

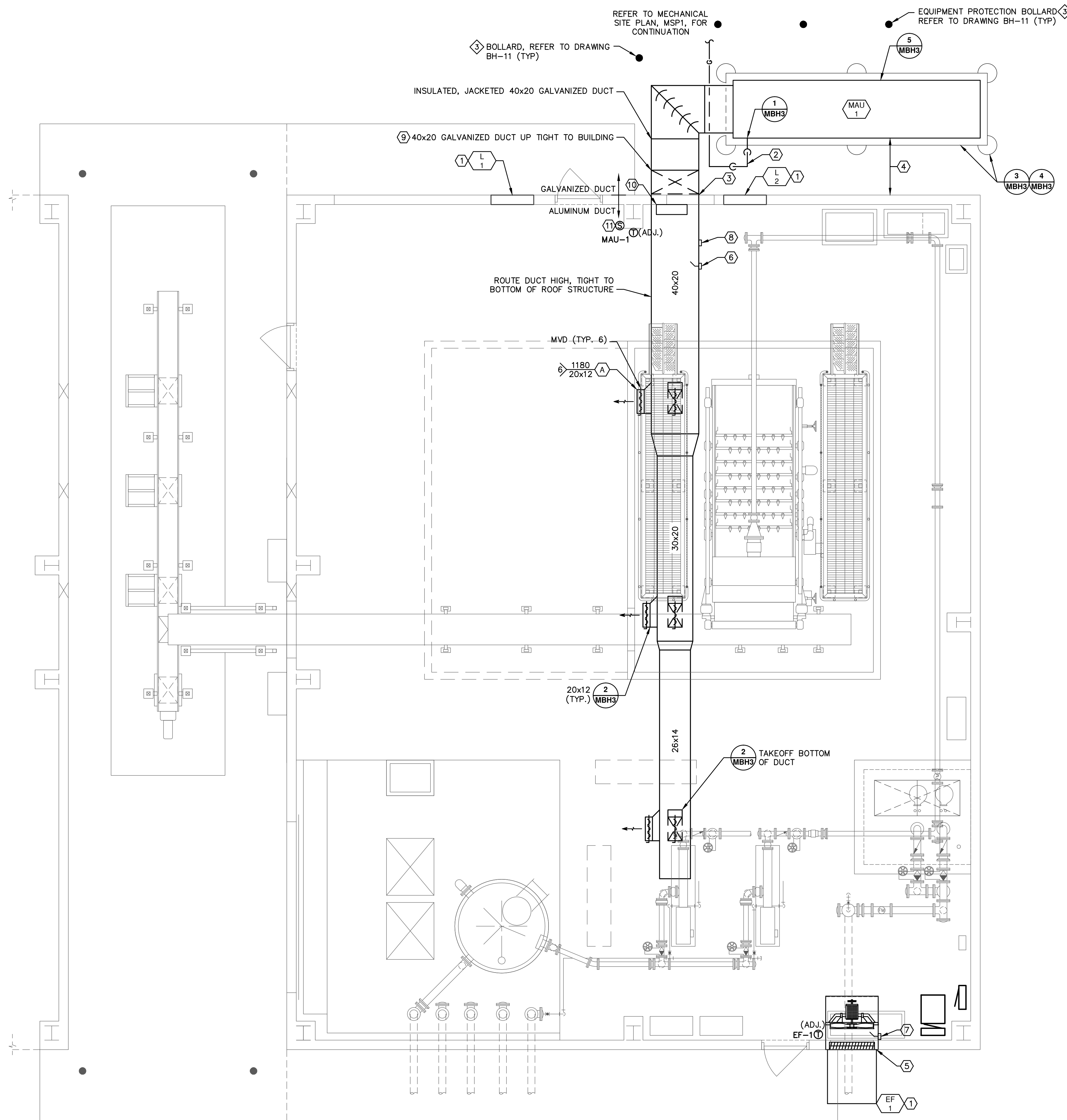
SEQUENCE OF OPERATIONS

EXHAUST FAN EF-1

1. CONTROLLER IN 'HAND' - EF-1 SHALL RUN AND LOUVERS L-1 AND L-2 SHALL BE FULLY OPEN.
2. CONTROLLER IN 'AUTO' - EF-1 SHALL ONLY OPERATE WHEN
 - 1) THE ROOM COOLING-ONLY THERMOSTAT CALLS FOR COOLING AT 80°F (ADJ.), OR
 - 2) THE SCADA SYSTEM COMMANDS THE FAN ON.
3. IF THE FAN IS COMMANDED TO RUN IN HAND OR AUTO, THE LOUVERS L-1 AND L-2 SHALL BE OPEN FULLY. EF-1 SHALL NOT START UNTIL THE LOUVERS ARE PROVEN TO BE OPEN VIA END SWITCH.
4. EF-1 OPERATION SHALL BE MONITORED BY THE SCADA SYSTEM VIA A DUCT-MOUNTED SAIL SWITCH.

MAKE-UP AIR UNIT

1. MAU-1 OPERATION SHALL BE MONITORED BY THE SCADA SYSTEM VIA A DUCT-MOUNTED SAIL SWITCH
2. CONTROLLER IN 'HAND' - MAU-1 FAN SHALL RUN AND LOUVER L-1 SHALL BE OPEN. L-2 REMAINS CLOSED.
3. CONTROLLER IN 'AUTO' - MAU-1 SHALL OPERATE ONLY WHEN
 - 1) THE ROOM HEATING-ONLY THERMOSTAT CALLS FOR HEATING AT 50°F, OR
 - 2) THE SCADA SYSTEM COMMANDS THE FAN ON.
 - 3) IF MAU-1 IS OPERATING, L-2 SHALL BE CLOSED.
4. IF THE FAN IS COMMANDED TO RUN, LOUVER L-1 SHALL BE PROVEN FULLY OPEN VIA END SWITCH BEFORE FAN STARTS.
5. NO CONTROL INTERLOCK SHALL REQUIRE OR PREVENT SIMULTANEOUS OPERATION OF MAU-1 AND EF-1.
6. GAS FURNACE SECTION SHALL BE UNDER CONTROL OF ROOM THERMOSTAT UNDER ALL CONDITIONS.



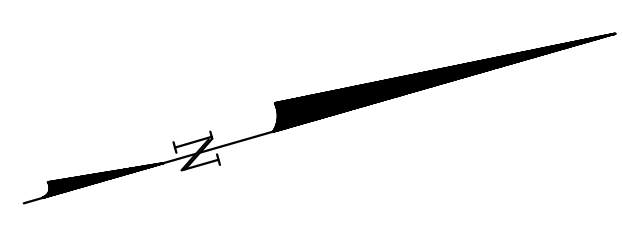
KEYED NOTES

- 1 REFER TO ARCHITECTURAL PLAN FOR LOCATION OF WALL LOUVERS AND EXHAUST FAN.
- 2 APPROXIMATE ROUTING OF 1-1/2" MEDIUM PRESSURE NATURAL GAS PIPING. REFER TO MECHANICAL SITE PLAN, MSP1. APPROXIMATE GAS DEMAND: 822.2 CFH @ 10-14" W.C. PROVIDE PRESSURE REGULATOR AT UNIT.
- 3 PENETRATE WALL WITH TOP OF DUCT AT APPROXIMATELY 5431'-0". SEAL PENETRATION WEATHERTIGHT.
- 4 SERVICE ACCESS SIDE OF UNIT. LOCATE UNIT TO ALLOW FOR A MINIMUM OF 4'-0" OF CLEARANCE BETWEEN UNIT AND EXTERIOR WALL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 5 PENETRATE EXTERIOR WALL WITH TOP OF EXHAUST FAN HOUSING AT APPROXIMATELY 5431'-0". SEAL WALL PENETRATION WEATHERTIGHT.
- 6 DUCT MOUNTED SAIL SWITCH MONITORED BY SCADA SYSTEM FOR MAU-1 OPERATION.
- 7 DUCT MOUNTED SAIL SWITCH MONITORED BY SCADA SYSTEM FOR EF-1 OPERATION.
- 8 DUCT MOUNTED SMOKE DETECTOR FOR MAU-1 SHUTDOWN.
- 9 SUPPORT FROM WALL USING UNISTRUT SUPPORTS ANCHORED TO WALL.
- 10 APPROXIMATE LOCATION OF COMMON FAN/MAU CONTROL PANEL. PROVIDE PHENOLIC LABEL PLATES MOUNTED ON THE WALL THAT READ:
 "EXHAUST FAN OPERATION
 DURING DEWATERING: SWITCH IN 'HAND'
 NO DEWATERING: SWITCH IN 'AUTO'"
 AND
 "MAKE-UP AIR UNIT (HEATING) OPERATION
 DURING DEWATERING: SWITCH IN 'AUTO'
 NO DEWATERING: SWITCH IN 'AUTO'"
 SWITCH IN 'HAND' FOR ADD'L VENTILATION
- 11 WALL MOUNTED LOW TEMPERATURE SWITCH CONNECTED TO SCADA SYSTEM. SCADA SYSTEM TO MONITOR SWITCH AND ALARM IF TEMPERATURE DROPS BELOW 40°F (ADJ.).

GENERAL NOTES

- A. ALL SUPPLY DUCTWORK IN THE PROCESS AREA SHALL BE LOW PRESSURE AND CONSTRUCTED OF ALUMINUM.
- B. ROUTE ALL DUCTWORK AS HIGH AS POSSIBLE. COORDINATE DUCT LOCATIONS WITH PROCESS EQUIPMENT AND PIPING INCLUDING EQUIPMENT SUPPORT TO STRUCTURE.
- C. MAKE-UP AIR UNIT (MAU-1) SHALL PROVIDE HEAT TO THE BUILDING AND AIRFLOW AT A RATE OF SIX AIR CHANGES PER HOUR TO MAINTAIN BUILDING INTERIOR AT 50 DEG F MIN. (ADJ.)
- D. ADJUST ALL DRUM LOUVERS TO PROVIDE WIDEST AIR COVERAGE TO ALLOW AIR MOVEMENT IN ALL PORTIONS OF PROCESS AREA.
- E. DUCT SIZES SHOWN REPRESENT CLEAR INSIDE DIMENSIONS.
- F. WALL LOUVERS, L-1 AND L-2, SHALL BE MONITORED BY EXHAUST FAN, EF-1, SUCH THAT IF EF-1 IS RUNNING, L-1 AND L-2 SHALL BE FULLY OPEN.
- G. MAKE-UP AIR UNIT MAU-1 AND EXHAUST FAN EF-1 OPERATION SHALL BE CONTROLLED BY A COMMON WALL MOUNTED CONTROL PANEL WITH HOA SWITCHES. REFER TO CONTROL SEQUENCE.
- H. EXHAUST FAN, EF-1, SHALL VENTILATE THE BUILDING TO PROVIDE 6 AIR CHANGES PER HOUR.
- J. EXHAUST FAN AND MAKE-UP AIR UNIT CONTROLLERS ARE BY THIS CONTRACTOR. COORDINATE ALL VOLTAGES OF CONTROLLER WITH MECHANICAL EQUIPMENT PROVIDED. CONTROLLER SHALL BE COMPATIBLE WITH SCADA SYSTEM EQUIPMENT.

MECHANICAL FLOOR PLAN
 SCALE: 1/4" = 1'-0"



REVISIONS		
NO.	DATE	DESCRIPTION
1	11/29/2012	ISSUED FOR VALUE ENGINEERING REVIEW AND PRICING
2	01/07/2013	ISSUED FOR BUILDING PERMIT SUBMITTAL TO PPRBD (BIOSOLIDS HANDLING COMPLEX)
3	03/14/2013	ISSUED FOR CONSTRUCTION PER PPRBD BLDG PERMIT #65132 (BIOSOLIDS HANDLING COMPLEX)

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MECHANICAL PLAN
 HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
 LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN: JE DESIGNED: MK CHECKED: CF DATE: SEPTEMBER 2012 PROJECT NO.: 20166.382 GMS FILE NO.: 2599	GMS, INC. CONSULTING ENGINEERS 611 N. WEBER, SUITE 300 COLORADO SPRINGS, COLORADO 80903	SHEET MBH-2 OF —
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