



Submittal

Prepared For:
MEEC

Date: July 16, 2026

Sold To:
Brighton Area Schools
Attn: Scott Jacobs

Job Name:
Brighton Area Schools - HS Science and Chiller Upg

Opportunity ID: 8568674

Trane U.S. Inc. is pleased to provide the following submittal for your review and approval.

Product Summary

Qty	Product	Tag(s)
1	ACR	ACCH-1

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

Submittal acceptance and return is a critical step, so please ensure submittals are returned with approval to release to production within 14 days of submittal date.

Product performance and submittal data is valid for a period of 6 months from the date of submittal generation. If six months or more has elapsed between submittal generation and equipment release, the product performance and submittal data will need to be verified. It is the customer's responsibility to obtain such verification.

Pump Package Notes:

1. The Single Point MCA has gone from 809.75 amps to 858.95 amps with the addition of one pumps running.
2. The Pump and Pump VFD will not be wired thru the Pueblo Factory Harmonic Filter. If you want the pump VFD to also have a harmonic filter it will be a change order and TCS will need to update the quote.
3. The isolator point load weights have changed due to the additional weight of the pump package option; unit shall come with the correct size and quantity of neoprene isolators.
4. The mechanically cooled chilled water piping shall be insulated with 3/4" Armaflex.
5. Pump is sized for a design point of 800 GPMs and 125 feet of head with a 30% Ethylene Glycol Mix
6. Due to the potential differences in CAD model dimensions, and actual unit dimensions, these drawings are intended to be representative only to give a close approximation of dimensional representation. Therefore as-built dimensions may change during production. If any field prefabrication is required before unit arrival, dimension coordination with Trane, or certified drawings may be requested. Drawings would be available a week or two prior to unit shipment. Trane will not be responsible for field rework.

REV.1 Updates:

1. Added Pump Harmonic Filter to scope of work.
2. Updated layout Drawing to show pump harmonic filter



**MECHANICAL ELECTRICAL ENGINEERING
CONSULTANTS, P.C.**

Review is only for conformance with the design concept on the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction, and for coordination of his work with all other trades.

☒ No Exceptions Taken INITIALS: Z.M.
☐ Note Markings
☐ Rejected DATE: 07/20/2026
☐ Resubmit

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Tag Data - ACR (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	ACCH-1	1	Ascend (TM) Air-Cooled Chiller Model (AC	ACRC4404EU**QEUEXCC2XCNWFMEV1CANBX XAA1XXXX0LX

Product Data - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1**

ACR Air-Cooled Screw Chiller
 440 Nominal Tons
 Mixed Screw Types
 460 Volt/60Hz/3Phase
 InvisiSound Superior with Noise Reduction Request
 UL Listed to U.S. and Canadian safety std via ETL - 2019
 ASME Pressure Vessel Code
 Refrigerant Charge R513A
 AHRI Certified
 ASHRAE 90.1/C743 2022 - Compliant
 Ice Making
 Chil 2-pass
 Evaporator Standard Tube
 Ethylene Glycol
 Grooved Pipe Connection
 Flow Switch Set Point 15cm/sec
 Factory Insulation - 0.75 inch
 Wide Ambient
 9V Condenser Coil Modules
 Long Life Alloy Aluminum Coil
 EC Condenser Fan Motors
 Fan Speed 950 RPM
 Variable Frequency Drive (1 Compr/CKT)
 Single Point Unit Power Connection
 Circuit Breaker
 Default Short Circuit Rating
 20A - 115V Convenience Outlet
 BACnet MS/TP Interface
 Architectural Louvered Panels
 Elastomeric Isolators
 5% TDD (IEEE 519 COMPLIANT)
 5 Year Compressor Parts Only Warranty
 Manufacturer's Start-up and 1st Year Labor Warranty

Additional Options:

1 year parts warranty included on Pump Package.

Parts warranty on chiller by others

Labor warranty by others

Integral Pump Package with:

Pumps: Taco CI4007D, 800 GPM @ 125 ft head, EG 30%, 3500 rpm, 40 HP, Inverter Ready, TEFC
 Triple Duty Valve
 Suction Diffuser
 1 – TR150 VFD 40 HP in NEMA 3R Enclosure
 8" Pipe, Valves, and Fittings
 Non-ASME Expansion Tank – Wessels N-90V
 Pump Isolation Valves
 Pump Pressure Gauges
 ¾" insulation
Pump Harmonic Filter

Performance Data - ACR

Tags	ACCH-1
Ice Build Capacity (tons)	294.79
Ice Build Efficiency (EER (Btu/W-h))	8.579
Ice Build Unit Power (kW)	412.34
Ice Build Evap Leaving Temp (F)	22.00
Ice Build Evap Entering Temp (F)	31.72
Ice Build Evap Flow Rate (gpm)	800.00
Ice Build Evap Fluid Pressure Drop (ft H2O)	56.28
Ice Build Saturated Evap Circuit1 (F)	20.47
Ice Build Saturated Evap Circuit 2 (F)	18.86
Ice Build Ambient (F)	85.00
Ice Build Saturated Cond Circuit 1 (F)	112.24
Ice Build Saturated Cond Circuit 2 (F)	122.94
Ice Build Compressor Power (kW)	382.36
Ice Build Fan Power (kW)	29.98
Ice Build Fan Speed Circuit 1 (rpm)	871
Ice Build Fan Speed Circuit 2 (rpm)	918
Ice Build Comp Speed Ckt 1 (rpm)	5250
Ice Build Comp Speed Ckt 2 (rpm)	5250
Ice Melt Capacity (tons)	430.87
Ice Melt Efficiency (EER (Btu/W-h))	10.017
Ice Melt Unit Power (kW)	516.16
Ice Melt Evap Leaving Temp (F)	42.00
Ice Melt Evap Entering Temp (F)	56.12
Ice Melt Evap Flow Rate (gpm)	800.00
Ice Melt Evap Fluid Pressure Drop (ft H2O)	55.09
Ice Melt Saturated Evap Circuit 1 (F)	40.27
Ice Melt Saturated Evap Circuit 2 (F)	37.26
Ice Melt Ambient (F)	95.00
Ice Melt Saturated Cond Circuit 1 (F)	130.80
Ice Melt Saturated Cond Circuit 2 (F)	134.66
Ice Melt Compressor Power (kW)	480.53
Ice Melt Fan Power (kW)	35.64
Ice Melt Fan Speed Circuit 1 (rpm)	950
Ice Melt Fan Speed Circuit 2 (rpm)	950
Ice Melt Comp Speed Ckt 1 (rpm)	5250
Ice Melt Comp Speed Ckt 2 (rpm)	5250
Trane Select Assist Version Number	2601
Elevation (ft)	0.00
Number of Fans - Total Installed (Each)	18.00
FLA - Condenser Fans (each) (A)	2.70
Compressor 1A MRC (A)	251.80
Compressor 1B RLA (A)	195.70
Compressor 2A MRC (A)	242.10
Compressor 1B LRA - WYE (A)	346.00
Compressor 1B LRA - DELTA (A)	1065.00
Compressor 1B Current Limit (A)	201.00
Single Point Power MCA (A)	858.95
Single Point Power MOP (A)	1000.00
Short Circuit Current Rating (A)	35000
Refrigerant Charge Ckt 1 (lb)	366
Refrigerant Charge Ckt 1 (Metric) (kg)	166
Refrigerant Charge Ckt 2 (lb)	177
Refrigerant Charge Ckt2 (Metric) (kg)	80
Oil Charge Ckt 1 (gal)	4.80

Tags	ACCH-1
Oil Charge Ckt 1 (Metric) (L)	18.20
Oil Charge Ckt 2 (gal)	3.50
Oil Charge Ckt 2 (Metric) (L)	13.20
Oil Factory Fill Charge Ckt 2 (gal)	3.50
Shipping Weight (lb)	29160
Operating Weight (lb)	30258
Length (in)	570.000
Width (in)	88.000
Height (in)	98.000
Evap Fouling Factor (hr-sq ft-deg F/ Btu)	0.000100
Evap Fluid Concentration (%)	30.00
Evap Fluid Freeze Point (F)	5.08
Mounting Location 1 (in)	52.400
Mounting Location 2 (in)	52.400
Mounting Location 3 (in)	152.000
Mounting Location 4 (in)	152.000
Mounting Location 5 (in)	233.000
Mounting Location 6 (in)	233.000
Mounting Location 7 (in)	351.100
Mounting Location 8 (in)	351.100
Mounting Location 9 (in)	429.800
Mounting Location 10 (in)	429.800
Mounting Location 11 (in)	547.900
Mounting Location 12 (in)	547.900
ASHRAE Certified Selection	ASHRAE 90.1 - 2016
Number of Refrigerant Circuits	2
Acoustic Note 1	Sound power data collected per AHRI 370 methodology.
Acoustic Note 2	Sound power referenced to 1 pW; sound pressure referenced to 20 µPa.
Acoustic Note 3	Sound pressure values are at 30 feet from broadside of unit.
Acoustic Note 4	Acoustical prediction is at max selected fan speed.
Number of Condenser Fans Circuit 1	12
Number of Condenser Fans Circuit 2	6
Actual Air Flow per Cond Fan Circuit 1 (cfm)	12202
Actual Air Flow per Cond Fan Circuit 2 (cfm)	12200
Chiller Pump Information	
Pump Tags	P1
Pump Model Number (Taco)	CI4007D 5x4x7
Number of Pumps	1
Pump Horse Power (HP)	40
Pump Flow Rate (GPM)	800
Pump Head (FEET)	125
Pump FLA (Amps)	49.2
Speed Control (VFD Used for balancing)	VFDs

Tags	ACCH-1
Chiller Piping Size (inches)	8"
Friction Loss per 100 Foot of Pipe (Feet)	1.02
Water (Feet Per Second)	5.13

Product Report - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1**

BELOW SPECIFICATIONS ARE FOR THE RTAF CHILLER ONLY AND DOES NOT INCLUDE THE PUMP PACKAGE ADD.

Ascend Product Report

General

Chiller Model	ACR Air-Cooled Screw Chiller
Model Series	Series "C" Model
Unit Nominal Tons	440 Nominal Tons
Voltage	460 Volt/60Hz/3Phase
Refrigerant	Refrigerant Charge R513A
Number of Circuits	2
Agency Listing	UL Listed to US/Canadian Safety Std



Thermal Battery Performance

	Ice Build	Ice Melt
Cooling Capacity	294.5 tons	430.5 tons
Cooling Efficiency	8.579 EER (Btu/W-h)	10.02 EER (Btu/W-h)
Total Power	412.3 kW	916.2 kW
Ambient Air Temperature	85.00 F	95.00 F
	Evaporator	
Leaving Temperature	22.00 F	42.00 F
Entering Temperature	31.72 F	55.12 F
Design Flow	800.0 gpm	800.0 gpm
Evaporator Head Loss	56.3 ft H ₂ O	55.1 ft H ₂ O
VPR Min Flow	Not Applicable	

Evaporator

Evaporator Application	Ice Making	Fluid Properties	
Fouling Factor	0.000100 hr-sq ft-Btu	Fluid Type	Ethylene Glycol
Number of Passes	Chil 2-pass	Fluid Concentration	30.00 %
Flow Switch Set Point	Flow Switch Set Point 15cm/sec	Fluid Freeze Point	5.08 F

Condenser

Unit Applications	Long Life Alloy Aluminum Coil	Condenser Length	9V Condenser Coil Modules
Condenser Fan Type	EC Condenser Fan Motors	Elevation	0 ft
Number of Fans	18 Each		

Electrical

Unit Voltage	460 Volt/60Hz/3Phase	Total Power	
Compressor Starter	Variable Frequency Drive (1 Comp/CKT)	Short Circuit Rating	35000 A
Incoming Line Connection	Single Point Unit Power Connection	FLA - Condenser Fan (each)	2.7 A
Single Point Power		MCA	MOP
	Unit 809.5 A		1000.0 A
Compressor	MRC/RLA	LRA - WYE	LRA - DELTA
1A	251.8 A	Not Applicable	Not Applicable
1B	195.70 A	348.00 A	1065.00 A
2A	242.1 A	Not Applicable	Not Applicable

Product Report - ACR

Item: A1 Qty: 1 Tag(s): ACCH-1

BELOW SPECIFICATIONS ARE FOR THE RTAF CHILLER ONLY AND DOES NOT INCLUDE THE PUMP PACKAGE ADD.

Acoustics											
Acoustic Note 1				Acoustic Note 2				Acoustic Note 3			
Sound power data collected per AHRI 370 methodology.				Sound power referenced to 1 pW; sound pressure referenced to 20 μ Pa.				Sound pressure values are at 30 feet from broadside of unit.			
Physical											
Dimensions						Weight					
Length 670.0 in						Operating weight 25900 lb					
Width 88.0 in						Shipping weight 25500 lb					
Height 98.0 in											
Circuit			Refrigerant Charge				Oil Charge				
Circuit 1			366 lb				4.8 gal				
Circuit 2			177 lb				3.5 gal				
Partload Information											
Partload Data, IP - IPLV 0.0000 EER (Btu/W-h)											
Load %	Cap. tons	Mech. Cap. tons	Free Cooling Cap. tons	LWT Evap F	EWV Evap F	Flow Evap gpm	WPD Evap ft H ₂ O	Amb. F	Power kW	Eff. EER (Btu/W-h)	
100	451.3	451.3	0.0000	44.00	54.00	1078	89.9	95.0	528.2	10.25	
75	338.4	338.4	0.0000	44.00	51.50	1078	90.0	80.0	276.3	14.70	
50	225.6	225.6	0.0000	44.00	49.00	1078	90.1	65.0	129.1	20.97	
Standard Rating Performance and LEED Rating											
Refrigerant Charge Circuit 1 366 lb						ASHRAE 90.1 - 2019					
Refrigerant Charge Circuit 2 177 lb						This product meets the minimum efficiency requirements of ASHRAE Standard 90.1 (which are based on AHRI standard rating conditions with water) and, therefore, also meets the LEED "Minimum Energy Performance" prerequisite in the Energy and Atmosphere Sections.					
						The LEED Green Building Rating System™, developed by the U.S. Green Building Council, provides independent, third-party verification that a building project meets green building and performance measures.					
Regulatory Compliance											
AHRI Certified											
Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/580 (L-P) and AHRI Standard 551/591 (S). Certified units may be found in the AHRI Directory at www.ahridirectory.org . Unit contains freeze protection liquids in the evaporator and is certified when rated per the Standard with water.											
Publication											
Data Generation Date						2/3/2026					
Trane Select Assist Version Number						2601					

Mechanical Specifications - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1****Foundation**

Provide rigid, non-warping mounting pads or a concrete foundation of sufficient strength and mass to support the applicable operating weight (i.e. including completed piping, and full operating charges of refrigerant, oil and water). The expectation of Trane equipment is that piping is fully supported by an independent structure/system, without being connected to the waterbox. Once in place, the unit must be level within 1/2" across the length and width of the unit. The Trane Company is not responsible for equipment problems resulting from an improperly designed or constructed foundation.

General

Units are leak and pressure tested at 385.00 psi high side, 220.00 psi low side, then evacuated and charged.

Standard power connections include main three phase power to the compressors, condenser fans and control power transformer.

Note: A separate field supplied low voltage power source is required to power the evaporator freeze protection.

Unit panels, structural elements and control boxes are constructed of galvanized steel and mounted on a bolted galvanized steel base. Unit panels, control boxes and the structural base may be finished with a baked on powder paint.

Anytime water only is present in the evaporator, the Trane Symbio(TM) 800 controller must have flow control of the chilled water system. Flow control can be done either directly or through an input to a building automation system to conduct an action resulting in minimum flow through the chiller evaporator barrel to avoid potentially catastrophic damage to the evaporator due to freezing. If the system has sufficient glycol to protect down to the lowest expected ambient, flow control is optional.

Factory Refrigeration Charge

Packaged units ship with a full operating charge of oil and HFO-513A refrigerant.

Evaporator Insulation

The evaporator is a tube-in-shell heat exchanger design with internally and externally finned copper tubes roller expanded into the tube sheet. The evaporator is designed, tested and stamped in accordance with ASME Pressure Vessel Code Section VIII for a refrigerant side working pressure of 200 psig (1379 kPa). The evaporator is designed for a water side working pressure of 150 psig (1034 kPa). Water connections are grooved pipe. Each shell includes a vent, a drain and fittings for temperature control sensors and is insulated with UV resistant 0.75 inch Armaflex II or equal insulation (K=0.28). Insulation also covers the liquid and suction line and evaporator heads. Heaters, with thermostat, are provided to help protect the evaporator from freezing at ambient installation temperatures down to -20 F (-29 C).

Evaporator Temperature

Unit controls are factory set to handle ice-making for thermal storage application.

ASME/Canadian Pressure Vessel Code

Chiller complies with ASME Pressure Vessel Code Section VIII. ASME nameplates are attached to applicable pressure vessels including oil separators.

Condenser

Air-cooled condenser coils use all Long Life Alloy aluminum brazed fin construction. The condenser will have an integral subcooling circuit. The maximum allowable working pressure of the condenser is 350 psig (2412 kPa).

Condenser Fans

Condenser fans are direct-drive vertical discharge. The condenser fan motors are permanent magnet motors with integrated drive to provide variable speed fan control for all fans. They are designed with permanently lubricated ball bearings, internal temperature and current overload protection, and customer fault feedback as a standard product offering. The fan impeller is a bladed-shrouded fan made from heavy-duty molded plastic.

Condenser Wide Ambient

Wide ambient units will start and operate between 0.0 F to 125.0 F ambient.

Sound - Invisi Sound Superior with Noise Reduction

Each variable speed rotary screw compressor will have a muffler as standard and each condenser fan will be low noise as standard. In addition to these sound reducing features, InvisiSound Superior with Noise Reduction adds insulating sound material to the suction and discharge lines of each refrigerant circuit along with a slightly lower rpm fan speed. A pre-formed 'sound box' encapsulates each compressor.

Compressor and Lube Oil System

The rotary screw compressor is semi-hermetic, direct drive, rolling element bearings, differential refrigerant pressure oil pump and oil heater. Capacity control is via an adaptive frequency drive on the "1A" and "2A" compressors. The motor is a suction gas cooled, hermetically sealed, and for the "1A" and "2A" compressors permanent magnet motor. For the "1B" and "2B" compressors the motor is a two pole squirrel cage inductor motor. An oil separator is provided separate from the compressor. Oil filtration is provided internal to the compressor. Check valves in the compressor discharge and lube oil system are also provided.

Refrigeration Circuit

Each unit has two refrigerant circuits, with one or two rotary screw compressor per circuit. Each refrigerant circuit includes a compressor suction and discharge service valve, liquid line shutoff valve, removable core filter, liquid line sight glass with moisture indicator, charging port and an electronic expansion valve. Fully modulating compressors and electronic expansion valves provide variable capacity modulation over the entire operating range.

Unit Controls

All unit controls are housed in an outdoor rated weather tight enclosure with removable plates to allow for customer connection of power wiring and remote interlocks. All controls, including sensors, are factory mounted and tested prior to shipment. Microcomputer controls provide all control functions including startup and shut down, leaving chilled water temperature control, evaporator flow proving, compressor staging and speed control, electronic expansion valve modulation, condenser fan sequencing and speed control, anti-recycle logic, automatic lead/lag compressor starting and load limiting.

The Symbio(TM) 800 unit control module, utilizing Adaptive Control microprocessor, automatically takes action to avoid unit shut-down due to abnormal operating conditions associated with low refrigerant pressure, high condensing pressure, VFD/Compressor current overload, low oil return, low discharge superheat, and high compressor discharge temperature. Should the abnormal operating condition continue until a protective limit is violated, the unit will be shut down. Unit protective functions of the Symbio(TM) 800, include loss of chilled water flow, evaporator freezing, low refrigerant pressure, high refrigerant pressure, high compressor motor temperature, and loss of oil to the compressor.

Unit Display

A full color TD-7 AdaptiView touch screen display indicates all important unit and circuit parameters, in logical groupings on various screens. The parameters including chilled water set point, leaving chilled water temperature, demand limit set point, evaporator and condenser refrigerant temperatures and pressures, compressor and fan speeds, and all pertinent electrical information. The display also provides on screen trending graphs of predefined parameters as well as customizable trend graphs based on user defined parameters from a list of all available parameters. The display also provides indication of the chiller and circuits top level operating modes with detailed sub-mode reports available with a single key press, as well as diagnostics annunciation and date and time stamped diagnostic history. The standard color display is fully outdoor rated, and, can be viewed in full daylight without opening any control panel doors.

The display is outdoor capable including an UV resistant touchscreen with removable metal cover

Chilled Water Reset

This provides the control logic and factory installed sensors to reset leaving chilled water temperature. The set point can be reset based on ambient temperature or return evaporator water temperature.

Factory Mounted Flow Proving - Water

The factory installed evaporator water flow switch is provided with the control logic to turn the chilled water flow on and off as the chiller requires for operation and protection.

Compressor Starter - Variable Frequency Drive

The "1A" and "2A" compressors on the ACR chillers are driven by air-cooled Variable Frequency Drives (VFD). The drives include custom programming for Trane application to provide chiller specific protections and stable compressor operation across the operating map. Protections include compressor overload, low or high line voltage, output phase loss, input phase loss, drive overheating, and more. The drives communicate over a serial connection (Modbus) to the Tracer® Symbio(TM) 800 unit control module for run-time control, real-time data feedback, and diagnostics.

Compressor Starter - Wye-Delta

The "1B" and "2B" compressors on the ACR chillers utilize a starter in a wye-delta closed transition configuration. The wye-delta closed transition starter reduces inrush current (Locked Rotor Amps) by 66%. The starter is factory mounted and completely pre-wired to the compressor motor.

Power Requirements

Unit is provided with single-point electrical power connection. Standard power connection includes main three phase power distribution to each end enclosure from the single-point power enclosure. The end enclosures distribute power to the corresponding compressors, condenser fans and control power transformers on each end of the machine. Standard connection is a power distribution block with optional default or increased short circuit current rating molded case circuit breaker.

Note: A separate field supplied 115V 15A power source is required for evaporator freeze protection and a 115V 20A for the convenience outlet.

Power Line Connection - Circuit Breaker

A molded case circuit breaker (UL approved) is available. The circuit breaker can also be used to disconnect the chiller from main power with a through the door handle and comes wired from the factory with terminal block power connections. The external operator handle is lockable.

Short Circuit Rating - Default

A short circuit current rating offers a measure of safety for what the starter panel enclosure is able to withstand in the event of a phase to phase, phase to ground, or similar fault caused by a short circuit.

Short circuit current rating of 35 kA is provided.

Harmonic Filter

Factory installed UL listed (for outdoor use) line reactor and capacitor is installed to help comply with harmonic filtering levels in IEEE 519. This option reduces the standard unit's ~30% TDD to 5% at the terminals. It is important to recognize that IEEE 519 as a guideline relates to the entire system, not specifically to any one load or product. IEEE 519 establishes requirements at the point of common coupling (PCC) where the building connects to the utility system. The standard contains no specific requirements for the internal electrical loads. Even though Trane VFD-equipped chillers will attenuate their own harmonics, other nonlinear loads on the same system could still create harmonic problems. In buildings where harmonics might be a concern, Trane recommends conducting a power-distribution system analysis to determine if there is a need to further attenuate harmonics at the system level.

Remote Communications - BACnet Interface (MS/TP)

BACnet Interface allows the user to easily interface with using BACnet MS/TP via a single twisted-pair wiring to a factory-installed and tested communication board. Provides support for BACnet defined MS/TP protocol as defined by ASHRAE standard 135-2004.

Architectural Louvered Panels

Louvered panels cover the complete condensing coil and service area beneath the condenser.

Elastomeric Isolators

Isolators provide isolation between chiller and structure to help eliminate vibration transmission. Elastomeric isolators are more effective and recommended over spring isolators.

Convenience Outlet

Provides a 20A, 115Vac (60 Hz) convenience outlet on the unit.

Note: An additional field supplied power connection must be provided to power the convenience outlet.

Piping Package

The unit shall be factory equipped with a dual pump piping package. Details of selected options are denoted on the piping schematic in the following pages. **All cold chilled water piping and equipment shall be insulated with 3/4" Armaflex Insulation.** The system inlet and outlet shall be grooved connections per the piping schematic page. The suction diffuser strainer will protect the pump and will prevent a collection of particles within the evaporator.

Close Coupled Pump

Furnish and install, as indicated on the plans and specifications, a Taco Series CI End-Suction Motor Mount Centrifugal Pump. The pump shall be of the radially split casing type of center-line discharge design with back pull out feature permitting removal of the pump internals without disturbing pipe connections. Pump constructions shall be BF suitable for a maximum working pressure of 175 PSIG. Casing gasket to be confined within the pump casing. The driving motor shall be of the horizontal shaft, foot mounted, squirrel cage induction type with NEMA "C" flange, TEFC enclosure, and suitable for operation on a 460/3/60 supply.

Pump Suction Diffuser

Furnish and install on the suction side of the pump a Taco Suction Diffuser, with Outlet Flow Stabilizing Guide Vanes, removable Stainless Steel Strainer and Fine Mesh Startup Strainer. For 150 psig systems, the suction diffuser shall have a cast iron body with 125 psig flanged ports. The installing contractor shall inspect the strainer prior to activating the pump and further shall remove the Fine Mesh Start-up Strainer after a short period (24 hours maximum) of operation. Space shall be provided for the removal of the Strainer and the connection blowdown.

Multi-Purpose Valve

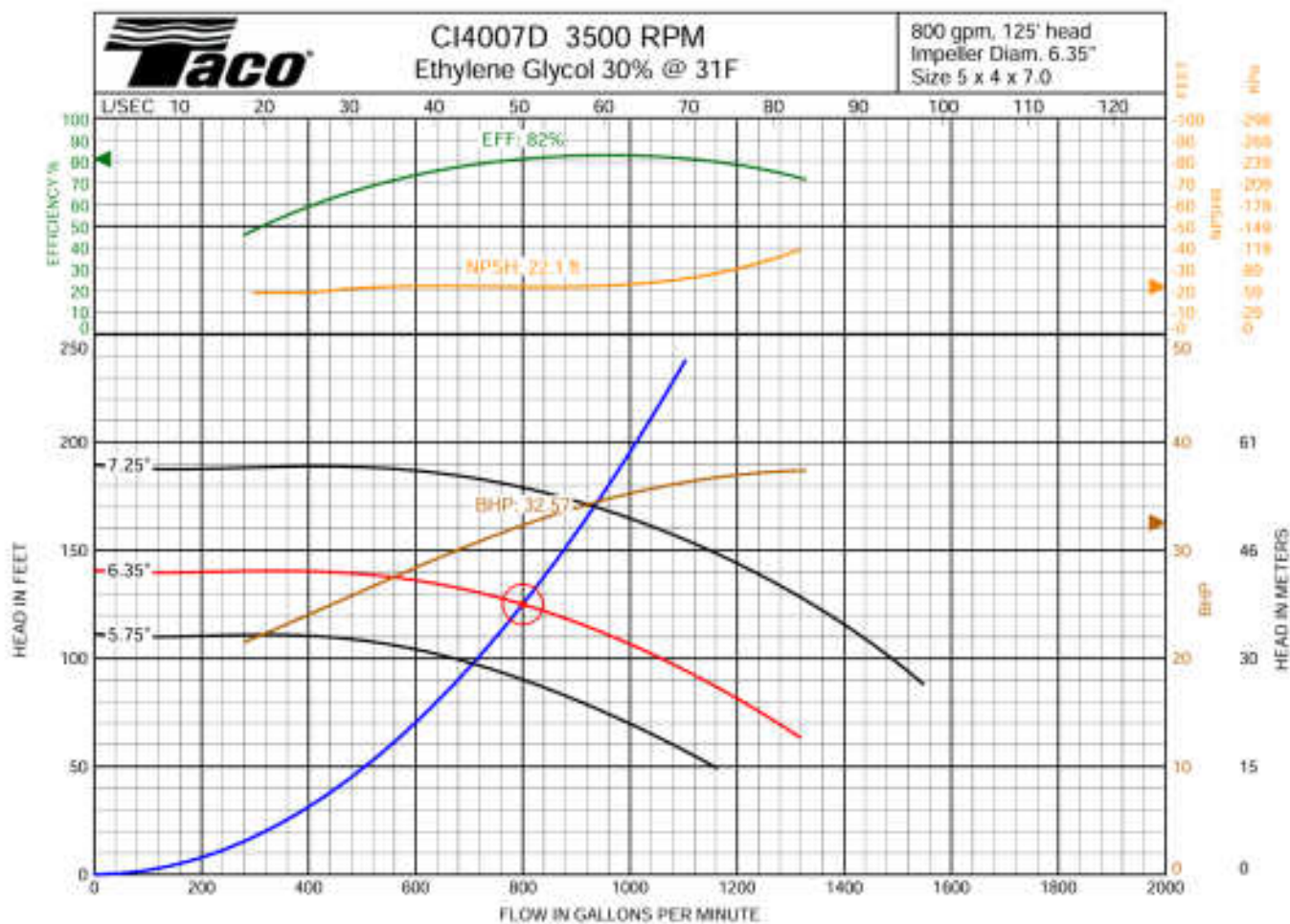
Furnish and install on the discharge side of the pump a Taco MPV Combination Valve. Each valve is to incorporate the following three functions in one body: Tight shut-off, spring-closure type silent non-slam check and effective throttling with flow measurement capability. The body shall have (2) 1/4" NPT connections on each side of the valve seat. The two connections to have brass pressure and temperature metering ports with Nordel check valves and gasketed caps. Two other connections to be supplied with brass drain plugs. Metering ports are to be interchangeable with drain ports to allow for measurement flexibility when installed in tight locations. The valve disc shall be bronze plug and disc type with high impact engineered resin seat to ensure tight shut-off and silent check operation. The valve stem shall be stainless steel with flat surfaces provided for adjustment with open-ended wrench. The valve body shall be cast iron with 125 psig flanged ports.

Non-ASME Expansion Tank:

Furnish and install as shown on the plans a 52.9 gallon (32.8 gallon acceptance volume) 23.6" diameter X 33.9" high pre-charged vertical steel expansion tank with integral, heavy duty butyl rubber diaphragm. The tank shall have a 1" NPT system connection, and a .302"-32 charging valve connection (standard tire valve) to facilitate on-site charging of the tank to meet system requirements. The tank must be designed for a maximum working pressure of 100 psi and a maximum temperature of 240°F.

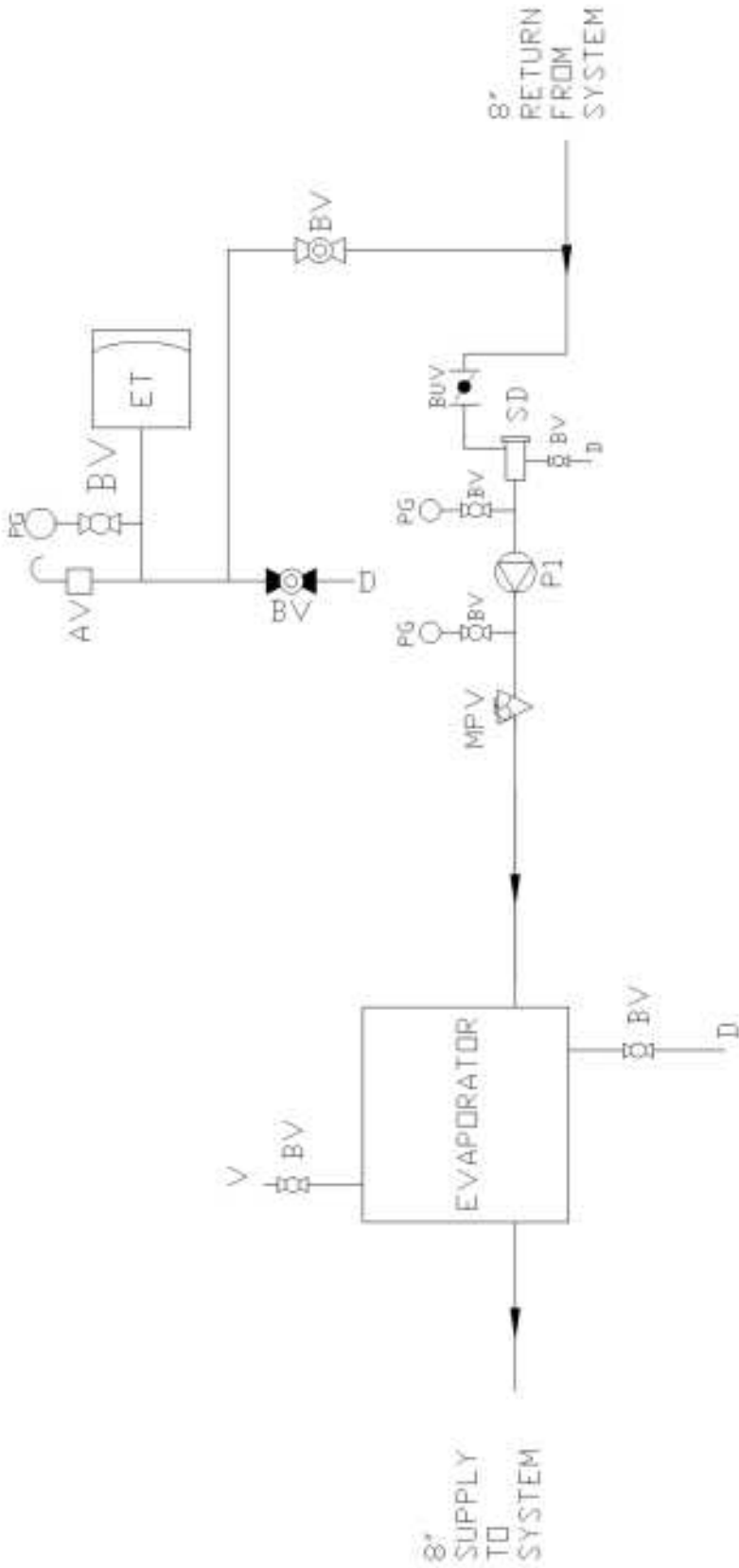
Pump Curve - ACR

Item: A1 Qty: 1 Tag(s): ACCH-1

**Tag: P-1**

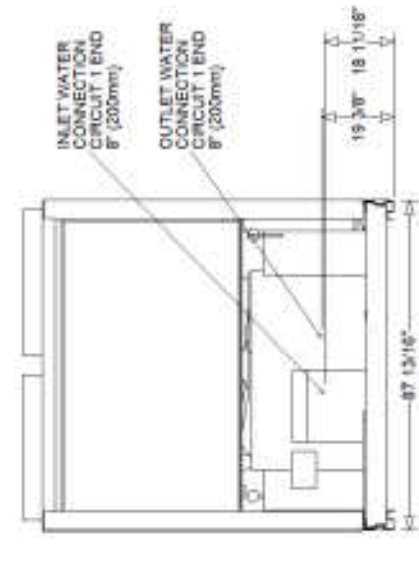
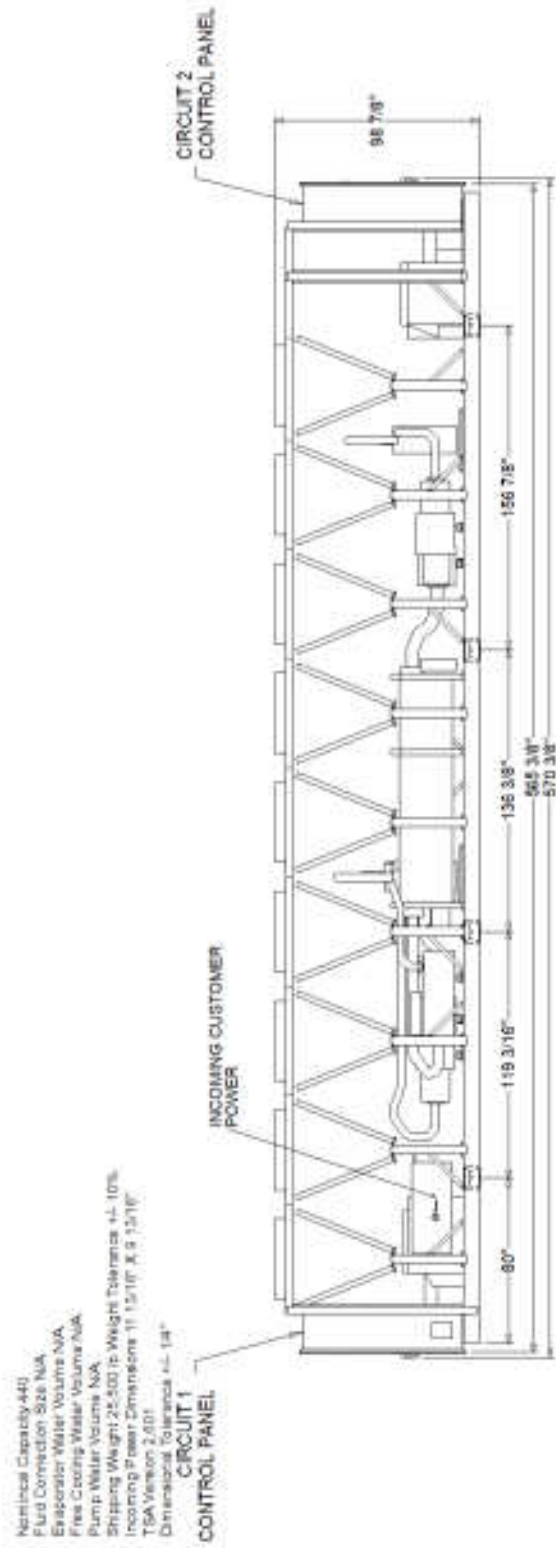
Flow Rate (GPM):	800
Head (FT):	125
Working Fluid:	Ethylene Glycol 30% @ 31F
Efficiency (%):	82%
Construction:	Iron
Design Hp:	32.57
Nol Hp:	36.25
Motor Hp:	
Npsh (Ft):	22
RPM:	3500

Piping Schematic - ACR
Item: A1 Qty: 1 Tag(s): ACCH-1



Dimensional Drawings - ACR
Item: A1 Qty: 1 Tag(s): ACCH-1

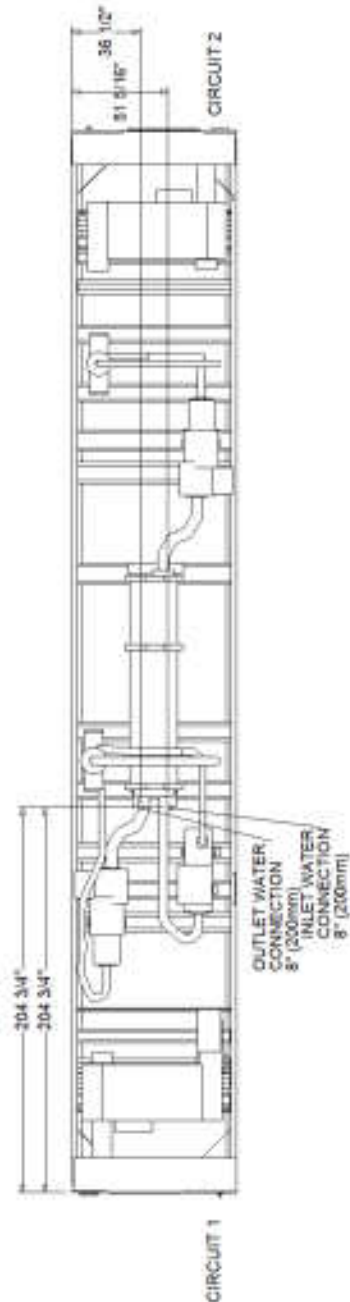
BELOW DRAWINGS ONLY SHOW THE
ACRC CHILLER AND DOES NOT
INCLUDE THE PUMP PACKAGE ADD.



CIRCUIT 2 END VIEW
CONTROL PANEL REMOVED FOR CLARITY

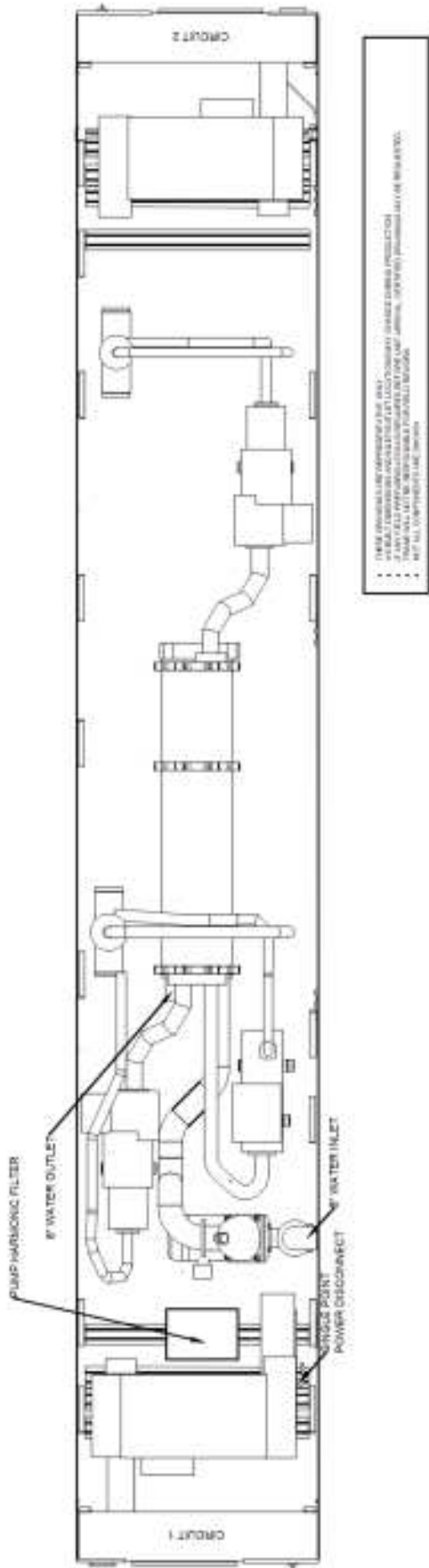
Dimensional Drawings - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1**

BELOW DRAWINGS ONLY SHOW THE
ACRC CHILLER AND DOES NOT
INCLUDE THE PUMP PACKAGE ADD.



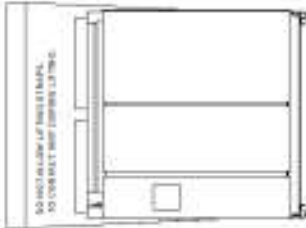
TOP VIEW
CONTROL PANEL REMOVED FOR CLARITY

TCS Concept Layout - ACR
Item: A1 Qty: 1 Tag(s): ACCH-1

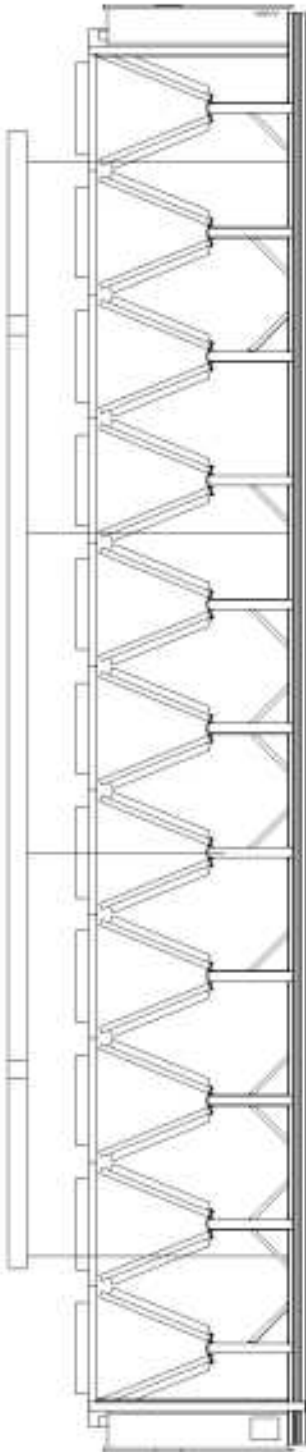


Weight, Clearance & Rigging - ACR
Item: A1 Qty: 1 Tag(s): ACCH-1

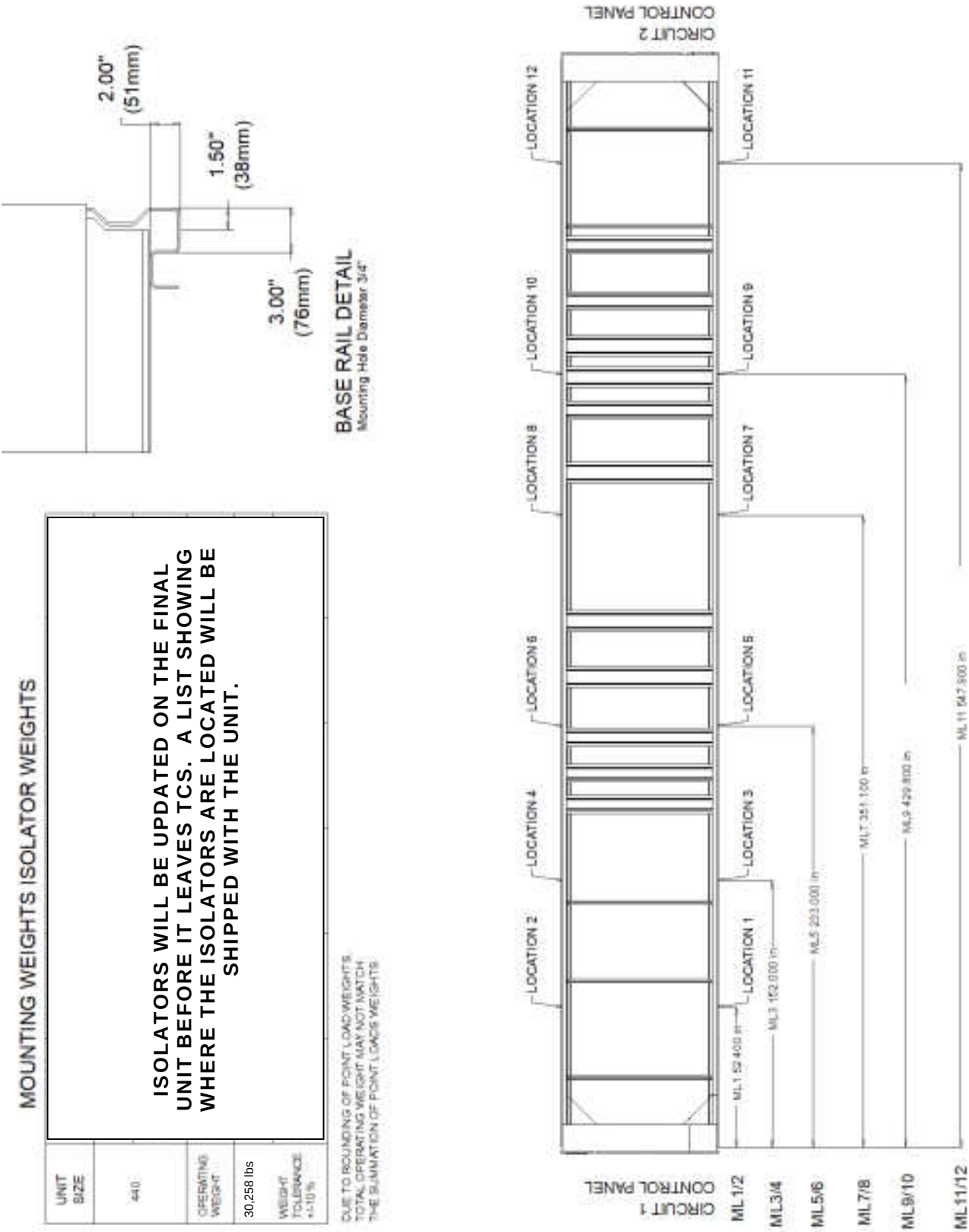
WARNING:
LIFTING AND MOVING INSTRUCTIONS
Use the spreader bar as shown in the diagram. Refer to installation instructions located inside the control panel for further rigging information.
Other lifting arrangements could result in death, serious injury or equipment damage.
DO NOT ALLOW LIFTING STRAPS TO CONTACT THE UNIT DURING LIFT.

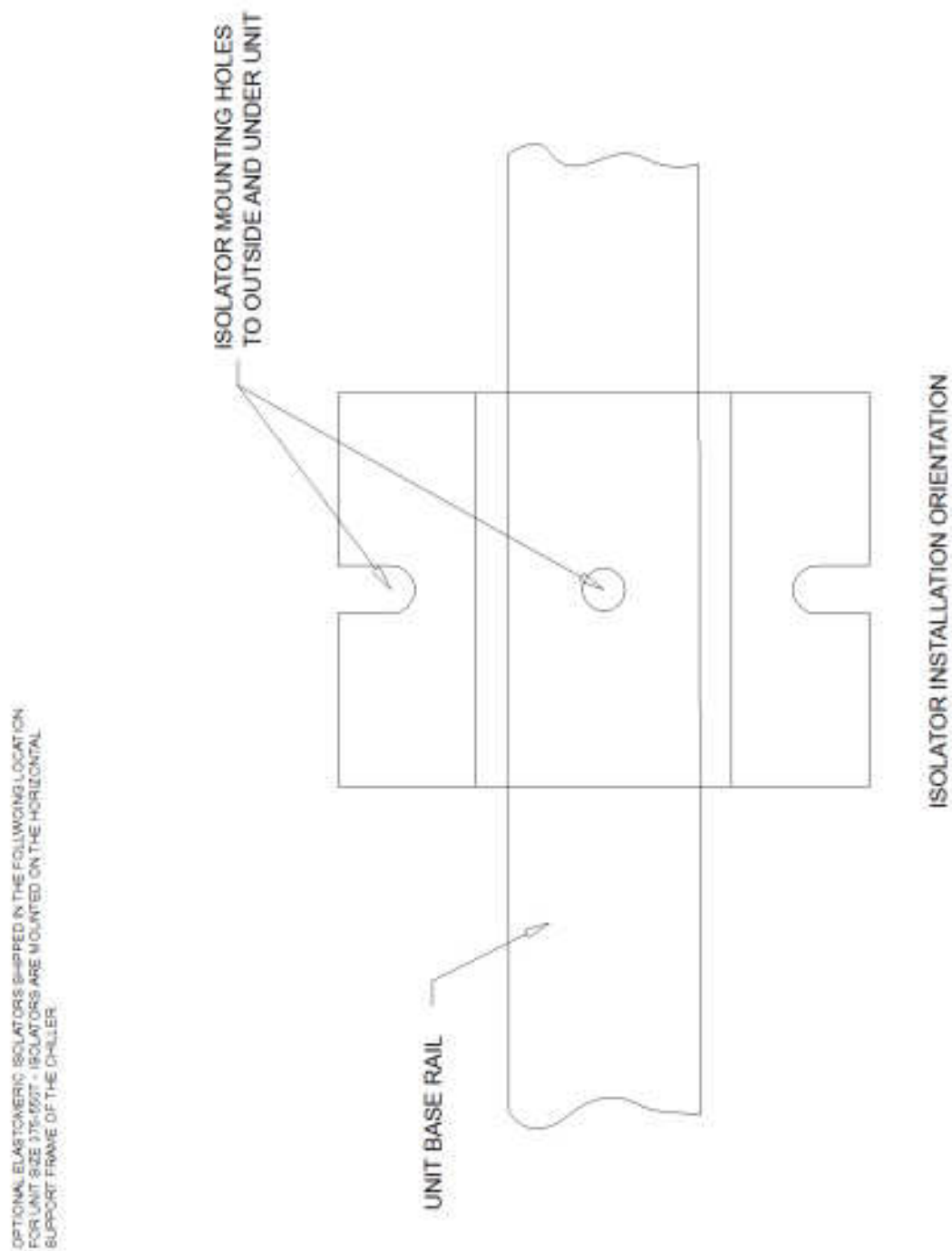


NOTES:
1. DO NOT FORK LIFT UNIT.
2. KEEP UNIT LEVEL WHEN LIFTING.
3. WEIGHT IS TYPICAL FOR UNITS WITH REFRIGERANT CHARGE.
4. WEIGHT IS TYPICAL FOR UNITS WITHOUT LOUVER PANELS.
5. DIAGRAM IS A GENERIC REPRESENTATION OF THE UNIT.
6. SPREADER BAR/LIFTING RIG IS 18 3/4" IN WIDTH.
7. THE MAXIMUM RIGGING ANGLE AT EACH CHILLER LIFT POINT IS 30 DEGREE FROM VERTICAL.
TOTAL SHIPPING/LIFTING WEIGHT: 29,160 lbs



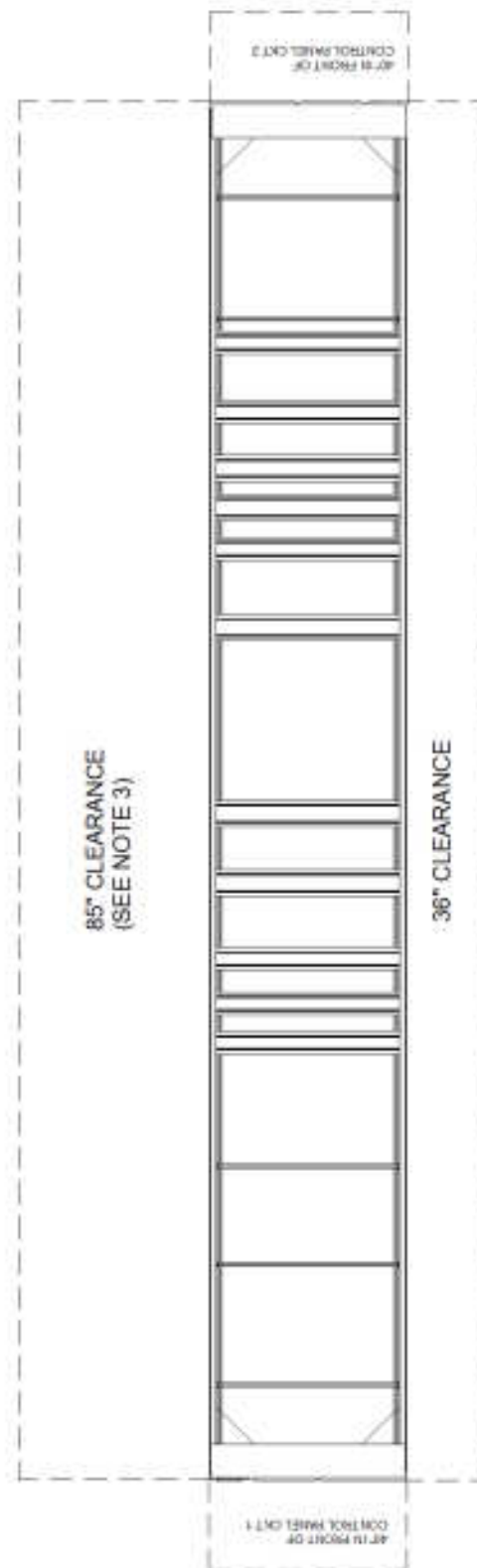
Accessory - ACR
Item: A1 Qty: 1 Tag(s): ACCH-1



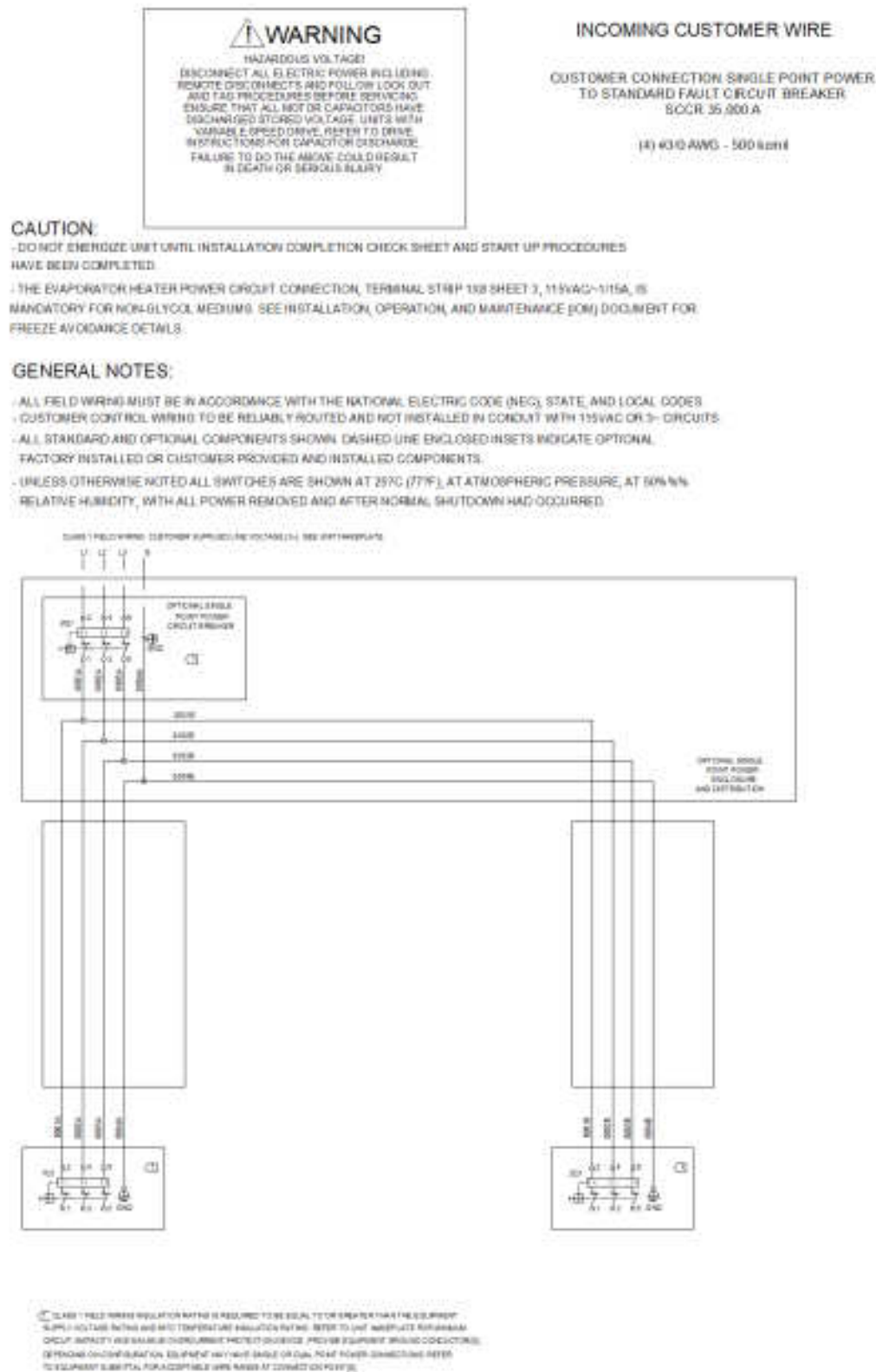
Accessory - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1**

Accessory - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1**

UNIT CLEARANCE
NO OBSTRUCTIONS ABOVE UNIT

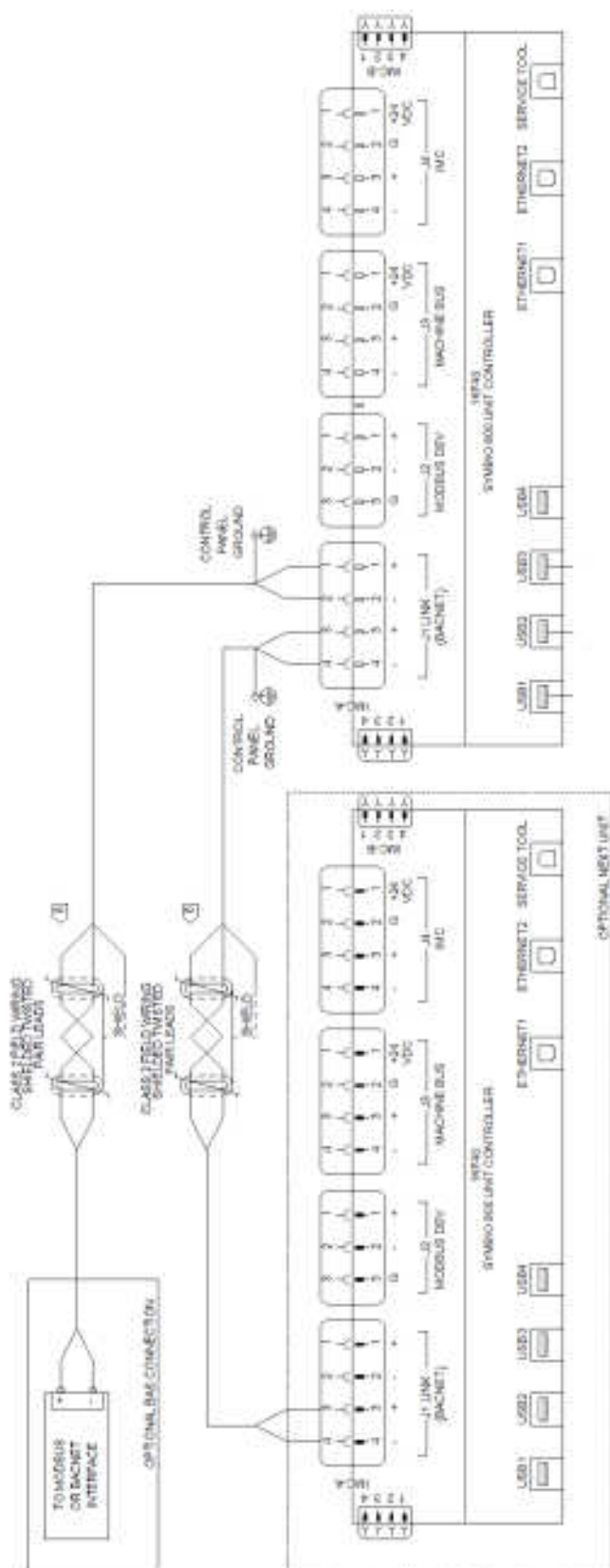


NOTES
1. AREA ABOVE UNIT IS REQUIRED FOR OPERATION, MAINTENANCE ACCESS PANEL AND AIRFLOW.
2. NO OBSTRUCTIONS ABOVE UNIT.
3. FOR OBSTRUCTIONS ON MULTIPLE UNITS, REFER TO THE CLOSE SPACE BULLETIN.
4. CLEARANCE OF 85" ON THE SIDE OF THE UNIT IS REQUIRED FOR COIL REPLACEMENT.

Field Wiring - ACR**Item: A1 Qty: 1 Tag(s): ACCH-1**

Field Wiring - ACR

Item: A1 Qty: 1 Tag(s): ACCH-1



Twisted pair leads are required for connections to the communications interface modules. The shield should only be grounded at the unit control panel. No special termination, shield braid, and building automation system (BAS) communication installation literature for more details.

Item: A1 Qty: 1 Tag(s): ACCH-1

