



**66' 40-Series - 4.00" Corrugation
Commercial Stiffened
(CTS Stiffened) Concrete
Foundation Manual**

(66' Diameter, 14 to 21 Rings)

Instructions Manual

PNEG-2100

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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. General Overview

General Information

The foundation recommendations in this manual are for use with 4.00" Corrugation 40-Series stiffened bins with CTS stiffeners.

Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

Soil bearing shall be confirmed by geotechnical investigation.

This document only provides estimation aids for frost free and inverted "T" style foundations for CTS stiffened 4.00" bins. Refer to the other appropriate GSI foundation estimation documents for other style foundations and sizes.

Anchor Bolt Detail (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 1A.)*

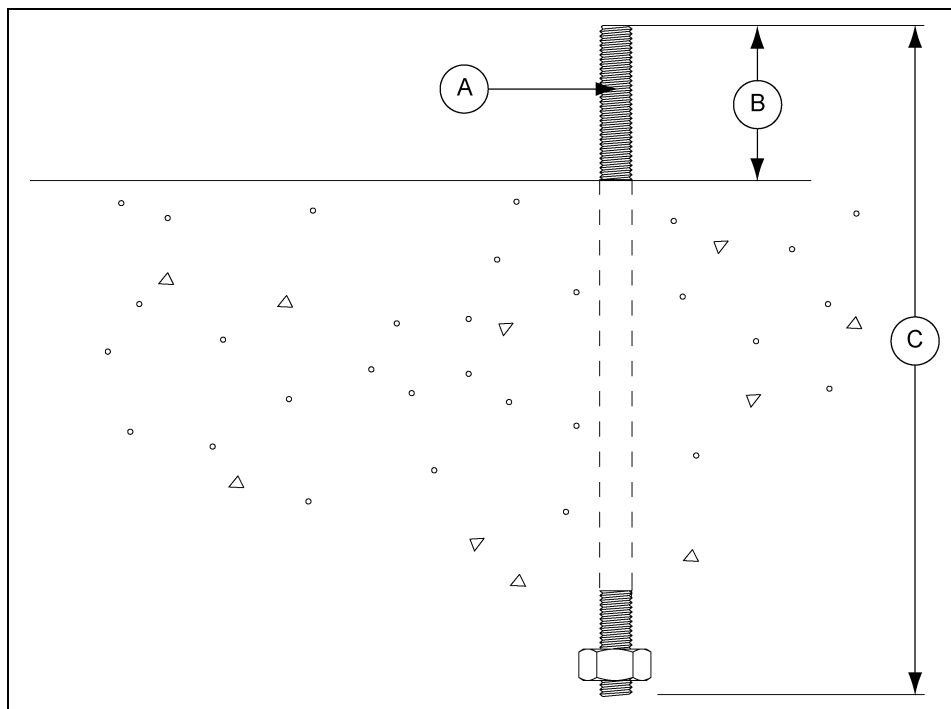


Figure 1A Anchor Bolt Example (3/4" Diameter Anchor Bolt Shown)

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

Anchor Bolt Charts (CTS Stiffeners)

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

The charts are divided up based on the following criteria:

- Does your bin have 2 or 3 stiffeners per sidewall sheet?
- What diameter of bin do you have?

Refer the proper chart *below* to find the anchor chord that corresponds to the bin that is going to be 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. Now work off of the last anchor bolts in each quarter to locate remaining anchor bolts in the last two (2) quarters. Anchor bolt radius tolerance = +/- 1/4" (7 mm).

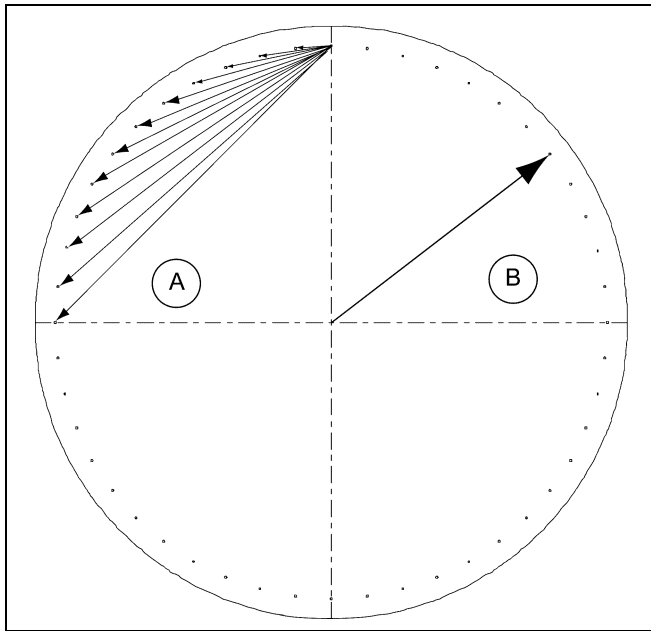


Figure 1B

Ref #	Description
A	Anchor Chord Dimensions
B	Bolt Radius

Anchor Bolt Placement Charts

Nominal	44 Anchors
Diameter	= 66' 2 Post
Bolt Radius	= 33' - 2-11/16"
Anchor Chord	4' - 8-7/8" 9' - 5-1/2" 14' - 1-1/2" 18' - 8-5/8" 23' - 2-1/2" 27' - 7-1/4" 31' - 10-1/8" 35' - 11-1/8" 39' - 9-7/8" 43' - 6-3/16" 46' - 11-7/8"

NOTE: The tables on this page are for 2 post outside stiffened tanks only.

1. General Overview

Vane Axial Fan Pad

Placement of the Fan Pad: Transitions/Fans/Heaters Only.

If a fan or fan and heater will be installed, refer to [Figure 1C](#) to determine the concrete pad size.

1. The top of this pad should be level with the top of the bin's foundation.
2. Recommended pad thickness is 4" minimum.
3. Front of pad should be perpendicular to bin wall.
4. Pad for heater not required, but if it is to added, pour the pad to cover both locations.

For fans and transitions used in aeration duct system applications, refer the transition and aeration installation instructions.

IMPORTANT: *Fan pad and fan must be level and smooth for proper operation. Vibration problems can result from improper fan leveling.*

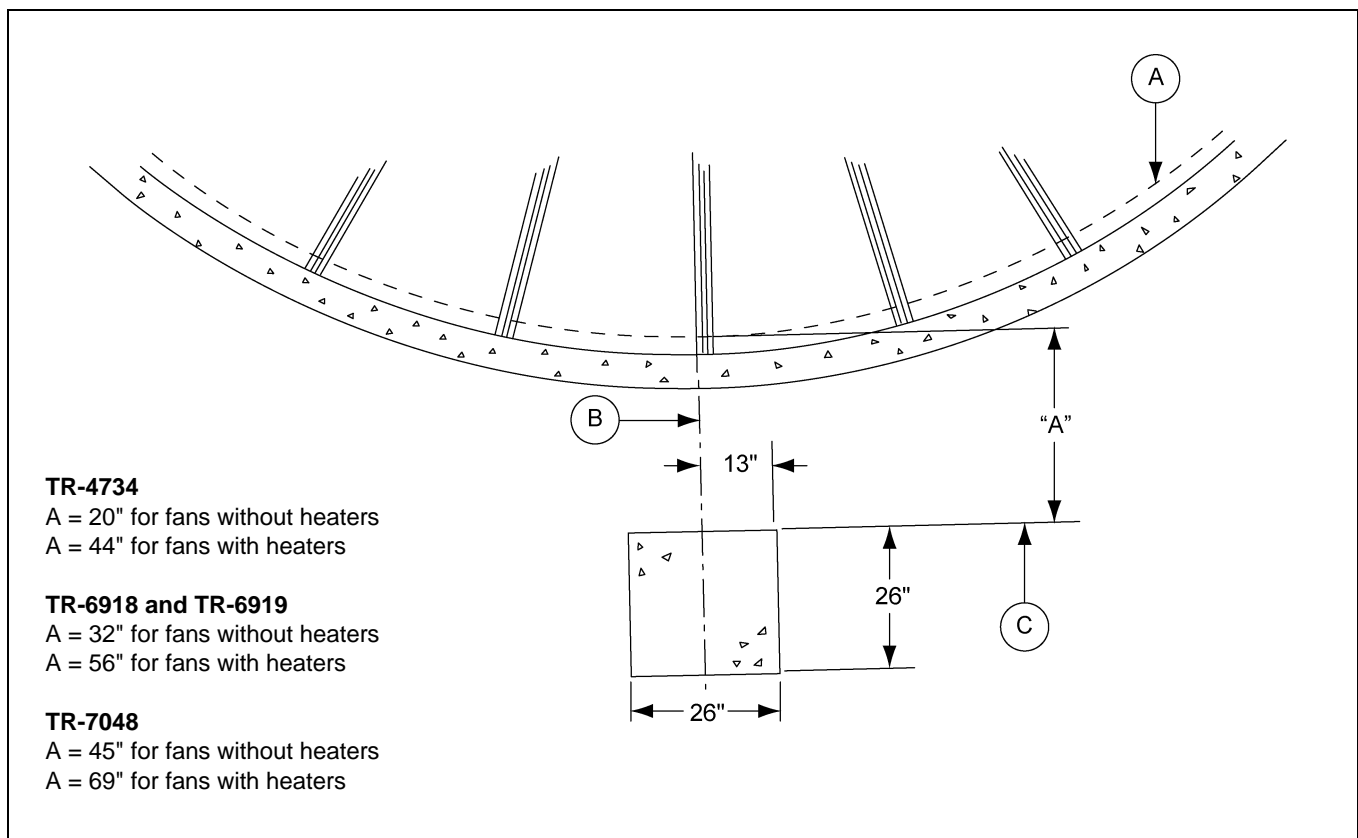


Figure 1C

Ref #	Description
A	Bin Wall
B	Centerline of Bin
C	From Sidewall

Centrifugal Fan Pad

1. Fan pad should be poured 2" below the top of the bin foundation for all centrifugal fans.
2. A pad for heaters is not required, but is recommended.
3. Recommended pad thickness is 4".
4. If a downwind heater pad is to be installed, the pad width ("C") should be 48" and extended toward the bin by 33".
5. Fan discharge should be centered on centerline of bin.
6. The fan pad should be perpendicular to bin wall.



Fan pad and fan must be level and smooth for proper operation. Vibration problems can result from improper fan leveling.

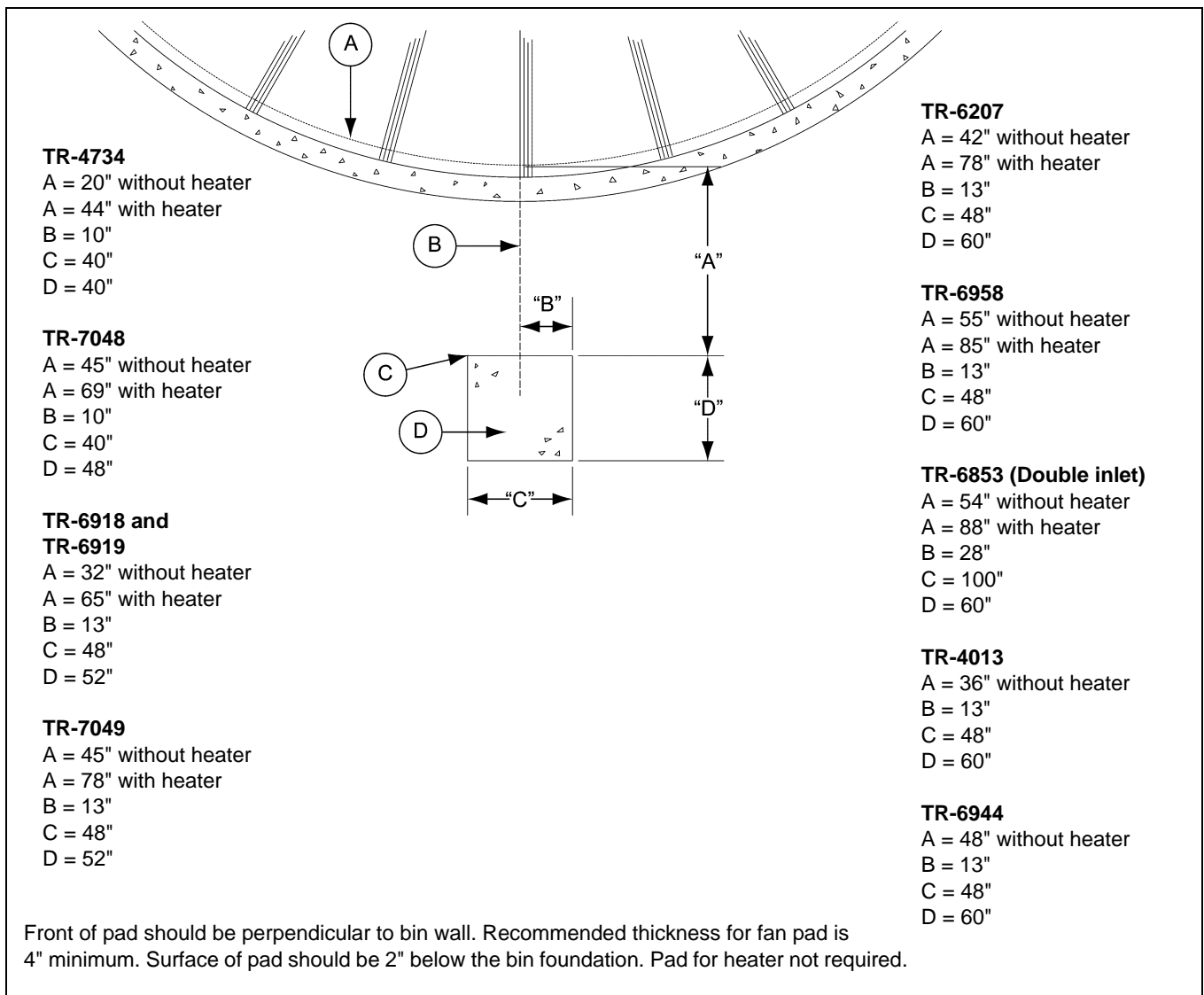


Figure 1D Centrifugal Fan Pad

Ref #	Description	Ref #	Description
A	Bin Wall	C	Dimension From Sidewall
B	Centerline of Bin	D	Fan Pad

2. Inverted "T" Foundation

66' Diameter, 14-18 Ring (4.00" Corrugation), 3000 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 3000 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

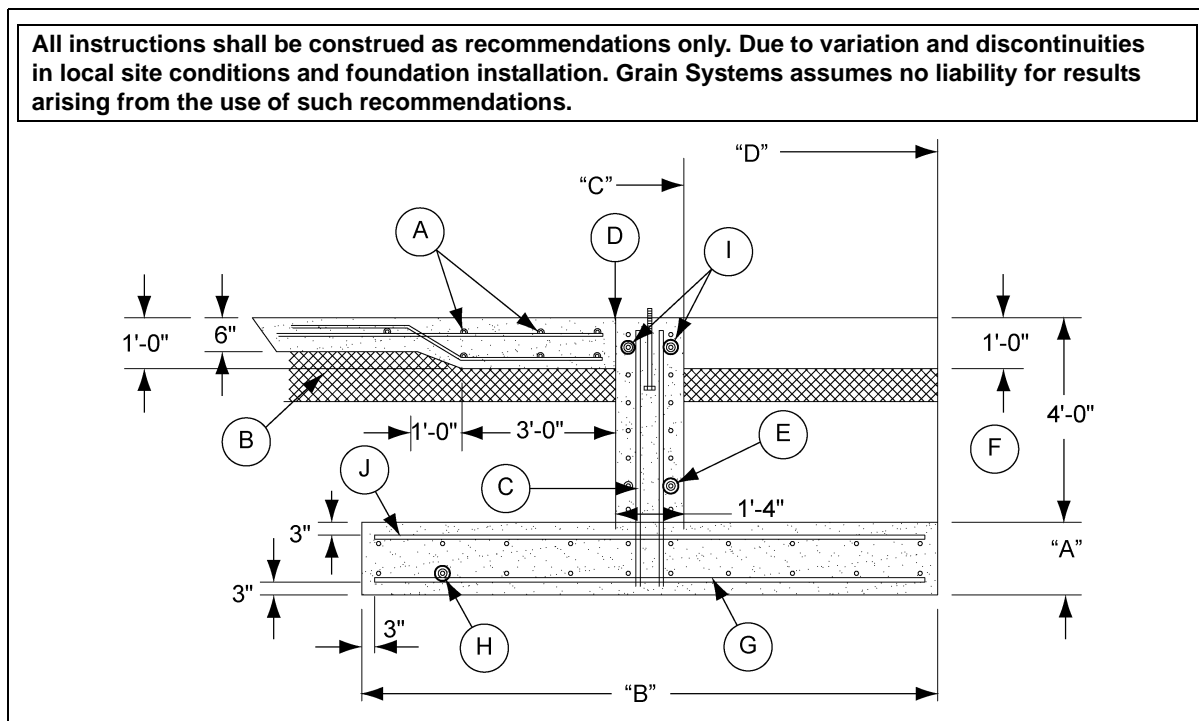


Figure 2A 66' Bin (14-18 Ring)

Ref #	Description	Ref #	Description
A	# 4 Bars @ 18" C/C Each Way	F	Grade
B	Well Compacted Fill	G	"P" Bars Spacing at Center of Footing
C	# 5 Bars @ 18" C/C Each Face (W STD 90° Hook)	H	"N" Bars Evenly Spaced
D	1/2" Expansion Joint	I	Two (2) Additional Hoop Bars, 3" from Top Hoop Bars
E	"M" Bars Evenly Spaced Each Face	J	"Q" Bars Spacing at Center of Footing

2. Inverted "T" Foundation

Diameter of Bin: 66'

Soil Bearing Capacity: 3000 PSF

	Ring #	14	16	18
	A	1'-0"	1'-2"	1'-6"
	B	7'-0"	8'-6"	11'-0"
	C	33'-10"	33'-10"	33'-10"
	D	36'-4"	37'-0"	38'-0"
	M	7 #5's	7 #5's	8 #5's
	N	8 #5's	9 #5's	12 #5's
	P	#5 @ 12" c/c	#6 @ 12" c/c	#6 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	5300	5300	5300
	#5 (ft.)	7600	6700	8300
	#6 (ft.)	0	1700	2600
Weight (Lbs.)		11475	13025	16075
Cu. Yds. Concrete	Footing	54	76	125
	Wall	41	41	41
	Floor	73	73	73
	Total	168	190	239

2. Inverted "T" Foundation

66' Diameter, 14-18 Ring (4.00" Corrugation), 3500 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 3500 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

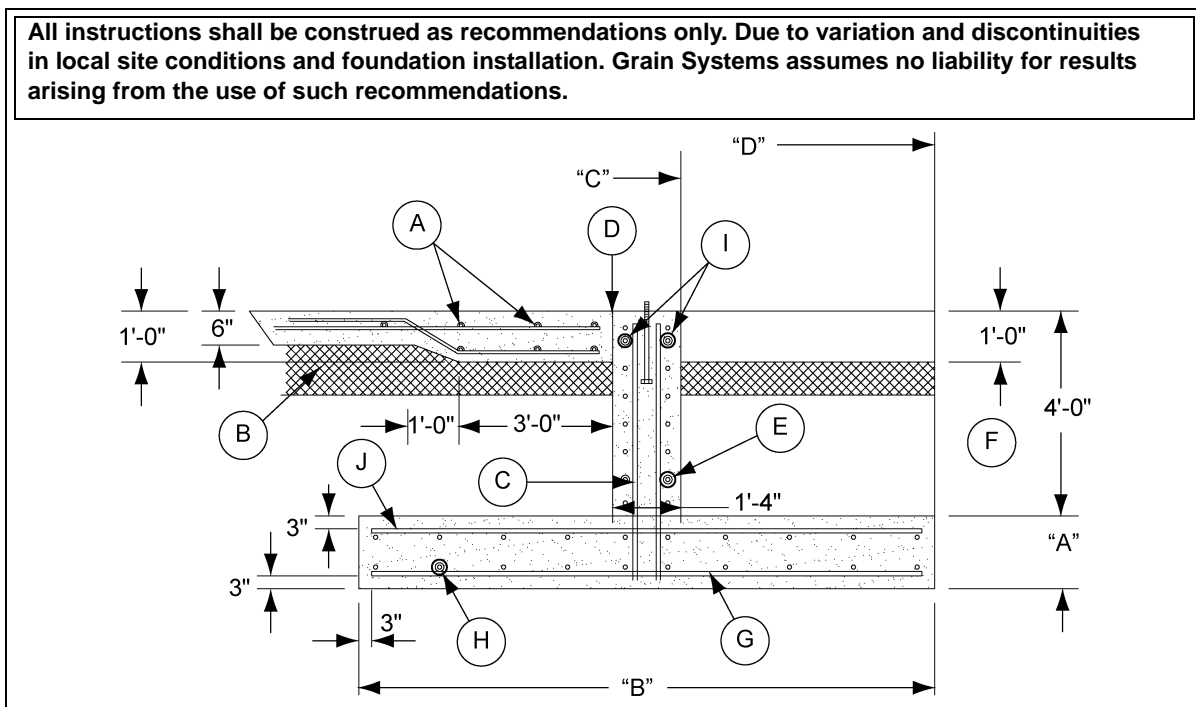


Figure 2B 66' Bin (14-18 Ring)

Ref #	Description	Ref #	Description
A	# 4 Bars @ 18" C/C Each Way	F	Grade
B	Well Compacted Fill	G	"P" Bars Spacing at Center of Footing
C	# 5 Bars @ 18" C/C Each Face (W STD 90° Hook)	H	"N" Bars Evenly Spaced
D	1/2" Expansion Joint	I	Two (2) Additional Hoop Bars, 3" from Top Hoop Bars
E	"M" Bars Evenly Spaced Each Face	J	"Q" Bars Spacing at Center of Footing

2. Inverted "T" Foundation

Diameter of Bin: 66'

Soil Bearing Capacity: 3500 PSF

	Ring #	14	16	18
	A	1'-0"	1'-2"	1'-6"
	B	5'-6"	7'-0"	9'-0"
	C	33'-10"	33'-10"	33'-10"
	D	35'-8"	36'-4"	37'-2"
	M	7 #5's	7 #5's	8 #5's
	N	6 #5's	8 #5's	10 #5's
	P	#5 @ 12" c/c	#5 @ 10" c/c	#6 @ 12" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	5300	5300	5300
	#5 (ft.)	6500	7900	7500
	#6 (ft.)	0	0	1800
Weight (Lbs.)		10275	11750	14050
Cu. Yds. Concrete	Footing	43	63	103
	Wall	41	41	41
	Floor	73	73	73
	Total	157	177	217

2. Inverted "T" Foundation

66' Diameter, 20-21 Ring (4.00" Corrugation), 3500 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 3500 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

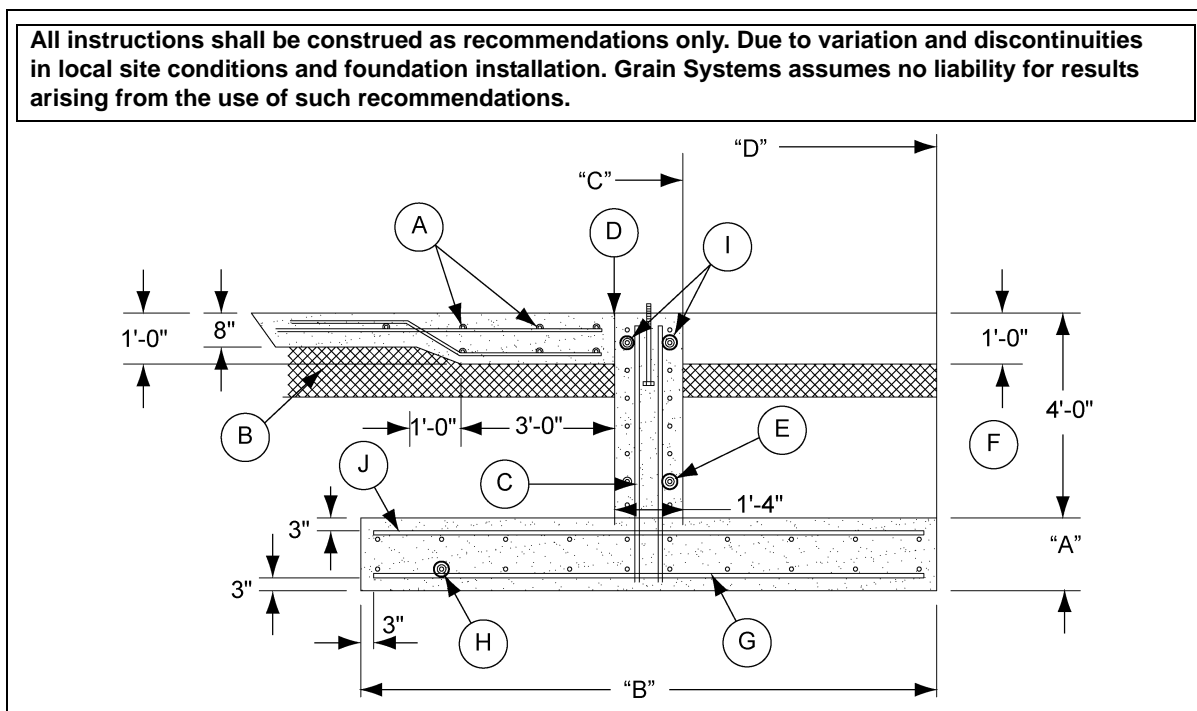


Figure 2C 66' Bin (20-21 Ring)

Ref #	Description
A	# 5 Bars @ 18" C/C Each Way
B	Well Compacted Fill
C	# 5 Bars @ 18" C/C Each Face (W STD 90° Hook)
D	1/2" Expansion Joint
E	"M" Bars Evenly Spaced Each Face

Ref #	Description
F	Grade
G	"P" Bars Spacing at Center of Footing
H	"N" Bars Evenly Spaced
I	Two (2) Additional Hoop Bars, 3" from Top Hoop Bars
J	"Q" Bars Spacing at Center of Footing

2. Inverted "T" Foundation

Diameter of Bin: 66'
Soil Bearing Capacity: 3500 PSF

	Ring #	20	21
	A	1'-6"	1'-8"
	B	11'-6"	12'-0"
	C	33'-10"	33'-10"
	D	38'-1"	38'-6"
	M	8 #5's	8 #5's
	N	12 #5's	13 #5's
	P	#7 @ 10" c/c	#7 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	0	0
	#5 (ft.)	13500	13900
	#6 (ft.)	2700	2900
Weight (Lbs.)		19525	20275
Cu. Yds. Concrete	Footing	130	152
	Wall	41	41
	Floor	90	90
	Total	261	283

2. Inverted "T" Foundation

66' Diameter, 16-18 Ring (4.00" Corrugation), 4000 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 4000 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

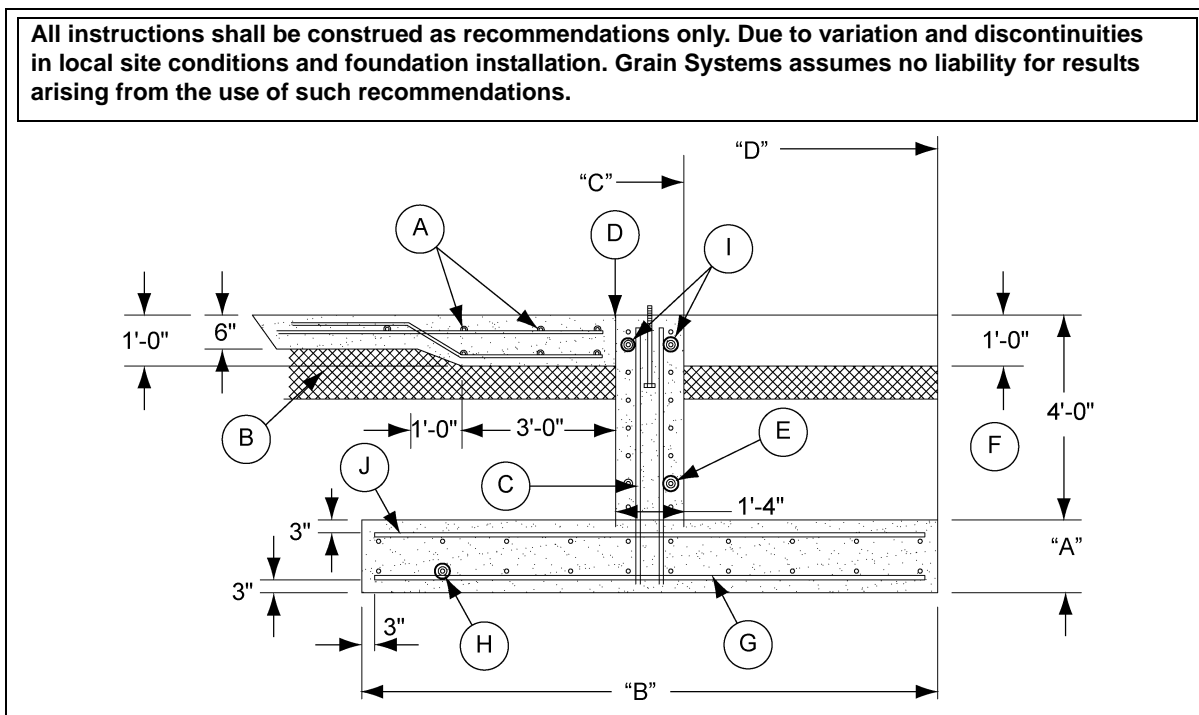


Figure 2D 66' Bin (16-18 Ring)

Ref #	Description	Ref #	Description
A	# 4 Bars @ 18" C/C Each Way	F	Grade
B	Well Compacted Fill	G	"P" Bars Spacing at Center of Footing
C	# 5 Bars @ 18" C/C Each Face (W STD 90° Hook)	H	"N" Bars Evenly Spaced
D	1/2" Expansion Joint	I	Two (2) Additional Hoop Bars, 3" from Top Hoop Bars
E	"M" Bars Evenly Spaced Each Face	J	"Q" Bars Spacing at Center of Footing

2. Inverted "T" Foundation

Diameter of Bin: 66'

Soil Bearing Capacity: 4000 PSF

	Ring #	16	18
	A	1'-2"	1'-3"
	B	6'-0"	7'-6"
	C	33'-10"	33'-10"
	D	35'-11"	36'-7"
	M	7 #5's	8 #5's
	N	7 #5's	8 #5's
	P	#5 @ 12" c/c	#6 @ 12" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	5300	5300
	#5 (ft.)	7000	6700
	#6 (ft.)	0	1500
Weight (Lbs.)		10825	12750
Cu. Yds. Concrete	Footing	54	72
	Wall	41	41
	Floor	73	73
	Total	168	186

2. Inverted "T" Foundation

Diameter of Bin: 66'

Soil Bearing Capacity: 4000 PSF

	Ring #	20	21
	A	1'-6"	1'-6"
	B	9'-0"	9'-0"
	C	33'-10"	33'-10"
	D	37'-3"	37'-3"
	M	8 #5's	8 #5's
	N	10 #5's	10 #5's
	P	#6 @ 10" c/c	#6 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	0	0
	#5 (ft.)	12700	12700
	#6 (ft.)	2100	2100
Weight (Lbs.)		16400	16400
Cu. Yds. Concrete	Footing	103	103
	Wall	41	41
	Floor	90	90
	Total	234	234

3. Frost Free Pad Foundation

66' Diameter, 14-18 Ring (4.00" Corrugation), 3000 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 3000 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. The full footing thickness is to be maintained and not interrupted.
9. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

All instructions shall be construed as recommendations only. Due to variation and discontinuities in local site conditions and foundation installation. Grain Systems assumes no liability for results arising from the use of such recommendations.

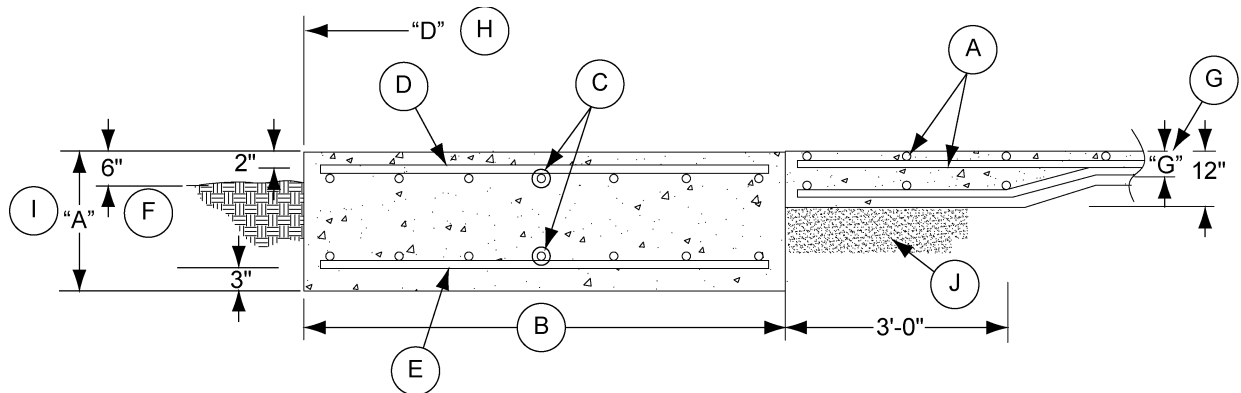


Figure 3A 66' Bin (14-18 Ring)

Ref #	Description
A	# 4 Bars @ 18" Each Direction
B	Footing Width
C	"N" Bars Each Face
D	"Q" Bars
E	"P" Bars

Ref #	Description
F	Grade
G	Slab Thickness "G"
H	Outside Footing Radius "D"
I	Footing Thickness "A"
J	Well Compacted Fill

3. Frost Free Pad Foundation

Diameter of Bin: 66'

Soil Bearing Capacity: 3000 PSF

	Ring #	14	16	18
	A	1'-6"	1'-6"	1'-6"
	B	6'-6"	8'-0"	10'-0"
	D	36'-0"	36'-7"	37'-5"
	G	6"	6"	6"
	N	8 #5's	9 #5's	11 #5's
	P	#6 @ 12" c/c	#6 @ 12" c/c	#7 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	4400	4100	3800
	#5 (ft.)	7800	8900	10900
	#6 (ft.)	1300	1600	0
	#7 (ft.)	0	0	2400
Weight (Lbs.)		13050	14425	18825
Total Cu. Yds. of Concrete	Total	135	148	166

3. Frost Free Pad Foundation

66' Diameter, 14-18 Ring (4.00" Corrugation), 3500 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 3500 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. The full footing thickness is to be maintained and not interrupted.
9. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

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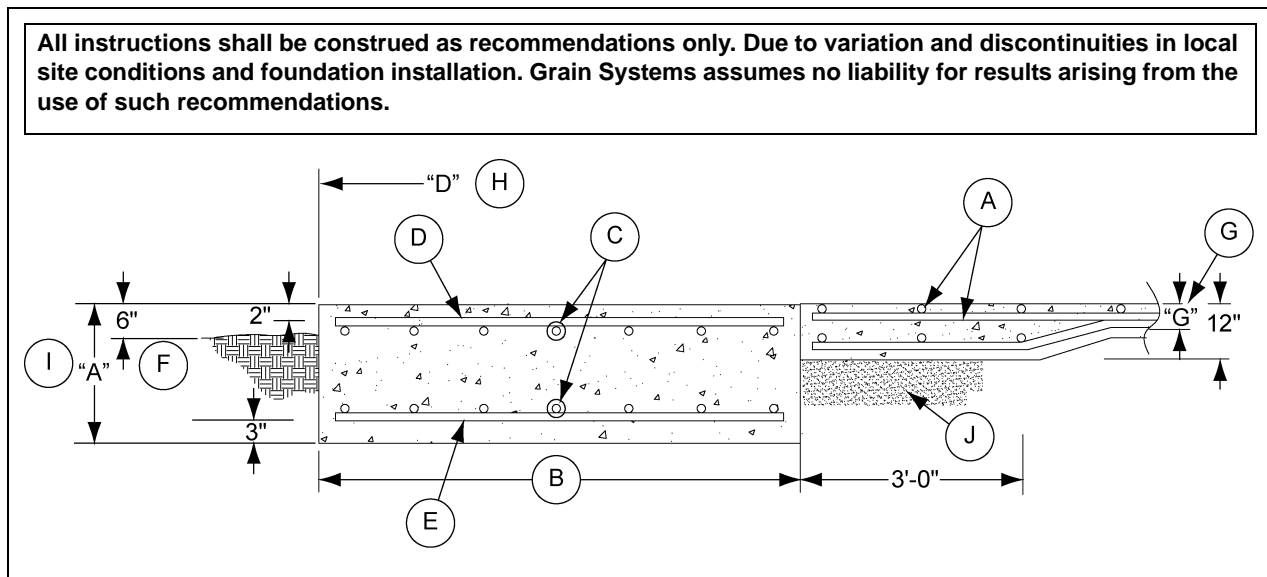


Figure 3B 66' Bin (14-18 Ring)

Ref #	Description
A	# 4 Bars @ 18" Each Direction
B	Footing Width
C	"N" Bars Each Face
D	"Q" Bars
E	"P" Bars

Ref #	Description
F	Grade
G	Slab Thickness "G"
H	Outside Footing Radius "D"
I	Footing Thickness "A"
J	Well Compacted Fill

3. Frost Free Pad Foundation

Diameter of Bin: 66'
Soil Bearing Capacity: 3500 PSF

	Ring #	14	16	18
	A	1'-6"	1'-6"	1'-6"
	B	5'-0"	6'-6"	8'-0"
	D	35'-5"	36'-0"	36'-8"
	G	6"	6"	6"
	N	6 #5's	8 #5's	9 #5's
	P	#6 @ 12" c/c	#6 @ 12" c/c	#6 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	4600	4400	4100
	#5 (ft.)	5900	7800	8900
	#6 (ft.)	1000	1300	1900
	#7 (ft.)	0	0	0
Weight (Lbs.)		10750	13050	14875
Total Cu. Yds. of Concrete	Total	122	135	149

3. Frost Free Pad Foundation

66' Diameter, 16-18 Ring (4.00" Corrugation), 4000 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 4000 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. The full footing thickness is to be maintained and not interrupted.
9. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

All instructions shall be construed as recommendations only. Due to variation and discontinuities in local site conditions and foundation installation. Grain Systems assumes no liability for results arising from the use of such recommendations.

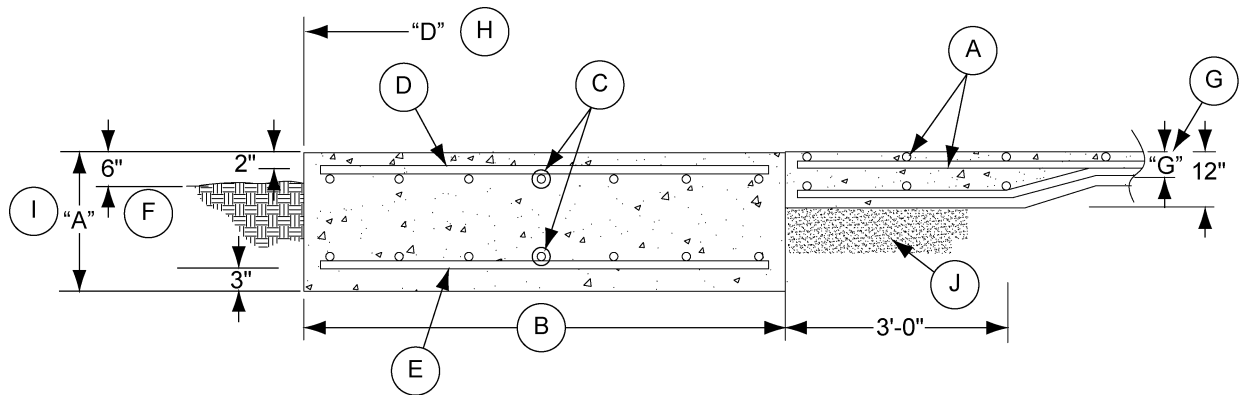


Figure 3C 66' Bin (16-18 Ring)

Ref #	Description
A	# 4 Bars @ 18" Each Direction
B	Footing Width
C	"N" Bars Each Face
D	"Q" Bars
E	"P" Bars

Ref #	Description
F	Grade
G	Slab Thickness "G"
H	Outside Footing Radius "D"
I	Footing Thickness "A"
J	Well Compacted Fill

3. Frost Free Pad Foundation

Diameter of Bin: 66'
Soil Bearing Capacity: 4000 PSF

	Ring #	16	18
	A	1'-6"	1'-6"
	B	5'-6"	7'-6"
	D	35'-8"	36'-6"
	G	6"	6"
	N	6 #5's	8 #5's
	P	#6 @ 12" c/c	#6 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	4500	4200
	#5 (ft.)	6000	8000
	#6 (ft.)	1100	1800
	#7 (ft.)	0	0
Weight (Lbs.)		10925	13875
Total Cu. Yds. of Concrete	Total	126	144

3. Frost Free Pad Foundation

66' Diameter, 20-21 Ring (4.00" Corrugation), 4000 PSF Allowable Soil Bearing Capacity

1. The foundation design is based on a minimum allowable soil bearing capacity of 4000 lbs./ft². Bearing capacity of the soils should be determined by geotechnical investigation and be of uniform bearing capacity.
2. The foundation site must be free of vegetation and debris and well drained.
3. The foundation must be founded below the frost line or constructed on non-expansive frost free fill.
4. All material used for backfill inside the ring wall should be clean, well graded, crushed rock or a sand-gravel mixture. Backfill should be placed in 6" lifts, 95% compaction.
5. All reinforcement must meet the requirements of ASTM A615 grade 60 deformed bars.
6. Lap all circumferential bars 40 bar diameters and stagger all laps in plans 3'-0". Estimates do not include end laps.
7. Concrete must have a minimum compressive strength of 4500 PSI at 28 days.
8. The full footing thickness is to be maintained and not interrupted.
9. Foundation recommendation charts are provided as an aid in material estimation purposes for standard commercial bin design conditions. Seismic conditions are not considered.

All instructions shall be construed as recommendations only. Due to variation and discontinuities in local site conditions and foundation installation. Grain Systems assumes no liability for results arising from the use of such recommendations.

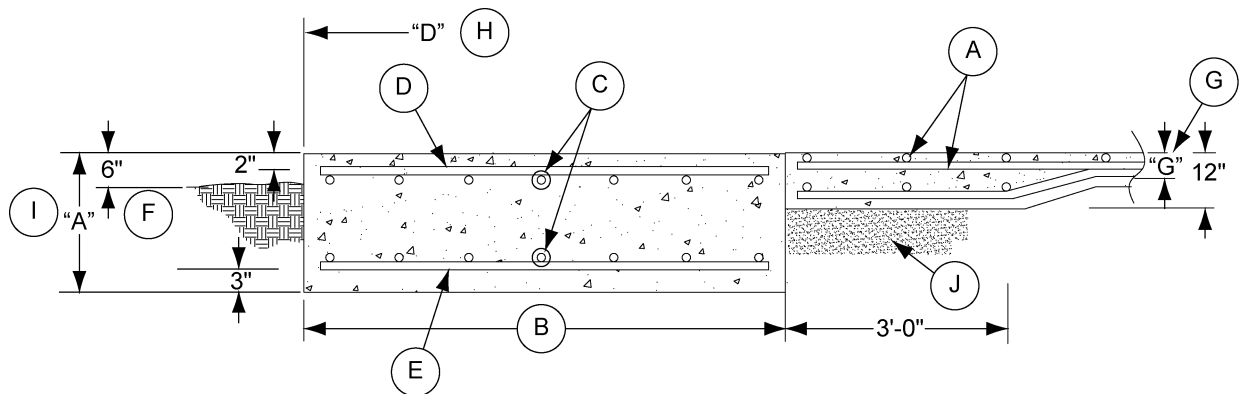


Figure 3D 66' Bin (20-21 Ring)

Ref #	Description
A	# 5 Bars @ 18" Each Direction
B	Footing Width
C	"N" Bars Each Face
D	"Q" Bars
E	"P" Bars

Ref #	Description
F	Grade
G	Slab Thickness "G"
H	Outside Footing Radius "D"
I	Footing Thickness "A"
J	Well Compacted Fill

3. Frost Free Pad Foundation

Diameter of Bin: 66'
Soil Bearing Capacity: 4000 PSF

	Ring #	20	21
	A	1'-8"	1'-8"
	B	8'-0"	9'-0"
	D	36'-8"	37'-1"
	G	8"	8"
	N	9 #5's	10 #5's
	P	#7 @ 10" c/c	#7 @ 10" c/c
	Q	#5 @ 12" c/c	#5 @ 12" c/c
Rerod	#4 (ft.)	0	0
	#5 (ft.)	13000	13900
	#6 (ft.)	0	0
	#7 (ft.)	1900	2100
Weight (Lbs.)		17450	18800
Total Cu. Yds. of Concrete	Total	171	181

NOTES

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.