

# MARINE STRUCTURES ENGINEERING, INC.

1004 Commercial Avenue, #364 Anacortes, WA 98221 (360) 466-8627 Fax: (360) 230-2310

PORT OF PORT TOWNSEND  
8' X 40' AND 8' X 15' TRAVELLIFT FLOATS  
FLOTATION CALCULATIONS

OCTOBER 2011



For:  
Matheus Lumber Company  
P.O. Box 2260  
15800 Woodinville-Redmond Road  
Woodinville, WA 98072-2260

PORT TOWNSEND TRAVELLIFT FLOAT  
FLOAT DEAD LOAD

10/19/2011

①

FLOAT 8'-0"x 40'-0"

IN THE WATER, ALL DEAD LOADS

Component	Width	Size		Length	Unit Weight	Quantity	Weight
	8	x		40			
	L	W	D				
	(in)	(in)	(in)		(lbs)		(lbs)
Timber Deck	96	5.5	2.5		50	84	3208.3
Longitudinal Glulam Wales	480	5.125	7.5		50	2	1067.7
Longitudinal Glulam Ledgers	473.5	3.125	7.5		50	2	642.2
End Glulam Wales	85.5	3.125	7.5		50	2	116.0
Transverse Timber Sills	96	5.5	3.5		50	9	481.3
4 x 6 Bullrail - Sides	480	5.5	3.5		50	0	0.0
4 x 6 Bullrail - Ends	96	5.5	3.5		50	0	0.0
UHMW Bullrail - Scupper	6	4	3.5		50	0	0.0
Rubstrip - Sides	480	2.5	9.5		50	2	659.7
Timber Rubstrip - Ends	96	2.5	9.5		50	2	131.9
96x36x20 Float Drum	96	36	20		2.6	6	624.0
Float Hinge	1	1	1		100	0	0.0
Pile Hoop	1	1	1		145	2	290.0
Angle Clips	1	1	1		8	8	64.0
Bolts and Nails	1	1	1		100	1	100.0
12" Cleats	1	1	1		15	10	150.0
Misc.	1	1	1		50	1	50.0
							7585.2
Average Wt.	23.70	PSF					



PORT TOWNSEND TRAVELLIFT FLOAT  
FLOAT DEAD LOAD

10/19/2011

③

FLOAT 8'-0" x 15'-0"

IN THE WATER, ALL DEAD LOADS

Float Size	Width 8	x	Length 15			
Component	L (in)	Size W (in)	D (in)	Unit Weight (lbs)	Quantity	Weight (lbs)
Timber Deck	96	5.5	2.5	50	32	1222.2
Longitudinal Glulam Wales	180	5.125	7.5	50	2	400.4
Longitudinal Glulam Ledgers	173.5	3.125	7.5	50	2	235.3
End Glulam Wales	85.5	3.125	7.5	50	2	116.0
Tranverse Timber Sills	96	5.5	3.5	50	6	320.8
4 x 6 Bullrail - Sides	480	5.5	3.5	50	0	0.0
4 x 6 Bullrail - Ends	96	5.5	3.5	50	0	0.0
UHMW Bullrail - Scupper	6	4	3.5	50	0	0.0
Rubstrip - Sides	180	2.5	9.5	50	2	247.4
Timber Rubstrip - Ends	96	2.5	9.5	50	1	66.0
72x36x16 Float Drum	72	36	20	2.85	4	342.0
Hinge	1	1	1	50	1	50.0
Pile Hoop	1	1	1	145	0	0.0
Angle Clips	1	1	1	8	8	64.0
Bolts and Nails	1	1	1	100	1	100.0
12" Cleats	1	1	1	15	4	60.0
Misc.	1	1	1	50	1	50.0
						3274.1
Average Wt.	27.28	PSF				

PORT TOWNSEND TRAVELLIFT FLOAT  
FLOTATION CHECK

10/19/2011


**Dead Load**

Float Area 120 square feet

(4)

**Dead Load**

	Weight	Wt./Sq. Ft.
Float Dead Load	3275	27.29
Gangway Reaction	0	0.00
Other Dead Load	0	0.00
<b>Total Load</b>	<b>3275</b>	<b>27.29</b>

Salt Water (22.5" FB)   
At 7.0" Reserve Float Depth

	Size		Disp. D	Unit Weight	Quantity	Flotation
	L	W				
	(in)	(in)	(in)	(lbs)		(lbs)
72x36x16 Float Drum	72	36	9	64	4	3456.0
72x36x20 Float Drum	72	36	13	64	0	0.0
Longitudinal Float Wales	180	5	0	64	2	0.0
Longitudinal Float Ledgers	173.5	3.125	0	64	2	0.0
Transverse End Wales	85.5	3.5	0	64	2	0.0
Transverse Sills	96	6	0	64	6	0.0
						<u>3456</u>

RESERVE 181

(02)

**Dead + Live Load**

	Weight	Wt./Sq. Ft.
Float Dead Load	3275	27.29
Other Dead Load	0	0.00
Live Load	3500	29.17
<b>Total Load</b>	<b>6775</b>	<b>56.46</b>

720 PSF (02)

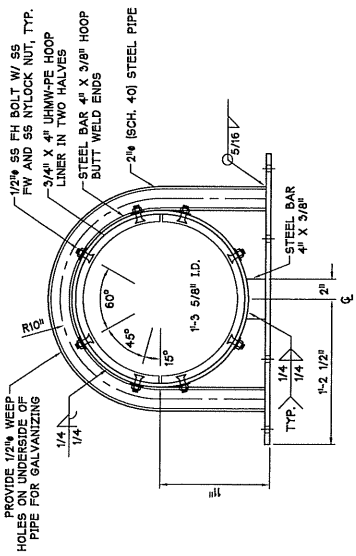
Salt Water (10" FB)  
At -5.5" Reserve Float Depth

	Size		Disp. D	Unit Weight	Quantity	Flotation
	L	W				
	(in)	(in)	(in)	(lbs)		(lbs)
72x36x16 Float Drum	72	36	16	64	4	6144.0
72x36x20 Float Drum	72	36	20	64	0	0.0
Longitudinal Float Wales	180	5	0	64	2	0.0
Longitudinal Float Ledgers	173.5	3.125	0	64	2	0.0
Transverse End Wales	85.5	3.5	0	64	2	0.0
Transverse Sills	96	5.5	5.5	64	6	0.0
						<u>645.3</u>
						6789

RESERVE 14

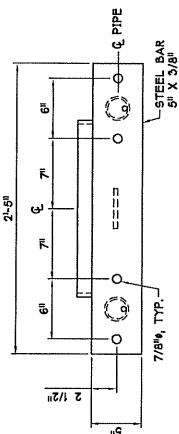






PROVIDE 1/2\"/>

1/2\"/>

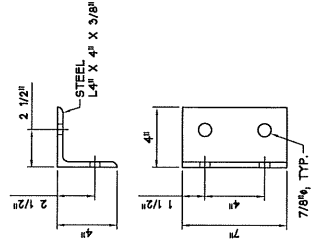


CHAMFER TOP AND BOTTOM OF UHMW-PE LINER 1/4\"/>

**SIDE PILE HOOP**

MAKE 2

HOT DIP GALVANIZE AFTER FABRICATION



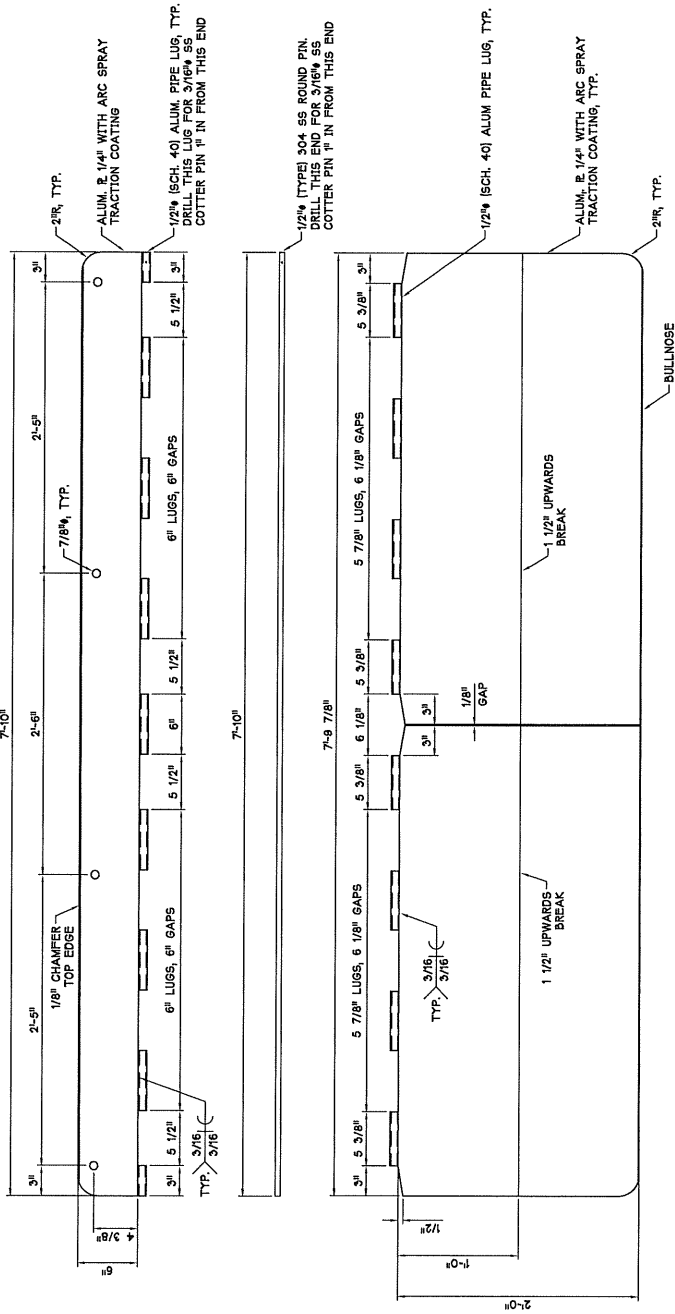
**ANGLE CLIP**

MAKE 16

HOT DIP GALVANIZE AFTER FABRICATION

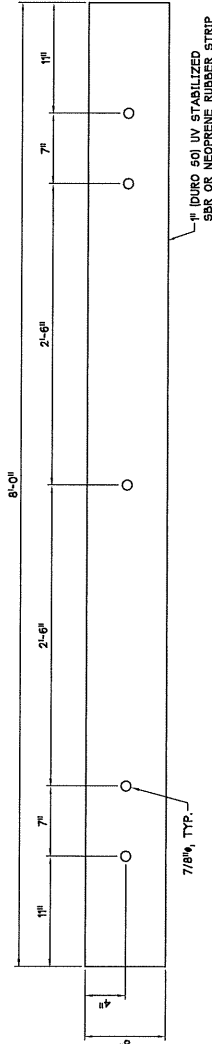


MARINE STRUCTURES ENGINEERING, INC. 1031 COMMERCIAL AVE. #304, ANACORTES, WA 98221 (360) 466-8627	
DESIGNED BY	APPROVED BY
DATE: OCT 11	DATE: OCT 11
PROJECT NO. KDL	
PROJECT: PORT OF PORT TOWNSEND TRAVELLIFT FLOAT	
DRAWING NUMBER: STEEL PILE HOOP AND ANGLE CLIP FABRICATION	
SHEET NUMBER: 3 OF 4	



**FLOAT-TO-FLOAT TRANSITION**

MAKE 1



**FLOAT-TO-FLOAT RUBBER STRIP**

MAKE 1



MARINE STRUCTURES ENGINEERING, INC.  
 1101 COMMERCIAL AVE. #541, ANACORTES, WA 98221 (206) 466-8627  
 DATE: OCT 11  
 DRAWN BY: KDL  
 PROJECT: PORT OF PORT TOWNSEND TRAVELLIFT FLOAT  
 FLOAT-TO-FLOAT TRANSITION AND RUBBER STRIP FABRICATION  
 SHEET NO. 4 OF 4