



SCOPE: The work covered by this section of the specifications consists of furnishing all plant, labor, equipment. appliances and materials, and in performing all operations in connection with the installation of an air conditioning system, complete, and in accordance with this section of the specifications and the applicable drawings, and subject to the terms and conditions of the contract. CODES AND STANDARDS: All work shall comply with the Florida Building Code 2010, Mechanical and all local addendum.

CONTRACTOR'S GUARANTEE AND SERVICE: All equipment to be under this section of the specifications shall be guaranteed for a period of one year unless noted otherwise.

ROOFTOP UNITS: Rooftop units shall be factory fabricated, unitary, air cooled, vertical discharge complete with hermetic compressors, centrifugal supply fan, evaporator coil, condenser coil, filter drier, sight glass, direct drive propeller condenser fans, overload protection, pressure relief valve, heavy duty steel cabinet with baked enamel finish. Unit shall have factory charge of refrigerant R-410A. Compressor shall have a five (5) year warranty, Unit shall have suction service valve and pressure gages.

A. Cabinet - Cabinet shall have welded galvanized steel frame galvanized steel panels. Cabinet shall be primed and painted with machinery enamel to withstand 500 hour salt spray resistance in accordance with ASTM BIIT. Louvered grills shall be provided to protect condenser coils. B. Compressors - Compressors shall be the scroll type, 3600 RPM direct drive with centrifugal oil pump, inlet dirt separator, oil sight glass, roller bearings, and oil charging valve.

D. Evaporator Fans - Fans shall be belt drive, centrifugal type, statically and dynamically balanced. Fans shall be provided with integral internal spring vibration isolation. Fan drive shall provide means to adjust fan air flow plus or minus 20 C. Coils - Coils shall have aluminum fins mechanically bonded to seamless copper tubing. Coils shall be factory air tested underwater at 425 p.s.i.g.

D. Condenser Fans - Fans shall be direct drive vertical discharge, statically and dynamically balanced. Three phase motors shall have permanently lubricated ball bearings and thermal overload protection.

C. Curb - Roof curb shall be provided by rooftop unit manufacturer. Curb shall be in compliance with SMACNA guidelines, and shall be constructed of galvanized steel.

DUCTWORK: Supply and return air ductwork shall be fibrous glass. Outdoor air and exhaust ducts shall be galvanized steel. Runouts to air distribution devices shall be flexible duct where shown. round supply and return air ducts shall be galvanized steel.

Steel Duct: Duct shall be constructed in accordance with latest edition of SMACNA "HYAC Duct Construction Standards"

DUCT ACCESSORIES: Fibrous Glass Duct: Duct shall be R-6, with foil reinforced jacket, conforming with the latest edition of SMACNA "Fibrous Glass Duct Construction Standards"

Flexible Duct: Duct shall be UL Listed 181, Class 1, constructed of flexible fabric with spiral reinforcing wire and 1-1/2 inch thick fibrous glass insulation and reinforced with vapor barrier jacket.

Air Turning Vanes: Turning vanes shall consist of single thickness curved metal blades or vanes, arranged so as to permit the air to make abrupt turns without appreciable turbulence.

Volume Control Dampers: Balancing dampers shall be the coblade type with a manually adjustable, locking quadrant control. Frame shall be 16 gauge galvanized steel channel, blades shall be 16 gauge galvanized steel, linkage shall be concealed in frame. Single blades shall be used on dampers 10 inches high or less. Shop-built volume dampers are not allowed. Provide 2 inch high standoffs to allow for duct insulation.

standard catalog product of the manufacturer, designed for air conditioning, under the conditions for which it is to be used. All devices shall have the nominal measurements indicated on the drawings and shall be designed to deliver the amount of air indicated on the drawings at the required throws.

All devices shall be listed and tested in accordance with Air Diffusion Council requirements and as specified on the drawings.

ART 3 - EXECUTION

Ductwork: All ductwork shall conform to the appropriate SMACNA construction standards. All turning vanes, splitter dampers, etc., shall be installed where indicated on the drawings. All ducts shall conform accurately to the dimensions indicated on the drawings and shall be straight and smooth on the inside with joints neatly finished. All duct dimensions refer to the net free interior dimensions.

3.01 Equipment: All equipment shall be installed as detailed on the drawings and in conformance with the manufacturer's recommendations. Any deviations from drawings must be approved by the Owner's representative.

Any changes necessary to clear obstructions shall be approved by the Engineer before fabrication. Ducts shall be securely anchored to the building in an approved manner and shall be completely free from vibration under all conditions of operation. Ductwork shall be airtight at static pressures indicated for the systems before being concealed.

NOTE:
PROVIDE CALCULATIONS BY A REGISTERED PROFESSIONAL ENGINEER DETAILING METHOD OF SECURING CURB TO ROOF AND UNIT TO CURB, TO COMPLY WITH CODE REQUIRED WIND LOADING.

Ducts, plenums and casings shall be thoroughly cleaned of all debris and blown free of all small particles of rubbish and dust before installing outlet faces. Equipment shall be wiped clean, with all traces of oil, dust, dirt or paint spots removed. Temporary filters shall be provided for all fans that are operated during construction, after all construction dirt has been removed from the building, new filters shall be installed.

Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. Belts shall be tightened to proper tension. All control valves and other miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans shall be adjusted to the speed indicated by the manufacturer to meet specified conditions.

PRESSURE TESTING:

A. Duct work shall be made substantially air-tight for the static pressure indicated for the system. Air leakage shall be noticeable by the sense of feeling or hearing.

3.06 Testing and Balancing:
A. The Test and Balance (T#B) Agency shall be a member of the Associated Air Balance Council (AABC) or the National Environmental Balancing Bureau (NEBB), independent of the Mechanical Sub-contractor, and shall be under direct contract with the General Contractor.
B. Air Flow:
1. The systems shall be balanced so that the total supply air quantity to each space shall be within -5 % to +10 % of the design amount. Submit complete test and balance report.

 The pattern for all adjustable outlets shall be adjusted for proper distribution without drafts. AND MAINTENANCE INSTRUCTIONS: Operation and mainter printed form, for each major item of equipment, shall by the Contractor, together with approved wiring and ams. All shall be bound in book form and three (3) oe delivered to the Owner's representative. \triangleright

AIR CONDITIONING CONTROL SEQUENCE A/C UNIT SHALL HAVE DIGITAL, PROGRAMMABLE THERMOSTAT LOCATED 4'-6" ABOVE FIN. FL. AS SHOWN ON THE DRAWINGS.THERMOSTAT SHALL HAVE THE FOLLOWING FEATURES.

1 DAY PROGRAMMING (ON-OFF, ETC.)
NIGHT SETBACK
HEATING & COOLING
ADJUSTABLE DEAD BAND
AUTOMATIC HEAT/COOL CHANGEOVER
MANUAL OVERRIDE (TEMPORARY UP TO 2 HOUGHT AL TIME & TEMPERATURE DISPLAY
REMOTE TEMPERATURE SENSOR

AIR HANDLING UNIT FAN SHALL RUN CONTINUOUSLY WHENE SYSTEM IS PROGRAMMED TO RUN.

PROVIDE ALL NECESSARY CONTROLS TO ACCOMPLISH THE DESIRED CONTROL SEQUENCE, INCLUDING RELAYS, TRANSFØRMERS, CIRCUITRY, ETC. COORDINATE WITH THE A/C UNIT MANUFACTURER, PROVIDE LINE VOLTAGE POWER SUPPLY FROM SPARE ON POWER PANEL IF NECESSARY FOR CONTROL SYSTEM OPERATION.

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EF-3 EXHAUST FAN AT OVEN SHALL BE CONTROLLED BY A THERMOSTAT IN CEILING ABOVE OVEN. ALL THERMOSTATS AND DUCT SENSORS SHALL BE FIELD LOCATED WITH THE OWNER'S REPRESENTATIVE.
ALL COSTS ASSOCIATED WITH LOCATION OF THESE DEVICES SHALL BE INCLUDED IN THE BASE BID COST. THERE WILL BE NO EXTRA COST ALLOWED REGARDLESS OF FINAL THERMOSTAT THOCATIONS.

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END OF SECTION

 \bigcirc RETURN AIR GRILLE CEILING DIFFUSER DISTRIBUTION DEVICE 2 2'x2' LAY-IN FRAME TITUS 3FL
TITUS 272FS TITUS TDC-AA w 4 SCHEDULE

- SECURE FLEX. DUCT TO COLLAR WITH NYLON STRAP CONNECTORS. PULL BACK INSULATION, CONNECT DUCT, SLIDE INSULATION BACK IN PLACE & TAPE TO MAIN DUCT.

HANGER WIRES TO PROOF FRAMING
LAY-IN FRAME TO BE
SUPPORTED BY CEILING

DUCT RUN OUT

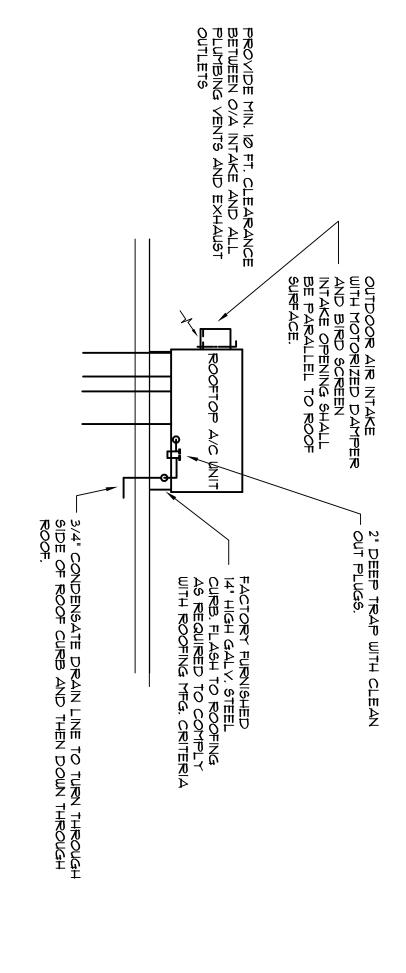
TIN-IN GALY, STEEL ACT CONNECTOR W/

INTERNAL DISCONNECT METHOD (v) FAN SPEED CONTROLLER S.P. MOTOR H.P. (Ju BACKURAFT DAMPER CASTERNATION OF -Y

Z.T.S.

DIFFUSER

CONNECTION



UNIT NUMBER
TOTAL CAPACITY (BTUH)
SENSIBLE CAPACITY (BTUH)
SUPPLY AIR (CFM)
OUTDOOR AIR (CFM)
AIR ENT. EVAP. COIL ("Fdb/"Fwb)
CONDENSING AIR TEMP ("Fdb)
FVT S.P. (IN. W.G.) EXT. S.P. (IN. W.G.)

FAN MOTOR (BHP)

ELECT. SER. (YOLT/PH.)

EER MIN. AIR CONDITIONING EQUIPMENT SCHEDULE: (A) AC UNITS SHALL HAVE I" 30% EFF. THROW-AWAY FILTERS
(B) ALL ROOFTOP UNITS SHALL HAVE FACTORY INSTALLED
CONVENIENCE RECEPTACLE LECTRIC HEAT (KW @ 208V) ANUFACTURER (OR EQUAL) OOFTOP UNIT MODEL AC-142 43,600 29,200 1120 210 18/66 95 ft 1,0 95 ft 1,0 150 85

Specifications and Details

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