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TECHNICAL MEMORANDUM

Date: 2024-Aug-14 **File No.:** 241207
Lisa Reid, P.Eng.
To: Director, Building Design and Construction **From:** Doug Power, P.Eng.
Jared Johnston, C.E.T.
Subject: Inspection of NL DTI Wharf at Red Bay

In July of 2024, Newfoundland and Labrador Department of Transportation and Infrastructure (NL DTI) engaged Harbourside Engineering Consultants (Harbourside) to perform an inspection of the provincial wharf infrastructure at Red Bay and to prepare a summary condition report for the structure with photo evidence of any significant defects and deficiencies found during the inspection. The inspection work included an above deck visual inspection of the structure and a perimeter inspection from a boat. No underwater or under wharf inspection work was completed.

The above deck inspection was completed on July 30th, 2024, by Harbourside employee Jared Johnston C.E.T. with the inspection documentation reviewed by Doug Power, P. Eng with Harbourside.

Based on documents provided by NL DTI the wharf owned by NL DTI at Red Bay has a L-shape and partially surrounds another adjacent wharf which is labelled in a topographic survey file provided by NL DTI as the "Fishermen's Wharf". The main berthing face of the L - shaped wharf is approximately 31 meters long with a width of 7 meters. The approach section extending from the shore is approximately 14 meters long. The exact age of the wharf is unknown, but some local residents communicated during the inspection work that the wharf was constructed in the 1950's.

Some local residents advised that occasionally visitors to the Town via boat tie up to the NL DTI wharf, but it is a rare occurrence. The wharf is barricaded at the south end to prevent access with some fencing and with a patio rail on the north end of the building deterring access to the north approach.

Adjacent to the NL DTI wharf is another section of wharf used by the Town of Red Bay. Although no effort was made to complete inspection of this portion of the wharf it was clearly evident to be in better condition than the NL DTI wharf. This section of wharf used by the Town of Red Bay supports a building that is approximately 25m by 13m and has been recently converted into a whale museum by the Town. The NL DTI wharf and the wharf used by the Town of Red Bay are

somewhat independent structures with a distinct gap between the two. The NL DTI wharf does likely play a role in protecting the wharf supporting the building from sea ice loading.

Design drawings for the wharf were not provided by NL DTI. Based on the inspection work completed the main portion of the wharf that would be utilized for berthing is a timber pile construction. A unique feature of the wharf is that suspended from the timber piles are rock filled bins or cribs. This type of construction is very unique with the rock filled bins suspended from the cribs likely constructed to help resist loading from sea ice.

Overall, the wharf is in very poor condition. The southwest and northwest corners of the wharf have clearly dropped likely resulting from broken/missing piles in these areas. The concrete wharf slab at the southwest corner has a large crack likely caused by overstress due to the broken/missing piles.

There are no ladders present on the north and west faces of the wharf.

All timber fendering is either missing or severely damaged on the north and west faces of the structure. There is a ladder and some fendering present on the south face of the wharf with local people advising this work was completed by the Town.

All existing wheel guard along the perimeter of the wharf (approximately 53m) is either deteriorated or detached entirely.

The mooring cleats on the northwest and southwest corners of the wharf have dropped with the deck slab in these areas. The cleat in the middle of the main west berthing face has significant tilt outward.



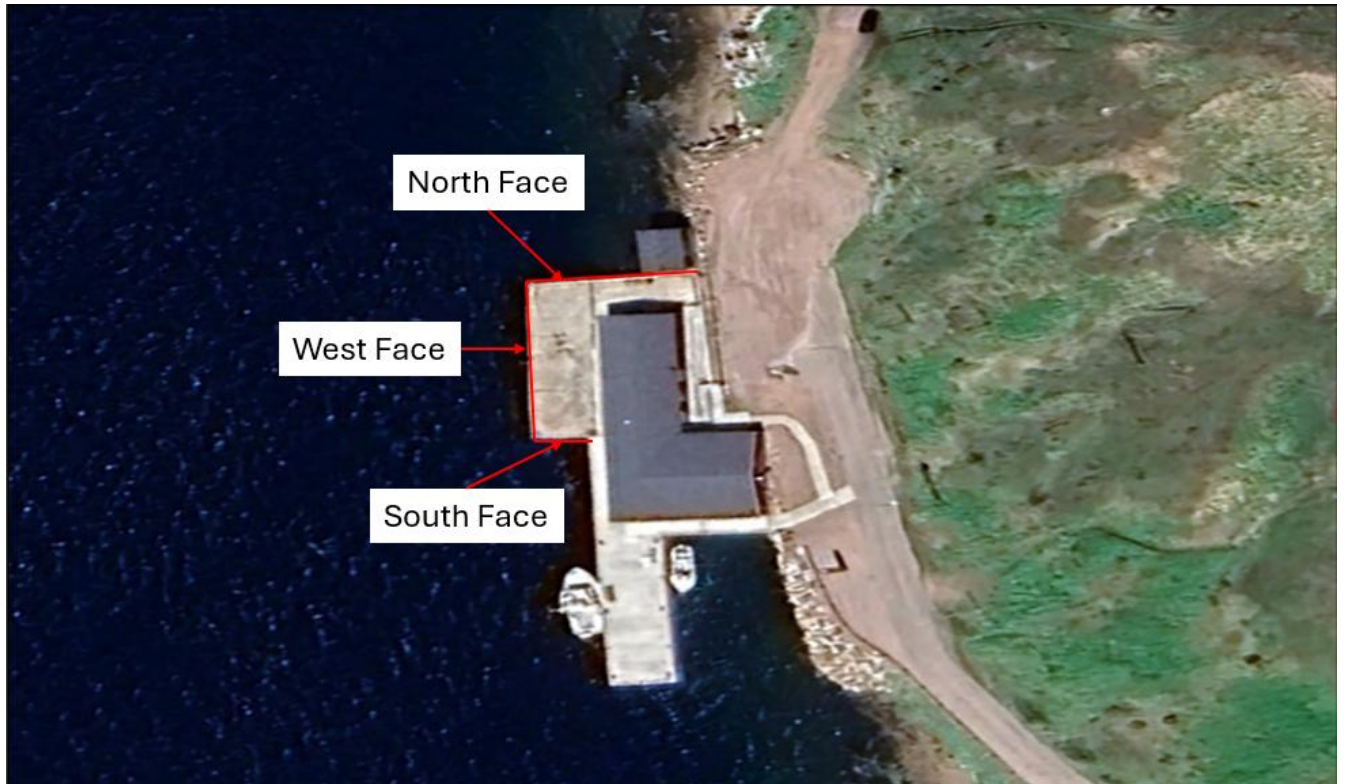


Figure 1- NL DTI Wharf at Red Bay



Figure 2 – Standing on northwest corner looking east (approach).



Figure 3 - Standing on northwest corner looking south.



Figure 4 – West berthing face.



Figure 5 - Dropped northwest corner on west berthing face.



Figure 6 – Dropped southwest corner on west berthing face.



Figure 7 – Damaged timber on southwest corner of west face.



Figure 8 – Wide crack in slab at the dropped southwest corner.



Figure 9 – Cleat on northwest corner with wheel guard detached in area.



Figure 10 - North face of wharf.



Figure 11 – Building on adjacent wharf with snow fence barrier to prevent access at south end of NL DTI wharf and patio rail to deter access at north end.