



ESQUIMALT GRAVING DOCK  
EAST END DOCK EXTENSION  
AND SECTION 3 DOCK FLOOR AND WALL  
REFURBISHMENT

MARCH 2021

## Project Background

- 2008 Dock Extension planning and design commences
- 2011 Construction of East End Retaining Wall – first phase of project
- 2012 Dock Floor and Wall Refurbishment planning and design commences
- 2019 Dock Extension and Refurbishment projects are combined under Herold Engineering, planned extension footprint increased to accommodate future vessels

## Project Objective

- Maximize Section 3 of the dry dock to allow for larger vessels and utilize the drydock more efficiently.
- Refurbish concrete floor and walls to extend the life of the dock, provide a better surface for removing contaminants, and improve drainage at the dock floor.

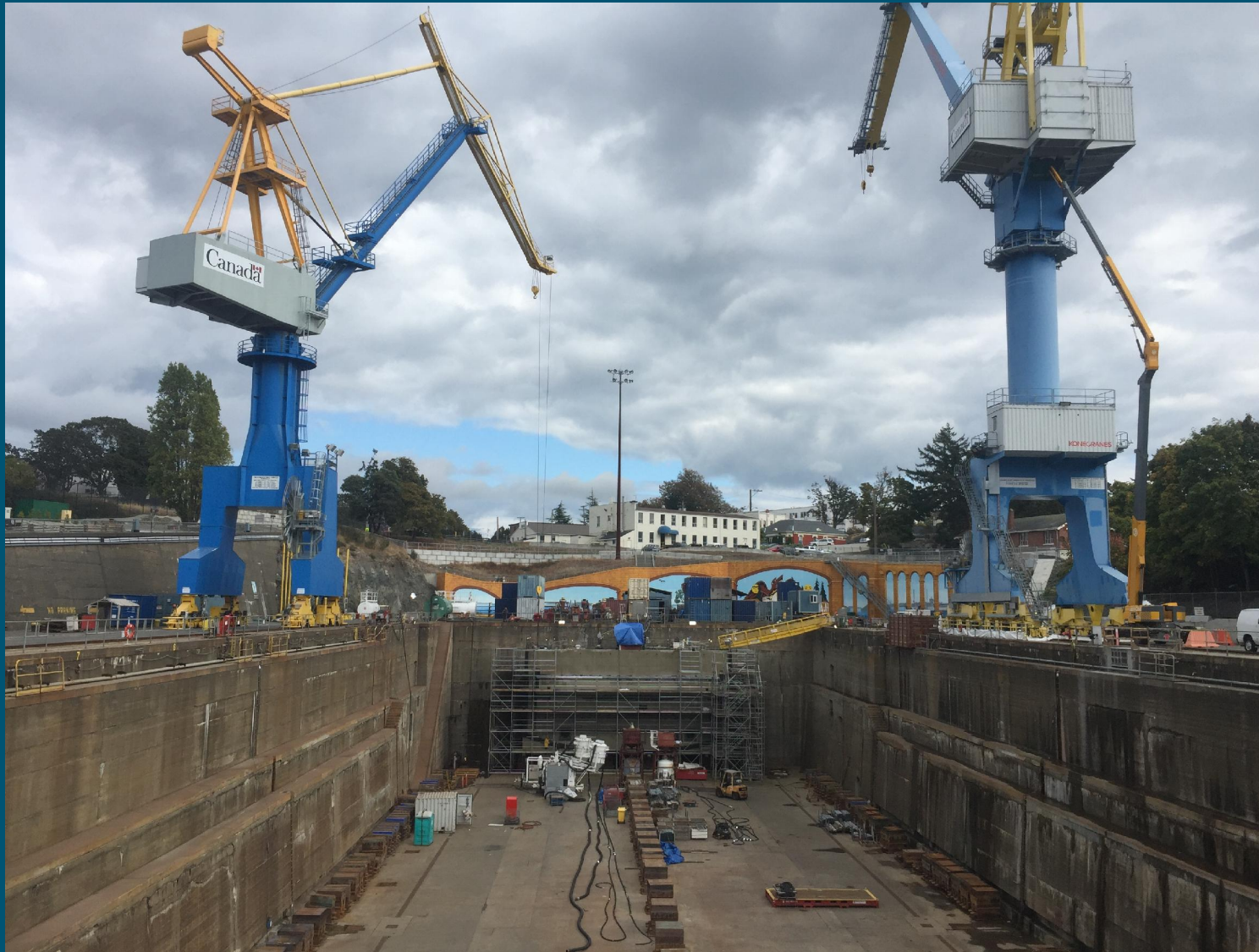
# Aerial View Of EGD



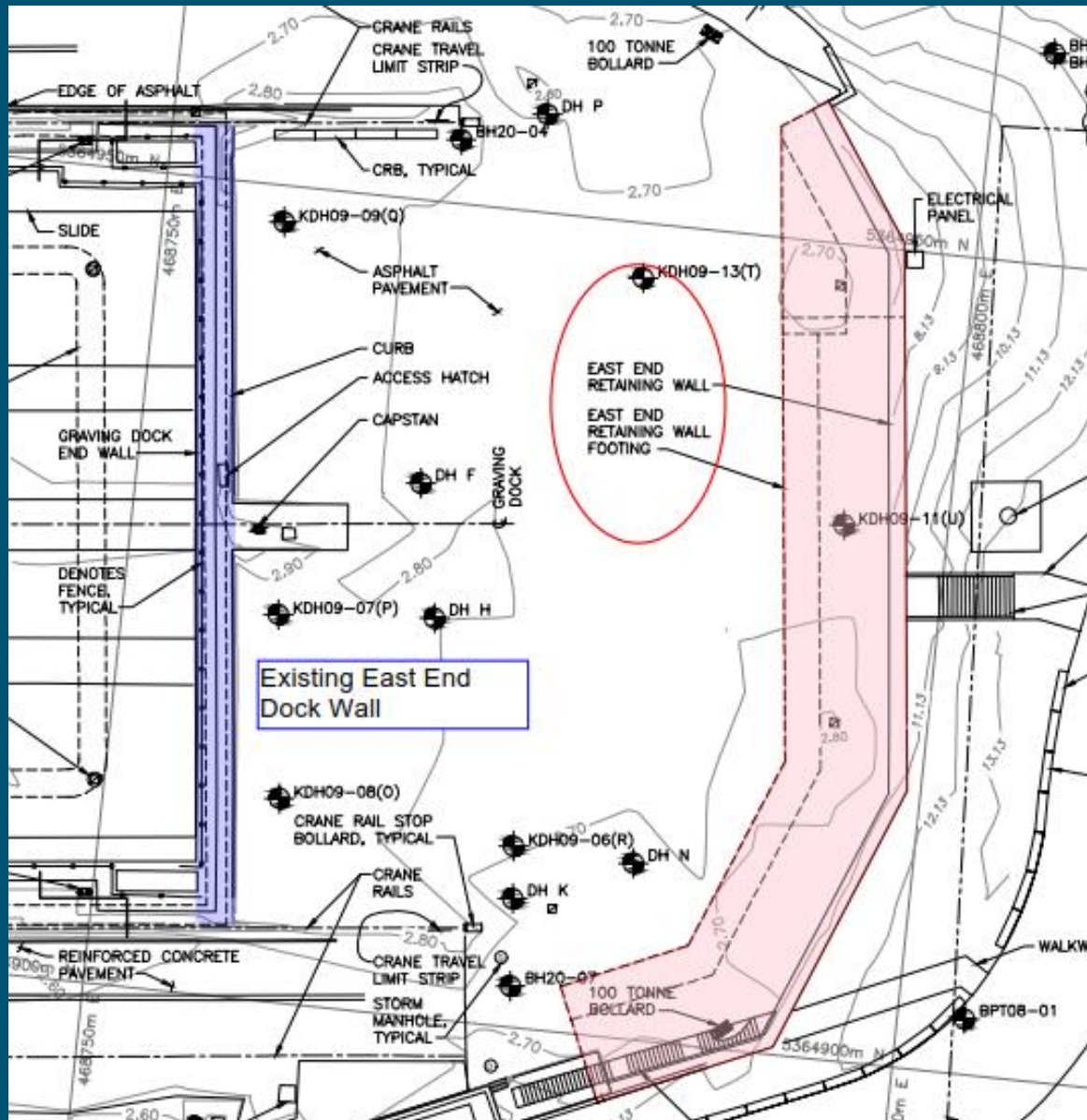
# Aerial View Of Site



## Existing Section 3 – Looking East



## Existing Site Conditions - Top Side



- Existing East End Wall of Section 3 and Existing Retaining Wall Foundation

## Existing Site Conditions – Top Side

East End Retaining Wall (Mural Wall) View From the South Side Looking East





## Existing Site Conditions – Top Side

### East End Retaining Wall (Mural Wall) View Looking Northeast



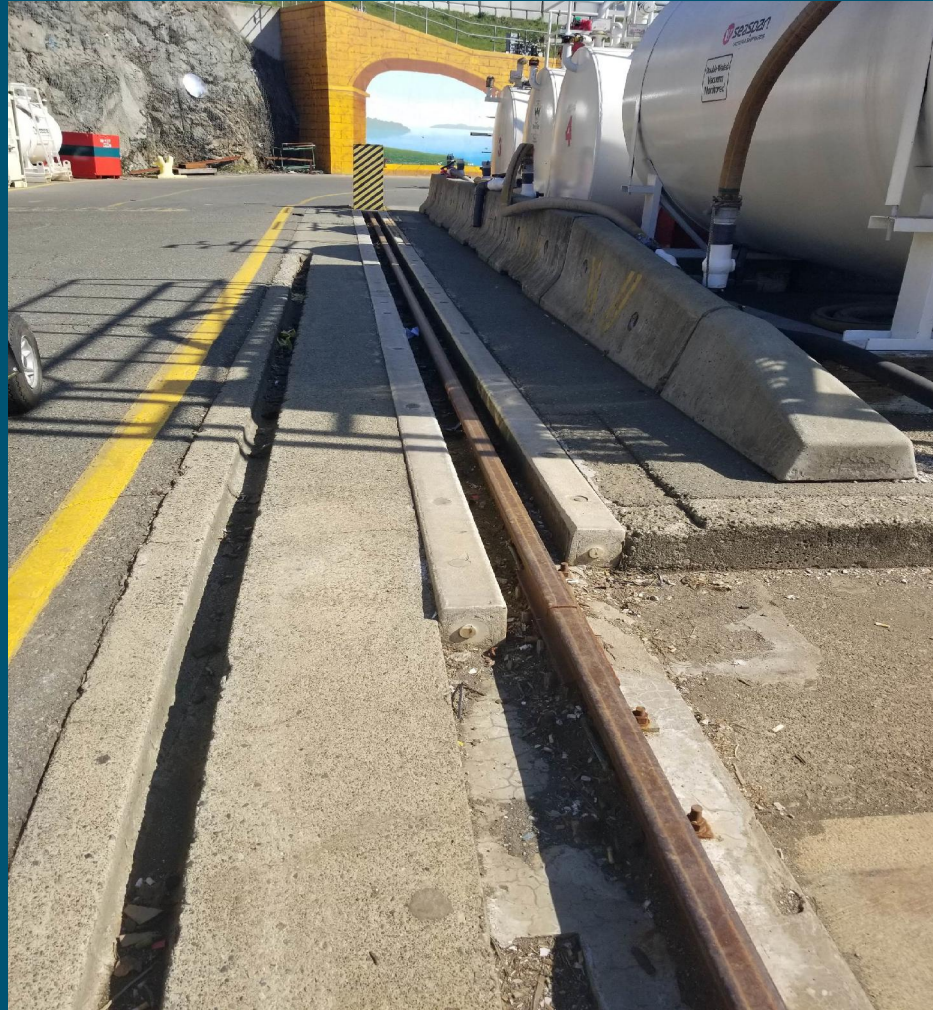
# Existing Site Conditions – Top Side

## Granite Sill at East End Wall View Looking North



## Existing Site Conditions – Top Side

Crane Rails North Side View from the North Looking East



# Existing Site Conditions –Service Tunnel

## East End Service Tunnel View Looking South



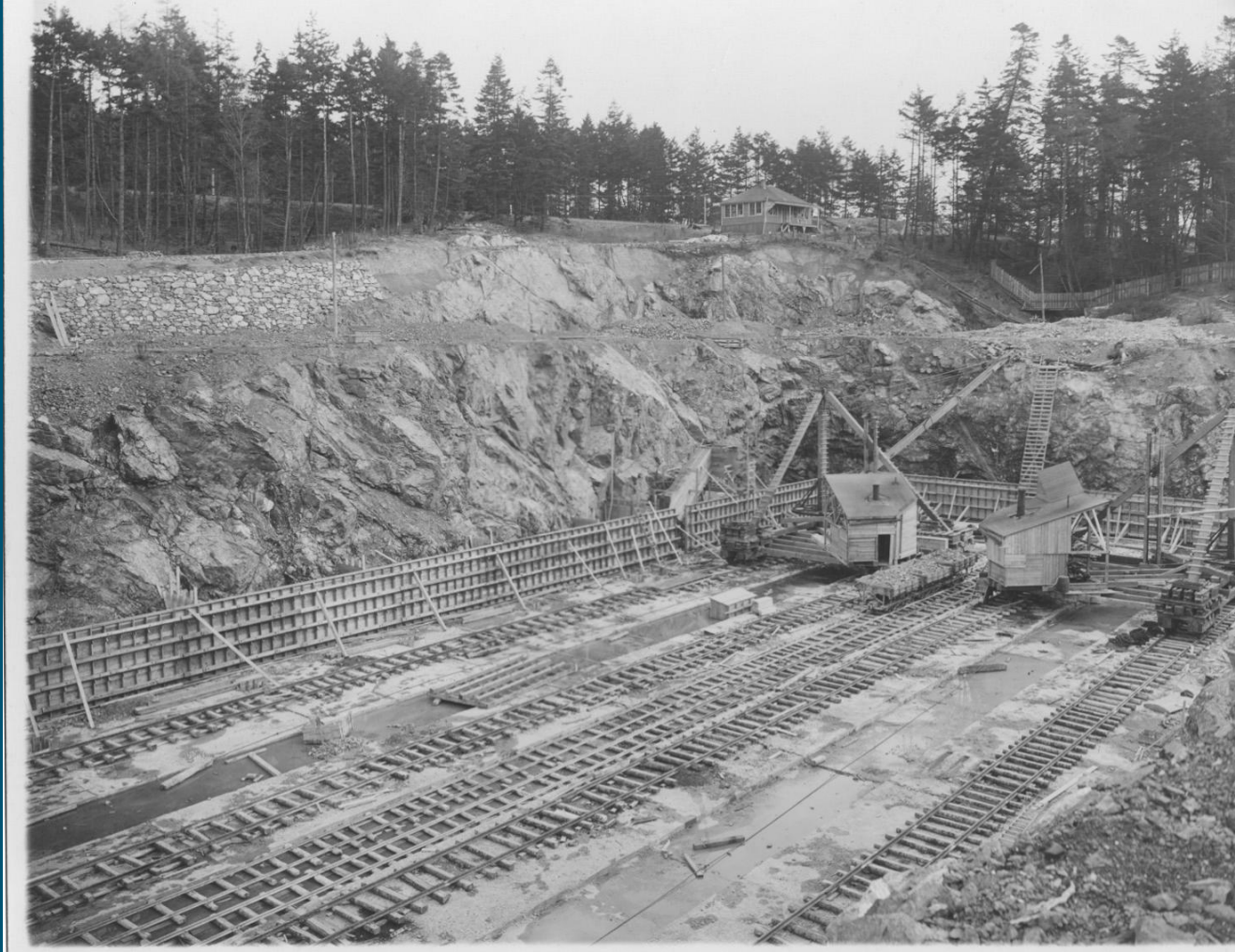
## Existing Site Conditions –Service Tunnel

### East End Service Tunnel View at North East Corner



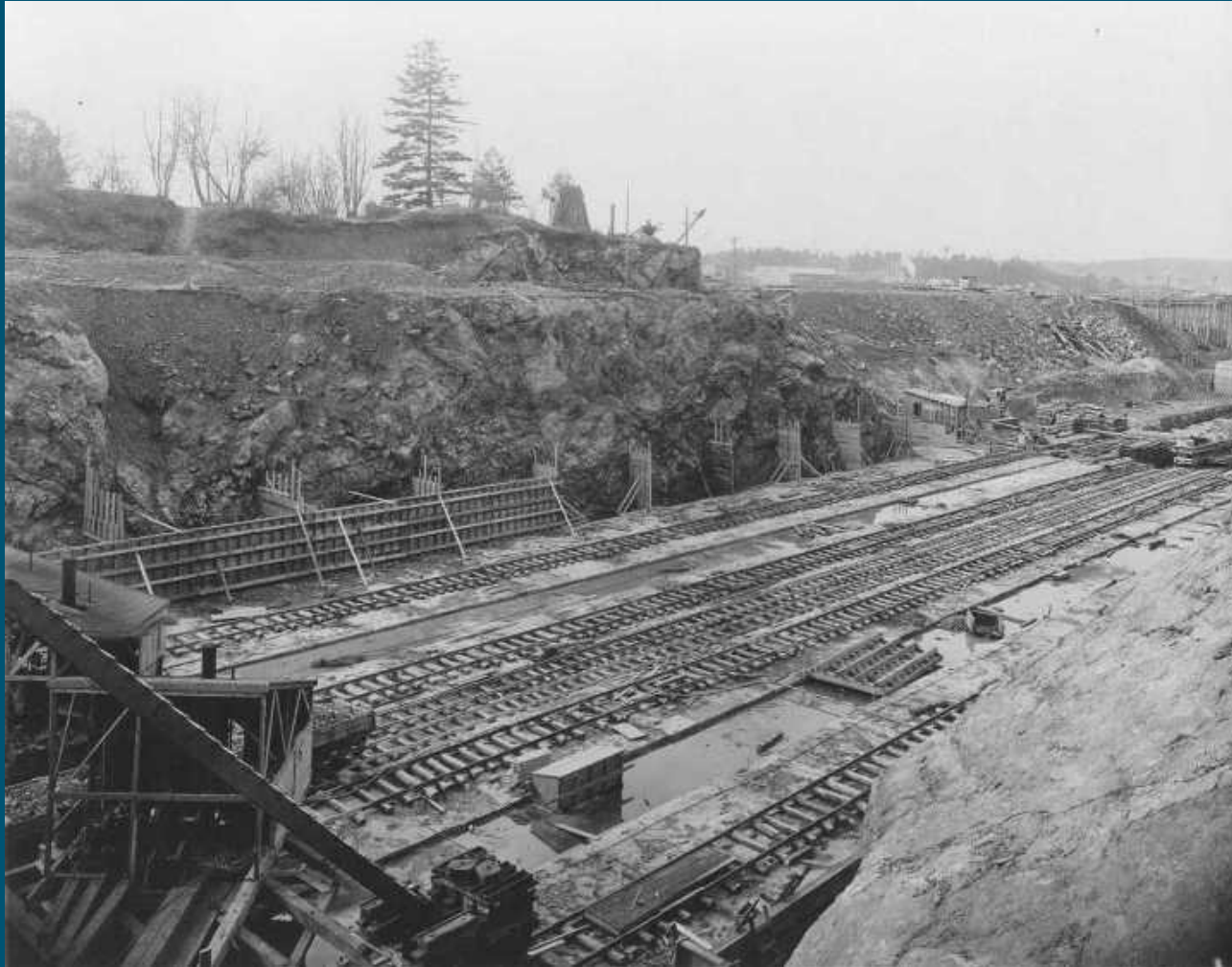
# Existing Site Conditions – Original Construction

View Looking Northeast



# Existing Site Conditions – Original Construction

View Looking Southwest



# Existing Site Conditions – Original Construction

View Looking Southwest





## Existing Site Conditions - Section 3 Dry Dock

- East End Wall View Looking North



## Existing Site Conditions - Section 3 Dry Dock

- South Wall at East End



## Existing Site Conditions - Section 3 Dry Dock

- South Wall Typical Conditions



## Existing Site Conditions - Section 3 Dry Dock

- South Wall West End



# Existing Site Conditions - Section 3 Dry Dock

- North Wall Typical Condition



## Existing Site Conditions - Section 3 Dry Dock

- Typical Wall Conditions



## Existing Site Conditions - Section 3 Dry Dock

- Typical Wall Conditions



## Existing Site Conditions - Section 3 Dry Dock

- Typical Wall Conditions at Service Sill





## Existing Site Conditions - Section 3 Dry Dock

- Typical Wall Conditions at Service Sill



## Existing Site Conditions - Section 3 Dry Dock

- Granite Conditions at Service Sill



## Existing Site Conditions - Section 3 Dry Dock

- Dock Floor View Looking West



## Existing Site Conditions - Section 3 Dry Dock

- Dock Floor at Northeast Corner



## Existing Site Conditions - Section 3 Dry Dock

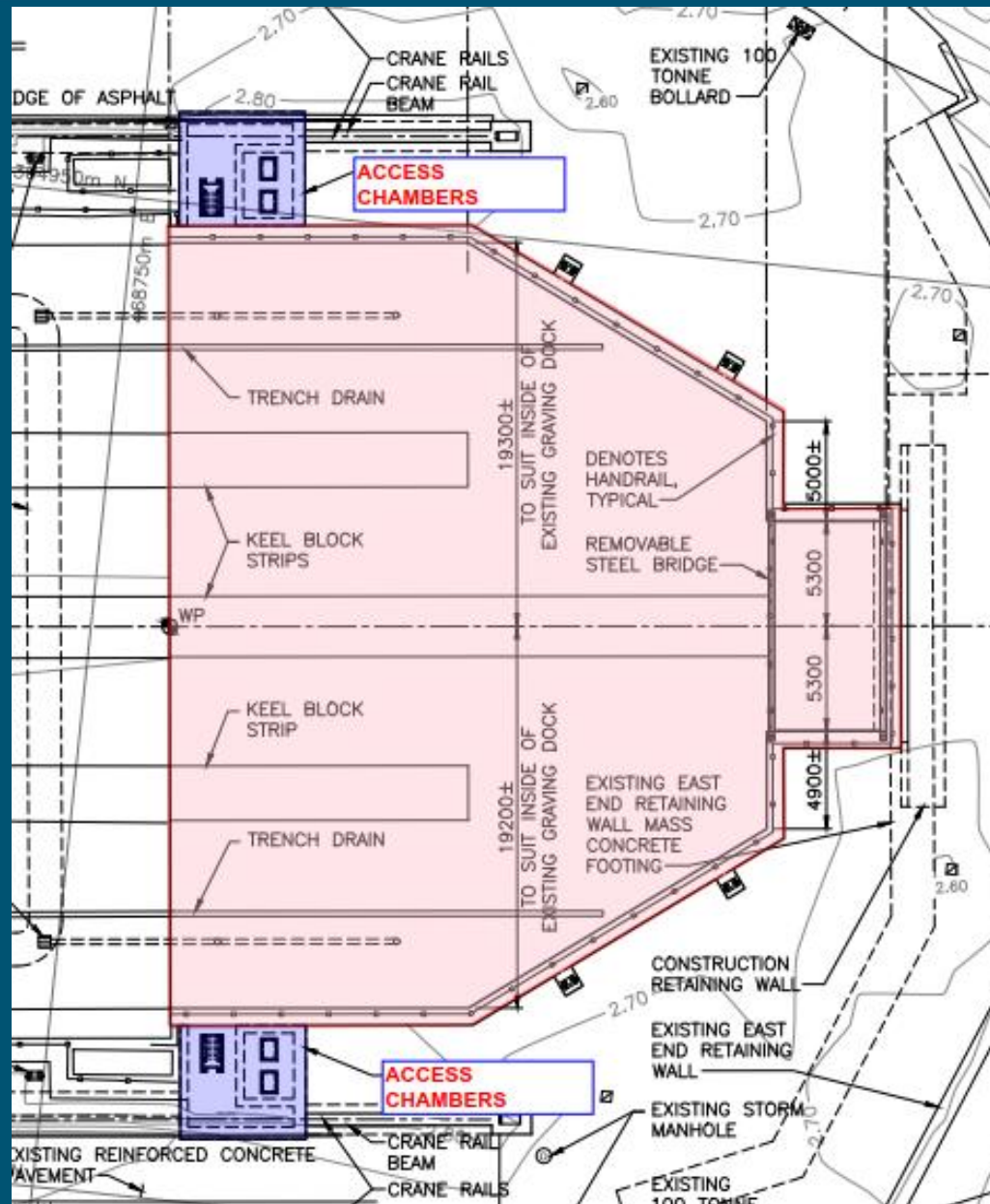
- Keel Strip
- Granite Damage



## New Construction - Dock Extension Footprint

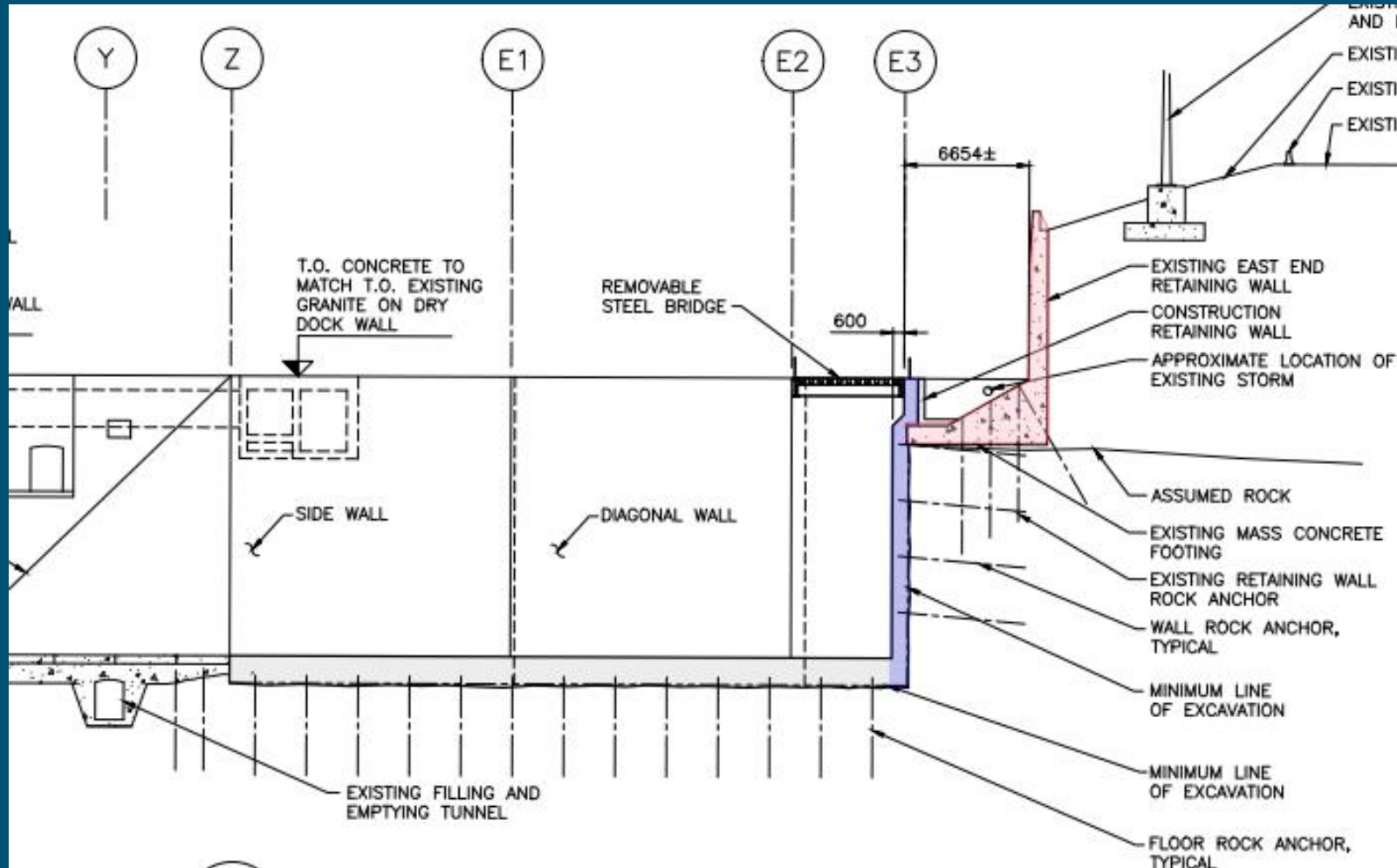
- Current Section 3 dock length is 122m, 118m clear when caisson is in sill 4
- Extended dock section is proposed to be 36m long to achieve 146m length with 4m clearance each end
- Extended dock section has a tapered geometry to accommodate design vessel and a removable bridge to maintain roadway at end of dock
- Dock extension includes new access chambers at North and South sides of existing dock tunnel termination with lift station and utility connections

# New Construction - Dock Extension Footprint



# New Construction - Existing Site Constraints

## New Extension at Existing East End Retaining Wall





## New Construction -Demolition and Excavation

- Dock Extension:
  - ~4500m<sup>3</sup> of overburden to excavate
    - Includes contaminated soils
  - ~17,000m<sup>3</sup> of rock to drill/blast/remove
  - ~2850m<sup>3</sup> of concrete structure demolition
- Dock Refurbishment:
  - ~750m<sup>3</sup> of concrete floor structure demolition

## New Construction – Main Structural Elements

- 850mm thick concrete walls
- 1200mm thick new concrete floor slab
- 200mm thick refurbished concrete floor slab
- Stainless steel reinforcing
- 57mm diameter rock anchors in new floor slab and new walls
- Structural Steel removable bridge
- Reconstructed crane rails on new foundations