



TOWER DRYER



INSTALLATION MANUAL

Models: 2000 & 2400

Effective: July 2010

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Section 1
General Information

12' Dryer Specifications

Model	2000	2400
Drying CFM	90,000 CFM	109,000 CFM
Cooling CFM	45,000 CFM	54,500 CFM
Fan HP	100 HP	100 HP
Discharge Drive	5 HP AC	5 HP AC
Sweep	4 Arms	4 Arms
Maximum Burner Capacity (MBTU)	21.78 MBTU	26.38 MBTU
Typical Heat Use @ 60° F (MBTU)	11.88 MBTU	14.39 MBTU
Tower Diameter	11' 8"	11' 8"
With Walkways	17' 9"	23' 2"
Overall Height	75' 9"	87' 9"
Grain Column Width	12"	12"
Grain Wall Height	65' 4"	77' 4"
Heat Holding (BU)	1211 BU	1453 BU
Cool Holding (BU)	485 BU	566 BU
Total Dryer Holding (BU)	1945 BU	2268 BU
Electrical Load		
230 Volts	319.5 Amps	319.5 Amps
460 Volts	166.3 Amps	166.3 Amps
BPH Capacity (20%-15%)	2000 Bu/Hr	2400 Bu/Hr
BPH Capacity (25%-15%)	1200 Bu/Hr	1440 Bu/Hr

12' Dryer Shipping Weight

2000 Tower Dryer		2400 Tower Dryer	
Base Section	10,500 lbs.	Base Section	10,500 lbs
6' Screen Section	900 lbs.	12' Screen Section	1,800 lbs.
Fan Housing	8,300 lbs.	Fan Housing	8,300 lbs.
12' Screen Section	1,800 lbs.	12' Screen Section	1,800 lbs.
12' Section with Turners	2,200 lbs.	12' Section with Turners	2,200 lbs.
Section with Roof	2,000 lbs.	Section with Roof	2,000 lbs.
Ladders	300 lbs.	Ladders	300 lbs.
Motor	1,100 lbs.	Motor	1,100 lbs.
Burner Section	600 lbs.	Burner Section	600 lbs.
Screens on Skid	200 lbs.	Screens on Skid	200 lbs.
Plumbing	700 lbs.	Plumbing	700 lbs.
Cabinets	600 lbs.	Cabinets	600 lbs.
Total	31,200 lbs.	Total	33,000 lbs.

CONCRETE FOUNDATION — GENERAL NOTES

GENERAL

1. Refer to design loads listed below.
2. Contractors to assume full responsibility for:
 - a. Compliance with the contract documents
 - b. Dimensions to be confirmed and correlated on the job site and between individual drawings or sets of drawings.
 - c. Fabrication processes and construction techniques (including excavation, shoring, scaffolding, bracing, erection, form work, etc.)
 - d. Coordination of the various trades.
 - e. Safe conditions on the job site.
3. Unless otherwise noted, all details, sections and notes on the drawing are intended to be typical for similar situations elsewhere.

Foundation

1. Footings are designed for a minimum soil bearing capacity of 2000 PSF.
2. All foundations shall be carried down to the depths shown on the drawings, or deeper, if necessary to reach undisturbed soil of design capacity.
3. Approved fill material in locations where engineered fill is required to obtain proper foundation-bearing condition shall be placed in layers not exceeding 9" in loose thickness and compacted to a minimum of 95% of the maximum density obtained in accordance with ASTM specification D1557 Modified Proctor Method, latest edition.
4. Beneath the silo area, sub-grade preparation shall include the removal of all unsuitable surface soils including soft clays, highly organic top soil, root matter, debris, and other deleterious materials.
5. If fill material is required, the zone of compacted fill shall be extended one foot beyond the edges of the footing for each corresponding foot of thickness of the compacted fill below the footing.

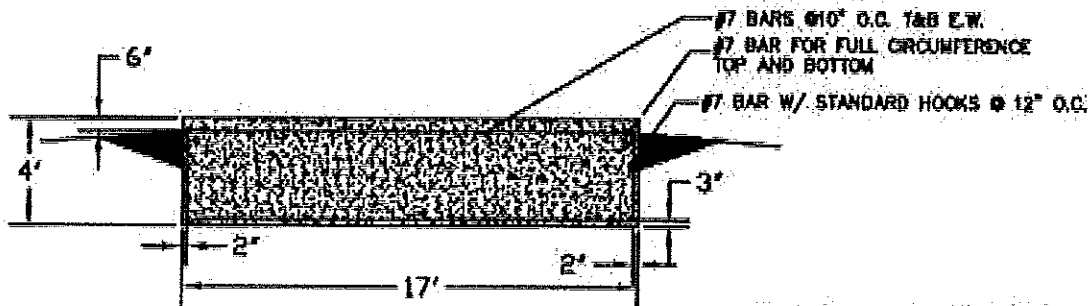
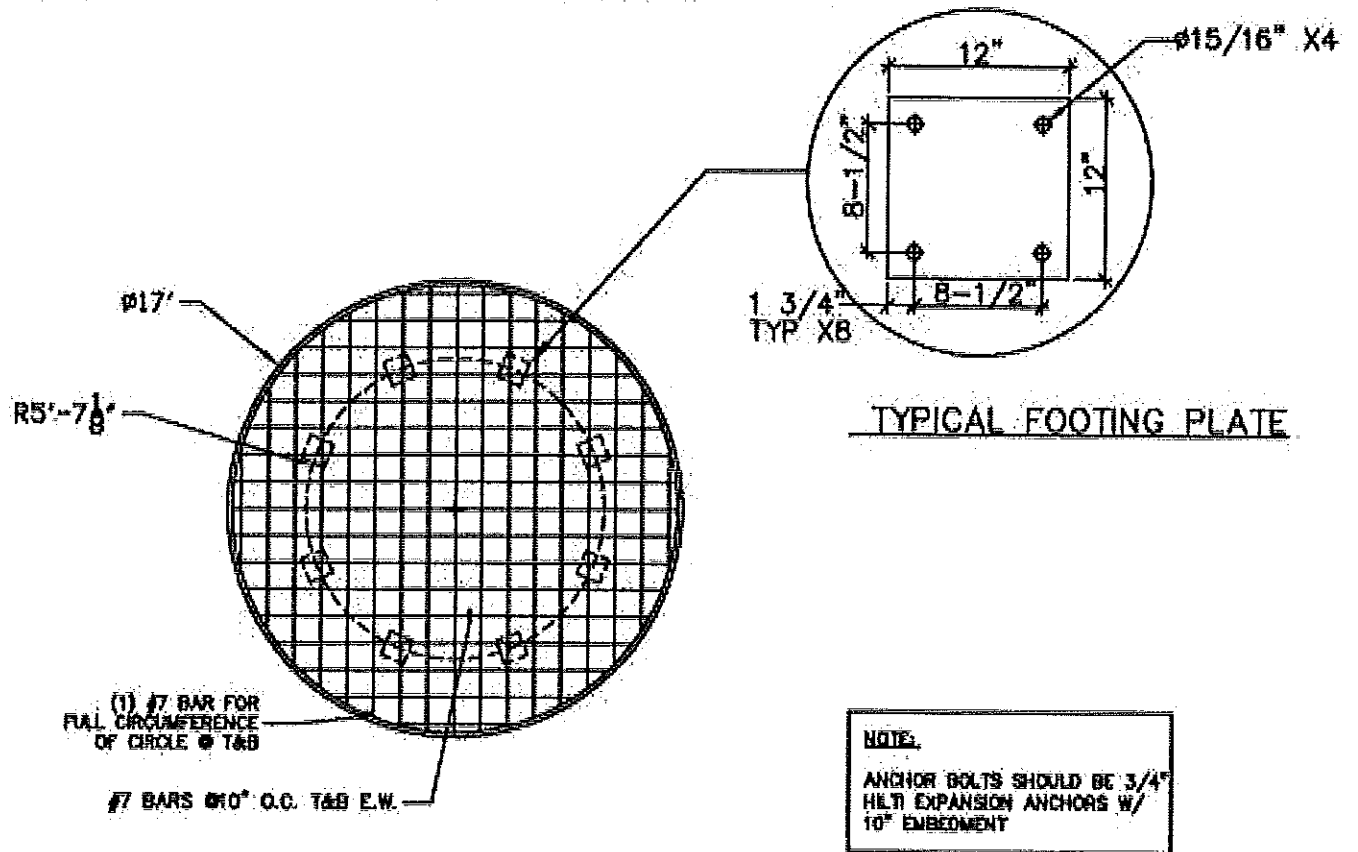
CONCRETE

1. Concrete work shall conform to:
 - a. ACI 318-89.R.92, Standard Building Requirements for Reinforced Concrete.
 - b. ACI 301, Specification for Structural Concrete in Buildings.
2. Ultimate Compressive Strength of Portland Concrete, Standard Weight (150 PCF), at 28 days, shall be 3000 PSI, air entrained (6% ± 1%)
3. Concrete contractor shall not pour any concrete in adverse weather conditions or when such are forecast for the time period following the pour, unless proper curing and protection is provided continuously until concrete develops its design strength.
4. Concrete contractor shall supervise all trades regarding piping, electrical, conduit, fixture inserts, anchors, etc., passing through the concrete. Bars shall not be cut or displaced unless absolutely necessary, and then only by the concrete contractor. Matching bars equal to cut bars shall be added with proper laps and embedded depths. The clear distance between sleeves shall be a minimum of 8"
5. No aluminum of any type shall be allowed in the concrete works unless coated to prevent aluminum/concrete reaction. This includes pumping through aluminum pipe.
6. Reinforcing bars shall conform to ASTM specifications 1-615, grade 60.
7. All laps for rebar, when not dimensioned on drawings, shall be 40 bar diameters.
8. Unless otherwise noted, principal reinforcement shall have the following concrete protection: 3" on the bottom, 6" on the top and 2" on the sides.

ANCHOR BOLTS

1. Anchor Bolts – ¾" HILITY HY 150 anchors or equivalent with A36 steel and 10" embedment.
2. Anchor bolts shall be paced no closer than 10" from the edge of the foundation.

CONCRETE FOUNDATION FOR 2000 TOWER DRYER



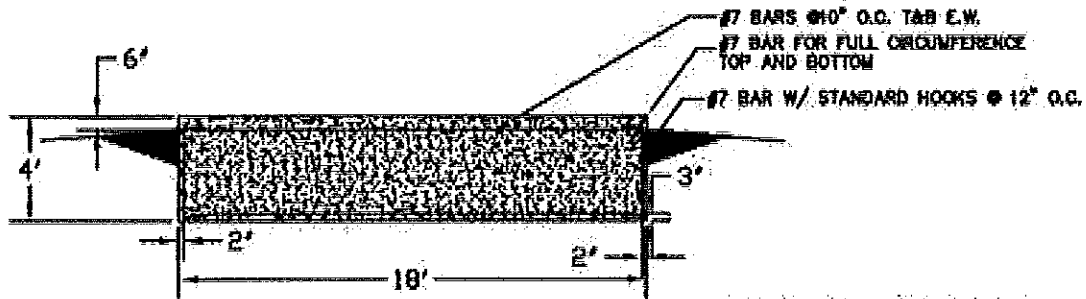
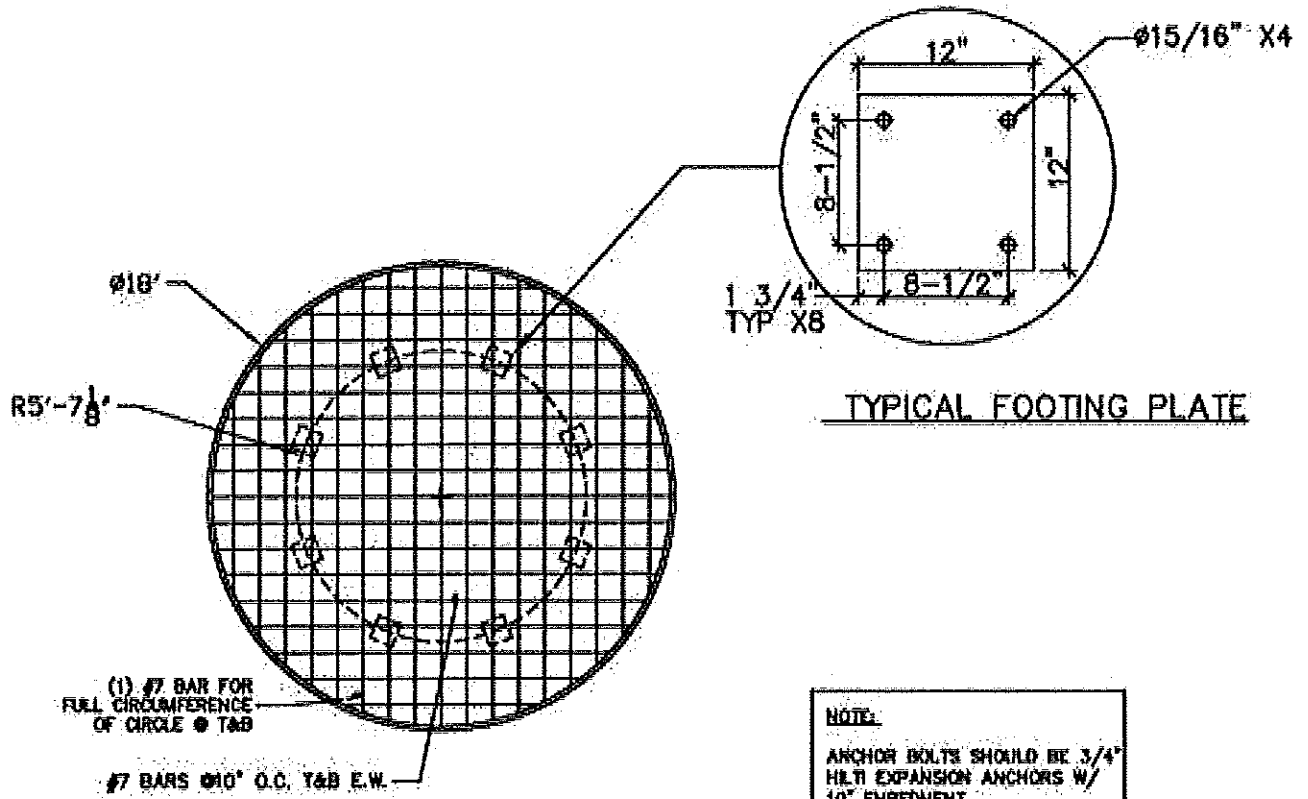
DESIGN CRITERIA

DRYER HEIGHT - 78'-0"
 DRYER DIAMETER - 12'-0"
 DRYER WEIGHT - 32,200 lbs.
 GRAIN WEIGHT - 115,000 lbs.
 WIND PRESSURE EQUAL TO A 80 MPH WIND.
 THE FOLLOWING PRESSURES WERE USED.
 23.8 PSF FROM 80FT. TO 60FT.
 22.4 PSF FROM 40FT. TO 60FT.
 19.5 PSF FROM 20FT. TO 40 FT.
 18.1 PSF FROM 0 FT. TO 20FT.
 COMPRESSIVE STRENGTH OF SOIL - 2000 PSF
 COMPRESSIVE STRENGTH OF CONCRETE - 3000 PSI
 REBAR YIELD STRENGTH - 60 KSI (GRADE 60 REBAR)

MANUFACTURER'S NOTE:

33.63 CUBIC YARDS OF CONCRETE FOR FOUNDATION
 #7 REBAR QUANTITY REQUIRED IS 1217 FEET
 $3/4"$ CONCRETE ANCHOR, 4 PER LEG, 10" MINIMUM EMBEDMENT, 32 ANCHORS REQUIRED

CONCRETE FOUNDATION FOR 2400 TOWER DRYER



DESIGN CRITERIA

DRYER HEIGHT - 87'-0"
 DRYER DIAMETER - 12'-0"
 DRYER WEIGHT - 32,200 lbs.
 GRAIN WEIGHT - 135,280 lbs.
 WIND PRESSURE EQUAL TO A 90 MPH WIND.
 THE FOLLOWING PRESSURES WERE USED.
 23.8 PSF FROM 80FT. TO 60FT.
 22.4 PSF FROM 40FT. TO 60FT.
 19.5 PSF FROM 20FT. TO 40 FT.
 18.1 PSF FROM 0 FT. TO 20FT.
 COMPRESSIVE STRENGTH OF SOIL - 2000 PSF
 COMPRESSIVE STRENGTH OF CONCRETE - 3000 PSI
 REBAR YIELD STRENGTH - 60 KSI (GRADE 60 REBAR)

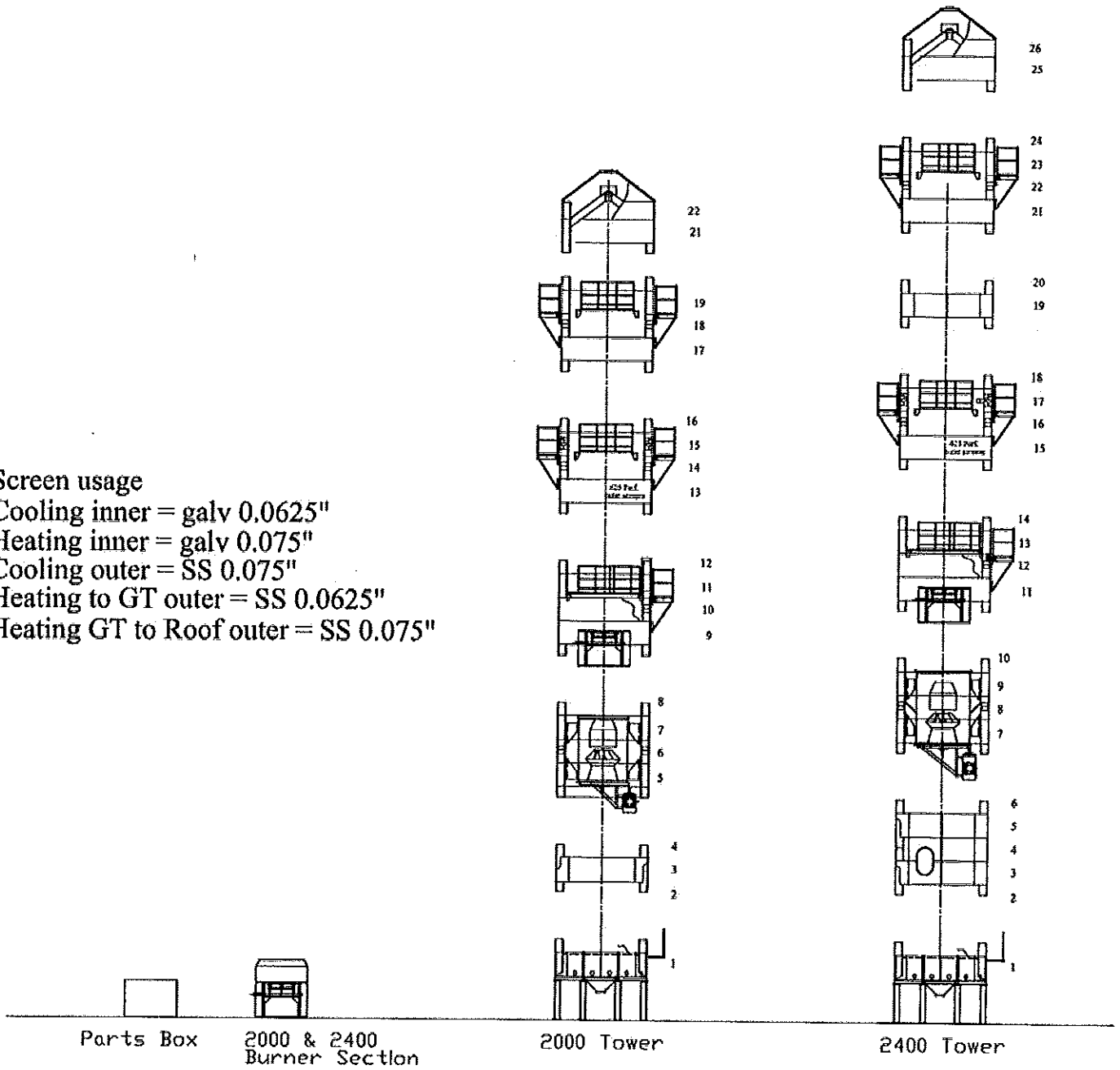
MANUFACTURER'S NOTE:

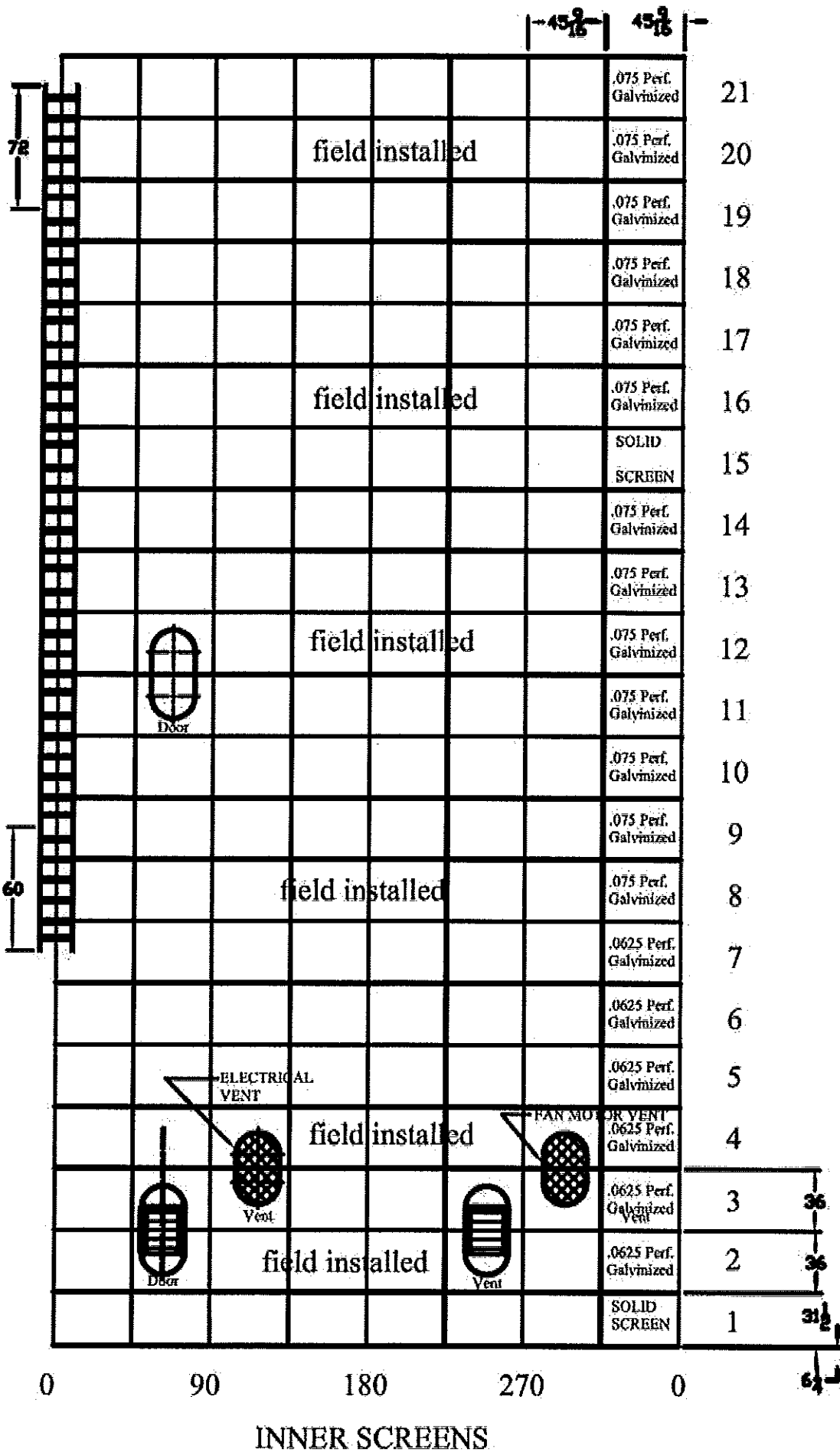
37.7 CUBIC YARDS OF CONCRETE FOR FOUNDATION
 #7 REBAR QUANTITY REQUIRED IS 1327 FEET
 3/4" CONCRETE ANCHOR, 4 PER LEG, 10" MINIMUM EMBEDMENT, 32 ANCHORS REQUIRED

REVISED 1/10/2007 - RJM/BA

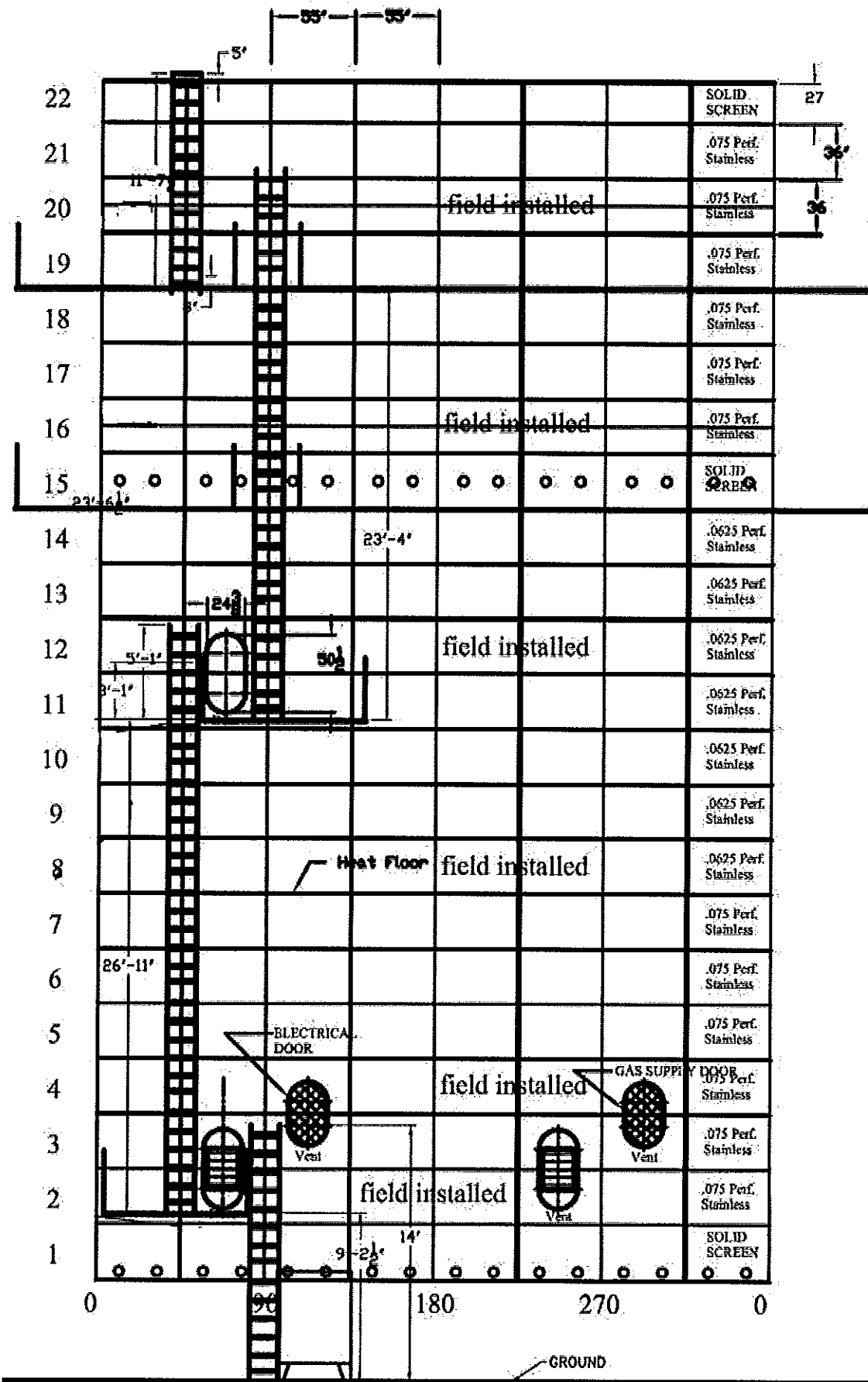
12' Shipping Sections

Screen usage
 Cooling inner = galv 0.0625"
 Heating inner = galv 0.075"
 Cooling outer = SS 0.075"
 Heating to GT outer = SS 0.0625"
 Heating GT to Roof outer = SS 0.075"



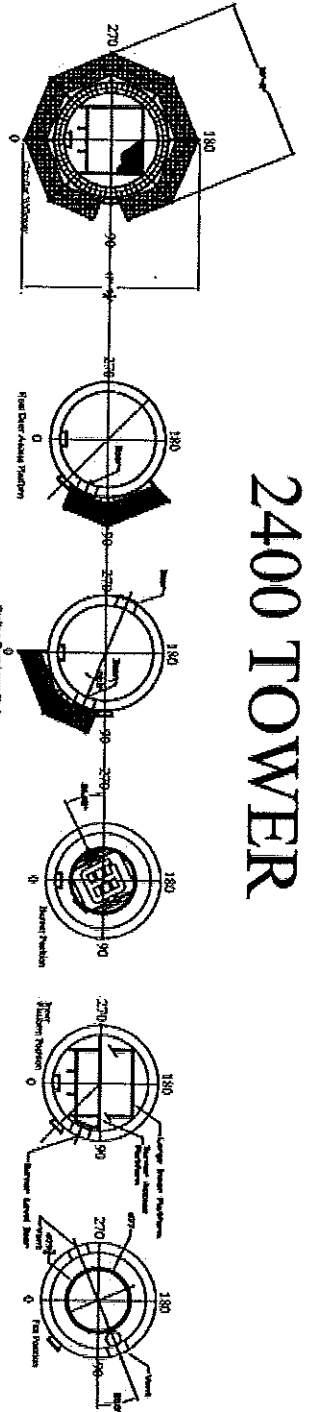


INNER SCREENS



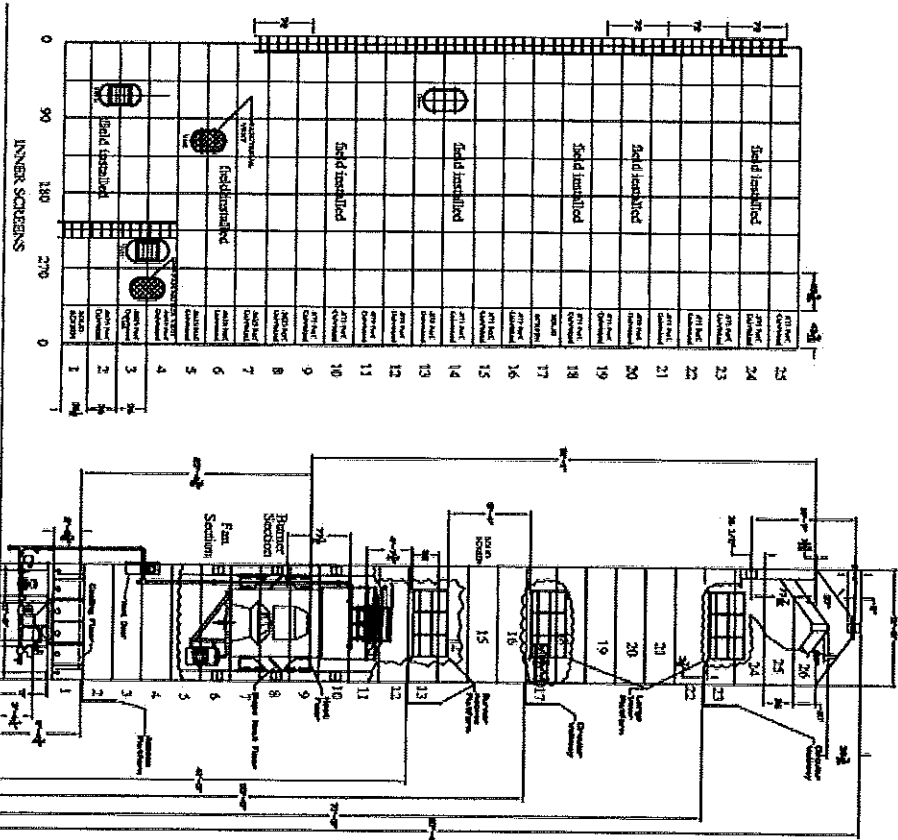
OUTER SCREENS

2400 TOWER



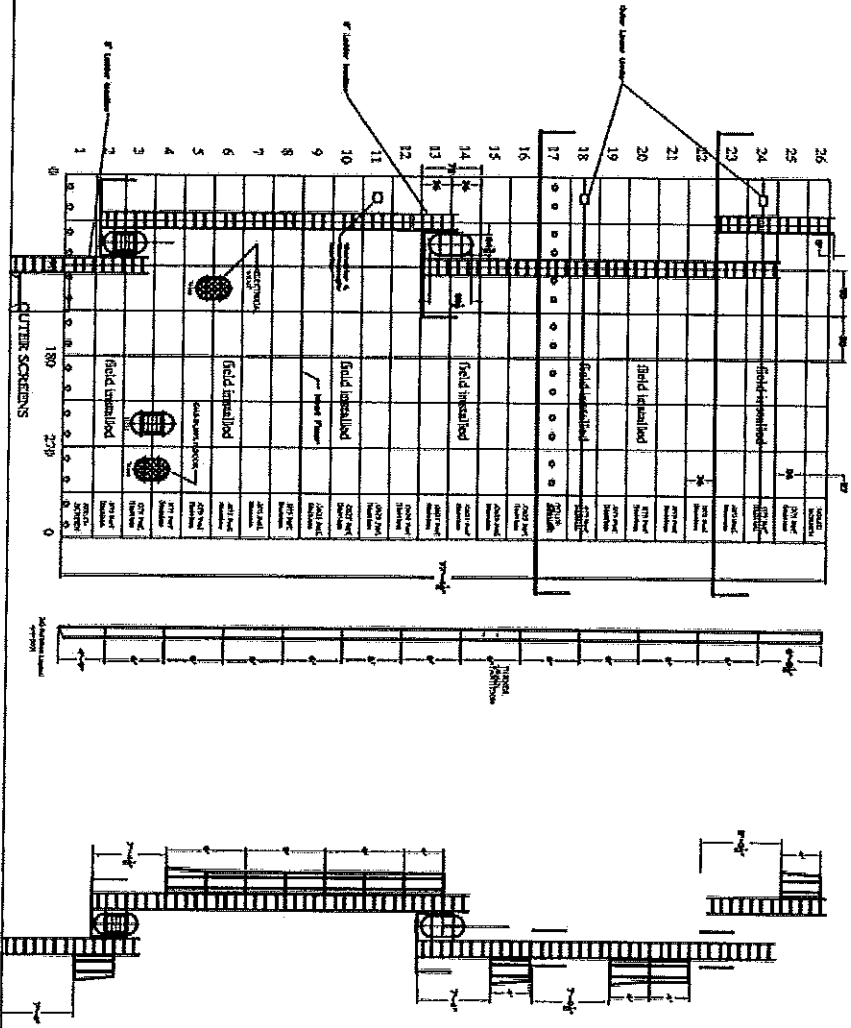
Quantity = 11 of 6' Ladders inside

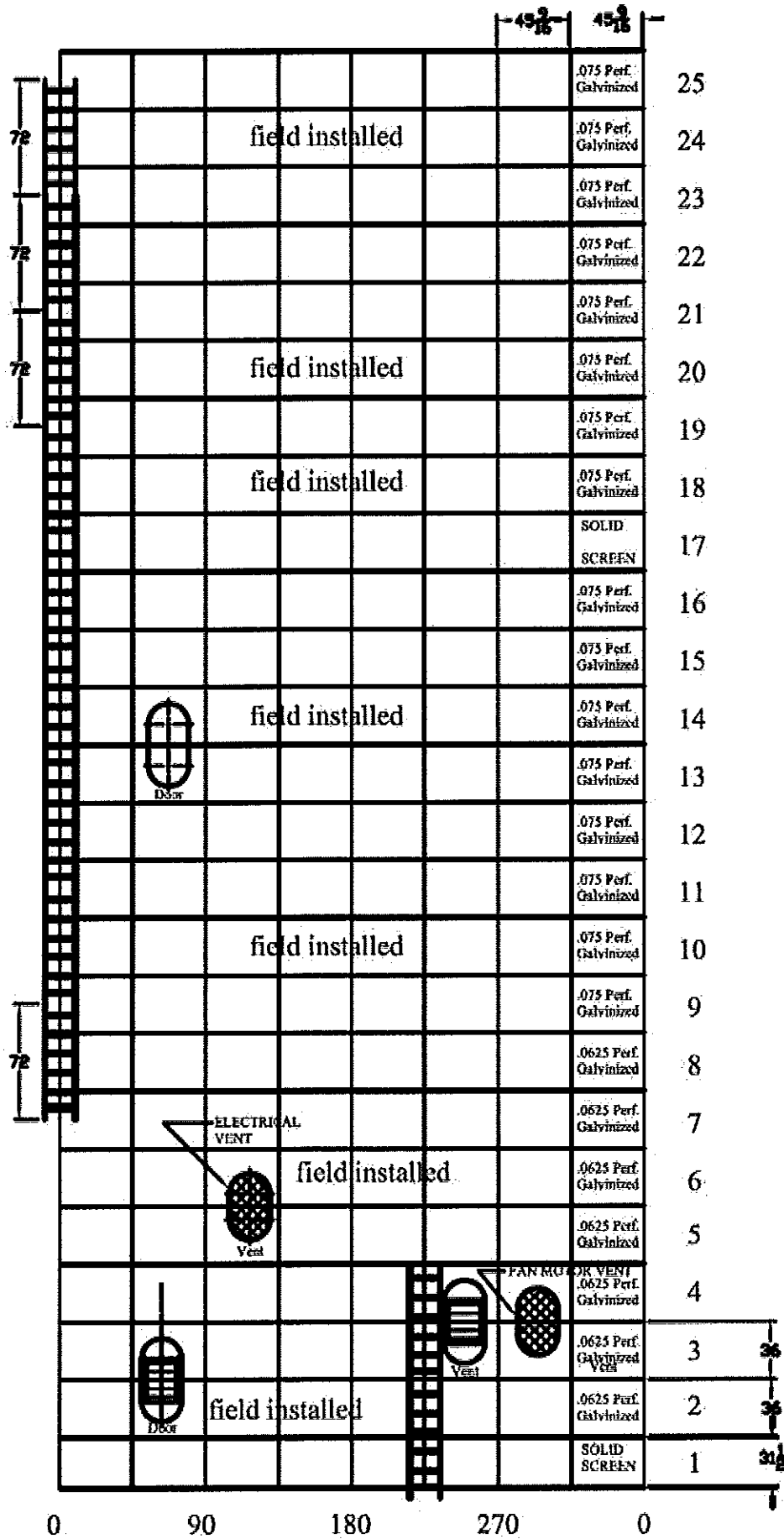
CONTINUED 2400 TOWER



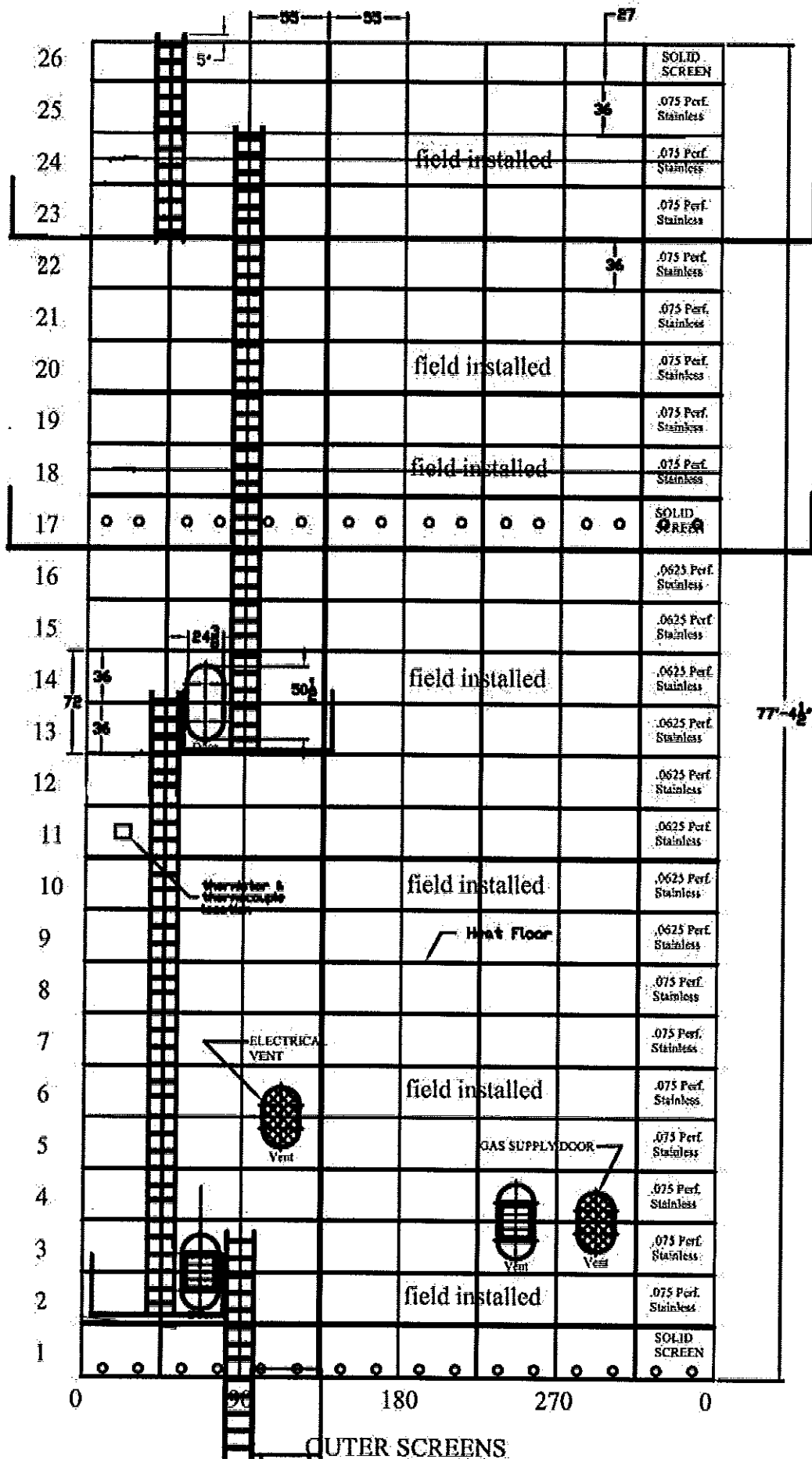
Quantity = 14 of 6' Ladders outside
Quantity = 2 of 8' Ladders outside

TERMINATED 2400 TOWER





INNER SCREENS

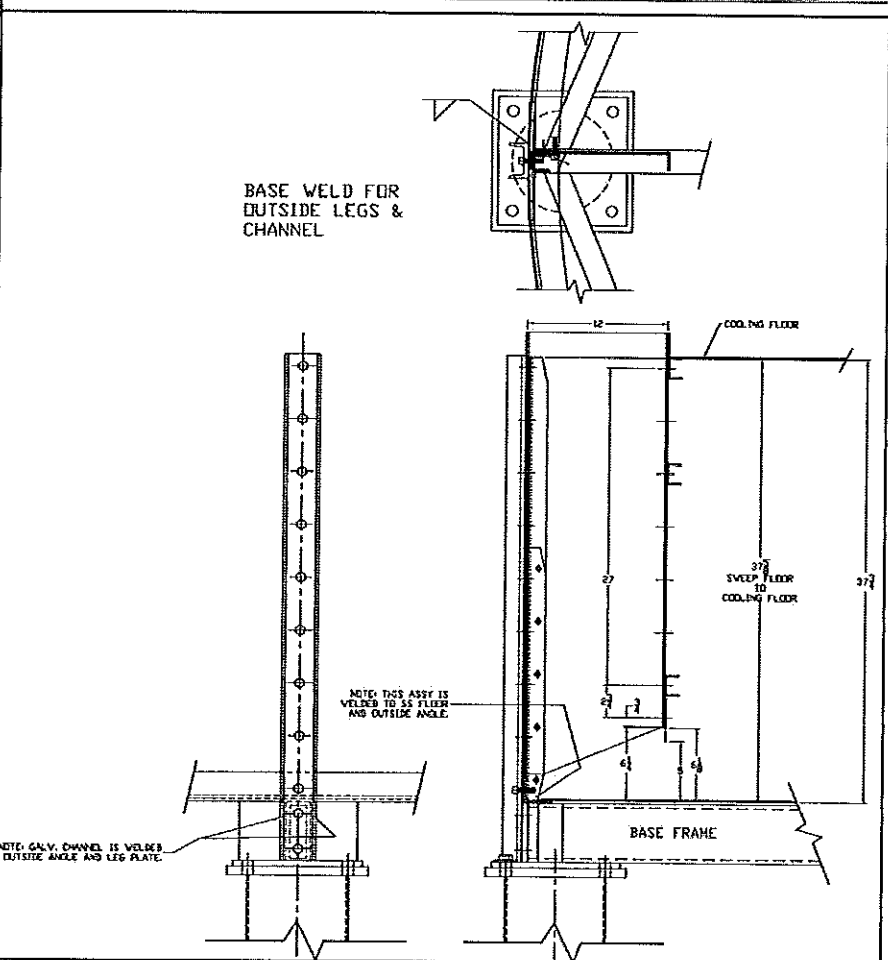
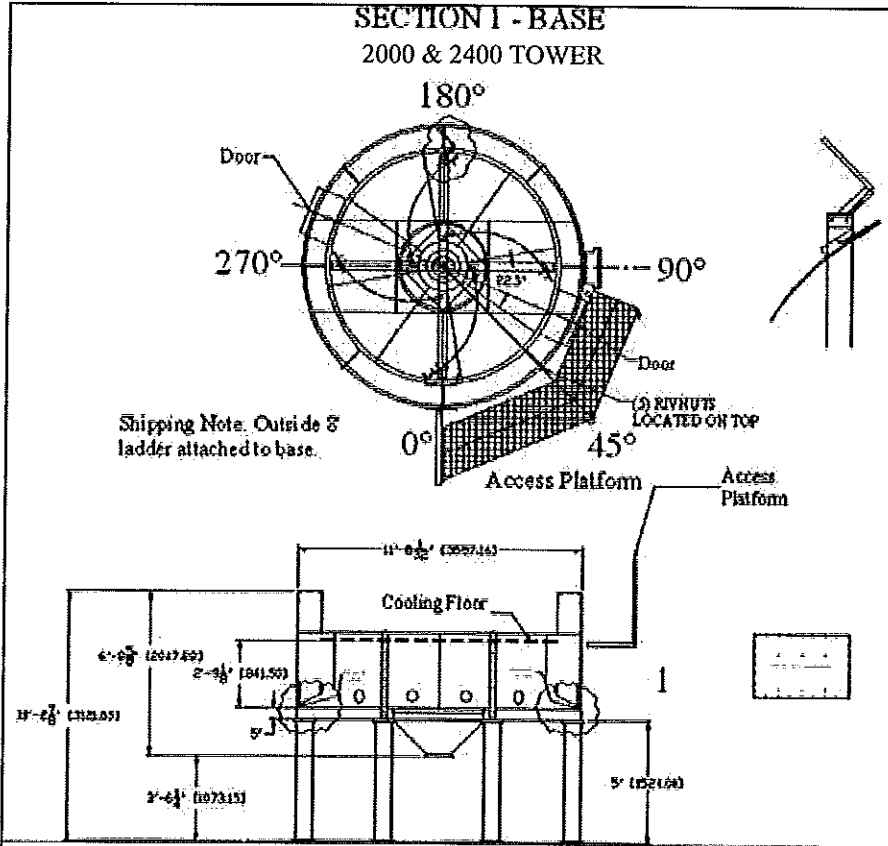


Section 2

Stacking the Dryer Sections

SECTION I - BASE

2000 & 2400 TOWER



Setup Instructions

General

Check packing lists to make sure that all parts and hardware listed on the packing list have been received.

Permanent Installation

The dryer must be installed on a level concrete foundation designed to hold the weight of the dryer when it is full of grain. The foundation must be engineered locally for ground and weather conditions to prevent settling and frost upheaval. See pp. 4-6 for more information about concrete foundation requirements. See p. 3 for machine weights.

Allow for unrestricted air flow around the dryer and a clean supply of intake air.

Dryer must be at least 10 feet from another dryer.

Unloading the Truck

The crane should be positioned so the crane operator can lift sections off the truck and place them in a separate working area.

Unload the sections from the truck in an order that reflects the order in which they will be stacked. Place sections that will be stacked together near one another.

Sections 5 and 6 will need to have walkways installed around the tops. Unload these first and place them on a level surface with at least 5' of clearance around all sides of each section to make room for the walkway installation.

After placing sections 5 and 6 on a level surface, remove the top section (7 on the 2000 tower and 8 on the 2400 tower) from the truck and place it in the work area.

Next, remove section 4 and place it near section 5 on a level surface.

Remove Section 2 from the truck and place it on a level surface.

Remove the base section and set it on the concrete in its permanent position (see "Setting the Base" on the right hand column of this page).

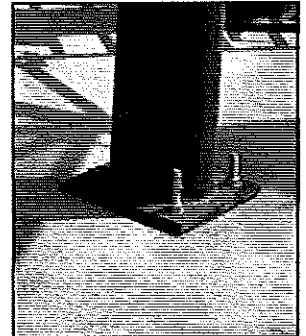
The last section to be lifted off the truck is Section 3 (blower section), which is lifted using the eyelets that are welded to the section specifically for the crane lift. See p. 19 for more information on stacking Sections 2 and 3.

Setting the Base

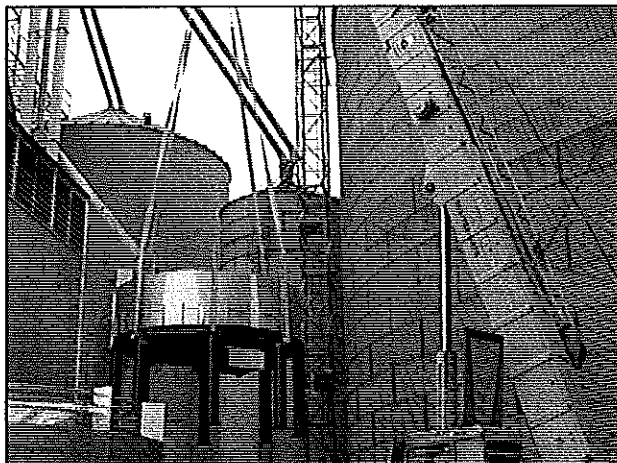
- The second-to-last section to be lifted off the truck is the base section along with the base weldment assembly. This assembly can be lifted from the truck and placed directly on the finished concrete base.
- The base assembly will be lifted using 40' nylon straps at four points. The straps should be secured around the top of every other leg on the base.
- Before placing the assembly onto the concrete base, the following must be determined:
 - Eventual location of input fuel and high voltage electrical supply.
 - Placement of the customer takeaway system.
- Rotate the base assembly until a satisfactory placement is located.
- Set the base in place so that the customer takeaway equipment is correctly positioned. Make sure a base leg will not obstruct the customer takeaway when installed. Level the base section using metal shims as needed.

Base Section Installation

- Set the base cooling section in the desired location and rotate to position electrical supply, fuel supply and discharge in desired locations. Set base and confirm rotation before releasing the lifting straps. Level the base using metal shims.
- Drill four 10" minimum-depth holes per leg into the concrete to allow expansion or epoxy anchors to be properly installed.

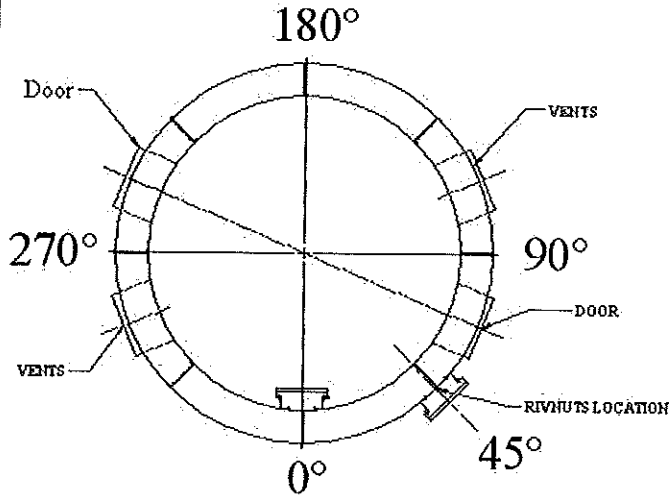


TIP: At this point, it is a good idea to install the lower entrance platform (see p. 36-37) on the base section and secure the ladders before proceeding. This will provide a surface on which to stand while screening the first field splice.

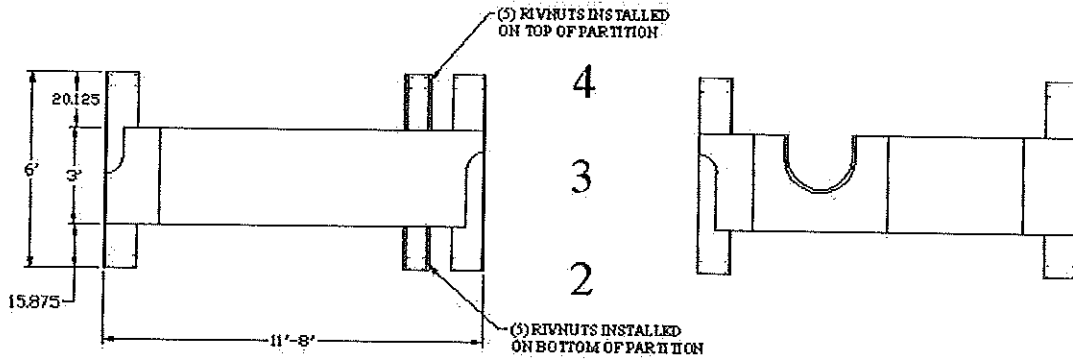


Lowering the base section into place.

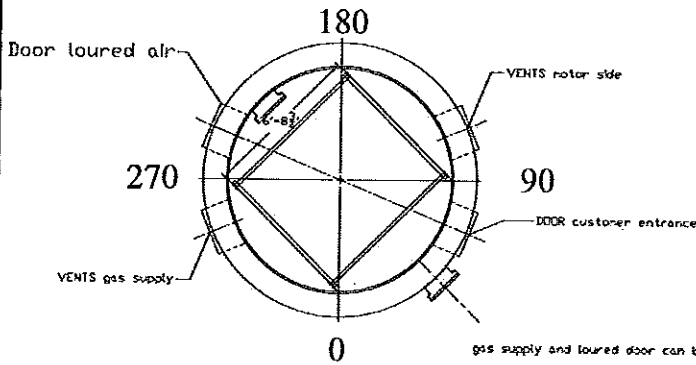
SECTION 2 - DOORS
2000 Tower



Shipping Note: No inside or outside ladders mounted to section.

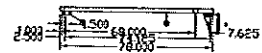


SECTION 2 - DOORS
2400 Tower

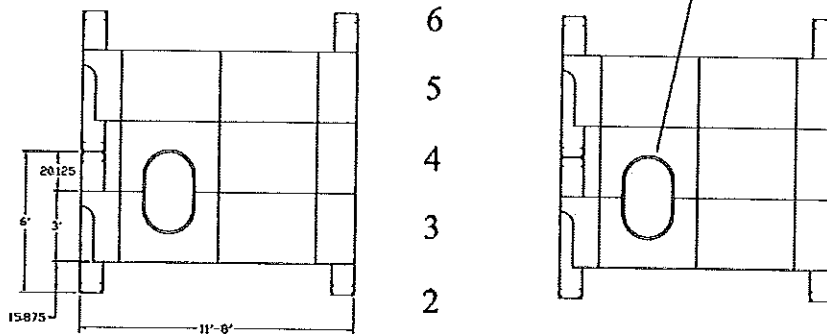


Shipping Note: 6' ladder is attached to outside of section.

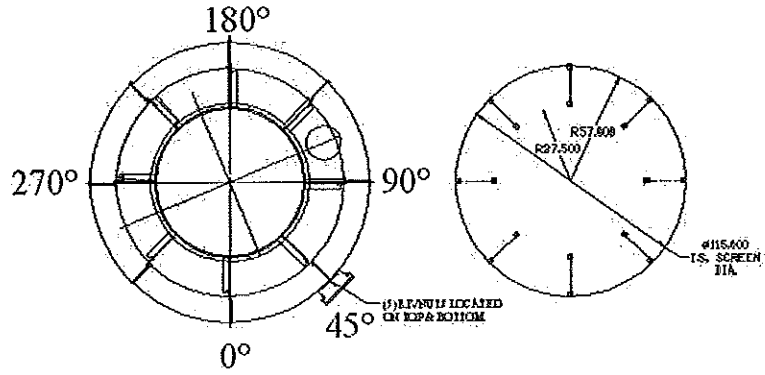
overall length 82"



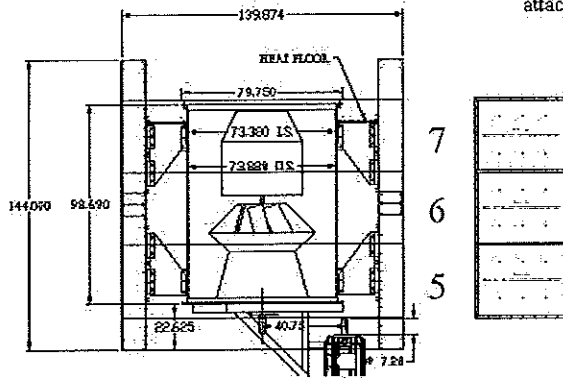
gas supply and loured door can be fully assembled.



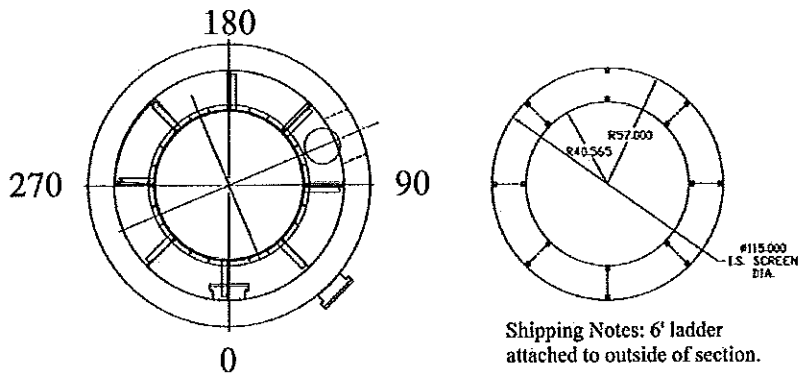
SECTION 3 - FAN
2000 Tower



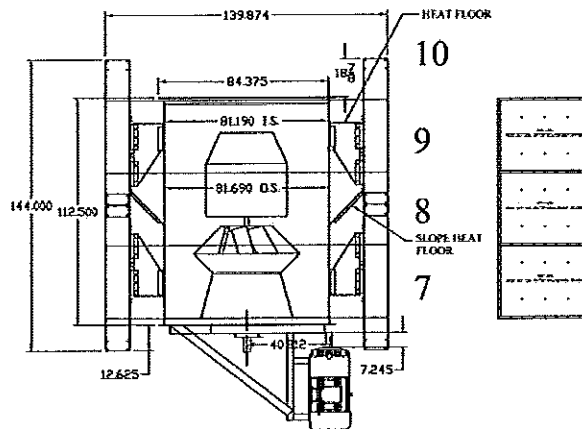
Shipping Note: 6' ladder attached to outside of section.



SECTION 3 - FAN
2400 Tower



Shipping Notes: 6' ladder attached to outside of section.

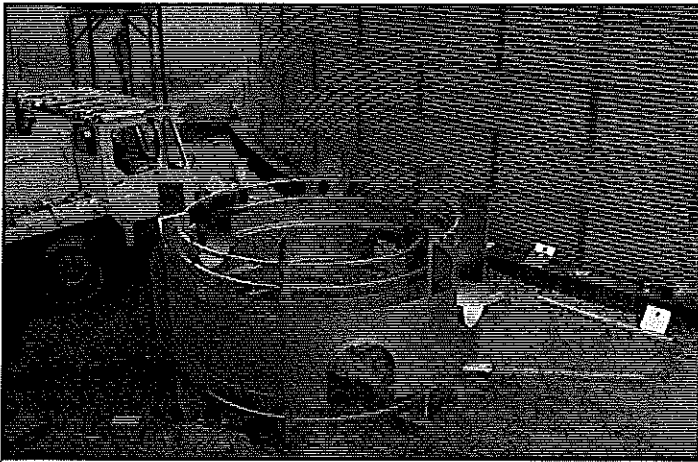


Stacking Sections 2 & 3

Section 2

Section 2 contains the door openings at the bottom of the tower. It should have been unloaded from the truck before setting the base and should be waiting in the separate work area.

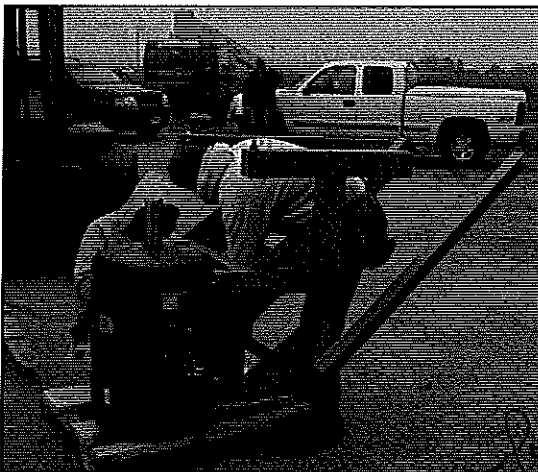
Do not stack Section 2 on top of Section 1 (Base) immediately.



Section 2 has been unloaded and placed in work area

Section 3

Section 3 contains the fan. Because the blower motor protrudes down below the bottom of the section, Section 3 must be stacked on top of Section 2 on the ground first and then both sections should be lifted onto the base together.



Unloading the blower motor

Before mounting the motor, adjust the motor mount pivot placement. The long threaded rods should be fully extended to help install the bolts once the motor is in place.

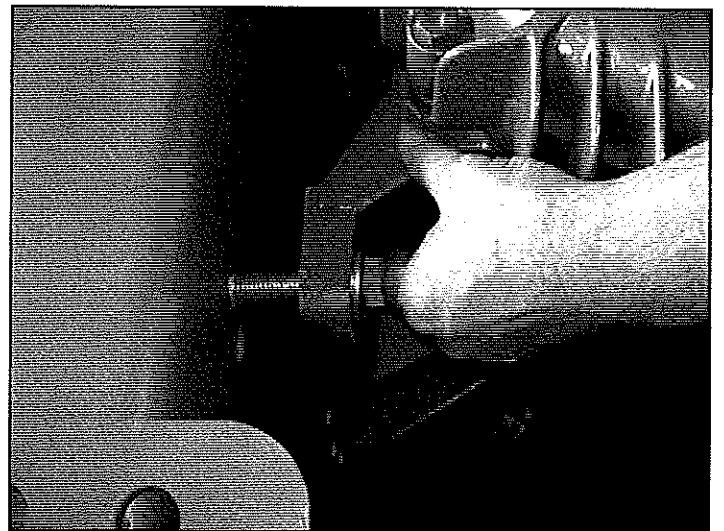
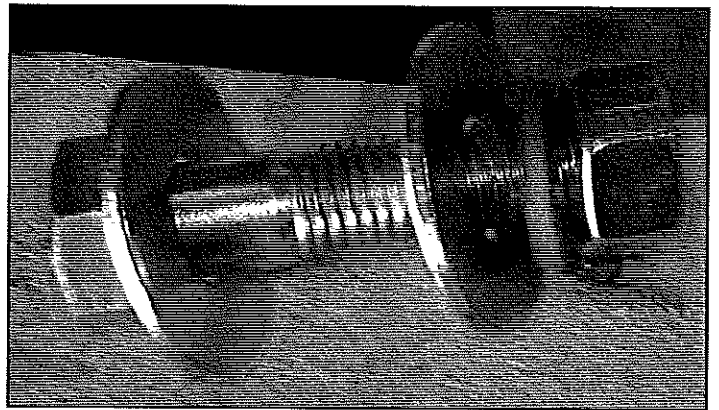
Mounting the Blower Motor

The blower motor must be mounted to the motor mount and the motor mount attached to the fan in Section 3 before Section 3 can be stacked on Section 2.

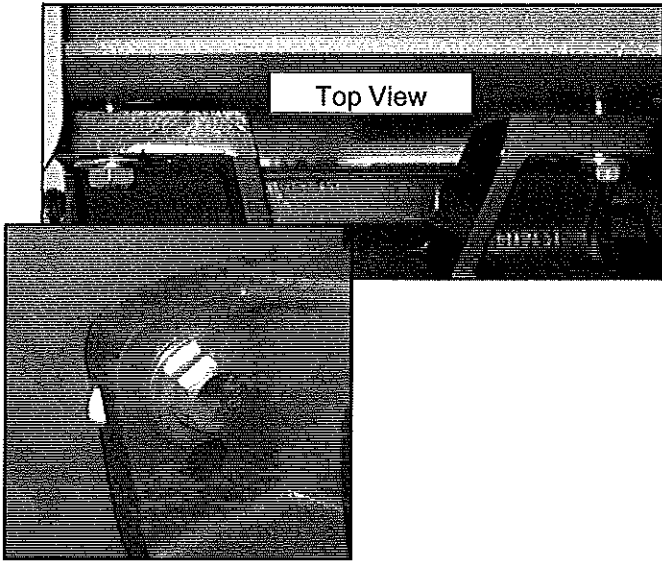
First, prepare the motor for mounting. The mount should be placed on level ground with enough room around it to lower Section 3 on top after it is mounted. Use the crane to lift the motor and hold it directly next to the mount, approximately six inches from the ground, so that the holes in the motor easily line up with the holes in the mount.

There are two $\frac{3}{4}$ " x 10" adjustment bolts for adjusting the mount and four $\frac{3}{4}$ " x 3" mounting bolts for attaching the motor to the mount. Each of the 10" bolts will be fitted with one $\frac{3}{4}$ " flat washer, one $\frac{3}{4}$ " lock washer and one belt tension nut.

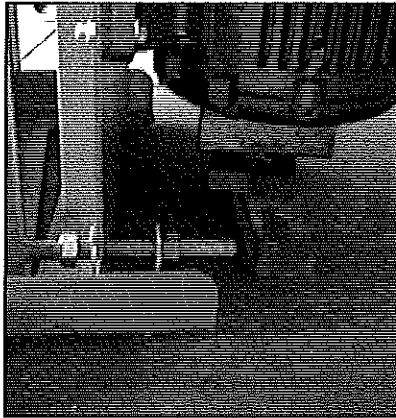
The first step is to attach the motor to the mount using the $\frac{3}{4}$ " x 3" bolts provided.



Start with the top two bolts and turn them in hand-tight.

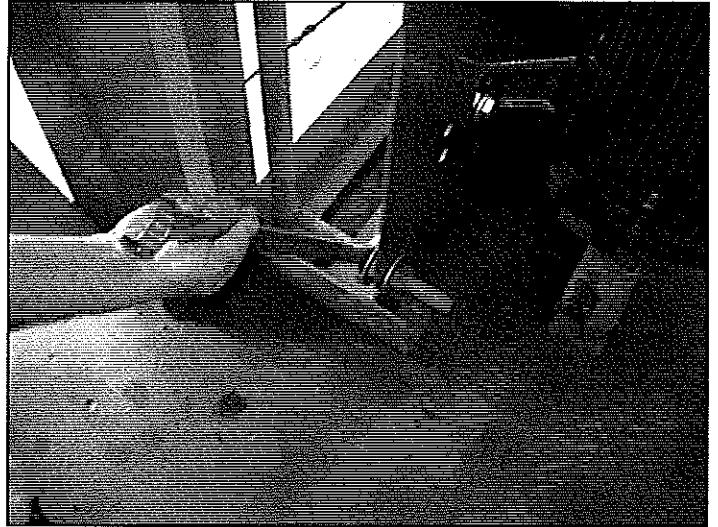


Repeat the process with the bottom two bolts. Place blocks under the motor to keep the weight from tipping the mount once it is secure. While the crane is still supporting the weight of the motor, it will no longer swing free and can be used to gauge the correct placement of the other components.

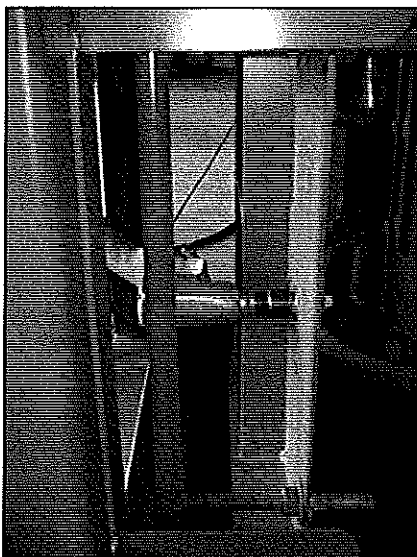
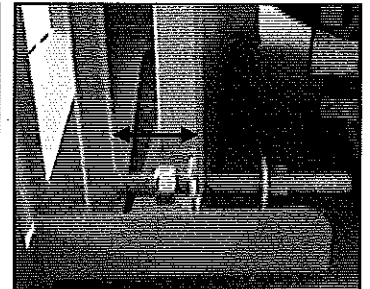
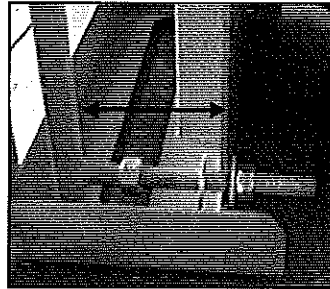


The next step is to adjust the mount using the bolts at the bottom. The slide and lock system allows you to position the motor closer to or farther from the inside wall so that you can line it up precisely with the fan.

Loosen the pre-installed bolt to slide the panel back and forth.

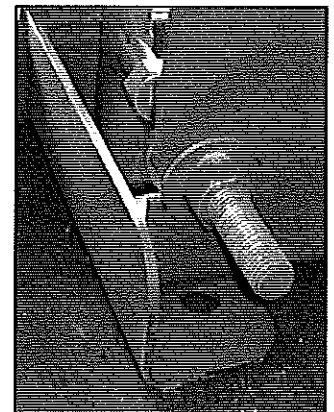


Place the panel in the desired position by sliding it along the bottom bolt. The illustration below shows the panel in two different positions to show how much variation in placement is possible.

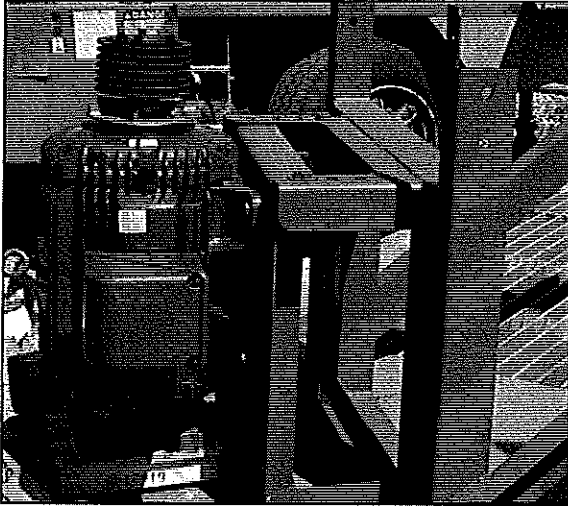


Use an impact wrench to tighten the bolts.

Use the nut to secure the bolt once it is in place.



Once the motor is secure, it can be released to rest on the blocks so its weight does not cause the mount to tip over. Place the pulley on top of the motor. The pulley will hold the belt that connects the motor to the fan.



Next, install the belts on the pulleys. The pulleys are installed using a taper lock bushing and can be adjusted once they are installed.

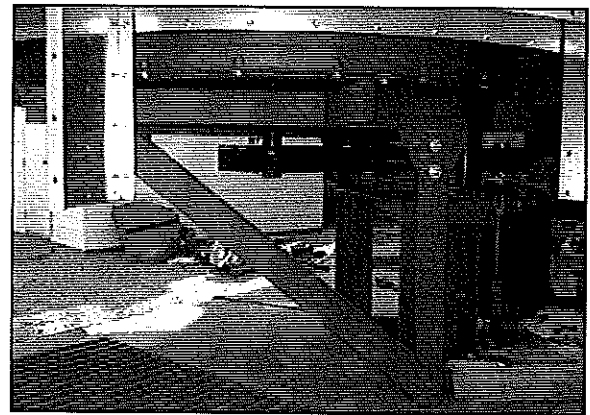


Once the pulley and the bushing have been aligned and tightened, slide in the 10" adjustment bolts to tighten the belts. Belt deflection should be 1/2"

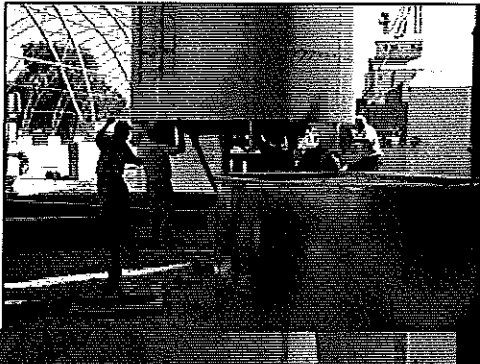


Now, use the crane to lift Section 3 and center it over the motor.

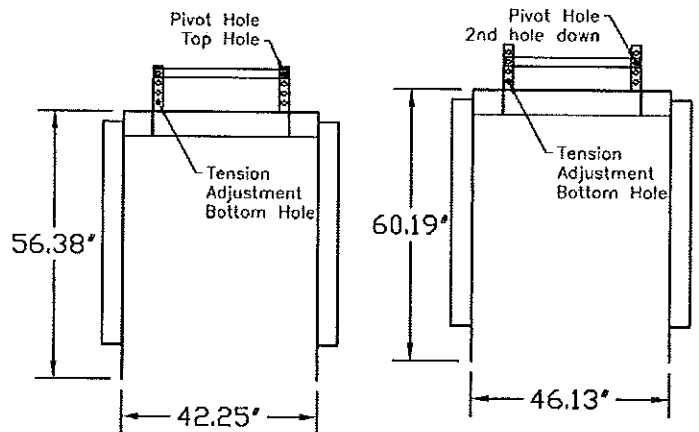
Attach the nylon lift straps to the blower.



Lower the blower section down slowly to install the alignment bolts. Use drift pins to align the mount holes with the blower frame holes.



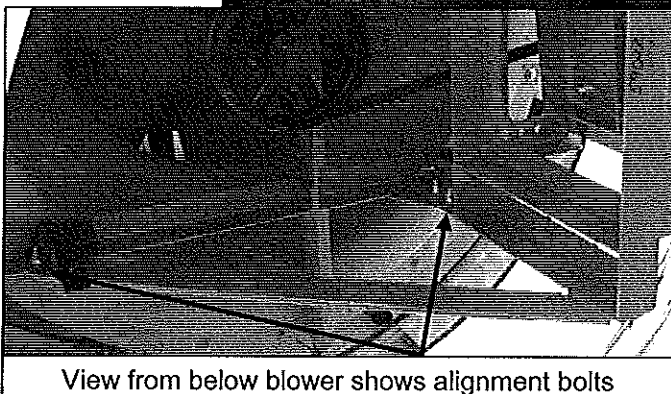
When mounting the motor, be sure that the pivot hole and tension adjustment are placed correctly according to the dryer model.



2000 Tower

2400 Tower

Section 3, with motor, is ready to be stacked on Section 2. Then stack both together on top of Section 1 (base). See p. 28 for stacking procedure.

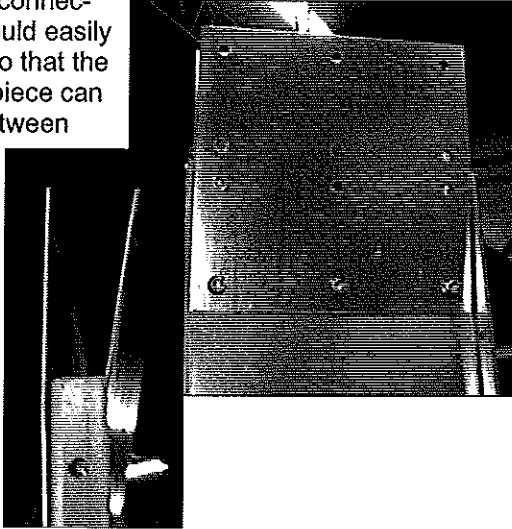


View from below blower shows alignment bolts

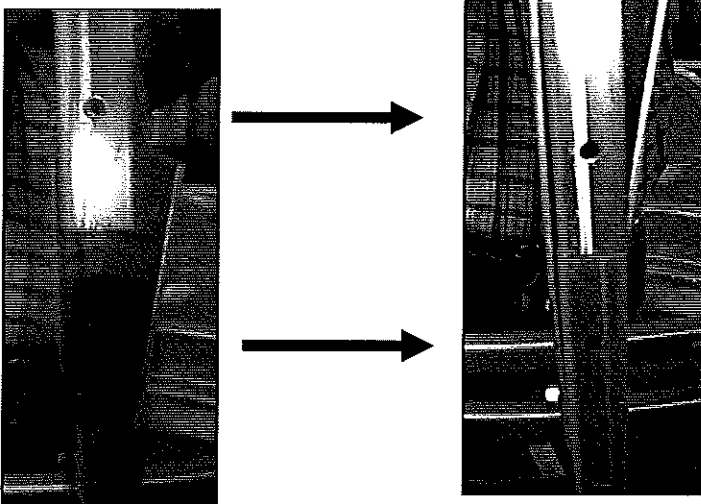
Stacking Two Sections Together

Dryer sections are stacked using the partitions in conjunction with connection plates before the screen splices are installed. The connection plates are attached using twelve 3/8" x 1" bolts each.

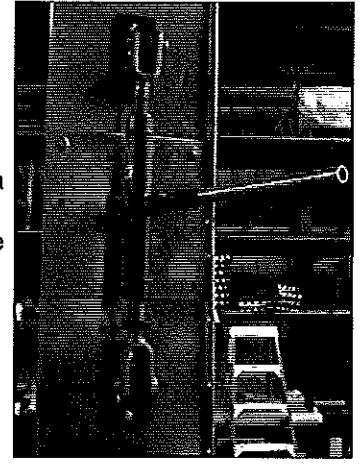
Bolt one connection plate to each side of the partition, using just the bottom three bolts. Do not tighten the bolts all the way. The connection plates should easily spread open so that the next partition piece can be inserted between them.



When the connection plates are loosely fastened to the lower partition, place the next partition piece squarely between them and slowly lower it down until it makes contact with the partition on the section below.

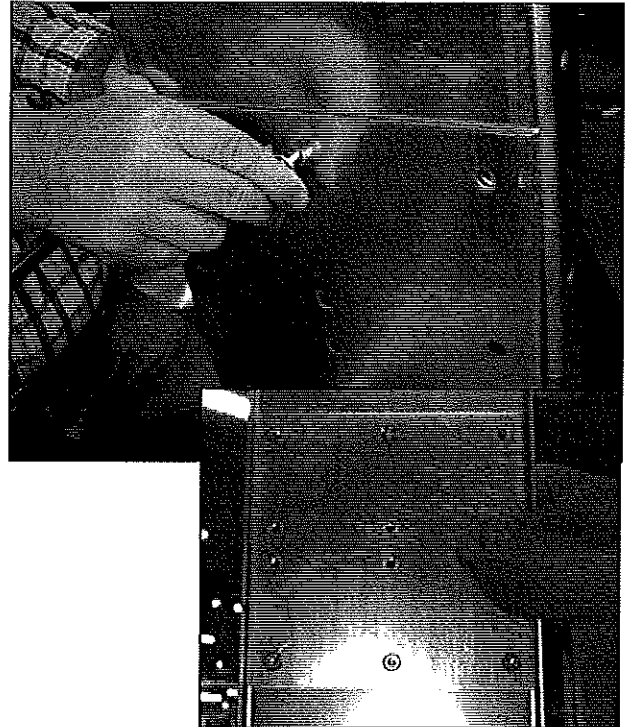


If the partitions do not make contact, use the holes in the partitions to attach a compression-mechanic jack. Bolt the attachment bracket to the top and bottom. Use a ratcheting jack to compress the partitions together. Once partitions make contact, the remaining bolts can be installed.

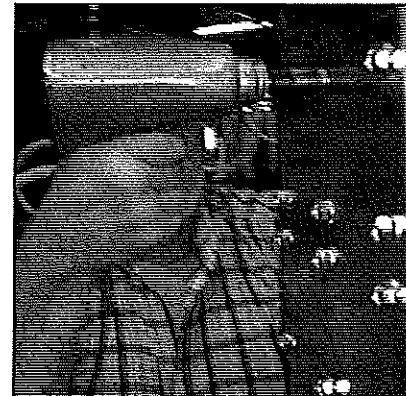


THIS IS ONLY DONE IF ABSOLUTELY NECESSARY

When the partition is in place, insert the rest of the bolts, starting with the top three and then insert the six bolts that go in the middle of the partition. Do not tighten these bolts all the way either. The partition may still need some adjustment.

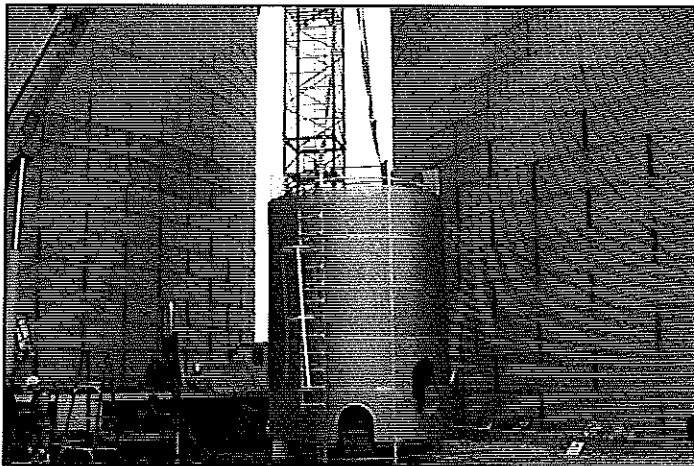
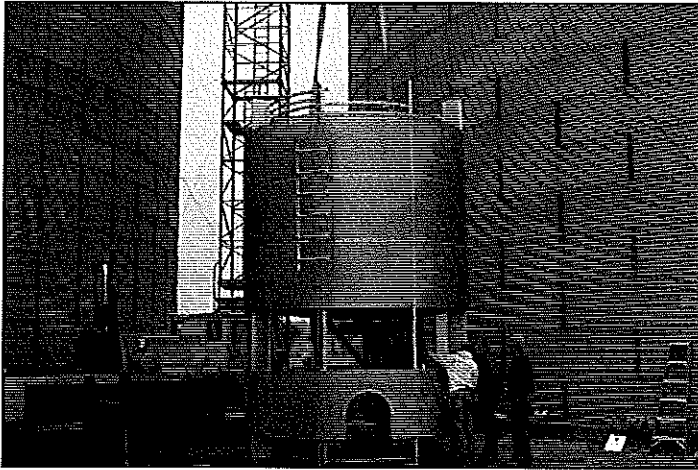


Finally, tighten all the bolts with an impact wrench.




Stacking Sections 2 & 3 on the Base

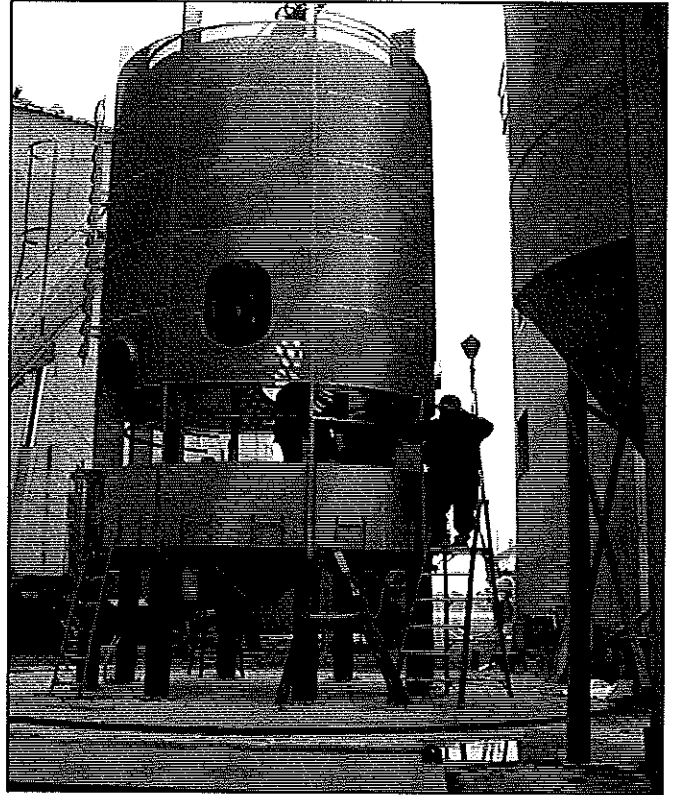
Once the section is centered over the blower motor, use the crane to lower it down over Section 2 and connect the two sections using twelve 3/8" x 1" bolts and connection plates. See p. 22.



After the section has been stacked, it will be necessary to screen a field splice. See pages 24-26 for detailed instructions. The field splice between sections two and three has .075" perforated stainless steel screens on the outside of the grain column and .0625" perforated galvanized screens to the inside of the grain column.

 **TIP:** The field splice procedure takes longer after the section is lifted and set on the base. It is a good idea to perform field splices as low to the ground as possible.

When Sections 2 and 3 are stacked and bolted together, they can be placed on top of the base section.



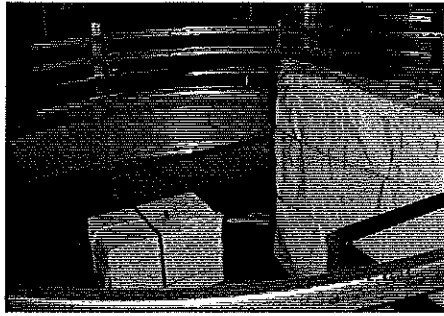
Bolt sections 2 and 3 to the base section using 12 3/8" x 1" bolts and connection plates. See p. 28.



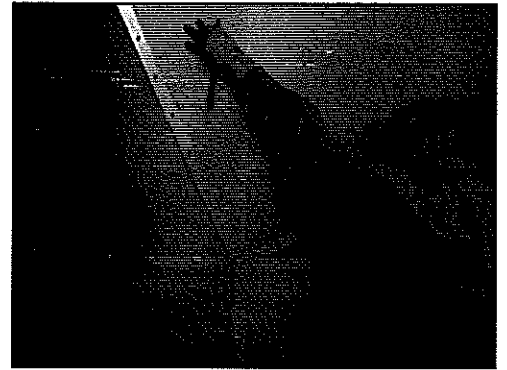
At this point, it will be necessary to screen another field splice (24-26). The field splice between Section 1 (base) and Section 2 has .075" perforated stainless steel screens on the outside of the grain column and .0625" perforated galvanized screens to the inside of the grain column.

Field Splice Installation Process

Except for the bottom 3 sections, for which the screens are located on a flat pallet; all hardware, screens and rings needed for mounting inside and outside screens at field splices can be found on the corresponding inner platforms, which are hinged closed to hold the screens. After they have been cleared, they should be hinged open when not being used for service to increase air flow above the burner.



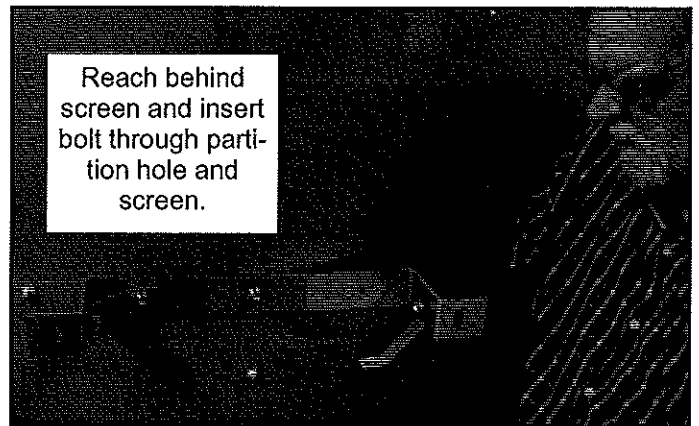
Screen assembly starts by shingling the new screen behind the lower screen and over the partition. Insert bolts from the back side or inside to outside through corner holes.



Screens are separated into two bundles.

The first, for splices one and two, are .062" perforated galvanized and .075" perforated stainless steel screens.

The second bundle is for splice three at the top of the blower section. Inner screens are .075" perforated galvanized and outer screens are .062" perforated stainless steel.

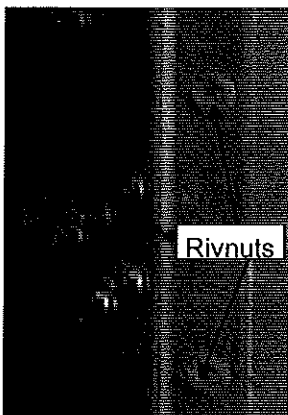


TIP: Refer to the diagrams on pages 9-10 or 12-13 for the correct screen gauge and material for each section.

Hardware and connection plates are located in a box on the heat floor.

Procedural Notes

1. Install all inner screens by attaching them to partitions and to one another by shingling the bottom inside screens toward the grain and the top outside screens into the plenum chamber.
2. Have one person working inside the dryer plenum chamber and a second person outside the dryer pushing bolts through partitions and screens, while the inside person installs nuts.
3. Once all screens are installed, inner rings should be installed using the same method as for the screens.
4. Once screens and rings are in place, tighten all hardware.



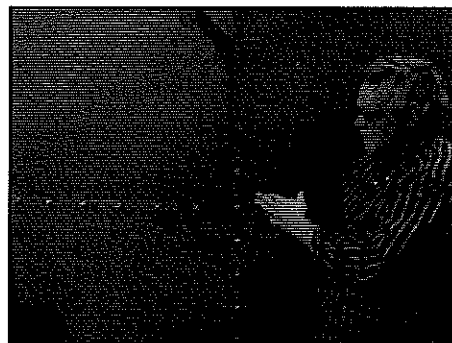
Screen Assembly

Begin at the partition with rivnuts and install screens one by one, moving to the right. The starting partition will then be the last set of holes to fill with hardware.

Install bolts through partition starting at the bottom and moving upward.



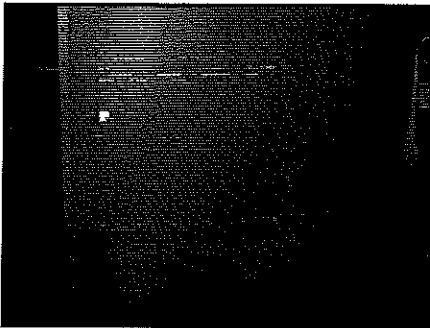
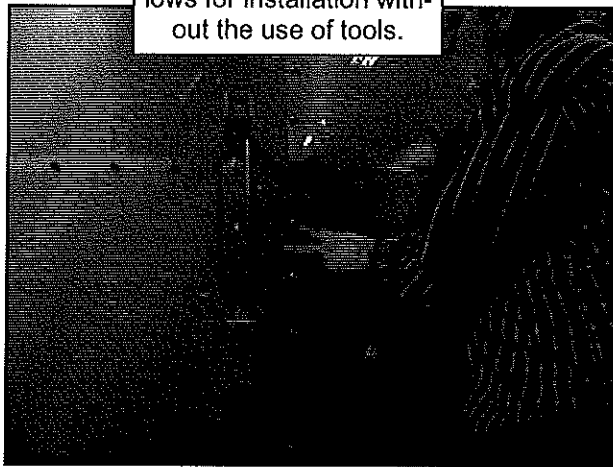
After the fourth bolt is installed, move to the top and reach behind the screen to complete the vertical bolt hole pattern of the screen.



Do not tighten any bolts until the screen is fully installed.

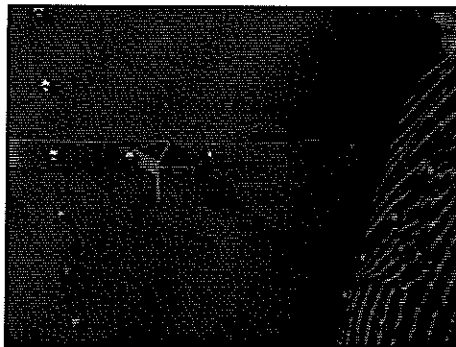


Installation of vertical seam from top side allows for installation without the use of tools.

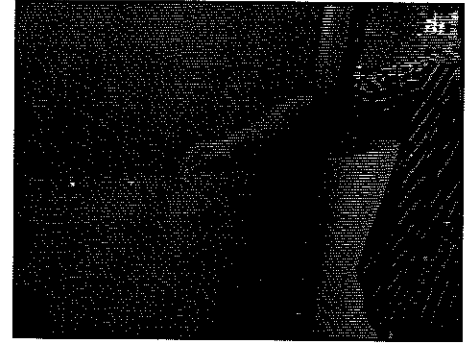


The screen being installed must shingle behind the lower screen.

Once the vertical left side of the screen is in place, reach behind the screen and insert bolts through the bottom holes of the upper screen and the top holes of the lower screen. Complete the entire hole pattern in this way.

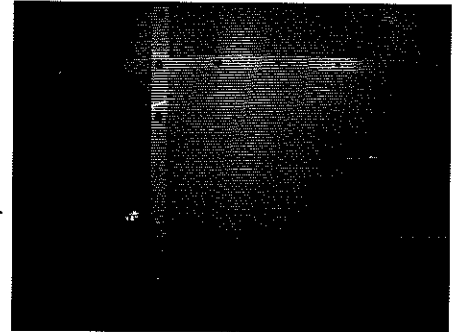


The last 3 holes must be installed by reaching behind from the end of the screen.



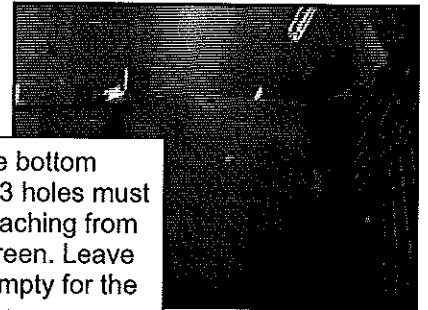
Leave the corner hole empty for the start of the next screen.

Following the same process as with the bottom screens, starting at the top left hole patterns and insert bolts by reaching behind the screen.

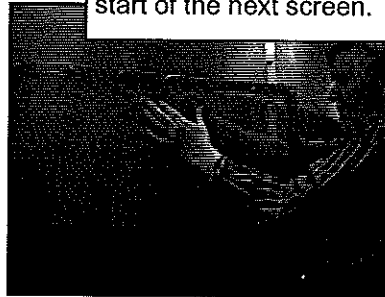


Shingle the screen on top of the upper screen and run the bolts through the top screen and then through the bottom screen.

As with the bottom screen, work from left to right.



Again, as with the bottom screens, the last 3 holes must be installed by reaching from the end of the screen. Leave the corner hole empty for the start of the next screen.

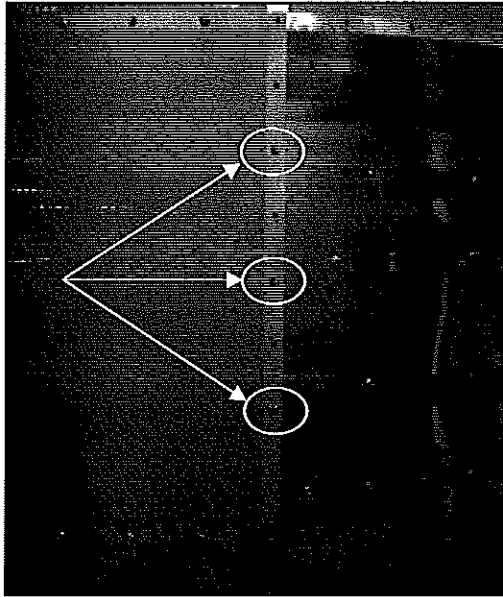


Next, insert 3 bolts into the partition and one vertical hole pattern in the screen to help secure the screen.

Once the screen is secure, tighten the nuts and bolts.

When tightening nuts and bolts, **always** work from the center out to the ends.

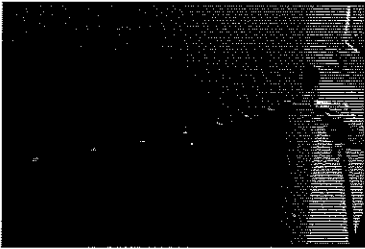
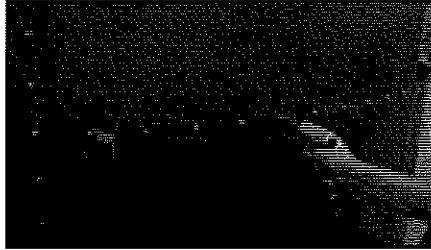
This pattern should be followed both vertically and horizontally.




Remove 3 bolts at the right side of the screen and partition to start the next screen.

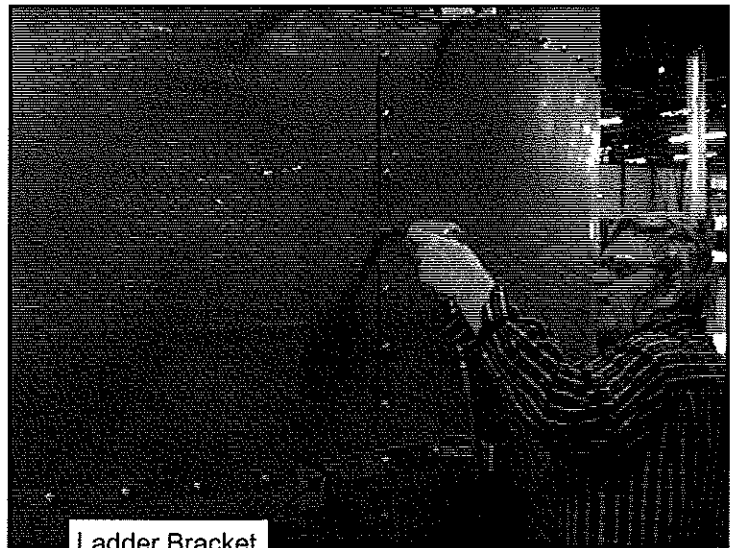
The last seam to finish installation will be the vertical-hole pattern in the center of the partition containing rivnuts, with which you began. Tighten hardware from the center down to the bottom. Return to the center and tighten the remaining bolts from the center to the top, including corner hardware. These bolts will push in from the outside of the dryer into the rivnuts.


The screen is now ready to have all the hardware tightened. Start at the bottom center hole pattern and tighten hardware from center to ends. Move from the center to the left, then from the center to the right.



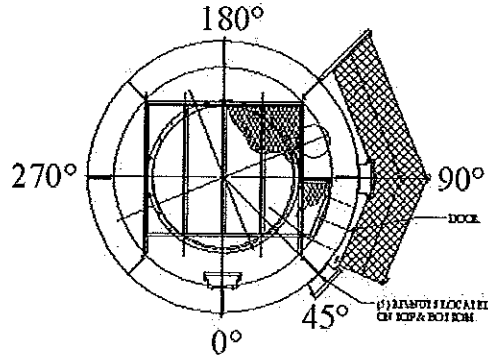
 The center-to-end sequence for tightening the hardware is crucial in avoiding unsightly bulges in the screens later on.

Once the hardware on the bottom screens is tight, move to the top center hole pattern and repeat the sequence. Starting at center, tighten right then left to corner hardware.

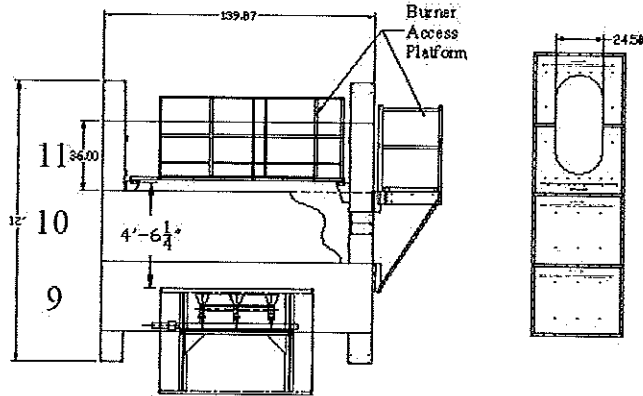


 On sections where ladders will be attached, a ladder bracket should be bolted on to the intersection of screens at each horizontal seam. A finished ladder bracket can be seen above.

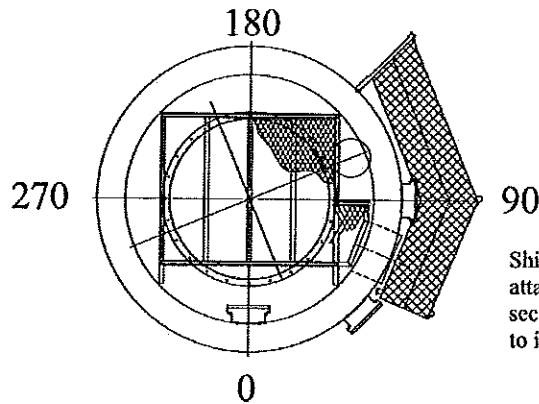
SECTION 4 - SMALL INSIDE PLATFORM
2000 Tower



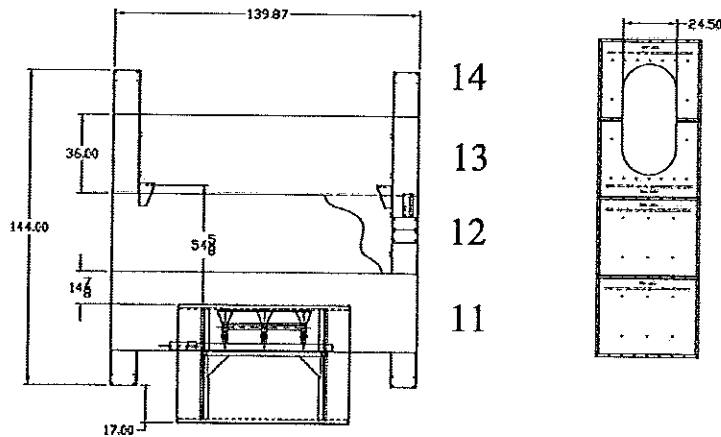
Shipping Notes: 8' ladder attached to outside of section.
6' ladder attached to inside of section.



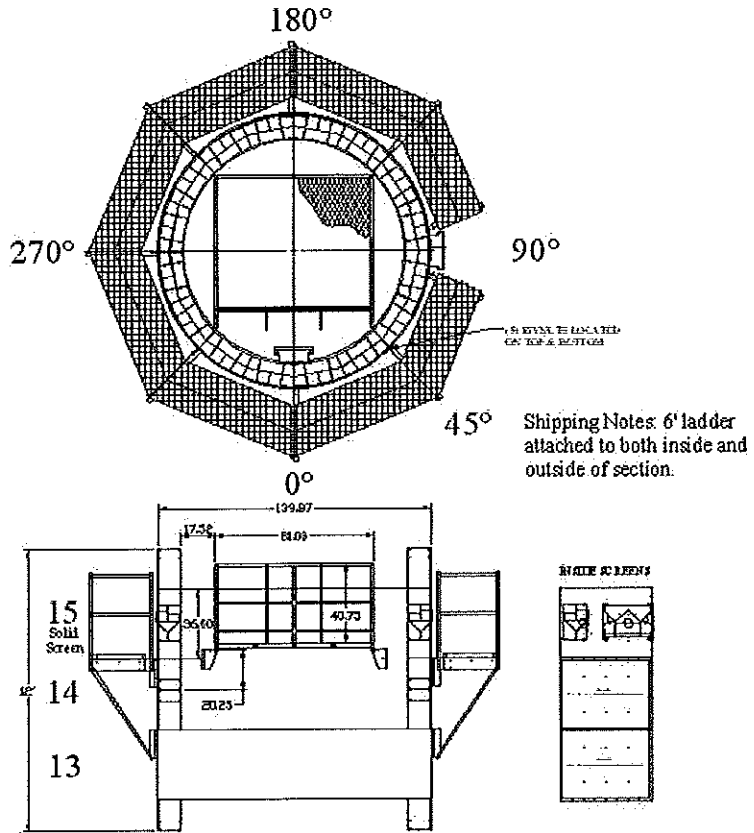
SECTION 4 - SMALL INSIDE PLATFORM
2400 Tower



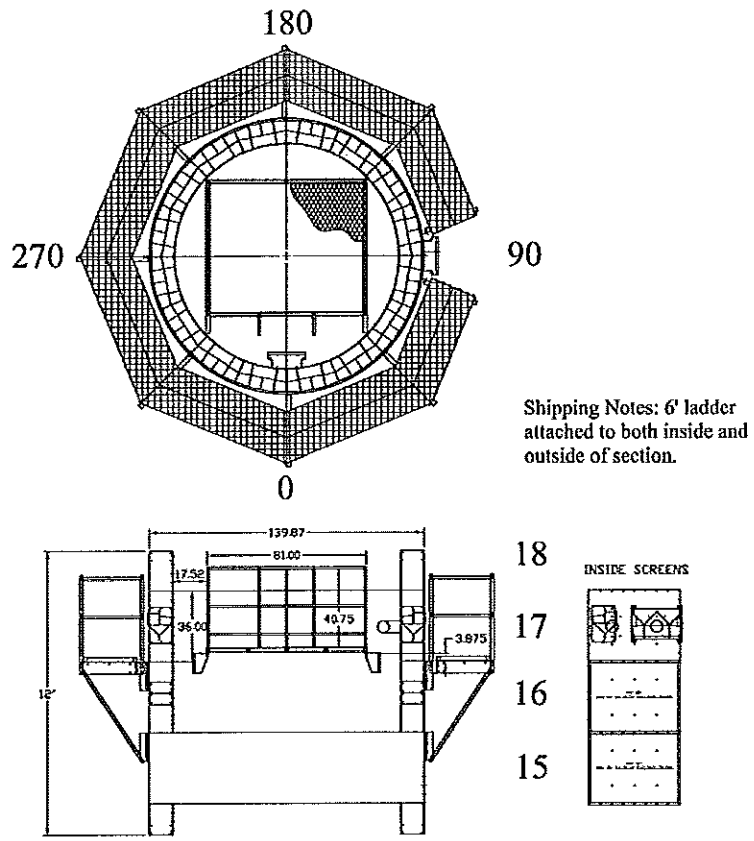
Shipping Notes: 8' ladder attached to outside of section.
6' ladder attached to inside of section.



SECTION 5 - GRAIN TURNER
2000 Tower



SECTION 5 - GRAIN TURNER
2400 Tower



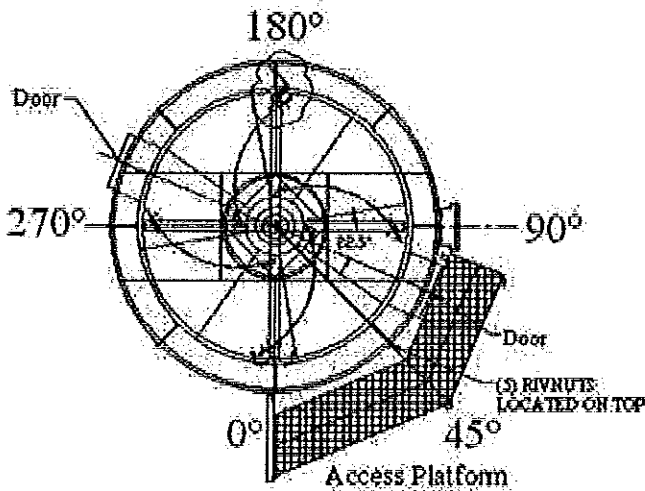
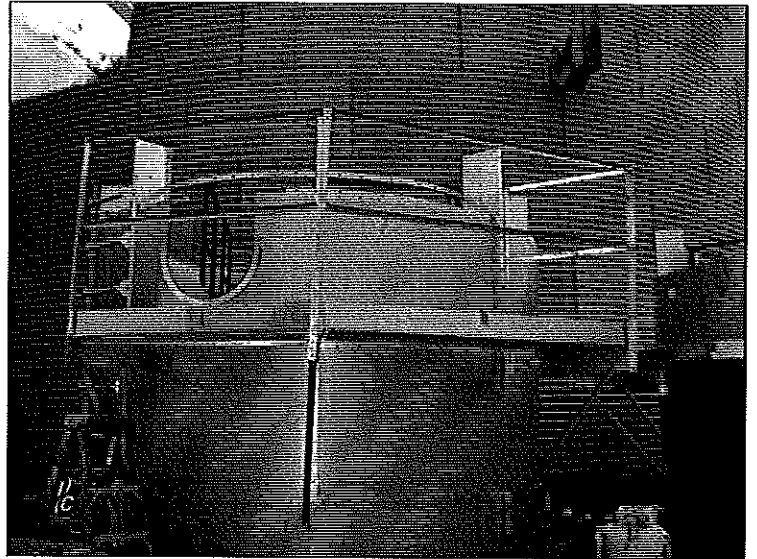
Outside Walkways and Platforms

The outside of the dryer has both circular walkways that go all the way around the dryer, and smaller platforms in front of the doors on certain sections.

There is a platform on the base section as well as on section 4.

There are circular walkways on Sections 5 and 6 on the 2000 tower and Sections 5 and 7 on the 2400 tower.

All these walkways and platforms are constructed similarly and use the same materials in different combinations.

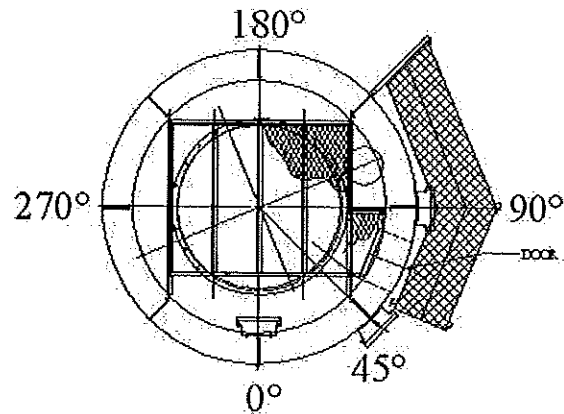


Section 1 Platform

Notice the difference in location between the two access platforms.

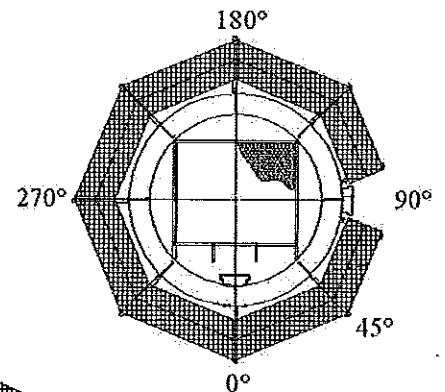
Also notice that the longer platform section and the shorter platform section are on opposite sides of the respective sections.

The circular walkways go all the way around the dryer and the only difference in their construction is placement of ladders and doors shown in the diagrams opposite and below.

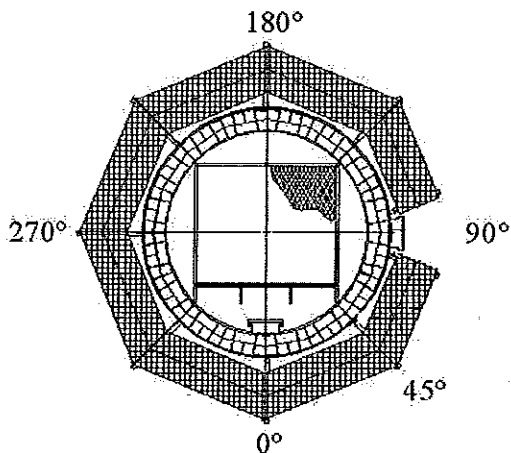


Section 4 Platform

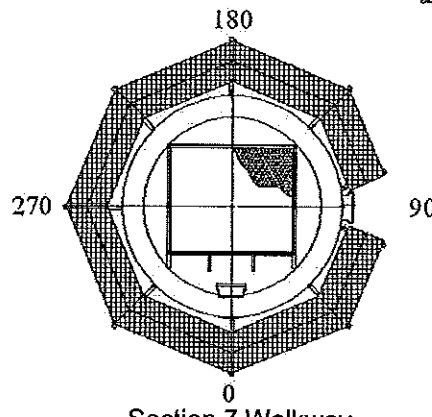
Walkways and platforms should be assembled before sections are lifted and stacked on other sections.



Section 6 Walkway
(Model 2000 only)



Section 5 Walkway (2000 and 2400 Models)



Section 7 Walkway
(Model 2400 only)

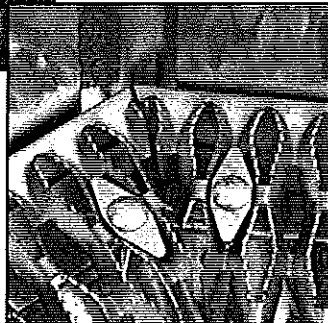
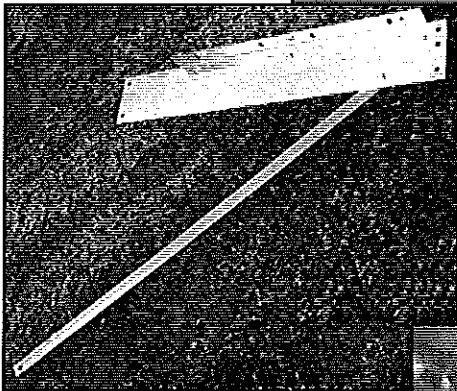
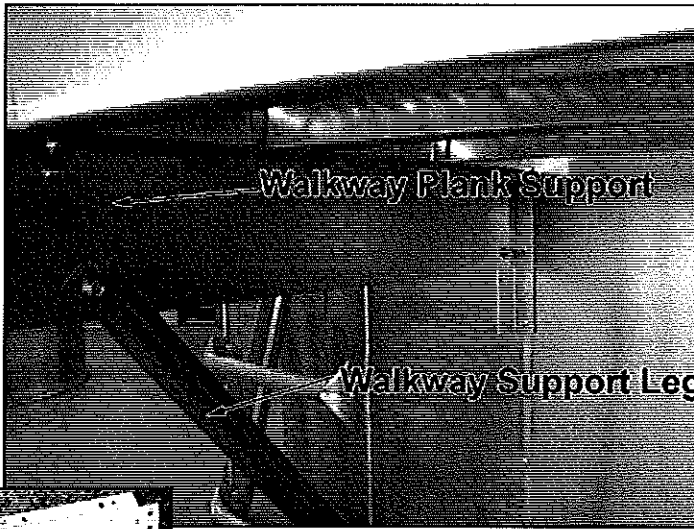
Outside Walkway Installation

Sections with walkways should be waiting in the work area with a sufficient distance between them to accommodate both fully assembled walkways.

NOTE: The access platforms are constructed using the same parts and methods as the circular walkways.

Installing the Walkway

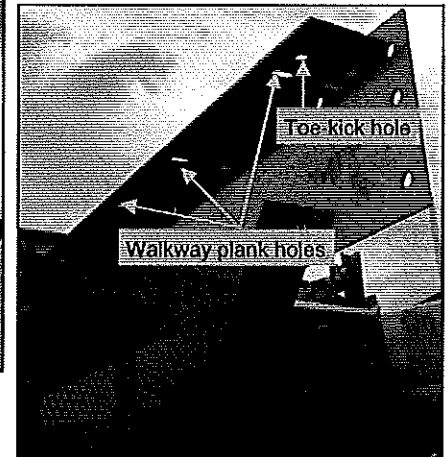
- The walkway floor support is a two-part system consisting of a floor plank support and a walkway support leg. The leg connects diagonally from the outer edge of the floor plank support to the pre-installed walkway mounting brackets found on the sections that have walkways.
- For best results, bolt the walkway support leg to the walkway support plank on the ground and then attach both to the screen section. This will reduce slight movement of the parts during installation and risk of injury from sharp edges if they are unstable.
- Bolt the walkway support legs to the second bottom hole from the front edge of the walkway plank supports.
- Attach the assembly to the section using the pre-installed walkway mounting brackets. Bolt the walkway support plank to the upper bracket and the walkway support leg to the lower.



- Once the walkway support legs and plank supports are in place, install the two walkway stiffeners. They extend diagonally across and one each must be bolted between the second and third plank supports and the eighth and ninth plank supports.



- The top side of each stiffener has a bolt hole at each of the two tapered ends, which must face in toward the screen section when mounting.
- Next, install the toe kicks around the exterior of the entire walkway. This will also help to hold the plank supports steady while the floor grating is installed.

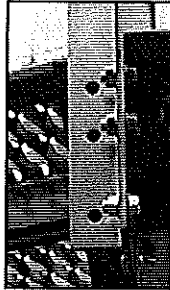


- To install toe kicks, place the toe-kick short onto the walkway plank supports just to the right of the ladder. There is a hole at the outside edge of each walkway plank support where the toe kick is to be bolted.
- Next, bolt the six toe-kicks-long on the outside edge of the walkway panel supports around the entire edge.
- Place the inner and outer short walkway planks onto the two walkway supports to the right of the ladder. Use two floor panel anchors, 5/16-18 x 3" (7.0 x 76mm) carriage bolts, flatwashers, and whiz locknuts at each end of the planks, with anchors under the bolt head and flatwashers next to the locknut. Use the slotted holes in the plank support. Repeat with the inner and outer walkway planks-long working around the screen section back to the ladder.

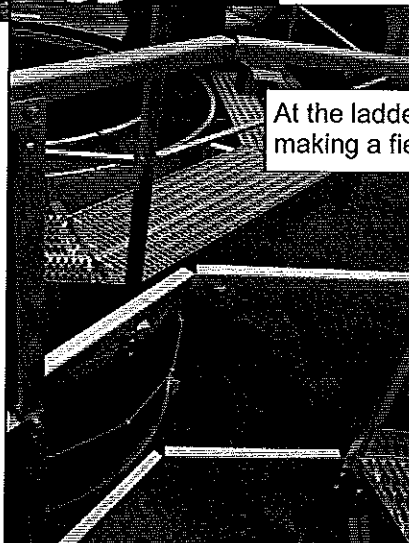
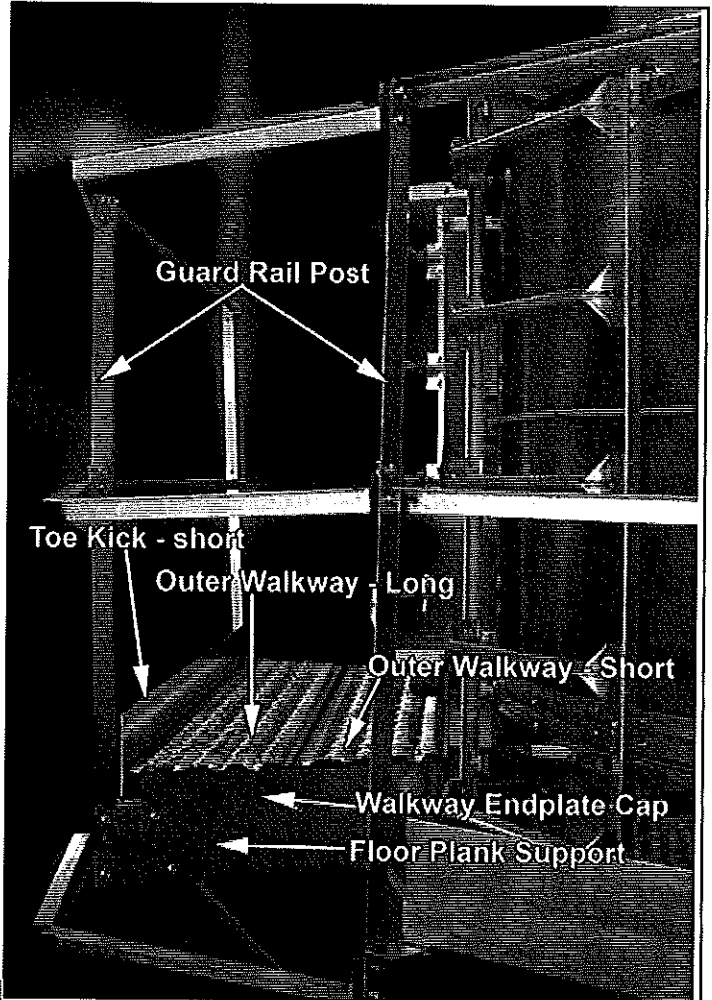
Outside Walkway Installation

WALKWAY HAND RAILS

- Attach the walkway end plate caps to the two walkway plank supports that border the ladder, bolting them to the side that is closer to the ladder.
- Bolt one of the 9 guard rail posts to the left side of each walkway plank support. The outside corner of the rail post should face the screen section, leaving a flat surface upon which to mount the guard rails. When the rail post is installed correctly, the 3 bolt holes in the rail post will line up with the 3 holes in the plank support.



- Place the 2 guard rails-short between the first and second guard rail posts, which are located just to the right of the ladder. The top flange of the guard rail should face away from the screen section.
- Now place the 14 guard rails-long between the remaining guard rail posts. The top flange of the guard rail should face away from the screen section.
- Bolt the field-formed safety cage angles to the guard rail post.



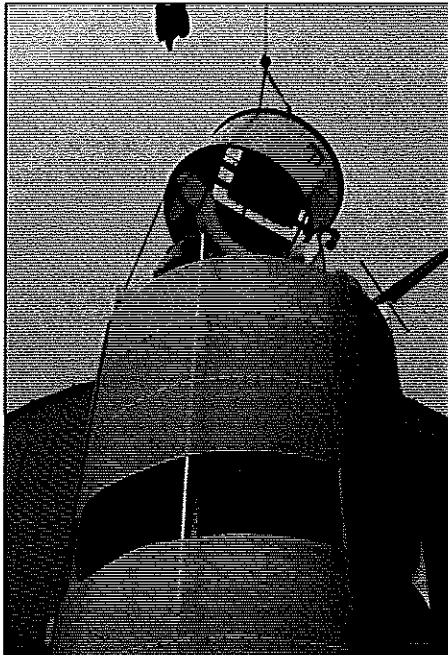
At the ladders, the guard rails are joined, making a field-formed safety cage.

Sections 4 & 5 Stacking Burner Section & Plumbing

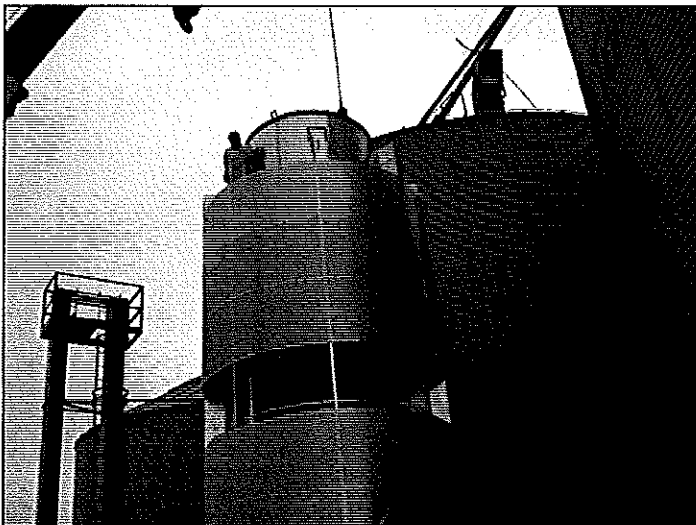
Stacking the burner provides a challenge because the portion of the burner feed pipe that protrudes from the burner housing and the 155" section of the pipe that is loose, must be aligned.

To mount the burner:

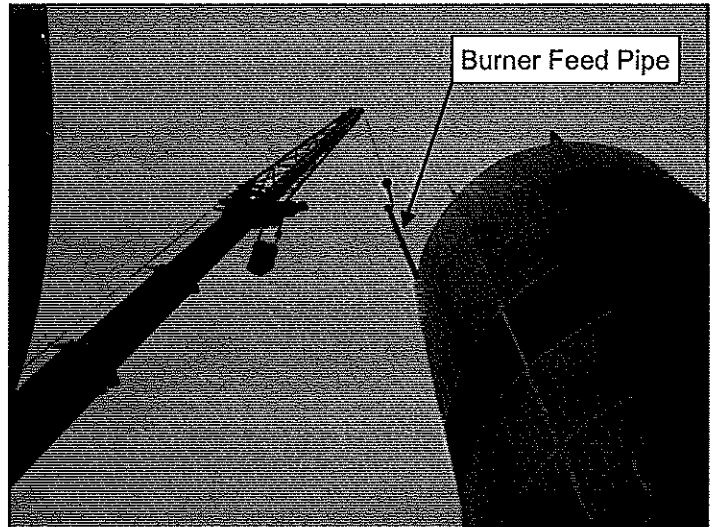
1. Attach the nylon straps to the burner manifold bracketry and secure for lifting.
2. Use the crane to lift the burner and stack it on top of the pre-drilled holes in the blower.



3. Set the burner but **DO NOT LINE UP THE BURNER FEED PIPE**. Instead, position the attached piece of pipe a few inches to the left or right of the pre-cut holes in the heat floor. Use vice grips, clamps, or a few hand-tight bolts to loosely secure the burner to keep it from shifting.



4. After first making sure that the pre-cut holes in the heat and slope floors are not blocked by any part of the burner, use the crane to lift the loose section of the burner feed pipe. It is 3" in diameter, 155" in length and weighs approximately 150 lbs.



5. Cut the seal in the slope floor to allow the pipe to pass through it. While still attached to the crane, guide the burner feed pipe down through the holes in the heat floor and the slope floor. When the pipe is close to its final position, support it at the bottom with a ladder or something else that can hold its weight.

View from below shows seal broken and pipe coming through the floor.

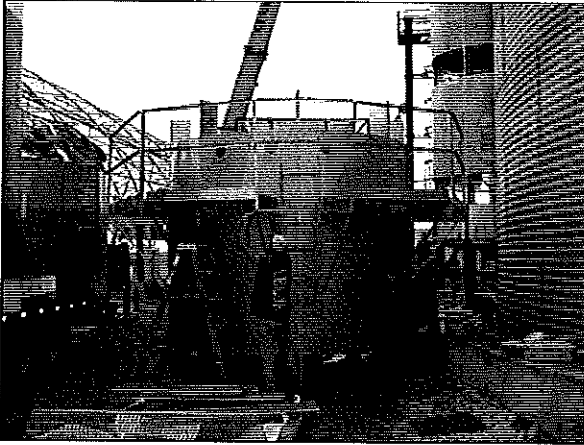


6. Remove the clips or bolts holding the burner housing and carefully rotate it a few inches so that the two parts of the burner feed pipe are aligned. Make sure that the bolt holes are also aligned and then begin inserting bolts all the way around the burner housing.

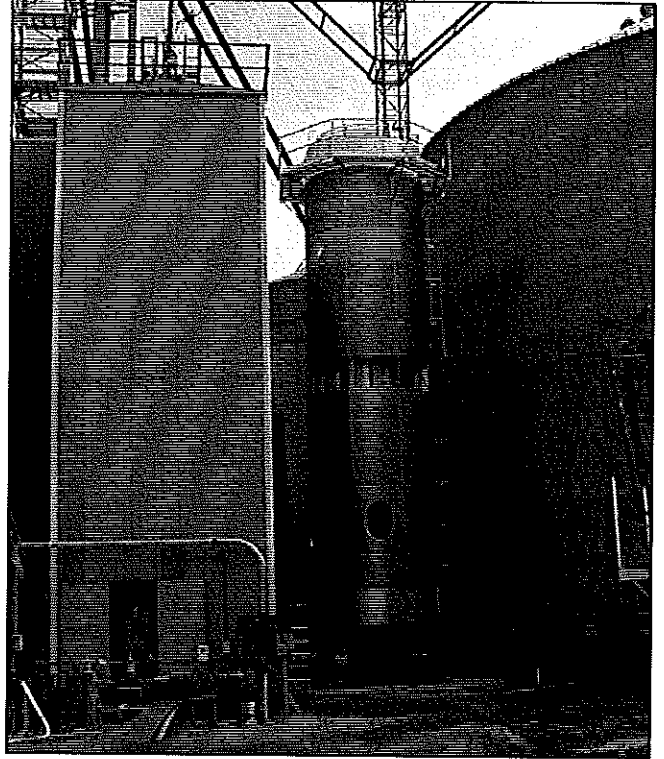
7. Bolt the burner housing all the way around and then tighten all bolts with an impact wrench.

Stacking Sections 4 & 5

If you have not already done so, install the platforms and walkways on the sections while they are waiting in the work area, before stacking them. See pages 30-31 for installation guide.



After Sections 4 and 5 have been stacked and bolted together, the field splice between them should be screened in. This field splice uses .0625" perforated stainless steel screens on the outer screens and .075" perforated galvanized screens for the inner section. After the screening is finished, the two sections can be lifted together and stacked onto the top of Sections 1-3.

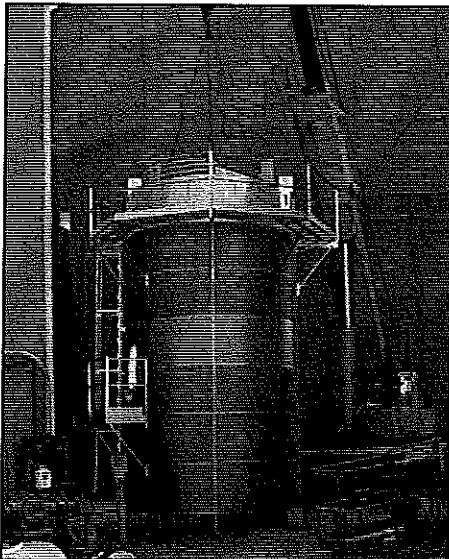


On the ground in the work area, lift Section 5 and place it on top of Section 4. Attach the nylon lift straps to the inner welded walkway.

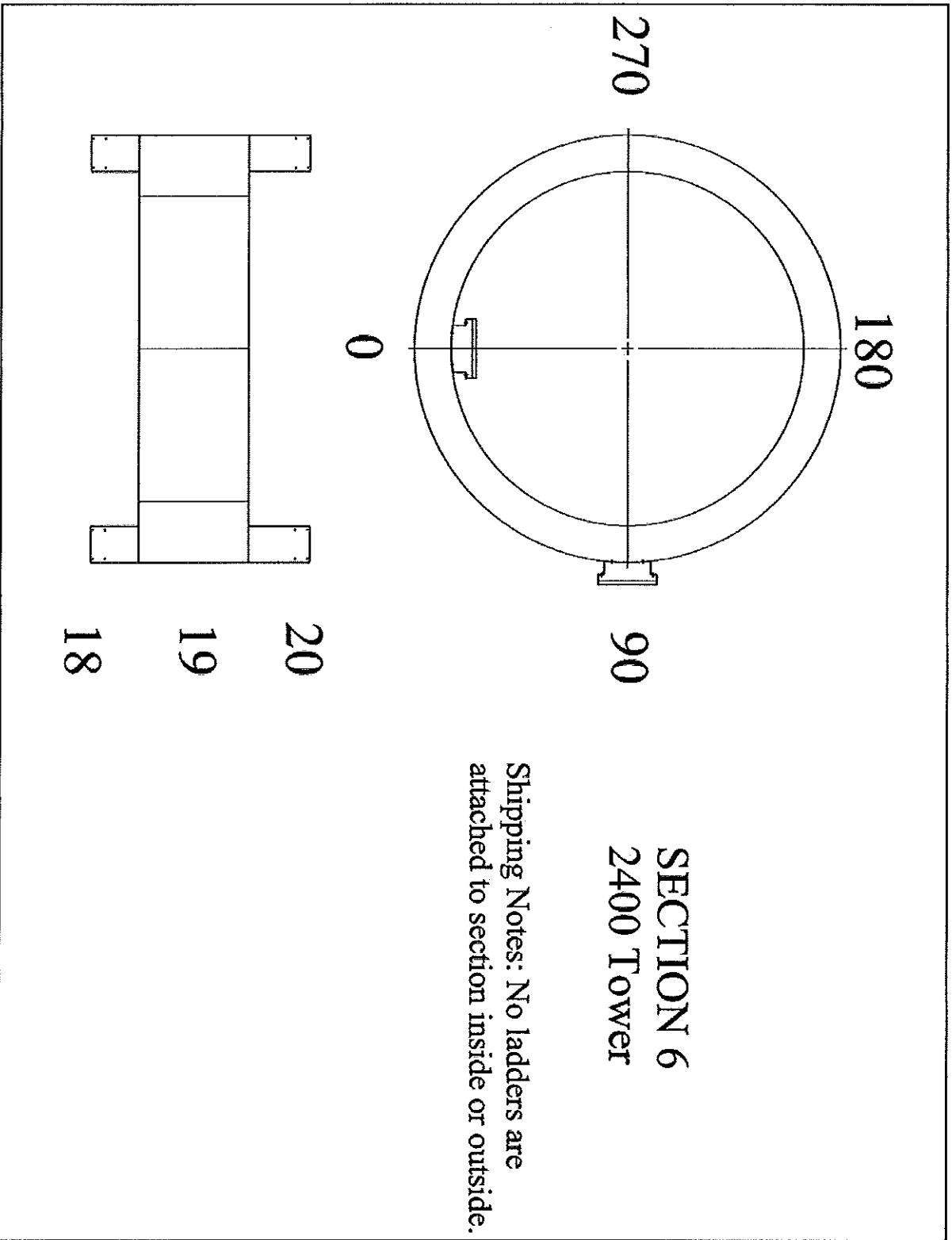


Screen in the remaining field splice (pp. 24-26) between Sections 3 and 4 with .075" perforated galvanized inner screens and .0625" perforated stainless steel outer screens.

When the burner is secured, The next section may be lifted and stacked on top of the burner section. It will then be necessary to perform another field splice.

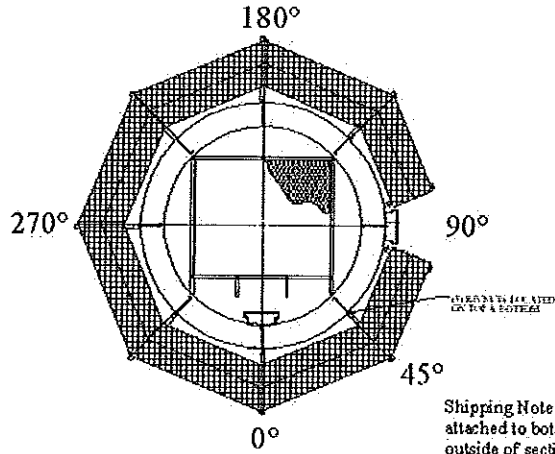


Place Section 5 on top of Section 4 and bolt the partitions together. See page 22 for instructions.

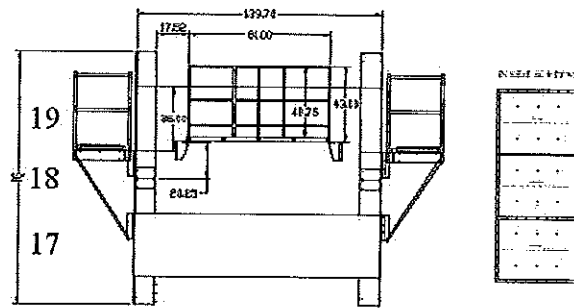


The 2400 Tower has an additional screen section between the top section and Section 5

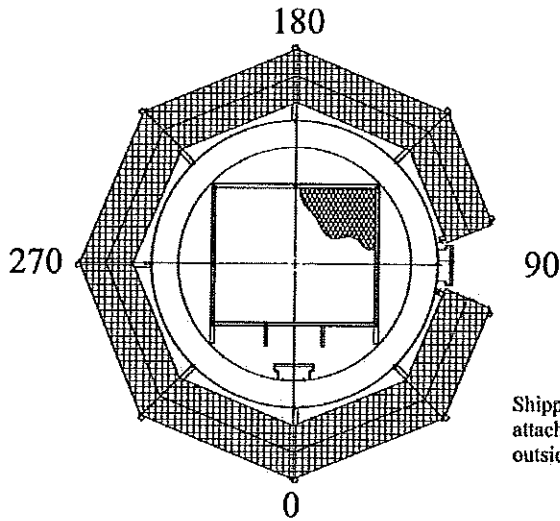
SECTION 6 - INSIDE WALKWAY TOP SECTION
2000 Tower



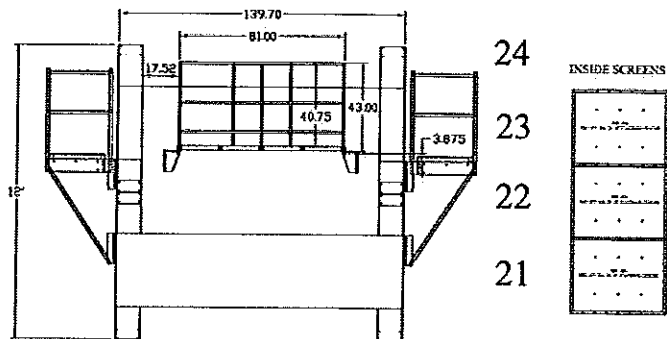
Shipping Notes: 6' ladder attached to both inside and outside of section.



SECTION 7 - INSIDE WALKWAY TOP SECTION
2400 Tower

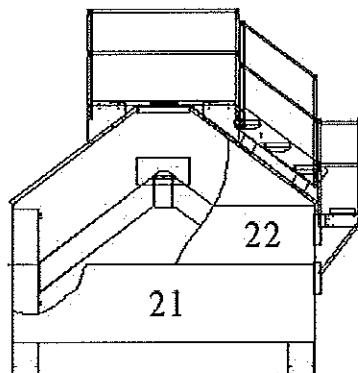
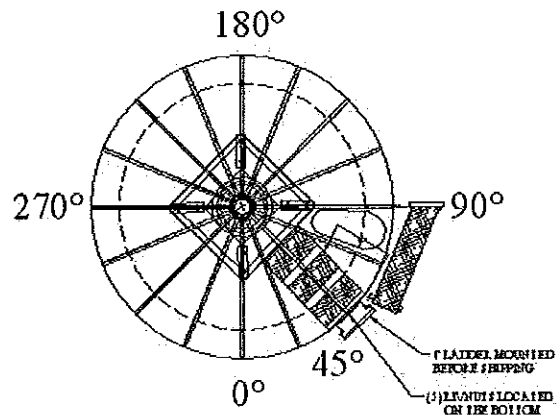


Shipping Notes: 6' ladder attached to both inside and outside of section.



SECTION 7 - ROOF SECTION

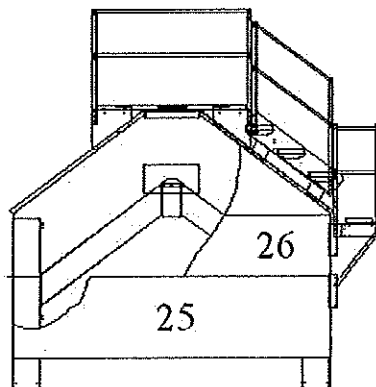
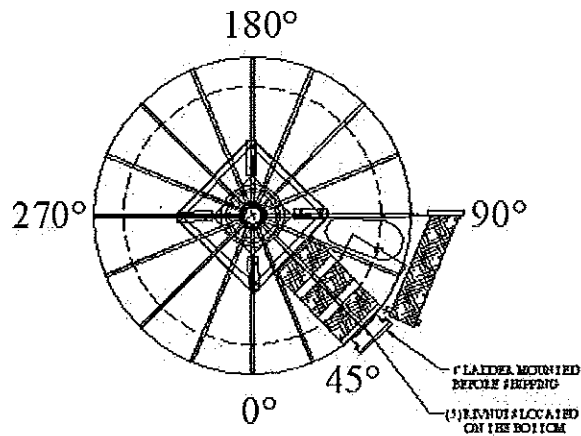
2000 Tower



Shipping Notes: 4' outer ladder attached vertically to section.

SECTION 8 - ROOF SECTION

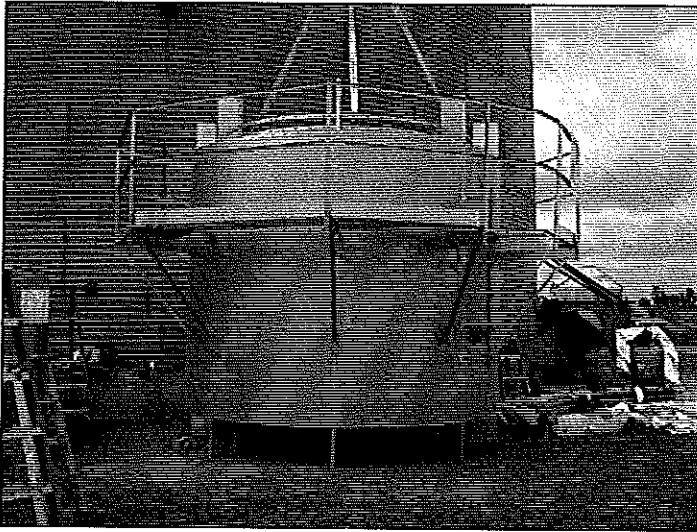
2400 Tower



Shipping Notes: 4' outer ladder attached vertically to section.

Sections 6, 7 & 8

The second section to the top contains the inside walkway top section. It is referred to as Section 6 on the model 2000 tower dryer and Section 7 on the 2400.

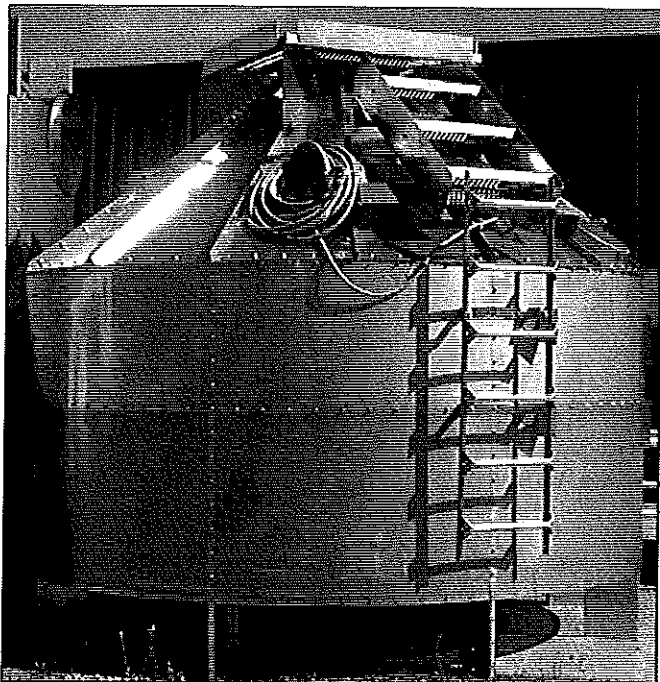


The inside walkway top section (6/7) also has an outside circular walkway. If you haven't done so already, assemble this walkway in the same way as the one on Section 5. Refer to pp. 30-31 for walkway installation instructions.

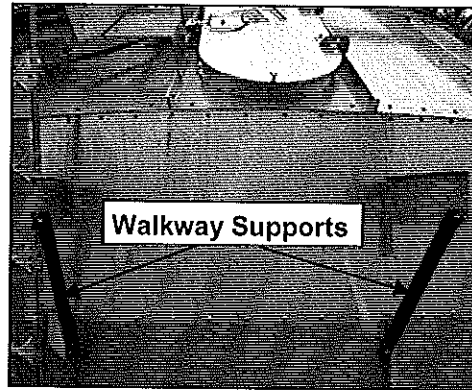
Roof Section Platform & Peak Platform

The roof section has a stairway at the top of the last ladder. The stairs and top peak platform are bolted to the roof in the factory.

The ladder safety cages and walkway platform handrails are field-installed. Also field-installed is the access platform for the door in the roof.

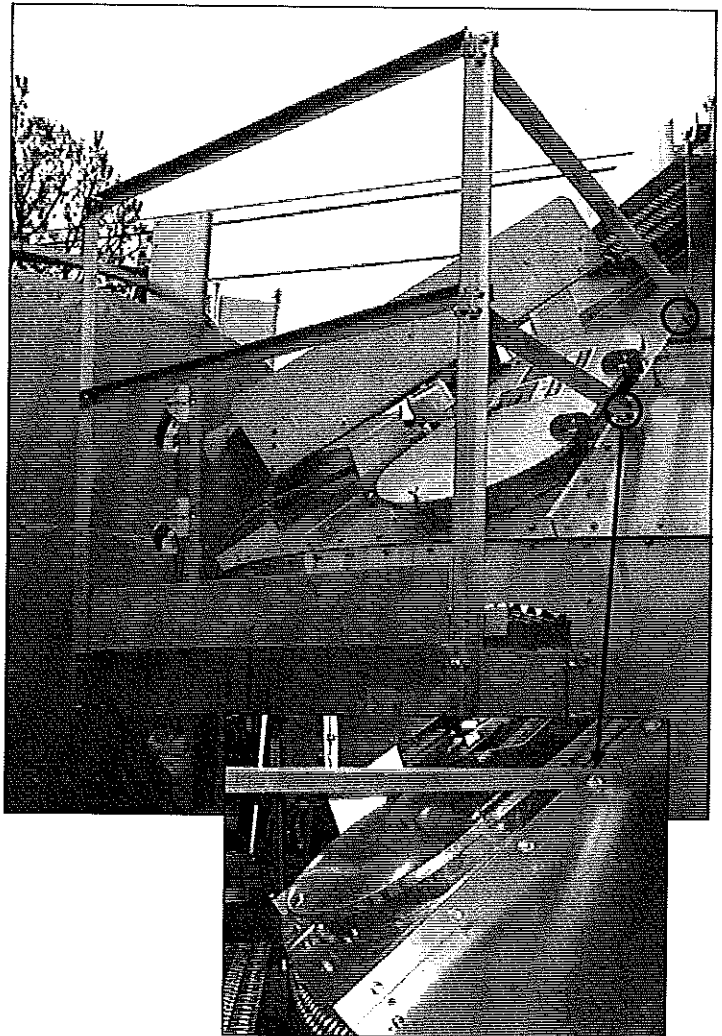


Mount the two walkway plank supports and the walkway support legs. Install the floor grating and toe kick using the same method as is used for other platforms (30-31).

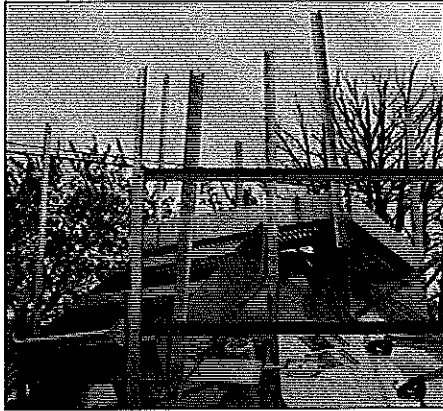


Install the handrail posts on the front of the platform to support the handrails that will go around the platform.

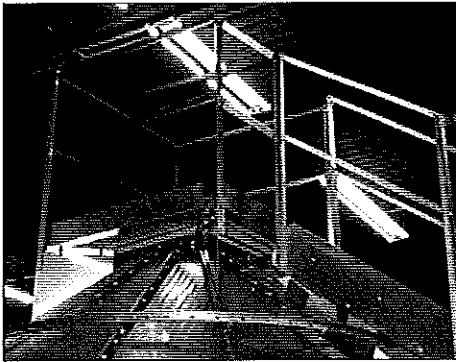
Mount the front handrail and bottom side handrail by loosening the fourth bolt from the bottom of the roof section. Mount the top handrail by replacing the eighth bolt from the bottom of the roof section.



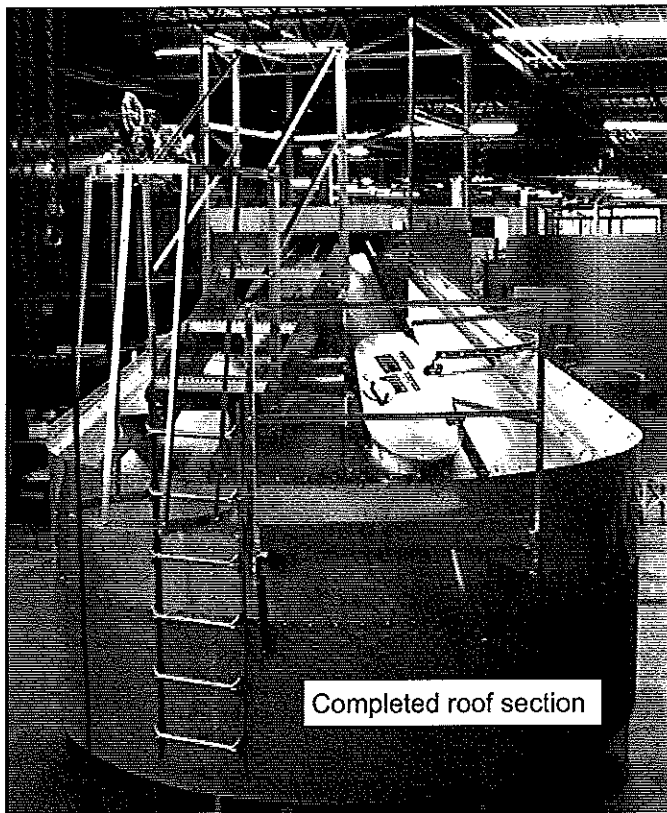
To install handrails on the peak walkway, mount the posts using the existing bolts in the bottom holes on the stairs. Place the post with the angle to the inside closest to the center of the dryer.



Mount the hand rails to the insides of the posts, with the two shorter handrails to the left of the steps.



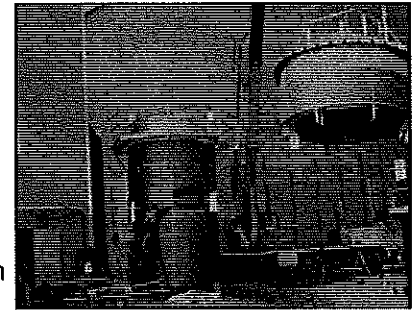
Finally, mount the peak hoops and cage straps (p. 41).



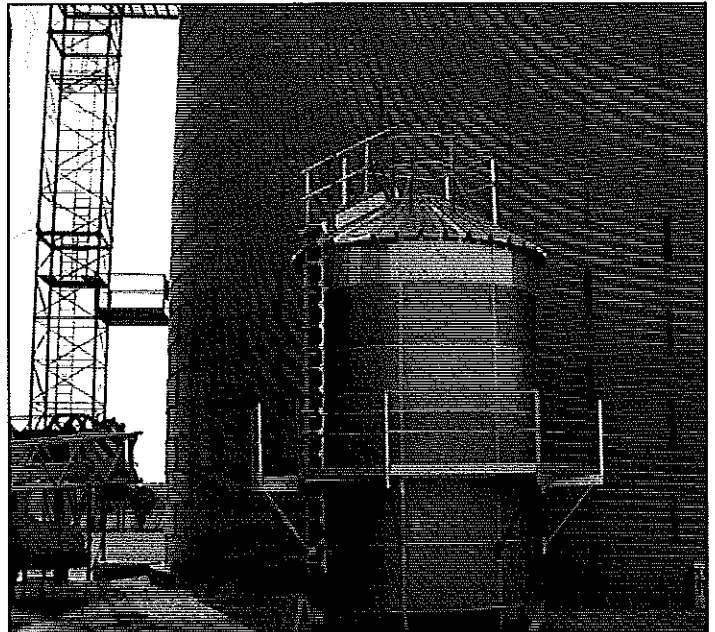
After the last circular walkway has been installed, stack the roof section (7 for model 2000, 8 for model 2400) on top of the inside walkway top section (6/7).

The inner peak contains a U-Bolt for lifting with the crane. Do not lift more than a 24' section by the peak.

The inside walkway is welded inside the section and on it you will find all the hardware needed for the field splices.



After stacking the roof section and screening in the field splice (pp. 24-26) on the ground, lift it with the crane and place it on top of the dryer.



Section 3

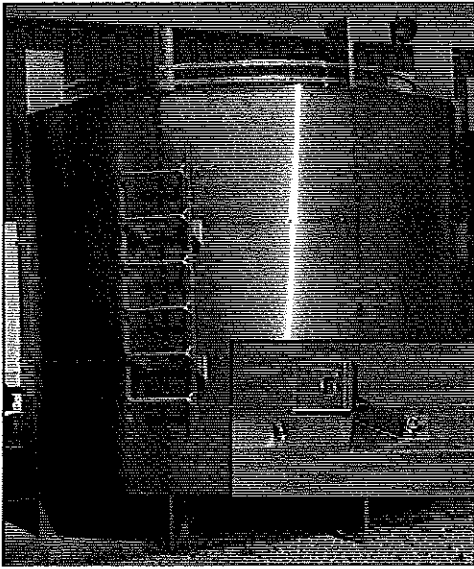
Completing the Installation

Ladder Installation

Installation of ladders on the 12' tower should begin at the bottom and move upward as the dryer is being stacked.

When screening sections on the ground before lifting, connect the ladders using ladder splices at that point. This is easier and safer than doing so after the section has been stacked.

The basic ladder installation process does not change from section to section.



Each section has a 6' length of ladder attached to the ladder brackets, which are found on every seam of the screen sections.

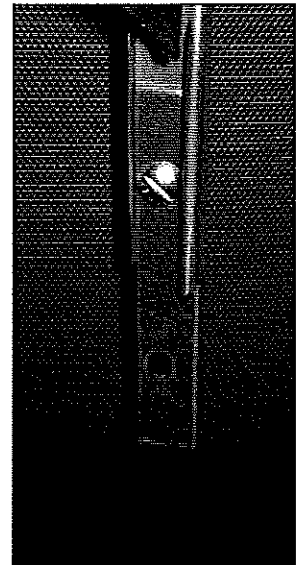
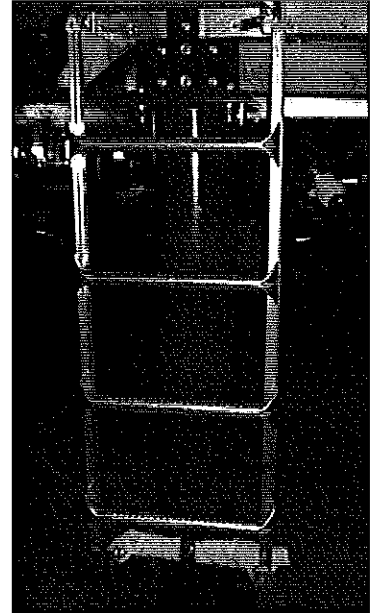
The base has a ladder attached to it. The bottom of this ladder must be no more than 12" above the ground. If it is higher when the base has been set, slide the ladder down to the desired location using the brackets in the grooves shown at bottom left.

From this point, use ladder splices to connect the base leg ladder to the 8' ladder section that will extend above it to the entrance platform at the bottom access door.

Ladder splices are used to connect the existing ladders together. Loose sections of ladders have to be connected in field splice sections as well as pre-screened sections where there are no ladders. Install ladder brackets on the field splice sections and then position the new section of ladder so that it connects to the next section below it.

To complete a ladder splice, slide the splice bar into place and insert a truss head bolt. Make sure all bolts are secure (top and bottom ladders, left and right sides) before putting weight on the new section of ladder.

To complete a ladder splice, slide the splice bar into place and insert a truss head bolt. Make sure all bolts are secure (top and bottom ladders, left and right sides) before putting weight on the new section of ladder.



These ladders are held in place using a pressure system in which the nut and bolt are tightened onto a bracket that slides into the ladder's grooved side and holds it steady.

The position of the ladder can be adjusted by loosening the bracket and sliding the ladder up or down to connect it to the next piece with a ladder splice.

Top view shows the bolt driven through the bracket from the front. The other side of the bracket fits into the grooved surface of the ladder.



Back view showing nut on the back of the bolt holding the ladder onto the ladder bracket.

Proceed up the dryer, staggering the ladders at walkways and platforms. Shorter ladder lengths prevent climbers from suffering long falls.

Consult the diagrams on pages 8 and 11 for suggested ladder placements.

Ladder Safety Cage Assembly

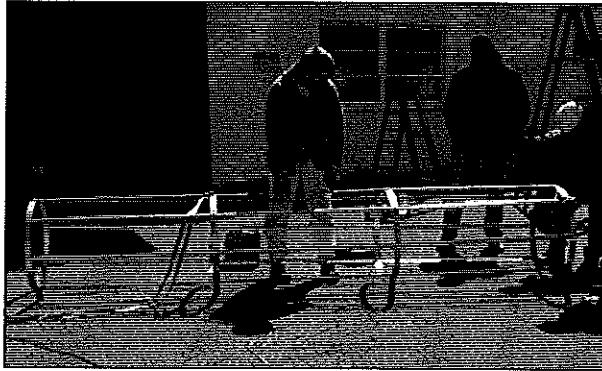
Safety cages should be installed top to bottom. In most cases, there is a 4' section of cage comprised of two hoops and 7 cage straps.

There are two possible methods for installing longer stretches of safety cages depending on available equipment and personal preference. One is to assemble all cage straps on the ground and lift them into place with the crane and the other is to install cage straps while connecting them to the ladders, moving from top to bottom.

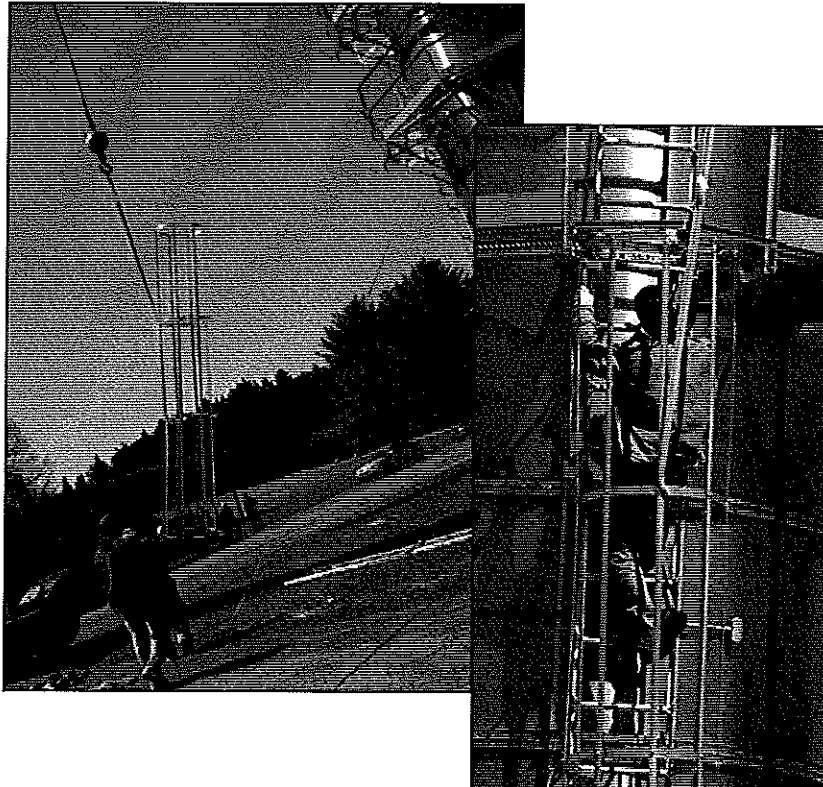
Attaching Constructed Cages with Crane:

Start by assembling the safety cage sections on the ground. Each hoop should have seven cage straps. The larger hoop will be at the bottom of the cage assembly for easier access to the ladder.

When bolting together the cage straps and hoops, each strap should overlap a hoop on each end and where two sections come together, each strap should also overlap another strap.



Once the cage assembly is complete, attach the nylon lift strap to one of the cage straps and lift it into position using the crane. Have one person waiting in position to attach the cage hoops to the ladders at the appropriate intervals.



Attaching Safety Cages to Ladders while Assembling:

The other option for safety cage installation is building them onto the ladders piece by piece. Start at the top and attach the first cage hoop. Overlap the cage straps as instructed in the previous method.

Beginning at the top will keep the cage straps hanging straight down, making it easier to attach the next cage hoop to the straps that are already there.

The second group of cage straps must be bolted to the second cage hoop at the same time it is attached to the above straps.

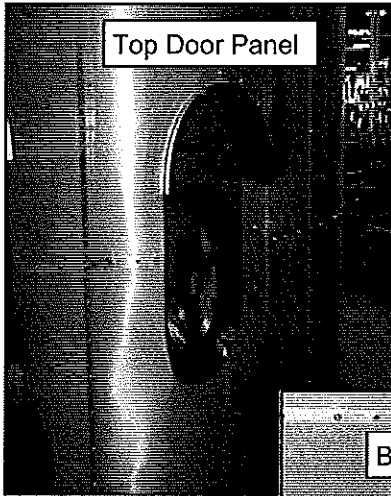
Continue down the ladder, bolting the remaining cage hoops and cage straps in the same fashion and ending with the widest hoop.

For cases in which there is only one 4' section of safety cage, simply bolt the 7 cage straps to the upper cage hoop and then bolt the larger bottom hoop to the cage straps once they are hanging down from the upper cage hoop.

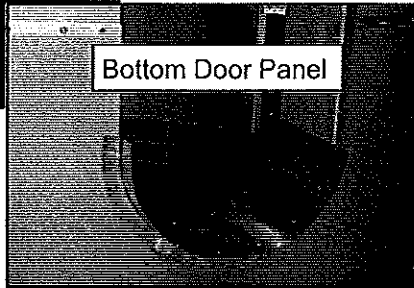
See page 8 for 2000 ladder layout and page 11 for 2400 ladder layout.

Door and Vent Assembly

Door frame assembly begins with the door frame access panels at the top and bottom of the door.



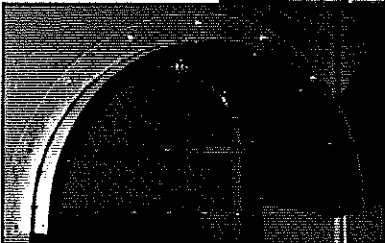
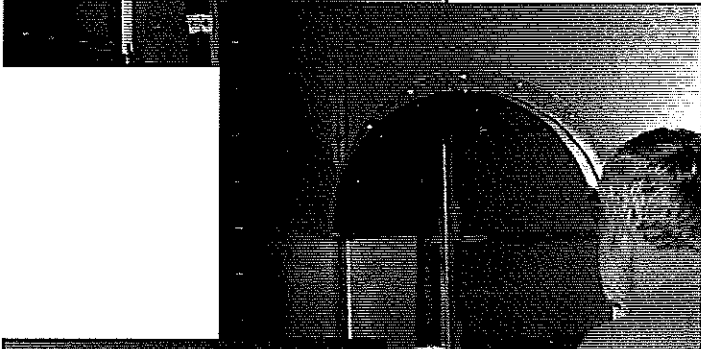
Starting with the top door frame access panel, place both access panels in the spaces provided at the top and bottom arches of the door opening.



Next, center the top access panel by dimensioning from the screen seam to the bottom of the access panel. When both sides are the same dimensions, the access panel is straight and can be permanently affixed.

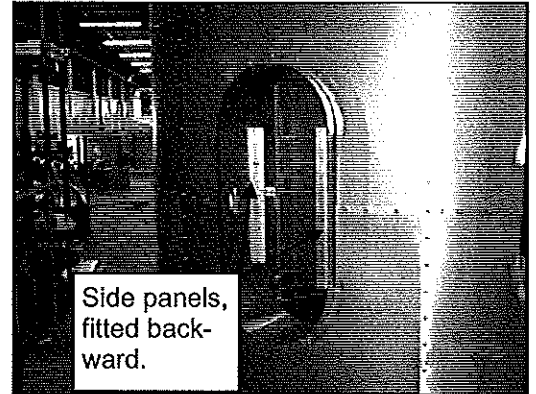


To attach the top access panel, drill out the top screen and attach using 1/4-20 x 1/2" hardware bolts.



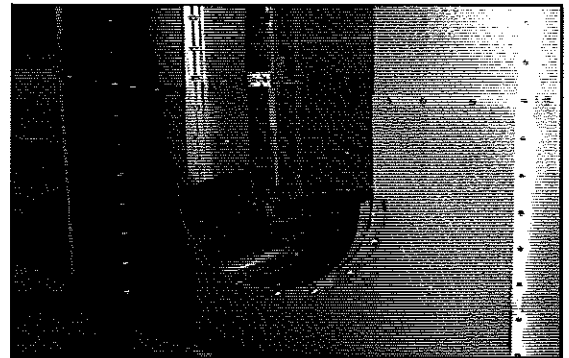
To center the bottom access panel, you must first attach the two side panels, backward, abutting the top door frame access panel as shown.

When these side panels are in place, they will hold the bottom access panel in the correct position.

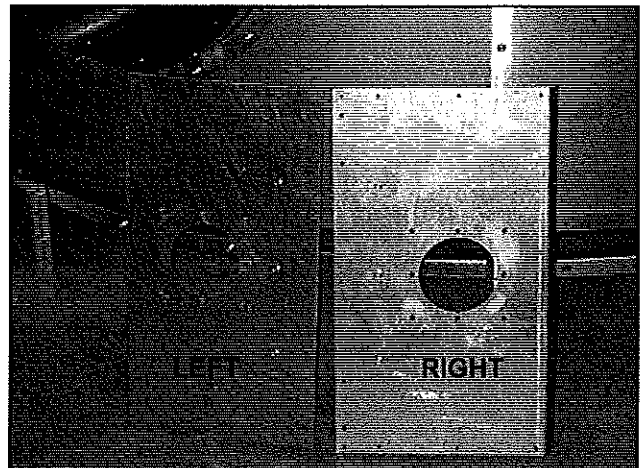


After the four bottom holes have been located, remove the side panels and finish bolting in the bottom access panel.

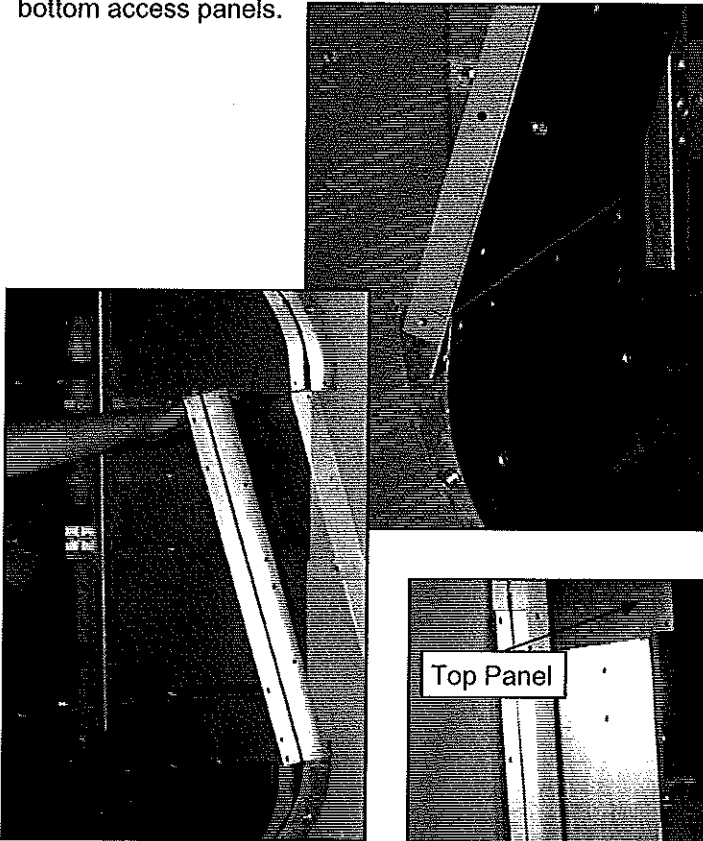
As with the top access panel, drill out the screens and attach the bottom access panel using 1/4-20 x 1/2" hardware bolts.



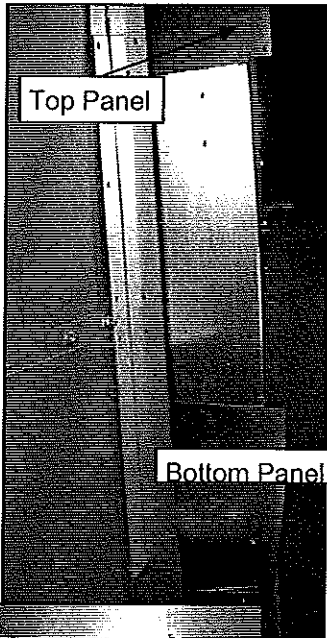
The next step is to permanently attach the side panels, facing in the correct direction. First, position the panels somewhere close to the door and lay them out with the left panel on the left side and the right panel on the right side.



To install the side panels, start by lowering them into the bottom access panels.

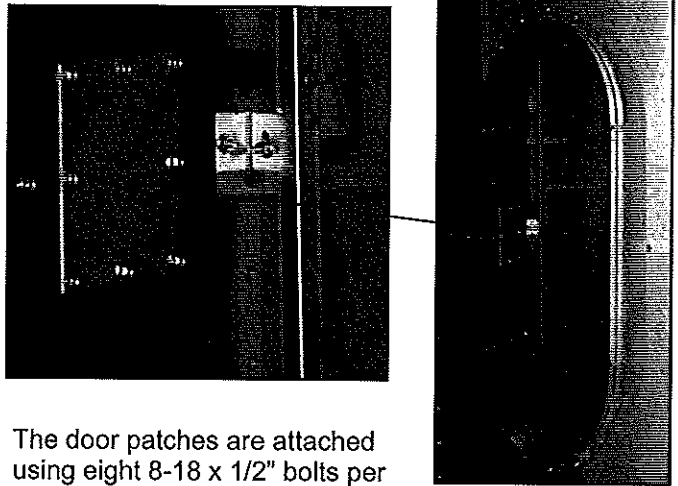


Position the side panels behind the top and bottom panels.



Once everything is lined up, bolt the side panels in place using 1/4-20 x 1/2" hardware to secure the panels.

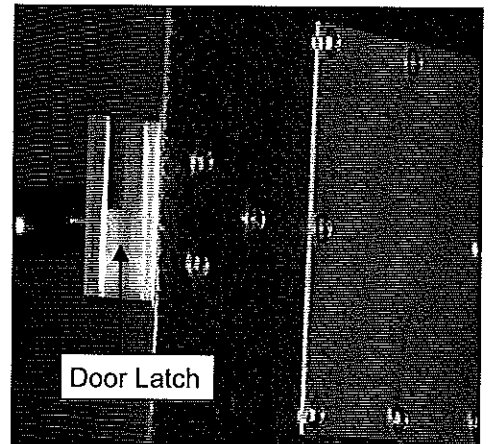
Attach the door patches to cover the openings in the two side panels, after they have been bolted to the frame.



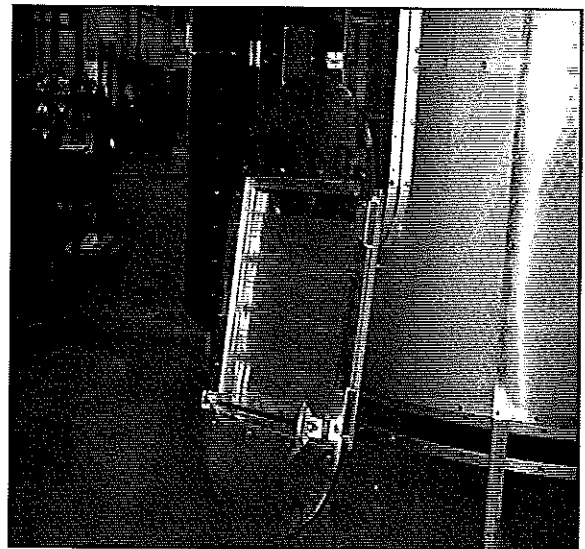
The door patches are attached using eight 8-18 x 1/2" bolts per side.

After the door patches are bolted on, it is time to mount the door itself on the frame.

First, attach the latch to the left side panel using two 5/16-18 x 3/4" bolts.



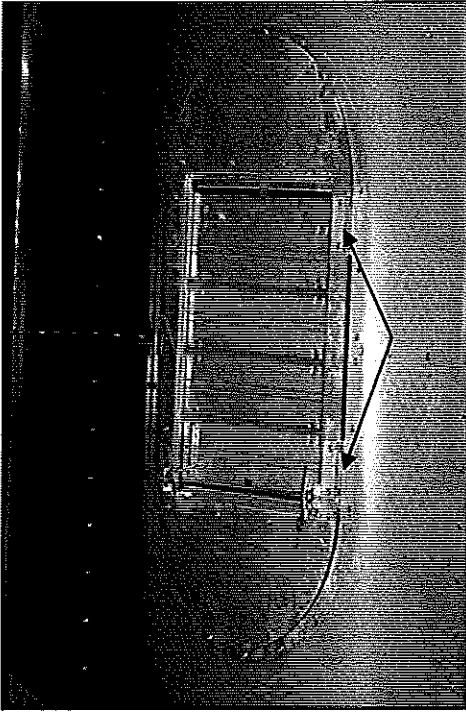
Before attaching it, position the door assembly next to the opening as seen below.



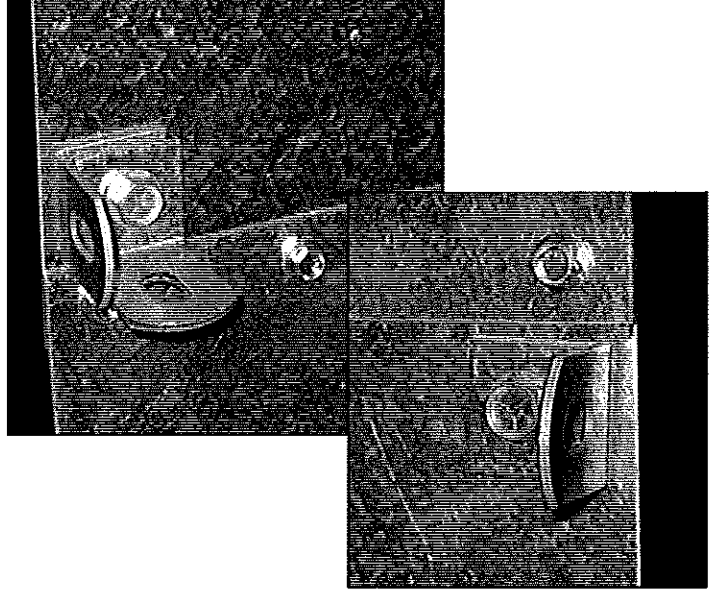
Vent Installation

Installation of the vents is similar to that of the doors.

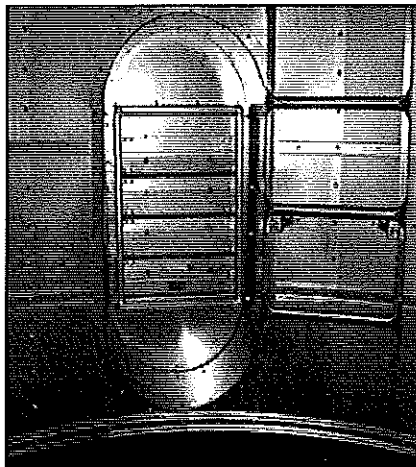
To install vents, follow the door installation instructions until you have installed the side patches. Instead of latches and hinges, the next step for vent installation is to attach angle brackets to the door frame.



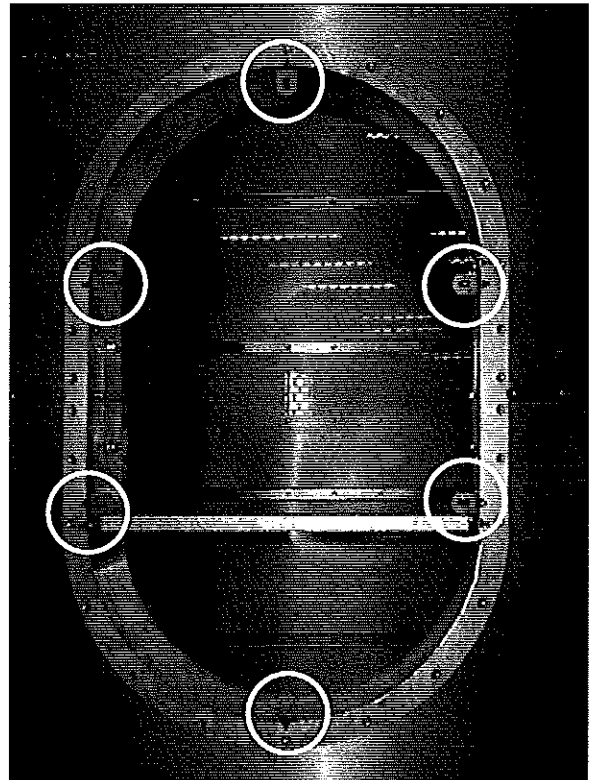
Using 5/16-18 x 3/4" bolts and nuts, mount the door on the hinges on the right side, as seen above.



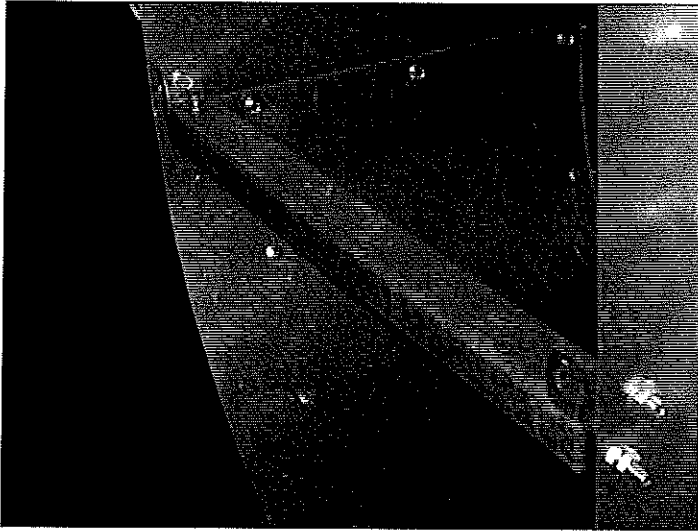
View of the door from inside the dryer



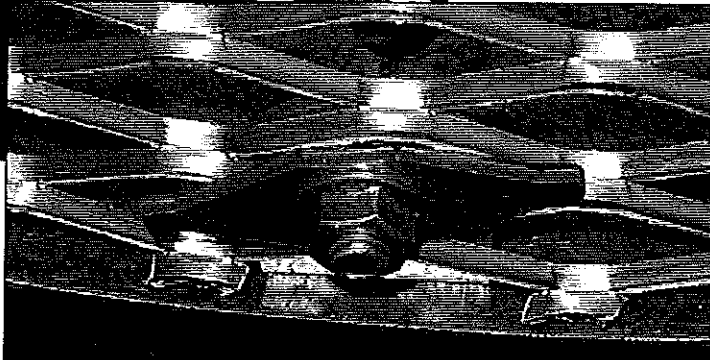
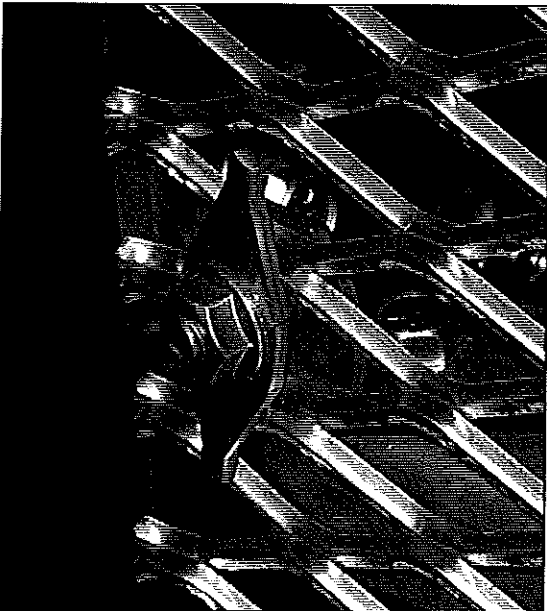
The angle brackets should be positioned in six locations. There should be one each at the center of the top and bottom panels and two on the outside edge of each side panel, at top and bottom where they connect to the other pieces.



In the previous photo showing location of the angle brackets, also note the brace, which is mounted using the second-lowest set of angle clips.

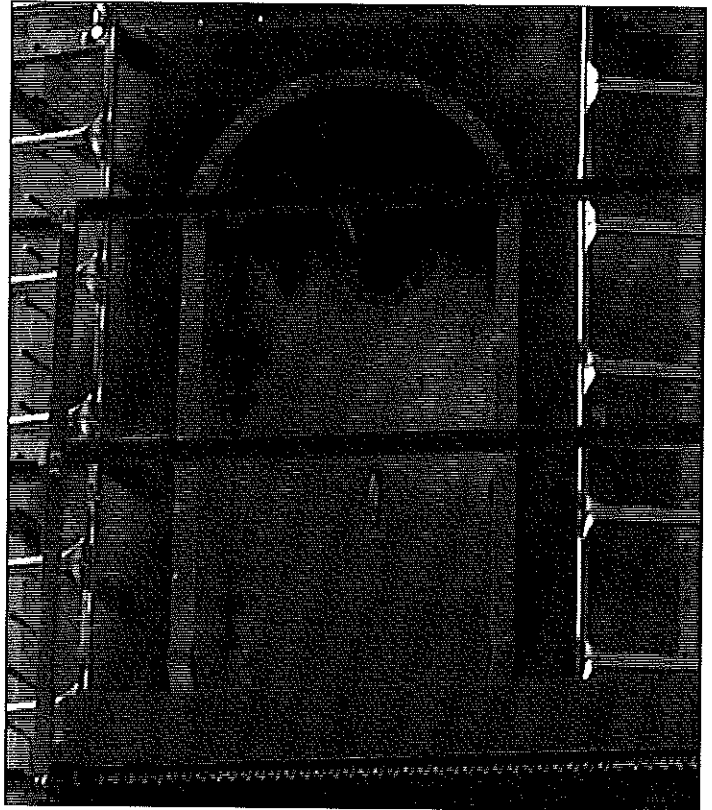


Place the screen in the opening. To secure the screens, fasten anchors to the angle clips using carriage bolts, flat-washers, and whiz locknuts to attach each one with anchors under the bolt head and flatwashers next to the locknut.



Heat Door

The heat door is located near the burner section to open inward providing access to the inside walkway and, unlike all the other doors, opens inward rather than swinging out.

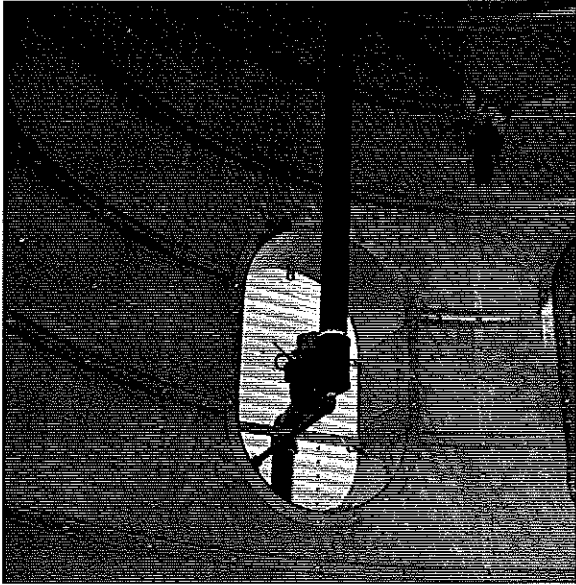


The heat door must be assembled in the field and the process is similar to that of the other doors but the heat door is mounted on the back (what will be nearer the inside) of the door frame.

There is a built-in area for the latch and hinges on the heat door.

Plumbing

The burner feed pipe, which was earlier lowered into place using the crane, will be fed all the way down to the gas door and out to the gas train. It should rest on the brace installed in the vent opening. Cut holes in the vent where needed to accommodate pipes.



Burner feed pipe: bottom view

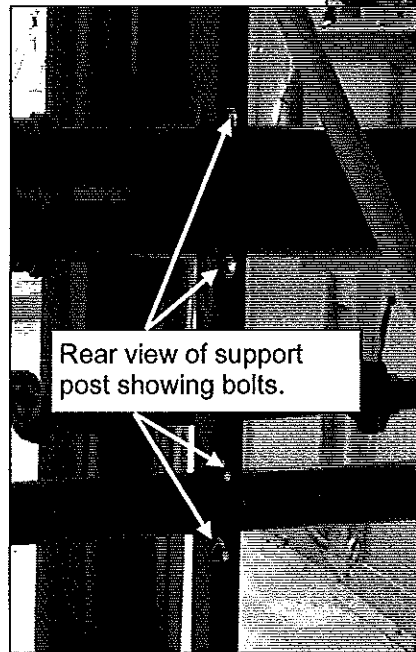
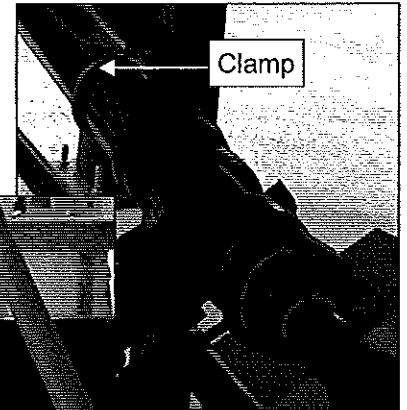
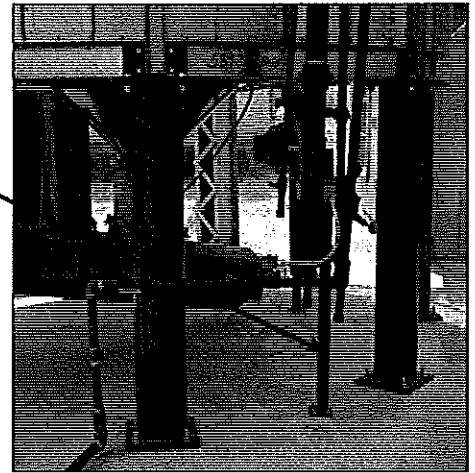
Extra heavy black pipe is run before the regulator and standard black pipe is run after the regulator.

The mesh on the vents must be cut in order for the pipes to pass through. The heavier pipe rests on the brace and is held in place with a metal bracket that is attached to the brace. Cut the mesh and push the pipe through. The smaller pipes can rest on the mesh itself and do not require additional support. Cut two more holes in the mesh below the brace and feed the two smaller pipes through them.

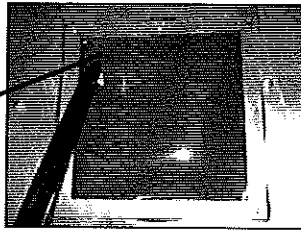
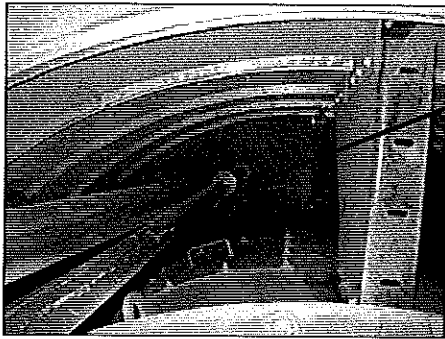


The support post to which the plumbing is attached is anchored in the concrete alongside the legs.

Clamps are bolted to the support post and hold the pipes in two places. These clamps are attached with bolts directly above and below the pipes they are holding in place.



The piping from the burner extends down and must go through the slope floor. There is a silicone pad that can be cut and the pipes fed through it. The silicone contracts tightly around the pipe and restricts movement and air flow between the two chambers. The silicone must be sliced before the pipe is run through it. **DO NOT USE THE PIPE TO PUT A HOLE THROUGH THE SILICONE.**



The manifold is supported at the regulator and at the stand pipe end. The inlet pipe sizes are as follows: The LP line is 1" extra heavy pipe, Natural Gas is 2" standard pipe with 3" manifold standard pipe.

When providing clearance between the heat section and the cooling section, seal the area as tightly as possible.

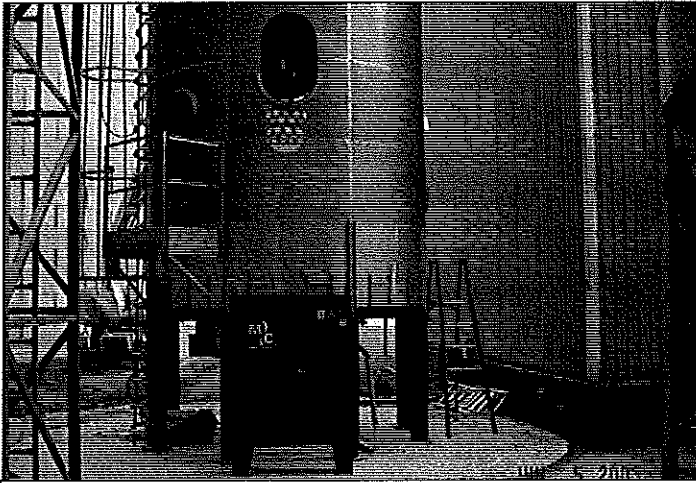
The heat slope floor will not be flush with the blower. Create a 3/8" space all the way around the blower by adjusting the plate if the gap is larger than 3/8".



High Voltage Cabinet and Remote Cabinet Installation

The M-C 12 foot tower dryer has three cabinets: A high voltage cabinet, control cabinet and a VFD enclosure.

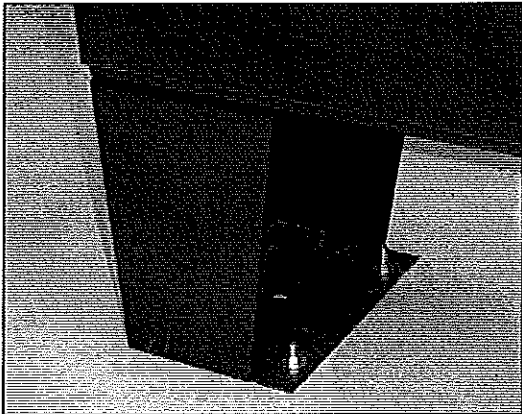
High voltage components have the same style enclosure no matter which control option the dryer is equipped with.



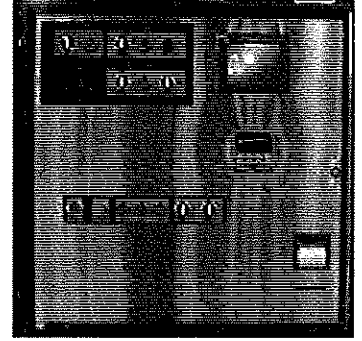
High Voltage Cabinet

The cabinets are shipped together on a pallet and must be installed in the desired locations relative to the dryer. The high voltage cabinet should be positioned according to the electrical and gas configuration diagrams found in the manual.

Anchor the legs of the high voltage cabinet into the cement pad.



The control cabinet varies based on dryer options. The standard control is Pinnacle Lite, shown at right. The control cabinet is mounted on two legs and has a clear glass door.



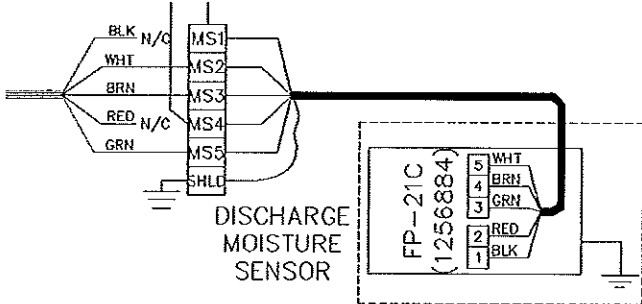
It is strongly recommended that the control cabinet be located within a building so that it is protected from the elements. The cabinet can remain on its stand or can be mounted directly on the wall.



Electrical

Moisture Sensor

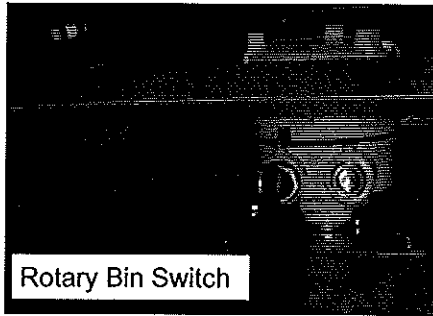
Run flexible liquidtight from the high voltage cabinet to the moisture sensor. There is a shielded 5-wire cable that is grounded in the high voltage cabinet. Consult the wiring diagram in the high voltage cabinet for the correct wire terminal numbers.



Where and how the sensor is mounted depends on the type of conveyor used. If a screw conveyor is being used, cut the bottom of the tube and trim away flighting 7" for proper clearance.

Rotary Bin Switch

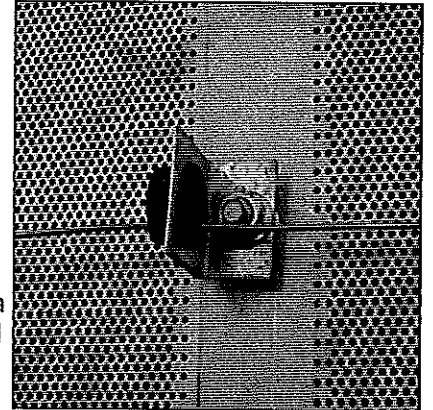
The rotary bin switch is pre-wired and a liquid-tight assembly is attached to the ladder. Feed the liquidtight assembly all the way down the dryer to connect with the high voltage cabinet, using the wiring diagram as a guide. Use mounting tabs to mount the liquidtight to the dryer.



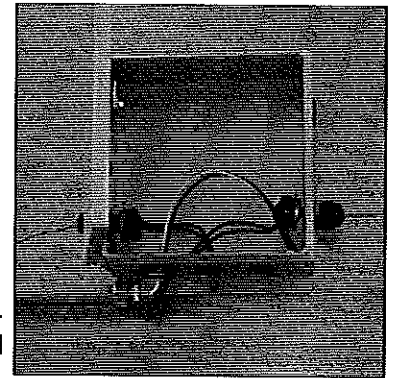
Rotary Bin Switch

Mounting Linear Limit Boxes

Run the copper linear limits around the circumference of the dryer. Use the mounting brackets to mount the linear limits to the screens and use heat shrink to bond the two sides together. The bulbs should overlap each other.

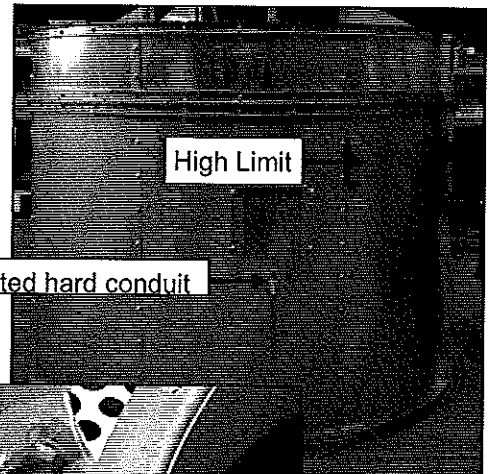


Run hard conduit from the ignition box through the burner housing and slope floor. Feed hard conduit out through the motor door and continue from there with flex conduit. The flex conduit will connect to the bottom of the high voltage cabinet.



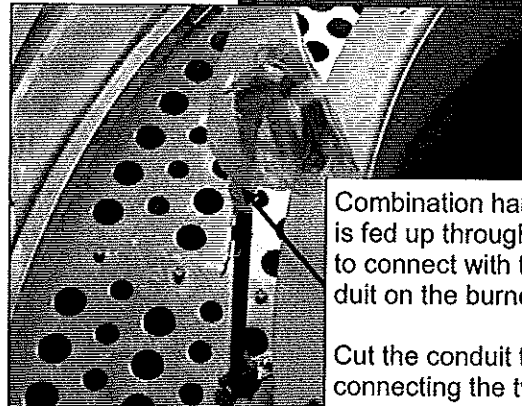
Ignition

Hard conduit is pre-mounted in the blower section. Connect the conduit to the ignition box and wire the high limit and transformer. There is flex conduit attached at the bottom of the hard conduit to connect through the air vent door to the high voltage cabinet.



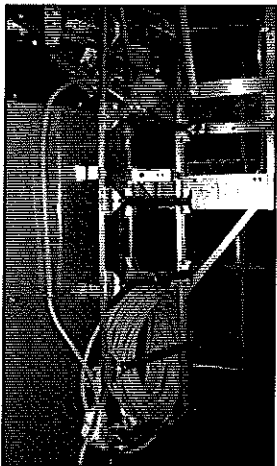
High Limit

Pre-mounted hard conduit



Combination hard/flex conduit is fed up through the heat floor to connect with the hard conduit on the burner housing.

Cut the conduit to fit before connecting the two.



The roof section is shipped with a roll of flexible liquidtight already attached to the ladder. After the roof section is in place, uncoil this and feed it down to the high voltage cabinet, according to the wiring diagram found inside the door of the high voltage cabinet.

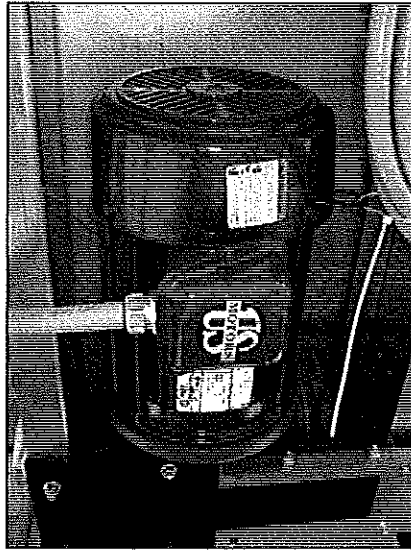
RTD Mid-Grain Sense Probes

The four RTD modules are pre-mounted at four equidistant points around the circumference of the dryer and connected with liquidtight. The signal meets at a central junction box located next to the ladder for easy access. The dryer arrives with liquidtight coiled around the junction box. Run the liquid tight down to the high voltage cabinet.

Discharge Motor

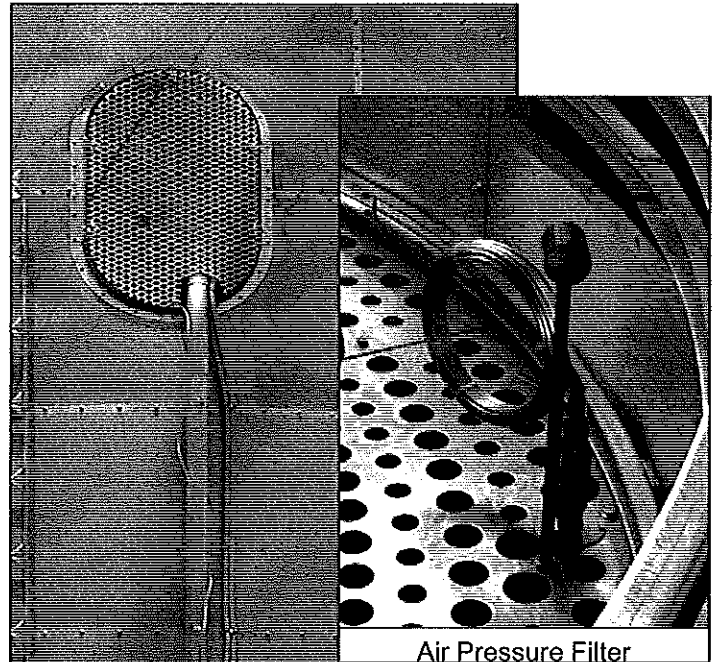
Flex conduit is attached and wired to the motor. Run the flex conduit to the high voltage cabinet and use the flex conduit brackets and a clamp to mount it to the bottom of the base to protect the assembly.

Run flex conduit for the discharge motor and discharge bin switch.



Air Pressure Tube

Run 1/4" metallic tubing from the air pressure switch in the high voltage cabinet to the air vent door and onto the air pressure filter. The filter is attached to the heat floor.



Safety Circuit — Customer Connections

Customer connections for remote equipment are the customer connection terminal blocks located in the remote cabinet. They are labeled:

- C1 - C2, which are remote fill equipment
- C3 - C4, which are remote discharge equipment
- C5 - C6, which are dryer safety circuit for remote starters

C1 - C2 are a dry set of contacts that are for the customer to supply power to C1 and C2 and would run back to the customer's fill starter and pull in starter. C1 and C2 contacts close when the dryer fill cycle begins. When this closes, the dryer will start the customer's fill equipment running, provided that the remote fill equipment has a good power source.

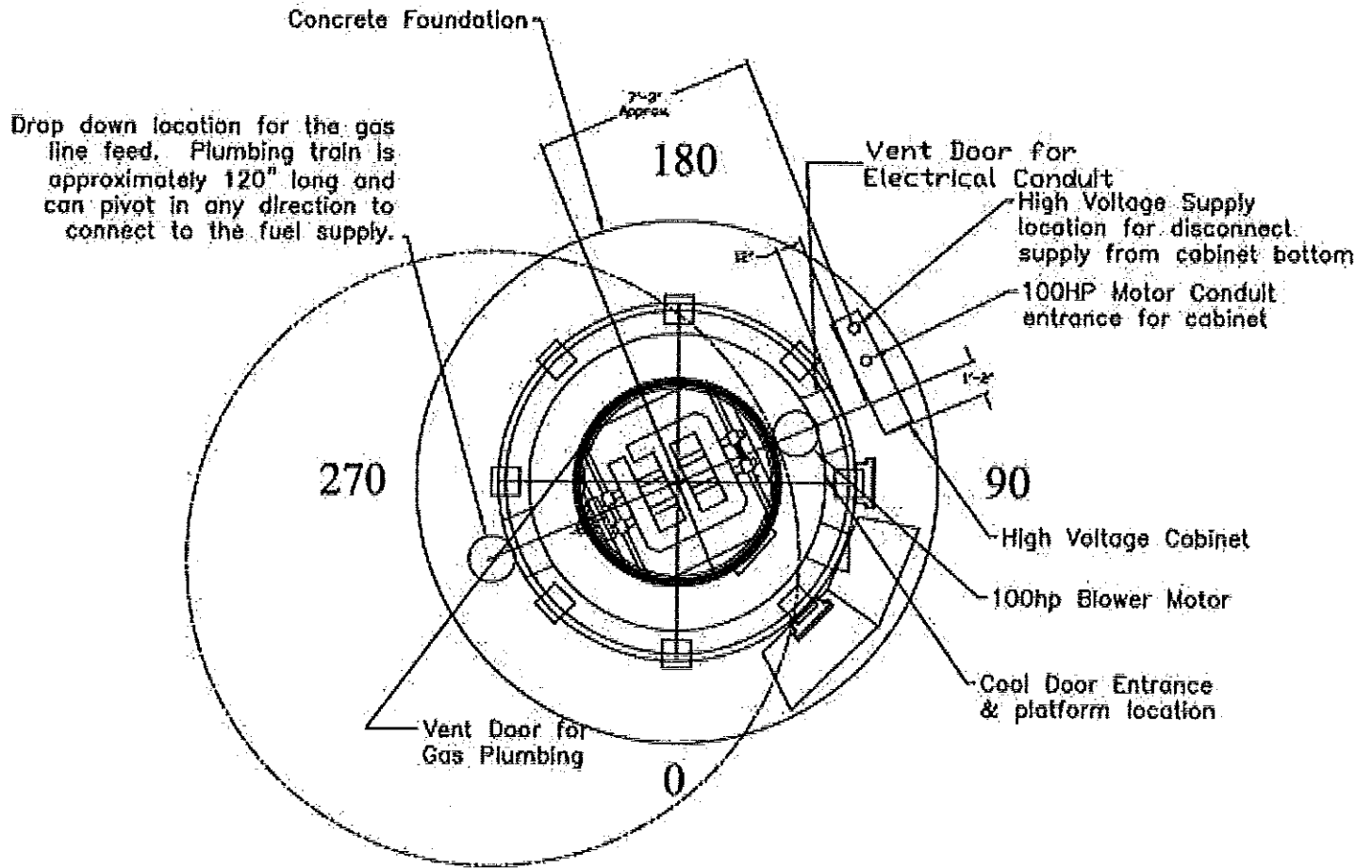
C3 - C4 are a dry set of contacts and are for customers to supply power to C3 and C4 and would run back to the customer's discharge starter and pull in starter. C3 and C4 contacts close when the dryer discharge system begins. When this closes, the dryer will start the customer's takeaway equipment running, provided that the remote discharge equipment has a good power source.

C5 - C6 are part of the dryer safety circuit and carry 120 volts as long as the dryer power switch is in the ON position. The dryer originally is delivered to the customer with a jumper across C5 - C6 to allow complete testing of the safety circuit. The jumper can be removed and two wires run from C5 & C6 to any motor starter overloads that will be engaged when the dryer is running. This will attach through a normally closed path of contacts that will open when the motor starters trip if thermal conditions are exceeded. Opening of this pathway will drop out the entire dryer. Remember that the dryer is providing power from C5 to C6 and must be tied to a dry set of contacts on the customer's equipment. **This is ONLY to be done by a trained Electrician.**



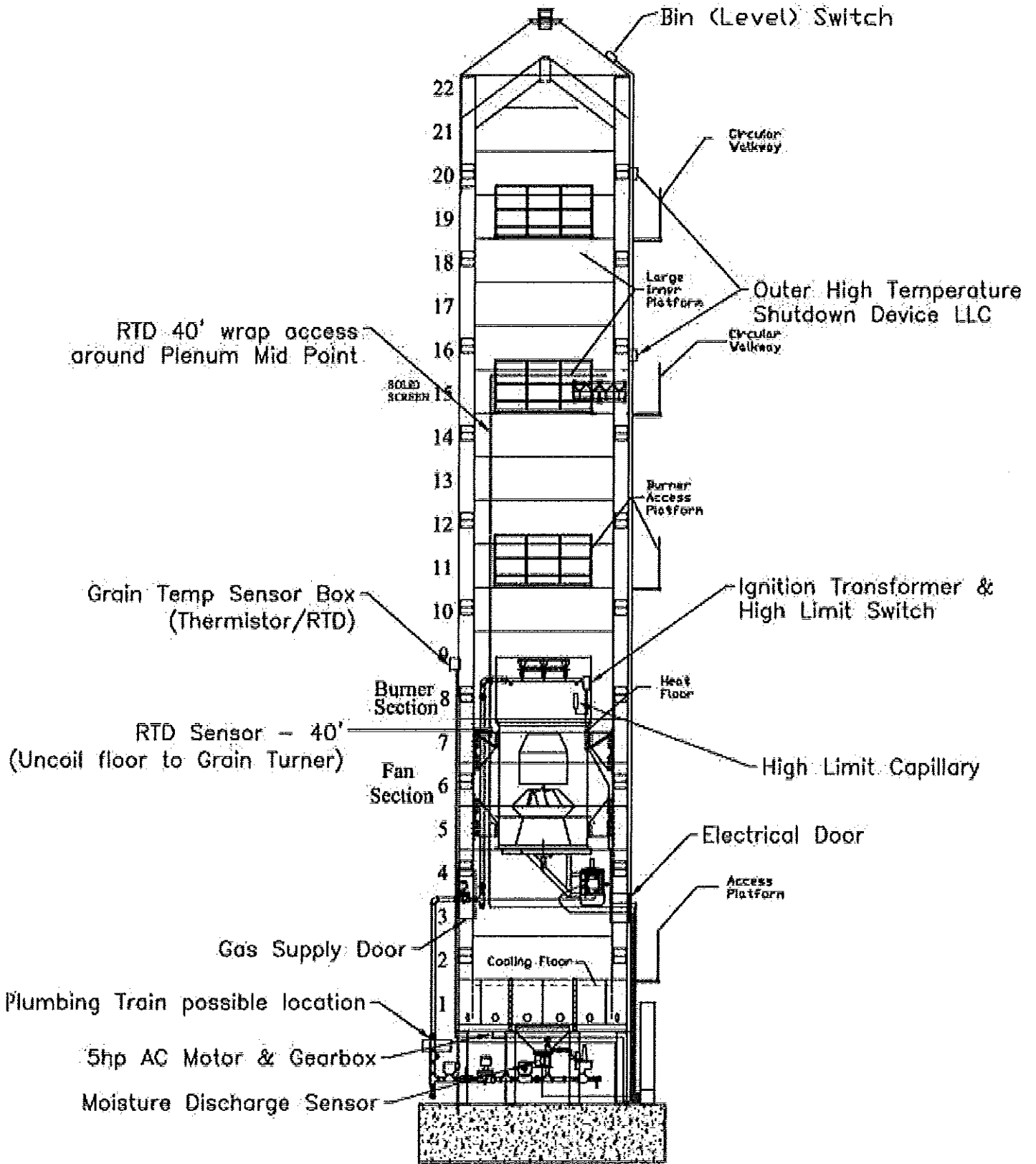
Run flex conduit from the thermistor box down to the high voltage cabinet.

Electrical and Gas Conduit Runs

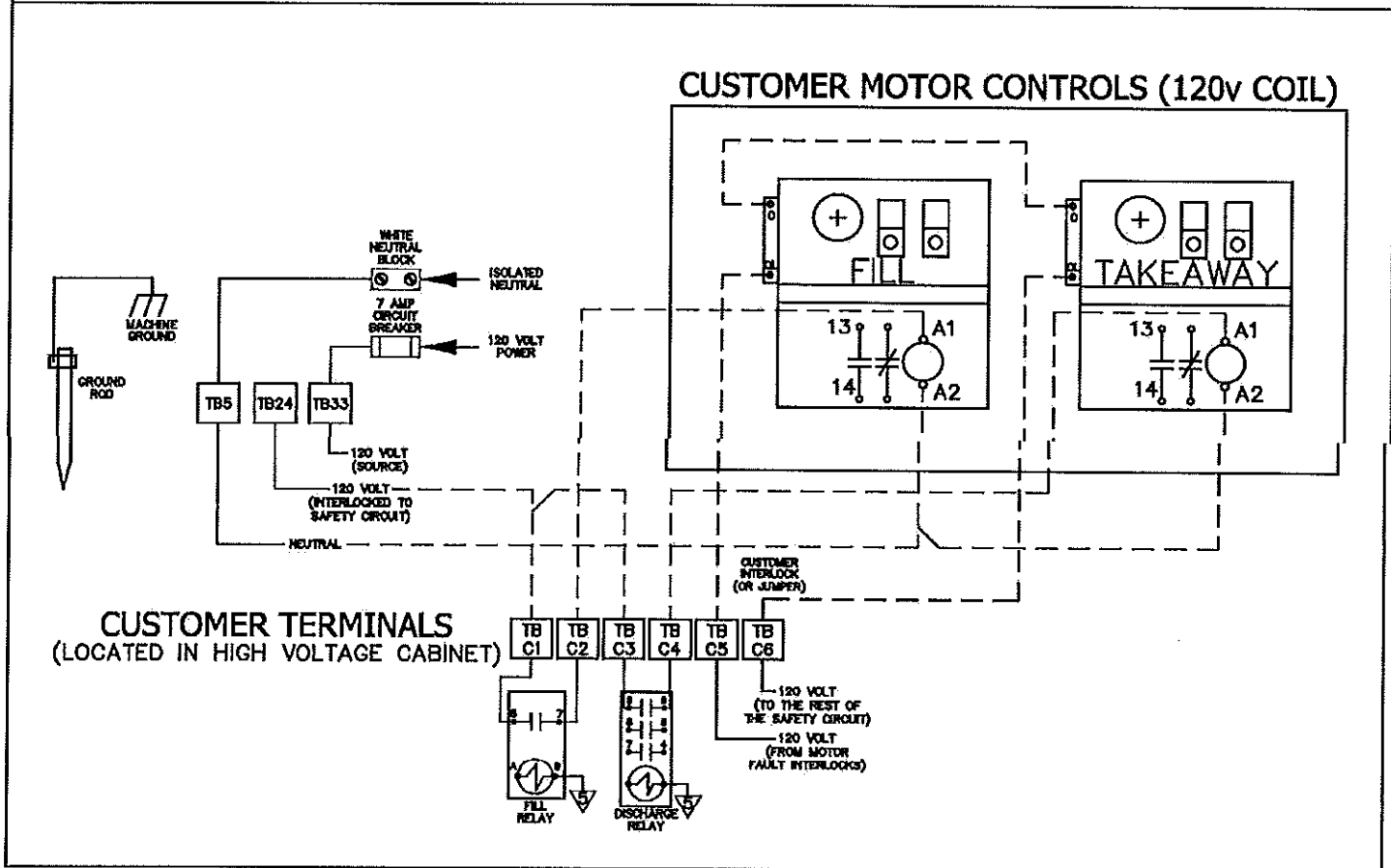
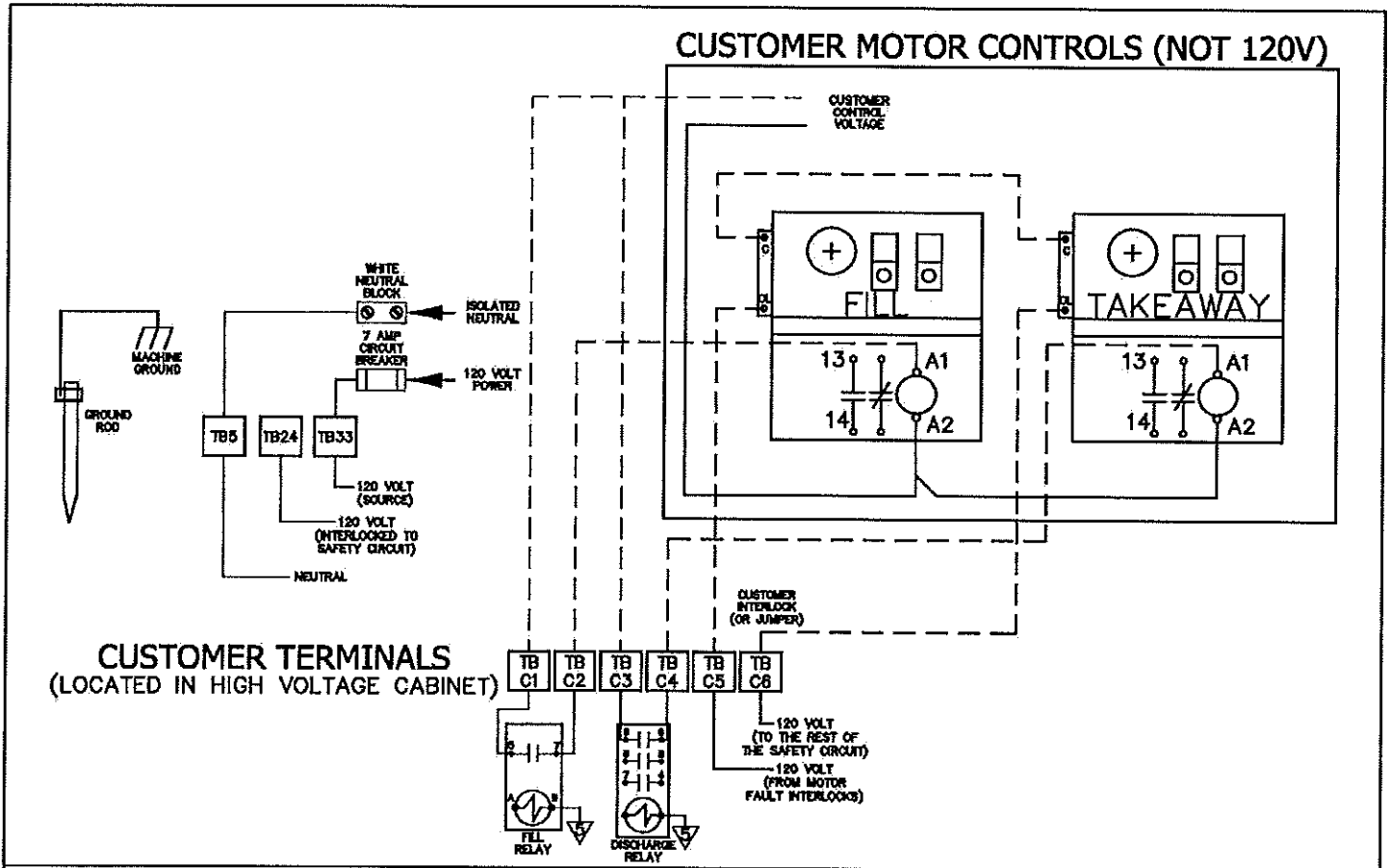


Scale 2:1

Electrical and Gas Conduit Runs Continued



Safety Circuit — Customer Connections



Remote Dryer Control Cabinet Specification

- The remote control cabinet for the grain dryer will control all dryer functions. The control cabinet is a UL508A-rated panel device. The cabinet is NEMA 4 rated. The remote control cabinet must be permanently fixed to the concrete or a vertical structure to avoid damage from being blown over onto the ground.
- The remote control cabinet is typically rated for maximum 7-amp continuous load and no more than 135 volts AC. Exceeding these conditions will result in damage to internal components.
- The wiring harness contains 120-volt AC, 24 volt DC and signal wires.
- The standard wiring harness is 20' wall to wall from the remote cabinet to the high voltage cabinet.
- The maximum recommended length of the wiring harness is 100' wall to wall from the remote cabinet to the high voltage cabinet.
- Standard wiring harnesses will have both ends of the wiring harness connected in both cabinets. The wiring harness will also be pre-installed in flexible liquid tight.
- A non-standard wiring harness is anything between 20' and 100' long. This wiring harness must be field determined and will not be supplied with flexible liquid tight. It needs to be installed in hard conduit, preferably by installing one hard conduit for 120 volt AC. The second hard conduit line should contain low-voltage DC and signal wires. These signal wires will be shielded cable and ethernet two cable, grounded in the high voltage cabinet only. The separate conduit is especially important for longer wiring harness runs and with the use of temperature controllers. The separate lines will aid in eliminating noise and voltage induction that can be problematic with signal and voltage lines running parallel and in the same conduit.
- The wire harness from cabinet to cabinet consists of labeled wires that indicate points of connection (terminal block to terminal block scheme) and cables with number labels. Refer to the wiring diagram to double check that the proper connections are made.
- Standard wire size for 120 volt AC is 16awg TFF copper wire. Shielded cables are smaller gauge (20-22) and are twisted. The shielded ground is connected to chassis ground on one end only and typically that ground is at the high voltage cabinet.
- The remote cabinet contains a 5.7" color touch screen HMI (Human Machine Interface). The remote cabinet should be mounted indoors if at all possible. The low and high ranges of ambient temperature will affect the performance of the screen. All grain dryer functions are controlled from the Remote Cabinet HMI.
- The high voltage cabinet contains the PLC unit and add-on modules.

LIQUID TIGHT INSTRUCTIONS

- The moisture sensor should be mounted to the take-away tube between the motor and the end of the takeaway tube.
- Ignition box wiring with hard conduit is staged on the burner cover.
- Attach the long end to the ignition box, feeding the wire through and into the box.
- Feed the wire and pipe through the hole. Attach EMT 90 with 1/2" straight wire tape from the ignition box through the liquid tight to the high limit/ignition box.
- From the high limit/ignition box, lower 3/4 liquid tight, feeding it through the motor door down to the high voltage cabinet. Feed thermocouples through the star plug to between the screen and heat floor onto a mounting bracket next to the ladder.
- Run 1/2" liquid tight from the discharge motor to the high voltage cabinet.
- Raise the motor wire assembly with the 90 deg. sweep closest to the motor door.
- Feed the motor wire through the door. Brace aluminum conduit to both u-struts on the back of the high voltage cabinet as high as possible. Mount the motor wire box to the motor.
- Connect the motor wire to the wire in the conduit. Brace the aluminum conduit to the brackets in the motor door. Locate the motor wire knockout after remote wire.
- Bundles and Incoming Voltage: Run 1/2" liquid tight from the actuator, primary solenoid and maxon to the high voltage cabinet.
- Run 3/8" liquid tight from the solenoid in the cooling section out the plumbing door to the high voltage cabinet.
- Lower 3/8" liquid tight from the bin switch on the roof along the left side of the ladder to the high voltage cabinet. Use supplied mineralac to attach it to the dryer.
- Lower 1/2" liquid tight from the RTD junction box, located next to the ladder, down to the high voltage cabinet. Use supplied mineralac to attach it to the dryer next to the bin switch liquid tight.

TOWER DRYER INSTALLATION AND INSTRUCTION PROCEDURE & CHECKLIST

Dryer must be properly shipped and customer ready with the proper main power, fuel supply foundation and tie down requirements before starting this installation instruction procedural check sheet. The tower installation manual must be followed with this checklist.

1. - Check all concrete foundations specifications, including foundation, concrete, and anchor bolts, as per the Concrete Foundation general notes.
2. - Check shipping and unloading sections as per the Set Up instructions with tower sections and weights.
3. - Base Section Installation, including base ladder installation, cross bracing, concrete anchors, outside screen braces, and base ladder installation.
4. - Connect outside walkway installation as per details in installation manual.
5. - Stack screen sections and roof as per ladder and platform requirements shown in manual.
6. - Check ladder safety cage assembly as per tower instruction manual.
7. - Check natural gas or liquid propane plumbing assembly on tower per installation manual.
8. - Check Wiring - Includes fan motor, ignition board box, and ignition electrode and sense wires as called out in the installation manual.
9. - Check air pressure switch and moisture control RTDs.
10. - Check rotary bin switch and linear limits.
11. - Check weather station as indicated in this manual.
12. - Check moisture sensor terminal blocks.
13. - Check customer connection terminals.

Dryer Owner Name: _____

Dryer Serial Number: _____ Dryer Model Number: _____

Installation Completed By: _____

Please check off and sign this form and fax to 815-459-5889.

This form will be collected and stored at Mathews Company in the Engineering Department



Iron Horse Quality