MECHANICAL TECHNOLOGIES GROUP

DSST Middle Schol

N7315

RTU-5

Submittal Package Number 15781

Submittal Number 15781-001

MTech

Reviewed for general conformity with plans and specifications. Subject to final approval by architect and/or engineer.

By: Matt Klingler

SWANSON RINK
TakingResponsibility
1120 Lincoln Street, Suite 1200
Denver, Colorado 80203-2139
www.rink.com
(303) 832-2666 FAX (303) 832-7563

Shop Drawing Review Form

SRI Project No.: 07-374.03

Project Name: DSST Middle School Addition

Date: 05/15/08

15781-001

Attention: Matt Klinger

Shop Dwg No.: REVISED

Contractor/Supplier: Mtech / Trane

Reviewed by: MAG

Corrections or comments made on the shop drawings during this review do not relieve Contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions, for selected fabrication processes and techniques of construction, for coordinating this work with that of all other trades, and for performing his work in a safe and satisfactory manner.

(A) Reviewed (B) Revise And Resubmit (C) Make Corrections Noted (D) Rejected

ITEM #	REFERENCE	COMMENT	ACTION TAKEN
1	RTU-5	~~This submittal proposes an RTU with limited modulation for the gas heating section. According to the manufacturer's catalog data, limited modulation is not recommended for applications where the temperature of the air entering the gas heating section may be below 50°F. Due to the large ventilation requirement required by this project, the temperature of the air entering the heating section is expected to frequently be less than 50°F. Therefore, provide unit with full modulation gas heat as indicated in the Rooftop Air Handling Unit Schedule on Sheet M-601.~~ Per a phone conversation with Steve Kugler (MTech) and Matt Diehl (Trane representative), the requirement for full modulation gas heat when the air temperature entering the gas heating section may be below 50°F, as stated in Trane's catalog, is overly conservative, and will add significant cost to the RTU. Based on Matt Diehl's recommendation, we will accept an RTU with limited modulation gas heat for this application.	~~C~~ A

TRANE Submittal

Trane U.S. Inc.

Prepared For:
Swanson Rink

Sold To:
Mtech Group

Date: *April 09, 2008*

Customer P.O. Number:
Customer Project Number:

Job Number:
Job Name:
DSST MIDDLE SCHOOL

Trane is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product	
1	Commercial Rooftop Air Conditioning Units (Large)	**RTU-5**

The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Matt Diehl
Trane
445 Bryant St., Suite 5
Denver, CO 80204-4800
Phone: (303) 228-3300
Fax: (303) 228-2828

Table Of Contents

Tag Data - Commercial Rooftop Air Conditioning Units (Large) (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-5	1	90-130 ton Packaged Industrial Rooftop	SFHGD114

Product Data - Commercial Rooftop Air Conditioning Units (Large)

Item: A1 Qty: 1 Tag(s): RTU-5

Self-Contained, Natural Gas Heat
105 Ton Unit
460 Volt-60 Hertz-3 Phase
Limited Modulating Gas Heat Capacity
100% Exhaust 20 HP With Statitrac
700 RPM Exhaust Fan
Bag Filters With Prefilters
50 Hp (2-25 Hp Motors) Supply Motor
1400 RPM Supply Fan
0-100% Economizer
Economizer control w/dry bulb
Supply and Exhaust Fan with VFD and Bypass
UL Approval
Nonfused Unit Disconnect Switch
Hot Gas Bypass Valve
High capacity evap coil
Generic Building Automation System Module
Extended Grease Lines
Access Doors
TRAQ flow sensor
2nd-5th Year Replacement Compressor Warranty
Heat Exchanger Warranty 2nd thru 5th Year
R407C REFRIGERANT
Factory Start-up

Performance Data - Commercial Rooftop Air Conditioning Units (Large)

Tags	RTU-5
Design airflow (cfm)	33000
Exhaust fan airflow (cfm)	28000
Elevation (ft)	5300.00
Cooling EDB (F)	83.10
Cooling EWB (F)	58.50
Ent air relative humidity (%)	24.34
Ambient temp (F)	105.00
Leaving Coil DB (F)	48.20
Leaving Coil WB (F)	45.30
Leaving Unit DB (F)	52.40
Leaving Unit WB (F)	47.08
Gross total capacity (MBh)	1044.72
Gross sensible capacity (MBh)	1044.72
Gross latent capacity (MBh)	0.00
Net total capacity (MBh)	936.66
Net sensible capacity (MBh)	936.66
Net sensible heat ratio (%)	100.00
Input htg capacity (MBh)	788.00
Output htg capacity (MBh)	646.16
Output htg capacity w/fan (MBh)	744.57
Heating EAT (F)	70.00
Heating LAT (F)	92.90
Heating delta T (F)	22.90
Supply duct static pressure (in H2O)	2.00
Return duct static pressure (in H2O)	1.00
Component S.P. drop (in H2O)	2.41
Total static pressure (in H2O)	5.41

Tags	RTU-5
Supply motor brake horsepower (bhp)	38.64
Supply fan RPM (rpm)	1389
Exhaust static pressure (in H2O)	1.00
Exhaust motor brake horsepower (bhp)	13.35
Exhaust fan RPM calculated (rpm)	658
System power (kW)	147.16
EER @ ARI (EER)	9.9
IPLV @ ARI (IPLV)	11.2
Minimum circuit ampacity (A)	278.92
Maximum overcurrent protection (A)	300.00
Minimum disconnect switch size (A)	311.00
Recommended dual element (A)	300.00
Compressor 1 count (Each)	6.00
Compressor 1 RLA (A)	27.30
Compressor 2 count (Each)	0.00
Compressor 2 RLA (A)	0.00
Supply fan motor FLA (A)	30.50
Supply fan count (Each)	2.00
Condenser fan FLA (A)	18.00
Exhaust fan motor FLA (A)	25.50
Other FLA (A)	2.00
Evaporator face area (sq ft)	59.30
Evaporator rows (Each)	5.00
Evaporator fin spacing (Per Foot)	148
Condenser rows (Each)	4.00
Condenser fin spacing (Per Foot)	144
Min. unit operating weight (lb)	13810.0
Max. unit operating weight (lb)	17810.0
Fan motor heat (MBh)	108.07
Discharge duct - 63 Hz (dB)	92
Discharge duct - 125 Hz (dB)	88
Discharge duct - 250 Hz (dB)	93
Discharge duct - 500 Hz (dB)	89
Discharge duct - 1 kHz (dB)	85
Discharge duct - 2 kHz (dB)	78
Discharge duct - 4 kHz (dB)	74
Discharge duct - 8 kHz (dB)	68
Return duct - 63 Hz (dB)	82
Return duct - 125 Hz (dB)	83
Return duct - 250 Hz (dB)	86
Return duct - 500 Hz (dB)	77
Return duct - 1 kHz (dB)	71
Return duct - 2 kHz (dB)	69
Return duct - 4 kHz (dB)	66
Return duct - 8 kHz (dB)	57
Run acoustics	Yes
Exhaust fan - 63 Hz (dB)	85
Exhaust fan - 125 Hz (dB)	82
Exhaust fan - 250 Hz (dB)	79
Exhaust fan - 500 Hz (dB)	78
Exhaust fan - 1 kHz (dB)	76
Exhaust fan - 2 kHz (dB)	74
Exhaust fan - 4 kHz (dB)	70
Exhaust fan - 8 kHz (dB)	64

Mechanical Specifications - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5

General (UL Approved Units)
Unit will be specifically designed for outdoor rooftop installation on a roof curb. The unit will be completely factory assembled, run tested, UL 1995 approved, piped, internally wired, fully charged with R-22 and the compressor will be oil charged. Cooling capacity will be rated in accordance with ARI Standard 360. Unit will have decals and tags to aid in service and to indicate caution areas. Electrical diagrams will be printed on long life water resist and material and will ship attached to control panel door.

Unit Casing
Exterior panelsshell be zinc coated galvanized steel, phosphatized and painted with an oven dried, water based enamel which meets a 672 hour salt spray test based on the ASTM B117 standard for salt spray resistance. Screws will be coated with zinc-plus-zinc chromate. Interior surfaces or exterior casing members will have 1/2" [12.7 mm] Tuf-Skin fiberglass insulation. Unit base will be watertight with 14 gauge formed load bearing members, formed recess and curb overhang. Unit lifting lugs will accept chains or cables for rigging. Lifting lugs will also serve as unit tiedown points.

Scroll Compressors
Trane 3-D Scroll compressors will have a simple mechanical design with only three major moving parts and no suction or discharge valves. Scroll type compression and 3-D compliance will provide a completely enclosed compression chamber with no leakage paths. Trane 3-D Scroll compressor will include a direct-drive, 3600 rpm, suction gas cooled hermetic motor, centrifugal oil pump, oil sight glass and oil charging valve. Control of compressor will allow lead/lag of multiple compressors/circuits for even run time to increase life of compressors.

Supply Fan Assembly
The unit has two centrifugal fan assemblies mounted independently within the unit. The fan assembly and fan motor with fixed sheaves are mounted on an independent base. Both assemblies are completely isolated from the unit by two-inch spring isolators. The fans are dynamically balanced and run tested at the factory. Shaft bearings are grease lubricated ball type designed for 200,000 hours average life. All supply fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Condenser Coil
Configurated aluminum fin secondary surface will be mechanically bonded to primary surface of 3/8" [9.53 mm] O.D. copper tubing. Subcooling circuits will be provided as standard. Coils will be factory tested at 450 psig [3102.8 kPa] air pressure and vacuum dehydrated.

Evaporator Coil
Internally enhanced seamless copper tubing of 1/2 " [12.7 mm] O.D. will be mechanically bonded to heavy-duty aluminum fins of configurated design. The coils will be equipped with thermal expansion valves and factory pressure and leak tested at 300 psi [2068.5 kPa].

Natural Gas Heat
Gas furnaces are a completely assembled, wired, and run tested system within the rooftop unit. Furnaces are UL/CSA agency approved specifically for outdoor applications. All gas piping is threaded with side or through-the-base main gas supply access. Heat exchangers are tubular two pass free floating design with 16 gauge stainless steel primary and 18 gauge stainless steel secondary surfaces. A flue tube/turbulator clean out plate is provided. The burner assembly is industrial type which includes ignition electrode, flame sensing rod, and ceramic cone. An air proving switch is provided to prevent operation during loss of combustion or supply air flow. The combustion blower assembly consists of a centrifugal fan powered by a direct drive thermally protected motor. Gas safety controls include an electronic ignition module with 60 second pre-purge cycle and continuous flame sensing capability.

The ignition module is microprocessor based and includes operation sequence LED's for monitoring the furnace operation.

Limited Modulating Gas Heat
The firing rate of the unit can modulate from 33% up to 100% of the heating nameplate rating of the unit.

100% Exhaust with Statitrac
Two centrifugal fans mounted on a common shaft with fixed sheaves. The fan is factory dynamically balanced and tested. Shaft bearings are grease lubricated ball type designed for 200,000 hours average life. Optional extended grease lines allow greasing the bearing from the filter section. Fan motor and fan assembly are mounted on a common base. Entire assembly is isolated from the unit by double deflection rubber in shear isolators with motor sizes larger than five horsepower. For both CV and VAV applications, Statitrac, a differential pressure control system, compares the

indoor building pressure to the atmospheric pressure. The exhaust fan is turned on and the discharge dampers at the fan outlet modulates when the building pressure exceeds the specified deadband configured in the Rooftop Human Interface Control. All exhaust fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Bag Filters with Prefilters

Bag filters are UL Class 2 listed disposable type with a 90 to 95 percent efficiency rating per ASHRAE 52-76 and 52.1, and MERV (Minimum Efficiency Reporting Value) is 15, when tested in accordance with the ASHRAE 52.2 test method. Pre-filters are 2" [50.8 mm] thick, UL class 2 listed, high efficiency pleated media type. Pre-filters have an average efficiency of 25 to 30 percent, and are rated in excess of 90 percent average synthetic dust weight arrestance, when tested in accordance with ASHRAE 52.76 and 52.1 test methods. Pre-filter MERV (Minimum Efficiency Reporting Value) is 7, when tested in accordance with the ASHRAE 52.2 test method. Filters mounted in galvanized steel rack.

0-100 Percent Economizer

Automatically modulating return and outside air dampers assist in the maintaining of the control temperature setpoint to allow "free" cooling. The economizer is equipped with an automatic lockout when the outdoor enthalpy/temperature is not suitable for space temperature control. Minimum position is standard and adjustable with either the Human Interface Control, remote potentiometer, or through the building management system. A spring return actuator insures closure of the outside air dampers during shutdown or power interruption. Mechanical cooling is available to assist the economizing mode. Low leak dampers are standard with a leakage rate of 2.5 percent of nominal airflow of 400 Cfm/ton [189 L/s] per ton at a static pressure of 1" [25.8 mm] w.c.

Variable Frequency Drive

General Description:

The AC Drive and all associated optional equipment are UL listed according to Power Conversation Equipment UL 508C and CSA certified. The AC Drive is designed, constructed and tested in accordance with NEMA ICS, NFPA, and IEC standards. The Drive is housed in a metal NEMA 1 enclosure. All standard and optional features are included within the Drive enclosure, unless otherwise specified. The Drive converts incoming fixed frequency three-phase AC power into a variable frequency and voltage for controlling the speed of three-phase AC motors. DC link reactors are provided on both the positive and negative rails of the DC bus equal to 3% impedance to minimize power line harmonics. Full load amp ratings meet or exceed NEC Table 430-150. The Drive provides full rated output current continuously, 110% of rated current for 60 seconds and 160% of rated current for up to 0.5 second while starting.

Isolation is provided between the Drive's power circuitry and control circuitry to ensure operator safety and to protect connected electronic control equipment from damage caused by voltage spikes, current surges, and ground loop currents. Audible motor noise is minimized through the use of an adjustable carrier frequency. Carrier frequency is automatically adjusted to optimize motor and AC Drive efficiencies while reducing motor noise. Operating range, ambient temperature, -10 to 50°C (14 to 104°F), 0 to 95% relative humidity, non-condensing, AC line voltage variation, -10 to +10% of nominal with full output.

Default: After 10-second time out the Drive will shut off. Will function normally when the keypad is removed while the AC Drive is running and continue to follow remote commands. AC Drive catches rotating motor operating forward or reverse up to full speed. The AC Drive is rated for 100,000 amperes interrupting capacity (AIC). Includes current sensors on three output phases to detect and report phase loss to the motor. Identifies which of the output phases is low or lost. Continues to operate without faulting until input voltage reaches 300 V AC on 208/230 volt units, 539 V AC on 460 volt units, and 690 volts on 600 volt units.

Interface Features

Off/Stop and Auto/Start selector switches provided to start and stop the AC Drive and determine the speed reference. On units with bypass, an AC Drive/Off/Bypass Hand selector switch will be provided in the unit control box. In case of an external current overload, a normally closed dry contact will stop the motor whether in DRIVE or BYPASS mode. In DRIVE mode speed reference is provided by a 0 to 10 V DC analog input. The display is programmable to display in 9 languages including English, Spanish and French. The display has four lines, with 20 characters on three lines and eight large characters on one line. The following points are controlled and/or accessible:

AC Drive Start/Stop. Speed reference, Fault diagnostics, Meter points to include - Motor power in HP, Motor power in kW, Motor kW-hr, Motor current, Motor voltage, Hours run, DC link voltage, Thermal load on motor, Thermal load on AC Drive and Heatsink temperature. The AC Drive stores in memory the last 10 faults and related operational data. Four simultaneous displays are available, frequency or speed, run time, output amps and output power. The following displays are accessible from the keypad. Reference Signal Value, Output Frequency in Hz or percent, Output Amps,

Motor HP, Motor kW, kW hour, Output Voltage, DC Bus Voltage, AC Drive Temperature in degrees, and Motor Speed in RPM.

A quick setup menu with factory preset parameters is provided on the AC Drive eliminating the need for macros. A red FAULT light, a yellow WARNING light and a green POWER-ON light are provided. These indications are visible both on the keypad and on the AC Drive when the keypad is removed. The AC Drive includes a standard EIA-485 communication port and capability for future connection to a Modbus communication interface.

If the temperature of the AC Drive's heat sink rises to 80°C, the AC Drive automatically reduces its carrier frequency to reduce the heat sink temperature. If the temperature of the heat sink continues to rise the AC Drive automatically reduces its output frequency to the motor. As the AC Drive's heat sink temperature returns to normal, the AC Drive automatically increases the output frequency to the motor and returns the carrier frequency to its normal switching speed. The AC Drive has temperature controlled cooling fans for quiet operation and minimized losses.

Adjustments and Factory Default Settings

AC Drive carrier frequency is adjustable in steps of not less than 0.1 kHz to allow tuning the AC Drive to the motor. Four, acceleration and four deceleration ramps are provided. Acceleration and deceleration time is adjustable over the range from 0 to 3,600 seconds to base speed. The shape of these curves is automatically contoured to ensure no-trip acceleration and deceleration. Factory Default: The Drive is programmed for an acceleration and deceleration time of 30 seconds. Four current limit settings will be provided. Factory Default: The Drive is programmed for 1 X rated current. If the AC Drive trips on one of the following conditions, the AC Drive will be programmable for automatic or manual reset: under-voltage, over-voltage, current limit and inverter overload.

Factory Default: The Drive is programmed for automatic reset. The number of restart attempts is selectable from 0 through infinity and the time between attempts is adjustable from 0 through 600 seconds. Factory Default: 3 attempts, 10 seconds between attempts. After 3 failed restart attempts, the drive automatically reverts to the manual reset mode. An automatic "on delay" may be selected from 0 to 120 seconds. Factory Default: The Drive is programmed for 0 seconds delay.

Protective Features

Class 10 I2t electronic motor overload protection for single motor applications is provided. Protection against input transients, loss of AC line phase, output short circuit, output ground fault, over-voltage, under-voltage, AC Drive over-temperature and motor over-temperature. All faults are displayed in plain English. Protection from AC Drive sustained power or phase loss. Full rated output with an input voltage as low as 90% of nominal. Continuous operation with reduced output with an input voltage as low as 164 V AC for 208/230 volt units, 313 V AC for 460 volt units, and 394 volts for 600 volts units. Semi-conductor rated input fuses to protect power components. A "signal loss detection" circuit senses the loss of an analog input signal such as 4 to 20 mA or 0 to 10 V DC, and is programmable to react as desired in such an instance.

Unit Non-Fused Disconnect
This switch is non-fused and is located inside the unit control box. An external handle allows power disconnection without having to open the control box door.

Hot Gas Bypass
Valves, piping and controls are all included to allow operation at low airflow, avoiding coil frosting and damage to compressor.

Economizer Dry Bulb Control
Dry bulb temperature control option an outdoor temperature sensor is included for comparing the outdoor dry bulb temperature to a locally adjustable temperature setpoint programmed either at the human interface or remote human interface to determine if outdoor air temperature is suitable for economizer operation.

High Capacity Evaporator Coil
Additional rows of coil and enhanced evaporator tube surfaces provide increased capacity compared to standard coils.

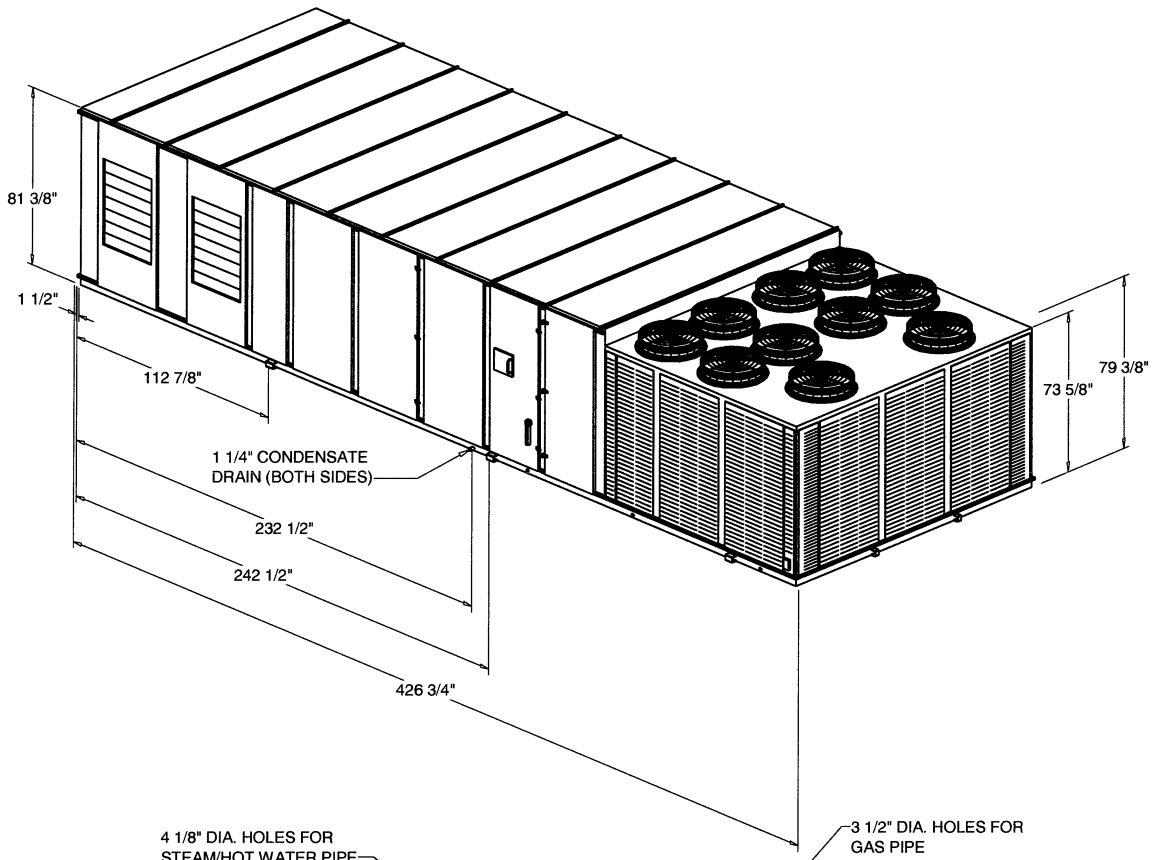
Generic Building Automation System (GBAS) Module
The GBAS module is provided for use with a non-Trane building management system. The module provides a binary input for Demand Limiting, four (4) analog inputs for setpoint adjustment and five (5) relay outputs for diagnostic reporting. Inputs can use a potentiometer of 0-5 vdc signal.

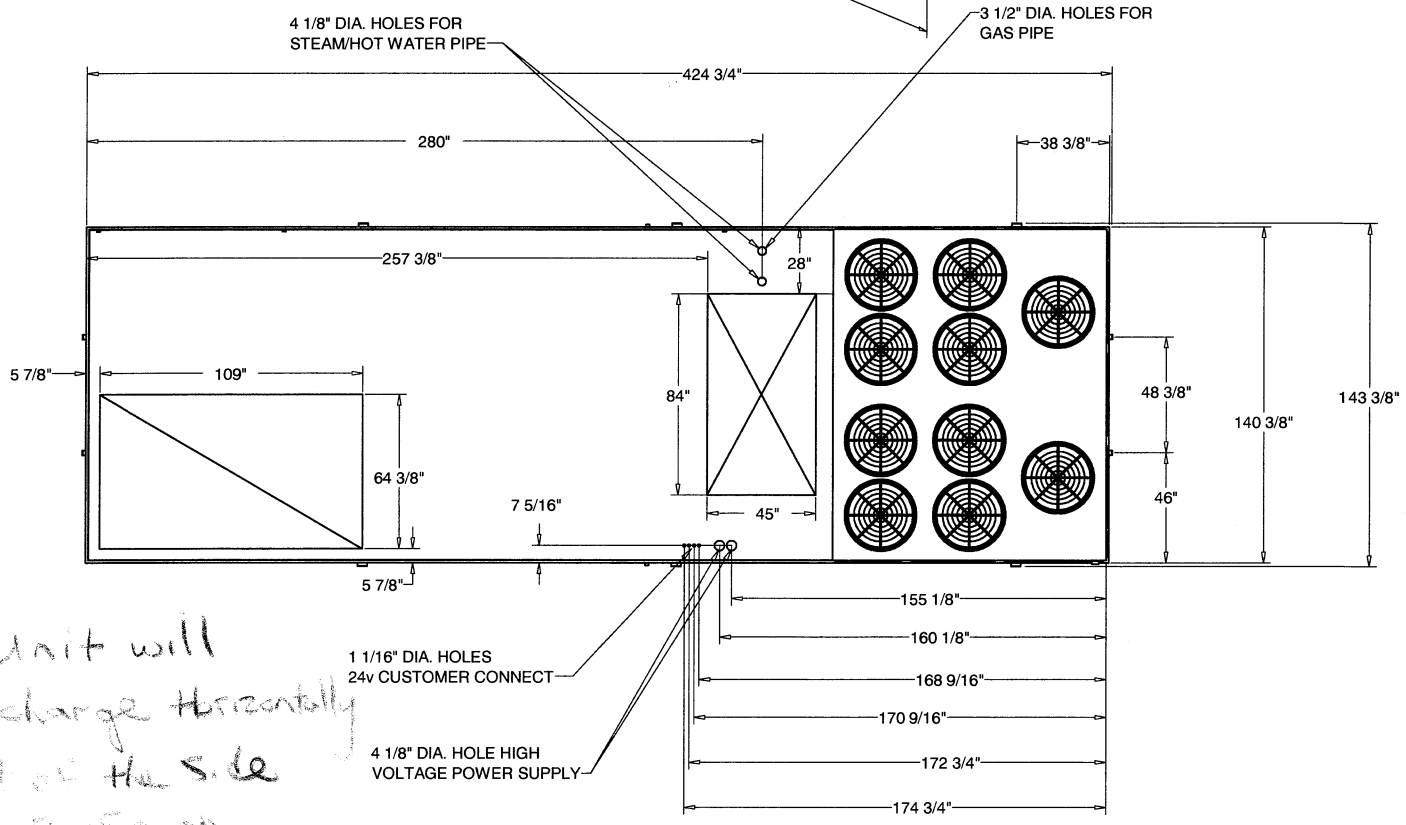
Extended Grease Lines
The extended grease line allows greasing of the supply (and exhaust fan if applicable) bearings through the filter access door.

Access Doors
Hinged access doors provide easy access to service areas. These access doors feature double wall construction with dual density insulation sandwiched between 18-gauge galvanized steel panels for strength and durability.

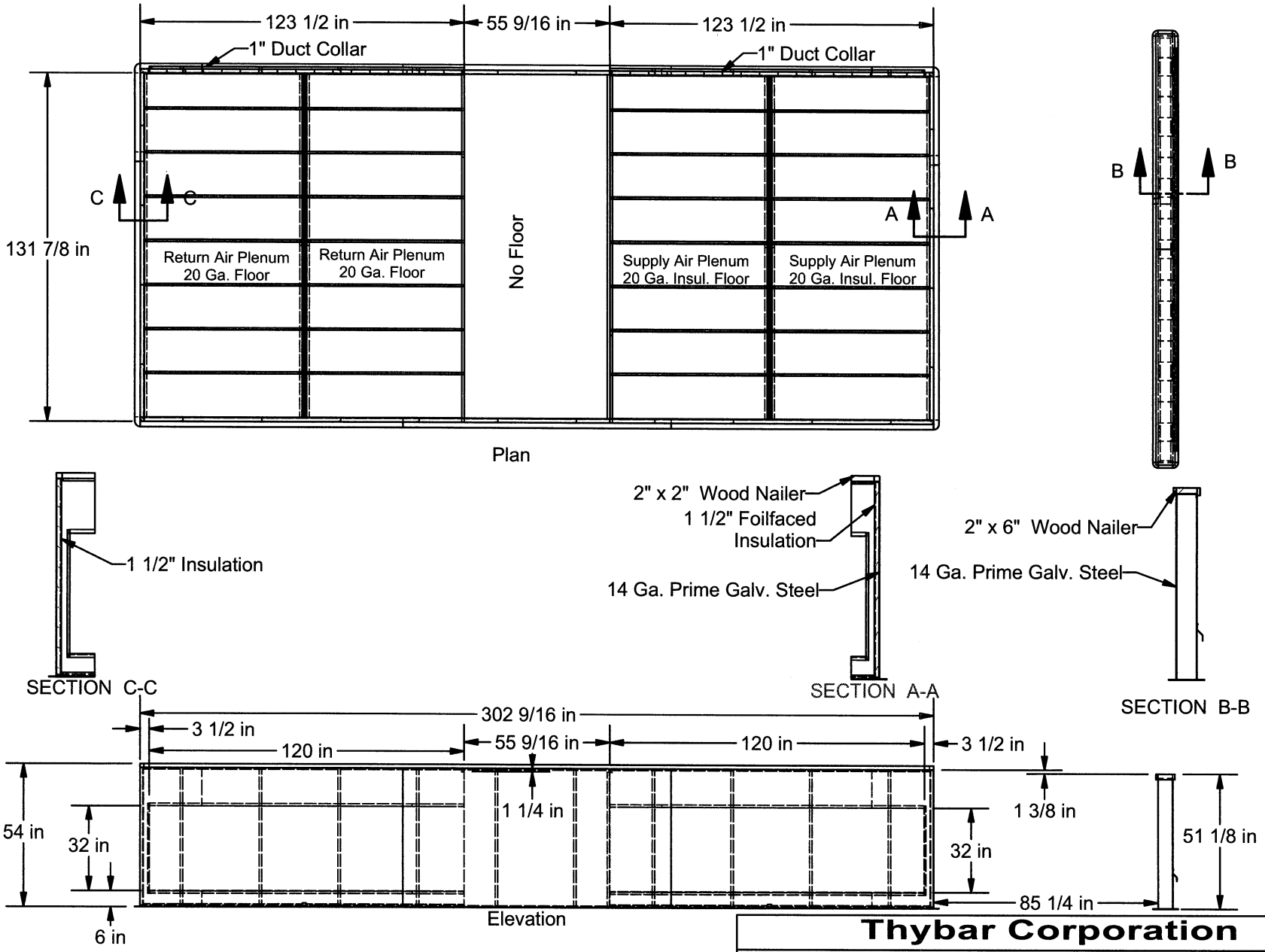
Design Special - Traq Sensor
Ventilation Control Module (VCM) (Used on units to control the minimum fresh air entering the unit.) The Ventilation Control Module (VCM) is linked to the Intellipak_ UCM. Using a velocity pressure sensing ring, the VCM monitors and controls the quantity of fresh air entering the unit. This allows it to control to the minimum airflow setpoint. An optional temperature sensor can be connected to the VCM which enables it to control a field installed fresh air preheater; and an optional carbon dioxide sensor can be connected to the VCM to control the carbon dioxide reset. UL approved special feature.

Unit Dimensions - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5





* Unit will Discharge Horizontally out of the S. de of Roof curb.



TC-3 Horizontal Roof Curb for
Trane IntelliPak S_HF 90-130
Send 25 ft. 1 x 3/4 Gasketing
Send 75 ft. 1 1/2 x 1/4 Gasketing
Wt. Approx. = 2,250 lbs.

Thybar Corporation

Tag:		
Qty:	Job # :	Date: 4/18/2008
Drawn By: B Nguyen		
Dwg. No. RC06161.idw		

ThyCurb

Unit Dimensions - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5

ELECTRICAL / GENERAL DATA

TONS				105		
UNIT OPERATING VOLTAGE RANGE				414	506	
UNIT PRIMARY VOLTAGE				460		
UNIT HERTZ				60		
UNIT PHASE				3		
HEATING - PERFORMANCE		**HEATING - GENERAL DATA**				
HEAT INPUT	1000	GAS INLET PRESSURE		MIN.____w.c.		MAX.____0 w.c.
HEAT OUTPUT	820 Mbh	GAS PIPE CONNECTION SIZE		1-1/4"		
CAPACITY STEPS						
COMPRESSOR		Circuit #1			Circuit #2	
NUMBER		3			3	
TONS (EACH) (5)		15/15/15	16.3 kW		15/15/15	16.3 kW
COMPRESSOR RATED LOAD AMPS (EACH)		27.3			27.3	
LOCKED ROTOR AMPS (EACH)		178			178	
SUPPLY FAN MOTOR						
NUMBER				2		
HORSEPOWER (EACH)				25.0	18.65 kW	
SUPPLY FAN MOTOR FULL LOAD AMPS				30.5		
CONDENSOR FAN MOTOR						
NUMBER				10		
HORSEPOWER (EACH)				1.0	0.75 kW	
CONDENSOR FAN MOTOR FULL LOAD AMPS				1.8		
EXHAUST FAN MOTOR						
NUMBER				1		
HORSEPOWER (EACH)				20.0	14.92 kW	
EXHAUST FAM MOTOR FULL LOAD AMPS				25.5		
ELECTRIC HEATER						
ELECTRIC HEATER KW						
ELECTRIC HEATER FULL LOAD AMPS						
FILTERS - TYPE				Bag w/prefilters		
FURNISHED				YES		
NUMBER				3 - 15 / 3 - 15		
RECOMMENDED SIZE				12 x 24 x 19 - 24 x 24 x 19 / 20 x 24 x 2 - 24 x 24 x 2		
REFRIGERANT TYPE				R-22		
FACTORY CHARGE (CIRCUIT #1) (6)				142.0 lb		
FACTORY CHARGE (CIRCUIT #2) (6)				141.0 lb		

Cooling MCA = (1.25 x LOAD 1) + LOAD 2 + LOAD 4

Cooling MOP= (2.25 x LOAD 1) + LOAD 2 + LOAD 4

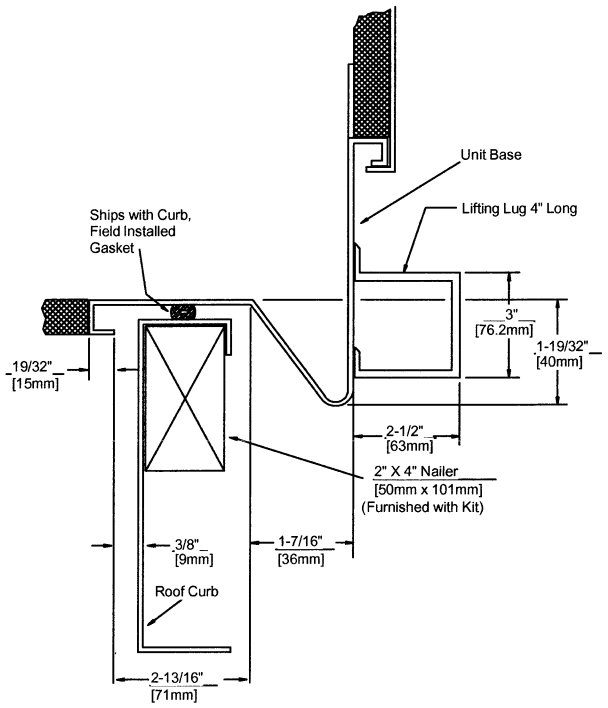
Cooling RDE= (1.5 x LOAD 1) + LOAD 2 + LOAD 4

Notes:

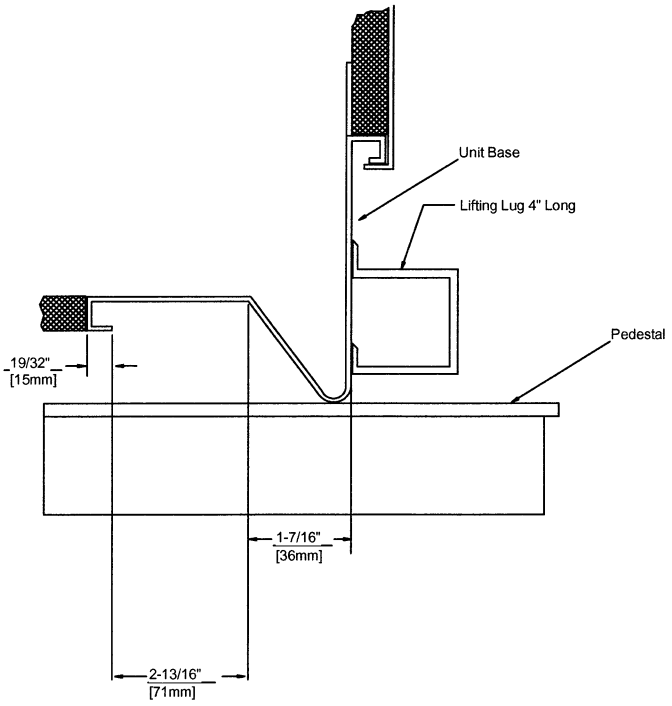
1. LOAD 1=Current of the largest motor (compressor or fan motor); LOAD 2=Sum of the currents of all remaining motors; LOAD 3 =Current of electric heaters LOAD 4 =Control Power Transformer (90-130 ton units add 6 FL amps for wire sizing formula)
2. For Electric Heat MCA, MOP, RDE values, calculate for both cooling and heating modes using the larger value for sizing. (When determining LOADS, the compressors do not operate when the unit is in heating mode) (Heating Load 4 = 12 amp on 200,230 volt units and 9 amps on 460,575 volt units).
3. If selected Max Over Cur is less than the Min Clr Amp, then select the lowest maximum fuse size which is equal to or larger than the Min Cir Amp, provided the selected fuse size does not exceed 800 amps.
4. If the selected Recommended Dual Element fuse size is greater than the selected Max Over Cur Protection value, then select the Recommended Dual Element fuse size value to equal the Max Over Protection value.
5. Compressor KW at ARI rating conditions of 80/67 -95
6. Refrigerant charge is an approx. value. For a more precise value, see unit nameplate and service instructions.

Unit Dimensions - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5

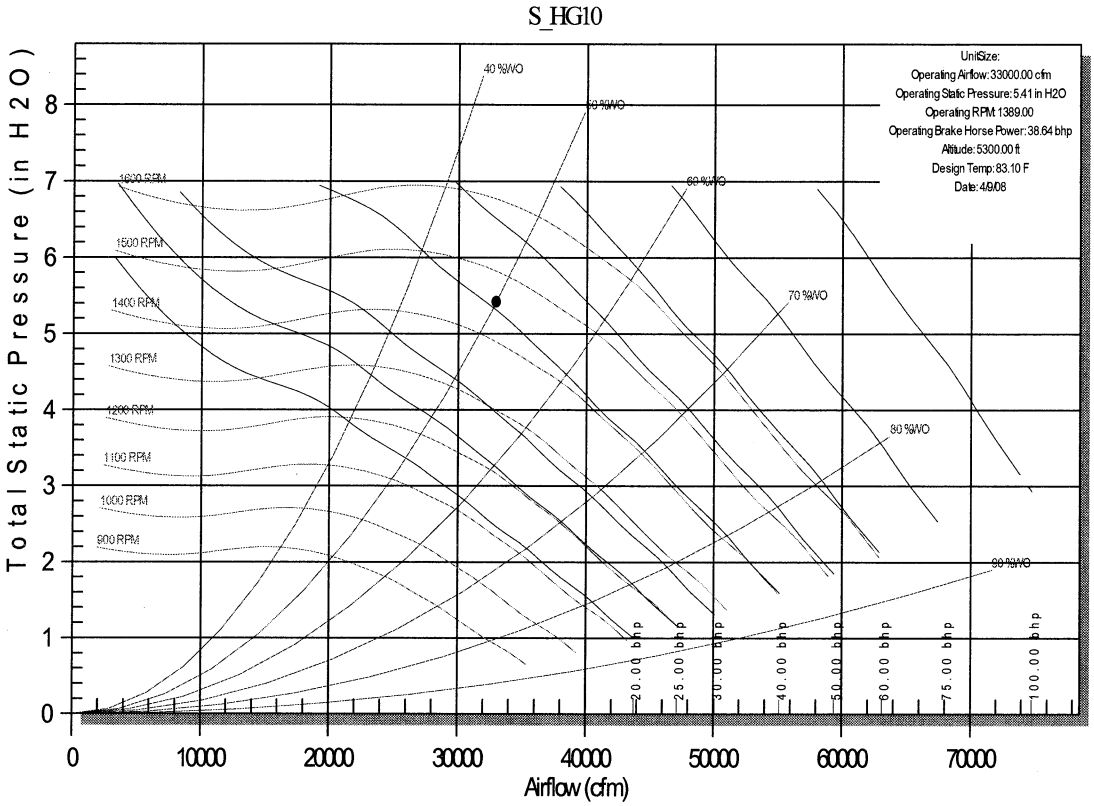
TYPICAL ROOF CURB AND BASE PAN DETAIL



TYPICAL PEDESTAL AND BASE PAN DETAIL



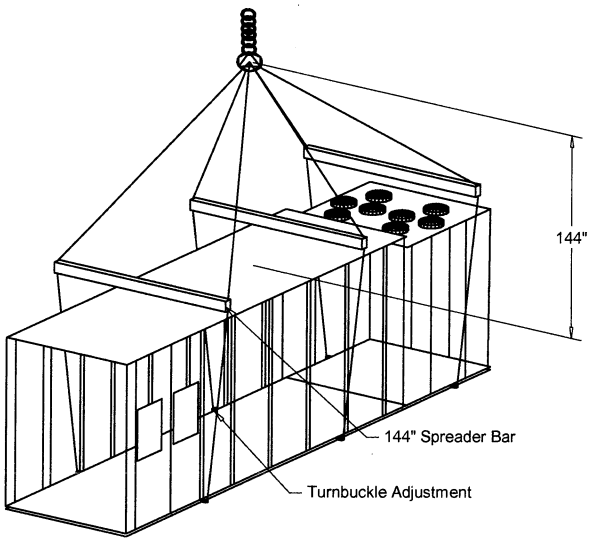
Fan Curve - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5



	63Hz	125Hz	250Hz	500Hz	1 kHz	2 kHz	4 kHz	8 kHz
Discharge duct:	92	88	93	89	85	78	74	68
Return duct:	82	83	86	77	71	69	66	57
Exhaust fan:	85	82	79	78	76	74	70	64

Weight, Clearance & Rigging Diagram - Commercial Rooftop Air Conditioning Units (Large)

Item: A1 Qty: 1 Tag(s): RTU-5



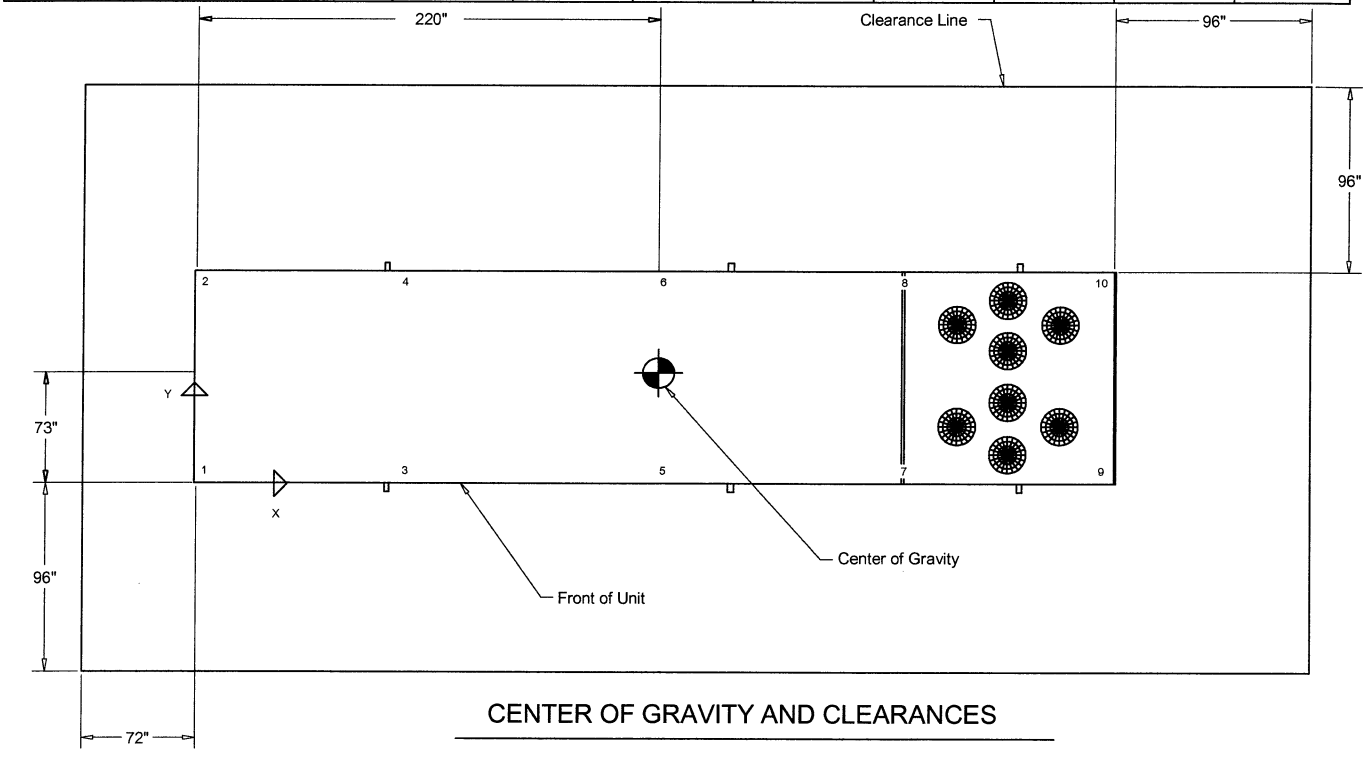
RIGGING

NOTES:

1. The actual weight is stamped on the unit nameplate.
2. The weight shown represent the typical unit operating weights for the unit selected.

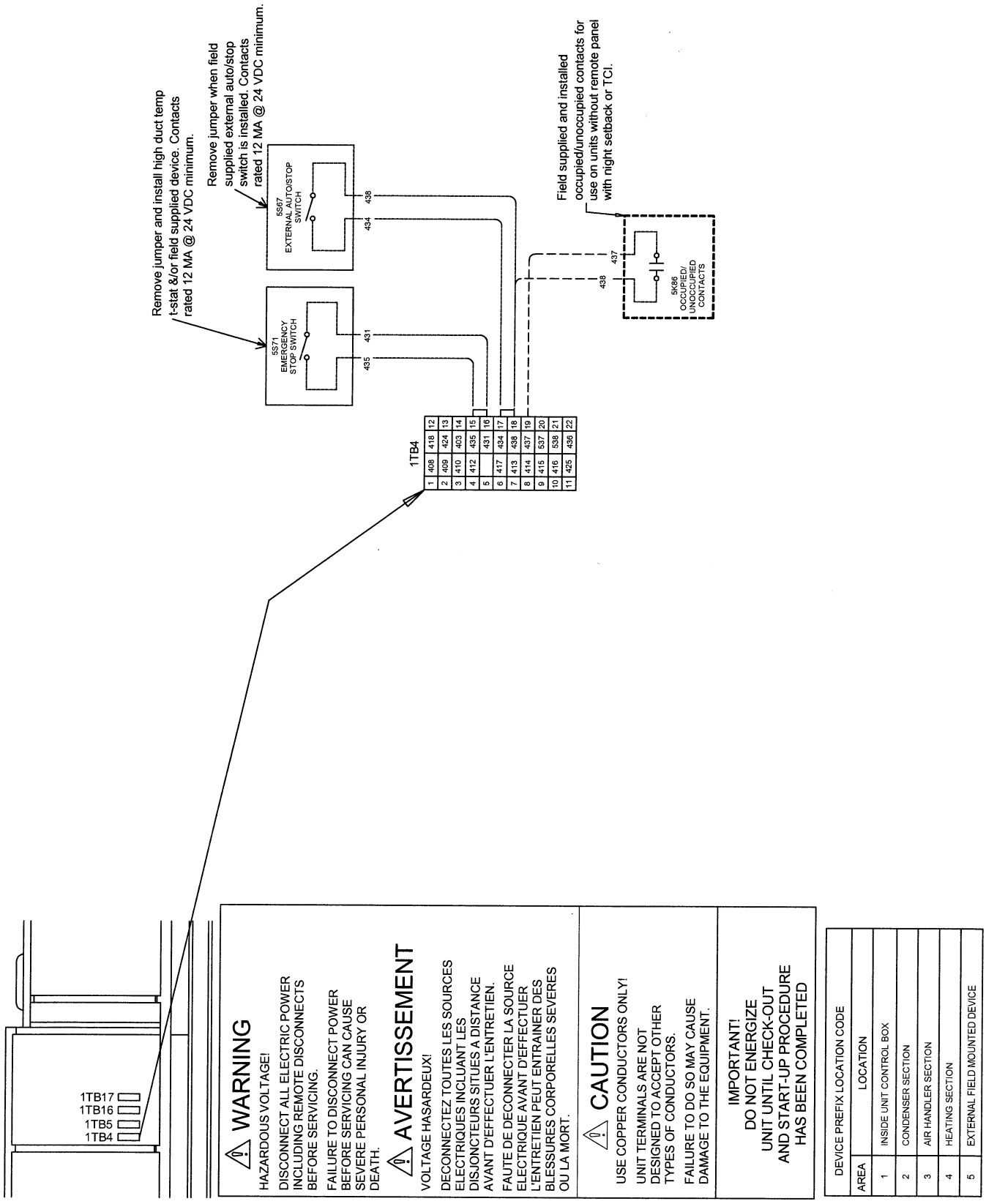
Total Weight
16590.0 lb
Weight Add For Double-Wall

	POINT WEIGHTS									
	1	2	3	4	5	6	7	8	9	10
	1490.0 lb	1550.0 lb	1440.0 lb	1500.0 lb	1400.0 lb	1930.0 lb	1810.0 lb	1880.0 lb	1760.0 lb	1830.0 lb
X / Y	4" / 4"	4" / 136"	120" / 4"	120" / 136"	215" / 4"	215" / 136"	309" / 4"	309" / 136"	396" / 4"	396" / 136"



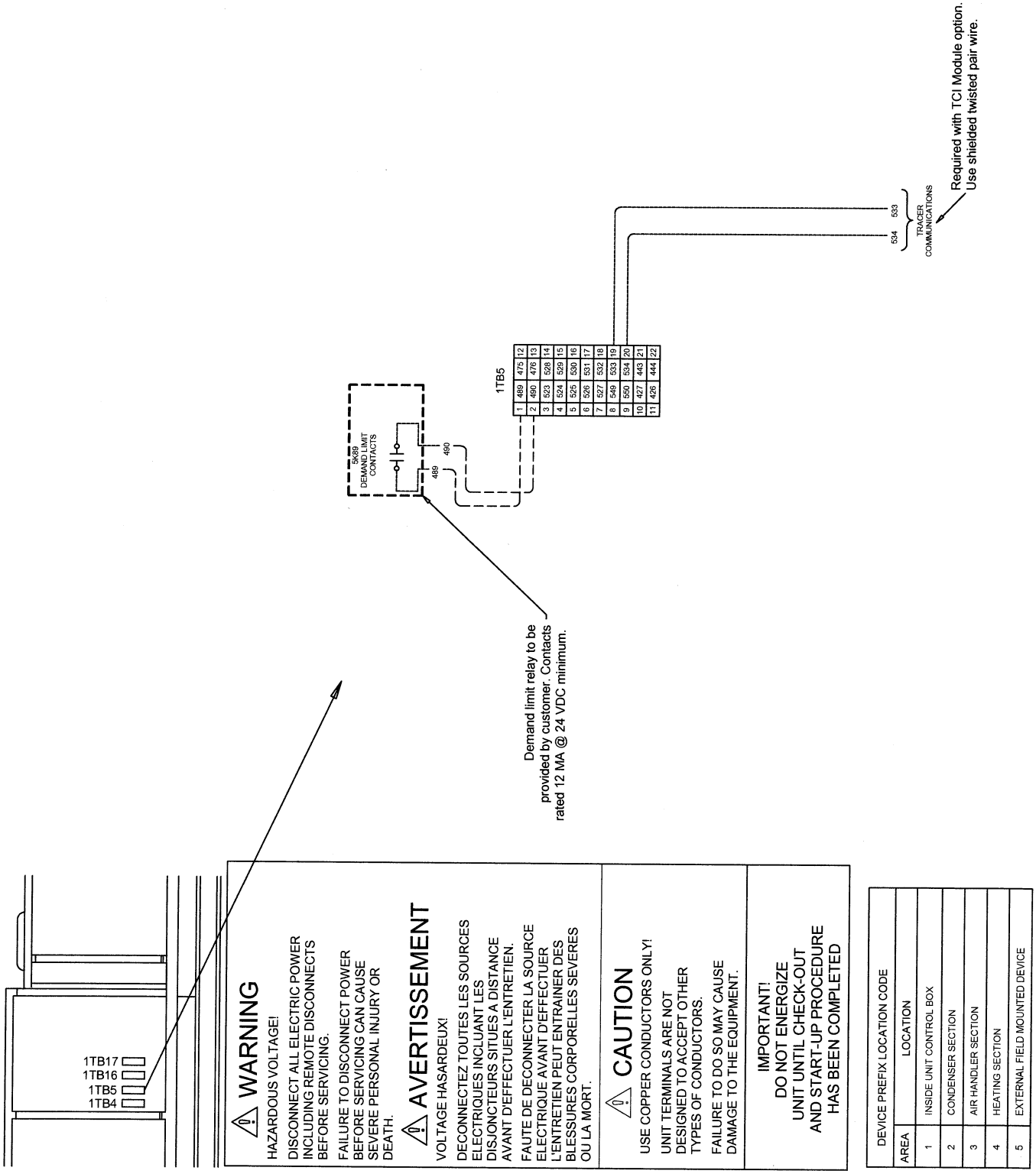
CENTER OF GRAVITY AND CLEARANCES

Field Wiring - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5



Note: All wiring and components shown dashed to be supplied and installed by the customer in accordance with local electrical codes.

Field Wiring - Commercial Rooftop Air Conditioning Units (Large)
Item: A1 Qty: 1 Tag(s): RTU-5



Note: All wiring and components shown dashed to be supplied and installed by the customer in accordance with local electrical codes.