



Town of East Hartford

ADDENDUM N^o. 03

Replacement of Rooftop HVAC Units

*Community Cultural Center
50 Chapman Place*

Bid No. 19-09

Issued February 19, 2019

The following summarizes revisions to the Bid Documents included in Addendum N^o. 03 for the Replacement of Rooftop HVAC Units (Bid No. 19-09).

- This Addendum clarifies conflicting language between Addendum No. 1 (3rd bullet point) and Addendum No. 2 (the added note for *Building Management System*). The language of Addendum No. 1 is correct; the lists provided in Section 230900 are NOT restricted list. Unnamed/unlisted manufacturers may be proposed for use on the project
- Add Alternate No. 1 is added to the project for the complete replacement of all existing VAV boxes in the Community Cultural Center. Replacement VAV boxes shall utilize BACnet controls and all associated components shall be BACnet compatible. Wireless controls can be proposed in lieu of wired systems. The *Bid Proposal Sheet* is revised to reflect this addition.
- Mechanical drawings from the 1996 building renovation are included with this Addendum for bidder information. These drawings show the proposed location of the HVAC system components. The actual location of HVAC system components may vary from these drawings. The drawings include:
 - Lower Level Mechanical Plan
 - Main Level Mechanical Plan
 - Upper Level Mechanical Plan
 - Schedules & Details
 - Temperature Controls

The following documents & drawings are modified by Addendum N^o. 03:

Revised Bid Documents

- Replace the *Bid Proposal Sheet* (Page 18 of 437) with 2 revised pages (Page 18 and 18.1 of 437) included with the Addendum.

Revised Drawings

- Drawing M-1: Revise the Note for “**Building Management System**” (*created in Addendum No. 2*) to read: **1. Contractor shall provide a complete new BMS as required in Specification Section 230900. Contractor shall provide a new complete working system that is based on one of the manufactures listed in the specifications. Contractor shall provide a complete working system that is open to future modifications and additions. The remaining control systems that have not been upgraded shall be connected to the new BMS.**

End of Addendum N^o. 03

Company Name: _____

TOWN OF EAST HARTFORD
BID PROPOSAL SHEET
REPLACEMENT OF ROOFTOP HVAC UNITS
Bid No. 19-09

Bidder will complete the Work in accordance with the Contract Documents for the following, all-inclusive price:

Lump Sum Base Bid Price	(words)
	\$
	(numerals)

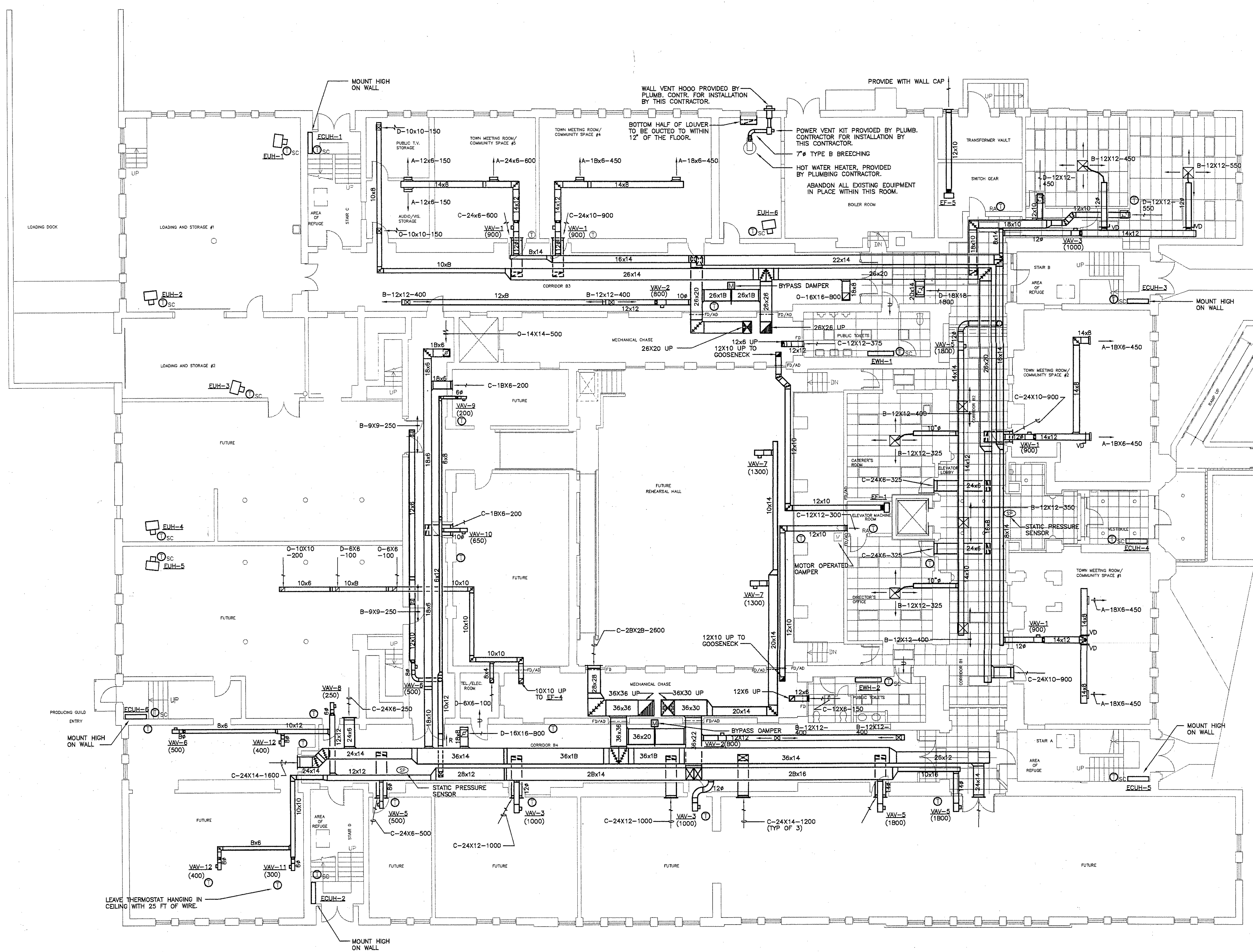
Add Alternate No. 1 The Work of Add Alternate No. 1, includes the replacement of all existing VAV boxes with BACnet controls [approximately 59 units] and replacement of associated thermostats, control wiring & wiring back to the front end [all components must be BACnet compatible] in the Community Cultural Center. Wireless controls can be proposed in lieu of wired systems. Bidder will complete Add Alternate No. 1 for the following, all-inclusive price:

Lump Sum Bid Price Add Alternate No. 1	(words)
	\$
	(numerals)

- A. The undersigned understands that there may be changes, omissions, or modification in the work, and that appropriate adjustments will be made to the Contract price in accordance with the Contract Documents. The undersigned understands that the Owner reserves the right to accept or reject any or all bids, and to waive all formalities, any irregularities, and accept the Bid deemed to be in the Owner's best interest.
- B. Bid prices shall not include any sales, excise or other taxes for which the Owner is not liable.
- C. Town of East Hartford is the awarding authority. The Bidder agrees to hold the above pricing for sixty (60) days, unless extended by mutual consent.

Company Name: _____

- D. The Bidder hereby agrees to commence Work under this Contract within ten (10) days of written Notice to Proceed from the Town, and to complete the Work of all base bid items within **no later than FRIDAY, AUGUST 30, 2019**, which shall be the required Date of Completion. The Bidder further agrees to pay as **liquidated damages, the sum of ONE THOUSAND DOLLARS (\$1,000.00) for each consecutive calendar day** beyond the date of completion. Liquidated damages are not intended as a penalty but rather shall be construed as a best estimate of damages which the Town will suffer due to Bidder's refusal, failure or neglect to perform pursuant to his Bid and Contract Documents.
- E. The Bid security in the sum of: 5% OF TOTAL BID is to become the property of the Town in the event the above forms are not executed within the time set forth above, as liquidated damages, and not as a penalty for the delay and additional expense to the Town caused thereby.



LOWER LEVEL PLAN - MECHANICAL

1/8" = 1'

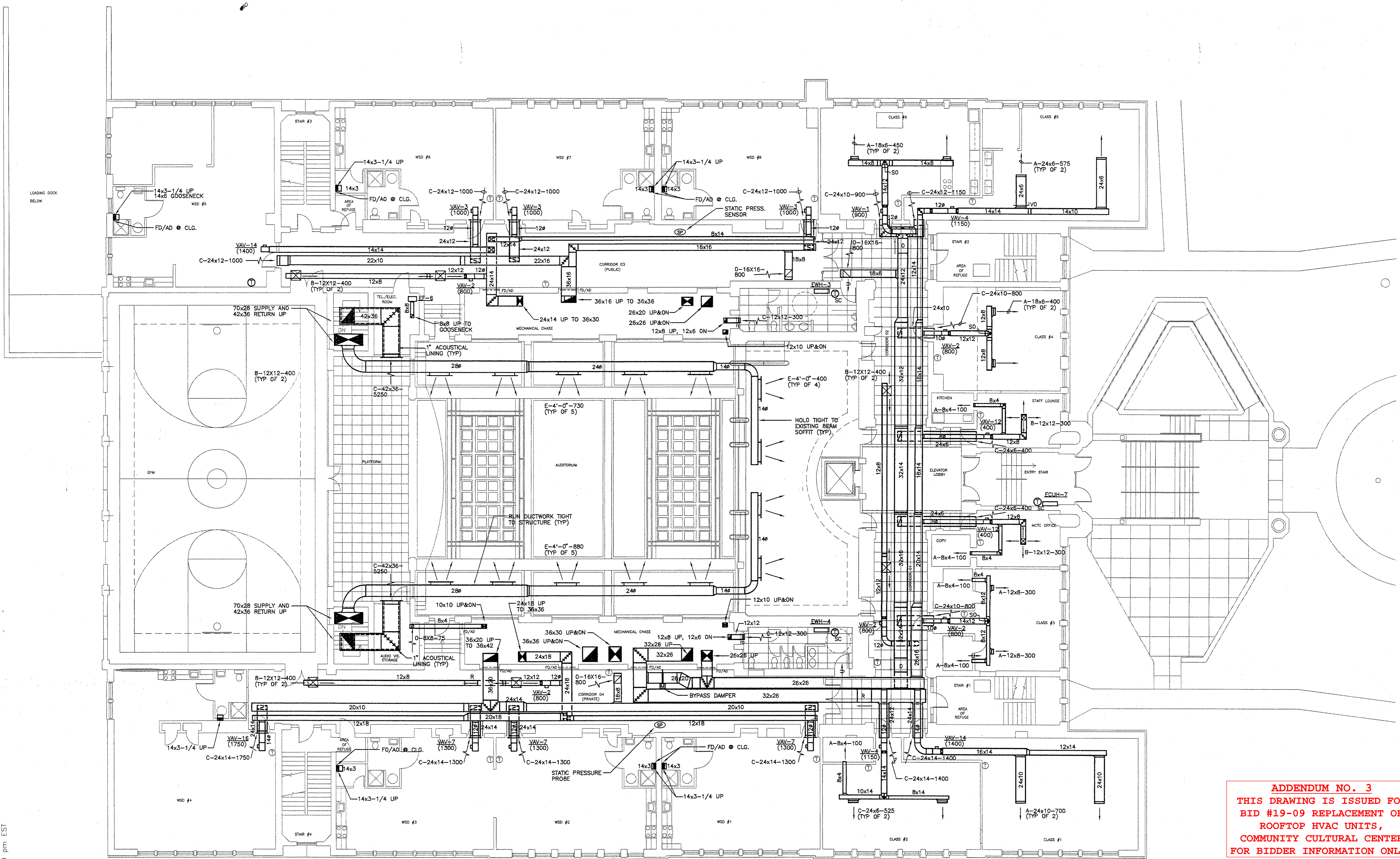
ADDENDUM NO. 3
 THIS DRAWING IS ISSUED FOR
 BID #19-09 REPLACEMENT OF
 ROOFTOP HVAC UNITS,
 COMMUNITY CULTURAL CENTER
 FOR BIDDER INFORMATION ONLY.

GENERAL NOTES:

- 1) ALL DUCTWORK SHALL BE MOUNTED AS TIGHT TO THE STRUCTURE AS POSSIBLE.
- 2) CONTRACTOR SHALL PROVIDE AT ALL PENETRATIONS OF CORRIDOR WALLS BY THE ROUND SUPPLY DUCT WHERE MASONRY REMAINS, A 20"x20" SQUARE SHEET METAL COLLAR FITTED AND SEALED TO THE ROUND DUCT.
- 3) CONTRACTOR SHALL PROVIDE 1-1/2"x1-1/2" COLLAR ON CORRIDOR SIDE OF WALL ON SQUARE RETURN DUCTS.
- 4) PROVIDE VOLUME DAMPERS AT ALL BRANCHES AND TAKE-OFFS.
- 5) CONTRACTOR TO PROVIDE 10'-0" LINEAR FEET OF OUTWORK OFF THE DISCHARGE OF THE VAV DAMPERS, LEFT LAYING ON THE FLOOR ADJACENT TO THE DAMPER. SEE VAV DAMPER SCHEDULE FOR SIZE OF OUTWORK TO BE PROVIDED WITH EACH DAMPER.

LOWER LEVEL
 MECHANICAL

date	1-31-96
scale	1/8" = 1'-0"
drawn	DAS
checked	RHR
project no.	95-23



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MAIN LEVEL PLAN - MECHANICAL

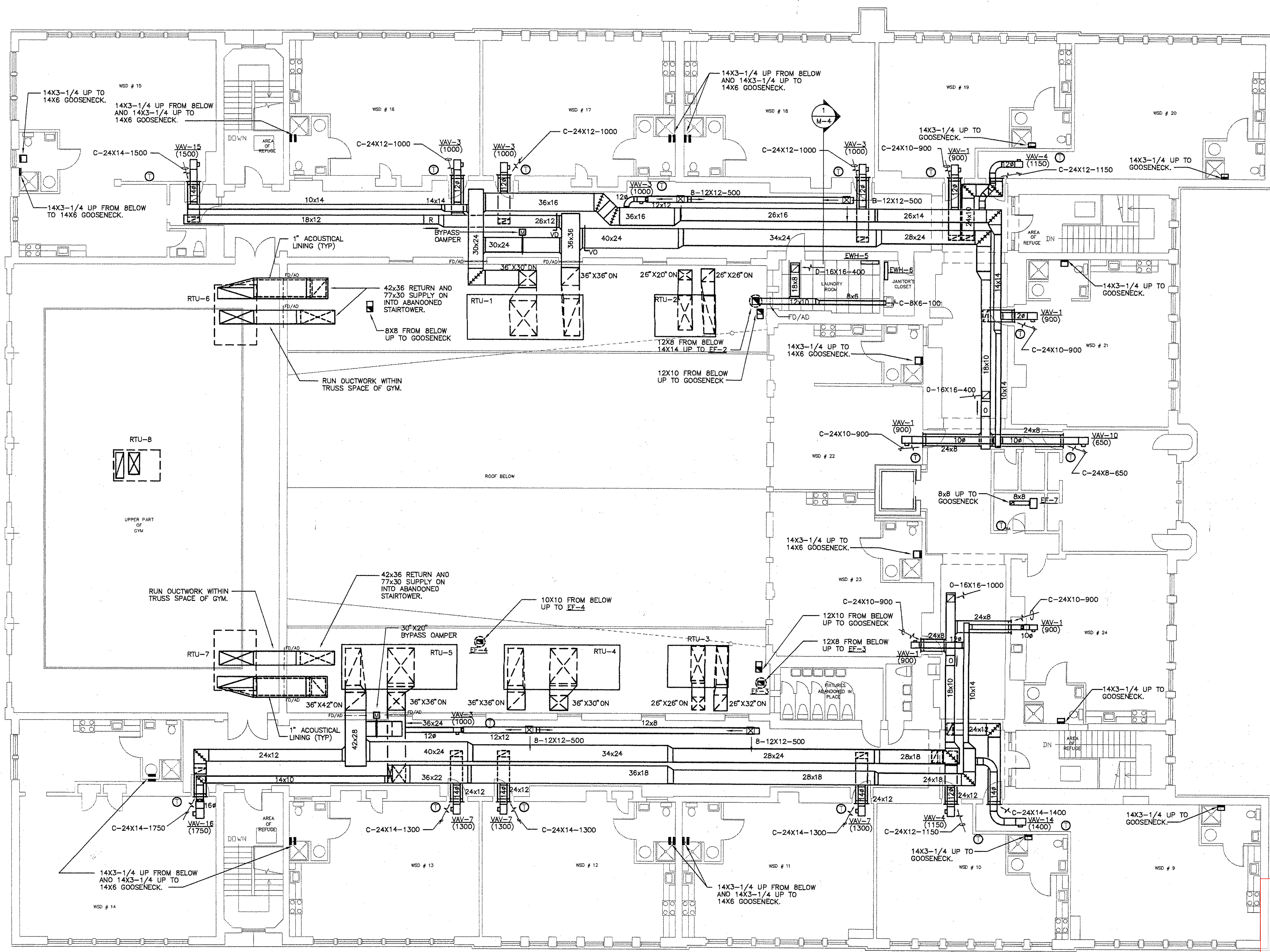
1/8" = 1'

EAST HARTFORD
 COMMUNITY - CULTURAL CENTER

MAIN LEVEL
 MECHANICAL

date	1-31-96
scale	1/8" = 1'-0"
drawn	DAS
checked	RHR
project no.	95-23

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ADDENDUM NO. 3
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UPPER LEVEL PLAN - MECHANICAL

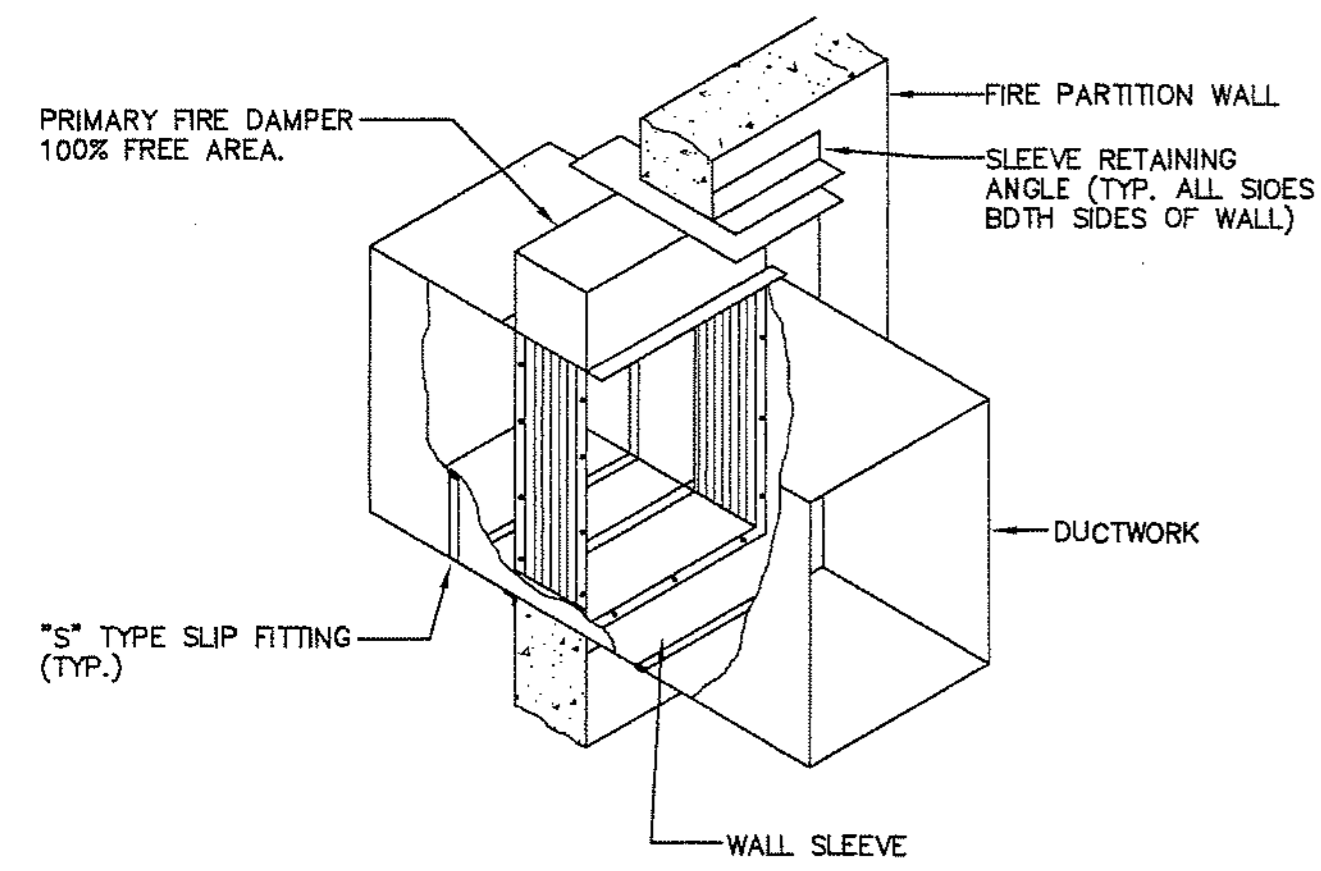
1/8" = 1'

EAST HARTFORD
 COMMUNITY - CULTURAL CENTER

UPPER LEVEL
 MECHANICAL

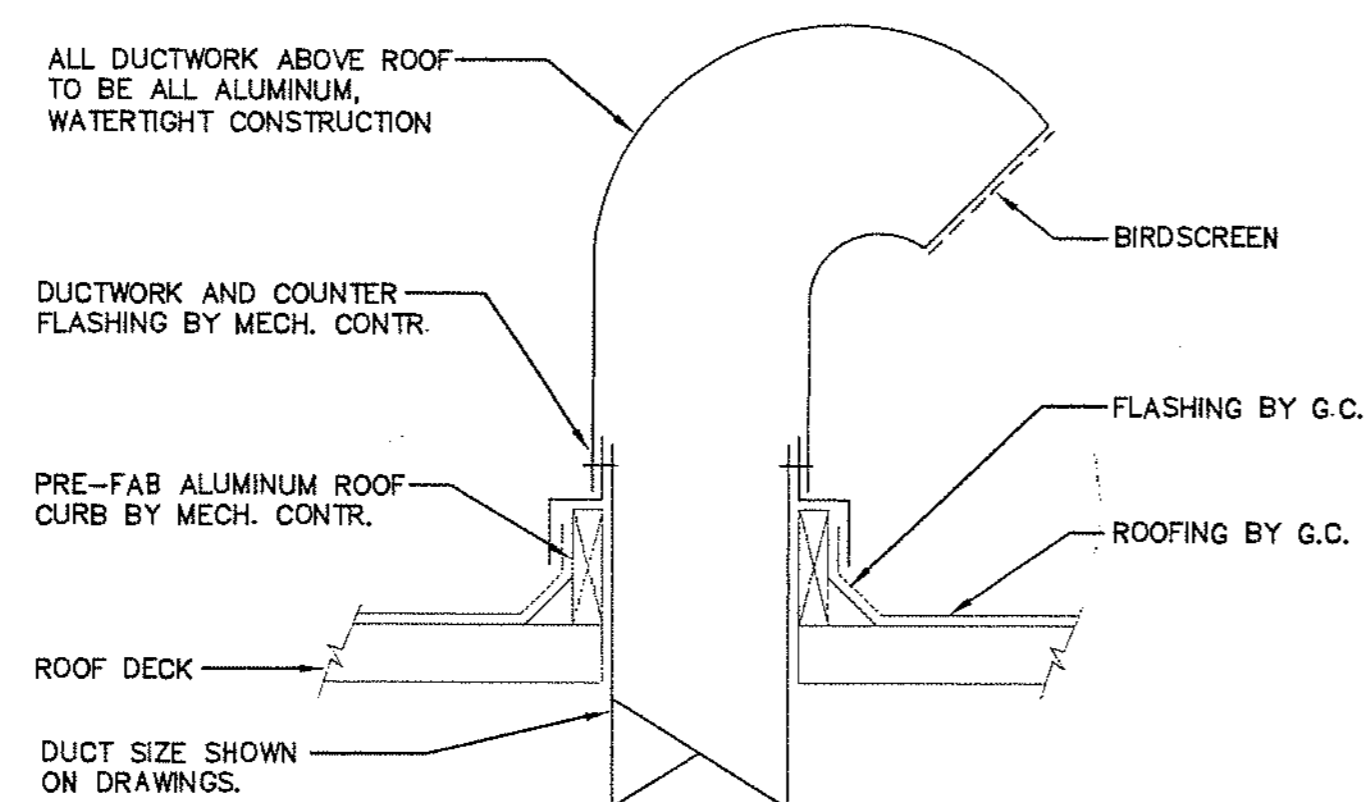
M-3

date	1-31-96
scale	1/8" = 1'-0"
drawn	DAS
checked	RHR
project no.	95-23

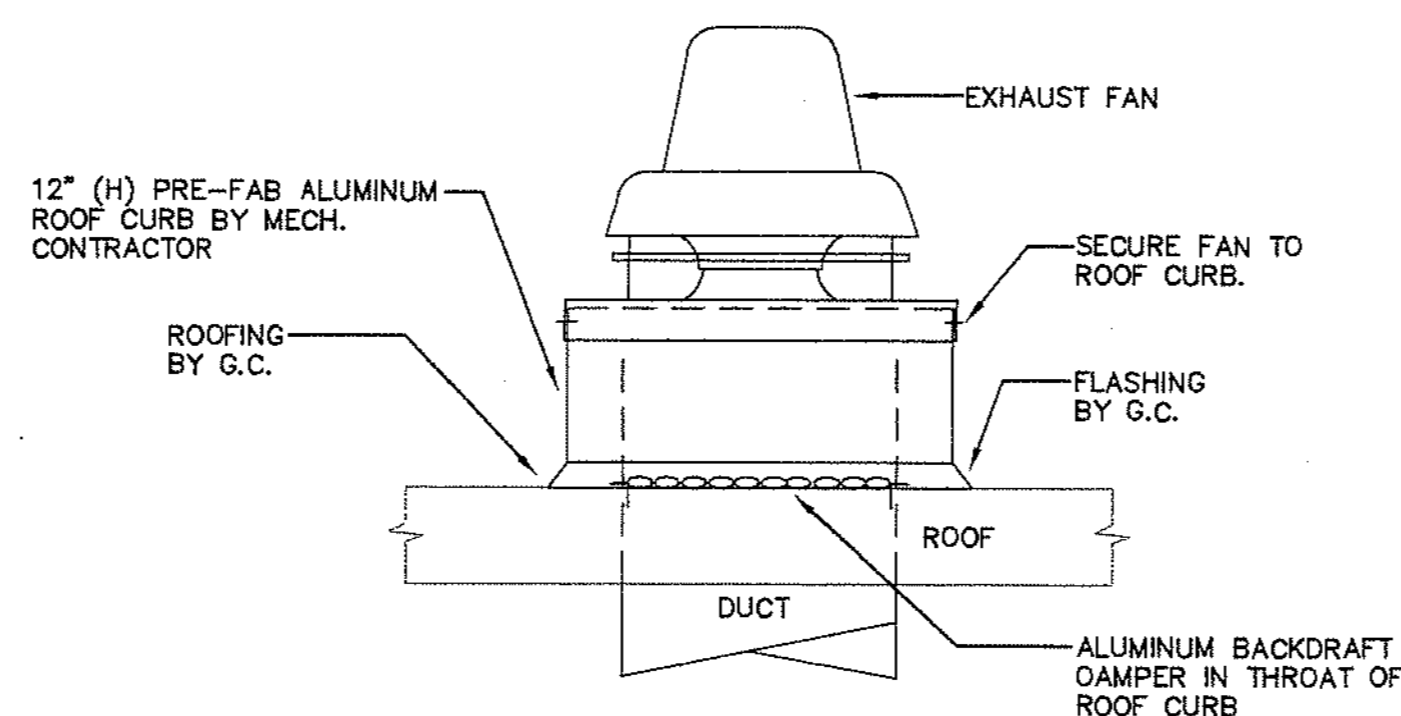


PRIMARY FIRE DAMPER DETAIL TYPE "B"
N.T.S.

NOTE: INSTALL ALL FIRE DAMPERS IN STRICT ACCORDANCE WITH UL 555 STANDARDS.



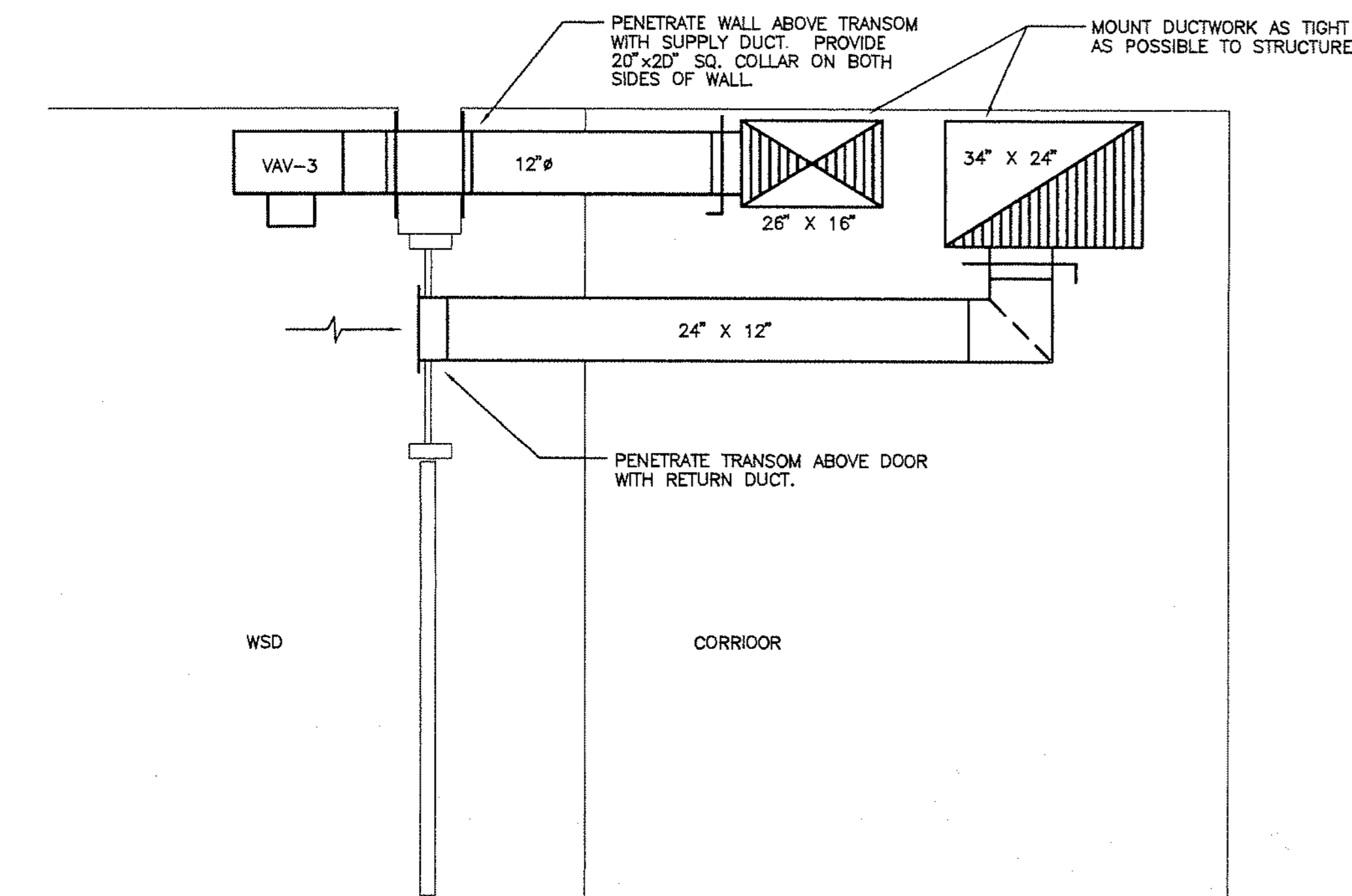
GOOSENECK DETAIL
N.T.S.



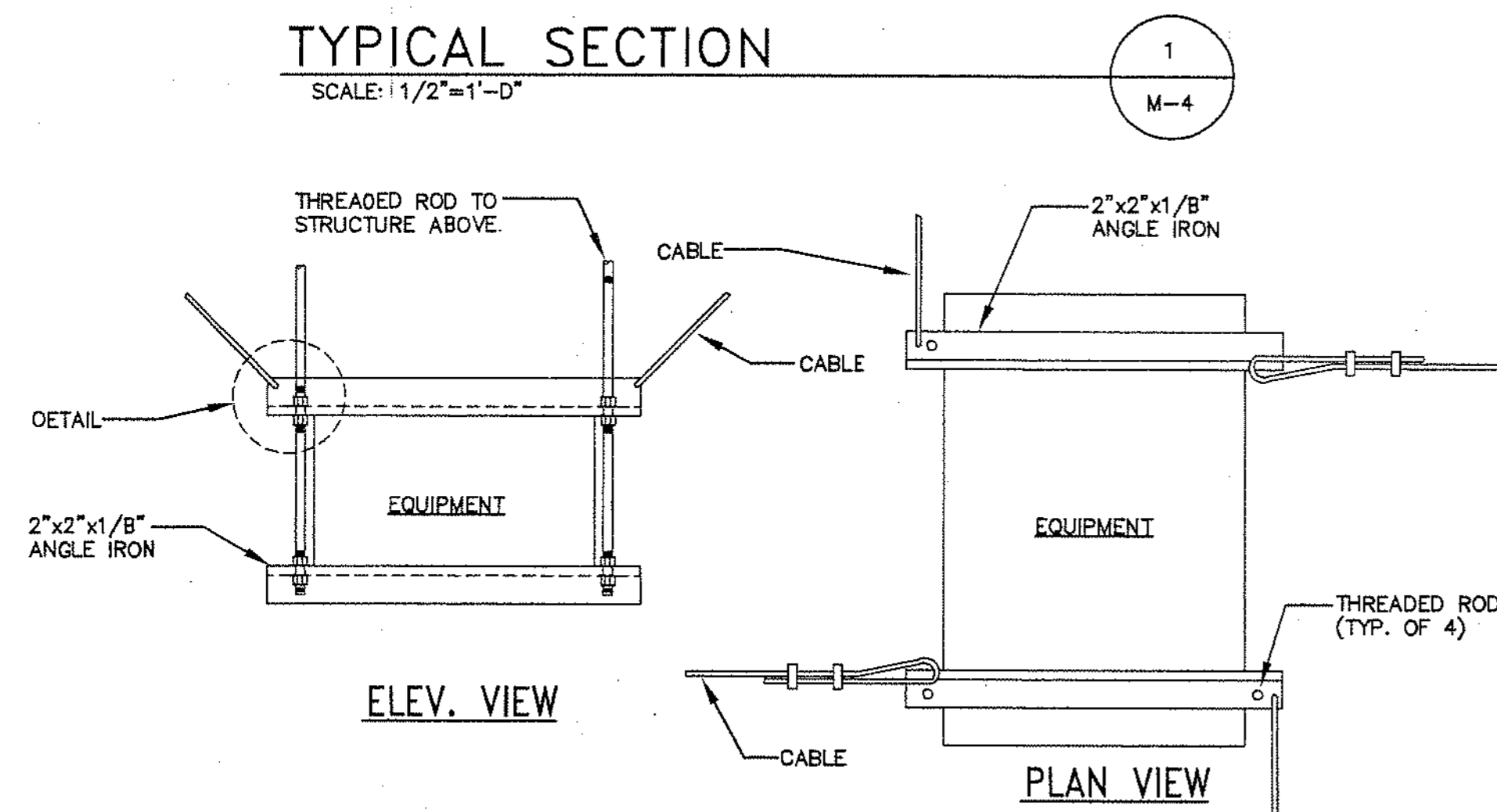
ROOF MOUNTED FAN DETAIL
N.T.S.

EXHAUST FAN SCHEDULE "LOREN COOK" AS STANDARD (PENN VENTILATOR, GREENHECK EQUALS)								
TAG	FAN TYPE	MODEL No.	CFM	T.S.P. (IN. W.G.)	RPM	MOTOR HP	VOLTAGE	REMARKS
EF-1	CEILING IN-LINE	GC-720	500	0.25	1375	300W	115-1-60	SEE NOTE #1
EF-2	CENTRIFUGAL ROOF MOUNTED	135C2B	1175	0.25	936	1/6	115-1-60	SEE NOTE #2
EF-3	CENTRIFUGAL ROOF MOUNTED	120C2B	450	0.25	800	1/6	115-1-60	SEE NOTE #2
EF-4	CENTRIFUGAL ROOF MOUNTED	120C2B	575	0.25	820	1/6	115-1-60	SEE NOTE #2
EF-5	CEILING IN-LINE	GC-720	500	0.25	1375	300W	115-1-60	SEE NOTE #3
EF-6	CEILING IN-LINE	GC-320	150	0.125	1365	77W	115-1-60	SEE NOTE #1
EF-7	CEILING IN-LINE	GC-320	150	0.125	1365	77W	115-1-60	SEE NOTE #1

NOTES:
1) PROVIDE WITH SOLID STATE SPEED CONTROLLER AND DISCONNECT MOUNTED AT FAN HOUSING.
2) PROVIDE WITH 12"(H) PREFAB ALUMINUM ROOFCURB AND INTEGRAL DISCONNECT.
3) PROVIDE WITH SOLID STATE SPEED CONTROLLER, DISCONNECT MOUNTED AT FAN HOUSING, AND WALL CAP.



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



EQUIPMENT SEISMIC RESTRAINT DETAIL #1
N.T.S.

NOTE: 1. SEISMIC RESTRAINT FOR DUCTWORK IS SIMILAR

DIFFUSERS & REGISTERS "TUTTLE & BAILEY" AS STD.					
TAG	MODEL No.	DESCRIPTION	CONSTRUCTION	FINISH	REMARKS
A	A547	SIDEWALL SUPPLY	EXTRUDED ALUM.	PER ARCHITECT	DOUBLE DEFLECTION, OBD
B	AMV	CEILING SUPPLY	EXTRUDED ALUM.	PER ARCHITECT	OBD
C	A77D	SIDEWALL RETURN	EXTRUDED ALUM.	PER ARCHITECT	42' DEFLECTION, OBD
D	CR507	CEILING RETURN	EXTRUDED ALUM.	PER ARCHITECT	1/2"x1/2"x1" CORE, OBD
E	4300	LINEAR BAR REG.	EXTRUDED ALUM.	PER ARCHITECT	6" WIDE, 15' DEFLECTION, OBD
F	VJR-244B	ROUND CLG. SUPPLY	STEEL	PER ARCHITECT	OBD

VAV BOX SCHEDULE "TRANE" AS STANDARD			
TAG	MODEL No.	CFM	SIZE
VAV-1	VADA-12-CHGR	900	12"
VAV-2	VADA-10-CHGR	800	10"
VAV-3	VADA-12-CHGR	1000	12"
VAV-4	VADA-12-CHGR	1150	12"
VAV-5	VADA-14-CHGR	1850	14"
VAV-6	VADA-08-CHGR	500	8"
VAV-7	VADA-12-CHGR	1300	12"
VAV-8	VADA-06-CHGR	250	6"
VAV-9	VADA-06-CHGR	200	6"
VAV-10	VADA-10-CHGR	650	10"
VAV-11	VADA-06-CHGR	300	6"
VAV-12	VADA-06-CHGR	400	6"
VAV-13	VADA-12-CHGR	950	12"
VAV-14	VADA-14-CHGR	1400	14"
VAV-15	VADA-14-CHGR	1500	14"
VAV-16	VADA-14-CHGR	1750	14"

ELECTRIC HEAT SCHEDULE "BERKO" AS STANDARD							
TAG	MODEL No.	WATTS	VOLTAGE	PH.	BTU/HR	CFM	REMARKS
EW-1	FRC-1527	1500	277	1	5,120	-	SEE NOTE #1
EW-2	FRC-1527	1500	277	1	5,120	-	SEE NOTE #1
EW-3	FRC-1527	1500	277	1	5,120	-	SEE NOTE #1
EW-4	FRC-1527	1500	277	1	5,120	-	SEE NOTE #1
EW-5	FRC-1527	1500	277	1	5,120	-	SEE NOTE #1
EW-6	FRC-1527	1500	277	1	5,120	-	SEE NOTE #1
ECUH-1	CUH4-0448-1	4000	480	1	13,648	500	SEE NOTE #2
ECUH-2	CUH4-0448-1	4000	480	1	13,648	500	SEE NOTE #2
ECUH-3	CUH4-0448-1	4000	480	1	13,648	500	SEE NOTE #2
ECUH-4	CUH3-0227-1	2000	277	1	6,824	250	SEE NOTE #2
ECUH-5	CUH4-0448-1	4000	480	1	13,648	500	SEE NOTE #2
ECUH-6	CUH3-0227-1	2000	277	1	6,824	250	SEE NOTE #2
ECUH-7	CUH3-0227-1	2000	277	1	6,824	250	SEE NOTE #2
EUH-1	HUHAA-748	7500	480	3	25,600	650	SEE NOTE #3
EUH-2	HUHAA-748	7500	480	3	25,600	650	SEE NOTE #3
EUH-3	HUHAA-748	7500	480	3	25,600	650	SEE NOTE #3
EUH-4	HUHAA-748	7500	480	3	25,600	650	SEE NOTE #3
EUH-5	HUHAA-748	7500	480	3	25,600	650	SEE NOTE #3
EUH-6	HUHAA-548	5000	480	3	17,000	350	SEE NOTE #3

NOTES:
1) PROVIDE WITH BUILT-IN TAMPER-PROOF THERMOSTAT, THERMAL CUTOUT, FAN DELAY, DISCONNECT SWITCH, AND SURFACE MOUNTING FRAME.
2) PROVIDE WITH BUILT-IN TWO-STAGE THERMOSTAT AND CIRCUIT BREAKERS, AND ADAPTER FRAME FOR SURFACE MOUNTING.
3) PROVIDE WITH AUTOMATIC FAN DELAY, THERMAL CUTOUT, POWER DISCONNECT SWITCH, 24 VOLT CONTROL, AND MOUNTING BRACKET.

SEISMIC BRACING SCHEDULE								
PIPE SIZE (INCHES)	"E" OR "L" HANGER TYPE	BOLTS TO 1/2"	VERTICAL ANGLE (3)	DIAGONAL ANGLE	LONGITUDINAL DIAGONAL ANGLE (4)	TOP CONNECTION OF DIAGONAL & LONGITUDINAL (5)	ROD SIZE (INCHES) FOR RODS	MAXIMUM LENGTH FOR RODS
2 1/2	CLEVIS TYPE	3/8"	2 x 2 x 16GA	2 x 2 x 16GA	2-1/2x2-1/2x16GA	TYPE II	1/2"	25'
3	DD	3/8"	2 x 2 x 16GA	2 x 2 x 16GA	2-1/2x2-1/2x16GA	TYPE II	1/2"	25'
4	DD	3/8"	2 x 2 x 16GA	2 x 2 x 16GA	2-1/2x2-1/2x16GA	TYPE IV	5/8"	31'
5	DD	1/2"	2 x 2 x 16GA	2 x 2 x 16GA	2-1/2x2-1/2x16GA	TYPE IV	5/8"	31'
6	DD	1/2"	2-1/2x2-1/2x16GA	2-1/2x2-1/2x16GA	2-1/2x2-1/2x16GA	TYPE V	3/4"	37'

GENERAL NOTES
1. PIPING SHALL BE TRANSVERSELY BRACED AT 40 FOOT INTERVALS AND AT TURNS OF MORE THAN 4 FEET. LONGITUDINAL BRACING AT 80 FOOT INTERVALS.
2. PIPE RISERS THROUGH CORED OPENINGS REQUIRE NO FURTHER SEISMIC BRACING (CORE DIAMETER TO BE A MAXIMUM OF 2" LARGER THAN PIPE O.D.).
3. ALL PIPING 2-1/2" OR LARGER SHALL BE SEISMICALLY BRACED.
4. ALL PIPING 1-1/4" OR LARGER IN BOILER AND MECHANICAL ROOMS SHALL BE SEISMICALLY BRACED.
5. ALL GAS PIPING 1" OR LARGER SHALL BE SEISMICALLY BRACED. SEE PLUMBING DWGS.
6. ALL RECTANGULAR DUCTWORK 6 SQ. FT. OR LARGER IN CROSS-SECTIONAL AREA, AND ROUND DUCTWORK 26" OR LARGER IN DIAMETER SHALL BE SEISMICALLY BRACED.
7. ALL PIPING SUSPENDED BY INDIVIDUAL HANGERS 12" INCHES OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE SUPPORT FOR THE HANGER SHALL NOT REQUIRE SEISMIC RESTRAINT.
8. ALL DUCTS SUSPENDED BY HANGERS 12" INCHES OR LESS IN LENGTH FROM THE TOP OF THE DUCT TO THE BOTTOM OF THE SUPPORT FOR THE HANGER SHALL NOT REQUIRE SEISMIC RESTRAINT.
9. "VERTICAL ANGLE" IN THE SCHEDULE IS REQUIRED IN ADDITION TO HANGER SUPPORTING MEMBERS.
10. PLACE STANDARD CUT WASHERS BETWEEN SHEET METAL 1/2" S & NUT.
11. SEE GENERAL NOTE 1 THIS SHEET FOR LONGITUDINAL DIAGONAL BRACE REQUIREMENTS.

ROOFTOP UNIT SCHEDULE "TRANE" AS STANDARD																									
TAG	MODEL No.	CFM	EXT. S.P. (IN. W.G.)	RPM	SUPPLY FAN MOTOR			EXHAUST FAN MOTOR			COMPRESSOR			COND. FAN MOTOR			DX COIL DATA			HEATING DATA		% O.A.			
					HP	VOLT	PH.	No./HP	VOLT	PH.	NO.	VOLT	PH.	No./HP	VOLT	PH.	EAT	LAT	TOT. CAP	SEN. CAP	INPUT		OUTPUT	EAT	LAT
RTU-1	YCD600A4	14,400	0.8	498	10.0	460	3	2/1.0	460	3	3	460	3	4/1.1	460	3	80/67	55.8/55.1	537.8	376.7	800	628	60	101.5	25
RTU-2	YCD240B4	6,550	1.0	748	5.0	460	3	1/0.75	460	1	2	460	3	2/1.0	460	3	80/67	58.7/56.1	225.8	150.8	350	284	60	107.3	25
RTU-3	YCD240B4	7,500	0.8	747	5.0	460	3	1/0.75	460	1	2	460	3	2/1.0	460	3	80/67	60.2/57.4	230.7	160.5	350	284	60	101.5	25
RTU-4	YCD480A4	12,700	1.0	456	10.0	460	3	2/1.0	460	3	3	460	3	4/1.1	460	3	80/67	57.5/55.7	451.8	308.2	800	628	60	106.5	25
RTU-5	YCD600A4	15,650	0.8	523	10.0	460	3	2/1.0	460	3	3	460	3	4/1.1	460	3	80/67	56.9/56.1	541.2	389.8	800	628	60	98.5	25
RTU-6	YCD210B4	5,250	0.5	560	3.0	460	3	1/0.75	460	1	2	460	3	2/1.0	460	3	80/67	57.8/55.3	192.1	126.2	250	203	60	111.0	25
RTU-7	YCD210B4	5,250	0.5	560	3.0	460	3	1/0.75	460	1	2	460	3	2/1.0	460	3	80/67	57.8/55.3	192.1	126.2	250	203	60	111.0	25
RTU-8	YCD210B4	5,000	0.5	551	3.0	460	3	1/0.75	460	1	2	460	3	2/1.0	460	3	80/67	57.3/54.9	124.1	124.1	250	203	60	112.9	25

NOTES:
1) RATINGS BASED ON 95° AMBIENT.
2) ALL FAN MOTORS SHALL BE HIGH EFFICIENCY.
3) ALL UNITS SHALL BE PROVIDED WITH 12"(H) PREFAB ALUMINUM ROOFCURBS. ECONOMIZER OPERATION WITH POWERED EXHAUST AND COMPARATIVE ENTHALPY CONTROL.
4) ALL UNITS SHALL BE PROVIDED WITH 2" THICK FARR 30/30 FILTERS. CONTRACTOR TO PROVIDE TWO ADDITIONAL FILTER CHANGES, ONE PRIOR TO AIR BALANCING, AND ONE PRIOR TO TURNING THE SYSTEM OVER TO THE OWNER.

ADDENDUM NO. 3
THIS DRAWING IS ISSUED FOR BID #19-09 REPLACEMENT OF ROOFTOP HVAC UNITS, COMMUNITY CULTURAL CENTER FOR BIDDER INFORMATION ONLY.

Legnos and Cramer, Inc.
Consulting Engineers
Mechanical & Electrical

109 Hawthorn Street
Hartford, Ct. 06105-3688
Tel: (203)846-8979, Fax: (203)825-2544



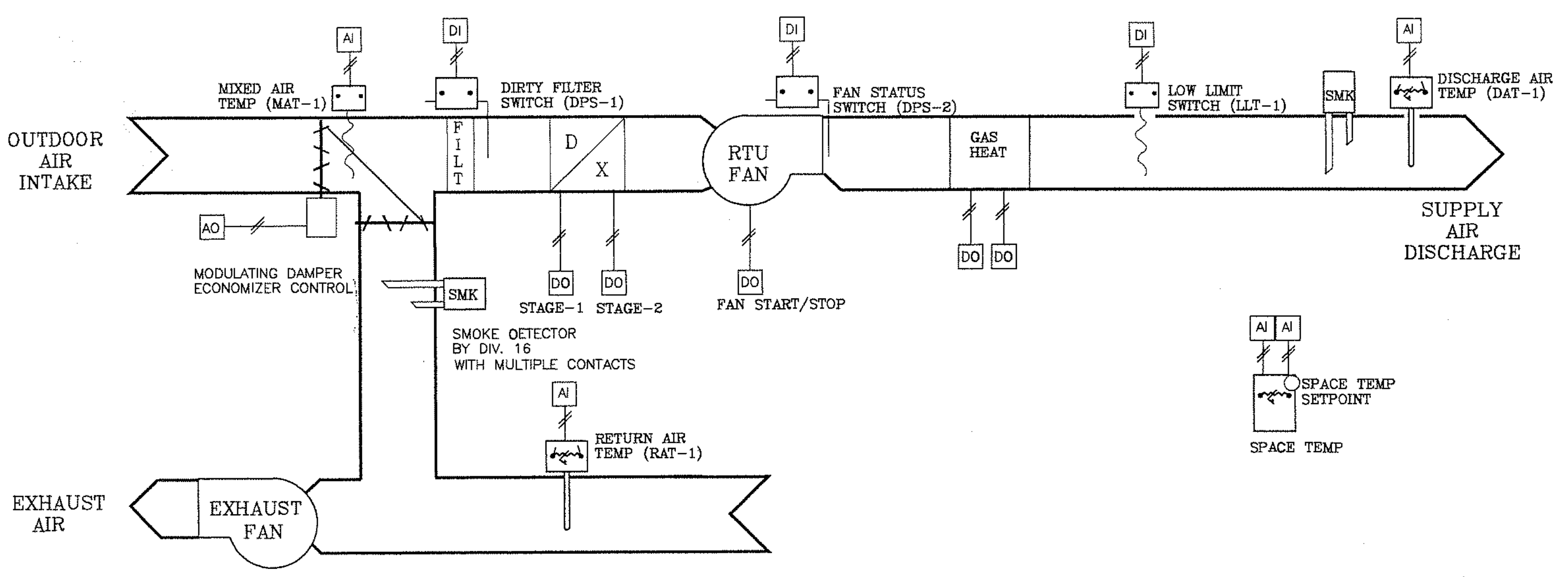
20 WESTBROOK STREET - EAST HARTFORD CT. 06108

EAST HARTFORD COMMUNITY-CULTURAL CENTER

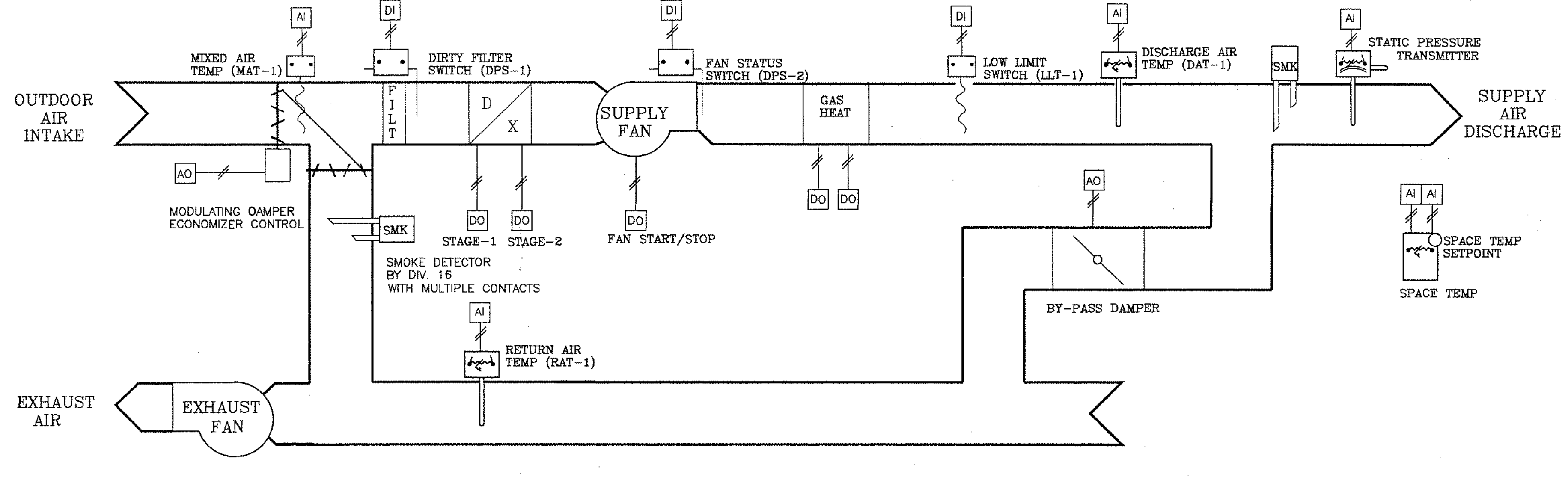
SCHEDULES & DETAILS

M-4

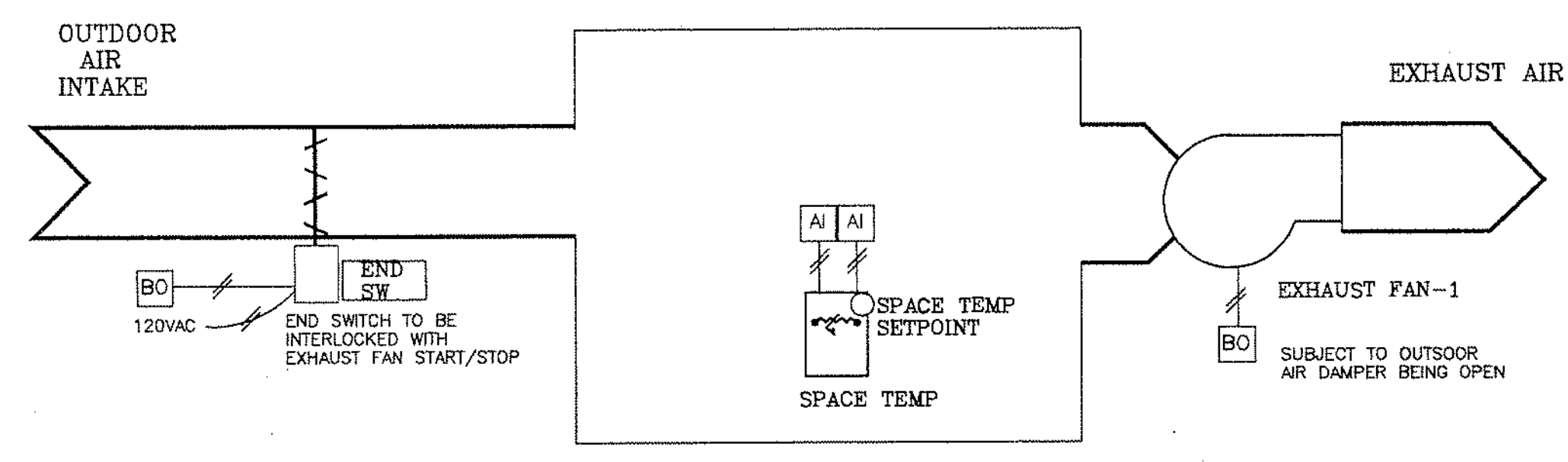
date 1-31-96
scale AS NOTED
drawn DAS
checked RHR
project no. 95-23



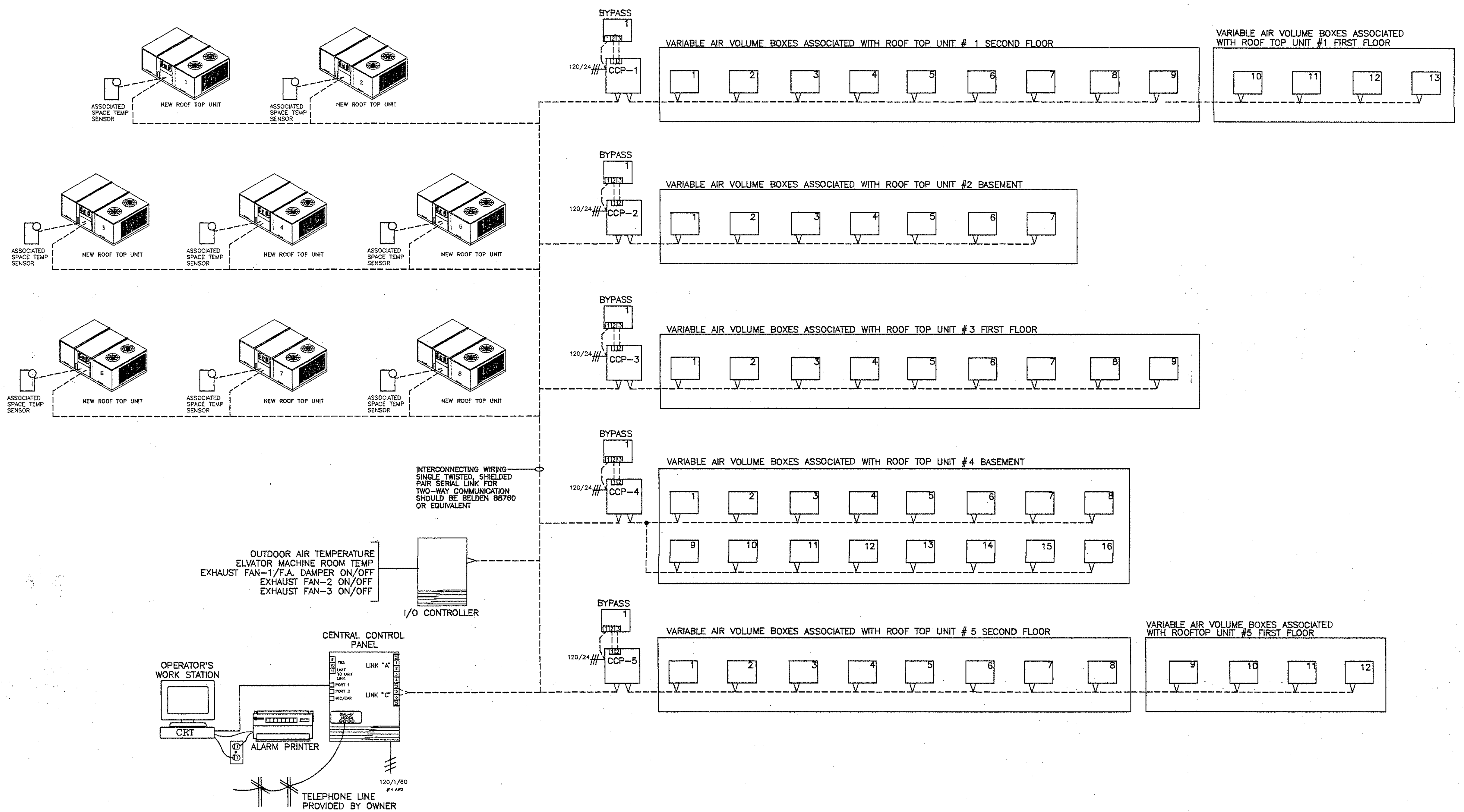
ROOFTOP UNIT SCHEMATIC (TYP FOR RTU-6,7&8)
 N.T.S.



ROOFTOP UNIT SCHEMATIC (TYP FOR RTU-1 THRU 5)
 N.T.S.



ELEVATOR MACHINE ROOM SCHEMATIC
 N.T.S.



NETWORK SCHEMATIC WIRING DIAGRAM
 N.T.S.

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THIS DRAWING IS ISSUED FOR
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MISC. POINTS			
ANALOG INPUTS	ANALOG OUTPUTS	BINARY INPUTS	BINARY OUTPUTS
OUTDOOR AIR TEMPERATURE			EXH FAN-1/F.A. DAMPER ON/OFF
ELEVATOR MACHINE ROOM TEMP.			EXHAUST FAN-2 START/STOP
			EXHAUST FAN-3 START/STOP
			EXHAUST FAN-4 START/STOP
			EXHAUST FAN-5 START/STOP
			EXHAUST FAN-6 START/STOP

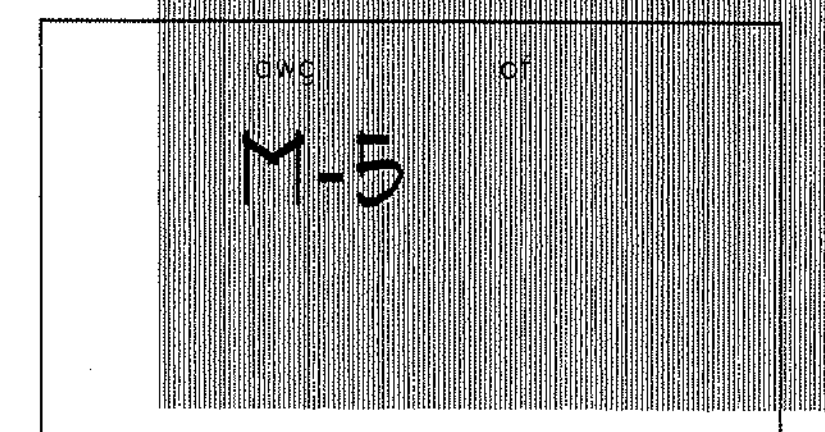
MISC. POINTS			
ANALOG INPUTS	ANALOG OUTPUTS	BINARY INPUTS	BINARY OUTPUTS
			EXHAUST FAN-7 START/STOP

ROOFTOP UNITS #6,7,8			
ANALOG INPUTS	ANALOG OUTPUTS	BINARY INPUTS	BINARY OUTPUTS
MIXED AIR TEMPERATURE	MIXING DAMPERS	DIRTY FILTER SWITCH	SUPPLY FAN START/STOP
DISCHARGE AIR TEMPERATURE		SUPPLY FAN STATUS	DX COOLING STAGE 1
RETURN AIR TEMPERATURE		DIRTY FILTER STATUS	DX COOLING STAGE 2
SPACE TEMPERATURE		LOW LIMIT STATUS	HEAT STAGE 1
SPACE TEMPERATURE SETPOINT		SMOKE DETECTOR STATUS	HEAT STAGE 2

ROOFTOP UNITS #1 THRU 5			
ANALOG INPUTS	ANALOG OUTPUTS	BINARY INPUTS	BINARY OUTPUTS
MIXED AIR TEMPERATURE	MIXING DAMPERS	DIRTY FILTER SWITCH	SUPPLY FAN START/STOP
DISCHARGE AIR TEMPERATURE	BY PASS DAMPER	SUPPLY FAN STATUS	DX COOLING STAGE 1
RETURN AIR TEMPERATURE		DIRTY FILTER STATUS	DX COOLING STAGE 2
SPACE TEMPERATURE		LOW LIMIT STATUS	HEAT STAGE 1
SPACE TEMPERATURE SETPOINT		SMOKE DETECTOR STATUS	HEAT STAGE 2
DUCT STATIC PRESSURE			

I/O POINT LIST
 N.T.S.

TEMPERATURE CONTROLS



date	01-31-96
scale	AS NOTED
drawn	DAS
checked	RHR
project no.	95-23

EAST HARTFORD
 COMMUNITY - CULTURAL CENTER