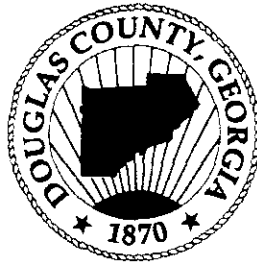


BILL C. PEACOCK  
Director - Purchasing



**DOUGLAS COUNTY BOARD OF COMMISSIONERS**  
**PURCHASING DEPARTMENT**

8700 Hospital Drive • Douglasville, GA 30134  
Telephone (770) 920-7247 • Fax (770) 920-7219

August 28, 2014

Re: INVITATION TO BID – COOLING TOWER REPLACEMENT  
Douglas County Board of Commissioners  
Solicitation No. 14-021

Dear Ladies and Gentlemen,

This **Addendum No.1**, to Douglas County's Invitation to Bid Cooling Tower Replacement, is hereby issued to provide clarification to the Bid in the following particulars only, and is made a part of the Bid document.

1. Please see attached BAC Towers Specs.

Thank you for your attention to this Addendum No.1, and interest in Douglas County. Please acknowledge receipt of this addendum via, return fax, at 770.920.7219 and include this addendum and your acknowledgement in your bid/proposal package, not to be counted as a part of any page limit.

All other terms and conditions of the Bid remain the same.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill C. Peacock", written in a cursive style.

Bill C. Peacock  
Director - Purchasing

ACKNOWLEDGEMENT

COMPANY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

We acknowledge receipt of your Addendum No. 1, Solicitation No 14-021.

web site: CelebrateDouglasCounty.com

e-mail: bpeacock@co.douglas.ga.us

Persons With Hearing Or Speech Disabilities Who Need To Contact Douglas County May Place Their Call Through The Georgia Relay Center At (800) 255-0056 (Text Telephone) Or (800) 255-0135 (Voice Telephone).



**BALTIMORE  
AIRCOIL COMPANY**

**Submittal Data Form**  
8-5-2014

**Sold To :** DouglasCounty Board of Commissioners  
Finance  
8700 Hospital Drive  
Douglasville, GA 30134  
United States

**Project:** Douglas County Courthouse  
**Purchase Order No:** 2014-00004921  
**Engineer:**  
**BAC Order #** U148598001  
**Representative:** BRAKE & HEGYAN, INC

**All Information is per Unit**

**Quantity: 1 Model S3E-8518-06M-2 COOLING TOWER**

Certified Capacity: 1050.00 USGPM of water from 95.00°F to 85.00°F at 78.00°F entering air wet bulb.

Fan Motor(s): Two (2) 20 HP fan motor(s): Totally Enclosed, Air Over (TEAO),  
1 Speed/1 Winding - Premium Efficiency (Inverter Duty), suitable for 460 volt, 3 phase,  
60 hertz electrical service. Drives are based on 0 inches ESP.

NOTE: Inverter Duty fan motors, furnished in accordance with NEMA Standard Mg.1 -- Part 31, are required for applications using variable frequency drives for fan motor control.

Submittal Information	Equipment Summary
<p><b>BAC Terms and Conditions of Sale</b> <b>Mechanical Specifications</b> <b>Certificate of Wind and Seismic Load Capacity</b> <b>Submittal Drawings/Diagrams</b></p> <p>UP-U148598001 Unit Print SS-U148598001 Unit Support CG-U148598001 Center of Gravity BC-U148598001 Bottom Connections BA-U148598001 Basin Accessories HW-U148598001 Heater Wiring EW-U148598001 EWLC Wiring ML-U148598001 Motor Location VL-U148598001 VCOS Location VW-U148598001 VCOS Wiring EA-U148598001 External Access IA-U148598001 Internal Access</p>	<p>Induced Draft, Crossflow Cooling Tower Quality Assurance - ISO 9001 Certified Unit Energy Efficiency per ASHRAE Standard 90.1-2010 CTI Certified Thermal Performance Steel Panels and Structural Members are Constructed of Galvanized Steel with a Welded Stainless Steel Cold Water Basin Standard Fan Driven by BALTIDRIVE® Power Train Galvanized Steel Fan Guard Fiberglass Reinforced Polyester (FRP) Casing Panels FRP Air Inlet Louvers PVC Fill &amp; Drift Eliminators Structure Designed in accordance with the 2009 IBC Top Inlet Connections with Balancing Valves The Bottom Outlet Pump Suction Connection will be supplied with Side Outlet Depressed Sump Box Positive Closure Plate Electric Water Level Control Package for Independent Cell Operation Electric Immersion Heater(s) Sized to Maintain +40°F water at a 0°F Ambient with Electrical Requirements Matching Fan Motor(s) Copper Heater Elements Heater Control Panel with Contactor, Disconnect and Fuse PVC Basin Sweeper Piping System Electronic Vibration Cutout Switch Extended Bearing Lubrication Lines Hot Water Basin Weir Dams Galvanized Steel Air Intake Screens Aluminum Ladder Located on the End Front Right of the Unit Perimeter Handrails 4' Ladder and Cage (if provided) Extension(s) for each Ladder Internal Walkway</p>

**THANK YOU FOR YOUR BUSINESS!**

Rigging and Installation Instructions, as well as Operating and Maintenance Instructions are available at [www.baltimoreaircoil.com](http://www.baltimoreaircoil.com)



#### Terms and Conditions of Sale

**Pricing:** Prices set forth in Seller's quotation shall remain firm for thirty (30) days. Within such period, the quotation shall convert into an order provided that all of the following have occurred: (1) Buyer submits either a purchase order or a copy of Seller's quotation displaying an authorized signature of Buyer within that thirty (30)-day period; (2) Buyer provides a release for fabrication; and (3) Buyer requests a shipment date that is no later than twelve (12) weeks from the date of Buyer's submission of a purchase order or signed quotation. In the event Buyer's requested shipment date is later than twelve (12) weeks beyond such submission date, Seller's price in effect twelve (12) weeks prior to such shipment date shall apply. In the event that Buyer requests for its convenience that Seller delay delivery of products subject to an order beyond the scheduled shipment date, pricing shall be subject to the same adjustment.

**Payments:** Terms of payment shall be net cash in thirty (30) days from date of invoice, subject to Seller's prior credit approval. If the Buyer shall fail to make any payments in accordance with the terms and conditions of sale, the Seller, in addition to its other rights and remedies but not in limitation thereof, may, at its option, without prior notice, cancel this order as to any undelivered products or defer shipments or deliveries hereunder, or under any other agreement between Buyer and Seller, except upon Seller's receipt of cash before shipment or such security as Seller considers satisfactory. Seller reserves the right to impose an interest charge (not exceeding the lawful maximum) on the balance of each invoice not paid on its due date for the period from the due date to the date of receipt of payment by Seller. In the event Buyer's failure to make timely payments to Seller results in Seller incurring additional costs, including but not limited to collection expenses and attorneys' fees, said costs shall be added to the amount due Seller from Buyer. Buyer shall have no right to any discount or retainage and shall not withhold payment as a set-off on Seller's invoice in any amount.

**Taxes:** Unless listed on the front (reverse) side of this document, prices do not include any federal, state or local sales, use or value-added taxes payable in connection with this order. All such taxes shall be paid by Buyer. Buyer shall indemnify Seller from and against such taxes, plus interest and penalties thereon, including, but not limited to, tax, interest and penalties resulting from a failure to collect such taxes because of Seller's reliance upon an invalid exemption certificate provided to Seller.

**Allocation of Risk:** Deliveries shall be considered made when the products subject to this order are loaded on the carrier. At such time, title to the goods and all risk of loss, damage or shortage shall pass to Buyer, and any claims based thereon must be filed by Buyer with the carrier.

**Force Majeure:** Seller shall under no circumstances be liable for any loss or damage resulting from delay or failure in the performance of its obligations under this contract to the extent that such performance is delayed or prevented by: fires, floods, war, terrorist activities, riots, strikes, freight embargoes or transportation delays, shortage of labor, inability to secure fuel, material, supplies or power at current prices, or on account of shortages thereof; acts of God or of the public enemy; any existing or future laws or acts of the federal, state or local government (including specifically, but not exclusively, any orders, rules or regulations issued by any official or agency of any such government) affecting the conduct of Seller's business with which Seller in its judgment and discretion deems it advisable to comply as a legal or patriotic duty, or to any case beyond the Seller's reasonable control.

**Warranties:** Seller warrants that the equipment sold under this contract shall be free from defects in material and workmanship for a period of twelve (12) months from the date of equipment startup or eighteen (18) months from the date of shipment, whichever occurs first. The following original equipment components only are warranted against defects in materials and workmanship for a period of five (5) years from date of shipment: fans, fan shafts, fan motors, bearings, sheaves, gearboxes, driveshafts, couplings, and mechanical equipment support. Details of option-specific warranties follow:

**Welded 304 Stainless Steel Cold Water Basins** are warranted against leaks for a period of five (5) years from date of shipment. Only leaks from the factory seams of the cold water basin are covered; this warranty does not apply to cold water basin field connections, field installed options or modifications by others.

Replacement Parts provided by Seller under its original equipment warranty obligations are warranted against defects in materials and workmanship for a period of twelve (12) months from date of shipment or until expiration of their original warranty, whichever occurs first. Parts purchased after expiration of the original equipment warranty are warranted against defects in materials and workmanship for a period of twelve (12) months from date of shipment.

Written notice of any defect shall be given to Seller immediately upon discovery by Buyer, and shall fully describe the claimed defect. Defective parts shall be repaired or replaced F.O.B. point of shipment, provided that inspection by Seller verifies the claimed defect(s). This shall be Buyer's exclusive remedy. **This warranty does not cover the costs of removing, shipping or reinstalling the equipment. Repairs made without the prior written approval of Seller shall void all warranties covering material and workmanship.** Any descriptions of the product(s) in the contract are for the sole purpose of identification and do not constitute a warranty. In the interest of product improvement, Seller reserves the right to change specifications and product design without incurring any liability therefore. The foregoing express warranties or those set forth elsewhere on this document are the only warranties of Seller applicable to the product(s) sold under this contract. **All other warranties, whether verbal or written, and all warranties implied by law, including any warranties of merchantability or fitness for a particular purpose, are hereby excluded. Failure on the part of Buyer or of other parties to properly maintain the product(s) sold under this contract, or the operation of such product(s), by Buyer and/or other parties under conditions more severe than those for which such product(s) were designed, shall void all warranties covering materials and workmanship. Seller's warranties do not apply to defects in product(s) for which payment in full has not been received by Seller, and said warranties do not cover normal wear and tear or the erosion, corrosion and/or deterioration of the product(s) from unusual causes. No warranties by Seller shall apply to accessories manufactured by others, inasmuch as they are warranted separately by their respective manufacturers, except as stated above.** Buyer assumes liability for and shall bear the costs of compliance with all laws, regulations, codes standards or ordinances applicable to the location, operation and maintenance of the product(s) sold under this contract, including those requirements pertaining to the distances between such product(s) and air-conditioning system duct intakes. No representative or agent of Seller is authorized to enlarge upon the express warranties of Seller.

**Cancellation/Changes>Returns:** Cancellation of or changes in any order by Buyer shall not be effective without Buyer's notice thereof received, agreed to, and confirmed in writing by Seller. If Seller, in its absolute discretion, approves Buyer's cancellation of an order, Buyer agrees to pay a reasonable cancellation charge. Seller's prior written consent must be obtained before Buyer returns any products, and when so returned will be subject to a handling charge and transportation costs payable by Buyer.

Corporate Headquarters: P.O. Box 7322, Baltimore, MD 21227 – Tele: (410) 799-6200 / Fax: (410) 799-6416

**Liability/Indemnification:** Seller shall not be liable for any damages caused by delay in delivery of the products. Buyer shall hold harmless and indemnify Seller from and against all liability, claims, losses, damages, and expenses (including attorneys' fees) for personal injury and property damage arising out of Buyer's improper unloading, handling, or use of the products subject to this order, and for Buyer's infringement of another's property rights. The Seller's maximum liability from any causes whatsoever, whether in breach of contract, tort (including negligence), strict liability, or otherwise, shall not exceed the contract price. Neither Buyer nor Seller shall in any event be liable to the other, whether such liability arises out of breach of contract, tort (including negligence), strict liability or any other cause or form of action, for any consequential, special, indirect or incidental damages, including but not limited to loss of actual or anticipated profits or loss of use arising out of this contract, other than such damages resulting from the willful misconduct of Buyer or Seller.

**Storage:** In the event that Buyer is unable to accept delivery of goods and the Seller is required to hold goods beyond two (2) working days from fabrication completion, a storage fee equal to the greater of \$200/day or 0.20% of the total order value/day will be assessed by Seller for every day beyond two (2) working days from fabrication date which it is required to store goods on behalf of Buyer. Storage will be assessed monthly and will need to be paid in full prior to a new shipment date being scheduled.

**Government Contracts:** If Buyer's purchase order is for products to be used in the performance of a U.S. Government contract, those clauses of applicable procurement regulations mandatorily required by federal law to be included in U.S. Government subcontracts shall be incorporated herein by reference.

**Export Transactions:** Buyer shall comply with all applicable export laws and regulations of the U.S. Government, and shall hold harmless and indemnify Seller from and against all liability, damages, and expenses (including attorneys' fees) incurred by Seller as a result of Buyer's violation of any U.S. Government export and/or international antiboycott laws or regulations.

**Agreement of Sale:** Buyer's order is accepted on the terms and conditions stated herein and Seller's acceptance of Buyer's order is expressly made conditional upon Buyer's assent to such terms and conditions, including any of Seller's terms and conditions which may be additional to or different from those contained in Buyer's purchase order or otherwise. Such assent shall be deemed to have been given unless written notice of objection to any such terms and conditions (including inconsistencies between Buyer's purchase order and this acceptance) is given by Buyer to Seller promptly upon receipt of this acknowledgment. Any agreement or understanding, oral or written, which modifies or waives the terms and conditions herein (whether contained in Buyer's purchase order or other documentation) shall be deemed material and shall be rejected unless hereafter agreed to in writing and signed by Seller's authorized officer. Waiver by Seller of any breach or default hereunder shall not be deemed a waiver by Seller of any other or subsequent breach or default which may thereafter occur. Neither the rights nor the obligations of either Buyer or Seller are assignable without the prior written consent of the other party. This agreement of sale and all rights and obligations of Buyer and Seller shall be governed by and construed in accordance with the laws of the State of Maryland.

Electronic copy of the latest version is available online at <http://baltimoreaircoil.com/english/terms>.

(Revised – 04/23/2013)



**Mechanical Specifications**  
8-5-2014

**Customer:** DouglasCounty Board of Commissioners  
**Project:** Douglas County Courthouse  
**Purchase Order No:** 2014-00004921  
**Engineer:**  
**BAC Order #** U148598001

**All Information is per Unit**

**Quantity: 1 Model S3E-8518-06M-2 COOLING TOWER**

**Unit Type:**

Factory fabricated, induced draft, crossflow cooling tower with vertical discharge.

**Quality Assurance:**

Each unit is manufactured under closely-controlled conditions using standardized parts to ensure each unit is built precisely to the same high-quality design and construction standards. The design, manufacture, and business processes of Baltimore Aircoil Company are ISO 9001:2000 certified.

**Unit Efficiency:**

The unit(s) complies with the energy efficiency requirements established by ASHRAE Standard 90.1-2010.

**CTI Certification:**

The thermal performance is certified by the Cooling Technology Institute in accordance with CTI Certification Standard STD-201.

**Materials of Construction:**

Structural steel components are constructed from G-235 (Z700 metric) hot-dip galvanized steel. The edges of the hot-dip galvanized steel components are given a protective coat of zinc-rich compound. The areas of the cold water basin in contact with the water will be constructed of Type 304 stainless steel. All factory seams in the cold water basin will be welded to ensure watertight construction and shall be warranted against leaks for a period of five (5) years from date of shipment. Cold water basin includes a depressed section with drain/clean-out connection and the area under the fill sections is sloped toward the depressed section for easy cleaning.

Hot water distribution basins are gravity type constructed of heavy gauge, G-235 (Z700 metric) hot-dip galvanized steel. Polypropylene metering orifices are provided to assure even distribution of water over the wet deck surface. Heavy gauge, G-235 (Z700 metric) hot-dip galvanized steel covers are furnished to prevent the accumulation of debris and algae in the hot water distribution basins.

**Fan & Drive System:**

Fan(s) are driven by a one-piece multi-groove, neoprene/polyester belt designed specifically for evaporative cooling equipment service. Motor is mounted on an adjustable motor base. Fan and motor sheaves are non-corrosive cast aluminum. The BALTIDRIVE® Power Train fan drive system, including fan motors, is warranted against defects in materials and workmanship for five (5) years from date of shipment.

Fan(s) and steel fan shaft(s) are supported by heavy-duty, self-aligning, grease-packed, relubricatable ball bearings with special seals for protection against dust and moisture. All bearings are designed for minimum L10 life of 80,000 hours (280,000 hours average life).

**Fan Guard(s):**

A heavy gauge, G-235 (Z700 metric) hot-dip galvanized steel wire fan guard is provided over each fan cylinder. The fan guard is shipped loose for field installation.

**Casing Panels:**

Casing panels are constructed of fiberglass-reinforced polyester (FRP) panels. Hinged access doors are provided on both side walls of the tower for access to eliminators and fan plenum section for all cells. The doors are made of a steel frame matching the unit construction, with an exterior overlay of FRP.

**Inlet Louvers:**

Air inlet louvers are wave-formed, fiberglass-reinforced polyester (FRP), spaced to minimize air resistance and prevent water splash-out.

**Fill:**

The BACross® Fill and integral drift eliminators are formed from self-extinguishing (per ASTM D-568) polyvinyl chloride (PVC), having a flame spread rating of 5 per ASTM Standard E84-77a, and are impervious to rot, decay, and fungus or biological attack. The fill is elevated above the cold water basin floor to facilitate cleaning. This fill is suitable for a maximum entering water temperature of 130°F (54.44°C). The eliminators are designed to effectively strip entrained moisture from the leaving airstream with a minimum of air resistance.

**Equipment Structure:**

The structure of this equipment has been designed, tested and independently certified in accordance with the wind and seismic load requirements of the 2009 International Building Code (IBC) and ASCE/SEI 7-05. Seismic qualification is based on tri-axial shake-table testing conducted at an independent test laboratory in accordance with the ICC-ES Acceptance Criteria AC 156, "Acceptance Criteria for Seismic Qualification By Shake-Table Testing of Nonstructural Components and Systems." For more information and specific wind and seismic load capacity ratings, please see the Certificate of Wind and Seismic Load Capacity.

**Water Inlet(s):**

Two (2) hot water inlet flange pattern connections, suitable for ASME Class 150 Flat Face flanges, are located at the top of the designated cell(s). A butterfly valve for each inlet connection is shipped loose for field mounting by others.

**Water Outlet(s):**

The depressed sump box(es) is fabricated of the same material as the cold water basin and provided with a bolt hole pattern for mating with an ASME Class 150 flat face flange. The pattern is appropriately sized for the design flow. Side outlet depressed sump box(es) ships loose for field installation by others. The flat face flange, full face gasket, and hardware are supplied and installed by others. A large area, lift out strainer is provided which matches the cold water basin material of construction and has perforated openings sized smaller than the water distribution nozzle orifices. Strainer includes anti-vortexing baffle to prevent air entrainment. Please see the submittal package for the connection size.

**Flume Box Options:**

The positive closure plate is included to allow cell isolation for maintenance or independent cell operation of flumed multi-cell units.

**Basin Water Level Control:**

Each cell is provided with a probe-type electric water level control package including solid-state relay, electrode head, stainless steel electrodes, and a solenoid valve in the make-up water connection. The electrodes are make-up on, make-up off, and ground. Field wiring is by others.

**Basin Heater(s):**

A minimum number of high-watt-density electric immersion heater elements, sized to maintain +40°F (+4°C) basin water at 0°F (-18°C) ambient with a 10 mph (16 km/h) wind speed, is provided. Electrical requirements match fan motor. Wiring is not included.

**Heater Element Material of Construction:**

The unit is supplied with copper heater elements.

**Basin Heater Control:**

An electric immersion heater control package which includes a control panel in a NEMA 4 enclosure is provided. It includes contactor(s), disconnect, fuse protection, thermostat, 24V transformer, and Type 316 stainless steel probe for water level and water temperature sensing. Panel ships loose for field mounting and wiring by others.

**Basin Sweeper Piping:**

Polyvinyl chloride (PVC) sump sweeper piping is included in the cold water basin. Influent and effluent connections are provided for connecting to a user supplied filtration system. 20 psig (135 kPa) pressure is required at the water inlet.

**Vibration Cutout Switch:**

Fan system is provided with an appropriate number of vibration cutout switches to limit collateral damage to the unit in the event of a catastrophic fan failure. The vibration switch(es) is solid state with a frequency range of 2 to 1,000 Hz (120 to 60,000 RPM), a velocity set point of 0.1 to 1.5 In./Sec., and a time delay adjustable from 2 to 15 seconds. Input power required is 110 V, 50/60 Hz, 3 Watts plus alarm current. Alarm or shutdown switch is rated at 5 Amperes, 110 VAC TRIAC. Field wiring is by others.

**Extended Lubrication Lines:**

Bearing lubrication lines are extended to a grease fitting located inside the unit and are accessible from the access door.

**Hot Water Basin Weirs:**

The unit is supplied with a hot water basin dam in each hot water basin to accommodate water flow rates down to 50% of the design flow.

**Air Intake Option:**

Galvanized steel air intake screens are constructed of 1" X 1" (25 mm X 25mm) wire mesh. They protect the air intake face and prevent airborne debris from entering the unit(s).

Corporate Headquarters: P.O. Box 7322, Baltimore, MD 21227 – Tele: (410) 799-6200 / Fax: (410) 799-6416

**External Ladder to Top of Unit:**

An aluminum ladder is provided to access the top of the unit. The ladder meets pertinent OSHA standards and ships loose for field installation by others.

**Safety Railings:**

Perimeter safety railing constructed of 1-1/4" (32 mm) galvanized steel pipe is provided to facilitate access to the top of the unit. Railings meet pertinent OSHA standards and ship loose for field assembly and installation by others.

**Ladder Extension(s):**

4' Ladder and Cage (if provided) Extension(s) for each Ladder

**Internal Access Option:**

A G-235 (Z700 metric) galvanized steel walkway complying with OSHA standards and regulations provides access to the plenum to facilitate servicing the unit. Walkway mounting supports match the cold water basin material of construction.



**BALTIMORE  
AIRCOIL COMPANY**

**Certificate of Wind and Seismic Load Capacity  
2006 and 2009 International Building Codes (IBC)  
8-5-2014**

**Customer:** DouglasCounty Board of Commissioners  
**Project:** Douglas County Courthouse  
**Purchase Order No:** 2014-00004921  
**Engineer:**  
**BAC Order #** U148598001



---

**Product Line:**  
**Model Number:** S3E-8518-06M-2

---

Wind and seismic load capacities for the referenced unit are provided below. It is the responsibility of the purchaser to determine the suitability of this unit for the specific application and to design the anchorage and support system for the project wind and seismic loads. Field modifications to the unit may void this certificate.

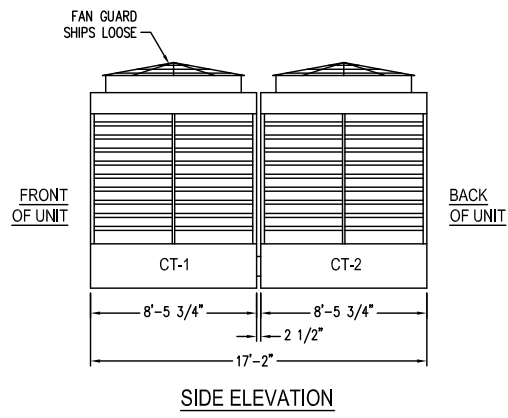
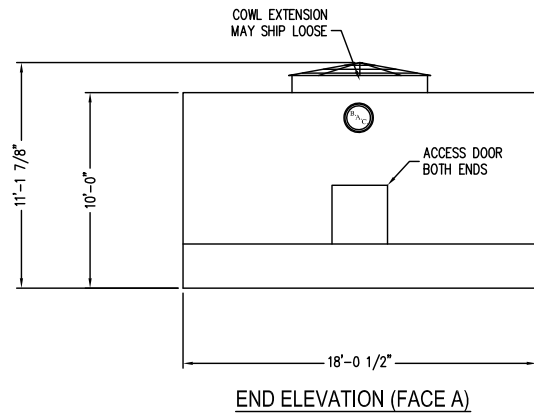
**Wind Load Rating**

Design Wind Pressure: p = 55.00 psf  
Installation Requirements: None

**Seismic Load Rating**

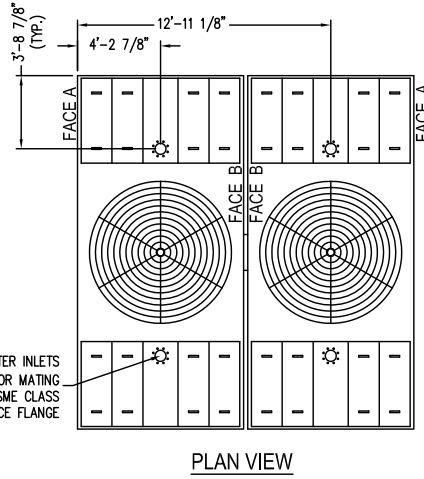
Design Spectral Acceleration: SDS = 1.40 on grade  
SDS = 0.88 on rooftop  
Component Importance Factor: Ip = 1.5  
Installation Restrictions: Outdoor





**Notes**

- 1) Drawings are not to scale. All dimensions are in feet and inches. Weights are in pounds and include options and accessories.
- 2) Unless otherwise indicated, connections 3" and smaller are MPT. Connections 4" and larger are grooved to suit a mechanical coupling and beveled for welding.
- 3) Field piping should be fabricated at time of installation. Pre-fabrication of pipe work is not recommended.
- 4) Do not support piping from unit connections. All necessary piping supports to be supplied by others.
- 5) For weight loadings and support requirements, refer to the suggested unit support drawing.
- 6) The area above the fan discharge must be unobstructed.
- 7) Due to height limitations on truck shipments, some items shown may ship loose for field installation.



Model Number	Shipping Weight	Operating Weight	Heaviest Section
S3E-8518-06M-2	17360	32700	8510

ORDER NO: **U148598001**

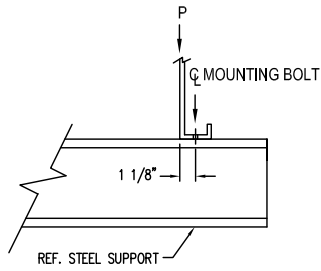
DATE: **8/5/2014**



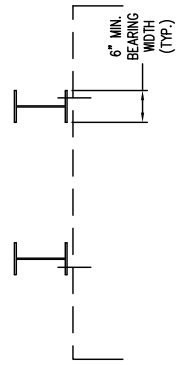
**BALTIMORE AIRCOIL COMPANY**

**3000E Unit Print  
One Piece Units**

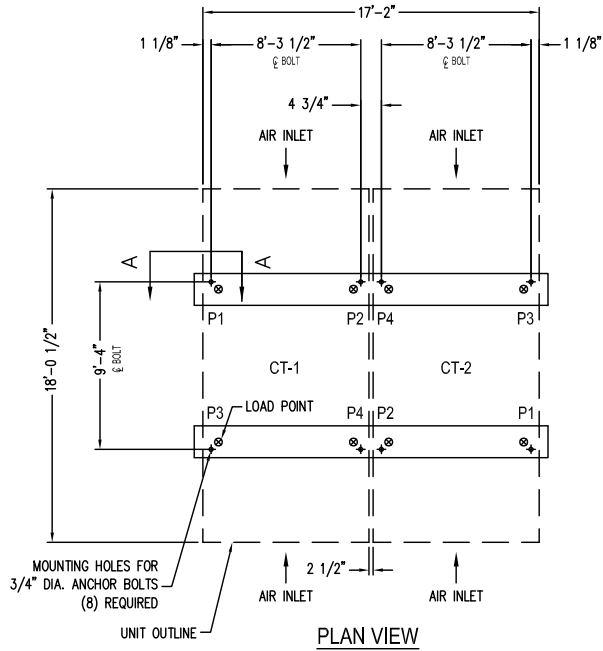
DRAWING NUMBER:  
**UP-U148598001**



SECTION "A-A"



END ELEVATION



PLAN VIEW

Notes

- 1) Drawings are not to scale. All dimensions are in feet and inches. Weights are in pounds and include options and accessories.
- 2) Operating weight and weight loading are for units with water level in basin at overflow.
- 3) Unit support beams and anchor bolts to be designed and furnished by others.
- 4) Support beams must be flush and level at top.
- 5) Steel frame members perpendicular to the support beams and under the air inlet edges of unit must be at least 2" below the top of the support beams.

Model Number	Shipping Weight	Operating Weight	Point "1"	Point "2"	Point "3"	Point "4"	Point "5"	Point "6"	Point "7"	Point "8"	Point "9"	Point "10"
S3E-8518-06M-2	17360	32700	4089	4089	4089	4089	0	0	0	0	0	0

ORDER NO: **U148598001**

DATE: **8/5/2014**



**BALTIMORE AIRCOIL COMPANY**

**3000E Unit Support Standard Basins**

DRAWING NUMBER:  
**SS-U148598001**

UNIT CENTER OF GRAVITY

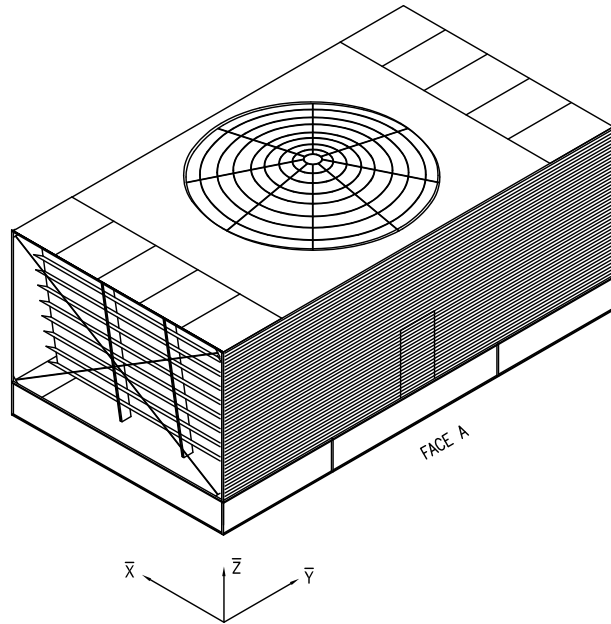
$\bar{x}$		$\bar{y}$		$\bar{z}$	
DRY	OPERATING	DRY	OPERATING	DRY	OPERATING
4'-6 3/4"	4'-4 3/4"	9'-1 1/2"	9'-0 1/2"	5'-0"	4'-2"

WEIGHT BREAKDOWN FOR  
FIELD INSTALLED ACCESSORIES

- VELOCITY RECOVERY STACK (EACH): N/A
- INTAKE ATTENUATION (EACH): N/A
- DISCHARGE ATTENUATION (PER CELL): N/A
- FAN COWL EXTENSIONS (EACH): N/A
- LOUVER FACE PLATFORMS (EACH): N/A
- ACCESS DOOR PLATFORMS (EACH): N/A
- EXTERNAL MOTOR PLATFORMS (EACH): N/A
- FAN DECK EXTENSION (EACH): N/A
- FAN DECK HANDRAILS (TOTAL): 300 LBS

Notes

- 1) Drawings are not to scale.
- 2) Accessory weights shown above are included in the total unit Operating, Shipping and Heaviest Section values located on the Unit Print and Unit Support drawings. Ladder and cage weights are not shown above but are included in the totals.
- 3) These accessories ship loose for field assembly and installation.



ORDER NO: **U148598001**

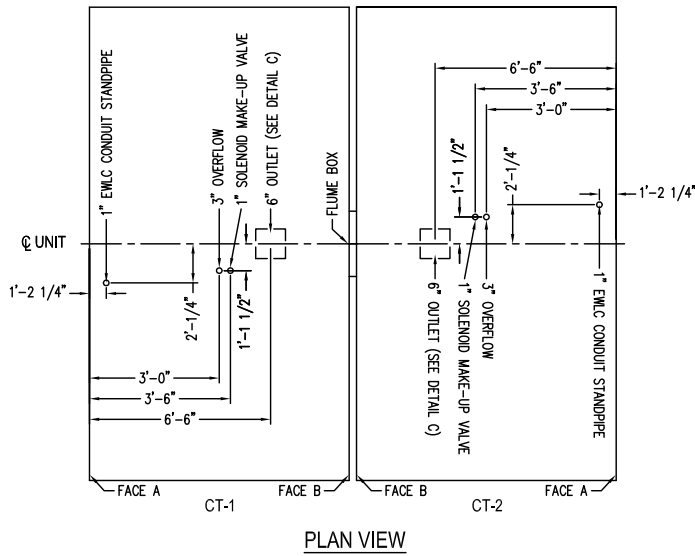
DATE: **8/5/2014**



**BALTIMORE  
AIRCOIL COMPANY**

**3000E Center of Gravity**

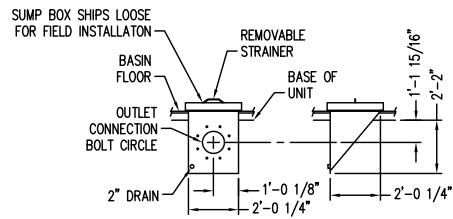
DRAWING NUMBER:  
**CG-U148598001**



PLAN VIEW

Notes

- 1) Bolt hole patterns are drilled to mate with an ASME Class 150 flat face flange with holes straddling transverse and longitudinal centerlines. The flat face flange and full face gasket are to be furnished by others for mating with the unit.
- 2) Drawings are not to scale.
- 3) Do not support piping from unit connections. All necessary piping supports to be supplied by others.
- 4) Field piping should be fabricated at time of installation. Pre-fabrication of pipe work is not recommended.
- 5) Connections 3" and smaller are MPT. Connections 4" and larger are grooved to suit a mechanical coupling and beveled for welding unless stated otherwise. For Knockdown and TriArmor units the Overflow and Make-Up will be a FPT connection.
- 6) Outlet connections are sized for pump suction application at the design flow rate. They are based on the maximum flow rate through the strainer with basin water at standard operating level.
- 7) Make-up solenoid valve ships loose for field installation (by others).



DETAIL C  
ELEVATION VIEW  
SIDE OUTLET DEPRESSED SUMP BOX  
(OUTLET CAN FACE EITHER SIDE OR END)

ORDER NO: **U148598001**

DATE: **8/5/2014**



**BALTIMORE  
AIRCOIL COMPANY**

**3000E Bottom Connections**

DRAWING NUMBER:  
**BC-U148598001**

**ELECTRIC IMMERSION HEATERS**

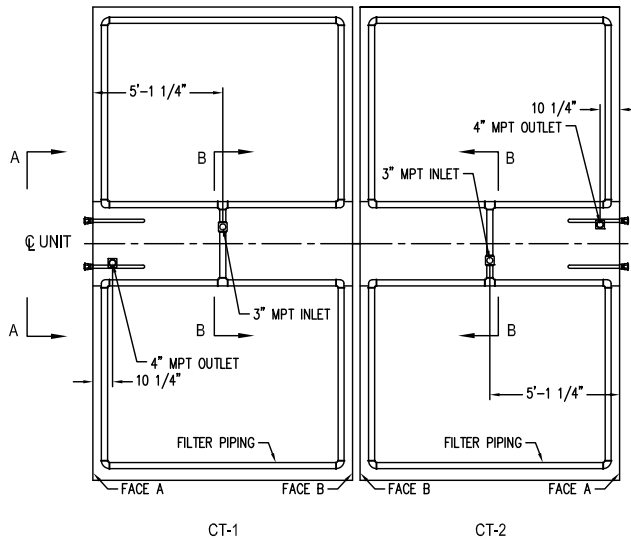
AMBIENT TEMPERATURE: 0F  
HEATER QTY (TOTAL): 4  
POWER (EACH): 6 KW  
VOLTAGE: 460 V  
PHASE: 3  
FREQUENCY: 60 HZ

**BASIN SWEEPER PIPING**

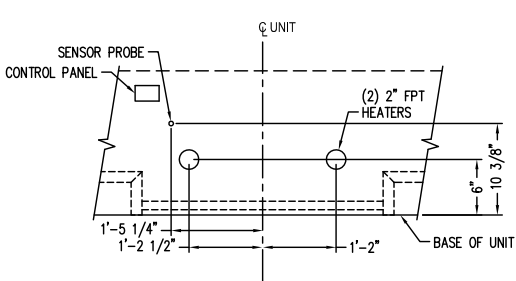
DESIGN PRESSURE: 20 PSI  
DESIGN FLOW RATE (PER CELL): 200 GPM

**Notes**

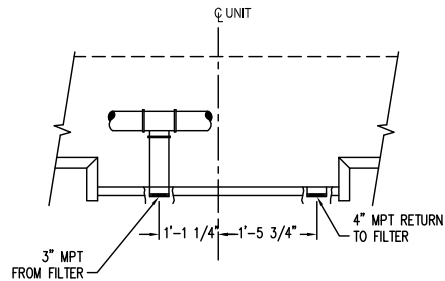
- 1) Heater elements and controls ship loose for field installation (by others).
- 2) Refer to the appropriate wiring diagram for heater wiring details.
- 3) Drawings are not to scale.
- 4) Do not support piping from unit connections. All necessary piping supports to be supplied by others.
- 5) Field piping should be fabricated at time of installation. Pre-fabrication of pipe work is not recommended.
- 6) Connections 3" and smaller are MPT. Connections 4" and larger are grooved to suit a mechanical coupling and beveled for welding unless stated otherwise. For Knockdown and TriArmor units the Overflow and Make-Up will be a FPT connection.



**PLAN VIEW**



**END ELEVATION VIEW A-A**  
CONTROLS IN ALL CELLS



**END ELEVATION VIEW B-B**

ORDER NO: **U148598001**

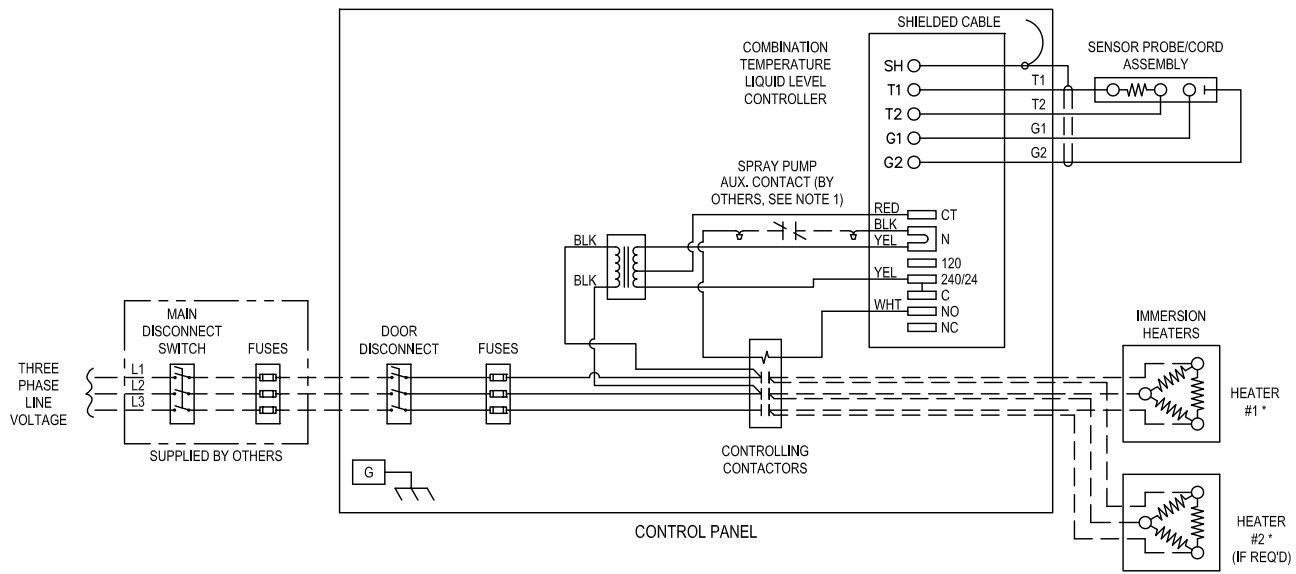
DATE: **8/5/2014**



**BALTIMORE  
AIRCOIL COMPANY**

**3000E Basin Accessories**

DRAWING NUMBER:  
**BA-U148598001**



**NOTES:**

1. INTERLOCK IMMERSION HEATERS WITH SPRAY WATER CIRCULATING PUMP TO DE-ENERGIZE HEATERS WHEN SPRAY IS RUNNING.
2. CONTROL THERMOSTAT IS TO BE AT 40°F. DO NOT SET THERMOSTAT LOWER THAN 40°F.
3. FUSE PROTECTION AND POWER SUPPLY WIRING ARE TO BE SIZED TO MATCH HEATER REQUIREMENTS. WIRING MUST COMPLY WITH APPLICABLE CODES AND ORDINANCES.

**SYMBOLS**

**DESCRIPTION**

- BROKEN LINES INDICATE WIRING AND COMPONENTS SUPPLIED BY OTHERS.
- SOLID LINES INDICATE WIRING AND COMPONENTS SUPPLIED BY BAC.

\* Refer to heater package drawings for heater power values.

ORDER NO: **U148598001**

DATE: **8/5/2014**

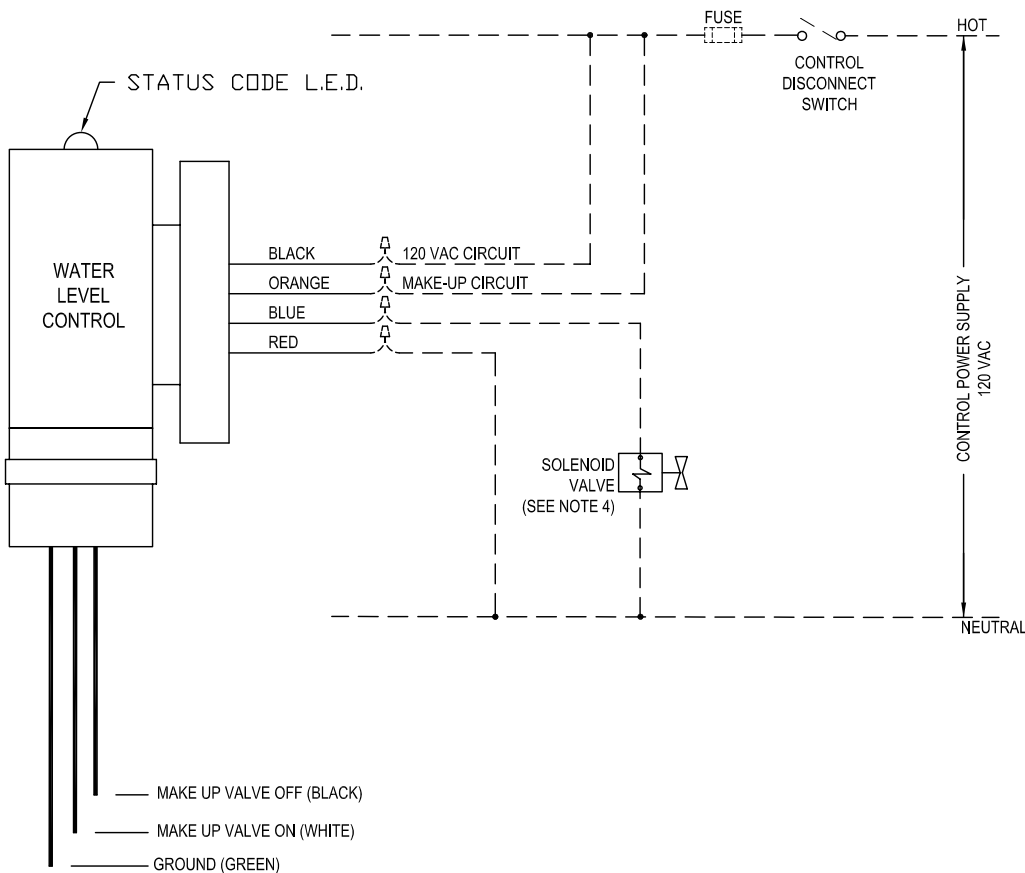


**BALTIMORE AIRCOIL COMPANY**

**Electric Immersion Heater Wiring  
Single Contactor with Fuse**

DRAWING NUMBER:  
**HW-U148598001**

(SEE NOTE 3)



**NOTES:**

1. WIRING AND COMPONENTS INDICATED BY DASHED LINES ARE TO BE SUPPLIED BY FIRMS OTHER THAN BAC. ALL WIRING MUST COMPLY WITH APPLICABLE CODES AND ORDINANCES.
2. THE WATER LEVEL CONTROL BOARD IS WIRED IN THE INVERSE MODE SO THAT THE SOLENOID MAKE-UP VALVE WILL CLOSE IF THERE IS A LOSS OF POWER TO THE CONTROL BOARD. WHEN THE WATER LEVEL RISES TO THE BOTTOM OF THE MAKE-UP VALVE OFF PROBE AND MAINTAINS CONTACT FOR AT LEAST 6 SECONDS, THE CONTROL DE-ENERGIZES THE VALVE. THE VALVE REMAINS DE-ENERGIZED UNTIL THE WATER LEVEL RECEDES BELOW THE BOTTOM OF THE MAKE-UP VALVE ON PROBE AND REMAINS AT THAT LEVEL FOR AT LEAST 6 SECONDS, THE CONTROL THEN ENERGIZES THE VALVE.
3. ANY INCOMING POWER SOURCE MUST HAVE A 3A FUSE FOR COMPONENT PROTECTION. USING A FUSE OVER 3A WILL VOID BAC WARRANTY.
4. THE SOLENOID ACTUATED MAKE-UP VALVE IS RATED AT 6.1 WATTS, 16 VA HOLDING, 30 VA INRUSH.
5. THE NORMALLY CLOSED SOLENOID VALVE HAS A SLOW CLOSING FEATURE WHICH MINIMIZES WATER HAMMER AND IS DESIGNED TO OPERATE AT MAKE-UP WATER LINE PRESSURES OF 10 TO 125 PSIG. TO FURTHER MINIMIZE THE POTENTIAL FOR WATER HAMMER, MAKE-UP WATER LINE PRESSURES AT THE HIGHER END OF THE RANGE SHOULD BE AVOIDED, AND MAKE-UP PIPING SHOULD BE WELL SUPPORTED.
6. INTERLOCK IMMERSION HEATERS WITH CIRCULATING PUMP TO DE-ENERGIZE HEATERS WHEN PUMP IS RUNNING.
7. CONTROL THERMOSTAT IS TO BE SET FOR 40°F. DO NOT SET THERMOSTAT LOWER THAN 40°F.
8. A STRAINER IS REQUIRED BEFORE THE SOLENOID MAKE-UP VALVE

**L.E.D. STATUS CODES:**

1. L.E.D. ON STEADY:  
INDICATES NORMAL OPERATION
2. STEADY ONE SECOND FLASHING:  
DIRTY PROBES - OVERRIDES ALL OTHER STATUS CODES
3. TWO FLASHES AND OFF FOR 5 SECONDS:  
MAKE-UP ON FOR MORE THAN 1 HOUR
4. THREE FLASHES AND OFF FOR 5 SECONDS:  
SHORTED OR HIGH CONDUCTIVITY WATER
5. FOUR FLASHES AND OFF FOR 5 SECONDS:  
SHORT FILL CYCLE - WHITE PROBE IS DIRTY OR NONFUNCTIONAL
6. L.E.D. DOES NOT COME ON AFTER POWER UP OR RESETTING POWER: INDICATES UNIT INOPERATIVE

ORDER NO: **U148598001**

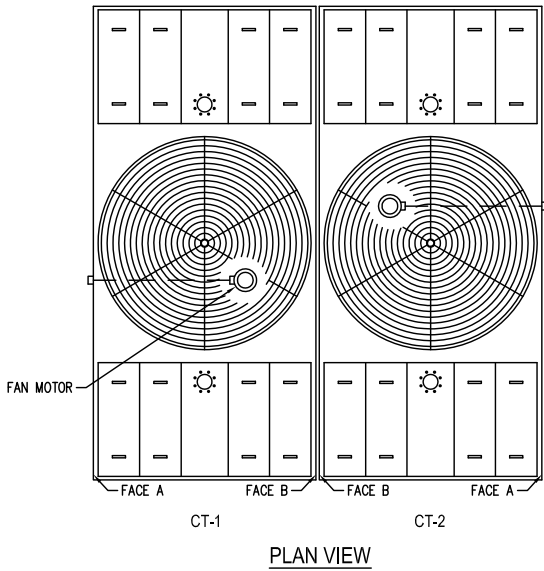
DATE: **8/5/2014**



**BALTIMORE AIRCOIL COMPANY**

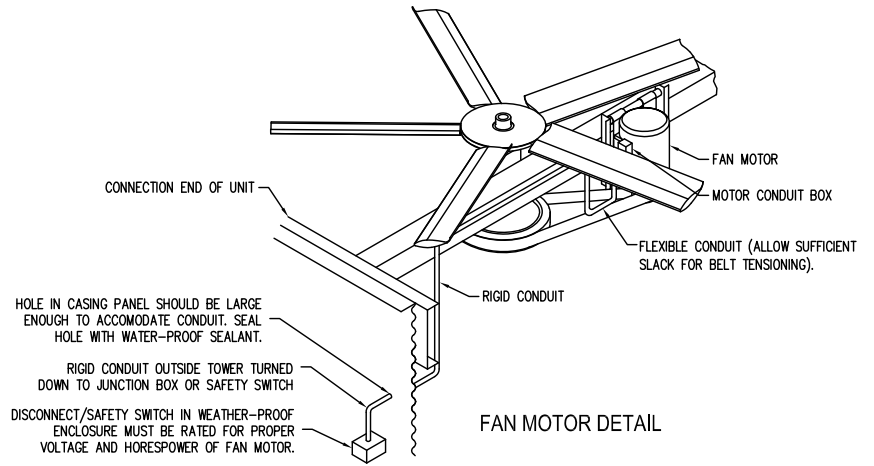
**EWLC Wiring Standard**

DRAWING NUMBER:  
**EW-U148598001**



**Notes**

- 1) Drawings are not to scale.
- 2) Conduit must be water tight and pitched downward to allow condensation to drain away from fan motor conduit box. Therefore, do not run the conduit through fan deck.
- 3) All wiring must conform to local and national electrical codes. Junction box/safety switch and all conduit from fan motor conduit box to be sized, provided, and installed by others.
- 4) Rigid conduit outside casing panel must turn down to junction box.
- 5) For proper motor orientation see plan view.



ORDER NO: **U148598001**

DATE: **8/5/2014**



**BALTIMORE  
AIRCOIL COMPANY**

**3000E Motor Location**

DRAWING NUMBER:  
**ML-U148598001**



**OPERATING INSTRUCTIONS**

Follow the installation drawings and wiring diagram to ensure the proper operation of the vibration switch. Direct any questions to your local BAC Representative.

**SELF TEST FEATURE**

The test position on the set-point adjustment knob is used to test the switch functions without the need for the fan motor(s) to be in operation. With the vibration switch powered, the LED should illuminate when the set-point adjustment knob is set to the test position. The time it takes to activate the shutdown relay after the LED is illuminated is the running time delay. This self test procedure should be performed periodically (at least once a year) to ensure the switch is operating properly.

**SETTING THE TIME DELAYS**

The vibration cutout switch has two built in time delays - a fixed 20 second start-up time delay and an adjustable running time delay. These time delays help to avoid nuisance trips from transitory startup vibrations and momentary vibrations during normal operation. When the switch is wired such that AC power is always applied to the switch, the 20 second time delay can be activated by means of opening a contact between terminals 5 and 7. This contact can be achieved by a N/C relay (by others) wired with the starter circuit as shown in the wiring diagram. This relay must open when power is applied to the starter circuit. This is the preferred method because the 3.5 watt dissipation provides a small amount of heating within the switch enclosure to help keep the switch moisture free. Alternately, when the vibration switch is wired in such a way that the switch is only powered when the starter circuit is powered, the 20 second time delay is automatically activated when power is applied to the switch. The running time delay is factory set at 3 seconds to avoid nuisance trips. This time delay can be field adjusted from 1 to 7 seconds. To readjust, turn the running time delay adjustment screw (see chart below for drawing) clockwise (CW) to increase and counterclockwise (CCW) to decrease (one complete turn is approximately 0.5 seconds). To determine the running time delay, refer to the "SELF TEST FEATURE" section above.

**SETTING OF TRIP POINTS**

The shutdown relay is activated by vibration severity (velocity in inches/second). This trip level is factory set at 0.45 in/sec, which is a typical trip level for evaporative cooling equipment and should prove to be satisfactory in the majority of installations. Should it be necessary, the shutdown relay trip limit may be field adjusted from 0.1 to 1.5 in/sec by turning the set-point adjustment knob CW to increase and CCW to decrease the vibration trip point. This adjustment should be made in increments of approximately 0.10 in/sec until the desired setting is obtained. This adjustment must be done with the unit off and all the equipment locked out.

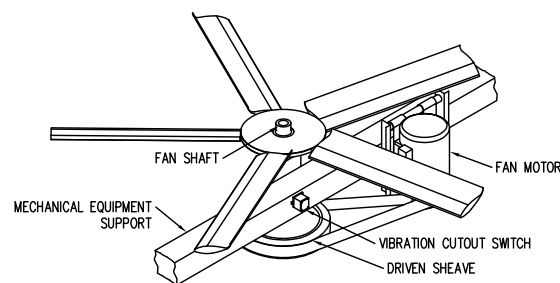
**NOTE**

Moisture inside the switch can lead to switch failure. Care must be taken when replacing the cover on the vibration switch to ensure that the proper watertight seal is obtained.

**CAUTION**

Before performing any maintenance, adjustment or inspection of the switch, make certain that all power has been disconnected and locked in the off position.

**SWITCH LOCATION**  
Belt Drive Units



ORDER NO: **U148598001**

DATE: **8/5/2014**



**BALTIMORE AIRCOIL COMPANY**

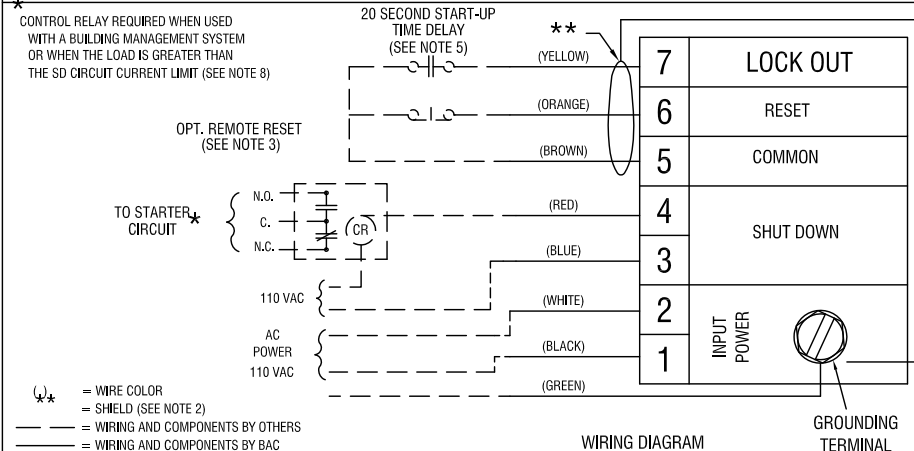
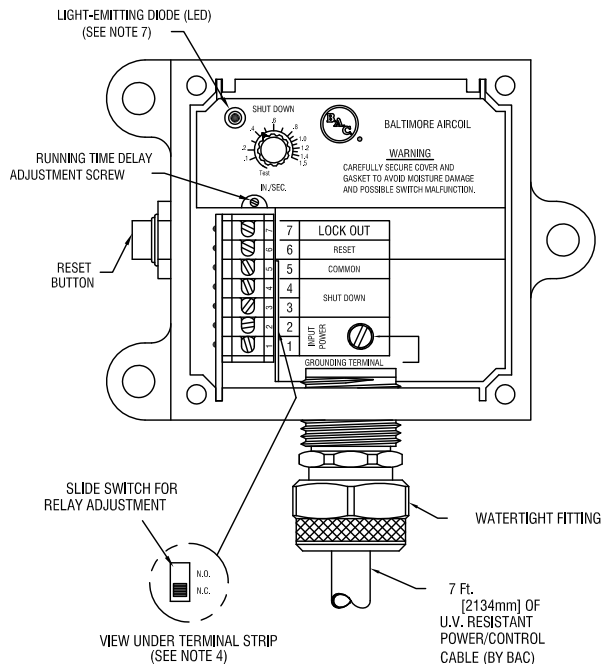
**3000E VCOS Location**

DRAWING NUMBER:  
**VL-U148598001**

- NOTES:**
1. THE VIBRATION CUTOUT SWITCH TIME DELAY AND VIBRATION LEVELS HAVE BEEN FACTORY SET AT TYPICAL VALUES FOR EVAPORATIVE COOLING EQUIPMENT. SHOULD ADJUSTMENT FROM THESE SETTINGS BE NECESSARY, PLEASE REFER TO THE OPERATING INSTRUCTIONS. (DRAWINGS BAC-10876, BAC-10877, BAC-10878, OR BAC-11489).
  2. THE VIBRATION SWITCH IS SHIPPED FROM THE FACTORY WITH SHIELDED POWER CABLE PRE-WIRED INSIDE THE SWITCH FOR CONNECTION TO WIRING IN A JUNCTION BOX (BY OTHERS) OUTSIDE THE UNIT. THE WIRES FROM TERMINALS 5, 6, AND 7 ARE ENCLOSED IN A SHIELD. IF EXTERNAL WIRING FOR START-UP DELAY OR REMOTE RESET IS USED (BY OTHERS), IT MUST BE SHIELDED AND THE SHIELD CONNECTED TO THE BAC SUPPLIED SHIELD. THIS SHIELD WIRE SHOULD NOT BE GROUNDED AT THE JUNCTION BOX.
  3. IF A REMOTE RESET (R/R) IS DESIRED, A MOMENTARY NORMALLY CLOSED (N/C) CONTACT MUST BE PROVIDED BY OTHERS. THE REMOTE RESET IS ACTIVATED BY MOMENTARILY OPENING THE CONTACT BETWEEN TERMINALS 5 AND 6. AS SUPPLIED FROM THE FACTORY, TERMINALS 5 AND 6 ARE CONNECTED BY A WIRE NUT FOR LOCAL RESET.
  4. THE SHUTDOWN (SD) RELAY IS FACTORY SET IN THE N/C POSITION. THE SD RELAY CAN BE FIELD ADJUSTED TO NORMALLY OPEN (N/O) BY MEANS OF A SLIDE SWITCH LOCATED UNDER THE TERMINAL STRIP INSIDE SWITCH ENCLOSURE. (SEE SHUTDOWN CIRCUIT CURRENT LIMIT NOTE).
  5. THE VIBRATION SWITCH HAS A FIXED 20 SECOND START-UP TIME DELAY CAPABILITY. WHEN THE SWITCH IS WIRED SUCH THAT AC POWER IS ALWAYS APPLIED TO THE SWITCH, THE 20 SECOND TIME DELAY CAN BE ACTIVATED BY MEANS OF A MOMENTARY CONTACT CLOSURE BETWEEN TERMINALS 5 AND 7. THIS CONTACT CAN BE ACHIEVED BY A ONE SHOT RELAY (BY OTHERS) WIRED WITH THE STARTER CIRCUIT AS SHOWN. ALTERNATELY, WHEN THE VIBRATION SWITCH IS WIRED IN SUCH A WAY THAT THE SWITCH IS ONLY POWERED WHEN THE STARTER CIRCUIT IS POWERED, THE 20 SECOND TIME DELAY IS AUTOMATICALLY ACTIVATED WHEN THE POWER IS APPLIED TO THE SWITCH.
  6. THE RUNNING TIME DELAY IS FACTORY SET AT 3 SECONDS AND CAN BE FIELD ADJUSTED FROM 1 TO 7 SECONDS. FOR FURTHER DETAILS SEE TIME DELAY SECTION OF THE OPERATING INSTRUCTIONS. 7. THE LIGHT-EMITTING DIODE (LED) IS ILLUMINATED WHEN THE VIBRATION LEVEL IS ABOVE THE TRIP SETTING. THE LED WILL REMAIN ILLUMINATED UNTIL THE UNIT VIBRATION LEVEL DROPS BELOW THE TRIP POINT.
  8. A CONTROL RELAY IS REQUIRED IF THE SWITCH IS USED AS INPUT TO A BUILDING MANAGEMENT SYSTEM (N/O TRIP CURRENT LEAKAGE IS 1 mA). THE RELAY COIL CURRENT MUST BE GREATER THAN 50 mA CONTINUOUS. A CONTROL RELAY IS ALSO REQUIRED FOR STARTER LOADS GREATER THAN 5 AMPS CONTINUOUS, 50 AMPS PEAK FOR 16 ms.
  9. IF DESIRED, A SINGLE POLE, DOUBLE THROW CLASS C RELAY (1 POLE N/O, 1 POLE N/C) CAN BE USED IN THE SHUTDOWN CIRCUIT TO POWER AN ALARM (BY OTHERS) TO PROVIDE AN AUDIBLE OR VISUAL INDICATION OF VIBRATION TRIP AS WELL AS SHUTTING DOWN THE MOTOR.

**ELECTRONIC VIBRATION CUTOUT SWITCH**

(W/WEATHER-PROOF COVER REMOVED)  
(INTERNAL FACTORY PRE-WIRING NOT SHOWN FOR CLARITY)



**SHUT DOWN CIRCUIT CURRENT LIMIT**

THE SHUTDOWN RELAY IS RATED AT 5 AMPS CONTINUOUS, 50 AMPS PEAK FOR 16ms AT 110 VAC .

BEFORE PERFORMING ANY MAINTENANCE, ADJUSTMENT OR INSPECTION OF THE SWITCH, MAKE CERTAIN THAT ALL POWER HAS BEEN DISCONNECTED AND LOCKED IN THE OFF POSITION.

ORDER NO: **U148598001**

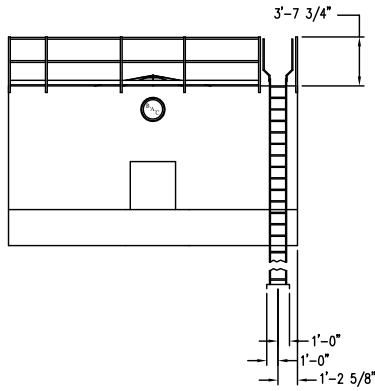
DATE: **8/5/2014**



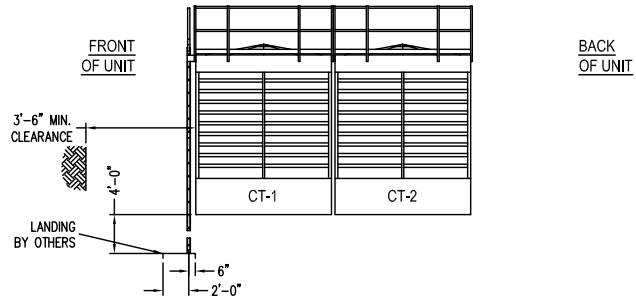
**BALTIMORE AIRCOIL COMPANY**

**Electronic VCOS Wiring Shut Off with Remote/Local Reset & Delay (110 VAC)**

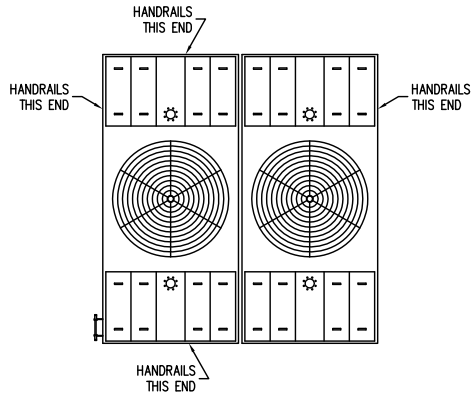
DRAWING NUMBER:  
**VW-U148598001**



END ELEVATION (FACE A)



SIDE VIEW



PLAN VIEW

Notes

- 1) Drawings are not to scale.
- 2) External unit access accessories ship loose for field installation (by others).
- 3) Field piping must be kept clear and supported independently of all unit access accessories.
- 4) Refer to OSHA and local occupational safety regulations to determine if safety cages and/or self closing safety gates are required.

ORDER NO: **U148598001**

DATE: **8/5/2014**



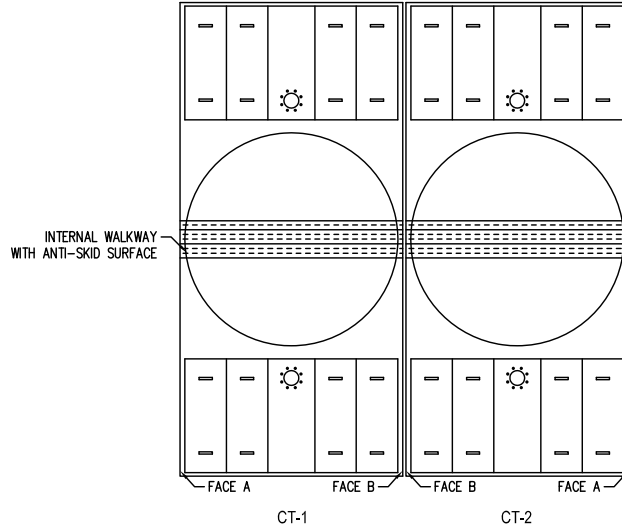
**BALTIMORE  
AIRCOIL COMPANY**

**3000E External Access  
One Piece Units**

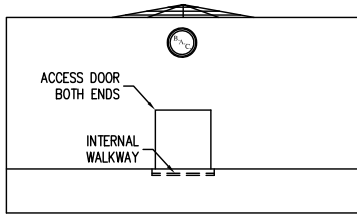
DRAWING NUMBER:  
**EA-U148598001**

Notes

- 1) Drawings are not to scale.
- 2) Field piping must be kept clear and supported independently of all unit access accessories.



PLAN VIEW



ORDER NO: **U148598001**

DATE: **8/5/2014**



**BALTIMORE  
AIRCOIL COMPANY**

**3000C Internal Access**

DRAWING NUMBER:  
**IA-U148598001**