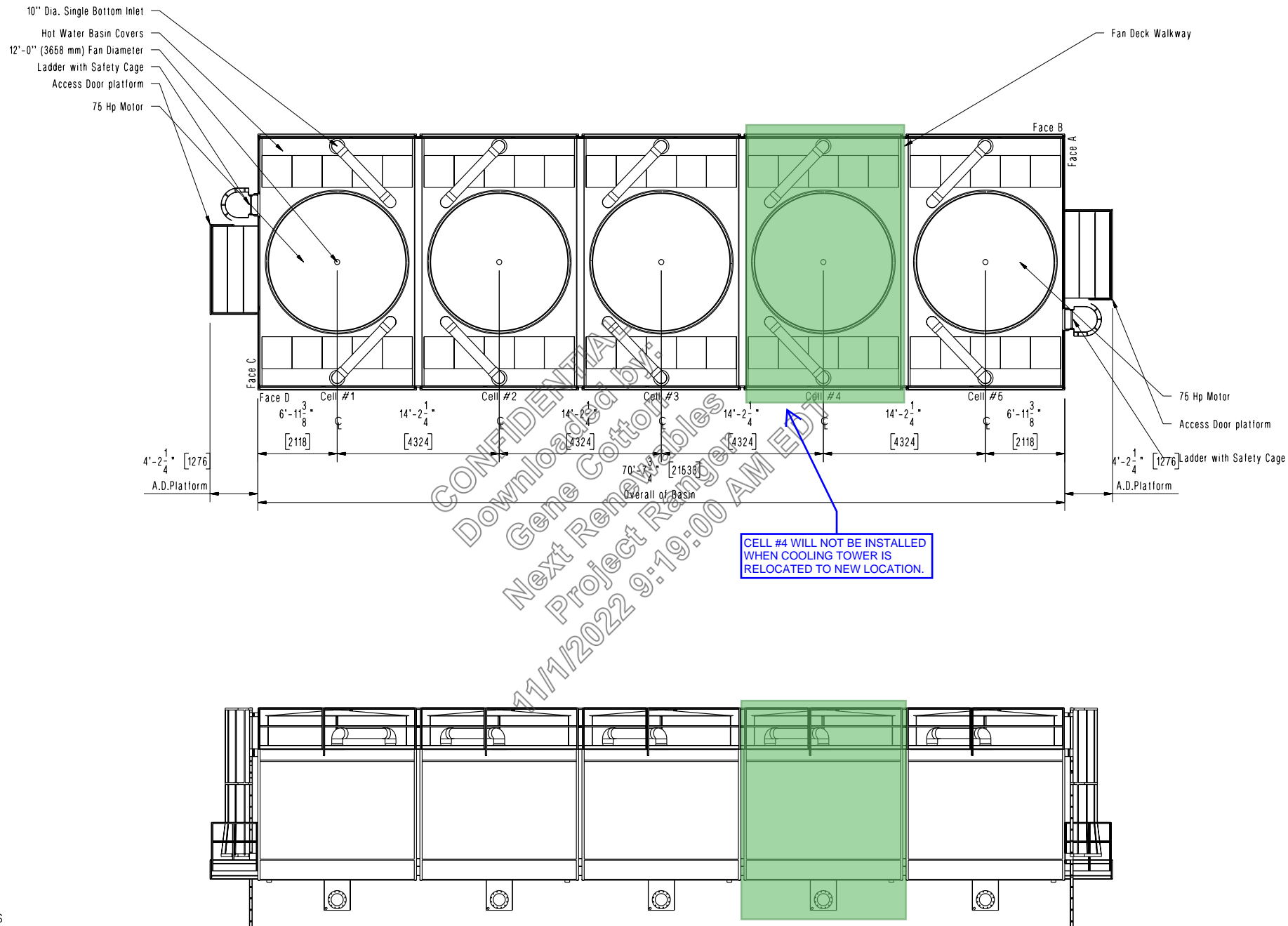


NOTES

1. All piping supports are by others. Do NOT support outlet piping from the tower.
2. 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 are supplied by others. The use of a flange other than a flat faced flange will damage the sump.
3. The sump is shipped inside the tower and is to be field installed by others.
4. The standpipe overflow is to be field installed by others.
5. 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.
6. Basin flumes are shipped inside the tower and are to be field installed by others. The connecting collars are shop installed.
7. Refer to basin heater detail drawings for heater details.
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.

| | | | | | | | |
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| NC8409WAN5GGF - Piping Plan Plant Process - Red Rock United States | | | | | | MARLEY | |
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| PAM MCLAUGHLIN_181102_104229840 V1 | QTC | | | 11/02/18 | SYS | PM688045P | |



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.

NC8409WAN5GGF - Schematic Plan and Louver Elevation
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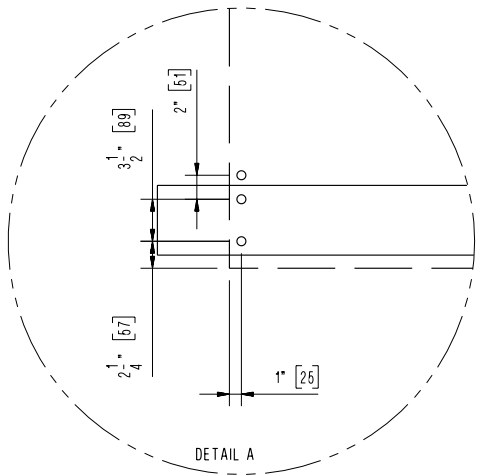
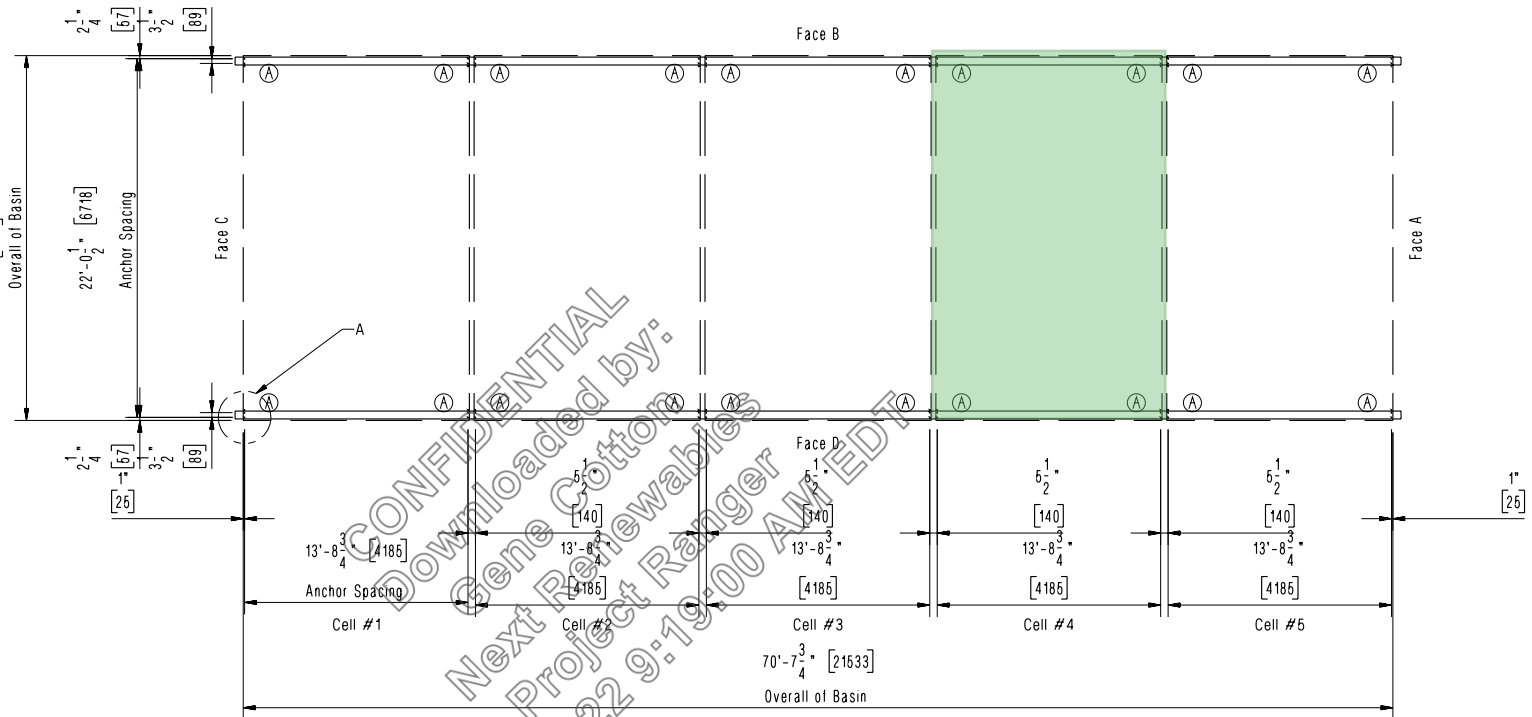
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| Shipping Weight | | Design Operating Loads | | | Wind Load | | Seismic Load | |
|---------------------|--------------------|------------------------|---------------------|-------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|
| per Tower | per Cell | per Tower | per Cell | at A | Vert. Reaction at A | Horiz. Reaction at A | Vert. Reaction at A | Horiz. Reaction at A |
| 78514 lb (35613 kg) | 15703 lb (7123 kg) | 163274 lb (74060 kg) | 32655 lb (14812 kg) | 8949 lb (4059 kg) | 61.89 x P lb (5.75 x P kgf) | 68.62 x P lb (6.38 x P kgf) | 5929 x G lb (2689 x G kgf) | 7462 x G lb (3385 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 115 psf (5506 N/m²) wind load or 0.99 G seismic load applied to the tower. Wind and Seismic capacities are un-factored loads as determined by ASCE7-10. Determination of the site specific design wind and seismic loads are by others.



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

- 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.
- 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.
- 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.
- SHIPPING WEIGHTS AND MAXIMUM OPERATING LOADS:** Values shown in table include the optional equipment weights.
- NON-STANDARD ANCHORAGE LOCATION:** The anchor bolt dimension shown can be varied upon request. Consult a SPX CT representative for specifics and to ensure that the appropriate modifications are added to the structure.
- 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).
- 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.
- The tower assembly tolerance applicable to all dimensions is + or - 1/8" (3 mm). Consult suppliers of supporting structure for construction tolerances.
- The units of measure are in IP (SI) units unless otherwise noted.

NC8409WAN5GGF – Supporting Steel Plan and Details
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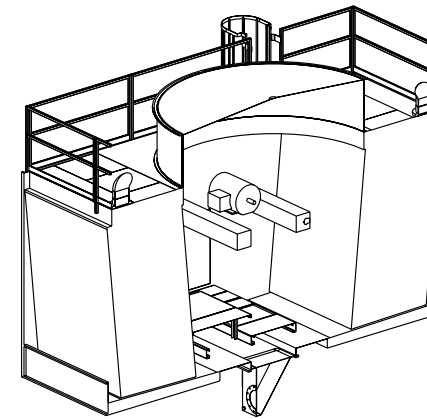
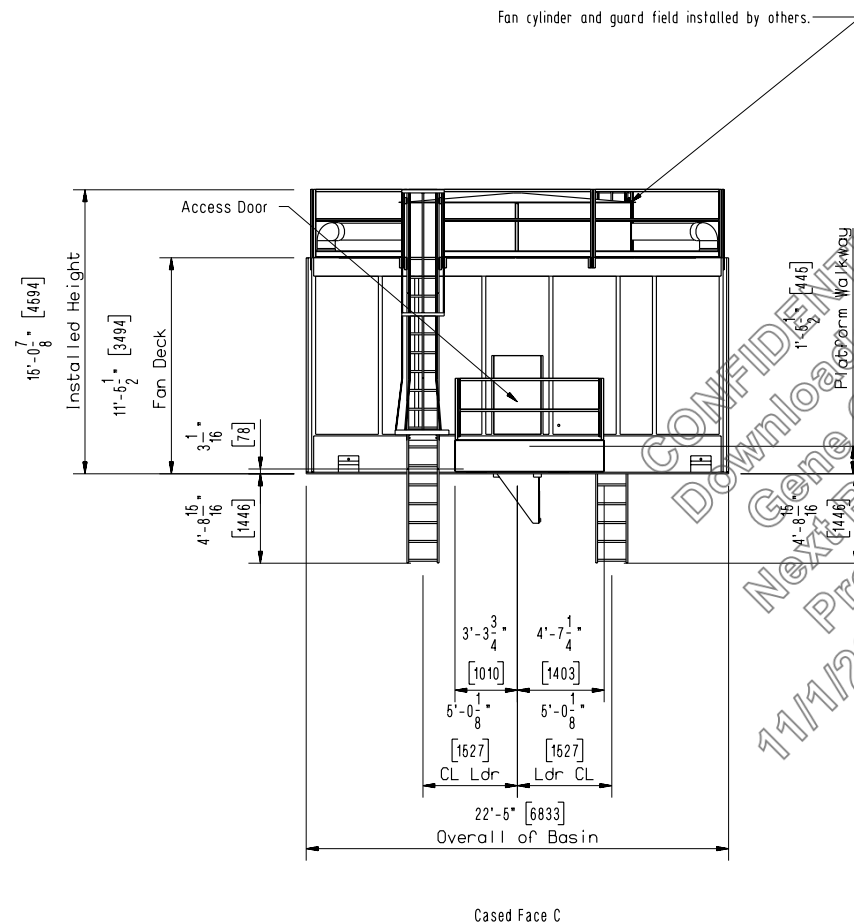
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Interior View

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. 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.
3. 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.
4. Multi-cell towers should include provisions to balance flow between cells.
5. The internal vertical riser will apply an additional vertical operating load of 700 lb (318 kg) at the bottom inlet flange attachment to the external piping which is supported by others.
6. To ensure 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.
7. Contact your SPX CT sales engineer for the required pump head for this inlet arrangement.
8. 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 its final position by using come-alongs at the base of the unit, after removal of shackle pins. See Hoisting Details drawing.
9. Flanged connections conform to Class 125 ANSI B16.1 specification. The bolt holes straddle the centerlines.
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. Ladder extensions are provided in nominal lengths of 5' [1524mm] and 11' [4572mm] only. Field modification by others is required for extensions of different lengths. Anchorage of the bottom of the ladder extension for proper stability is by others.
13. O.S.H.A. standards recommend the use of a Safety Cage when the length of a single ladder exceeds 20'-0" (6096 mm).
14. 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 8'-1 5/16" (2472 mm).
15. The Interior Mechanical Equipment Platform consists of the Plenum Walkway plus an elevated platform for access to the mechanical equipment. Platform consists of 11 gauge steel supports and 16 gauge steel walkway panels.
16. The distance from the elevated platform to the fan exceeds 6'-10 13/16" (2104 mm).
17. O.S.H.A. standards recommend the use of an Access Door Platform if the door is 4'-0" (1219 mm) or higher above grade.
18. The access door platform is designed for use with the Ladder and Handrail Option. The tower has been shop modified to accept this option. The assembly of the SPX CT supplied components is to be made in the field by others. The details of assembly are included in the Literature Package shipped with the tower.
19. Single inlet options (side or bottom inlet) - This piping can be an obstacle to personnel on top of the tower.
20. The tower assembly tolerance applicable to all dimensions is + or - 1/8" (3 mm). Consult suppliers of supporting structure for construction tolerances.
21. The units of measure are in IP (SI) units unless otherwise noted.

NC8409WAN5GGF – Schematic Cased Elevation and Notes
Plant Process – Red Rock
United States

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