PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The requirements of the General Conditions, Supplementary Conditions and the following Specification sections apply to all Work herein:
   1. Section 23 00 10 - General Requirements
   2. Section 23 00 20 - HVAC Scope of Work
   3. Section 23 05 07 - Design Conditions
   4. Section 23 05 13 - Motor Requirements for HVAC Equipment
   5. Section 23 05 48 - Vibration Isolation
   6. Section 23 05 93 - Testing, Balancing, and Adjusting
   7. Section 23 31 00 - Ductwork and Sheet Metal

1.2 SUMMARY

A. Furnish and install exhaust and ventilating fans as specified herein and as shown on the Drawings.

1.3 REFERENCE STANDARDS

A. All exhaust and ventilating fans shall be designed, manufactured and tested in accordance with the latest applicable industry standards including the following:
   1. AMCA Standard 210
   2. NEMA
   3. AMCA 300
   4. UL762
   5. NFPA 96

B. All equipment and material to be furnished and installed on this Project shall be UL or ETL listed, in accordance with the requirements of the authorities having jurisdiction, and suitable for its intended use on this Project.

1.4 SUBMITTALS

A. The following submittal data shall be furnished according to the General Conditions and Section 23 00 10 and shall include, but not be limited to:
   1. Exhaust and Ventilating Fans complete with selection, fan performance curves, fan rotation, physical dimensions, capacity data, motor data, miscellaneous accessories, etc.
   2. Variable Speed Drives* complete with enclosure construction details, line reactor or tuned filter data, design features, accessories, disconnect, capacitor, mechanical bypass, if specified, and spare parts data.
   3. Inline Centrifugal Smoke Exhaust Fans* complete with selection, fan rotation, physical dimensions, capacity data, motor, etc.
   4. Epoxy paint recommended by the manufacturer for roof mounted fans and fans exposed to the weather.
   5. Prior to execution of factory testing and lab testing, submit test procedures, recording forms, and test equipment cut sheets to Engineer for review. Refer to Section 23 00 20 titled “Scope of Work” for “Scheduling Procedures”.

B. All items or equipment listed above with asterisks (*) shall be certified by the manufacturer using Manufacturer Certification “MCA” as set forth in Section 23 00 10. See Section 23 00 10 for certification requirements.

1.5 WARRANTY

A. Comply with the requirements of the General Conditions and Section 23 00 10.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. If it complies with these Specifications, propeller type wall fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Aerovent
3. Barry
4. Bayley
5. Carnes
6. Cool Air
7. Greenheck
8. Hartzell
9. Howden/Buffalo
10. Loren Cook
11. New Philadelphia Fan Co.
12. Quiet Air
13. U. S. Fan International

B. If it complies with these Specifications, centrifugal type supply and exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Barry
3. Carrier
4. Chicago
5. Greenheck
6. Hartzell
7. Howden/Buffalo
8. Loren Cook
9. Pace
10. Trane
11. Twin City
12. York
13. U. S. Fan International

C. If it complies with these Specifications, cabinet type fans manufactured by one of the following manufacturers will be acceptable:
1. Bohn
2. Buffalo Forge
3. Carrier
4. Greenheck
5. McQuay
6. Trane
7. York
8. U. S. Fan International

D. If it complies with these Specifications, inline vane axial fans manufactured by one of the following manufacturers will be acceptable:
1. Aerovent/Flakt
2. Barry
3. Hartzell
4. Howden/Buffalo
5. Loren Cook
6. New Philadelphia Fan Co.
7. Trane
8. Woods
9. U.S. Fan International

E. If it complies with these Specifications, mixed flow inline fans manufactured by one of the following manufacturers will be acceptable:
1. Greenheck
2. Woods
3. U.S. Fan International

F. If it complies with these Specifications, ceiling exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Loren Cook
3. Penn Ventilating Company, Inc.
4. U.S. Fan International

G. If it complies with these Specifications, centrifugal type roof exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Greenheck
3. Loren Cook
4. Penn
5. U.S. Fan International

H. If it complies with these Specifications, inline centrifugal type ventilation fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Barry
3. Carrier
4. Chicago
5. Greenheck
6. Howden/Buffalo
7. U.S. Fan International

I. If it complies with these Specifications, utility propeller fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Bayley
3. Coolair
4. Greenheck
5. Hartzell
6. Howden/Buffalo
7. U.S. Fan International

J. If it complies with these Specifications, upblast type kitchen exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Aerovent
3. U.S. Fan International

K. If it complies with these Specifications, centrifugal utility set type kitchen exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Buffalo Forge
3. Greenheck
4. Twin City
5. U.S. Fan International

L. If it complies with these Specifications, centrifugal upblast roof exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. Acme
2. Acrovent
3. Greenheck

4. Loren Cook
5. U.S. Fan International

M. If it complies with these specifications, inline type smoke exhaust fans manufactured by one of the following manufacturers will be acceptable:
1. ACME
2. Greenheck
3. Loren Cook
4. U.S. Fan International

2.2 GENERAL

A. Fans shall be of the types and capacities listed in the Schedules on the Contract Documents.

B. Each fan shall be tested in accordance with the latest AMCA fan test code and shall bear an AMCA certified rating seal unless otherwise specified hereinafter.

C. Each fan, except fans below 1500 cfm, shall be statically and dynamically balanced at the factory. All fans 10,000 cfm and larger shall have factory balancing certified in writing to the Engineer. Certification shall be submitted prior to shipment of fans. Electric or electronic actuators for in flight adjustable fans and fans with inlet vanes will be supplied by Division 25 to the fan manufacturer who will install and hook up the actuator with linkage.

D. Fan drives shall be selected with a minimum belt horsepower capacity of 120% of the motor nameplate horsepower. Belt ratings shall be in accordance with “Engineering Standards for Multiple V-Belt Drives-1972” as adopted by the Mechanical Power Transmission Association and the Rubber Manufacturers Association, Inc. The selection calculations shall include the correction factor for arc of contact. The fan drive components shall be as follows:
1. The motor sheaves shall be Browning Type LVP or MVP adjustable type with double locking feature. Motor sheaves shall be selected for the rated fan rpm as determined by the fan capacity requirements scheduled and shall be adjustable as close to ten (10%) percent above and below the rated fan speed as possible. If it complies with these Specifications, equipment manufactured by one of the following manufacturers will be acceptable: T. B. Woods Company or Browning.
2. The fan sheaves shall be of the non-adjustable type with removable machined bushings. Fan sheaves shall be machined on all surfaces. Fan sheaves with over three grooves shall be dynamically balanced, and the manufacturer shall emboss the legend “Dynamically Balanced” on each sheave. Fan sheaves with three grooves or less shall be statically balanced. If weights are required for balancing, they shall be welded to the sheaves. If it complies with these Specifications, equipment manufactured by one of the following manufacturers will be acceptable: Browning, Eaton, Yale and Towne, Dodge Mfg. Company, Fort Worth Steel and Machinery Company or T. B. Woods.
3. The belts shall be standard “V-Groove” type suitable for the service intended with the capacities specified herein. The belts shall be closely matched and tagged prior to delivery to the job site. If in the opinion of the Engineer the belts do not appear to be properly matched during operation, they shall be rechecked and, if necessary, replaced at no cost to the Owner. If it complies with these Specifications, equipment manufactured by one of the following manufacturers will be acceptable: Gates, Durkee-Atwood, Goodyear, Browning or Uniroyal. Belt guards shall comply with OSHA requirements.

E. Fans 2000 cfm and larger shall have SKF, Sealmaster, Timken or Fafnir externally or internally mounted grease lubricated self-aligning ball bearings or permanently lubricated duplex bearings with pillow block housing with resiliently mounted isolation rings. Bearings shall have a minimum life of L10-40,000 or L50-200,000 hours at design operating conditions. Permanently lubricated bearings shall have a five (5) year warranty. Manually lubricated bearings shall have grease type zerk fittings and metallic or nylon grease tubing. High temperature fans shall have metallic grease tubing.

F. Some fans will be furnished with variable speed drives as indicated in the Contract Documents. The motors for the variable speed drive fans shall be designed for variable speed duty and the motor manufacturer shall certify that the motor and variable speed drives are compatible. See Section 23 05 13 titled “Motor Requirements for HVAC Equipment” for variable speed drive specifications.

G. Each motor for a belt driven fan shall be factory mounted on an adjustable base rigidly supported on the fan and shall have extended shaft to accommodate the adjustable pitch sheaves. See Section 23 05 13 titled "Motor Requirements for HVAC Equipment" for motor specifications.

H. Unless noted otherwise in the schedule or specified herein motor controllers will be furnished and installed under Division 26.

I. Fans handling outside air shall be designed to operate satisfactorily at the outside air conditions specified in Section 23 05 07 titled "Design Conditions".

J. Sound Rating:
1. Fan sound ratings shall be based on AMCA 300 tests in a sound laboratory reverberant room. Data must be based on RSS calibration within last six (6) months. Separate data must be provided for both inlet and outlet.
2. Where the manufacturer's sound power data is not published, an officer of the company must certify that sound data conforms with the above requirements. If the manufacturer does not have acoustical facilities in accordance with the above requirements, the contractor must submit certified data that the specified units have been tested in an approved independent acoustics lab, capable of testing equipment at specified operating conditions to determine sound power levels by octave band.
3. Where units do not meet the above requirements, the Subcontractor must furnish at no additional cost, necessary attenuation to reduce net sound level to the above requirements. In this case, the room sound level must be taken by the Subcontractor and submitted for approval by the Engineer to assure conformance to sound level requirements.
4. The increased pressure drop due to attenuation must not cause an increase in power requirements from those specified. If oversize, slow speed units are required; the Subcontractor shall be responsible for any related extra costs not coming under his contract.

K. Roof mounted fans and fans exposed to the weather shall have all fan parts cleaned, conditioned and prime painted prior to final assembly. Fan wheels and housings shall be completely coated with two coats of fire resistive, corrosion resistant epoxy paint after final assembly. The type of epoxy paint recommended by the manufacturer shall be submitted to the Engineer for review.

2.3 PROPELLER TYPE SUPPLY AND EXHAUST WALL FANS

A. Each propeller type wall fan shall comply with the requirements in Paragraph 2.02 titled "General" and shall have the capacities listed in the Contract Documents. The entire fan shall be of heavy duty welded construction. Fans shall be direct or belt drive as indicated in the schedules. Fan shall be non-overloading type. Direct drive fans may have aluminum blades riveted to a steel hub.

B. Fan motor shall be of the totally enclosed air over (TEAO) or totally enclosed fan cooled (TEFC) type with sealed ball bearings and shall have a standard NEMA frame size. Motor shall be factory mounted suitable for vertical or horizontal mounting as shown on the Drawings. See Section 23 05 13 titled "Motor Requirements for HVAC Equipment" for motor specifications.

C. Each fan shall provide the specified cfm at the stated static pressure and shall not exceed the specified rpm and horsepower. Each fan shall be tested in accordance with the latest AMCA standards.

D. Unless noted otherwise on the Drawings, each fan shall be complete with safety screens, provision for wall or plenum mounting and adjustable motor slide base.

E. Provide back draft dampers where indicated on the schedules and Drawings. See Section 23 31 00 titled "Ductwork and Sheet Metal" for back draft damper requirements.

F. Belt drive propeller type fans shall be similar or approved to:
1. ACME Model K Series
2. Greenheck Model SB-3
3. Loren Cook Model XLWH or XMWH

G. Direct drive propeller type shall be similar or approved to:
1. ACME Model FQ
2. Greenheck Model S1
3. Loren Cook Model SWD

2.4 CENTRIFUGAL TYPE SUPPLY AND EXHAUST FANS SWSI OR UTILITY SET TYPE

A. Centrifugal type fans shall comply with the requirements in Paragraph 2.02 titled “General” and shall have the capacities listed in the Contract Documents. Centrifugal type fans shall be single width, single inlet and shall have fan blades that are either forward or backward curved.

B. Wheels shall be of riveted or spot weld construction with steel rims and hub plates. Blades shall be die cut and die formed. Hubs shall be machined close grained cast iron.

C. Housings shall be steel with lockseam construction and beaded discharge reinforcement. Housings shall be of the adjustable type with continuous inlet collars. Any unit exposed to weather shall be complete with weatherproof enclosure for motor and drive.

D. Fan shafts shall be solid turned and polished C1040 steel with rust resistant coating.

E. Unless otherwise indicated on the Drawings, fan drives shall be adjustable V-belts. Sheaves shall be in overhanging position. Motors shall be mounted on slide rail bases.

F. Centrifugal type supply and exhaust fans shall be similar or approved equal to:
1. ACME Model FCF or QBR
2. Greenheck Model SWB
3. Loren Cook Model CPS

2.5 CABINET TYPE FANS

A. Each cabinet type fan shall comply with the requirements in Paragraph 2.02 titled “General” and shall have the capacities listed in the Contract Documents. Cabinet type fans shall be complete with housing, fan, adjustable V-belt drive motor, etc. Applicable portions of the Specifications for centrifugal factory-built air handling units apply as if herein repeated in full except that a cabinet type fan shall neither be internally insulated nor have a drain pan.

B. Each cabinet type fan shall bear the AMCA certified rating seal.

C. Cabinet type fans shall be similar or approved equal to:
1. ACME Model DMS
2. Greenheck Model BCF
3. Loren Cook Model DB

2.6 INLINE VANE AXIAL FANS - FIXED PITCH

A. Each inline vane-axial fan shall comply with the requirements of Paragraph 2.02 titled “General” and shall have the capacities listed in the Contract Documents. Axial fans shall be of heavy gauge welded steel, hot dipped galvanized or painted after fabrication, with flange inlet and outlet connections. To minimize entrance and exit losses, furnish and install inlet and outlet cones as indicated on the Drawings.

B. Each fan shall be direct or belt driven and have the accessories, inlet bells, outlet and inlet cones, inlet screens, outlet screens, etc., as indicated in the Contract Documents.

C. Each fan shall be belt driven or direct drive with manually adjustable blades, shall have the accessories as indicated in the Contract Documents and shall meet the other requirements specified herein.

D. Each fan shall have a support frame, which will support the motor base and extended lubrication fittings. Motor and drive shall be factory mounted. Axial fans handling outside air shall have a full weatherproof treatment to limit moisture ingress including drain holes to free any moisture after condensation.

E. Each fan and fan wheel shall be statically and dynamically balanced and shall be so certified in writing to the Engineer prior to shipment. See Section 23 00 10 for certification requirements.

F. Each fan shall provide the maximum scheduled cfm at the scheduled external static pressure and shall not exceed the maximum specified brake horsepower. The minimum cfm mechanical stops shall be factory set at 20% of the scheduled maximum cfm, unless otherwise specified. The fan shall be selected by the fan manufacturer to operate satisfactorily from 20% to 100% of the scheduled cfm. Each fan shall be tested for cfm and static pressure in accordance with the procedures listed in AMCA Standard 210 (current edition).

G. Fixed pitch vane axial fans shall be similar or approved equal to Woods Model JM.

2.7 MIXED FLOW FANS

A. Each inline mixed flow fan shall comply with the requirements of Paragraph 2.02 titled “General” and shall have the capacities listed in the Contract Documents. Axial fans shall be of heavy gauge welded steel, painted fan casing with flange inlet and outlet connections.

B. Each fan shall be direct or belt driven and have the accessories, inlet bells, outlet and inlet cones, inlet screens, outlet screens, sound attenuating double wall casing, etc., as indicated in the Contract Documents.

C. Each fan shall be belt driven or direct drive with quiet mixed flow wheels, shall have the accessories as indicated in the Contract Documents and shall meet the other requirements specified herein.

D. Each fan shall have a support frame, which will support the motor base and extended lubrication fittings. Motor and drive shall be factory mounted. Mixed flow fans handling outside air shall have a full weatherproof treatment to limit moisture ingress including drain holes to free any moisture after condensation.

E. Each fan and fan wheel shall be statically and dynamically balanced and shall be so certified in writing to the Engineer prior to shipment. See Section 23 00 10 for certification requirements.

F. Each fan shall provide the maximum scheduled cfm at the scheduled external static pressure and shall not exceed the maximum specified brake horsepower. Each fan shall be tested for cfm and static pressure in accordance with the procedures listed in AMCA Standard 210 (current edition).

G. Inline mixed flow fans shall be similar to Greenheck QEI, Greenheck QEID, or Woods Model MX.

2.8 CEILING EXHAUST FANS

A. Ceiling fans shall be direct drive.

B. Fan shall have acoustically insulated housings and shall have a maximum sound level rating of 3.6 sones. Fans shall have the capacities as listed in the Contract Documents. The fan shall bear the AMCA certified rating seal and be UL listed.

C. Manufacturer shall submit vibration amplitudes and magnetic motor hum levels in decibels.

D. Integral back draft damper shall be totally noise free with no metal to metal contact.

E. Fan shall have a centrifugal wheel with inlet perpendicular to inlet grille.

F. Grills shall be constructed of white painted aluminum or white molded plastic with egg-crate shape and provide eighty-five (85%) percent free open area where indicated on the Drawings as mounted directly on the ceiling.

G. Terminal box shall be provided on the housing with cord, plug and receptacle inside the housing.

H. Motor speeds shall not exceed 1050 rpm. Provide a solid state speed controller with each fan. Fan motor shall be suitably grounded and mounted on rubber-in-shear vibration isolators.

I. Ceiling exhaust fans shall be similar or approved equal to:
1. ACME Model VQ or VQL
2. Penn Ventilation “Penn Zephyr”
3. Greenheck Model SP or CSP
4. Loren Cook GC

2.9 CENTRIFUGAL TYPE ROOF EXHAUST FAN

A. Centrifugal type roof exhaust fans shall comply with the requirements in Paragraph 2.02 titled “General” and shall have the capacities listed in the Contract Documents. Speed and motor horsepower shall not exceed the values specified in the schedule.

B. Each motor shall be mounted in a separate compartment outside the exhaust air stream and shall have a cooling system to continuously draw outside air through the motor and motor compartment.

C. Each exhaust fan shall have a wiring post from the motor compartment to the curb base. Each belt driven exhaust fan shall be factory wired from the motor to the wiring post with flexible metal conduit in accordance with the National Electrical Code using UL approved materials only. Each unit shall be furnished with a nonfused disconnect switch factory mounted inside the drive housing. Provide a 12” high roof curb for unit mounting.

D. Each belt driven exhaust fan shall have a variable pitch motor sheave as specified herein, which will not overload the motor when set to its maximum pitch diameter.

E. Centrifugal fan wheels shall be aluminum and shall be backward curved non-overload type.

F. Centrifugal type roof exhaust fans shall be similar or approved equal to:
1. ACME Model PV
2. Greenheck Model GB
3. Loren Cook Model ACE-B

2.10 INLINE CENTRIFUGAL TYPE VENTILATION FANS

A. Centrifugal type ventilation fans shall comply with the requirements in Paragraph 2.02, titled “General” and shall have the capacities listed in the Contract Documents. Centrifugal type inline fans shall have fan wheels that are high efficiency non-overloading air foil type wheels.

B. Wheels shall be of riveted or weld construction with steel rims and hub plates. Blades shall be die cut and die formed. Hubs shall be machined close grained cast iron.

C. Housings shall be steel with lockseam construction and beaded discharge reinforcement. Housings shall be of the adjustable type with continuous inlet collars. Any unit exposed to weather shall be complete with weatherproof enclosure for motor and drive.

D. Fan shafts shall be solid turned and polished C1040 steel with rust resistant coating.

E. Unless otherwise indicated on the Drawings, fan drives shall be adjustable V-belts. Sheaves shall be in overhanging position. Motors shall be factory mounted on slide rail bases.

F. Inline centrifugal type ventilation fans shall be similar or approved equal to:
1. ACME Model XB Belt Drive or XD Direct Drive
2. Greenheck Model BSQ
3. Loren Cook Model SQN-B or SQN-HP

2.11 PROPELLER TYPE CIRCULATING FANS

A. Each utility propeller type circulating fan shall comply with the requirements in Paragraph 2.02, "General" and shall have the capacities listed in the Contract Documents. The entire fan shall be of heavy duty welded construction. Fan shall be non-overloading type.

B. Fan motor shall be of the totally enclosed air over (TEAO) type with sealed ball bearings and shall have a standard NEMA frame size. Motor shall be factory mounted and suitable for vertical or horizontal mounting as shown on the Drawings. See Section 23 05 13 titled "Motor Requirements for HVAC Equipment" for motor specifications.

C. Each fan shall provide the specified cfm at the stated static pressure and shall not exceed the specified rpm and horsepower. Each fan shall be tested in accordance with the latest AMCA Fan Test Code.

D. Unless noted otherwise on the Drawings, each fan shall be complete with safety screens, flat base suitable for ceiling or wall mounting and adjustable tilt head - 45º up, 30º down.

E. Propeller type circulating fans shall be similar or approved equal to :
1. Greenheck Model MC7
2. ACME Model FQ with mounting brackets

2.12 KITCHEN EXHAUST FANS (UPBLAST)

A. Kitchen exhaust fans shall be similar to Acme Model PNURG or Aerovent Model BI, and factory wired to a terminal box. Fan shall be upblast discharge and shall be constructed in accordance with UL 762 and NFPA 96 requirements. Fans shall be UL listed.

B. Fans shall be direct or belt driven as indicated in the Contract Documents. Fan wheel shall be steel and non-overloading design. Motor and variable speed V-belt drives shall be located in a separate ventilated, weatherproof compartment and factory wired to a box. Motor shall be TEFC, mill and chemical duty.

C. Provide an 18" high prefabricated roof curb, which complies with NFPA 96 requirements.

2.13 KITCHEN EXHAUST FANS (UTILITY SET)

A. Centrifugal vent sets for kitchen smoke exhaust shall be similar to Acme QBR and shall be constructed in accordance with UL 762 and NFPA 96 requirements. Fan shall be UL listed. Capacities shall be as listed in the Contract Documents.

B. Fan shall be equipped with a grease trough and an easily removable gasketed scroll access door.

C. Fan scroll design shall be rotatable and be equipped with outlet flange and a 1-1/2" drain connection.

D. Fan wheel shall be aluminum with airfoil backward inclined blades with aluminum collar for spark resistant construction.

E. Motor, drive and belts shall comply with the requirements in Paragraph 2.03, General. Belt guards shall comply with OSHA requirements.

F. Any fan exposed to weather shall be complete with a weatherproof enclosure for motor and drive.

2.14 INLINE CENTRIFUGAL TYPE SMOKE EXHAUST FANS

A. Inline centrifugal type smoke exhaust fans shall comply with the requirements in Paragraph 2.02 titled "General" and shall have the capacities listed in the Contract Documents. The entire fan shall be heavy duty all welded construction.

B. Wheels shall be all steel welded construction. Hubs shall be machined close grained cast iron or steel plate.

C. Fan motor shall be of the totally enclosed air over (TEAO) type with sealed ball bearings and shall have a standard NEMA frame size. Motor shall be factory mounted and suitable for vertical or horizontal mounting as shown on the Drawings. See Section 23 05 13 titled "Motor Requirements for HVAC Equipment" for motor specifications.

D. Each fan shall be rated for continuous operation while exhausting air from the fire floor at the minimum temperature reduced by the authorities having jurisdiction.

E. Roof mounted upblast type centrifugal smoke exhaust fans shall have a curb base and a wind band damper.

F. Inline centrifugal type smoke exhaust fans shall be similar or approved equal to ACME 2100 Series with high temperature construction suitable for 600ºF operation.

PART 3 EXECUTION

3.1 INSTALLATION

A. All exhaust and ventilating fans shall be installed in accordance with the latest industry standards, per the manufacturer's recommendations and as indicated on the Drawings.

3.2 FACTORY TESTING

A. All exhaust and ventilating fans shall be tested in accordance with the latest applicable industry standards and as specified herein.

B. The Owner and/or Engineer may observe the air handling units for this Project under manufacture at the factory prior to shipment, if he so desires. The Mechanical Subcontractor shall notify the Owner and Engineer in writing at three (3) weeks prior to the first air handing unit production date.

3.3 FIELD TESTING

A. Refer to Section 23 05 93 for additional testing requirements for exhaust and ventilating fans.

B. Prior to execution of field testing, submit test procedures, recording forms, and test equipment cut sheets to Engineer for review. Refer to Section 23 00 20 titled "Scope of Work" for "Scheduling Procedures".

END OF SECTION