RKR

R.K. REDDING CONSTRUCTION, INC.

P.O. Box 426 • Bremen, Georgia 30110 • (770) 537-1845 • Fax (770) 537-1599 • www.rkredding.com

SUBMITTAL APPROVAL SHEET

DESCRIPTION: Revised Cooling Tower Product Data
SECTION: 15660

Honda Precision Parts Quality Control and Die Cast Expansion

CONTRACTOR

X A. Approved As Noted for Architect's & Engineers Review
☐ B. Revise and Resubmit
☐ C. Rejected

This review is for general compliance with plans and specifications only. Any deviations from the plans and specifications not clearly noted by the trade contractor have not been reviewed. Review shall not constitute complete check of detail dimensions or serve to relieve trade contractor of their responsibility for any errors or deviations from contract requirements.

R.K. Redding Construction, Inc.

By: *Adam Varney*

Date: **December 19, 2013**

Submittal Number: **15660-001REV1**

ARCHITECT/ENGINEER

SHOP DRAWING REVIEW

A-E REMARKS

☐ No Exceptions ☒ Note Markings

☐ Comments Attached ☐ Rejected

REQUIRED OF CONTRACTOR

☒ Process ☐ Resubmit

A-E review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project plans and specifications, nor departures therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for verification of field conditions, for selecting fabrication processes, for techniques of assembly and for performing his work in a safe manner.

BY: J. PITTMANN

DATE: 12/20/13

SSOE

SPX
COOLING TECHNOLOGIES

Applied Thermal Resources
81 Woodstock Road
Roswell, GA 30075
(770) 674-9100 / fax: (770) 674-9200
email: mark.porter@atrga.com

Submittal to:
R.K. Redding Construction, Inc.
412 Sangamore Road
Bremen, Georgia 30110-2278
Attn: Mr. Adam Varney

Project:
Honda Precision Parts of Geogia
Quality & Die Casting Expansion
Tallapossa, Georgia
Revision No. 1 CT Submittal

Opportunity / Quote No. (Ver): MARK PORTER_131016_083605538 / MARK PORTER_131216_125653734 (1)
Rep Quote No.:

December 19, 2013

Marley NC8400 Tower

TOWER MODEL	PERFORMANCE CONDITIONS	MOTOR DATA	TOWER DIMENSIONS	WEIGHTS
Quantity of (1) Marley NC Class model **NC8411VAN** factory assembled 2-Cell crossflow cooling tower	Per 2-cell tower: 4,376 gpm 100.0 °F Hot Water 85.0 °F Cold Water 78.3 °F Entering WB	NEMA 60 HP 1 speed / 1 wind 3 phase / 60 Hz / **230/460v** 1.15sf / TEFC 1800 RPM Premium Efficiency Inverter duty nameplated	Each cell: (without options) Length 11' - 10 3/4" Width 22' - 5" Height 18' - 10 1/8" Per 2-cell tower: (with options) Length 27' - 3 11/16" Width 26' - 5" Height 21' - 11 3/16"	Per cell: Shipping: 20,159 lb Operating: 39,884 lb Per 2-cell tower: Shipping: 40,317 lb Operating: 79,767 lb Heaviest Lift: 10,906 lb

Quantities shown below are per tower.

Base Tower Construction/Equipment:

Galvanized Steel casing.
Galvanized Steel structure.
Stainless Steel collection basin.
Stainless Steel distribution basin.
All stainless steel is series 300.
Low Sound fan with aluminum blades.
Marley designed Geareducer® with 5-year warranty.
PVC film fill with integral louvers and drift eliminators designed and manufactured by Marley.
Drift rate guaranteed to be no greater than .005% of the design flow rate.
CTI certification per STD-201.
Factory Mutual Approval
HDG steel fan guard.

Collection Basin Connections and Accessories:

All flanges are to Class 125 ANSI B16.1 standard.
All threads are to American Standard Pipe Taper Thread.
(2) 12 in (305 mm) diameter depressed side sump outlet(s) with trash screen(s).
14 in (356 mm) diameter hole and bolt circle(s) for equalization, One per Cell
4 in (102 mm) diameter combination drain and overflow in each cell
4 in (102 mm) additional drain with plug in each cell
(2) 2 in (50.8 mm) water make-up float valve(s)
18 kW per cell 480/3 volt/phase electric immersion heater for freeze protection of the collection basin during cold weather system shutdown
Includes heater elements, water temperature sensor probe and control box
Heater system circuit breaker
Heater system disconnect switch

Distribution Basin Inlet and Accessories:

(1) self-balancing 12 in (305 mm) diameter PVC bottom inlet connection per cell.
All internal piping is PVC. External piping is PVC.
Variable flow nozzles (based on low flow to 800 GPM Per Cell)

Applied Thermal Resources
81 Woodstock Road
Roswell, GA 30075
(770) 674-9100 / fax: (770) 674-9200
email: mark.porter@atrga.com

Maintenance & Maintenance Access Features:

Tower is designed in accordance with OSHA safety standards.
This quotation does not include features which are available to allow safe access on the fan deck while the fan is still operating. If this is a desired feature for your intended operation, please contact your sales representative.
External lube line with dipstick
Full face horizontally mounted air inlet screens for easy access to collection basin
Convenient access to the collection basin and plenum area is provided via a large access door located on each endwall
Stainless Steel plenum walkway in each cell
Internal mechanical equipment access platform in each cell
Easy fitting perimeter guardrail, kneerail & toeboard
(1) Cased face ladder
Easy fitting ladder safety cage(s)
Self closing safety gate(s) included at the top of the access ladder(s)

Control Systems:

Marley M-5 121-010 DPDT Manual Reset vibration cutoff switch
Field installed Single Speed UL NEMA 4X safety switch

Field Installed Equipment:

The field installed portion of the equipment will require approximately 66.5 man-hours of installation time after the tower arrives at the jobsite (based on USA experienced crew). The price to install these components is NOT included in the total price.

COOLING TOWER SUBMITTAL

Drawings & Data

Transmittal Code	*Approval Code*	*No. of Copies*	*Drawing Number /Rev/Date*	*Description*
E	SFA	1	MP509962M	Schematic Cased Elevation
E	SFA	1	MP509962S	Schematic Plan & Louver Elevation
E	SFA	1	MP509962P	Piping Plan
E	SFA	1	MP509962G	Supporting Steel Plan
E	SFA	1	2011-1419	Standard Bottom Equalizer Piping Details
E	SFA	1	2011-1414	Steel Side Outlet Sump Details
E	SFA	1	2011-1417	Collection Basin Water Level Details
E	SFA	1	09-117	Ladder w/Safety Cage Details
E	SFA	1	09-168	Recommended Conduit Installation
E	SFA	1	09-119	Bottom Inlet Connection Details
E	SFA	1	00-4885	Electric Basin Heater Details
E	SFA	1	09-14	Support Bearing Details
E	SFA	1	09-136	Hoisting Details
E	SFA	1	2013-1229	Safety Switch Details
E	SFA	1	n/a	M-5 Vibration Switch Details

Transmittal Codes:
E = Enclosed Herewith
S = Sent Separately
F = Sent via Fax
O = Other

Other Codes:
P = Print
R = Reproducible
D = Reduced Copy

Approval Codes:
SFA = Approval Document. Equipment is held for Approval and Release.
AFC = Certified Document. Equipment has been Approved for Construction.
Changes made after this point may result in price adds and/or delays.
INF = Information Document. Submitted for Information only.
RFA = Corrected Document. Re-submitted for Approval and Release
OTH = Other

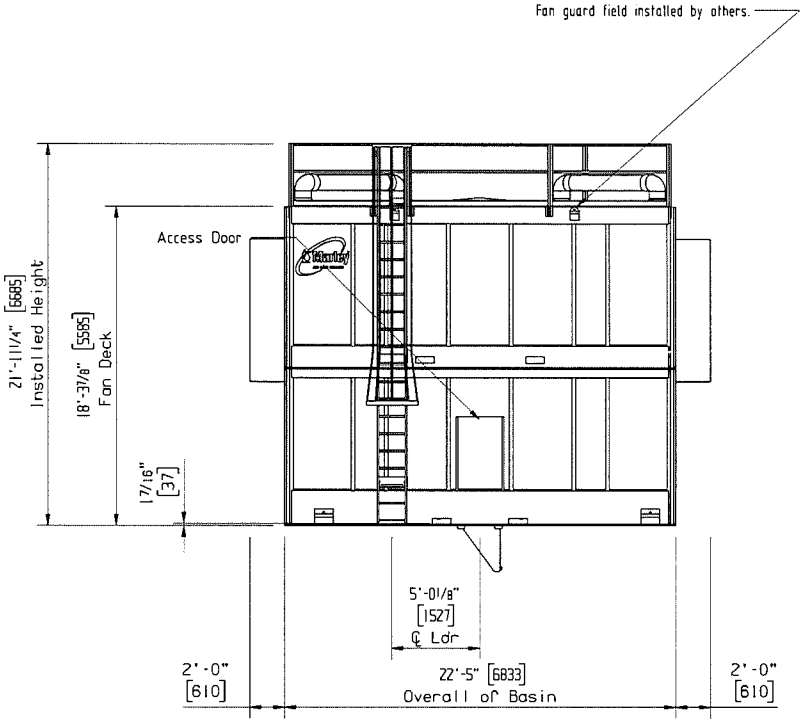
Shipment Lead-Time After Drawing Approval: 35 business days

December 19, 2013

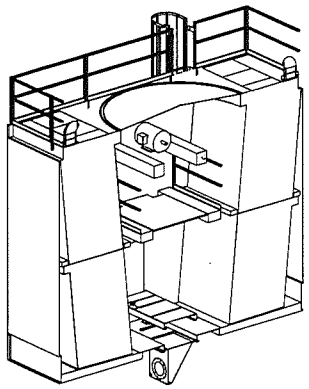
For: SPX Cooling Technologies

By: Applied Thermal Resources

Mark C. Porter
Sales Engineer
770.678.9128



Cased Face C



Interior View

NOTES

1. The fan motor must be locked out and inoperable before entering the tower. This warning has been placed on the access door.
2. Flanged connections conform to class 125 of the ANSI B16.1 specification. The bolt holes straddle the centerlines.
3. The internal inlet piping, including flat face flange gaskets, which starts at the face of the inlet connection is provided by SPX CT. The piping external to the tower and its supports are provided by others. The external piping may not be supported from the tower.
4. The external inlet piping at the top of the tower is provided by SPX CT and installed in the field by others. This piping can be an obstacle to personnel on top of the tower. The installation detail drawings are included in the Literature Package shipped with the tower.
5. Multi-cell towers should include provisions to balance flow between cells.
6. The internal vertical riser will apply an additional vertical operating load of 1050 lb (476 kg) at the bottom inlet flange attachment to the external piping which is supported by others.
7. To insure maximum thermal performance the cooling tower must be installed level and plumb. Both of the air inlet faces must have adequate air supply. If obstructions exist, consult your SPX CT representative.
8. Contact your SPX CT sales engineer for the required pump head for this inlet arrangement.
9. Hoisting clips are provided for ease of unloading and positioning. For overhead lifts or where additional safety precautions are prudent, add slings beneath the tower. Adequate space has been provided for removal of the shackles and the 5 1/4" (133 mm) long pins from the hoist clips between the cells of a multi-cell tower. If the pin used is longer than 5 1/4" (133 mm), the cell may be slid into it's final position by using come-alongs at the base of the unit, after removal of shackle pins. See Hoisting Details drawing.
10. Construction of the ladder and guardrail: The guardrail is fabricated from galvanized structural tubing. Top rail, middle rail and posts are 1 1/2" (38 mm) square tube 1/8" (3 mm) thick. Toeboards are 12 gauge heavy mill galvanized steel. The ladder is aluminum 3" (76 mm) x 1 1/8" (29 mm) I-beam side rails and 1 1/4" (32 mm) serrated rungs.
11. The ladder and guardrail are field installed by others. The tower is shop modified to accept this option. The clips and hardware are provided by SPX CT for the field installation. The installation detail drawings are included in the literature package shipped with the tower.
12. O.S.H.A. standards recommend the use of a Safety Cage when the length of a single ladder exceeds 20'-0" (6096 mm).
13. The Plenum Walkway consists of 11 gauge steel supports and 16 gauge steel walkway panels. The elevation of the Plenum Walkway is above the overflow water level of the collection basin. The distance from the top of the Plenum Walkway to the fan is 14'-9 11/16" (4514 mm).
14. The Interior Mechanical Equipment Platform consists of the Plenum Walkway plus an elevated platform for access to the mechanical equipment. A ladder is provided from the Plenum Walkway to the elevated platform along with a handrail system for the elevated platform.
15. The distance from the elevated platform to the fan exceeds 7'-1 3/4" (2178 mm).
16. Single inlet options (side or bottom inlet) - This piping can be an obstacle to personnel on top of the tower.
17. The tower assembly tolerance applicable to all dimensions is + or - 1/8" (3 mm). Consult suppliers of supporting structure for construction tolerances.
18. The units of measure are in IP (SI) units unless otherwise noted.

ECO NUMBER		NC8411VAN2BGF - Schematic Cased Elevation and Notes HPPG Quality & Die Casting Expansion - Revision No. 1 United States							
REV. BY	CHECKED								
REV. DATE		DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.
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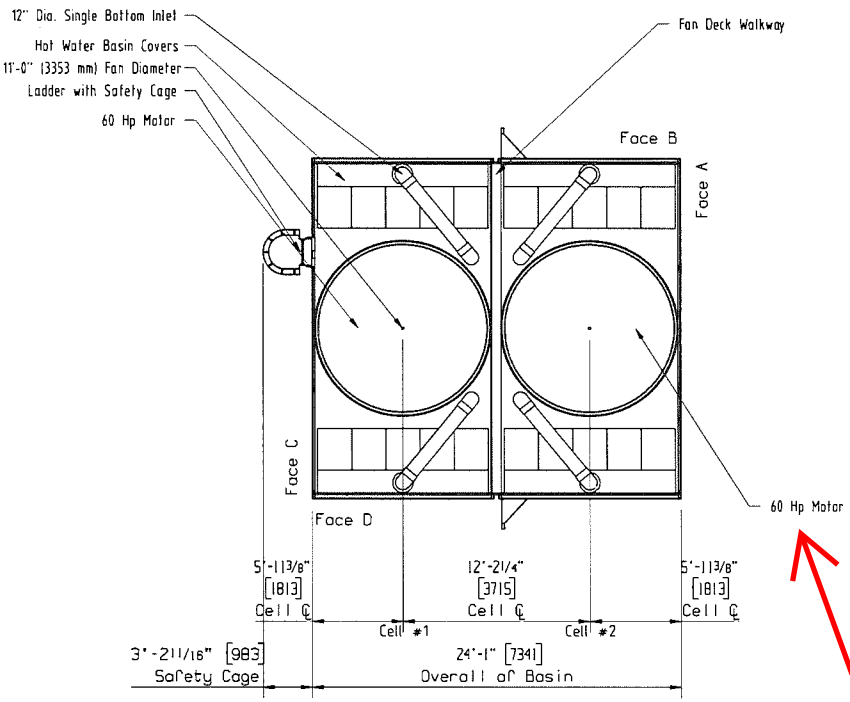
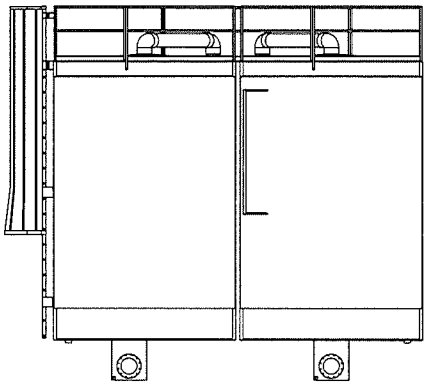


BOTH CELLS MOTORS IN STANDARD LOCATION



NOTES

1. The tower assembly tolerance applicable to all dimensions is + or - 1/8" (3 mm). Consult suppliers of supporting structure for construction tolerances.
2. The units of measure are in IP (SI) units unless otherwise noted.
3. See Schematic Cased Elevation and Notes drawing for additional notes.

ECO NUMBER		NC8411VAN2BGF - Schematic Plan and Louver Elevation HPPG Quality & Die Casting Expansion - Revision No. 1 United States							
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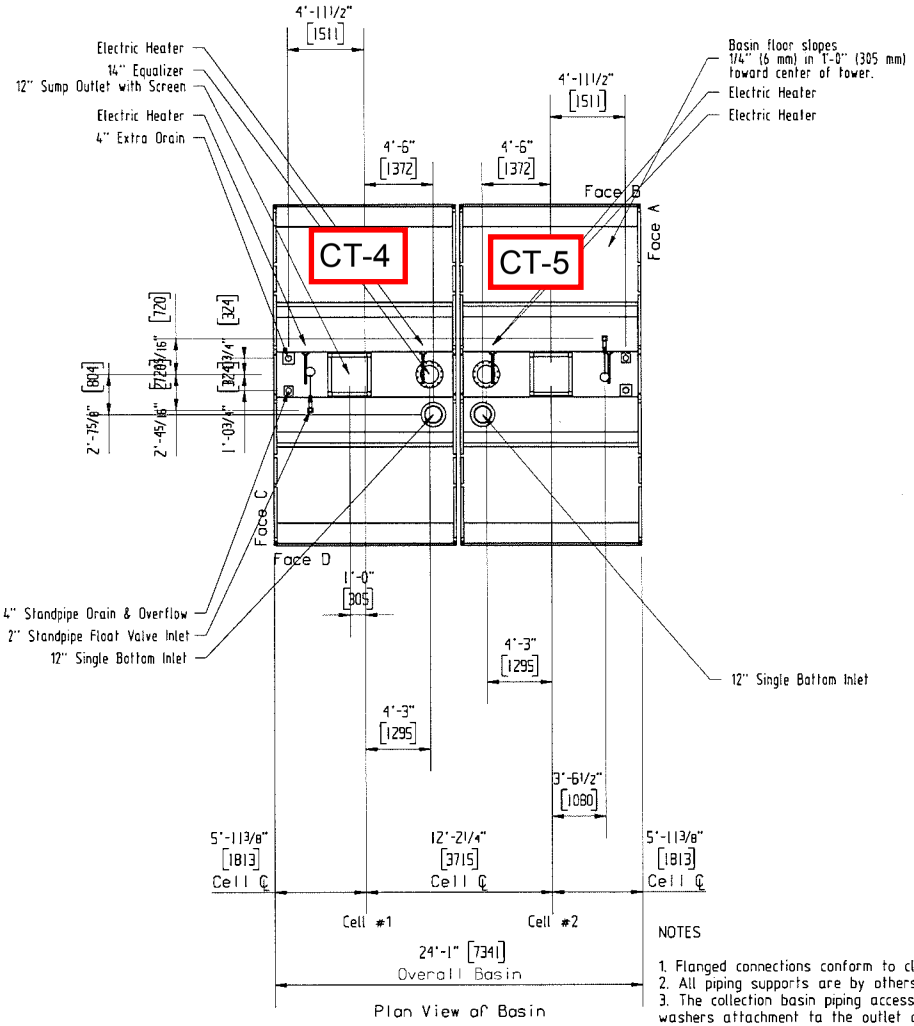

Plan View of Basin

NOTES

1. Flanged connections conform to class 125 of the ANSI B16.1 specification. The bolt holes straddle the centerlines.
2. All piping supports are by others. Do NOT support outlet piping from the tower.
3. The collection basin piping accessories shown on this drawing are furnished by SPX CT. This includes a full faced gasket. Flat faced flange, fasteners and seal washers attachment to the outlet and equalizer are supplied by others. The use of a flange other than a flat faced flange will damage the sump or the collection basin floor.
4. The sump is shipped inside the tower and is to be field installed by others.
5. The diameter of the bottom outlet equalizer option is based on a SPX CT standard using 20 percent of a tower's outlet design flow and a head differential between two adjacent towers of 1" (25 mm).
6. The standpipe overflow is to be field installed by others.
7. The design operating loads shown in the table on the Grillage Details drawing are based upon the volume of water in the collection basin at shutdown. The shutdown water level has been sized to accommodate the maximum allowable flow rates. The actual operating load is variable, and is dependent upon the design flow rate per cell. Design loads are all based upon the recommended operating water level. Operating levels in excess of that recommended can result in loads exceeding values stated. Consult a SPX CT representative for greater detail on this or any other subject.
8. Basin flumes are shipped inside the tower and are to be field installed by others. The connecting collars are shop installed.
9. Refer to basin heater detail drawings for heater details.
10. The tower assembly tolerance applicable to all dimensions is + or - 1/8" (3 mm). Consult suppliers of supporting structure for construction tolerances.
11. The units of measure are in IP (SI) units unless otherwise noted.

ECO NUMBER		NC8411VAN2BGF - Piping Plan HPPG Quality & Die Casting Expansion - Revision No. 1 United States							
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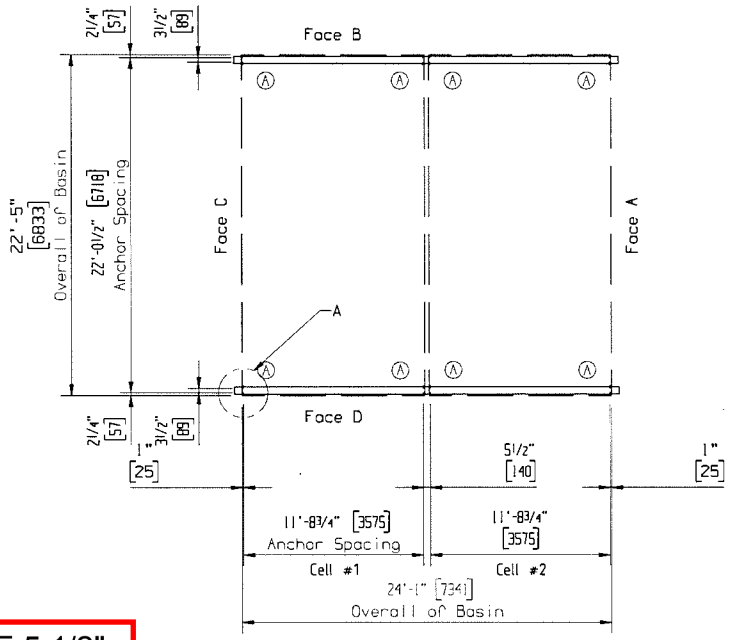
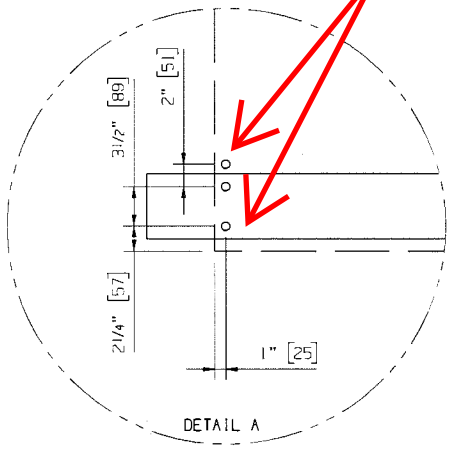
Shipping Weight		Design Operating Loads			Wind Load		Seismic Load	
per Tower	Heaviest Lift	per Tower	per Cell	at A	Vert. Reaction at A	Horiz. Reaction at A	Vert. Reaction at A	Horiz. Reaction at A
40317 lb (18287 kg)	10906 lb (4947 kg)	79767 lb (36182 kg)	39884 lb (18091 kg)	10979 lb (4980 kg)	160.43 x P lb (14.9 x P kgf)	102.69 x P lb (9.54 x P kgf)	16812 x G lb (7626 x G kgf)	10151 x G lb (4604 x G kgf)

(8) 3/4" ASTM A307 or M20 Grade 4.6 anchor bolts are required per cell. These anchor bolts are capable of resisting 46 psf (2203 N/m²) wind load or a factored 0.47 G seismic load applied to the tower. Determination of the site specific design wind and seismic loads are by others.



BEAM GAGE 5 1/2"



The first anchor bolt hole is the closest to the end of the cold water basin flange. The second anchor bolt should use the hole that matches the gauge of the beam.

NOTES

1. SUPPORTING STEEL: The supporting steel is to be designed, constructed and furnished by the customer. It shall include customer supplied anchor bolts to suit the general dimensions of this drawing and of the Outlet Piping Plan drawing. The top surface of the supporting steel must be framed flush and level. The maximum beam deflection shall be limited to 1/360 of span, not to exceed 1/2" (13 mm) at the anchor bolts in order to assure that the cooling tower is level and plumb.
2. DESIGN OPERATING LOADS: The design operating loads shown in the above table are based upon the volume of water in the collection basin at shutdown. The shutdown water level has been sized to accommodate the maximum allowable flow rates. The design loads are shown for your use as a quick reference. The actual operating load is variable, and dependent upon the design flow rate per cell. Design loads are all based upon the recommended operating water level. Operating levels in excess of that recommended will result in loads exceeding the values stated. Consult a SPX CT representative for greater detail on this or any other subject.
3. WIND & SEISMIC LOADS: Reactions shown are the result of the wind/seismic load being applied perpendicular to the face of the tower structure. Loads are additive to the operating loads. Wind reactions can be calculated by multiplying by P, which is the wind pressure in psf for Imperial units and kgf/m² for metric units. Seismic reactions can be calculated by design G.
4. SHIPPING WEIGHTS AND MAXIMUM OPERATING LOADS: Values shown in table include the optional equipment weights.
5. NON-STANDARD ANCHORAGE LOCATION: The anchor bolt dimension shown can be varied upon request. Consult a SPX CT representative for specifics and to insure that the appropriate modifications are added to the structure.
6. PIER SUPPORTS: The tower may be supported from piers at each anchor bolt location as an alternate. A pier should be at least 6" (152 mm) x 6" (152 mm).
7. VIBRATION ISOLATORS: The towers may be supported on vibration isolators. The isolators must be placed UNDER the supporting steel beams and not between the support beams and the tower.
8. The tower assembly tolerance applicable to all dimensions is + or - 1/8" (3 mm). Consult suppliers of supporting structure for construction tolerances.
9. The units of measure are in IP (SI) units unless otherwise noted.

ECO NUMBER		NC8411VAN2BGF - Supporting Steel Plan and Details HPPG Quality & Die Casting Expansion - Revision No. 1 United States							
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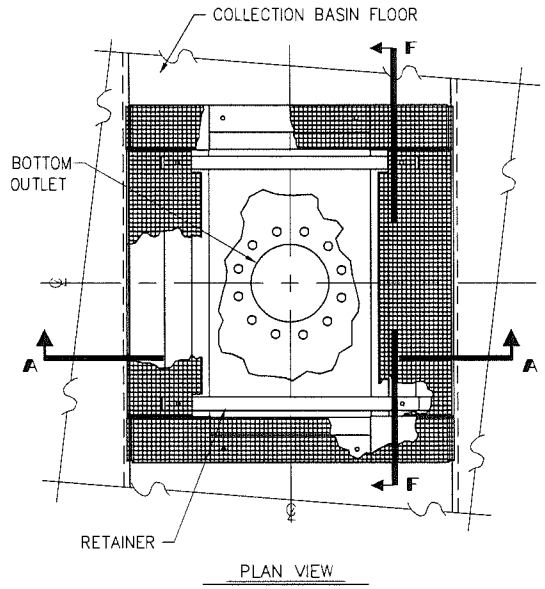
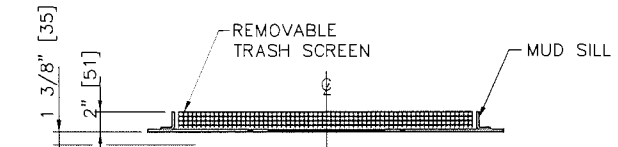
		MARK PORTER_131216_125653734 V1	12/17/13	QTC	SYS	0	1=1	MP509962G	

TOWER MODEL	DIMENSIONS
	A7
8401	1'-3" [381]
8402	1'-3" [381]
8403	1'-5 1/4" [438]
8405	1'-5 1/4" [438]
8407	1'-5 1/4" [438]
8409	1'-5 1/4" [438]
8411	1'-9 1/4" [540]
8412	1'-9 1/4" [540]
8413	1'-11 1/4" [591]
8414	1'-11 1/4" [591]

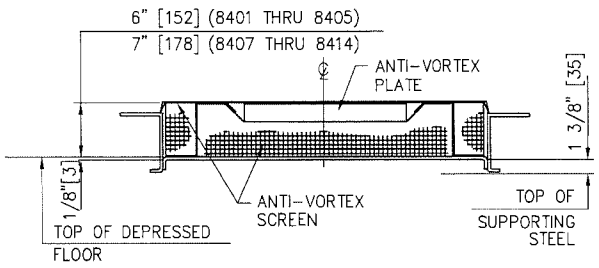


PLAN VIEW



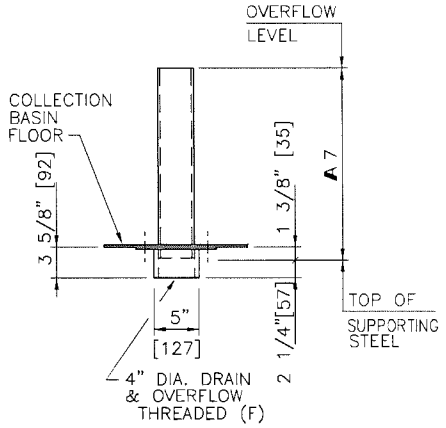
SECTION F-F

(MUD SILL & SCREEN)
(FOR OUTLETS WITHOUT ANTI-VORTEX PLATE)



SECTION A-A

(ANTI-VORTEX PLATE & SCREEN)



STANDARD STANDPIPE
DRAIN & OVERFLOW
(TYPICAL ALL CELLS)

BOTTOM OUTLET WITH ANTI-VORTEX PLATE AND SCREEN

BOTTOM OUTLET WITH MUD SILL AND SCREEN

BOTTOM OUTLET WITHOUT SCREEN

→ BOTTOM OUTLET EQUALIZER - 14" DIA

NOTE: ANTI-VORTEX PLATE AND SCREEN ARE NOT PROVIDED FOR BOTTOM OUTLET EQUALIZER.

SEE "OUTLET PIPING PLAN" DRAWING FOR OUTLET DIAMETER

GENERAL NOTES

1. ALL ACCESSORIES SHOWN ARE PROVIDED WITH THE COOLING TOWER.
2. ALL PIPING SUPPORTS ARE BY OTHERS. DO NOT SUPPORT PIPING FROM TOWER.
3. FLANGE DRILLING SHOWN CONFORMS TO CLASS 125 ANSI B16.1. BOLT HOLES WILL STRADDLE CENTERLINE OF AN OUTLET. THE OUTLET PIPING ATTACHMENT REQUIRES USE OF A FLAT FACED FLANGE, FASTENERS AND SEAL WASHERS(SUPPLIED BY OTHERS) AND A FULL FACED GASKET (PROVIDED WITH THE COOLING TOWER).
4. TOLERANCE APPLICABLE TO DIMENSIONS SHOWN ARE DEPENDENT UPON FABRICATION, ASSEMBLY AND CONSTRUCTION TOLERANCES. FABRICATION TOLERANCE IS ±1/16" [2] AND ASSEMBLY TOLERANCE IS ±1/8" [3]. CONSULT SUPPLIERS OF SUPPORTING STRUCTURE FOR CONSTRUCTION TOLERANCE. ALL OF THE DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
5. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

I-P [SI] UNITS

ECO NUMBER		STANDARD BOTTOM OUTLET PIPING DETAILS 8401 THRU 8414 TOWERS				SPX COOLING TECHNOLOGIES			
REV. BY	CHECKED								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.	
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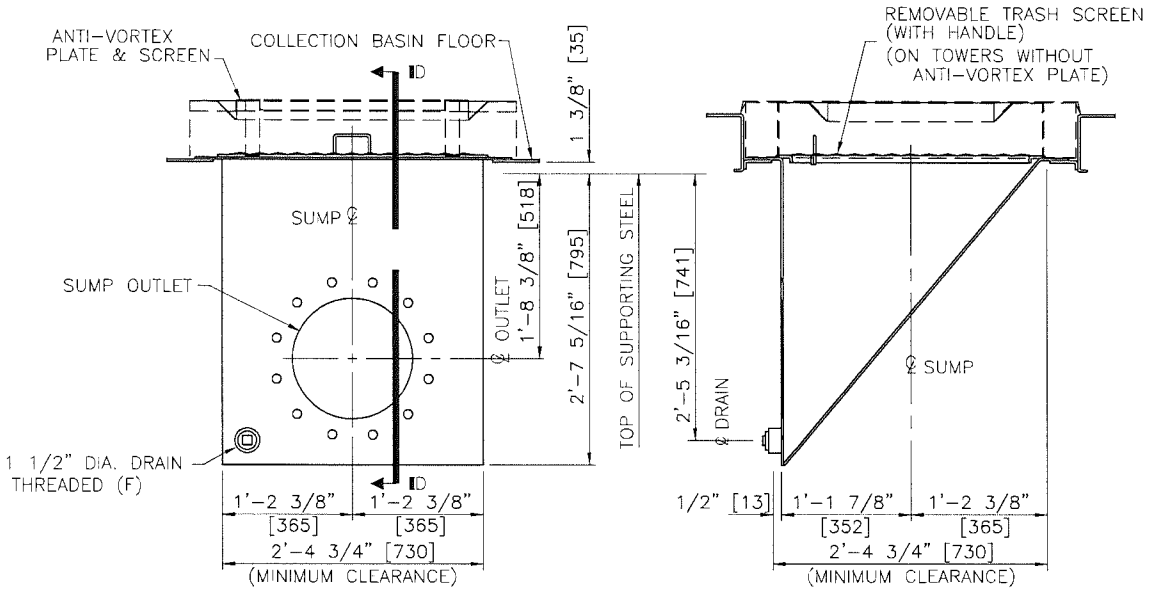


ELEVATION VIEW

SECTION ID-ID

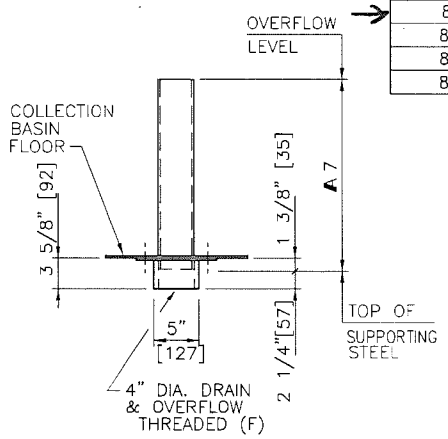
STEEL SIDE OUTLET SUMP

NOTE: SUMP MAY BE ROTATED 90° OR 180°

12" DIA

SEE "OUTLET PIPING PLAN" DRAWING FOR OUTLET DIAMETER

TOWER MODEL	DIMENSIONS A7
8401	1'-3" [381]
8402	1'-3" [381]
8403	1'-5 1/4" [438]
8405	1'-5 1/4" [438]
8407	1'-5 1/4" [438]
8409	1'-5 1/4" [438]
8411	1'-9 1/4" [540]
8412	1'-9 1/4" [540]
8413	1'-11 1/4" [591]
8414	1'-11 1/4" [591]



STANDARD STANDPIPE DRAIN & OVERFLOW

(TYPICAL ALL CELLS)

GENERAL NOTES

1. THE COLLECTION BASIN PIPING ACCESSORIES SHOWN ON THIS DRAWING ARE FURNISHED WITH THE COOLING TOWER.
2. ALL PIPING SUPPORTS ARE BY OTHERS. DO NOT SUPPORT PIPING FROM TOWER.
3. FLANGE DRILLING SHOWN CONFORMS TO CLASS 125 ANSI B16.1. BOLT HOLES WILL STRADDLE CENTERLINE OF AN OUTLET. THE OUTLET PIPING ATTACHMENT REQUIRES USE OF A FLAT FACED FLANGE, FASTENERS AND SEAL WASHERS (SUPPLIED BY OTHERS) AND A FULL FACED GASKET (PROVIDED WITH THE COOLING TOWER). THE USE OF A FLANGE OTHER THAN A FLAT FACED FLANGE WILL DAMAGE THE SUMP.
4. TOLERANCE APPLICABLE TO DIMENSIONS SHOWN ARE DEPENDENT UPON FABRICATION, ASSEMBLY AND CONSTRUCTION TOLERANCES. FABRICATION TOLERANCE IS ±1/16" [2] AND ASSEMBLY TOLERANCE IS ±1/8" [3]. CONSULT SUPPLIERS OF SUPPORTING STRUCTURE FOR CONSTRUCTION TOLERANCE. ALL OF THE DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE NOTED.
5. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

I-P [SI] UNITS

ECO NUMBER	REV. BY	CHECKED	REV. DATE

STEEL SIDE OUTLET SUMP DETAILS
8401 THRU 8414 TOWERS

SPX COOLING TECHNOLOGIES

DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.
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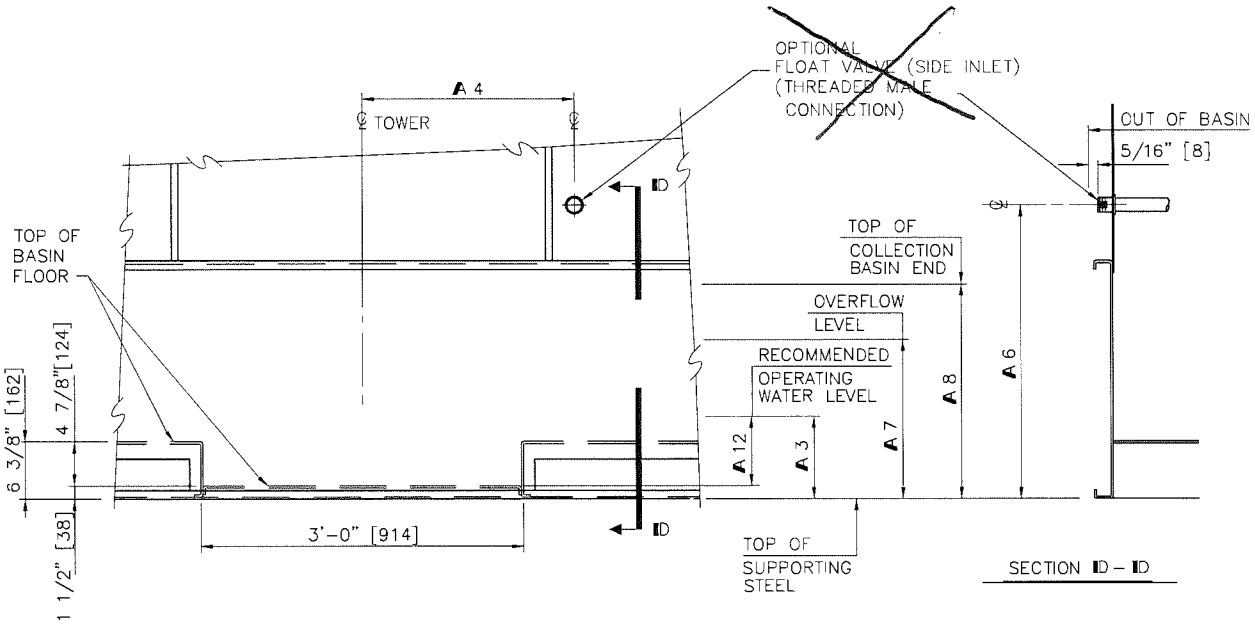
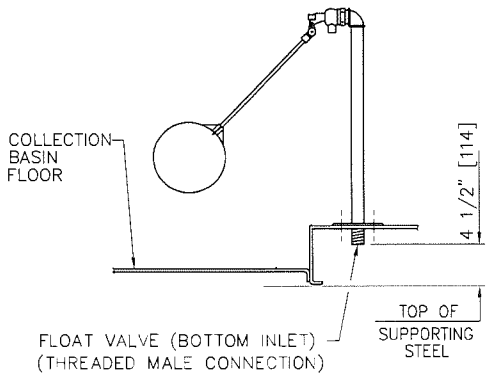


EXTERIOR CELL ELEVATION

(FACES "A" OR "C")



OPTIONAL FLOAT VALVE

(BOTTOM INLET)

SEE "OUTLET PIPING PLAN" DRAWING FOR FLOAT VALVE LOCATION, SIZE & TYPE

TOWER MODEL	DIMENSIONS						
	A3	A4	A6		A7	A8	A12
			1" DIAMETER	2" DIAMETER			
8401	8 1/2" [216]	1'-6 3/16" [462]	2'-3 11/16" [703]	2'-4 3/16" [716]	1'-3" [381]	1'-8" [508]	7" [178]
8402	8 1/2" [216]	1'-10 1/2" [572]	2'-3 11/16" [703]	2'-4 3/16" [716]	1'-3" [381]	1'-8" [508]	7" [178]
8403	8 1/2" [216]	2'-4 3/8" [721]	2'-6 7/8" [784]	2'-7 3/8" [797]	* 1'-5 1/4" [438]	1'-10 1/4" [565]	7" [178]
8405	8 1/2" [216]	1'-11 7/8" [606]	2'-6 7/8" [784]	2'-7 3/8" [797]	* 1'-5 1/4" [438]	1'-10 1/4" [565]	7" [178]
8407	9 1/2" [241]	2'-2 3/8" [670]	2'-6 7/8" [784]	2'-7 3/8" [797]	* 1'-5 1/4" [438]	1'-10 1/4" [565]	8" [203]
8409	9 1/2" [241]	2'-2 3/8" [670]	2'-6 7/8" [784]	2'-7 3/8" [797]	* 1'-5 1/4" [438]	1'-10 1/4" [565]	8" [203]
8411	9 1/2" [241]	2'-5 3/4" [755]	2'-9 15/16" [862]	2'-10 7/16" [875]	1'-9 1/4" [540]	2'-2 1/4" [667]	8" [203]
8412	9 1/2" [241]	2'-5 3/4" [755]	2'-9 15/16" [862]	2'-10 7/16" [875]	1'-9 1/4" [540]	2'-2 1/4" [667]	8" [203]
8413	9 1/2" [241]	2'-5 3/4" [755]	2'-9 15/16" [862]	2'-10 7/16" [875]	1'-11 1/4" [591]	2'-2 1/4" [667]	8" [203]
8414	9 1/2" [241]	2'-5 3/4" [755]	2'-9 15/16" [862]	2'-10 7/16" [875]	1'-11 1/4" [591]	2'-2 1/4" [667]	8" [203]

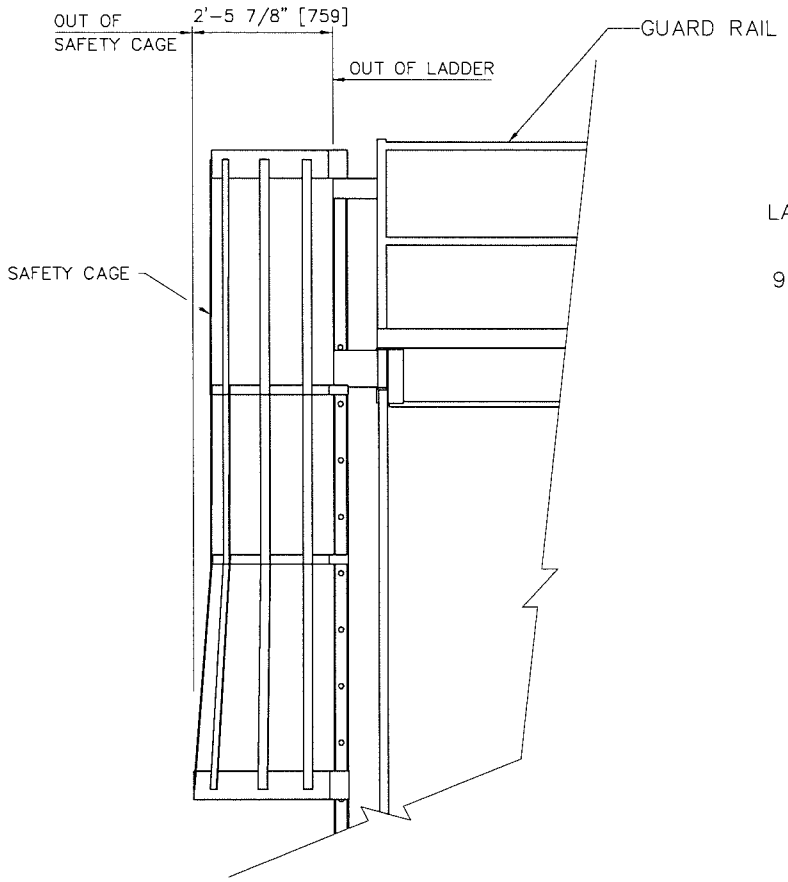
* 1'-6 1/2" [470] ON TOWERS WITH 12" OR 14" DIA. SIDE SUCTION OUTLET

GENERAL NOTES

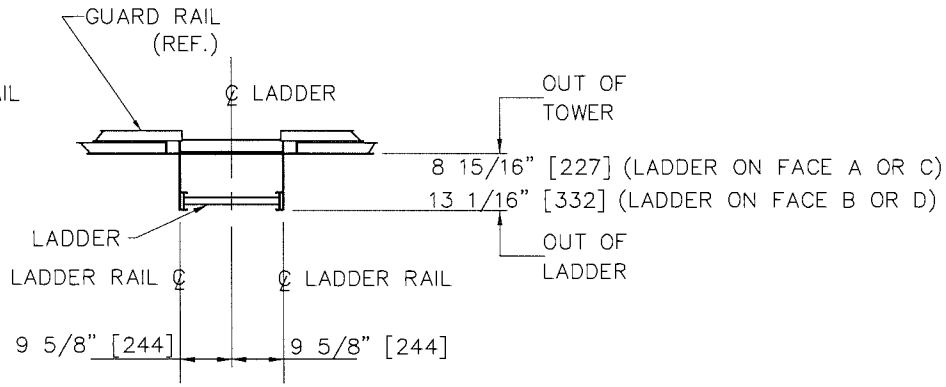
1. FOR FLOAT VALVE INLET DIAMETER SIZING INFORMATION, SEE DWG. 98-22969 [98-22970].
2. TOLERANCE APPLICABLE TO DIMENSIONS SHOWN ARE DEPENDENT UPON FABRICATION, ASSEMBLY AND CONSTRUCTION TOLERANCES. FABRICATION TOLERANCE IS ±1/16" [2] AND ASSEMBLY TOLERANCE IS ±1/8" [3]. CONSULT SUPPLIERS OF SUPPORTING STRUCTURE FOR CONSTRUCTION TOLERANCE. ALL OF THE DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE NOTED.
3. ON THE 8401, IF A SUMP OR BOTTOM OUTLET OPTION IS SUPPLIED WITH AN ANTI-VORTEX PLATE, A FLOAT VALVE MAY NOT BE IN THE SAME CELL.
4. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
5. REFER TO SUPPORTING STEEL DRAWING FOR DESIGN OPERATING LOADS.
6. THE RECOMMENDED WATER LEVEL IS FOR CELLS WITH OUTLETS. THE OPERATING WATER LEVEL IN ADJACENT CELLS MAY BE GREATER DEPENDING ON THE GPM, NUMBER OF OUTLES AND FLUME ARRANGEMENT.

I-P [SI] UNITS

ECO NUMBER		COLLECTION BASIN WATER LEVEL DETAILS 8401 THRU 8414 TOWERS				SPX COOLING TECHNOLOGIES			
REV. BY	CHECKED								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.	
	M. Nation	12/20/2011	MM	MM		1=1	2011-1417		



LADDER WITH CAGE ELEVATION



LADDER DETAIL
(PLAN VIEW)

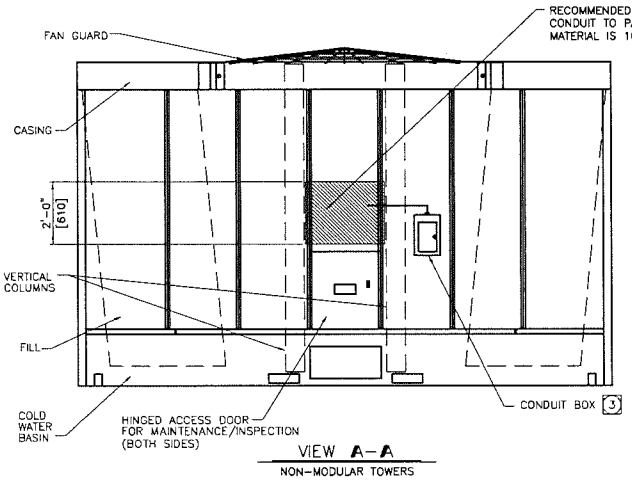
NOTES

1. THE COOLING TOWER FAN DECK IS NOT CONSIDERED AN ELEVATED WORKING PLATFORM SINCE NORMAL RECOMMENDED MAINTENANCE PROCEDURES ARE LESS THAN THE FREQUENCY OF MAN-HOURS THAT OSHA DEFINES FOR SUCH A PLATFORM, PER OSHA'S 1984 INTERPRETATION OF THEIR REGULATIONS. THIS OPTION AND OTHERS ARE AVAILABLE FOR THOSE CUSTOMERS WHO PREFER THE EXTRA DEGREE OF PROTECTION IT PROVIDES.
2. NORMAL TOWER MAINTENANCE DOES NOT REQUIRE PERSONNEL TO BE ON TOP OF THE TOWER. IF ACCESS TO TOP OF THE TOWER IS NEEDED, THEN LADDER AND HANDRAIL OPTION IS RECOMMENDED.
3. LADDER IS ALL ALUMINUM CONSTRUCTION CONSISTING OF 3" [76] X 1 1/8" [29] I-BEAM SIDE RAILS AND 1 1/4" [32] DIAMETER SERRATED RUNGS.
4. TOWER IS MODIFIED FOR LADDER AND HANDRAIL WITH ALL ATTACHING CLIPS AND HARDWARE PROVIDED WITH THE COOLING TOWER. LADDER AND HANDRAIL ARE ASSEMBLED AND INSTALLED IN THE FIELD BY OTHERS. INSTALLATION DETAILS ARE SHIPPED WITH THE TOWER.
5. TOLERANCE APPLICABLE TO DIMENSIONS SHOWN ARE DEPENDENT UPON FABRICATION, ASSEMBLY AND CONSTRUCTION TOLERANCES. FABRICATION TOLERANCE IS ±1/16" [2] & ASSEMBLY TOLERANCE IS ±1/8" [3]. CONSULT SUPPLIERS OF SUPPORTING STRUCTURE FOR CONSTRUCTION TOLERANCE. ALL OF THE DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE NOTED.
6. PER O.S.H.A. STANDARDS, SAFETY CAGE IS RECOMMENDED WHEN THE DIFFERENCE IN ELEVATION BETWEEN TOWER FAN DECK AND GRADE EXCEEDS 20' [6096].
7. OPTIONAL LADDER EXTENSIONS ARE PROVIDED IN NOMINAL LENGTHS OF 5' [1524] AND 11' [3353] ONLY. FIELD MODIFICATION, BY OTHERS, OTHERS, IS REQUIRED FOR EXTENSIONS OF DIFFERENT LENGTHS. PER O.S.H.A. STANDARDS, AN ACCESS DOOR PLATFORM IS RECOMMENDED IF TOWER IS ELEVATED.
8. IF LADDER EXTENSION WITH SAFETY CAGE IS PURCHASED, THE ACTUAL LADDER EXTENSION LENGTH MUST BE SPECIFIED TO ASSURE THE PROPER BOTTOM ELEVATION OF SAFETY CAGE.
9. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

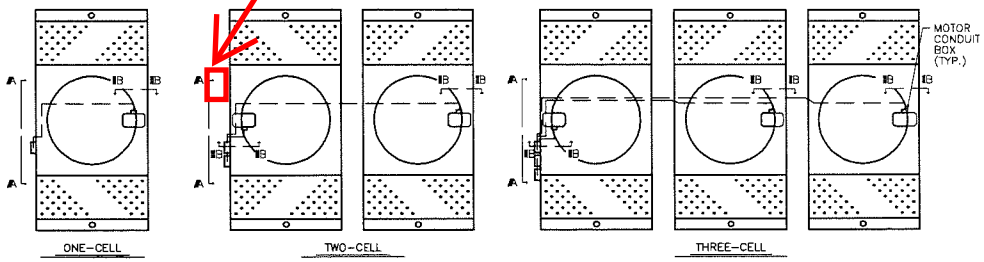
I-P [SI] UNITS

ECO NUMBER		LADDER DETAILS WITH SAFETY CAGE				SPX COOLING TECHNOLOGIES			
QTC-CHK									
REV. BY	CHECKED								
BCG	MN								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.	
02/04/09	B. GOODING	01/16/09		MN		1=1	09-117	A	

CONDUIT BOXES TO BE LOCATED AWAY FROM FUTURE COOLING TOWER LOCATIONS

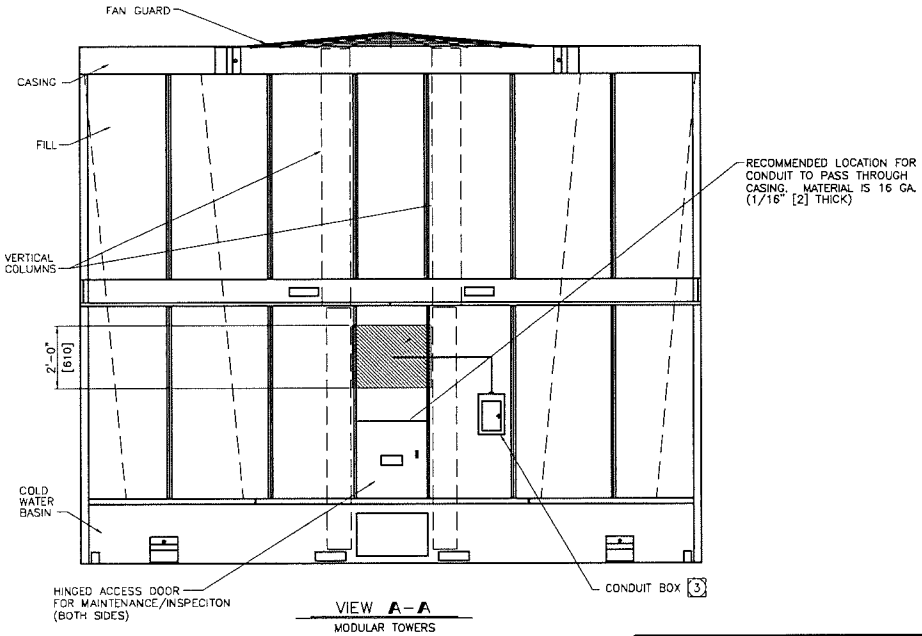


VIEW A-A
NON-MODULAR TOWERS

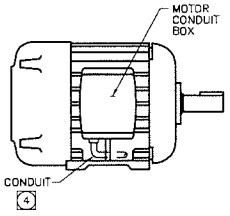


CONDUIT INSTALLATION KEY PLANS

* FIELD INSTALLED BY OTHER
LOCATE DISCONNECT AS REQUIRED FOR FUTURE



VIEW A-A
MODULAR TOWERS



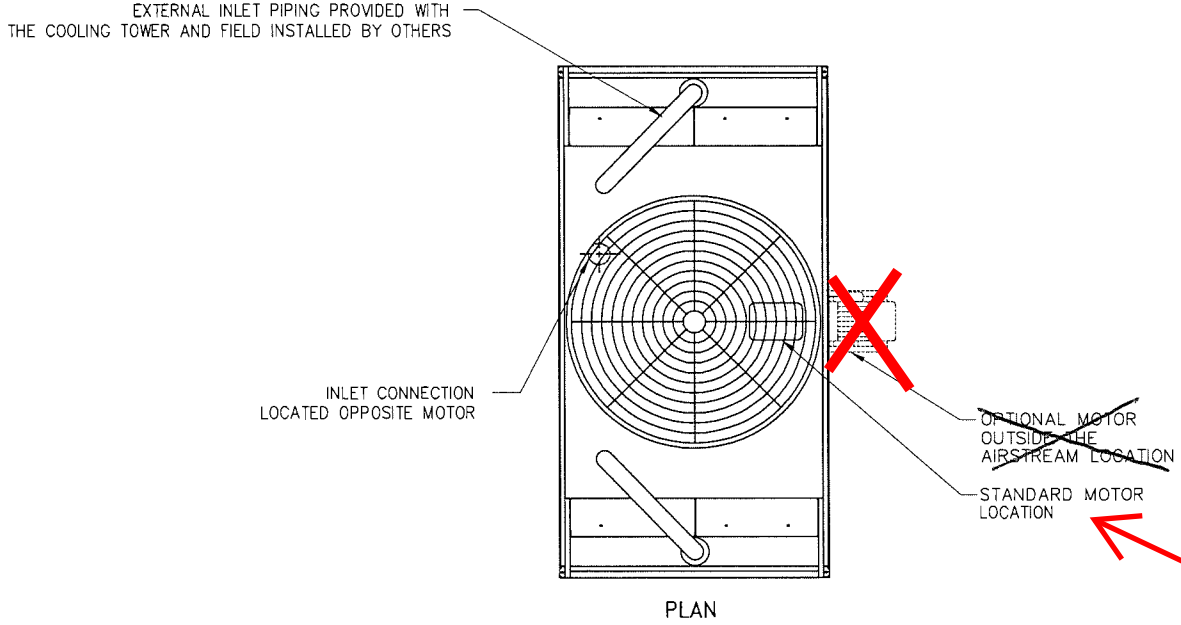
SECTION B-B

GENERAL NOTES

1. ALL CONDUIT, CONNECTIONS, SUPPORTING CLIPS, HANGERS, AND SAFETY SWITCHES ARE SUPPLIED BY OTHERS.
2. ALL WIRING MUST CONFORM TO LOCAL AND NATIONAL CODES.
3. NON-FUSED SAFETY DISCONNECT SWITCHES ARE RECOMMENDED; THREE-POLE FOR SINGLE SPEED MOTORS, SIX-POLE FOR TWO SPEED MOTORS, WITH VOLTAGE AND HORSEPOWER RATED FOR FAN MOTOR. LOCATED IN A NEMA 3 OR 4 WEATHERPROOF ENCLOSURE. ATTACH ENCLOSURE TO EXTERIOR OF TOWER USING VERTICAL FLANGES OF CASING. CONDUIT BOX MUST BE LOCATED AT A LOWER ELEVATION THAN MOTOR.
4. CONDUIT SHOULD BE SUPPORTED APPROXIMATELY EVERY TEN FEET [3048], EXCEPT WHERE NOTED BELOW. IMPORTANT! CONDUIT MUST BE PITCHED DOWN TO ALLOW CONDENSATION TO DRAIN AWAY FROM MOTOR AND OUT OF CONDUIT. CONDUIT MUST BE WATERTIGHT. CONDUIT SHOULD BE RIGID EXCEPT AS NOTED BELOW.
   A) APPROXIMATELY 2 FEET [610] OF FLEXIBLE STEEL CONDUIT (SEALTIGHT OR EQUIVALENT) SHOULD BE USED AT THE MOTOR CONDUIT BOX.
   B) A CONDUIT SUPPORT SHOULD BE LOCATED WITHIN 3 FEET [914] OF ALL CONDUIT BOXES.
   C) IF MOISTURE CANNOT DRAIN OUT OF MOTOR CONDUIT BOX, A SMALL (3/16" [5] – 1/4" [6]) DRAIN HOLE MUST BE DRILLED IN BOTTOM OF CONDUIT BOX.
5. CONDUIT MAY BE SUPPORTED ON THE SIDE OF THE INTERIOR BOX BEAMS OR SUSPENDED FROM BOTTOM OF THE BEAM. SEE KEY PLANS AND VIEW A-A FOR LOCATION AT WHICH TO RUN CONDUIT THROUGH TOWER CASING.
6. HOLE(S) CUT IN CASING FOR CONDUIT SHOULD NOT BE FLAME CUT, AND SHOULD NOT BE LARGER THAN NECESSARY TO ACCOMMODATE CONDUIT FITTINGS. SEAL HOLES WITH WATERPROOF CAULKING.
7. TOWERS WITH NO LADDER AND HANDRAIL:
   A) ONE CELL TOWERS MAY HAVE DISCONNECT SWITCH LOCATED ON MOTOR FACE OF TOWER.
   B) MULTI-CELL TOWERS SHOULD HAVE DISCONNECT SWITCHES LOCATED TOGETHER. SEPARATE CONDUIT IS REQUIRED FOR EACH MOTOR. ROUTE CONDUIT THROUGH CASING AND ACROSS ADJACENT CELLS AS SHOWN ON INSTALLATION KEY PLAN.
8. TOWERS WITH LADDER AND HANDRAIL:
   DISCONNECT SWITCHES SHOULD BE LOCATED ON LADDER SIDE OF TOWER FOR EASE OF ACCESSIBILITY. SEPARATE CONDUIT IS REQUIRED FOR EACH MOTOR. ROUTE CONDUIT THROUGH CASING AND ACROSS ADJACENT CELLS AS SHOWN IN INSTALLATION KEY PLAN.
9. ALL OF THE DIMENSIONS SHOWN INSIDE BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

I-P [SI] UNITS

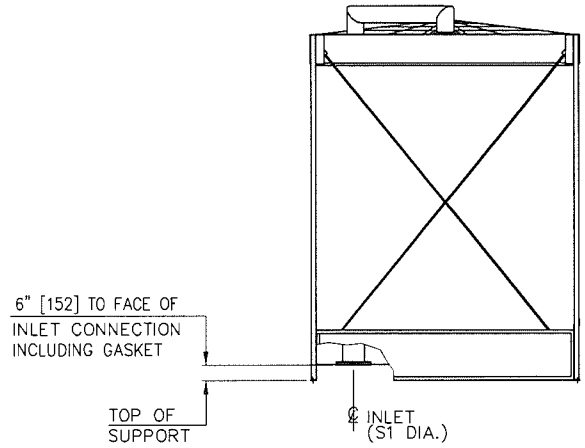
ECO NUMBER		RECOMMENDED CONDUIT INSTALLATION				SPX. COOLING TECHNOLOGIES			
REV. BY	CHECKED								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.	
	B. GOODING	02/05/2009		MN		1=1	09-167		



PLAN

TOWER MODEL	DIMENSIONS
	S1
8401	N/A
8402	8"
8403	8"
8405	10"
8407	10"
8409	10"
8411	12"
8412	12"
8413	12"
8414	12"

SEE "OUTLET PIPING PLAN" DRAWING FOR DIMENSTIONAL LOCATION OF INTERNAL INLET PIPING.



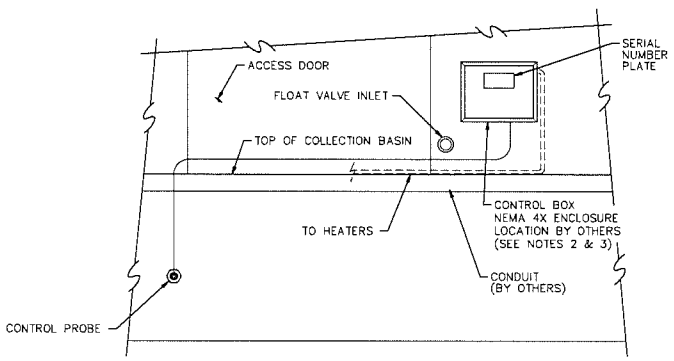
AIR INLET ELEVATION

NOTES

1. ALL INTERNAL INLET PIPING TO THE FACE OF THE INLET CONNECTION, INCLUDING RUBBER SLEEVE IS SUPPLIED WITH THE COOLING TOWER. EXTERNAL PIPING AND SUPPORTS BEYOND THE INLET CONNECTION IS BY OTHERS. EXTERNAL PIPING MAY NOT BE SUPPORTED FROM THE TOWER.
2. ASSEMBLY TOLERANCE IS ±1/8" [3]. CONSULT SUPPLIERS OF SUPPORTING STRUCTURE FOR CONSTRUCTION TOLERANCE. ALL OF THE DIMENSIONS SHOWN ARE IN I-P (INCH-POUND) UNITS UNLESS OTHERWISE NOTED.
3. S1 DIAMETER INLET CONNECTION CONFORMS TO CLASS 125 ANSI B16.1 SPECIFICATIONS. BOLT HOLES STRADDLE CENTERLINES. FLAT FACE FLANGE GASKETS ARE SUPPLIED WITH THE COOLING TOWER.
4. USE THIS DRAWING IN CONJUNCTION WITH THE SCHEMATIC DETAIL DRAWINGS.
5. MULTI-CELL TOWERS SHOULD INCLUDE PROVISIONS TO BALANCE FLOW BETWEEN CELLS.
6. CONTACT YOUR SALES ENGINEER FOR THE REQUIRED PUMP HEAD FOR THIS ARRANGEMENT.
7. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

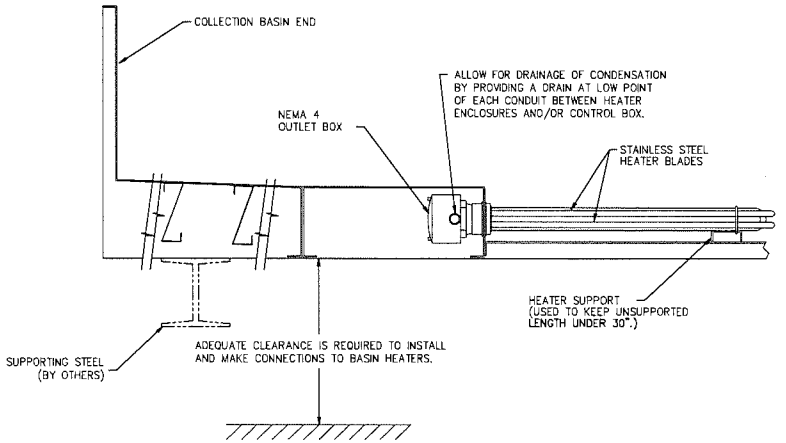
I-P [SI] UNITS

ECO NUMBER		BOTTOM INLET CONNECTION DETAILS 8401 THRU 8414 TOWERS				SPX COOLING TECHNOLOGIES			
QTC-CHK									
REV. BY	CHECKED								
BCG	MN								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.	
02/02/09	B. GOODING	01/16/09		MN		1=1	09-119	A	



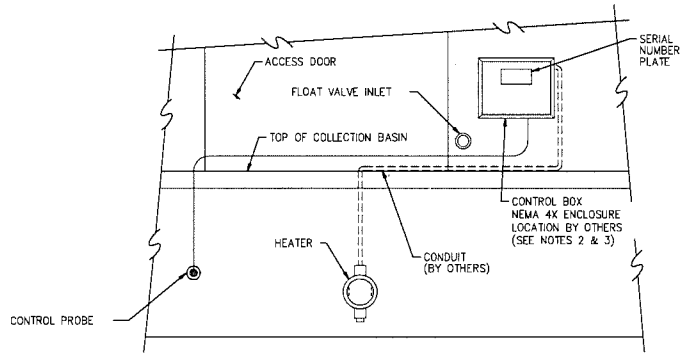
VIEW WITH HEATER IN SIDE OF DEPRESSED SECTION

SINGLE & MULTI-CELL TOWERS



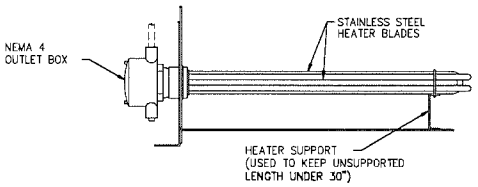
SECTION WITH HEATER IN SIDE OF DEPRESSED SECTION

SINGLE & MULTI-CELL TOWERS



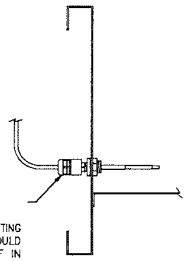
VIEW WITH HEATER IN BASIN SIDE AT END OF DEPRESSED SECTION

SINGLE OR 2 CELL TOWERS



SECTION WITH HEATER IN BASIN SIDE AT END OF DEPRESSED SECTION

SINGLE OR 2 CELL TOWERS



STAINLESS STEEL CONTROL PROBE TO MONITOR WATER TEMPERATURE AND PREVENT HEATERS FROM OPERATING OUT OF WATER. THE HEATERS WOULD OPERATE IN EXCESS OF 1500° F IN THE AIR AND WOULD BE A POTENTIAL FIRE HAZARD.

SECTION SHOWING CONTROL PROBE

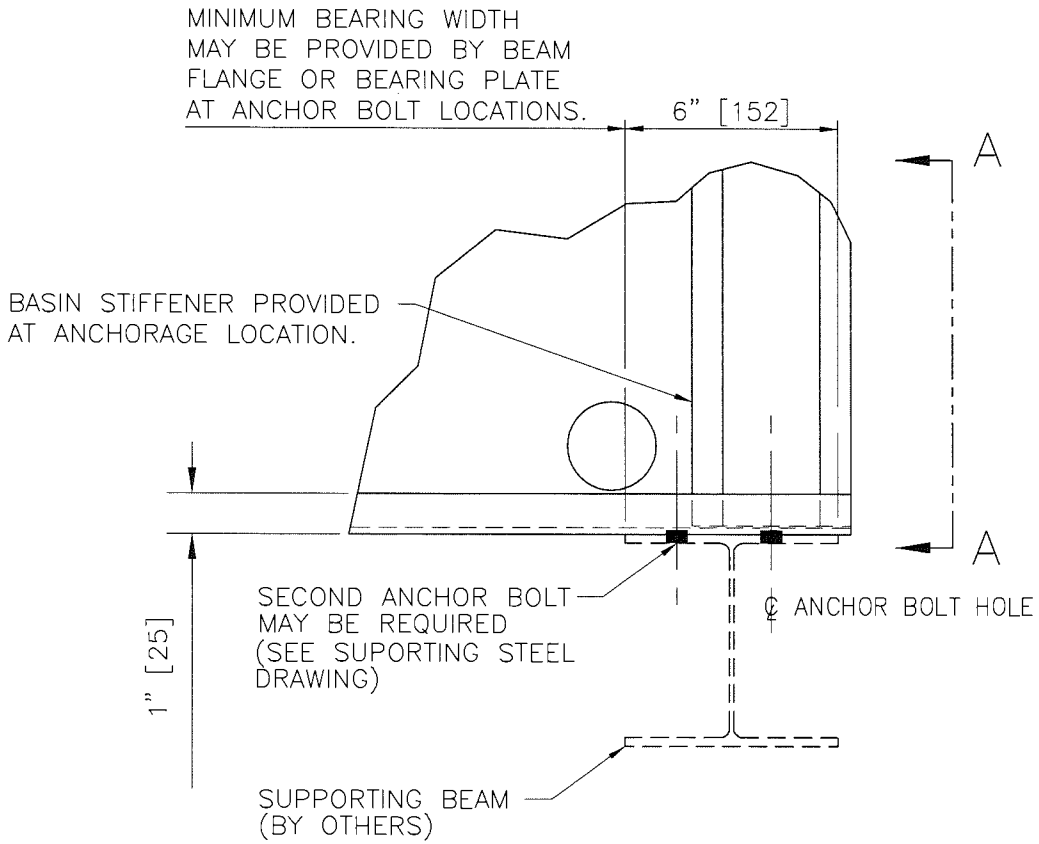
SINGLE & MULTI-CELL TOWERS

GENERAL NOTES

1. ALL BASIN HEATER COMPONENTS ARE FIELD INSTALLED AND WIRED BY OTHERS. CUSTOMER'S INSTALLATION MUST MEET REQUIREMENTS OF LATEST NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. ONE HEATER PACKAGE FOR CONTROL OF THE HEATERS IS LIMITED TO A MAXIMUM OF TWO CELLS. MULTI-CELL TOWERS WITH MORE THAN TWO CELLS MUST HAVE A HEATER PACKAGE FOR EVERY TWO CELLS.
3. CONTROL BOX COMPONENTS:
   - TRANSFORMER – STEP DOWN LINE VOLTAGE TO 24 VOLTS FOR CONTROL CIRCUIT.
   - MAGNETIC CONTACTOR – CONTROLS POWER TO HEATER. CONTACTS ARE RATED FOR LINE VOLTAGE. COIL IS RATED FOR A 24 VOLT CIRCUIT.
   - CIRCUIT BOARD / CONTROL PROBE – SENSES WATER TEMPERATURE AND CONTROLS THE CONTACTOR TO MAINTAIN THE SET WATER TEMPERATURE . PREVENTS THE CONTACTOR FROM CLOSING WHEN THE CONTROL PROBE SENSES THE WATER LEVEL DROPPING TOO LOW FOR SAFE OPERATION OF THE HEATERS.
   - OPTIONAL FEATURES AS SELECTED.
4. ALL STANDARD HEATER PACKAGES WITH NEMA 4 CONTROL BOXES ARE U.L. LISTED. (U.L. LISTING NOT AVAILABLE ON EXPLOSION PROOF CONTROL BOXES).
5. CONTROL PROBE CORD LENGTH OF 12'-0" MAY LIMIT CONTROL BOX LOCATION.
6. SINGLE AND DUAL HEATERS WILL BE PLACED IN EITHER THE SIDE AND/OR END OF THE DEPRESSED SECTION OF THE COLDWATER BASIN. LOCATION WILL DEPEND ON OPTIONS SELECTED WITH LOCATION SHOWN ON THE CONTRACT OUTLET PIPING DETAILS DRAWING.
7. THE ENCLOSURE RATING FOR THE INDEECO CONTROL BOX OR PANEL IS NEMA 4X. THIS IS STANDARD. THE HEATER CONTROL PANEL CARRIES A NEMA RATING OF 4X, BUT THE UL RATING IS TYPE 4. UL DOES NOT RATE COMPONENTS ACCORDING TO NEMA STANDARDS, BUT INSTEAD THEY HAVE TO BE TESTED TO UL STANDARDS.

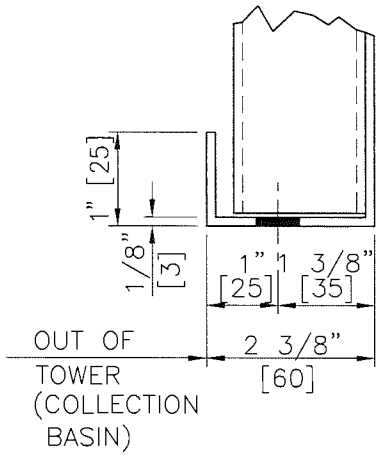
I-P UNITS

ECO NUMBER		ELECTRIC BASIN HEATER DETAILS NC CLASS SINGLE AND MULTI-CELL TOWERS					Marley		
15408									
REV. BY	CHECKED								
BEJ	DMJ								
REV. DATE		DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.
11/15/2011		J.MALONE	09/15/2000		MPC		1=1	00-4885	B



SUPPORT BEARING DETAILS

(PARTIAL CASED FACE A OR C ELEVATION)



SECTION A–A

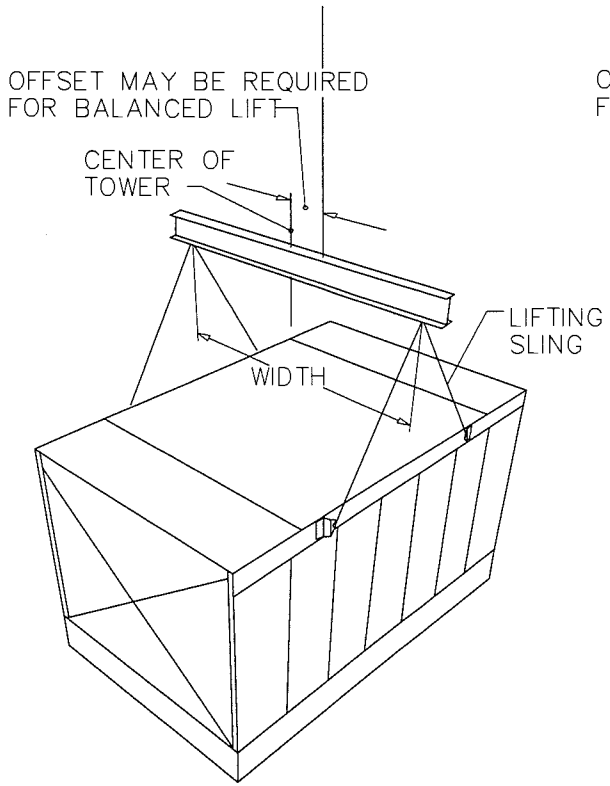
(LOUVER FACE B OR D)

GENERAL NOTES

1. TOLERANCE APPLICABLE TO DIMENSIONS SHOWN ARE DEPENDENT UPON FABRICATION, ASSEMBLY AND CONSTRUCTION TOLERANCES. FABRICATION TOLERANCE IS ±1/16" [2] & ASSEMBLY TOLERANCE IS ±1/8" [3]. CONSULT SUPPLIERS OF SUPPORTING STRUCTURE FOR CONSTRUCTION TOLERANCE. ALL OF THE DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

I-P [SI] UNITS

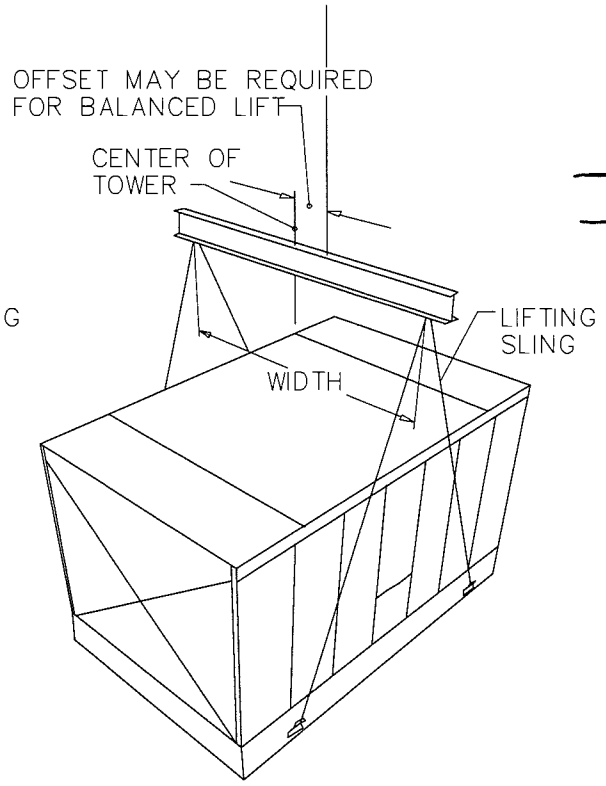
ECO NUMBER		SUPPORT BEARING DETAILS				SPX COOLING TECHNOLOGIES			
QTC-CHK		8401 THRU 8414 TOWERS							
REV. BY	CHECKED								
BCG	MN								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.	
02/04/09	B. GOODING	01/16/2009		MN		1=1	09—14	A	



TOWER UNITS WITH
HOISTING CLIPS AT THE TOP

8401 THRU 8407

TOP MODULE OF 8411, 8412, 8413 & 8414



TOWER UNITS WITH
HOISTING CLIPS AT THE BOTTOM

8409

BOTTOM MODULE OF 8411, 8412, 8413 & 8414

TOWER MODEL	TOWER WIDTH	MINIMUM SLING LENGTH
8401	6'-7" [2007]	5'-6" [1676]
8402	8'-6" [2591]	6'-0" [1829]
8403	8'-6" [2591]	8'-0" [2438]
8405	10'-0" [3048]	8'-0" [2438]
8407	12'-0" [3658]	8'-6" [2591]
8409	14'-0" [4267]	17'-6" [5334]
8411 TOP	12'-0" [3658]	9'-0" [2743]
8411 BOTTOM	12'-0" [3658]	16'-6" [5029]
8412 TOP	14'-0" [4267]	9'-0" [2743]
8412 BOTTOM	14'-0" [4267]	16'-6" [5029]
8413 TOP	12'-0" [3658]	9'-0" [2743]
8413 BOTTOM	12'-0" [3658]	16'-6" [5029]
8414 TOP	14'-0" [4267]	9'-0" [2743]
8414 BOTTOM	14'-0" [4267]	16'-6" [5029]

NOTES:
1. ALL HOISTING CLIP HOLES ARE 1 1/4" [32].
2. OVERALL LENGTH OF SHACKLE PIN SHOULD NOT EXCEED 5 1/4" [133].
3. FOR OVERHEAD LIFTS OR WHERE ADDITIONAL SAFETY IS REQUIRED, ADD SLINGS BENEATH THE TOWER UNIT.
4. ALL DIMENSIONS SHOWN INSIDE OF BRACKETS[ ] ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

I-P [SI] Units

ECO NUMBER		HOISTING DETAILS 8401 THRU 8414 TOWERS				SPX. COOLING TECHNOLOGIES			
REV. BY	CHECKED								
REV. DATE	DRAWN BY	DATE	CHECKED	APPROVED	ORDER NUMBER	PLOT	DRAWING NUMBER	REV.
	B. GOODING	01/23/2009		MN		1=1	09-136	

Safety switch used as a motor safety disconnect, at the fan and or pump motor, meeting standards and features listed below.

A) Standards and certifications: UL 98, UL 50, CSA, NEC

B) Heavy duty classification, 100% HP continuous duty rating up to 600 VAC

C) 100% load break and 100% load make

D) Enclosures available in outdoor NEMA 3R painted steel or outdoor NEMA 4X stainless steel

E) Non fusible type

F) Factory installed ground lug

G) Factory installed auxiliary contacts including: (1) N.O. and (1) N.C. early make early break contacts. The N.C. auxiliary contact is typically used with a shutdown circuit in the VFD. This feature prevents voltage feed back to VFD if power is disconnected while under load.

H) Provisions on operating handle meeting OSHA lock out tag out requirements. Three padlocks may be applied locking the handle in the off position. Padlocks are not furnished.

I) Door is interlocked with the operating mechanism.

J) 3 pole switches are used for single speed motors and 6 pole switches are used for two speed motors.

K) Visible double-break quick make, quick break rotary blade mechanism

Amp and pole ratings	Enclosure rating	Enclosure material	Width (inches)	Height (inches)	Depth (inches)
30/3	NEMA 3R	Painted steel enclosure	9	16	10
60/3	NEMA 3R	Painted steel enclosure	9	16	10
100/3	NEMA 3R	Painted steel enclosure	12	22	10
200/3	NEMA 3R	Painted steel enclosure	16	28	12
30/3	NEMA 4X	Stainless steel enclosure	9	13	10
60/3	NEMA 4X	Stainless steel enclosure	9	13	10
100/3	NEMA 4X	Stainless steel enclosure	12	24	11
200/3	NEMA 4X	Stainless steel enclosure	16	35	12
30/6	NEMA 3R	Painted steel enclosure	13	20	11
60/6	NEMA 3R	Painted steel enclosure	13	20	11
100/6	NEMA 3R	Painted steel enclosure	17	25	11
200/6	NEMA 3R	Painted steel enclosure	25	36	12
30/6	NEMA 4X	Stainless steel enclosure	17	19	11
60/6	NEMA 4X	Stainless steel enclosure	17	19	11
100/6	NEMA 4X	Stainless steel enclosure	17	19	11
200/6	NEMA 4X	Stainless steel enclosure	25	36	12

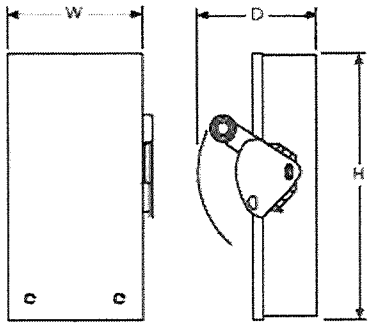
— Dimensions are a close approximation
— Depth dimensions include handle throw

Switch amp rating	Maximum HP at 200V or 208V	Maximum HP at 230 V	Maximum HP at 480 V	Maximum HP at 575 V
30	7.5	10	20	25
60	15	20	40	50
100	30	30	75	100
200	60	60	125	150

Maximum HP (KW) at 190 V	Maximum HP (KW) at 380 V	Maximum HP (KW) at 400 V or 415 V
7.5 hp (5.5 kW)	10 hp (7.5 kW)	15 hp (11 kW)
15 hp (11 kW)	30 hp (22 kW)	40 hp (30 kW)
30 hp (22 kW)	60 hp (45 kW)	60 hp (45 kW)
60 hp (45 kW)	125 hp (90 kW)	125 hp (90 kW)

Switch amp rating	Maximum HP at 240 V 1 phase
30	3

— Unless otherwise noted all voltages are 3 phase ratings



DRAWING NO. 2013-1229

LTR.	DATE	ECO	BY	CHKD

COMMON FRACTIONS MAY VARY ± 1/16"
ANGLES MAY VARY ± 1/2°

Safety Switch

Marley Item # 2320043

100 Amp - 3 Pole - NEMA 4X

SCALE	DATE	DRAWN	CHECKED	APPROVED
	3-15-13	HICKMAN	MG	MG

ORDER NUMBER

DRAWING NUMBER 2013-1229

REV.

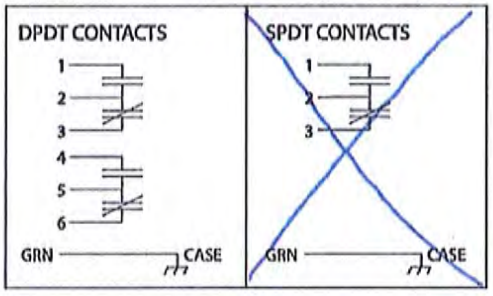
SPX

M-5™ Vibration Switch

- **Meets all requirements for mechanical switches on one package**
- **Weatherproof and optional hazard area rating**
- **Local and optional remote reset with startup delay**
- **SPDT or (2)SPDT switch output contacts**

The Marley M-5 vibration switch is designed to meet all requirements for mechanical switches in a single, affordable package. This unit provides economical vibration protection for cooling tower mechanical equipment. An inertia sensitive mechanism activates a snap-action switch with SPDT output contacts if the vibration exceeds an adjustable setpoint.

The M-5 contacts can be used to activate an alarm or initiate equipment shutdown. The housing is weatherproof with an optional hazardous area rating.



User Wiring Diagrams