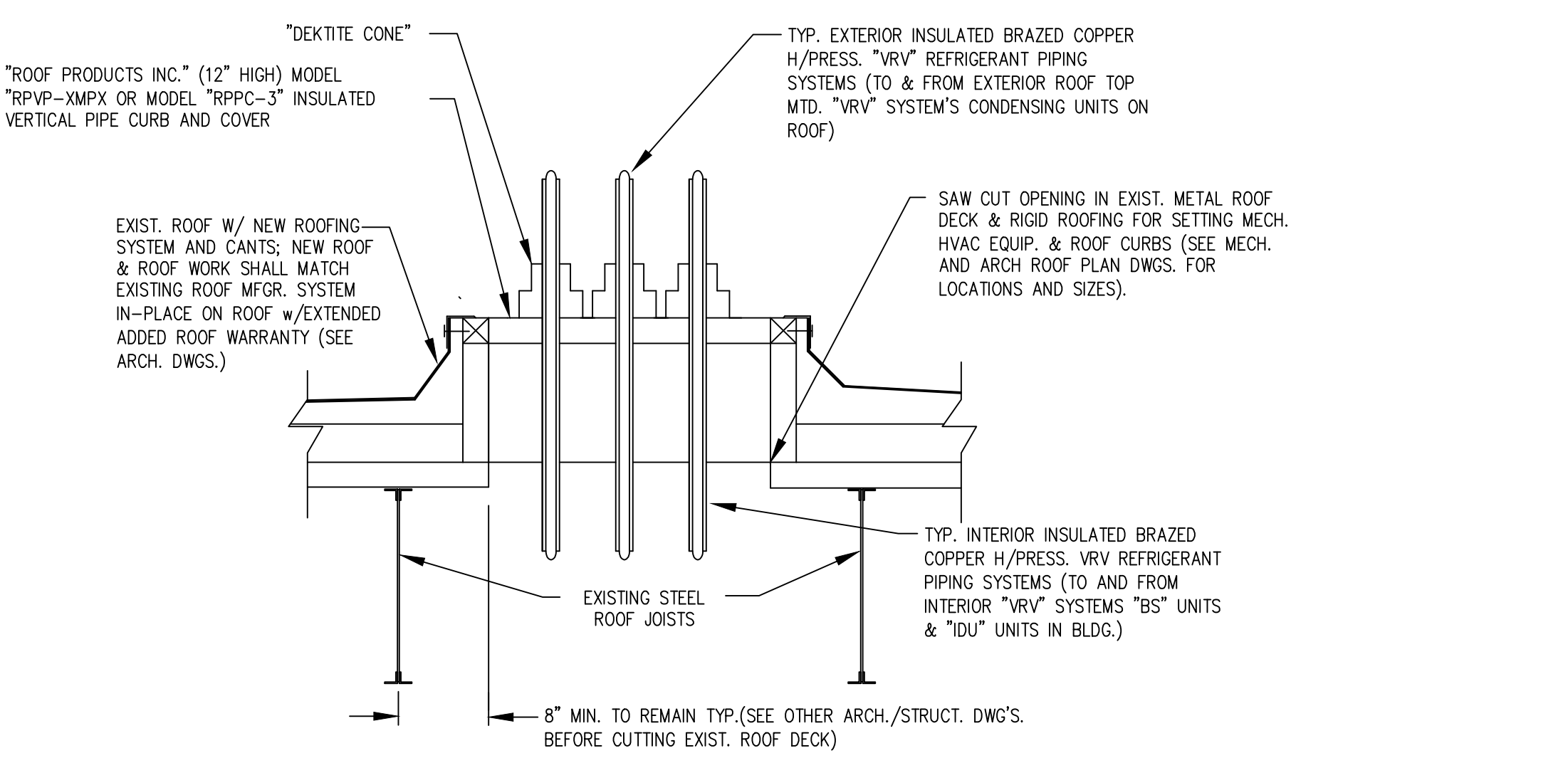


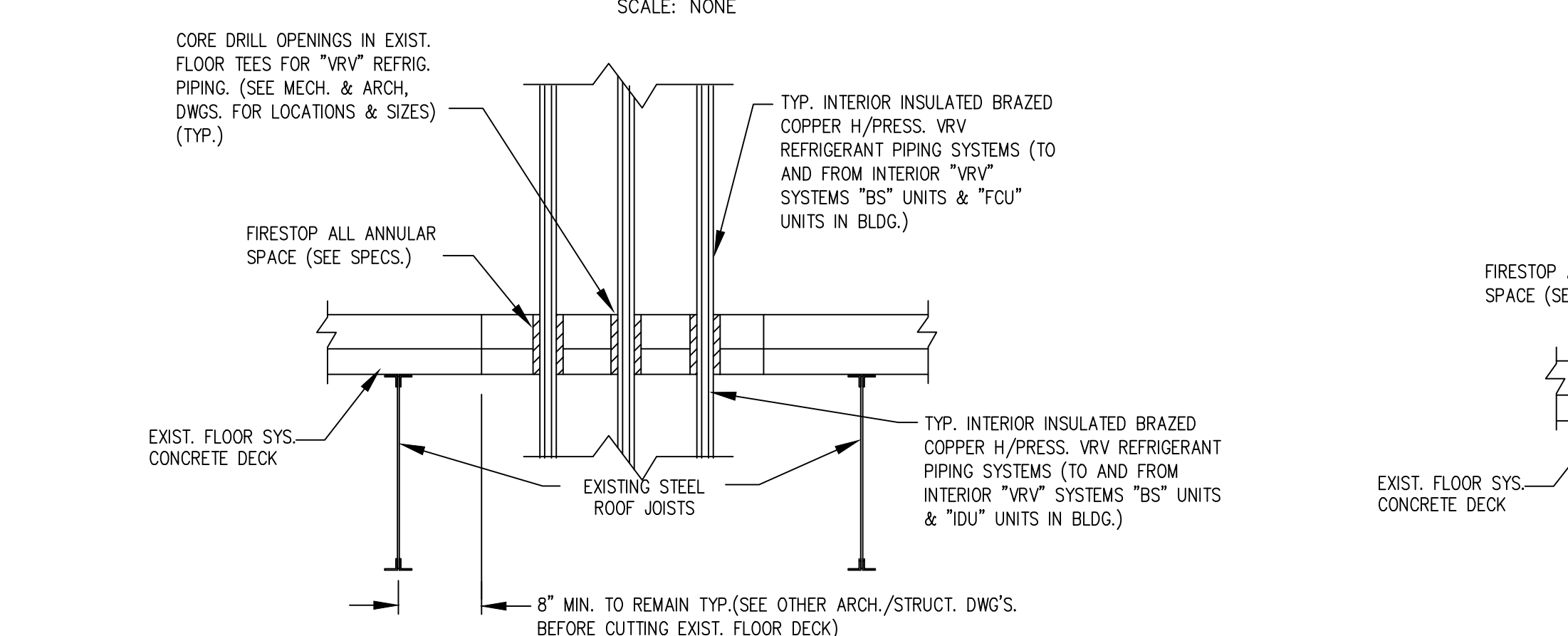
TYPICAL (3-PIPE) HEAT RECOVERY "VRV" SYSTEM "BS" BRANCH SELECTOR REFRIGERANT PIPING DETAIL

NO SCALE



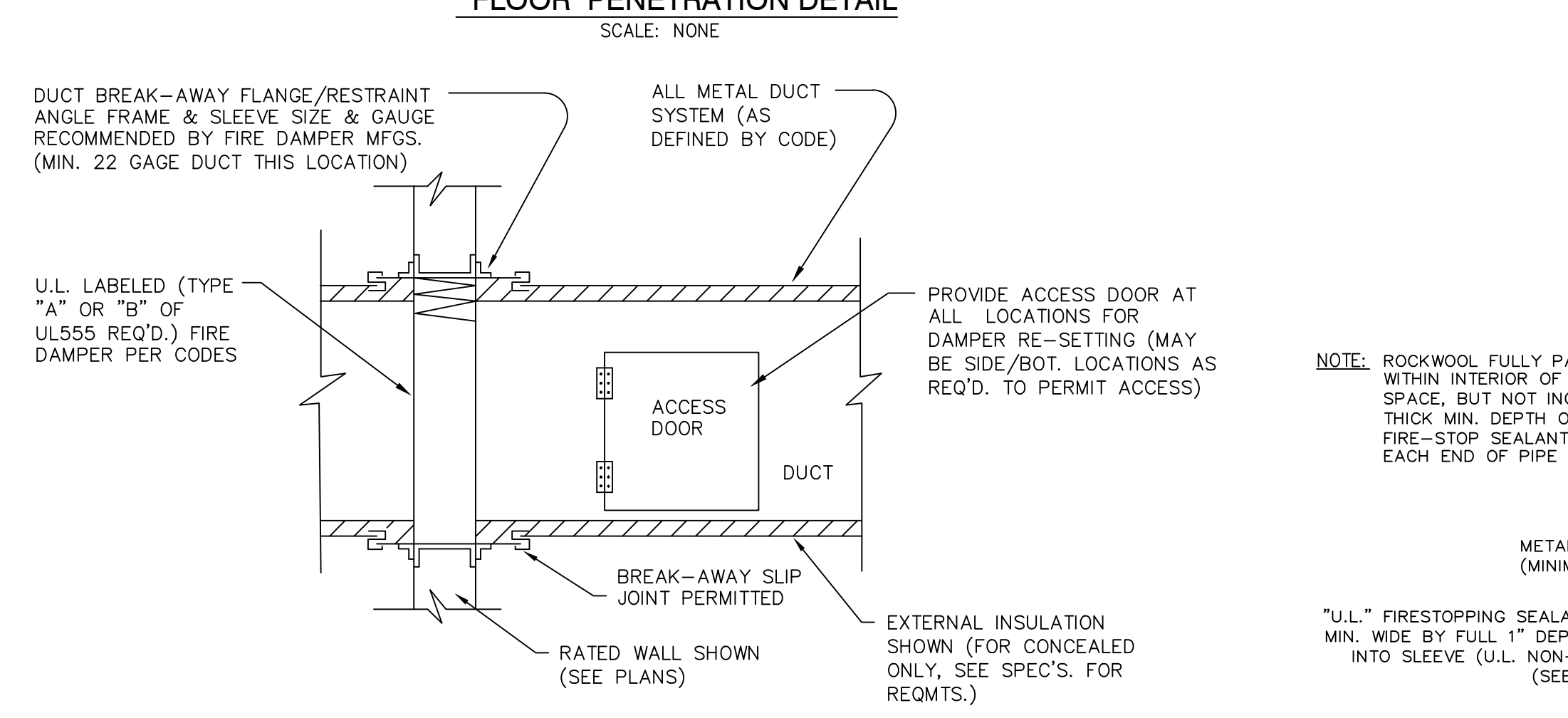
TYPICAL "VRV" SYSTEMS REFRIG. PIPING ROOF CURB/PENETRATION DETAIL

SCALE: NONE



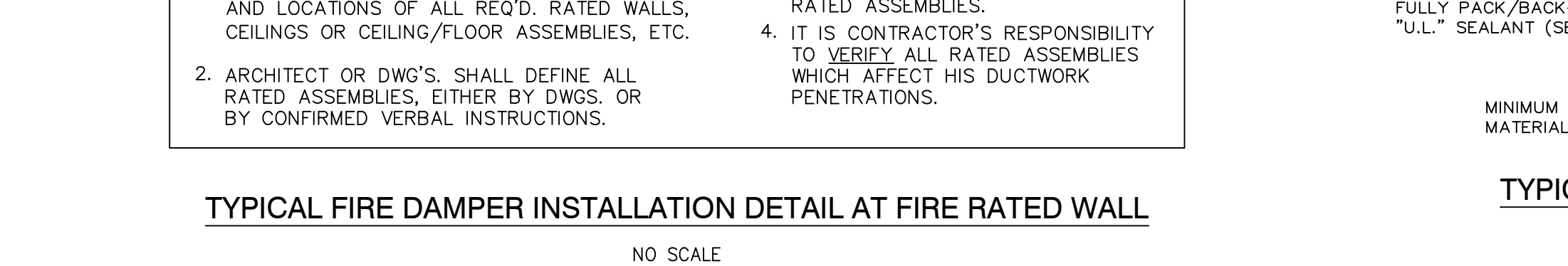
TYPICAL "VRV" SYSTEMS REFRIG. PIPING FLOOR PENETRATION DETAIL

SCALE: NONE



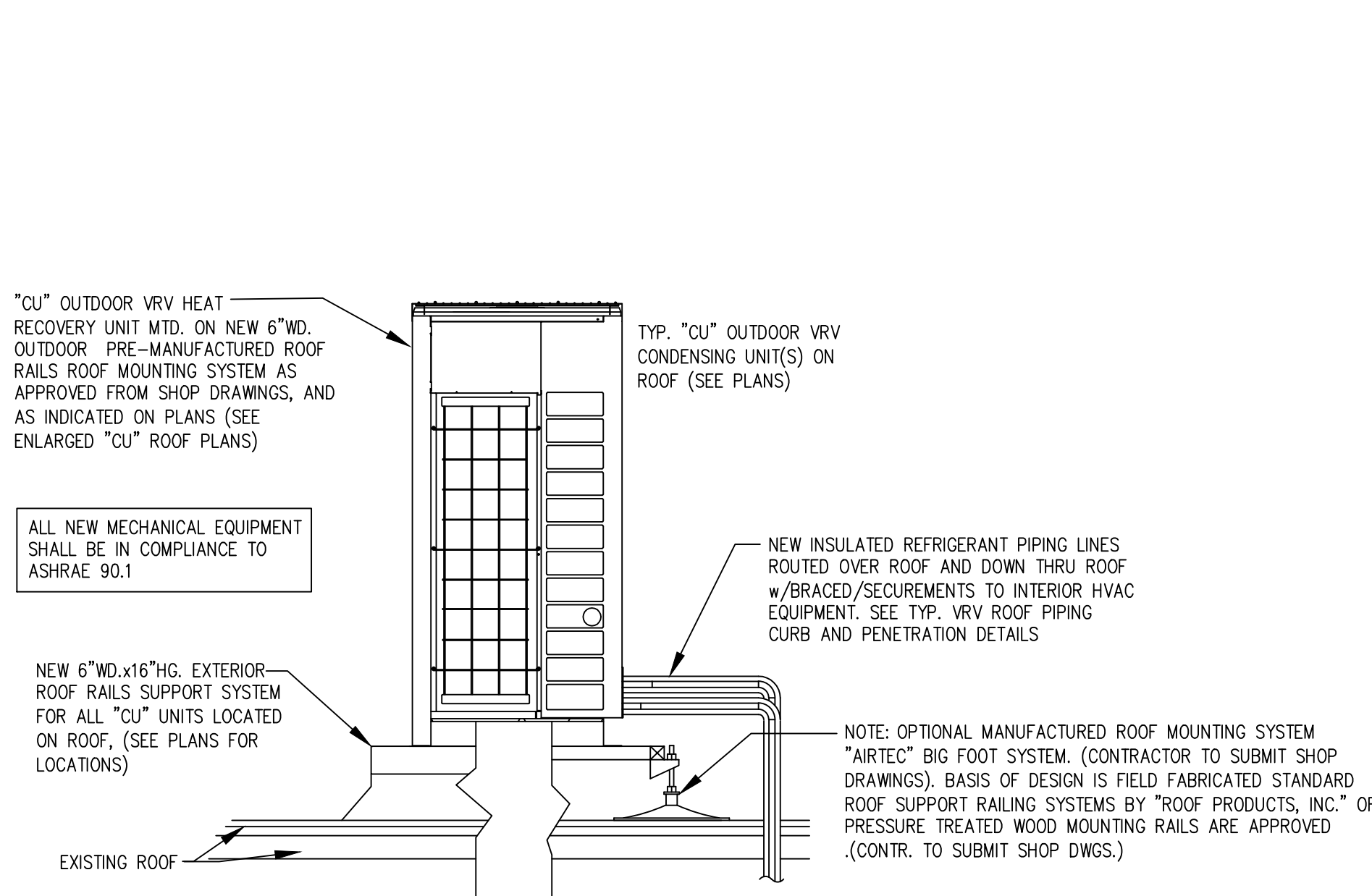
TYPICAL FIRE DAMPER INSTALLATION DETAIL AT FIRE RATED WALL

NO SCALE



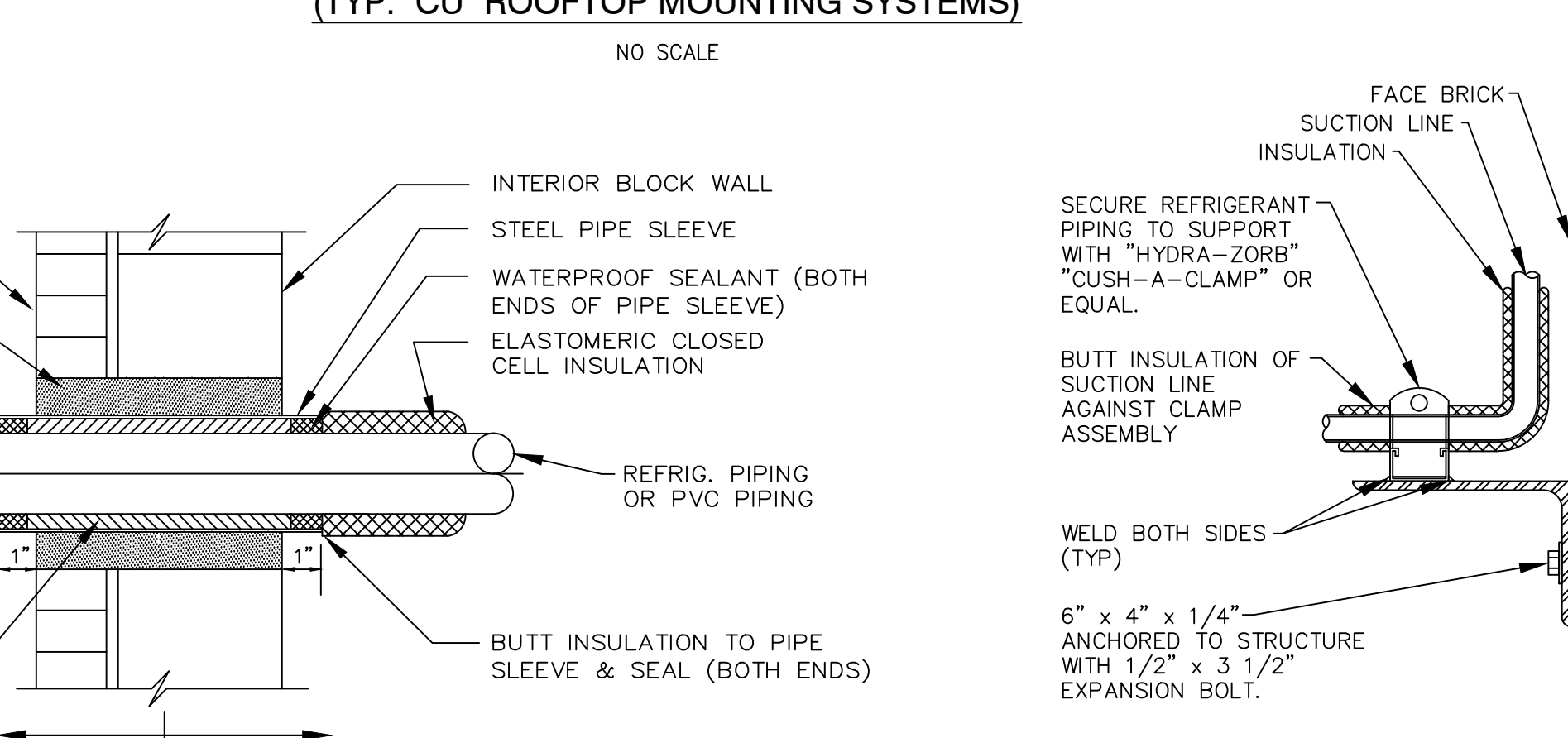
TYPICAL PIPE SLEEVE FIRE-STOP DETAIL - (TYPICAL FOR ALL PIPE PASSING THROUGH RATED WALLS-ABOVE GRADE)

NO SCALE



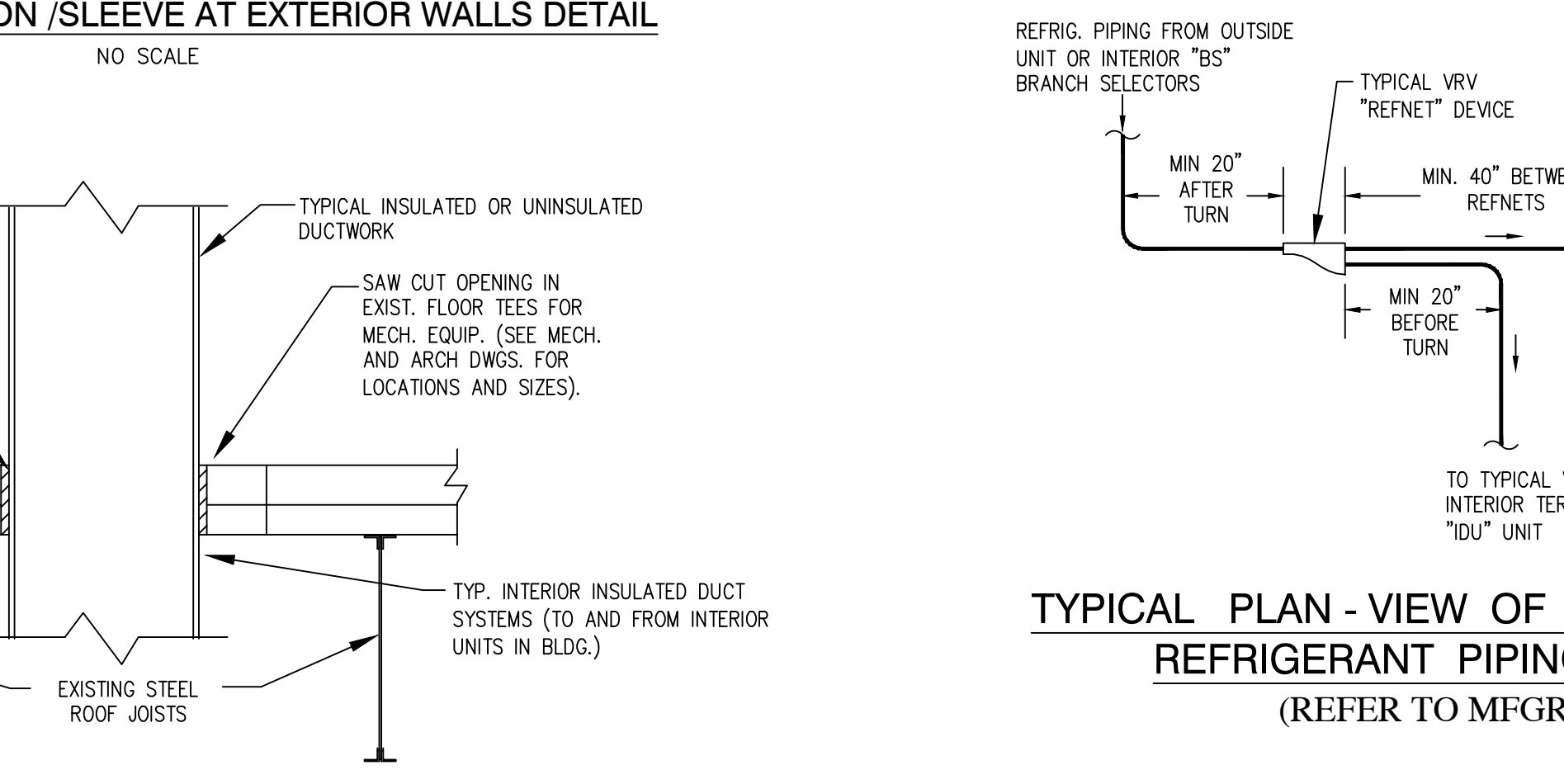
TYPICAL NEW EXTERIOR "CU" VRV AIR-COOLED OUTDOOR HEAT PUMP HEAT RECOVERY CONDENSING UNITS W/ REFRIG. PIPING ROUTING DETAIL (TYP. "CU" ROOFTOP MOUNTING SYSTEMS)

NO SCALE



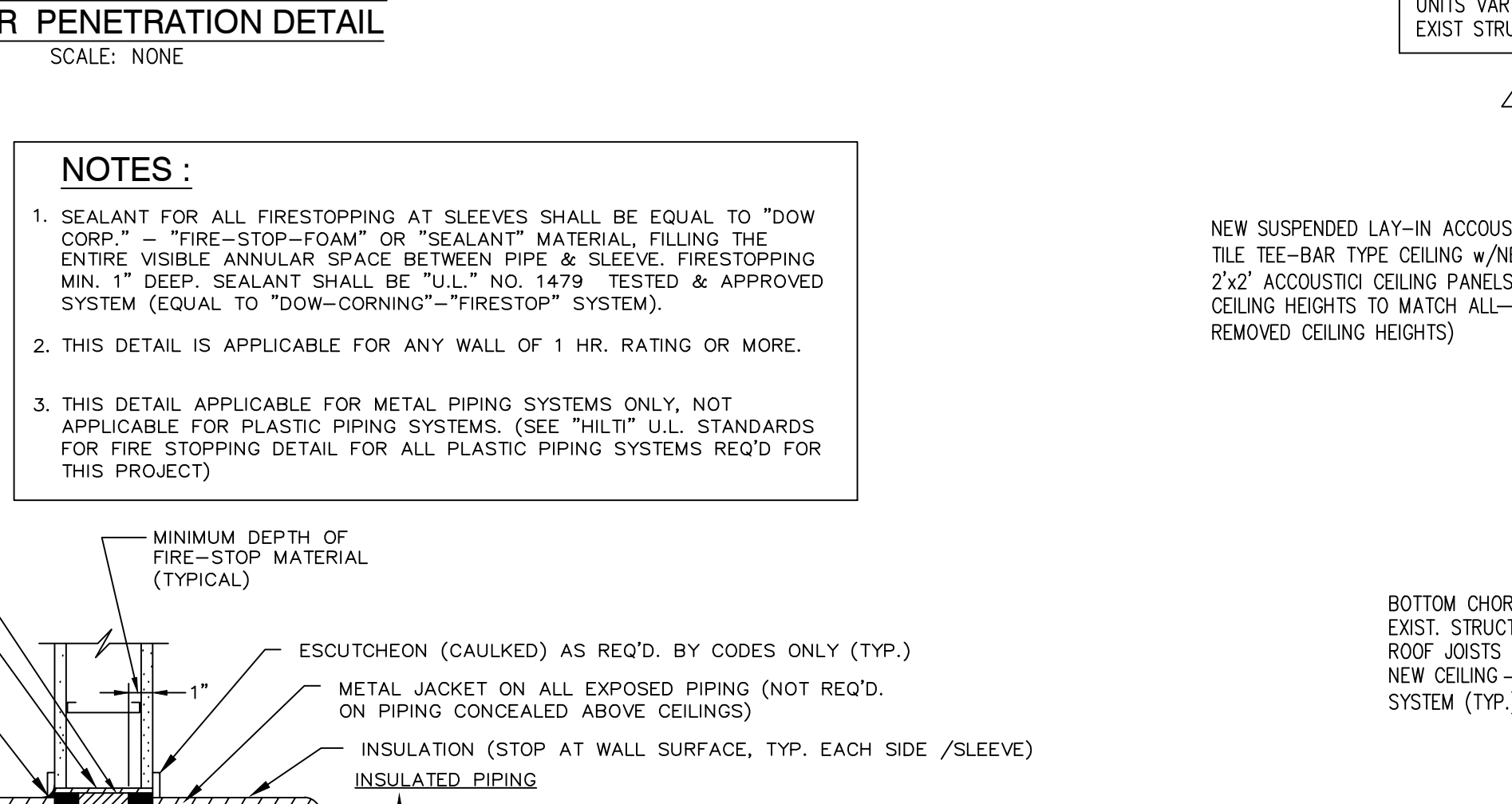
TYP. PIPE PENETRATION /SLEEVE AT EXTERIOR WALLS DETAIL

NO SCALE



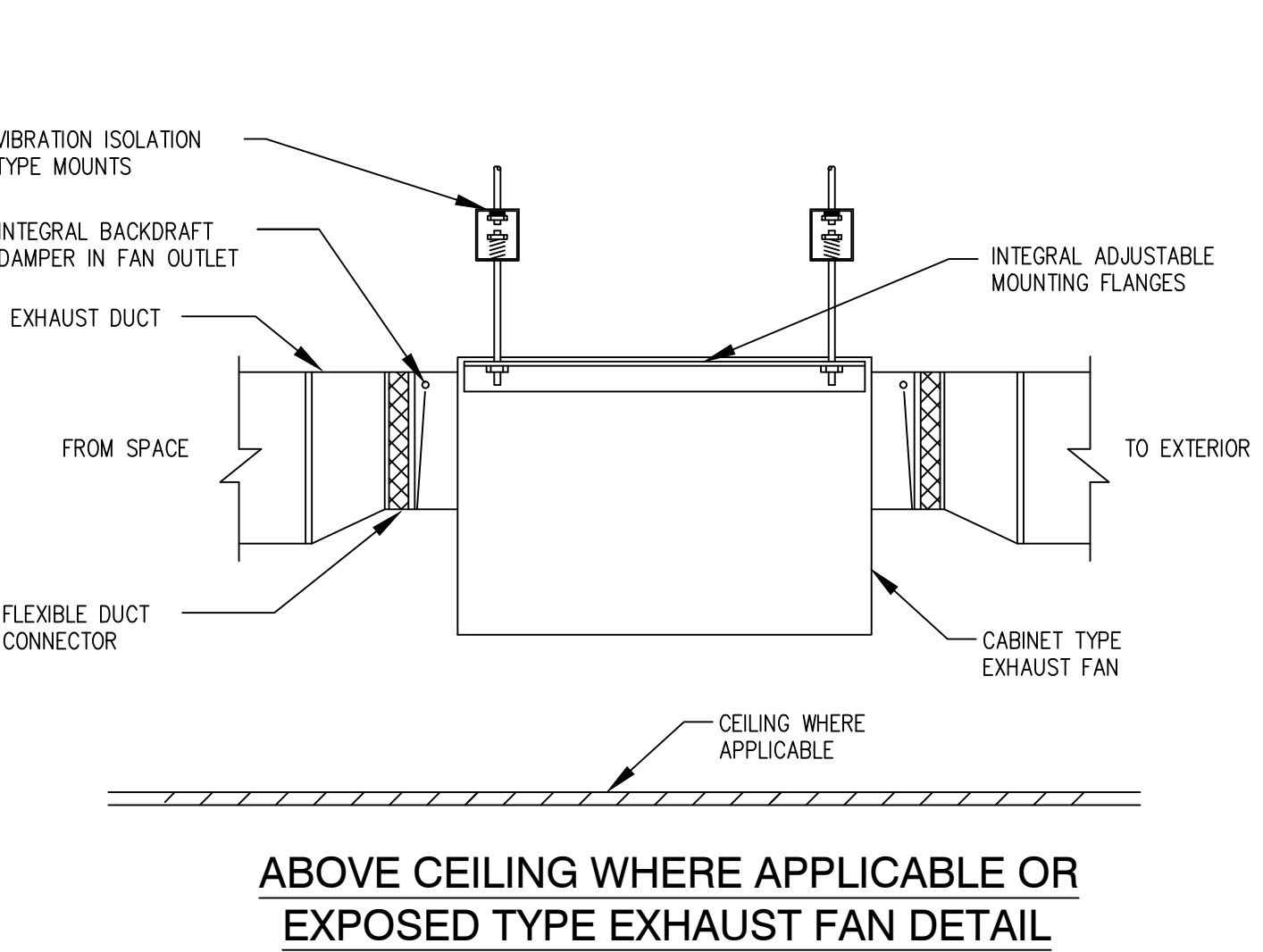
TYPICAL HVAC DUCT SYSTEMS AT FLOOR PENETRATION DETAIL

SCALE: NONE



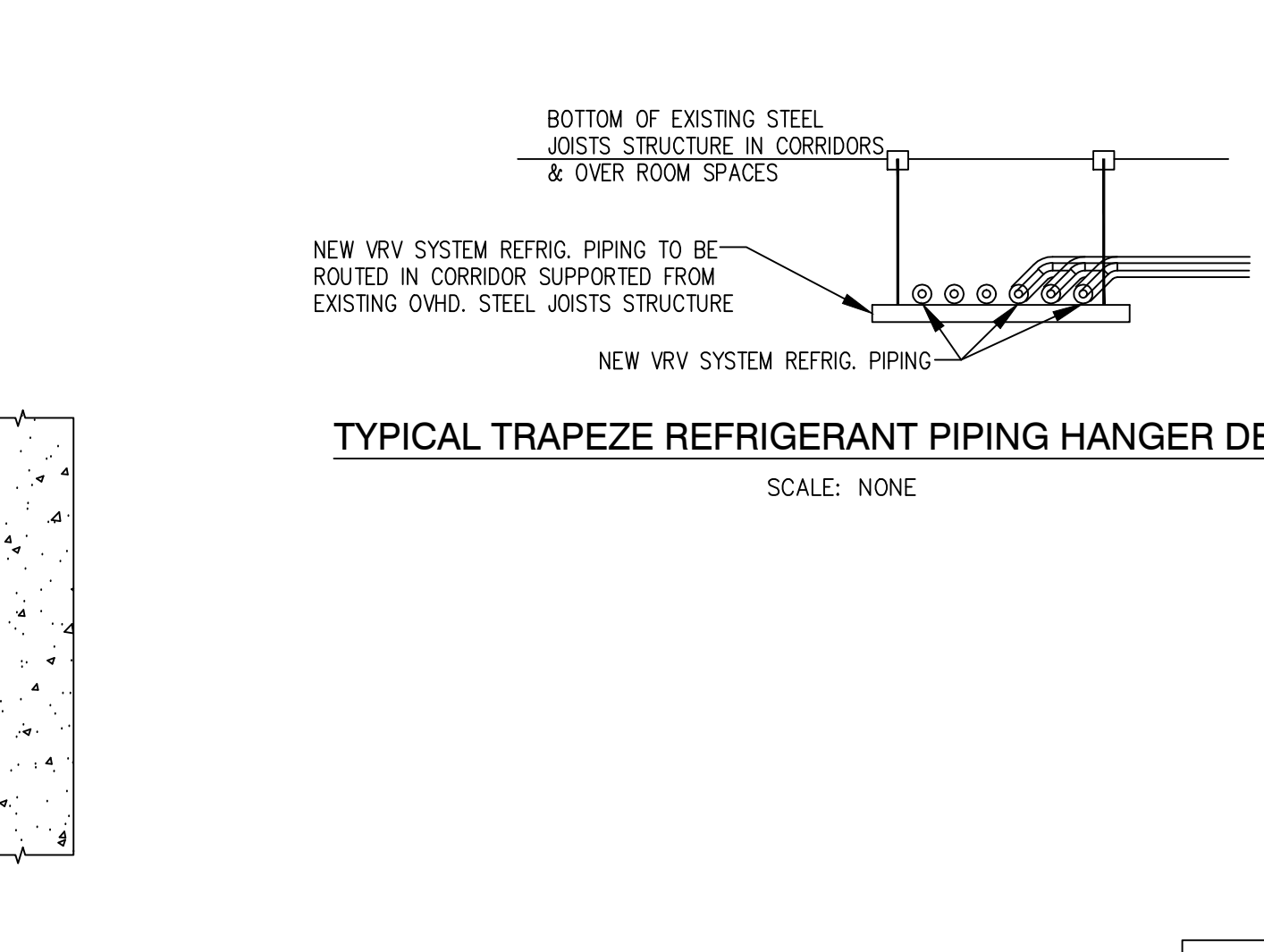
TYPICAL "VRV" UNIT MOUNTING AT INTERIOR OF ROOMS/SPACES W/NEW CEILING SYSTEMS

SCALE: NONE



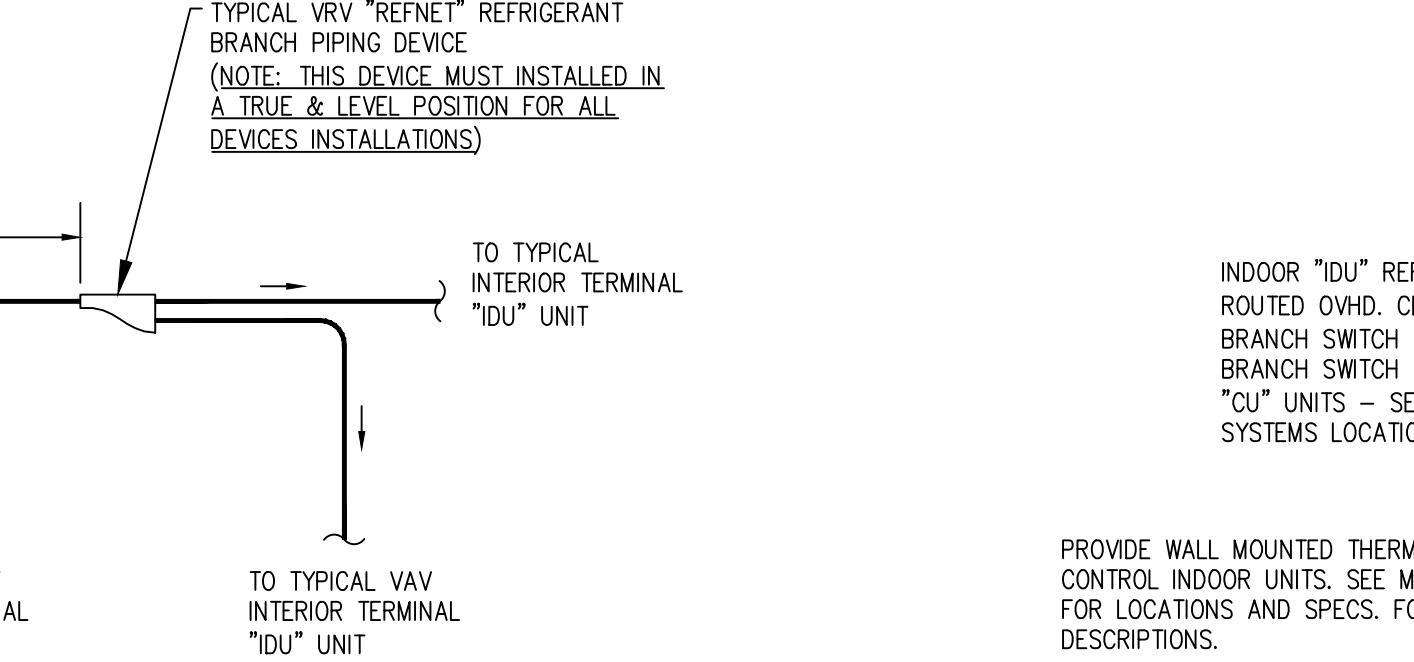
ABOVE CEILING WHERE APPLICABLE OR EXPOSED TYPE EXHAUST FAN DETAIL

NOT TO SCALE



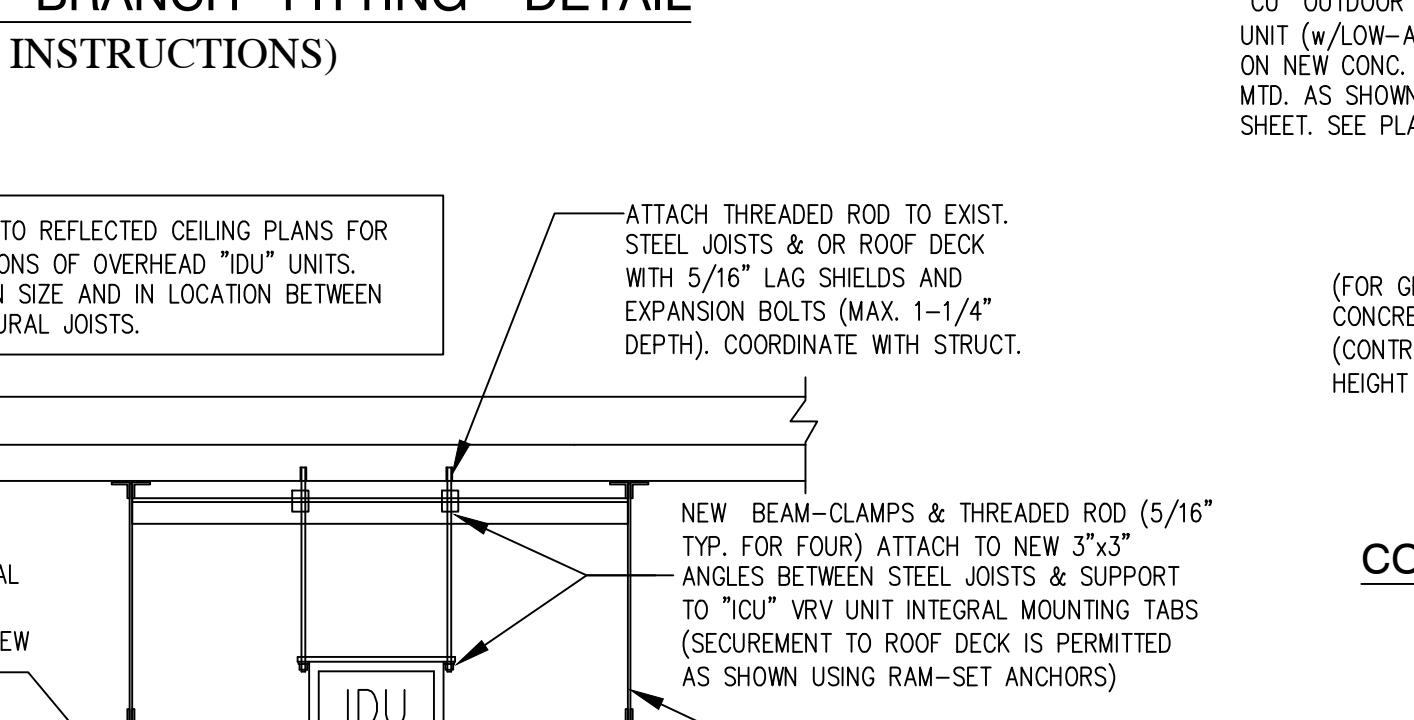
TYPICAL TRAPEZE REFRIGERANT PIPING HANGER DETAIL

SCALE: NONE



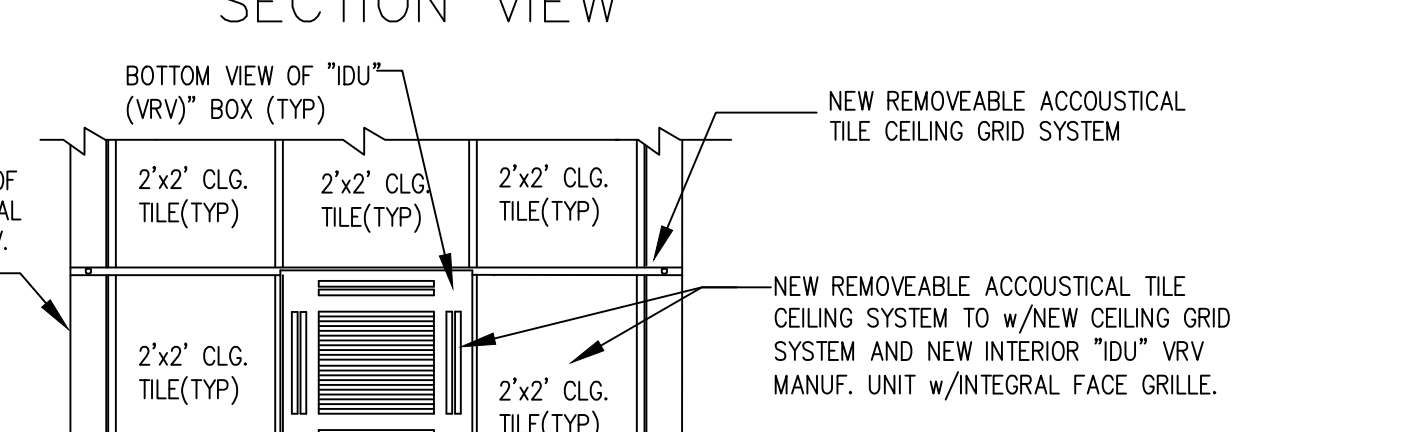
TYPICAL PLAN - VIEW OF TYPICAL "VRV" SYSTEMS ("REFNET") REFRIGERANT PIPING BRANCH FITTING DETAIL (REFER TO MFG'S INSTRUCTIONS)

SCALE: NONE



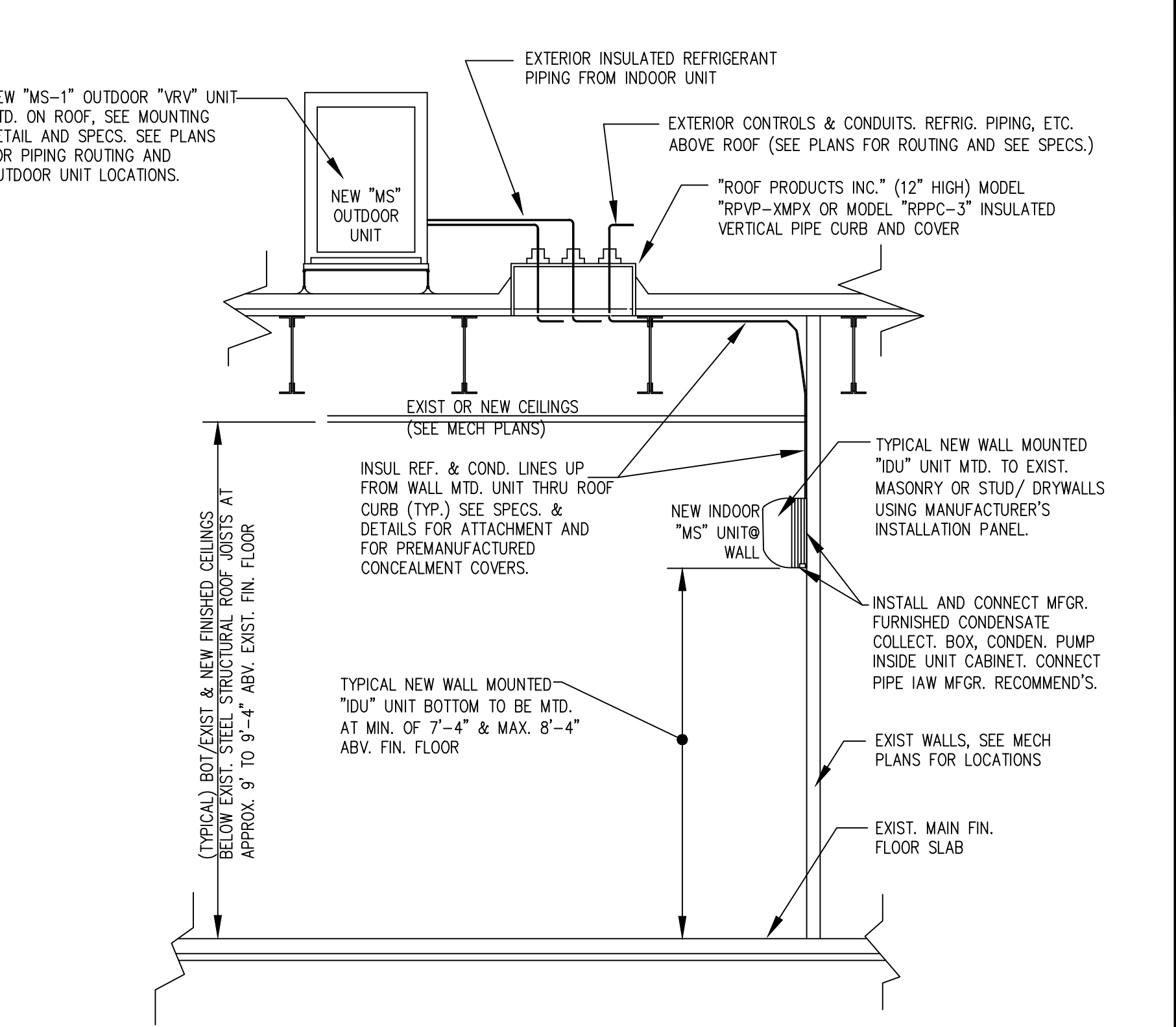
TYPICAL "VRV" UNIT MOUNTING AT INTERIOR OF ROOMS/SPACES W/NEW CEILING SYSTEMS

SCALE: NONE



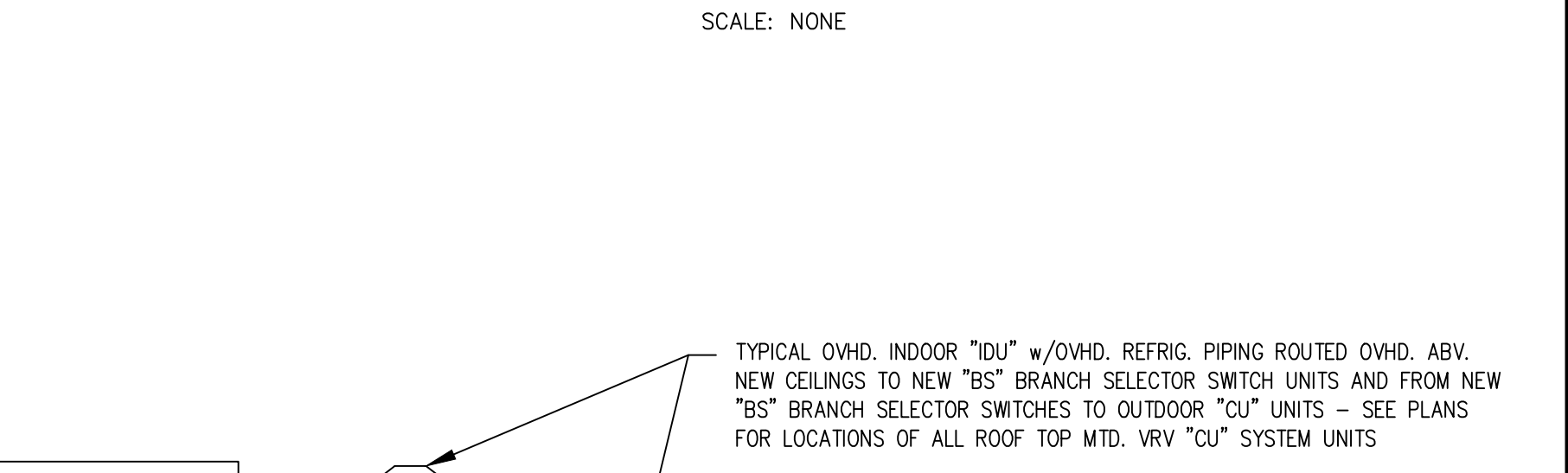
TYPICAL "VRV" UNIT MOUNTING AT INTERIOR OF ROOMS/SPACES W/NEW CEILING SYSTEMS

SCALE: NONE



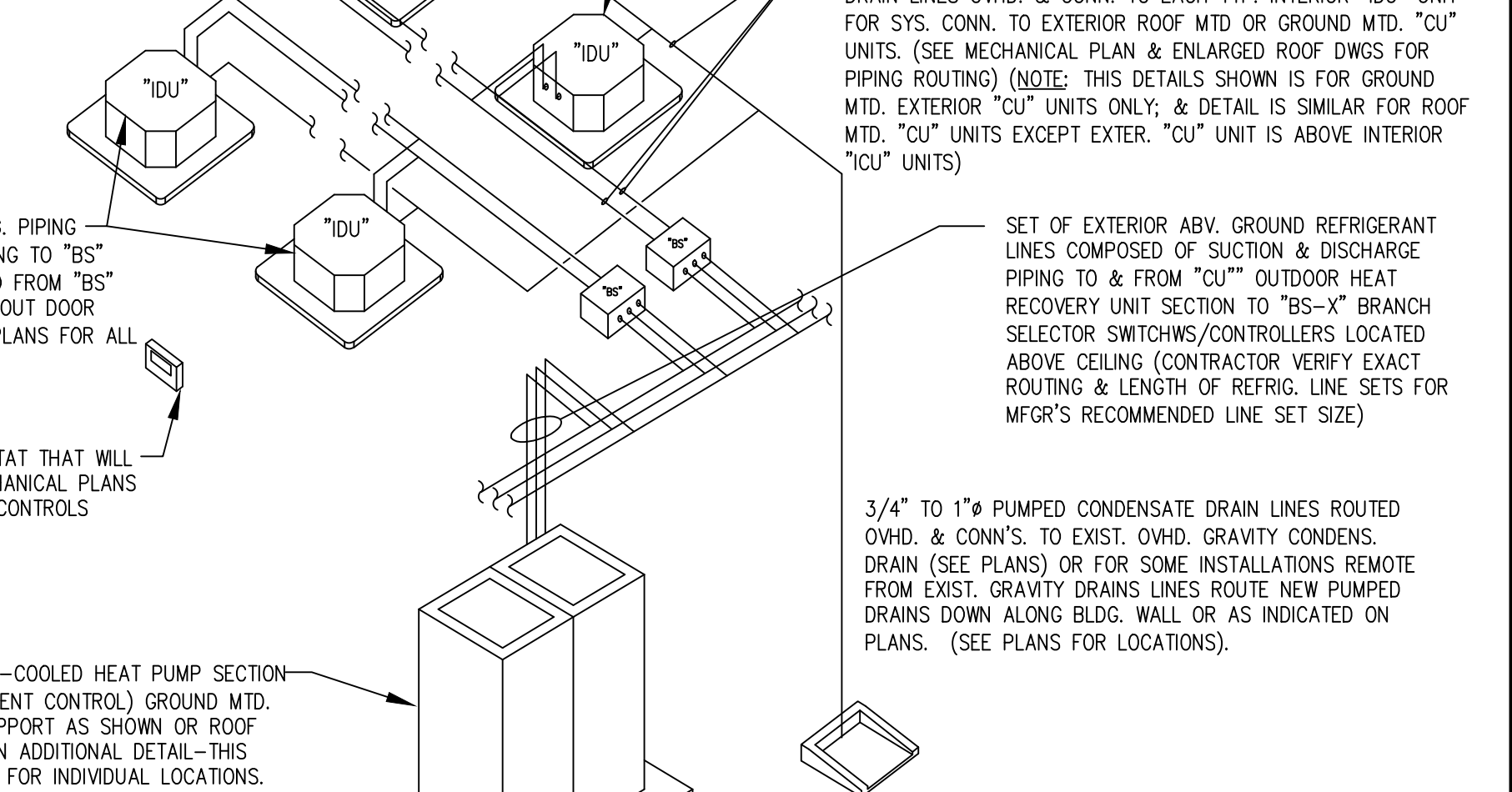
TYPICAL WALL MOUNTED "IDU" UNIT MOUNTING DETAIL

SCALE: NONE



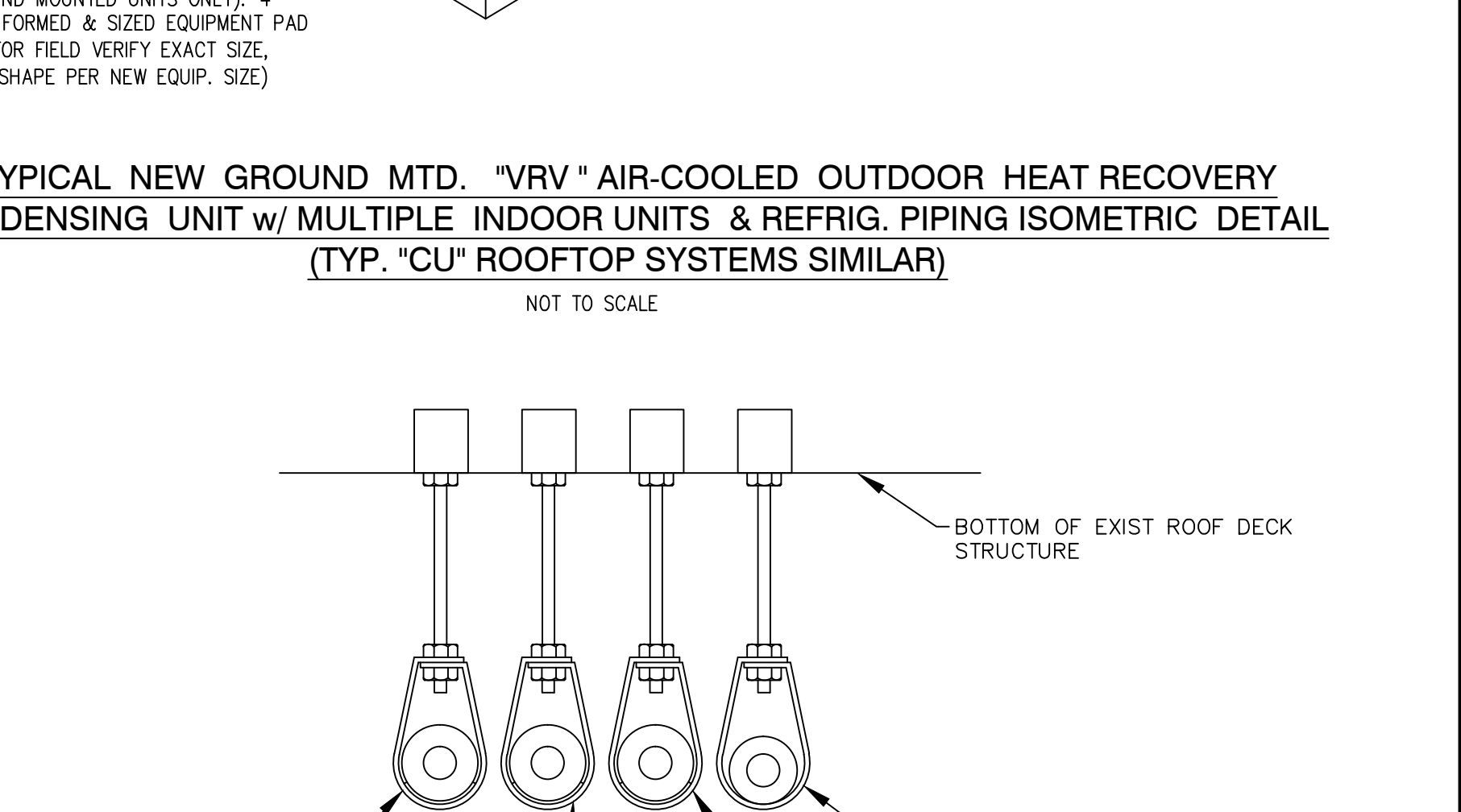
TYPICAL TRAPEZE REFRIGERANT PIPING HANGER DETAIL

SCALE: NONE



TYPICAL NEW GROUND MTD. "VRV" AIR-COOLED OUTDOOR HEAT RECOVERY CONDENSING UNIT W/ MULTIPLE INDOOR UNITS & REFRIG. PIPING ISOMETRIC DETAIL (TYP. "CU" ROOFTOP SYSTEMS SIMILAR)

NOT TO SCALE



TYPICAL REFRIGERANT PIPING & CONDENSATE DRAIN PIPING HANGER DETAIL

SCALE: N.T.S.

| NO. | DATE | REVISIONS | DESCRIPTION | BY |
|-----|---------------|---------------------------|-------------|-----|
| 1 | DEC. 16, 2019 | ISSUED FOR OWNER BIDDING. | | JJC |

DESIGNED BY: S.BRAUNBECK & J.CAPITAN
 DRAWN BY: CAPITAN
 CHECKED BY: CAPITAN
 DATE: DECEMBER-16-2019
 SCALE: AS NOTED
 JOB NO.: DEJ JOB NO. 19005

DESIGN & ENGINEERING ENERGY SYSTEMS INFRASTRUCTURE UTILITIES SYSTEMS ANALYSIS COMMISSIONING REVIEW

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RUGBY - NEW HVAC UPGRADE SYSTEMS MECHANICAL DETAILS

PROJECT: 2019 - 2020 HVAC UPGRADES TO FLAT ROCK & RUGBY MIDDLE SCHOOLS

HENDERSON COUNTY PUBLIC SCHOOLS
 414 - 4TH STREET, HENDERSONVILLE, HENDERSON COUNTY, NORTH CAROLINA 29621

DRAWING: RG-M-3

SHEET: 13 OF 14
 REV. NO.: IFOB