

Ladder Placement Instructions

By: Peter Germaine, Co-op Student

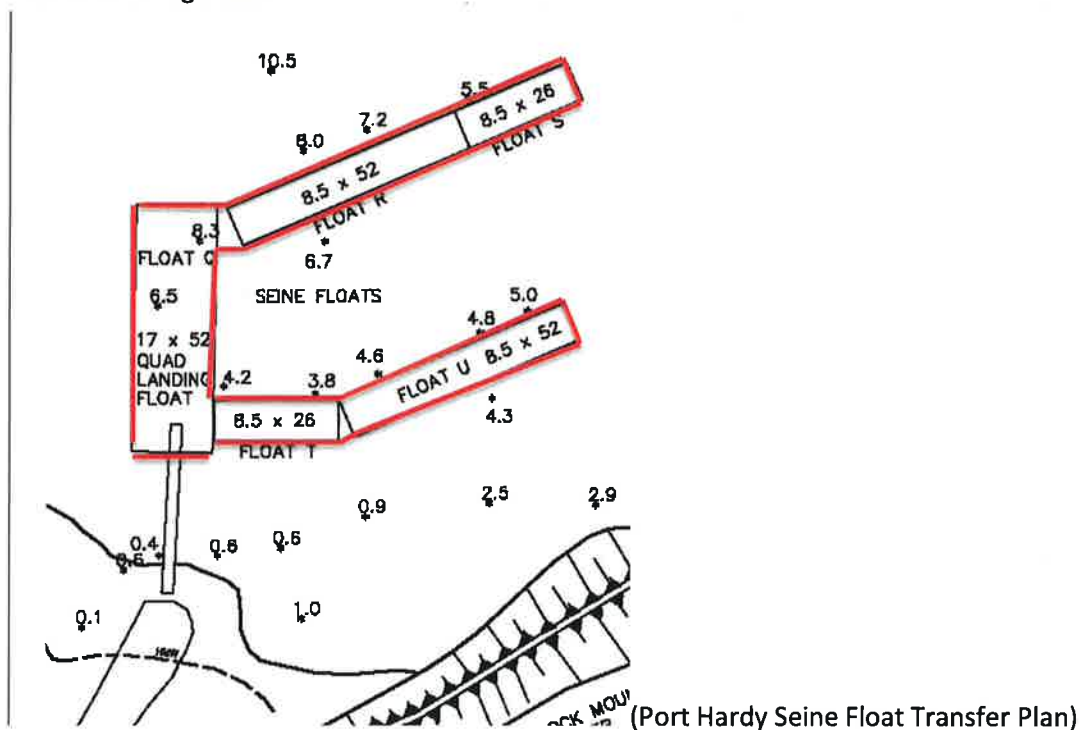
Summary

This document outlines the procedure for designing the layout of ladders on a group of floats, as per the Federal Labour Code. As of August 10, 2015, it is required to have ladders placed every 60 metres around the perimeter of the float. This means that if a person is in the water around the perimeter of any float, it must be a maximum of 30 metres to the nearest ladder.

Procedure

1. Measure the total outside perimeter of the floats. This can be done several ways, including using the transfer plan, the AutoCAD measuring tool, or Google Earth's measuring tool.

Example: In the float layout below, the perimeter that will need ladders is approximately 460m. This is shown by the red line outlining the floats; it is assumed that you cannot swim between two connecting floats.

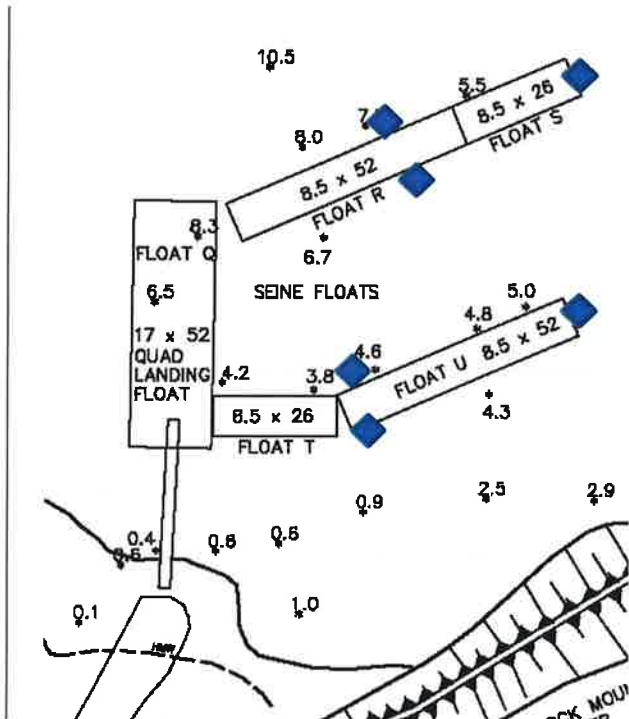


2. Divide the outside perimeter by 60 to determine how many ladders are needed to meet the requirements. **You must always round up to the nearest whole number.**

Example: When there is 460m of perimeter, you must have 8 ladders minimum in place.

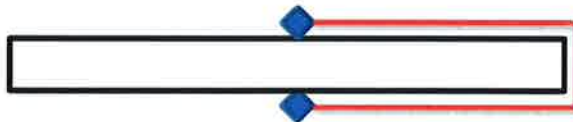
3. Now that you have estimated the amount of ladders needed, we will begin to map the placements. This is done most simply by starting at the furthest most ends of the float and working towards the centre. In this example we will begin at the end of Float U and Float S. The reason for starting at the end of each float is to allow for symmetry for each float, and then it will be easier for people to recognize where the ladders are placed. Place one ladder at each end, then a second and third ladder on each side of the float, 60m from the end ladder following the outside perimeter.

Example:



Notes:

- A. The reason for symmetry is to create consistency between the ladder layouts, then if someone has fallen into the water, it will be easier to recognize where the closest ladder may be.
- B. When placing ladders on long, narrow sections of floats, notice that there will be several scenarios you may encounter.
 - i. If the float section is narrow and under 60 metres long, you will only need a ladder on each side, as displayed in the image below. You must ensure that the total length of the red line is still less than 60 metres, to meet the requirements.

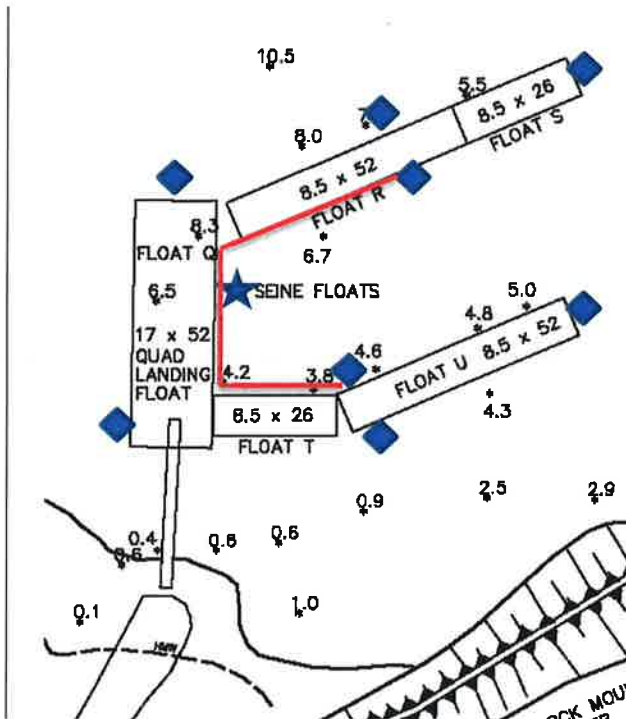


- ii. If the float section is longer than 60 metres, you will need a ladder at the end as well as on both sides, as displayed in the image below. Each line must be less than 60 metres.



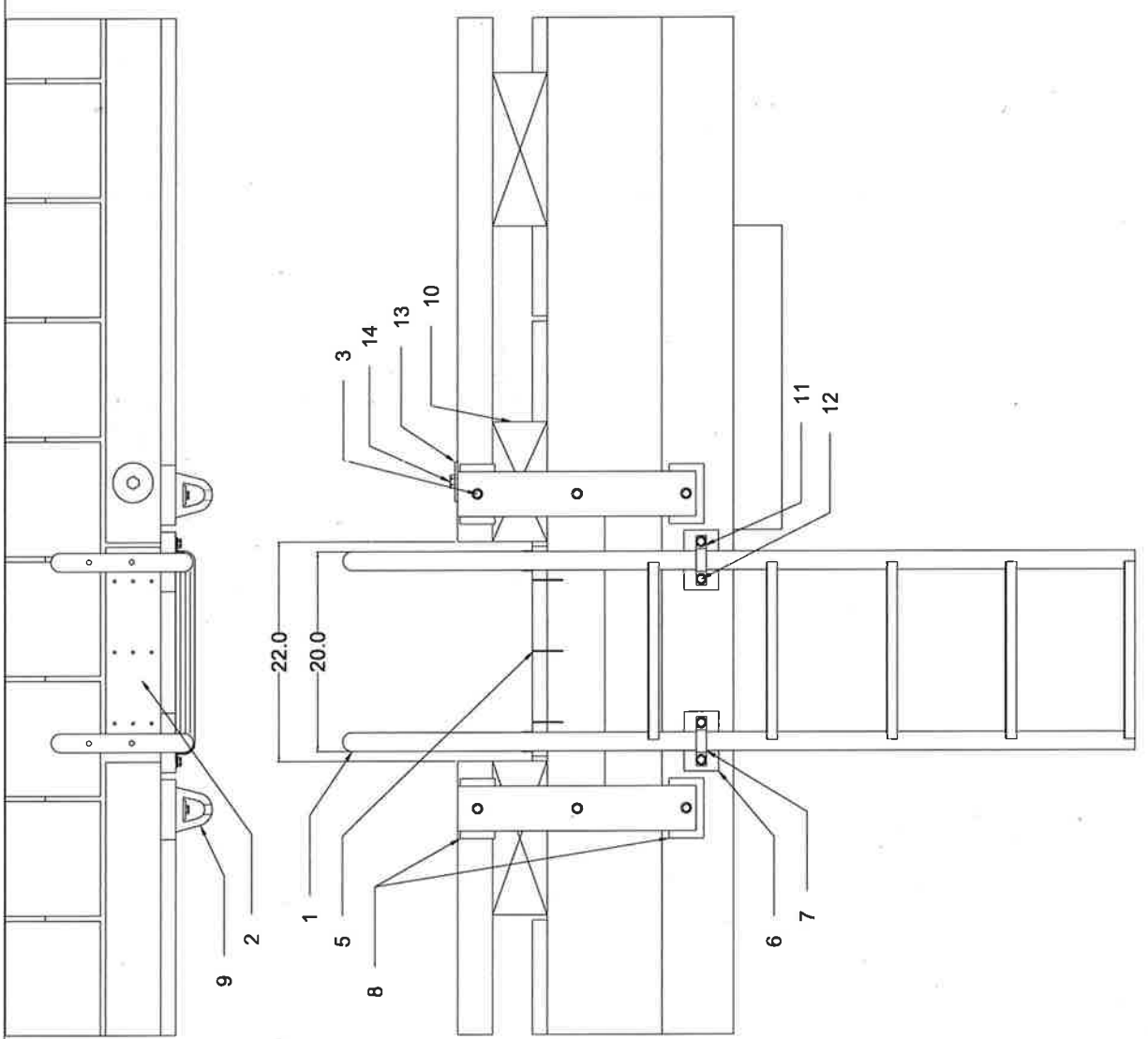
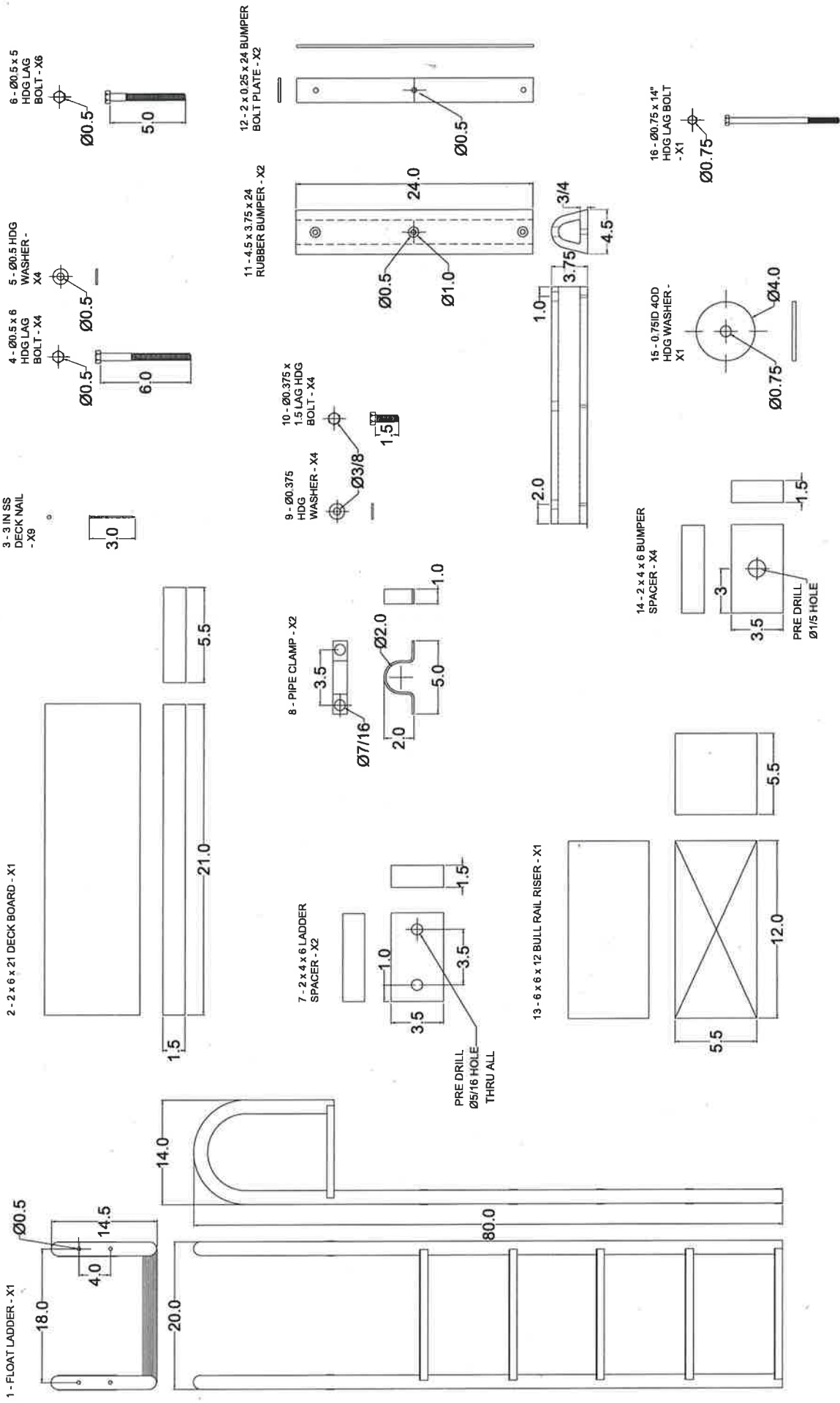
4. Following the same procedure as step 3, we will now follow the perimeter of the float another 60 metres and add the remainder of the ladders to the float layout.

Example:



Note: Because the distance of the red line above is more than 60 metres, you will need one ladder in the middle of the red line at the star symbol. If the line had been shorter than 60 metres, a ladder would not need to be placed there.

5. Now that all of the ladders have been placed, ensure that it is less than 30 metres from any point on the outside perimeter of the float to the closest ladder. Once this has been checked, show the proposed ladder layout to your immediate supervisor for consultation, generally your supervisor may add more ladders to improve visibility. The layout will then be sent to the respective harbour along with the Ladder Installation Instructions and ladders will then be installed at the harbour.



DEPARTMENT OF FISHERIES AND OCEANS CANADA	LADDER INSTALLATION DRAWING	DRAWN BY TREVOR SLACK, REVISED BY GEOFFREY WRIGHT	PART NUMBER	PART NAME	QUANTITY	NOTES
ALL DIMENSIONS IN INCHES	DRAWING 1 OF 2	PRINT ON ANSI B	7	2 x 6 x 21 LADDER SPACER	2	1) ALL EXPOSED WOOD MUST BE CAPPED OR FIELD TREATED
	TOLERANCES ARE ± 1/16 IN	DRAWING NOT TO SCALE	8	PIPE CLAMP	2	
	BILL OF MATERIALS					2) LADDERS CANNOT HAVE A FLOAT PERIMETER DISTANCE SPACING GREATER THAN 60 METERS
PART NUMBER	PART NAME	QUANTITY				
1	LADDER	1	9	Ø0.375 HDG WASHER	4	3) DO NOT SECURE LADDER SPACERS TO FLANGE
2	2 x 6 x 21 DECK BOARD	1	10	Ø0.375 X 1.5 LAG HDG BOLT	4	
3	3 IN SS DECK NAILS	9	11	4.5 x 3.75 x 24 RUBBER BUMPER	2	
4	Ø0.5 x 6 HDG LAG BOLT	4	12	1.5 x 0.125 x 24 BUMPER BOLT PLATE	2	4) PHOTO SHOWS INCORRECT BUMBERS.
5	Ø0.5 HDG WASHER	9	13	6 x 6 X 12 BULL RAIL RISER	1	
6	Ø0.5 x 5 HDG LAG BOLT	6	14	2 x 4 x 6 BUMPER SPACER	4	5) PRINTED OCTOBER 30, 2015 14:00
			15	0.75ID 400 HDG WASHER	1	
			16	Ø0.75 x 14 HDG LAG BOLT	1	

GENERAL FLOAT LADDER INSTALLATION INSTRUCTIONS

