



MECHANICAL - FIRST FLOOR PLAN - DUCTWORK  
SCALE 1/8" = 1'-0"

NEW WORK KEY NOTES (1, 2, ETC.)

- 1 ALL SUSPENDED MECHANICAL EQUIPMENT SHALL BE HUNG FROM STRUCTURE ABOVE WITH VIBRATION ISOLATION HANGERS. SUSPEND EQUIPMENT IN APPROXIMATE LOCATION SHOWN WHILE MAINTAINING THE MANUFACTURER'S REQUIRED CLEARANCE FOR ACCESS TO SERVICEABLE COMPONENTS, FILTERS, ETC. (TYPICAL)
- 2 PROVIDE INTERNALLY LINED RETURN AIR PLENUM, FULL SIZE OF UNIT CONNECTION. PROVIDE OPEN ENDED DUCT WITH VOLUME DAMPER AND 1/2" WIRE MESH SCREEN IN TOP OF RETURN PLENUM. CONNECT OUTDOOR AIR INTAKE DUCTWORK INTO SIDE OF RETURN PLENUM AS SHOWN. BALANCE OUTDOOR AND RETURN AIRFLOW AS INDICATED. OPEN ENDED DUCT SIZE SHALL BE AS FOLLOWS (TYPICAL):
  - UNIT SIZE 09-12: 12x10
  - UNIT SIZE 18-24: 18x12
  - UNIT SIZE 36-48: 36x12
- 3 14x12 OUTDOOR AND EXHAUST AIR DUCTWORK FROM ERV-1 UP TO SECOND FLOOR. PROVIDE FIRE DAMPER AND ACCESS DOOR AT FLOOR PENETRATION.
- 4 PROVIDE 24x12 OPEN ENDED DUCT WITH 1/2" WIRE MESH SCREEN.
- 5 10x6 EXHAUST AIR DUCT FROM EF-3 TO SECOND FLOOR. PROVIDE FIRE DAMPER AND ACCESS DOOR AT FLOOR PENETRATION.
- 6 PROVIDE IRON BARS OF AT LEAST 1/2" INCH ROUND NO MORE THAN SIX (6) INCHES APART. BARS SHALL BE WELDED TO HAT CHANNEL FRAME AND FRAME SHALL BE SECURELY WELDED TO DUCT. INCREASE DUCTS FROM ERV TO 18x12 ACCOMMODATE BAR FRAME AS SHOWN.
- 7 PROVIDE DUCT MOUNTED VOLUME DAMPERS FOR ALL SUPPLY AND EXHAUST AIR DEVICES SERVING CELLS AND ADJACENT CELL AREA. DAMPERS SHALL BE GEAR DRIVEN, CABLE OPERATED (DIAPHRAGM GOCODR OR EQUIVALENT). LOCATE GEAR OPERATOR IN ACCESSIBLE LOCATION WITHIN NEAREST PLUMBING ACCESS CHASE FOR CELL PLUMBING FIXTURES. PROVIDE CONTROL CABLE LENGTH AS REQUIRED FOR CONNECTION TO DAMPER AND GEAR OPERATOR. LABEL EACH OPERATOR TO IDENTIFY AREA AND SYSTEM SERVICE. (TYPICAL)
- 8 PROVIDE SHEETMETAL DIFFUSER BOX WITH ROUND DUCT CONNECTION. ROUND DUCT RUNOUT AND CONNECTION SHALL BE SIZED AS PER THE DIFFUSER AND REGISTER SCHEDULE. PROVIDE SECURITY DIFFUSER IN CEILING. PROVIDE OPTIONAL OPPOSED BLADE DAMPER ACCESSIBLE THROUGH DIFFUSER. (TYPICAL)
- 9 DROP DUCTWORK, FULL SIZE OF UNIT CONNECTION, FROM ERV-2 ON ROOF. TRANSITION OUTDOOR AIR DUCTWORK TO SIZE INDICATED ON PLANS. DROP FULL SIZE EXHAUST DUCT INTO TOP OF 14x12.
- 10 INTERLOCK ELECTRIC DUCT HEATING COIL WITH DUCT MOUNTED SUPPLY AIR TEMPERATURE SENSOR AND REMOTE THERMOSTAT LOCATED IN MECHANICAL ROOM. SET TO PROVIDE 65 DEG F DISCHARGE AIR.
- 11 SUSPEND UNIT HEATER FROM STRUCTURE ABOVE. PROVIDE 4" COMBUSTION AIR INTAKE AND VENT AND MANUFACTURER'S VERTICAL CONCENTRIC VENT TERMINATION. PROVIDE ALL REQUIRED HARDWARE AND ACCESSORIES. PROVIDE INTAKE AND VENT PIPE MATERIAL IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
- 12 14x14 UP TO CONNECTION AT EF-1 ON ROOF.
- 13 36x24 LOUVER, GREENHECK ESD-403 OR SIMILAR. PROVIDE LOUVER WITH BIRDSCREEN, COLOR BY ARCHITECT. PROVIDE INTERNALLY LINED SHEETMETAL PLENUM WITH 1/2" WIRE MESH SCREEN OVER OPENING, OPPOSED BLADE DAMPER WITH 2-POSITION ACTUATOR AND END SWITCH. PROVIDE IRON BARS OF AT LEAST 1/2" INCH ROUND NO MORE THAN SIX (6) INCHES APART. BARS SHALL BE WELDED TO HAT CHANNEL FRAME AND FRAME SHALL BE SECURELY WELDED TO DUCT.
- 14 PROVIDE GAS MONITOR WITH INTEGRAL CO SENSOR, MSA Z-GARD COMBO GAS MONITOR WITH LED READOUT, STATUS LEDs, AND AUDIBLE ALARM. PROVIDE REMOTE MSA Z-GARD S NO2 SENSOR WITH RS485 COMMUNICATION. INTERLOCK REMOTE SENSOR WITH GAS MONITOR. INTERLOCK WARNING RELAY OUTPUT WITH 2-SPEED EXHAUST FAN, EF-1, CONTROL PANEL AND DAMPER ACTUATOR. UPON DETECTION OF CO/NO2 ABOVE THE WARNING SETPOINT, THE LOUVER DAMPER SHALL OPEN FROM ITS MINIMUM TO MAXIMUM POSITION AND THE FAN SHALL SWITCH FROM LOW TO HIGH SPEED. REFER TO CONTROL DIAGRAM AND SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION. PROVIDE ALL REQUIRED HARDWARE, POWER AND CONTROL WIRING, ETC. MOUNT SENSOR/CONTROL PANEL APPROXIMATELY 5'-0" ABOVE FINISHED FLOOR.
- 15 PROVIDE WALL MOUNTED THERMOSTAT WITH PROTECTIVE, METAL GUARD. INTERLOCK HEATING MODE OPERATION WITH UNIT HEATERS. INTERLOCK COOLING MODE OPERATION WITH EF-1, WIRE COOLING IN PARALLEL WITH MOTION SENSOR. REFER TO CONTROL DIAGRAM AND SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
- 16 NOT USED.
- 17 PROVIDE INTERNALLY LINED TRANSFER DUCT ABOVE SUSPENDED CEILING WITH SCREEN ELBOWS TURNED UP. SIZE AS PER PLANS. (TYPICAL)
- 18 VRV SYSTEM MANAGER WITH LCD DISPLAY. CONNECT ALL VRV SYSTEM INDOOR/OUTDOOR UNITS, MULTI-ZONE SPLIT SYSTEM INDOOR/OUTDOOR UNITS, ENERGY RECOVERY VENTILATORS, AND EXHAUST FANS, AS INDICATED. PROVIDE INTERNET CONNECTION FOR REMOTE ACCESS AND EMAIL NOTIFICATIONS TO SELECT OWNER STAFF. SYSTEM MANAGER SHALL BE PROGRAMMED TO ACCORDING TO THE OWNER'S OPERATING SCHEDULE. COORDINATE WITH BUILDING OWNER PRIOR TO ANY PROGRAMMING. REFER TO CONTROL DETAILS AND SEQUENCE OF OPERATIONS FOR ADDITIONAL INFORMATION.
- 19 PROVIDE WALL MOUNTED, INDOOR UNIT CONTROLLER WITH TEMPERATURE DISPLAY AND SETPOINT ADJUSTMENT. (TYPICAL FOR ALL FCUs, ACs)
- 20 PROVIDE VOLUME DAMPER WITH INTEGRAL MECHANICAL STOPS TO PREVENT AIRFLOW FROM BEING REDUCED BELOW ONE-QUARTER OF THE MAXIMUM AIRFLOW INDICATED. (TYPICAL)

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DWG  
**MECHANICAL FIRST FLOOR PLAN - DUCTWORK**

SCALE AS NOTED			
DATE	DESCRIPTION	DRN	CHK
1/17/17	ISSUED FOR BID	-	-
2/14/17	ISSUED FOR BID	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

REV.	DATE	DESCRIPTION

PROJECT NO. SHEET NO.  
**3578 M1.1**

Plotter: 02/09/17 - 2:41 PM, By: jwent  
 Plot: D:\Projects\1414-108\_Garfield Police\_Headquarters.dwg, scale: 1/8"=1'-0"