

## LEGEND

	EQUIPMENT TAG		AIR DEVICE TAG. TOP LINE INDICATES TYPE OF DEVICE BOTTOM LINE INDICATES AIRFLOW IN CFM
	DETAIL TAG ("1" INDICATES IDENTIFICATION NUMBER; "M3" INDICATES THE SHEET NUMBER DRAWN ON)		AIR DEVICE TAG. TOP LINE INDICATES TYPE OF DEVICE BOTTOM LINE INDICATES AIRFLOW IN CFM (2) INDICATES TYPICAL OF TWO DEVICES
	SHEET NOTE	TYP	TYPICAL
	SUPPLY DUCT SECTION POSITIVE PRESSURE	TEMP	TEMPERATURE
	RETURN OR EXHAUST DUCT NEGATIVE PRESSURE	SA	SUPPLY AIR
	RECTANGULAR DUCT SIZE ("A" INDICATES SIDE SHOWN; "B" INDICATES SIDE NOT SHOWN)	RA	RETURN AIR
	INDICATES RISE IN ELEVATION OF DUCT.	EA	EXHAUST AIR
	ROUND DUCT SIZE	MA	MIXED AIR
	EXTERNALLY INSULATED DUCTWORK OR DUCT BOARD	OA	OUTDOOR AIR
	EXTERNALLY INSULATED ROUND FLEXIBLE DUCTWORK	TA	TRANSFER AIR
	DUCT ELBOW WITH TURNING VANES	EF	EXHAUST FAN
	RADIUSED DUCT ELBOW	CD	CEILING DIFFUSER
	FLEXIBLE DUCT CONNECTION	RC	RETURN GRILLE
	MANUAL VOLUME BALANCING DAMPER	EG	EXHAUST GRILLE
	MOTORIZED DAMPER	ER	EXHAUST REGISTER
	FIRE DAMPER WITH ACCESS DOORS	CREF	CEILING ROOF EXHAUST FAN
	SMOKE DAMPER WITH ACCESS DOORS	AHU	INDOOR AIR HANDLING UNIT
	BACKDRAFT DAMPER	BF	INLINE BOOSTER FAN
	TEE WITH TURNING VANES		THERMOSTAT, "1" INDICATES UNIT CONTROLLED
	TRANSITION		DUCT MOUNTED SMOKE DETECTOR
	FLEX DUCT TAKE OFF WITH MVD SIZE EQUALS DIFFUSER NECK SIZE UNLESS NOTED OTHERWISE		FLOOR DRAIN
	BRANCH DUCT TAKEOFF WITH MVD		UNDERCUT DOOR 1/2"
			DOOR GRILLE. REFER TO DOOR SCHEDULE
		AFF	ABOVE FINISHED FLOOR
			HORIZONTAL FIRE DAMPER
		XFR	TRANSFER AIR
		ESP	EXTERNAL STATIC PRESSURE
		TAB	TESTING, ADJUSTING AND BALANCING
		NOM	NOMINAL
		VFD	VARIABLE FREQUENCY DRIVE
		(F)	FUTURE
		EUH	ELECTRIC UNIT HEATER
		HP	HEAT PUMP
		MHP	MINI- HEAT PUMP
		WM	WALL MOUNT MINI AIR HANDLER
		S	WALL SWITCH

## GENERAL NOTES

- ALL DUCT DIMENSIONS ARE NET INSIDE.
- VERIFY COLLAR SIZES ON ALL AIR TERMINALS, EQUIPMENT OUTLETS AND INLETS, TRANSITION DUCTWORK AS NECESSARY. EXTERNALLY INSULATE TRANSITIONS AT EQUIPMENT CONNECTIONS.
- FIELD VERIFY CLEAR SPACE AVAILABLE, ROUTING PATH, AND CONFLICTS WITH STRUCTURE AND THE WORK OF OTHER TRADES PRIOR TO FABRICATING DUCTWORK. PROVIDE OFFSETS IN DUCTWORK AS REQUIRED, WHETHER SPECIFICALLY INDICATED ON DRAWINGS OR NOT. SUBMIT SHOP DRAWINGS ON DUCTWORK LAYOUT PRIOR TO COMMENCING WORK. MAINTAIN CLEARANCE AROUND ALL LIGHT FIXTURES AS REQUIRED TO REMOVE AND SERVICE FIXTURES. COORDINATE WITH ROOF TRUSSES/STRUCTURE. PRESSURE TEST ALL NEW DUCTWORK FOR LEAKS. SEE SPECIFICATIONS.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT, PIPING, AND DUCTWORK SUCH THAT MANUFACTURERS' RECOMMENDED CLEARANCES ARE MET FOR ALL ACCESS PANELS, MOTORS, FANS, BELTS, FILTERS AND AIR INTAKES. CONDENSATE LINES SHALL BE CLEAR OF FILTER RACK ACCESS.
- PROVIDE DUCT FLEX CONNECTIONS & VIBRATION ISOLATION FOR ALL UNITS NOT INTERNALLY ISOLATED.
- ALL SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR INTAKE DUCTWORK SHALL BE GALVANIZED SHEET METAL.
- ALL AHU AND OAU FILTERS SHALL BE OF A READILY AVAILABLE SIZE, OF DISPOSABLE TYPE, AND BE ACCESSIBLE WITHOUT THE USE OF SCREWS OR OTHER MECHANICAL DEVICES REQUIRING TOOLS.
- PROVIDE ACCESS PANELS IN CEILINGS AS REQUIRED FOR MAINTENANCE AND ADJUSTMENT OF EQUIPMENT LOCATED ABOVE CEILING. COORDINATE ALL SIZES AND LOCATIONS WITH ARCHITECT DURING SUBMITTALS. PROVIDE PLANS IF REQUIRED BY ARCHITECT.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATION OF ALL EQUIPMENT AND UTILITIES.
- CONTRACTOR SHALL SUBMIT COORDINATED DUCTWORK SHOP DRAWINGS INDICATING COORDINATION WITH ELECTRICAL, PLUMBING, AND FIRE PROTECTION, PRIOR TO BEGINNING WORK. SHOP DRAWINGS SHALL INCLUDE LOCATIONS OF THERMOSTATS, ACCESS PANELS, AIR DEVICES, DUCTWORK, ETC.
- ALL WORK SHALL COMPLY WITH EIGHTH EDITION OF FLORIDA BUILDING CODE (2023).

## DUCTWORK NOTES

- ALL ROUND FLEXIBLE DUCT SHALL BE FLEXMASTER TYPE 8M ACOUSTICAL FLEX OR ENGINEER APPROVED EQUAL MAXIMUM LENGTH OF ANY FLEXIBLE DUCT RUNOUT SHALL BE 5'-0". WHERE LENGTH REQUIRED EXCEEDS 5'-0", INSTALL EXTERNALLY INSULATED ROUND SNAPLOCK DUCT FOR BALANCE OF DISTANCE TO SPIN-IN TAP AT MAIN DUCT TRUNK.
- SEAL ALL DUCT PENETRATIONS OF WALLS AND FLOORS AIRTIGHT, REGARDLESS OF WHETHER WALLS OR FLOORS ARE FIRE RATED OR NOT.
- ALL SUPPLY AIR DUCTWORK FROM AHU'S (EXCEPT TAKEOFFS TO SUPPLY AIR DIFFUSERS) SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 2" W.G., SEAL CLASS A, EXTERNALLY INSULATED UNLESS OTHERWISE INDICATED. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS.
- ALL RETURN AIR DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 2" W.G., SEAL CLASS A, EXTERNALLY INSULATED UNLESS OTHERWISE INDICATED. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS.
- ALL OUTSIDE AIR INTAKE DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 2" W.G., SEAL CLASS A, EXTERNALLY INSULATED SHEET METAL. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS.
- STANDARD EXHAUST AIR DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 1/2" W.G., SEAL CLASS A, SHEET METAL.
- WHEN ROUTING DUCTWORK OVER LIGHTS, PROVIDE A MINIMUM 6" CLEARANCE BETWEEN DUCT AND LIGHTS.
- PROVIDE DUCT ACCESS DOORS AT ALL CONTROL DAMPERS, SMOKE DETECTORS, FIRE DAMPERS, AND SMOKE DAMPERS.
- PROVIDE REMOVABLE DUCT SECTIONS IN DUCTWORK CONTAINING FIRE DAMPERS IF FULL 12X12 ACCESS DOOR CAN NOT BE PROVIDED.

## SEQUENCE OF OPERATION

### AHU/HP

**GENERAL:** PROVIDE PROGRAMMABLE THERMOSTAT FOR EACH UNIT. THERMOSTAT SHALL BE CAPABLE OF PERFORMING THE SEQUENCE OUTLINED BELOW. THERMOSTAT SHALL ACCEPT AN EXTERNAL OCCUPIED SCHEDULE FROM THE ELECTRONIC MECHANICAL EQUIPMENT TIME CLOCK.

**OCCUPIED MODE:** THE INDOOR FAN SHALL RUN CONTINUOUSLY. THE HP SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE. THE ELECTRIC HEAT SHALL OPERATE A 2ND STAGE OF HEAT ONLY WHEN OUTDOOR TEMPERATURE IS BELOW 40°F. THE SETPOINT FOR COOLING SHALL BE 75°F ADJUSTABLE. THE SETPOINT FOR HEATING SHALL BE 70°F ADJUSTABLE.

**UNOCCUPIED MODE:** THE INDOOR FAN AND HP SHALL CYCLE TO MAINTAIN SETPOINT TEMPERATURE. THE SETPOINT FOR COOLING SHALL BE 85°F ADJUSTABLE. THE SETPOINT FOR HEATING SHALL BE 60°F ADJUSTABLE.

**OVERRIDE MODE:** THE OVERRIDE MODE SHALL PLACE THE SYSTEM IN OCCUPIED MODE FOR 1 HOUR.

### EVIDENCE ROOM

LOW LEAKAGE MOTORIZED DAMPERS SHALL BE INSTALLED IN SUPPLY AND RETURN DUCT SERVING EVIDENCE ROOM. THESE SHALL BE OPEN DURING NORMAL OPERATION AND SHALL BE INTERLOCKED WITH FIRE SUPPRESSION CONTROL PANEL TO CLOSE DURING CLEAN AGENT DISCHARGE.

LOW LEAKAGE MOTORIZED DAMPER SHALL BE INSTALLED IN EXHAUST DUCT OF EF-3 AND SHALL REMAIN CLOSED DURING NORMAL OPERATION. SWITCH OUTSIDE EVIDENCE ROOM SHALL OPEN THE DAMPER AND TURN ON EF-3.

## AIR DEVICE SCHEDULE

MARK	MAX AIRFLOW CFM	AIR DEVICE SIZE	DUCT CONNECTION SIZE	TITUS MODEL
CD-1 CFM	90	9X9	6Ø	TDC
CD-2 CFM	245	12X12	8Ø	TDC
CD-3 CFM	350	12X12	10Ø	TDC
RC, EG, SG, TC, RR, ER				
XX-1 CFM	450	12X12	12X12	350FL
XX-2 CFM	1705	22X22	22X22	350FL
XX-3 CFM	220	8X8	8X8	350FL
XX-4 CFM	500	12X8	12X8	350FL

- MAX NC=20
- PROVIDE 2X2 LAY-IN PANEL FOR AIR DEVICES IN LAY-IN CEILINGS
- PROVIDE BEVELED MOUNTING FRAME FOR CEILING DIFFUSERS IN HARD CEILINGS.
- PROVIDE FLAT MOUNTING FRAME FOR GRILLES LOCATED IN HARD CEILINGS.

## VENTILATION SCHEDULE

SPACE TYPE	VENTILATION CFM/S.F.	VENTILATION CFM/PERSON	EXHAUST CFM
LOBBY	0.06	5.0	-
CORRIDOR/VESTIBULE	0.06	0	-
OFFICE	0.06	5.0	-
STORAGE	0.06	5.0	-
RESTROOM - INTERMITTENT	0	0	70/FIXTURE

### NOTES:

VENTILATION AIR HAS BEEN CALCULATED IN COMPLIANCE WITH ASHRAE STANDARD 62.1-2019 INDOOR AIR QUALITY METHOD. THE INDOOR AIR QUALITY METHOD IS UTILIZED AS A MEANS OF REDUCTION IN OUTDOOR AIR AND IS SUBMITTED FOR APPROVAL AS AN ALTERNATE DESIGN IN ACCORDANCE WITH FBC 104.11. BIPOLAR IONIZATION IS UTILIZED TO CLEAN INDOOR AIR AND MAINTAIN ACCEPTABLE INDOOR AIR QUALITY WITH A REDUCTION IN OUTDOOR AIRFLOW.

## LOUVER SCHEDULE

MARK	AIRFLOW CFM (MAX)	LOUVER SIZE (WxH) INCHES	FREE AREA FT <sup>2</sup> (MIN)	RUSKIN MODEL	NOTES
LVR-1 CFM	215	18x12	0.46	EME3625MD + XP500	1,2,3,4,5

### NOTES:

- FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.
- PROVIDE LOUVER WITH FLORIDA PRODUCT APPROVAL, LISTED FOR COMPLIANCE WITH AMCA 540 AND AMCA 550.
- PROVIDE LOUVER IN ACCORDANCE WITH ICC 500.
- PROVIDE EME3625MD LOUVER IN FRONT OF XP500 LOUVER IN COMMON 10 GAUGE SLEEVE.
- REFER TO STRUCTURAL DRAWINGS FOR INSTALLATION DETAILS.

## SPLIT SYSTEM HEAT PUMP SCHEDULE

UNIT AHU/HP	BASIS OF DESIGN	MODEL HP/AHU	SA (CFM)	OA(CFM)	ESP (IN.H2O)	FAN (HP)	COOLING				HEATING				SUPPL. HEAT	AHU ELECTRICAL				HP ELECTRICAL				NOTES
							MAT° (DB/WB)	OAT° (DB/WB)	TOTAL (BTUH)	SEER2	MAT° (DB)	OAT° (DB)	TOTAL (BTUH)	HSPF2		VOLTS/PHASE	MCA	MOP	VOLTS/PHASE	MCA	MOP			
1	TRANE	5TWR4030A1/5TEM6D04	920	115	0.5	1/3	75.0/64.0	95/77	23000	18400	14.3	64.0	25	19000	7.5	7.68kW	240/1	29	30	240/1	13	20	1,2,3,4,5,6,7,8,9,10,11	
2	TRANE	5TWR4024A1/5TEM6B02	690	70	0.4	1/3	74.4/64.2	95/77	16400	12800	14.3	65.2	25	10400	7.5	4.8kW	240/1	45	45	240/1	16	25	1,2,3,4,5,6,7,8,9,10,11	

- PROVIDE 2" 30% FILTERS AND FILTER HOUSING SHOWN IN DETAILS.
- EFFICIENCIES IN ACCORDANCE WITH ARI STANDARD 210/240.
- ESP DOES NOT INCLUDE FILTER, CASING, ETC.
- PROVIDE CONTROL KIT TO INCLUDE BLOWER CONTACTOR OR STARTER, TRANSFORMER, ELECTRIC HEATER INTERLOCKS. ELECTRICAL SERVICE SHALL BE A SINGLE POINT OF CONNECTION.
- PROVIDE THERMAL EXPANSION VALVES.
- DIRECT DRIVE AHU FAN.
- COOLING CAPACITY IS NET AND DOES NOT INCLUDE FAN HEAT.
- PROVIDE UNIT MOUNTED CIRCUIT BREAKER FOR INDOOR AIR HANDLERS.
- PROVIDE BASIS OF DESIGN OR EQUAL BY LENNOX OR CARRIER.
- PROVIDE EPA APPROVED REFRIGERANT.
- PROVIDE REFRIGERANT MONITORING SYSTEM.



100% COMPLETE

DONOFRO ARCHITECTS



NOT FOR CONSTRUCTION  
OCTOBER 31, 2025

DONOFRO ARCHITECTS

2910 CALEDONIA ST.  
MARIANNA, FL 32446  
OFFICE: (850) 482-5261

THE CITY OF COTTONDALE

JOB NUMBER:  
M-2024-13

DATE:  
OCT. 31, 2025

DRAWN BY:  
JFG

CHECKED BY:  
KAJ

SHEET No.

M-0.1

### FAN SCHEDULE

UNIT	TYPE	CFM	MAX. FAN RPM	ESP (IN. H2O)	MAX. MOTOR POWER	SONES/db (MAX.)	BASIS OF DESIGN	MODEL	CONTROL	ELECTRICAL VOLTS/PHASE	NOTES
EF-1	CEILING	70	772	0.25	7 W	1.2	COOK	GCVF-100	INTERLOCK WITH LIGHTS	115/1	1,2,3,4,5,6,7
EF-2	CEILING	70	772	0.25	7 W	1.2	COOK	GCVF-100	INTERLOCK WITH LIGHTS	115/1	1,2,3,4,5,6,7
EF-3	INLINE	500	1521	0.35	1/4 HP	4.8	COOK	100SQN17DEC	INTERLOCK WITH WALL SWITCH	115/1	1,2,3,4,5,7

- |  |                               |   |
|--|-------------------------------|---|
| 1. PROVIDE DISCONNECT.                   | 3. PROVIDE BACK DRAFT DAMPER. | 6. PROVIDE ALUMINUM GRILLE.                               |
| 2. PROVIDE SOLID STATE SPEED CONTROLLER. | 4. PROVIDE THERMAL OVERLOAD.  | 7. PROVIDE BASIS OF DESIGN OR EQUAL BY GREENHECK OR ACME. |
|  | 5. PROVIDE DIRECT DRIVE FAN.  |   |

### AIR PURIFICATION EQUIPMENT SCHEDULE

ZONE	SUPPLY AHU	OA CFM	PRESS. IN. W.C.	BASIS OF DESIGN	MODEL	QUANTITY	ELECTRICAL		NOTES
							VOLTS/PHASE	WATTS	
	AHU-1	920	<0.01	GPS	DM-2	1	24V DC	14	1,2,3,4
	AHU-2	690	<0.01	GPS	DM-2	1	24V DC	14	1,2,3,4

- GPS = GLOBAL PLASMA SOLUTIONS.
- PROVIDE BASIS OF DESIGN OR EQUAL LISTED IN SPECIFICATIONS.
- BI-POLAR IONIZATION SYSTEMS REQUIRING PERISHABLE GLASS TUBES ARE NOT ACCEPTABLE.
- MANUFACTURER MUST PASS UL-867-2007 OZONE CHAMBER TESTING BY EITHER UL OR ETL

### MINI SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE

UNIT	BASIS OF DESIGN	MODEL	TYPE	NOMINAL COOL CAPACITY (BTUH)	DESIGN COOLING EAT °F DB/WB	DESIGN COOLING CAPACITY (BTUH)		AIRFLOW (CFM)	VOLTS/PHASE	FAN (WATTS)	FAN FLA (AMPS)	NOTES
						COOLING TOTAL	COOLING SENSIBLE					
WM-1.1	MIITSUBISHI	PKA-A18LA1	WALL MOUNT	18000	72.5/44.7	14700	14700	575	FED FROM MHP	30	0.19	1,2,3,4,5,6,7,8,9,10,11

- |   |   |  |
|---|---|--|
| 1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB) | 4. DESIGN CAPACITY IS NET CAPACITY FOR INSTALLATION ACCOUNTING FOR 65 FT PIPE RUN LENGTHS, ETC. | 7. PROVIDE HARD WIRED REMOTE THERMOSTAT.   |
| 2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F(WB)        | 5. CALCULATE REFRIGERANT LINE SIZES BASED UPON FINAL FIELD PIPING LAYOUT.                       | 8. PROVIDE CONDENSATE PUMP.                |
| 3. DESIGN COOLING CONDITIONS ARE AT 95°F AMBIENT; DESIGN HEATING CONDITIONS ARE AT 26°F AMBIENT     | 6. EXPOSED (INDOOR OR OUTDOOR) REF PIPING SHALL BE HARD DRAWN COPPER.                           | 9. PROVIDE DISCONNECT.                     |
|   |   | 10. PROVIDE EPA APPROVED REFRIGERANT.      |
|   |   | 11. PROVIDE REFRIGERANT MONITORING SYSTEM. |

### MINI SPLIT SYSTEM CONDENSING UNIT SCHEDULE

UNIT	BASIS OF DESIGN	MODEL	NOMINAL COOL CAPACITY (BTUH)	DESIGN COOLING OUTDOOR TEMP DB	SEER2	VOLTS/PHASE	MCA (AMPS)	MOP (AMPS)	NOTES
MHP-1	MIITSUBISHI	PUY-A18NKA7	18000	95	20.2	240/1	11.0	28	1,2,3

- |   |   |
|---|---|
| 1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB) | 3. EFFICIENCY VALUES FOR EER, IEER, AND COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED AND NON-DUCTED INDOOR UNITS. |
| 2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F(WB)        |   |

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SHEET HVAC SCHEDULES

NEW POLICE STATION

FOR THE: THE CITY OF COTTONDALE

FRONT ST. COTTONDALE, FLORIDA

JOB NUMBER: M-2024-13

DATE: OCT. 31, 2025

DRAWN BY: JFG

CHECKED BY: KAJ

**100% COMPLETE**

DONOFRO ARCHITECTS



**NOT FOR CONSTRUCTION**  
OCTOBER 31, 2025

Florida CA Number: 27825  
 Keith A. Johnson, PE  
 Florida License Number: 86457  
 850.535.3447  
 Project Number: 2025-018  
 Checked By: KAJ  
 Drawn By: JFG

SHEET No.

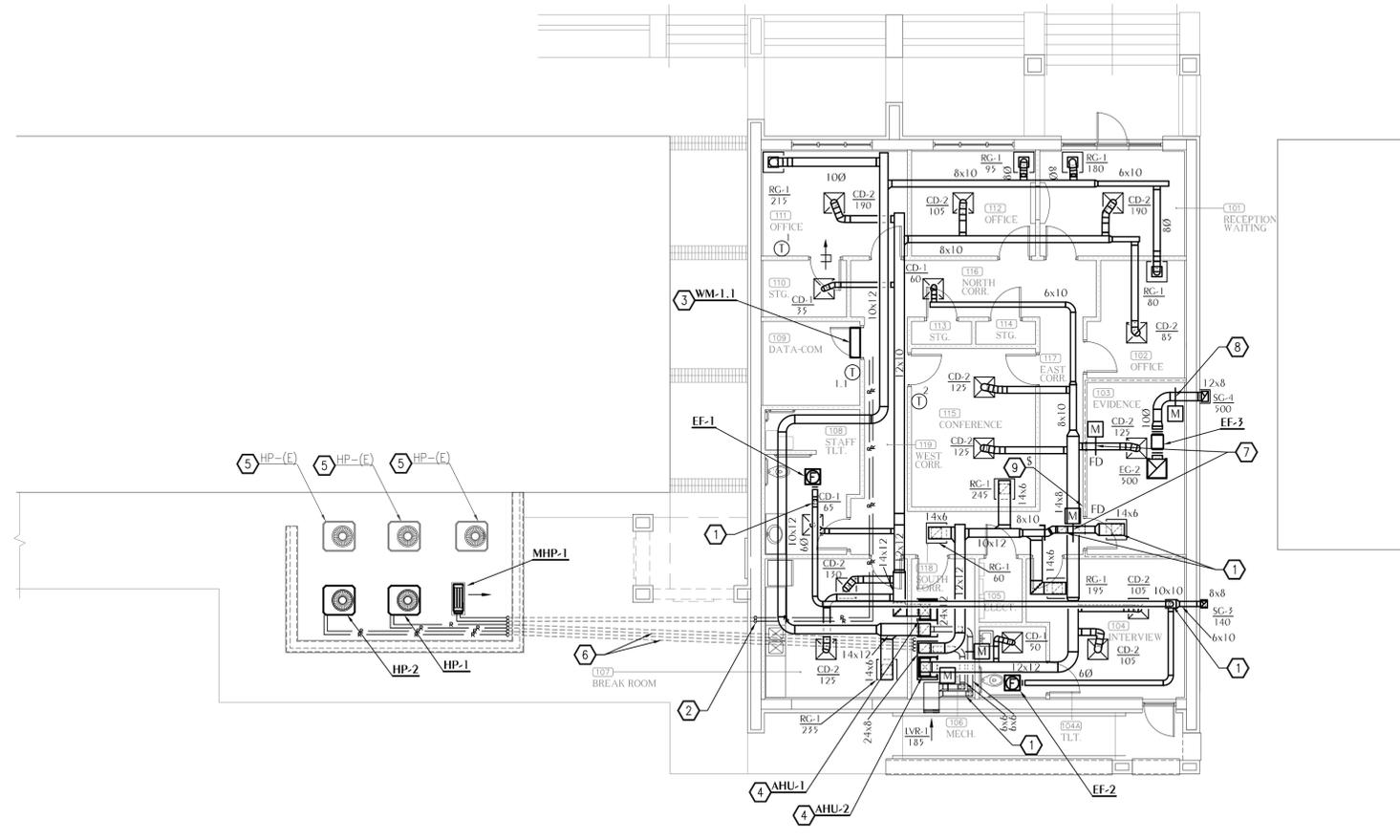
# M-0.2

## SHEET NOTES

- 1 RISE INTO ATTIC SPACE OCCUPIED BY ROOF TRUSSES. COORDINATE WITH STRUCTURE.
- 2 ROUTE REFRIGERANT PIPING IN UNDERGROUND PVC CHASE PER DETAIL 2/M-2.1. RISE UP IN WALL CAVITY CONTINUE ABOVE CEILING TO INDOOR UNIT.
- 3 ROUTE CONDENSATE TO HUB DRAIN.
- 4 ROUTE CONDENSATE TO FLOOR DRAIN CONNECTED TO STORMWATER.
- 5 EXISTING EQUIPMENT RELOCATED AND SERVICED ON SEPARATE CONTRACT THROUGH CITY MAINTENANCE.
- 6 ROUTE REFRIGERANT PIPING UNDERGROUND IN PVC CHASE PER DETAIL 1/M-2.1. RISE UP IN MECHANICAL ROOM AND CONTINUE TO INDOOR UNIT.
- 7 PROVIDE LOW LEAKAGE DAMPER INTERLOCKED WITH CLEAN AGENT FIRE SUPPRESSION SYSTEM. SUPPLY AND RETURN DAMPER SHALL BE OPEN DURING NORMAL OPERATION AND SHALL BE SHUT UPON CLEAN AGENT FIRE SUPPRESSION SYSTEM ACTIVATION.
- 8 PROVIDE LOW LEAKAGE 120 VOLT DAMPER. DAMPER SHALL BE INTERLOCKED WITH FAN AND SHALL OPEN WHEN FAN IS IN OPERATION.
- 9 SWITCH SHALL BE VISIBLY LABELED "EMERGENCY EXHAUST FAN".

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**HVAC NEW WORK FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"

SHEET TITLE: HVAC NEW WORK FLOOR PLAN  
 FOR THE: NEW POLICE STATION  
 THE CITY OF COTTONDALE  
 FRONT ST. COTTONDALE, FLORIDA

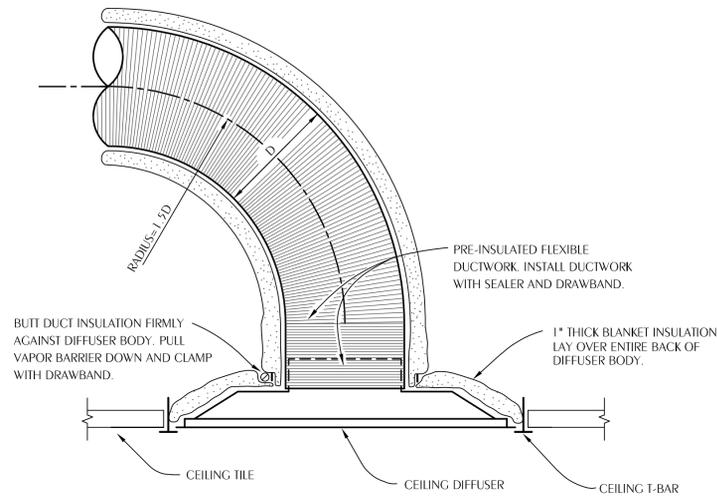
JOB NUMBER: M-2024-13  
 DATE: OCT. 31, 2025  
 DRAWN BY: JFG  
 CHECKED BY: KAJ

SHEET No.  
**M-1.0**

**WATFORD ENGINEERING**  
 Florida CA Number: 27825  
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 Project Number: 2025-018  
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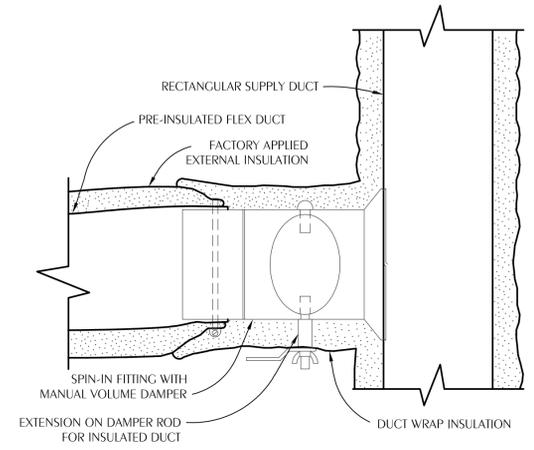
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 OCTOBER 31, 2025

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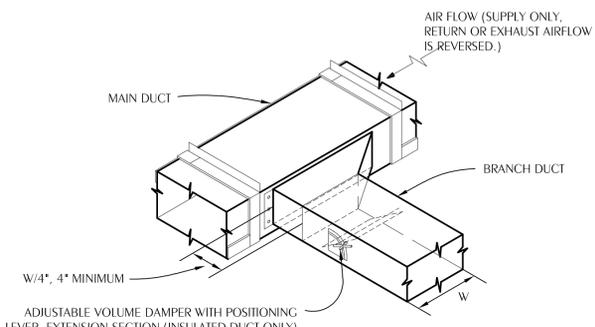
**NOTES:**  
 FLEX DUCT SHALL BE NO LONGER THAN 5'-0". FLEXIBLE DUCT SHALL HAVE REINFORCED, METALIZED POLYESTER JACKET WITH NO FIBERGLASS EROSION IN THE AIRSTREAM AND AN ENCAPSULATED WIRE HELIX. FLEX DUCT SHALL HAVE OPERATING PRESSURE OF 6" W.G. AND NEGATIVE OPERATING PRESSURE OF 0.75" W.G. FLEX DUCT SHALL HAVE R-VALUE OF R-6 AND MEET REQUIREMENTS OF UL-181, 2023 FLORIDA ENERGY CODE, NFPA 90A AND NFPA 90B. ATCO 36 OR APPROVED EQUAL.  
 PROVIDE 24x24 LAY IN PANEL FOR DIFFUSERS IN LAY IN CEILINGS.  
 PROVIDE BEVELED MOUNTING FRAME FOR DIFFUSERS IN HARD CEILINGS.

**1 TYPICAL CEILING DIFFUSER DETAIL**  
 M-2.0 SCALE: NONE



**NOTES:**  
 CONNECT FLEXIBLE DUCT TO FITTING WITH DRAWBAND AND SEALER.  
 ROUND HARD DUCT RUNOUTS SHOULD START WITH SPIN-IN FITTINGS SIMILAR TO THIS DETAIL.  
 PROVIDE CABLE ACTIVATED DAMPER WITH ADJUSTMENT IN FACE OF CEILING DIFFUSER FOR INACCESSIBLE TAKEOFFS.  
 FLEXIBLE INSULATION SHALL BE 2" THICK, ASTM C553, TYPE 1, CLASS B-3 WITH 1 PCF DENSITY AND UL RATED ALUMINUM FOIL VAPOR BARRIER (FSK)

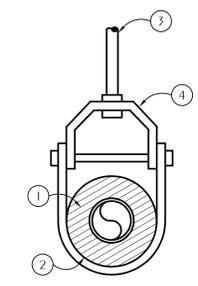
**2 TYPICAL FLEX DUCT TAKEOFF DETAIL**  
 M-2.0 SCALE: NONE



ADJUSTABLE VOLUME DAMPER WITH POSITIONING LEVER, EXTENSION SECTION (INSULATED DUCT ONLY) AND LOCKING WING NUT. VOLUME DAMPER SHALL BE SINGLE BLADE OR MULTI-BLADE DEPENDING ON DUCT SIZE. SEE SPECIFICATIONS. LOCATE DAMPER AT LEAST 12" DOWNSTREAM OF TAKEOFF.

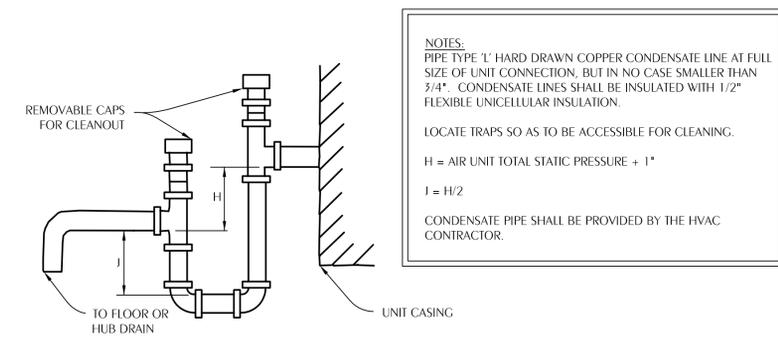
**NOTES:**  
 PROVIDE CABLE ACTIVATED DAMPER WITH ADJUSTMENT IN FACE OF AIR DEVICE FOR INACCESSIBLE TAKEOFFS LOCATED ABOVE HARD CEILINGS.  
 FLEXIBLE INSULATION SHALL BE 2" THICK, ASTM C553, TYPE 1, CLASS B-3 WITH 1 PCF DENSITY AND UL RATED ALUMINUM FOIL VAPOR BARRIER (FSK)

**3 TYPICAL BRANCH DUCT TAKEOFF**  
 M-2.0 SCALE: NONE



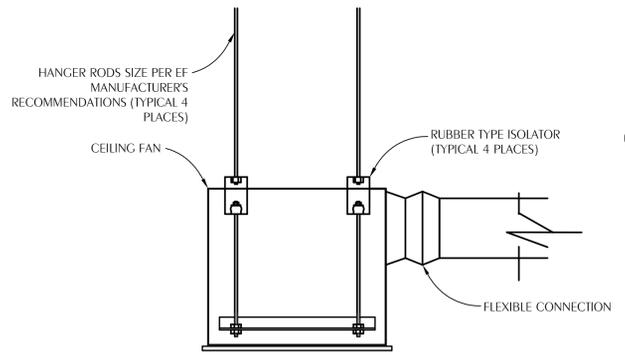
- 1 INSULATION
- 2 PIPE COVERING PROTECTION SADDLE
- 3 HANGER ROD FASTEN TO STRUCTURE PER SPECIFICATION
- 4 CLEVIS TYPE HANGER

**4 OVERHEAD PIPE SUPPORT**  
 M-2.0 SCALE: NONE

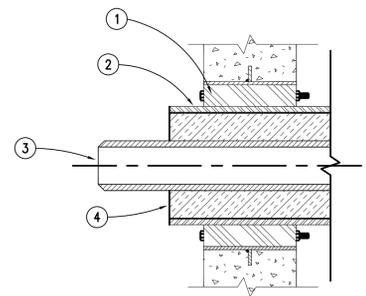


**NOTES:**  
 PIPE TYPE 1" HARD DRAWN COPPER CONDENSATE LINE AT FULL SIZE OF UNIT CONNECTION, BUT IN NO CASE SMALLER THAN 3/4". CONDENSATE LINES SHALL BE INSULATED WITH 1/2" FLEXIBLE UNICELLULAR INSULATION.  
 LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.  
 $H = \text{AIR UNIT TOTAL STATIC PRESSURE} + 1"$   
 $J = H/2$   
 CONDENSATE PIPE SHALL BE PROVIDED BY THE HVAC CONTRACTOR.

**6 NEGATIVE PRESSURE CONDENSATE DRAIN TRAP**  
 M-2.0 SCALE: NONE

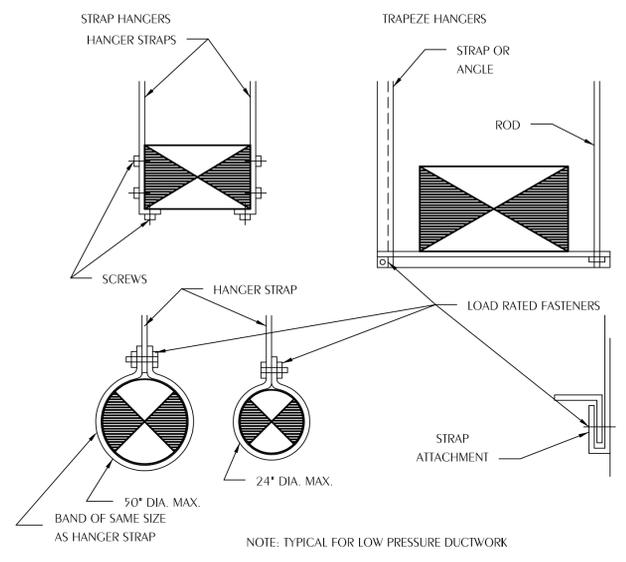


**8 CEILING FAN DETAIL**  
 M-2.0 SCALE: NONE

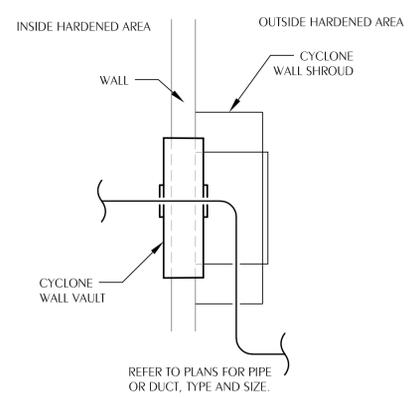


- 1 WALL OR FLOOR SEAL APPURTENANCES PER SPECIFICATIONS
- 2 PIPE SLEEVE PER SPECIFICATIONS
- 3 PIPING
- 4 INSULATION

**9 TYPICAL WALL PIPE PENETRATION**  
 M-2.0 SCALE: NONE



**5 DUCT HANGER DETAILS**  
 M-2.0 SCALE: NONE



**7 HARDENED WALL PENETRATION DETAIL**  
 M-2.0 SCALE: NONE

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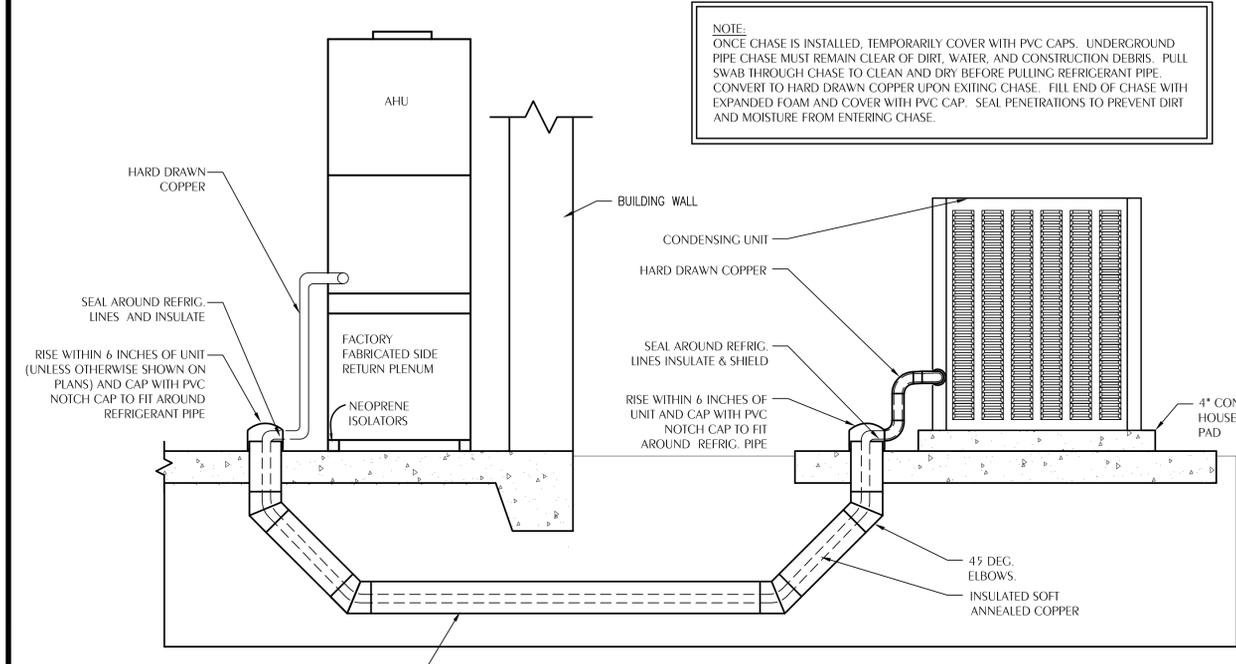
SHEET HVAC DETAILS  
 TITLE: NEW POLICE STATION  
 FOR THE: THE CITY OF COTTONDALE  
 FRONT ST. COTTONDALE, FLORIDA

JOB NUMBER: M-2024-13  
 DATE: OCT. 31, 2025  
 DRAWN BY: JFG  
 CHECKED BY: KAJ

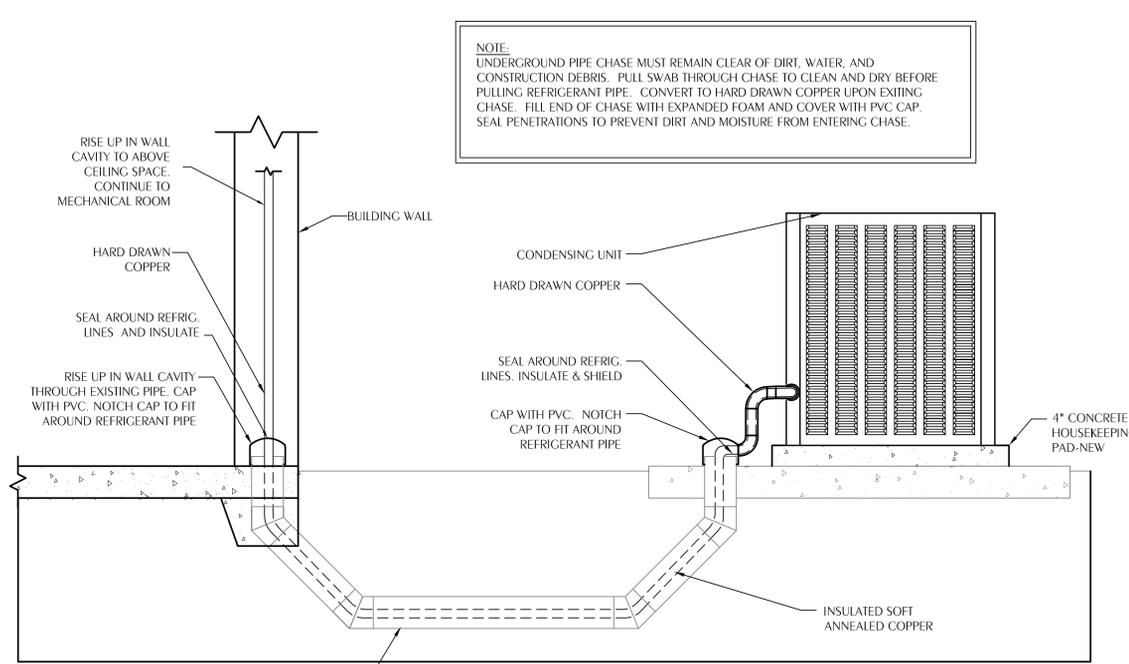
SHEET No.  
**M-2.0**

**WATFORD ENGINEERING**  
 Florida CA Number: 27825  
 Keith A. Johnson, PE  
 Florida License Number: 88457  
 850.535.3447  
 Project Number: 2025-018  
 Checked By: KAJ  
 Drawn By: JFG  
 4452 Clinton Street Marianna, Florida 32446  
 2449 Moores Mill Road Auburn, AL 36830

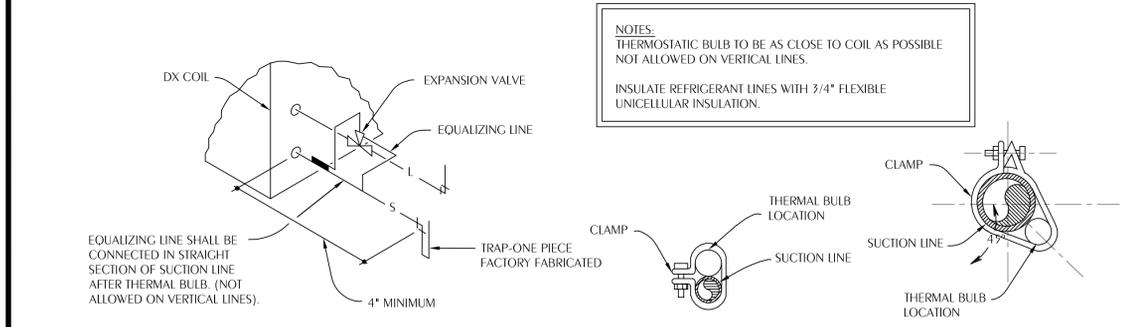
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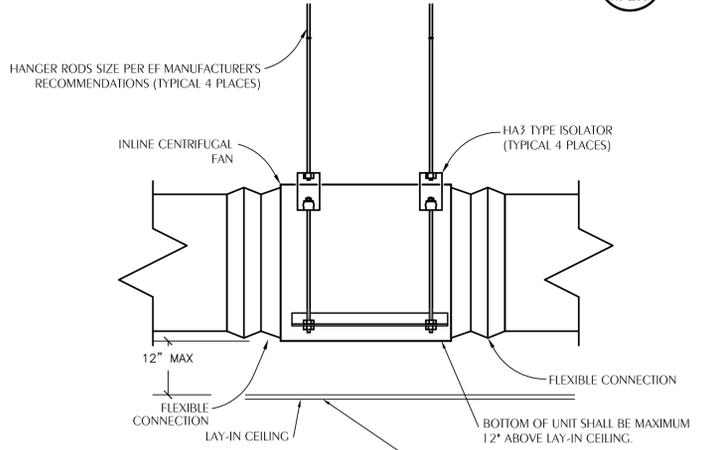
**1 UNDERGROUND REFRIGERANT PIPING DETAIL**  
M-2.1 SCALE: NONE



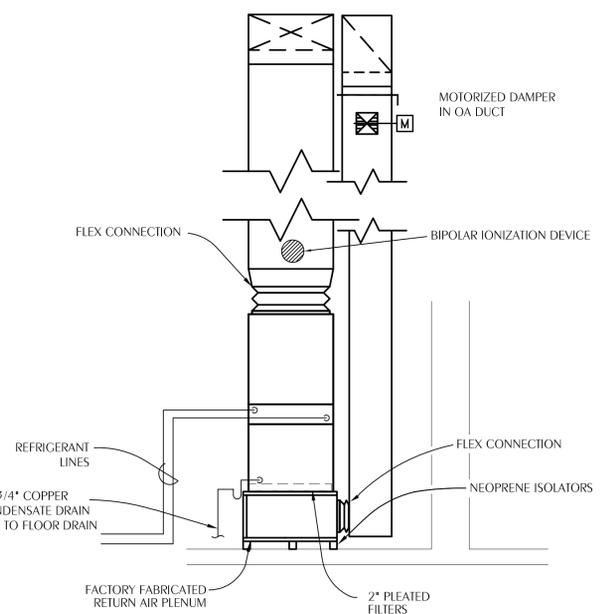
**2 UNDERGROUND REFRIGERANT PIPING DETAIL**  
M-2.1 SCALE: NONE



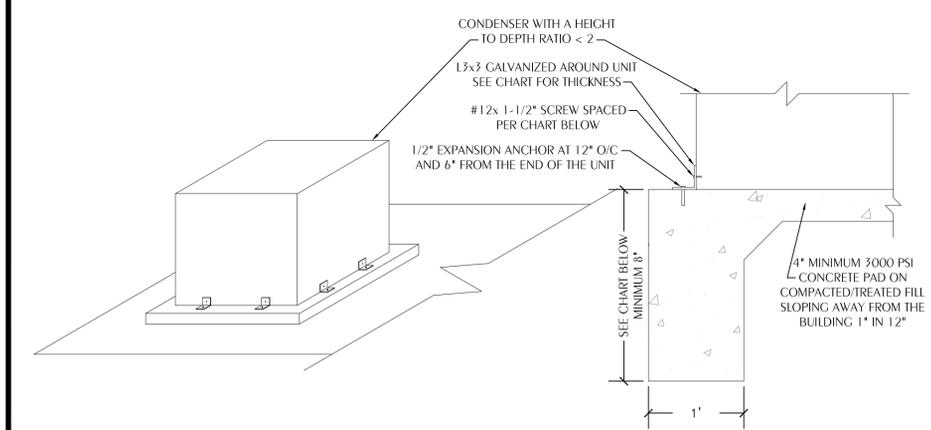
**3 REFRIGERANT COIL CONNECTION DETAIL**  
M-2.1 SCALE: NONE



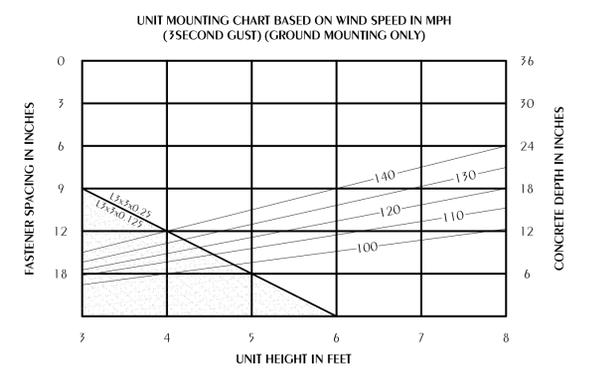
**4 INLINE FAN DETAIL**  
M-2.1 SCALE: NONE



**5 VERTICAL UPFLOW AHU DETAIL**  
M-2.1 SCALE: NONE



**5 OUTDOOR MECHANICAL UNIT MOUNTING DETAIL**  
M-2.1 SCALE: NONE



DESIGN CRITERIA:

CODE:	ASCE 7-05
VELOCITY:	SEE BELOW
Kz:	0.70
Kzt:	1.00
Kd:	0.85
IMPORTANCE:	1.15
EXPOSURE:	B
Cf:	1.3
Ce:	0.85
qz:	
100 mph	17.52 psf
110 mph	21.20 psf
120 mph	25.22 psf
130 mph	29.60 psf
140 mph	34.33 psf
Pdist(qz):	
100 mph	19.36 psf
110 mph	23.42 psf
120 mph	27.87 psf
130 mph	32.71 psf
140 mph	37.94 psf

NOTES:  
SECURE REFRIGERANT LINES AND CONDENSATE PIPING WITH UNISTRUT.  
PROVIDE FACTORY FABRICATED RETURN AIR PLENUM OR ENGINEER APPROVED EQUAL.  
SIZE COPPER CONDENSATE LINE AT FULL SIZE OF UNIT CONNECTION, BUT IN NO CASE SMALLER THAN 3/4\"/>

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SHEET HVAC DETAILS  
TITLE:  
NEW POLICE STATION  
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**THE CITY OF COTTONDALE**  
FRONT ST. COTTONDALE, FLORIDA

JOB NUMBER:  
M-2024-13  
DATE:  
OCT. 31, 2025  
DRAWN BY:  
JFG  
CHECKED BY:  
KAJ

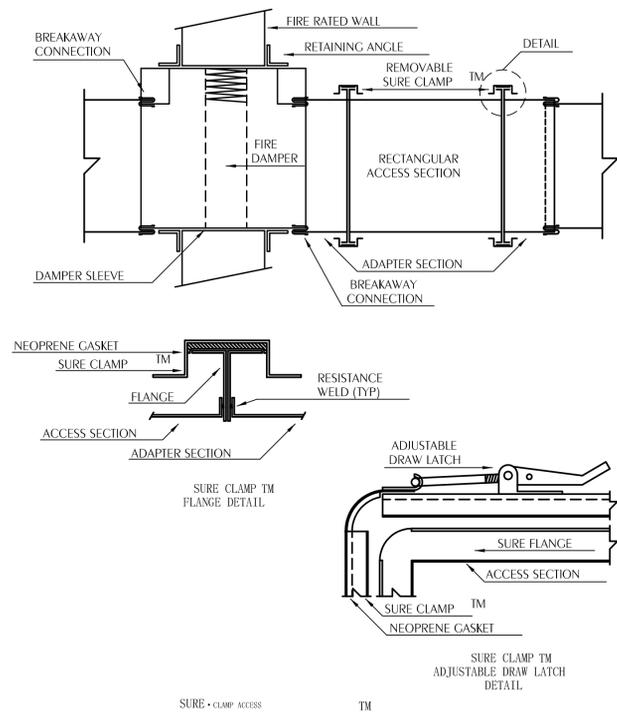
SHEET No.  
**M-2.1**

**WATFORD ENGINEERING**  
4452 Clinton Street Marianna, Florida 32446  
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850.535.3447  
Project Number: 2025-018  
Checked By: KAJ  
Drawn By: JFG

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OCTOBER 31, 2025

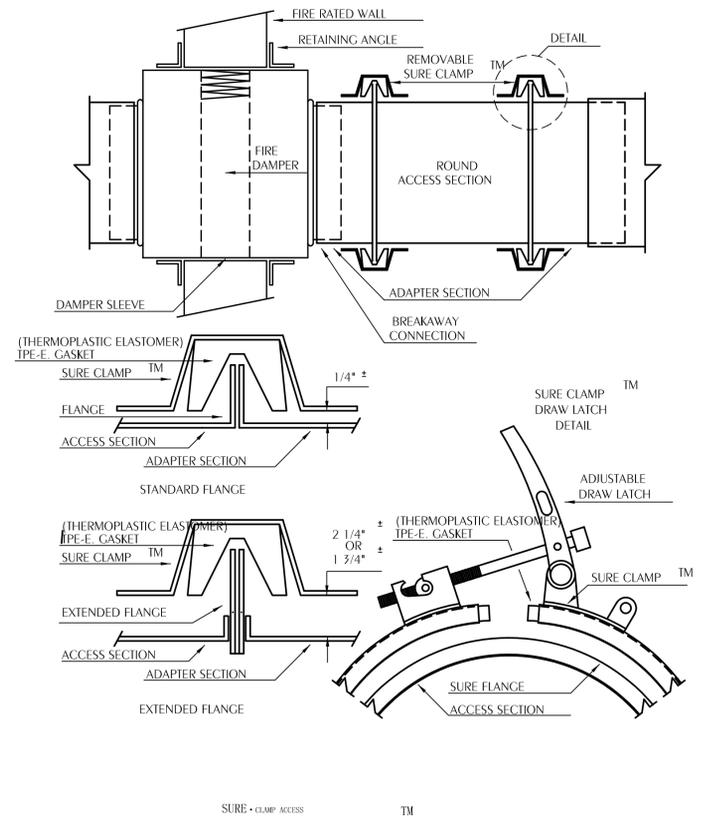
# 1 RECTANGULAR REMOVABLE DUCTWORK SECTION FIRE DAMPER ACCESS

M-3.0 SCALE: NONE



# 2 ROUND REMOVABLE DUCTWORK SECTION FIRE DAMPER ACCESS

M-3.0 SCALE: NONE



## VERTICAL INSTALLATION

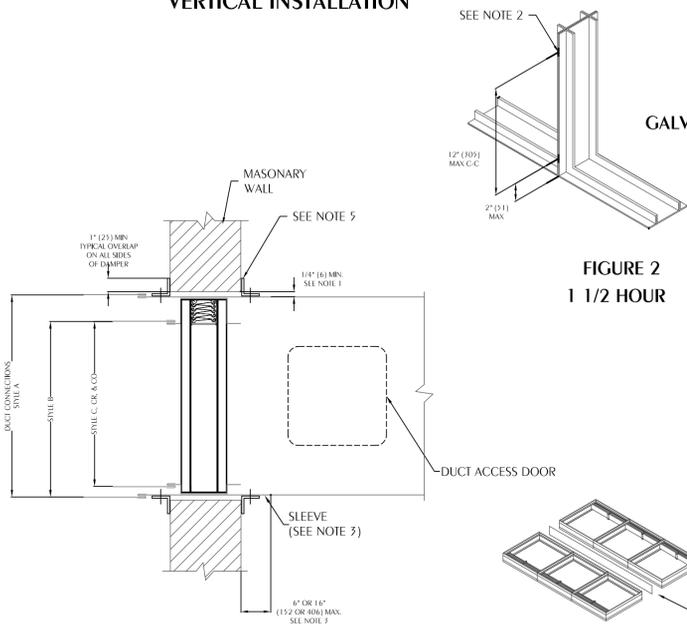


FIGURE 2  
1 1/2 HOUR

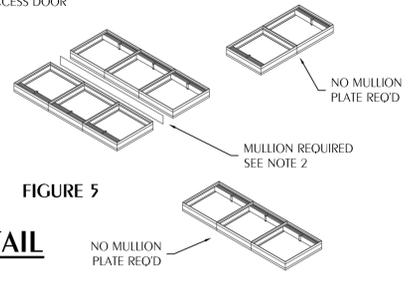


FIGURE 5

1. **Opening Clearance**  
The opening in the wall or floor shall be larger than the damper/sleeve assembly to permit installation or expansion. For two angle installations the opening shall be a minimum of 1/8" per foot (3 per 305) larger than the overall size of the damper/sleeve assembly. The maximum opening size shall not exceed 1/8" per foot (3 per 305) plus 2" (51), nor shall the opening be less than 1/4" (6) larger than the damper/sleeve assembly. For one angle installations, the opening shall be a minimum of 1/4" (6) to a maximum of 1" (25) larger than the overall size of the damper/sleeve assembly. The opening may be as much as 2" (51) larger than the damper/sleeve assembly if a 1.6α (1.6) mounting angles is utilized.
2. **Fasteners and Multiple Section Assembly**  
Use No. 10 (M5) bolts or screws, 3/16" (5) rivets, tack welds or spot welds as depicted in figures 3 and 4 and spaced as follows when joining individual dampers to make multiple section damper assemblies or when fastening damper to the sleeve:  
Vertical Mount (In wall)  
Galvanized steel dampers 12" (305) spacing  
Stainless steel dampers 6" (152) spacing  
Horizontal Mount (In floor)  
All dampers 6" (152) spacing  
Multiple section horizontal mount dampers require a 1/4" gage thick x 4 1/2" (2 x 114) wide steel reinforcing plate sandwiched between the damper frames with 1/2" (12) long welds staggered intermittently and spaced on maximum 6" (152) centers. The reinforcing plate must be the same material as the dampers. The length must be equal to the damper width of two or more adjoining damper sections. Reinforcing plates are not required for assemblies consisting of two dampers attached end-to-end or three dampers attached side-to-side as depicted in figure 5.
3. **Damper Sleeve**  
Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gage requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA90A. If a breakaway style duct/sleeve connection is not used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide by 24" (610) high and 14 gage (1.9) for dampers exceeding 36" (914) wide by 24" (610) high. Damper sleeve shall not extend more than 6" (152) beyond the fire wall or partition unless damper is equipped with a factory installed access door. Sleeve may extend up to 16" (406) beyond the fire wall or partition on sides equipped with a factory installed access door. Sleeve shall terminate at both sides of wall within dimensions shown.
4. **Damper Orientation**  
Use "Air Flow" and "Mount with Arrow Up" labels on Dynamic DIBD and DIBDX models for proper damper orientation. For Static IBD models use only "Mount With Arrow Up" label on damper for proper damper orientations.
5. **Mounting Angles**  
Mounting angles shall be a minimum of 11/2" x 11/2" x 20 gage steel (38 x 38 x 1.0). For openings in metal stud, wood stud walls or concrete/masonry walls and floors of sizes 90" x 49" or 49" x 90" (2286 x 1245 or 1245 x 2286) and less mounting angles are only required on one side of the wall or top side of the floor and must be attached to both the sleeve and the wall or floor. Mounting angles must be installed directly to the metal stud under the wall board on metal stud wall installations only. Larger openings require mounting angles on both sides of the partition and must be attached only to the sleeve. Mounting angles must overlap the partition a minimum of 1" (25). Do not weld or fasten angles together at corners of dampers. Ruskin fire dampers may be installed using Ruskin FAST angle for one angle installation or Ruskin PFMA for two angle installations.
6. **Duct/Sleeve Connections**
  - a. **Break-away Duct/Sleeve Connections**  
Rectangular ducts must use one or more of the connections: plain "S" slip, flanged "S" slip, double "S" slip, inside slip joint, standing S, standing S (angle reinforced), standing S (bar reinforced), standing S (angle reinforced), or drive slip joint.  
A maximum of two #10 sheet metal screws on each side and the bottom, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used. Connections using these slip joints on the top and bottom with flat drive slips up to 20" (508) long on the sides may also be used.
  - b. **Round and Oval Break-away Connections**  
Round and flat oval break-away connections must use either a 4" (102) wide drawband or #10 sheet metal screws spaced equally around the circumference of the duct as follows:  
• Duct diameters 22" (559) and smaller - Maximum 3 screws.  
• Duct diameters over 22" (559) and including 36" (914) - Maximum 5 screws.  
• Duct diameters over 36" (914) and up to and including 191" (4851) total perimeter - Maximum 8 screws. For flat oval ducts, the diameter is considered the largest (major) dimension of the duct.  
**Note:** When optional sealing of these joints is desired, the following sealants may be applied in accordance with the sealant manufacturer's instructions:  
Handcast, Inc. - Iron Grip 601 Precision-PA2084T  
Eco Duct Seal 44-52 Design Polymers - DP 1010
  - c. **Flanged Break-away Style Duct Sleeve Connections**  
Flanged connection systems manufactured by Ductmate, Nexus or Ward are approved break-away connections when installed as shown on the Flanged System Breakaway Connections Supplement. TDC and TDF roll-formed flanged connections using 3/8" (10) steel bolts and nuts, and metal cleats, as tested by SMACNA, are approved break-away connections when installed as shown on the Flanged System Breakaway Connections Supplement.
  - d. **Non-Break-away Duct/Sleeve Connections**  
If other duct sleeve connections are used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide x 24" (610) high and 14 gage (2.0) for dampers exceeding 36" (914) wide x 24" (610) high.
7. **Installation and Maintenance**  
To ensure optimum operation and performance, the damper must be installed so it is square and free from racking. Each fire damper should be maintained and tested on a regular basis and in accordance with the latest editions of NFPA 90A and local codes. Care should be exercised to ensure that such tests are performed safely and do not cause system damage.

# 3 TYPICAL VERTICAL FIRE DAMPER DETAIL

M-3.0 SCALE: NONE

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850.535.3447  
Project Number: 2025-018  
Checked By: KAJ  
Drawn By: JFG

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SHEET FIRE DAMPER DETAILS  
NEW POLICE STATION  
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SHEET No.

M-3.0

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