



4024 - 4" Stiffened Grain Bins Anchor Bolt Charts

Instructions Manual

PNEG-2027

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All information, illustrations, photos and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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1. Anchor Bolt Charts

Anchor Bolt Detail for FC Stiffeners

The following is the minimum requirement for anchoring of standard tanks. Refer to sidedraw instructions for special anchoring details.

1. 5/8" Diameter anchor bolt (A) is the minimum allowed, 3/4" diameter anchor bolt (A) is the minimum with sidedraw flume system.
2. Exposed anchor bolt thread height (B) for 5/8" and 3/4" diameter anchor bolts are 3" (7.6 cm) and 5" (12.7 cm) respectively.
3. Overall anchor bolt length (C) for 5/8" and 3/4" diameter anchor bolts are 14" (35.56 cm) and 18" (45.72 cm) respectively. (See Figure 1A.)

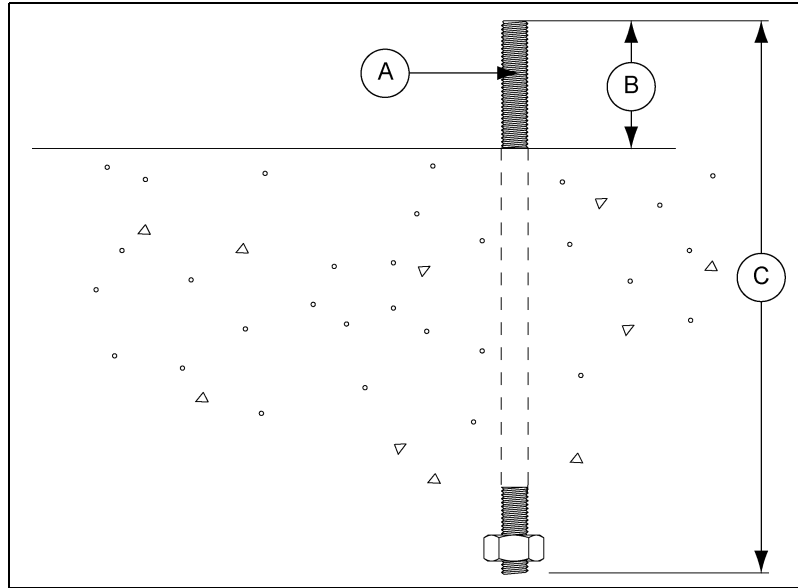


Figure 1A Anchor Bolt Example (3/4" Diameter Anchor Bolt Shown)

Ref #	Description
A	Anchor Bolt
B	Anchor Bolt Thread Height
C	Anchor Bolt Length

FC Stiffener - Base Boot Detail

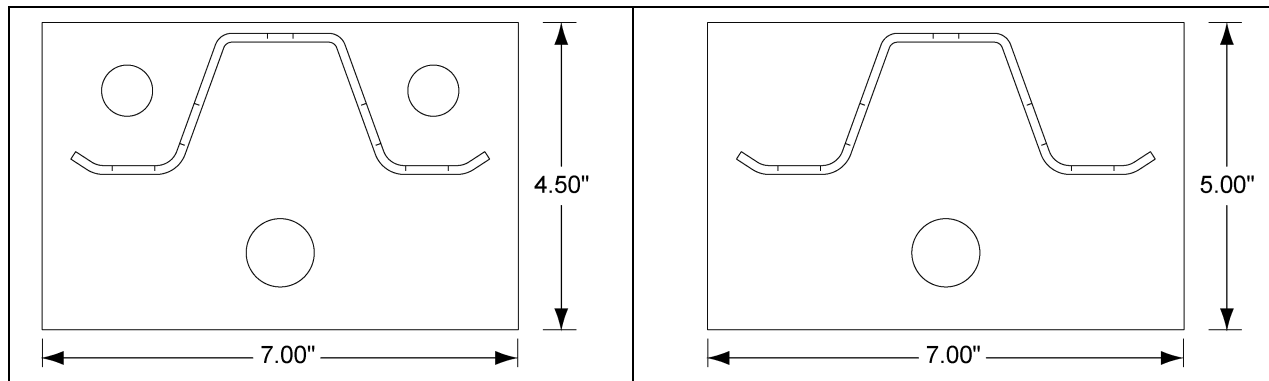


Figure 1B Top View

Anchor Bolt Detail for CTS Stiffeners

The following is the minimum requirement for anchoring of standard tanks. Refer to sidedraw instructions for special anchoring details.

1. 3/4" Diameter anchor bolt (A) is the minimum allowed, 1" diameter anchor bolt (A) is the minimum with sidedraw flume system.
2. Exposed anchor bolt thread height (B) is 5" (12.7 cm).
3. Overall anchor bolt length (C) for 3/4" and 1" diameter anchor bolt is 18" (45.72 cm). *(See Figure 1C.)*

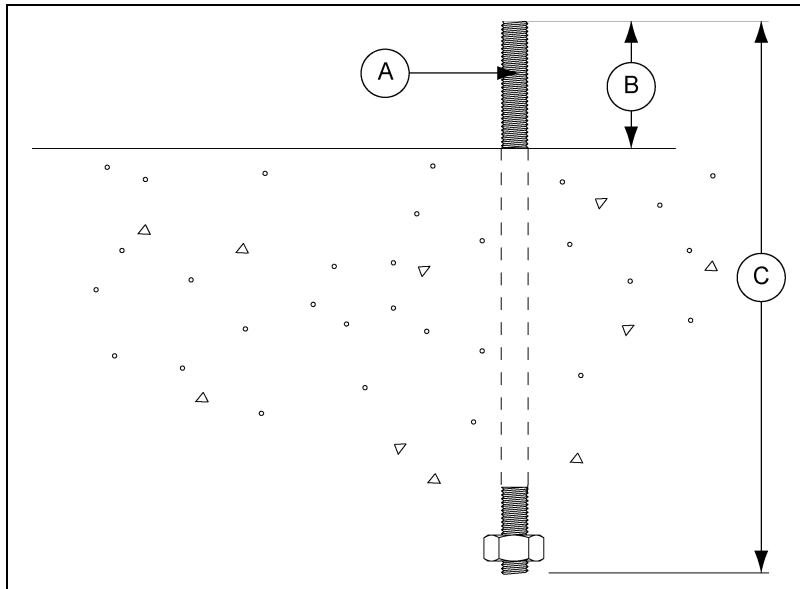
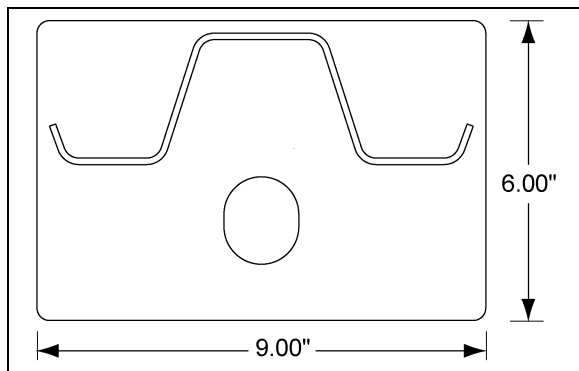


Figure 1C Anchor Bolt Example (3/4" Diameter Anchor Bolt Shown)

Ref #	Description
A	Anchor Bolt
B	Anchor Bolt Thread Height
C	Anchor Bolt Length

CTS Stiffener - Base Boot Detail



**** TYPICAL CTS BASE BOOT PLATE SIZE SHOWN. SOME BASE BOOT WELDMENTS MAY UTILIZE LARGER PLATES.**

Figure 1D Top View

1. Anchor Bolt Charts

4024 - 4" Stiffened Grain Bins Stiffener Usage

Diameter	Stiffener Profile	
	FC Profile	CTS Profile
12'-27'	All Ring Heights	
30'-60'	13 Rings and Smaller	14 Rings and Taller
72'		All Ring Heights

** Chart above applies to standard 4024 4" bins only. Bins with special applications, such as high peak loads or special environmental conditions, may utilize the CTS stiffener profile regardless of the ring height breaks shown above. Contact GSI for stiffener profile confirmation on any non-standard bins.

**** Users of these charts must determine that they are using the appropriate radii for the bin series to be installed.**

Prior to setting any anchor bolts, you must be sure to have the correct anchor bolt placement. Accuracy is very critical for stiffener alignment during bin erection.

NOTE: Refer to proper chart to find the anchor chord dimensions that correspond to the bin that is being built.

Start with one anchor bolt and work from it to the left to locate one quarter of the anchor bolts then to the right to locate another quarter of the bolts. Working off of the last anchor bolts in each quarter, locate the remaining anchor bolts in the last two (2) quarters.

Anchor Bolt Chords for 12' Diameter

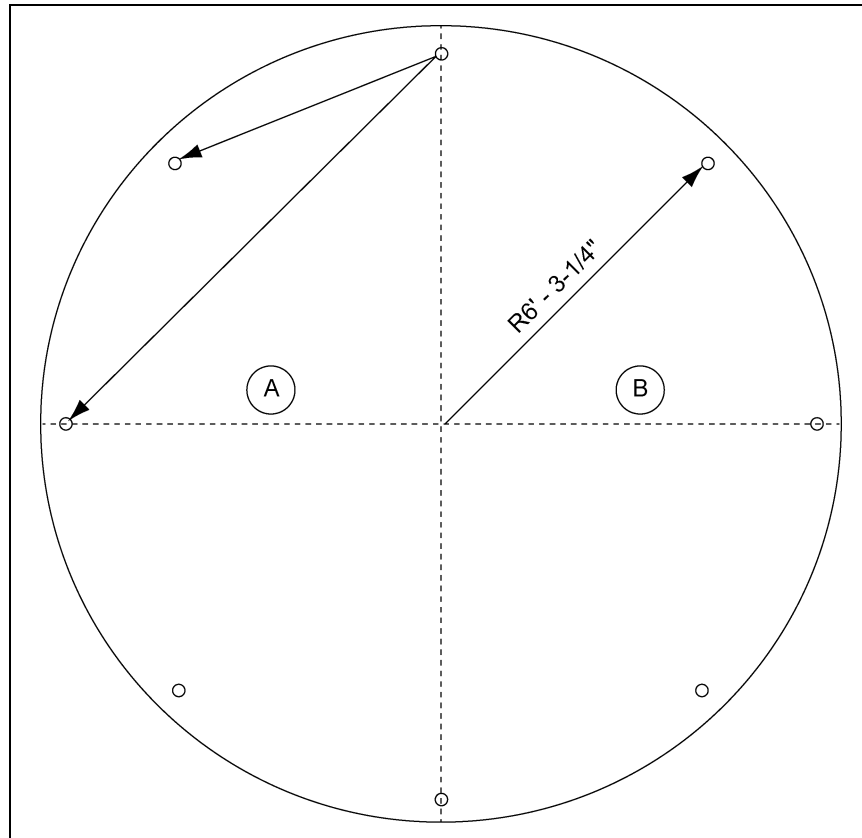


Figure 1E Anchor Bolt Chords for 12' Diameter 2 Post Bin (All Rings) with FC Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	12'	
# of Anchors	8	
Bolt Radius	6' - 3-1/4"	1.911 m
Chord 1	4' - 9-5/8"	1.464 m
Chord 2	8' - 10-7/16"	2.704 m

Anchor Bolt Chords for 15' Diameter

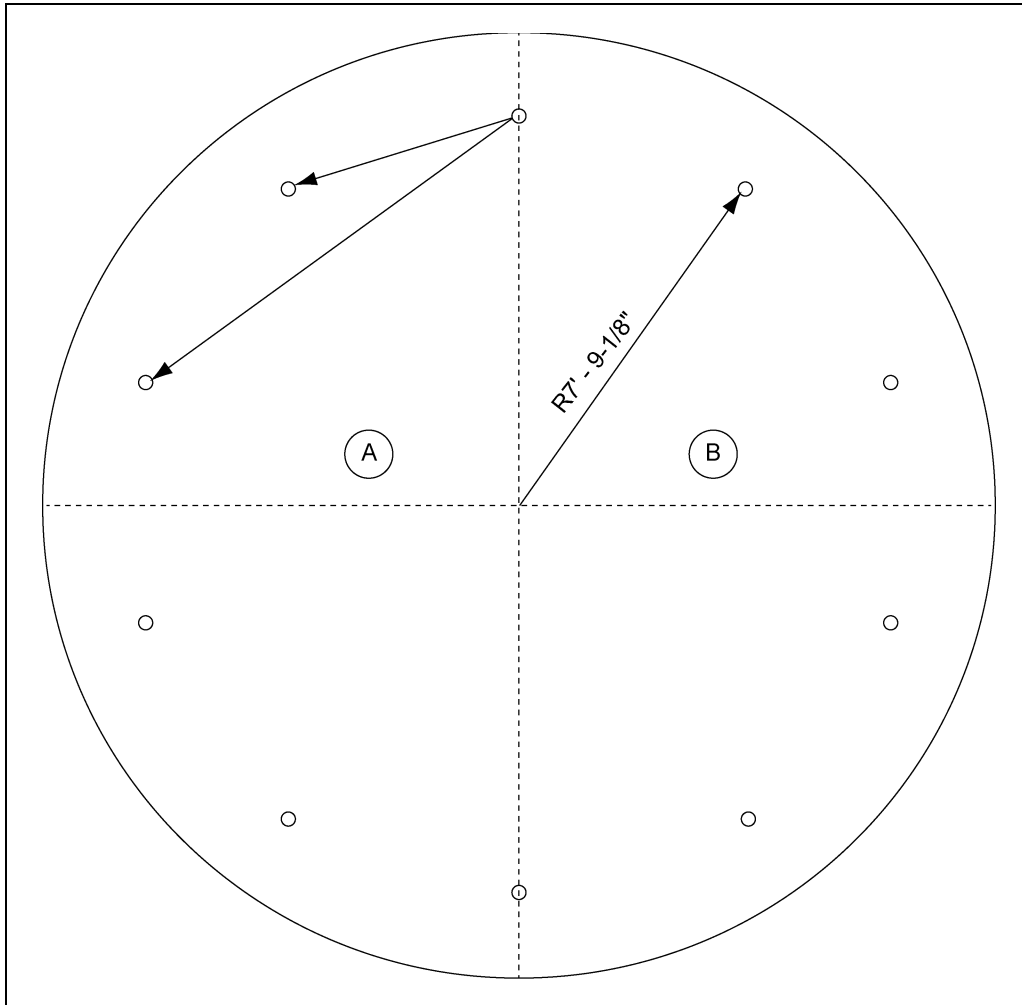


Figure 1F Anchor Bolt Chords for 15' Diameter 2 Post Bin (All Rings) with FC Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	15'	
# of Anchors	10	
Bolt Radius	7' - 9-1/8"	2.365 m
Chord 1	4' - 9-9/16"	1.462 m
Chord 2	9' - 1-1/2"	2.781 m

Anchor Bolt Chords for 18' Diameter

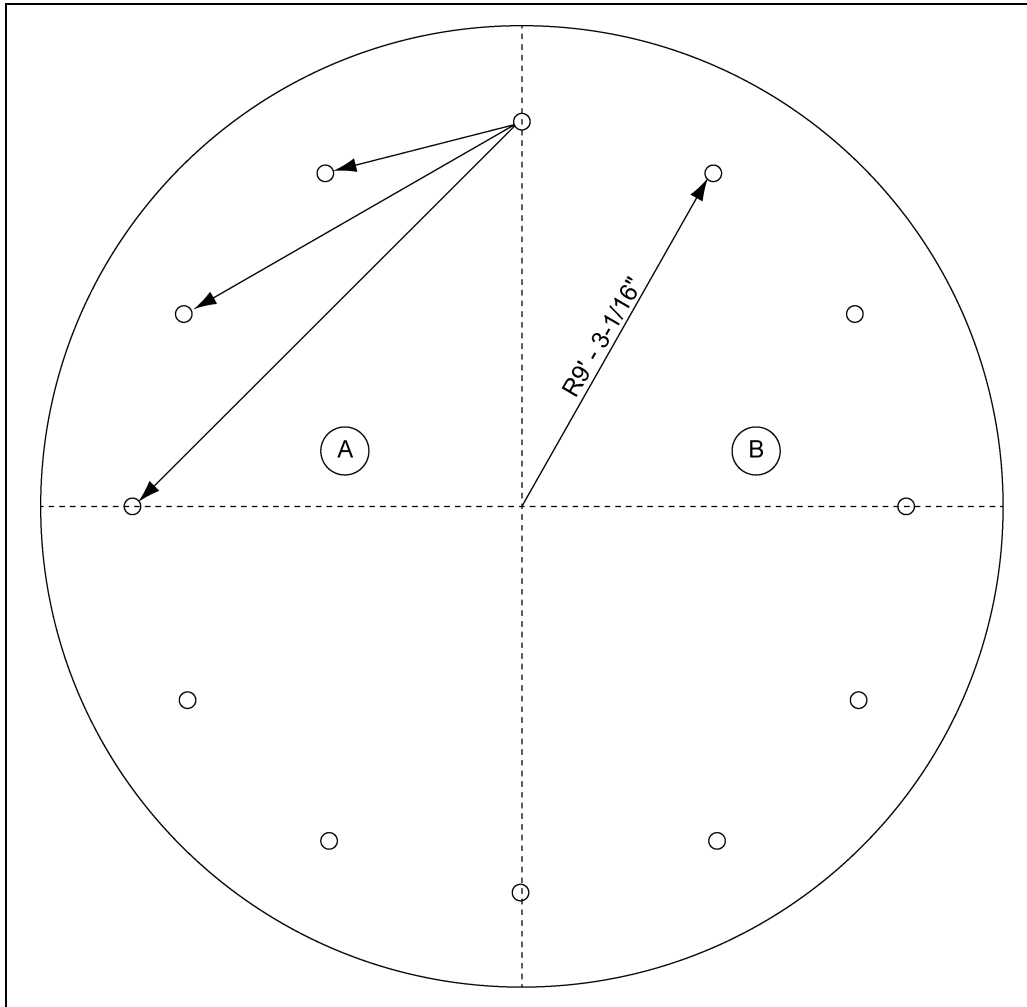


Figure 1G Anchor Bolt Chords for 18' Diameter 2 Post Bin (All Rings) with FC Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	18'	
# of Anchors	12	
Bolt Radius	9' - 3-1/16"	2.821 m
Chord 1	4' - 9-1/2"	1.461 m
Chord 2	9' - 3-1/16"	2.821 m
Chord 3	13' - 1-1/16"	3.989 m

Anchor Bolt Chords for 21' Diameter

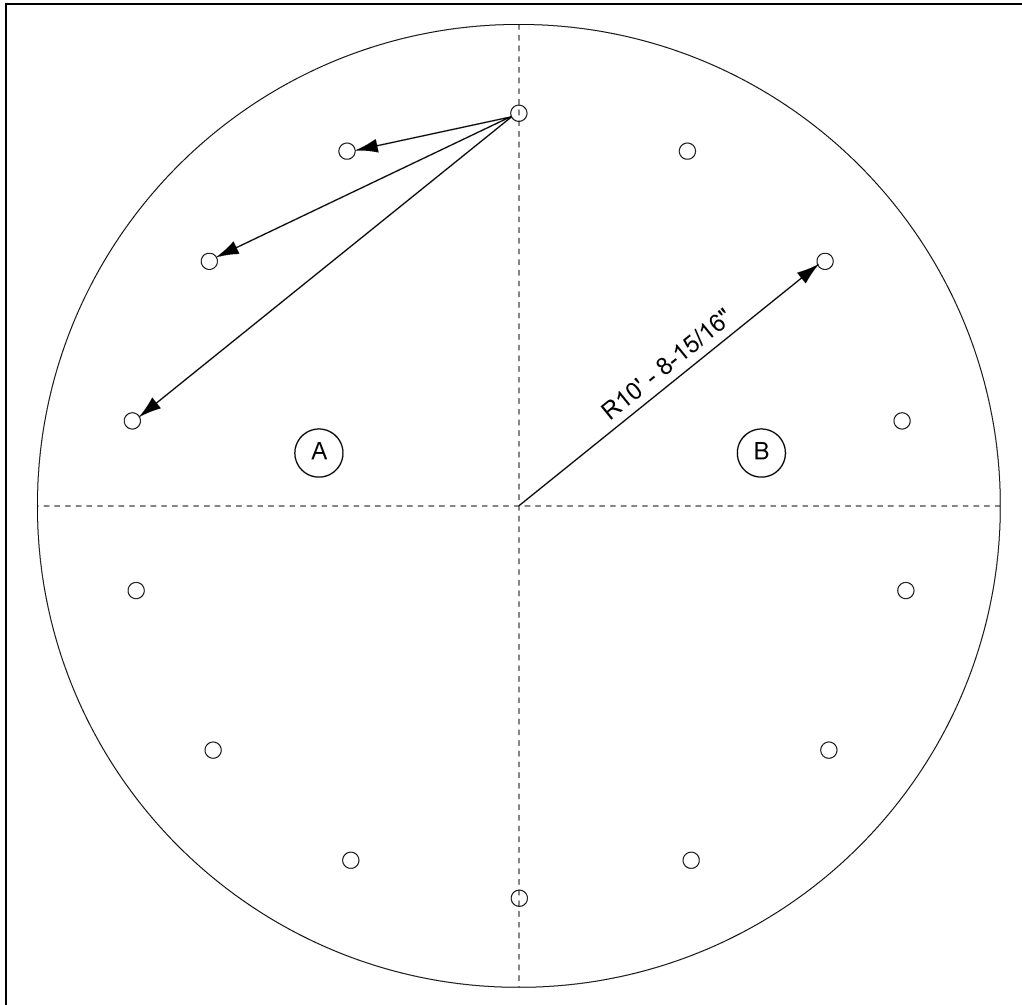


Figure 1H Anchor Bolt Chords for 21' Diameter 2 Post Bin (All Rings) with FC Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	21'	
# of Anchors	14	
Bolt Radius	10' - 8-15/16"	3.275 m
Chord 1	4' - 9-3/8"	1.457 m
Chord 2	9' - 3-7/8"	2.842 m
Chord 3	13' - 4-13/16"	4.085 m

Anchor Bolt Chords for 24' Diameter

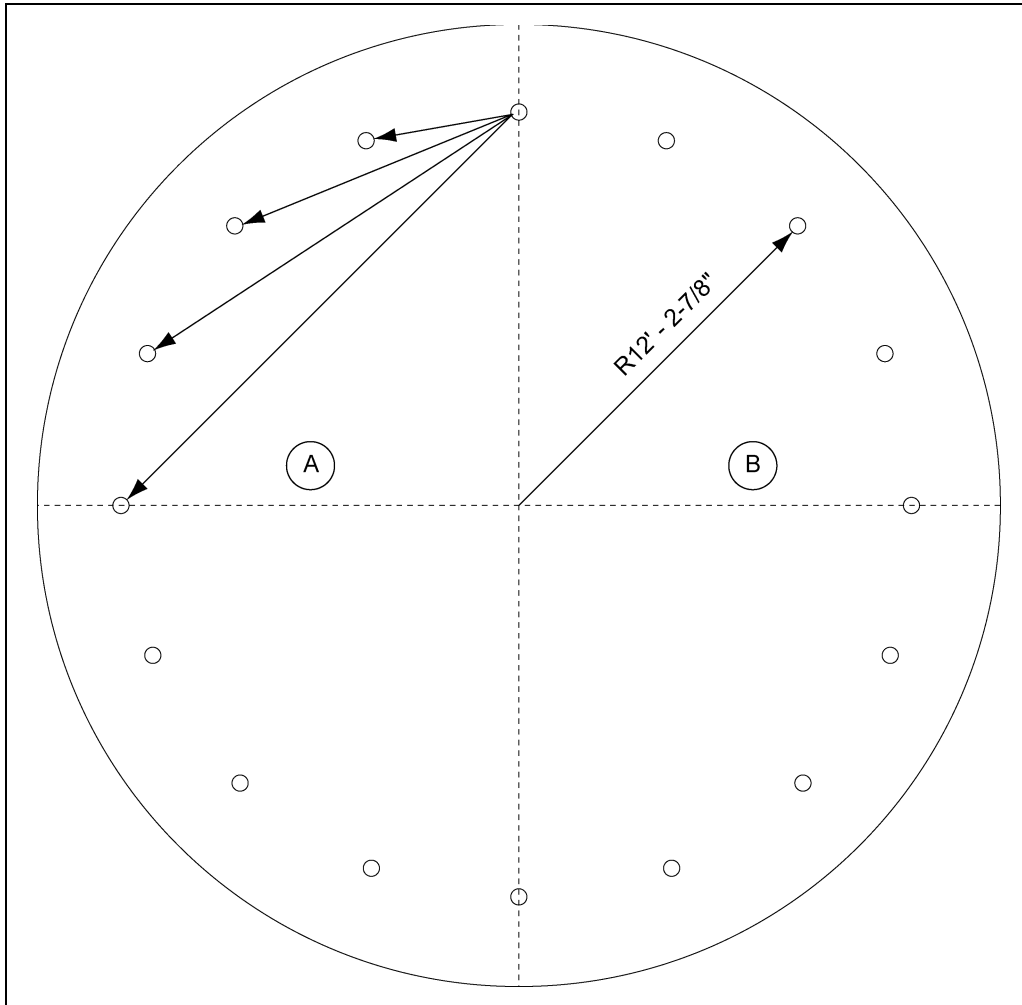


Figure 11 Anchor Bolt Chords for 24' Diameter 2 Post Bin (All Rings) with FC Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	24'	
# of Anchors	16	
Bolt Radius	12' - 2-7/8"	3.731 m
Chord 1	4' - 9-5/16"	1.456 m
Chord 2	9' - 4-7/16"	2.856 m
Chord 3	13' - 7-3/16"	4.145 m
Chord 4	17' - 3-11/16"	5.275 m

Anchor Bolt Chords for 27' Diameter

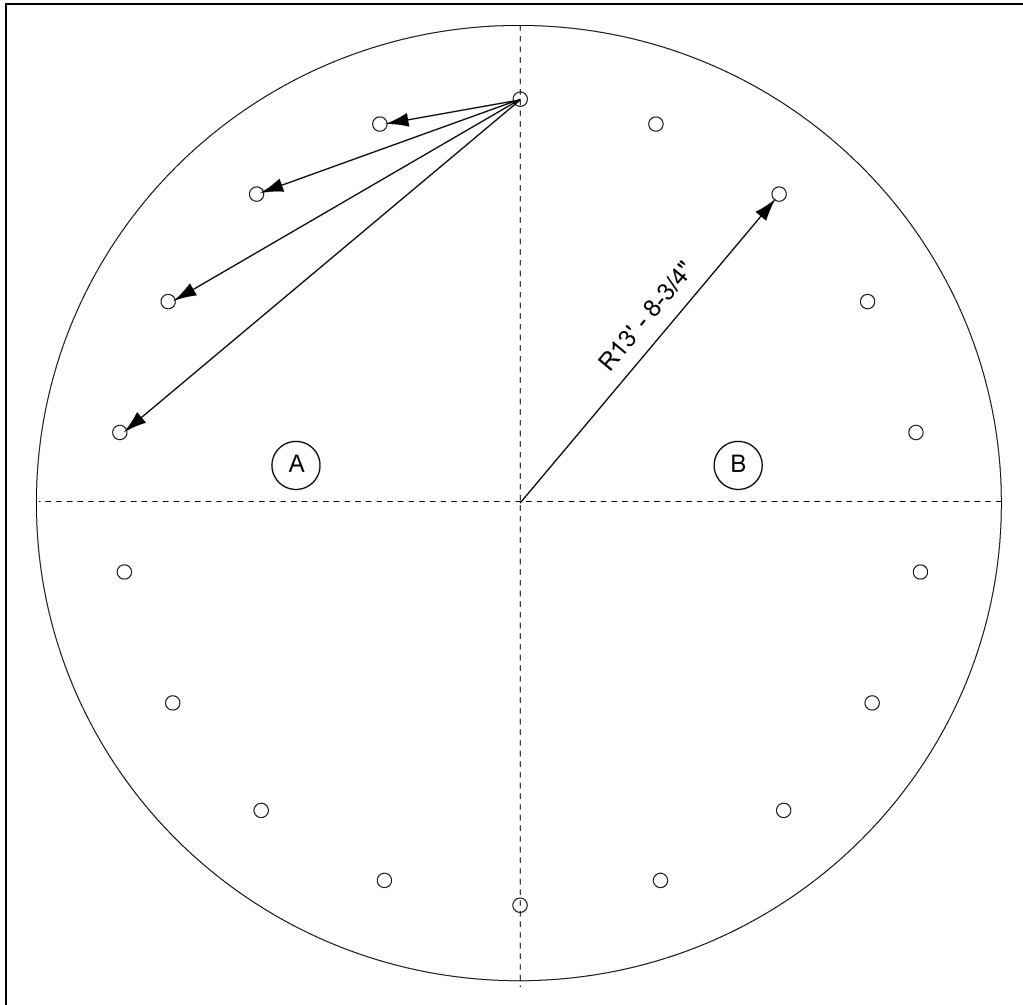


Figure 1J Anchor Bolt Chords for 27' Diameter 2 Post Bin (All Rings) with FC Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	27'	
# of Anchors	18	
Bolt Radius	13' - 8-3/4"	4.185 m
Chord 1	4' - 9-3/16"	1.453 m
Chord 2	9' - 4-11/16"	2.862 m
Chord 3	13' - 8-3/4"	4.185 m
Chord 4	17' - 7-3/16"	5.380 m

Anchor Bolt Chords for 30' Diameter

FC Stiffener

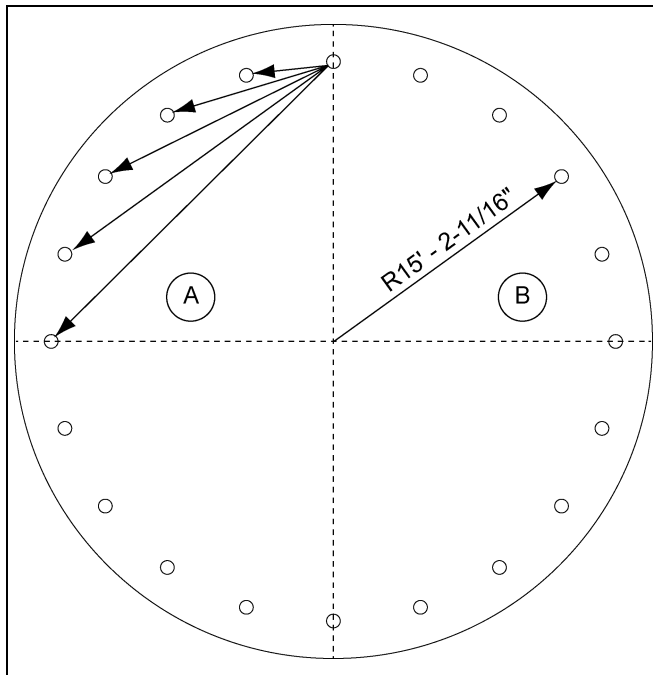


Figure 1K Anchor Bolt Chords for 30' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

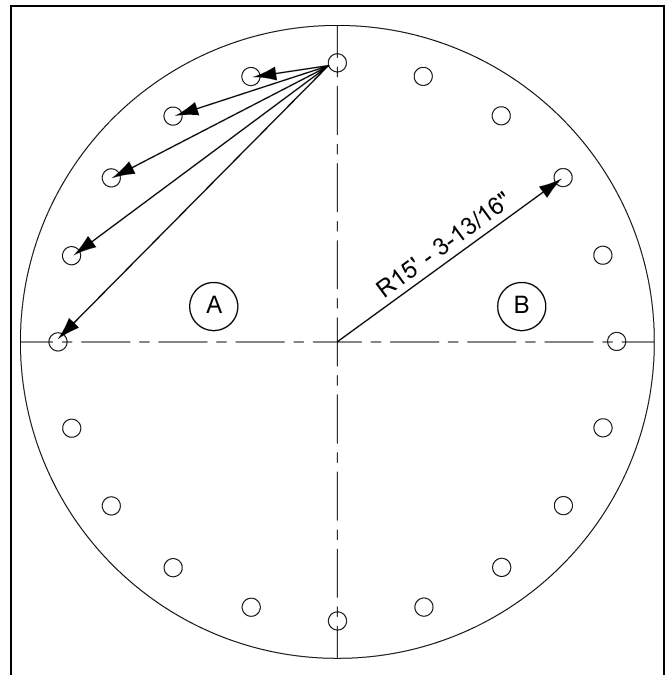


Figure 1L Anchor Bolt Chords for 30' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	30'	
# of Anchors	20	
Bolt Radius	15' - 2-11/16"	4.640 m
Chord 1	4' - 9-3/16"	1.453 m
Chord 2	9' - 4-15/16"	2.869 m
Chord 3	13' - 9-7/8"	4.213 m
Chord 4	17' - 10-3/4"	5.455 m
Chord 5	21' - 6-3/8"	6.563 m

Diameter	30'	
# of Anchors	20	
Bolt Radius	15' - 3-13/16"	4.669 m
Chord 1	4' - 9-9/16"	1.462 m
Chord 2	9' - 5-5/8"	2.886 m
Chord 3	13' - 10-15/16"	4.240 m
Chord 4	18'-1/8"	5.490 m
Chord 5	21'-8"	6.604 m

1. Anchor Bolt Charts

Anchor Bolt Chords for 33' Diameter

FC Stiffener

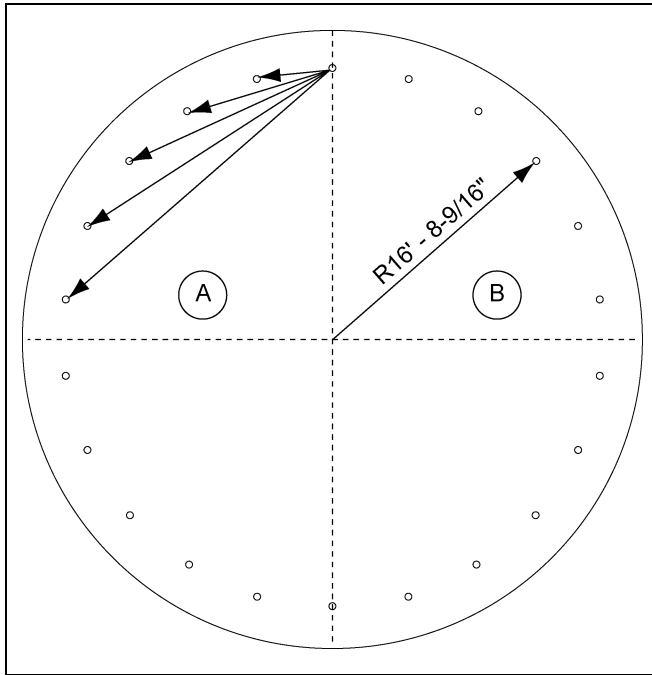


Figure 1M Anchor Bolt Chords for 33' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

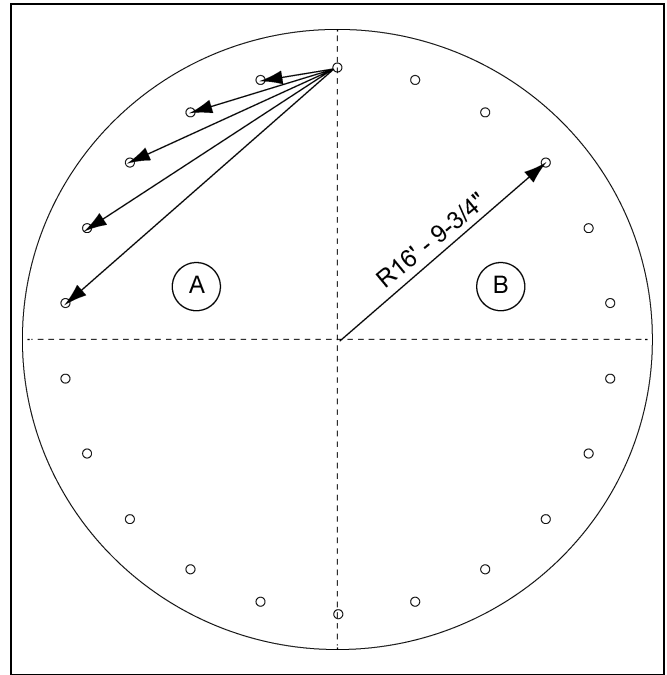


Figure 1N Anchor Bolt Chords for 33' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	33'	
# of Anchors	22	
Bolt Radius	16' - 8-9/16"	5.094 m
Chord 1	4' - 9-1/16"	1.449 m
Chord 2	9'-5"	2.870 m
Chord 3	13' - 10-5/8"	4.232 m
Chord 4	18'-7/8"	5.509 m
Chord 5	21' - 10-11/16"	6.672 m

Diameter	33'	
# of Anchors	22	
Bolt Radius	16' - 9-3/4"	5.124 m
Chord 1	4' - 9-7/16"	1.459 m
Chord 2	9' - 5-11/16"	2.888 m
Chord 3	13' - 11-5/8"	4.258 m
Chord 4	18' - 2-3/16"	5.542 m
Chord 5	22'-1/4"	6.712 m

Anchor Bolt Chords for 36' Diameter

FC Stiffener

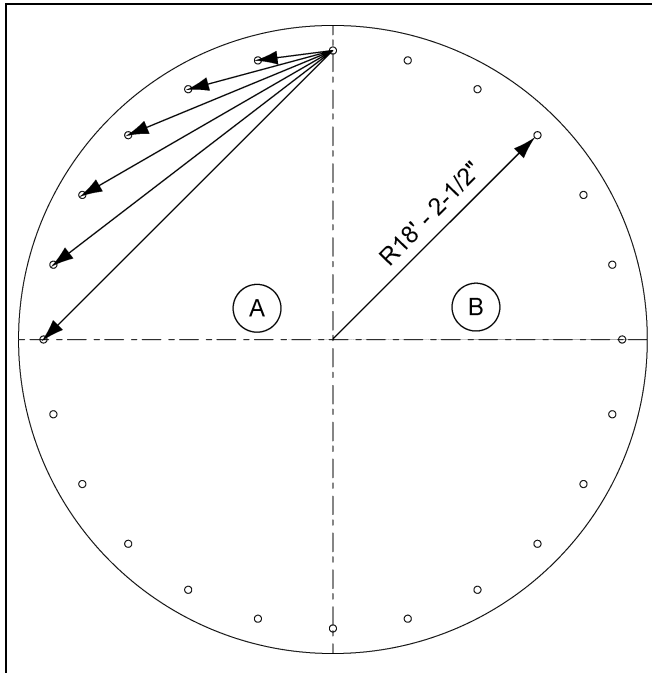


Figure 10 Anchor Bolt Chords for 36' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

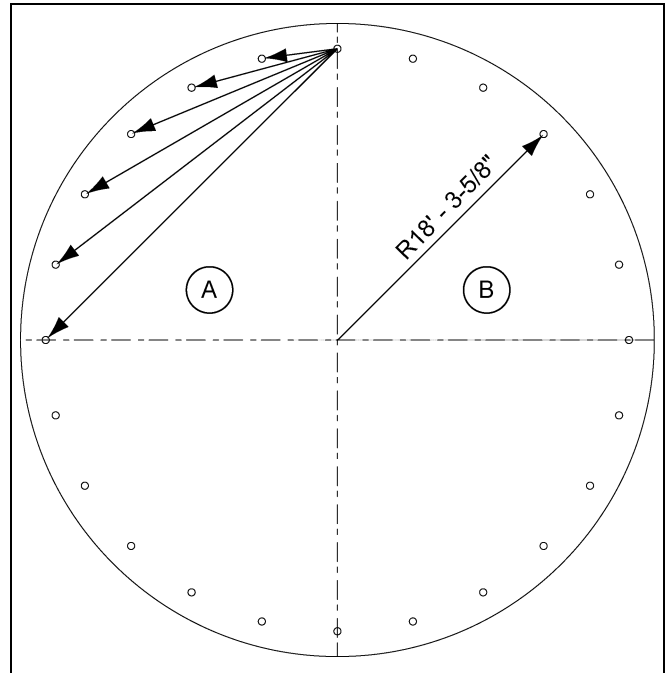


Figure 1P Anchor Bolt Chords for 36' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	36'	
# of Anchors	24	
Bolt Radius	18' - 2-1/2"	5.55 m
Chord 1	4' - 9-1/16"	1.449 m
Chord 2	9' - 5-1/8"	2.873 m
Chord 3	13' - 11-1/4"	4.248 m
Chord 4	18' - 2-1/2"	5.550 m
Chord 5	22'-2"	6.756 m
Chord 6	25'-9"	7.849 m

Diameter	36'	
# of Anchors	24	
Bolt Radius	18' - 3-5/8"	5.578 m
Chord 1	4' - 9-3/8"	1.457 m
Chord 2	9' - 5-3/4"	2.889 m
Chord 3	14'-1/8"	4.270 m
Chord 4	18' - 3-11/16"	5.580 m
Chord 5	22' - 3-7/16"	6.793 m
Chord 6	25' - 10-11/16"	7.891 m

1. Anchor Bolt Charts

Anchor Bolt Chords for 42' Diameter

FC Stiffener

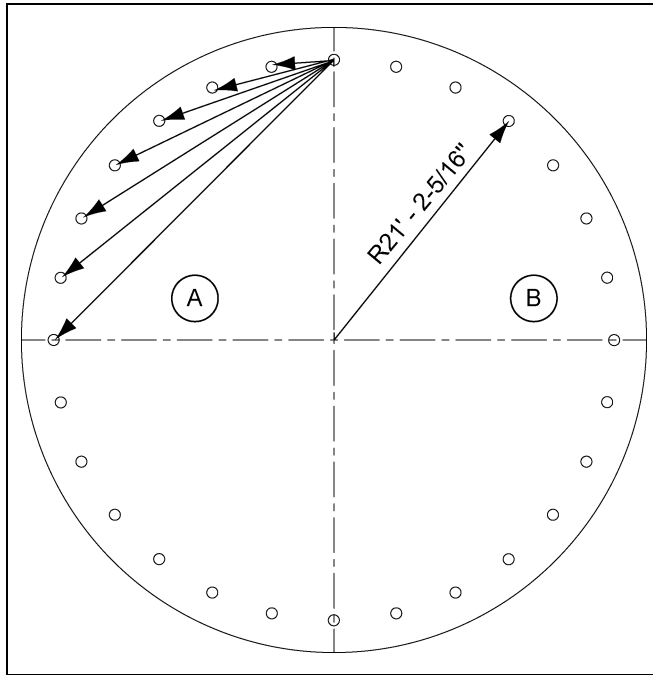


Figure 1Q Anchor Bolt Chords for 42' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

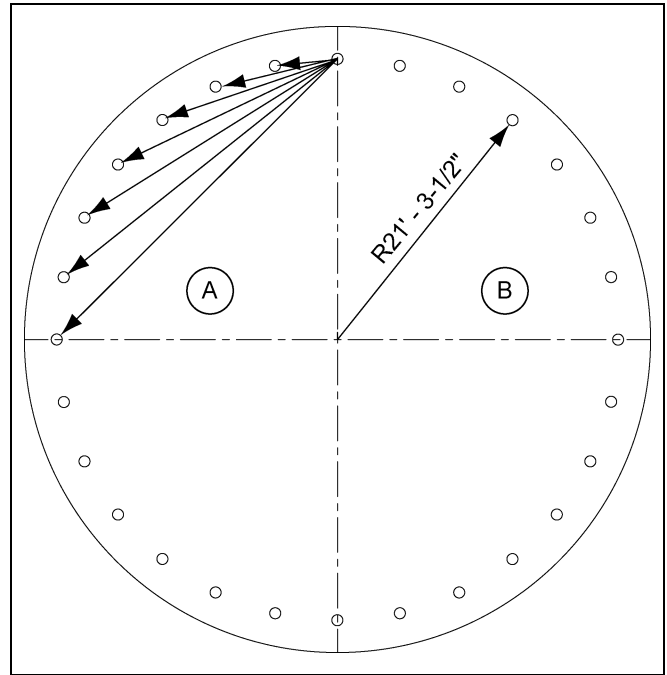


Figure 1R Anchor Bolt Chords for 42' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	42'	
# of Anchors	28	
Bolt Radius	21' - 2-5/16"	6.460 m
Chord 1	4' - 8-15/16"	1.446 m
Chord 2	9' - 5-3/16"	2.875 m
Chord 3	14'	4.267 m
Chord 4	18' - 4-11/16"	5.605 m
Chord 5	22' - 6-5/8"	6.874 m
Chord 6	26' - 5-1/8"	8.055 m
Chord 7	29' - 11-5/8"	9.134 m

Diameter	42'	
# of Anchors	28	
Bolt Radius	21' - 3-1/2"	6.490 m
Chord 1	4' - 9-1/4"	1.454 m
Chord 2	9' - 5-3/4"	2.889 m
Chord 3	14'-3/4"	4.286 m
Chord 4	18' - 5-11/16"	5.631 m
Chord 5	22' - 7-7/8"	6.906 m
Chord 6	26' - 6-3/4"	8.096 m
Chord 7	30' - 1-5/16"	9.177 m

Anchor Bolt Chords for 48' Diameter

FC Stiffener

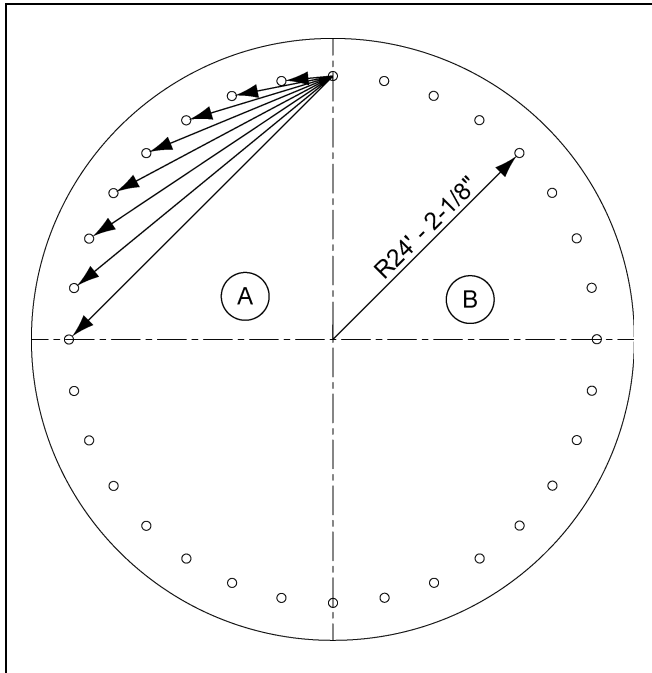


Figure 1S Anchor Bolt Chords for 48' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

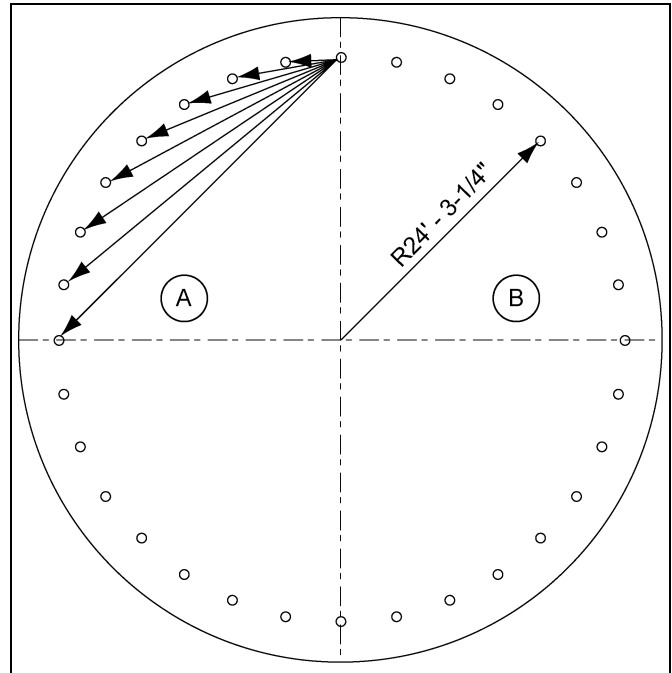


Figure 1T Anchor Bolt Chords for 48' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	48'	
# of Anchors	32	
Bolt Radius	24' - 2-1/8"	7.369 m
Chord 1	4' - 8-7/8"	1.445 m
Chord 2	9' - 5-3/16"	2.875 m
Chord 3	14' - 7/16"	4.278 m
Chord 4	18' - 6-1/16"	5.640 m
Chord 5	22' - 9-1/2"	6.947 m
Chord 6	26' - 10-3/8"	8.188 m
Chord 7	30' - 8-1/8"	9.350 m
Chord 8	34' - 2-5/16"	10.422 m

Diameter	48'	
# of Anchors	32	
Bolt Radius	24' - 3-1/4"	7.398 m
Chord 1	4' - 9-1/8"	1.451 m
Chord 2	9' - 5-11/16"	2.888 m
Chord 3	14' - 1-1/8"	4.296 m
Chord 4	18' - 6-15/16"	5.663 m
Chord 5	22' - 10-5/8"	6.975 m
Chord 6	26' - 11-11/16"	8.222 m
Chord 7	30' - 9-9/16"	9.387 m
Chord 8	34' - 3-15/16"	10.463 m

1. Anchor Bolt Charts

Anchor Bolt Chords for 54' Diameter

FC Stiffener

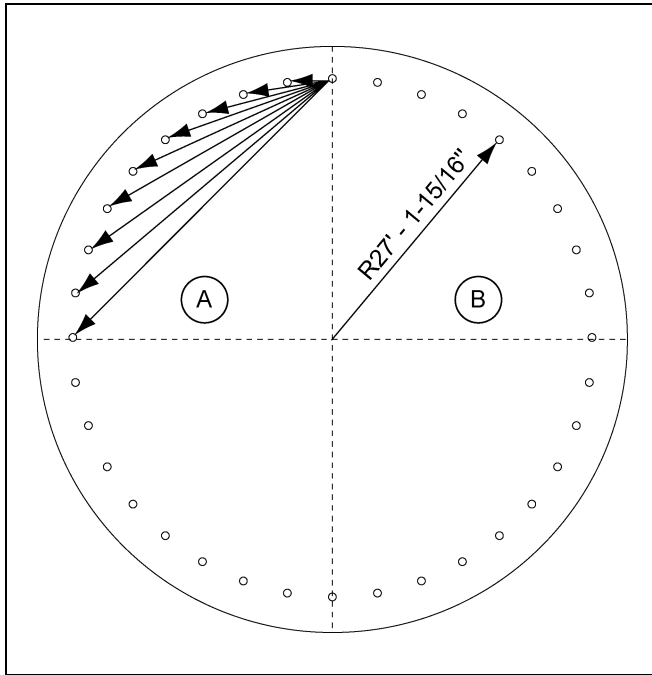


Figure 1U Anchor Bolt Chords for 54' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

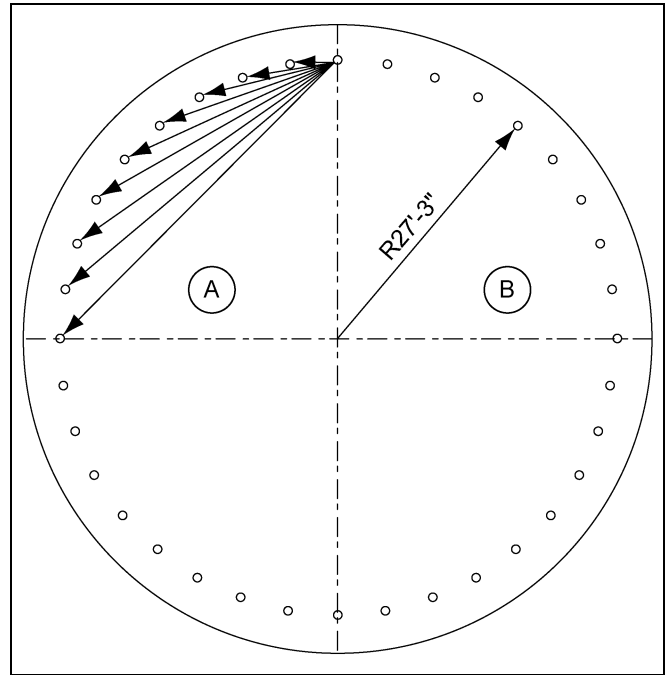


Figure 1V Anchor Bolt Chords for 54' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	54'	
# of Anchors	36	
Bolt Radius	27' - 1-15/16"	8.279 m
Chord 1	4' - 8-13/16"	1.443 m
Chord 2	9' - 5-3/16"	2.875 m
Chord 3	14' - 11/16"	4.285 m
Chord 4	18' - 6-15/16"	5.663 m
Chord 5	22' - 11-1/2"	7.303 m
Chord 6	27' - 1-15/16"	8.279 m
Chord 7	31' - 1-7/8"	9.496 m
Chord 8	34'-11"	10.947 m
Chord 9	38' - 4-15/16"	11.708 m

Diameter	54'	
# of Anchors	36	
Bolt Radius	27'-3"	8.306 m
Chord 1	4' - 9-1/16"	1.449 m
Chord 2	9' - 5-5/8"	2.886 m
Chord 3	14' - 1-5/16"	4.301 m
Chord 4	18' - 7-3/4"	5.683 m
Chord 5	23'-1/2"	7.023 m
Chord 6	27' - 3-1/8"	8.309 m
Chord 7	31' - 3-1/4"	9.531 m
Chord 8	35'-1/2"	10.681 m
Chord 9	38' - 6-9/16"	11.749 m

Anchor Bolt Chords for 60' Diameter

FC Stiffener

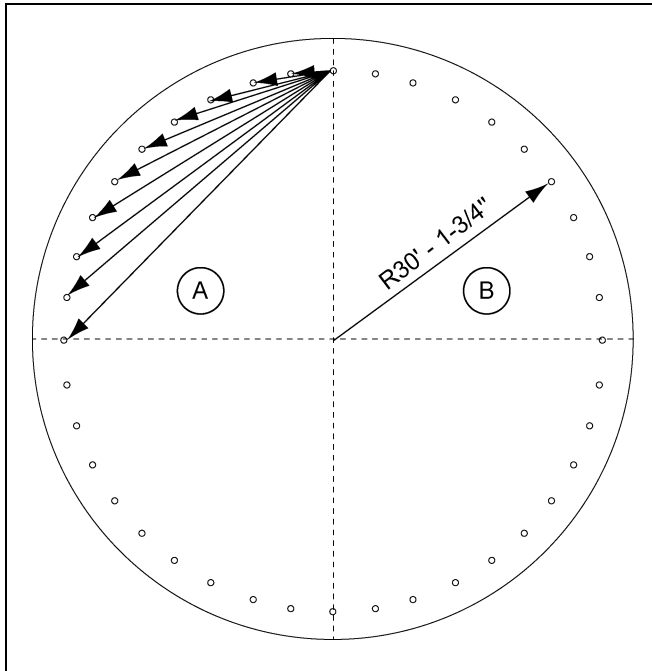


Figure 1W Anchor Bolt Chords for 60' Diameter 2 Post Bin (13 Rings and Shorter) with **FC Stiffener**

CTS Stiffener

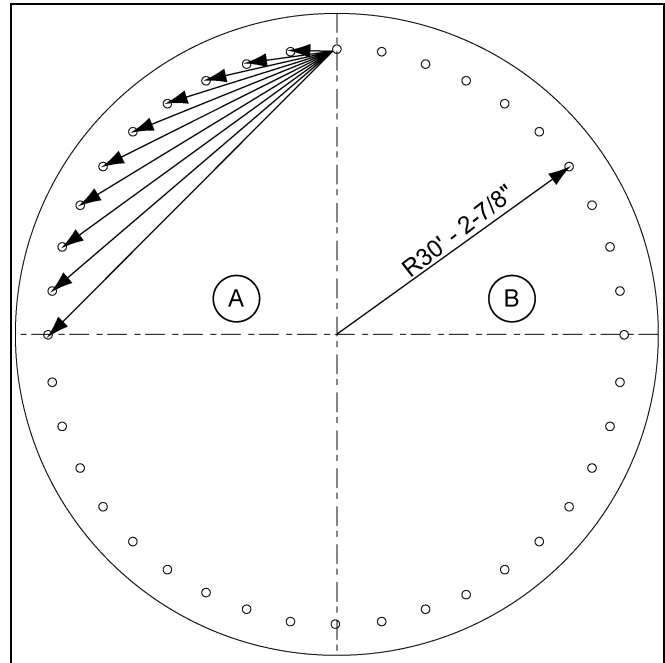


Figure 1X Anchor Bolt Chords for 60' Diameter 2 Post Bin (14 Rings and Taller) with **CTS Stiffener**

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	60'	
# of Anchors	40	
Bolt Radius	30' - 1-3/4"	9.188 m
Chord 1	4' - 8-3/4"	1.441 m
Chord 2	9' - 5-3/16"	2.875 m
Chord 3	14' - 7/8"	4.289 m
Chord 4	18' - 7-9/16"	5.678 m
Chord 5	23' - 7/8"	7.033 m
Chord 6	27' - 4-7/16"	8.342 m
Chord 7	31' - 6"	9.601 m
Chord 8	35' - 5-1/4"	10.801 m
Chord 9	39' - 1-7/8"	11.935 m
Chord 10	42' - 7-9/16"	12.994 m

Diameter	60'	
# of Anchors	40	
Bolt Radius	30' - 2-7/8"	9.217 m
Chord 1	4'-9"	1.448 m
Chord 2	9' - 9-5/16"	2.884 m
Chord 3	14' - 1-7/16"	4.304 m
Chord 4	18' - 8-5/16"	5.698 m
Chord 5	23' - 1-3/4"	7.055 m
Chord 6	27' - 5-1/2"	8.369 m
Chord 7	31' - 7-1/4"	9.633 m
Chord 8	35' - 6-5/8"	10.836 m
Chord 9	39' - 3-3/8"	11.973 m
Chord 10	42' - 9-3/16"	13.035 m

Anchor Bolt Chords for 72' Diameter

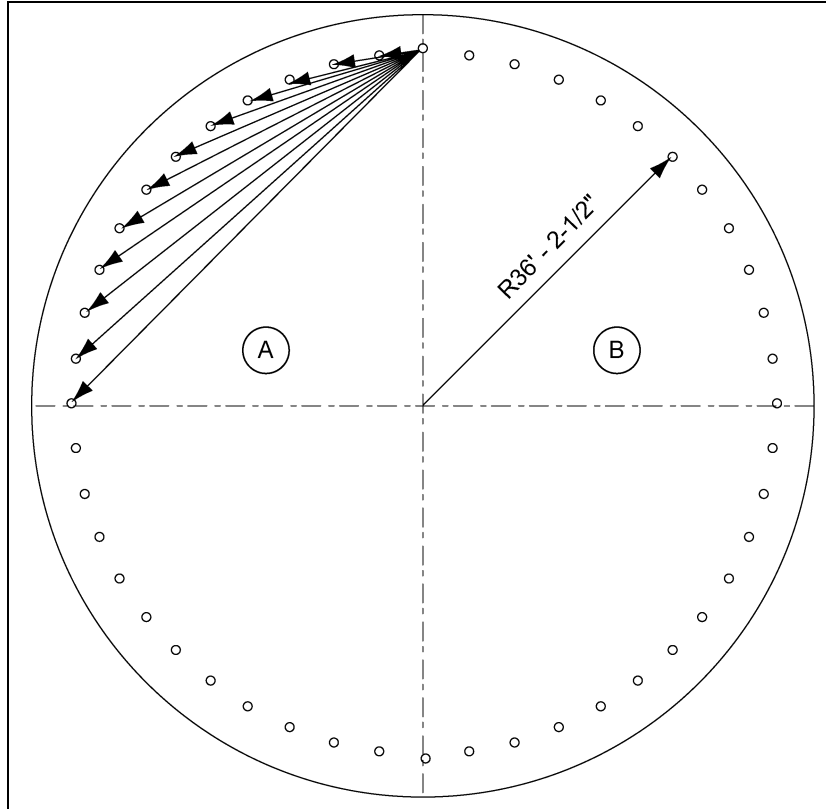


Figure 1Y Anchor Bolt Chords for 72' Diameter 2 Post Bin (All Rings) with CTS Stiffener

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Diameter	72'	
# of Anchors	48	
Bolt Radius	36' - 2-1/2"	10.973 m
Chord 1	4' - 8-7/8"	1.219 m
Chord 2	9' - 5-7/16"	2.743 m
Chord 3	14' - 1-9/16"	4.267 m
Chord 4	18' - 8-15/16"	5.486 m
Chord 5	23' - 3-3/8"	7.010 m
Chord 6	27' - 8-9/16"	8.230 m
Chord 7	32' - 0-3/8"	9.754 m
Chord 8	36' - 2-9/19"	10.973 m
Chord 9	40' - 2-13/16"	12.192 m
Chord 10	44' - 1-1/16"	13.411 m
Chord 11	47'-9"	14.326 m
Chord 12	51' - 2-1/2"	15.545 m

GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period	
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years	* Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
AP and Cumberland	Flex-Flo/Pan Feeding System Motors	2 Years	
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 50%
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
Grain Systems	Grain Bin Structural Design	5 Years	
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years	† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12th) month from the date of purchase and continuing until the sixtieth (60th) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) PRODUCT MANUFACTURED OR SOLD BY GSI OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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GSI is a worldwide brand of AGCO Corporation.