# DIVISION 23 – HVAC SPECIFICATIONS

PART ONE–GENERAL

23.01 DRAWINGS

A. The drawings are diagrammatic and not necessarily to scale or show all items required for the complete HVAC (Heating, Ventilation and Air Conditioning) installation. When a discrepancy occurs in the Contract Documents, the most strigent of the two shall be enforced.

B. Any conflicts or discrepancies on these drawings shall be called to the attention of the Architet/Engineer during the bidding period for resolution. Otherwise such conflicts or discrepancies shall be resolved at the Contractor's expense.

C. These drawings are not complete without written specifications. See specifications for additional data. Each Contractor is advised to read specifications and study drawings very carefully.

23.02 SHOP DRAWINGS

A. Shop Drawings shall be submitted for approval on all manufactured and/or fabricated items, complete with manufacturer's cuts, materials, lists, etc.

23.03 FEES AND PERMITS

A. Provide all required permits and obtain all inspections and pay such fees as may be thereby incurred. Perform and obtain all tests as may be required, supplying all fuel, power, labor and instruments needed, and pay such costs as may be thereby incurred.

23.04 GUARANTEE

A. The Contrator shall furnish all labor, materials, equipment and services necessary for a complete HVAC system. Provide as shown on the contract documents, implied, or otherwise required, so that the Owner shall be furnished a complete and working system, ready for continuous and satisfactory operation.

B. All equipment, materials and workmanship to conform with this Section of the specifications. Parts defective or not as specified shall be replaced in the system and retested at no additional cost to the Owner, for a period of one year after final acceptance of the completed work.

C. The above shall include guarantee of all machinery, equipment, accessories, and connections to operate without undue vibration, pulsation or objectionable noise. Should such conditions be found to exist after final acceptance of the completed work, provide applicable reinforcement, isolation, as required. Objectionable conditions shall be determined by the Architect.

D. Manufacturer's guarantees which extend beyond the one (1) year guarantee shall be submitted to the Architect for transfer to the Owner on or before final requisition for payment of the work involved.

23.05 OPERATION AND MAINTENANCE MANUALS

A. Furnish and deliver to the Owner two copies of manufacturer's operating and maintenance manuals and parts lists for each different item of equipment furnished on the project. Prepare and post complete control wiring diagrams as required and furnished a competent individual to aquaint the Owner or his representative with all operating, lubrication, saftey control and maintenance features of the system.

PART TWO–PRODUCTS

23.06 SYSTEMS DESCRIPTION, TESTS AND BALANCING

A. VENTILATION FANS:

1. Provide cabinet type or in–line or wall mounted fans as scheduled. Each fan is to have an integral unit mount disconnect.
2. Provide vibration isolation at each fan.

23.07 AIR DISTRIBUTION SYSTEM

A. General: Furnish and install a complete system of ductwork, including all component parts as shown on the drawings and/or as specified herein for each air conditioning unit and each exhaust and/or relief system. Ductwork shall conform to appropriate "SMACNA" standards.

B. SHEET METAL DUCTS:

1. Sheet metal ducts shall be a minimum 26 gauge metal and installed according to the appropriate "SMACNA" standards. The contractor is to provide all required fittings, splitters, and dampers for a complete installation. Sheet metal ducts shall be used for, but not limited to supply, return, exhaust, and outside air.
2. Supply Ductwork shall be insulated with Johns Manville "Microlite" R–Series in concealed areas. Exposed duct shall be double wall duct. Both insulations shall be 1–1/2" thick with an "R" value of 6.0. The insulation is to be installed according to the manufactures instructions.

C. Access Doors:

1. Provide access doors of appropiate size in ductwork for service and cleaning. Access doors shall be "Ventlok" an approved equal.
2. See schedule for duct material and use.

23.08 CONTROLS

A. ELECTRICAL CONTROLS:

1. Exhaust fans shall be controlled as specified in conjunction with the CO/H sensors.

PART THREE–EXECUTION

23.09 GENERAL

A. The Mechanical Contractor shall verify in the field, all HVAC equipment and duct space limitations prior to fabrication of ductwork. Notify the Engineer/Arcitect immediately if conflicts occur. The Contractor shall coordinate with all trades prior to duct fabrication. Pay special attention to light fixtures and structural members. No change orders will be allowed for improperly coordinated ductwork.

B. The Contractor is to examine the site and the plans, be fully informed regarding the limitations of space available for the installation of all equipment and materails as well as all conditions regarding and all factors involved in the completion of the work.

C. Air outlets and equipment locations are diagrammatic only. Final locations will be determined by Field Conditions, in accordance with the code and/or as directed by the Interior Designer/Architect/Engineer.

D. All work shall be laid out and installed in advance of pouring concrete floors, or walls. Furnished and install all sleeves, hangers, trapezes, inserts, anchors, and such other specialties and appurtenances as may be required.

E. Provide access to all opposed blade dampers and fans located above hard ceilings.

F. Paintings and Special Coatings: Provide repair and touch–up of damaged factory finishes on equipment and special coatings for such purposes as corrosion control and condensate drip prevention.

G. Work shall be performed in a neat and workmanlike manner and upon completion of this contract this Section shall turn over to the Owner complete operating system to the full intent of the Plans and this Specification. All HVAC equipment shall be stored in a clean, dry location prior to installation.

H. Structual members shall not be cut or notched without written approval of the Architect.

I. Wall, ceiling and floor openings indicated on these drawings are rough and nominal sizes only. Contractor shall see Shop Drawings for actual size.

J. Cleaning and Adjustment: Upon completion of work, clean, oil and grease all fans, motors, and other equipment, and make certain all such equipment is in proper working order and ready for testing.

# HVAC LEGEND

| HVAC SYMBOL | DESCRIPTION | HVAC SYMBOL | DESCRIPTION |
|---|---|---|---|
| | SUPPLY AIR DUCT | | MOTORIZED OPPOSED BLADE DAMPER |
| | RETURN AIR DUCT | | TURNING VANES |
| | OUTSIDE AIR DUCT | | MITERED BEND |
| | EXHAUST AIR DUCT | | SMOOTH ELBOW (RADIUS = 1.5 * DIAMETER) |
| | DUCT UNDERGROUND | | VERTICAL FIRE DAMPER |
| | SUPPLY OR OUTSIDE AIR DUCT UP/DOWN | | HORIZONTAL FIRE DAMPER |
| | SUPPLY OR OUTSIDE AIR DUCT THROUGH SLAB | | CEILING SUPPLY AIR GRILLE |
| | RETURN AIR DUCT UP/DOWN | | CEILING RETURN/EXHAUST AIR GRILLE |
| | RETURN AIR DUCT THROUGH SLAB | | SIDE WALL EXHAUST AIR GRILLE |
| | EXHAUST AIR DUCT UP/DOWN | | EXHAUST FAN |
| | EXHAUST AIR DUCT THROUGH SLAB | AHU–1 | EQUIPMENT DESIGNATION |
| | FLEXIBLE DUCT | | SERVICE ACCESS (REQUIRED BY CODE) |
| | TWIST IN DUCT COLLAR WITH OBD | T # | HEAT/COOL – TEMPERATURE SENSOR |
| | TWIST IN DUCT COLLAR WITHOUT OBD | H | HUMIDITY SENSOR |
| | OPPOSED BLADE DAMPER (OBD) | S | HEAT ONLY – TEMPERATURE SENSOR |
| SG 100 / 1 C 1'X2" | GRILLE DESIGNATION (SEE GRILLE SCHEDULE) | PAD | BOTTOM ACCESS DOOR |
| | ACCESS IN HARD CEILING | S/S | SIDE ACCESS DOOR |

# APPLICABLE CODES AND STANDARDS

1) FLORIDA BUILDING CODE, FBC 2007 WITH 2009 SUPPLEMENTS.
2) FLORIDA BUILDING CODE, MECHANICAL, FBC–M 2007 WITH 2009 SUPPLEMENTS.
3) FLORIDA BUILDING CODE, PLUMBING, FBC–P 2007 WITH 2009 SUPPLEMENTS.
4) FLORIDA BUILDING CODE, EXISTING BUILDING, FBC–EB 2007 WITH 2009 SUPPLEMENTS.
5) FLORIDA BUILDING CODE, FBC CHAPTER 11, FLORIDA ACCESSIBILITY CODE, 2009 WITH SUPPLEMENTS.
6) FLORIDA FIRE PREVENTION CODE 69A–3.012 2007.
7) FLORIDA BUILDING CODE, FUEL GAS, FBC–FG 2007 WITH SUPPLEMENTS.
8) NFPA 70, NATIONAL ELECTRICAL CODE, 2008.
9) NFPA 101, LIFE SAFETY CODE, 2006.
10) NATIONAL ELECTRIC SAFETY CODE, 2003.
11) FLORIDA BUILDING CODE, FBC CHAPTER 13, FLORIDA ENERGY CODE, 2007 WITH 2009 SUPPLEMENTS.
12) NFPA 72, NATIONAL FIRE ALARM CODE, 2002
13) ASHRAE 62, INDOOR AIR QUALITY, 2001.
14) NFPA 241, STANDARDS FOR SAFEGUARDING CONSTRUCTION ALTERATIONS, AND DEMOLITION OPERATIONS, 2000.

## HVAC SPECIFICATIONS + LEGENDS

SCALE:

| NO. | DATE | ISSUED FOR | BY |
|---|---|---|---|
| 1 | 02/13/2012 | NEW TITLE BLOCK | TMM |

DESIGNED BY
DRAWN BY
CHECKED DAW
PROJ.ENGR.
PROJ.NO. 2011.049

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.

DAVID A. WOJCIESZAK, P.E.
02/28/2012
DATE SIGNED
LICENSE NO. 32091

WOJCIESZAK & ASSOCIATES, INC.
CONSULTING ENGINEERS
833 East 5th St.
Stuart, Florida 34994
(772)286–8692
Certificate of Authorization No. 3988

HAZEN AND SAWYER
Environmental Engineers & Scientists
2101 Corporate Boulevard, Suite 301
Boca Raton, Florida 33431
Certificate of Authorization Number: 2771

Song + Associates
Architecture • Planning • Interior Design
400 Australian Ave S. 6th Floor
West Palm Beach, Florida 33401
Telephone: 561/655-2423
Fax: 561/655-1482
AA - 0003165 ID - 0001095

TOWN OF JUPITER, FLORIDA

EMERGENCY OPERATIONS CENTER POLE BARN

HVAC SPECS AND LEGEND

| | |
|---|---|
| DATE | MARCH 2012 |
| PROJECT NUMBERS | W1206 |
| | 11025 |
| DRAWING NUMBER | M–3 |