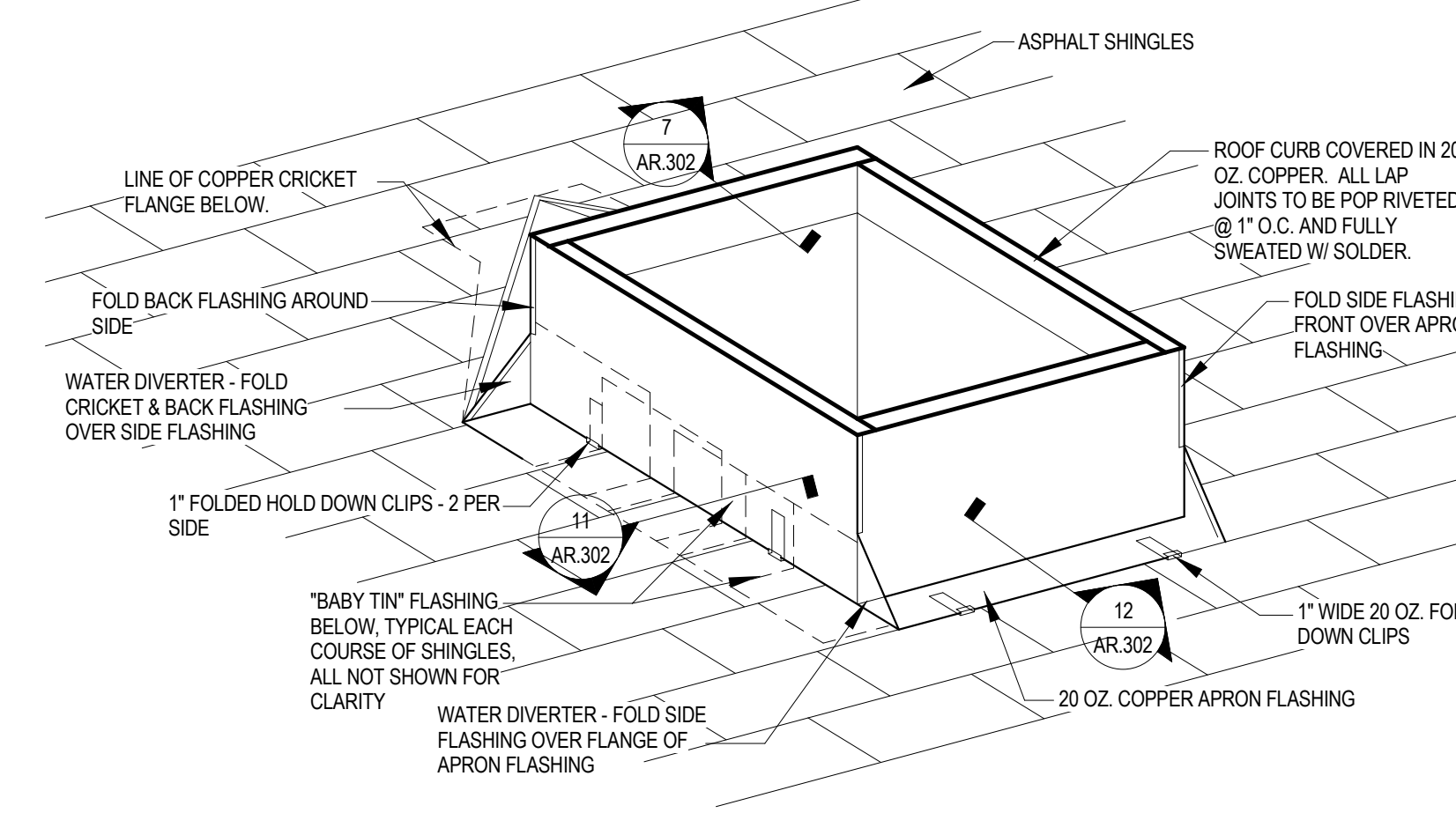
11 ASPHALT SHINGLE ROOF - CURB SECTION  
3" = 1'-0"



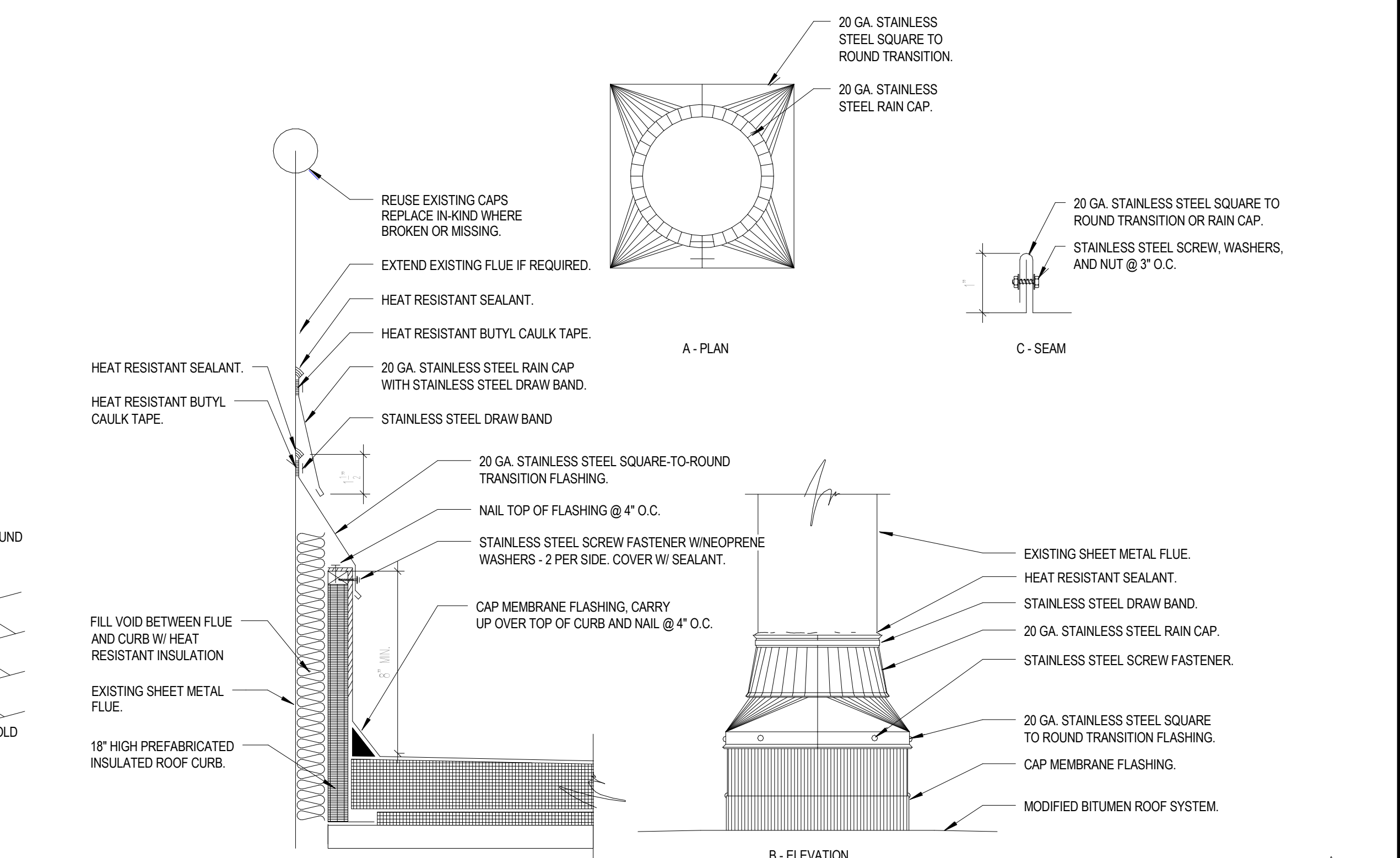
7 ASPHALT SHINGLE ROOF - CURB SECTION AT HIGH SIDE CRICKET  
3" = 1'-0"



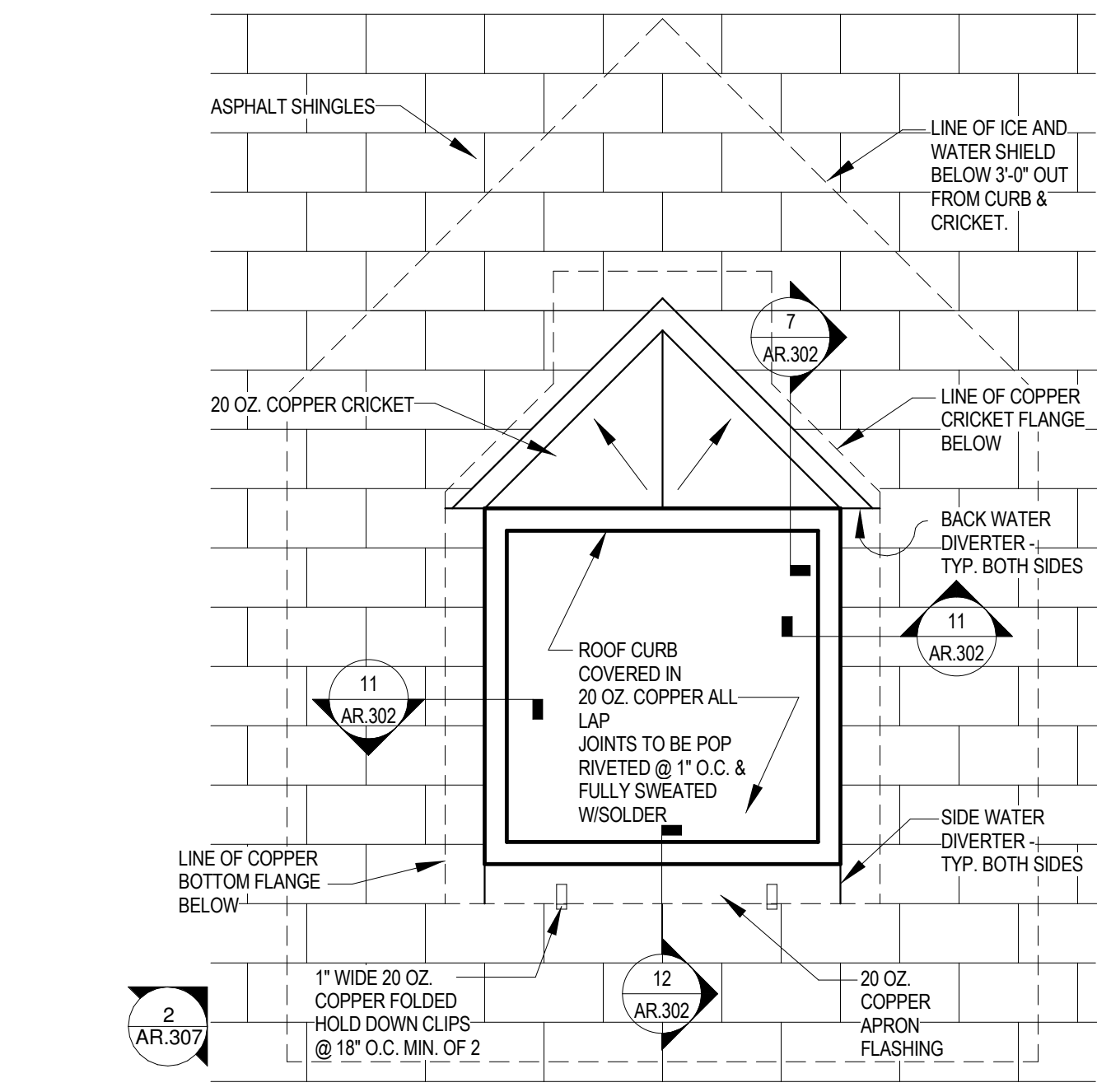
10 ASPHALT SHINGLE ROOF - TYPICAL VENT PIPE  
3" = 1'-0"



6 ASPHALT SHINGLE ROOF - ROOF CURB ISOMETRIC  
3" = 1'-0"



1 FLUE CURB DETAIL  
3" = 1'-0"



14 ASPHALT SHINGLE ROOF - CURB PLAN  
3" = 1'-0"

WARNING: LEAD-BASED PAINT MAY BE PRESENT WITHIN THE BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS INCLUDING OSHA (1926.62) COMPLIANCE, WASTE CHARACTERIZATION AND WASTE DISPOSAL. ALL WORK WITH SURFACES CONTAINING LEAD-BASED PAINT SHALL BE DONE IN ACCORDANCE WITH SECTION 02133.

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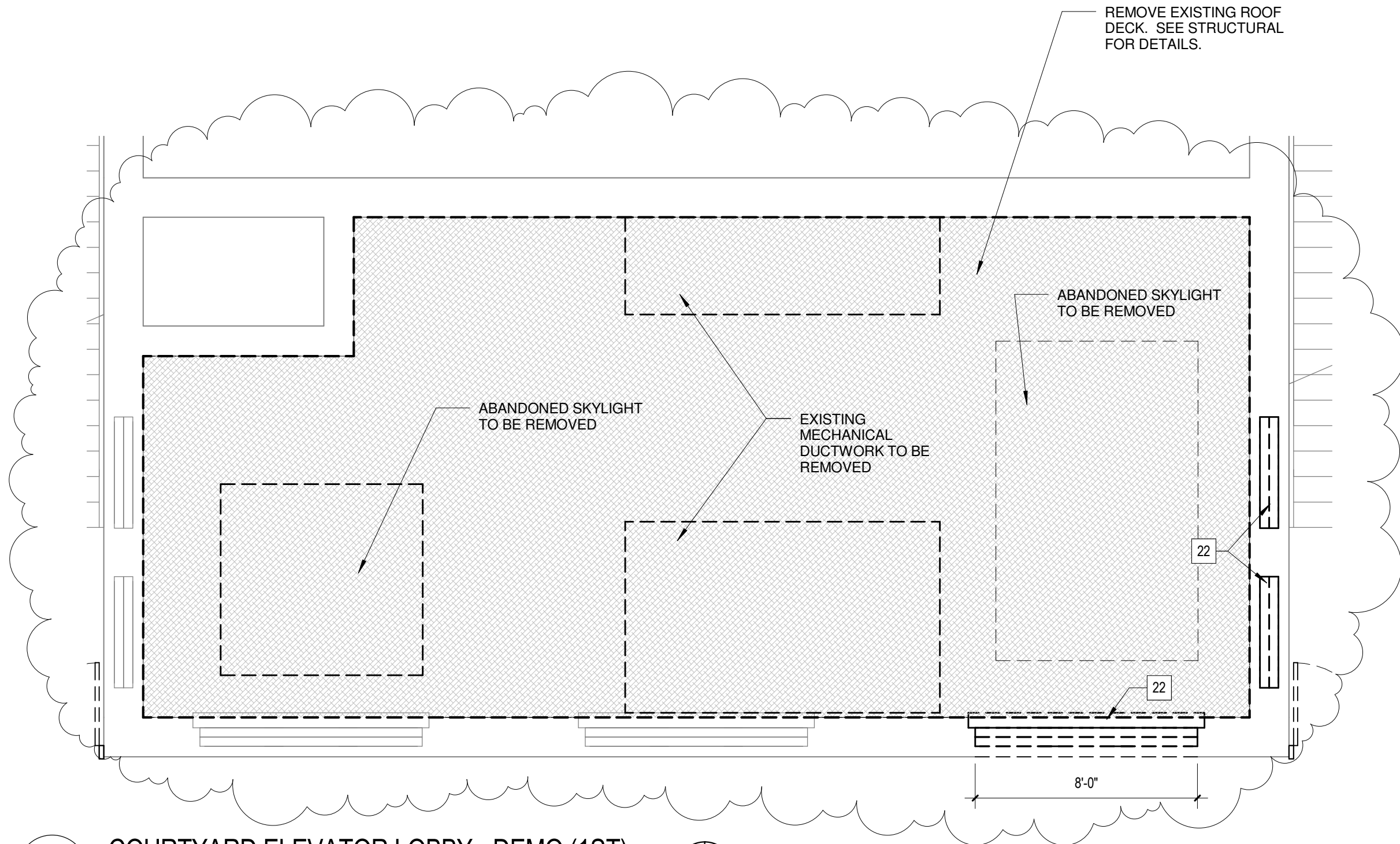
CPS

**Henderson  
 Elementary  
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 Renovations  
 Phase II**

5650 S. Wolcott Avenue  
 Chicago, IL 60636

**Legat Architects**

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Courtyard Roof  
 Demolition

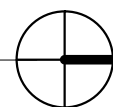
PBC CONTRACT NO. 05813  
 LEGAT PROJECT NO. 211060.01  
 DATE OF ISSUE 11-28-2011

**ASK-01**

3

**COURTYARD ELEVATOR LOBBY - DEMO (1ST)**

1/4" = 1'-0"



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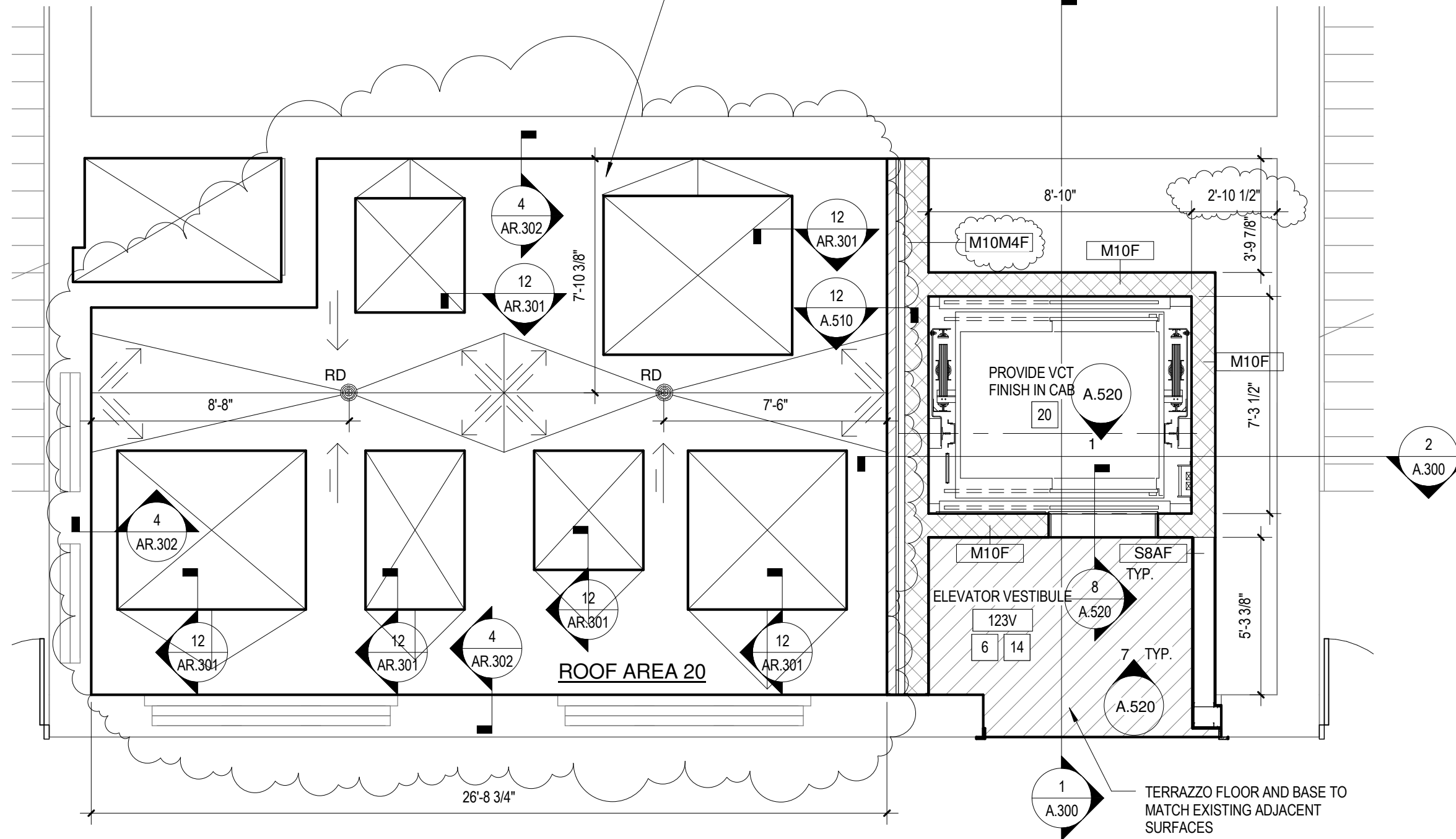
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**Courtyard Elevator and  
 Roof**

PBC CONTRACT NO. 05813  
 LEGAT PROJECT NO. 211060.01  
 DATE OF ISSUE 11-28-2011

**ASK-02**

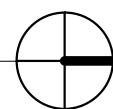
PROVIDE NEW ROOF DECK  
 AND MODIFIED BITUMEN  
 ROOFING. SEE STRUCTURAL  
 FOR DETAILS.



**COURTYARD ELEVATOR LOBBY (1ST)**

4

1/4" = 1'-0"



CPS

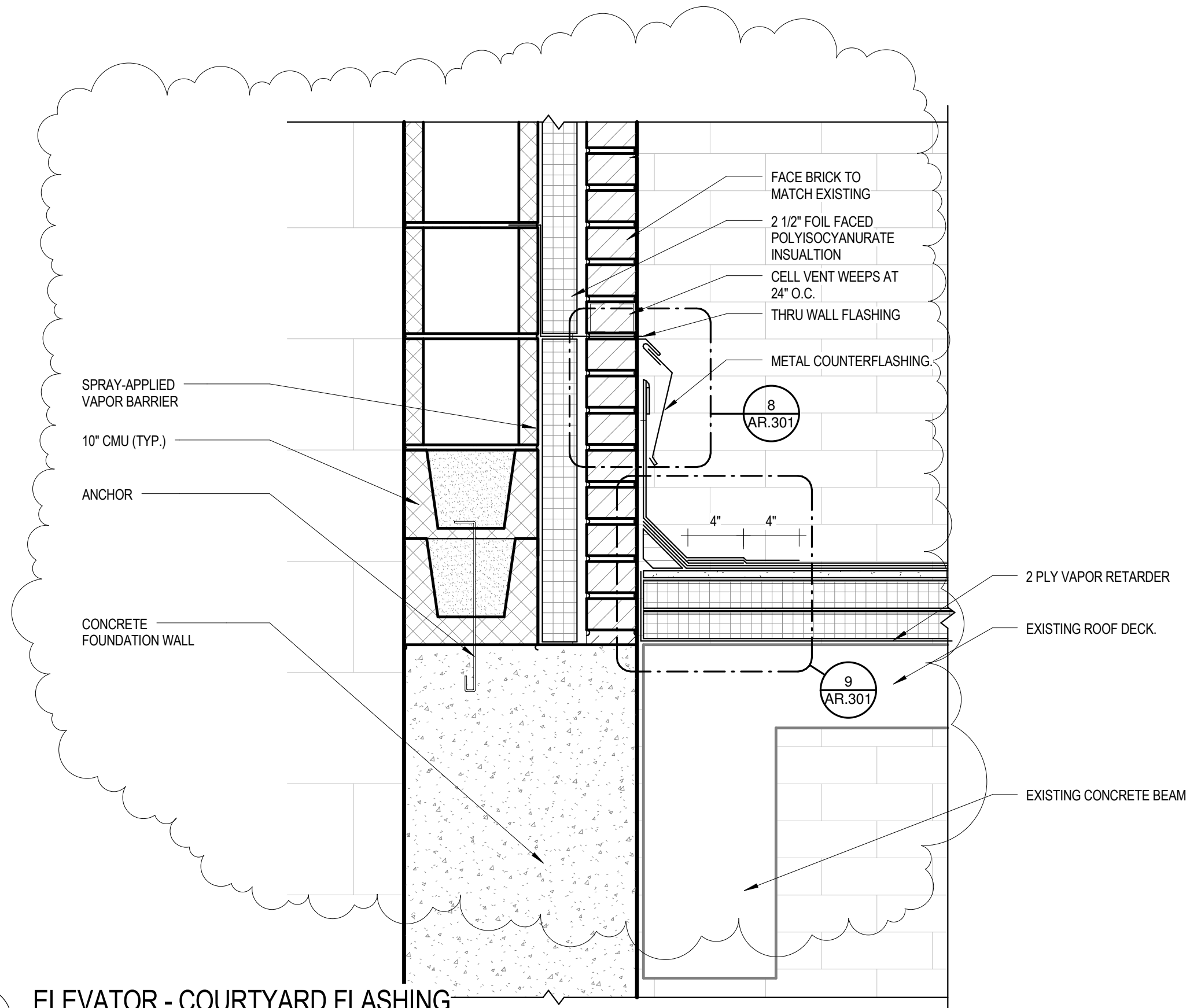
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**12** ELEVATOR - COURTYARD FLASHING  
 1 1/2" = 1'-0"

Roofing Details at  
 Elevator

PBC CONTRACT NO. 05813  
 LEGAT PROJECT NO. 211060.01  
 DATE OF ISSUE 11-28-2011

**ASK-03**



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Elevator East Parapet

PBC CONTRACT NO. 05813  
 LEGAT PROJECT NO. 211060.01  
 DATE OF ISSUE 11-28-2011

**ASK-04**

CAP FLASHING STRIP W/  
SEALANT ALONG EDGES.

GRANULAR SURFACED  
MODIFIED BITUMEN CAP SHEET.

MODIFIED BITUMEN BASE  
SHEET.

1/2" COVERBOARD. SET IN  
COLD ADHESIVE.

TAPERED INSULATION SUMP.  
SET IN COLD ADHESIVE.

2 PLY VAPOR RETARDER

CONCRETE ROOF DECK.

2 X 6 WOOD BLOCKING AND  
PLYWOOD. FASTEN TO ROOF  
DECK.

5/8" DIAMETER STAINLESS  
STEEL DOWEL GROUDED SOLID  
- ONE PER UNIT. SOLDER TO  
THRU-WALL FLASHING.

REINSTALL COPING STONE  
AFTER LINTEL  
INSTALLATION

HYPNUM MEMBRANE

PROVIDE NEW BRICK TO  
MATCH EXISTING ABOVE  
NEW LINTELS

(4) 3 1/2 x 3 1/2 x 1/4  
STEEL ANGLES -  
PROVIDE 8" BEARING  
EACH SIDE

20 OZ COPPER THRU-  
WALL SCUPPER.  
DESIGN PER SMACNA,  
5TH ED., FIGURE 1-27A.

PROVIDE NEW 8" HIGH x 8" WIDE  
THROUGH WALL OPENING IN  
EXISTING WALL

MODIFIED BITUMEN CAP  
FLASHING FROM ROOF  
BELOW

MODIFIED BITUMEN  
BASE FLASHING FROM  
ROOF BELOW

EXISTING MASONRY  
WALL.

11

**ELEVATOR - EAST PARAPET**

3" = 1'-0"

5/8" DIAMETER STAINLESS STEEL  
DOWEL GROUTED SOLID - ONE PER  
UNIT. SOLDER TO THRU-WALL  
FLASHING.

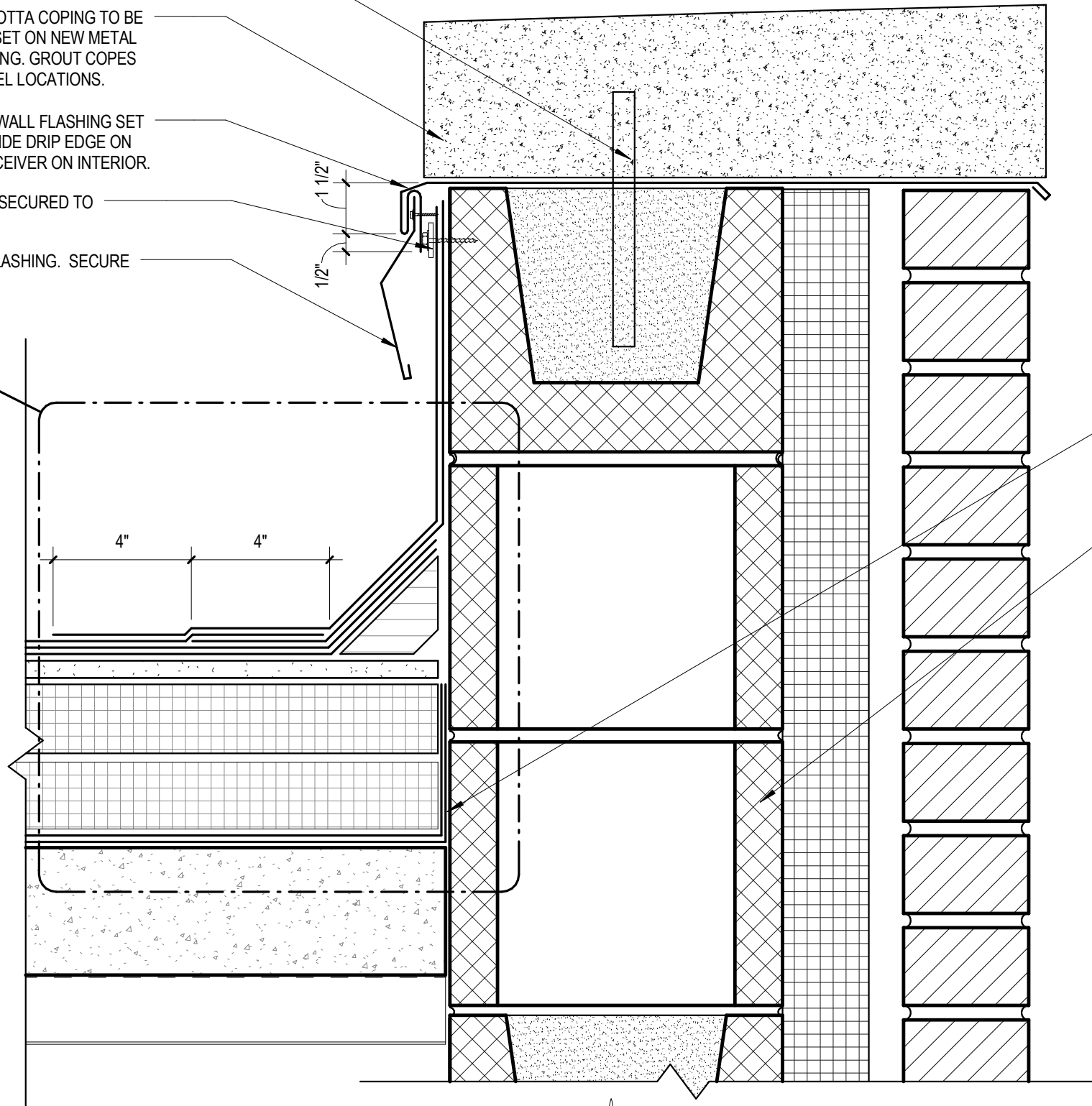
EXISTING TERRA COTTA COPING TO BE  
REMOVED AND RESET ON NEW METAL  
THRU-WALL FLASHING. GROUT COPE  
SOLID AT ALL DOWEL LOCATIONS.

NEW METAL THRU-WALL FLASHING SET  
IN SEALANT. PROVIDE DRIP EDGE ON  
EXTERIOR AND RECEIVER ON INTERIOR.

TERMINATION BAR SECURED TO  
MASONRY.

METAL COUNTERFLASHING. SECURE  
TO RECEIVER.

9  
AR.301



2 PLY VAPOR RETARDER

SOLID BRICK WALL  
CONSTRUCTION AT SIMILAR  
CONDITION



CPS

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Elevator North Parapet

PBC CONTRACT NO. 05813

LEGAT PROJECT NO. 211060.01

DATE OF ISSUE 11-28-2011

10

## ELEVATOR - SOUTH PARAPET

3" = 1'-0"

ASK-05

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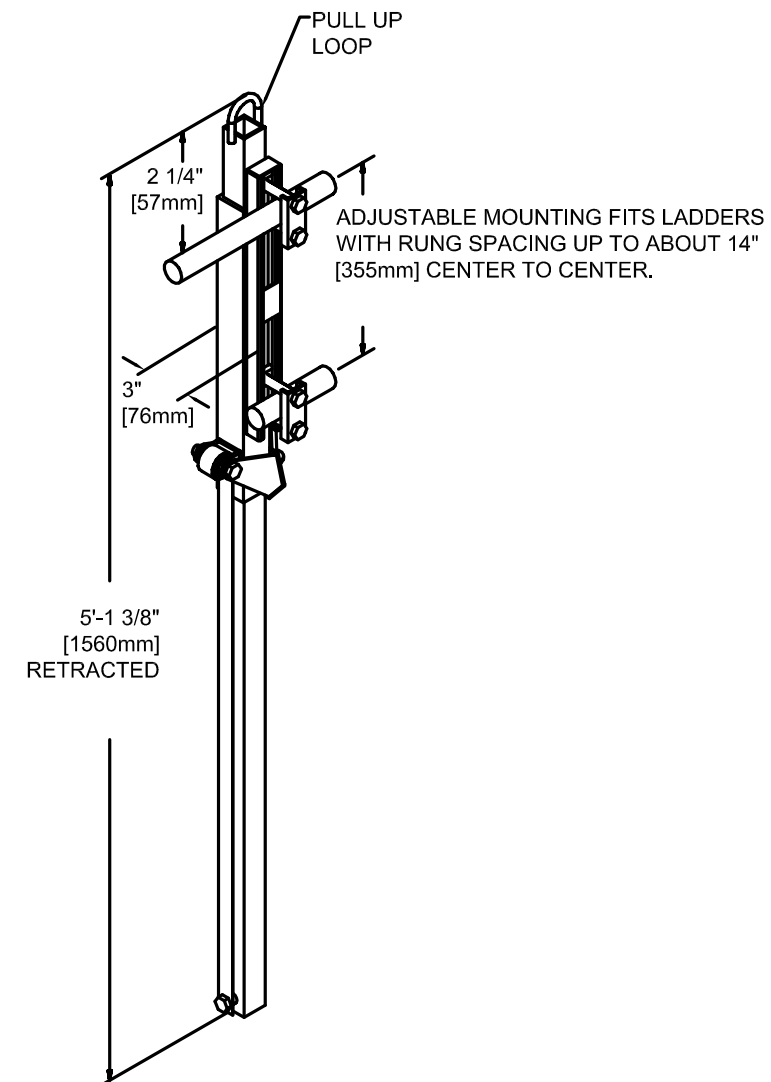
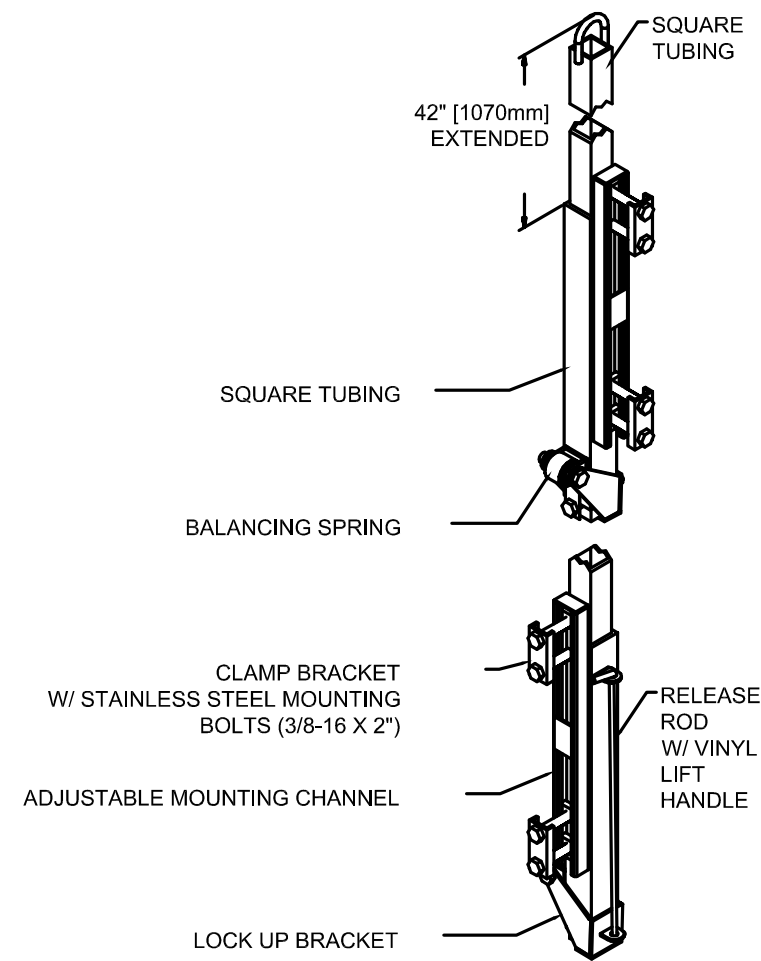
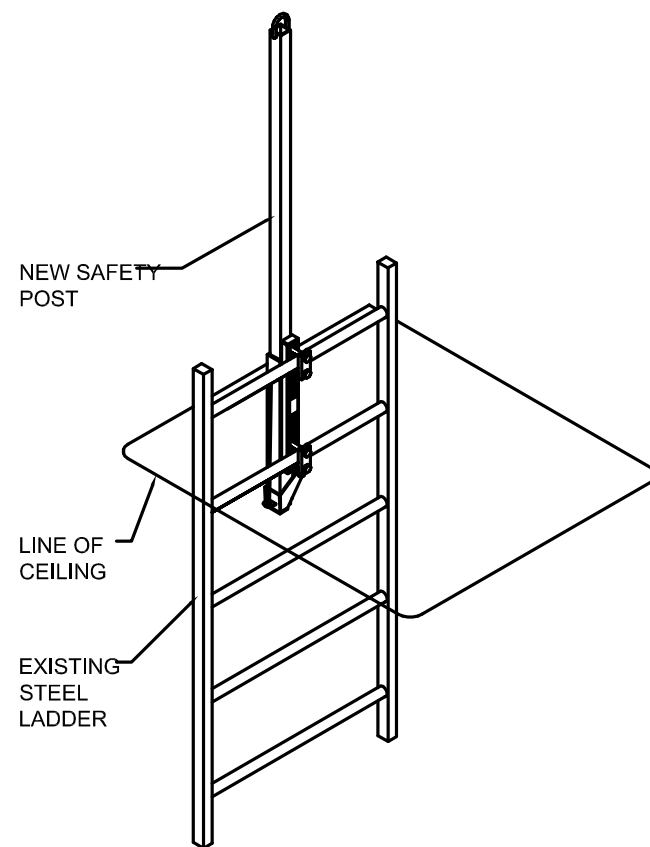
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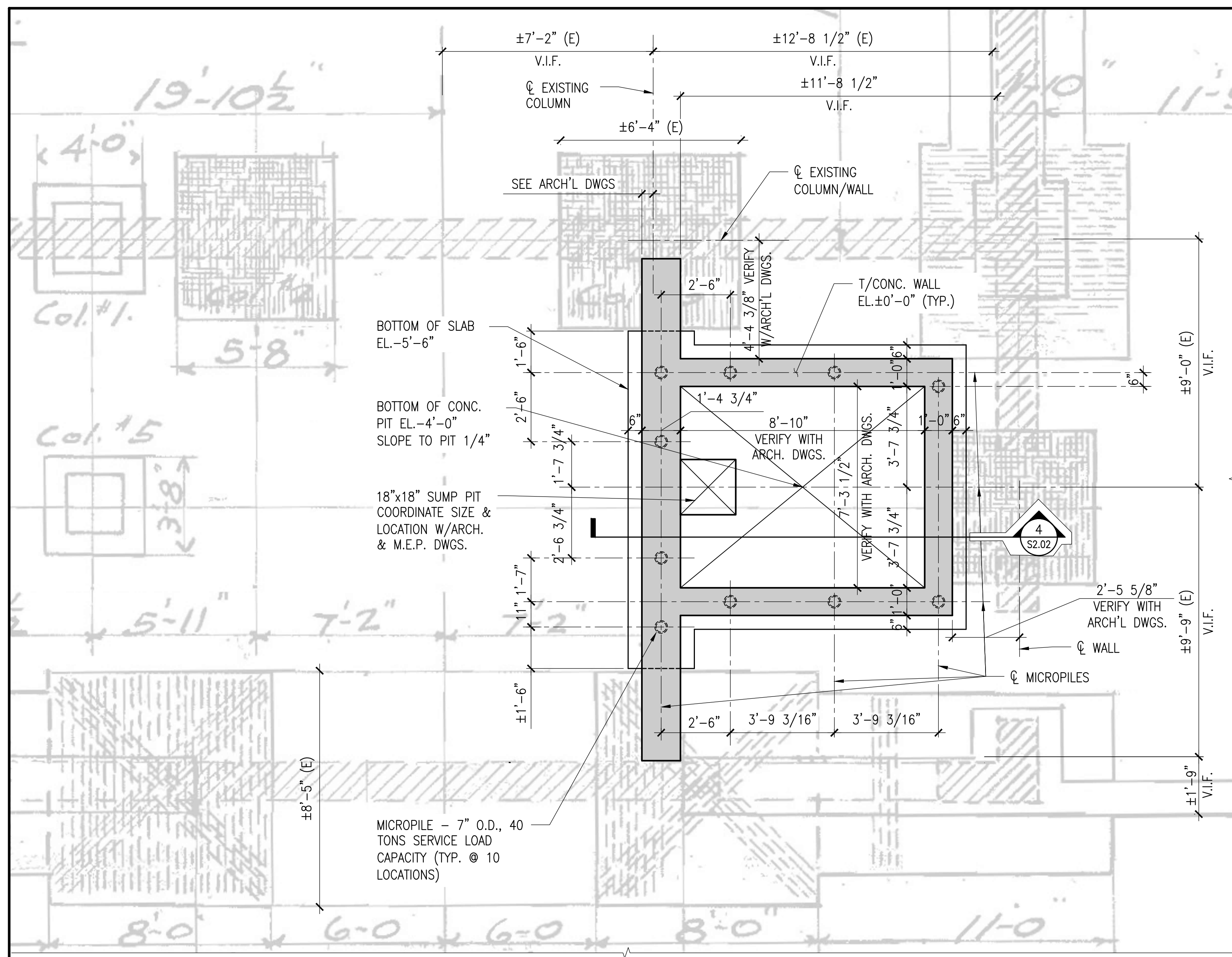
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**LADDER SAFETY POST  
 DETAIL**

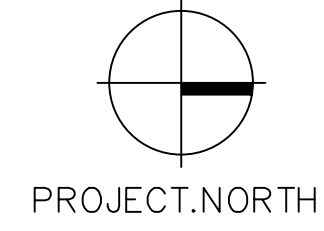
PBC CONTRACT NO. 05813  
 LEGAT PROJECT NO. 211060.01  
 DATE OF ISSUE 11-22-2011

**ASK.06**

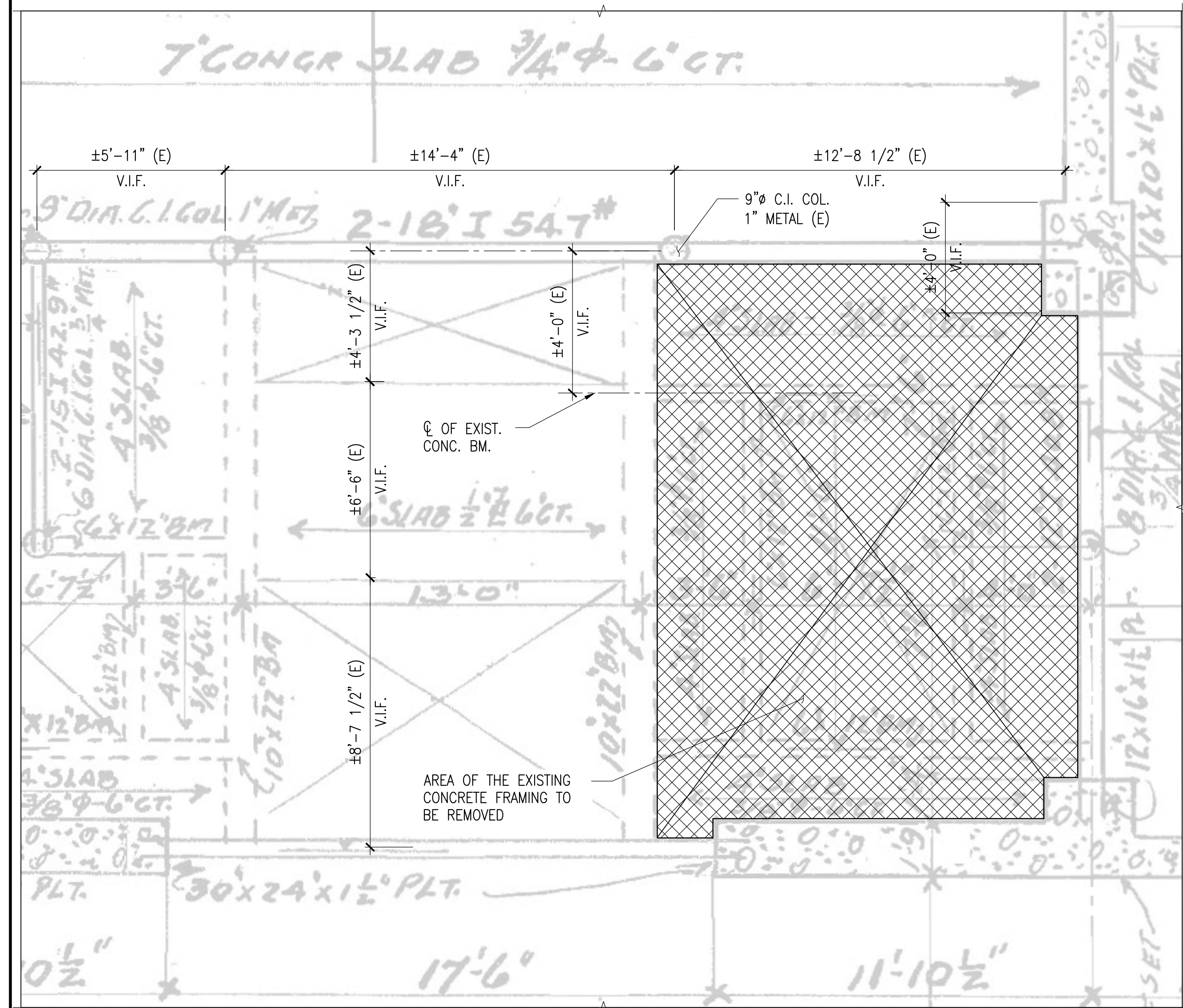




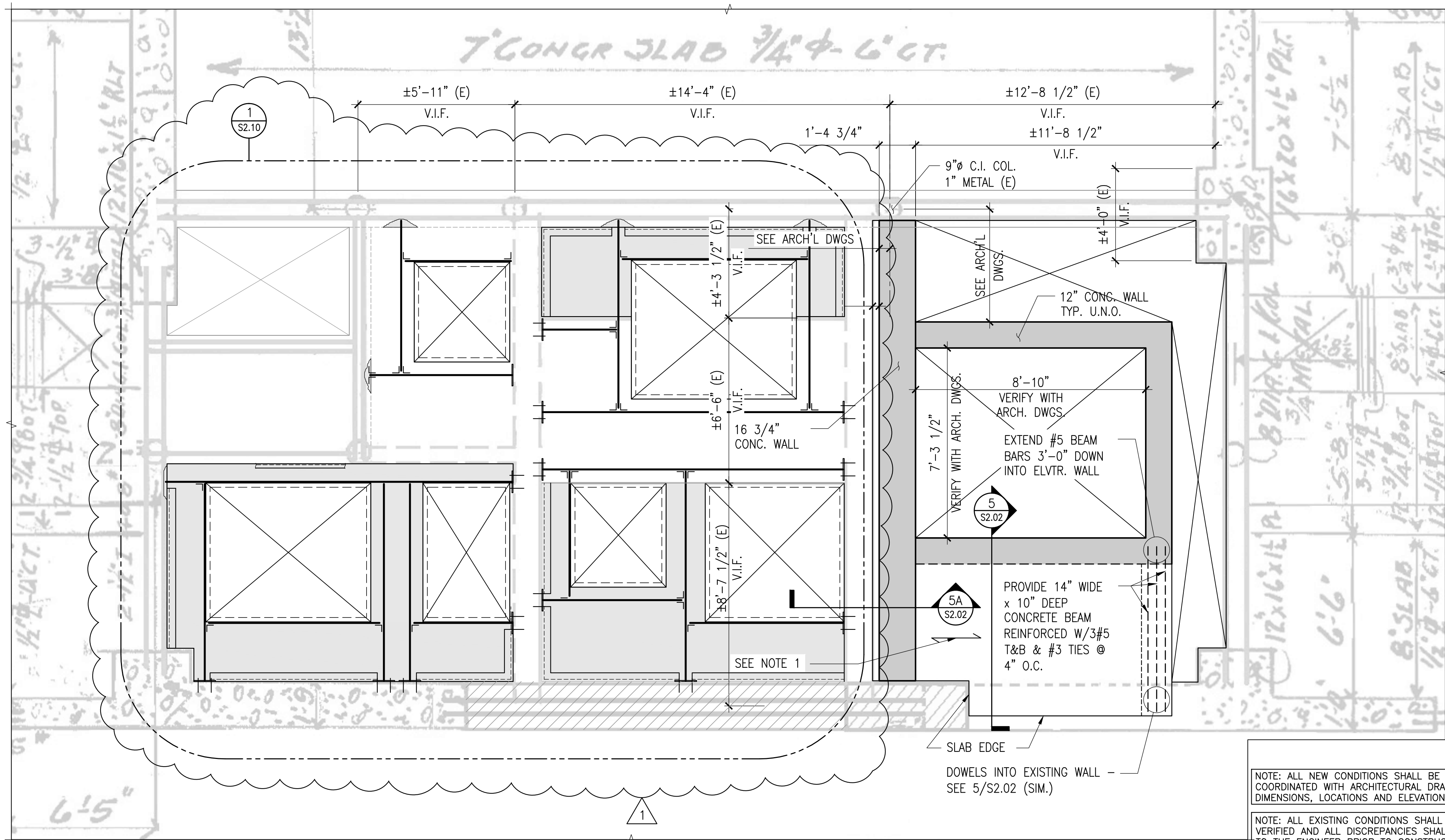
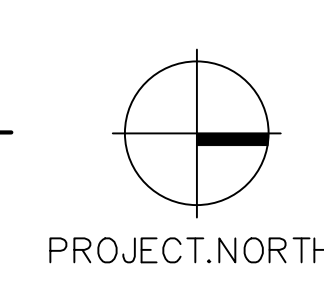
1 PARTIAL FOUNDATION ELEVATOR AREA FRAMING PLAN  
SCALE: 3/8"=1'-0"



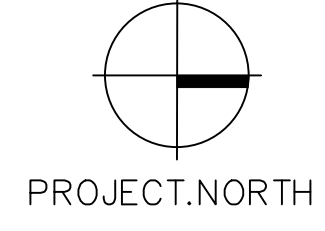
- NOTES:
1. PROVIDE 6" CONCRETE SLAB REINFORCED WITH #5@12" O.C. E.W.
  2. VERIFY WITH ARCHITECTURAL DRAWINGS ALL NEW DIMENSIONS.
  3. ALL EXISTING DIMENSIONS AS REFERENCED WITHIN THE AREA OF NEW WORK SHALL BE VERIFIED IN FIELD AND WITH ARCHITECTURAL DRAWINGS.
  4. (E) - DESIGNATES EXISTING



2 PARTIAL FIRST FLOOR ELEVATOR AREA EXISTING FRAMING DEMOLITION PLAN  
SCALE: 3/8"=1'-0"

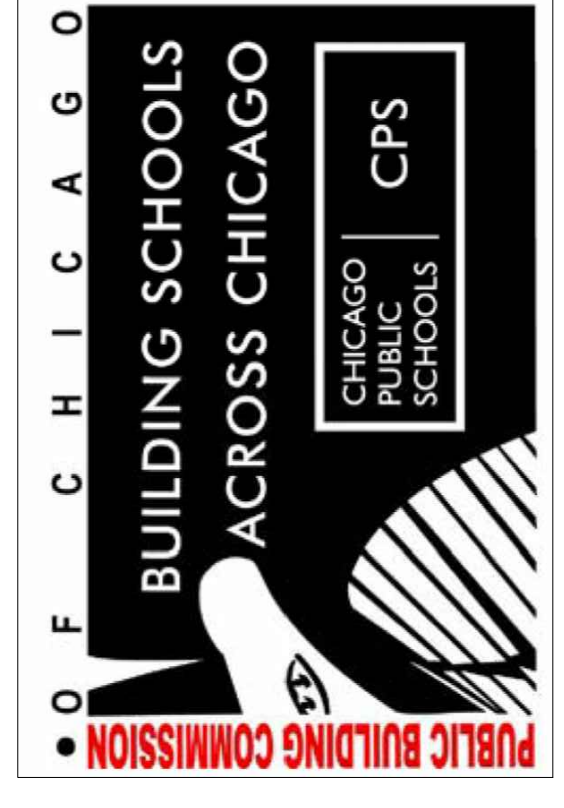


3 PARTIAL FIRST FLOOR ELEVATOR AREA FRAMING PLAN  
SCALE: 3/8"=1'-0"



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MEP Engineering Consultant  
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**CYLA**  
Landscape Architect  
Oak Park, IL

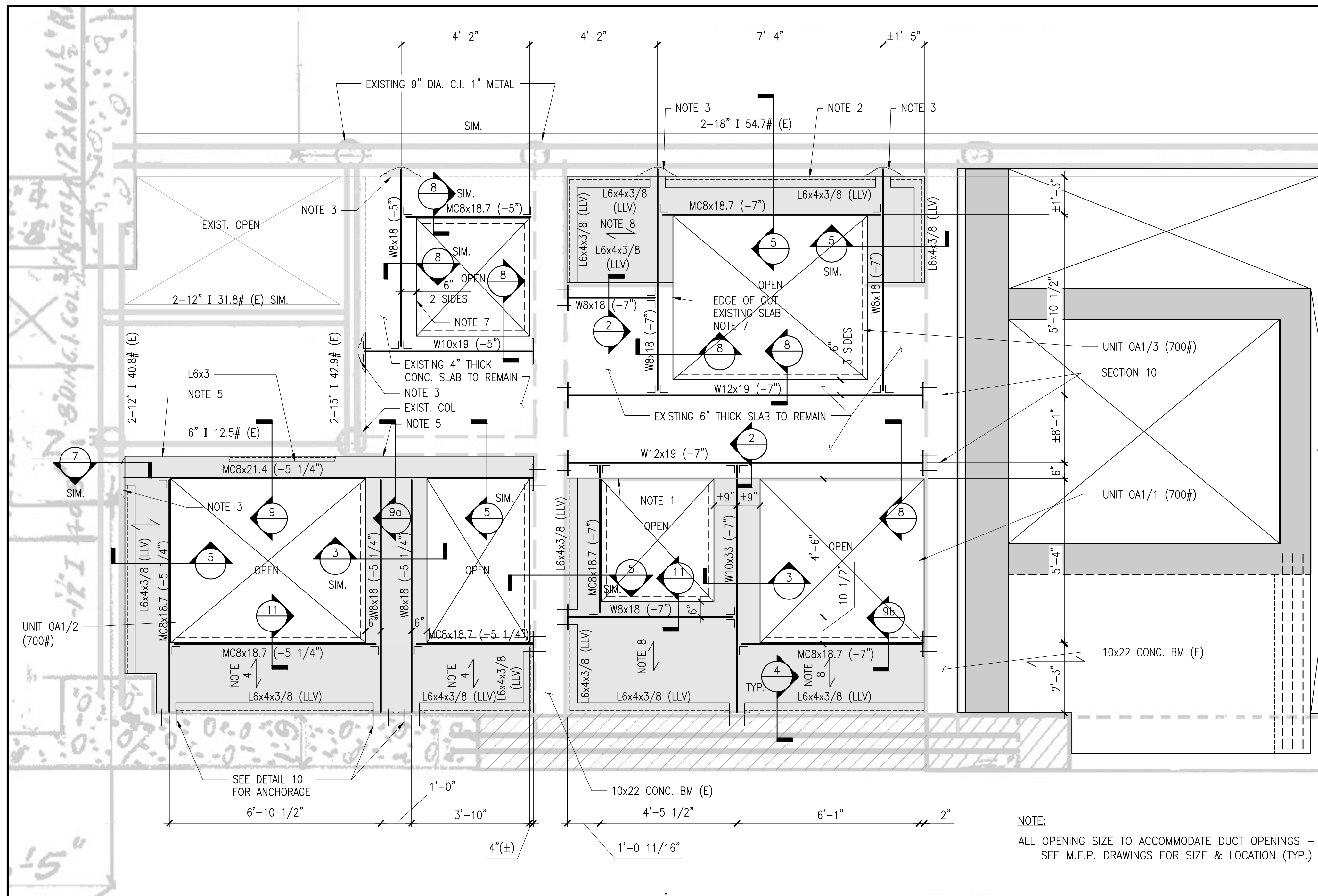


NO.	DESCRIPTION	DATE
1	Phase 1 - Toilet Rooms	06/01/11
2	Issued for Permits - Phase I	06/09/11
3	100% DD - Phase II	06/23/11
4	60% CD - Phase II	09/23/11
5	90% CD - Phase II	10/21/11
6	Issued for Bid	11/08/11
7	Addendum 1	11/22/11

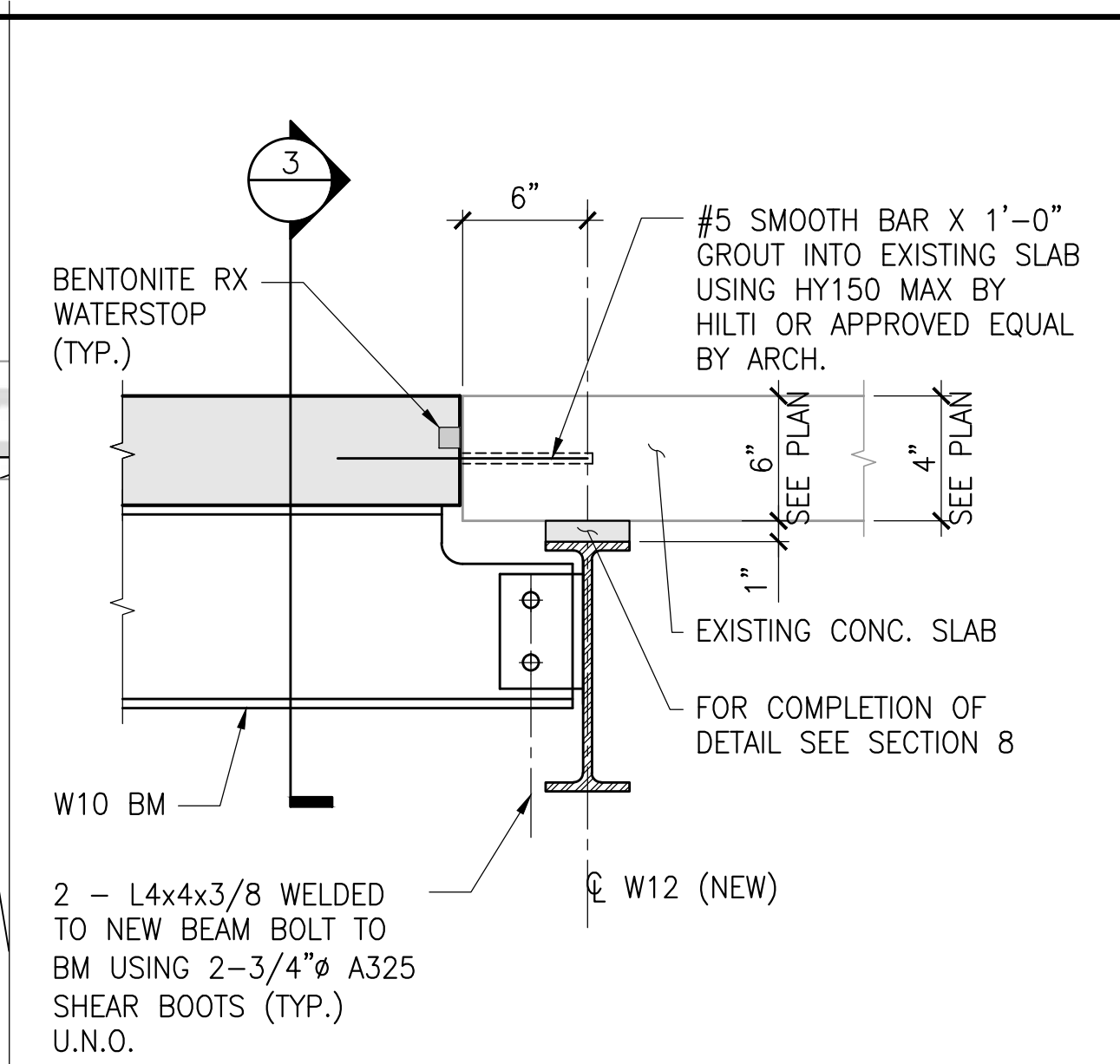
DATE OF ISSUE: 11-22-2011  
PRC Project Name: Henderson Elem. School Ren. Phase II  
PRC Contract No.: 05813  
Legat Project No.: 211060.00

PARTIAL FOUNDATION & 1ST FLOOR ELEVATOR AREA FRAMING PLAN

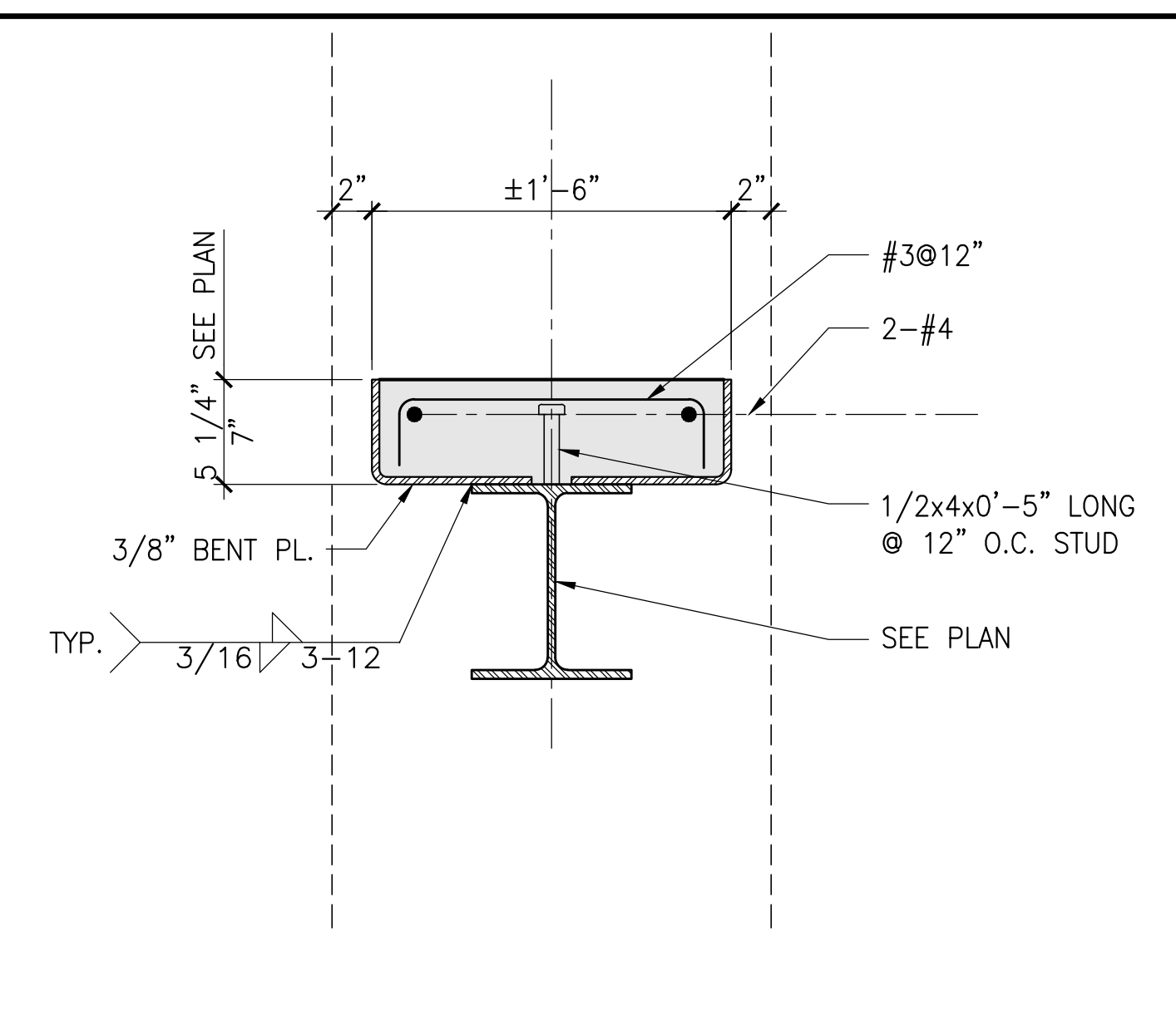
**S1.02R**  
ISSUED FOR BID



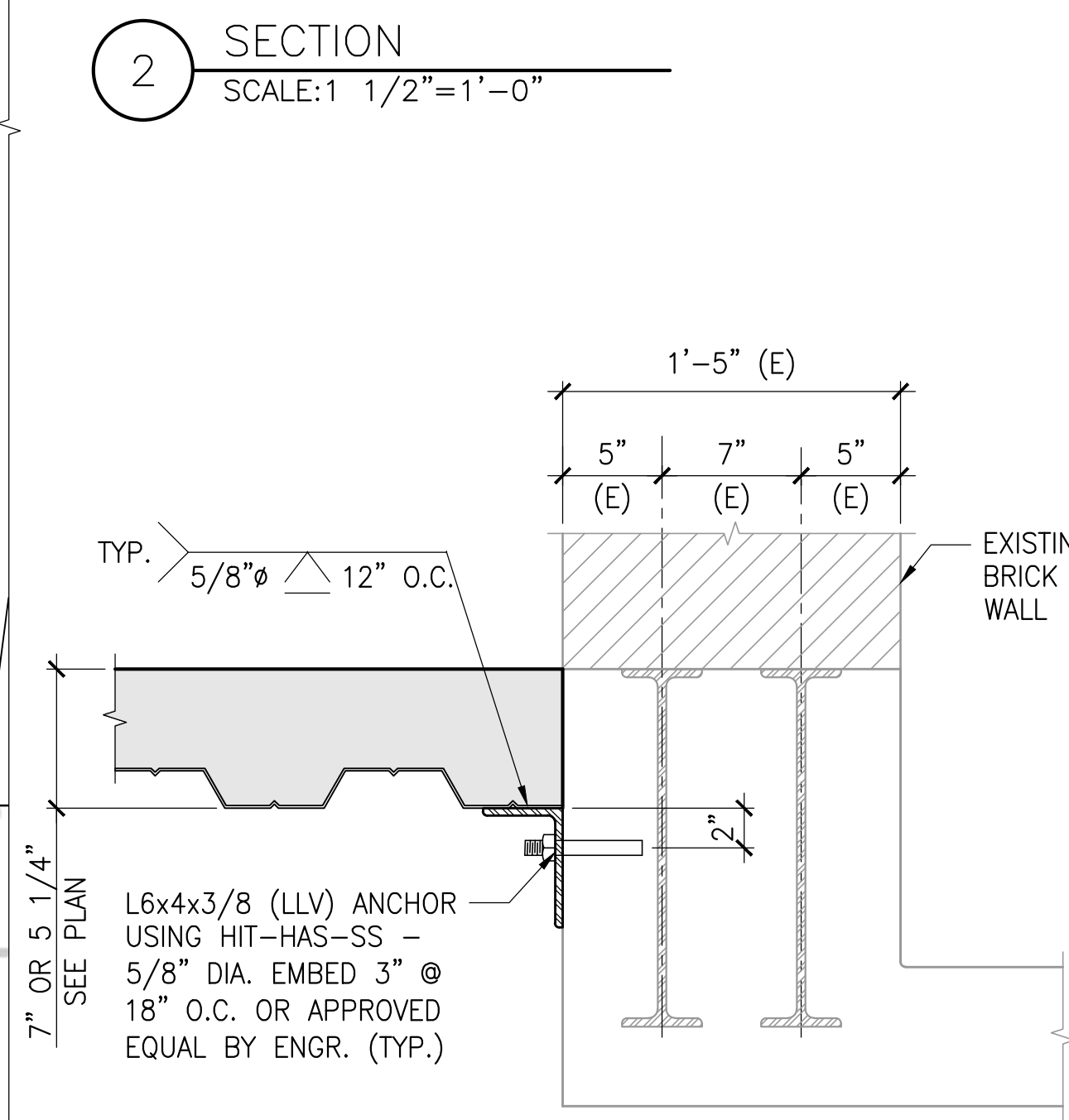
**1 PARTIAL ENLARGED FIRST FLOOR FRAMING PLAN FOR MECHANICAL OPENINGS AT ELEVATOR AREA**  
SCALE: 1/2"=1'-0"  
(E) EXISTING



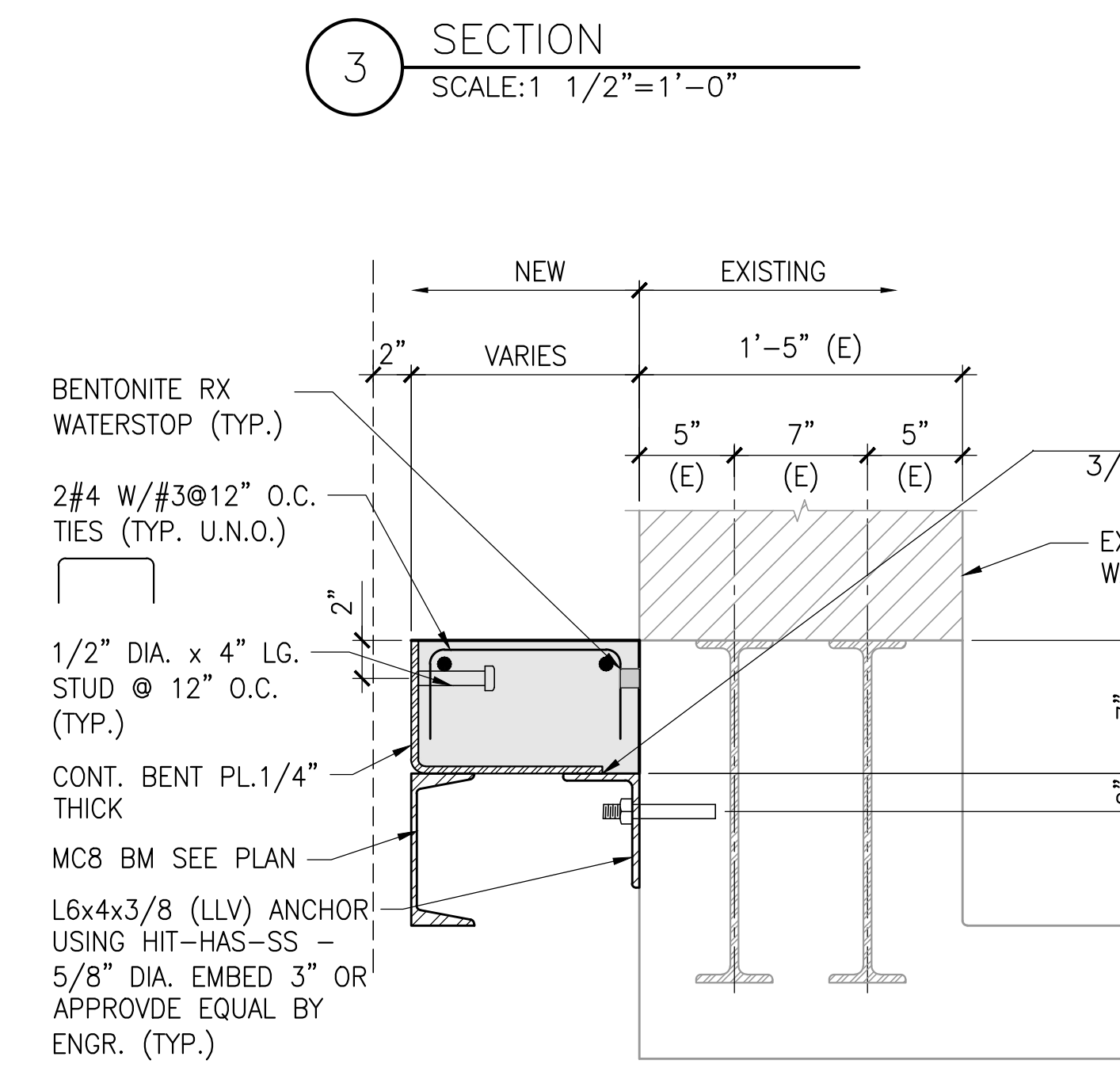
**2 SECTION**  
SCALE: 1/2"=1'-0"



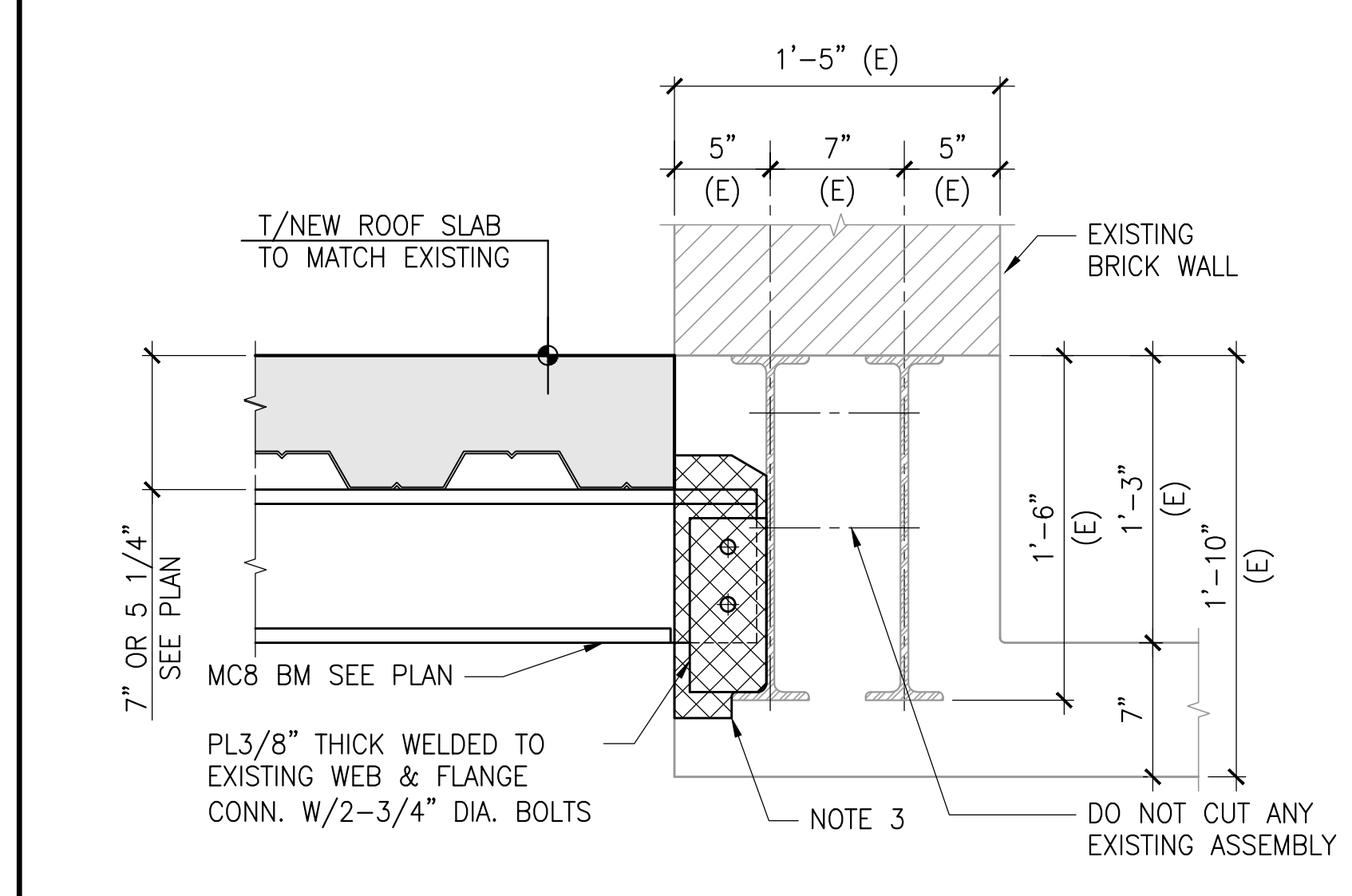
**3 SECTION**  
SCALE: 1/2"=1'-0"



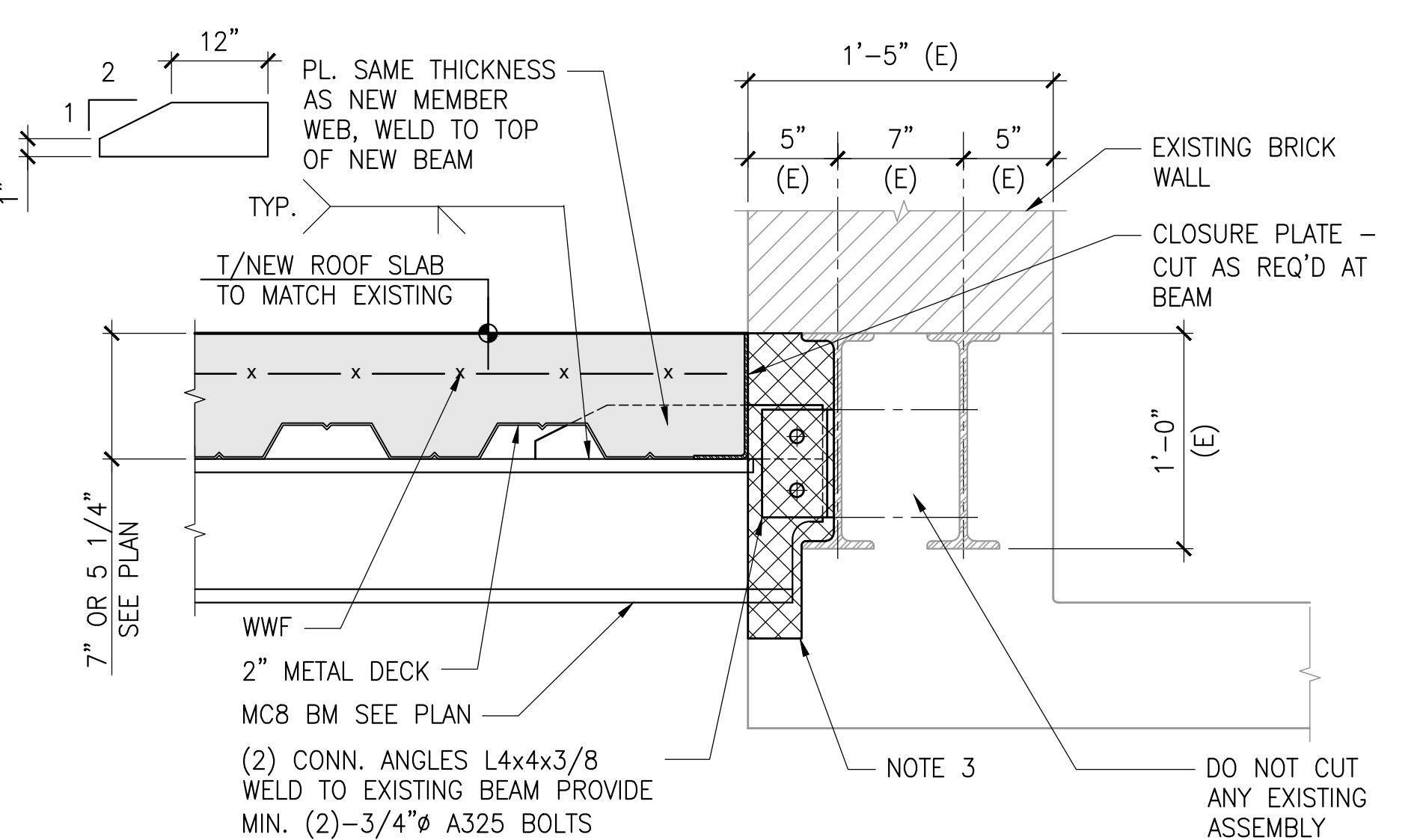
**4 SECTION**  
SCALE: 1/2"=1'-0"



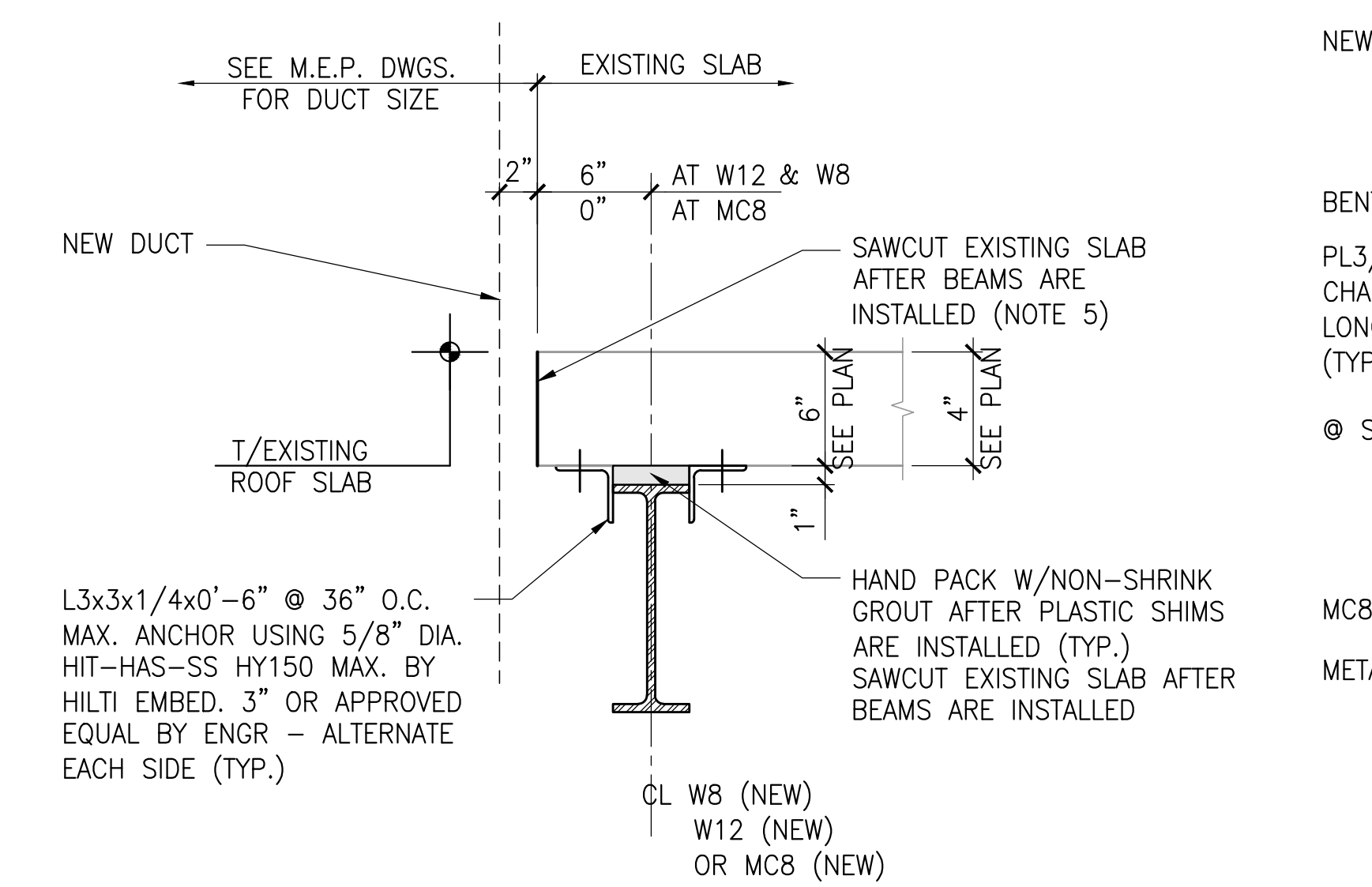
**5 SECTION**  
SCALE: 1/2"=1'-0"



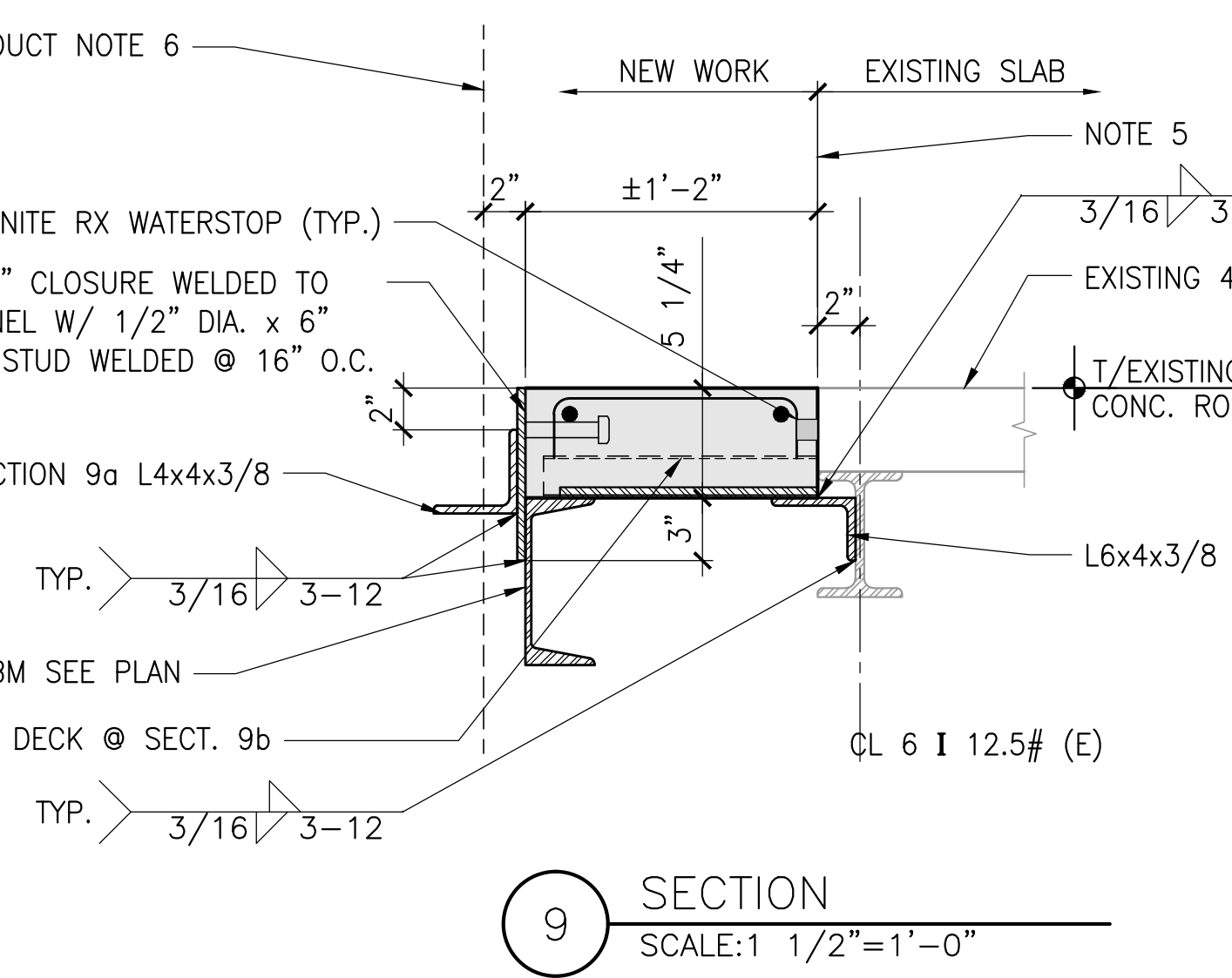
**6 SECTION**  
SCALE: 1/2"=1'-0"



**7 SECTION**  
SCALE: 1/2"=1'-0"



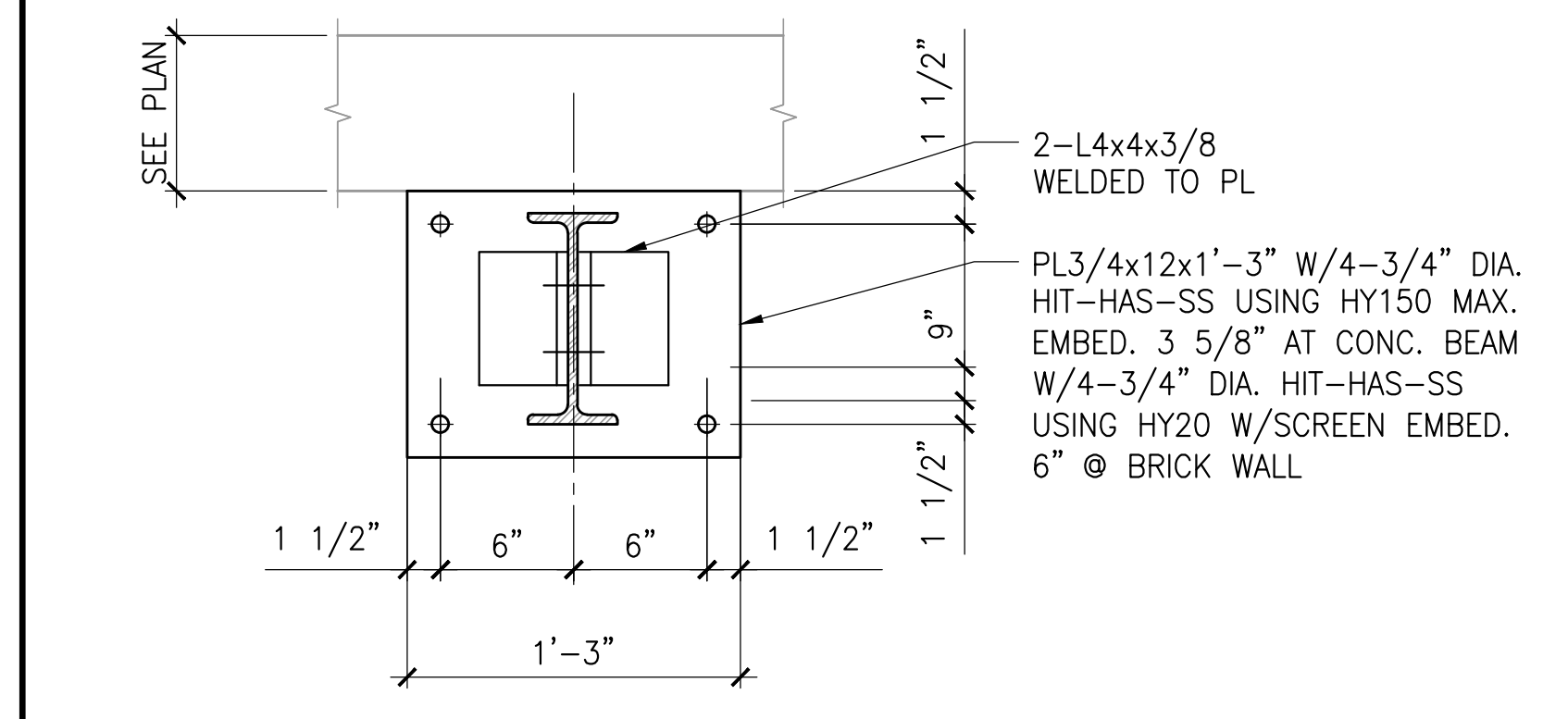
**8 SECTION**  
SCALE: 1/2"=1'-0"



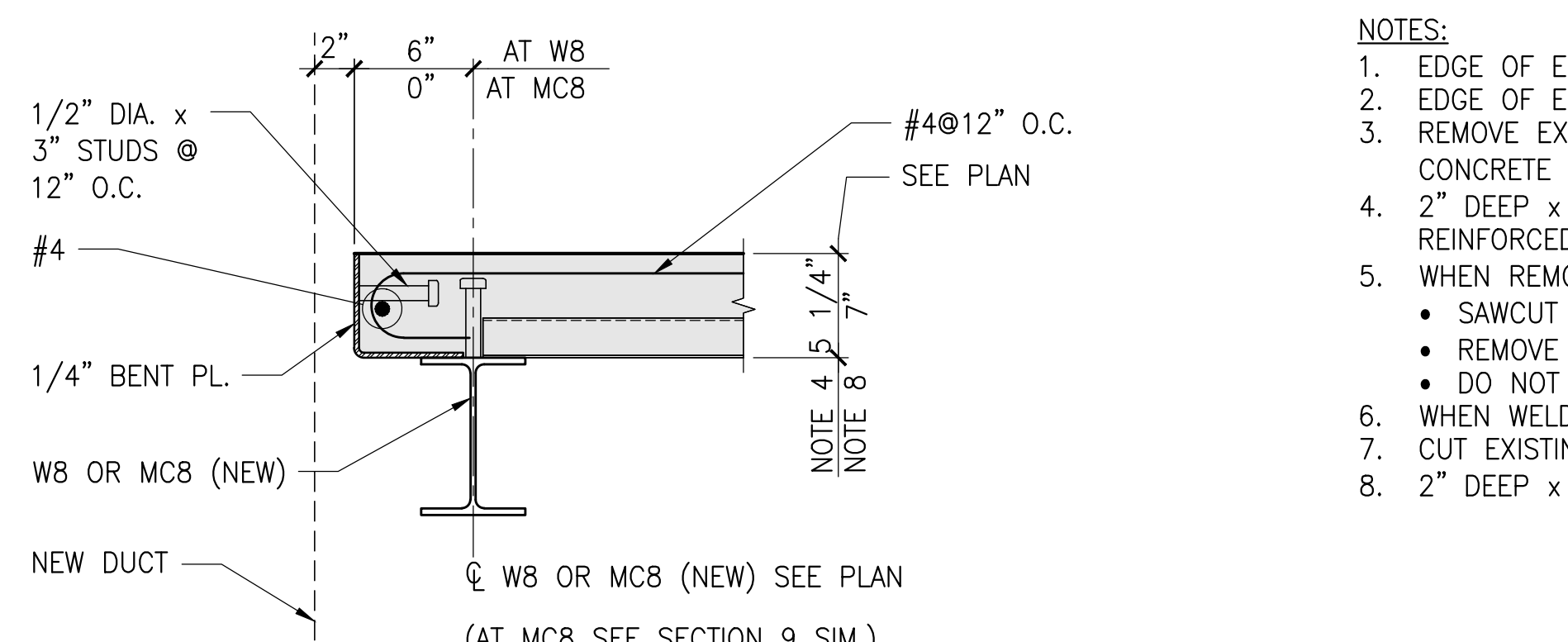
**9 SECTION**  
SCALE: 1/2"=1'-0"

**9a SECTION**  
SCALE: 1/2"=1'-0"

**9b SECTION**  
SCALE: 1/2"=1'-0"



**10 SECTION**  
SCALE: 1/2"=1'-0"



**10 SECTION**  
SCALE: 1/2"=1'-0"

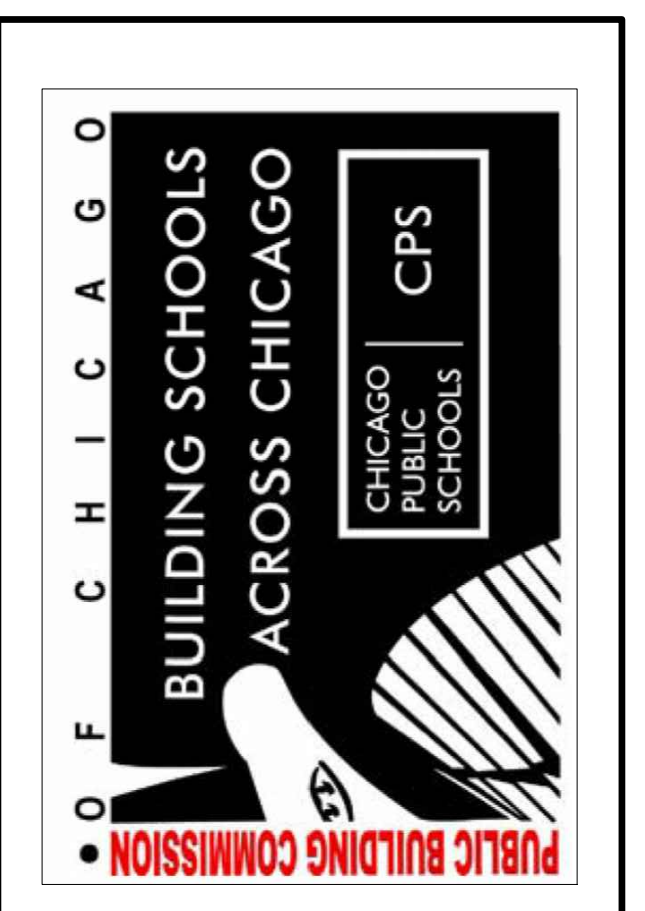
- NOTES:**
- EDGE OF EXISTING 6" CONCRETE SLAB.
  - EDGE OF EXISTING BEAM.
  - REMOVE EXISTING CONCRETE TO INSTALL & CONNECT NEW BEAM TO EXISTING - PATCH WITH REPAIR CONCRETE & 1/4" DIA. S.S. PINS INTO EXISTING CONCRETE.
  - 2" DEEP x 18 GAGE COMPOSITE DECK WITH 3 1/4" LIGHTWEIGHT TOPPING (TOTAL THICKNESS = 5 1/4") REINFORCED WITH 6x6-W2.1KW2.1 WELDED WIRE FABRIC.
  - WHEN REMOVING EXISTING SLAB FROM EXISTING CONCRETE/STEEL BEAM:
    - SAWCUT TOP 1" OF EXISTING SLAB
    - REMOVE REMAINING SLAB USING 45 # HAMMER
    - DO NOT DAMAGE EXISTING BEAM OR ANY OTHER ADJACENT STRUCTURE
  - WHEN WELDING TO EXISTING
  - CUT EXISTING SLAB TO ACCOMMODATE NEW DUCT - SEE M.E.P. DRAWINGS FOR SIZE & LOCATION.
  - 2" DEEP x 18 GAGE COMPOSITE DECK WITH 5" LIGHTWEIGHT TOPPING (TOTAL THICKNESS = 7").

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**NOTE: ALL NEW CONDITIONS SHALL BE FIELD COORDINATED WITH ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS AND ELEVATIONS.**

**NOTE: ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED AND ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.**

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**RME**  
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**CCJM**  
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**CYLA**  
Landscape Architect  
Oak Park, IL

**RME** Rubione & Menza Engineers, Inc.  
201 S. Morgan Avenue, Suite 1000, Chicago, IL 60607

NO.	DESCRIPTION	DATE
1	Phase 1 - Toilet Rooms	06/01/11
2	Issued for Permits - Phase I	06/09/11
3	100% DD - Phase II	06/24/11
4	60% CD - Phase II	09/23/11
5	90% CD - Phase II	10/21/11
6	Issued for Bid	11/08/11
7	Addendum 1	11/22/11

DATE OF ISSUE: 11-22-2011  
PBC Project Name: Henderson Elem School Ren. Phase II  
PBC Contract No.: 05813  
Legat Project No.: 211050.00

**ENLARGED 1ST FLOOR FRAMING PLAN, SECTIONS AND DETAILS AT ELEVATOR AREA FOR MECHANICAL OPENINGS**

**S2.10**  
ISSUED FOR BID

**Henderson Elementary School  
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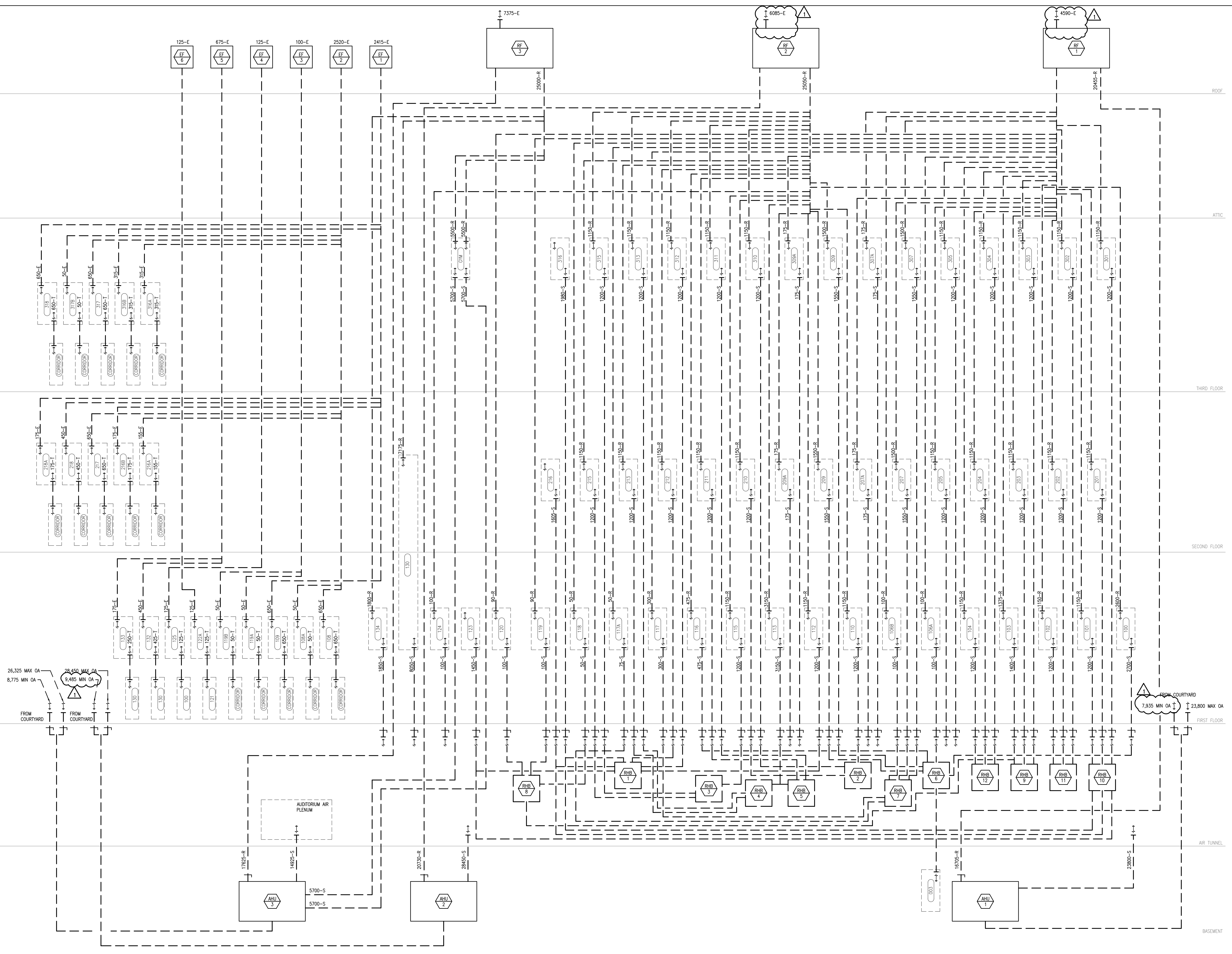
**CCJM**  
 MEP Engineering Consultant  
 Chicago, IL

**CYLA**  
 Landscape Architect  
 Oak Park, IL

NO.	DESCRIPTION	DATE
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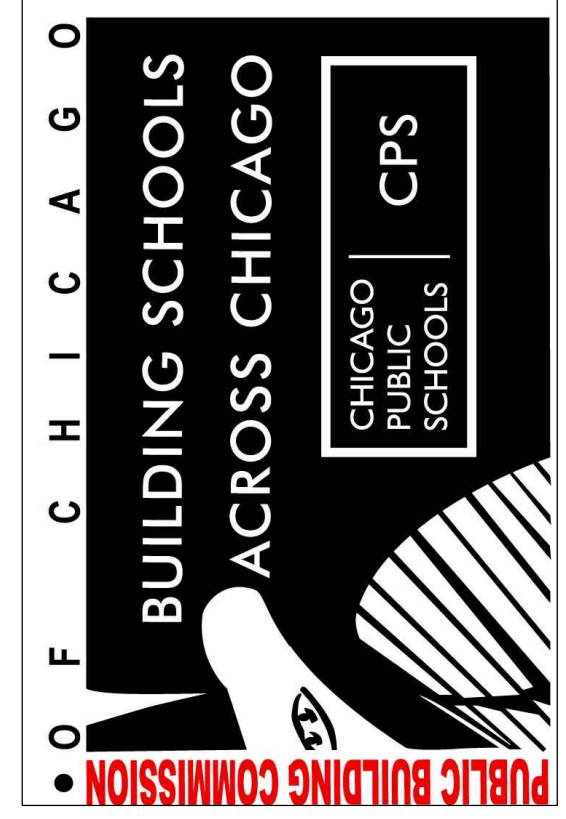
DATE OF ISSUE 11-22-2011  
 PSC Project Name: Henderson Elem School Ren. Phase II  
 PSC Contract No: 09913  
 Legat Project No: 211060.00

**MECHANICAL AIRFLOW  
 DIAGRAM**



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CITY OF CHICAGO, ILLINOIS

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7	Addendum 1	11/22/11

DATE OF ISSUE 11-22-2011  
PSC Project Name: Henderson Elem School Ren. Phase II  
PSC Contract No.: 05913  
Legat Project No.: 211060.00

**MECHANICAL SCHEDULES**

**M5.2R**  
ISSUED FOR BID

**AIR COOLED CHILLER SCHEDULE**

TAG	LOCATION	NOMINAL TONS	ACTUAL TOTAL TONS	EWT °F	LWT °F	AMBIENT AIR °F	EVAPORATOR		FOULING FACTOR	GLYCOL %		CONDENSER			COMPRESSOR			NO. OF REFRIGERANT CIRCUITS	MCA (TOTAL)	VOLT	PH	HZ	REFRIGERANT TYPE	OPERATING WEIGHT (LBS)	MAX. SOUND POWER DATA								MANUFACTURER AND MODEL	REMARKS
							GPM	MAX WPD FT		ETH	PROP	NO. FAN	KW EACH	TOTAL KW	NO.	RLA COMP.1/COMP.2	LRA COMP.1/COMP.2								63 Hz	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz		
CH-1	BOILER ROOM ROOF	200	203.9	58	44	91.7	370	21.4	0.00010		30%	11	1.68	18.5	2	327/353	N/A	2	839	208	3	60	R-134A	18,000	91.0	94.0	98.0	102.0	94.0	89.0	82.0	78.0	YORK YCAW0207VA17	①②③④

- ① UNIT TO COME FULLY ENCLOSED, RESTRAINED SPRING ISOLATORS. MINIMUM STATIC DEFLECTION OF 2"
- ② COMMUNICATION INTERFACE PER BAS SPECIFICATIONS.
- ③ PROVIDE ALL SOUND ATTENUATION REQUIRED TO MEET THE CHICAGO NOISE CRITERIA (55 DBA AT LOT LINE) AND SCHOOL SOUND REQUIREMENTS
- ④ SINGLE POINT POWER CONNECTION

**FIN TUBE RADIATION SCHEDULE**

TAG	LOCATION	BTUH/LIN.FT.	ELEMENT SIZE				EWT (°F)	LWT (°F)	EAT (°F)	GPM	MAX WTR P.D. FT	COVER DATA			MANUFACTURER AND MODEL	REMARKS
			FIN THICKNESS (IN)	FIN SIZE	PIPE SIZE/MATERIAL	FPF						LENGTH	HEIGHT	DEPTH		
BB-A	KINDERGARTEN	781	0.032	40	3/4" COPPER		150	120	65	0.42	0.37	48	12	10.5	RITTLING PIBG10	①②

- ① COLOR BY ARCHITECT
- ② COORDINATE THERMOSTAT REQUIREMENTS AND UNIT CONTROL WITH 15958 SEQUENCE OF OPERATION SPECIFICATION.

**BOILER SCHEDULE CONDENSING**

TAG	LOCATION	AREA SERVED	MIN/MAX NATURAL GAS INPUT PRESSURE (IN W.C.)	CAPACITY		EWT/LWT °F/°F	FLUID	FLOW RATE (GPM)	MAXIMUM OPERATING TEMP (°F)	MAX WORKING PRESSURE (PSI)	RELIEF VALVE SETTING	ELECTRICAL DATA			OPERATING WEIGHT LBS	MANUFACTURER AND MODEL	REMARKS
				INPUT MBH	OUTPUT MBH							VOLT	PH	FLA			
B-1	BOILER ROOM	MAIN BUILDING	14/22	3000	2640	150/120	30% PG	150	150	160	150	208	3	6.8	7000	FULTON VTC-3000	1,2,3,4
B-2	BOILER ROOM	MAIN BUILDING	14/22	3000	2640	150/120	30% PG	150	150	160	150	208	3	6.8	7000	FULTON VTC-3000	1,2,3,4

- ① PROVIDE WITH COMMUNICATION INTERFACE PER CONTROL AND BOILER SPEC.
- ② PROVIDE WITH BAS/LOCAL SWITCH AND MANUAL CAPACITY CONTROL
- ③ PROVIDE CONDENSATE FLUE GAS TRAP AND NEUTRALIZING PAN.
- ④ BOILER FLUE LAYOUT MUST BE REVIEWED AND APPROVED BY THE BOILER MANUFACTURER.

**COOLING AND HEATING COIL SCHEDULE (HYDRONIC)**

TAG	AHU SERVING	LOCATION	CFM	FACE AREA SQ.FT.	COIL DATA										COOLING PERFORMANCE										HEATING PERFORMANCE										MANUFACTURER AND MODEL	REMARKS		
					QTY	TYPE	W (IN)	L (IN)	MIN. ROWS	MAX FPI	FLUID TYPE	TUBE DIA. (IN)	TUBE THICKNESS (IN)	MAX FACE VEL. FPM	MAX AIR FLOW IN. W.C.	EAT DB °F	LWT °F	CLAT DB °F	CLAT WB °F	GPM	EWT °F	LWT °F	MAX PD FT	VEL FPS	TOTAL MBH	SENS. MBH	MAX FACE VEL. FPM	MAX AIR FLOW IN. W.C.	EAT DB °F	HLAT DB °F	GPM	EWT °F	LWT °F	MAX PD FT			VEL FPS	TOTAL MBH
DTC-1A	AHU-1	BASEMENT	7,935	22	1	COOLING	58	56	8	10	30% PG	5/8	0.025"	355	0.59	84	69	54.1	54.9	62	44	58	18.3	2.77	414	253	355	0.43	43.6	75	25	87	65	3.2	1.5	275	YORK	1,2,3,4
DTC-1B	AHU-1	BASEMENT	7,935	22	1	COOLING	58	56	8	10	30% PG	5/8	0.025"	355	0.59	84	69	54.1	54.9	62	44	58	18.3	2.77	414	253	355	0.43	43.6	75	25	87	65	3.2	1.5	275	YORK	1,2,3,4
DTC-2A	AHU-2	BASEMENT	9,485	25	1	COOLING	58	63	6	10	30% PG	5/8	0.025"	383	0.59	84	69	54.3	54.2	71	44	58	18.4	3.0	465	314	383	0.46	43.6	75	25	94	66	2.4	1.5	325	YORK	1,2,3,4
DTC-2B	AHU-2	BASEMENT	9,485	25	1	COOLING	58	63	6	10	30% PG	5/8	0.025"	383	0.59	84	69	54.3	54.2	71	44	58	18.4	3.0	465	314	383	0.46	43.6	75	25	94	66	2.4	1.5	325	YORK	1,2,3,4
DTC-3A	AHU-3	BASEMENT	8,775	43	1	COOLING	69.5	49	8	10	30% PG	5/8	0.025"	413	0.56	84	69	53.3	53.1	65	44	58	14.1	3.9	432	300	413	0.77	43.6	105	28	122	78	2.6	1.5	585	YORK	1,2,3,4
DTC-3B	AHU-3	BASEMENT	8,775	43	1	COOLING	69.5	49	8	10	30% PG	5/8	0.025"	413	0.56	84	69	53.3	53.1	65	44	58	14.1	3.9	432	300	413	0.77	43.6	105	28	122	78	2.6	1.5	585	YORK	1,2,3,4

- NOTES:
- 1. H/LAT IS THE TEMPERATURE LEAVING THE DUAL TEMP COIL IN HEATING SEASON. THE AIR WILL BE BLENDED WITH BYPASS AIR DOWNSTREAM. AND THE FINAL AIR TEMP WILL BE 64.7 DEGREES F.
  - 2. H/LAT IS THE TEMPERATURE LEAVING THE DUAL TEMP COIL IN HEATING SEASON. THE AIR WILL BE BLENDED WITH BYPASS AIR DOWNSTREAM. AND THE FINAL AIR TEMP WILL BE 88 DEGREES F.
  - 3. CLAT IS THE TEMPERATURE LEAVING THE DUAL TEMP COIL IN COOLING SEASON. THE FINAL AIR TEMP LEAVING THE UNIT WILL BE 63 DEGREES F.
  - 4. THE EWT LISTED HERE IS THE TEMPERATURE REQUIRED DOWNSTREAM OF THE CIRCULATION PUMP AFTER THE 150T WATER AND THE RETURN WATER HAVE BEEN BLENDED VIA THE BYPASS.

**EXPANSION TANK SCHEDULE**

TAG	LOCATION	SIZE (IN)	CAPACITY GALLONS	WORKING PRESSURE	TEST PRESSURE	RELIEF VALVE PRESSURE	MAX. WT. FLOODED (LBS)	FLUID TYPE	MANUFACTURER AND MODEL	REMARKS
ET-1	BLR ROOM	24	106	125	125	160	1184	30% PG	B&G B500	①

- ① ALL TANKS TO BE BLADDER TYPE

**REHEAT/REHEAT OR BOOSTER COIL SCHEDULE (HYDRONIC)**

TAG	LOCATION	CFM	MBH	COIL ARRGT. WXH (IN)	AIR DATA			WATER COIL DATA						MANUFACTURER AND MODEL	REMARKS	
					EAT °F	LAT °F	MAX PD IN. WC	GPM	EWT °F	LWT °F	NO. PASS	MIN. NUMBER OF ROWS	MAX VEL FPS			MAX PD FT.
RHC-1	RHB-1	6120	133	63x49	65	85		9	150	120		2			YORK	①
RHC-2	RHB-2	3600	79	54x49	65	85		5	150	120		2			YORK	①
RHC-3	RHB-3	3600	79	52x49	65	85		5	150	120		2			YORK	①
RHC-4	RHB-4	3975	87	55x49	65	85		6	150	120		2			YORK	①
RHC-5	RHB-5	3975	87	63x49	65	85		6	150	120		2			YORK	①
RHC-6	RHB-6	3675	80	49x49	65	85		5	150	120		2			YORK	①
RHC-7	RHB-7	3575	78	48x49	65	85		5	150	120		2			YORK	①
RHC-8	RHB-8	3350	73	55x49	65	85		5	150	120		2			YORK	①
RHC-9	RHB-9	3100	68	55x49	65	85		4	150	120		2			YORK	①
RHC-10	RHB-10	6120	133	64x49	65	85		9	150	120		2			YORK	①
RHC-11	RHB-11	3600	79	63x49	65	85		5	150	120		2			YORK	①
RHC-12	RHB-12	3600	79	54x49	65	85		5	150	120		2			YORK	①

- ① PROVIDE MAXIMUM 10 FINNS/INCH

**PRESSURE FILL SYSTEM SCHEDULE**

TAG	LOCATION	SYSTEM SERVED	FLUID	SYSTEM FILL PRV SETPOINT, PSIG	TANK VOLUME, GAL	DISCH. PRESS. PSI	PUMP				BASED ON	REMARKS
							FLOW RATE GPH	HP	V/PH/HZ			
PF-1	BASEMENT BLR ROOM	CHILLED WATER	30% P.G.		55	30	875	1/2	208/3/60	B&G: BPF-35H3055M	2,3	

- NOTES:
- 1. BALL FLOAT SURGE TANK AUTO FILL VALVE (WATER SYSTEMS).
  - 2. MANUAL SURGE TANK FILL VALVE (GLYCOL SYSTEMS).
  - 3. GLYCOL SYSTEM LOW LEVEL HORN & LIGHT ALARM WITH DRY CONTACTS FOR BAS MONITORING.

**PUMP SCHEDULE**

TAG	LOCATION	SERVICE	TYPE	FLUID TYPE	GPM	HEAD (FT)	MOTOR DATA				MANUFACTURER AND MODEL	REMARKS			
							BHP	HP	RPM	VOLT					
DTP-1	BOILER ROOM	DUAL TEMP.	BASE MOUNTED	30% PG	370	125	17.64	25	1750	208	3	60	B&G 1510 3G	①③	
DTP-2	BOILER ROOM	DUAL TEMP.	BASE MOUNTED	30% PG	370	125	17.64	25	1750	208	3	60	B&G 1510 3G	①②③	
HWP-1	AHU-1	HW BOOSTER	INLINE	30% PG	50	18			1/2	1750	115	1	60	B&G PD-35	
HWP-2	AHU-2	HW BOOSTER	INLINE	30% PG	50	15			1/2	1750	115	1	60	B&G PD-35	
HWP-3	AHU-3	HW BOOSTER	INLINE	30% PG	56	13			1/2	1750	115	1	60	B&G PD-35	

- ① WPD
- ② 100% STANDBY
- ③ PROVIDE 30S-45 TRIPLE DUTY VALVE

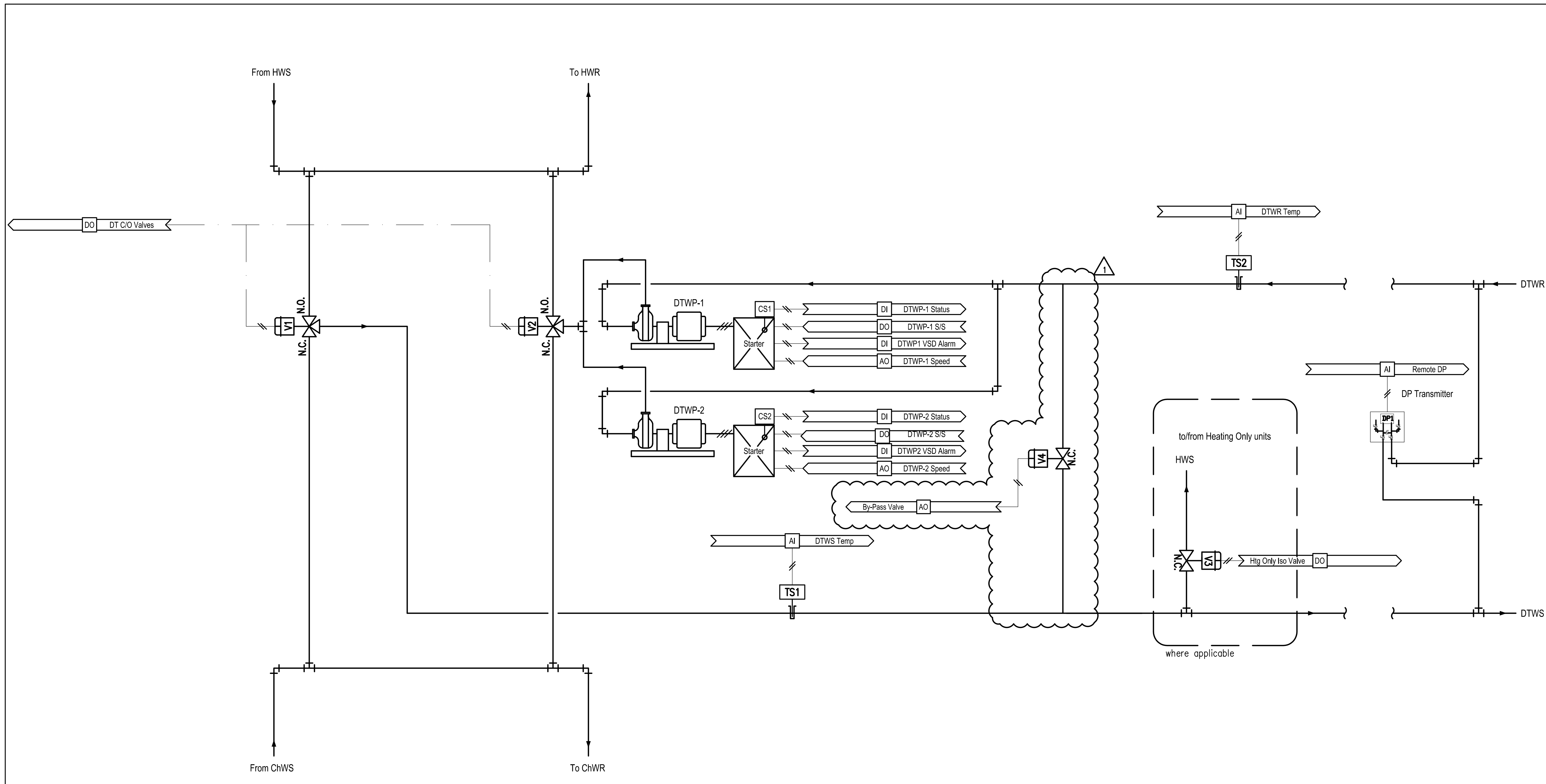
**AIR COOLED CONDENSING/CONDENSER SCHEDULE**

TAG	LOCATION	UNIT SERVED	AMB. TEMP. °F	REJECTION CAPACITY BTUH	COMPRESSOR DATA				CONDENSER FAN				ELECTRICAL DATA				UNIT WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
					TYPE	QTY/HP	RPM	STEPS	QTY	HP EA	FAN TOTAL	V	PH	HZ	FLA				
CU-1	ROOF	AC-1	95	NA	DC ROT. INV.	50W	1750	2	1	30W	1059	115	1	60	0.6	100	SANYO C1271		

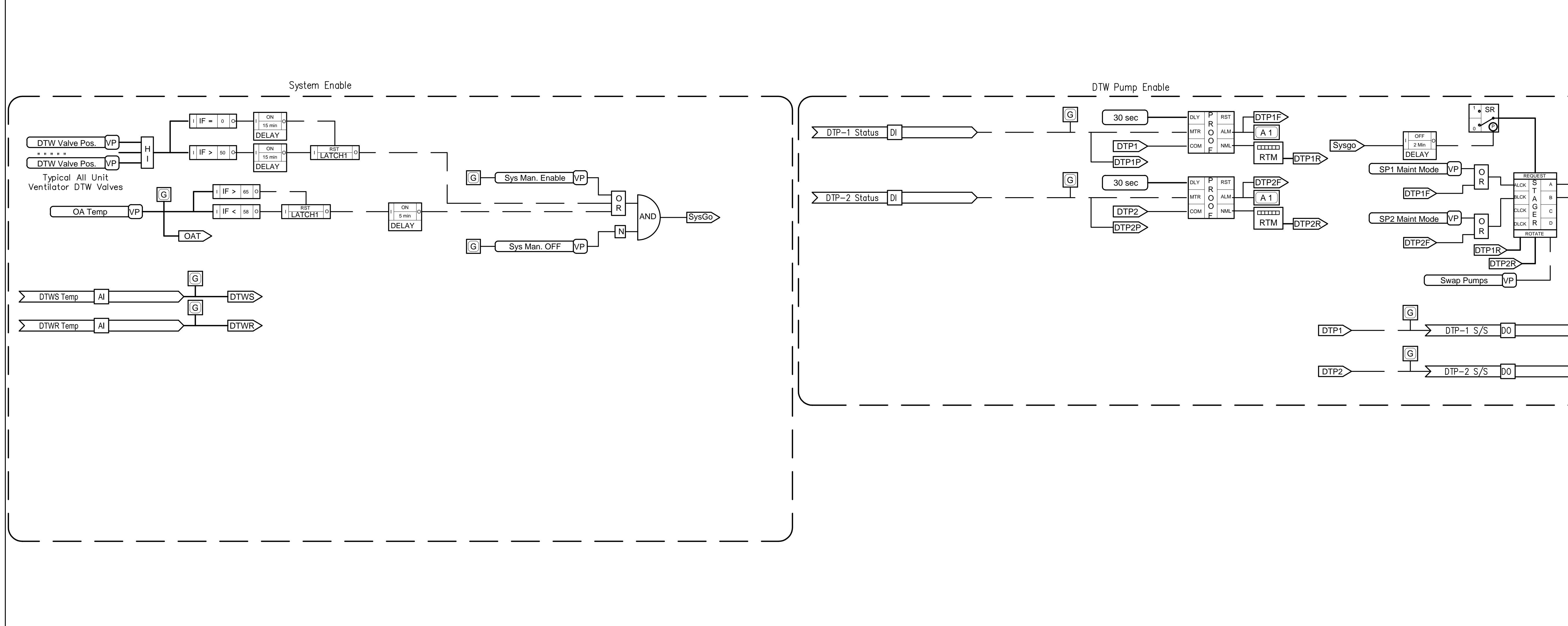
- NOTES:
- PROVIDE LOW AMBIENT KIT TO -30°

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Dual Temperature Water System

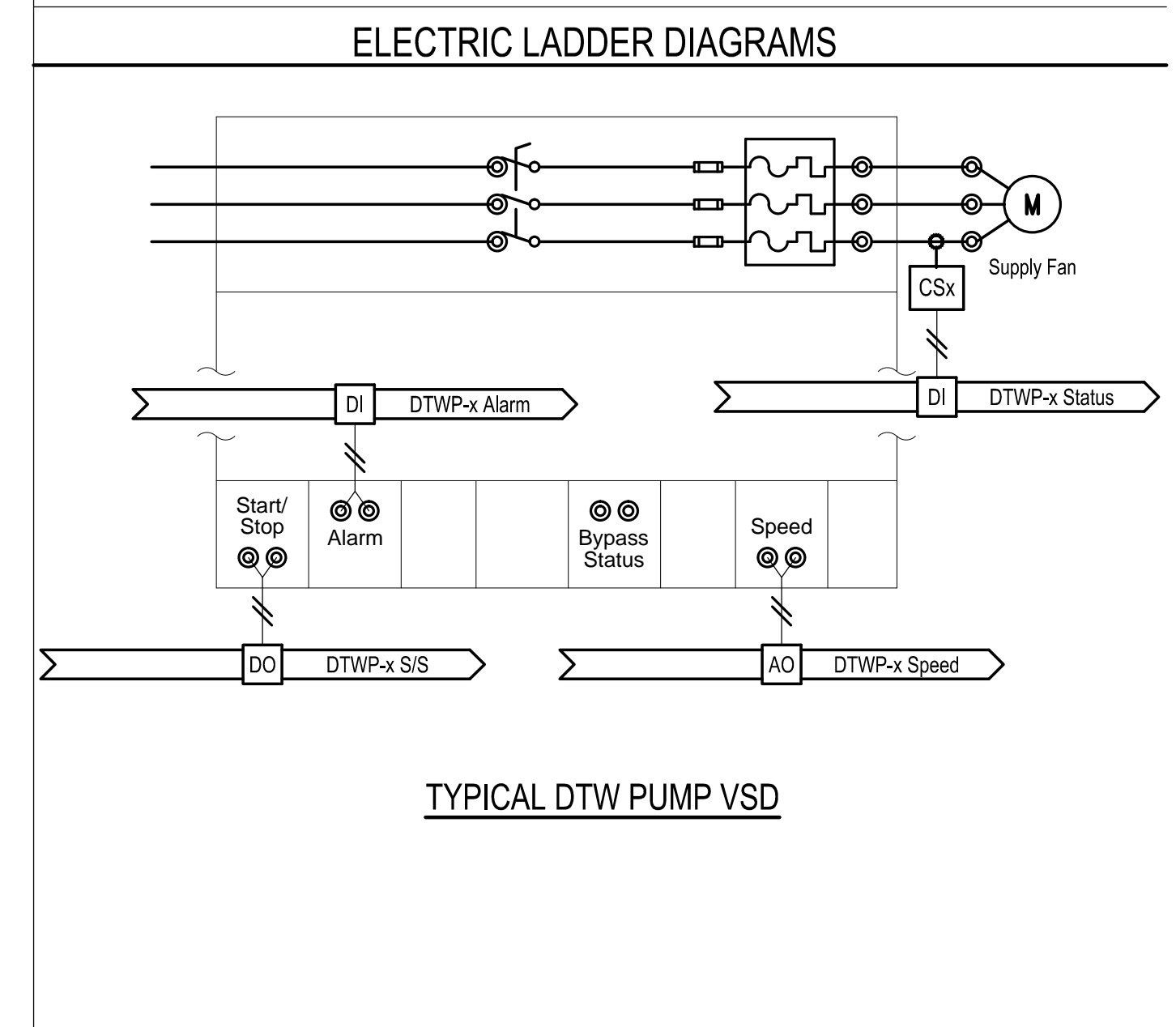


Software Logic Diagram

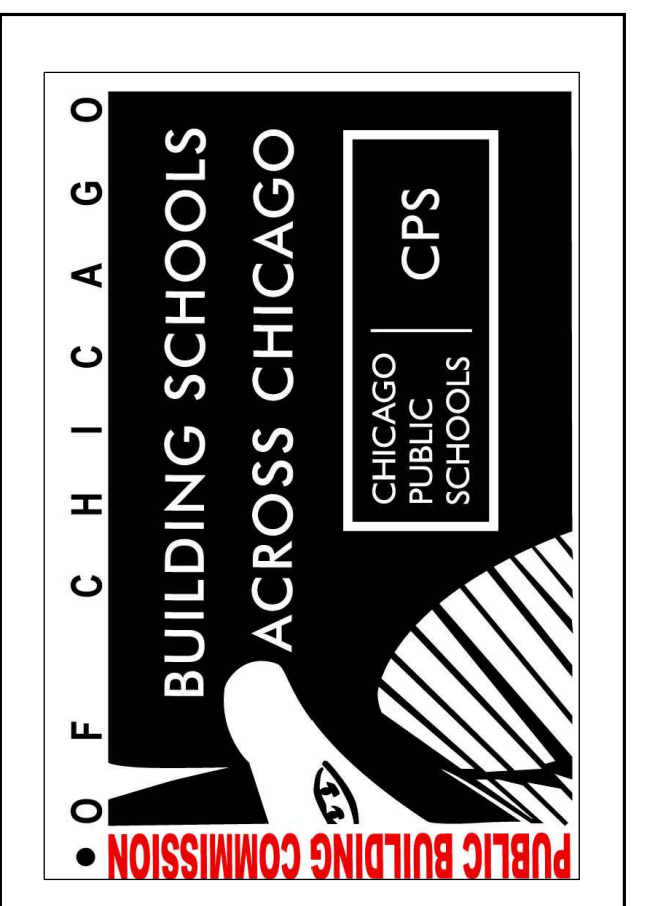
POINTS LIST						
ADDRESS	POINT DESCRIPTOR	POINT TYPE				REMARKS
		DI	AI	DO	AO	
	DTWS Temp		•			
	DTWR Temp		•			
	Remote DP					
	DTWP-1 S/S			•		
	DTWP-1 Status	•				
	DTWP-1 VSD Alarm	•				
	DTWP-1 Speed				•	
	DTWP-2 S/S			•		
	DTWP-2 Status	•				
	DTWP-2 VSD Alarm	•				
	DTWP-2 Speed				•	
	DT C/O Valves				•	
	Htg Only Iso Valve				•	
	By-Pass Valve				•	

BILL OF MATERIAL				
DESIG	QTY	MODEL NO.	DESCRIPTION	MFG / REMARKS
TS1-2			Immersion Temperature Sensor	
DP-1			Pipe Differential Pressure Transmitter	
V1-2			DTW Change-Over Valves	
V-3			Htg Only Iso Valve	
V-4			By-Pass Valve	
CS1-2			Current Sensor (VFD Type)	

DRAWING NOTES:  
1.



TYPICAL DTW PUMP VSD



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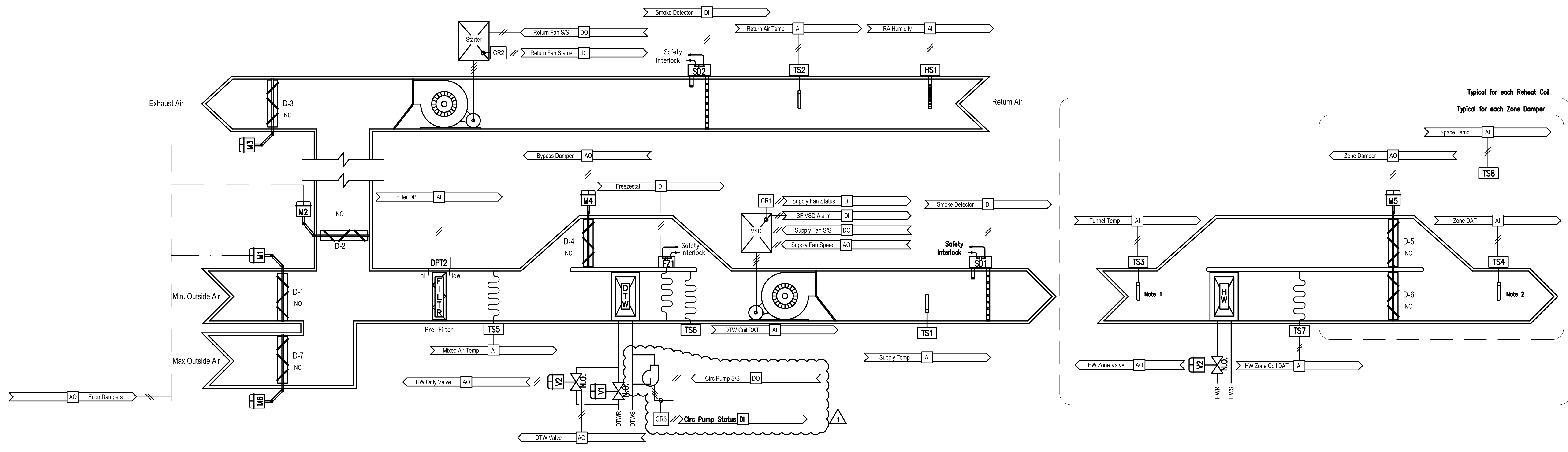
MECHANICAL BAS DIAGRAM

**M7.6R**  
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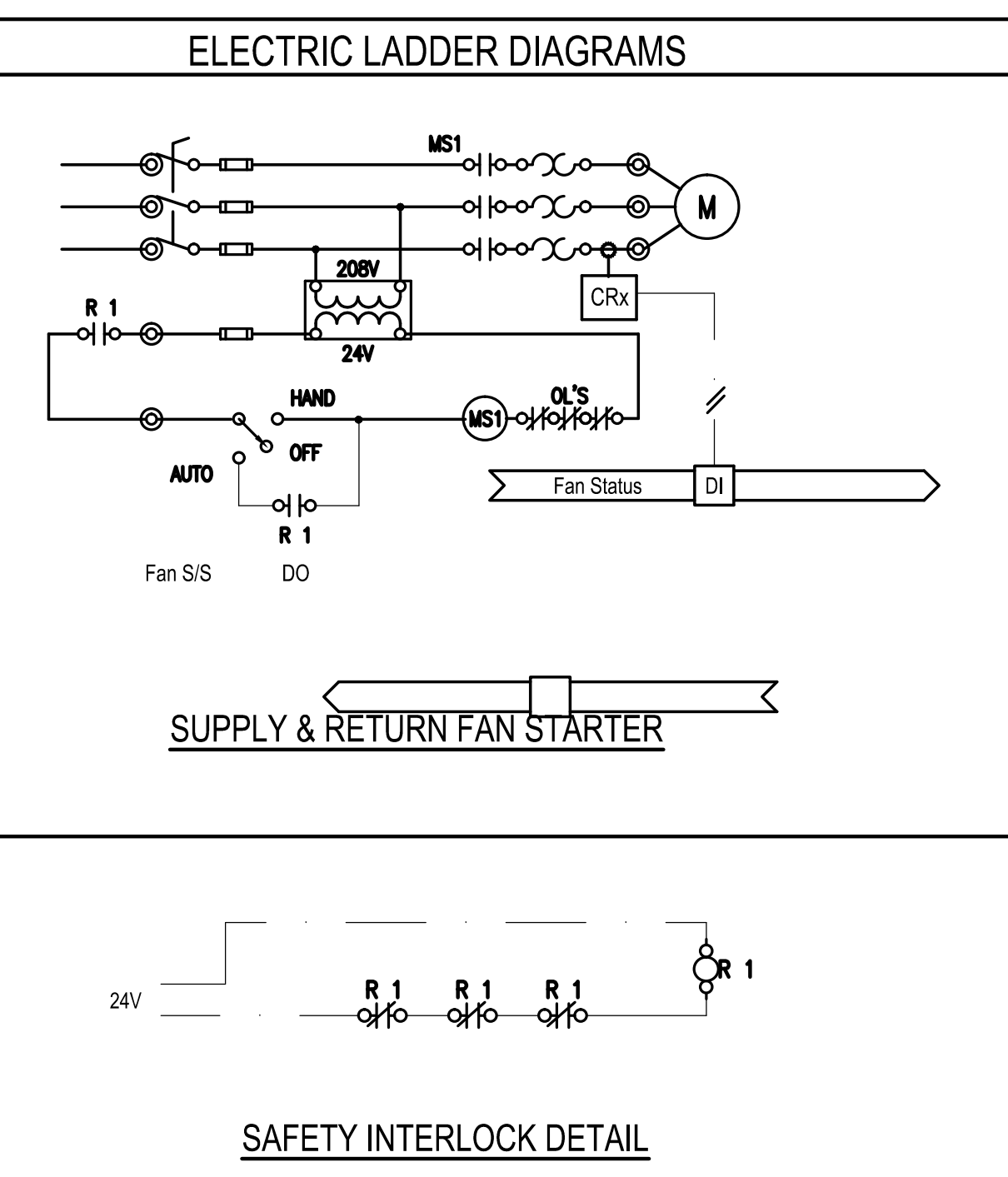
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### Multi Zone Unit Dual Temperature (AHU-1, AHU-2)

ADDRESS	POINT DESCRIPTOR	POINT TYPE					REMARKS
		DI	AI	DO	AO	VP	
	Supply Fan S/S						
	Supply Fan Status						
	SF VSD Alarm						
	Supply Fan Speed						
	Return Fan S/S						
	Return Fan Status						
	Supply Temp						
	Smoke Detector						
	Freezeslat						
	Mixed Air Temp						
	Return Air Temp						
	Filter DP						
	DTW Valve						
	Econ Dampers						
	Bypass Damper						
	DTW Coil DAT						
	Tunnel Temp						Note 1
	HW Zone Valve						typical for RHC
	HW Zone Coil DAT						typical for RHC
	HW Only Valve						
	Space Temp						typical for each zone
	Zone DAT						typical for each zone
	RHC Fan Damper						typical for each zone
	Circ Pump S/S						
	Circ Pump Status						



DESIG	QTY	MODEL NO.	DESCRIPTION	MFG / REMARKS
TS1-4			Duct Temperature Sensor	
TSS-7			Averaging Duct Temperature Sensor	
DPT1			Differential Pressure Transmitter	
SD1-2			Smoke Detector	
CR1-3			Current Relay	
FZ1			Freezeslat	qty as required
V1-3			Control Valve	
D1-7			Control Dampers	
M1-6			Damper Actuators	
TS8			Space Temperature Sensor	
R1			Safety Interlock Control Relay	
HS1			Duct Humidity Sensor	

- DRAWING NOTES:**
- Provide a temperature sensor at the inlet to the most distant tunnel reheat coil box. If the tunnel goes in two directions provide one temperature sensor at the most distant boxes on each end of the tunnel.
  - Locate each Zone Damper DAT sensor a sufficient distance downstream of the zone dampers to ensure adequate mixing of the airstreams.

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MECHANICAL BAS  
 DIAGRAM

**M7.7R**  
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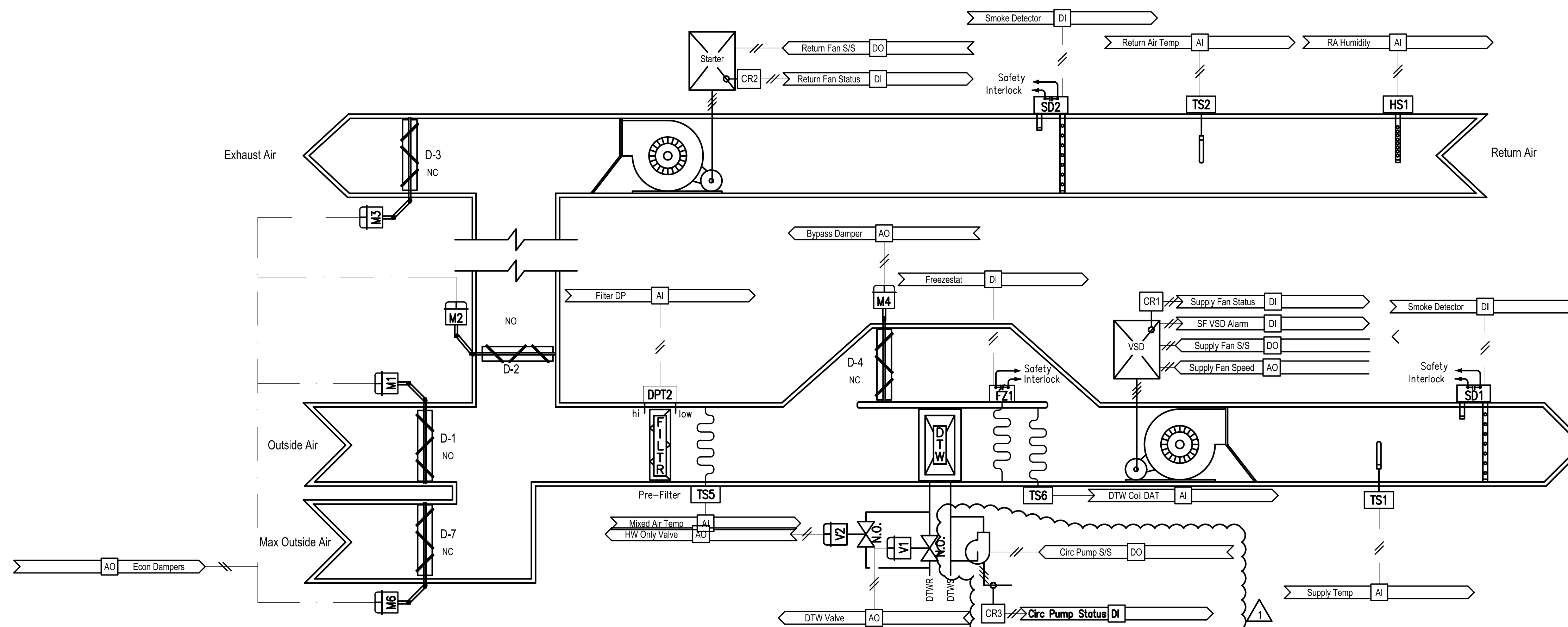
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MECHANICAL BAS  
 DIAGRAM

**M7.8R**  
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### Single Zone Unit Dual Temperature (AHU-3)

#### POINTS LIST

ADDRESS	POINT DESCRIPTOR	POINT TYPE					REMARKS
		DI	AI	DO	AO	VP	
	Supply Fan S/S						
	Supply Fan Status						
	SF VSD Alarm						
	Supply Fan Speed						
	Return Fan S/S						
	Return Fan Status						
	Supply Temp						
	Smoke Detector						
	Freezesat						
	Mixed Air Temp						
	Return Air Temp						
	Filter DP						
	DTW Valve						
	Econ Dampers						
	Bypass Damper						
	DTW Coil DAT						
	Tunnel Temp						Note 1
	DTW Zone Valve						typical for RHC
	DTW Zone Coil DAT						typical for RHC
	HW Only Valve						
	Circ Pump S/S						
	Circ Pump Status						

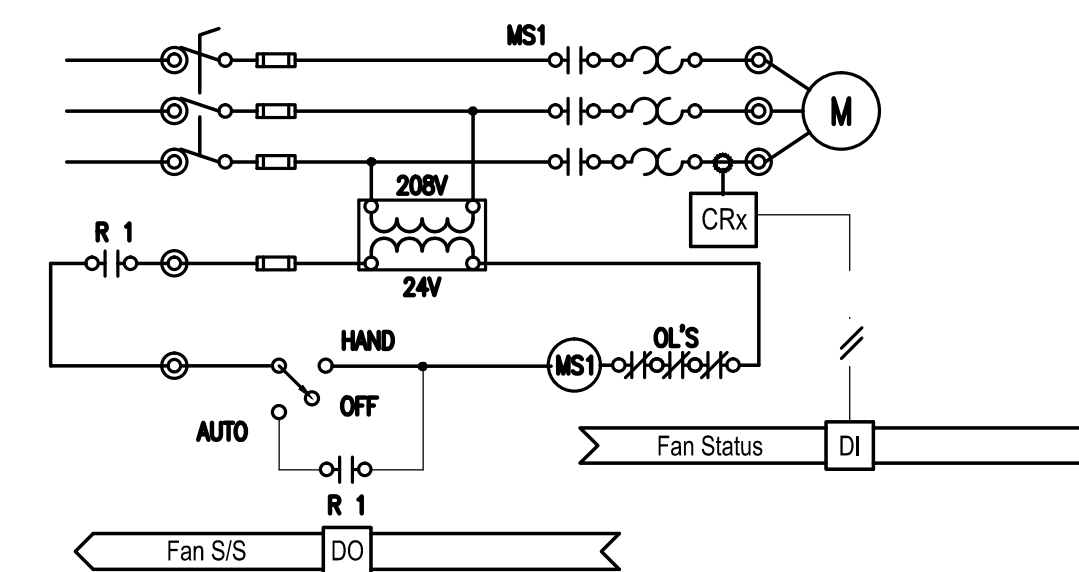
#### BILL OF MATERIAL

DESIG	QTY	MODEL NO.	DESCRIPTION	MFG / REMARKS
TS1-2			Duct Temperature Sensor	
TS5-6			Averaging Duct Temperature Sensor	
DPT1			Differential Pressure Transmitter	
SD1-2			Smoke Detector	
CR1-3			Current Relay	
FZ1			Freezesat	qty as required
VI-2			Control Valve	
D1-4			Control Dampers	
M1-4			Damper Actuators	
TS8			Space Temperature Sensor	
R1			Safety Interlock Control Relay	
HS1			Duct Humidity Sensor	

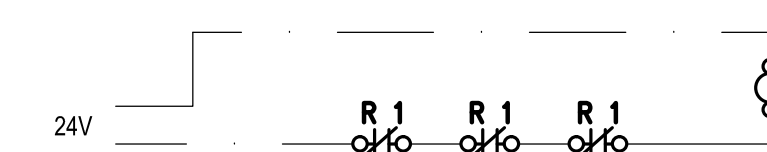
#### DRAWING NOTES:

- Provide a temperature sensor at the inlet to the most distant tunnel reheat coil box. If the tunnel goes in two directions provide one temperature sensor at the most distant boxes on each end of the tunnel.
- Locate each Zone Damper DAT sensor a sufficient distance downstream of the zone dampers to ensure adequate mixing of the airstreams.

#### ELECTRIC LADDER DIAGRAMS



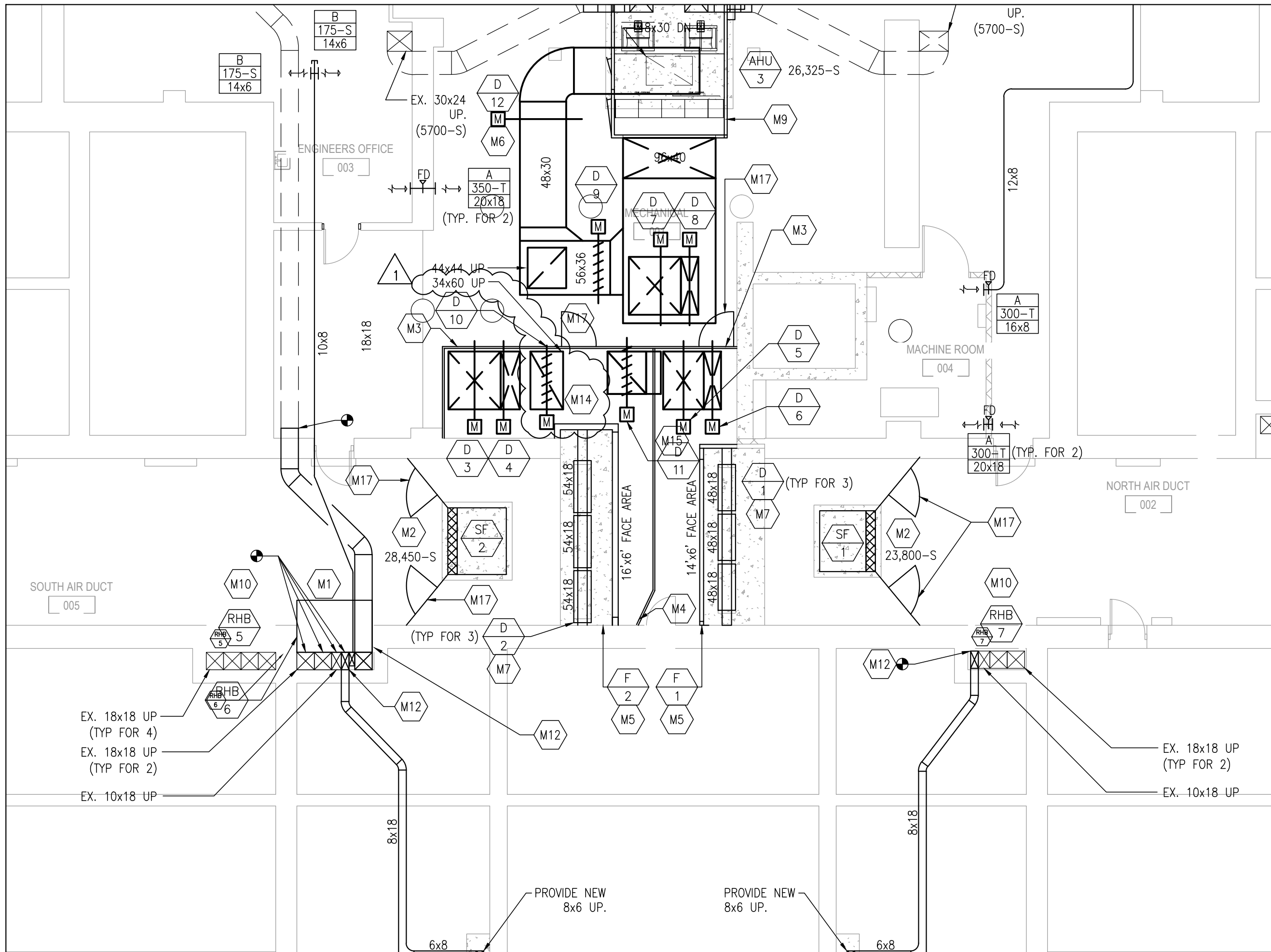
#### SUPPLY & RETURN FAN STARTER



#### SAFETY INTERLOCK DETAIL

WARNING: LEAD-BASED PAINT MAY BE PRESENT WITHIN THE BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS INCLUDING OSHA (1926.62) COMPLIANCE, WASTE CHARACTERIZATION AND WASTE DISPOSAL. ALL WORK WITH SURFACES CONTAINING LEAD-BASED PAINT SHALL BE DONE IN ACCORDANCE WITH SECTION 02133.

WARNING: ASBESTOS-CONTAINING BUILDING MATERIALS ARE OR MAY BE PRESENT IN THIS BUILDING. AN ASBESTOS MANAGEMENT PLAN IS AVAILABLE IN THE SCHOOL FOR REVIEW UPON REQUEST. NO PERSON MAY DISTURB ASBESTOS-CONTAINING MATERIALS UNLESS THAT PERSON IS A LICENSED ASBESTOS WORKER OR CONDUCTS SUCH WORK IN ACCORDANCE WITH SPECIFICATION(S) CONTAINED IN THE PROJECT DOCUMENTS AND IN COMPLIANCE WITH ILLINOIS DEPARTMENT OF HEALTH RULES AND REGULATIONS.



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# Henderson Elementary School Renovations Phase II

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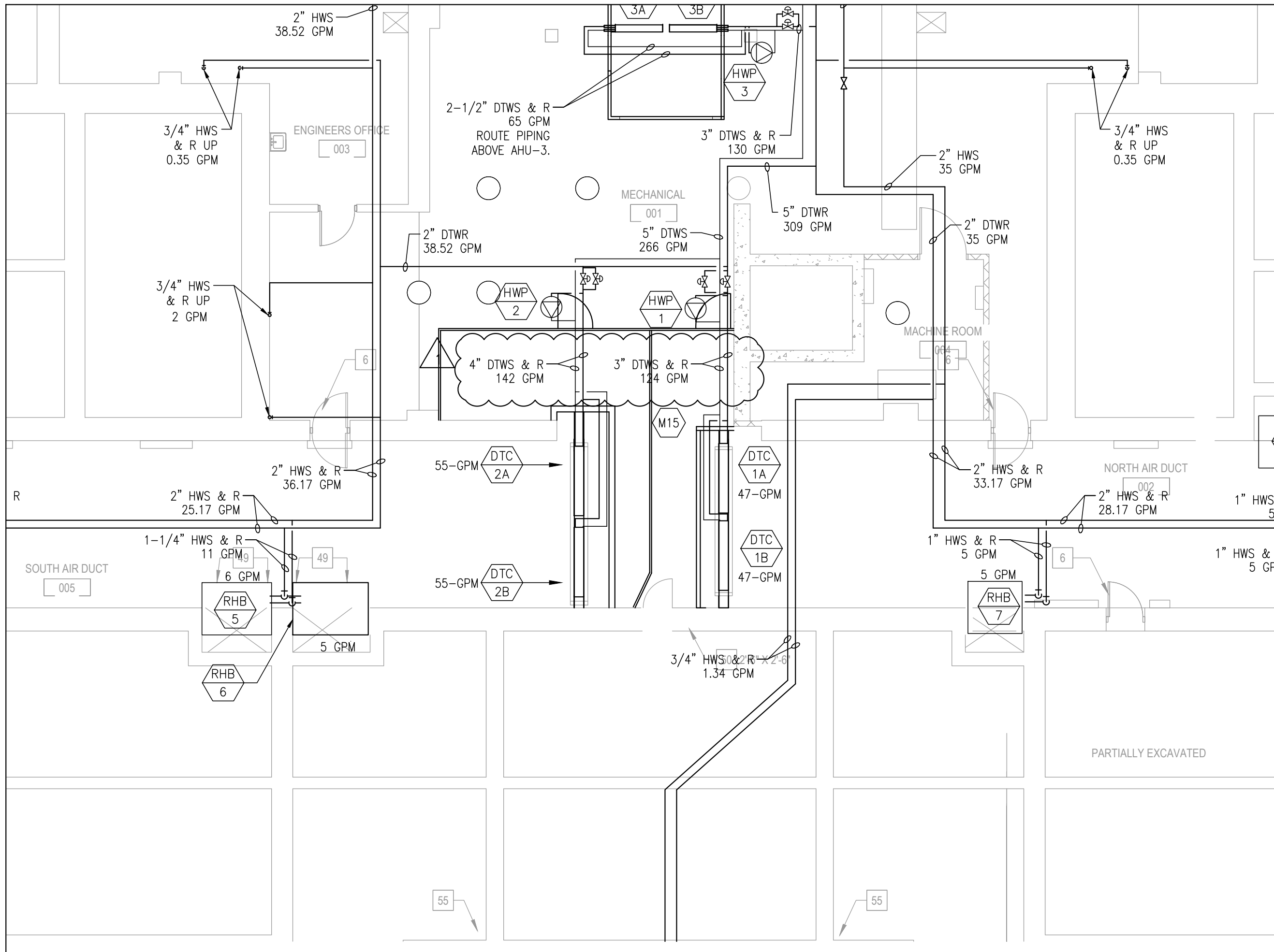
## CCJM

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Chicago, IL

### MECHANICAL BASEMENT VENTILATION PLAN

PBC CONTRACT NO. 05813  
LEGAT PROJECT NO. 211060.01  
DATE OF ISSUE 11-22-2011

# MSK.01



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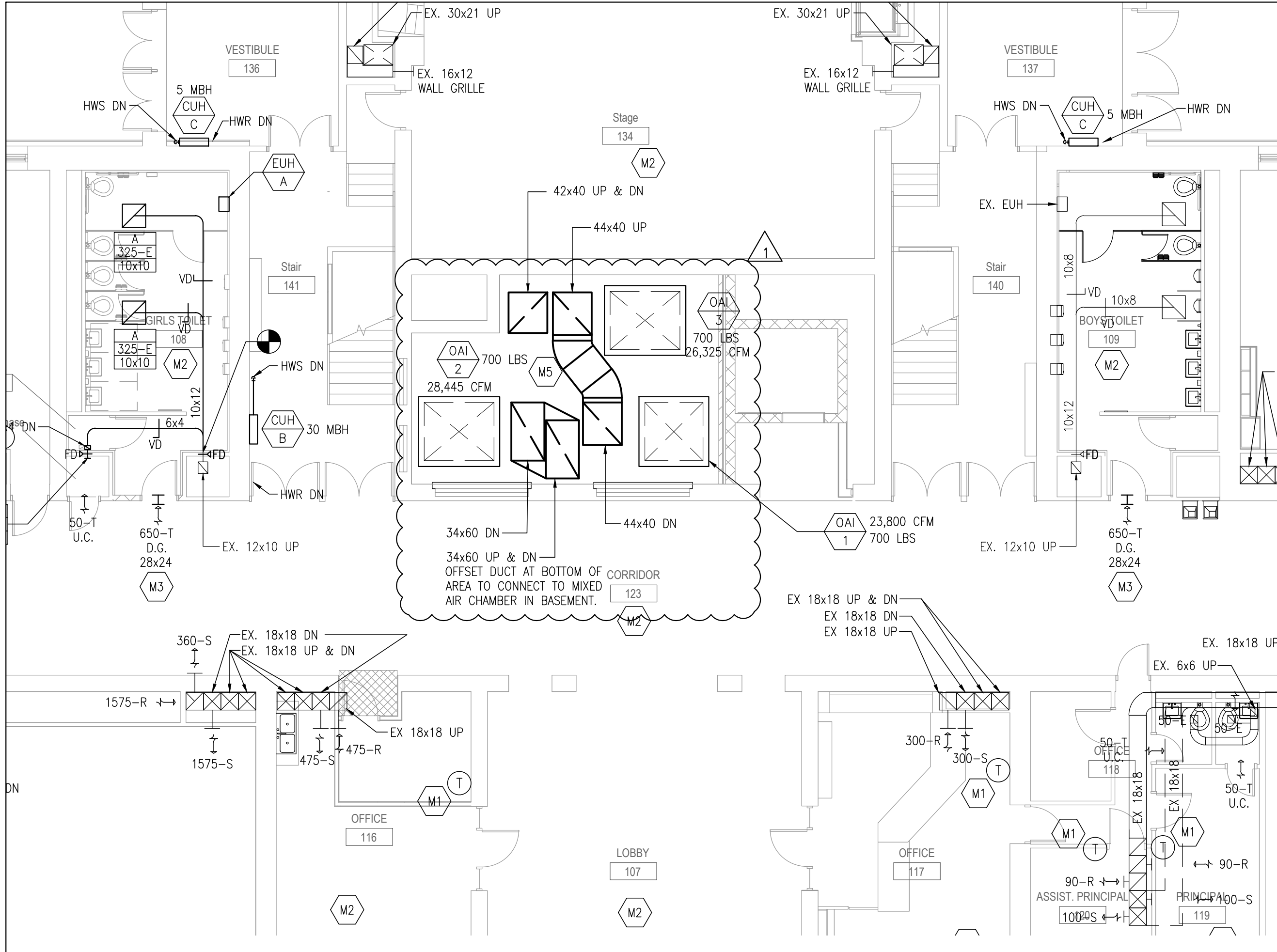
## CCJM

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### MECHANICAL BASEMENT PIPING PLAN

PBC CONTRACT NO. 05813  
LEGAT PROJECT NO. 211060.01  
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# MSK.02



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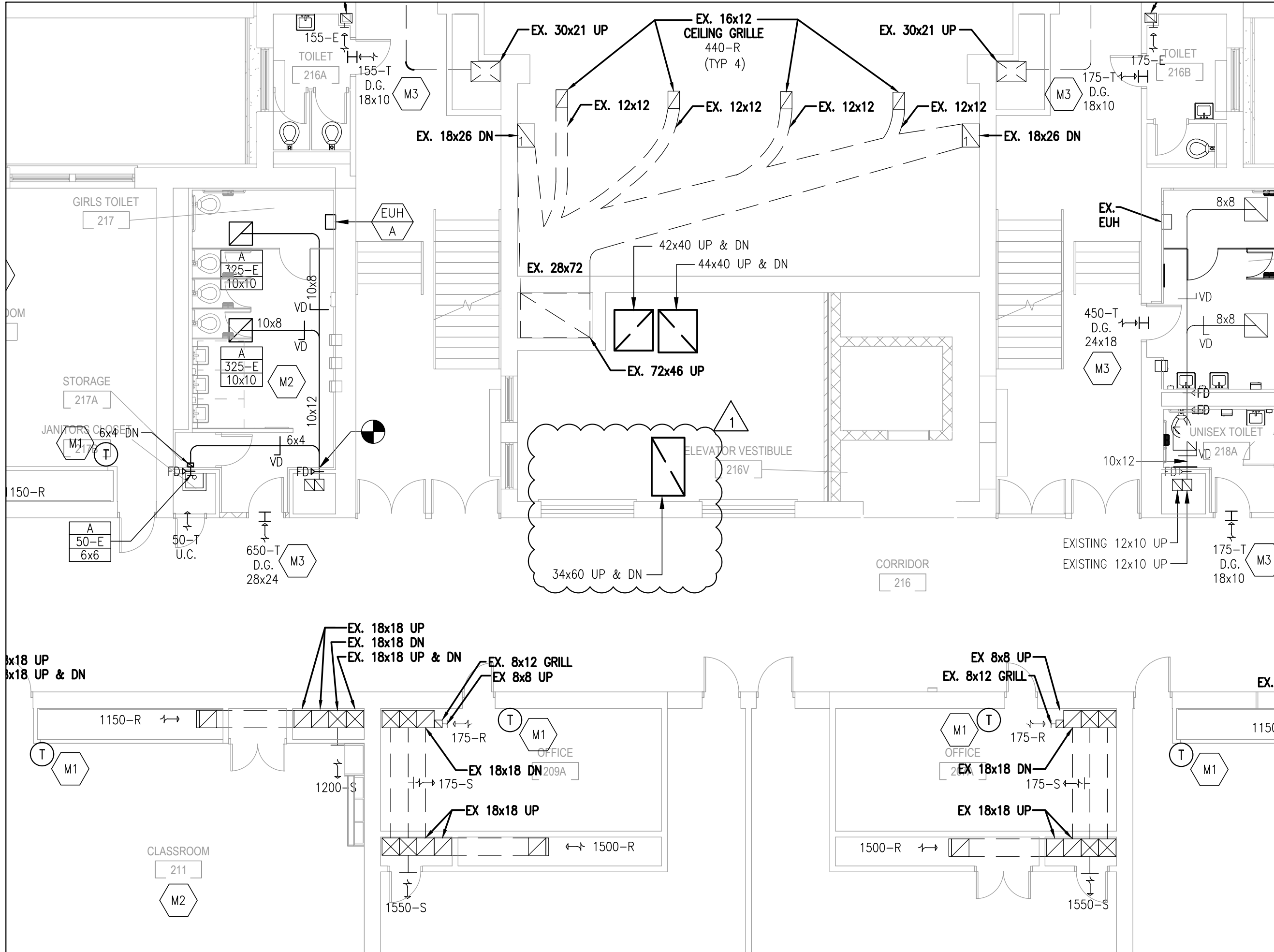
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### MECHANICAL FIRST FLOOR VENTILATION PLAN

PBC CONTRACT NO. 05813  
LEGAT PROJECT NO. 211060.01  
DATE OF ISSUE 11-22-2011

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## Henderson Elementary School Renovations Phase II

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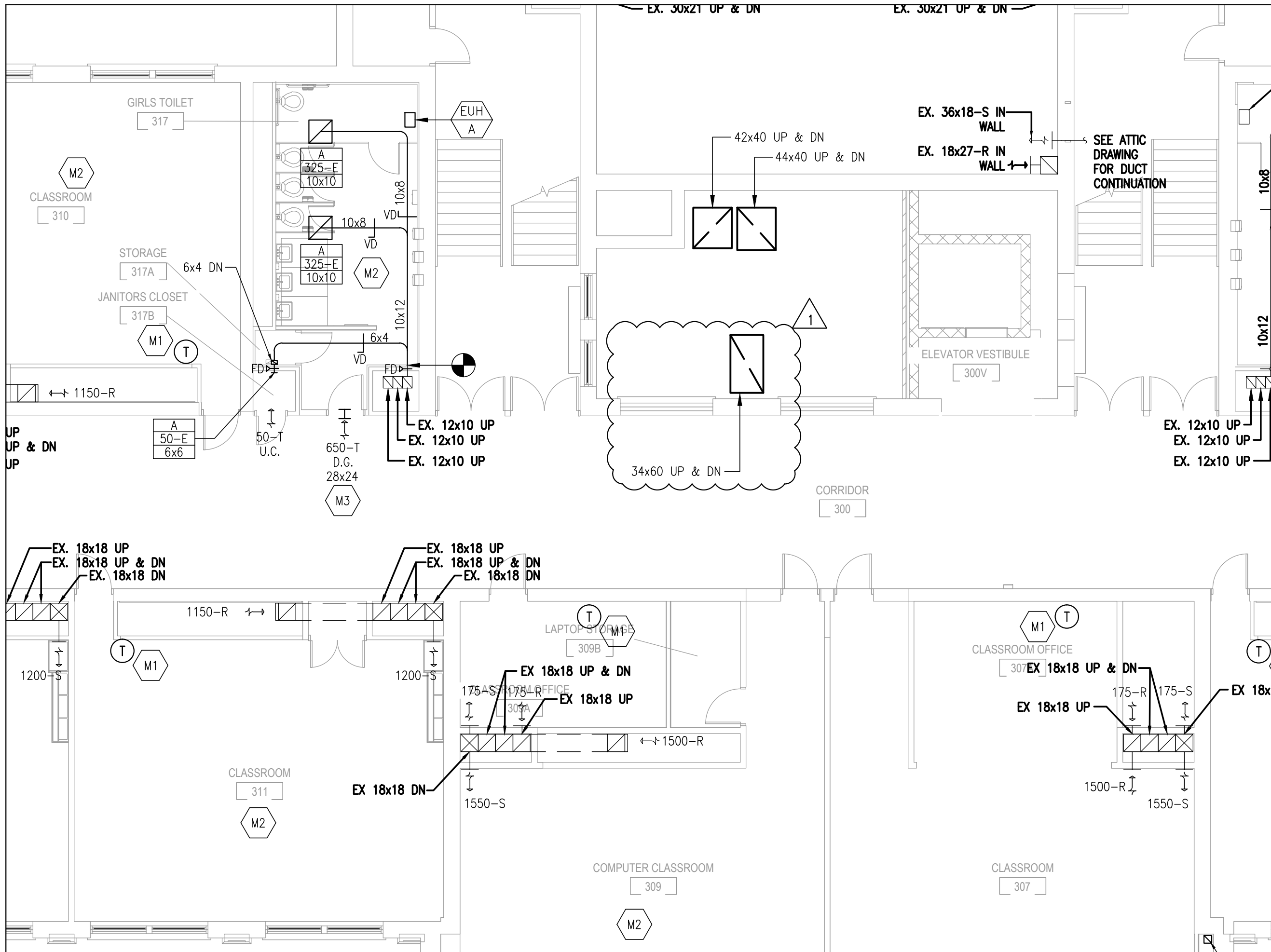
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**MECHANICAL SECOND FLOOR VENTILATION PLAN**

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**MSK.04**



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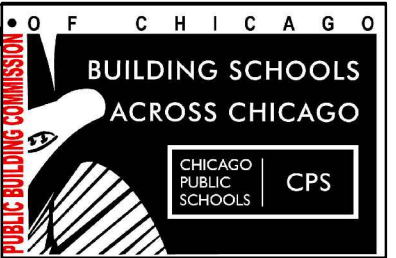
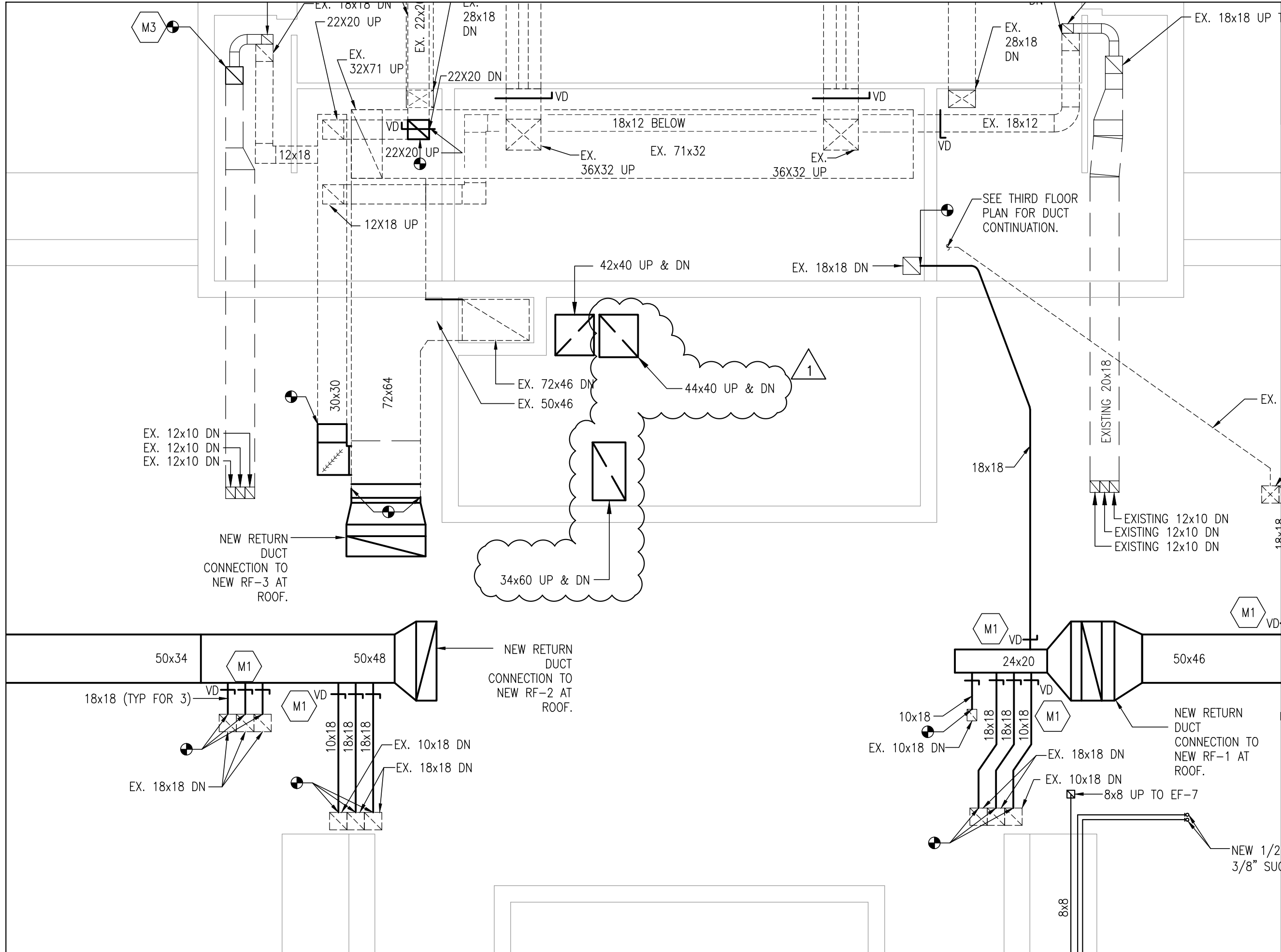
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**CCJM**  
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**MECHANICAL THIRD FLOOR VENTILATION PLAN**

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# MSK.05



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LEGAT PROJECT NO. 211060.01  
DATE OF ISSUE 11-22-2011

**MSK.06**



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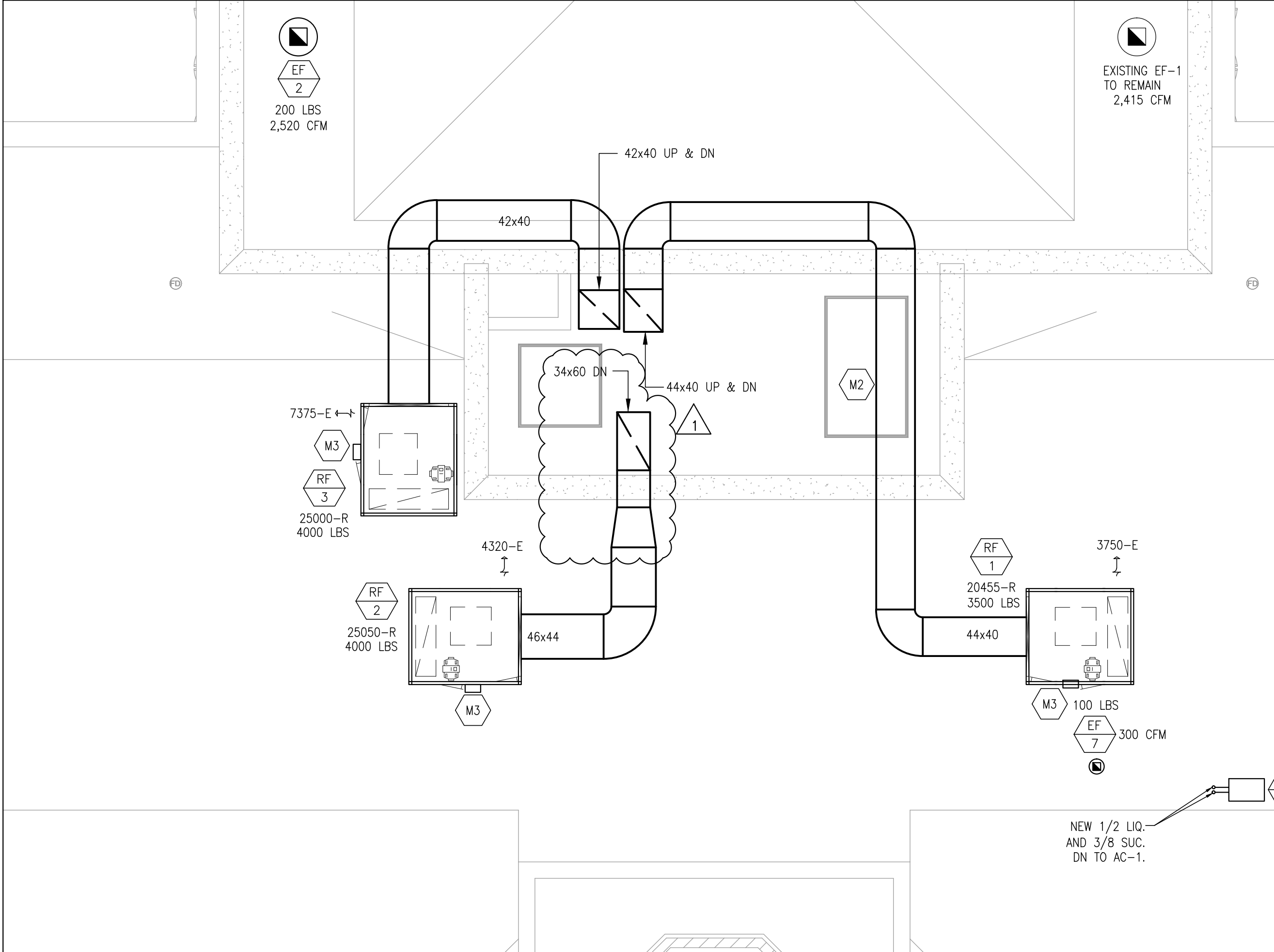
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**MECHANICAL  
 ROOF  
 VENTILATION  
 PLAN**

PBC CONTRACT NO. 05813  
 LEGAT PROJECT NO. 211060.01  
 DATE OF ISSUE 11-22-2011

**MSK.07**





CONTROL DAMPER SCHEDULE				
DAMPER TAG	DAMPER NAME	DESIGN FLOW RATE (CFM)	DIMENSIONS	REMARKS
D-1 (3 EA)	AHU-1 BYPASS DAMPER(S)	17,850	48x18	1,2,3,4
D-2 (3 EA)	AHU-2 BYPASS DAMPER(S)	21,380	56x18	1,2,3,4
D-3	AHU-2 MAX OA DAMPER	18,965	72x42	1,2,3,4
D-4	AHU-2 MIN OA DAMPER	9,485	72x18	1,2,3,4
D-5	AHU-1 MAX OA DAMPER	15,865	60x40	1,2,3,4
D-6	AHU-1 MIN OA DAMPER	7,935	60x20	1,2,3,4
D-7	AHU-3 MAX OA DAMPER	17,550	72x40	1,2,3,4
D-8	AHU-3 MIN OA DAMPER	8,775	72x20	1,2,3,4
D-9	AHU-3 RA DAMPER	17,550	56x36	1,2,3,4,5
D-10	AHU-2 RA DAMPER	20,730	34x60	1,2,3,4,5
D-11	AHU-1 RA DAMPER	16,705	44x40	1,2,3,4,5
D-12	AHU-3 BYPASS DAMPER	13,165	48x30	1,2,3,4,5

- ① DAMPERS CONTROLLED BY THE BUILDING AUTOMATION SYSTEM WILL FOLLOW THE REQUIREMENTS OF SPECIFICATION 15951.
- ② DAMPERS WITH VERTICAL BLADES WILL HAVE HAVE THRUST BEARINGS.
- ③ DAMPER ACTUATOR WILL BE SIZED IN COORDINATION WITH THE BUILDING AUTOMATION SYSTEM CONTRACTOR TO ENSURE PROPER CONTROLABILITY.
- ④ MECHANICAL CONTRACTOR RESPONSIBLE FOR DUCTWORK TRANSITIONS REQUIRED BY DAMPERS SMALLER THAN THE DUCT.
- ⑤ DAMPER SIZE SHOWN IS FOR ACTUAL DUCT DIMENSION. DAMPER WILL BE SIZED 2" SMALLER THAN THE DUCT OPENING FOR CONTROLABILITY

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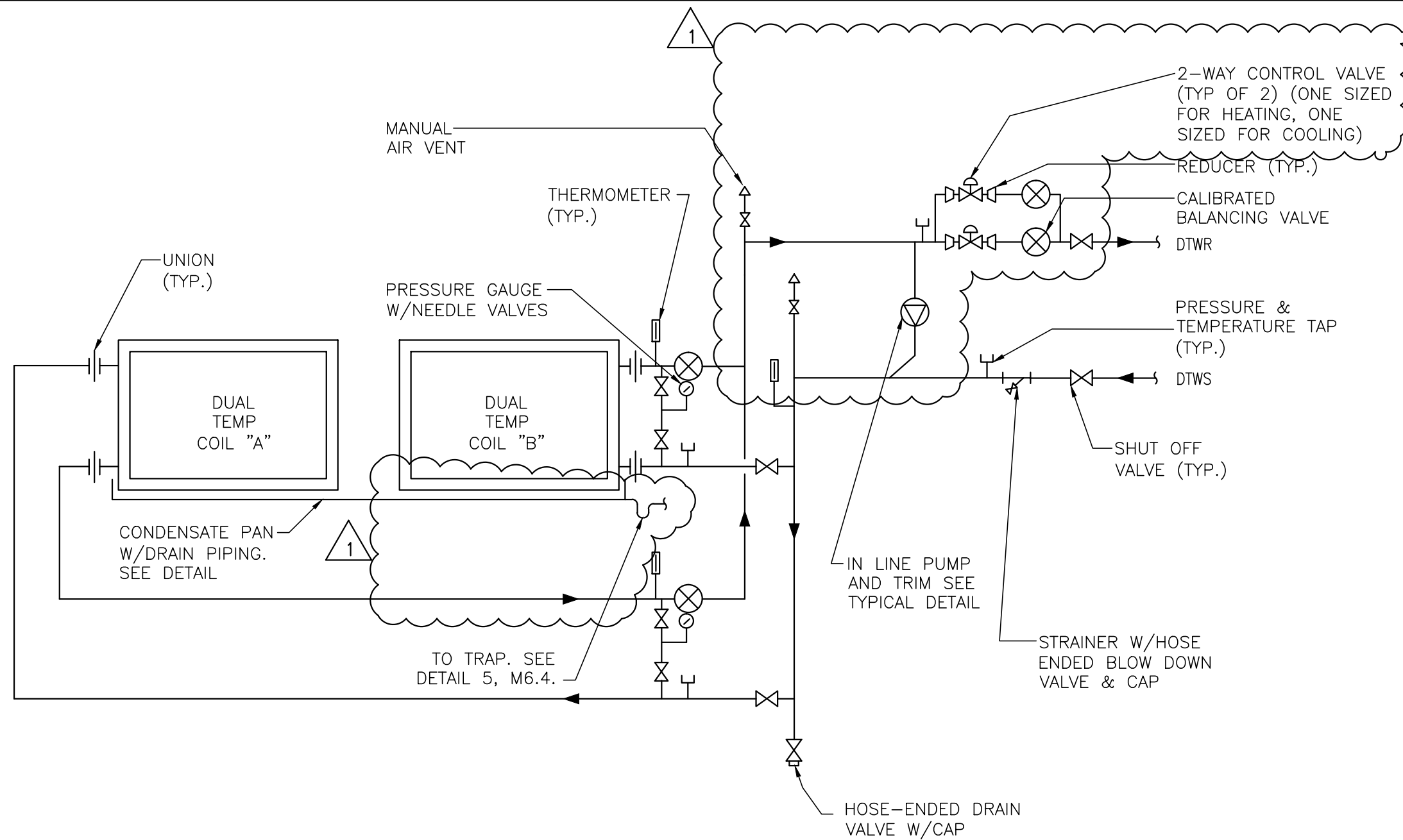
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Chicago, IL

MECHANICAL  
SCHEDULES

PBC CONTRACT NO. 05813  
LEGAT PROJECT NO. 211060.01  
DATE OF ISSUE 11-22-2011

**MSK.09**



## TYPICAL SIDE BY SIDE DUAL TEMP COIL PIPING DIAGRAM WITH RECIRCULATION PUMP (AHU-3)

9  
M6.3 N.T.S.

1. CONDENSATE PAN TO BE MADE OF STAINLESS STEEL (20 GA.) WELDED AT ALL JOINTS.
2. THE SIDES OF THE PAN WILL BE 2" HIGH AND THE PAN WILL EXTEND 4" UPSTREAM AND 18" DOWNSTREAM OF THE COIL. PROVIDE 1/8"/1' PITCH ON DRAIN PAN.
3. USE STAINLESS STEEL CHANNEL TO RAISE THE COIL TO PREVENT PIPE INTERFERENCE WITH THE SIDES OF THE PAN.



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### Henderson Elementary School Renovations Phase II

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#### MECHANICAL DETAILS

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## MSK.10

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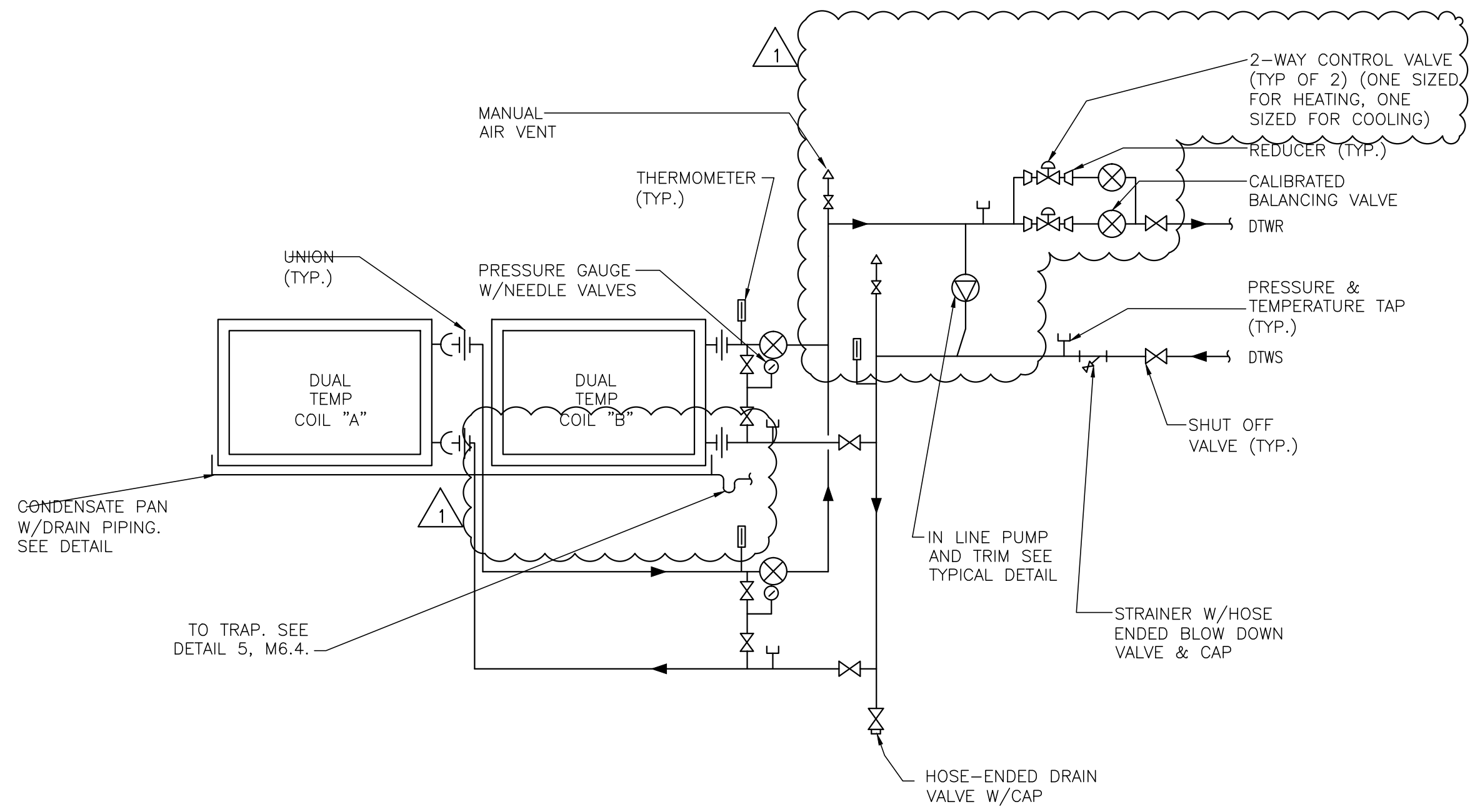
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**MECHANICAL  
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**MSK.11**

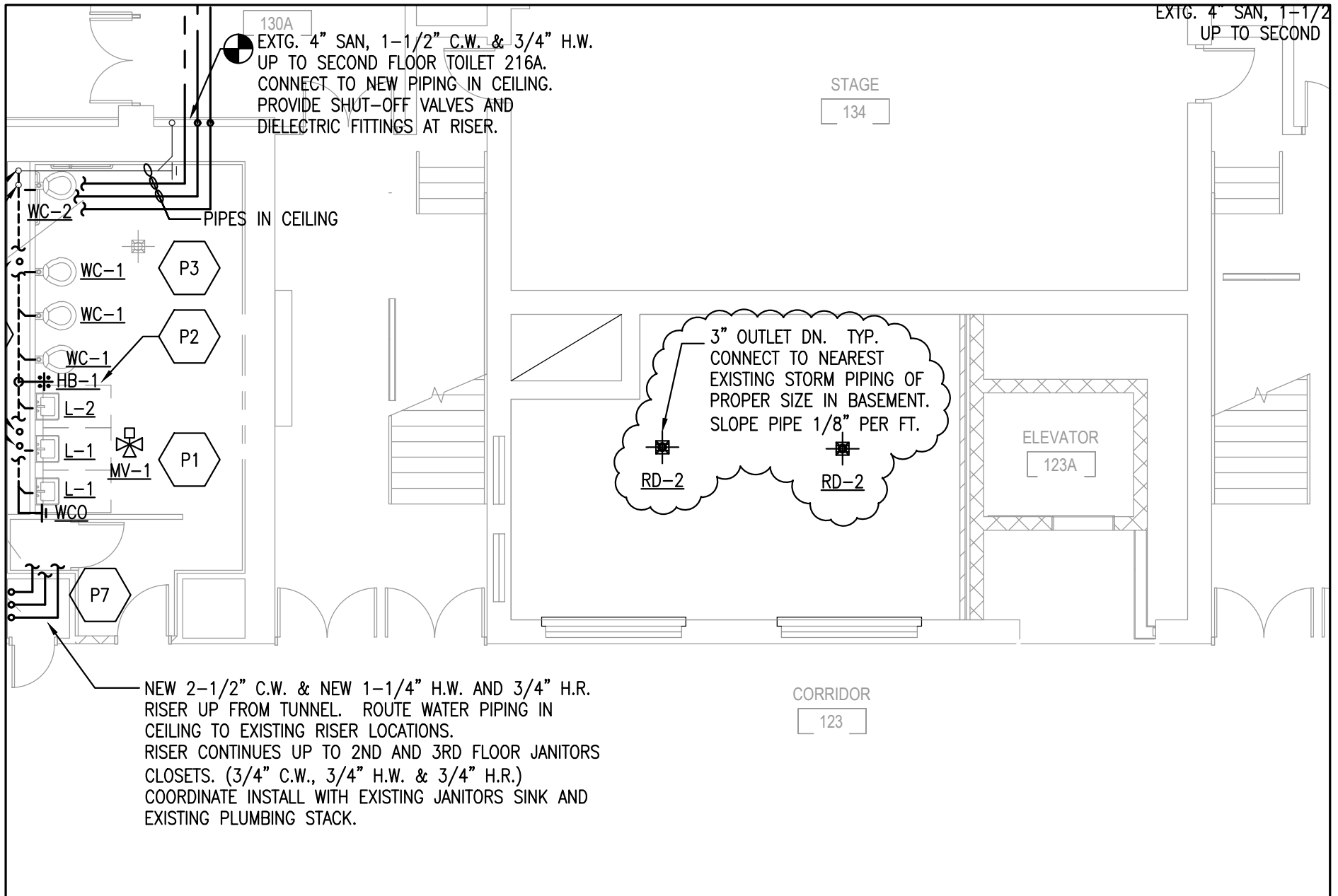


**TYPICAL SIDE BY SIDE DUAL TEMP COIL  
PIPING DIAGRAM WITH RECIRCULATION PUMP**

2  
M6.4

N.T.S.

1. CONDENSATE PAN TO BE MADE OF STAINLESS STEEL (20 GA.) WELDED AT ALL JOINTS.
2. THE SIDES OF THE PAN WILL BE 2" HIGH AND THE PAN WILL EXTEND 4" UPSTREAM AND 18" DOWNSTREAM OF THE COIL. PROVIDE 1/8"/1' PITCH ON DRAIN PAN.
3. USE STAINLESS STEEL CHANNEL TO RAISE THE COIL TO PREVENT PIPE INTERFERENCE WITH THE SIDES OF THE PAN.



## Henderson Elementary School Renovations Phase II

COURTYARD DECK DRAINS

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# PSK.01

					ADJACENT TO L-1 AND L-2.	
L-1	WALL MOUNT LAVATORY	6	2	1	AMERICAN STANDARD MODEL# 0124.131 "COMRADE" WALL MOUNT LAVATORY. WHITE. PROVIDE SLOAN MODEL# ETF-600 HARD-WIRED SENSOR FAUCET, 0.5 GPM OUTLET. PROVIDE SLOAN MODEL# EL-154 TRANSFORMER.	ADA COMPLIAN MV-1, GRID D KIT & CARRIER FOR MOUNTING
L-2	WALL MOUNT LAVATORY (ADA)	5	2	1		
MV-1	MIXING VALVE	X			POWERS MODEL# LM490 "HYDRO-GUARD" TEMPERED MIXING VALVE. MULTIPLE LAVATORY INSTALLATIONS. MIXING VALVES MAY BE NEEDED IN EXISTING TOILET ROOMS, PROVIDE WHEN REQUIRED.	REFER TO PLU INSTALLATION I FLOOR PLANS
MV-2	MASTER MIXING VALVE	1			POWERS MODEL# MM432 "MASTER MIXER" TEMPERED MIXING VAVLE. 3/4" INLET, 1" OUTLET.	
WCO	WALL CLEANOUT	X			JAY R SMITH MODEL# 4422C. WITH COVER AND SCREW.	
WC-1	WATER CLOSET	9	10	6	AMERICAN STANDARD MODEL# 3351.160 "AFWALL". WALL-HUNG, TOP SPUD, ELONGATED BOWL. WITH BEMIS SEAT (SHALL BE ANTIMICROBIAL PLASTIC). PROVIDE SLOAN 111-1.28 ES-S HARD WIRED SENSOR FLUSHOMETER AND SLOAN EL-154 TRANSFORMER. 1.28GPF. WALL MOUNTED CARRIERS.	REFER TO ARC MOUNTING HEIG
WC-2	WATER CLOSET (ADA)	4				
WC-4	WATER CLOSET	1	10	6	AMERICAN STANDARD MODEL# 3351.160 "AFWALL". WALL-HUNG, TOP SPUD, ELONGATED BOWL. WITH BEMIS SEAT (SHALL BE ANTIMICROBIAL PLASTIC). PROVIDE SLOAN 111-1.28 ES-S HARD WIRED SENSOR FLUSHOMETER AND SLOAN EL-154 TRANSFORMER. 1.28GPF. WALL MOUNTED CARRIERS.	REFER TO ARC MOUNTING HEIG
RD-1	ROOF DRAIN	4			JAY R SMITH MODEL# 1010C, 16" Ø LOW PROFILE DOME. 3" OUTLET, CAST IRON DOME.	
RD-2	DECK DRAIN	2			JAY R SMITH MODEL# 1470, 8" SQUARE DUCTILE IRON GRATE. 4" OUTLET, SUMP RECEIVER AND VANDAL PROOF GRATE.	

(X) REFER TO FLOOR PLANS FOR TOTALS

NEW FIXTURE TOTALS: 183 WFU

104 DFU

PROVIDE ANGLE STOPS WITH HANDLES FOR ALL LAVATORY DRINKING FOUNTAINS.



## Henderson Elementary School Renovations Phase II

COURTYARD DECK DRAINS

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**PSK.02**

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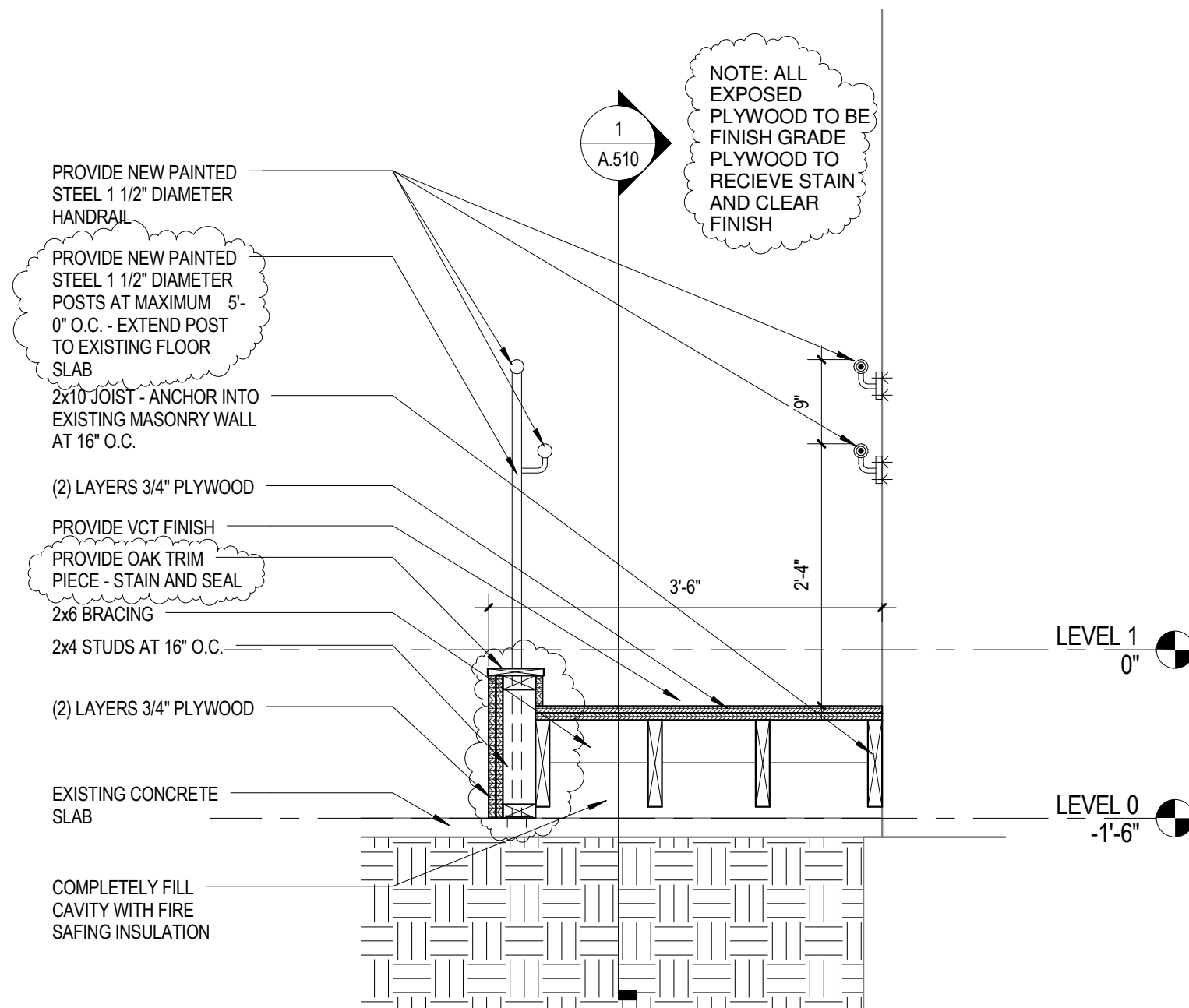
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**3** INTERIOR RAMP - CROSS SECTION  
 3/4" = 1'-0"

Interior Ramp Section

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 DATE OF ISSUE 11-28-2011

**ASK-07**