

MILLER CONSTRUCTION, INC.

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TRANSMITTAL

TO: Jennifer Fitch, PE Project Manager Vermont Agency of Transportation	DATE	PROJECT NO.
	6/30/2014	Brookfield BRF FLBR (2)

XX WE ENCLOSE THE FOLLOWING: _____ UNDER SEPARATE COVER WE ARE SENDING THE FOLLOWING

COPIES	NUMBER	DESCRIPTION	CODE
1		FRP Component Fabrication Drawings - Rev 1-1	H
1		FRP Assembly Procedure Drawings - Rev 1-1	H

- CODE:
- | | |
|---|----------------------------|
| A FOR INITIAL APPROVAL | H FOR APPROVAL |
| B FOR FINAL APPROVAL | I AS REQUESTED OR REQUIRED |
| C APPROVED AS NOTED-RESUBMISSION REQUIRED | J FOR USE IN ERECTION |
| D APPROVED AS NOTED-RESUBMISSION NOT REQUIRED | K LETTER FOLLOWS |
| E DISAPPROVED-RESUBMIT | L FOR FIELD CHECK |
| F QUOTATION REQUESTED | M FOR YOUR USE |
| G APPROVED | |

BY: Paul J. Albany

Rev 1 Changes to Fabrication Drawing

Item	Comment	Resolution
1	Separate stainless shelf into its own submittal	Stainless components have been moved to a separate drawing for submittal
2	Note roughened surface preparation	Grit blasted surface preparation has been added to general notes
3	2" laps all directions, all plies	All <u>structural</u> overlaps are changed to 2" min. – C-veil is included for cosmetics only and will not be held to the 2" min.
4	Will cut/drilled edges be sealed?	Note changed to call out final coating of all exposed fiber from cutting/drilling
5	Provide anticipated cure temperature	Notes added regarding desired gel time and anticipated peak exotherm
6	1" thick only in tapered regions of hull – need to add a section view?	Section view added to show ½" thick
7	Any laps in the roll direction?	Pre-selected roll length chosen to avoid any laps in longitudinal direction
8	Bottom hull dimension of 107-3/4" incorrect	Dimension is fixed – line had snapped to wrong point on fillet
9	Should dimensions to edge of flange and bottom of vertical wall in "flattened" view be labeled typical?	Dimensions now shown as typical on first sketch of each hull layup sheet
10	Note bolting flange layup is in addition to typical ½" laminate	Label has been added to sketch to indicate additional laminate
11	Questionable dimensions on transverse rod bulkhead	Dimensions have been corrected
12	Are all fabric corners intended to be cut out or slit and overlapped?	Solid line indicates a cut edge, dashed line indicates a fold – most corners have 1 cut and the tab is folded across the corner unless otherwise noted as remove
13	Where are the details for the top plate stiffener? Secondary infusion? Layup?	Changed note to indicate stiffener is infused with primary laminate and noted layup schedule for facing
14	Clarify the intent of the statement regarding perforations	Since the stiffener is infused with the primary laminate, the core must be perforated for resin flow – this note has been removed since core will come perforated from the factory

Rev 1 Changes to Assembly Drawing

Item	Comment	Resolution
1	Note MMA cure/clamp time	Notes added showing cure time and fixture time of MMA
2	Note cure time of foam	Note added showing tack free time and time to wait before shaping
3	Should MMA bead be larger for the 6" flange?	Note has been modified to define bead size for 3" and 6" flanges at 1/8" thick
4	Denote top of pontoon and "typical" to appropriate dimensions	Added notes and dimensions
5	Stainless steel shelf is a separate pay item, please separate	Stainless shelf components are all on a unique drawing
6	Need to provide material specifications	Material specification notes are added
7	FRP shim plate details?	FRP shim plates added to shelf drawing
8	Add roll direction to plates	Roll direction added
9	Where are details for threaded rod components?	Threaded rod requirements have been added to galvanized steel drawing notes; protective end caps to be detailed elsewhere
10	Need to provide welding procedure	Note added to define welding specification
11	Are bolts, nuts, and washers to be detailed here?	Note added to define hardware requirements
12	Need to locate bearing device holes	Drawing updated to show location of bearing pad holes
13	Add 15/16" hole diameter dimension	Hole dimension added to stainless shelf

STATE OF VERMONT
BROOKFIELD FLOATING BRIDGE

BRIDGE REPLACEMENT PROJECT

PROJECT NAME: BROOKFIELD

PROJECT NUMBER: BRF FLBR (2)

JUNE 4, 2014

FIBER REINFORCED POLYMER (FRP) PONTOON COMPONENT FABRICATION

Vermont Agency of Transportation

RECEIVED

ON: June 30, 2014

and Checked for

CONFORMANCE

BY: Jennifer Fitch DATE: 07/07/2014

T.Y. LIN INTERNATIONAL

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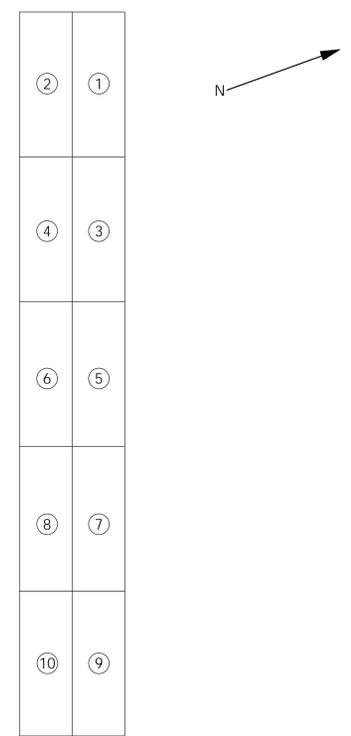
JOSH OLUND
REVIEWER

07/03/2014
DATE

SHEET INDEX:

- 00 COVER SHEET
- 01 GENERAL NOTES
- 02 HULL 3 TO 8 DIMENSIONS
- 03 HULL 3 TO 8 MATERIAL LAYUP SCHEDULE
- 04 END HULL DIMENSIONS
- 05 END HULL MATERIAL LAYUP SCHEDULE
- 06 HULL INFUSION LAYOUT AND DETAILS
- 07 BULKHEAD DIMENSIONS
- 08 END BULKHEADS LAYUP SCHEDULE
- 09 TRANSVERSE ROD BULKHEAD LAYUP SCHEDULE
- 10 MIDDLE LONGITUDAL BULKHEAD LAYUP SCHEDULE
- 11 END LONGITUDAL BULKHEAD LAYUP SCHEDULE
- 12 BULKHEAD INFUSION LAYOUT AND DETAILS
- 13 HALF TOP PLATE DIMENSIONS
- 14 END HALF TOP PLATE DIMENSIONS
- 15 HALF TOP PLATE LAYUP SCHEDULE
- 16 HALF TOP PLATE INFUSION LAYOUT AND DETAILS

ASSEMBLY OF THE PONTOONS USING THE COMPONENTS FABRICATED FROM THIS DRAWING IS DESCRIBED IN DWG: 8420-8.



PONTOON NUMBERING

FABRICATION NOTES

FABRIC:
VECTORPLY E-BXM 4008 ±45
TEAM 54OZ 0/90 E-GLASS
PPG C-VEIL E-GLASS

FLOTATION FOAM:
PFPI 23-008(2) URETHANE FOAM

RESIN:
INTERPLASTICS CORVE 8100-50 VINYL ESTER

ADDITIVES:
BASF TINUVIN 328 ULTRAVIOLET LIGHT ABSORBER
ADVANCED COATINGS A-8-14265 GRAY PIGMENT

CATALYST:
SYRGIS NOROX MEKP 925

PROMOTERS:
DURA CHEMICALS DUROCT COBALT
PURITAN PRODUCTS DIMETHYLANILINE (DMA)

TOLERANCES:
LENGTH: +/- 1/2"
ADJACENT UNIT LENGTHS: +/- 1/2"
DEPTH & WIDTH: +/- 1/4"
WALL THICKNESS: + 1/16, - 0
SURFACE FLATNESS: +/- 1/16 PER 48"
SWEEP: +/- 1/8"
CAMBER: + 1/2", - 1/4"
DEVIATION FROM DIAGONALS: +/- 3/4"
DEVIATION FROM END SQUARENESS: +/- 1/4"
INSERT OR HOLE LOCATIONS: +/- 1/8"
VERTICAL DIFFERENTIAL BETWEEN PONTON SURFACES: +/- 1/8"
FLOATING SPAN OVERALL LENGTH: +/- 1/2"

REPAIRS:
REPAIRS ARE NOT TO EXCEED DEFECTS IDENTIFIED BY ASTM D 2563 (MORE THAN 2 DEFECTS WITHIN A 1 FT RADIUS). TO BE REPAIRED PER KENWAY QA/QC PLAN.

CURING:
PARTS ARE TO BE LEFT IN THE MOLD FOR A PERIOD OF NO LESS THAN 6 HOURS AFTER ALL HOSES HAVE BEEN CLAMPED. PARTS MUST BE UNDER FULL VACUUM PRESSURE FOR A PERIOD OF NO LESS THAN 6 HOURS. BARCOL HARDNESS READINGS OF NO LESS THAN 40 WILL BE ACCEPTABLE.

SURFACE PREP:
CLEAN SURFACE OF CONTAMINENTS INCLUDING MOLD RELEASE AGENT, RESIN RIDGES AND/OR DRIPS.

GRIT BLASTING:
VERTICAL SURFACE THAT MATES WITH ADJOINING PONTOON SHALL BE GRIT BLASTED USING 60-120 MESH GLASS BEADS AT 80 PSI - DURATION SHALL BE APPROXIMATELY 1 MINUTE PER SQ.FT.

LABELING:
EACH PONTOON IS TO BE LABELED WITH KENWAY NAME PLATES ON THE UPSTATION END WALL. IT SHALL INCLUDE AT A MINIMUM THE FABRICATOR NAME, DATE OF MANUFACTURE, AND MARK NUMBER

WITNESS PANELS:
PANELS HAVING A MINIMUM LENGTH AND WIDTH OF 2 FT SHALL BE FABRICATED AT THE SAME TIME AS THE HULL TO BE USED FOR RANDOM TESTING. THE LAYUP SHALL CONSIST OF THE FOLLOWING:
(1) 1708
(3) 54
(1) 1708

LAYUP REQUIREMENTS:
MINIMUM TRANSVERSE LAP SPLICE TO BE 2 INCHES FOR ALL VECTORPLY E-BXM 4008. ~~TEAM 54 OZ MATERIAL MAY BE BUTTED TOGETHER.~~ C-VEIL IS COSMETIC ONLY AND REQUIRES MINIMAL OVERLAP. LONGITUDINAL SEAMS ARE INCLUDED BY DESIGN. NO MORE THAN 2 SPLICES IN THE SAME LOCATION. LAP SPLICES TO BE PER KENWAY FABRICATION DRAWINGS.

FINISHING:
GENERALLY, NO CUTTING OF FINISHED PARTS WILL BE ALLOWED EXCEPT FOR BOLT HOLES AND COPE CORNER IN BULKHEADS AS SHOWN IN DRAWINGS - EXPOSED GLASS SHALL BE FINAL COATED WITH RESIN

LIFTING:
LIFTING OF FINISHED MOLDED PART SHALL ONLY BE BY THE ATTACHED LIFTING LUGS OR BASKET SLING. LIFTING BY ANY OTHER METHOD IS PROHIBITED UNLESS APPROVED BY THE ENGINEER.

HANDLING/STORAGE:
ALL FINISHED PARTS MUST BE HANDLED WITH CARE IN ORDER TO PREVENT DAMAGE. FINISHED PARTS MUST BE PROTECTED FROM UV LIGHT AND SUPPORTED BELOW BULKHEADS. STACKING OF PONTOONS WILL BE ACCEPTABLE.

INSPECTION:
ALL PONTOONS MUST BE INSPECTED BY KENWAY PROJECT ENGINEER & VERMONT DOT AGENCY REPRESENTATIVE PRIOR TO SHIPMENT.

INFUSION NOTES
PERFORATED RELEASE FILM SHALL BE APPLIED OVER THE ENTIRE PART

SHADE CLOTH SHALL BE APPLIED OVER THE PART BUT WILL STOP 3" FROM THE EDGE OF THE PART UNLESS OTHERWISE NOTED

FEED LINES SHALL START AT THE CENTER OF THE PART AND BE SPACED NOMINALLY 16" APART UNLESS OTHERWISE NOTED - FEED TUBE INPUT LOCATIONS SHALL GENERALL BE AT THE CENTER OF THE FEED LINE

VAC LINES SHALL BE LAID OUT IN SEPARATE ZONES AS NOTED IN THE DRAWING TO ALLOW FOR CLAMPING INDIVIDUAL ZONES IF REQUIRED AND SHALL PROVIDE AT LEAST 6" BETWEEN THE PART AND THE TUBE

RESIN BUCKETS SHALL BE PLACED SUCH THAT THE HEIGHT OF THE RESIN IS EVEN WITH OR UP TO 12" BELOW THE LOWEST POINT ON THE PART

PARTS SHALL BE FED STARTING FROM THE CENTER FEED LINE - ADJACENT LINES SHALL BE OPENED ONCE THE RESIN FLOW FRONT IS APPROXIMATELY 3-4" PAST THE NEXT FEED LINE

A MINIMUM AMOUNT OF RESIN SHALL BE KEPT IN THE BUCKET TO AVOID PULLING AIR INTO THE LINE - LINES WILL ONLY BE CLAMPED ONCE THE RESIN IN THE BUCKET HAS GELLED

FLOODED VAC LINES MAY BE CLAMPED IF NEEDED - HOWEVER, AT LEAST ONE VAC LINE MUST REMAIN OPEN FOR 6 HOURS AFTER THE PART IS FILLED

PART AND RESIN TEMPERATURE SHALL BE BETWEEN 70-90F AT TIME OF INFUSION - ADJUST CATALYST RATIO AS NEEDED TO ACHIEVE 40-60 MINUTE GEL TIME

ANTICIPATED PEAK EXOTHERM DURING CURE IS 230F +/-30F

Vermont Agency of Transportation
RECEIVED
ON: **June 30, 2014**
and Checked for
CONFORMANCE
BY: **Jennifer Fitch** DATE: **07/07/2014**

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JOSH OLUND 07/03/2014
REVIEWER DATE

DATE	6/25/14
DESCRIPTION	ADDED GRIT BLASTING, C-VEIL JOINT AND FINAL COAT NOTE
REV	1
DESCRIPTION	ADDED INFUSION AND CURE TEMP NOTE
REV	1
DIMENSIONS ARE IN INCHES TOLERANCES: +0, -1/16" FRACTIONAL: MACH. ANGULAR: MACH. TWO PLACE DECIMAL THREE PLACE DECIMAL	
DRAWN BY	ML
DATE	6/4/14
CHKD BY	JM
DATE	6/4/14
PROJECT	BROOKFIELD FRP PONTOONS
CUSTOMER	MILLER CONST. / VTRANS
SHEET	GENERAL NOTES
WEIGHT:	N/A
DESCRIPTION:	FABRICATION
SCALE	1 : 64
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	1 OF 16
PONTOON	N/A
PART NO.	N/A

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JOSH OLUND REVIEWER 07/03/2014 DATE

Vermont Agency of Transportation

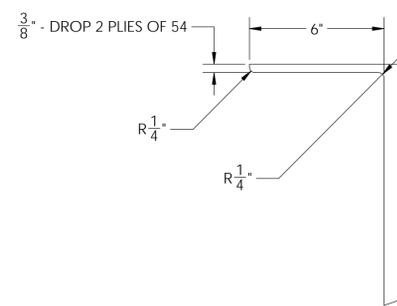
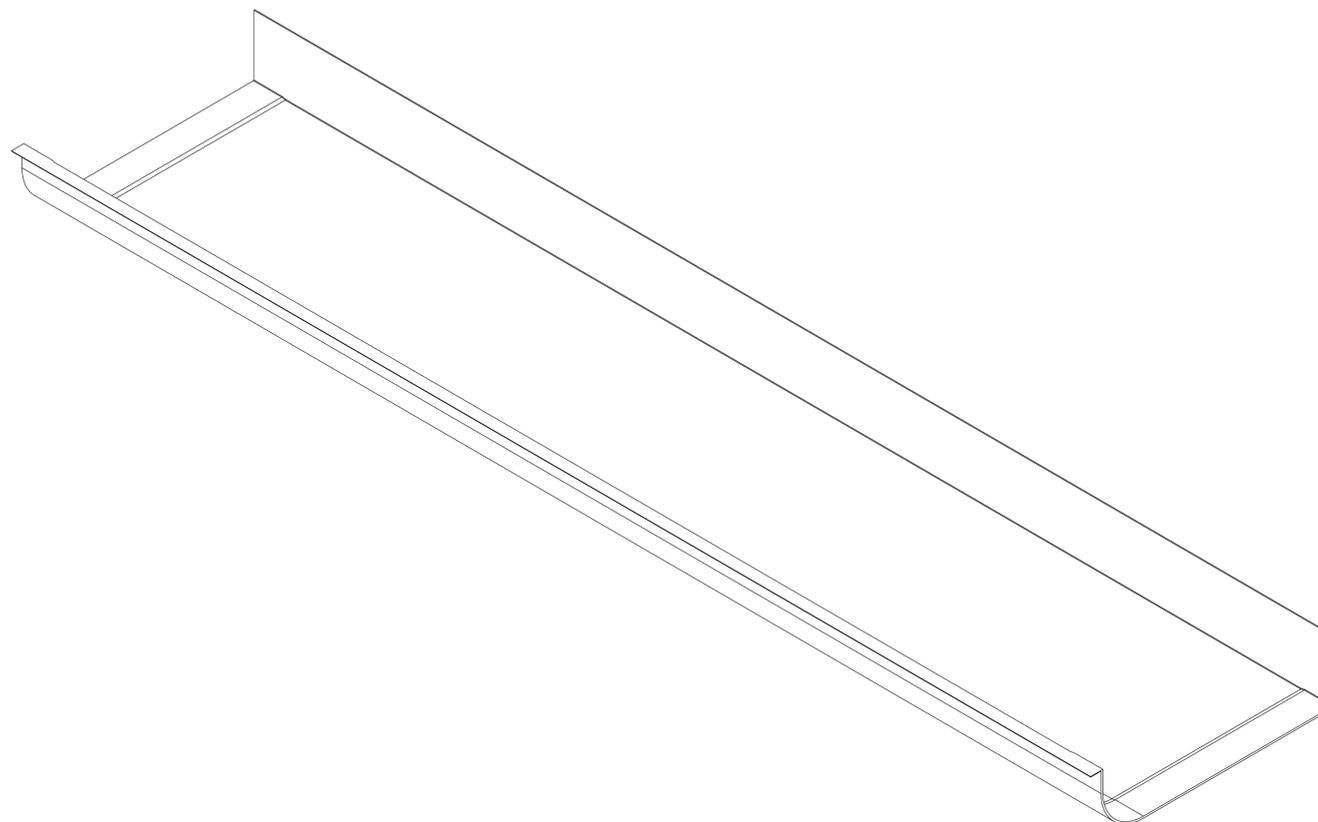
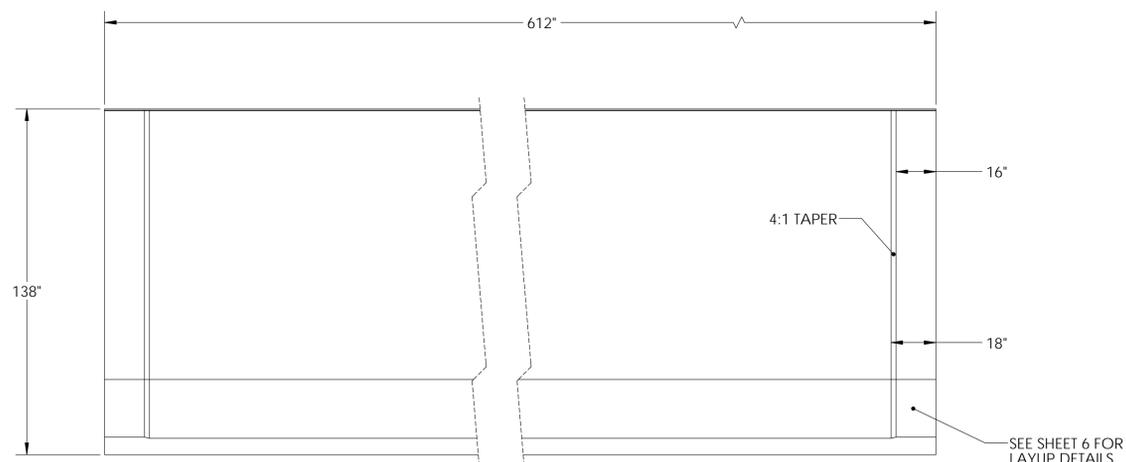
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ON: **June 30, 2014**

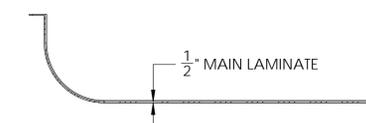
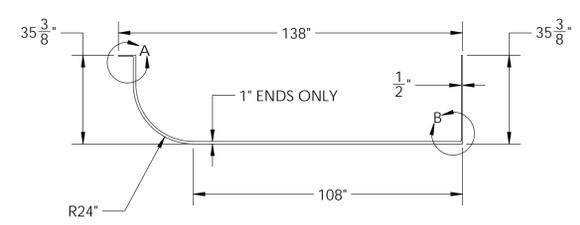
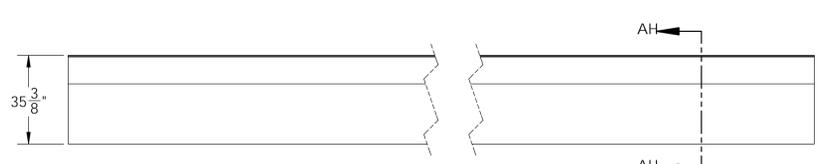
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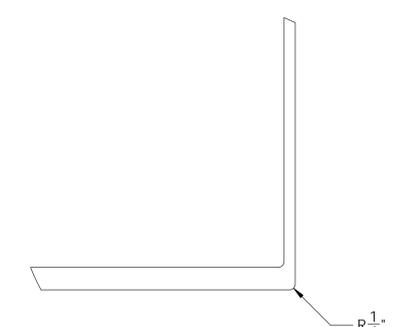
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DETAIL A
SCALE 1 : 4

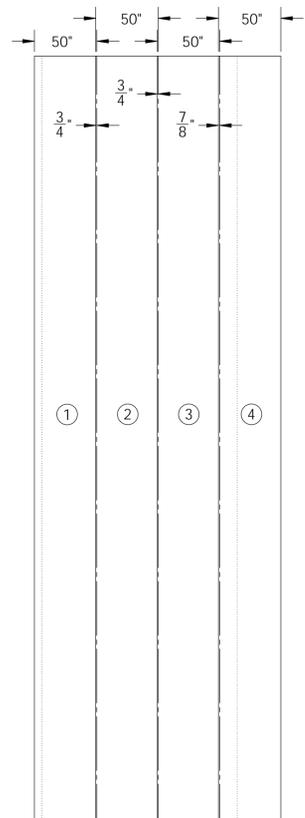


SECTION AH-AH
SCALE 1 : 36



DETAIL B
SCALE 1 : 4

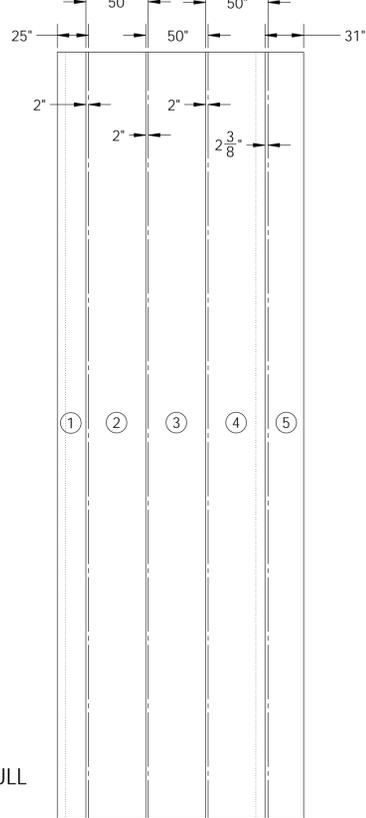
		DATE	6/25/14
		DESCRIPTION	ADDED SECTION AH-AH
REV	1		
SEAL			
DIMENSIONS ARE IN INCHES TOLERANCES: +0, -1/16" FRACTIONAL: MACH. ANGULAR: MACH. BEND: ± TWO PLACE DECIMAL THREE PLACE DECIMAL			
DRAWN BY	ML	DATE	6/4/14
CHKD BY	JM	DATE	6/4/14
PROJECT	BROOKFIELD FRP PONTOONS		
CUSTOMER	MILLER CONST. / VTRANS		
SHEET	HULLS 3-8 DIMENSIONS		
WEIGHT:	4,205 lb		
DESCRIPTION:	FABRICATION		
SCALE	1 : 48		
WO NO.	8420		
CONTRACT NO.	9185		
DWG NO.	8420-6		
SHEET	2 OF 16		
PONTOON	3-8	PART NO.	1



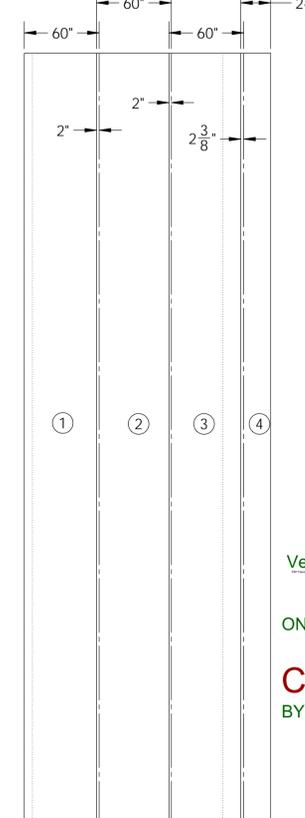
PLAN VIEW OF "UNFOLDED" HULL

FLANGE WIDTH 6" TYP VERT. SIDE HT. 35" TYP

PLY # 1 - C-VEIL



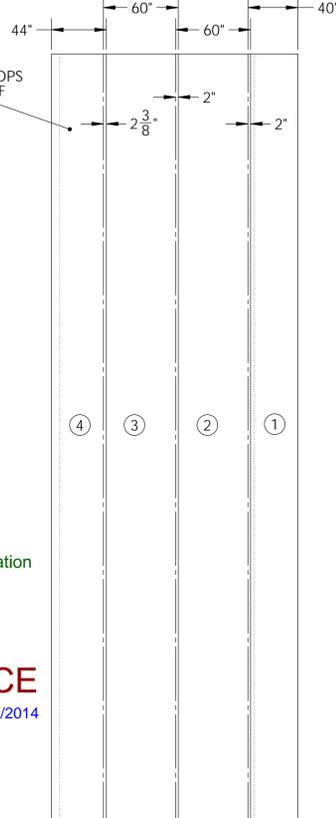
PLY # 2 - 4008



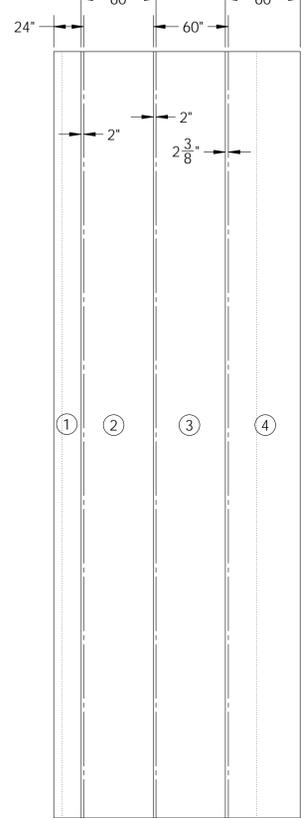
PLY # 3 - 54 oz

THIS PLY STOPS AT EDGE OF FLANGE

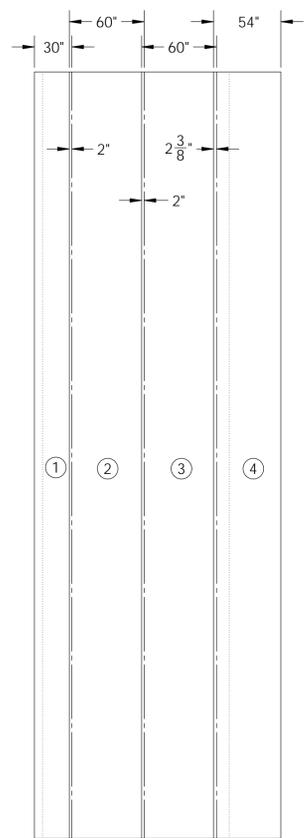
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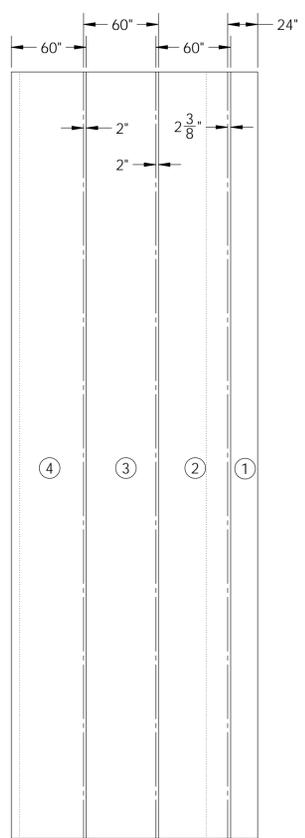
PLY # 4 - 54 oz



PLY # 5 - 54 oz

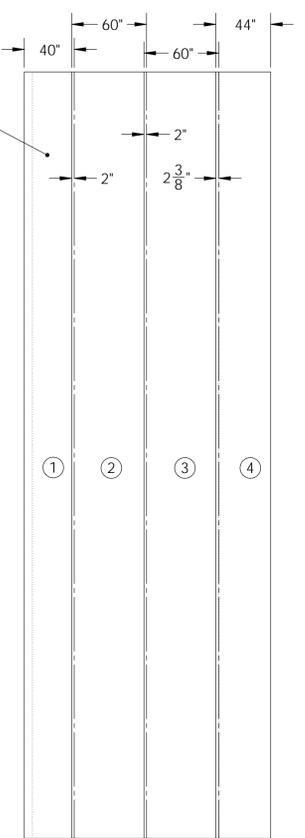


PLY # 6 - 54 oz

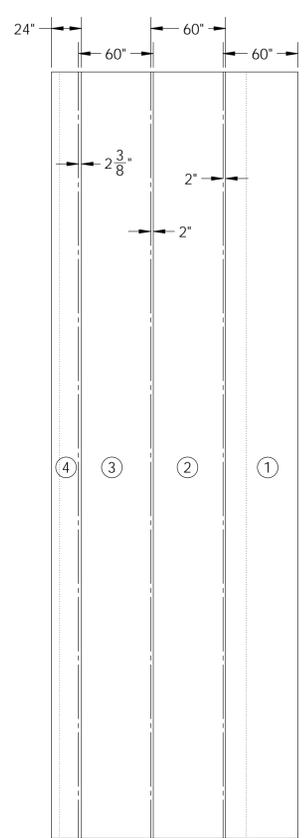


PLY # 7 - 54 oz

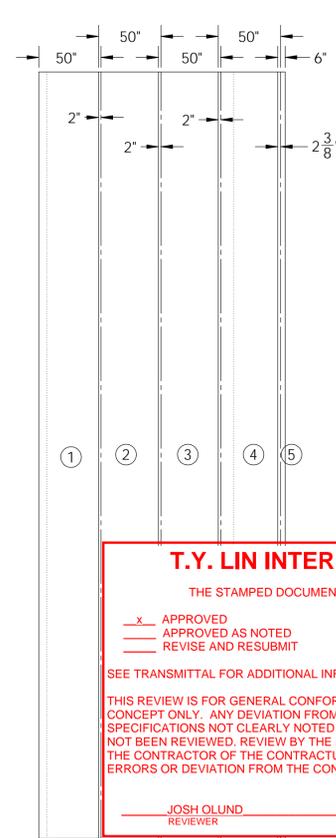
THIS PLY STOPS AT EDGE OF FLANGE



PLY # 8 - 54 oz



PLY # 9 - 54 oz



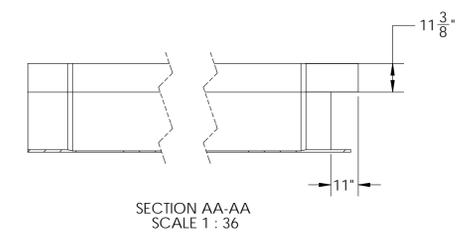
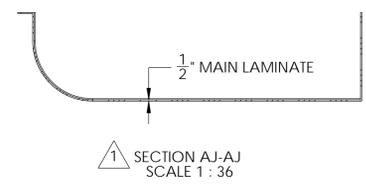
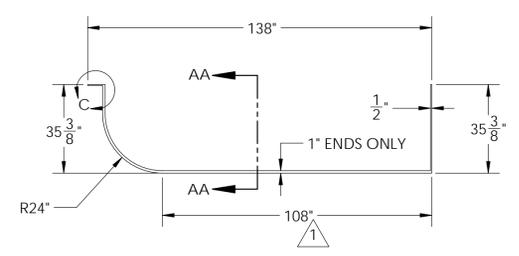
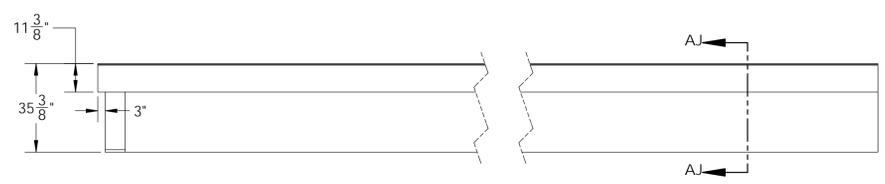
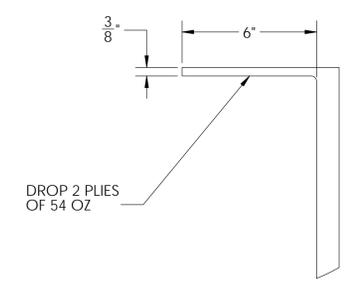
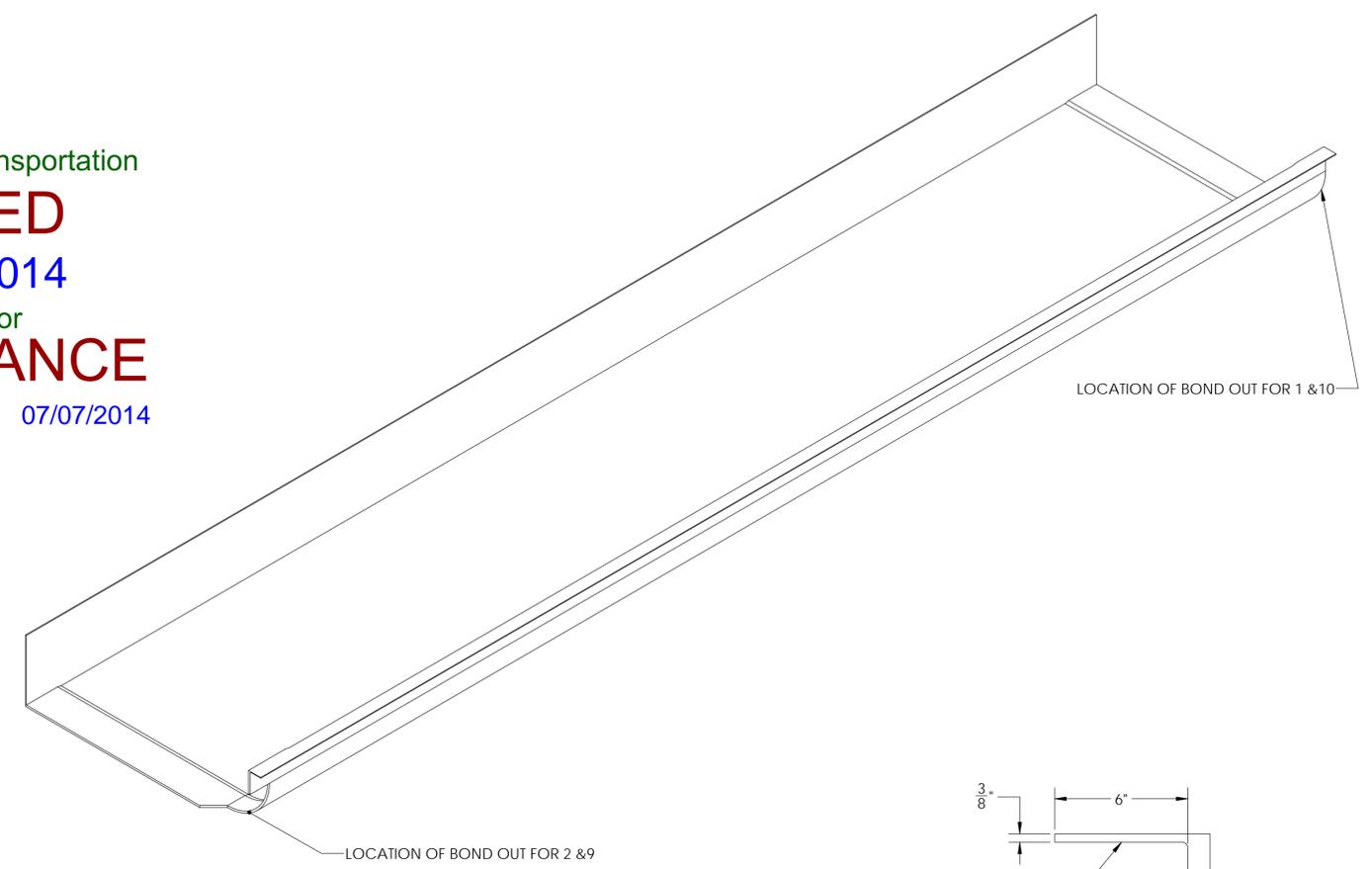
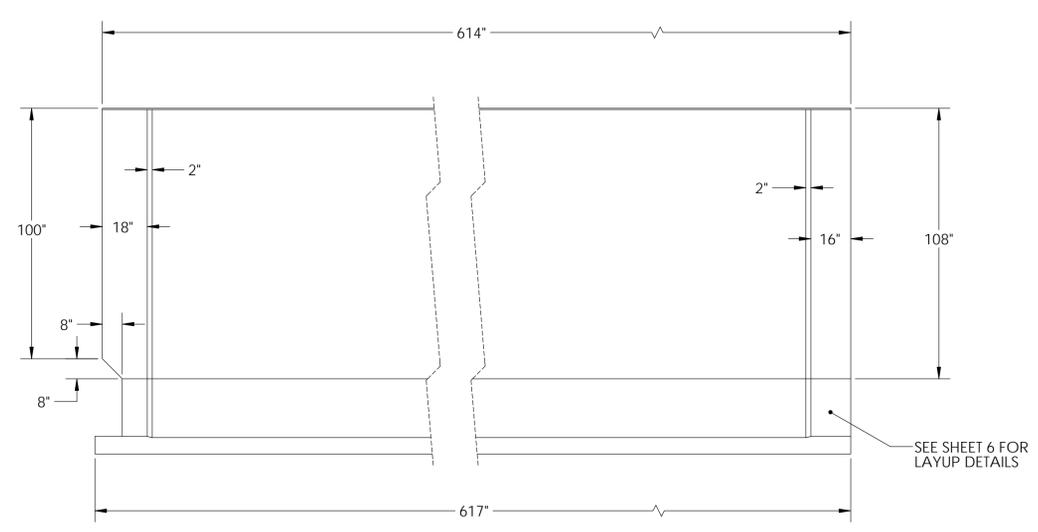
PLY # 10 - 4008

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 JOSH OLUND 07/03/2014
 REVIEWER DATE

DATE	6/26/14
DESCRIPTION	CHANGED NOTE ON REFERENCE LINES ADDED 2" OVERLAP ON ALL 54 OZ PLYS
REV	1
DIMENSIONS ARE IN INCHES TOLERANCES: +0, -1/16" FRACTIONAL: MACH. ANGULAR: MACH. TWO PLACE DECIMAL THREE PLACE DECIMAL	
DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14
PROJECT	BROOKFIELD FRP PONTOONS
CUSTOMER	MILLER CONST. / VTRANS
SHEET	HULLS 3-8 LAY UP SCHEDULE
WEIGHT:	4,205 lb
DESCRIPTION:	FABRICATION
SCALE	1 : 72
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	3 OF 16
PONTOON PART NO.	3-8 1



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NOTE:
 PONTOON HULLS 2 & 9 SHOWN - SWAP MOLD INSERT END FOR END
 TO PROPERLY ORIENTATE CONFIGURATION FOR HULLS 1&10

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JOSH OLUND REVIEWER
 07/03/2014 DATE

REV	DESCRIPTION	DATE
1	ADDED SECTION AJ-AJ AND FIXED DIMENSION SNAP	6/25/14

SEAL

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: +, -1/16"
 ANGULAR: MACH +, BEND +
 TWO PLACE DECIMAL +, +
 THREE PLACE DECIMAL +, +

DRAWN BY	DATE
ML	6/4/14

CHKD BY	DATE
JM	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

CUSTOMER: MILLER CONST. / VTRANS

SHEET: END HULL DIMENSIONS

WEIGHT:	4,205 lb
DESCRIPTION:	FABRICATION
SCALE:	1 : 48
WO NO.:	8420
CONTRACT NO.:	9185
DWG NO.:	8420-6
SHEET:	4 OF 16
PONTOON PART NO.:	1,2,9,10
PART NO.:	1



DATE	6/25/14
DESCRIPTION	CHANGED NOTE ON REFERENCE LINES ADDED 2" OVERLAP ON ALL 54 OZ PLYS
REV	1

SEAL

DIMENSIONS ARE IN INCHES
TOLERANCES: +0, -1/16"
FRACTIONAL: MACH. ±
ANGULAR: MACH. ±
BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±

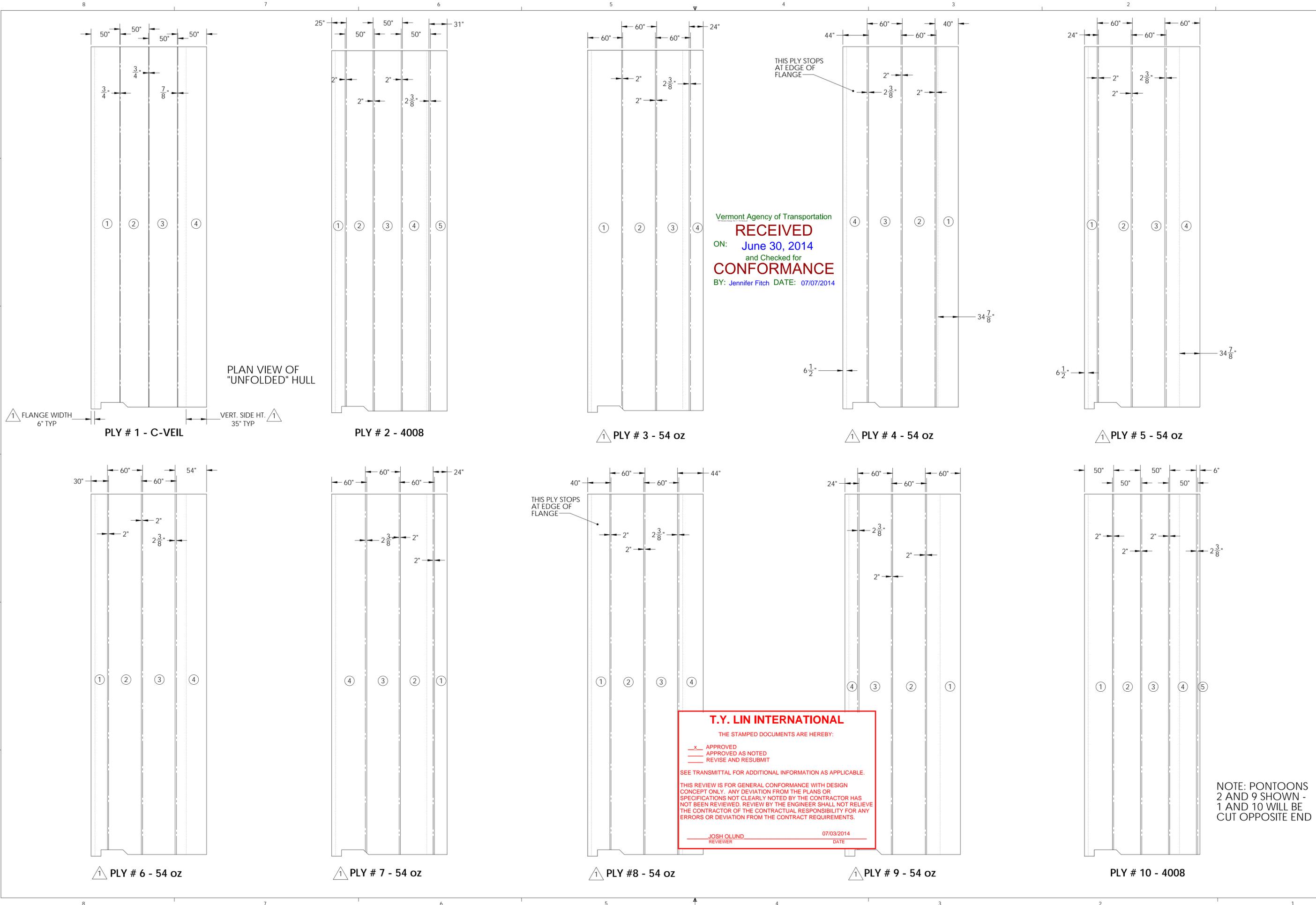
DRAWN BY	ML	DATE	6/4/14
CHKD BY	JM	DATE	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

CUSTOMER: MILLER CONST. / VTRANS

SHEET: END HULL LAY UP SCHEDULE

WEIGHT:	4,205 lb
DESCRIPTION:	FABRICATION
SCALE:	1 : 72
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	5 OF 16
PONTOON PART NO.	1,2,9,10
PART NO.	1



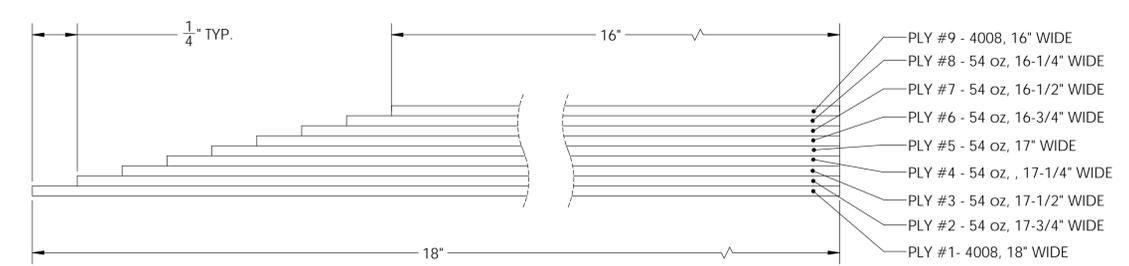
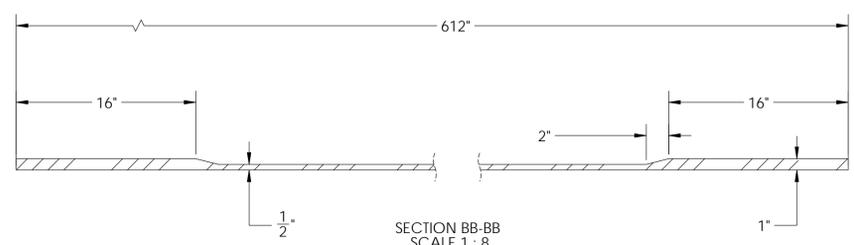
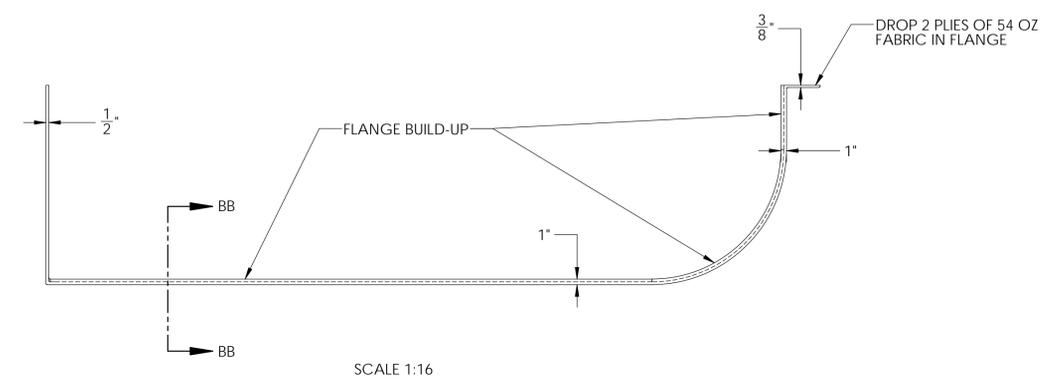
DATE	6/26/14
DESCRIPTION	ADDED BOLT AREA LAMINATE NOTE
REV	1

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH.
 ANGULAR: MACH.
 TWO PLACE DECIMAL
 THREE PLACE DECIMAL

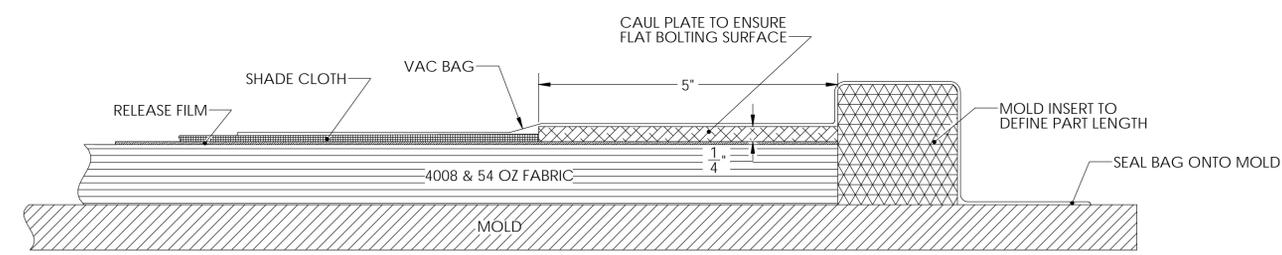
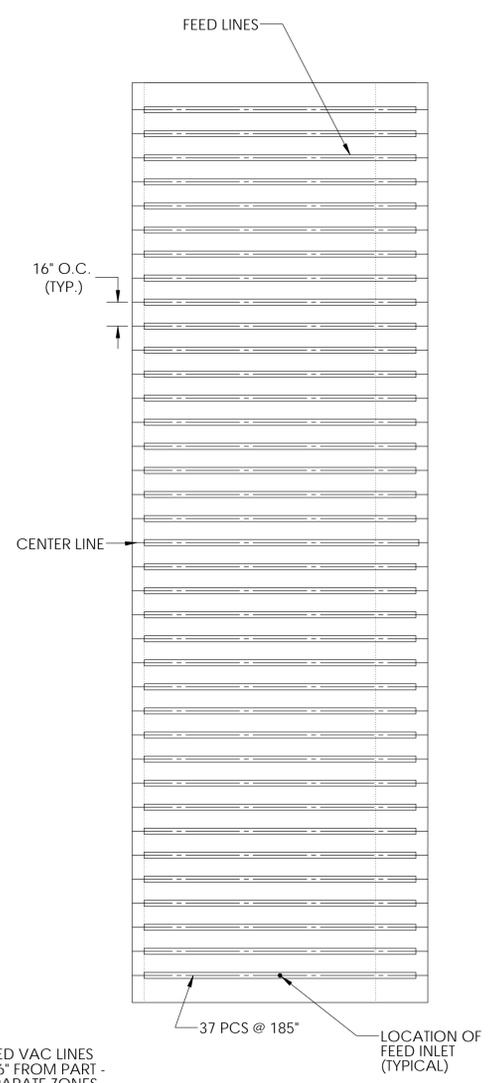
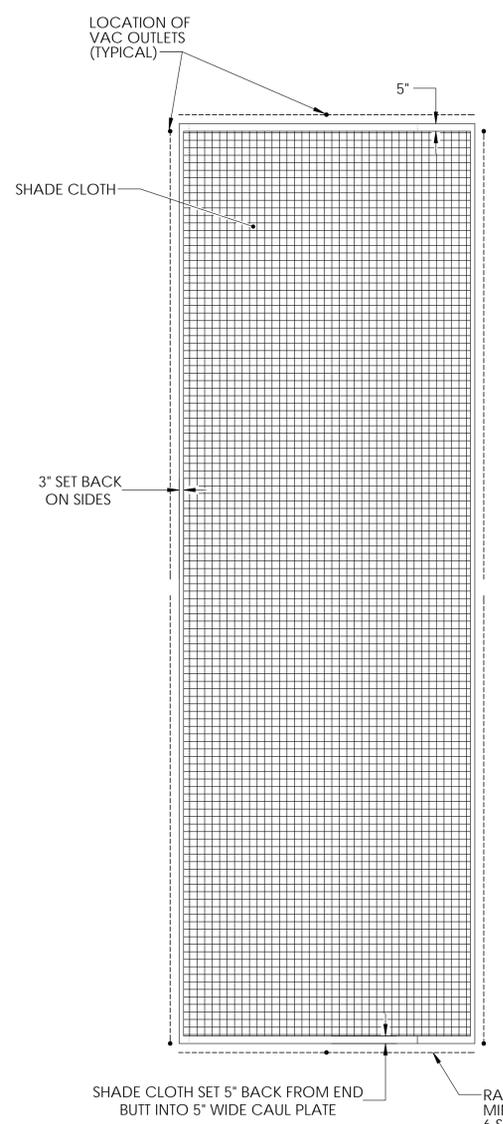
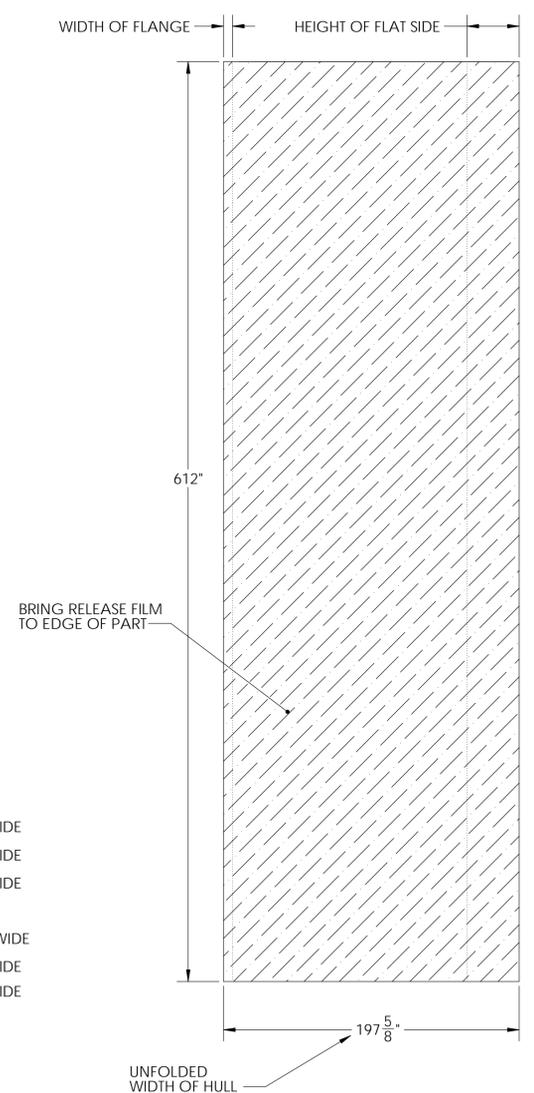
DRAWN BY	ML	DATE	6/4/14
CHKD BY	JM	DATE	6/4/14

PROJECT	BROOKFIELD FRP PONTOONS
CUSTOMER	MILLER CONST. / VTRANS

WEIGHT	N/A
DESCRIPTION	FABRICATION
SCALE	1 : 60
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	6 OF 16
PONTOON	1-10
PART NO.	1



1 ADDITIONAL BOLT ARE LAMINATE - ON TOP OF STARNDARD 1/2" LAMINATE



Vermont Agency of Transportation
RECEIVED
 ON: **June 30, 2014**
 and Checked for
CONFORMANCE
 BY: Jennifer Fitch DATE: 07/07/2014

INFUSION SET-UP DETAILS

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JOSH OLUND 07/03/2014
 REVIEWER DATE



DATE	6/25/14
DESCRIPTION	FIXED FLANGE AND RADIUS DIMENSIONS
REV	1

SEAL

DIMENSIONS ARE IN INCHES
TOLERANCES: +0, -1/16"
FRACTIONAL + BEND +
ANGULAR: MACH +
TWO PLACE DECIMAL
THREE PLACE DECIMAL

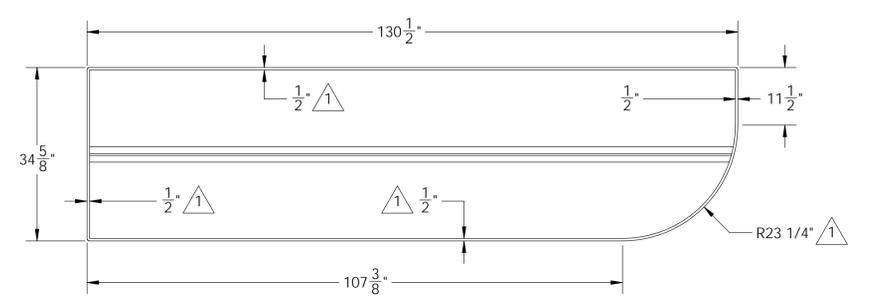
DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

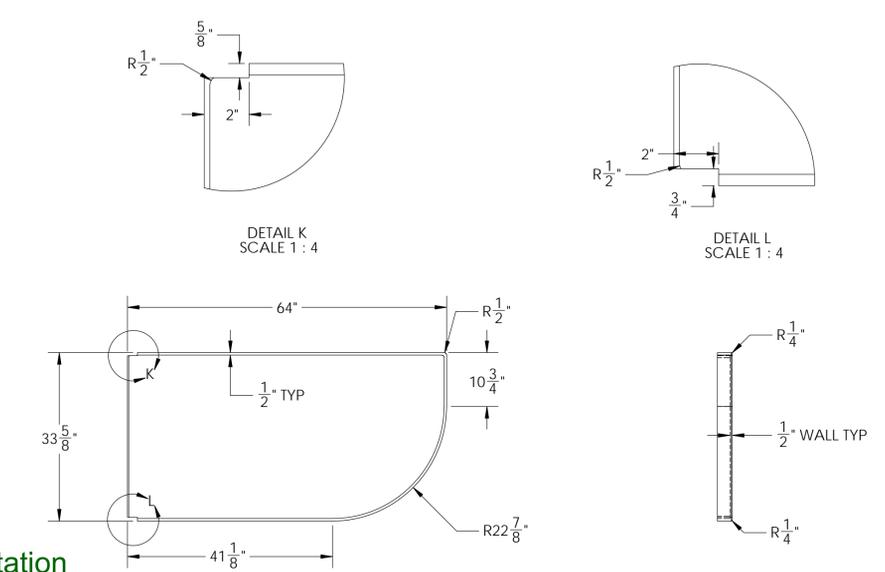
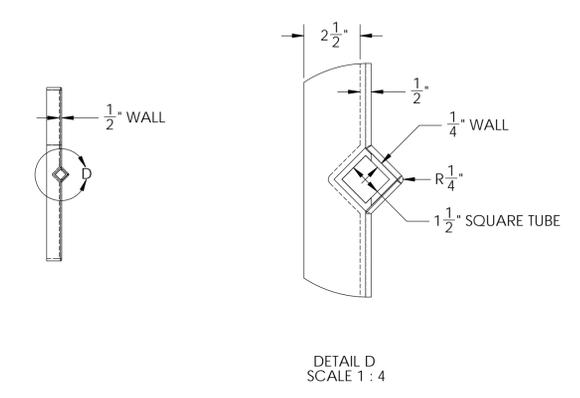
CUSTOMER: MILLER CONST. / VTRANS

SHEET: BULKHEAD DIMENSIONS

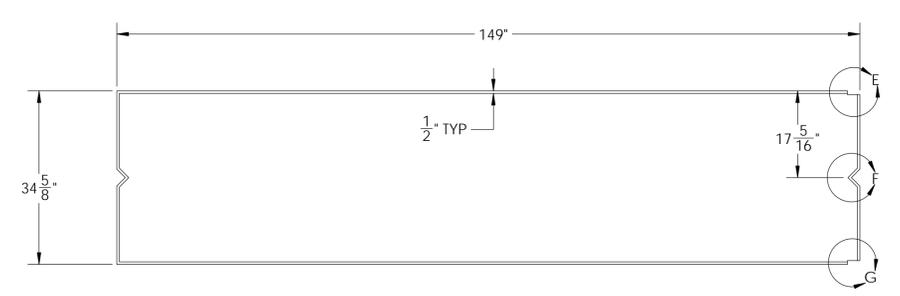
WEIGHT:	NOTED
DESCRIPTION:	FABRICATION
SCALE:	1 : 18
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	7 OF 18
PONTOON PART NO.	1-10 NOTED



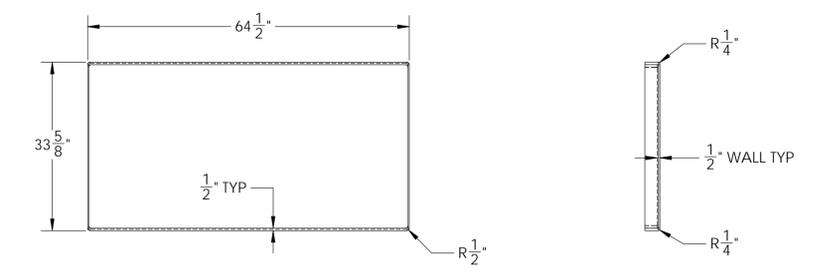
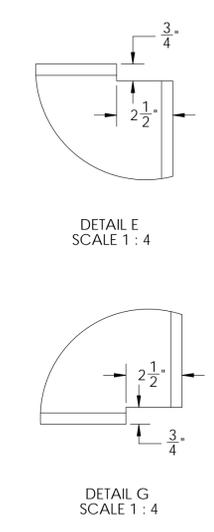
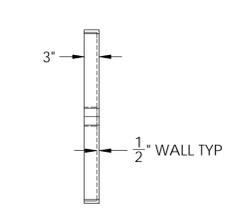
TRANSVERSE ROD BULKHEAD - PN 2
195 LB



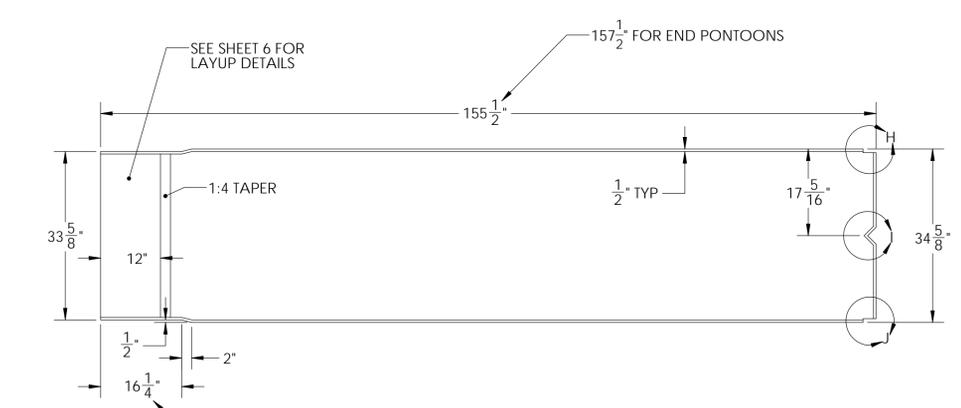
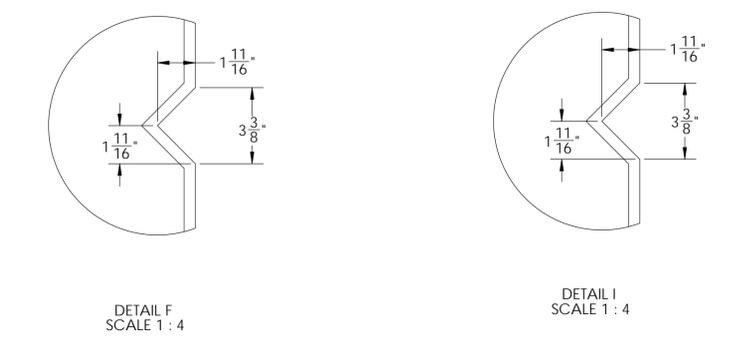
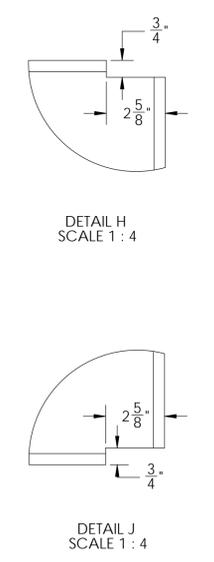
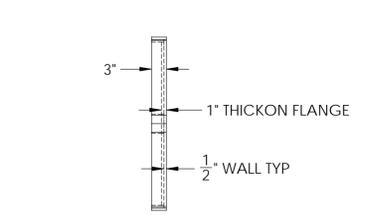
TRANSVERSE RADIUS BULKHEAD - PN 6
(PN 8 OPPOSITE HAND)
82 LB



INTERIOR LONGITUDINAL BULKHEAD - PN 3
203 LB



TRANSVERSE SQUARE BULKHEAD - PN 7
86 LB



END LONGITUDINAL BULKHEAD - PN 4
223 LB

Vermont Agency of Transportation
RECEIVED
ON: **June 30, 2014**
and Checked for
CONFORMANCE
BY: **Jennifer Fitch** DATE: **07/07/2014**

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JOSH OLUND 07/03/2014
REVIEWER DATE



DATE	DESCRIPTION
6/26/14	ADDED CORNER CUT OUT NOTE
6/26/14	ADDED 2" OVERLAP ON NOTED 54 OZ PLYS

REV	DESCRIPTION
1	ADDED CORNER CUT OUT NOTE
1	ADDED 2" OVERLAP ON NOTED 54 OZ PLYS

SEAL

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH + BEND +
 ANGULAR: MACH + BEND +
 TWO PLACE DECIMAL +
 THREE PLACE DECIMAL +

DRAWN BY	DATE
ML	6/4/14

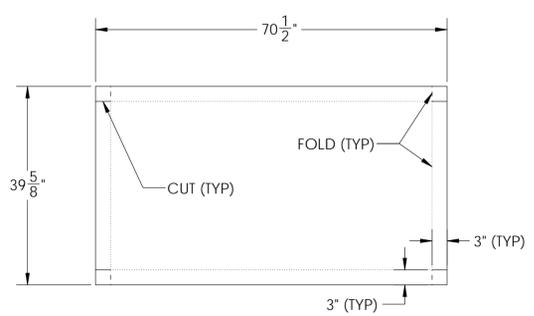
CHKD BY	DATE
JM	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

CUSTOMER: MILLER CONST. / VTRANS

SHEET: END BULKHEADS LAYUP SCHEDULE

WEIGHT:	N/A
DESCRIPTION:	FABRICATION
SCALE:	1 : 18
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	8 OF 16
PONTOON	1-10
PART NO.	6-8



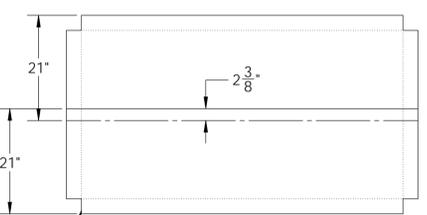
PLY # 1 - C-VEIL



PLY # 2 - 4008



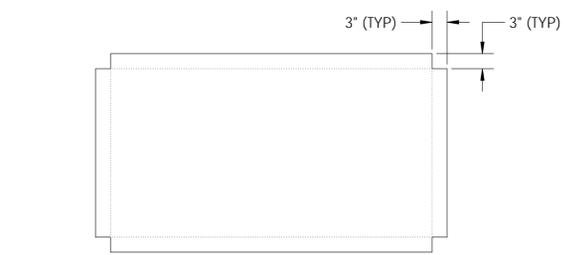
PLY # 3 - 54 oz



PLY # 4 - 54 oz



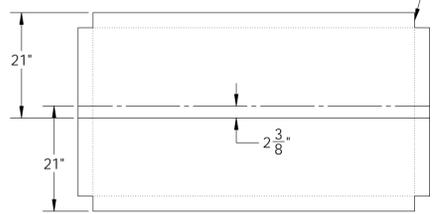
PLY # 5 - 54 oz



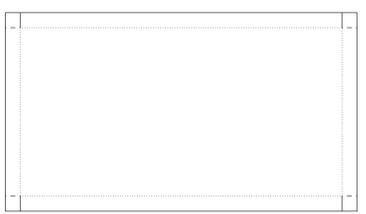
PLY # 6 - 54 oz



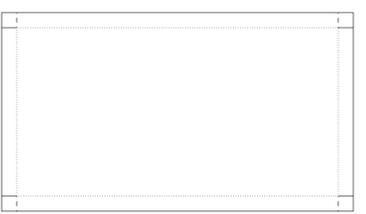
PLY # 7 - 54 oz



PLY # 8 - 54 oz



PLY # 9 - 54 oz



PLY # 10 - 4008

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 THE STAMPED DOCUMENTS ARE HEREBY:

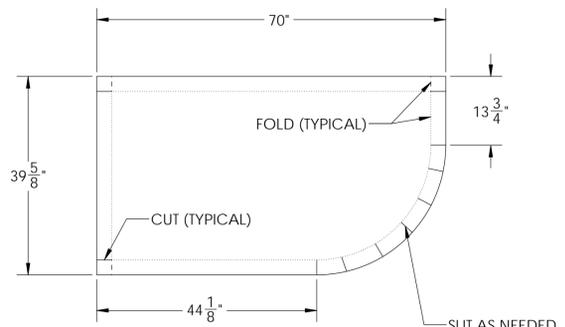
—X— APPROVED
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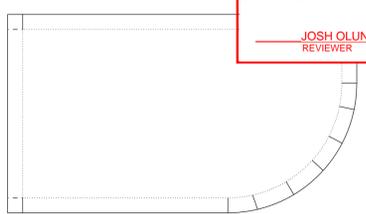
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 JOSH OLUND REVIEWER 07/03/2014 DATE

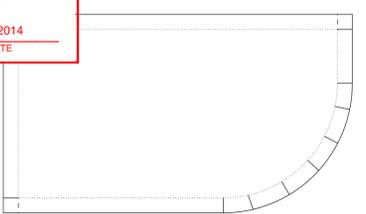
Vermont Agency of Transportation
RECEIVED
 ON: June 30, 2014
 and Checked for
CONFORMANCE
 BY: Jennifer Fitch DATE: 07/07/2014



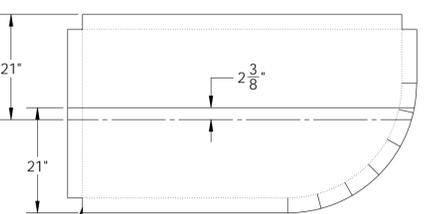
PLY # 1 - C-VEIL



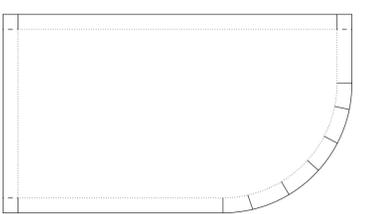
PLY # 2 - 4008



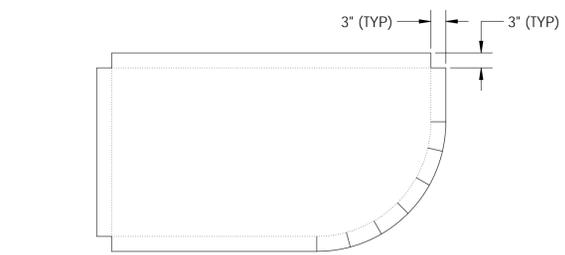
PLY # 3 - 54 oz



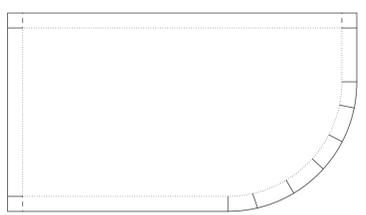
PLY # 4 - 54 oz



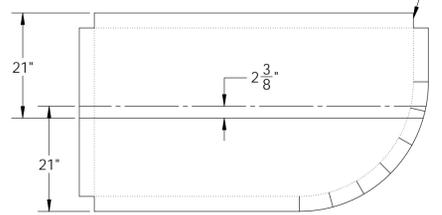
PLY # 5 - 54 oz



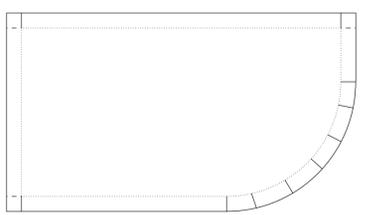
PLY # 6 - 54 oz



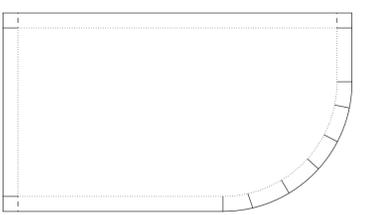
PLY # 7 - 54 oz



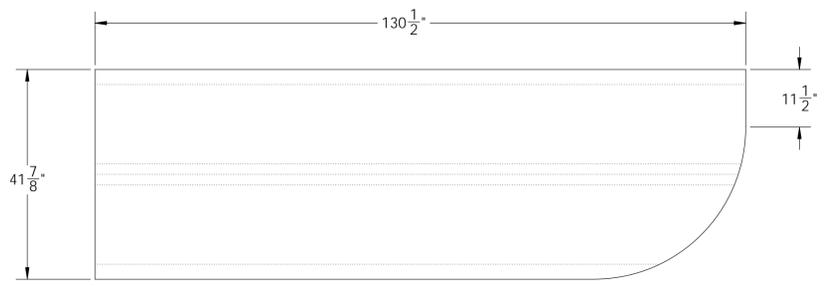
PLY # 8 - 54 oz



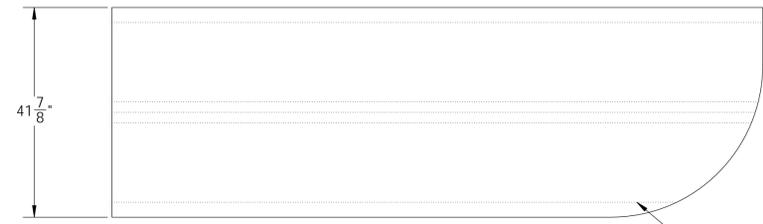
PLY # 9 - 54 oz



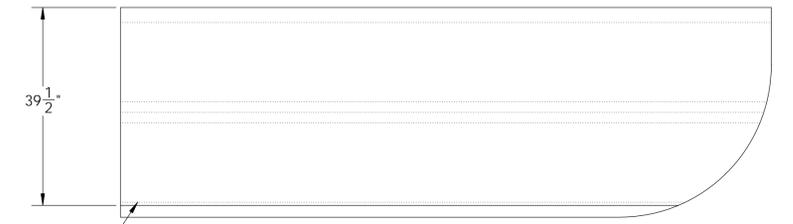
PLY # 10 - 4008



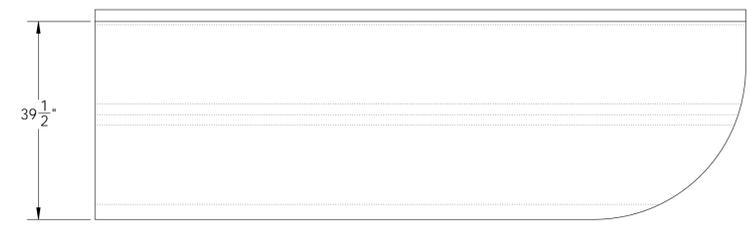
PLY # 1 - C-VEIL



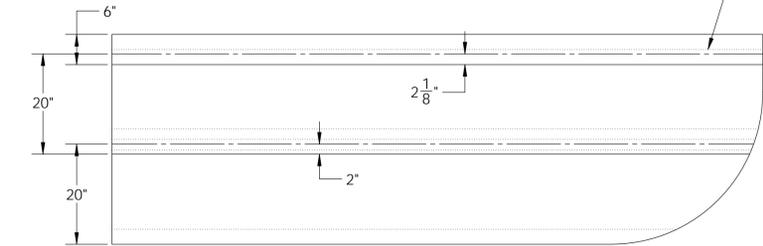
PLY # 2 - 4008



PLY # 3 - 54 oz

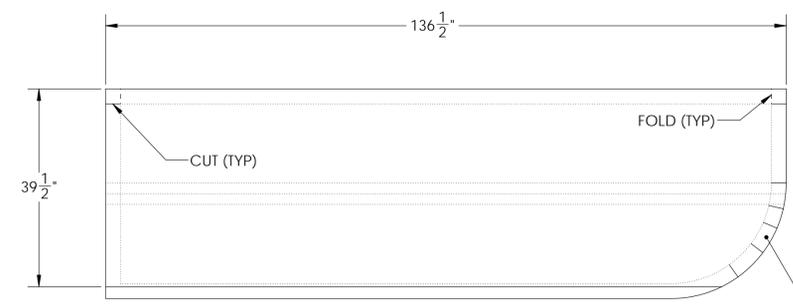


PLY # 4 - 54 oz



PLY # 5 - 54 oz

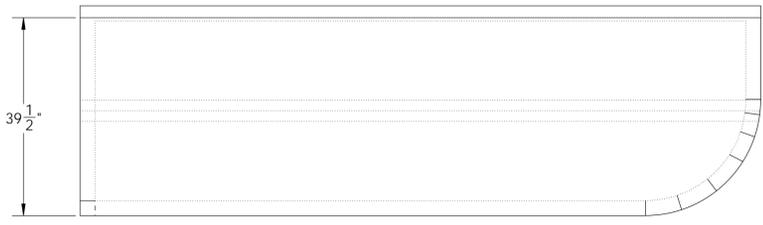
FIRST 5 PLYS FOLD UP ON LONG FLANGES ONLY SO SQUARE TUBE WILL BUTT AGAINST MOLD (TYP)



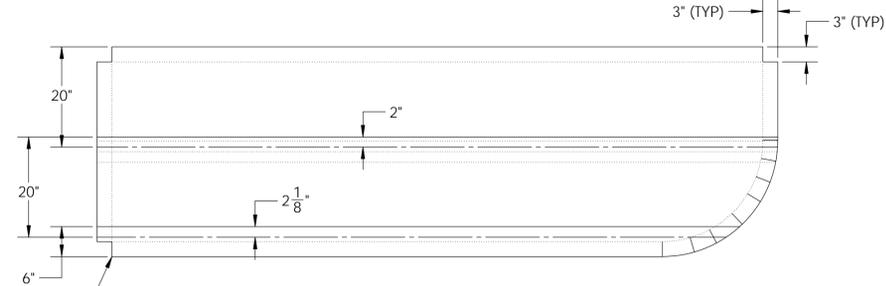
PLY # 6 - 54 oz

SLIT AS NEEDED TO FIT CONTOUR

1 INSERT 2X2 FRP TUBE BETWEEN PLYS 5 AND 6

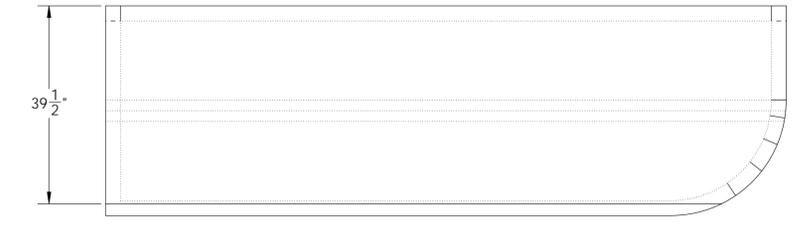


PLY # 7 - 54 oz

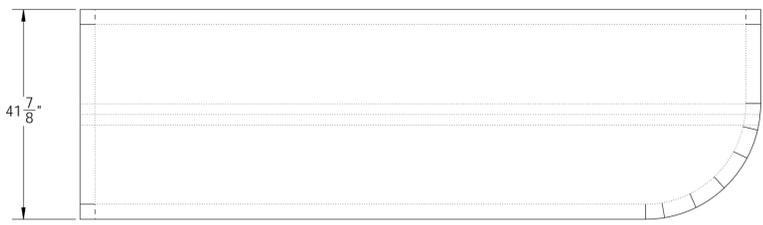


PLY # 8 - 54 oz

CUT OUT CORNERS FROM PLY 8



PLY # 9 - 54 oz



PLY # 10 - 4008

NOTE: PLYS 1-5 BUTT UP TO SHORT SIDE FLANGES

Vermont Agency of Transportation
RECEIVED
ON: **June 30, 2014**
and Checked for
CONFORMANCE
BY: **Jennifer Fitch** DATE: **07/07/2014**

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JOSH OLLUND REVIEWER 07/03/2014 DATE

DATE	6/25/14	6/26/14		
DESCRIPTION	ADDED FABRIC FOLD, FRP TUBE, AND CORNER CUT NOTES			
REV	1	1		
DESCRIPTION	ADDED 2" OVERLAP ON NOTED 54 OZ PLYS			
SEAL				
DIMENSIONS ARE IN INCHES TOLERANCES: +0, -1/16" FRACTIONAL: MACH. ANGULAR: MACH. BEND: ± TWO PLACE DECIMAL THREE PLACE DECIMAL				
DRAWN BY	ML	DATE	6/4/14	
CHKD BY	JM	DATE	6/4/14	
PROJECT	BROOKFIELD FRP PONTOONS			
CUSTOMER	MILLER CONST. / VTRANS			
SHEET	TRANSVERSE ROD BULKHEAD LAYOUT SCHEDULE			
WEIGHT:	195 LB			
DESCRIPTION:	FABRICATION			
SCALE	1 : 18			
WO NO.	8420			
CONTRACT NO.	9185			
DWG NO.	8420-6			
SHEET	9 OF 16			
PONTOON	1-10	PART NO.	2	



REV	DESCRIPTION	DATE
1	ADDED CORNER CUT OUT NOTE	6/26/14
1	ADDED 2" OVERLAP ON NOTED 54 OZ PLYS	6/26/14

SEAL

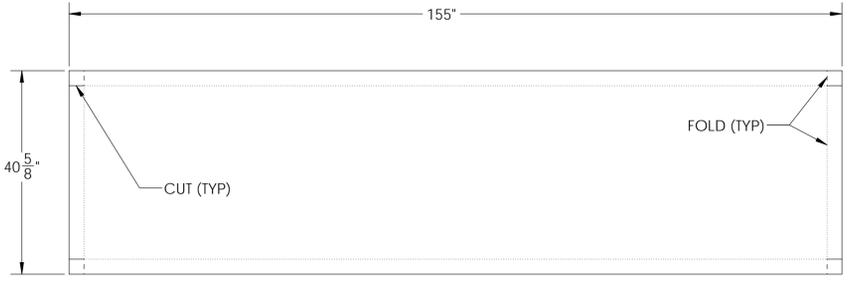
DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH.
 ANGULAR: MACH.
 BEND: ±
 TWO PLACE DECIMAL
 THREE PLACE DECIMAL

DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14

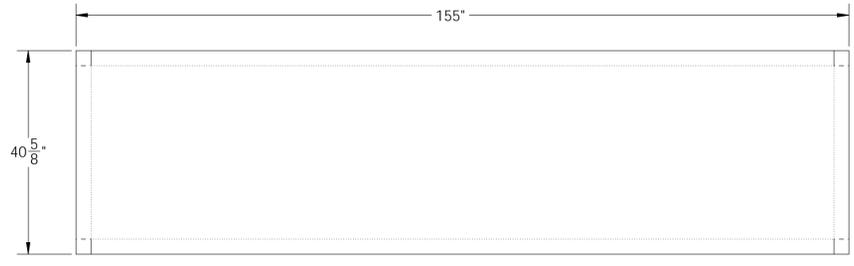
PROJECT: BROOKFIELD FRP PONTOONS

SHEET: MIDDLE LONGITUDINAL BULKHEAD LAYUP SCHEDULE

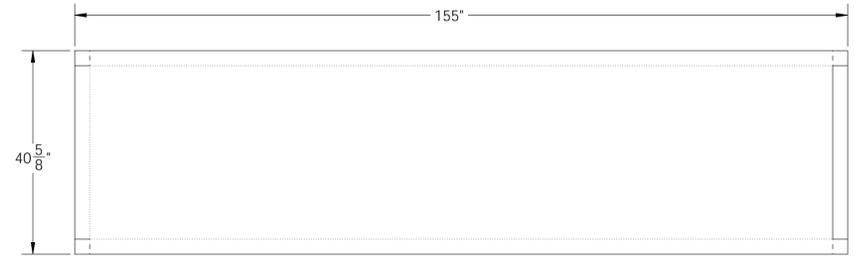
CUSTOMER	MILLER CONST. / VTRANS
WEIGHT:	203 LB
DESCRIPTION:	FABRICATION
SCALE	1 : 18
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	10 OF 16
PONTOON	PART NO.
1-10	3



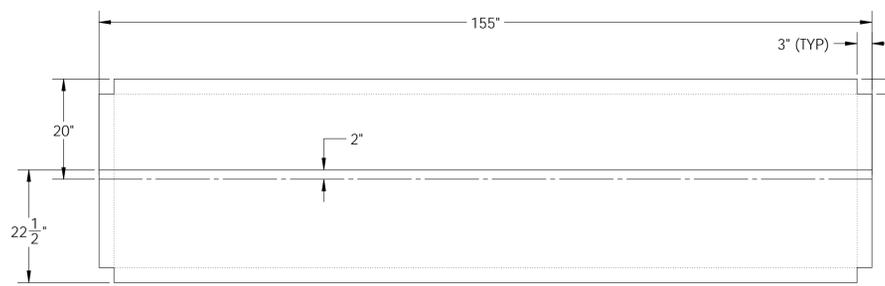
PLY # 1 - C-VEIL



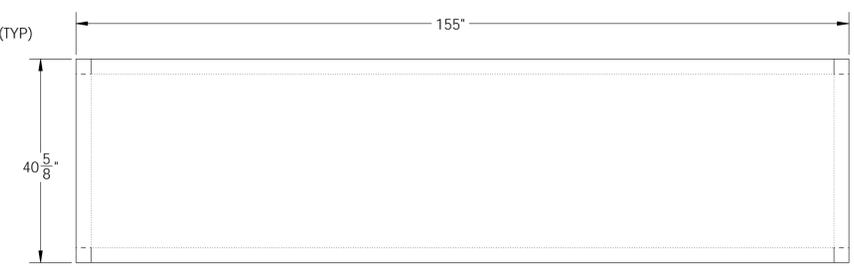
PLY # 2 - 4008



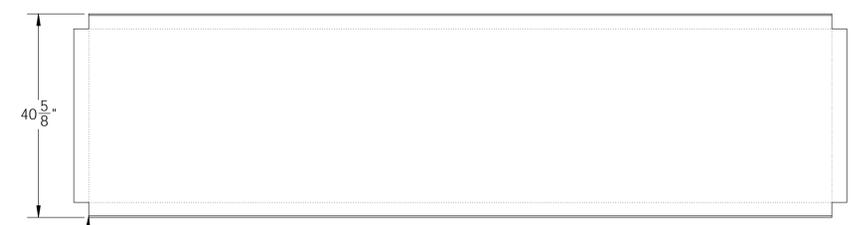
PLY # 3 - 54 oz



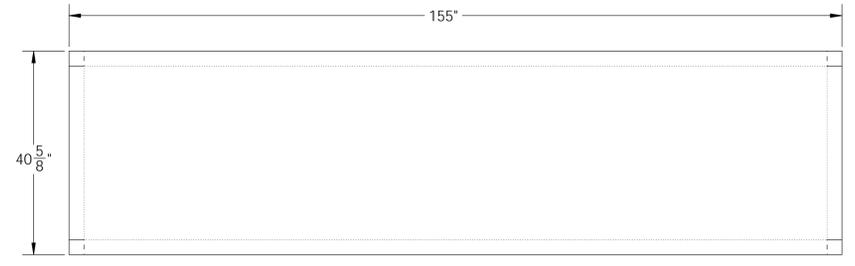
PLY # 4 - 54 oz



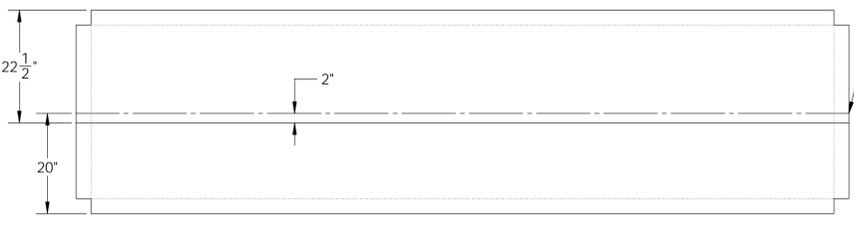
PLY # 5 - 54 oz



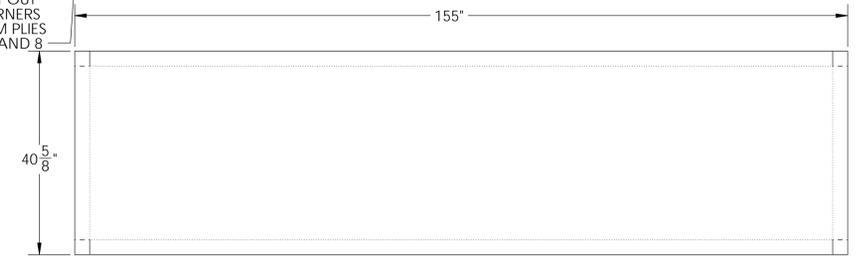
PLY # 6 - 54 oz



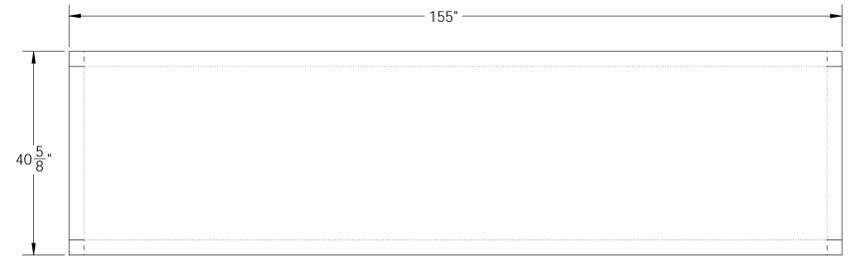
PLY # 7 - 54 oz



PLY # 8 - 54 oz



PLY # 9 - 54 oz



PLY # 10 - 4008

Vermont Agency of Transportation
RECEIVED
 ON: **June 30, 2014**
 and Checked for
CONFORMANCE
 BY: Jennifer Fitch DATE: 07/07/2014

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 JOSH OLUND 07/03/2014
 REVIEWER DATE



REV	DESCRIPTION	DATE
1	ADDED CORNER CUT OUT NOTE	6/26/14
1	ADDED 2" OVERLAP ON NOTED 54 OZ PLYS	6/26/14

SEAL

DIMENSIONS ARE IN INCHES
TOLERANCES: +0, -1/16"
FRACTIONAL +
ANGULAR: MACH +
TWO PLACE DECIMAL +
THREE PLACE DECIMAL +

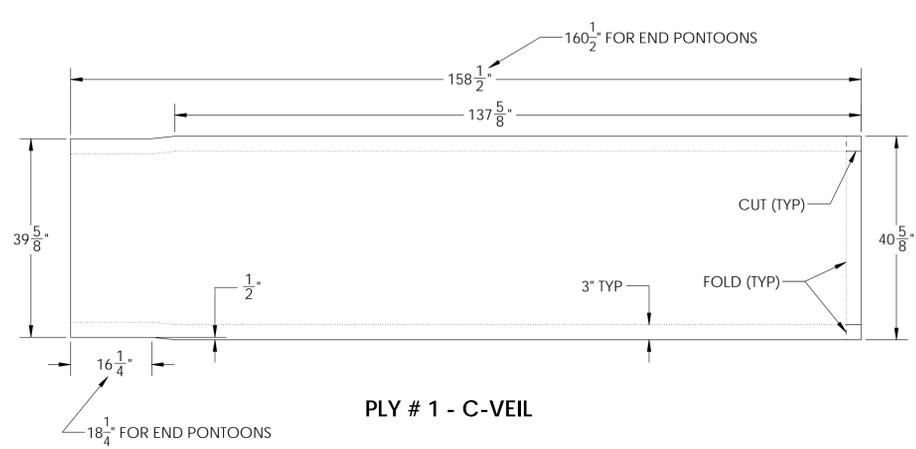
DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

CUSTOMER: MILLER CONST. / VTRANS

SHEET: END LONGITUDINAL BULKHEAD LAYOUT SCHEDULE

WEIGHT:	223 lb
DESCRIPTION:	FABRICATION
SCALE:	1 : 18
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	11 OF 16
PONTOON	PART NO.
1-10	4



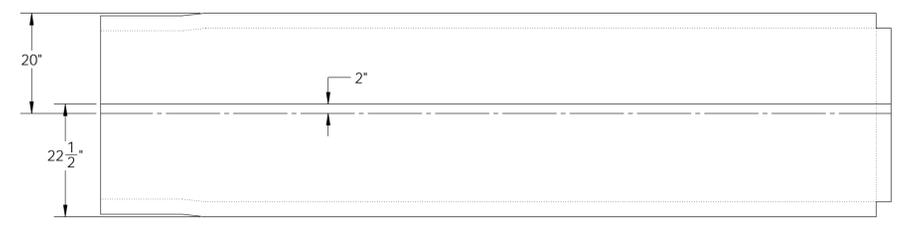
PLY # 1 - C-VEIL



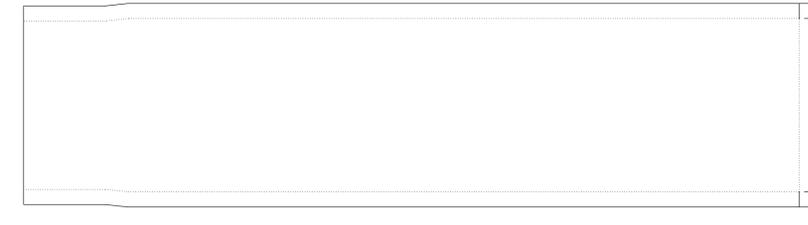
PLY # 2 - 4008



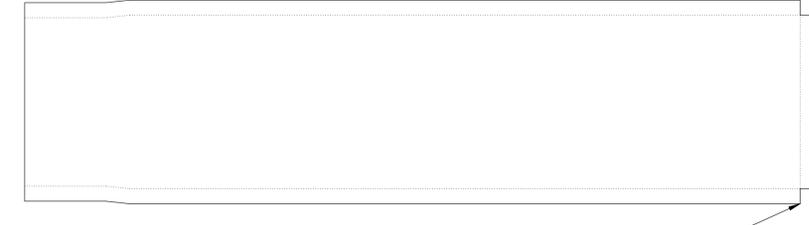
PLY # 3 - 54 oz



PLY # 4 - 54 oz



PLY # 5 - 54 oz

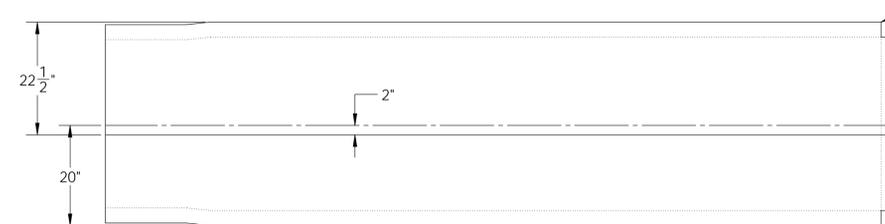


PLY # 6 - 54 oz

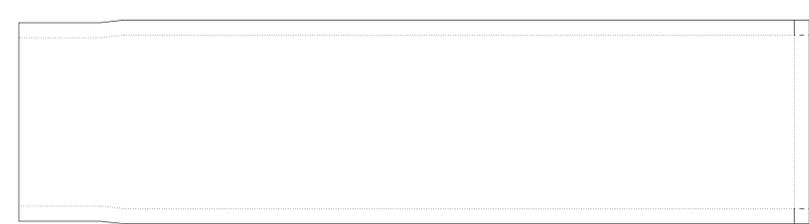
CUT OUT CORNERS FROM PLYS 4, 6 AND 8



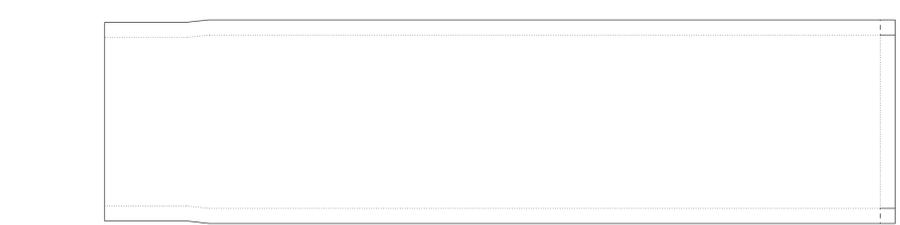
PLY # 7 - 54 oz



PLY # 8 - 54 oz



PLY # 9 - 54 oz



PLY # 10 - 4008

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 JOSH OLUND 07/03/2014
 REVIEWER DATE



REV	DESCRIPTION	DATE

SEAL

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 ANGULAR: MACH ± BEND ±
 TWO PLACE DECIMAL ±
 THREE PLACE DECIMAL ±

DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

CUSTOMER: MILLER CONST. / VTRANS

SHEET: BULKHEAD INFUSION LAYOUT AND DETAILS

WEIGHT: N/A

DESCRIPTION: FABRICATION

SCALE: 1 : 12

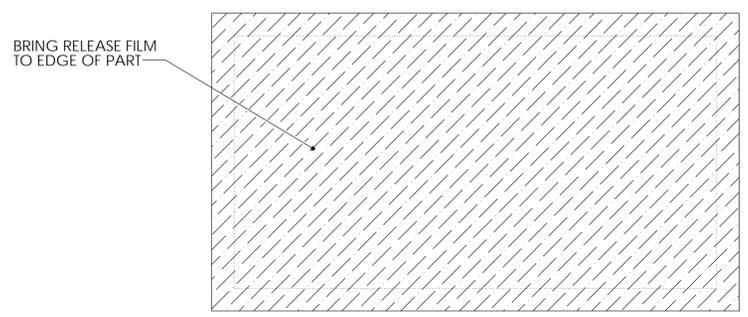
WO NO. 8420

CONTRACT NO. 9185

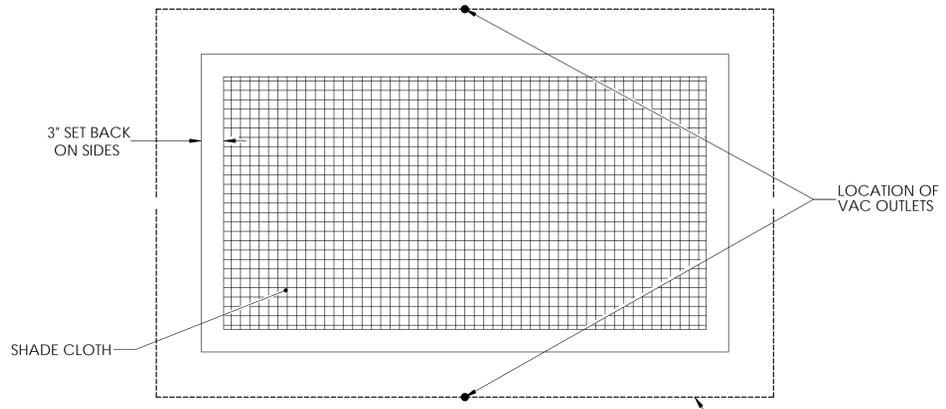
DWG NO. 8420-6

SHEET 12 OF 16

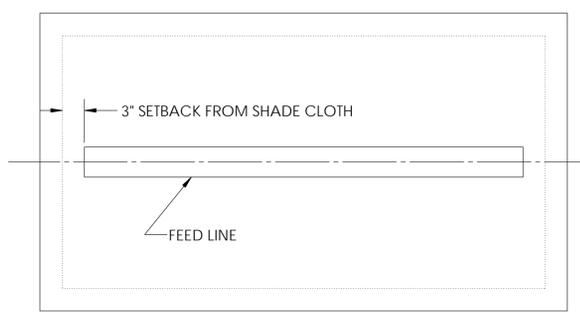
PONTOON PART NO. 1-10 2-4,6-8



RELEASE FILM

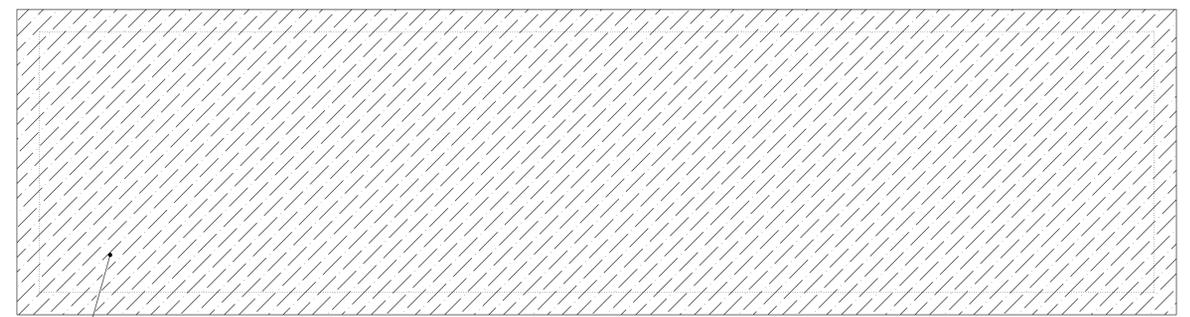


SHADE CLOTH & VAC LINES

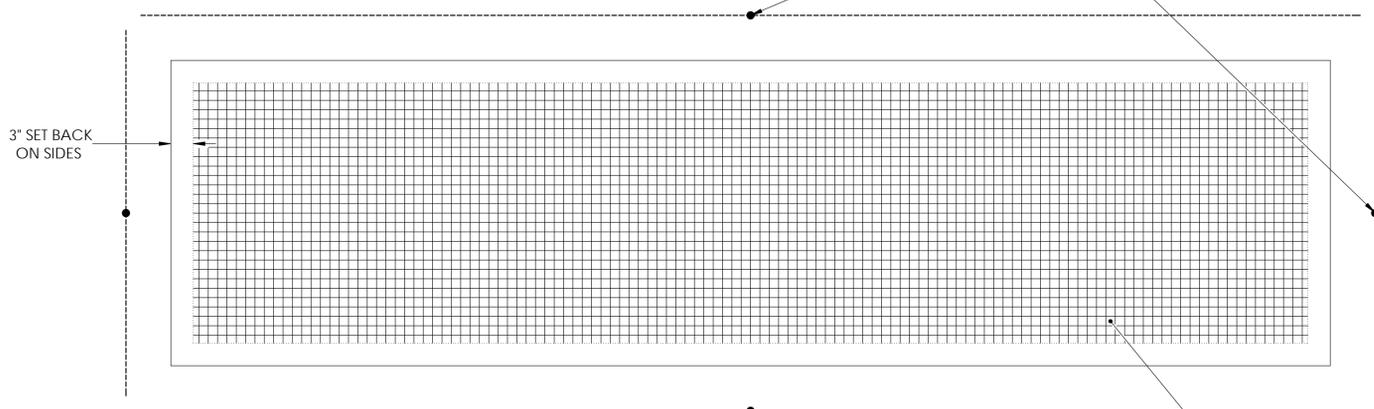


FEED LINE

END BULKHEAD INFUSION DETAILS



RELEASE FILM



SHADE CLOTH & VAC LINES

BRING RELEASE FILM TO EDGE OF PART



FEED LINE

LONG BULKHEAD INFUSION DETAILS

Vermont Agency of Transportation

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 DATE



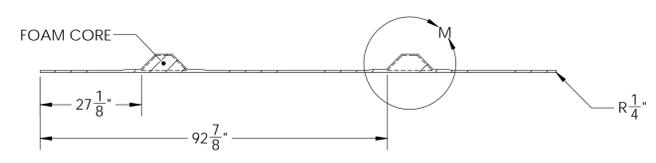
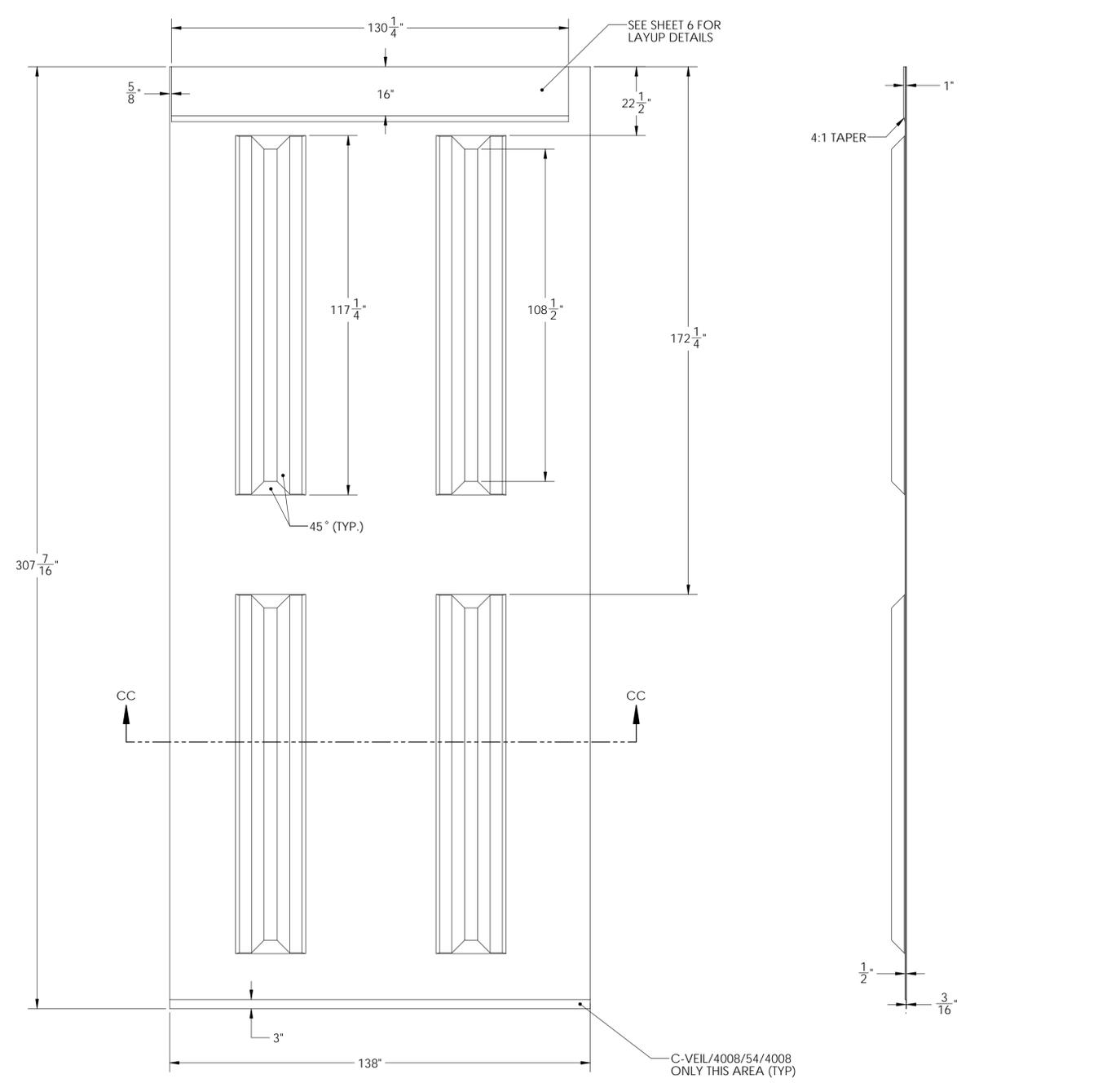
DATE	6/26/14
DESCRIPTION	CHANGED STIFFENER NOTE AND ADDED FACING LAYUP
REV	1

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH.
 ANGULAR: MACH.
 TWO PLACE DECIMAL
 THREE PLACE DECIMAL

DRAWN BY	ML	DATE	6/4/14
CHKD BY	JM	DATE	6/4/14

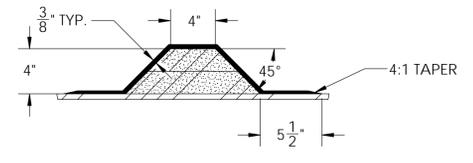
PROJECT: BROOKFIELD FRP PONTOONS
 CUSTOMER: MILLER CONST. / VTRANS
 SHEET: HALF TOP PLATE DIMENSIONS

WEIGHT:	1,490 lb
DESCRIPTION:	FABRICATION
SCALE:	1 : 24
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	13 OF 16
PONTOON	PART NO. 3-8
PART NO.	9



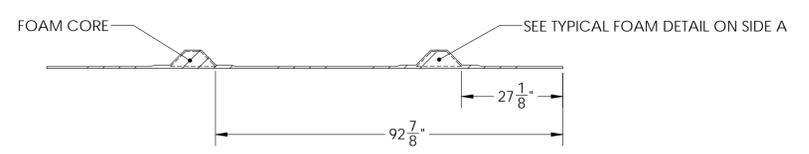
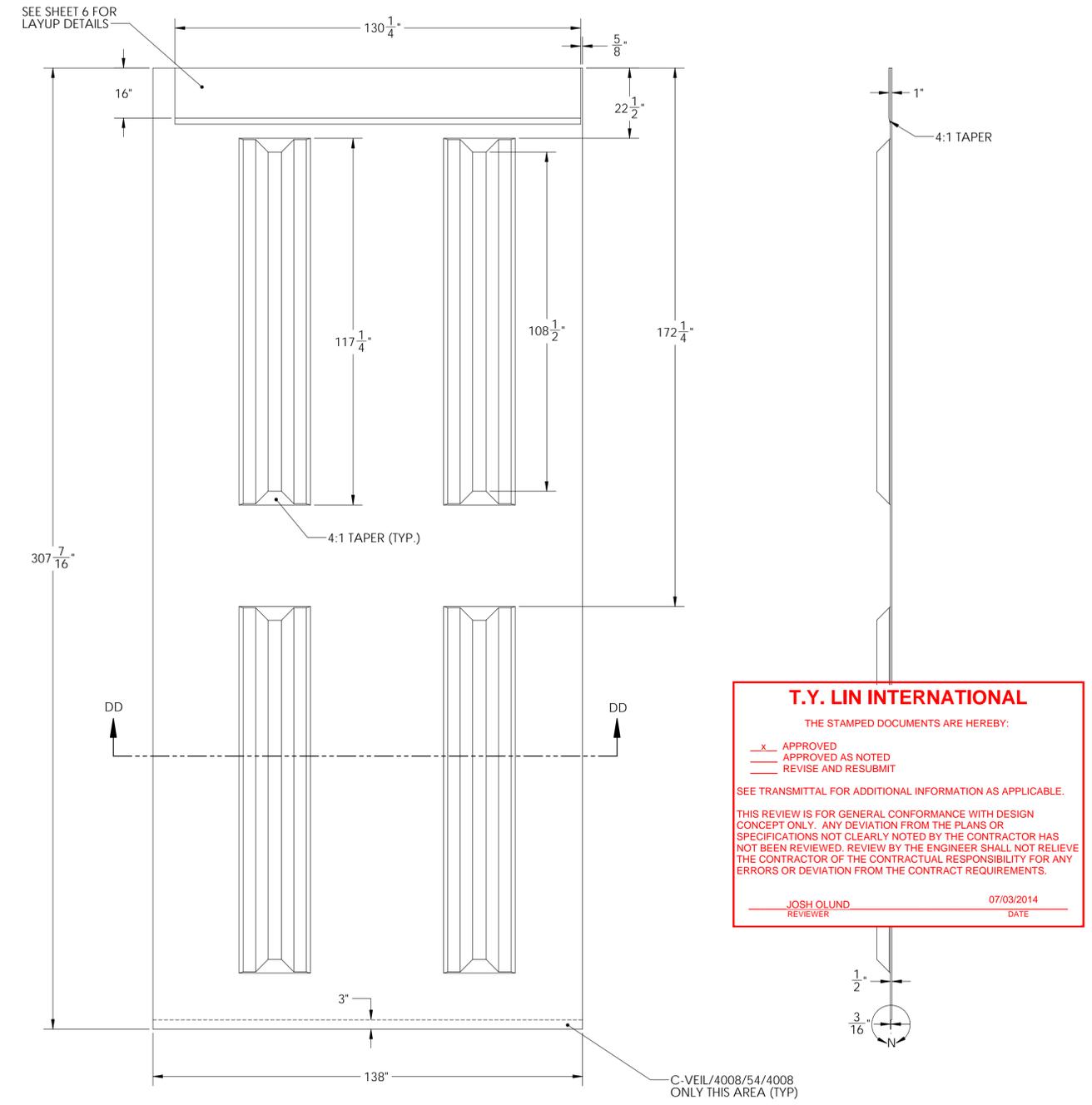
SECTION CC-CC

TOP PLATE SIDE A



DETAIL M
 TYPICAL STIFFENER DETAIL
 SCALE 1 : 8

NOTE:
 2 LAYERS OF 2" PERFORATED FOAM CORE WITH 1.5OZ CFM BETWEEN FOAM INFUSED WITH PRIMARY LAMINATE
 FACING LAYUP SCHEDULE: (1) 4008 / (5) 54 / (1) 4008



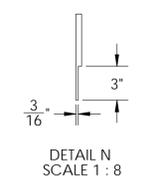
SECTION DD-DD

TOP PLATE SIDE B

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DETAIL N
 SCALE 1 : 8



DATE	6/26/14
DESCRIPTION	CHANGED STIFFENER NOTE AND ADDED FACING LAYUP
REV	1

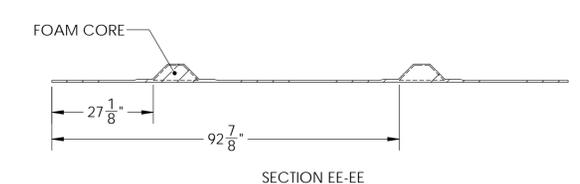
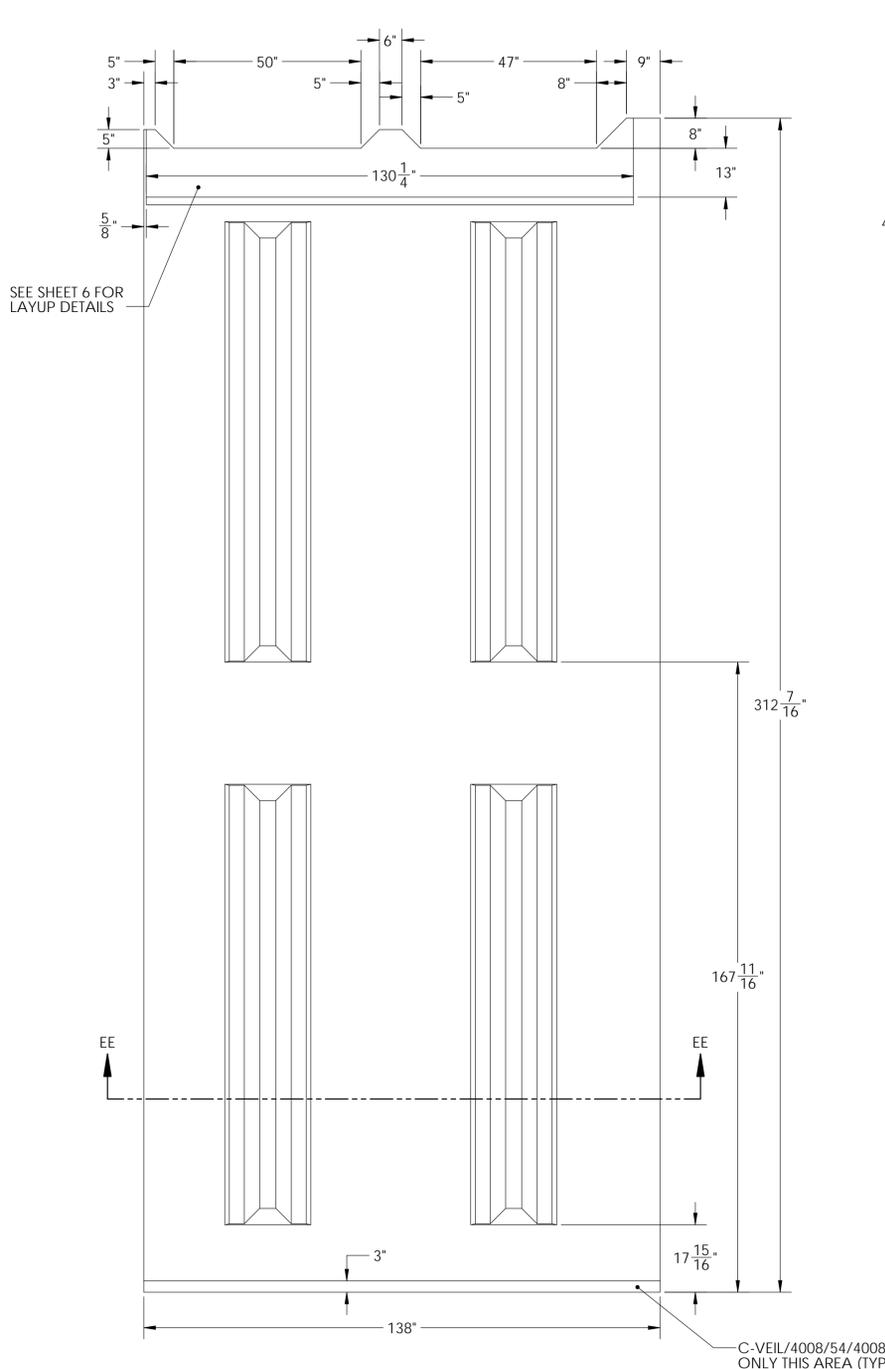
DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH.
 ANGULAR: MACH.
 TWO PLACE DECIMAL
 THREE PLACE DECIMAL

DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14

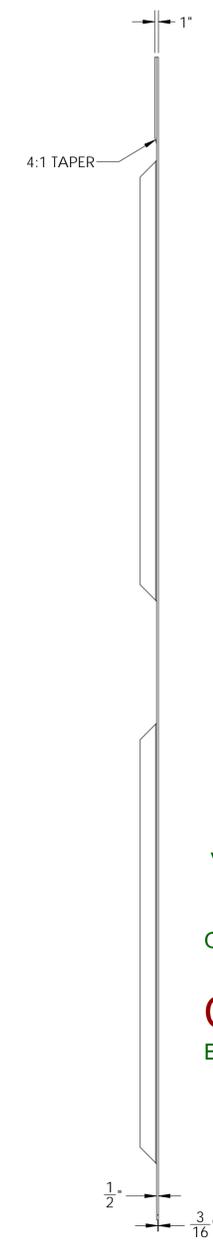
PROJECT: BROOKFIELD FRP PONTOONS
 CUSTOMER: MILLER CONST. / VTRANS
 SHEET: END HALF TOP PLATE DIMENSIONS

WEIGHT: 1,490 lb
 DESCRIPTION: FABRICATION
 SCALE: 1 : 24
 WO NO. 8420
 CONTRACT NO. 9185
 DWG NO. 8420-6
 SHEET 14 OF 16
 PONTOON PART NO. 1,2,9,10 9

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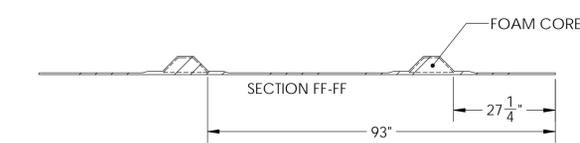
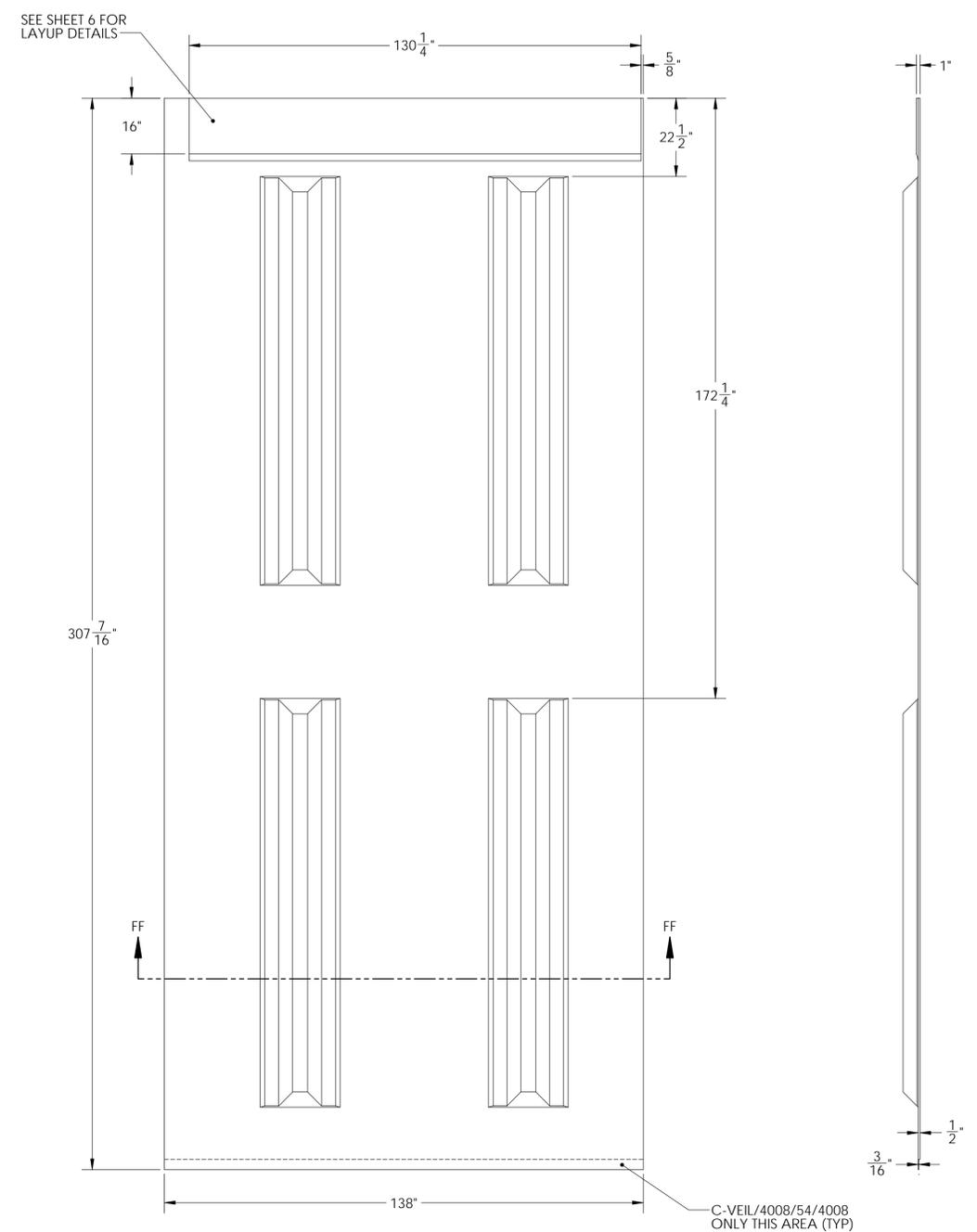


TOP PLATE SIDE A

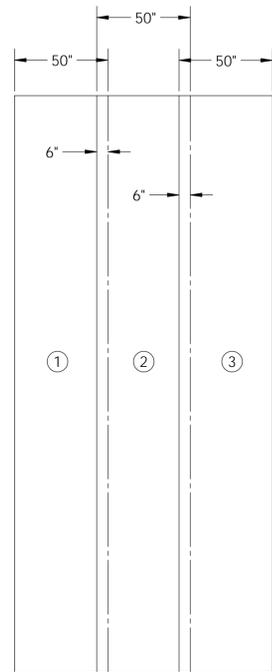


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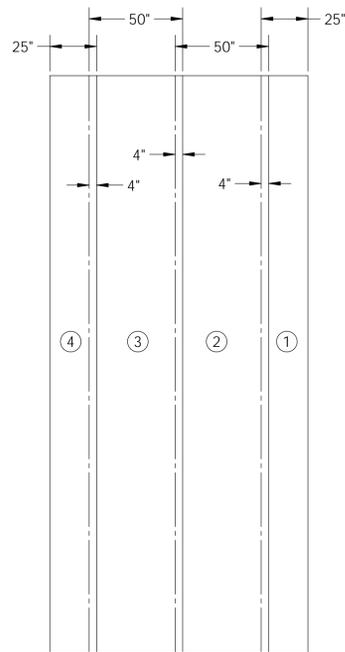
TOP SIDE A SHOWN FOR PONTOONS 2 & 9 - MIRROR ABOUT LONGITUDINAL AXIS FOR PONTOONS 1 & 10
 NOTE:
 1 2 LAYERS OF 2" PERFORATED FOAM CORE WITH 1.5OZ CFM BETWEEN FOAM INFUSED WITH PRIMARY LAMINATE
 FACING LAYUP SCHEDULE: (1) 4008 / (5) 54 / (1) 4008
 SEE DETAIL M ON SHEET 13



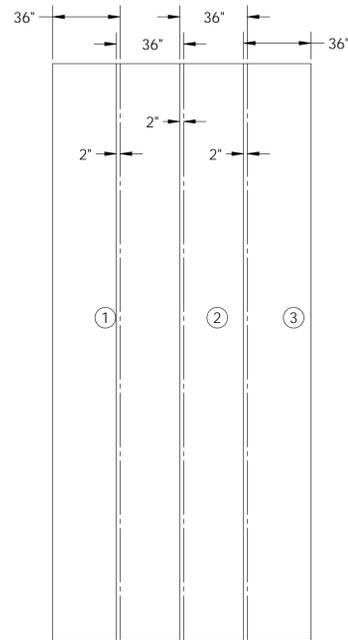
TOP PLATE SIDE B



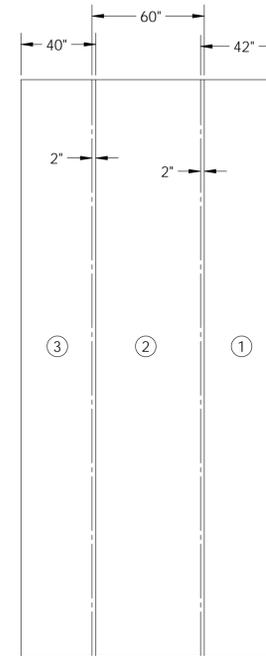
PLY # 1 - C-VEIL



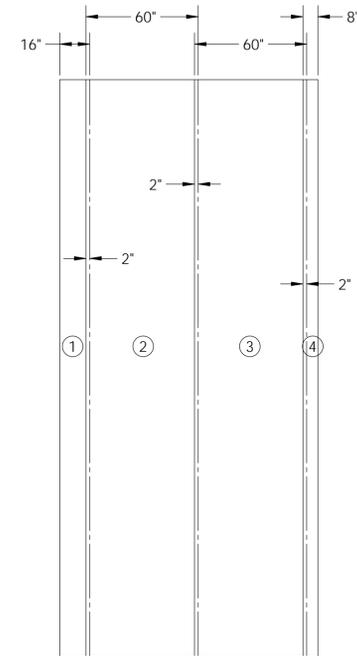
PLY # 2 - 4008



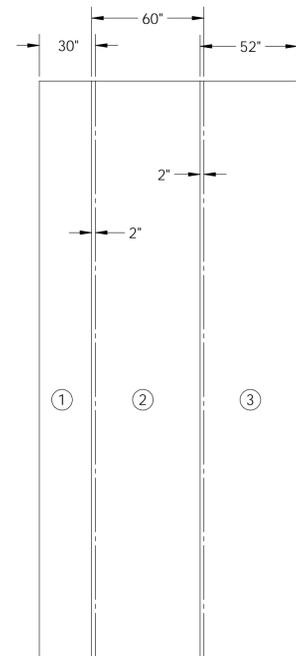
PLY # 3 - 54 oz



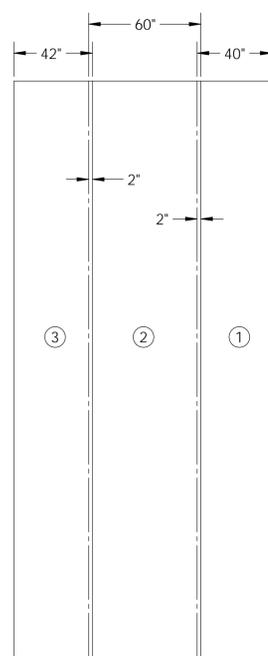
PLY # 4 - 54 oz



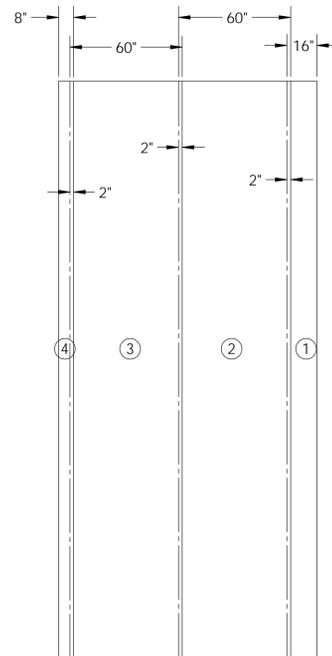
PLY # 5 - 54 oz



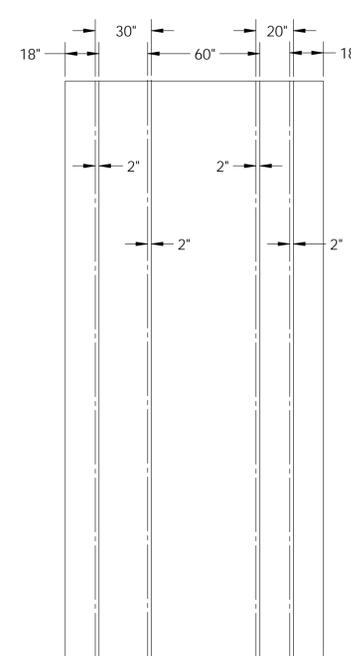
PLY # 6 - 54 oz



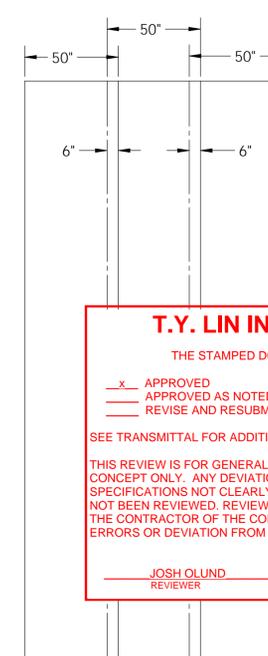
PLY # 7 - 54 oz



PLY # 8 - 54 oz



PLY # 9 - 54 oz



PLY # 10 - 4008

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NOTE:
 1. SEE SHEET 13 OR 14 FOR REQUIRED LENGTH
 2. PLYS 4-9 ARE 3" SHORTER TO CREATE LAP SPLICE WHERE TOP PLATES ARE JOINED



DATE	6/27/14
DESCRIPTION	CHANGED ALL 54 OZ FABRIC TO 2" MIN. OVERLAP
REV	1

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH.
 ANGULAR: MACH.
 TWO PLACE DECIMAL
 THREE PLACE DECIMAL

DRAWN BY	ML	DATE	6/4/14
CHKD BY	JM	DATE	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS
 CUSTOMER: MILLER CONST. / VTRANS
 SHEET: HALF TOP PLATE LAYOUT SCHEDULE

WEIGHT:	1,490 lb
DESCRIPTION:	FABRICATION
SCALE	1 : 48
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-6
SHEET	15 OF 16
PONTOON PART NO.	N/A



DATE	REV	DESCRIPTION

SEAL

DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 FRACTIONAL: MACH.
 ANGULAR: MACH.
 BEND ±
 TWO PLACE DECIMAL ±
 THREE PLACE DECIMAL ±

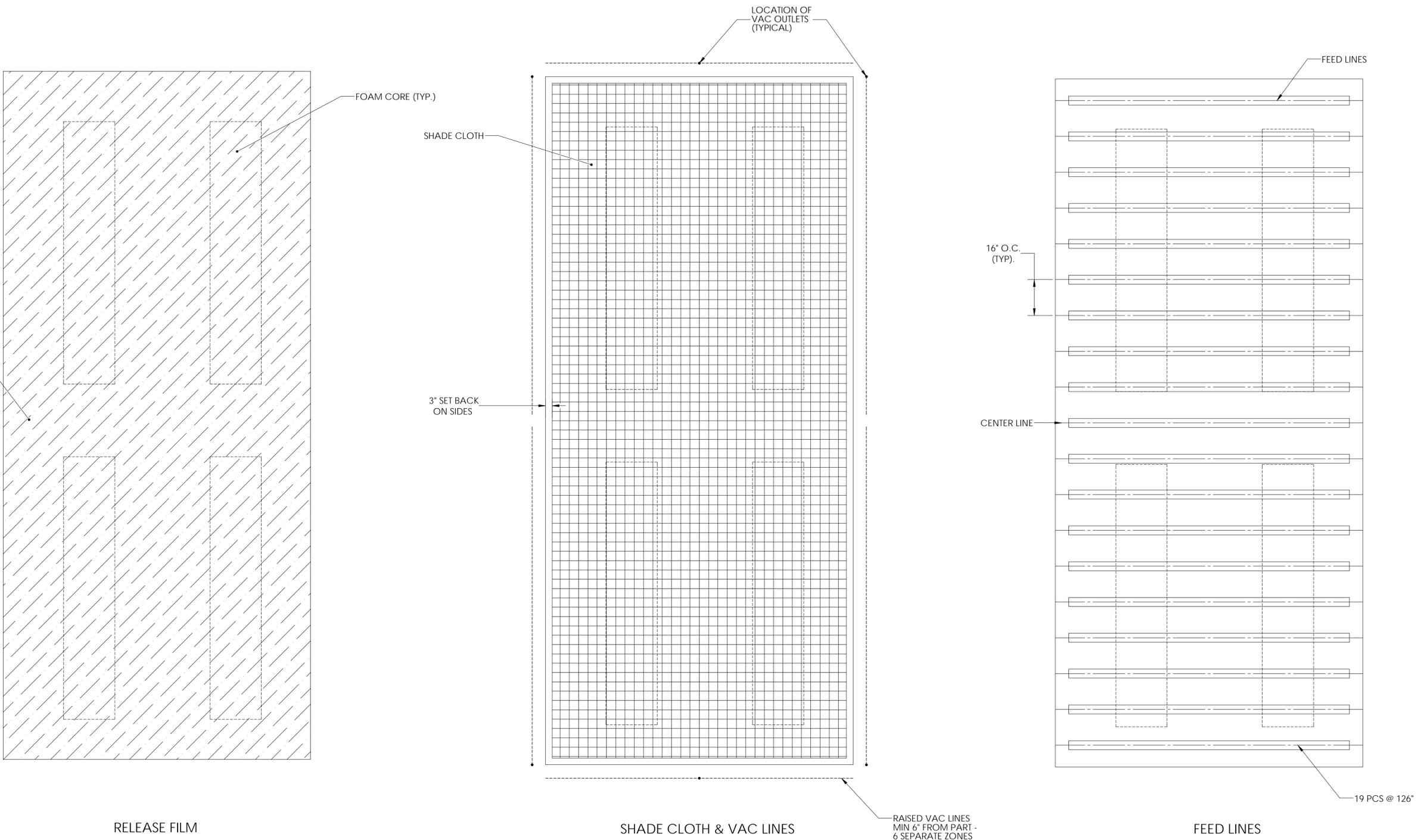
DRAWN BY	DATE
ML	6/4/14
CHKD BY	DATE
JM	6/4/14

PROJECT: BROOKFIELD FRP PONTOONS

CUSTOMER: MILLER CONST. / VTRANS

SHEET: HALF TOP PLATE INFUSION LAYOUT AND DETAILS

WEIGHT:	N/A
DESCRIPTION:	FABRICATION
SCALE:	1 : 24
WO NO.:	8420
CONTRACT NO.:	9185
DWG NO.:	8420-6
SHEET:	16 OF 16
PONTOON PART NO.:	N/A



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INFUSION SET-UP DETAILS

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STATE OF VERMONT
BROOKFIELD FLOATING BRIDGE

BRIDGE REPLACEMENT PROJECT

PROJECT NAME: BROOKFIELD

PROJECT NUMBER: BRF FLBR (2)

JUNE 4, 2014

FIBER REINFORCED POLYMER (FRP) PONTOON COMPONENT ASSEMBLY

Vermont Agency of Transportation

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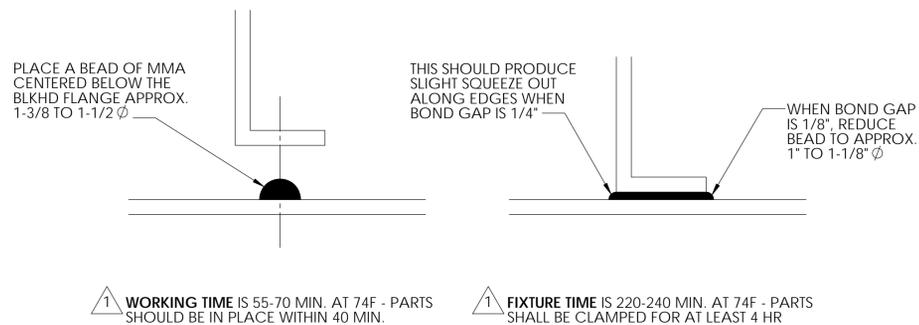
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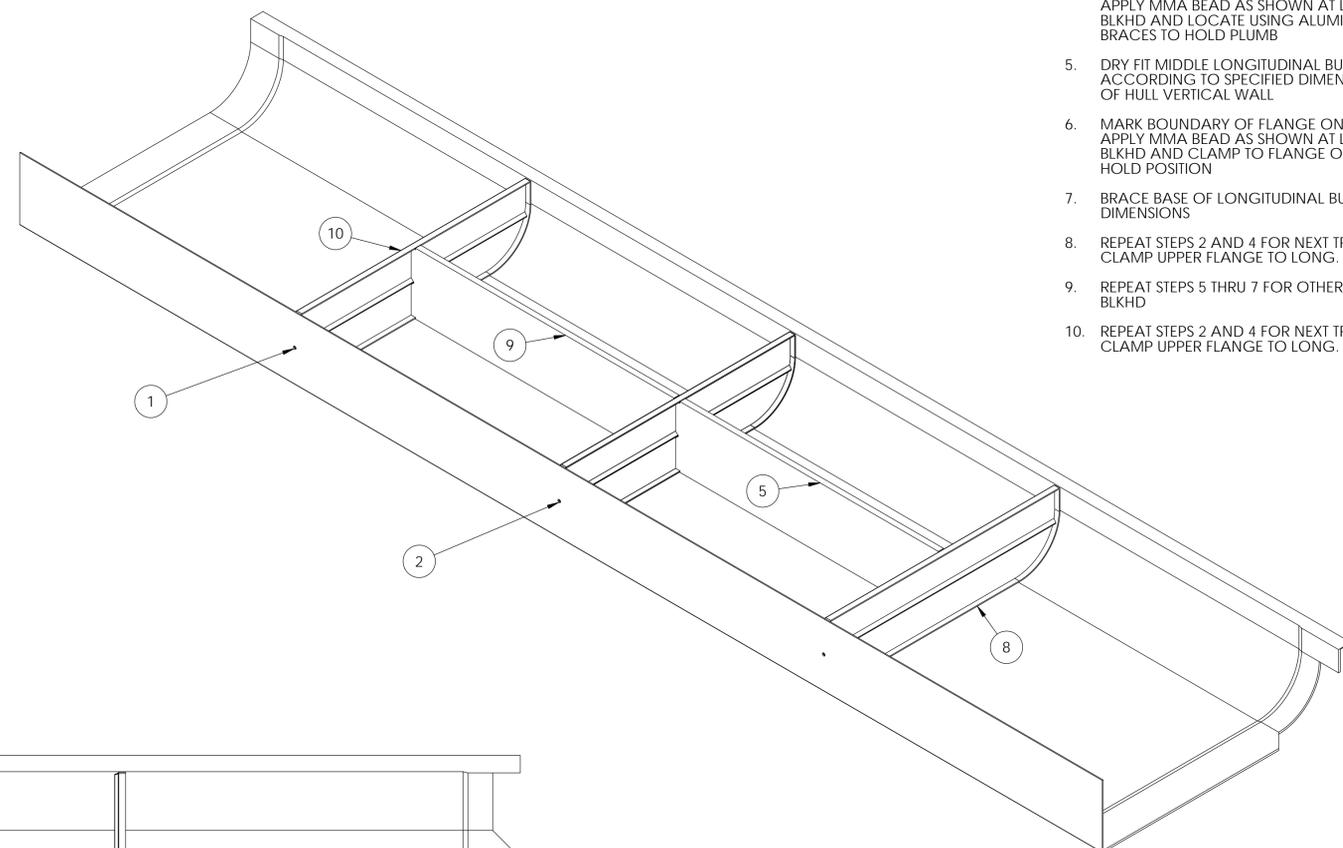


TYPICAL BONDING APPROACH

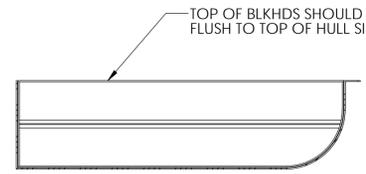
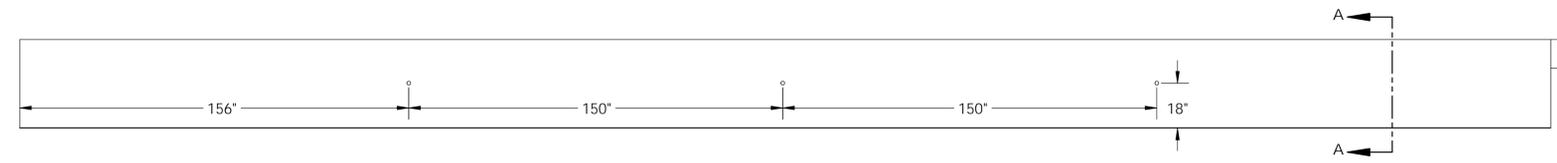
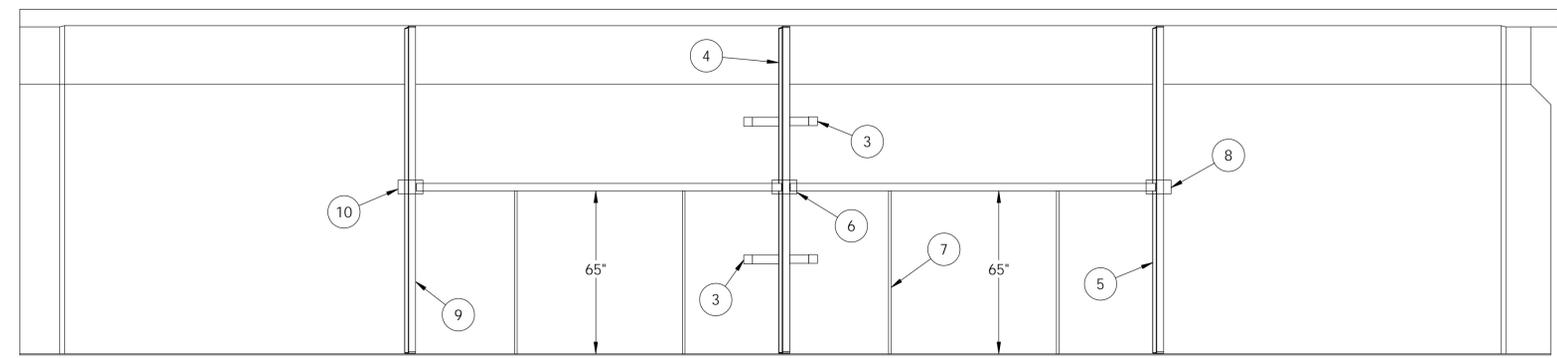


NOTES:
 ALL GLUED SURFACES ARE TO BE VACUUM CLEANED AND WIPED WITH ALCOHOL PRIOR TO BONDING
 SELECT THE PROPER SPACERS WHEN DRY FITTING PARTS TO MAINTAIN NECESSARY BONDLINE - NOMINAL GAP IS 1/4" (HAVE 3/16" & 5/16" AVAILABLE)

1. REMOVE PLUGS FROM LOCATOR SLEEVES IN MOLD AND DRILL 1-1/2" HOLE THRU HULL WALL (6 PLACES)
2. DRY FIT CENTER TRANSVERSE BULKHEAD AND ALIGN BY PUSHING 1-1/2" ALUMINUM TUBE THRU HULL SLEEVES AND BULKHEAD - NOTE: PROPERLY SEAL AND APPLY FREKOTE RELEASE PRODUCTS TO ALUMINUM TUBE
3. HOT GLUE 2X4 BLOCKS TO HULL AND DRY FIT BRACES TO HOLD BLKHD PLUMB (4 PLACES)
4. MARK BOUNDARY OF FLANGE ON HULL, LIFT BLKHD AND APPLY MMA BEAD AS SHOWN AT LEFT (1/4" GAP), LOWER BLKHD AND LOCATE USING ALUMINUM TUBE, REPOSITION BRACES TO HOLD PLUMB
5. DRY FIT MIDDLE LONGITUDINAL BULKHEAD - PLACE ACCORDING TO SPECIFIED DIMENSION FROM INSIDE FACE OF HULL VERTICAL WALL
6. MARK BOUNDARY OF FLANGE ON HULL, LIFT BLKHD AND APPLY MMA BEAD AS SHOWN AT LEFT (1/4" GAP), LOWER BLKHD AND CLAMP TO FLANGE OF TRANSVERSE BLKHD TO HOLD POSITION
7. BRACE BASE OF LONGITUDINAL BULKHEAD TO HOLD DIMENSIONS
8. REPEAT STEPS 2 AND 4 FOR NEXT TRANSVERSE BLKHD THEN CLAMP UPPER FLANGE TO LONG. BLKHD
9. REPEAT STEPS 5 THRU 7 FOR OTHER MIDDLE LONGITUDINAL BLKHD
10. REPEAT STEPS 2 AND 4 FOR NEXT TRANSVERSE BLKHD THEN CLAMP UPPER FLANGE TO LONG. BLKHD



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SECTION A-A
 SCALE 1 : 36

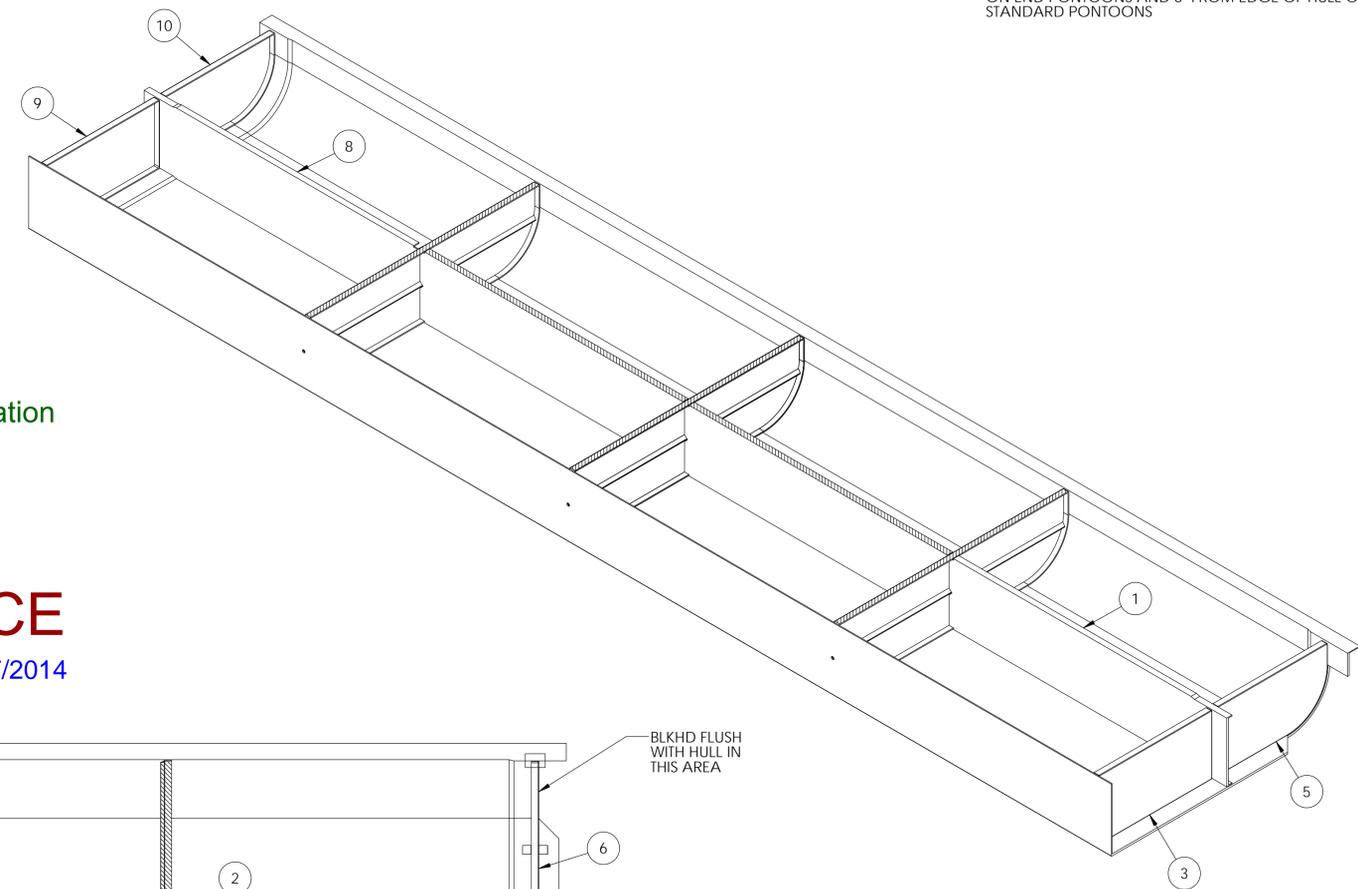
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 JOSH OLUND REVIEWER 07/03/2014 DATE

DATE	6/26/14
DESCRIPTION	ADDED MMA WORKING AND FIXTURE TIME NOTES
REV	1
DRAWN BY	JM
DATE	6/2/14
CHKD BY	XX
DATE	X/X/XX
PROJECT	BROOKFIELD FRP PONTOONS
CUSTOMER	MILLER CONST. / VTRANS
SHEET	PONTOON ASSEMBLY - STEP 1
WEIGHT:	5,195 LB
DESCRIPTION:	ASSEMBLY
SCALE	1 : 36
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-8
SHEET	1 OF 5
PONTOON	N/A
PART NO.	N/A

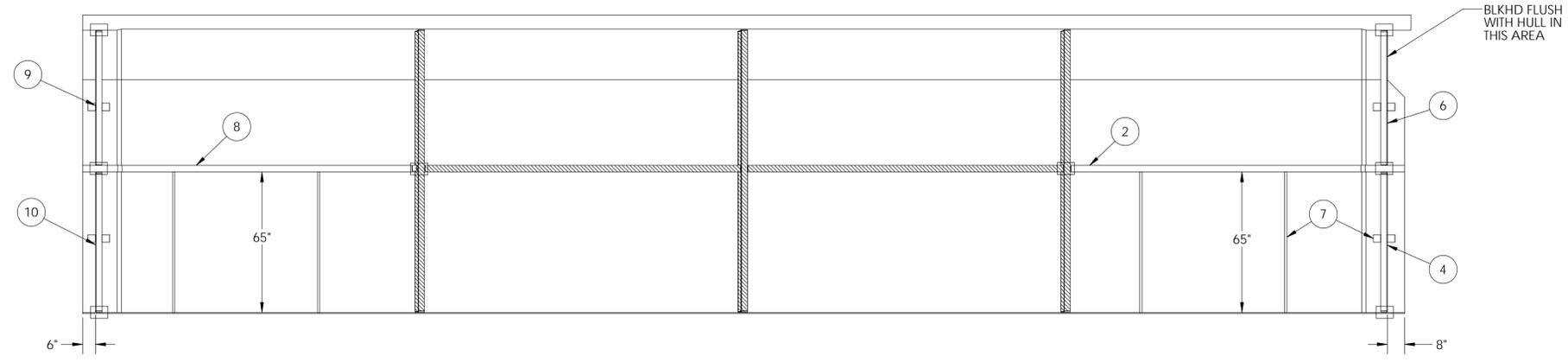


1. DRY FIT END LONGITUDINAL BLKHD - PLACE ACCORDING TO SPECIFIED DIMENSION FROM INSIDE FACE OF HULL VERTICAL WALL
2. MARK BOUNDARY OF FLANGE ON HULL, LIFT BLKHD AND APPLY MMA BEAD AS SHOWN AT LEFT (1/4" GAP), LOWER BLKHD AND CLAMP TO FLANGE OF TRANSVERSE BLKHD
3. DRY FIT END SQUARE BULKHEAD - PLACE ACCORDING TO SPECIFIED DIMENSION FROM END OF HULL
4. MARK BOUNDARY OF FLANGE ON HULL, LIFT BLKHD AND APPLY MMA BEAD AS SHOWN ON SHEET 1 (1/4" GAP), LOWER BLKHD AND CLAMP TO FLANGE OF LONGITUDINAL BLKHD AND TOP OF HULL MOLD
5. DRY FIT END RADIUS BULKHEAD - PLACE ACCORDING TO SPECIFIED DIMENSIONS FROM END OF HULL
6. MARK BOUNDARY OF FLANGE ON HULL, LIFT BLKHD AND APPLY MMA BEAD AS SHOWN AT LEFT (1/4" GAP), LOWER BLKHD AND CLAMP TO FLANGE OF LONGITUDINAL BLKHD AND TOP OF HULL MOLD
7. BRACE BASE OF LONGITUDINAL AND END BULKHEADS TO HOLD DIMENSIONS AND KEEP PLUMB
8. REPEAT STEPS 1 AND 2 FOR OTHER LONGITUDINAL BLKHD
9. REPEAT STEPS 3 AND 4 FOR OTHER END SQUARE BULKHEAD
10. REPEAT STEPS 5 AND 6 FOR OTHER END RADIUS BULKHEAD

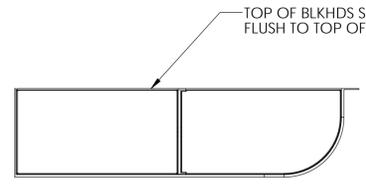
NOTES:
 ALL GLUED SURFACES ARE TO BE VACUUM CLEANED AND WIPED WITH ALCOHOL PRIOR TO BONDING
 SELECT THE PROPER SPACERS WHEN DRY FITTING PARTS TO MAINTAIN NECESSARY BONDLINE - NOMINAL GAP IS 1/4" (HAVE 3/16" & 5/16" AVAILABLE)
 FACE OF END BULKHEADS IS 8" FROM EDGE OF HULL ON END PONTOONS AND 6" FROM EDGE OF HULL ON STANDARD PONTOONS



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 BY: Jennifer Fitch DATE: 07/07/2014



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 _____ JOSH OLUND 07/03/2014
 REVIEWER DATE



DATE	DESCRIPTION	REV

DRAWN BY	DATE
JM	6/3/14
CHKD BY	DATE
XX	X/X/XX

PROJECT	BROOKFIELD FRP PONTOONS
CUSTOMER	MILLER CONST. / VTRANS
SHEET	PONTOON ASSEMBLY - STEP 2

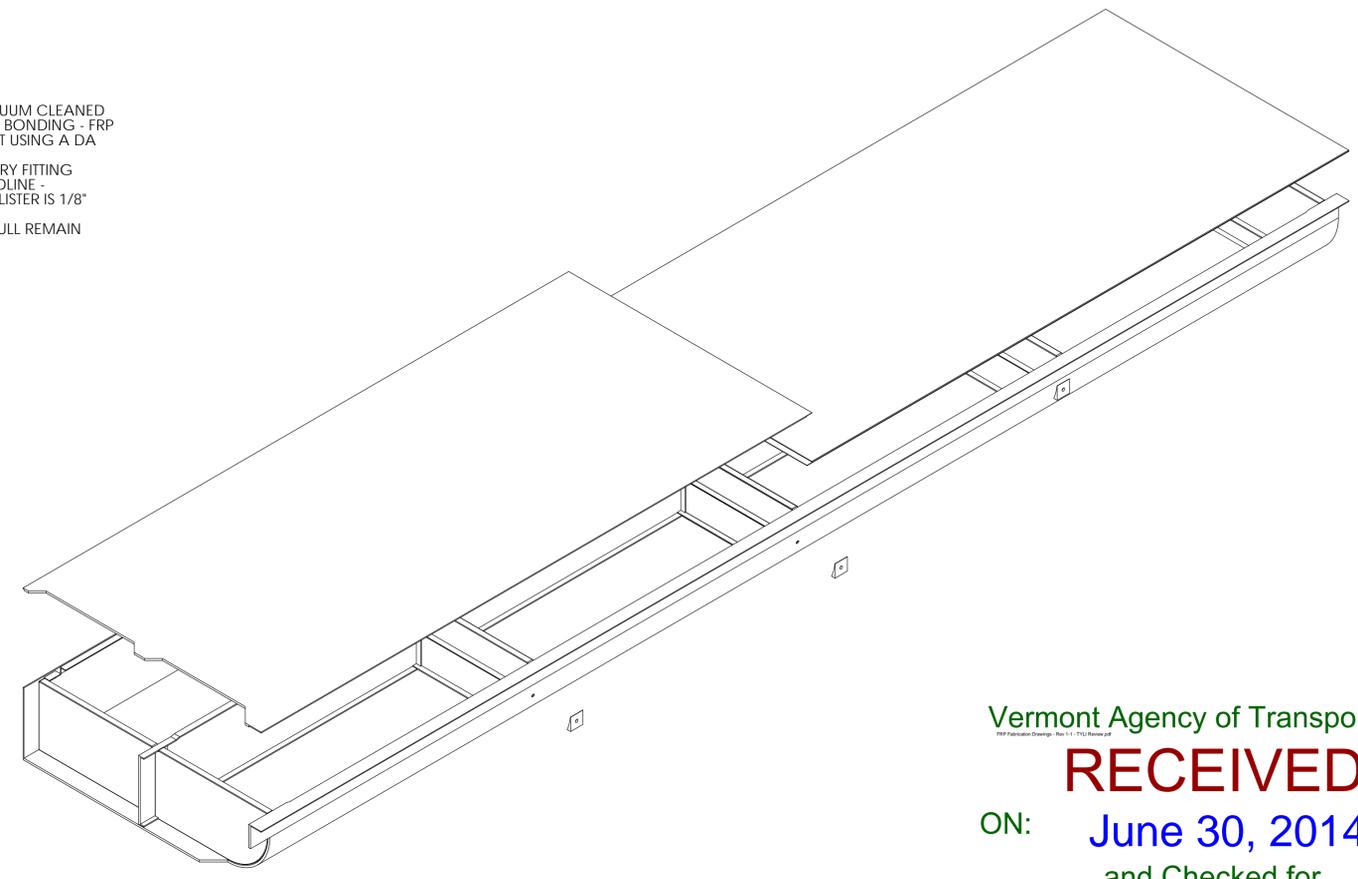
WEIGHT:	6,058 LB
DESCRIPTION:	ASSEMBLY
SCALE	1 : 36
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-8
SHEET	2 OF 5
PONTOON PART NO.	N/A



DATE	6/26/14
DESCRIPTION	CLARIFIED MMA BEAD SIZE FOR 3" AND 6" FLANGES
REV	1

- REMOVE LIFTING PLATES BY CUTTING FLUSH WITH TOP OF BULKHEAD FLANGE
- DRY FIT TOP PLATES - PAY ATTENTION TO WHICH PLATE HAS THE LOWER LIP FOR THE LAP JOINT AND PLACE FIRST
- PLACE 1/8" SPACERS BENEATH TOP PLATES WHEN DRY FITTING AND ENSURE ALL TOLERANCES ARE WITHIN SPEC - ADJUST SPACER THICKNESS AS NEEDED
- APPLY A 1" WIDE BEAD OF MMA CENTERED ON THE 3" GLUE FLANGES AND A 1-1/2" WIDE BEAD ON THE 6" FLANGE FOR A 1/8" BOND LINE (SEE SHEET 1) AND PLACE FIRST TOP PLATE
- REPEAT THE PROCESS FOR PLACING THE OTHER TOP PLATE - PLACE A 1" WIDE BEAD ACROSS THE LAP JOINT ON THE FIRST PLATE
- WIPE OFF ANY EXCESS ADEHSIVE THAT SQUEEZES OUT - USE A SPATULA TO CREATE AN ADEHSIVE FILLET AT ALL INSIDE CORNERS AT EACH END
- BOND THE FRP BLISTERS AT 3 LOCATIONS AS SHOWN ENSURING THE HOLE IN THE BLISTER IS CENTERED ON THE HOLE IN THE HULL (NOMINAL 1/8" BOND LINE)
- APPLY LABEL TO UPSTATION END OF PONTOON AND MOVE TO STAGING AREA FOR RAFT ASSEMBLY AND DRILLING

NOTES:
 ALL GLUED SURFACES ARE TO BE VACUUM CLEANED AND WIPED WITH ALCOHOL PRIOR TO BONDING - FRP ANGLE MUST BE SCUFFED WITH 60-GRIT USING A DA
 SELECT THE PROPER SPACERS WHEN DRY FITTING PARTS TO MAINTAIN NECESSARY BONDLINE - NOMINAL GAP FOR TOP PLATE AND BLISTER IS 1/8"
 ENSURE THRU HOLES IN BLISTER AND HULL REMAIN CLEAR OF ADHESIVE



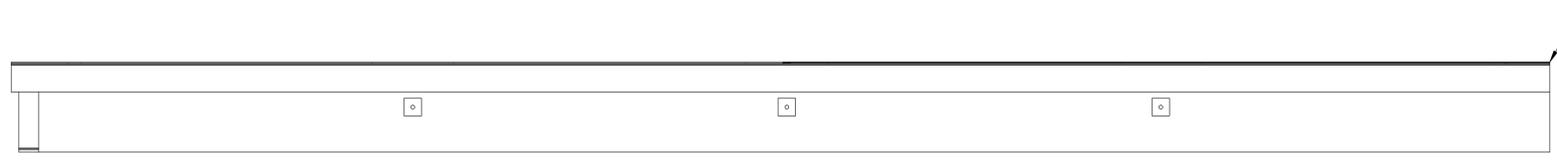
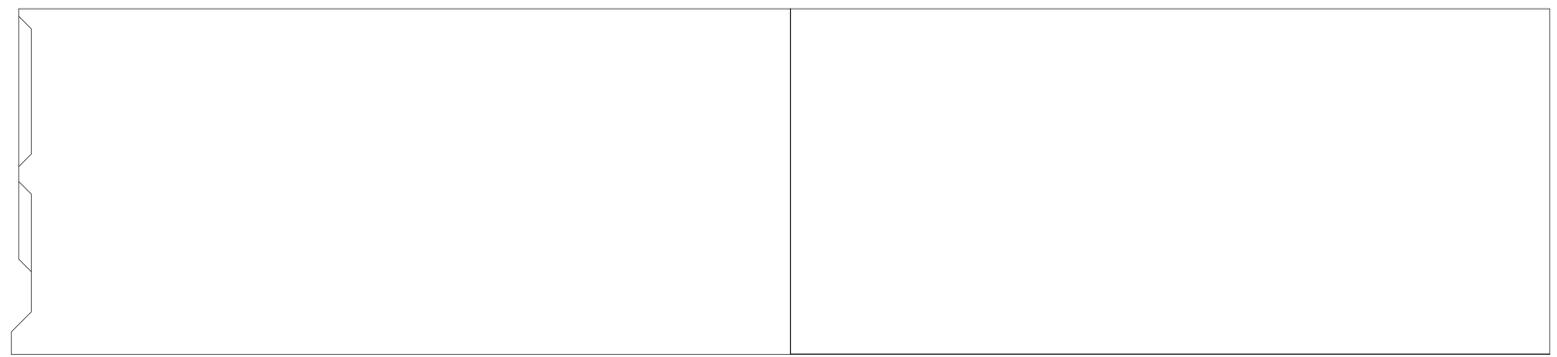
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SEAL
 DIMENSIONS ARE IN INCHES
 TOLERANCES: +0, -1/16"
 ANGULAR: MACH + BEND +
 TWO PLACE DECIMAL +
 THREE PLACE DECIMAL +

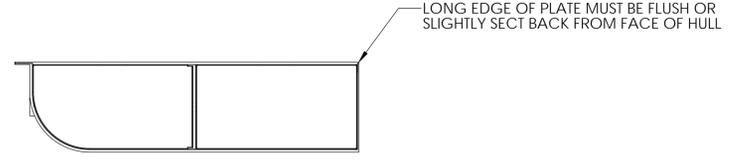
DRAWN BY	JM <th>DATE</th> <td>6/4/14</td>	DATE	6/4/14
CHKD BY	XX	DATE	X/X/XX

PROJECT: BROOKFIELD FRP PONTOONS
 CUSTOMER: MILLER CONST. / VTRANS
 SHEET: PONTOON ASSEMBLY - STEP 4

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 JOSH OLUND 07/03/2014
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ENSURE PLATE IS FLUSH WITH HULL



LONG EDGE OF PLATE MUST BE FLUSH OR SLIGHTLY SECT BACK FROM FACE OF HULL

WEIGHT:	12,735 lb
DESCRIPTION:	ASSEMBLY
SCALE	1 : 36
WO NO.	8420
CONTRACT NO.	9185
DWG NO.	8420-8
SHEET	4 OF 5
PONTOON PART NO.	N/A



DATE
6/26/14

REV	DESCRIPTION
1	ADDED NOTES AND DIMENSIONS TO SPLICE DETAILS

SEAL

DIMENSIONS ARE IN INCHES
TOLERANCES: +0, -1/16"
FRACTIONAL
ANGULAR: MACH ±
TWO PLACE DECIMAL
BEND ±
THREE PLACE DECIMAL

DRAWN BY
JM

DATE
6/4/14

CHKD BY
XX

DATE
X/X/XX

PROJECT
BROOKFIELD FRP PONTOONS

CUSTOMER
MILLER CONST. / VTRANS

SHEET
RAFT ASSEMBLY - BOLT HOLE LOCATIONS

WEIGHT: N/A

DESCRIPTION:
ASSEMBLY

SCALE 1 : 36

WO NO. 8420

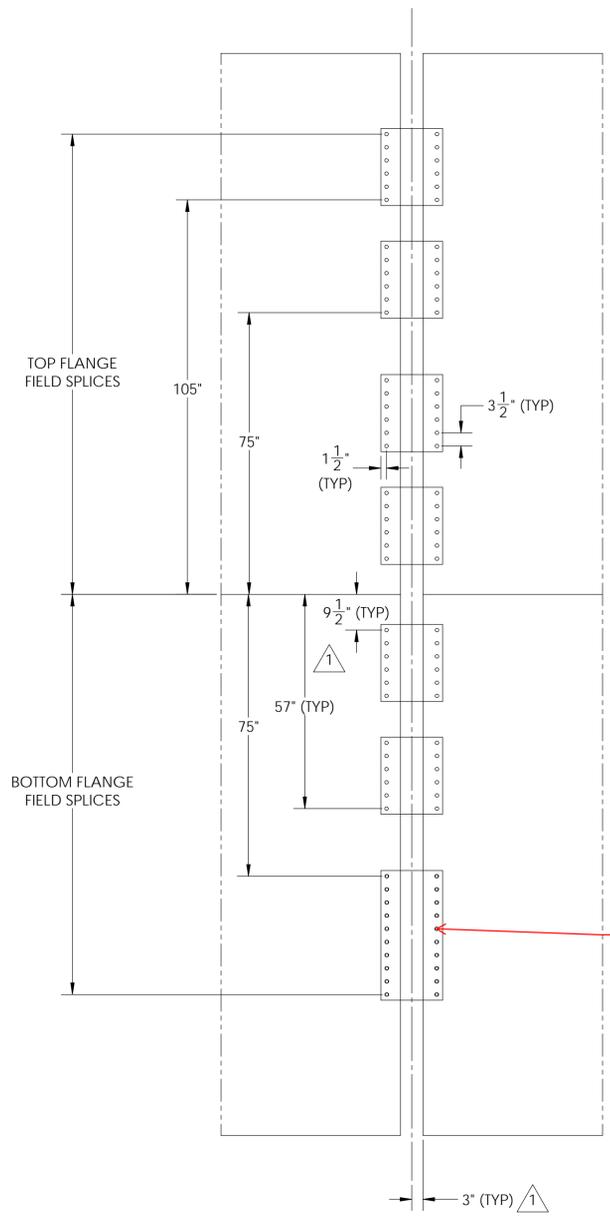
CONTRACT NO. 9185

DWG NO. 8420-8

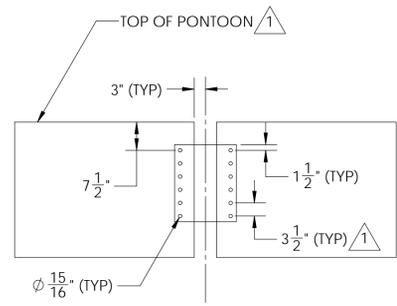
SHEET 5 OF 5

PONTOON PART NO. N/A

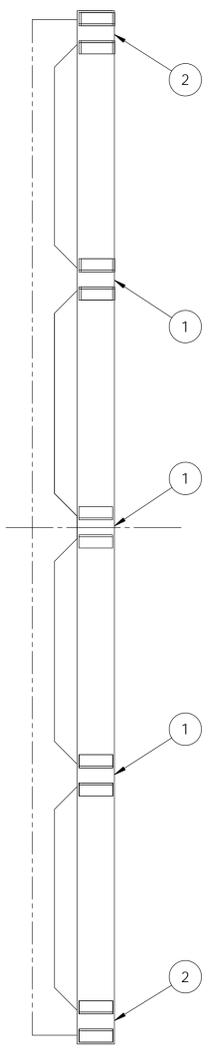
NOTES:
LEVEL PONTOONS ON BOAT STANDS AND SNUG
THREADED ROD THRU EACH RAFT - VERIFY ALIGNMENT
AND SET REFERENCE MARKS
VERIFY ALIGNMENT USING ROTARY LASER LEVEL IN
EACH PLANE BETWEEN ADJACENT RAFTS
ALIGN THE CNC MACHINED DRILLING TEMPLATE TO
THE BOLT HOLE LOCATIONS PROVIDED IN THIS
DRAWING AND DRILL 1/8" PILOT HOLES
REMOVE TEMPLATE AND DRILL 15/16" THRU HOLES
USING A MAG DRILL TO ENSURE ACCURACY



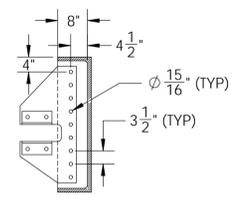
TOP AND BOTTOM FLANGE FIELD SPLICES



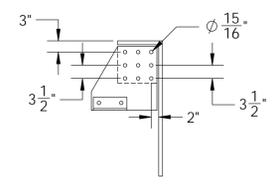
WEB SPLICE DETAILS



STAINLESS SHELF SUPPORT PLATE LOCATIONS



1 - INTERIOR SUPPORT PLATE BOLTING



2 - EXTERIOR SUPPORT PLATE BOLTING

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DATE 6/26/14

DESCRIPTION
ADDED MATERIAL AND ROLL DIRECTION NOTES

REV 1

SEAL

DIMENSIONS ARE IN INCHES
TOLERANCES: +0, -1/16"
FRACTIONAL: MACH.
ANGULAR: MACH.
TWO PLACE DECIMAL
THREE PLACE DECIMAL

DRAWN BY JM DATE 5/29/14

CHKD BY XX DATE XX/XX/XX

PROJECT
BROOKFIELD FRP PONTOONS

CUSTOMER
MILLER CONST. / VTRANS
SHEET
GALVANIZED STEEL FABRICATION

WEIGHT: N/A

DESCRIPTION:
FABRICATION

SCALE 1 : 6

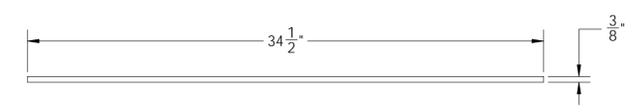
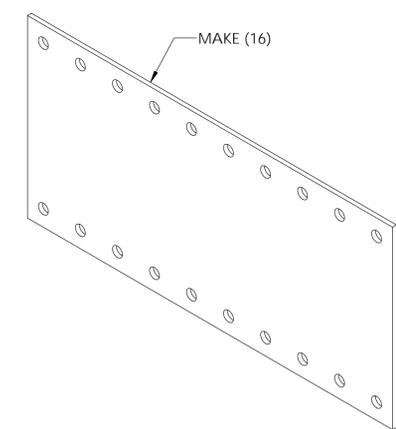
WO NO. 8420

CONTRACT NO. 9185

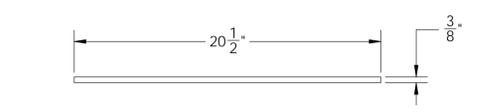
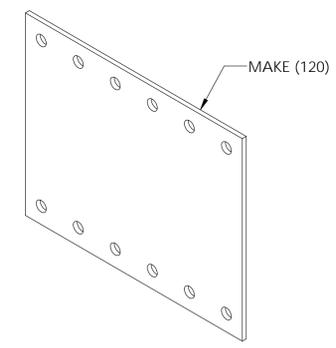
DWG NO. 8420-7

SHEET 1 OF 1

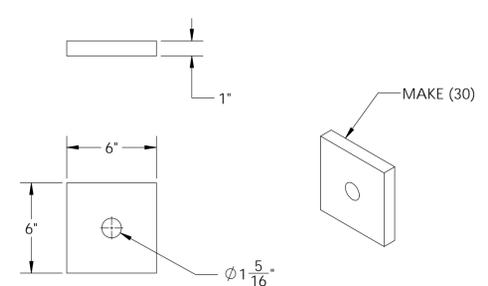
PONTOON PART NO. N/A



GALVANIZED SPLICE PLATE - LONG



GALVANIZED SPLICE PLATE - SHORT



GALVANIZED BEARING PLATE

NOTES:

- STRUCTURAL STEEL SHALL MEET AASHTO M 270M/M 270, GRADE 50 (50 KSI) STEEL
- STRUCTURAL STEEL SHALL BE CHARPY V-NOTCH TESTED PER AASHTO T 243
- STRUCTURAL STEEL SHALL BE GALVANIZED IN CONFORMANCE WITH AASHTO M 111M/M 111
- STEEL HARDWARE SHALL MEET REQUIREMENTS OF ASTM A325, TYPE I (7/8" Ø BOLTS THROUGHOUT) **THREADS OF BOLTS SHALL BE EXCLUDED FROM THE THICKNESS OF THE CONNECTED MATERIAL.**
- STEEL HARDWARE SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH AASHTO M 298, CLASS 50, TYPE 1
- THREADED ROD SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 75 (1-1/4" Ø THROUGHOUT)
- THREADED ROD NUTS SHALL BE IN ACCORDANCE WITH ASTM A108
- THREADED ROD WASHERS SHALL BE IN ACCORDANCE WITH ASTM F436
- BEARING PLATES SHALL MEET THE REQUIREMENTS OF AASHTO M 270M/M 270, GRADE 36 (36 KSI)
- THREADED ROD COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M 111 (PRODUCTS) OR AASHTO M 232M/M 232 (HARDWARE)

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