

Historic Shubenacadie Canal *Canal Greenway Park* Interpretive Masterplan



Shubenacadie Canal Commission
Presentation to the Harbour East – Marine Drive
Community Council

April 6, 2017



Dartmouth Inclined Plane / Flume House 2016



Flume House and Elevated Timber Flume

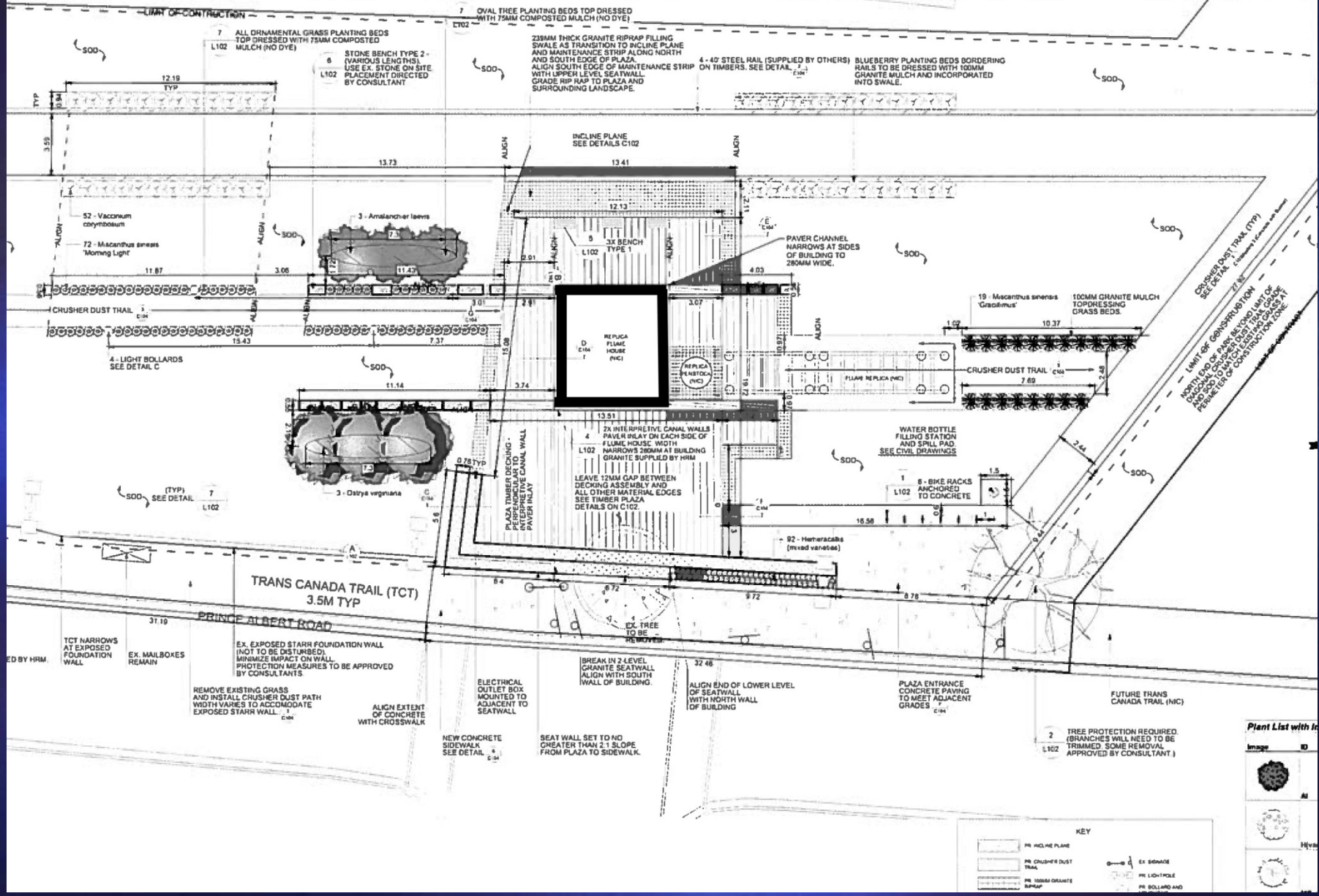




Turbine Chamber

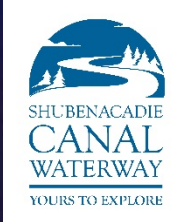
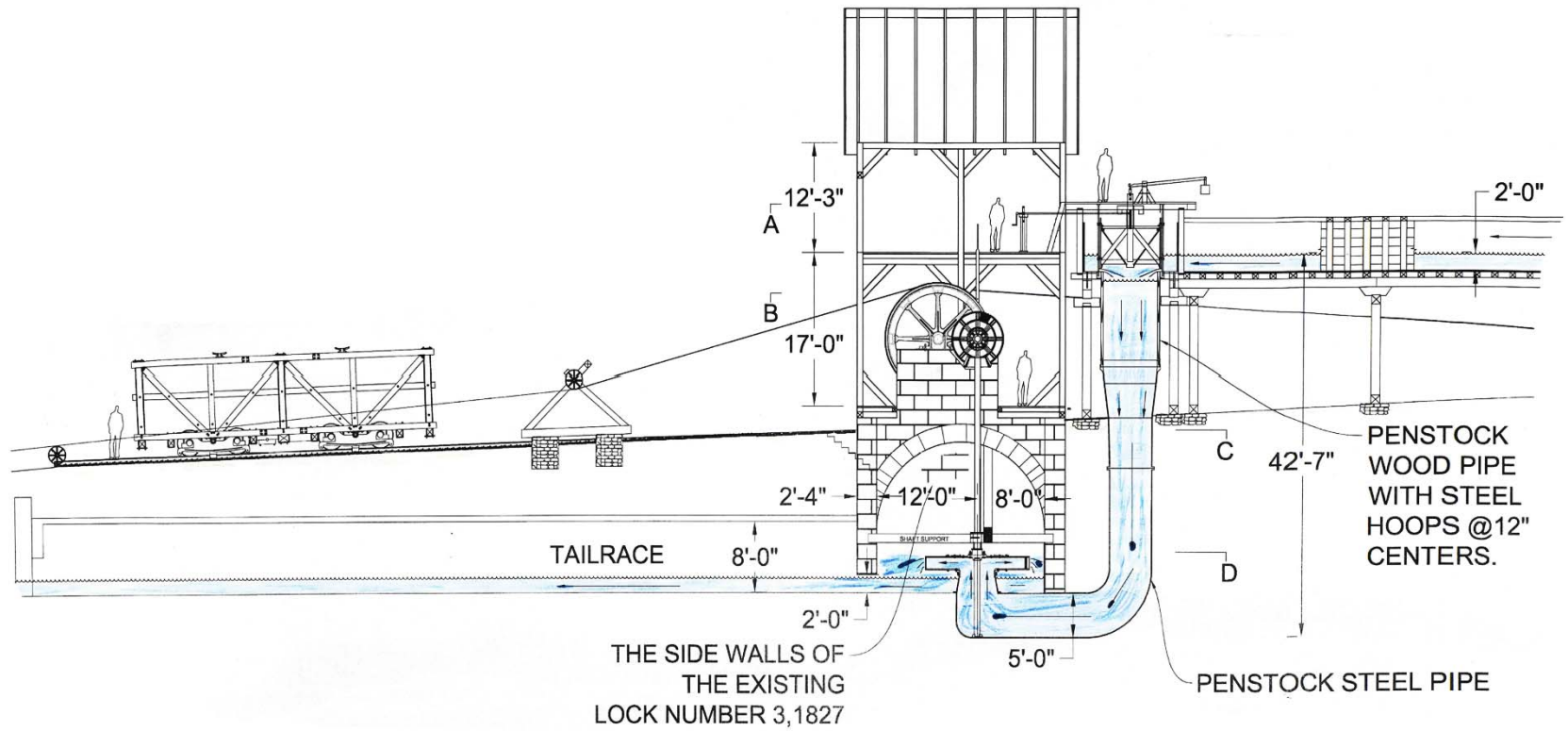


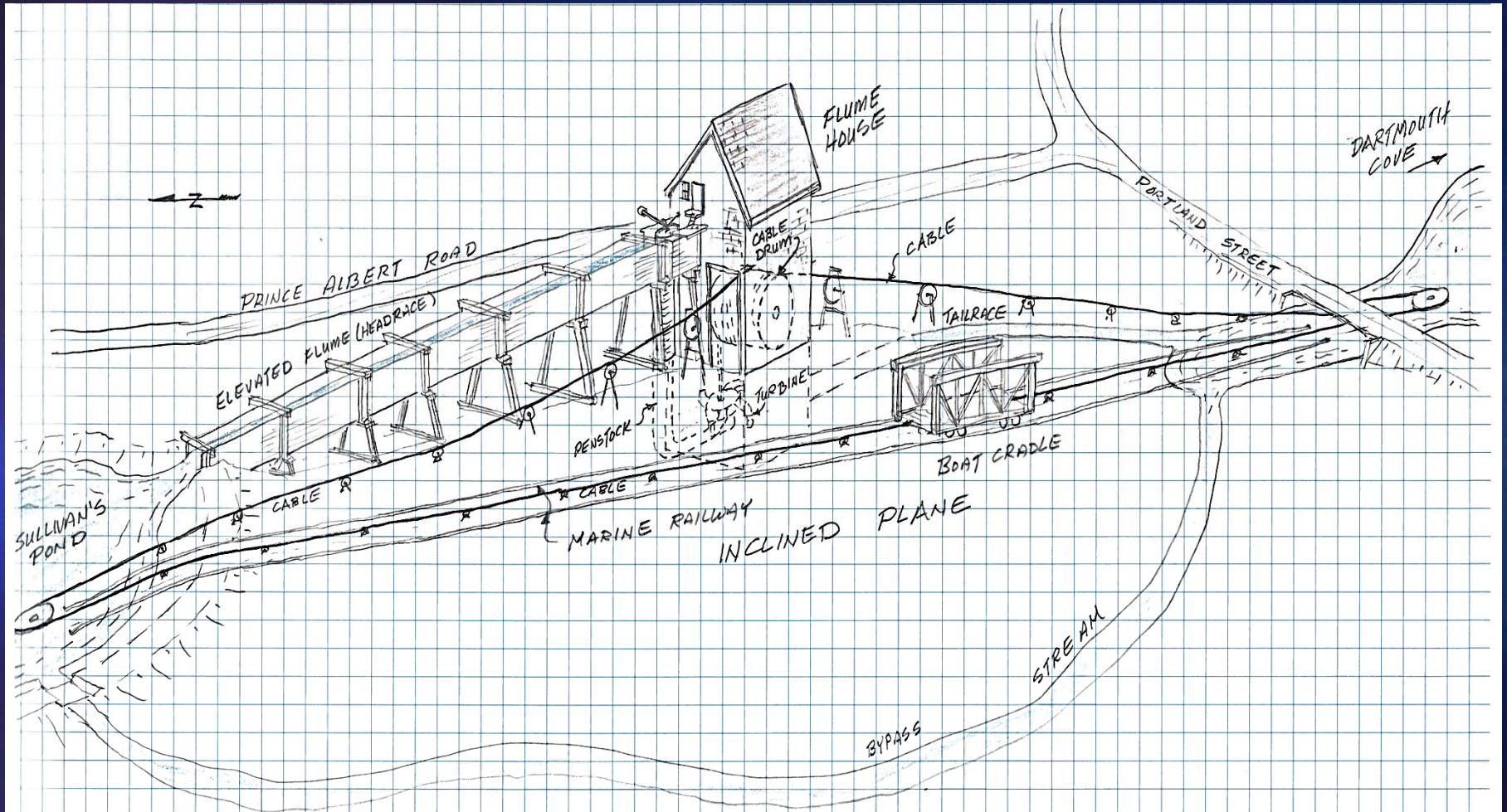
Boat Cradle and Flume House



Plant List with Image

Image	ID
	3
	3
	19
	92

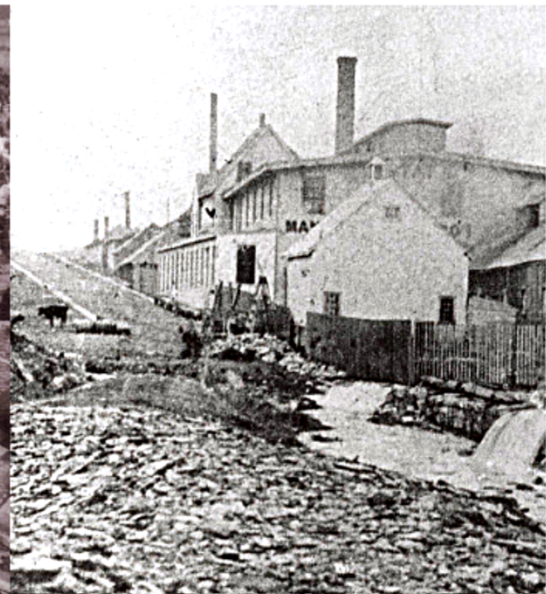
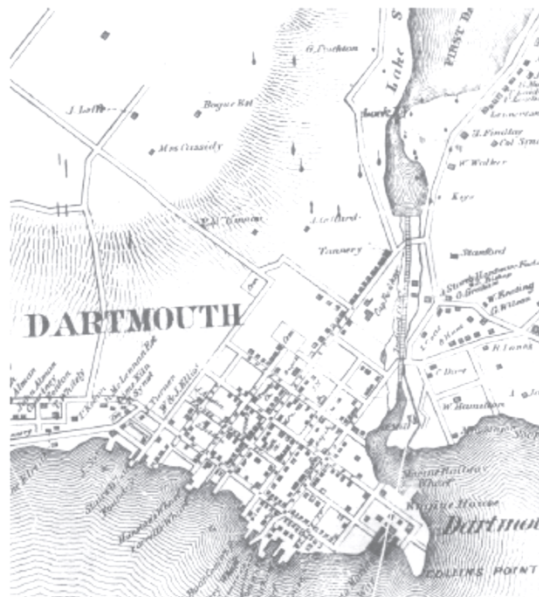




SHUBENACADIE CANAL GREENWAY

INTERPRETIVE MASTERPLAN

FINAL REPORT, January, 2017
Prepared For: Doug Conrad, General Manager
The Shubenacadie Canal Commission



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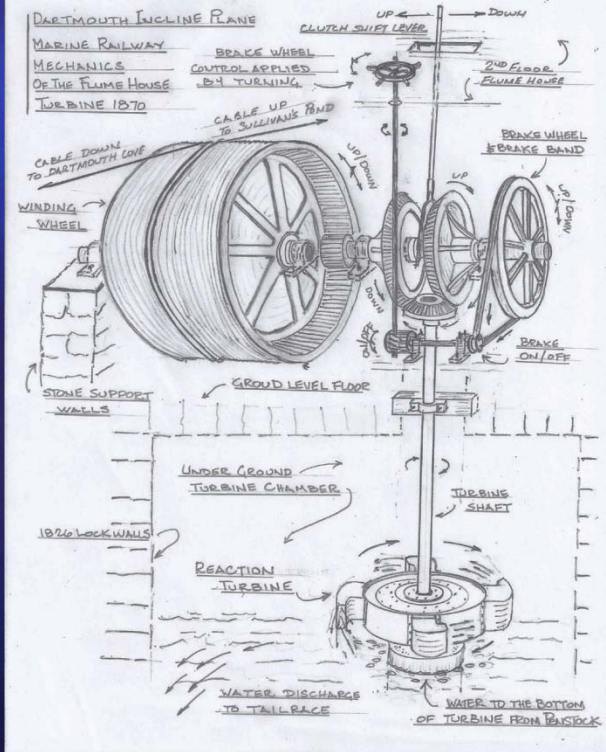
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POWER HOUSE

A Morris Canal Incline Plane was a huge and powerful machine that could raise or lower a fully loaded canal boat one hundred feet in less than fifteen minutes. To provide the power, water was brought to the power house from the upper level of the canal in an overhead trough called the headrace flume. From the end of the flume the water was dropped 47 feet down a wood and iron penstock pipe to operate a reaction turbine, housed in a chamber below. The column of water in the penstock weighing many tons forced the rotor to turn like a huge lawn sprinkler. A shaft transmitted power from the turbine rotor to gearing that turned a cable drum in the power house above. The used water flowed out the turbine chamber down a tailrace tunnel and into the lower level of the canal to be used at the next inclined plane.

It took two men to operate the plane. The plane tender manned the controls and operated the machinery at the power house. The brakeman rode the cradle car, organized the loading and unloading of the boats and operated a brake when needed.

From his perch in the cupola atop the power house, the plane tender could see the brakeman's signals from either the top or the bottom of the plane. When a boat was secured in one of the cradle cars, the plane tender raised the sub valve at the end of the headrace flume dropping thousands of tons of water to turn the turbine below. A simple check engaged the cable drum in the appropriate direction to move a canal boat up or down the plane.

REACTION TURBINE

If the inclined plane was not in operation excess water could flow out of the headrace above a bypass flume and channel and into the lower level of the canal. This allowed water to bypass the turbine in the power house and assure the canal could maintain the proper water level.

The power house stood tall against the sky with a third story cupola that gave the plane tender a view of both the top and the bottom of the plane. The headrace flume brought tons of water to turn the reaction turbine in the chamber below.



1862 - 1863 USS Monitor	1864 - 1865 USS Monitor	1865 - 1866 USS Monitor
1866 - 1867 USS Monitor	1868 - 1869 USS Monitor	1870 - 1871 USS Monitor
1872 - 1873 USS Monitor	1874 - 1875 USS Monitor	1876 - 1877 USS Monitor

Atlantic Ocean

NAVY







Prince Albert Rd

Octerloney St

Sullivan's Pond

Thank You

Questions ?

