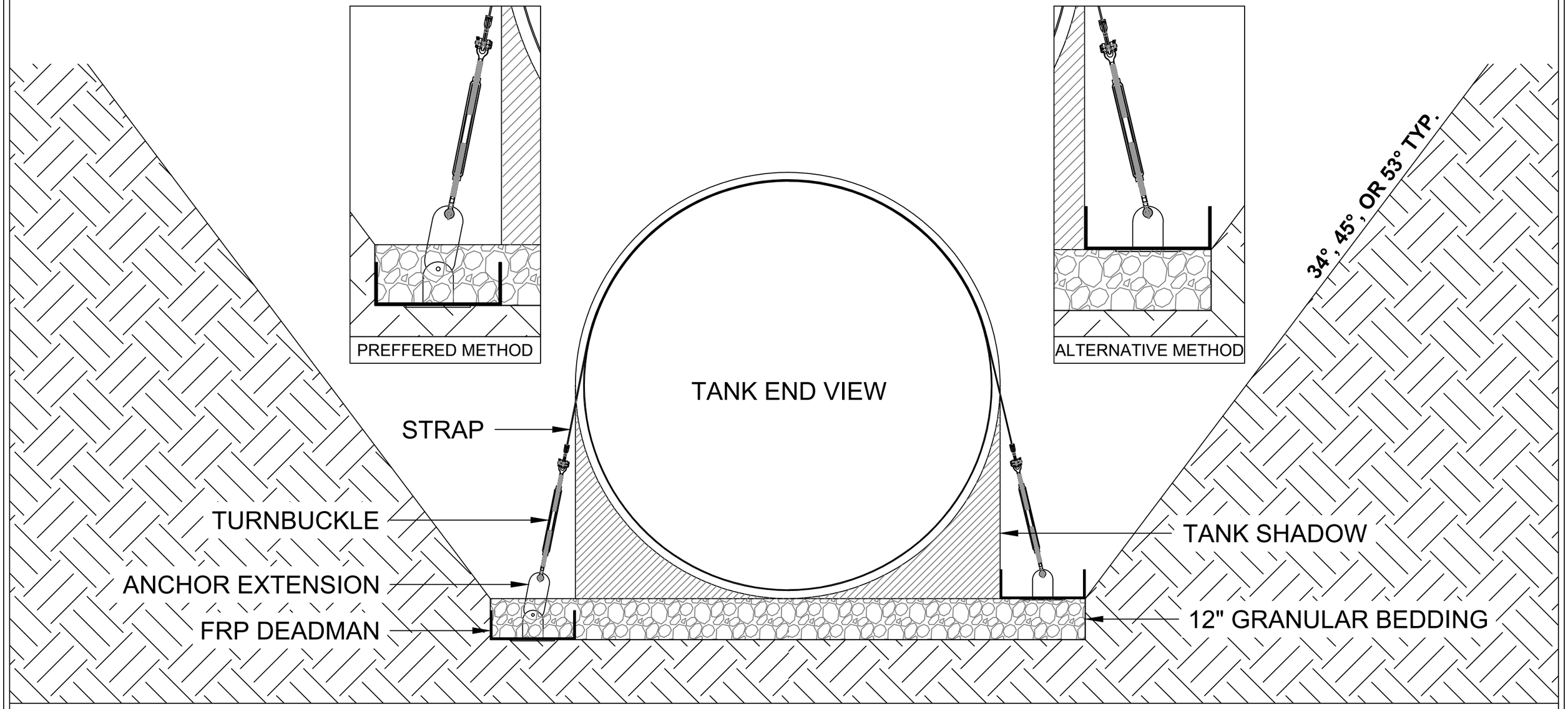


- The preffered anchoring method, shown on the left side, is to add the 12" granular bedding over the FRP deadmen and utilize the anchor extension.
- The alternative anchoring method is to set the FRP deadmen on top of the 12" bedding, which may affect buoyancy design. Contractor to remove the anchor extensions when using this method.
- FRP deadmen must be outside of the tank shadow in order to maximize the soil column directly above the deadmen.
- FRP deadmen can be used with open cut trench excavation or shored hole excavation.
- The FRP deadmen are 12" wide for 4',5', and 6' diameter tanks, 18" wide for 8' diameter tanks, and 24" wide for 10' and 12' diameter tanks.

SHEET TITLE: END VIEW

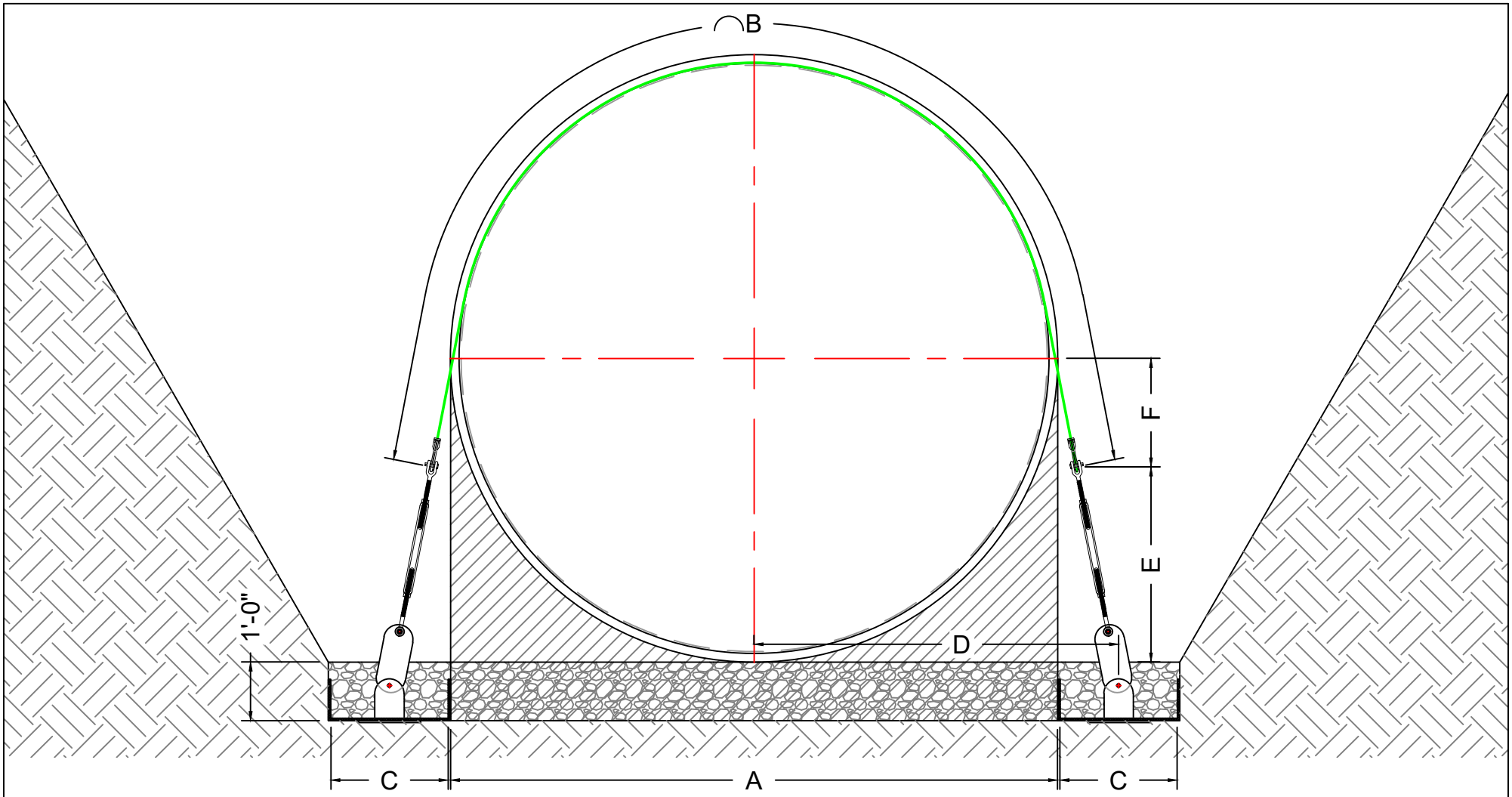
PROJECT NUMBER:

PROJECT NAME: FIBERGLASS DEADMEN

DRAWN DATE:	DRAWN BY:	REV.
11/09/20	JACK	00

Fiberglass Tank SOLUTIONS

Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620



ANCHORING DIMENSIONS

TANK DIA.	"A"	"B"	"C"	"D"	"E"	"F"
4'	4'-4"	85"	12"	2'-8 1/2"	1'-10 1/4"	0'-4"
5'	5'-4 1/4"	111.5"	12"	3'-2 3/4"	2'-1 1/4"	0'-7"
6'	6'-4 1/4"	145"	12"	3'-8 3/4"	1'-11 1/2"	1'-2 3/4"
8'	8'-4 1/4"	181"	18"	4'-11 3/4"	3'-0 1/2"	1'-1 3/4"
10'	10'-4 1/4"	236"	24"	6'-3 3/4"	3'-4"	1'-10 1/4"
12'	12'-4 1/4"	288"	24"	7'-2 3/4"	3'-8 3/4"	2'-5 1/2"

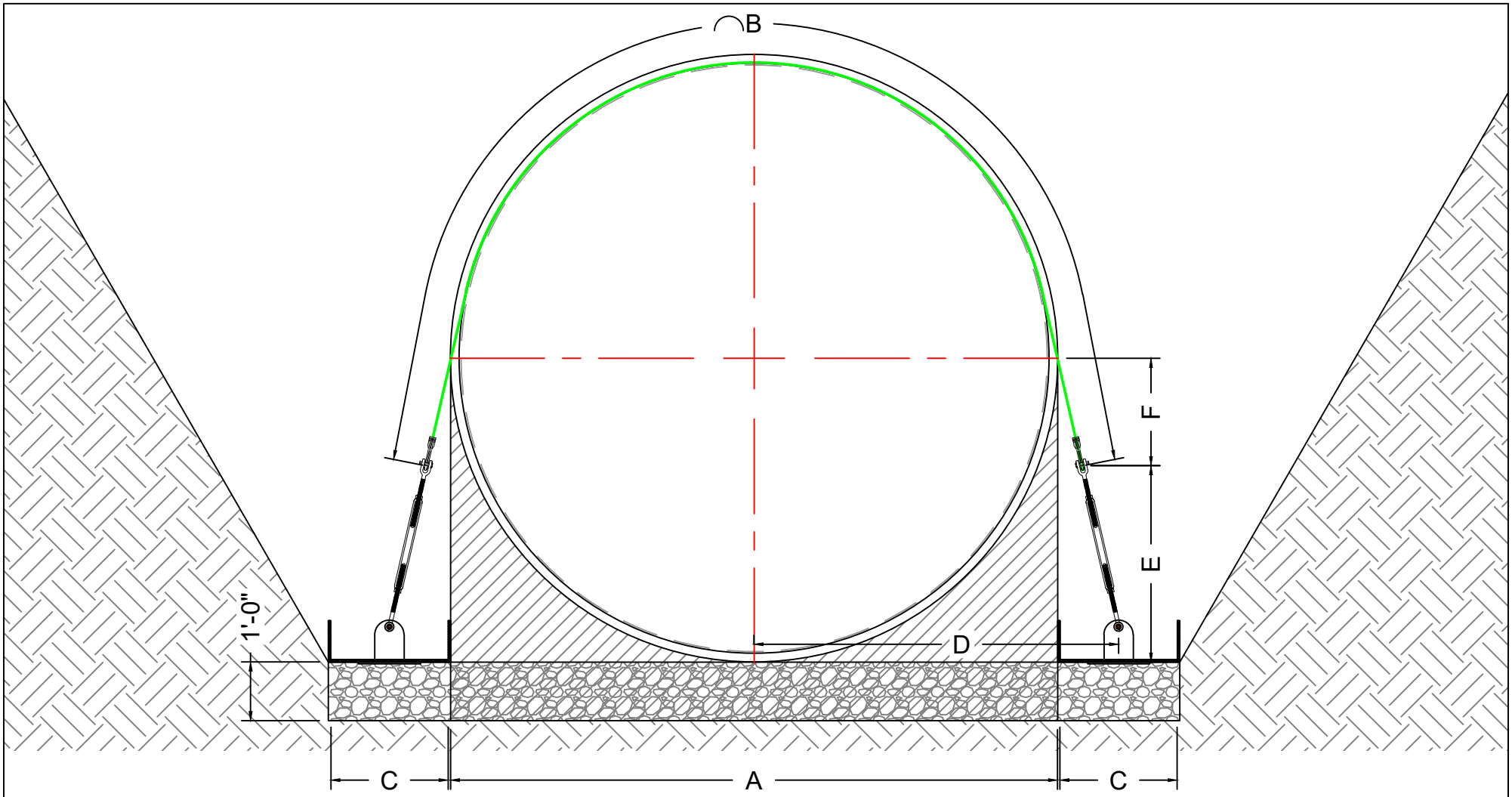
PROJECT NAME:

FRP DEADMEN LAYOUT W/ ANCHOR EXTENSIONS

DRAWN DATE:	DRAWN BY:	REV.
12/10/20	JACK	00

Fiberglass Tank SOLUTIONS

Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620



ANCHORING DIMENSIONS

TANK DIA.	"A"	"B"	"C"	"D"	"E"	"F"
4'	4'-4"	85"	12"	2'-8 1/2"	1'-10 1/4"	0'-4"
5'	5'-4 1/4"	111.5"	12"	3'-2 3/4"	2'-1 1/4"	0'-7"
6'	6'-4 1/4"	145"	12"	3'-8 3/4"	1'-11 1/2"	1'-2 3/4"
8'	8'-4 1/4"	181"	18"	4'-11 3/4"	3'-0 1/2"	1'-1 3/4"
10'	10'-4 1/4"	236"	24"	6'-3 3/4"	3'-4"	1'-10 1/4"
12'	12'-4 1/4"	288"	24"	7'-2 3/4"	3'-8 3/4"	2'-5 1/2"

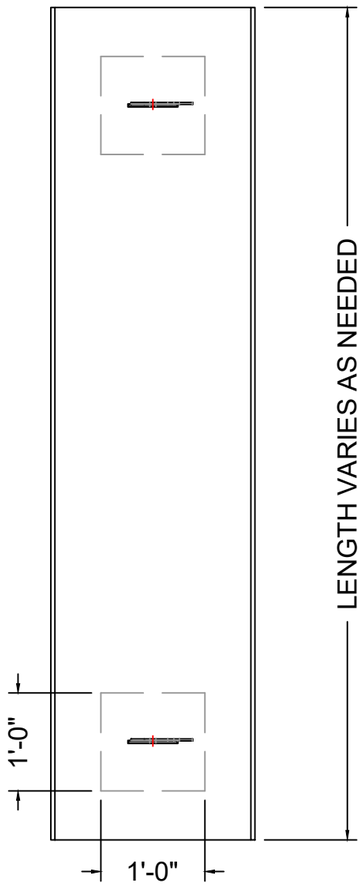
PROJECT NAME:

FRP DEADMEN LAYOUT WITHOUT EXTENSIONS

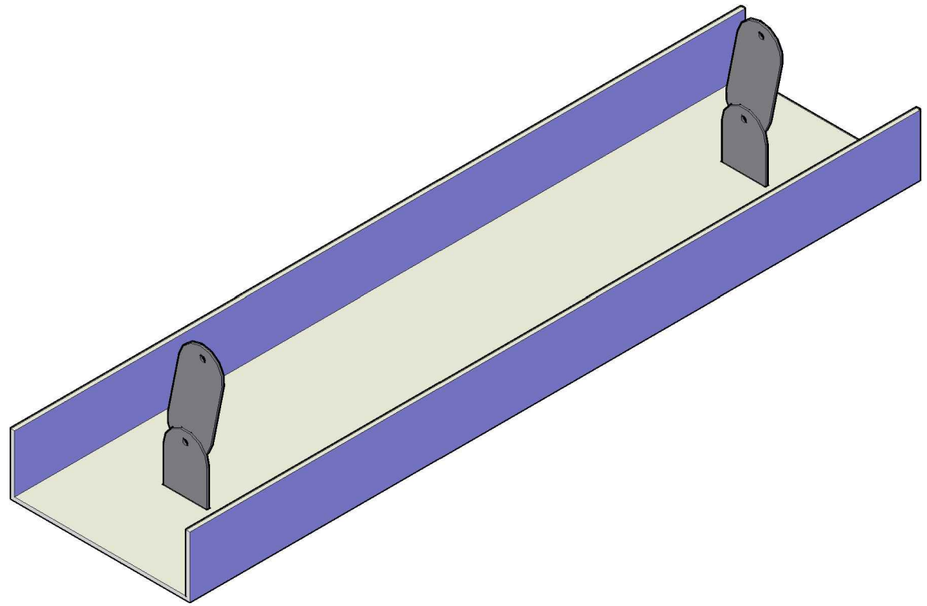
DRAWN DATE:	DRAWN BY:	REV.
12/10/20	JACK	00

Fiberglass Tank SOLUTIONS

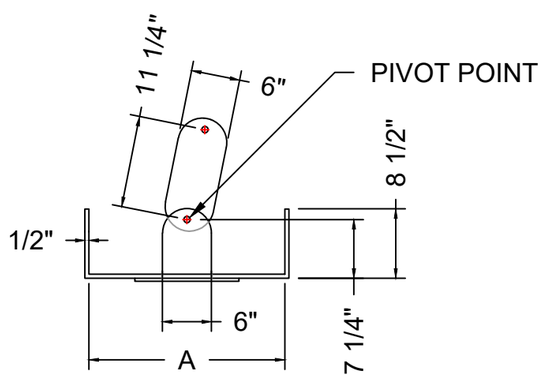
Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620



TOP VIEW



ISOMETRIC VIEW



FRONT VIEW

RIGHT SIDE VIEW

DEADMEN WIDTH

TANK Ø	DIM. "A"
5'-0"	1'-0"
6'-0"	1'-0"
8'-0"	1'-6"
10'-0"	2'-0"
12'-0"	2'-0"

SHEET TITLE: DEADMAN

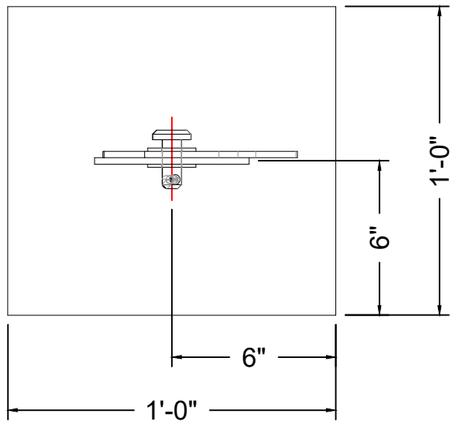
PROJECT NUMBER:

PROJECT NAME: FIBERGLASS DEADMEN

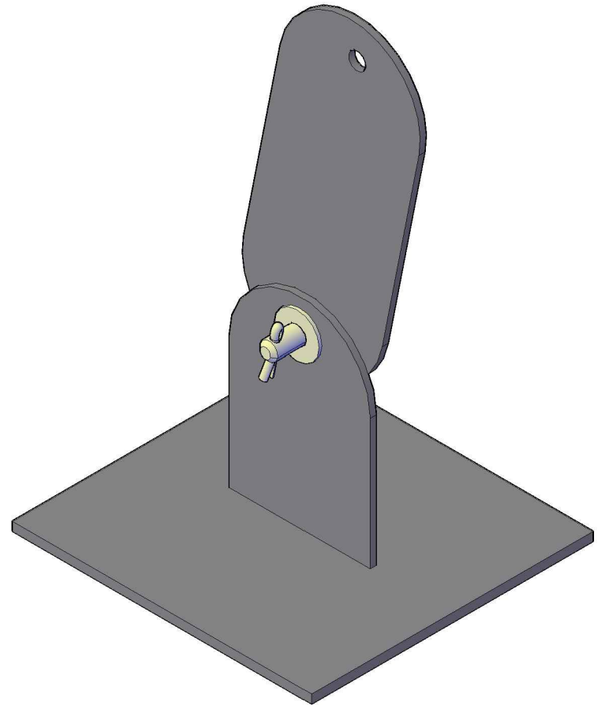
DRAWN DATE:	DRAWN BY:	REV.
10/13/20	JACK	00

Fiberglass Tank SOLUTIONS

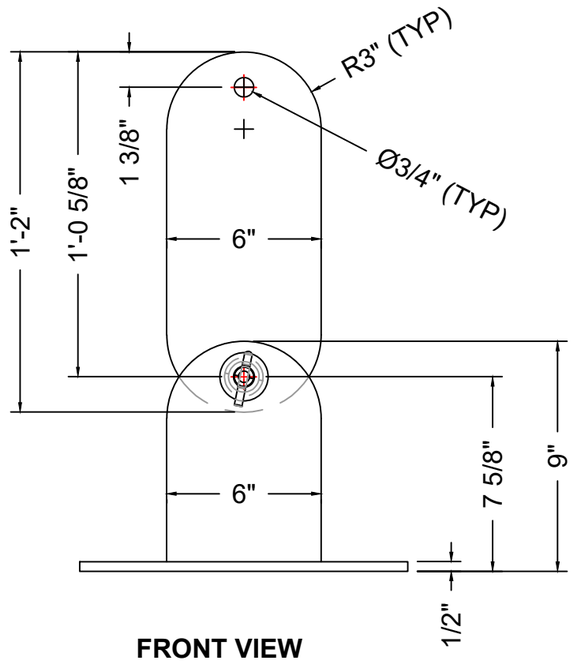
Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620



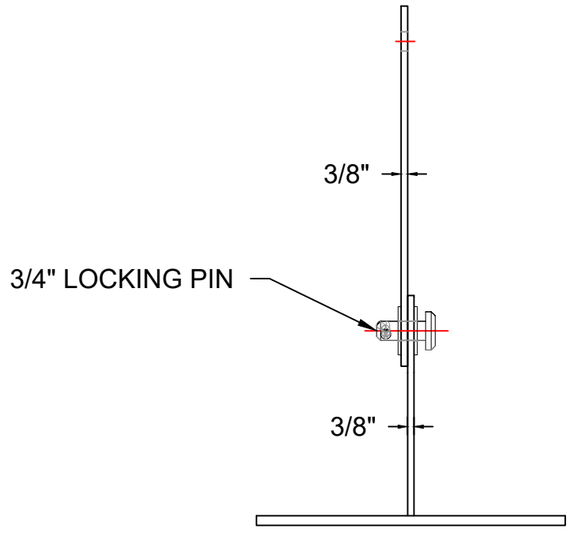
TOP VIEW



ISOMETRIC VIEW



FRONT VIEW



RIGHT SIDE VIEW

SHEET TITLE: ANCHOR POINT

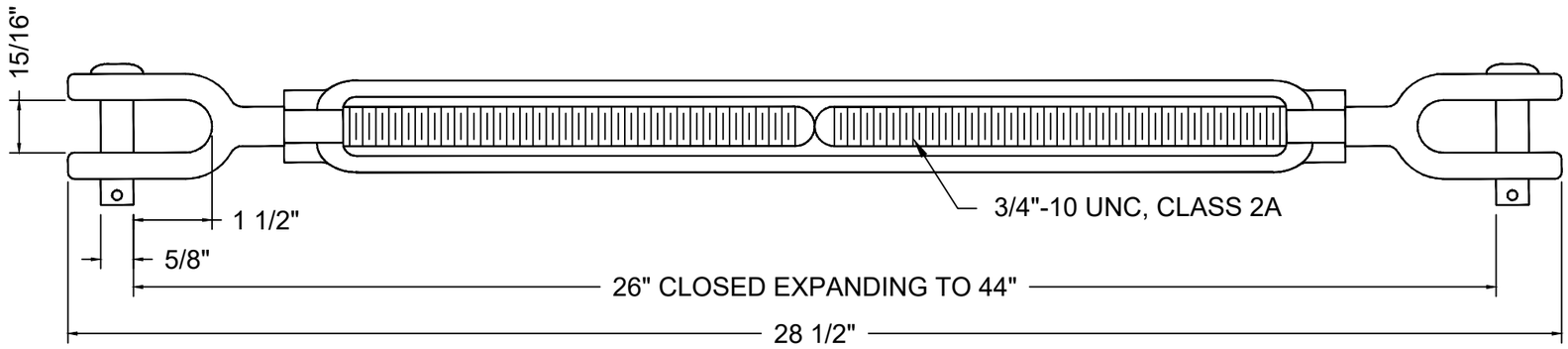
PROJECT NUMBER:

PROJECT NAME: FIBERGLASS DEADMEN

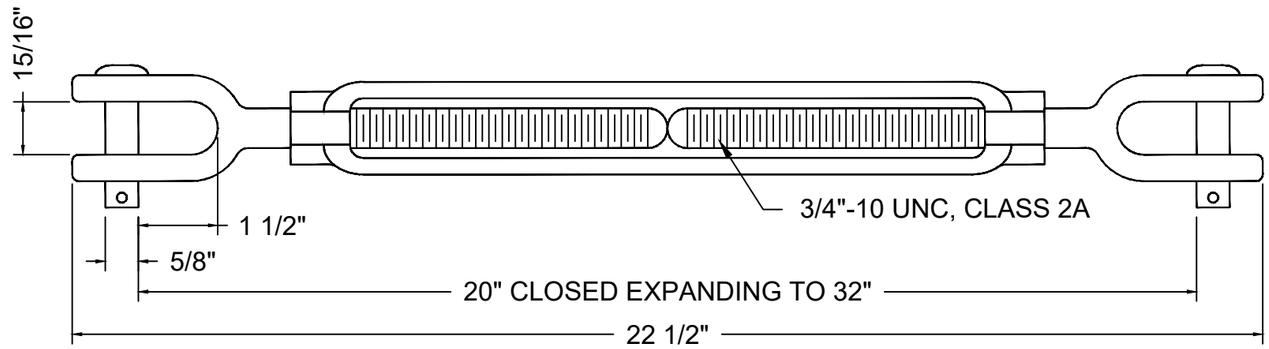
DRAWN DATE:	DRAWN BY:	REV.
10/13/20	JACK	00

Fiberglass Tank SOLUTIONS

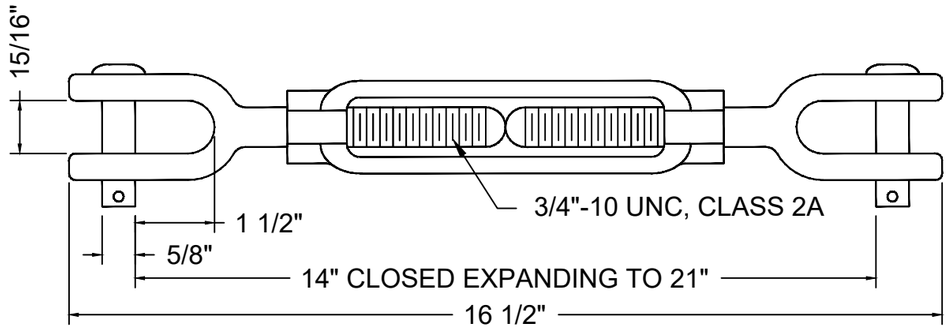
Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620



3/4" X 18" JAW TO JAW TURNBUCKLE
FOR USE ON Ø10' & Ø12' TANKS



3/4" X 12" JAW TO JAW TURNBUCKLE
FOR USE ON Ø8' TANKS



3/4" X 6" JAW TO JAW TURNBUCKLE
FOR USE ON Ø6' & Ø5' TANKS

PROJECT NAME:
JAW TO JAW TURNBUCKLES

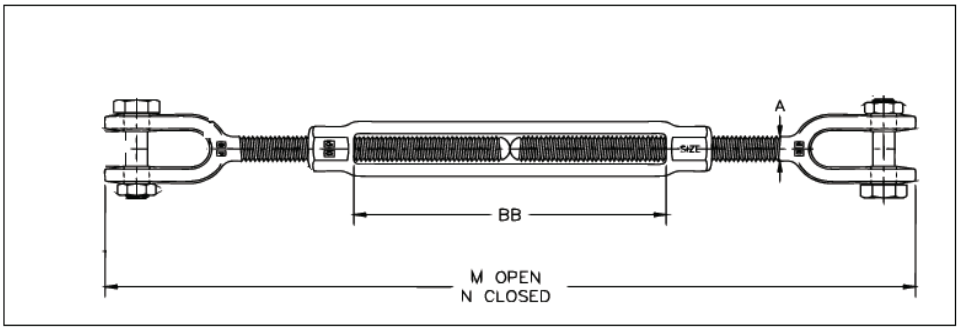
DRAWN DATE:	DRAWN BY:	REV.
10/01/20	JACK	00

Fiberglass Tank SOLUTIONS
Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620

US CARGO CONTROL

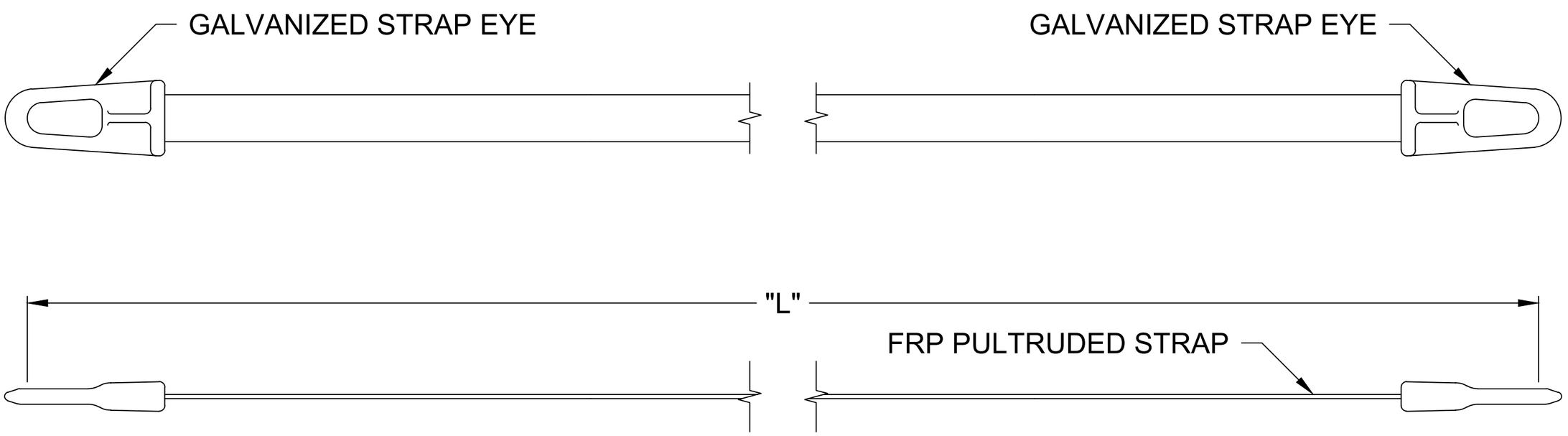
JAW & JAW GALVANIZED TURNBUCKLES - IMPORT

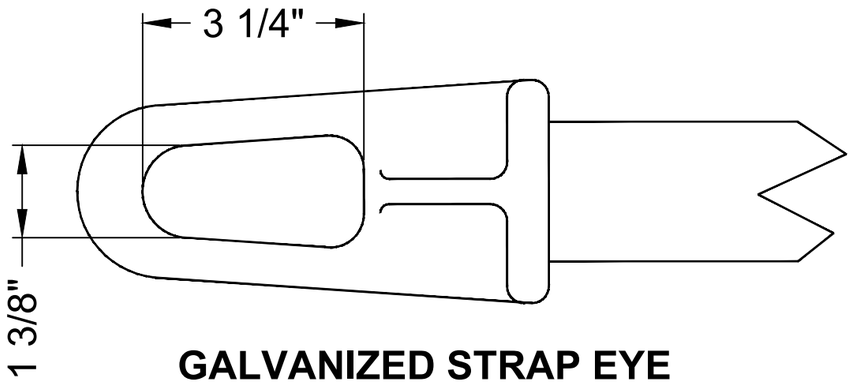
Part# JJTBGV series



JAW&JAW

SIZE(in)	A	M	N	BB	WLL/lbs
1/4X4"	0.25	11.90	7.90	4.00	500
5/16x4-1/2"	0.31	13.90	9.40	4.50	800
3/8x6"	0.38	17.38	11.38	6.00	1200
1/2x6"	0.50	20.00	13.00	6.00	2200
1/2x9"	0.50	26.00	16.00	9.00	2200
1/2x12"	0.50	32.00	19.00	12.00	2200
5/8x6"	0.63	21.82	14.88	6.00	3500
5/8x9"	0.63	28.13	17.88	9.00	3500
5/8x12"	0.63	34.13	20.88	12.00	3500
3/4x6"	0.75	23.68	16.60	6.00	5200
3/4x9"	0.75	30.08	19.60	9.00	5200
3/4x12"	0.75	36.08	22.60	12.00	5200
3/4x18"	0.75	48.08	29.60	18.00	5200
7/8x12"	0.88	37.62	24.32	12.00	7200
7/8x18"	0.88	50.07	30.32	18.00	7200
1x12"	1.00	39.18	26.06	12.00	10000
1x18"	1.00	51.18	32.06	18.00	10000
1x24"	1.00	63.78	38.06	24.00	10000
1-1/4x12"	1.25	43.58	29.54	12.00	15200
1-1/4x18"	1.25	55.58	35.54	18.00	15200
1-1/4x24"	1.25	68.04	41.54	24.00	15200
1-1/2x18"	1.50	57.68	37.50	18.00	21400
1-1/2x24"	1.50	70.30	43.50	24.00	21400
1-3/4x18"	1.75	59.16	41.16	18.00	28000





GALVANIZED STRAP EYE

HOLD-DOWN STRAPS	
TANK SIZE	STRAP LENGTH "L"
4' DIA.	85"
5' DIA.	111.5"
6' DIA.	145"
8' DIA.	181"
10' DIA.	236"
12' DIA.	288"

PROJECT NAME:
DOUBLE D-LUG
HOLD-DOWN STRAPS

DRAWN DATE:	DRAWN BY:	REV.
10/01/20	JACK	00

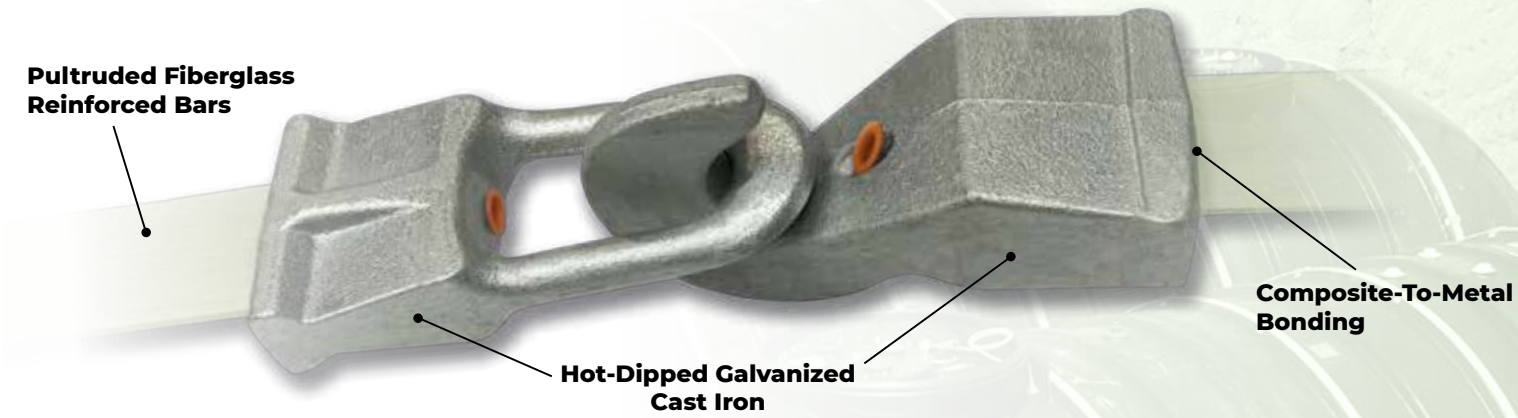
Fiberglass Tank SOLUTIONS

Mailing: P.O. BOX 326, Montreal, MO 65591
MFG: 147 Camdenton Bus. Prk. Dr.,
Camdenton, MO 65020
P: 573-317-9620

FIBER Straps
A division of Pultrusion technique inc.

HOLD-DOWN STRAPS

FOR UNDERGROUND STORAGE TANKS



Specifications

Hook

- Ductile Iron Casting ASTM A536-84 Grade 80-55-06
- Hot-dipped galvanized MIL Spec. QQ-Z-325B Class 2
- Galvanized steel thickness = 0. 008

Bars

- Weight of pultruded bar is 70-75% high quality fiberglass roving
- Guaranteed to sustain extensive tensile loads of 25,000 lbs
- High resistance to acid corrosion
- Elasticity module = 55 X 10^6 psi
- Stronger and more rigid than polyester

Straps

- Quality control load test of 21,000 lbs for each strap
- Breaking point 35,000 lbs
- Only 2% elongation at breaking point
- Tension = up to 80,000 psi
- Strap bound to hook with special epoxy formulation
- Weight of 20' straps is 14 lbs
- Specific testing protocols prior to and during epoxy injection, and after curing
- Engineered and manufactured under strict quality standards
- No added pressure on tanks

Custom-Build Your Straps

The custom-built assembly includes a pultruded fiberglass reinforced resin strap, each end of which is epoxy-bound to a hot-dipped galvanized cast iron C Hooks or D Rings.

HOLD-DOWN STRAPS

FOR UNDERGROUND STORAGE TANKS

Shipping and Handling

Our packaging system provides for easy and safer loading, unloading and on-site handling. Regular orders are shipped in custom-built platforms, and small orders in wood casings. Urgent delivery is available for small orders. Straps are rolled to form a loop (minimum radius of 30'' to prevent hairline fractures), packaged in a wood casing and air-shipped.

Made-to-Measure

- Strap lengths calculated from inside hook to inside hook
- Straps available in standard and custom lengths
- Platform built according to length of straps

Custom-built Platform

Packaging

- Custom-built heavy-duty platforms
- No crane required
- Side beams: 11 7/8'' high and 1 3/4'' thick
- Platforms are 44'' wide
- Steel structure is bolted to platform plus saddles, if necessary
- Platforms can support 5,500 lbs on a 20-ft length

Wood Casing

Platforms are designed for easy loading and unloading onto vans or flatbeds, and safe on-site handling. Straps must be handled with care and not be exposed to ultra-violet radiation.

Properties of our Pultruded Bars

PROPERTY (Coupon Value)	ASTM	UNIT	FIBERGLASS 65%-70%	FIBERGLASS 70%-75%
Tensile strength	D-638	psi X 10^3	100	120
Tensile modulus		psi X 10^6	6	6.5
Flexural strength	D-790	psi X 10^3	100	120
Flexural modulus		psi X 10^6	6	6.5
Compressive strength	D-695	psi X 10^3	60	70
Compressive modulus		psi X 10^6	2.3	2.5
Shear strength		psi	2,800	3,000
Torque shear strength		psi	5,000	5,500
Izod impact strength	D-256	lbs-ft/in.	40	50
Water absorption	D-570	%	0.09	0.09