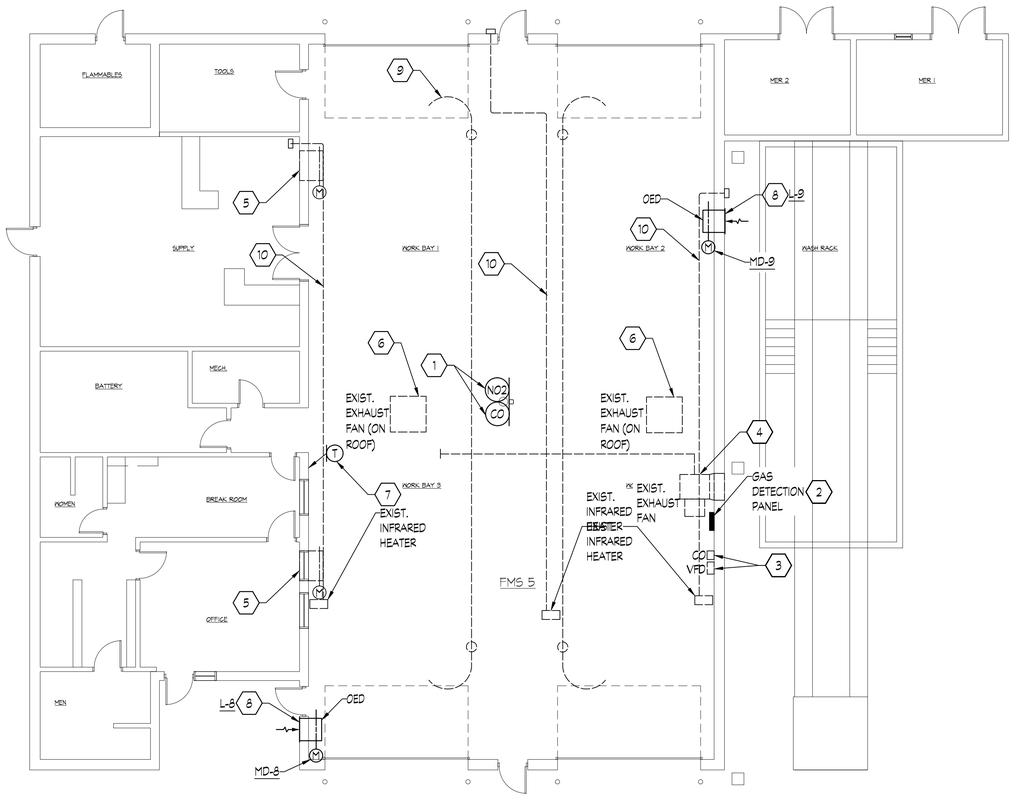


FIELD MAINTENANCE SHOP #5 (FMS-5) FLOOR PLAN

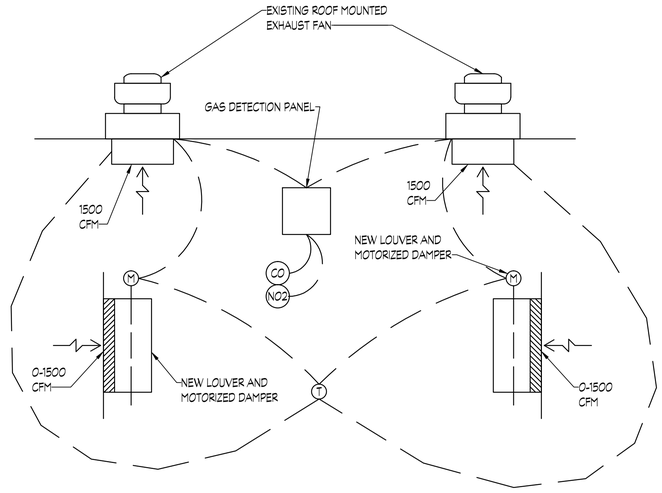
SCALE: 1/8" = 1' - 0"

GENERAL NOTES:

1. REFER TO SEQUENCE OF OPERATIONS, ON THIS DRAWING, FOR REQUIRED EQUIPMENT OPERATION AND SYSTEM CONTROL.

DRAWING NOTES:

1. INSTALL CARBON MONOXIDE (CO) AND NITROGEN DIOXIDE (NO2) SENSORS AS INDICATED, TO ACCOUNT FOR DIESEL AND GAS VEHICLES. INSTALL BOTH SENSORS ON A COMMON MOUNTING PANEL, AND ATTACH TO CENTER ROUND COLUMN. COORDINATE WITH OTHER EXISTING SERVICES THAT ARE ATTACHED TO THE COLUMN. MAINTAIN MAXIMUM 50'-0" RADIUS FOR FULL COVERAGE OF VEHICLE BAYS.
2. INSTALL NEW GAS DETECTION CONTROL PANEL WITH INTEGRAL ALARMS.
3. REMOVE EXISTING VARIABLE FREQUENCY DRIVE (VFD) AND ASSOCIATED CARBON MONOXIDE (CO) CONTROLLER; CURRENTLY INTERLOCKED WITH EXISTING VEHICLE EXHAUST UTILITY FAN, WITHIN SPACE, WHICH WILL REMAIN.
4. EXISTING VEHICLE EXHAUST UTILITY FAN, WITHIN SPACE, TO REMAIN.
5. EXISTING EXTERIOR WALL LOUVER, OVER LOW ROOF. REMOVE MOTORIZED DAMPER AND ANY ASSOCIATED POWER AND CONTROL WIRING. PROVIDE ALUMINUM INSULATED BLANK-OFF PANEL AT REAR OF LOUVER, AND SEAL AIR AND WATER TIGHT.
6. CONFIRM OPERATION OF EXISTING ROOF-MOUNTED EXHAUST FAN TO PROVIDE A MINIMUM OF 1500 CFM. REMOVE INTERLOCK TO CONTROL FAN FROM EXISTING WALL SWITCH, AND REFER TO SEQUENCES FOR REQUIRED OPERATION UNDER GAS DETECTION OR SUMMER VENTILATION. PROVIDE 'ADD ALTERNATE' LINE ITEM PRICE TO REPLACE FAN; SEE FAN SCHEDULE FOR (EF-11). EXISTING CURB TO BE MODIFIED IF FAN IS REPLACED.
7. PROVIDE NEW THERMOSTAT FOR SUMMER VENTILATION CONTROL OF EXISTING EXHAUST FANS, AND NEW INTAKE AIR LOUVERS AND MOTORIZED DAMPERS.
8. PROVIDE NEW 30"x30" OUTSIDE AIR LOUVER, AND INSTALL AT 18" AFF, IN EXISTING CONCRETE BLOCK WALL. SEAL WALL PENETRATION AIR TIGHT. PROVIDE INSULATED PLENUM ON REAR SIDE OF LOUVER FOR INSTALLATION OF NEW MOTORIZED DAMPER WITH INTERNAL ACTUATOR IN NEMA 3 ENCLOSURE, AND INSTALL WIRE MESH SCREEN AT OPEN ENDED DUCT.
9. EXISTING HOSE AND TAILPIPE ADAPTER, TO REMAIN. TYPICAL OF FOUR (4).
10. EXISTING GAS-FIRED INFRARED HEATER AND ASSOCIATED COMPONENTS, TO REMAIN. EXHAUST FLUE TERMINATES AT EXTERIOR OF BUILDING. SHOWN FOR REFERENCE ONLY.



SERVICE BAYS FLOW DIAGRAM

NO SCALE

SEQUENCE OF OPERATIONS:

1. GAS DETECTION: THE GAS DETECTION SYSTEM SHALL OPERATE AND OVER-RIDE ALL OTHER SEQUENCES.

A. THERE IS A SINGLE SET OF CARBON MONOXIDE AND NITROGEN DIOXIDE SENSORS, CENTRALLY LOCATED, TO PROVIDE FULL COVERAGE OF THE VEHICLE MAINTENANCE BAYS.

B. IF EITHER ONE OF THE CARBON MONOXIDE AND/OR NITROGEN DIOXIDE DETECTORS SENSES GAS CONCENTRATIONS ABOVE LEVEL ONE SET POINTS (20 PPM OF CARBON MONOXIDE AND/OR 3 PPM OF NITROGEN DIOXIDE), THE FOLLOWING SHALL OCCUR.

(1) MOTORIZED DAMPERS AT BOTH OF THE TWO OUTSIDE AIR LOUVERS SHALL OPEN.
(2) BOTH OF THE TWO ROOF MOUNTED EXHAUST FANS SHALL BE ENERGIZED.
(3) END SWITCHES SHALL PROVIDE INDICATION THAT DAMPERS ARE WIDE OPEN, BUT SHALL NOT PRECLUDE ANY EXHAUST FANS FROM OPERATING.

C. IF EITHER ONE OF THE CARBON MONOXIDE AND/OR NITROGEN DIOXIDE DETECTORS SENSES GAS CONCENTRATIONS CONTINUING TO RISE ABOVE LEVEL TWO SET POINTS (50 PPM OF CARBON MONOXIDE AND/OR 5 PPM OF NITROGEN DIOXIDE), THE GAS DETECTION PANEL SHALL INITIATE AUDIBLE AND VISUAL ALARMS.

D. EXHAUST FAN(S) SHALL CONTINUE TO OPERATE UNTIL GAS CONCENTRATIONS ARE REDUCED TO BELOW SET POINT LEVELS.

E. WHEN CARBON MONOXIDE AND/OR NITROGEN DIOXIDE GAS CONCENTRATIONS FALL BELOW THE LEVEL ONE SET POINTS (NOTED ABOVE), THE EXHAUST FAN(S) SHALL DE-ENERGIZE AND MOTORIZED DAMPER(S) SHALL CLOSE.

2. VEHICLE EXHAUST:

A. VEHICLE EXHAUST UTILITY FAN SHALL BE MANUALLY STARTED, WITH TAILPIPE HOSE CONNECTED TO VEHICLE(S) PLANNED TO BE OPERATED.

B. MOTORIZED DAMPERS AT BOTH OF THE TWO OUTSIDE AIR LOUVERS SHALL OPEN.

C. WHEN VEHICLE EXHAUST FAN IS DE-ENERGIZED, AND IF GAS DETECTION SYSTEM IS NOT IN LEVEL ONE OR LEVEL TWO ALARM, THE OUTSIDE AIR MOTORIZED DAMPERS SHALL CLOSE.

3. SUMMER VENTILATION:

A. THE SPACE TEMPERATURE SENSOR SHALL, UPON A RISE IN ROOM TEMPERATURE ABOVE ITS SET POINT (80°F, ADJUSTABLE), OPEN THE OUTSIDE AIR LOUVERS' MOTORIZED DAMPERS, AND ENERGIZE THE ROOF MOUNTED EXHAUST FANS.

N 1'-0 4' 8' 12' 16'

GRAPHIC SCALE 1/8" = 1'-0"

DAVIS BOWEN & FRIEDEL, INC.
ARCHITECTS, ENGINEERS & SURVEYORS
SALISBURY,MARYLAND ■ MILFORD, DELAWARE
410.543.9091 302.424.1441

General Notes:

NOT FOR BIDDING PURPOSES

Consultant:

Allen & Shariff
DESIGN | BUILD | MANAGE
Allen & Shariff Engineering, LLC
205 East Market Street
Salisbury, Maryland 21801
Tel: 410.341.0200

Revision

Project:

DELAWARE ARMY NATIONAL GUARD

VEHICLE MAINTENANCE BLDGS - C0/NO2 DETECTION DESIGN

FIELD MAINTENANCE SHOP #5 (FMS-5)
29757 ARMORY ROAD
DAGSBORO, DE 19939

Set No.: DESIGN	Sheet Title: MECHANICAL FLOOR PLAN	
Proj.No.: 0999.011.002	Scale: AS NOTED	Sheet No.: M6
Dwn.By: DH & SM	Date: 11/26/13	