

**GENERAL NOTES**

- A. ALL DUCT SIZES SHOWN ARE INSIDE FREE AREA DIMENSIONS. INSTALL WORK AS HIGH AS POSSIBLE AND CAREFULLY COORDINATE ALL WORK WITH STRUCTURAL, ELECTRICAL, PLUMBING, ETC.
- B. PROVIDE FLEXIBLE CONNECTIONS AT ALL EVAPORATIVE COOLERS, EXHAUST FANS AND ANY OTHER EQUIPMENT WITH VIBRATION-PRODUCING COMPONENTS.
- C. ALL EXHAUST FAN OUTLETS, FLUES, AND PLUMBING VENTS SHALL BE LOCATED AT LEAST 10'-0" FROM ANY OUTSIDE AIR INTAKES.
- D. ALL LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED AND INSTALLED BY DIVISION 23 UNLESS NOTED OTHERWISE.
- E. LOCATION OF THERMOSTATS AND ACCESS DOORS SHALL BE VERIFIED WITH ARCHITECT BEFORE INSTALLATION.
- F. ALL SUPPLY AND RETURN DUCTWORK OUTSIDE OF BUILDING SHALL BE WRAPPED WITH 1-1/2" EXTERNAL INSULATION AND 0.016" STUCCO EMBOSSED WEATHERPROOF ALUMINUM JACKETING (IN ADDITION TO BEING LINED AS SPECIFIED ABOVE). ALL OTHER SUPPLY AND RETURN DUCTWORK SHALL BE WRAPPED WITH 1-1/2" EXTERNAL INSULATION, EXCEPT FOR EXPOSED ROUND DUCTS WHICH SHALL BE UNINSULATED. (NOTE: PROVIDE THICKER INSULATION WHERE NEEDED TO MEET LOCAL CODE AND NATIONAL ENERGY R-VALUE REQUIREMENTS.)
- G. PROVIDE ROUND SPIRAL CONSTRUCTION FOR ALL EXPOSED DUCTWORK.
- H. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF SIDEWALL GRILLES, DUCT-MOUNTED GRILLES, EXPOSED DUCTWORK, EXPOSED PIPING, LOUVERS, AND EXHAUST FANS WITH ARCHITECT BEFORE INSTALLATION.
- I. PROVIDE INLET AND OUTLET TRANSITIONS AS REQUIRED AT EACH EXHAUST FAN, LOUVER, AIR DISTRIBUTION DEVICE, ETC.
- J. CLEAR SPACE ALLOWANCE FOR ALL DUCTWORK IS VERY MINIMAL AND WILL REQUIRE CAREFUL COORDINATION WITH OTHER TRADES. VERIFY ALL DIMENSIONS BOTH ON THE DRAWINGS AND ON SITE BEFORE LAYING OUT, CUTTING, AND FABRICATING THE WORK. DIVISION 23 SHALL BE RESPONSIBLE FOR ALL SHEET METAL WORK THAT IS CUT AND FABRICATED FROM THE CONTRACT DRAWINGS WITHOUT DIMENSIONAL VERIFICATION. DIVISION 23 SHALL ALSO BE RESPONSIBLE FOR ALL DUCT AND PIPE OFFSETS REQUIRED TO AVOID STRUCTURAL ELEMENTS, CHANGES IN CEILING HEIGHTS, AND ALL WORK BY OTHER TRADES.
- K. PROVIDE ALL EQUIPMENT WITH ALL REQUIRED SERVICE AND OPERATIONAL CLEARANCES, INCLUDING ALL REQUIRED CLEARANCES TO COMBUSTIBLES (WHERE APPLICABLE) AND ALL CLEARANCES REQUIRED BY NEC ARTICLE 110.
- L. PIPE AND DUCT ROUTING IS APPROXIMATE ONLY. EACH BIDDER SHALL SATISFY HIMSELF OR HERSELF AS TO EXISTING BUILDING CONDITIONS BEFORE SUBMITTING HIS OR HER BID. NO ALLOWANCE SHALL BE MADE AFTER CONTRACT IS AWARDED TO ALLOW FOR LACK OF PRE-BID INSPECTION OF BUILDING BY SUCCESSFUL BIDDER.
- M. COORDINATE WORK WITH OTHER TRADES TO MINIMIZE CONFLICTS AND "DOWN TIME".
- N. ALL EQUIPMENT CAPACITIES ARE SCHEDULED FOR 5800 FT. ELEVATION.
- O. ALL WORK SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES.
- P. DIVISION 23 SHALL KEEP UPDATED AS-BUILT DRAWINGS ON SITE FOR REVIEW DURING CONSTRUCTION. PROVIDE AS-BUILT DRAWINGS TO OWNER AFTER CONSTRUCTION HAS BEEN COMPLETED.
- Q. CONSTRUCT LOW VELOCITY/LOW PRESSURE DUCT WORK AS SPECIFIED IN THE CURRENT SMACNA HVAC CONSTRUCTION STANDARDS, FOR 2" wg PRESSURE CLASSES.
- R. CONTROLS PRICE SHALL BE INCLUDED IN DIVISION 23 PRICE.
- S. ALL PIPING ROUTING IS SHOWN SCHEMATIC IN NATURE. ALL DUCT ROUTING IS SHOWN IN APPROXIMATE LOCATIONS. ALL EQUIPMENT LOCATIONS SHOWN ARE APPROXIMATE. MECHANICAL DIVISION SHALL COORDINATE ROUTING OF PIPING AND DUCTWORK AND LOCATION OF EQUIPMENT WITH ALL OTHER TRADES TO ENSURE PROPER INSTALLATION AND TO AVOID CONFLICTS.
- T. AS USED ON THESE CONSTRUCTION DOCUMENTS, DIVISION 23 REFERS TO THE MECHANICAL DIVISION AND DIVISION 26 REFERS TO THE ELECTRICAL DIVISION.

| MECHANICAL SYMBOL LEGEND |                                                                                                                                                                                               |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL                   | DESCRIPTION                                                                                                                                                                                   |
|                          | NEW SIDEWALL SUPPLY/RETURN GRILLE                                                                                                                                                             |
|                          | DIFFUSER TYPE, GRILLE SIZE, AND CFM                                                                                                                                                           |
|                          | SUPPLY/RETURN/EXHAUST DUCTWORK RISER UP                                                                                                                                                       |
|                          | SUPPLY/RETURN/EXHAUST DUCTWORK RISER DOWN                                                                                                                                                     |
|                          | NEW SUPPLY/RETURN/EXHAUST DUCT                                                                                                                                                                |
|                          | NEW MANUAL BALANCING DAMPER WITH OFFSET BRACKET AND EXTENDED FIN (OPPOSED BLADE DAMPER IN RECTANGULAR DUCT, BUTTERFLY DAMPER IN ROUND DUCT) DAMPER SHALL BE INSTALLED IN ACCESSIBLE LOCATION. |
|                          | NEW MOTORIZED DAMPER - INSTALL IN ACCESSIBLE LOCATION.                                                                                                                                        |
|                          | DUCT WIDTH BY DUCT HEIGHT                                                                                                                                                                     |
|                          | NEW 90 DEGREE ELBOW W/ SINGLE WIDTH TURNING VANES                                                                                                                                             |
|                          | NEW LONG RADIUS ELBOW (r/d = 1.5)                                                                                                                                                             |
|                          | NEW SHORT RADIUS ELBOW W/ SINGLE WIDTH TURNING VANES                                                                                                                                          |
|                          | NEW MECHANICAL EQUIPMENT                                                                                                                                                                      |
|                          | NEW ROOM THERMOSTAT                                                                                                                                                                           |
|                          | ASSOCIATED EQUIPMENT                                                                                                                                                                          |
|                          | NEW 4-HOUR TWIST TIMER                                                                                                                                                                        |
|                          | ASSOCIATED EQUIPMENT                                                                                                                                                                          |
|                          | KEYED NOTE SYMBOL DESIGNATION                                                                                                                                                                 |
|                          | NEW EQUIPMENT SYMBOL DESIGNATION                                                                                                                                                              |

**GAS FIRED UNIT HEATER SCHEDULE**

| MARK | SERVICE/ MOUNTING       | CFM | HEATING DATA |              | ELECTRICAL |       | MOTOR HP | EFFICIENCY | APPROX. WT. LBS | MANUFACTURER MODEL # |
|------|-------------------------|-----|--------------|--------------|------------|-------|----------|------------|-----------------|----------------------|
|      |                         |     | INPUT (MBH)  | OUTPUT (MBH) | VOLTS      | PHASE |          |            |                 |                      |
| UH-1 | STORAGE/ CEILING        | 500 | 30           | 19.6         | 115        | 1     | 1/15     | 82         | 60              | MODINE HDS 30        |
| UH-2 | MECHANICAL BAY/ CEILING | 500 | 30           | 19.6         | 115        | 1     | 1/15     | 82         | 60              | MODINE HDS 30        |
| UH-3 | MECHANICAL BAY/ CEILING | 500 | 30           | 19.6         | 115        | 1     | 1/15     | 82         | 60              | MODINE HDS 30        |

- NOTES:  
 1. UNITS ARE SELECTED AT AN ELEVATION OF 5400 FEET ABOVE SEA LEVEL. PROVIDE PROPER BURNERS AND ORIFICES FOR SITE ELEVATION.  
 2. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF UNITS WITH ARCHITECT PRIOR TO INSTALLATION.  
 3. PROVIDE ALL REQUIRED SERVICE AND OPERATIONAL CLEARANCES, INCLUDING ALL REQUIRED CLEARANCES TO COMBUSTIBLES AND ALL CLEARANCES REQUIRED BY NEC ARTICLE 110.

- ACCESSORIES:  
 1. HIGH ALTITUDE GAS CONTROL.  
 2. ADJUSTABLE HORIZONTAL LOUVERS.  
 3. ELECTRONIC SPARK IGNITED SAFETY PILOT.  
 4. WALL-MOUNTED TWO-STAGE THERMOSTAT AND SUMMER/WINTER SWITCH.  
 5. 24-VOLT TRANSFORMER.  
 6. SUSPENSION KIT.  
 7. TWO-STAGE GAS CONTROL.  
 8. VERTICAL-HORIZONTAL COMBUSTION AIR VENT KIT WITH CONCENTRIC ADAPTER PER PLAN  
 9. PROVIDE WITH PROPANE GAS CONVERSION KIT

**EXHAUST FAN SCHEDULE**

| MARK | FAN TYPE              | SERVICE/ MOUNTING              | CFM | EXT. SP IN | MOTOR RPM | MOTOR HP | ELECTRICAL |       | SONES | DRIVE  | MANUFACTURER MODEL #     |
|------|-----------------------|--------------------------------|-----|------------|-----------|----------|------------|-------|-------|--------|--------------------------|
|      |                       |                                |     |            |           |          | VOLTS      | PHASE |       |        |                          |
| EF-1 | SIDEWALL PROP EXHAUST | MAINTENANCE BAY/ SIDEWALL HIGH | 850 | 0.25       | 1550      | 1/8      | 115        | 1     | 8.7   | DIRECT | GREENHECK SE1-12-432-D8  |
| EF-2 | SIDEWALL PROP EXHAUST | STORAGE/ SIDEWALL              | 960 | 0.25       | 1350      | 1/12     | 115        | 1     | 7.9   | DIRECT | GREENHECK SE1-12-432-G-1 |
| EF-3 | SIDEWALL PROP EXHAUST | MAINTENANCE BAY/ SIDEWALL LOW  | 850 | 0.25       | 1550      | 1/8      | 115        | 1     | 8.7   | DIRECT | GREENHECK SE1-12-432-D8  |

- NOTES:  
 1. FANS ARE SELECTED AT 5800 FT ABOVE SEA LEVEL.  
 2. PROVIDE ALL FANS WITH INTEGRAL VIBRATION ISOLATION.  
 3. PROVIDE ALL FANS WITH BACKDRAFT DAMPERS.  
 4. PROVIDE EF-1, EF-2, AND EF-3 WITH MOTORIZED ANTI-BACKDRAFT DISCHARGE LOUVER, MOTOR-SIDE WELDED STEEL WIRE MOTOR SUPPORTS AND FAN GUARD, MOTOR MOUNTED TO SUPPORT GUARD WITH NEOPRENE ISOLATORS, AND LOUVER/DAMPER WEATHERHOOD.  
 5. DIVISION 23 SHALL INTERLOCK EF-1, EF-2 AND EF-3 WITH EC-1. REFER TO ELECTRICAL.  
 6. DIVISION 23 SHALL INTERLOCK EF-1 AND EF-2 AND EF-3 WITH 4-HOUR TWIST TIMER. REFER TO ELECTRICAL.  
 7. PROVIDE ALL SERVICE AND OPERATIONAL CLEARANCES AS REQUIRED, INCLUDING ALL CLEARANCES REQUIRED BY NEC ARTICLE 110.  
 8. REFER TO MANUFACTURER DATA FOR EQUIPMENT WEIGHTS.  
 9. PROVIDE ALL DIRECT DRIVE FANS WITH SOLID-STATE SPEED CONTROLLER MOUNTED ON FAN HOUSING.

**AIR DISTRIBUTION DEVICE SCHEDULE**

| MARK | DESCRIPTION              | MOUNTING         | MANUFACTURER MODEL # | MATERIAL | FINISH             | REMARKS                                                                                                     |
|------|--------------------------|------------------|----------------------|----------|--------------------|-------------------------------------------------------------------------------------------------------------|
| G1   | SIDEWALL RETURN GRILLE   | SURFACE SIDEWALL | TITUS 35FS           | ALUMINUM | WHITE BAKED ENAMEL | 35 DEG FIXED DEFLECTION, 1/2" BLADE SPACING, BLADES PARALLEL TO SHORT DIMENSION, AND NECK SIZE AS INDICATED |
| LV   | EXHAUST OR INTAKE LOUVER | SURFACE SIDEWALL | RUSKIN ELF-37SDX     | ALUMINUM | COLOR BY ARCHITECT | LOUVER SIZE AS INDICATED. PROVIDE WITH MOTORIZED DAMPER AND BIRDSCREEN. COORDINATE FRAME WITH INSTALLATION. |

- NOTES:  
 1. PATCH AND SEAL ALL WALL PENETRATIONS WEATHERTIGHT AT TYPE LV DEVICES.

IN THE EVENT THAT BONES OR HISTORIC ARCHEOLOGICAL MATERIAL ARE UNCOVERED DURING CONSTRUCTION OR EARTH DISTURBING ACTIVITIES, CEASE WORK IMMEDIATELY AND PROTECT THE REMAINS FROM FURTHER DISTURBANCE. NOTIFY THE OWNER, THE DIRECTOR OF FORT BLISS NATIONAL CEMETERY AT AT 915-564-0201. THE OWNER WILL CONTACT THE NEW MEXICO HISTORIC PRESERVATION DIVISION (SHPO). THE OWNER AND SHPO MAY DISCUSS THE APPROPRIATE WAY TO PROCEED. DIRECTION TO THE CONTRACTOR WILL BE PROVIDED BY THE OWNER.

Vertical scale markers on the left side of the page, including 'three inches = one foot', 'one and one half inches = one foot', 'one inch = one foot', 'three quarters inch = one foot', 'one half inch = one foot', 'one eighth inch = one foot', and 'one quarter inch = one foot'.

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| <p>Drawing Title</p> <p style="text-align: center;"><b>STORAGE BUILDING<br/>MECHANICAL SCHEDULES</b></p> <p>Approved: Director Office of Construction Management</p> | <p>Project Title</p> <p style="text-align: center;"><b>CEMETERY IMPROVEMENTS AND<br/>NEW MAINTENANCE BUILDING</b></p> <p>Location<br/>FORT BAYARD, NEW MEXICO</p> <p>Date<br/>NOVEMBER 18, 2011</p> <p>Checked<br/>RA</p> <p>Drawn<br/>NJS</p> | <p>Project Number<br/>885CM3007</p> <p>Building Number<br/>BLDG #2</p> <p>Drawing Number<br/>H-611</p> <p>Dwg. 109 of 120</p> | <p><b>NATIONAL CEMETERY<br/>ADMINISTRATION<br/>OFFICE OF<br/>DESIGN AND<br/>CONSTRUCTION</b></p> <p>Department of<br/>Veterans Affairs</p> |
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**100% CONSTRUCTION DRAWINGS**