AIRPORT HIGH SCHOOL
HVAC UNIT REPLACEMENT UPGRADE

1315 BOSTON AVENUE
WEST COLUMBIA, SOUTH CAROLINA 29170

LEXINGTON SCHOOL DISTRICT TWO

715 NINTH STREET
WEST COLUMBIA, SOUTH CAROLINA 29169

VICINITY MAP
NOT TO SCALE

ALTERNATE BID

THE BASE BID SHALL INCLUDE ALL ASSOCIATED PRICING TO REPLACE THE EXISTING CARRIER GAS PACKAGE ROOFTOP UNIT (GP-7-40) AS SHOWN IN THE CONTRACT DRAWINGS WITH A NEW UNIT INCLUDING A NEW ROOF CURB ADAPTER (IF REQUIRED), SEISMIC CONNECTION TO THE STRUCTURE, PERIMETER SUPPLEMENTAL STEEL (IF REQUIRED), FACTORY INSTALLED DISCONNECT SWITCH AND NEW WALL MOUNTED CONTROLS WITH HUMIDITY/CO2 SENSOR.

ALTERNATE NO 1 (GP-6-40).
STATE THE AMOUNT TO BE ADDED TO THE BASE BID TO INCLUDE ALL ASSOCIATED PRICING TO REPLACE THE EXISTING CARRIER GAS PACKAGE ROOFTOP UNIT (GP-6-40)AS SHOWN IN THE CONTRACT DRAWINGS WITH A NEW GAS PACKAGE ROOFTOP UNIT INCLUDING A NEW ROOF CURB ADAPTER (IF REQUIRED), SEISMIC CONNECTION TO THE STRUCTURE PERIMETER SUPPLEMENTAL STEEL (IF REQUIRED), FACTORY DISCONNECT SWITCH AND NEW WALL MOUNTED CONTROLS WITH HUMIDITY/CO2 SENSOR.

MECHANICAL CODE INFORMATION

GENERAL INFORMATION		
BUILDING LOCATION	WEST COLUMBIS, SOUTH CAROLINA	
CLIMATE ZONE	3	
OUTDOOR DESIGN CONDITIONS	SUMMER	97° F DB
		78° F WB
	WINTER	22° F DB
		-° F WB
INDOOR DESIGN CONDITIONS	SUMMER	74° F DB
		67° F WB
	WINTER	70 F DB
		-° F WB

OUTSIDE AIR = 10 CFM PER PERSON (SEE SCHEDULE)

OCCUPIED MININMUM OUTSIDE AIR:
MINIMUM VENTILATION AIR REQUIREMENT IS PROVIDED IN ACCORDANCE WITH ASHRAE STANDARD 62.1-13. QUANTITY IS NOTED ON THE EQUIPMENT SCHEDULES.

CO2 DEMAND MANAGEMENT: (YES WHERE APPLICABLE)
DEMAND CONTROL VENTILATION IS PROVIDED WHERE APPLICABLE TO MINIMIZE ENERGY COSTS BY MONITORING CO2 LEVELS AND MODULATING THE OUTDOOR AIR DAMPER ACCORDINGLY TO MAINTAIN A MAXIMUM OF 1000PPM (ADJ).

SUPERVISED CONTROL SYSTEM YES

MECHANICAL SYSTEMS, SERVICE SYSTEMS & EQUIPMENT:

THE EXISTING GAS PACKAGE ROOF MOUNTED UNIT (GP-7-40) SERVING THE COMMONS AREA, WILL BE REPLACED WITH A NEW ROOF MOUNTED GAS PACKAGE UNIT WITH HOT GAS DEHUMIDIFICATON CONTROL AND CO2 BASED DEMAND VENTILATION.

Codes of Record

INTERNATIONAL BUILDING CODE (IBC), 2015 EDITION
INTERNATIONAL MECHANICAL CODE (IMC), 2015 EDITION
NATIONAL ELECTRICAL CODE (NEC), 2014 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE (NEC), 2009 EDITION

Classification of Work

ALTERATION – LEVEL 1 (HVAC)

LEVEL 1 ALTERATIONS INCLUDE THE REMOVAL AND REPLACEMENT OR THE COVERING OF EXISTING MATERIALS, ELEMENTS, EQUIPMENT, OR FIXTURES USING NEW MATERIALS, ELEMENTS, EQUIPMENT, OR FIXTURES THAT SERVE THE SAME PURPOSE.

OCCUPANCY

EDUCATIONAL

SEISMIC DESIGN CATEGORY

CATEGORY "C"

INDEX OF DRAWINGS

TYPICAL DEMOLITION NOTES

A. ALL HVAC MATERIAL AND EQUIPMENT MADE OBSOLETE BY THE SCOPE OF THIS WORK SHALL BE REMOVED FROM THE WORK SPACE. EQUIPMENT AND MATERIAL OF VALUE (REFRIFERANT, CONTROL VALVES, CONTROL COMPONENTS, ETC.) SHALL BE TURNED OVER TO THE OWNER AND DELIVERED UNDAMAGED TO THE LOCATION ON SITE WHERE DIRECTED BY THE OWNER. ALL OTHER DEMOLISHED ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE SITE.

B. REMOVE EXISTING ROOFTOP HEAT PUMP UNITS AS NOTED COMPLETELY. PROVIDE NEW ROOFTOP HEAT PUMPS AS SCHEDULED AND AS DEFINED IN THE BASE BID AND ALTERNATE BID REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL ADDITIONAL SUPPLEMENTARY SUPPORT STEEL REQUIRED FOR NEW INSTALLTION (SEE DETAIL).

C. THE CONTRACTOR SHALL REMOVE AND RECOVER ALL REFRIGERANT FROM THE EXISTING AIR HANDLER PRIOR TO THE REMOVAL OF THE REFRIGERANT SYSTEM. THE REMOVAL OF REFRIGERANT SHALL MAXIMIZE RECOVERY AND RECYCLING OF OZONE DEPLETING SUBSTANCES (BOTH CLOROFLOROCARBONS (CFCs) AND HYDROCHOROFLOROCARBONS HCFCs) AND THEIR BLENDS) DURING DOSPOSAL OF ALL AIR CONDITIONING AND REFRIGERANT EQUIPMENT.

ELECTRICAL DEMOLITION NOTES

(E1) REMOVE EXISTING UNIT DISCONNECT AND CONDUIT COMPLETE TO ROOF LEVEL. EXISTING CONDUIT AND FEEDER FROM BREAKER PANEL TO BE RE-USED. SPLICE/EXTEND/REROUTE CIRCUIT AS REQUIRED TO CONNECT TO NEW UNIT

(E2) PROVIDE A NEW HEAVY DUTY, FUSED, DISCONNECT SWITCH AND CONDUIT TO NEW ROOFTOP UNIT (SEE DETAIL). FUSES IN NEW DISCONNECT SWITCH SHALL BE TIME DELAY TYPE FUSES, UL CLASS RK5. FUSES AND WIRE SIZING SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S ELECTRICAL NAMEPLATE DATA.

(E3) CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER IMMEDIATELY IF EXISTING WIRE SIZE AND/OR CIRCUIT BREAKER SIZE DO NOT MATCH MCA/MFS/MOCP OF NEW HVAC UNITS.

ISSUE NO.	REMARKS:	BY	APPROV'D	DATE:

LEXINGTON 2 SCHOOLS

A/E SEAL: SOUTH CAROLINA PROFESSIONAL ENGINEER REGISTERED No. 11155 DANNY WILDS 10-02-2018

FIRM SEAL: SOUTH CAROLINA MECHANICAL DESIGN, INC. Columbia, SC No. C00096 CERTIFICATE OF AUTHORIZATION

MECHANICAL DESIGN INC.
4403 Broad River Road
Columbia, S.C. 29210
(803) 731-9834
(803) 731-9837 FAX
CONTACT: M. BURGESS
COMM. NO. 173382

Project:
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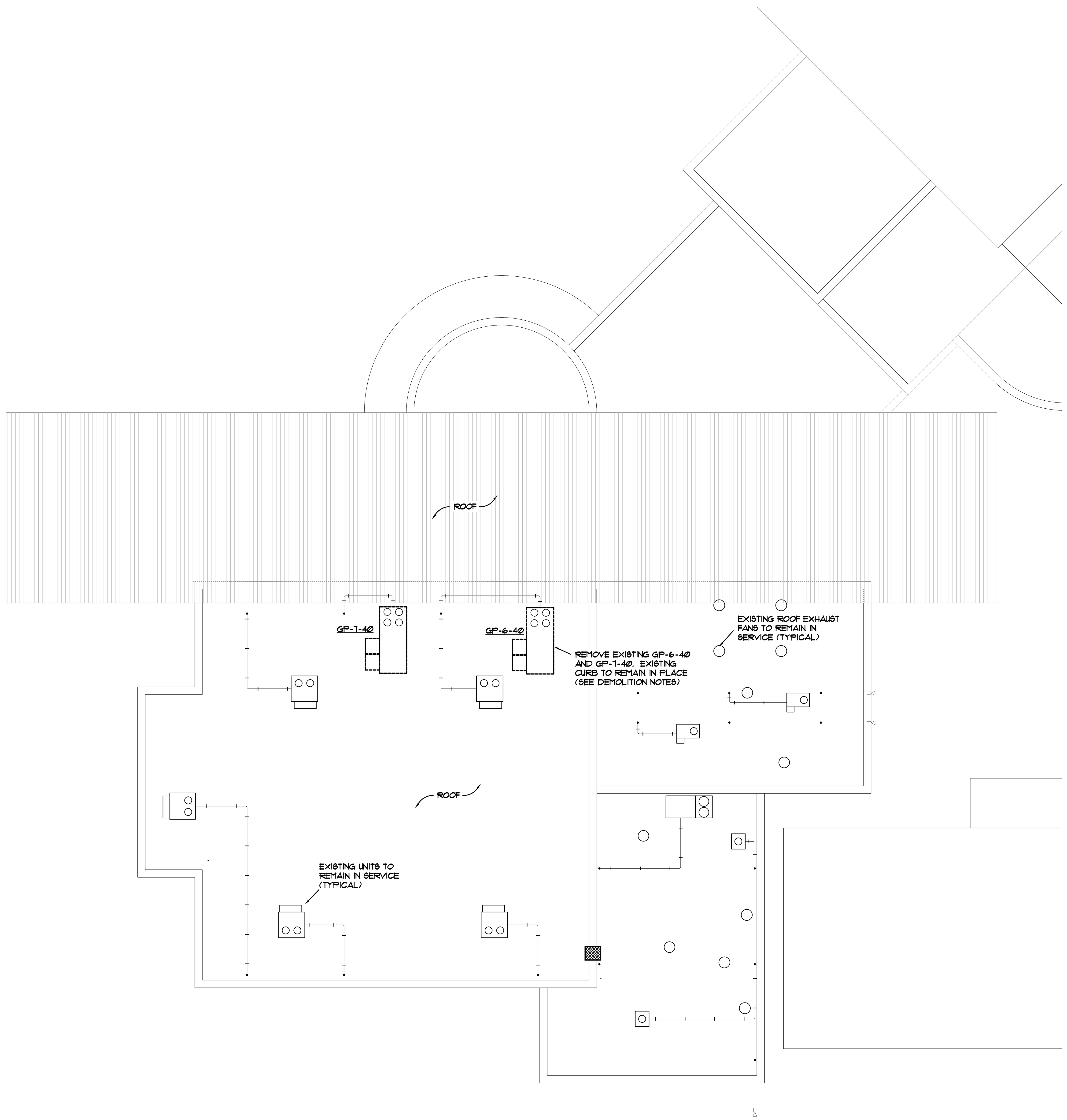
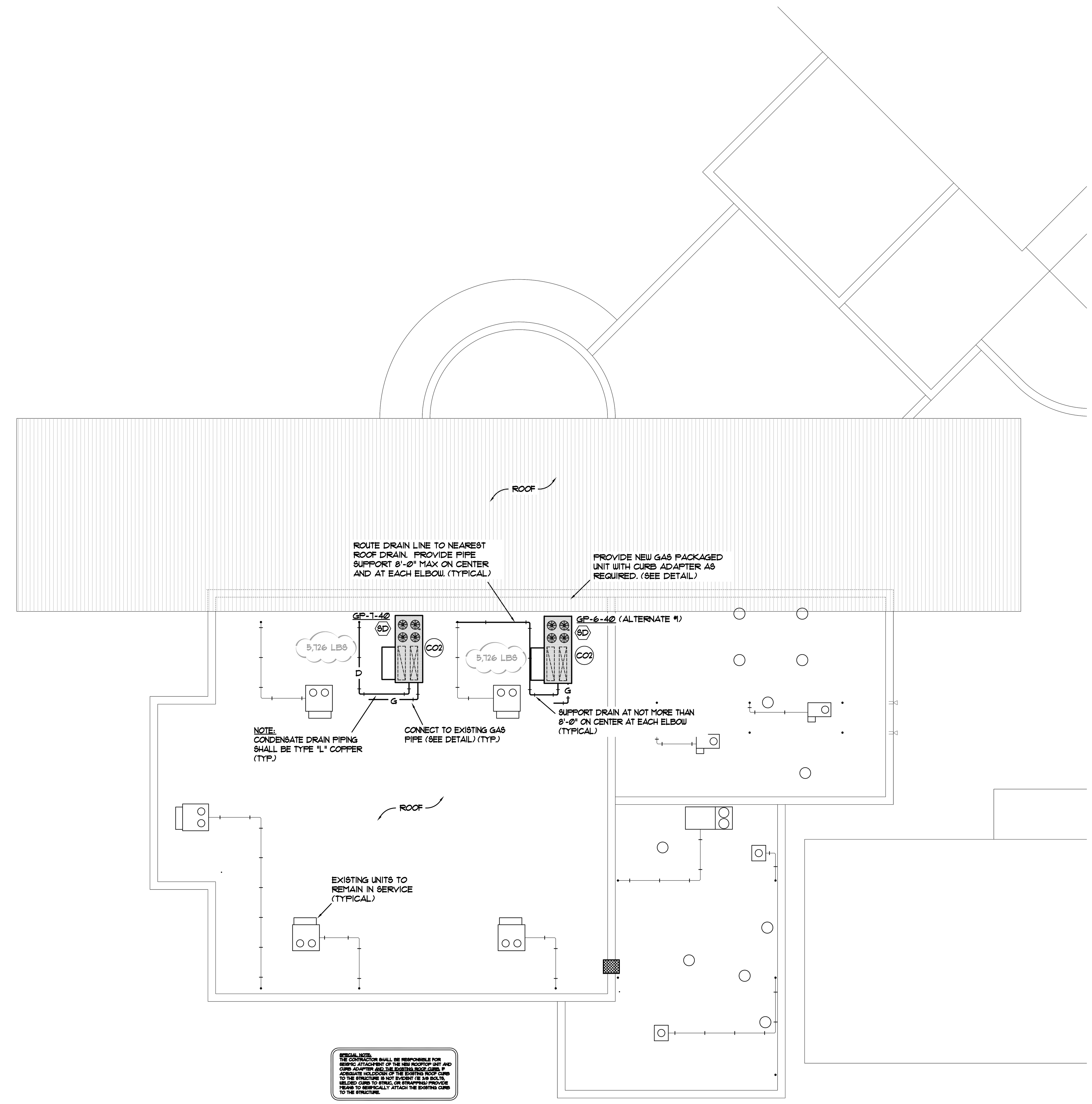
LEXINGTON SCHOOL DISTRICT TWO

SHEET NO.
M1



HVAC PARTIAL ROOF DEMOLITION PLAN

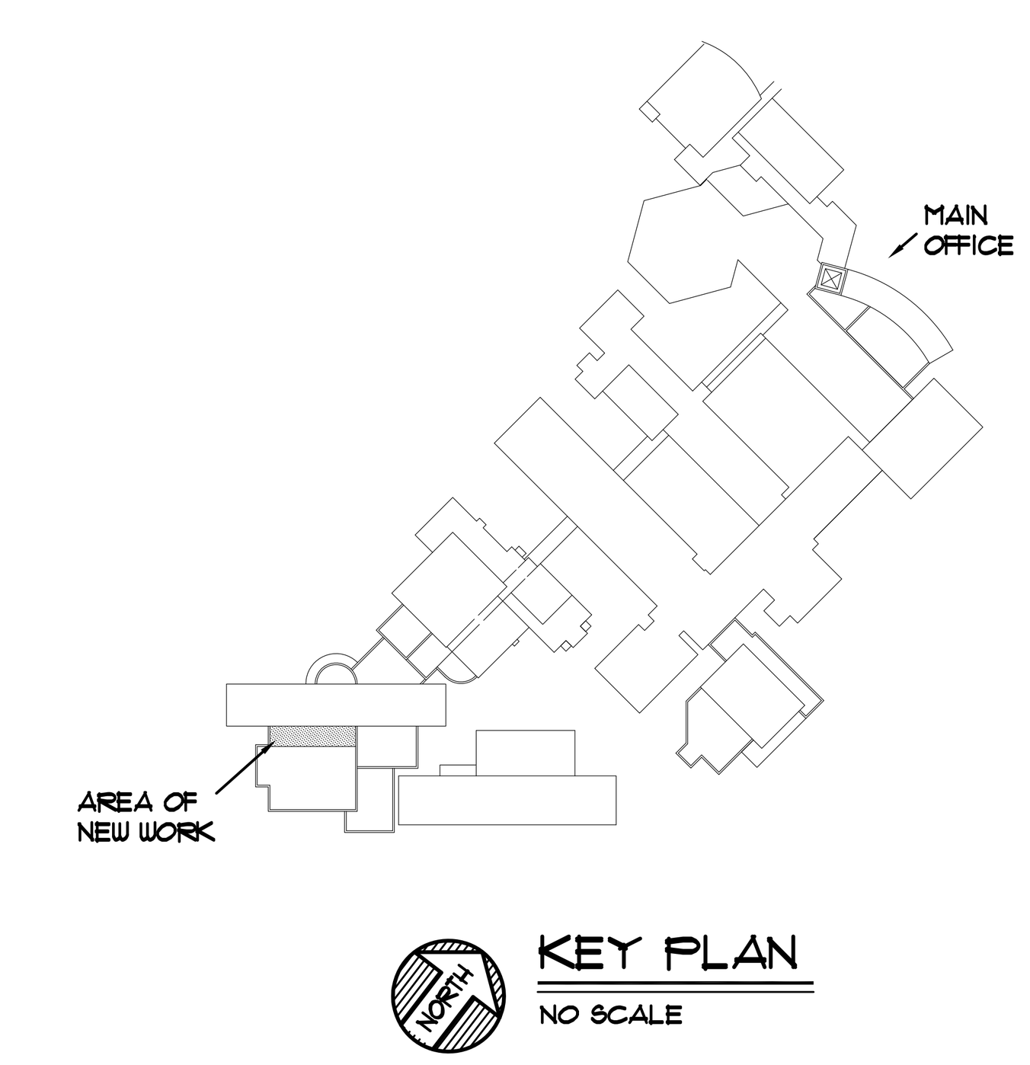
SCALE: 1/16" = 1'-0"



SPECIAL NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEISMIC ATTACHMENT OF THE NEW ROOFTOP UNIT AND CURB ADAPTER AND THE EXISTING ROOF CURB. IF ADEQUATE HOLDDOWN OF THE EXISTING ROOF CURB TO THE STRUCTURE IS NOT EVIDENT (IE 3/8 BOLTS, WELDED CURB TO STRUC, OR STRAPPING) PROVIDE MEANS TO SEISMICALLY ATTACH THE EXISTING CURB TO THE STRUCTURE.

HVAC PARTIAL ROOF RENOVATION PLAN

SCALE: 1/16" = 1'-0"



KEY PLAN

NO SCALE

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LEXINGTON SCHOOLS

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SHEET NO.
M2

GAS PACKAGED HEATING & AIR CONDITIONING SCHEDULE (1) (6) (7) (5) (9)

	MARK	CARRIER (2) MODEL	OPERATING WEIGHT	O.A. CFM	INDOOR FAN CFM	INDOOR FAN E.S.P.	INDOOR FAN H.P.	COOLING (3) TOTAL	COOLING (3) SENS.	COOLING (3) ENT.AIR	COOLING (3) EER	(4) GAS HEAT INPUT	GAS HEAT OUTPUT	GAS HEAT STAGES	GAS HEAT AFUE
(ALTERNATE #1)	GPU-6-40	48A3F040 (8)	5,726	3,750	16,000	0.75"	20	477	355	80/67	11.0	400	324	5	81.0
(BASE BID)	GPU-7-40	48A3F040 (8)	5,726	3,750	16,000	0.75"	20	477	355	80/67	11.0	400	324	5	81.0

VOLT.	MCA	MOCP
460/3	98.3	110
460/3	98.3	110

(1) ROOF TOP UNIT TO MATCH AVAILABLE ELECTRICAL SERVICE, SEE ELECTRICAL. UNIT SHALL BE SINGLE POINT POWER CONNECTION.

(2) OR EQUAL BY TRANE, OR APPROVED EQUAL.

(3) BASED ON 95°F CONDENSER AIR TEMPERATURE.

(4) BASED ON 70°F ENTERING AIR TEMPERATURE.

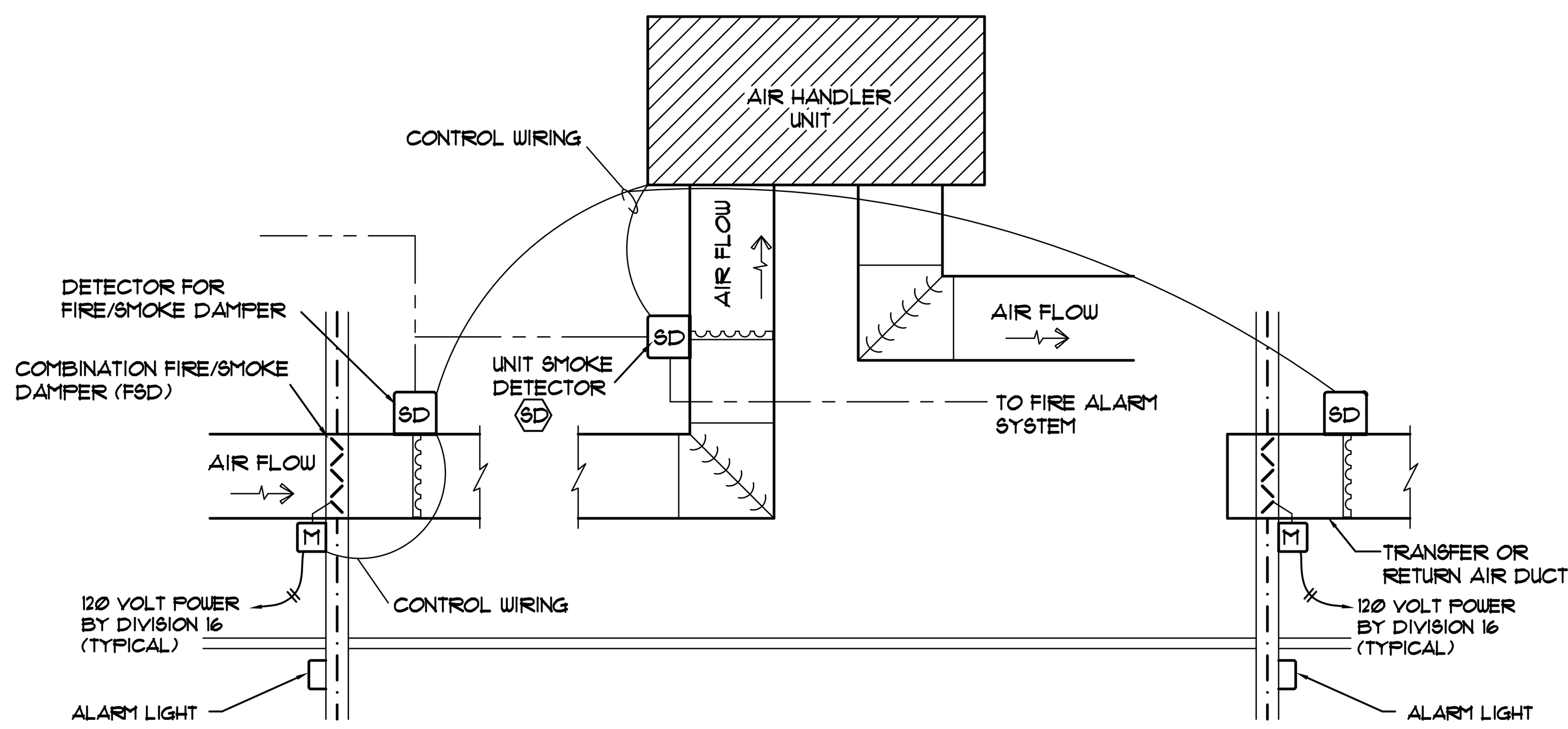
(5) ALL UNITS SHALL BE ASHRAE 90.1 COMPLIANT.

(6) PROVIDE R410A REFRIGENANT. (HCFC WILL NOT BE ACCEPTED)

(7) FURNISH UNIT WITH ONE PIECE WELDED ROOF CURB ADAPTER (IF REQUIRED), HINGED ACCESS PANELS, STAINLESS STEEL HEAT EXCHANGER, CO2 SENSOR, FILTER RACK, LOW AMBIENT CONTROL, HAIL GUARD, HARD WIRED SAFETY CONTROLS, CONVENIENCE OUTLET, CONVENTIONAL THERMOSTAT INTERFACE FOR FULL EMS CONTROL AND 100% ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL AND POWER EXHAUST RELIEF. FURNISH UNIT WITH A MINIMUM OF 4 COMPRESSORS FOR PART LOAD CONTROL WITH ONE DIGITAL SCROLL COMPRESSOR FOR INCREASED STAGE CONTROL.

(8) FURNISH WITH SINGLE ZONE VAV CONTROLS

(9) FURNISH WITH HOT GAS RE-HEAT



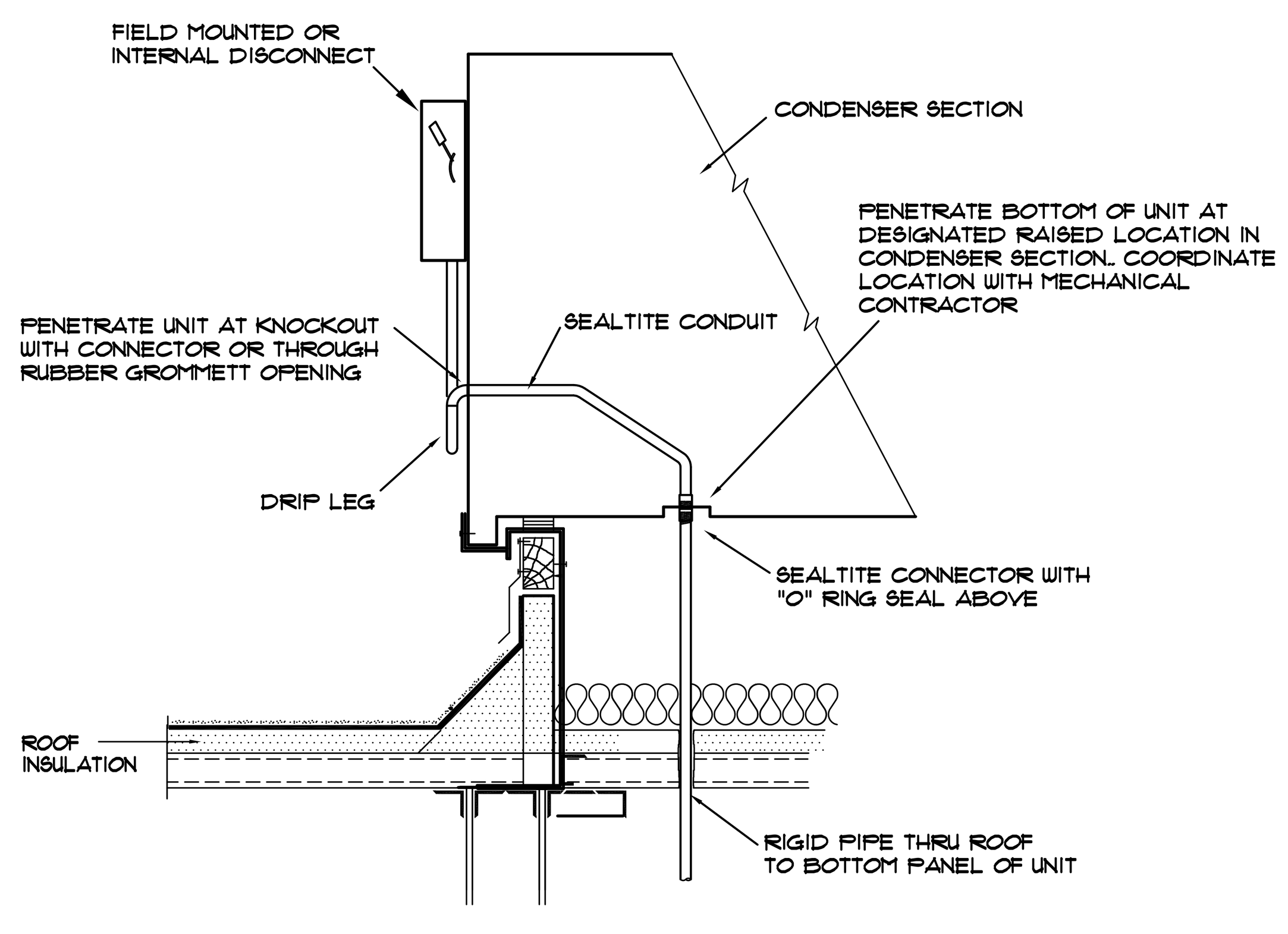
NOTE:
UNIT SMOKE DETECTORS, DETECTORS FOR COMBINATION FIRE/SMOKE DAMPERS (INCLUDING TRANSFER) AND POWER WIRING FOR MOTOR OPERATED DAMPERS SHALL BE PROVIDED UNDER DIVISION 26. CONNECTION TO FIRE ALARM SYSTEM SHALL BE PROVIDED AND INSTALLED UNDER DIVISION 26. INSTALLATION OF DETECTORS,CONTROL AND INTERLOCK WIRING AND DAMPERS SHALL BE PROVIDED UNDER DIVISION 23. ALARM LIGHT AND CONTROL WIRING SHALL BE PROVIDE AND INSTALLED UNDER DIVISION 23. COORDINATE WITH THE FIRE ALARM SUPPLIER LOCATION AND QUANTITY OF DETECTORS REQUIRED. DIVISION 26 SHALL PROVIDE 120 VOLT WIRING FROM NEAREST AVAILABLE UNSWITCHED CIRCUIT TO DAMPER MOTOR.

HVAC AUTOMATIC FAN SHUTDOWN
NOT TO SCALE

GENERAL NOTES

GENERAL:
REFER TO ARCH DRGS FOR CONSTRUCTION PHASING OF WORK AS APPLICABLE AND COORDINATE INSTALLATIONS WITH ALL TRADES TO PREVENT CONFLICTS PRIOR TO START OF CONSTRUCTION.

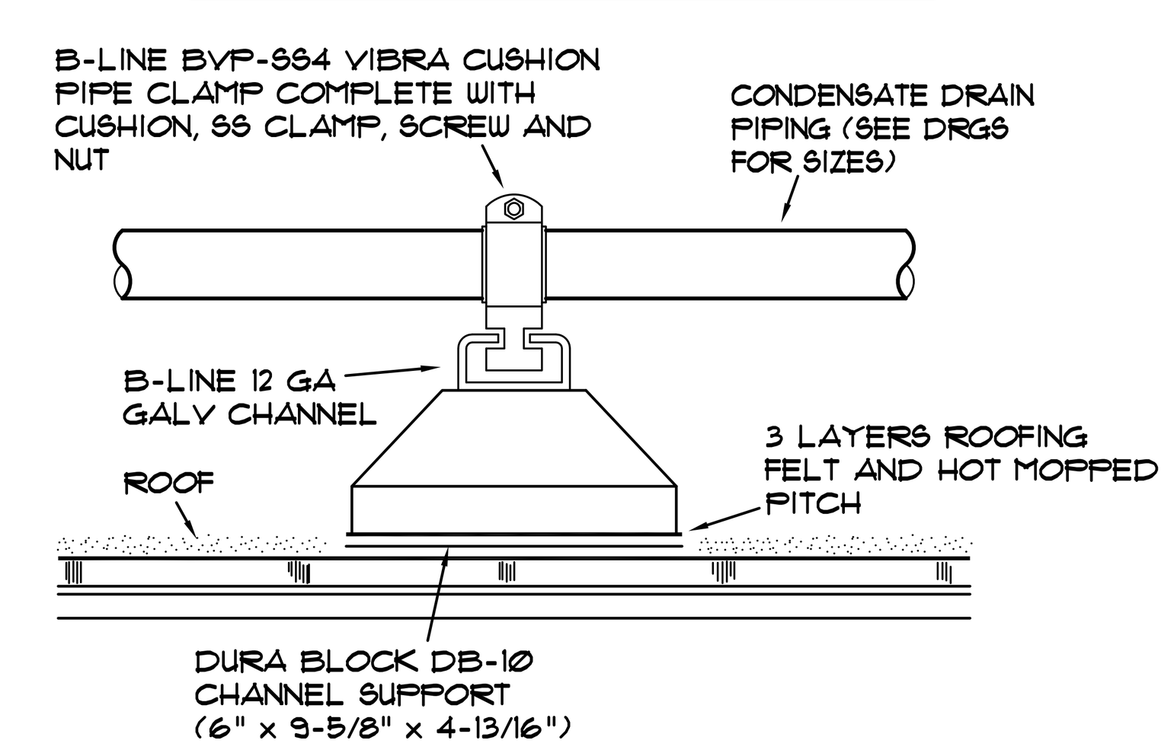
1. DO NOT SCALE DRAWINGS. ROUGH FROM ARCHITECTURAL AND EQUIPMENT MANUFACTURER'S DRAWINGS.
2. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
3. WHENEVER THE WORD PROVIDE IS USED IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE".
4. ELECTRICAL CHARACTERISTICS SHOWN ON SCHEDULES OR DRAWINGS ARE DESIGN VALUES ONLY AND SHALL BE VERIFIED BEFORE ORDERING EQUIPMENT.
5. PROVIDE "P" TRAP FOR ALL CONDENSATE DRAINS AND SAFETY DRAINS. PROVIDE INSULATED DRAIN LINES FROM ALL DRAIN CONNECTIONS TO FLOOR DRAINS OR DRAINAGE SYSTEM. CONDENSATE DRAIN LINES SHALL BE TYPE "L" COPPER.
6. DUCT SIZES SHOWN ON DRAWINGS ARE INTERIOR DIMENSIONS.
7. CONSTRUCT DUCTWORK AS JOB PROGRESSES AND AFTER COORDINATING WITH ALL CONCERNED TRADES AND CONTRACTORS.
8. UNLESS OTHERWISE NOTED, CEILING RETURN GRILLES SHALL BE THE SAME SIZE AS CEILING SUPPLY GRILLE.
9. PROVIDE GALVANIZED UNI-STRUT SUPPORT HANGERS AND PIPE CLAMP FOR ALL REFRIGERANT PIPING INSIDE AND OUTSIDE OF BUILDING.
10. ALL SUPPLEMENTAL STEEL AND HANGERS REQUIRED FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR UNLESS SHOWN OTHERWISE IN BID DOCUMENTS.
11. PROVIDE ACCESS DOOR FOR ALL EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS. DOOR SHALL BE OF ADEQUATE SIZE TO FACILITATE SERVICE, REPAIR OR REMOVAL OF EQUIPMENT.
12. PROVIDE FULL SIZE TYPE "L" COPPER CONDENSATE DRAIN LINE, ROUTE TO NEAREST ROOF DRAIN. SUPPORT DRAIN LINES AT NOT MORE THAN 8'-0" O.C. AND AT EACH ELBOW.



NOTE:
THIS DETAIL SHALL APPLY TO ALL UNITS FURNISHED WITHOUT DISCONNECT SWITCHES.

ROOF MOUNTED POWER AND CONTROL WIRING DETAIL
NOT TO SCALE

NOTES:
1. LOCATE PIPE SUPPORTS MAXIMUM 8'-0" ON CENTERS AND AT EACH FITTING.
2. POLYETHYLENE FOAM AND WOOD TIMBERS WILL NOT BE ACCEPTED.



ROOFTOP PIPE SUPPORT DETAIL
NO SCALE

SPECIAL NOTE:
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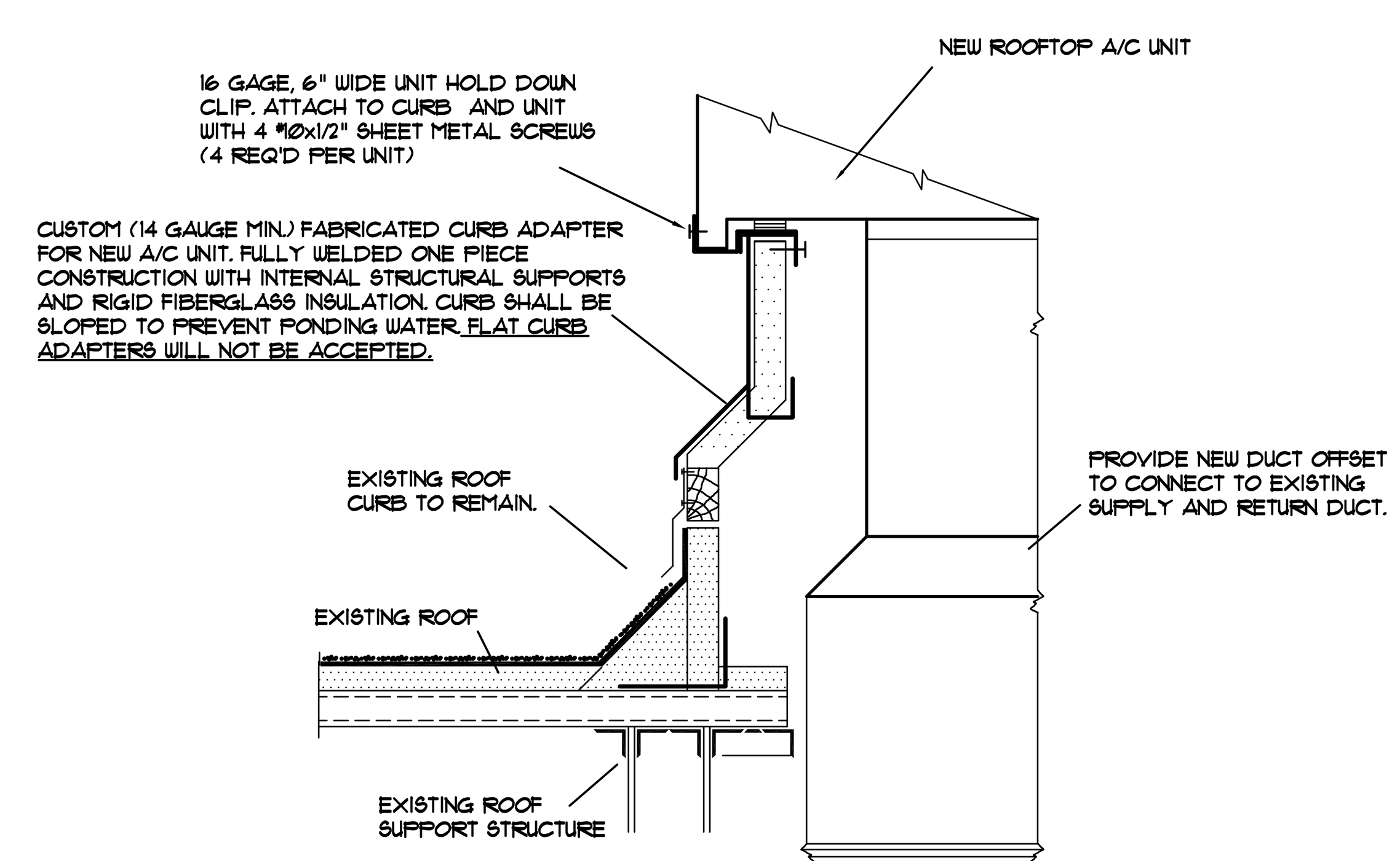
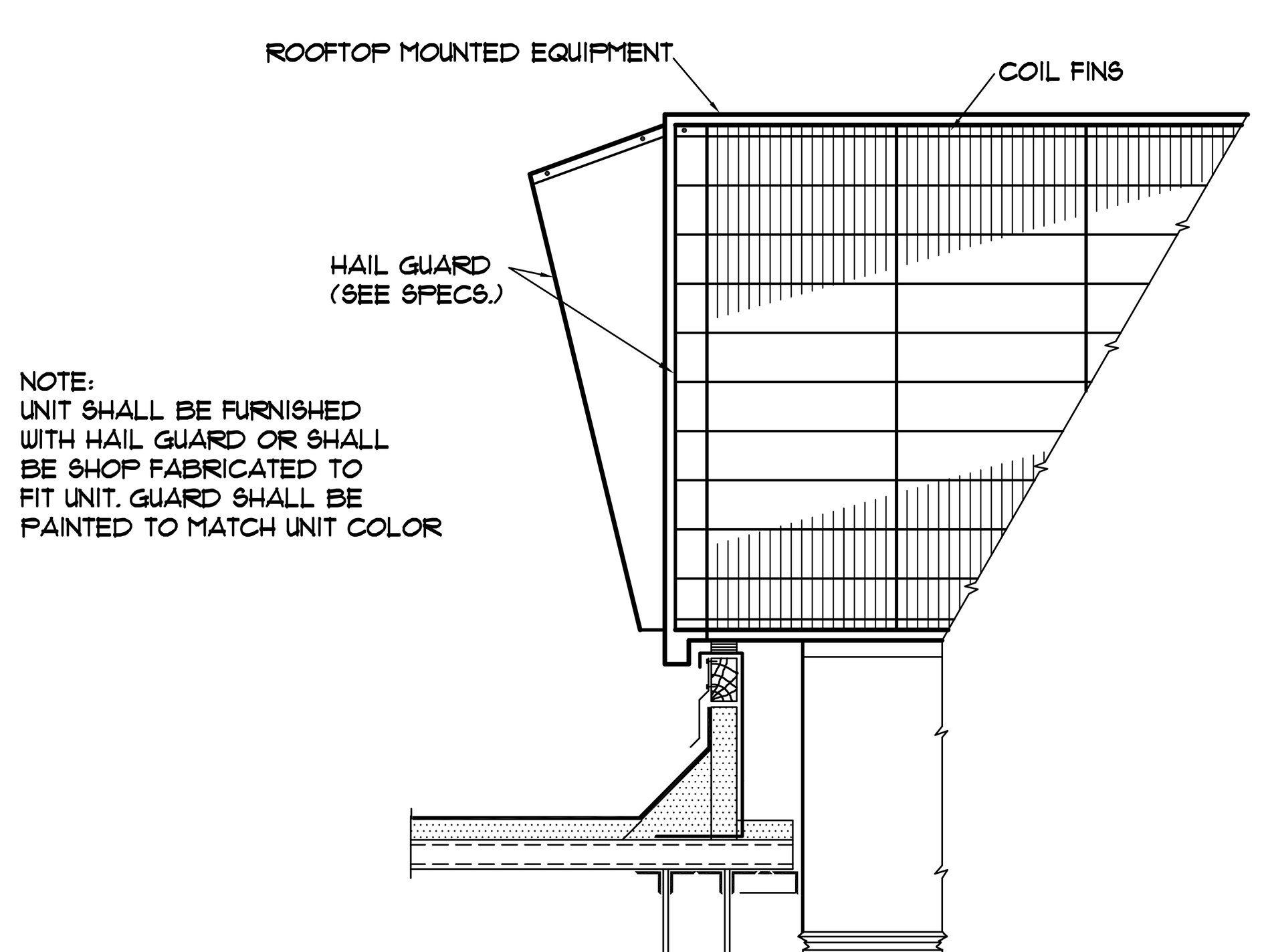
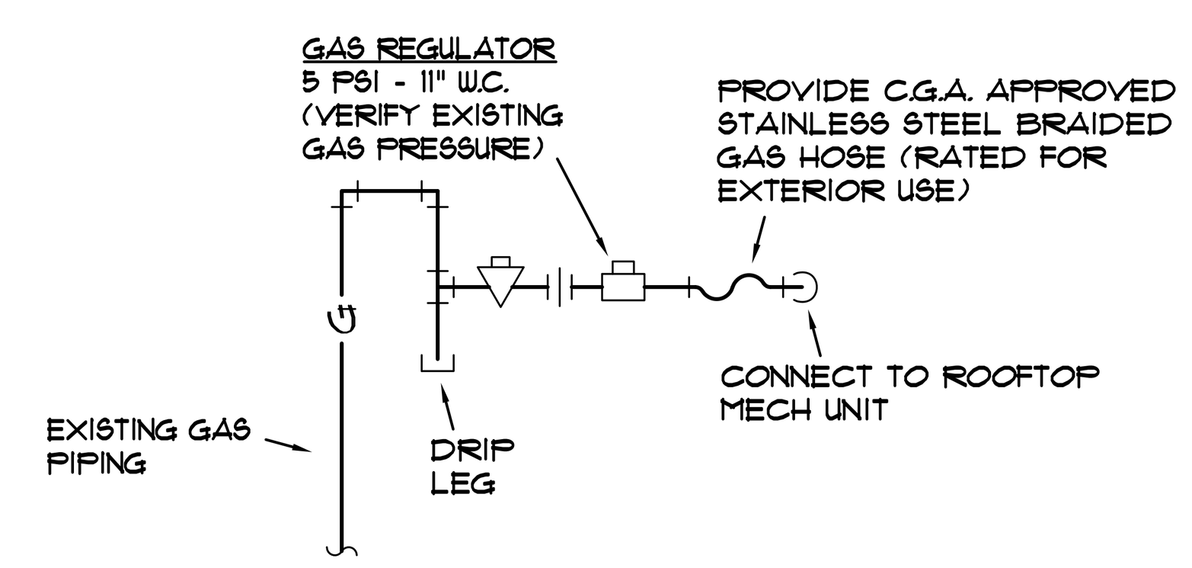


CURB AND ADAPTER DETAIL
NOT TO SCALE



ROOFTOP UNIT HAIL GUARD DETAIL
NOT TO SCALE



MECH UNIT GAS CONNECTION DETAIL
NO SCALE

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