GENERAL NOTES
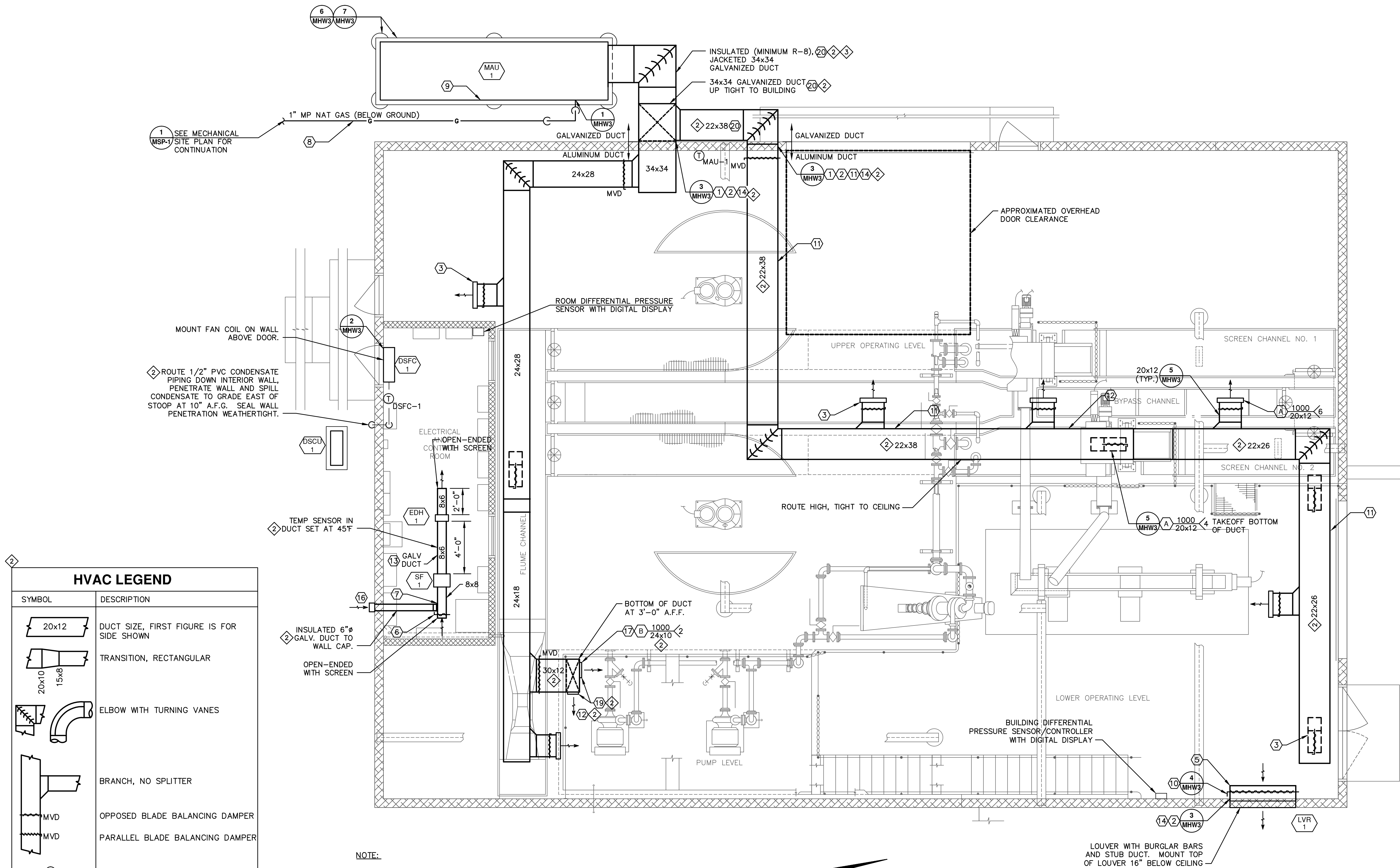
A. ALL EXHAUST AND SUPPLY DUCTWORK IN THE PROCESS AREA SHALL BE LOW PRESSURE AND CONSTRUCTED OF ALUMINUM. LINE ALL DUCT WITH INTERIOR INSULATION.

B. ROUTE ALL DUCT AS HIGH AS POSSIBLE. COORDINATE DUCT LOCATIONS WITH ROLL-UP DOORS AND PROCESS EQUIPMENT, INCLUDING EQUIPMENT RAILS.

C. MAKEUP AIR UNIT SHALL RUN CONTINUOUSLY TO PROVIDE HEAT TO THE BUILDING AND A MINIMUM OF 12 AIR CHANGES PER HOUR.

D. DAMPER AT LOUVER LVR-1 SHALL BE SET TO MAINTAIN THE PROCESS AREA PRESSURE AT A POSITIVE 0.02"W.C. WITH RESPECT TO THE OUTDOOR PRESSURE.

E. ELECTRICAL ROOM SUPPLY FAN SF-1 SHALL RUN CONTINUOUSLY TO PROVIDE VENTILATION AIR, HEAT AND ROOM PRESSURIZATION. ROOM SHALL BE MAINTAINED AT A POSITIVE PRESSURE OF APPROXIMATELY 0.05"W.C. WITH RESPECT TO THE PROCESS AREA BY SF-1.

F. DUCTLESS SPLIT SYSTEM IN ELECTRICAL ROOM SHALL BE OPERATED TO MAINTAIN ROOM AT MAXIMUM OF 80°F, MINIMUM 50°F.

G. ELECTRIC DUCT HEATER EDH-1 IN THE ELECTRICAL ROOM SHALL OPERATE TO MAINTAIN MINIMUM DISCHARGE AIR TEMPERATURE FROM SF-1 AT 45°F.

H. UNLESS NOTED OTHERWISE, ADJUST ALL DRUM LOUVERS TO PROVIDE WIDEST AIR COVERAGE TO ALLOW AIR MOVEMENT IN ALL PORTIONS OF PROCESS AREA.

I. PROCESS AREA IS MONITORED BY ENVIRONMENTAL SENSORS FOR LEL, O2 AND H2S. REFER TO ELECTRICAL FOR COORDINATION.

KEYED NOTES

1. PENETRATE WALL WITH TOP OF DUCT AT APPROXIMATE ELEVATION 5435. SEAL WALL PENETRATION WEATHERTIGHT.

2. PROVIDE BURGLAR BARS AT WALL PENETRATION. REFER TO SHEET MHW-3 FOR DETAIL.

3. AFTER INSTALLATION OF DRUM LOUVER, ROTATE OR AIM DRUM LOUVER SUCH THAT AIRFLOW DISCHARGES ON NEARBY DOOR.

4. NOT USED.

5. PROVIDE 8" DEEP ALUMINUM STUB DUCT FULL SIZE OF LOUVER. ATTACH TO BURGLAR BARS AT WALL PENETRATION. INSTALL LOW-LEAKAGE MULTI-BLADE OPPOSED BLADE DAMPER WITH OPERATOR IN SPACE BETWEEN WALL PENETRATION AND OPEN END OF STUB DUCT. PROVIDE ALUMINUM OR STAINLESS WIRE MESH OVER OPEN END OF DUCT. ATTACH MESH AROUND ENTIRE PERIMETER OF DUCT USING STAINLESS STEEL THREADED FASTENERS AT 6" O.C. MESH MUST BE REMOVABLE FOR CLEANING AND MAINTENANCE.

6. ADJUST MANUAL BALANCING DAMPER TO OBTAIN APPROXIMATELY 100 CFM RETURN AIR AND 50 CFM OUTSIDE AIR. FINAL BALANCE SHALL BE DETERMINED BY ROOM PRESSURE.

7. MAKE OUTSIDE AIR CONNECTION BETWEEN DAMPER AND FAN INTAKE.

8. APPROXIMATE ROUTING OF MEDIUM PRESSURE NATURAL GAS PIPING. ROUTE GAS PIPING APPROXIMATELY 150 FEET TO GAS METER UNDERGROUND, SEE MASTER MECHANICAL SITE PLAN SHEET MSP-1. APPROXIMATE GAS DEMAND: 1200 CFH @ 10-14"W.C. PROVIDE PRESSURE REGULATOR AT UNIT.

9. SERVICE ACCESS SIDE OF UNIT. MOUNT UNIT TO ALLOW FOR MINIMUM 4 FEET OF CLEARANCE BETWEEN UNIT AND WALL. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS.

10. GREENHECK VCD OR ENGINEER APPROVED EQUIVALENT LOW-LEAKAGE DAMPER SHALL BE PROVIDED AS NECESSARY TO MAINTAIN PROCESS AREA DIFFERENTIAL PRESSURE AT 0.02" ABOVE OUTDOOR PRESSURE.

11. COORDINATE DUCT LOCATION WITH OVERHEAD DOOR IN THIS AREA. DUCTWORK SHALL BE INSTALLED TO AVOID INTERFERENCE WITH DOOR, TRACK AND INSTALLATION HARDWARE.

12. COORDINATE DUCT LOCATION WITH LIGHTING AND ENVIRONMENTAL SENSORS IN THIS AREA.

13. TRANSITION AS NECESSARY TO HEATER SIZE.

14. BURGLAR BARS SHALL BE MANUFACTURED OF ALUMINUM.

15. NOT USED.

16. GREENHECK WC-6 HOODED WALL CAP OR EQUIVALENT. PROVIDE BIRD SCREEN AND DAMPER.

17. MOUNT SUPPLY GRILLE DIRECTLY TO DUCT AT APPROXIMATELY 3'-2" A.F.F.

18. NOT USED.

19. ADJUST SUPPLY GRILLE TO 45° DEFLECTION DOWNWARD TOWARD FLOOR.

20. PREPARE SURFACE AND PAINT TO MATCH BUILDING EXTERIOR WALL COLOR.

HVAC LEGEND

SYMBOL	DESCRIPTION
20x12	DUCT SIZE, FIRST FIGURE IS FOR SIDE SHOWN
20x10 15x8	TRANSITION, RECTANGULAR
	ELBOW WITH TURNING VANES
	BRANCH, NO SPLITTER
MVD	OPPOSED BLADE BALANCING DAMPER
MVD	PARALLEL BLADE BALANCING DAMPER
T RTU-1	THERMOSTAT WITH EQUIP CONTROLLED
→	AIR FLOW DIRECTION
B 275 / 24x24 3	AIR DEVICE CALLOUT WITH QUANTITY - TOP LINE INDICATES CFM, BOTTOM LINE INDICATES NECK SIZE
EF	EQUIPMENT CALLOUT - SEE SCHEDULES
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
EX	EXHAUST
A.F.F.	ABOVE FINISHED FLOOR

NOTE:
1. PROVIDE TEST AND BALANCE REPORT TO PPRBD INSPECTOR AT TIME OF HEAT FINAL.

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

(Plan labels: MAU-1, MHW3, 1" MP NAT GAS (BELOW GROUND), SEE MECHANICAL SITE PLAN FOR CONTINUATION, INSULATED (MINIMUM R-8) JACKETED 34x34 GALVANIZED DUCT, 34x34 GALVANIZED DUCT UP TIGHT TO BUILDING, GALVANIZED DUCT, ALUMINUM DUCT, 24x28, 34x34, ALUMINUM DUCT, APPROXIMATED OVERHEAD DOOR CLEARANCE, MOUNT FAN COIL ON WALL ABOVE DOOR, ROUTE 1/2" PVC CONDENSATE PIPING DOWN INTERIOR WALL, PENETRATE WALL AND SPILL CONDENSATE TO GRADE EAST OF STOOP AT 10" A.F.G. SEAL WALL PENETRATION WEATHERTIGHT., DSFC-1, DSCU-1, ELECTRICAL ROOM, OPEN-ENDED CONT WITH SCREEN, ROOM DIFFERENTIAL PRESSURE SENSOR WITH DIGITAL DISPLAY, UPPER OPERATING LEVEL, SCREEN CHANNEL NO. 1, BYPASS CHANNEL, SCREEN CHANNEL NO. 2, 22x38, 22x26, 20x12 (TYP.), TEMP SENSOR IN DUCT SET AT 45°F, EDH-1, FLUME CHANNEL, GALV DUCT, SF-1, 8x6, 8x8, 24x18, INSULATED 6"∅ GALV. DUCT TO WALL CAP., OPEN-ENDED WITH SCREEN, BOTTOM OF DUCT AT 3'-0" A.F.F., 1000 24x10, ROUTE HIGH, TIGHT TO CEILING, 1000 20x12, TAKEOFF BOTTOM OF DUCT, 30x12, MVD, LOWER OPERATING LEVEL, PUMP LEVEL, BUILDING DIFFERENTIAL PRESSURE SENSOR/CONTROLLER WITH DIGITAL DISPLAY, 1000 20x12, LVR-1, LOUVER WITH BURGLAR BARS AND STUB DUCT. MOUNT TOP OF LOUVER 16" BELOW CEILING.)

REVISIONS

NO.	DATE	DESCRIPTION
1	04/22/2011	ISSUED FOR VALUE ENGINEERING REVIEW AND COMMENT
2	05/17/2011	ISSUED FOR PREPARATION OF CMO
3	06/20/2011	ISSUED FOR BUILDING PERMIT SUBMITTAL TO PPRBD (HEADWORKS BUILDING)
4	08/05/2011	ISSUED FOR CONSTRUCTION PER PPRBD BUILDING PERMIT #68510 (HEADWORKS BLDG)

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

DRAWN JH
DESIGNED CF
CHECKED
DATE 04/11/2011
PROJECT NO. 20166.352
GMS FILE NO. 2599

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET
MHW-1
OF