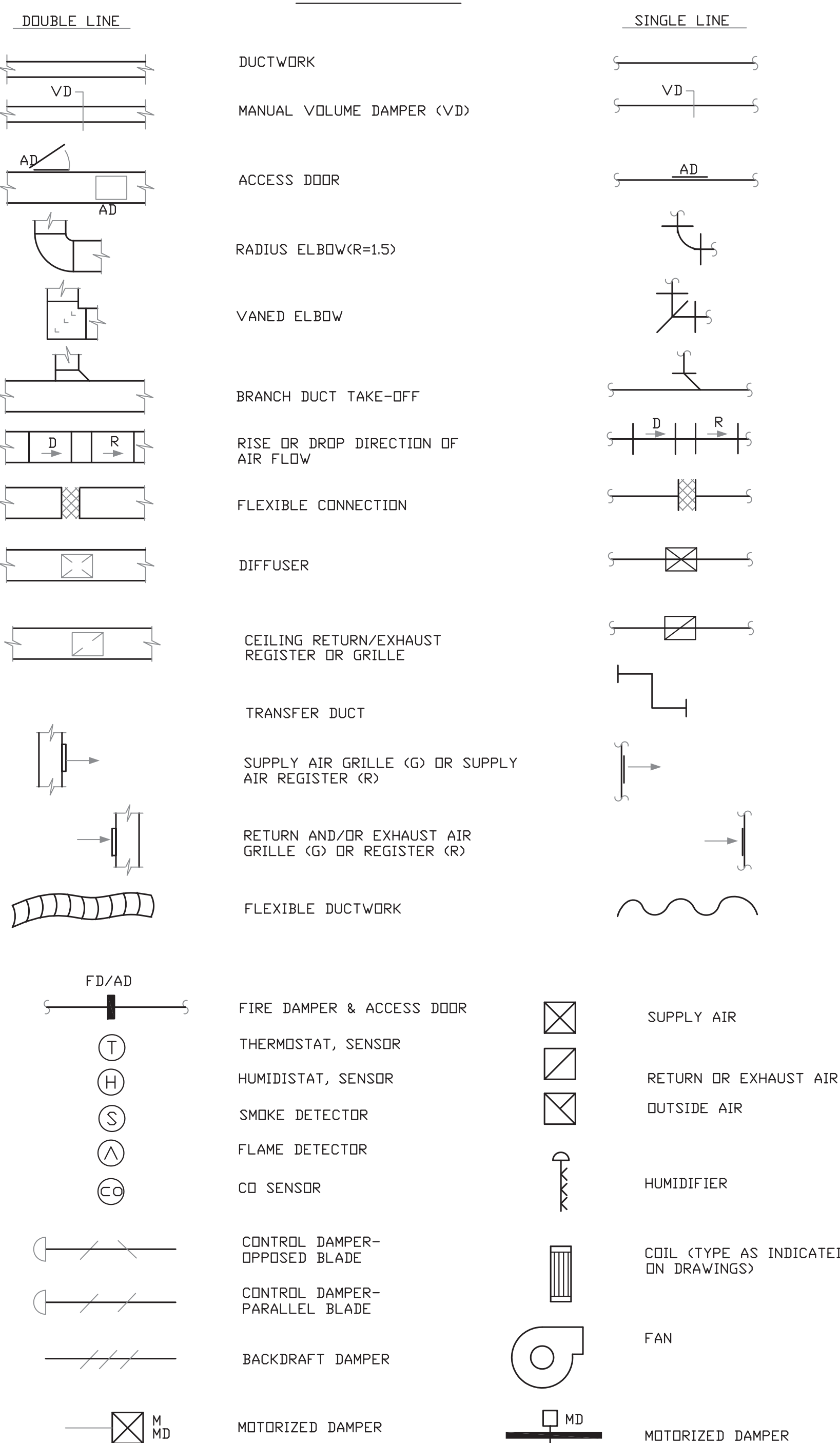


Lothrop

White Plains Rochester Red Bank Hartford

CBK PROJECT NO. 21030

ABBREVIATIONS



AB	AIR BLENDER	SAV	SUPPLY AIR VALVE
ACU	AIR CONDITIONING UNIT	SF	SUPPLY FAN
ACCU	AIR COOLED CONDENSING UNIT	ST	STORAGE TANK
AHU	AIR HANDLING UNIT	STP	SOUND TRAP
AS	AIR SEPARATOR	TG	TRANSFER GRILLE
B	BOILER	UH	UNIT HEATER
CAF	COMBUSTION AIR FAN	VAV	VARIABLE AIR VOLUME
CH	CHILLER		

CONNECTION OF NEW
TO EXISTING

EXTENT OF DEMOLITION WORK

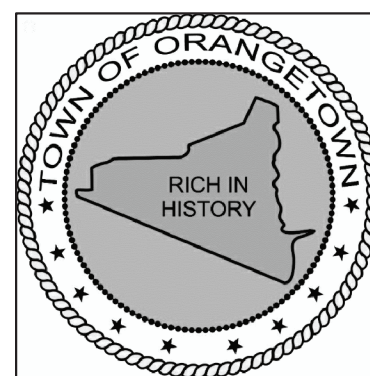
—	EXISTING DUCTWORK TO BE REMOVED
—D—	DRAIN
—E—	EXPANSION
—EXH—	EXHAUST
—RS—	REFRIGERANT SUCTION
—RL—	REFRIGERANT LIQUID
—HWS—	HOT WATER SUPPLY
—HWR—	HOT WATER RETURN
—CWR—	CONDENSER WATER RETURN
—CWS—	CONDENSER WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
—CHWS—	CHILLED WATER SUPPLY

SWS - SIDE WALL SUPPLY GRILLES
SWR - SIDE WALL RETURN GRILLES
SWE - SIDE WALL EXHAUST GRILLES
TG - TRANSFER GRILLES
RAR - RETURN AIR REGISTER

1. GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
3. COORDINATE THIS WORK WITH THAT OF OTHER CONTRACTORS.
4. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL.
5. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE ACCESS PANELS FOR ALL EQUIPMENT, WHETHER SHOWN OR NOT, THAT REQUIRES PERIODIC SERVICE INSTALLATION SHALL BE BY THE GENERAL CONTRACTOR.
7. PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
8. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.
9. RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING MEMBERS.
10. INSTALL THERMOSTATS 4'-8" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.

1. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED. PROVIDE ACOUSTIC LINING DUCTWORK 20 FOOT MINIMUM FROM ALL AIR CONDITIONING EQUIPMENT ON BOTH SUPPLY AND RETURN.
2. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
3. REGISTERS AND GRILLE SIZES ARE NOMINAL.
4. PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTERS AND GRILLES AND IN RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
5. PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.
6. PROVIDE FLEXIBLE CONNECTION ON EACH SIDE OF ALL FANS AND HVAC UNITS.

A/V	AUTOMATIC AIR VENT	HT	HEIGHT
AFF	ABOVE FINISHED FLOOR	H ₂ O	WATER
AD	ACCESS DOOR	HP	HORSEPOWER
AFD	ADJUSTABLE FREQUENCY DRIVE	HR	HOUR
AI	ANALOG INPUT	HWR	HOT WATER RETURN
AO	ANALOG OUTPUT	HWS	HOT WATER SUPPLY
ATC	AUTOMATIC TEMPERATURE CONTROL	HTR	HEATER
BDD	BACK DRAFT DAMPER	HZ	HERTZ
BFF	BELOW FINISHED FLOOR	ID	INTERNAL DIAMETER
BFP	BACK FLOW PREVENTOR	IN	INCHES
BLDG	BUILDING	KW	KILOWATT
BOD	BOTTOM OF DUCT	L	LENGTH
BSMT	BASEMENT	LAT	LEAVING AIR TEMPERATURE
BTU	BRITISH THERMAL UNIT	LB	POUND
CAF	COMBUSTION AIR FAN	LBS/HR	POUNDS PER HOUR (#/HR)
CAP	CAPACITY	LD	LINEAR DIFFUSER
CBV	CIRCUIT BALANCING VALVE	LIN	LINEAR
CD	CEILING DIFFUSER	LVG	LEAVING
CFM	CUBIC FEET PER MINUTE	LVR	LOUVER
CHWR	CHILLED WATER RETURN	LWT	LEAVING WATER TEMPERATURE
CHWS	CHILLED WATER SUPPLY	MBH	THOUSANDS OF BTU PER HOUR
CLG	CEILING	MD	MEDIUM
CONN	CONNECTION	MFR	MANUFACTURER
CV	CONTROL VALVE	MIN	MINIMUM
CWR	CONDENSER WATER RETURN	MISC	MISCELLANEOUS
CWS	CONDENSER WATER SUPPLY	NC	NORMALLY CLOSED
DAMP	DAMPER	NO	NUMBER
DB	DRY BULB	NO	NORMALLY OPEN
DDC	DIRECT DIGITAL CONTROL	NTS	NOT TO SCALE
DIA	DIAMETER	PD	PRESSURE DROP (SEE SCHEDULE)
DISCH	DISCHARGE	PH	PHASE
DI	DIGITAL INPUT	PRESS	PRESSURE
DIV	DIVISION	PS	PRESSURE SWITCH
DO	DIGITAL OUTPUT	PSI	POUNDS PER SQUARE INCH
DN	DOWN	PSIG	POUNDS PER SQUARE INCH GAUGE
DVG	DRAWING	PT	PRESSURE TRANSMITTER
DX	DIRECT EXPANSION	PV	PLUG VALVE
EA	EACH	R	REGISTER
EAT	ENTERING AIR TEMPERATURE	RA	RETURN AIR
EFF	EFFICIENCY	RAG	RETURN AIR GRILLE
EJ	EXPANSION JOINT	RAR	RETURN AIR REGISTER
EL	ELEVATION	RE	ROUNDED ENTRANCE/EXIT
ELEC	ELECTRIC	REL	RELIEF
ENT	ENTERING	RET	RETURN
EQ	EQUAL	RH	RELATIVE HUMIDITY
EQUIP	EQUIPMENT	RLA	RATED LOAD AMPS
ES	END SWITCH	RPM	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE	RS	REFRIGERANT SUCTION LINE
EWI	ENTERING WATER TEMPERATURE	RL	REFRIGERANT LIQUID LINE
EXH	EXHAUST	SA	SUPPLY AIR
EXPN	EXPANSION	SAR	SUPPLY AIR REGISTER
EXT	EXTERNAL	SH	SENSIBLE HEAT
°F	DEGREES FAHRENHEIT	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
FCV	FLOW CONTROL VALVE	SP	STATIC PRESSURE
FD	FLOOR DRAIN	SPEC	SPECIFICATION
FD/AD	FIRE DAMPER WITH ACCESS DOOR	SQ	SQUARE
FIN	FINISHED	STD	STANDARD
FLA	FULL LOAD AMPS	SUCT	SUCTION
FPH	FEET PER HOUR	SUP	SUPPLY
FPM	FEET PER MINUTE	SYS	SYSTEM
FPS	FEET PER SECOND	TAD	TRANSFER AIR DUCT
FS	FLOW SWITCH	TEMP	TEMPERATURE
FD/SD/AD	COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR	TP	TOTAL PRESSURE
FD/AD	FIRE DAMPER WITH ACCESS DOOR	TSP	TOTAL STATIC PRESSURE
FT	FEET	TT	TEMPERATURE TRANSMITTER
FTR	FINNED TUBE RADIATION	TV	TYPICAL
FV	FACE VELOCITY	V	VOLTS
FXC	FLEXIBLE CONNECTION	VD	VOLUME DAMPER
FDS	FUEL OIL SUCTION	VEL	VELOCITY
FDR	FUEL OIL RETURN	VFD	VARIABLE FREQUENCY DRIVE
GA	GAUGE	VOLT	VOLTAGE
GAL	GALLON	W	WIDTH
GFF	GAS FIRED FURNACE	WB	WET BULB
GPH	GALLONS PER HOUR	WMS	WIRE MESH SCREEN
GPM	GALLONS PER MINUTE	WC	WATER COLUMN
		WG	WATER GAUGE
		WT	WEIGHT

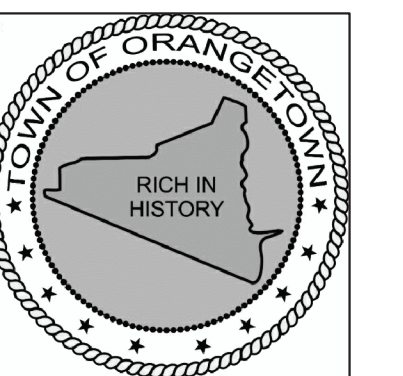
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26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

PROJECT NO.: 2219-05

DRAWING NO.

M-001

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ORANGETOWN TOWN HALL ADDITION AND ALTERATIONS

26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

BASEMENT DEMOLITION PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-101



1 BASEMENT MECHANICAL ROOM DEMOLITION PART PLAN
SCALE: 1/8"=1'-0"

DEMOLITION NOTES

- 1 REMOVE GENERATOR FLUE, SHEET METAL CONNECTIONS TO LOUVER AND LOUVER.
- 2 REMOVE EXISTING ELEVATOR MACHINE ROOM EXHAUST FAN.
- 3 REMOVE EXISTING FUEL OIL FILL AND VENT PIPING FROM TANK TO EXTERIOR.
- 4 RELOCATE AND REINSTALL DUCTWORK, GRILLES, DIFFUSERS, ETC. TO COORDINATE WITH NEW IT CONDUITS.

DEMOLITION NOTES

1. CEILING MOUNTED MINI-MATE TO BE REMOVED WITH ALL ASSOCIATED PIPING.
2. EXISTING DIFFUSERS AND FLEX DUCT WORK TO BE REMOVED.
3. EXISTING VAV, ASSOCIATED BRANCH HWS AND HWR PIPING AND ASSOCIATED DUCT WORK TO BE REMOVED.
4. REMOVE EXISTING EXHAUST FAN.

1 LEVEL 01 DEMOLITION PART PLAN
SCALE: 1/8"=1'-0"

SCALE: $1/8"=1'-0"$

DEMOLITION NOTES SITE PLAN

- 1 RELOCATE EXISTING COOLING TOWERS, WATER TREATMENT AND ASSOCIATED PIPING. RECONNECT TO EXISTING CONDENSER WATER PIPING. COORDINATE WITH NEW LOCATION OF STORM WATER STRUCTURES.

② SITE PLAN
SCALE: 1/32"=1'-0'

SCALE: $1/32"=1'-0"$



ORANGETOWN
TOWN HALL

ADDITION AND ALTERATIONS

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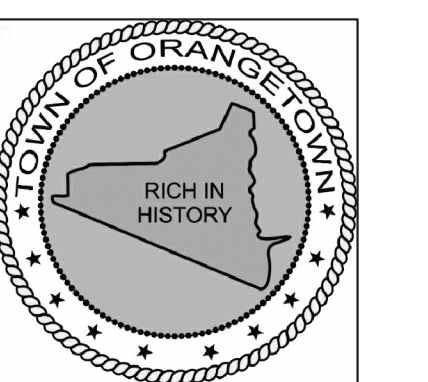
LEVEL 01 DEMOLITION PART PLAN, SITE PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-102

ISSUE NO.	ISSUE DATE	DESCRIPTION
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1	11/9/2021	RELEASE FOR BID



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ADDITION AND ALTERATIONS

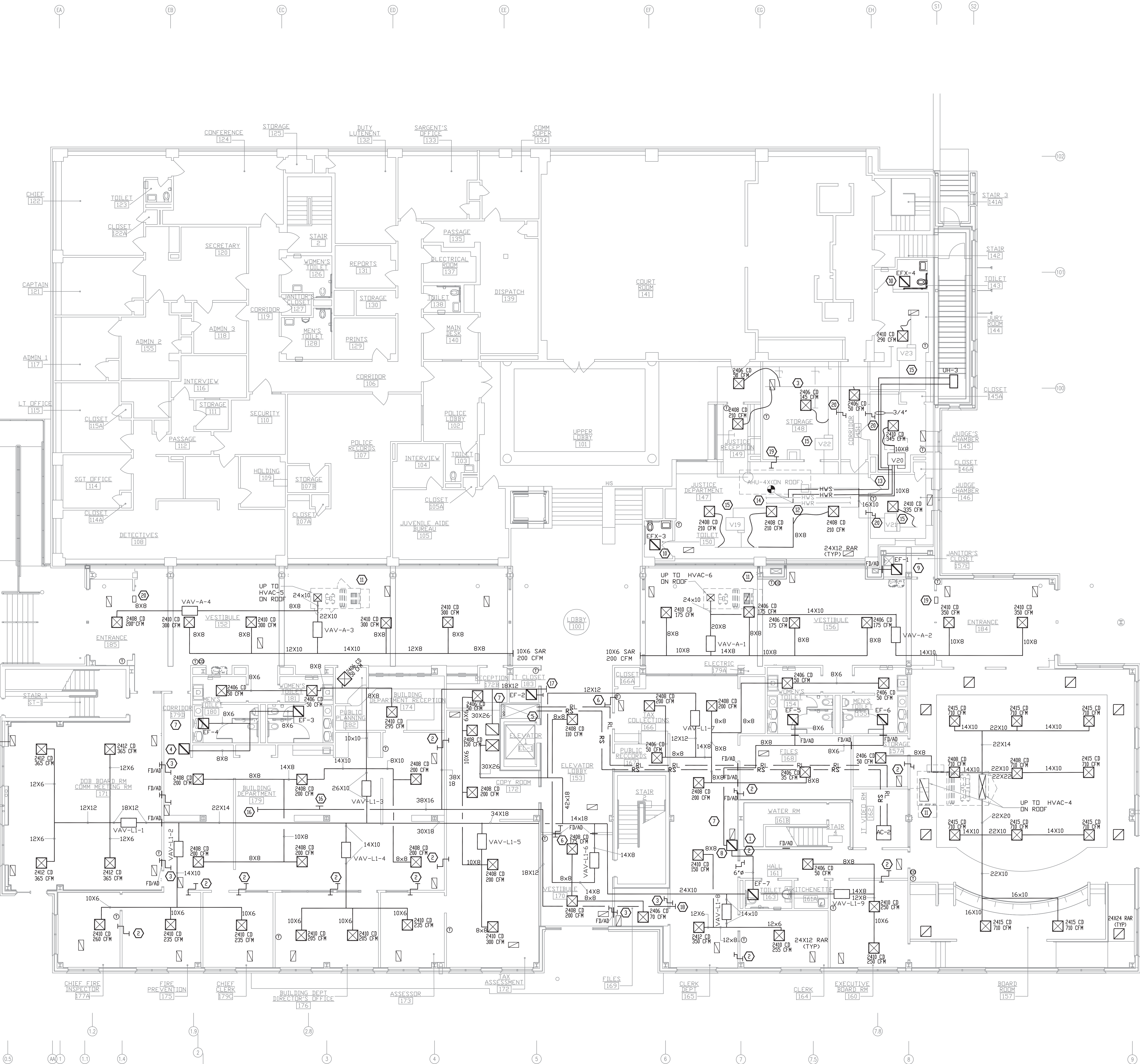
26 ORANGEBURG RD
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LEVEL 01
CONSTRUCTION PLAN
AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-201



1 LEVEL 01 CONSTRUCTION PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- EXHAUST DUCT TO LEVEL 02.
- 12X12 TRANSFER ABOVE HUNG CEILING.
- 18X12 TRANSFER ABOVE HUNG CEILING.
- 8X8 EXHAUST UP.
- RS & RL UP TO ROOF.
- 24X12 TRANSFER ABOVE HUNG CEILING.
- FD/AD AT SLAB PENETRATION.
- 10X8 EXHAUST UP.
- CONNECT EF-1 EXHAUST TO DUCT RISER IN SHAFT.
- PROVIDE NEW EXHAUST FAN, RECONNECT TO EXISTING DUCTWORK.
- FULL SIZE RETURN DUCTWORK TO 12" BELOW SLAB WITH 1" WMS.
- EXISTING HWS & HWR PIPING TO REMAIN.
- NEW 3/4" HWS & HWR PIPING TO V20.
- EXISTING HWS & HWR PIPING.
- EXISTING VAVs TO REMAIN FOR RE-USE.
- TWO 44X16 WITH VD AND 1" WMS.
- 28X12 WITH VD AND 1" WMS.
- 28X12 WITH VD AND 1" WMS.
- 18X12 TRANSFER OPENING ABOVE HUNG CEILING.
- 12X12 TRANSFER OPENING ABOVE HUNG CEILING.

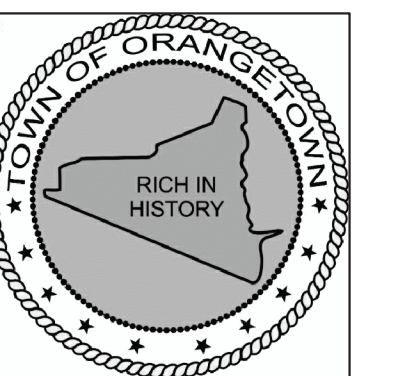
one inch = one foot

one quarter inch = one foot

one half inch = one foot

three eighths inch = one foot

one eighth inch = one foot

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ORANGETOWN TOWN HALL ADDITION AND ALTERATIONS

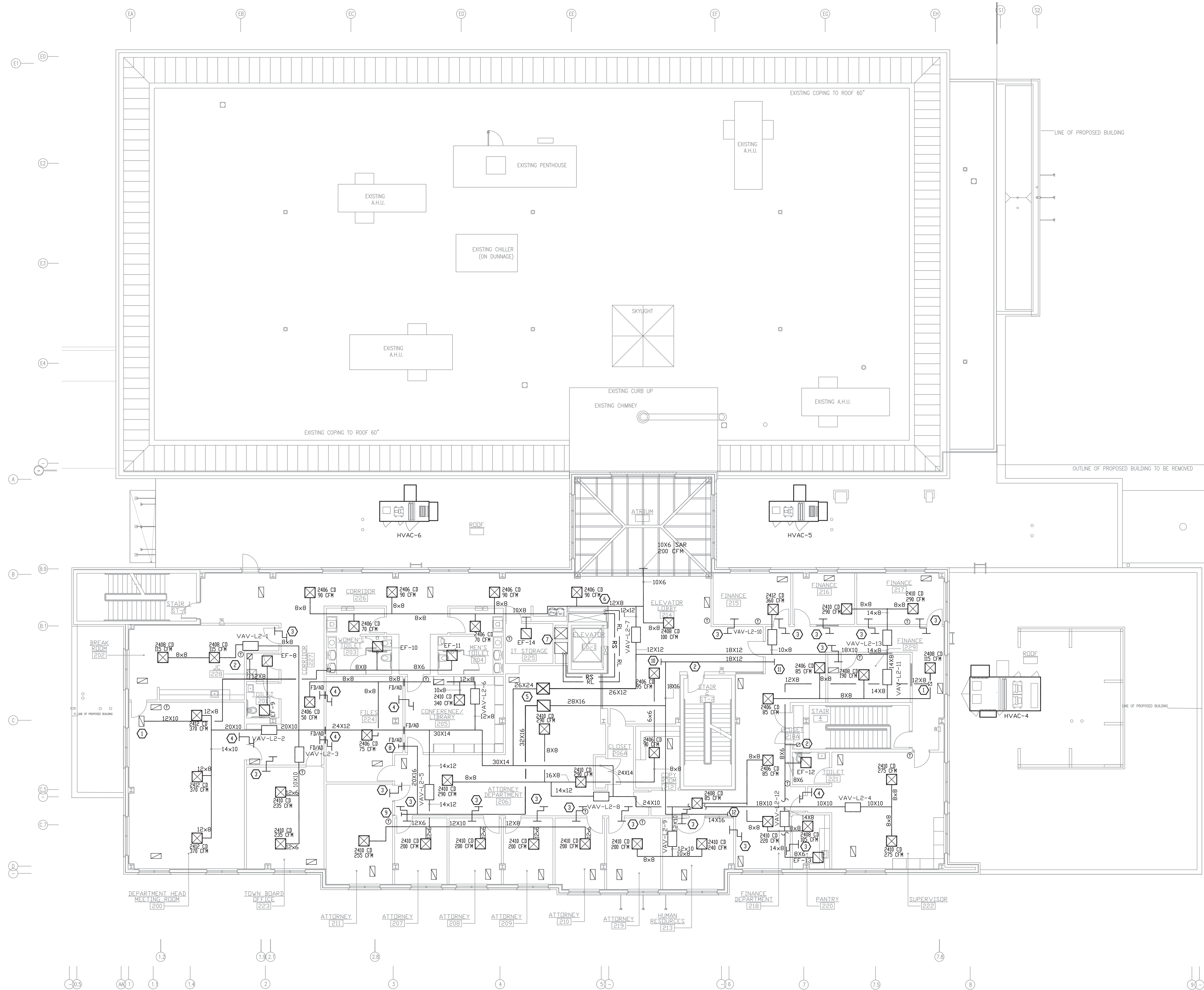
26 ORANGEBURG RD
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LEVEL 02 CONSTRUCTION PLAN AND NOTES

PROJECT NO.: 2219-05	
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DRAWING NO.:

M-202

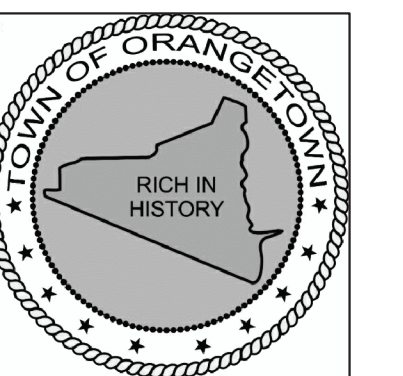


1 LEVEL 02 CONSTRUCTION PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- | | | | |
|---|---|---|--------------------------|
| ① | EXHAUST DUCT UP TO ROOF HOOD. | ⑧ | 30X16 WITH VD AND 1" WMS |
| ② | EXHAUST DUCT DOWN TO LEVEL 01. | ⑨ | 34X16 WITH VD AND 1" WMS |
| ③ | 12X12 TRANSFER DUCT ABOVE HUNG CEILING | ⑩ | 14X12 WITH VD AND 1" WMS |
| ④ | 18X12 TRANSFER DUCT ABOVE HUNG CEILING. | ⑪ | 26X12 WITH VD AND 1" WMS |
| ⑤ | SUPPLY AND RETURN DUCT UP TO HVAC-3. | ⑫ | 20X16 WITH VD AND 1" WMS |
| ⑥ | RS & RL DOWN. | | |
| ⑦ | RS & RL UP TO ROOF. | | |

2	03/04/2022	ISSUED FOR BUILDING PERMIT
1	11/9/2021	RELEASE FOR BID
	ISSUE DATE	DESCRIPTION



ORANGETOWN TOWN HALL

ADDITION AND ALTERATIONS

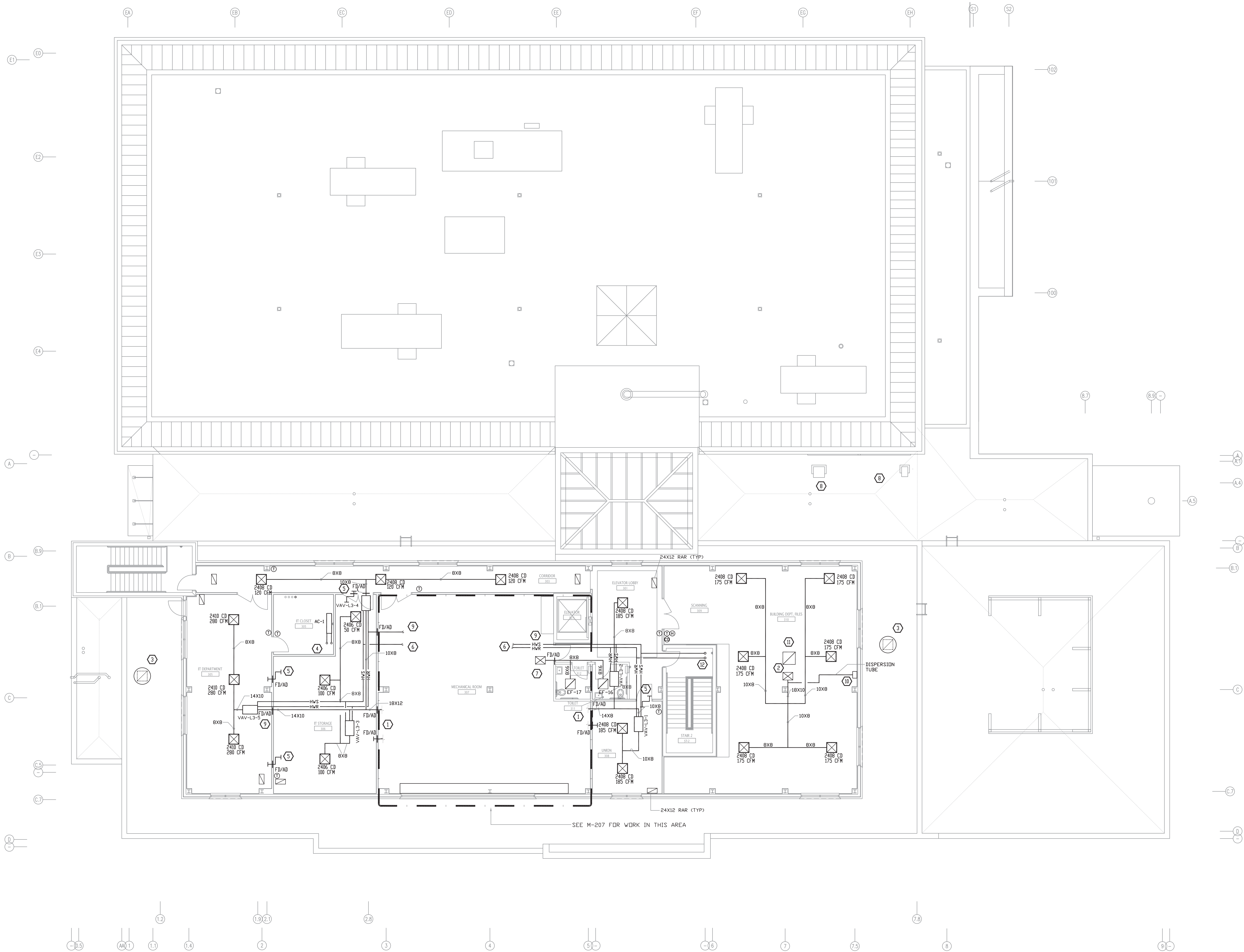
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LEVEL 03
CONSTRUCTION PLAN
AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-203

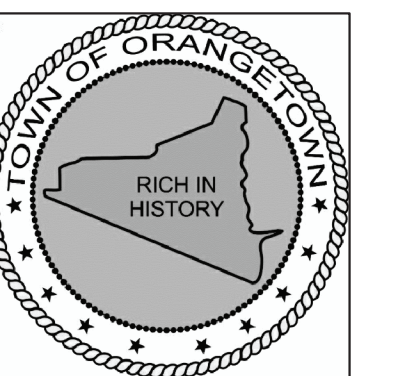


1 LEVEL 03 CONSTRUCTION PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- | | | | |
|---|--|---|--|
| ① | FOR CONTINUATION TO HVAC-1 SEE DWG. M-207. | ⑧ | FD/AD AT SHAFT PENETRATION. |
| ② | SUPPLY AND RETURN UP TO RTU-1. | ⑨ | FIRE SEAL PIPE PENETRATIONS THROUGH FIRE WALLS. |
| ③ | ROOF EXHAUST HOOD. | ⑩ | WALL MOUNTED HUMIDIFIER
PROVIDE ARMSTRONG ELECTRIC HUMIDIFIER WITH IONIC BED
TECHNOLOGY MODEL # HC-6100 230/3/60, 3KW, 8.3"/S/HR
ACCESSORIES SHALL INCLUDE DISPERSION TUBE MODEL #DL-1,
PROVING SWITCH PART #DS2160, SPACE HUMIDISTAT AND SUPPLY
DUCT HIGH LIMIT SWITCH
PART #DS1414 |
| ④ | RS, RL UP. | ⑪ | FULL SIZE RETURN DUCTWORK FROM UNIT RTU 1 TO 12" BELOW SLAB
WITH 1" WMS. |
| ⑤ | 12X12 TRANSFER ABOVE HUNG CEILING. | ⑫ | 3/4" HWS & HWR PIPING UP TO UH-4. |
| ⑥ | 3" HWS AND HWR FOR CONTINUATION SEE DWG. M-207 | | |
| ⑦ | EXHAUST FANS IN TOILETS AND ASSOCIATED DUCTWORK TO ROOF,
EXTEND 8X8 DUCTWORK UP TO ROOF HOOD. | | |

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ISSUE NO.	ISSUE DATE	DESCRIPTION



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ADDITION AND ALTERATIONS

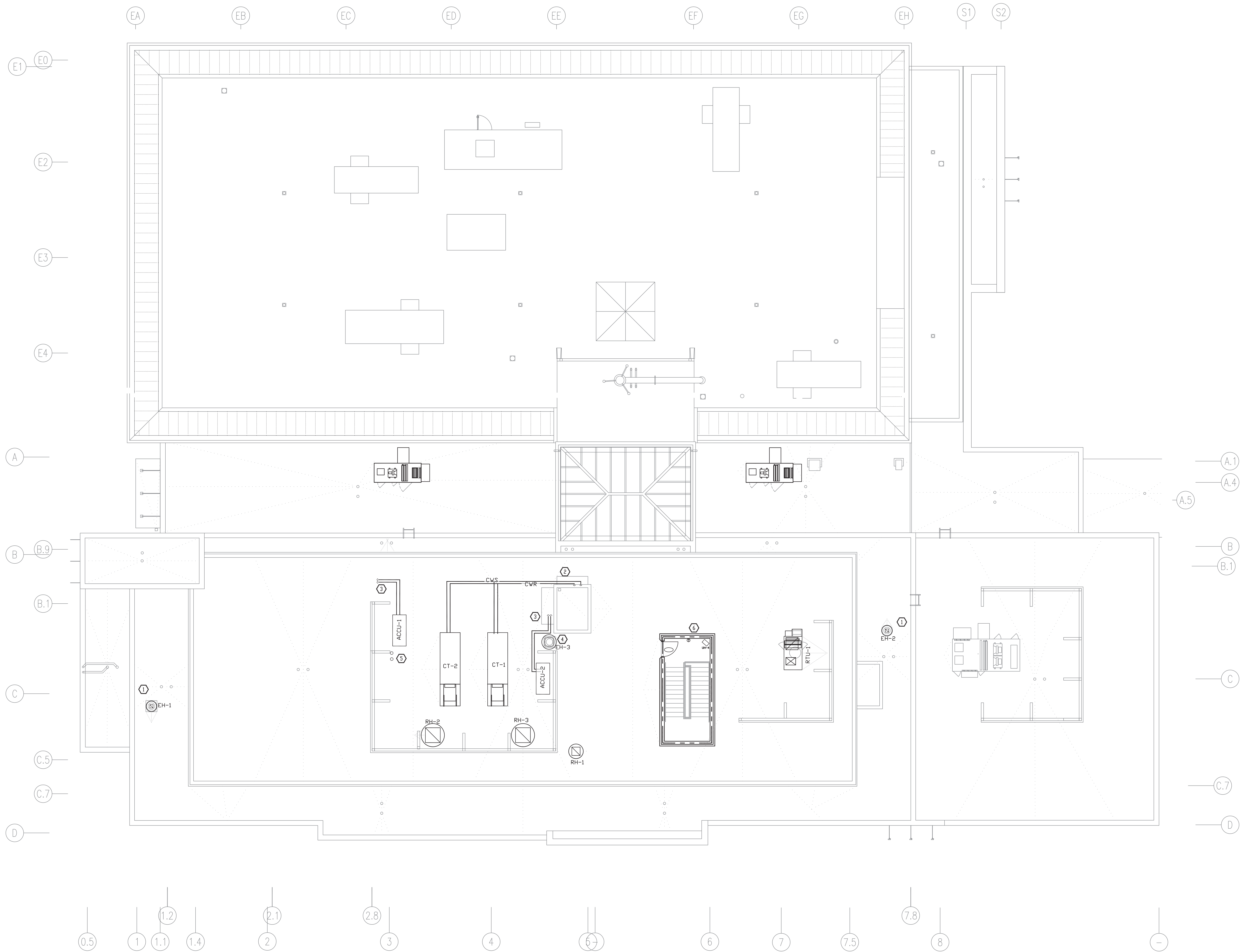
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ROOF PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-204

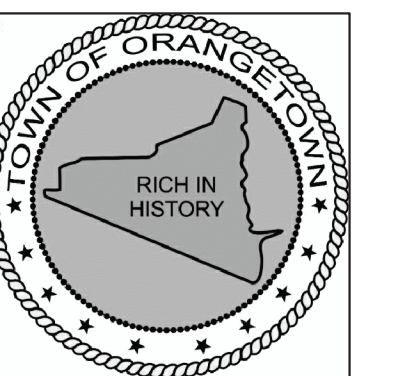


1 ROOF PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- | | |
|---|---|
| 1 | EXHAUST HOOD |
| 2 | CWS, CWR DN. |
| 3 | RS, RL DN. |
| 4 | EXHAUST HOOD. |
| 5 | 4" BOILER VENTS. |
| 6 | 3/4" HWS & HWR PIPING DOWN TO LEVEL 03. |

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	ISSUE DATE	DESCRIPTION



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ADDITION AND ALTERATIONS

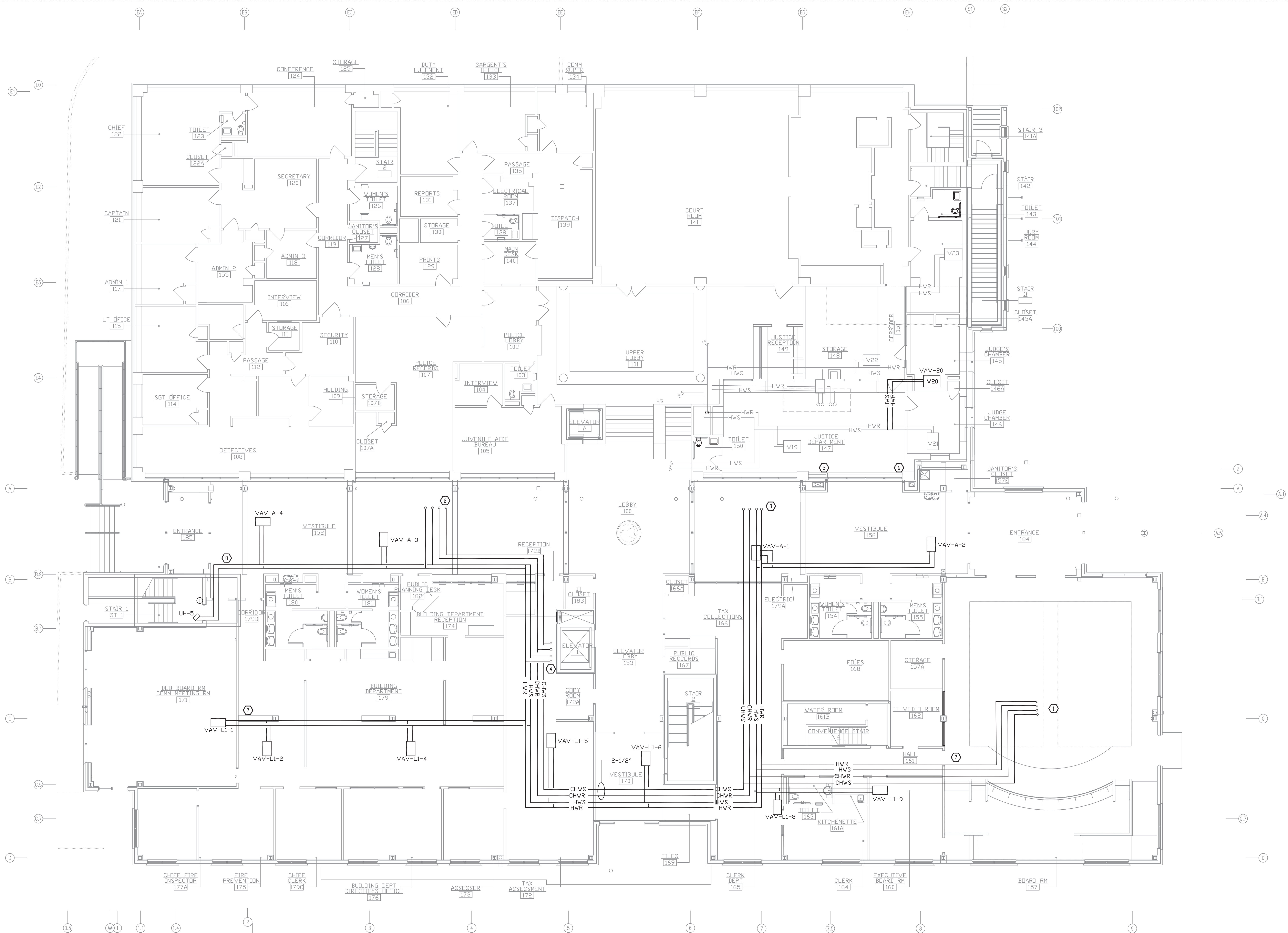
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LEVEL 01 PIPING PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-205

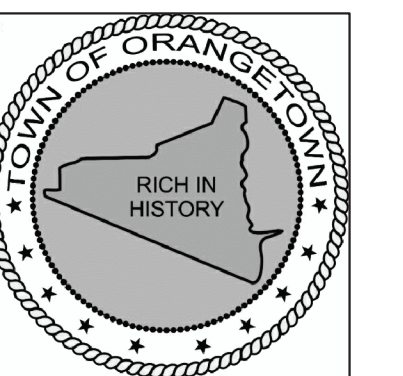


1 LEVEL 01 PIPING PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- ① 2" CHWS, CHWR, 1-1/4" HWS, HWR, UP TO HVAC-4
- ② 1-1/4" CHWS, CHWR, 1" HWS, HWR UP TO HVAC-5
- ③ 1-1/4" CHWS, CHWR, 1" HWS, HWR UP TO HVAC-6
- ④ 2-1/2" CHWS, CHWR, 2" HWS, HWR UP
- ⑤ 24X10 INSULATED COMBUSTION AIR INTAKE DUCT UP TO GOOSENECK.
- ⑥ 12X8 INSULATED ELEVATOR MACHINE EXHAUST ROOM DUCT UP TO GOOSENECK.
- ⑦ FIRE SEAL ALL PIPE PENETRATIONS THROUGH FIRE WALLS.
- ⑧ 3/4" HWS & HWR TO UH-5.

2	03/04/2022	ISSUED FOR BUILDING PERMIT
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ADDITION AND ALTERATIONS

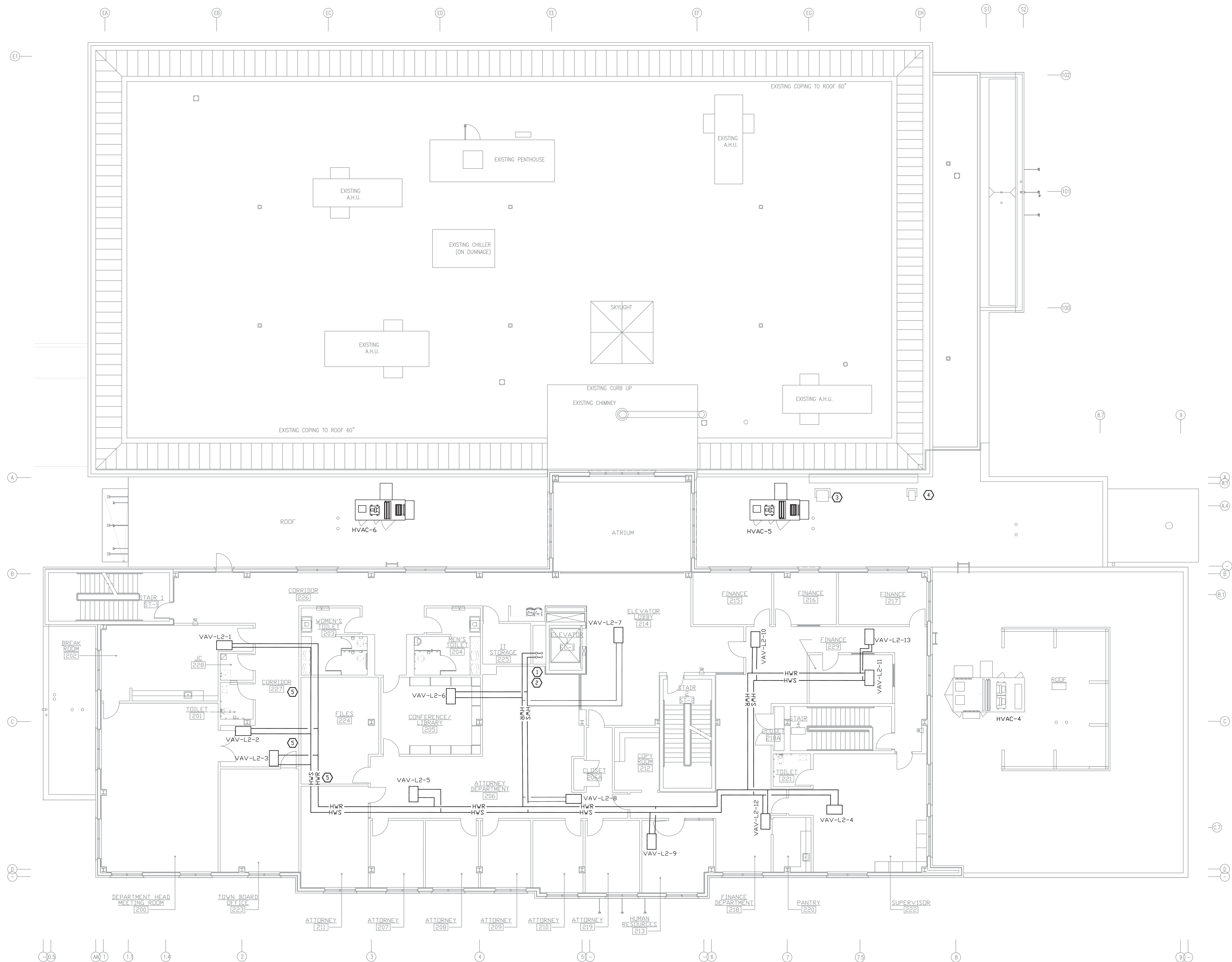
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LEVEL 02 PIPING PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

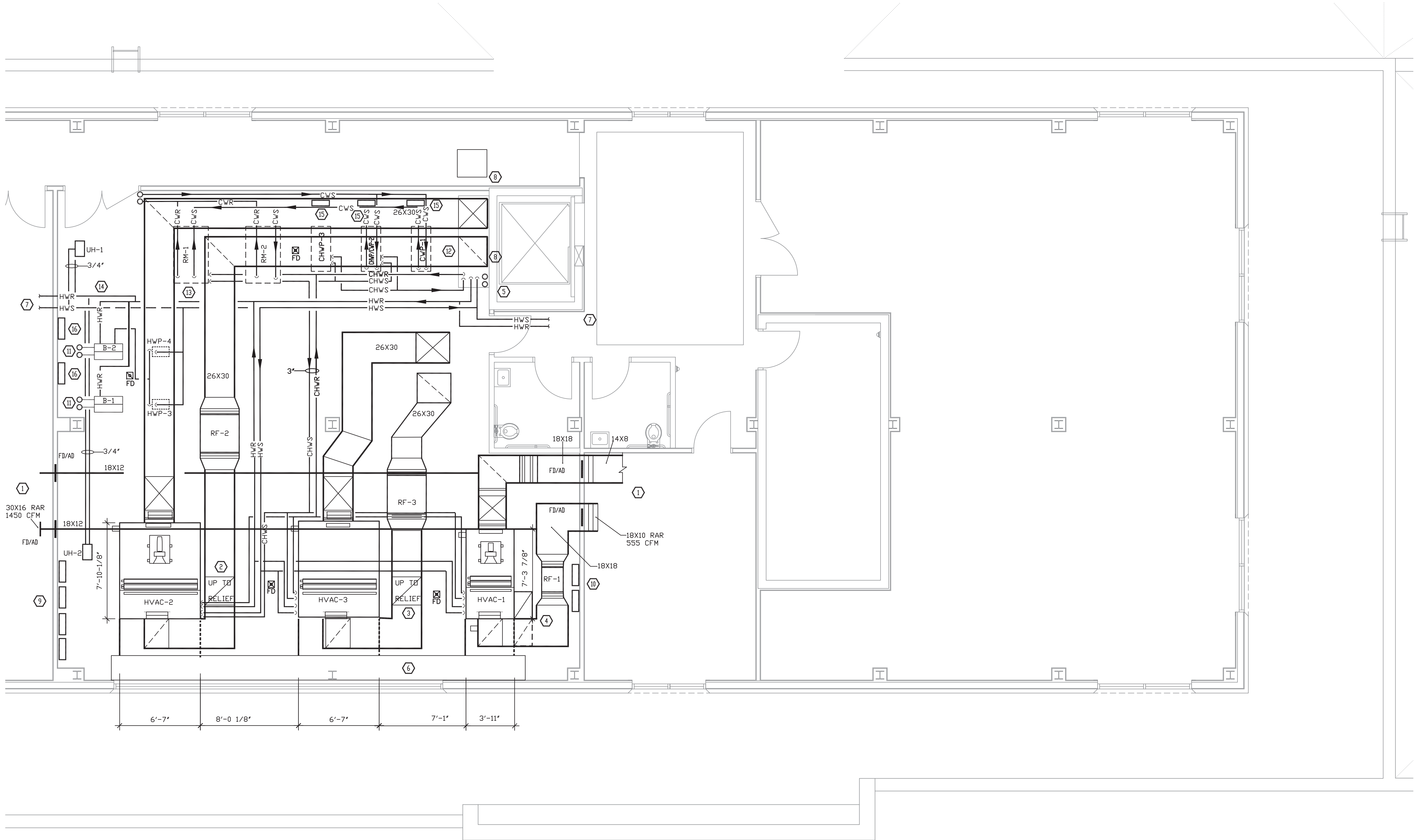
M-206



1 LEVEL 02 PIPING PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- 1 2-1/2" CHWS, CHWR, UP TO LEVEL 03 AND DOWN TO LEVEL 01
- 2 2" HWS & HWR UP TO LEVEL 03 AND DOWN TO LEVEL 01 EXTEN
BRANCHES FROM MAINS TO CONNECTIONS ON LEVEL 02
- 3 24X10 GOOSENECK ABOVE SHAFT.
- 4 12X8 GOOSENECK ABOVE SHAFT.
- 5 FIRESEAL ALL PENETRATIONS THROUGH FIRE WALLS.



1 LEVEL 03 MECHANICAL ROOM PART PLAN
SCALE: 1/4"=1'-0"

CONSTRUCTION NOTES

- FOR CONTINUATION SEE DWG. M-203.
- 36X36 UP TO RH-2. RH-2 SHALL BE GREEN HECK GRSR-36 OR APPROVED EQUAL.
- 36X36 UP TO RH-3. RH-3 SHALL BE GREEN HECK GRSR-36 OR APPROVED EQUAL.
- 20X20 UP TO RH-1, OFFSET IN VERTICAL TO GREEN HECK GRSR-20 OR APPROVED EQUAL.
- RS AND RL UP TO ROOF AND DOWN TO LEVEL 02.
- 35" X 2'-6" X 5' HIGH DOUBLE WALL PLENUM. BLOCK OFF TOP 2'-4" OF LOUVER WITH DOUBLE WALL INSULATED PANELS.
- FOR CONTINUATION SEE M-203. FIRE SEAL PIPE PENETRATIONS THROUGH FIRE WALLS.

- FD/AD AT SHAFT PENETRATION. FIRE SEAL ALL PIPE PENETRATIONS THROUGH FIRE WALLS.
- AFD'S FOR HVAC-2,3 AND RF-2,3.
- AFD'S FOR HVAC-1 AND RF-1.
- INTAKE AND VENT THROUGH ROOF.
- EXTEND 2" MAKEUP TO CONDENSER WATER SYSTEM. PROVIDE WATER METER, CONDUCTIVITY CONTROLLER AND OVERFLOW ALARM.
- EXTEND 2" MAKEUP WATER TO CHILLED WATER SYSTEM. PROVIDE WATER METER.
- EXTEND 1-1/2" MAKEUP TO BOILER SYSTEM. PROVIDE WATER METER.
- AFD'S FOR CWP-1, CWP/CHWP-2 AND CHWP-3.
- AFD'S FOR HWP-3, HWP-4.



ORANGETOWN
TOWN HALL
ADDITION AND ALTERATIONS

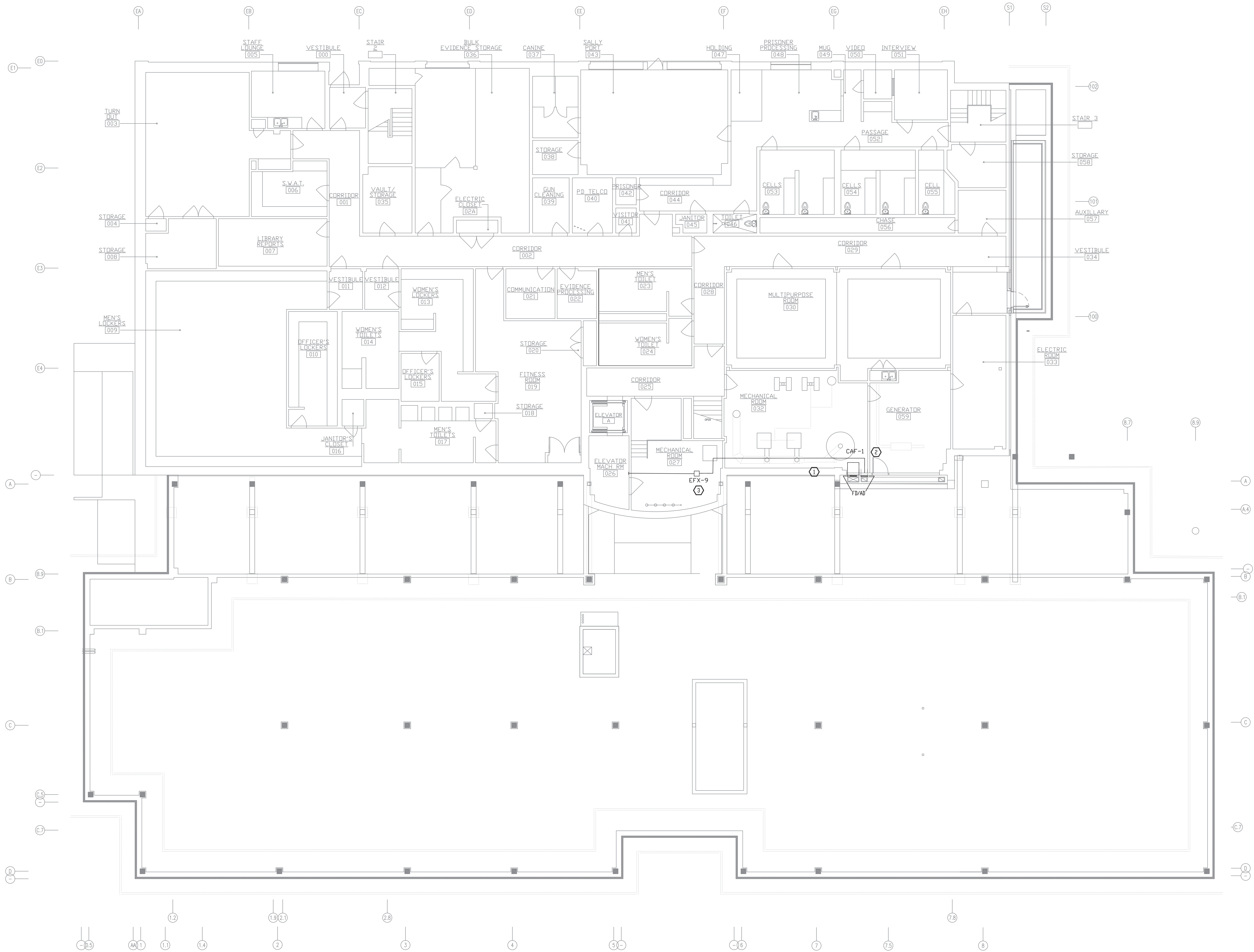
26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

LEVEL 03
MECHANICAL ROOM PART
PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-207

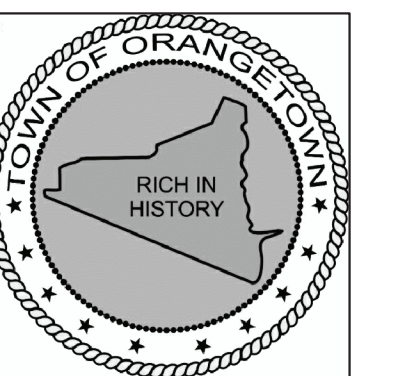


1 BASEMENT MECHANICAL ROOM PART PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

- ① NEW CAF-1 IN BOILER ROOM EXTEND 24X10 INSULATED DUCTWORK UP TO ROOF OF SHAFT
- ② CONNECT EXISTING 12X8 EXHAUST DUCT FROM ELEVATOR MACHINE ROOM TO NEW 12X8 INSULATED EXHAUST DUCT. EXTEND UP TO ROOF OF SHAFT.
- ③ NEW ELEVATOR MACHINE ROOM EXHAUST FAN EFX-9. CONNECT TO EXISTING DUCTWORK.

2	03/04/2022	ISSUED FOR BUILDING PERMIT
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ORANGETOWN TOWN HALL

ADDITION AND ALTERATIONS

26 ORANGEBURG RD
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BASEMENT PLAN AND NOTES

PROJECT NO.: 2219-05

DRAWING NO.:

M-208

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

UNIT NO.	LOCATION	CFM	AIR HANDLER										AIR HANDLER MANUFACTURER & MODEL NO.	A.C.C.U.					A.C.C.U. MANUFACTURER & MODEL NO.	REMARKS		
			EXT. SP.	FAN RPM	BHP	HP	MBH TOT.	MBH SEN.	MBH HTG	VOLT	PH	M.C.A.		MAX FUSE	VOLT	PH	M.C.A.	MAX FUSE			OPERATING WEIGHT (LBS)	UNIT NO.
AC-1	IT ROOM	1306	0.1	-	-	-	36	-	40	208	1	.6	20	HITACHI HIC4036B21S	208	1	31	40	249	ACCU-1	HITACHI HVAHP036B21S	
AC-2	VIDEO ROOM	1306	0.1	-	-	-	36	-	40	208	1	.6	20	HITACHI HIC4036B21S	208	1	31	40	249	ACCU-2	HITACHI HVAHP036B21S	

REMARKS: PROVIDE CONDENSATE PUMP WITH UNIT PREWIRED.
PUMP ALL CONDENSATE TO INDIRECT DRAIN.
SHALL PROVIDE FULL HEATING TO 0 DEGREES OUTDOOR TEMPERATURE.
PROVIDE THERMOSTAT WITH BOC INTERFACE FOR ALARMS.

EXHAUST AND RETURN FAN SCHEDULE

FAN No.	SYSTEM SERVICED	CFM	TOTAL S.P. IN. WAT.	RPM	D.V. FPM	MOTOR					FAN					MANUFACTURER AND MODEL No.
						BHP	HP	VOLT	PH	HZ	DRIVE	TYPE	CLASS	ARR.	ROTATION	
EF-1,7,8,9,12,13,15,16 EFX-3,4	-	70	.25	950	-	-	52 WATTS	120	1	60	DIRECT	CEILING	-	-	-	GREENHECK CSP-A125
RF-1	HVAC-1	2000	.5	1959	-	.61	1	208	3	60	BELT	IN LINE	-	-	-	GREENHECK BSQ-130-10
EF-2,3,4,5,6,10,11,14	-	140	.25	1400	-	-	51 WATTS	120	1	60	DIRECT	CEILING	-	-	-	GREENHECK CSP-A190
RF-2	HVAC-2	8000	1.0	700	-	2.57	3	208	3	60	BELT	IN-LINE	-	-	-	GREENHECK BSQ-300-30
RF-3	HVAC-3	8000	1.0	700	-	2.57	3	208	3	60	BELT	IN-LINE	-	-	-	GREENHECK BSQ-300-30
CAF-1	BOILERS, WATER HEATER	815	.25	999	-	.18	4.75 AMPS	115	1	60	DIRECT	IN-LINE	-	-	-	GREENHECK CSP-A1050-VG
EFX-9	ELEVATOR MACHINE ROOM	400	.5	1246	-	.14	2.45 AMPS	115	1	60	DIRECT	IN-LINE	-	-	-	GREENHECK CSP-A510-VG

REMARKS: 1. ALL EXHAUST FANS SHALL BE INSTALLED WITH BACK DRAFT DAMPER.
2. ALL EXHAUST FANS SHALL OPERATE ON AN OCCUPANCY SENSOR.
3. ALL RETURN FANS SHALL BE INTERLOCKED WITH THEIR SEPARATE HVAC UNIT.
4. PROVIDE "SOFT START" STARTER FOR ALL FANS.
5. RECONNECT THERMOSTATIC CONTROL TO NEW FAN EFX-9.
6. CAF-1 SHALL BE INTERLOCKED TO START WHEN EITHER BOILER OR WATER HEATER TURNS ON.
7. ALL RETURN FANS SHALL BE PROVIDED WITH AFD.

REFRIGERATION MACHINE SCHEDULE

UNIT NO.	TOTAL CAP. (TONS)	VOLT	PH	HZ	COMPRESSOR						CONDENSER				COOLER				UNIT WEIGHT	MANUFACTURER & MODEL NO.
					TYPE	INPUT KW	MCA	FUSE	MIN. CAP. (TONS)	REFRIGERANT	GPM	EW (°F)	LWT (°F)	W/P FT H2O	GPM	EW (°F)	LWT (°F)	W/P FT H2O		
RM-1, 2	32.9	208	3	60	SCROLL	23.5	96	125	-	-	210	85	95	17.1	168	55	45	15.3	1480	CLIMA COOL UCW030AHADACB05

REMARKS: PROVIDE TWO 15 TON COMPRESSORS IN EACH MODULE.

PUMP SCHEDULE

UNIT NO.	GPM	HD FT H2O	RPM	MOTOR HP.	ELECTRICAL DATA	CONNECTIONS		TYPE	MANUFACTURER AND MODEL NO.
						SUCT.	DISCH.		
HWP-1, 2	85	40	3500	1.5	208V-3PH-60HZ	3"	3"	IN LINE	BELL & GOSSETT SERIES e-90 STOCK 2AAC
HWP-3, 4	85	80	3600	5	208V-3PH-60HZ	1-1/2"	1-1/4"	END SUCTION	BELL & GOSSETT SERIES e-1535 125AAC
CWP-1	210	60	-	7.5	208V-3PH	2"	2"	END SUCTION	BELL & GOSSETT SERIES e-1510 2BD
CHWP-3	168	80	1800	7.5	208V-3PH	2"	2"	END SUCTION	BELL & GOSSETT SERIES e-1510 2BD
CHWP/CWP-2	210	60	1750	7.5	208V-3PH-60HZ	2"	2"	END SUCTION	BELL & GOSSETT SERIES e-1510 2BD

REMARKS: 1. HWP-3,4, CWP-1, CHWP/CWP-2 AND CHWP-3 SHALL HAVE AFD.
2. PROVIDE "SOFT START" STARTERS FOR HWP-1 AND 2 WITH H-D-A.

COOLING TOWER SCHEDULE

UNIT NO.	CAPACITY TONS	GPM	EWI °F	LWT °F	EWB °F	HD (FT)	FAN MOTOR (HP)	VOLTS	PH	HZ	OPERATING WEIGHT (LBS)	MANUFACTURER AND MODEL NO.
CT-1	35	105	95	85	78	10.3	10	208	3	60	7970	BALTIMORE AIRCOIL VFL-036-22K
CT-2	35	105	95	85	78	10.3	10	208	3	60	7970	BALTIMORE AIRCOIL VFL-036-22K

REMARKS: 1. EACH TOWER PROVIDED WITH 4KV, 208V, THREE PHASE BASIN HEATER.
2. EACH TOWER HAS 1 HP, 208 VOLT, 3 PHASE SPRAY PUMP.
3. PROVIDE "VFD" STARTERS FOR COOLING TOWERS.

HVAC UNIT SCHEDULE

UNIT NO.	LOCATION	CFM	DA CFM	FANS						HEATING COIL						COOLING COIL						MANUFACTURER & MODEL NO.	DIMENSIONS	WEIGHT	REMARKS
				EXT. SP.	FAN RPM	BHP	SUPPLY FAN HP	RETURN FAN HP	VOLT	PH	M.C.A.	MAX FUSE	GPM	EWI	MBH HTG	GPM	EWI	EAT (DB/WB)	SENS WBH	TOTAL MBH					
HVAC-1	PENTHOUSE	2000	125	1.5	-	-	1.5	-	208	3	-	-	6	180	60	12	45	80/67	50	61	TRANE UCCAG06A	88X47X32H	762		
HVAC-2	PENTHOUSE	8000	1000	1.5	-	-	10	-	208	3	-	-	12	180	120	45	45	80/67	162	224	TRANE UCCAG17K21A	94X79X48"H	1494		
HVAC-3	PENTHOUSE	8000	1100	1.5	-	-	10	-	208	3	-	-	12	180	120	45	45	80/67	90	160	TRANE UCCAG17K21A	94X79X48"H	1494		
HVAC-4	ROOF	8000	900	1.0	-	-	283	282	208	3	-	-	13	180	126	44	45	80/67	160	220	TRANE UCCAK21A	165X79X59H	3145		
HVAC-5	ROOF	1600	300	1.0	-	-	1.5	-	208	3	-	-	5	180	43	10	45	80/67	29	45	TRANE UCCAG06A	115X47X37H	1223		
HVAC-6	ROOF	1600	300	1.0	-	-	1.5	-	208	3	-	-	4	180	38	8	45	80/67	27	42	TRANE UCCAG06A	115X47X37H	1223		
AHU-4X	EXISTING ROOF	2055	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EXISTING	-	-		

REMARKS: 1. HVAC-1,2,3,5 AND 6 SHALL BE PROVIDED WITH AFD'S
2. HVAC-4 AND ASSOCIATED RETURN FANS SHALL BE PROVIDED WITH "SOFT START" STARTERS.
3. ALL FILTERS SHALL BE MERV 13.
4. NOTE DIMENSIONS FOR ROOFTOP UNITS DO NOT INCLUDE PIPE CHAMBERS OR AIR HOODS.
5. REBALANCE THE EXISTING UNIT AHU-4X TO THE TOTAL AND DA CFMS SHOWN.

EXHAUST/RELIEF HOOD SCHEDULE

UNIT No.	AREA SERVICED	CFM	DIMENSIONS		MANUFACTURER	MODEL NO.
			OPENING	CAP		
RH-1	HVAC-1 RELIEF	2000	20"ø	36"ø	GREENHECK	GRSR-20
RH-2,3	HVAC-2,3 RELIEF	8000	36"ø	57"ø	GREENHECK	GRSR-36
EH-1	TOILET EXHAUST	700	18.5"ø	29"ø	GREENHECK	GRSR-15
EH-2	TOILET EXHAUST	490	14.5"ø	29"ø	GREENHECK	GRSR-12
EH-3	TOILET EXHAUST	140	10.5"ø	20.5"ø	GREENHECK	GRSR-8
REMARKS:						



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SCHEDULES

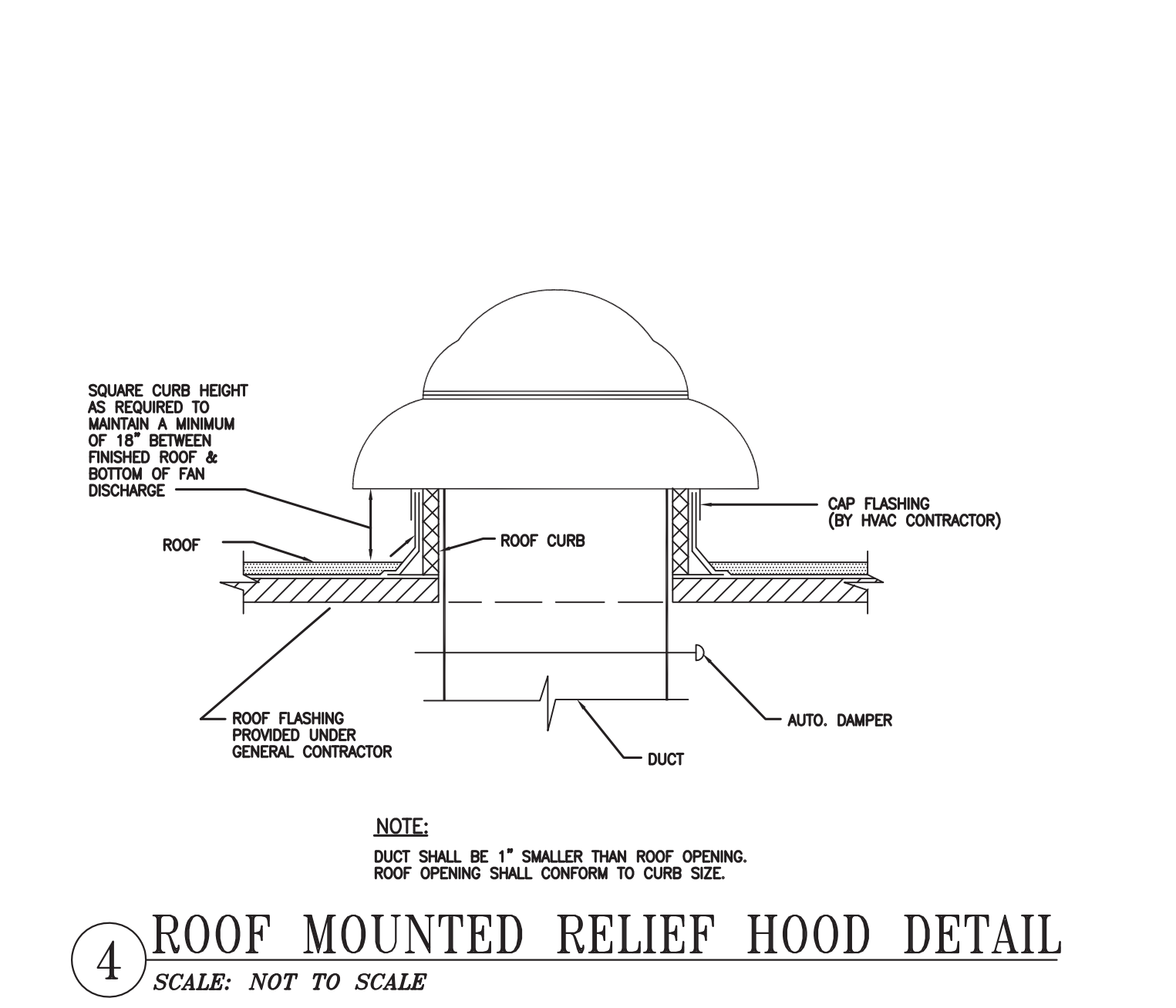
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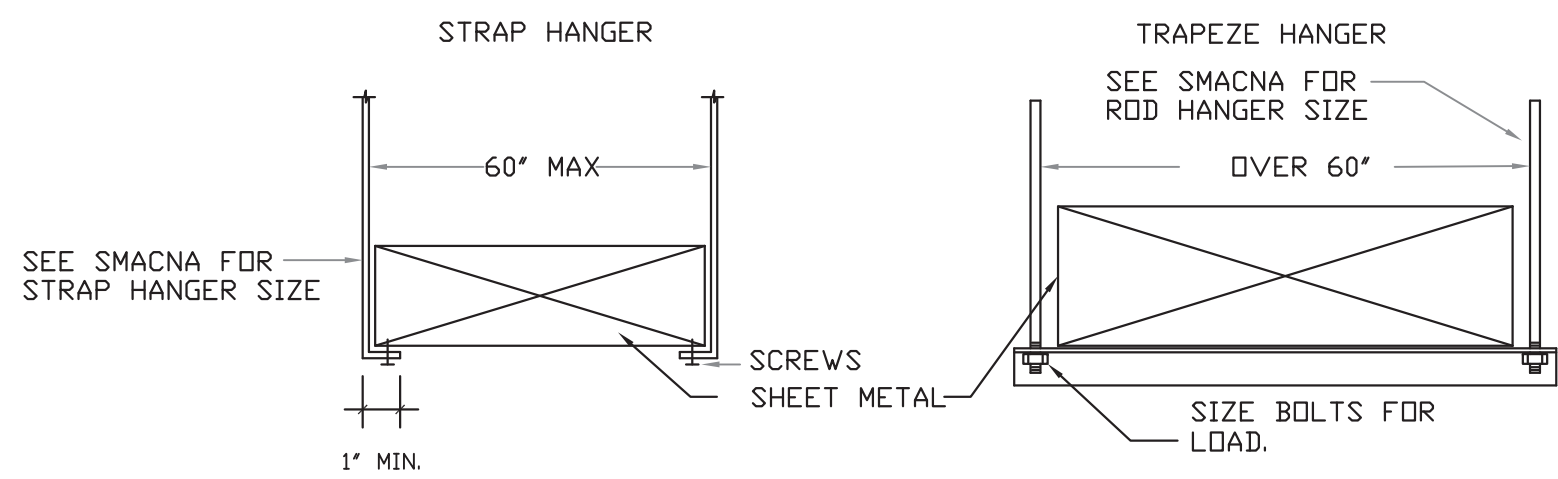
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M-301

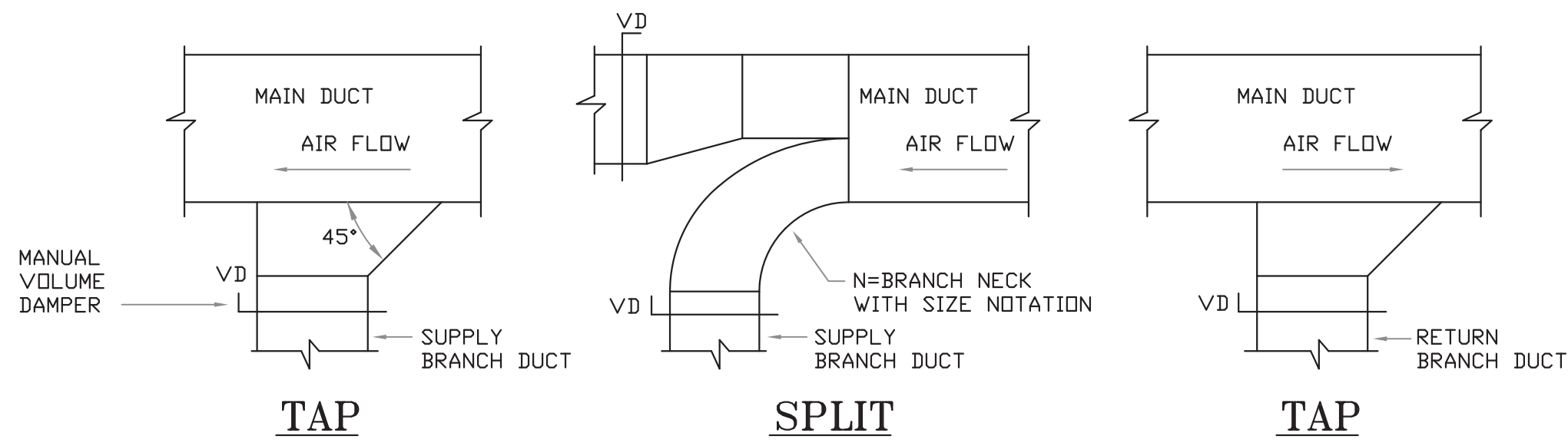
HOT WATER UNIT HEATER SCHEDULE								
UNIT NO.	AREA SERVED	CAPACITY (MBTU)	GPM	FAN SECTION			ELECTRICAL DATA	MANUFACTURER MODEL NO.
				MOTOR HP	CFM	RPM		
UH-1,2,3,4,5	VARIUOUS	12.6	1.3	1/60	340	-	120V-1Ø-60 HZ	MODINE H
REMARKS: 1. UNIT HEATERS TO HAVE 24 VAC CONTROLS AND REMOTE THERMOSTATS. 2. UNIT HEATERS SHALL BE MOUNTED WITH BOTTOM AT 8'-0" AFF, UNLESS OTHERWISE NOTED. 3. CABINET HEATER SHALL HAVE BUILT IN THERMOSTATS 4. CONTRACTOR SHALL PROVIDE ALL NECESSARY HARDWARE AND ACCESSORIES FOR THE INSTALLATION. 5. CUH-2 SHALL HAVE 2 ROW COIL.								

HOT WATER BOILERS SCHEDULE										
UNIT	MFR	MODEL	BOILER DATA			BURNER DATA			LOCATION	
			TYPE	INPUT (MBH)	OUTPUT (MBH)	FUEL	FIRING	ELECTRIC		
							VOLT	PH		
B-1,2	LOCHINVAR	KBN400	HOT WATER HEATING	399	376	NATURAL GAS	ELECTRONIC	120	1	MECHANICAL ROOM
NOTES:										

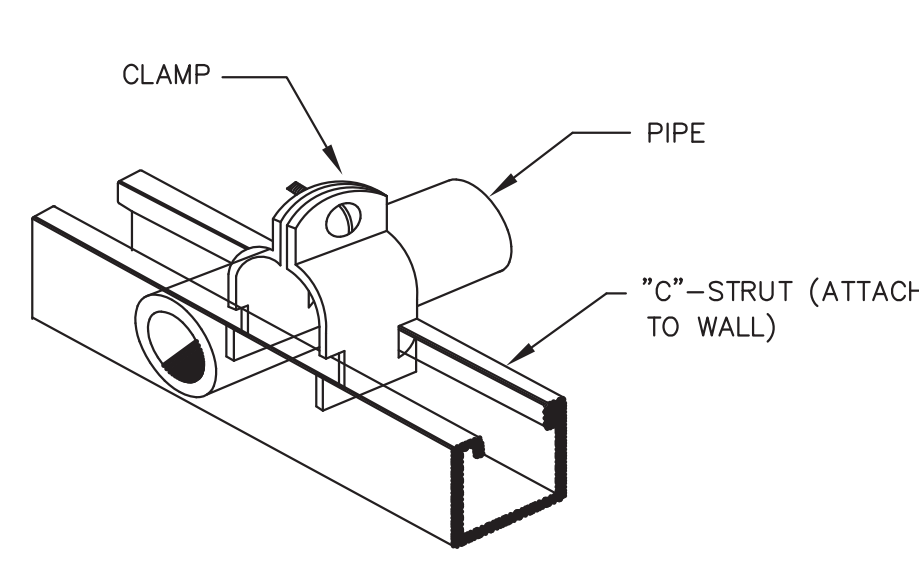




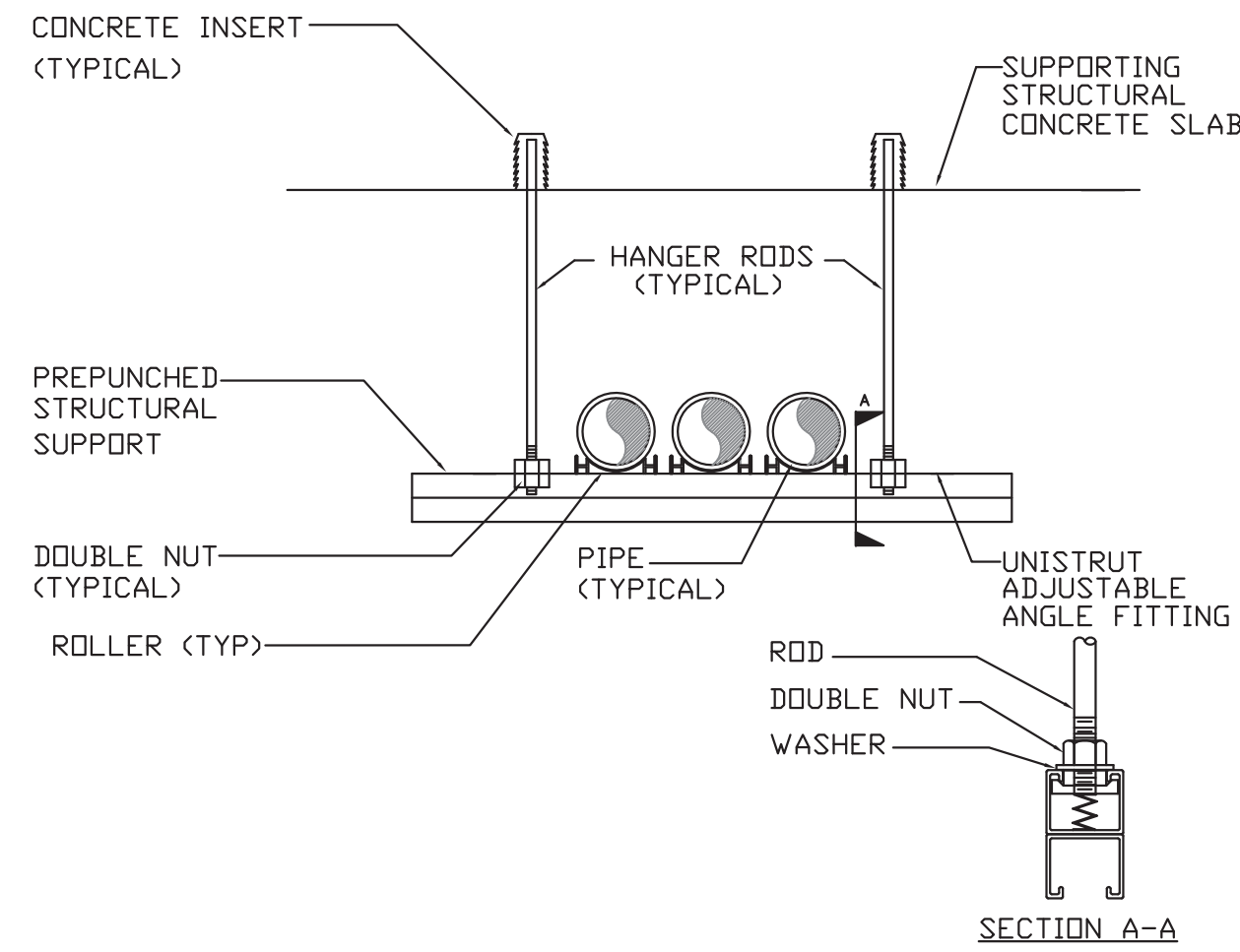
1 DUCT HANGER DETAIL
SCALE: NOT TO SCALE



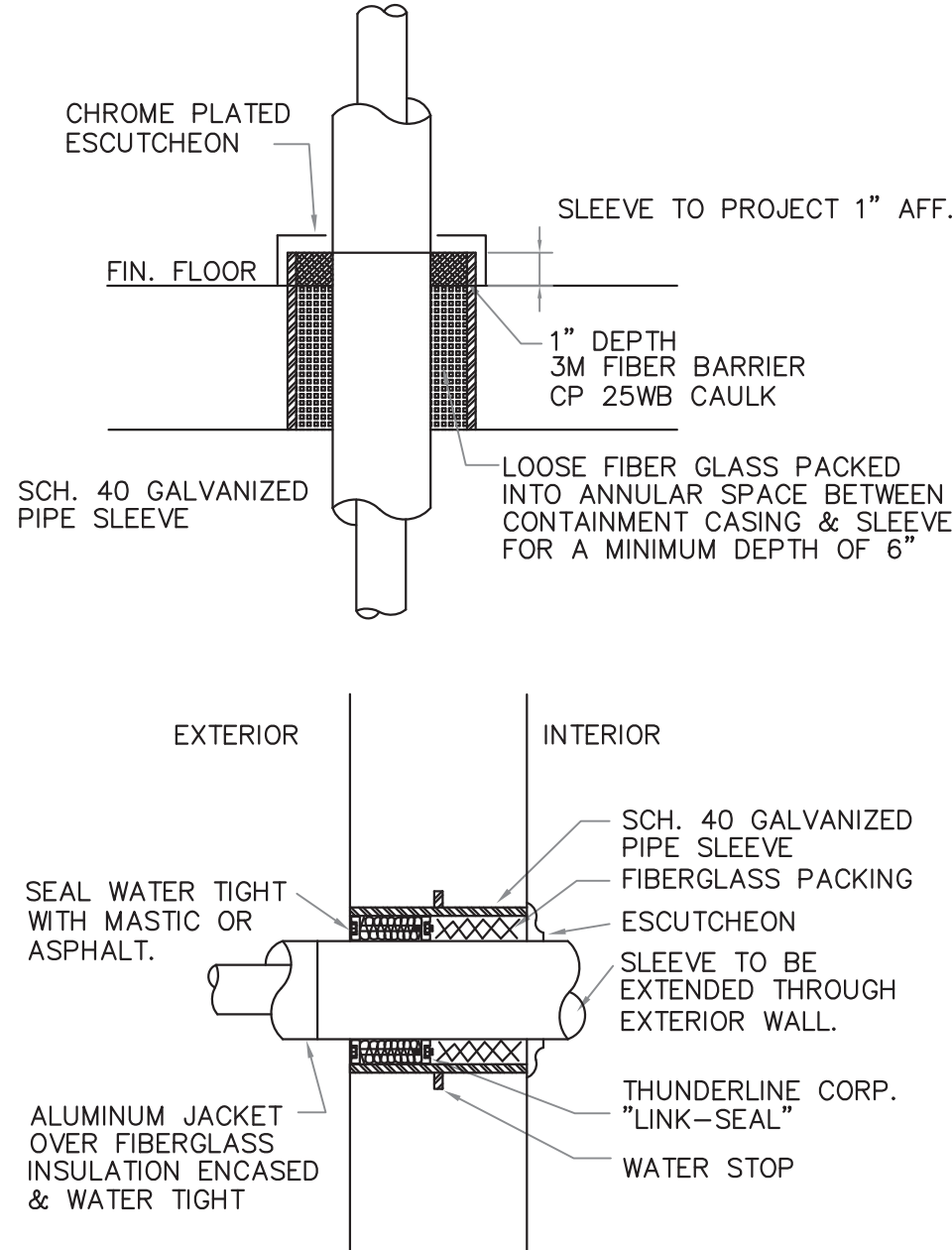
2 DUCT CONNECTION DETAIL
SCALE: NOT TO SCALE



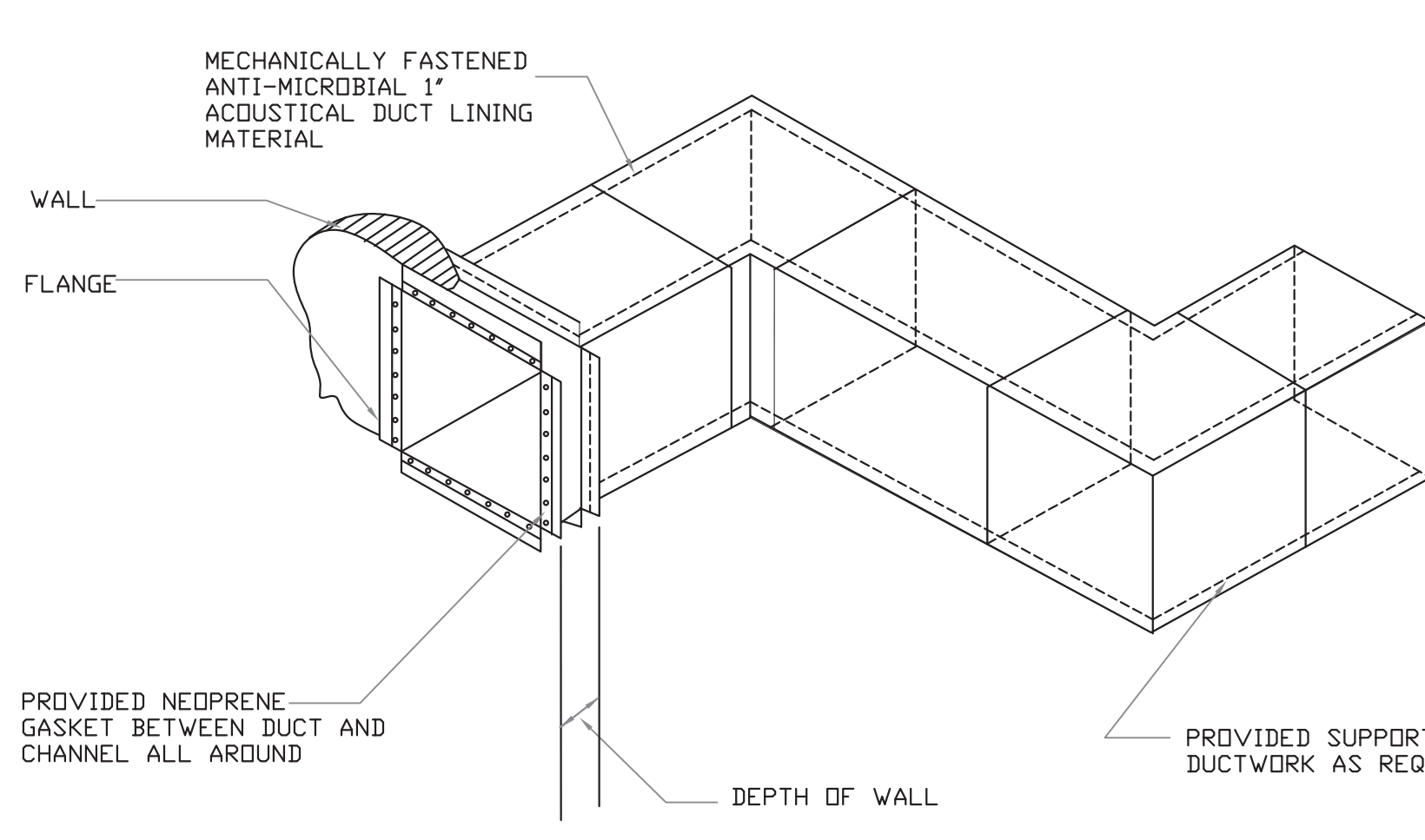
3 WALL SUPPORT DETAIL
SCALE: NOT TO SCALE



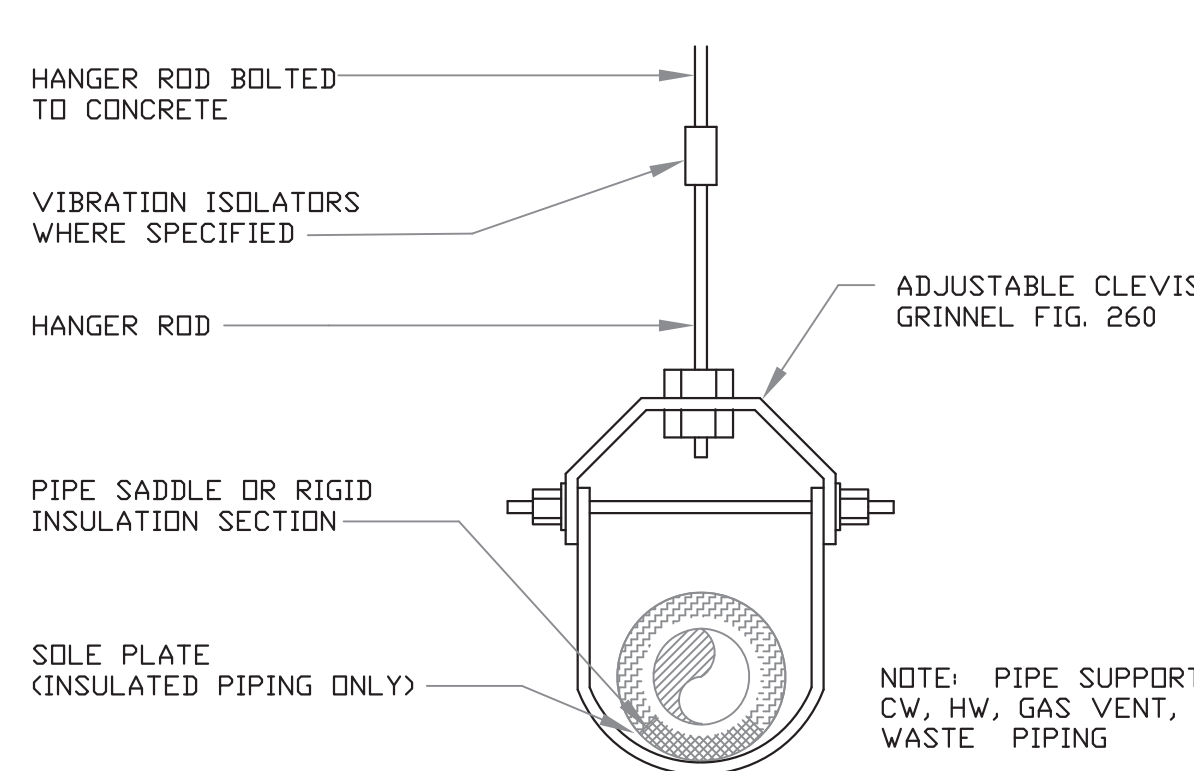
4 PIPE HANGER DETAIL
SCALE: NOT TO SCALE



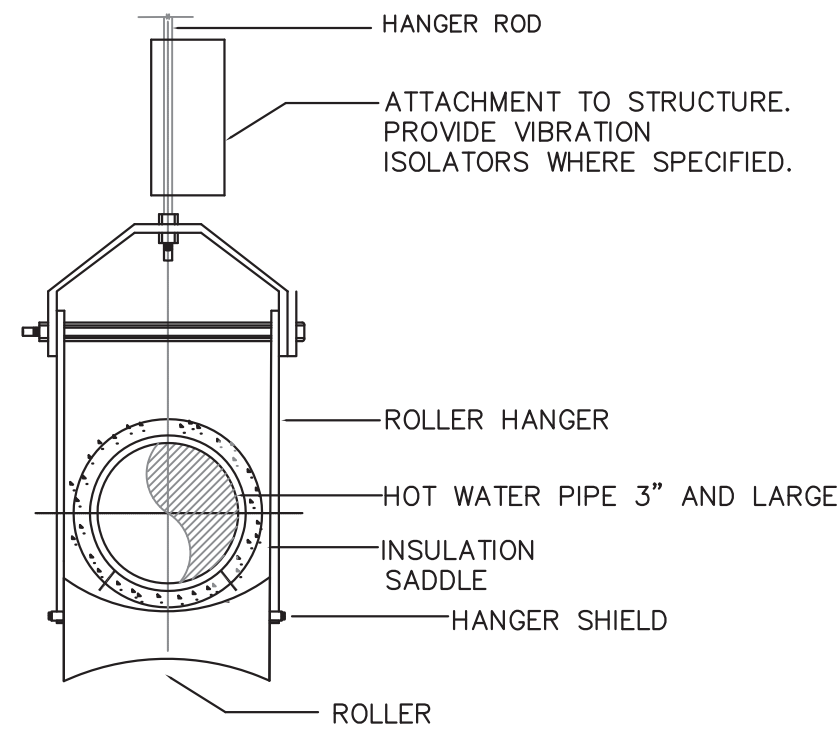
5 PIPE SLEEVE DETAIL
SCALE: NOT TO SCALE



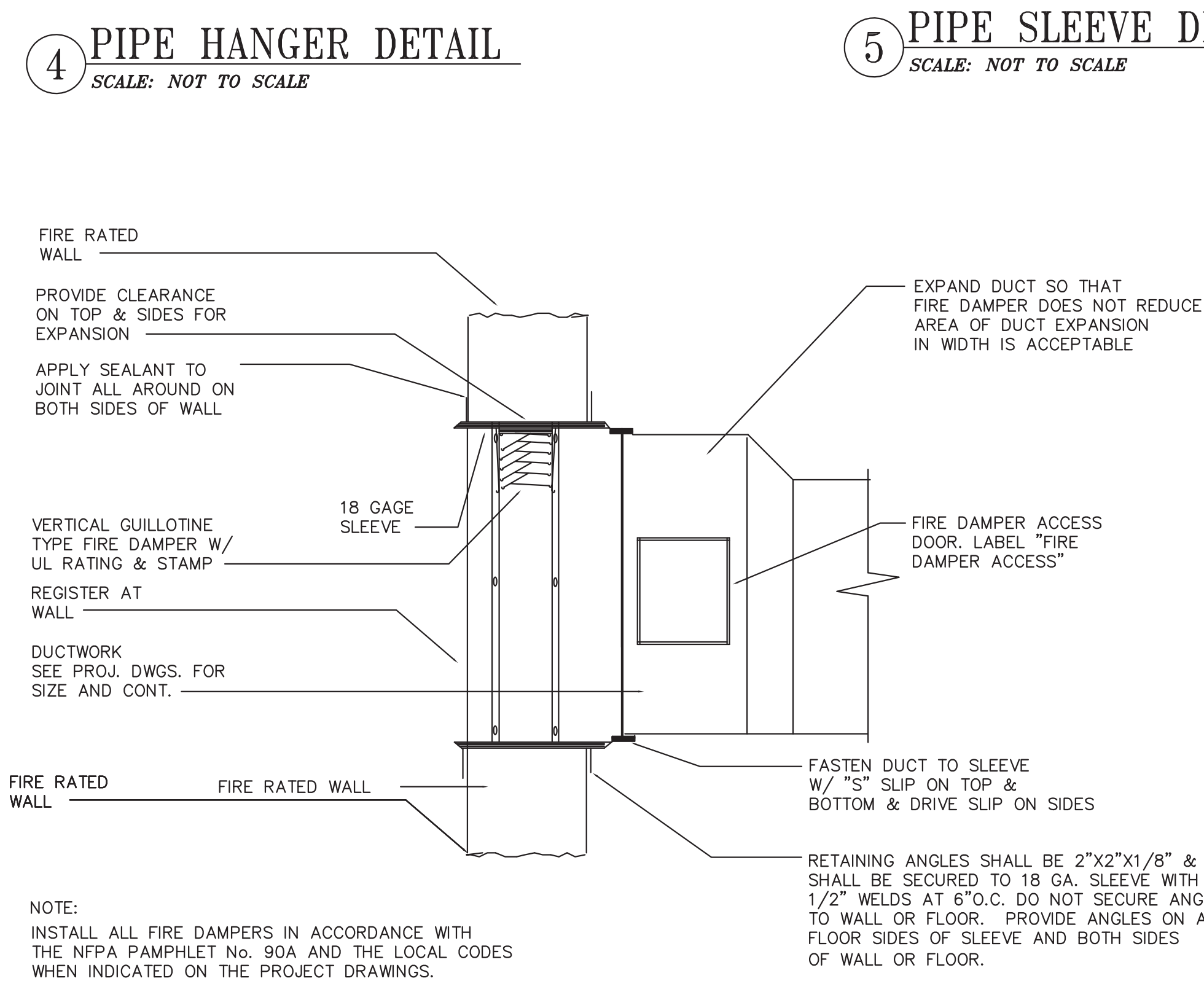
6 TRANSFER DUCT DETAIL
SCALE: NOT TO SCALE



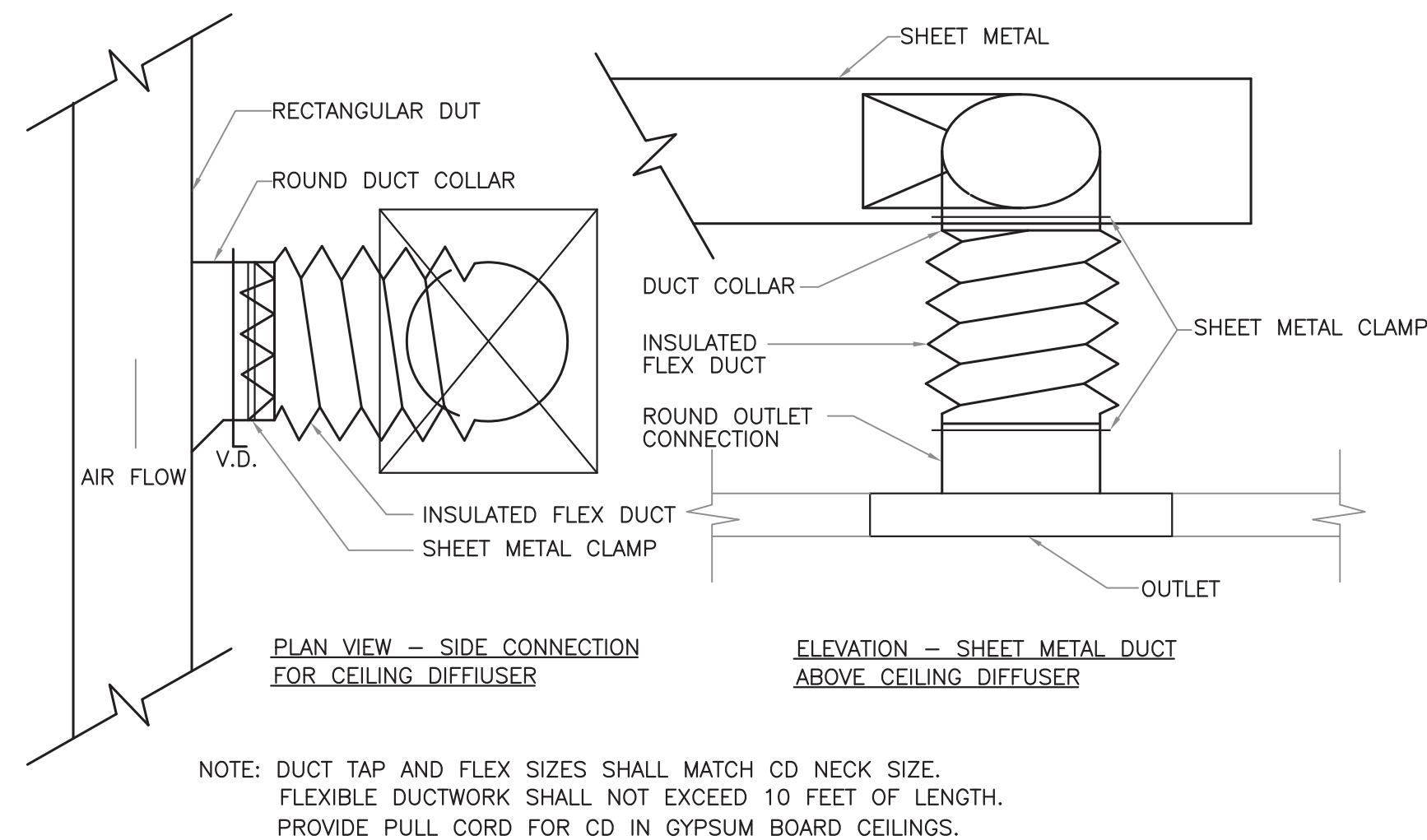
7 CLEVIS PIPE HANGER DETAIL
SCALE: NOT TO SCALE



8 ROLLER PIPE HANGER DETAIL
SCALE: NOT TO SCALE

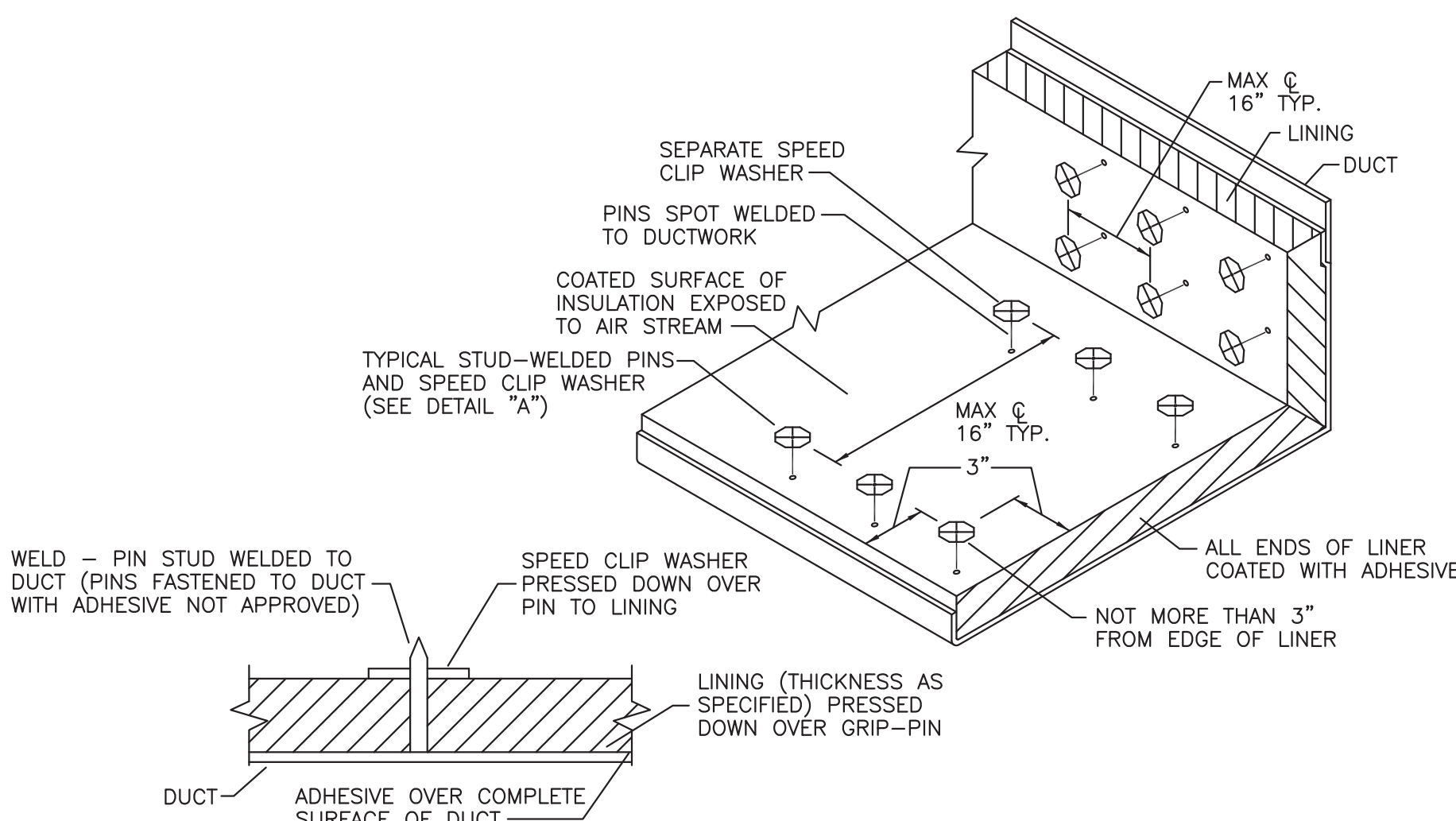


9 FIRE DAMPER DETAIL
SCALE: NOT TO SCALE

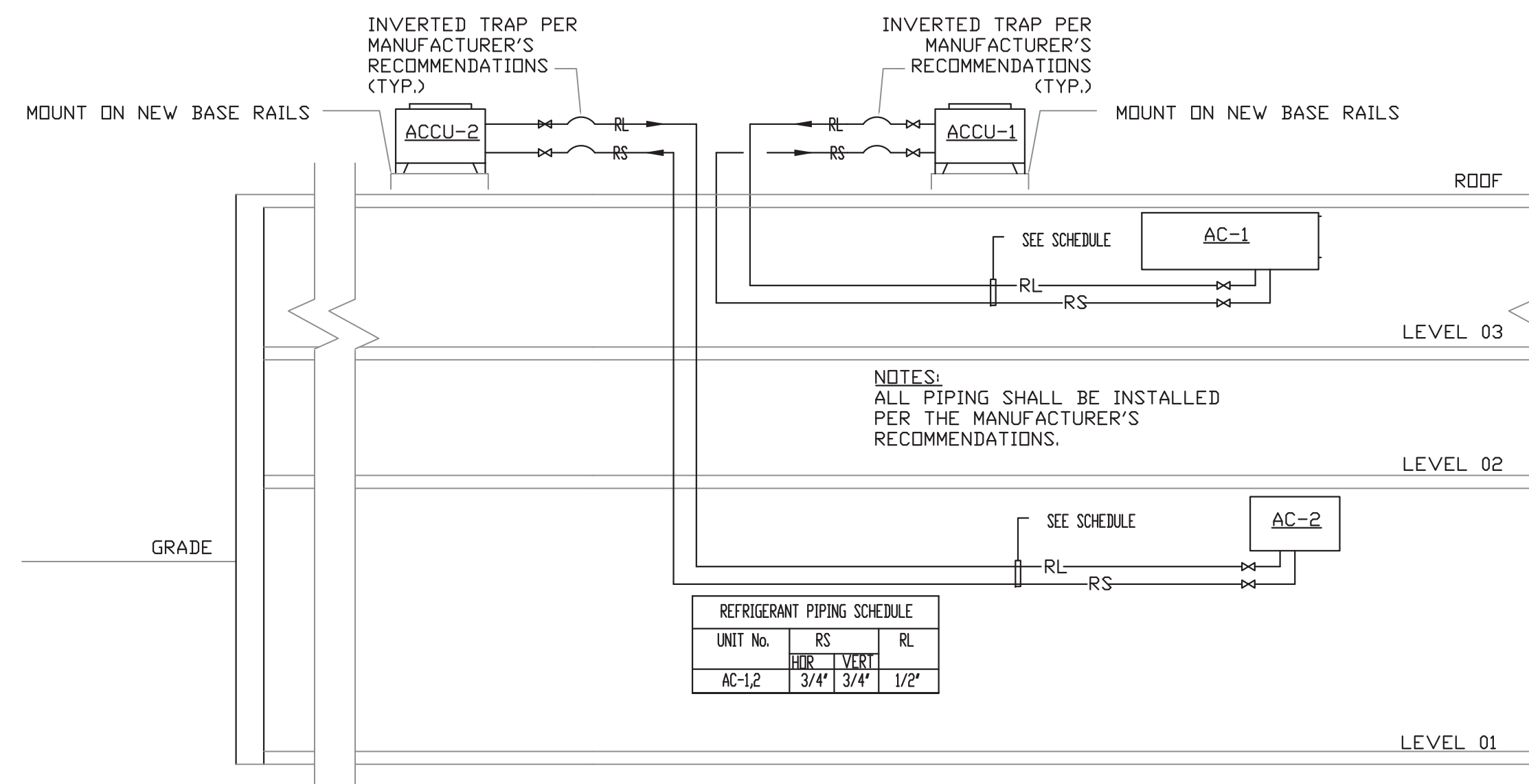


11 DIFFUSER CONNECTION DETAIL
SCALE: NOT TO SCALE

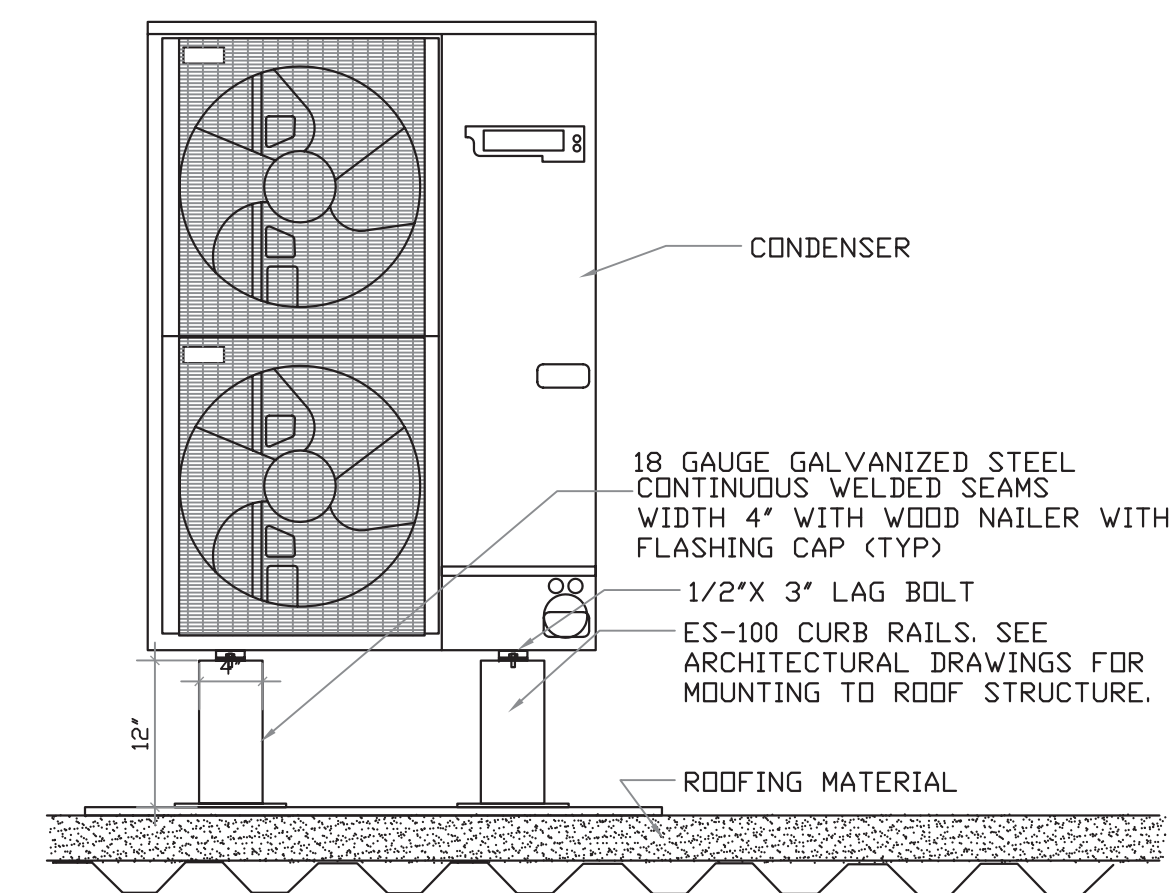
DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESS			
RECTANGULAR DUCTS			
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NOMINAL)	ALUMINUM (MINIMUM THICKNESS, NOMINAL)	
THROUGH 12	0.022 INCH (26 GAGE, GALV.)	0.020 INCH (NO. 24 B&S GAGE)	
13 THROUGH 30	0.028 INCH (24 GAGE, GALV.)	0.028 INCH (NO. 22 B&S GAGE)	
31 THROUGH 54	0.034 INCH (22 GAGE, GALV.)	0.032 INCH (NO. 20 B&S GAGE)	
55 THROUGH 84	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (NO. 18 B&S GAGE)	
OVER 84	0.052 INCH (18 GAGE, GALV.)	0.051 INCH (NO. 16 B&S GAGE)	
ROUND DUCTS			
MAXIMUM SIZE (INCHES)	SPIRAL SEAM DUCT	LONGITUDINAL SEAM DUCT	FITTINGS
	STEEL (MINIMUM THICKNESS, NOMINAL)	STEEL (MINIMUM THICKNESS, NOMINAL)	STEEL (MINIMUM THICKNESS, NOMINAL)
THROUGH 12	0.019 INCH (28 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)
13 THROUGH 18	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)
19 THROUGH 28	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)
29 THROUGH 36	0.034 INCH (22 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)
37 THROUGH 52	0.040 INCH (20 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)



10 DUCT LINING INSTALLATION DETAIL
SCALE: NOT TO SCALE



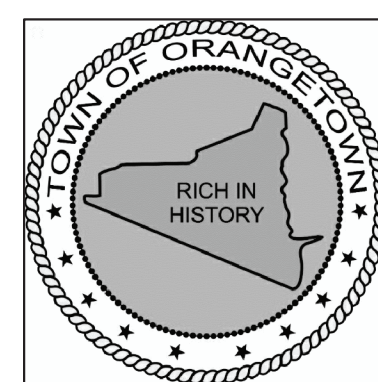
12 REFRIGERANT PIPING DIAGRAM
SCALE: NOT TO SCALE



13 CONDENSING UNIT SUPPORT DETAIL
SCALE: NOT TO SCALE

FOR CURB MOUNTING SEE ARCHITECTURAL DRAWINGS

ISSUE NO.	ISSUE DATE	DESCRIPTION
2	03/04/2022	ISSUED FOR BUILDING PERMIT
1	11/9/2021	RELEASE FOR BID



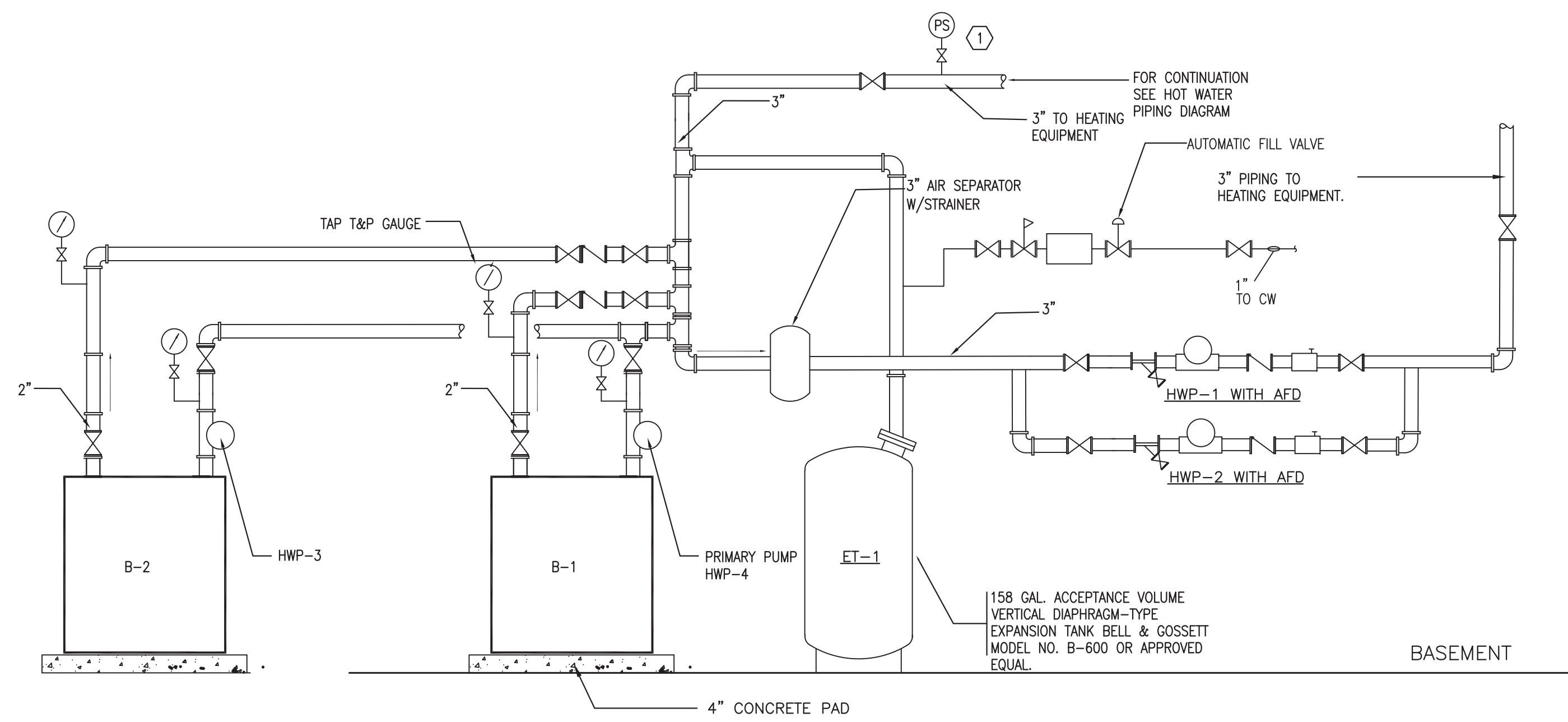
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DETAILS

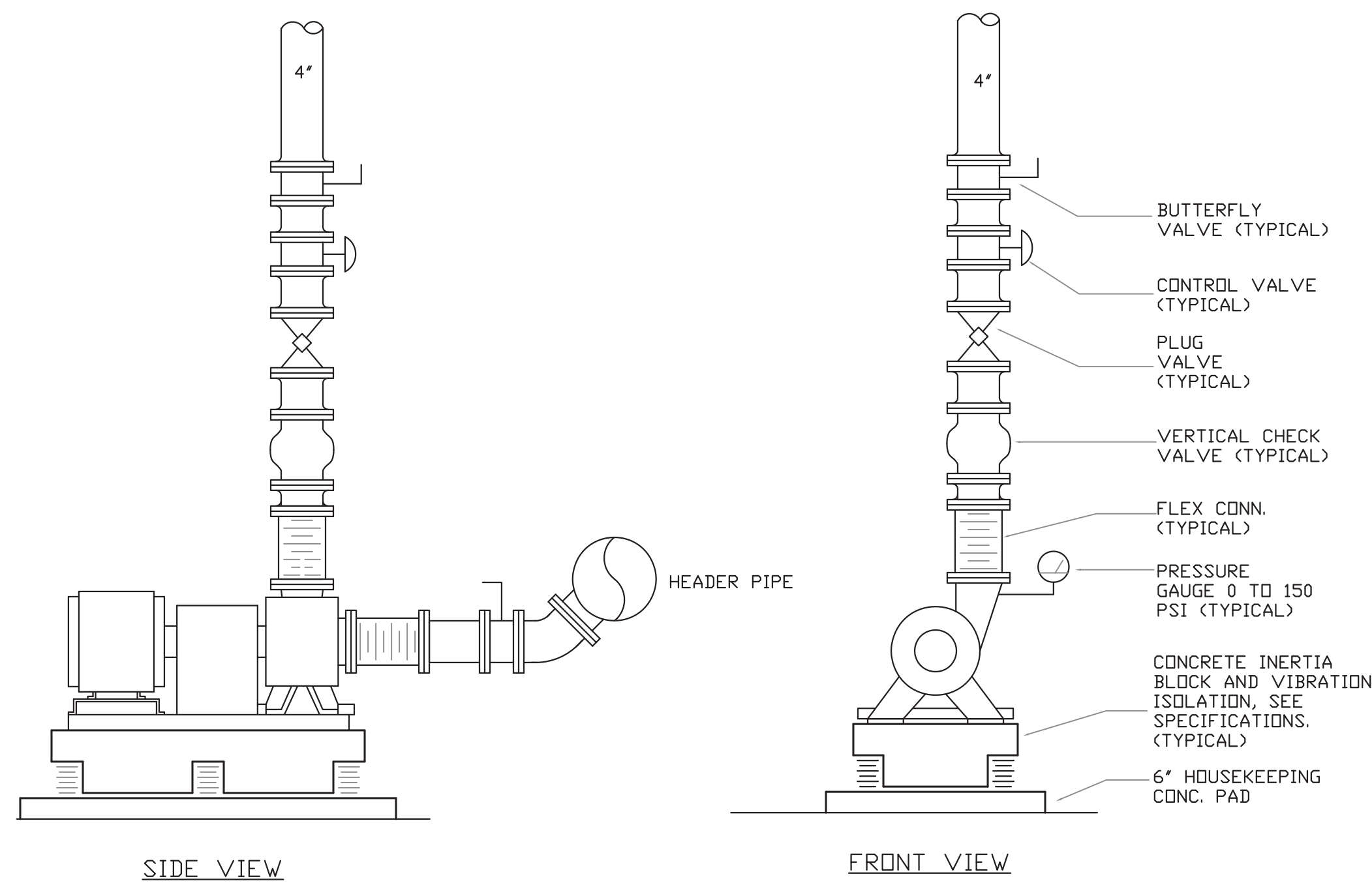
PROJECT NO.: 2219-05

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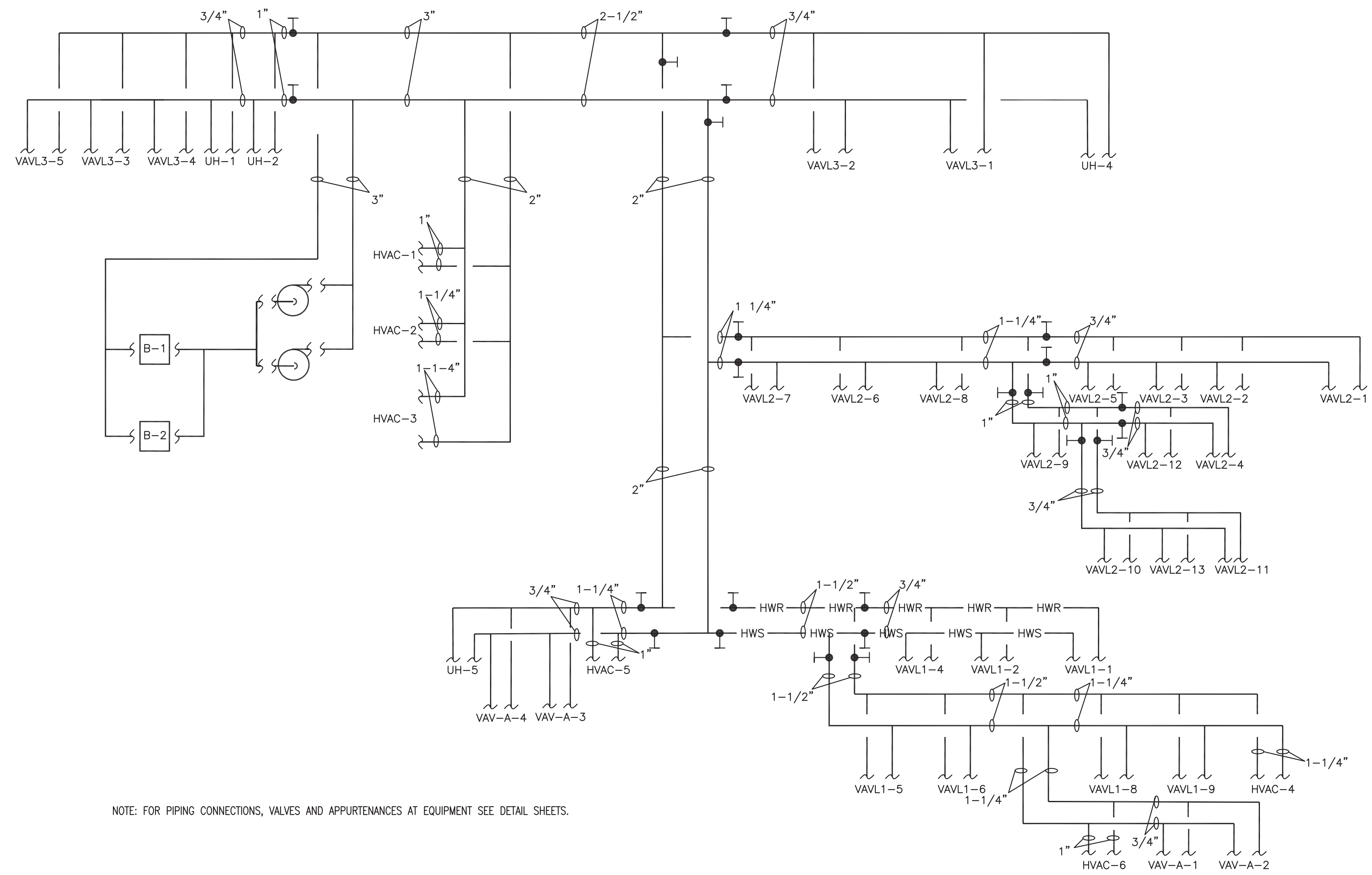
M-303



1 HOT WATER PIPING DIAGRAM

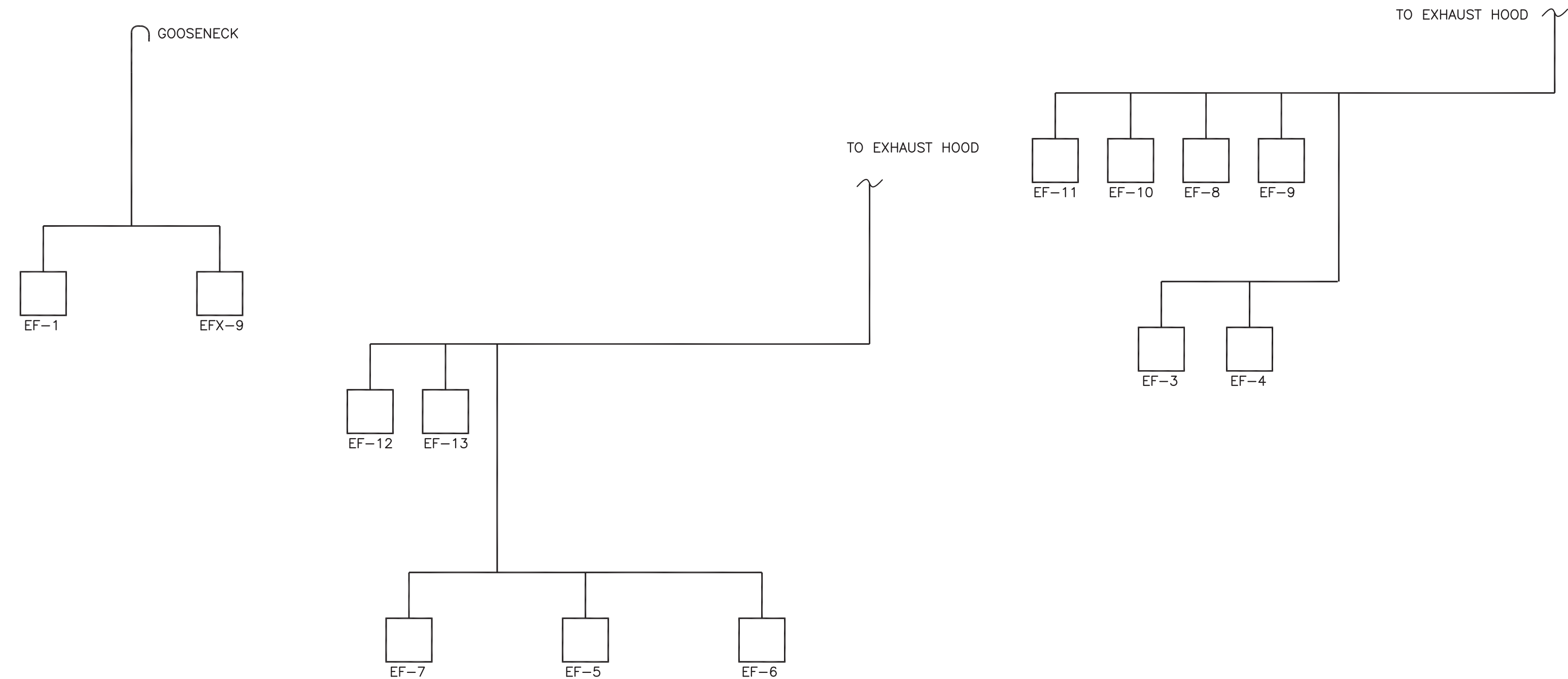


2 TYPICAL END SUCTION PUMP CONNECTION DETAIL
SCALE: NONE

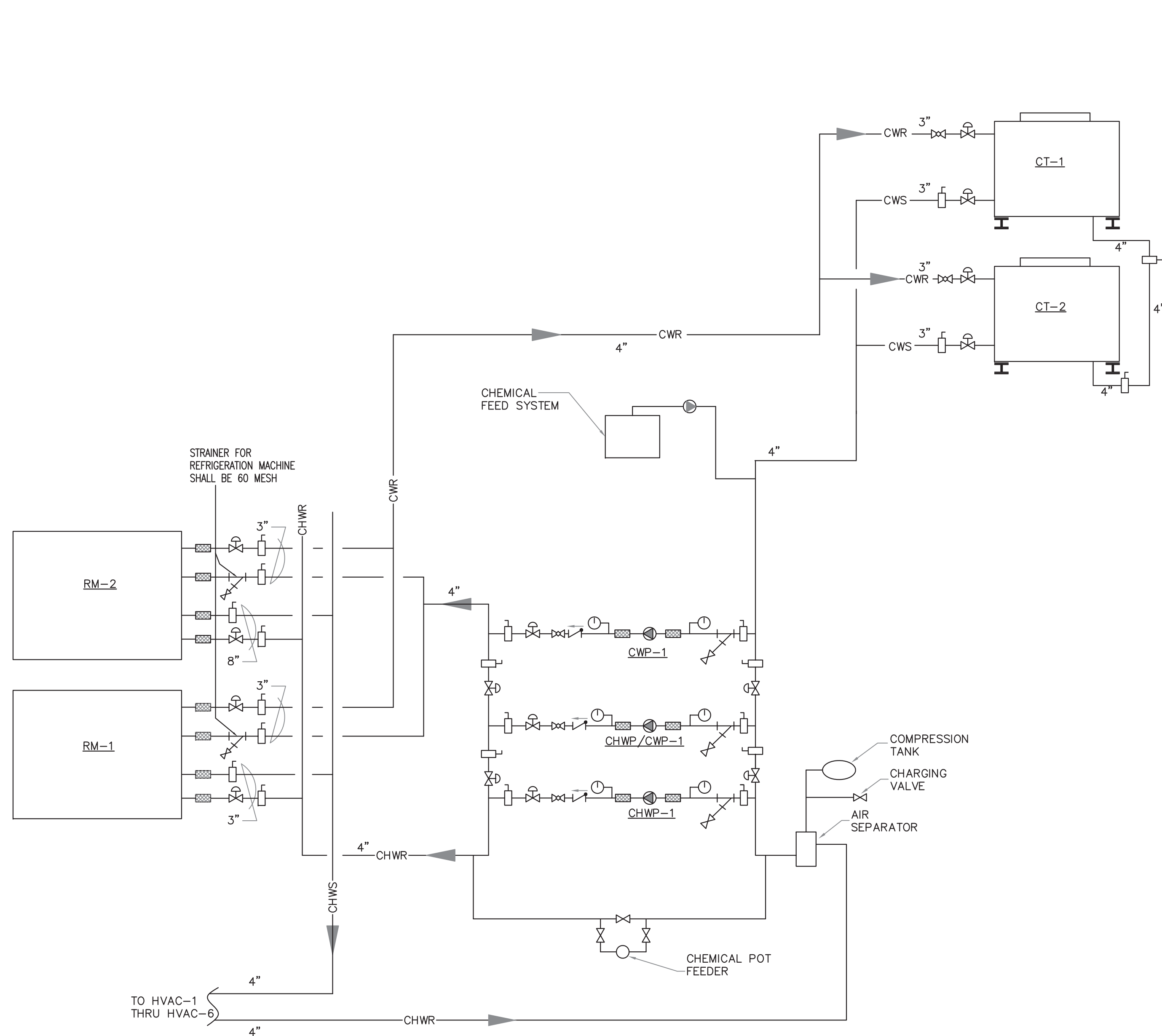


NOTE: FOR PIPING CONNECTIONS, VALVES AND APPURTENANCES AT EQUIPMENT SEE DETAIL SHEETS.

4 HOT WATER PIPING RISER DIAGRAM
SCALE: NOT TO SCALE



5 EXHAUST RISER DIAGRAMS
SCALE: NOT TO SCALE



3 CHILED WATER AND CONDENSER WATER RISER DIAGRAM
SCALE: NONE



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RISER DIAGRAMS AND DETAILS

PROJECT NO.: 2219-05

DRAWING NO.:

M-304

