

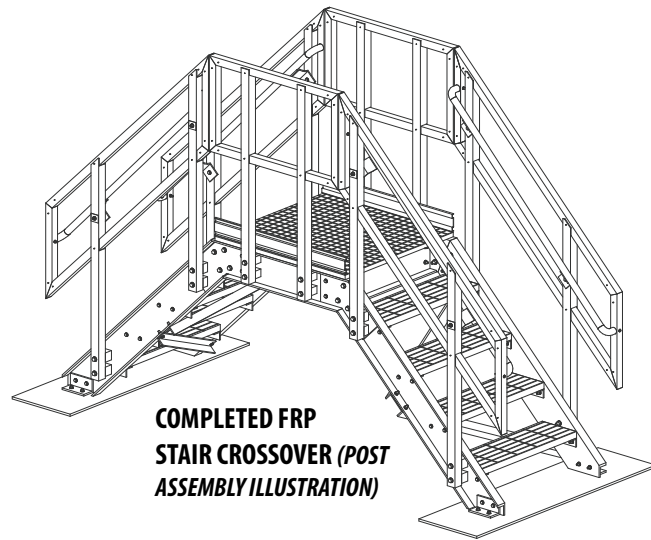
FRP Stair Crossovers



Estimated Installation Time: 2 Man Crew, 2 Hours

ASSEMBLY INSTRUCTIONS

ITEM DESCRIPTION	PART NUMBER
FRP Stair Crossover - 10" Clearance	866210.01
FRP Stair Crossover - 19-1/2" Clearance	866219.01
FRP Stair Crossover - 29" Clearance	866229.01
FRP Stair Crossover - 38-1/2" Clearance	866238.01
FRP Stair Crossover - 48" Clearance	866248.01
FRP Stair Crossover - 65" Clearance	866265.01

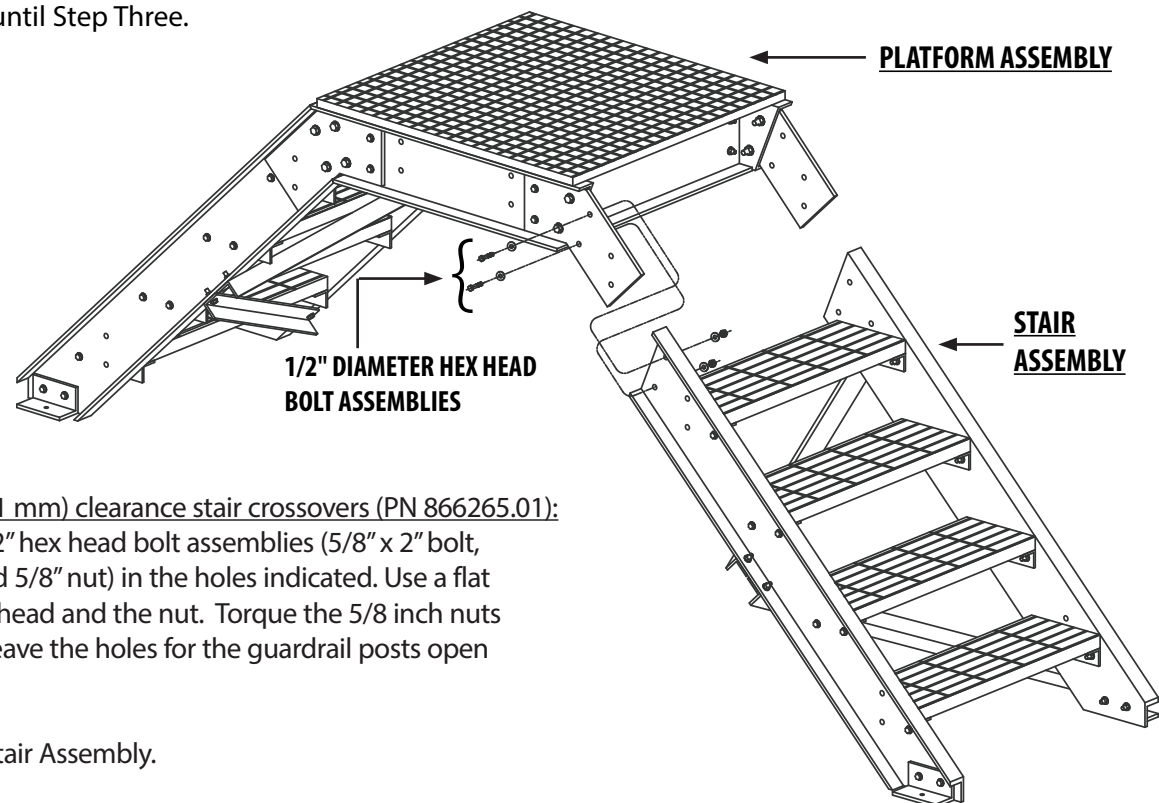


STEP 1:

ATTACH STAIR ASSEMBLIES TO PLATFORM ASSEMBLY

A) Slide channels of Stair Assembly inside of Splice Plates on Platform Assembly and line up the holes. Refer to Drawing B-03060 Rev 1 dated 2/23/17 for the exact configuration of the crossover. The illustration shown in these instructions may vary from the crossover you are assembling.

B) For the stair crossovers up to and including the 48 inch (1219 mm) clearance crossover (PN 866248.01): Install two each 1/2" x 2" hex head bolt assemblies (1/2" x 2" bolt, 2 each flat washers, and 1/2" nut) in the holes indicated. Use a flat washer under the bolt head and the nut. Torque the 1/2 inch nuts to 45 ft-lb (5.1 N-m). Leave the holes for the guardrail posts open until Step Three.



C) For the 65 inch (1651 mm) clearance stair crossovers (PN 866265.01): Install two each 5/8" x 2" hex head bolt assemblies (5/8" x 2" bolt, 2 each flat washers, and 5/8" nut) in the holes indicated. Use a flat washer under the bolt head and the nut. Torque the 5/8 inch nuts to 45 ft-lb (5.1 N-m). Leave the holes for the guardrail posts open until Step Three.

D) Repeat for second Stair Assembly.

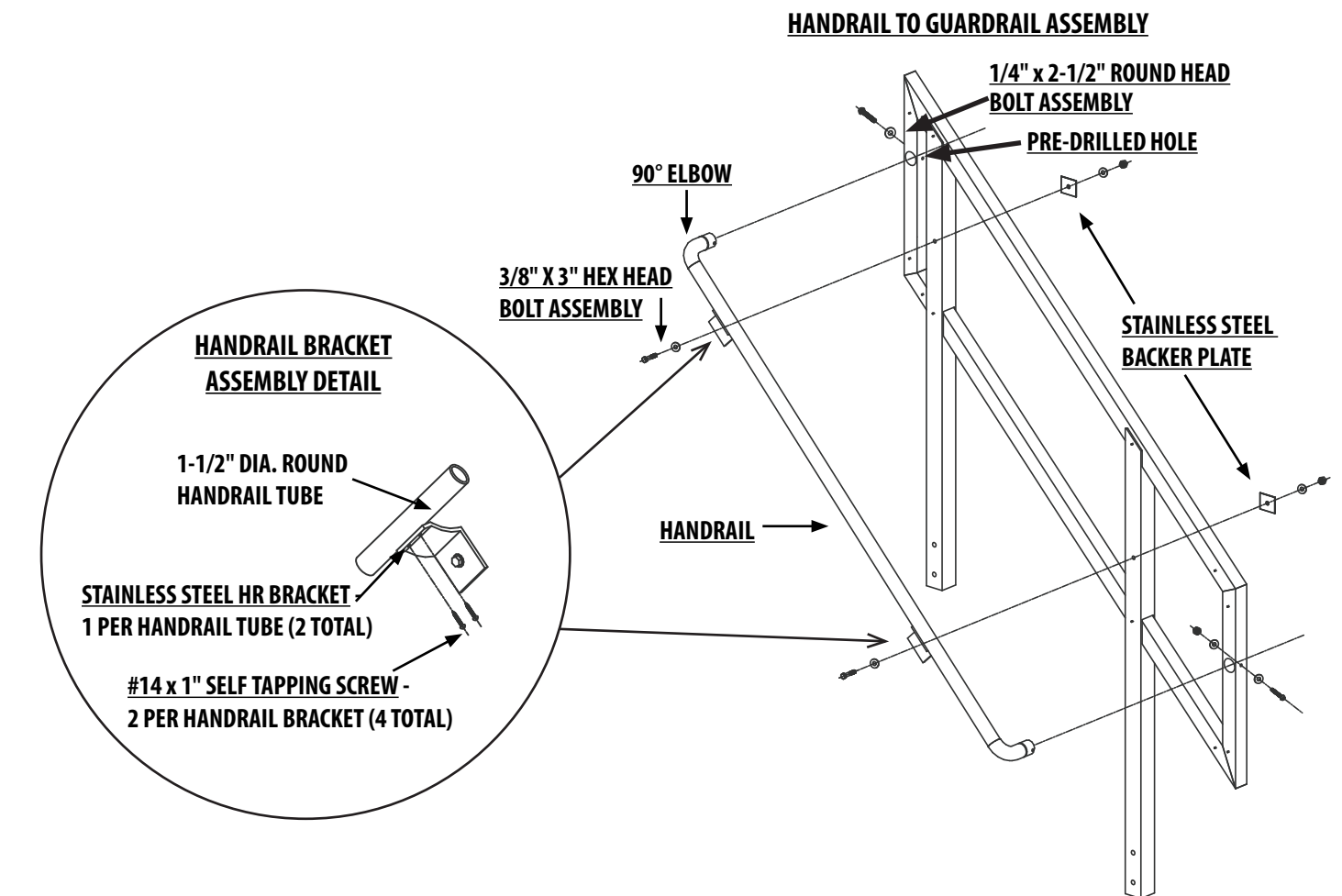
Stair Crossover Assembly Instructions

STEP 2: ASSEMBLE HANDRAIL TO GUARDRAILS

A) Attach the stainless steel handrail brackets to the 1-1/2 inch dia round handrail tubes using two #14 x 1 inch self-tapping screws per handrail bracket. The pilot holes for the screws are shop drilled into the handrail tubes. Be careful not to over-torque the screws to prevent stripping the holes. Note that you will be assembling a left hand and a right hand set of handrails for each stair.

B) Attach the handrail to the guardrail by following Details 702 and 703 in Drawing B-3060. The stainless steel handrail brackets connect to the 2-1/8 inch (54 mm) post and 1-3/4 inch (44.5 mm) rail with a 3/8" x 3" hex head bolt assembly, flat washer, and backer plate. Apply blue thread locking compound to the bolt threads prior to installing the nuts. Torque nuts until the assemblies are tightly clamped together.

C) The 90° elbow at the top and bottom of the handrail connects to the 1-3/4 inch (44.5 mm) square tube rail return by fitting it into the pre-drilled hole and securing it with a 1/4" x 2-1/2" round head bolt assembly. Install the round head bolt so that the nut is oriented toward the inside of the assembly. Refer to Detail 703. Apply blue thread locking compound to the bolt threads prior to installing the nut. Torque nuts until the assemblies are tightly clamped together.



Stair Crossover Assembly Instructions

STEP 3: INSTALL GUARDRAILS

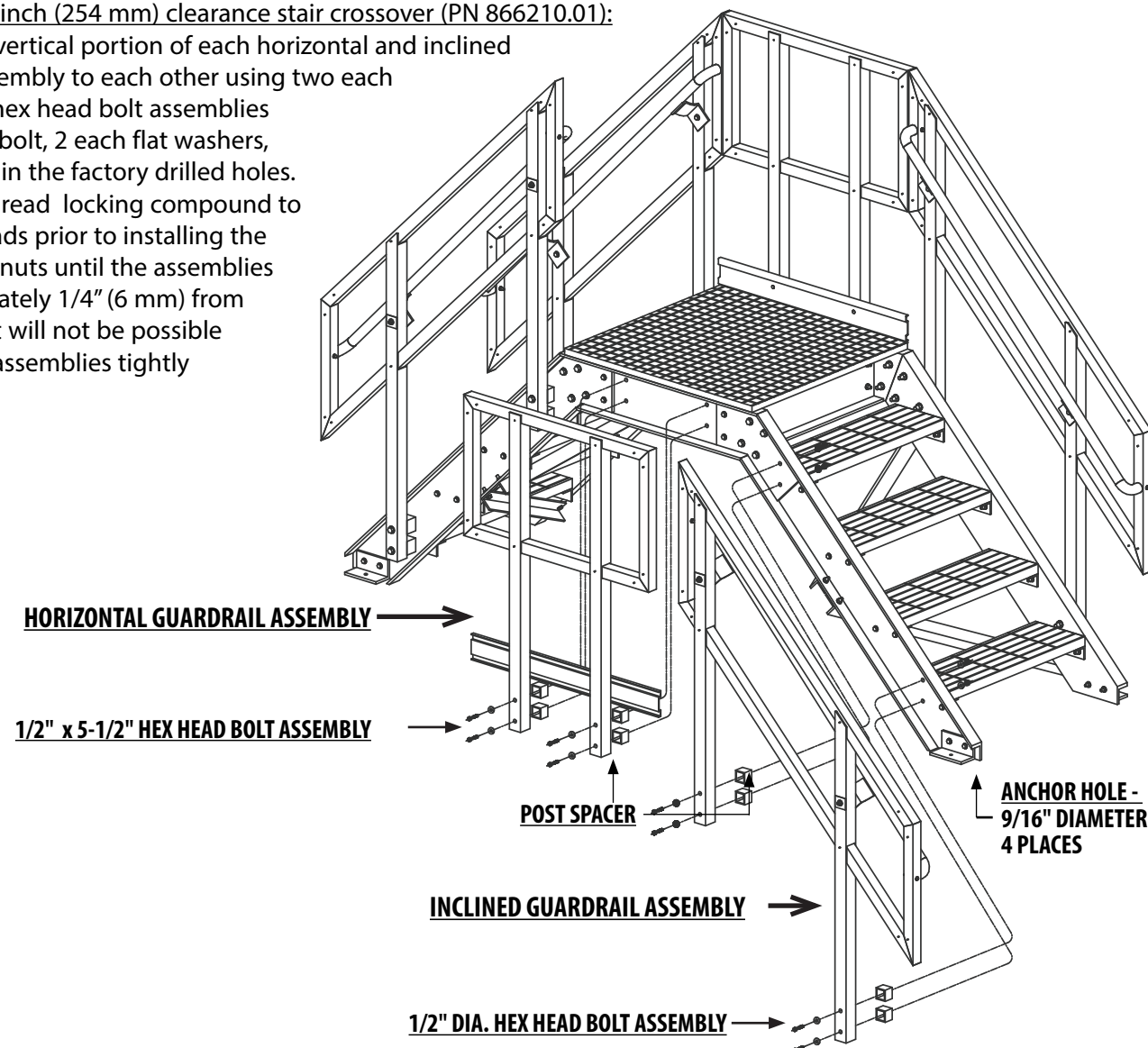
A) For the stair crossovers up to and including the 48 inch (1219 mm) clearance crossover (PN 866248.01): Install each Guardrail Assembly to the Crossover by sandwiching the 2-1/8 inch x 3/16 inch (54 x 4.8 mm) Square Tube Post Spacers between the Guardrail Assembly and the Crossover and installing the 1/2 inch x 5-1/2 inch hex head bolt assemblies (1/2 inch x 5-1/2 inch bolt, 2 each flat washers, and 1/2" nut) in the holes indicated. Where the post falls on a splice plate, use the shorter spacer. The longer spacers are for the locations where the post is bolted directly to the web of the channel. Use a flat washer under the bolt head and the nut. Hold Post Spacers in alignment with the edges of the post while torquing the nuts. Torque the nuts to 45 ft-lb (5.1 N-m).

B) For the 65 inch (1651 mm) clearance stair crossovers (PN 866265.01): Follow the instructions above except use 1/2 inch x 6 inch hex head bolt assemblies (1/2 inch x 6 inch bolt, 2 each flat washers, and 1/2" nut) for installing the Guardrail Assemblies.

C) Repeat for all six Guardrail Assemblies.

D) For the 10 inch (254 mm) clearance stair crossover (PN 866210.01):

Connect the vertical portion of each horizontal and inclined Guardrail Assembly to each other using two each 1/4" x 4-1/2" hex head bolt assemblies (1/4" x 1-1/2" bolt, 2 each flat washers, and 1/4" nut) in the factory drilled holes. Apply blue thread locking compound to the bolt threads prior to installing the nuts. Torque nuts until the assemblies are approximately 1/4" (6 mm) from each other. It will not be possible to pull the two assemblies tightly together.



Stair Crossover Assembly Instructions

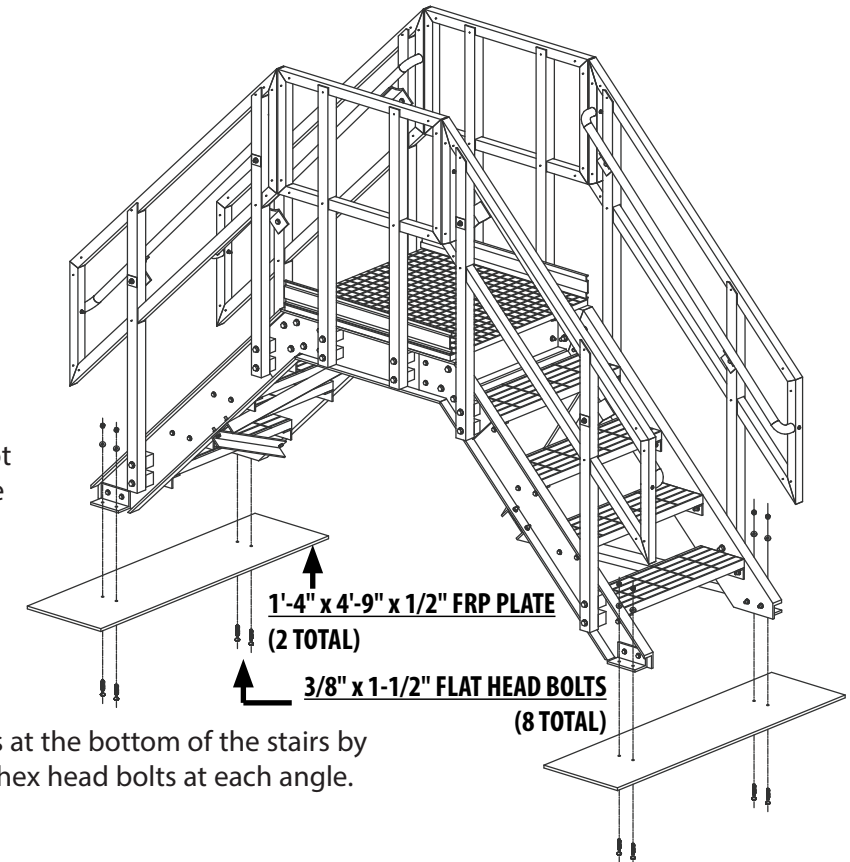
STEP 4: ANCHOR STAIR CROSSOVER

A) Prior to use, the Stair Crossover must be anchored to the supporting surface to prevent tipping. Anchor holes are 9/16 inch (14.3 mm) diameter and located at the bottom of the stair in four locations (see illustration on page 3). Anchoring hardware is not included.

B) Concrete Floors: Anchor Stair Crossover to concrete floors using 4 each 1/2" diameter expansion or adhesive concrete anchors. A minimum embedment of 2-1/2" is required.

C) Wood Floors: Anchor Stair Crossover to wooden floors with four each 1/2" x 3" lag bolts.

D) For other support conditions, contact a qualified engineer to develop adequate anchoring details. For installations on roofs or other areas where the supporting surface cannot be penetrated by fasteners, install the Roof Plate Kit by following Step Five below.



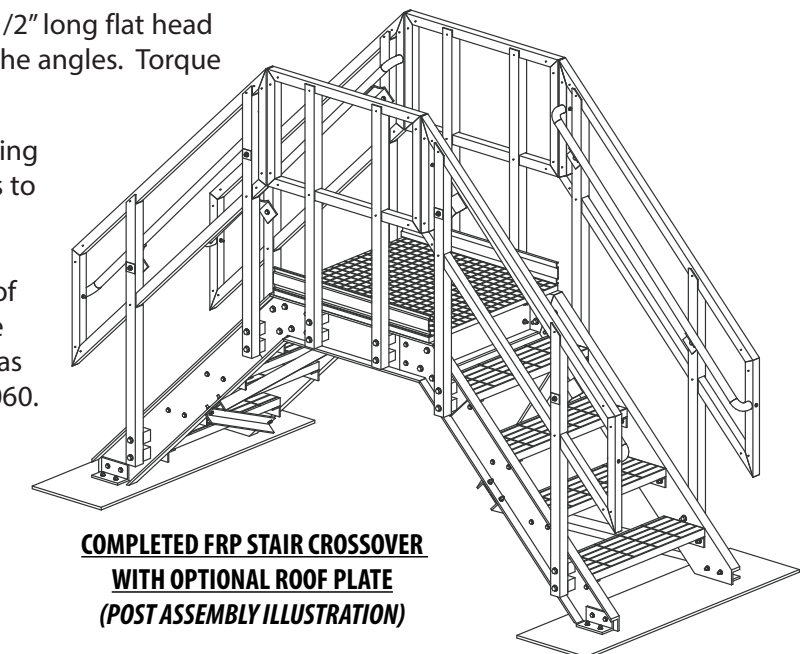
STEP 5: OPTIONAL ROOF PLATE KIT

A) Remove the four 3" x 3" x 3/8" x 6" long angles at the bottom of the stairs by removing the two factory installed 3/8" x 1-1/2" hex head bolts at each angle. Retain the bolts; discard the angles.

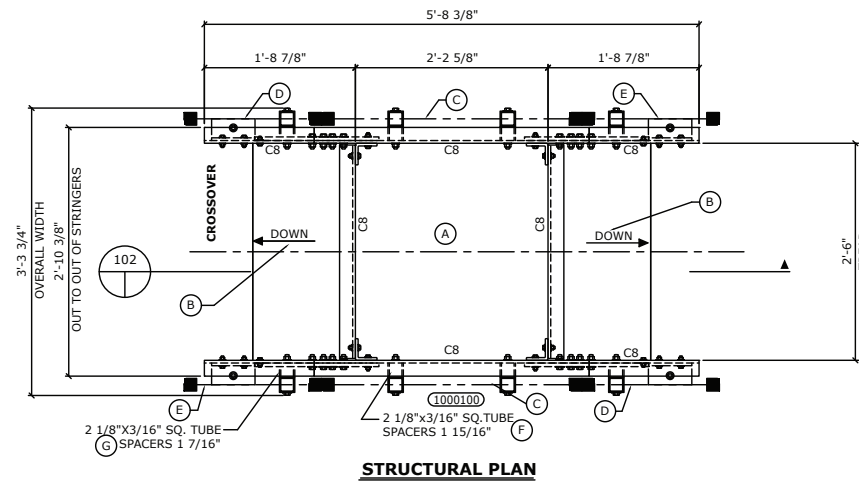
B) Attach the four 3" x 3" x 3/8" x 6" long angles supplied with the kit to the 1'-4" x 4'-9" x 1/2" thick FRP plate using the 3/8" x 1-1/2" long flat head bolts supplied with the kit. Note the orientation of the angles. Torque the bolts to 30 lb-ft (3.9 N-m).

C) Attach this assembly to the bottom of the stair using the 3/8" x 1-1/2" removed in step 2. Torque the bolts to 30 ft-lb (3.9 N-m).

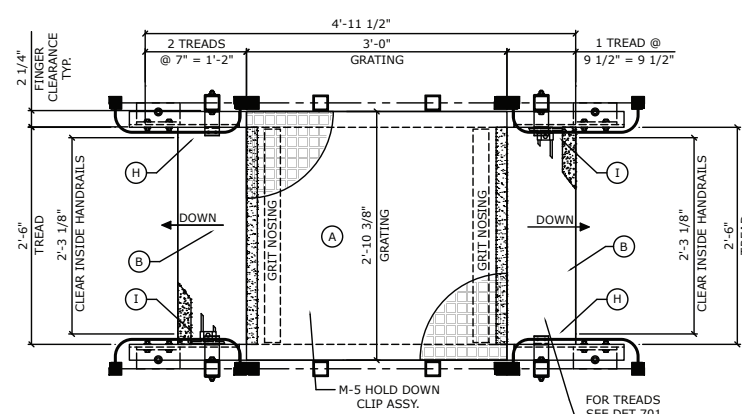
D) Before placing the finished crossover onto the roof surface, protect the roof from abrasion following the roof manufacturer's recommendations. Add ballast as required to the locations indicated in Drawing B-03060.



Part No. 866210.01 FRP Crossover Stair 10" Clearance, 45° Stringer Weight = 200Lbs



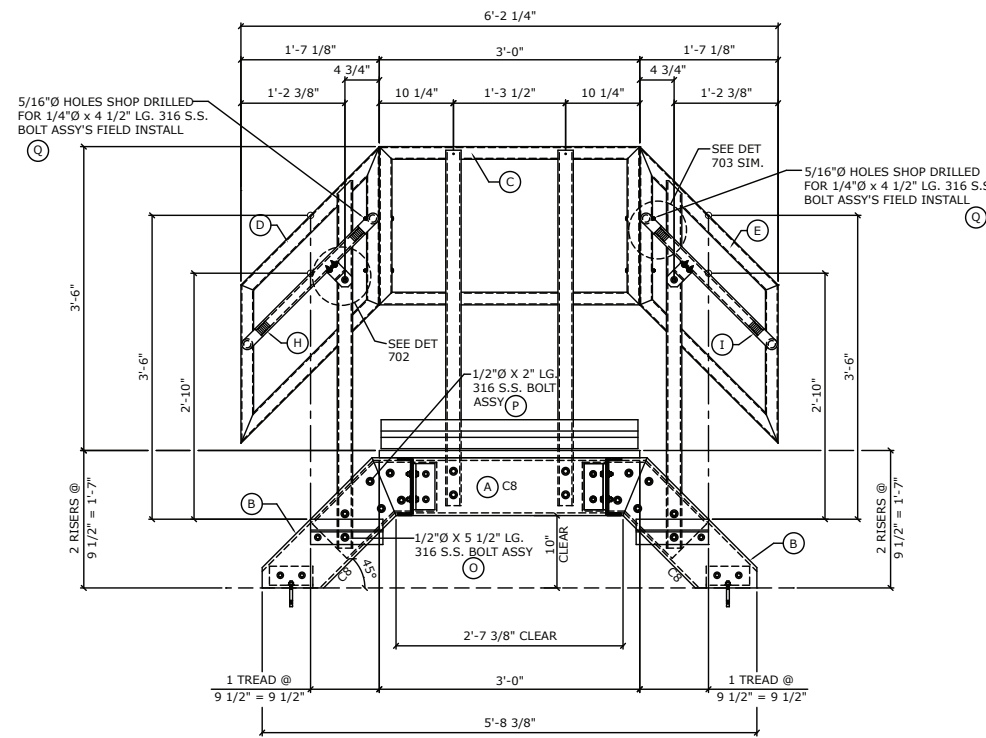
STRUCTURAL PLAN



GRATING PLAN



PLAN - FRP CROSSOVER



SECTION - FRP CROSSOVER

NOTE TO PRODUCTION
BOTTOM RAIL OF INCLINED
GUARDRAIL ADJUSTED TO FIT WITH
HORIZONTAL GUARDRAIL, ADJUST
GUARDRAIL SHEETS ACCORDINGLY.

1000000	R	1	FRP Crossover Stair Assembly Instructions
1000000	Q	8	1/4" Dia. x 4 1/2" Lg. 316 S.S. Bolt Assy.
1000000	P	8	1/2" Dia. x 2" Lg. 316 S.S. Bolt Assy.
1000000	O	16	1/2" Dia. x 5 1/2" Lg. 316 S.S. Bolt Assy.
1000000	N	4	3/8" Dia. x 3" Lg. Hex Head Bolt Assembly
1000000	M	4	1/4" Dia. x 2 1/2" Lg. Round Hd S.S. Bolt Assy
1000000	L	8	#14 x 1" Lg. S.S. Self Tap Screw
1000000	K	4	2" x 1 3/4" x 14 GA. 316 S.S. Plate
1000000	J	4	S.S. Handrail Bracket
1000000	I	2	1 1/2" Dia. Round Tube Handrail
1000000	H	2	1 1/2" Dia. Round Tube Handrail
1000000	G	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 7/16" Lg.)
1000000	F	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 15/16" Lg.)
1000000	E	2	Inclined Sq. Tube Guardrail Assembly
1000000	D	2	Inclined Sq. Tube Guardrail Assembly
1000000	C	2	Horizontal Sq. Tube Guardrail Assembly
1000000	B	2	Stair Assembly
1000000	A	1	Platform Assembly
ASSY. NO.			

LEGEND:

A2=2"x2"x1/4" ANGLE
C8=8"x2 3/16"x3/8" CHANNEL

- = GUARDRAIL
- = GUARDRAIL POST
- = GUARDRAIL RETURN
- = A2 BRACE
- = HANDRAIL

FABRICATION TOLERANCES (U.N.O.)

	MOLDED GRATING	PULTRUDED GRATING	DYNAFORM SHAPES
LENGTH	+1/8, -5/16	±1/8	±1/8
WIDTH	+1/8, -5/16	±1/8	±1/8
HOLE LOC.	±1/16	±1/16	±1/16
CIRC. CUTS	±3/16	±3/16	N/A
NOTCHES	±1/8	±1/8	N/A
SQUARE OF CUT	1°	1°	2°
ANGULARITY	±2	±2	±2

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COATING: CORVEX 1" DEEP 1 1/2" SQ. MESH MOLDED	COLOR: DK.GRAY	SURFACE: MENISCUS
TREADS: CORVEX FIBERTRED 1 1/2" DEEP 1 1/2"x6" RECT. MESH MOLDED	COLOR:DK.GRAY	SURFACE: MENISCUS
DYNAFORM SHAPES: ISOFR	COLOR: DK.GRAY	COLOR: YELLOW
HARDWARE: 316 SS	GRATING H.D.C. ASSYS.: M-5, M-2	
COATING: FLATSHEET: 1/2"		
REFERENCE DWGS.:		

CONTRACTOR:
10" FRP CROSSOVER
Drawing No. B-03060

DATE: 10/11/16
STRUCTURAL DESIGNER: ETHAN LOVE P.E.
PROJECT COORDINATOR:

Fiberglass Grating • Structurals • Fabrication

Fibergrate
Composite Structures

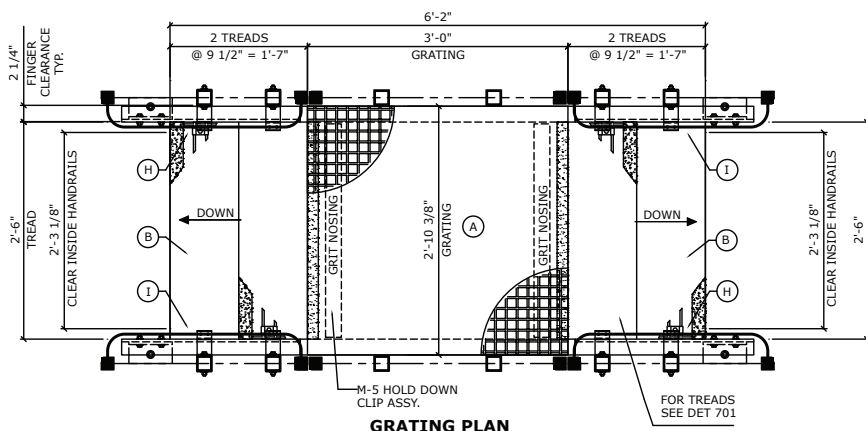
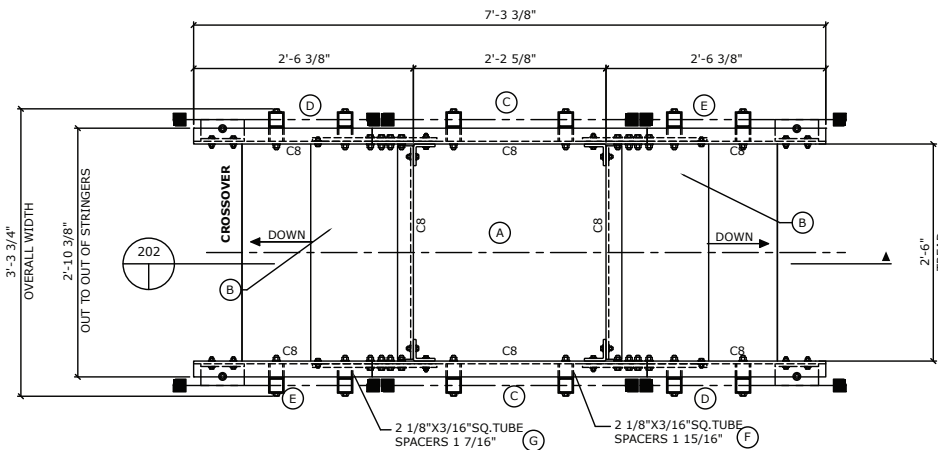
900 FM 205 • STEPHENVILLE, TEXAS 76401 • Phone: (800) 527-4043

W.D. NO.: 865312
SCALE: N.T.S.
DWG. SHIT: 1 OF 8

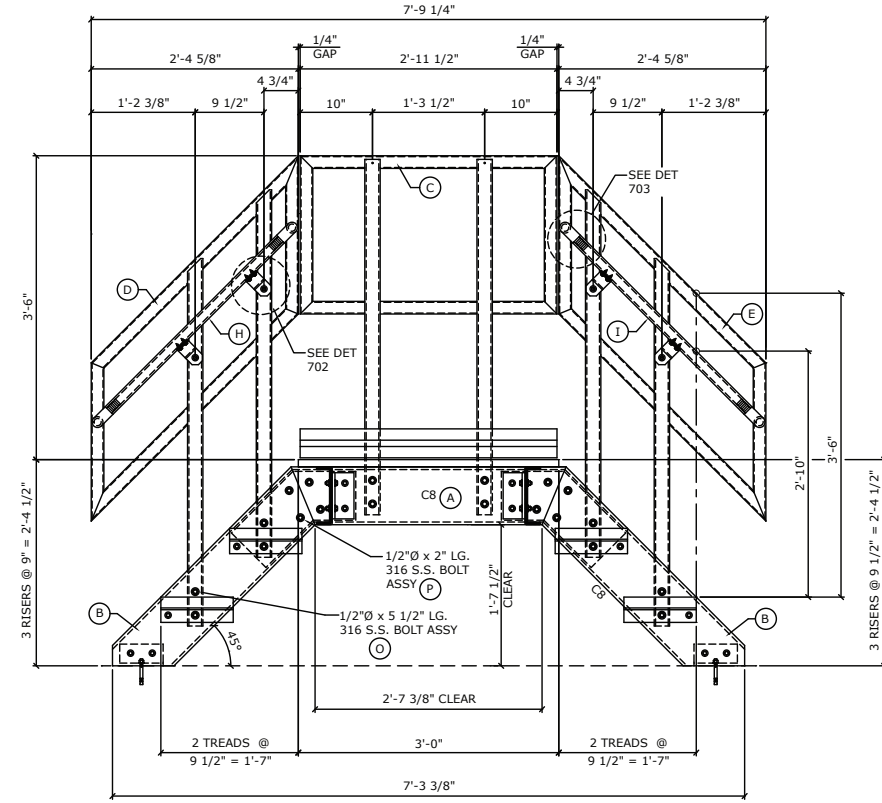
NO.	BY	DATE	REVISION	CHKD. BY	DATE
3					
2	SLV/JM	04/04/17	NEW OSHA RULES ECN-171	EAL	04/05/17
1	BM	10/11/16	FOR PRODUCTION ECN-160	EL	10/11/16

Part No. 866219.01 FRP Crossover Stair 19 1/2" Clearance, 45° Stringer Weight = 240Lbs

NOTE TO PRODUCTION
BOTTOM RAIL OF INCLINED
GUARDRAIL ADJUSTED TO FIT WITH
HORIZONTAL GUARDRAIL, ADJUST
GUARDRAIL SHEETS ACCORDINGLY.



201 PLAN - FRP CROSSOVER



202 SECTION - FRP CROSSOVER

LEGEND:

	= GUARDRAIL
	= GUARDRAIL POST
	= GUARDRAIL RETURN
	= A2 BRACE
	= HANDRAIL

A2=2"x2"x1/4" ANGLE
C8=8"x2 3/16"x3/8" CHANNEL

NO.	BY	DATE	REVISION	CHKD. BY	DATE
3					
2	SLV/JM	04/04/17	NEW OSHA RULES ECN-171	EAL	04/05/17
1	BM	10/11/16	FOR PRODUCTION ECN-160	EL	10/11/16

FABRICATION TOLERANCES (U.N.O.)

LENGTH	MOLDED GRATING	PULTRUDED GRATING	DYNAFORM SHAPES
WIDTH	+1/8, -5/16	+1/8	+1/8
HOLE LOC.	+1/16	+1/16	+1/16
CIRC. CUTS	+3/16	+3/16	N/A
NOTCHES	+1/8	+1/8	N/A
SQUARE OF CUT	1°	1°	2°
ANGULARITY	#2	#2	#2

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COATING:
CORVEX 1" DEEP 1 1/2" SQ. MESH MOLDED
COLOR: DK.GRAY SURFACE: MENISCUS

TREADS:
CORVEX FIBERTRED 1 1/2" DEEP 1 1/2"x6" RECT. MESH MOLDED
COLOR: DK.GRAY SURFACE: MENISCUS

DYNAFORM SHAPES:
ISOFR
COLOR: DK.GRAY

HARDWARE:
316 SS
GRATING H.D.C. ASSYS.: M-5, M-2

COATING:
FLATSHEET: 1/2"

REFERENCE DWGS.:

ASSY. NO.	P/N	QTY.	DESCRIPTION
1000000	Q	1	FRP Crossover Stair Assembly Instructions
1000000	P	8	1/2" Dia. x 2" Lg. 316 S.S. Bolt Assy.
1000000	O	24	1/2" Dia. x 5 1/2" Lg. 316 S.S. Bolt Assy.
1000000	N	8	3/8" Dia. x 3" Lg. Hex Head Bolt Assembly
1000000	M	8	1/4" Dia. x 2 1/2" Lg. Round Hd S.S. Bolt Assy
1000000	L	16	#14 x 1" Lg. S.S. Self Tap Screw
1000000	K	8	2" x 1 3/4" x 14 GA. 316 S.S. Plate
1000000	J	8	S.S. Handrail Bracket
1000000	I	2	1 1/2" Dia. Round Tube Handrail
1000000	H	2	1 1/2" Dia. Round Tube Handrail
1000000	G	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 7/16" Lg.)
1000000	F	16	2 1/8"x3/16" Sq. Tube Post Spacer (1 15/16" Lg.)
1000000	E	2	Inclined Sq. Tube Guardrail Assembly
1000000	D	2	Inclined Sq. Tube Guardrail Assembly
1000000	C	2	Horizontal Sq. Tube Guardrail Assembly
1000000	B	2	Stair Assembly
1000000	A	1	Platform Assembly

BILL OF MATERIALS

CONTRACTOR: 19 1/2" FRP CROSSOVER
Drawing No. B-03060

DRAWN BY: BM DATE: 10/11/16 STRUCTURAL DESIGNER: ETHAN LOVE P.E. PROJECT COORDINATOR: -

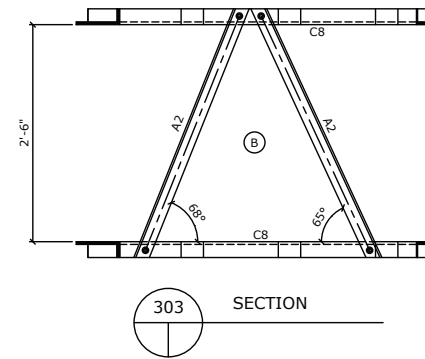
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Composite Structures

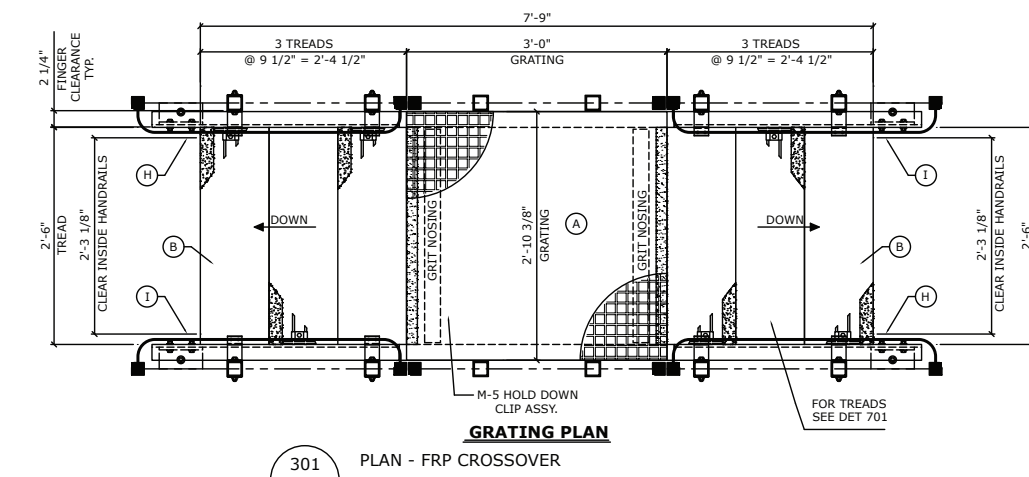
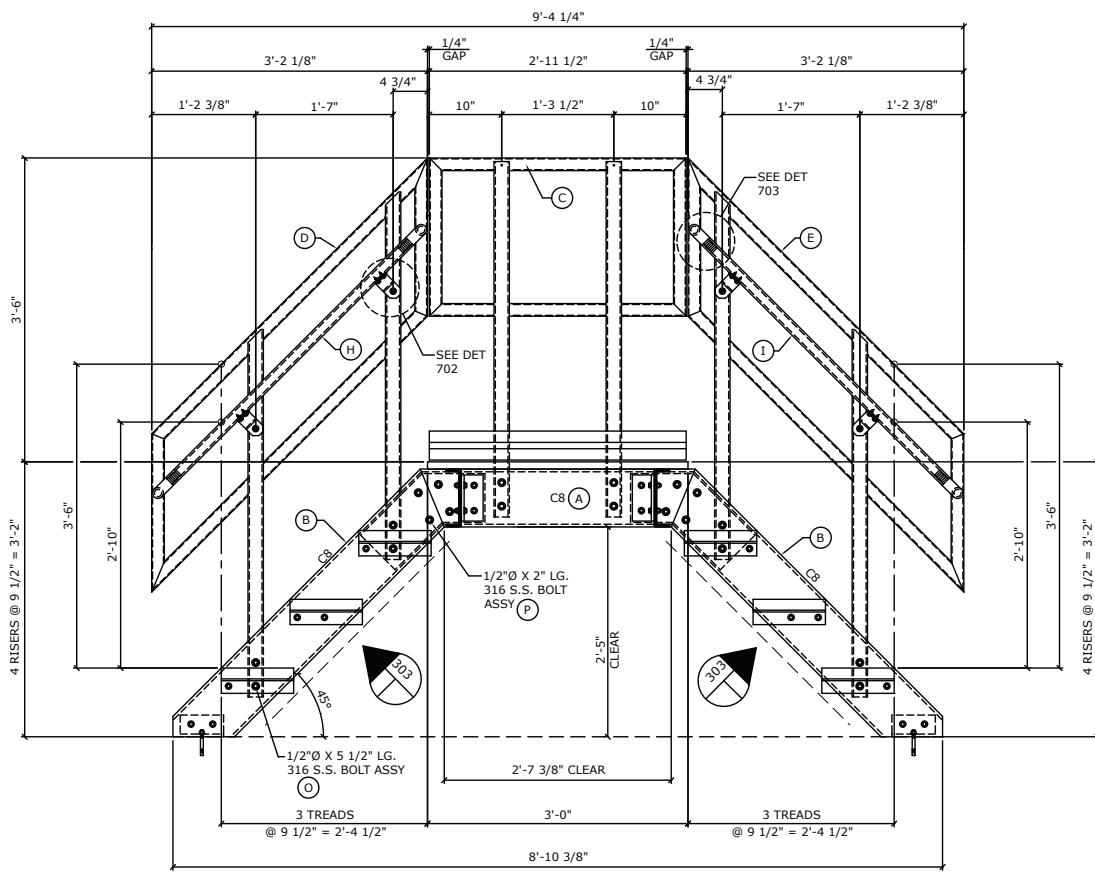
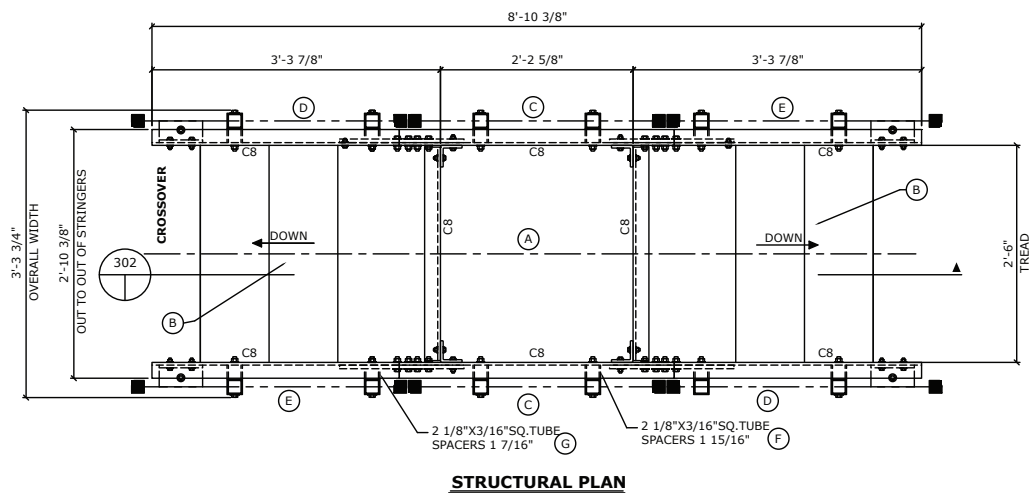
900 FM 205 • STEPHENVILLE, TEXAS 76404 • Phone: (800) 527-4043

Cur. NO.: -
W.D. NO.: 865318
SCALE: N.T.S.
DWG. SHT: 2 OF 8

Part No. 866229.01 FRP Crossover Stair 29" Clearance, 45° Stringer Weight = 266Lbs



NOTE TO PRODUCTION
BOTTOM RAIL OF INCLINED
GUARDRAIL ADJUSTED TO FIT WITH
HORIZONTAL GUARDRAIL, ADJUST
GUARDRAIL SHEETS ACCORDINGLY.



ASSY. NO.	P/N	QTY.	DESCRIPTION
1000000	Q	1	FRP Crossover Stair Assembly Instructions
1000000	P	8	1/2" Dia. x 2" Lg. 316 S.S. Bolt Assy.
1000000	O	24	1/2" Dia. x 5 1/2" Lg. 316 S.S. Bolt Assy.
1000000	N	8	3/8" Dia. x 3" Lg. Hex Head Bolt Assembly
1000000	M	8	1/4" Dia. x 2 1/2" Lg. Round Hd S.S. Bolt Assy
1000000	L	16	#14 x 1" Lg. S.S. Self Tap Screw
1000000	K	8	2" x 1 3/4" x 14 GA. 316 S.S. Plate
1000000	J	8	S.S. Handrail Bracket
1000000	I	2	1 1/2" Dia. Round Tube Handrail
1000000	H	2	1 1/2" Dia. Round Tube Handrail
1000000	G	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 7/16" Lg.)
1000000	F	16	2 1/8"x3/16" Sq. Tube Post Spacer (1 15/16" Lg.)
1000000	E	2	Inclined Sq. Tube Guardrail Assembly
1000000	D	2	Inclined Sq. Tube Guardrail Assembly
1000000	C	2	Horizontal Sq. Tube Guardrail Assembly
1000000	B	2	Stair Assembly
1000000	A	1	Platform Assembly

BILL OF MATERIALS			
CONTRACTOR: 29" FRP CROSSOVER			
Drawing No. B-03060			
DRAWN BY: BM	DATE: 10/11/16	STRUCTURAL DESIGNER: ETHAN LOVE P.E.	P.O. NO.: -
Fibergate Structures			CURT NO.: -
900 FM 205 • STEPHENVILLE, TEXAS 76404 • Phone: (800) 527-4043			W.O. NO.: 865324
			SCALE: N.T.S.
			DWG. SHEET: 3 OF 8

- LEGEND:**
- = GUARDRAIL
 - = GUARDRAIL POST
 - = GUARDRAIL RETURN
 - = A2 BRACE
 - = HANDRAIL
- A2=2"x2"x1/4" ANGLE
C8=8"x2 3/16"x3/8" CHANNEL

NO.	BY	DATE	REVISION	CHKD. BY	DATE
3					
2					
1	SLV/JM	04/04/17	NEW OSHA RULES ECN-171	EAL	04/05/17
0	BM	10/11/16	FOR PRODUCTION ECN-160	EL	10/11/16

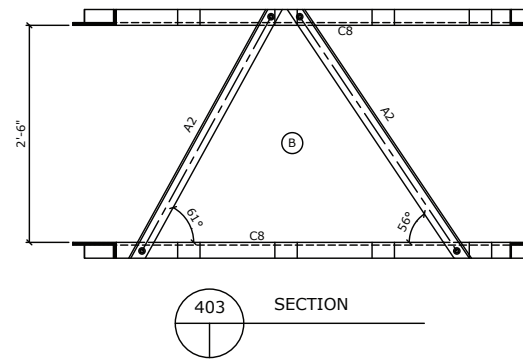
FABRICATION TOLERANCES (U.N.O.)

LENGTH	MOLDED GRATING	PULTRUDED GRATING	DYNAFORM SHAPES
	+1/8, -5/16	#1/8	#1/8
WIDTH	+1/8, -5/16	#1/8	#1/8
HOLE LOC.	#1/16	#1/16	#1/16
CIRC. CUTS	#3/16	#3/16	N/A
NOTCHES	#1/8	#1/8	N/A
SQUARE OF CUT ANGLE	1°	1°	2°
	#2	#2	#2

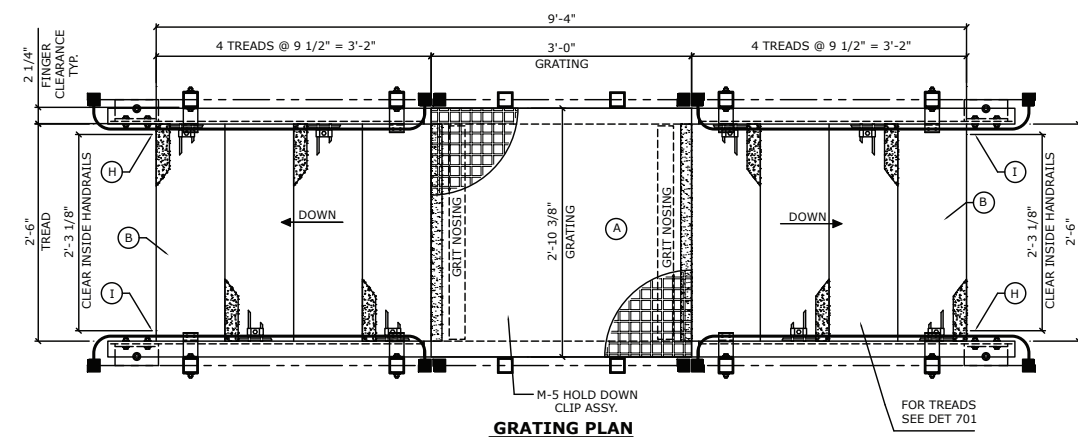
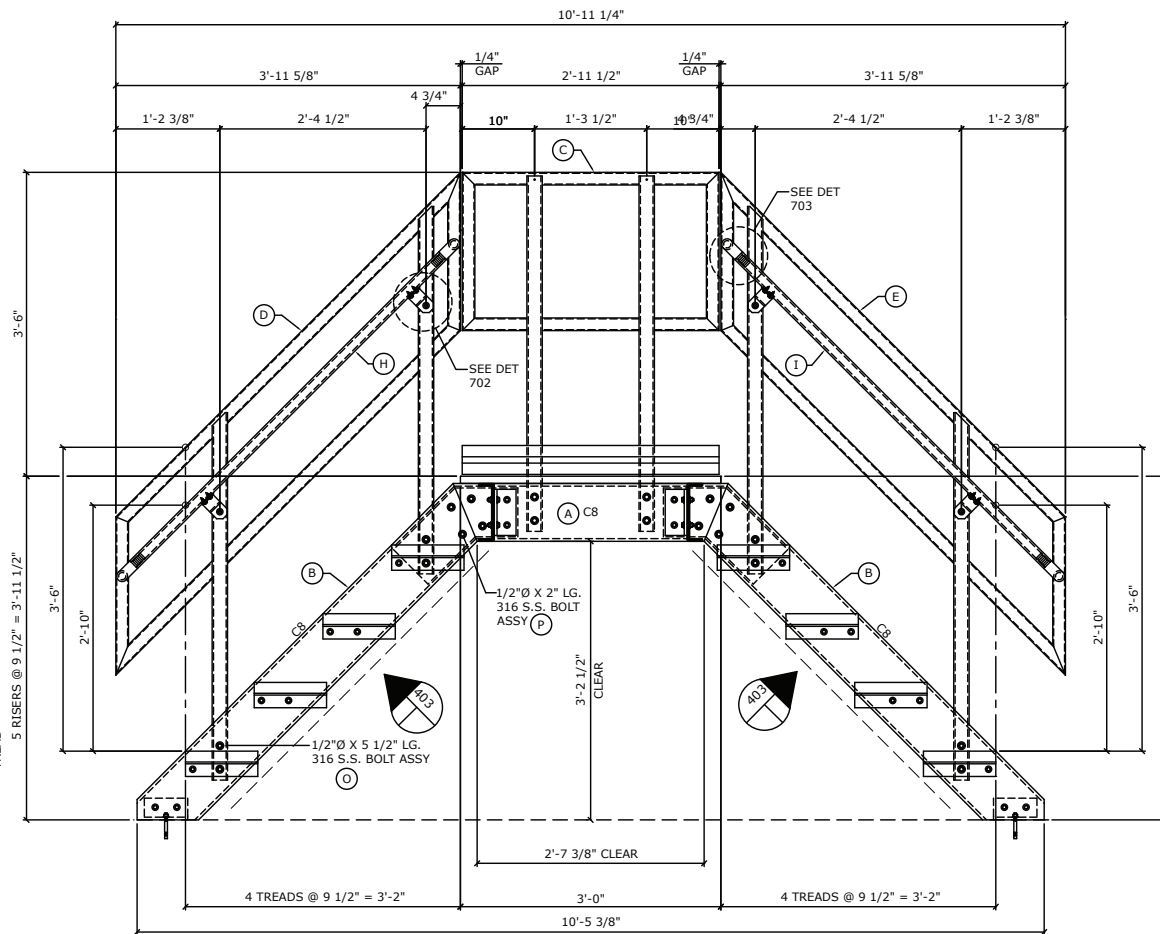
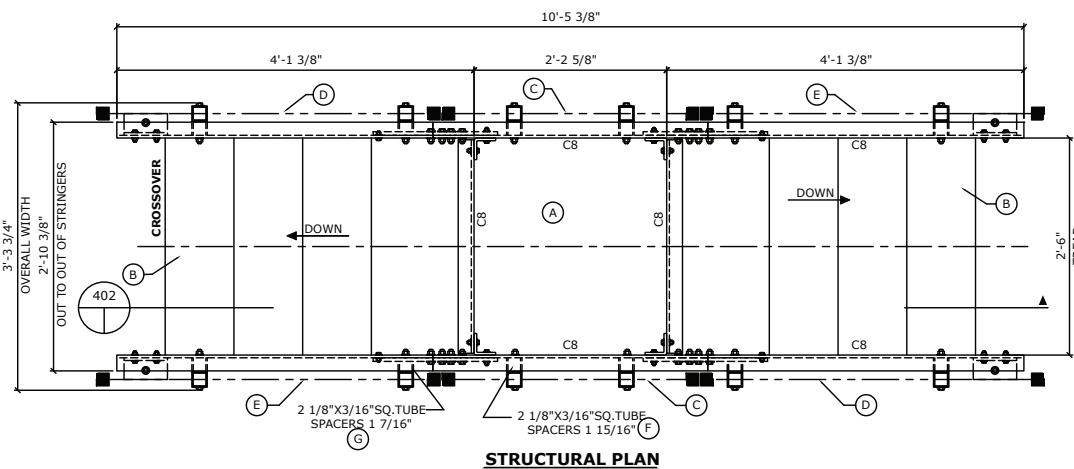
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GRATING: CORVEX 1" DEEP 1 1/2" SQ. MESH MOLDED
COLOR: DK. GRAY SURFACE: MENISCUS
TRENDS: CORVEX FIBERTRED 1 1/2" DEEP 1 1/2"x6" RECT. MESH MOLDED
COLOR: DK. GRAY SURFACE: MENISCUS
DYNIFORM SHAPES: ISOFIR
COLOR: DK. GRAY GRATING H.O.C. ASSYS.: ISOFIR
COLOR: YELLOW
HARDWARE: 316 SS GRATING H.O.C. ASSYS.: M-5, M-2
COATING: FLAT SHEET: 1/2"

Part No. 866238.01 FRP Crossover Stair 38 1/2" Clearance, 45° Stringer Weight = 320Lbs



NOTE TO PRODUCTION
BOTTOM RAIL OF INCLINED
GUARDRAIL ADJUSTED TO FIT WITH
HORIZONTAL GUARDRAIL, ADJUST
GUARDRAIL SHEETS ACCORDINGLY.



401 PLAN - FRP CROSSOVER

402 SECTION - FRP CROSSOVER

ASSY. NO.	P/N	QTY.	DESCRIPTION
1000000	Q	1	FRP Crossover Stair Assembly Instructions
1000000	P	8	1/2" Dia. x 2" Lg. 316 S.S. Bolt Assy.
1000000	O	24	1/2" Dia. x 5 1/2" Lg. 316 S.S. Bolt Assy.
1000000	N	8	3/8" Dia. x 3" Lg. Hex Head Bolt Assembly
1000000	M	8	1/4" Dia. x 2 1/2" Lg. Round Hd S.S. Bolt Assy
1000000	L	16	#14 x 1" Lg. S.S. Self Tap Screw
1000000	K	8	2" x 1 3/4" x 14 GA. 316 S.S. Plate
1000000	J	8	S.S. Handrail Bracket
1000000	I	2	1 1/2" Dia. Round Tube Handrail
1000000	H	2	1 1/2" Dia. Round Tube Handrail
1000000	G	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 7/16" Lg.)
1000000	F	16	2 1/8"x3/16" Sq. Tube Post Spacer (1 15/16" Lg.)
1000000	E	2	Inclined Sq. Tube Guardrail Assembly
1000000	D	2	Inclined Sq. Tube Guardrail Assembly
1000000	C	2	Horizontal Sq. Tube Guardrail Assembly
1000000	B	2	Stair Assembly
1000000	A	1	Platform Assembly

BILL OF MATERIALS

CONTRACTOR: 38 1/2" FRP CROSSOVER		P.O. NO.:	
Drawing No. B-03060		-	
DRAWN BY: BM	DATE: 10/11/16	STRUCTURAL DESIGNER: ETHAN LOVE P.E.	PROJECT COORDINATOR:
Fiberglass Grating • Structurals • Fabrication			CUR. NO.:
			W.O. NO.:
			865336
900 FM 205 • STEPHENVILLE, TEXAS 76401 • Phone: (800) 527-4043			SCALE:
			N.T.S.
			DWG. SH.:
			4 OF 8

LEGEND:

- A2=2"x2"x1/4" ANGLE
- C8=8"x2 3/16"x3/8" CHANNEL
- = GUARDRAIL POST
- = GUARDRAIL RETURN
- = A2 BRACE
- = HANDRAIL

FABRICATION TOLERANCES (U.N.O.)

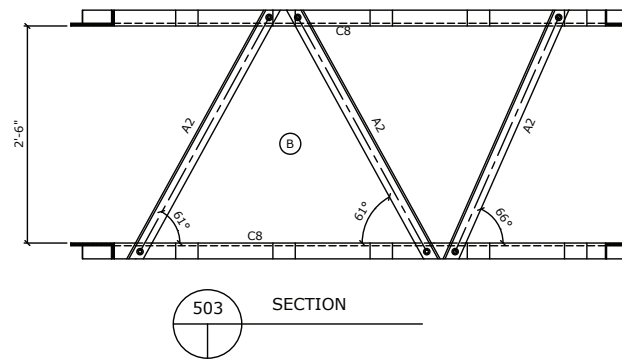
	MOLDED GRATING	PULTRUDED GRATING	DYNAFORM SHAPES
LENGTH	+1/8, -5/16	#1/8	#1/8
WIDTH	+1/8, -5/16	#1/8	#1/8
HOLE LOC.	#1/16	#1/16	#1/16
CIRC. CUTS	#3/16	#3/16	N/A
NOTCHES	#1/8	#1/8	N/A
SQUARE OF CUT	1°	1°	2°
ANGULARITY	#2	#2	#2

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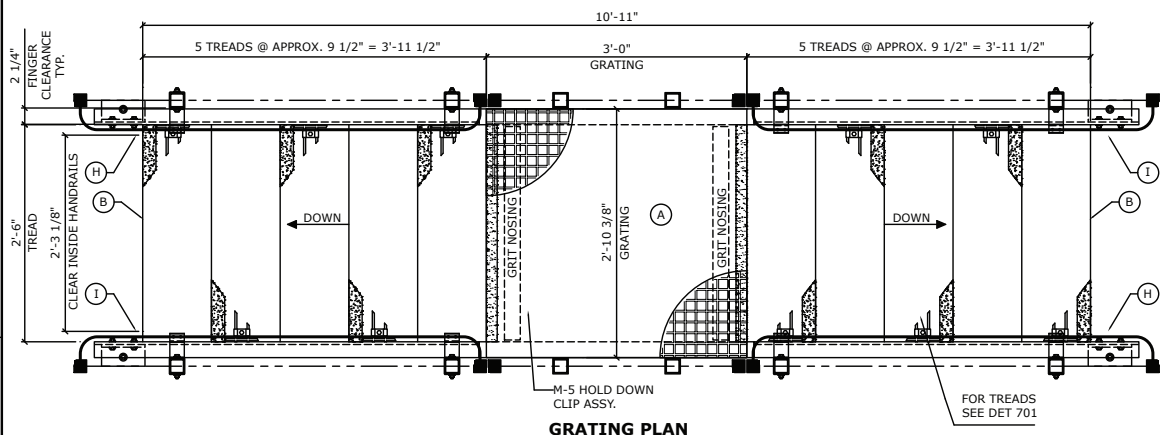
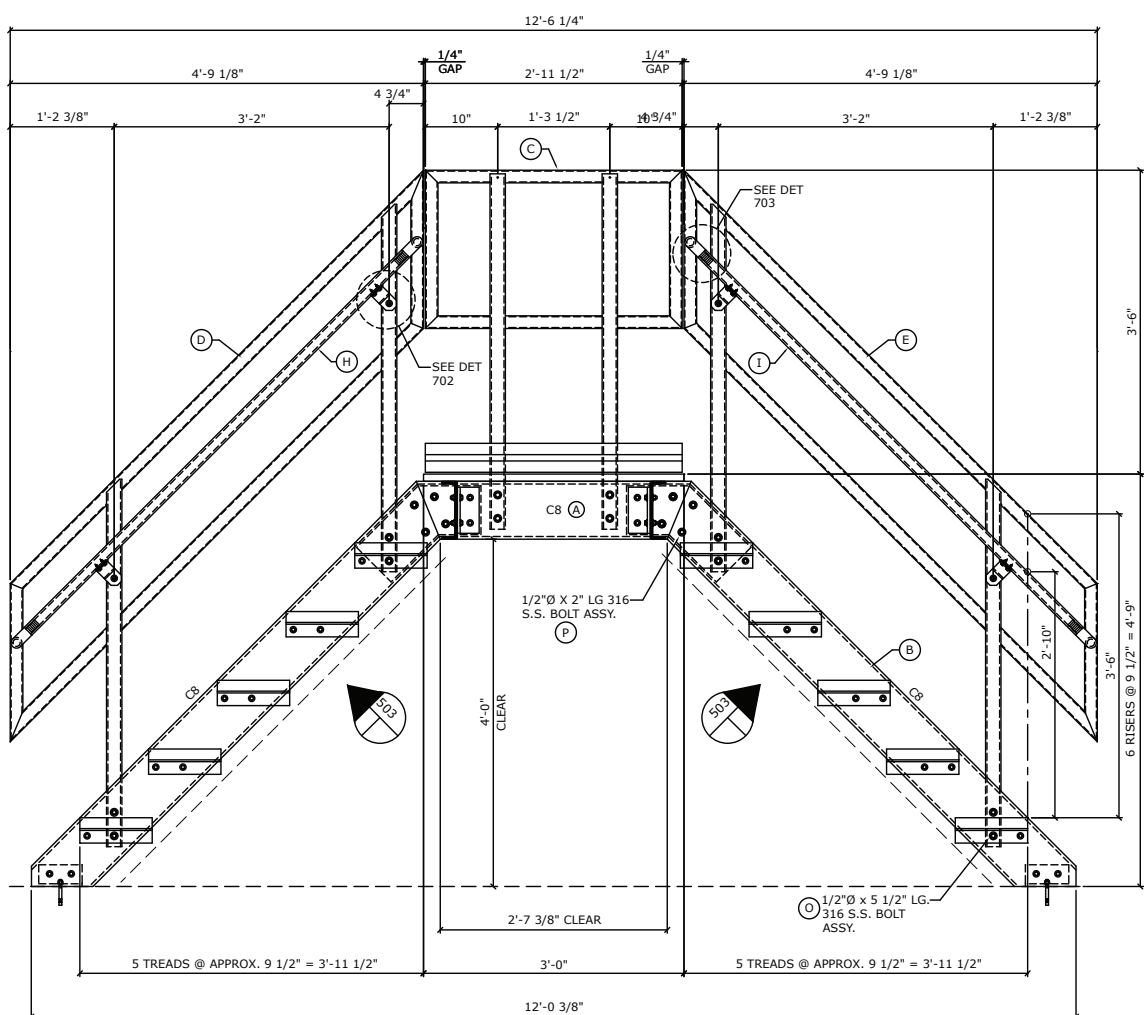
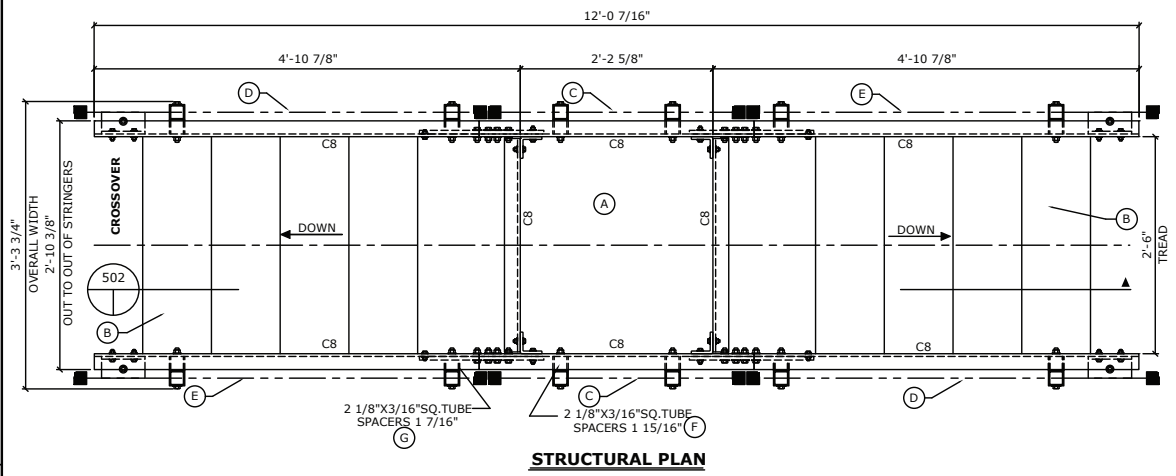
COATING: CORVEX 1" DEEP 1 1/2" SQ. MESH MOLDED COLOR: DK.GRAY SURFACE: MENISCUS	DYNAFORM GUARDRAIL: ISOFR COLOR: YELLOW
TREADS: CORVEX FIBERTRED 1 1/2" DEEP 1 1/2"x6" RECT. MESH MOLDED COLOR:DK.GRAY SURFACE: MENISCUS	GRATING H.D.C. ASSYS.:
HARDWARE: 316 SS	M-5, M-2
COATING: FLATSHEET: 1/2"	
REFERENCE DWGS.:	

NO.	BY	DATE	REVISION	CHKD. BY	DATE
3	SLV/JM	04/04/17	NEW OSHA RULES ECN-171	EAL	04/05/17
2	BM	10/11/16	FOR PRODUCTION ECN-160	EL	10/11/16

Part No. 866248.01 FRP Crossover Stair 48" Clearance, 45° Stringer Weight = 374Lbs



NOTE TO PRODUCTION
BOTTOM RAIL OF INCLINED
GUARDRAIL ADJUSTED TO FIT WITH
HORIZONTAL GUARDRAIL, ADJUST
GUARDRAIL SHEETS ACCORDINGLY.



ASSY. NO.	P/N	QTY.	DESCRIPTION
1000000	Q	1	FRP Crossover Stair Assembly Instructions
1000000	P	8	1/2" Dia. x 2" Lg. 316 S.S. Bolt Assy.
1000000	O	24	1/2" Dia. x 5 1/2" Lg. 316 S.S. Bolt Assy.
1000000	N	8	3/8" Dia. x 3" Lg. Hex Head Bolt Assembly
1000000	M	8	1/4" Dia. x 2 1/2" Lg. Round Hd S.S. Bolt Assy
1000000	L	16	#14 x 1" Lg. S.S. Self Tap Screw
1000000	K	8	2" x 1 3/4" x 14 GA. 316 S.S. Plate
1000000	J	8	S.S. Handrail Bracket
1000000	I	2	1 1/2" Dia. Round Tube Handrail
1000000	H	2	1 1/2" Dia. Round Tube Handrail
1000000	G	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 7/16" Lg.)
1000000	F	16	2 1/8"x3/16" Sq. Tube Post Spacer (1 15/16" Lg.)
1000000	E	2	Inclined Sq. Tube Guardrail Assembly
1000000	D	2	Inclined Sq. Tube Guardrail Assembly
1000000	C	2	Horizontal Sq. Tube Guardrail Assembly
1000000	B	2	Stair Assembly
1000000	A	1	Platform Assembly

BILL OF MATERIALS

48" FRP CROSSOVER
Drawing No. B-03060

CONTRACTOR: **Fibergate**
Fiberglass Grating • Structurals • Fabrication

DATE: 10/11/16
STRUCTURAL DESIGNER: ETHAN LOVE P.E.
PROJECT COORDINATOR: -

W.D. NO.: 865348
SCALE: N.T.S.
DWS. SH. 5 OF 8

900 FM 205 • STEPHENVILLE, TEXAS 76404 • Phone: (800) 527-4043

LEGEND:

- = GUARDRAIL
- = GUARDRAIL POST
- = GUARDRAIL RETURN
- = A2 BRACE
- = HANDRAIL

A2=2"x2"x1/4" ANGLE
C8=8"x2 3/16"x3/8" CHANNEL

NO.	BY	DATE	REVISION	CHKD. BY	DATE
3	SLV/JM	04/04/17	NEW OSHA RULES ECN-171	EAL	04/05/17
2	BM	10/11/16	FOR PRODUCTION ECN-160	EL	10/11/16

FABRICATION TOLERANCES (U.N.O.)

LENGTH	MOLDED GRATING	PULTRUDED GRATING	DYNAFORM SHAPES
+1/8, -5/16	+1/8	+1/8	+1/8
+1/8, -5/16	+1/8	+1/8	+1/8
+1/16	+1/16	+1/16	+1/16
+3/16	+3/16	+3/16	N/A
+1/8	+1/8	+1/8	N/A
1"	1"	1"	2"
+2	+2	+2	+2

DO NOT STACK TOLERANCES

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COATING: CORVEX 1" DEEP 1 1/2" SQ. MESH MOLDED
COLOR: DK.GRAY SURFACE: MENISCUS

TREADS: CORVEX FIBERTRED 1 1/2" DEEP 1 1/2"x6" RECT. MESH MOLDED
COLOR: DK.GRAY SURFACE: MENISCUS

DYNAFORM SHAPES: ISOFR
COLOR: DK.GRAY

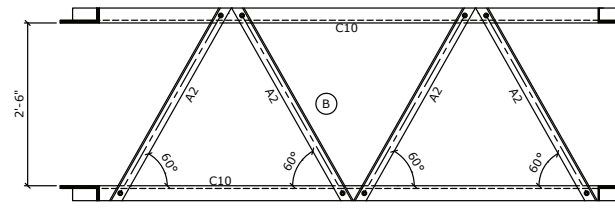
DYNAFORM GUARDRAIL: ISOFR
COLOR: YELLOW

HARDWARE: 316 SS
GRATING H.D.C. ASSYS.: M-5, M-2

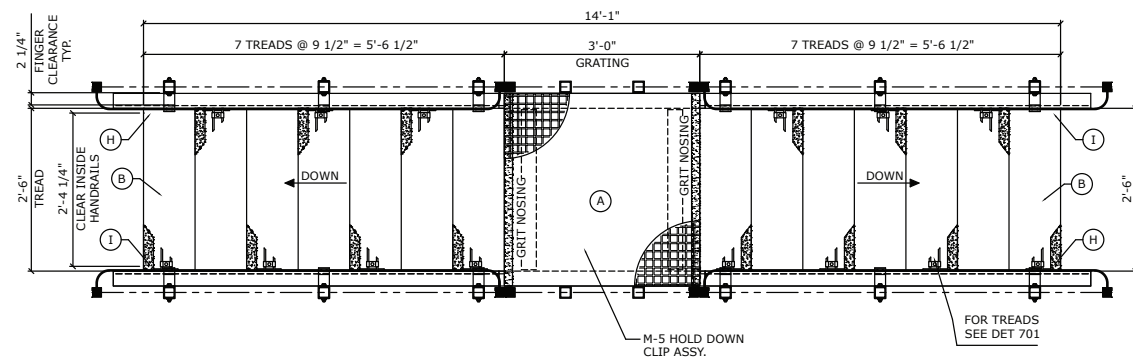
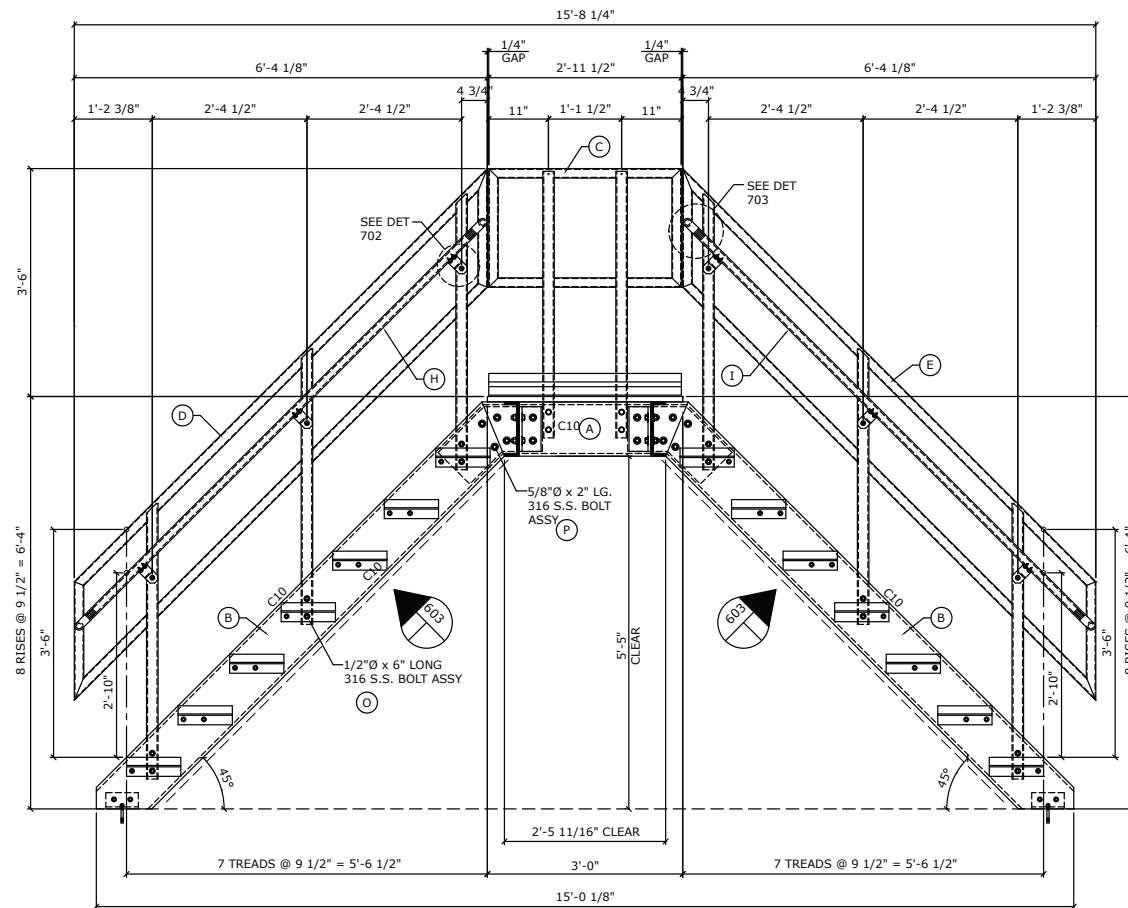
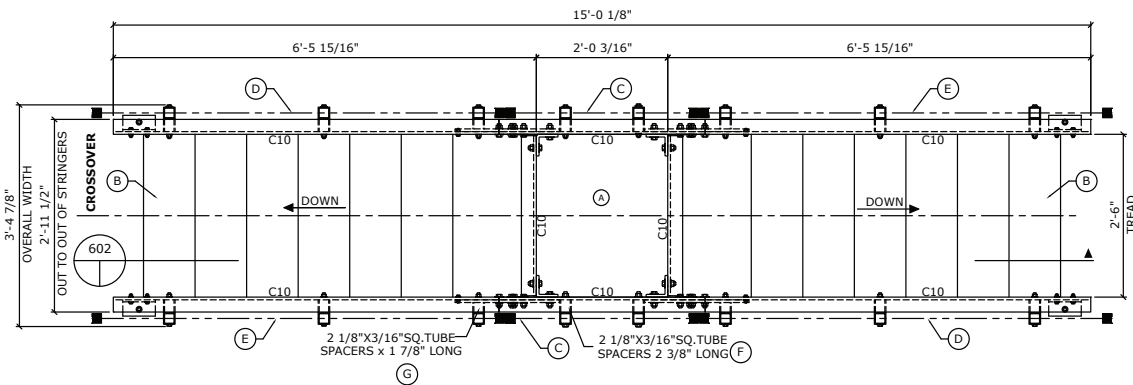
COATING: FLATSHEET: 1/2"

REFERENCE DWGS.:

Part No. 866165.01 FRP Crossover Stair 65" Clearance, 45° Stringer Weight = 447Lbs



NOTE TO PRODUCTION
BOTTOM RAIL OF INCLINED
GUARDRAIL ADJUSTED TO FIT WITH
HORIZONTAL GUARDRAIL, ADJUST
GUARDRAIL SHEETS ACCORDINGLY.



601 PLAN - FRP CROSSOVER

602 SECTION - FRP CROSSOVER

ASSY. NO.	P/N	QTY.	DESCRIPTION
1000000	Q	1	FRP Crossover Stair Assembly Instructions
1000000	P	8	5/8" Dia. x 2" Lg. 316 S.S. Bolt Assy.
1000000	O	32	1/2" Dia. x 6" Lg. 316 S.S. Bolt Assy.
1000000	N	12	3/8" Dia. x 3" Lg. Hex Head Bolt Assembly
1000000	M	8	1/4" Dia. x 2 1/2" Lg. Round Hd S.S. Bolt Assy
1000000	L	24	#14 x 1" Lg. S.S. Self Tap Screw
1000000	K	12	2" x 1 3/4" x 14 GA. 316 S.S. Plate
1000000	J	12	S.S. Handrail Bracket
1000000	I	2	1 1/2" Dia. Round Tube Handrail
1000000	H	2	1 1/2" Dia. Round Tube Handrail
1000000	G	8	2 1/8"x3/16" Sq. Tube Post Spacer (1 7/8" Lg.)
1000000	F	24	2 1/8"x3/16" Sq. Tube Post Spacer (2 3/8" Lg.)
1000000	E	2	Inclined Sq. Tube Guardrail Assembly
1000000	D	2	Inclined Sq. Tube Guardrail Assembly
1000000	C	2	Horizontal Sq. Tube Guardrail Assembly
1000000	B	2	Stair Assembly
1000000	A	1	Platform Assembly

BILL OF MATERIALS

CONTRACTOR:
65" FRP CROSSOVER
Drawing No. B-03060

CONTRACT NO.: -
DATE: 10/11/16
STRUCTURAL DESIGNER: ETHAN LOVE P.E.
PROJECT COORDINATOR: -

DRAWN BY: BM
DATE: 10/11/16
STRUCTURAL DESIGNER: ETHAN LOVE P.E.
PROJECT COORDINATOR: -

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Composite Structures

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W.O. NO.: 865360
SCALE: N.T.S.
DWG. SHT.: 6 OF 8

LEGEND:

A2=2"x2"x1/4" ANGLE	□ = GUARDRAIL POST	— = GUARDRAIL
C10=10"x2 3/4"x1/2" CHANNEL	■ = GUARDRAIL RETURN	— = A2 BRACE
	— = HANDRAIL	

NO.	BY	DATE	REVISION	CHKD. BY	DATE
3	SLV/JM	04/04/17	NEW OSHA RULES ECN-171	EAL	04/05/17
2	BM	10/11/16	FOR PRODUCTION ECN-160	EL	10/11/16

COATING: CORVEX 1" DEEP 1 1/2" SQ. MESH MOLDED
COLOR: DK.GRAY SURFACE: MENISCUS

TREADS: CORVEX FIBRETRED 1 1/2" DEEP 1 1/2"x6" RECT. MESH MOLDED
COLOR: DK.GRAY SURFACE: MENISCUS

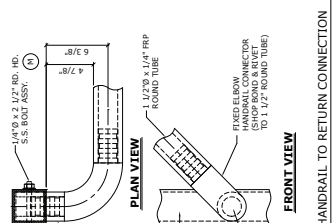
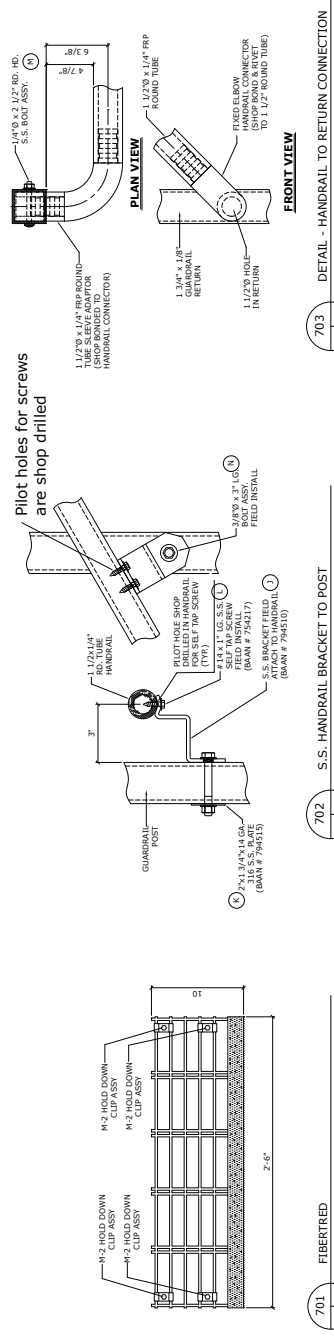
CHANGEOVER SHAPES: ISOFR
COLOR: DK.GRAY

HARDWARE: GRATING H.D.C. ASSYS.: M-5, M-2
COATING: FLATSHEET: 1/2"

REFERENCE DWGS.:

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FRP Crossover Stair Additional Details



701 FIBERTIED

702 S.S. HANDRAIL BRACKET TO POST

703 DETAIL - HANDRAIL TO RETURN CONNECTION

Pilot holes for screws are shop drilled

LEGEND:

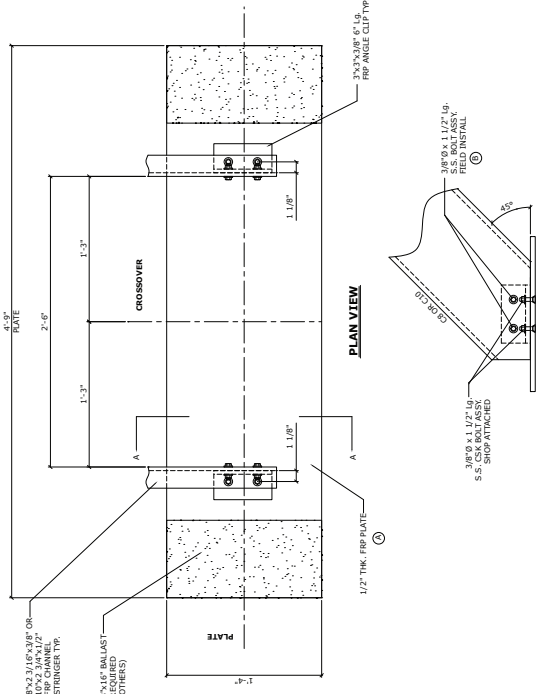
- A2-2"x2"x1/4\"/>

<p>FRP FINISHES Additional Details For FRP Crossover Stairs</p>	
<p>DESIGNED BY: BM DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
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1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

Part No. 865300 FRP Crossover Stair OPTIONAL BASE PLATE Weight = 35Lbs



SECTION A-A

801 OPTIONAL BASEPLATE FOR ROOFTOP APPLICATIONS PART NO. - 865300

LEGEND:

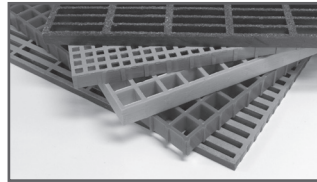
- A2-2"x2"x1/4\"/>

<p>FRP FINISHES OPTIONAL BASE PLATE FOR ROOFTOP APPLICATIONS Drawing No. B-03060</p>	
<p>DESIGNED BY: BM DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
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<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>
<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>	<p>DATE: 10/11/16 PROJECT COORDINATOR: ETHAN LOVE P.E. FIBERGLASS GRATING • STRUCTURALS • FABRICATION</p>

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

Fibergrate Products & Services



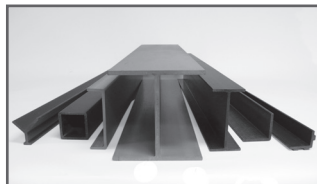
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Safe-T-Span® Pultruded Industrial and Pedestrian Gratings

Combining corrosion resistance, long-life and low maintenance, Safe-T-Span® provides unidirectional strength for industrial and pedestrian pultruded grating applications.



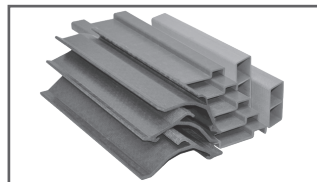
Dynaform® Structural Shapes

Fibergrate offers a wide range of standard Dynaform pultruded structural profiles for industrial and commercial use, including I-beams, wide flange beams, round and square tubes, bars, rods, channels, leg angles and plate.



Dynarail® & DynaRound™ Guardrail, Handrail & Ladders

Easily assembled from durable components or engineered and prefabricated to your specifications, Dynarail square tube and DynaRound round tube railing systems and Dynarail safety ladder systems meet or exceed OSHA and strict building code requirements for safety and design.



Custom Composite Solutions

Combining Fibergrate's design, manufacturing and fabrication services allows Fibergrate to offer custom composite solutions to meet our client's specific requirements. Either through unique pultruded profiles or custom open molding, Fibergrate can help bring your vision to reality.



Design & Fabrication Services

Combining engineering expertise with an understanding of fiberglass applications, Fibergrate provides turnkey design and fabrication of fiberglass structures, including platforms, catwalks, stairways, railings and equipment support structures.



Worldwide Sales & Distribution Network

Whether a customer requires a platform in a mine in South Africa to grating on an oil rig in the North Sea, or walkways in a Wisconsin cheese plant to railing at a water treatment facility in Brazil; Fibergrate has sales and service locations throughout the world to meet the needs and exceed the expectations of any customer.

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