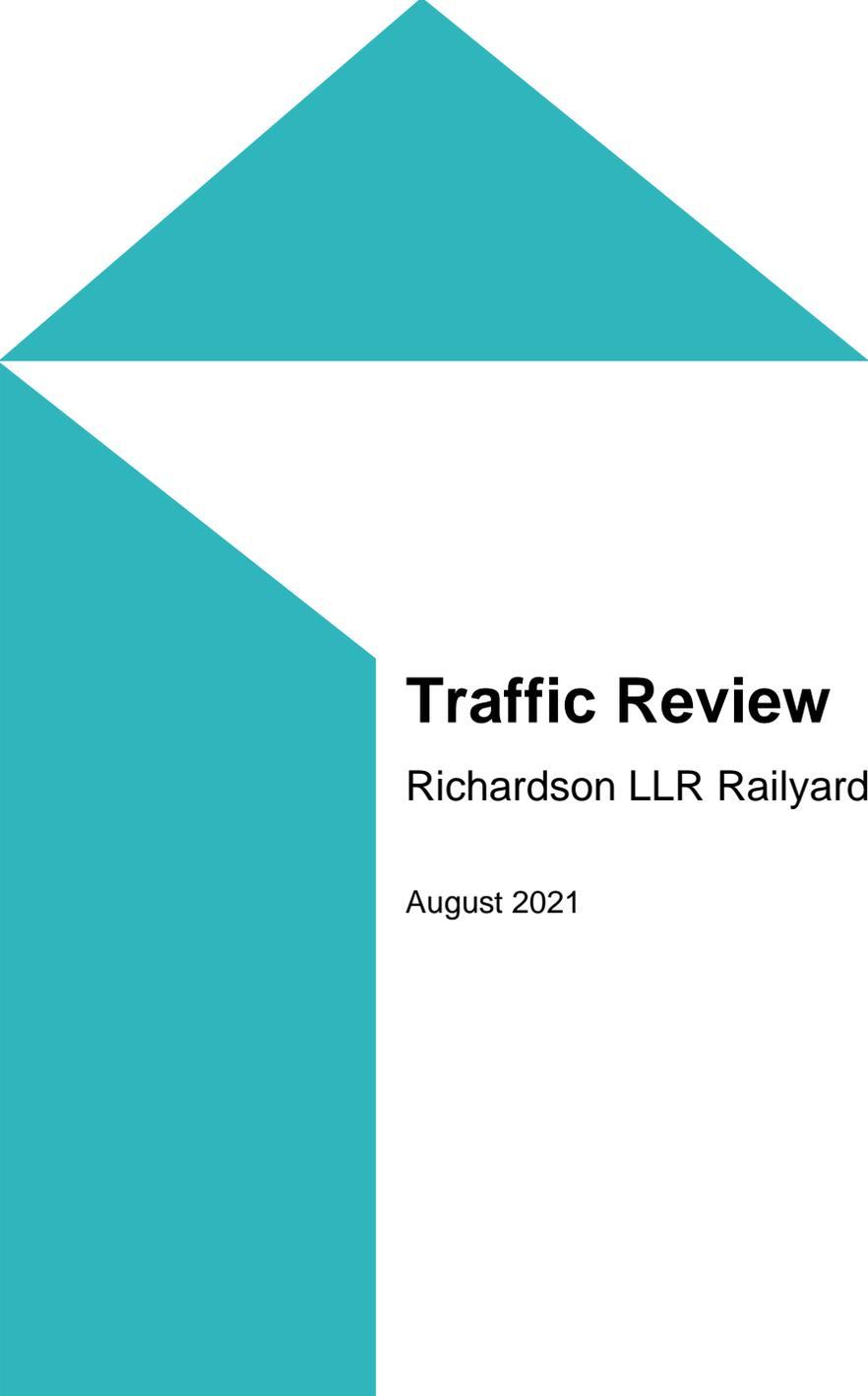

Appendix A6
Traffic Technical Memo

A large teal graphic element on the left side of the page, consisting of a triangle pointing upwards at the top, a horizontal line, and a vertical line extending downwards from the left side of the horizontal line, forming a partial 'L' shape.

Traffic Review

Richardson LLR Railyard Expansion

August 2021

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Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	2021/Aug/10	C. Au	A. Wells	C. Otero	Issued for Client Review
B	2021/Aug/27	C. Au	A. Wells	C. Otero	Issued for Permit

Document reference: 514100569-MMD-00-P0-RP-TE-0001 Rev B

Information class: Standard

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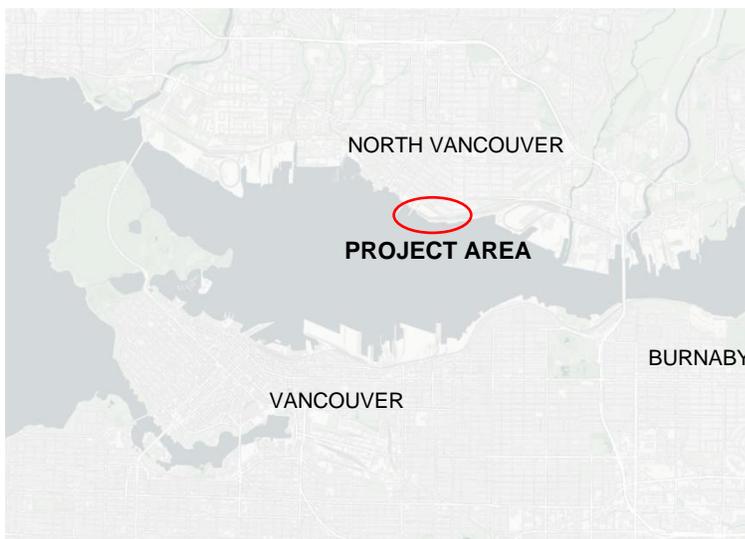
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1 Introduction

Richardson International Ltd. is requesting a permit from the Vancouver Fraser Port Authority (VFPA) under the Project and Environmental Review (PER) process for a railyard expansion at the North Vancouver Terminal. As part of this project, Mott MacDonald was retained to design the civil components of the project.

The railyard expansion includes increasing the rail capacity of incoming trains, adding additional storage tracks, and installation of several crossovers and turnouts to optimize the Richardson Terminal's operations and increase overall flexibility.

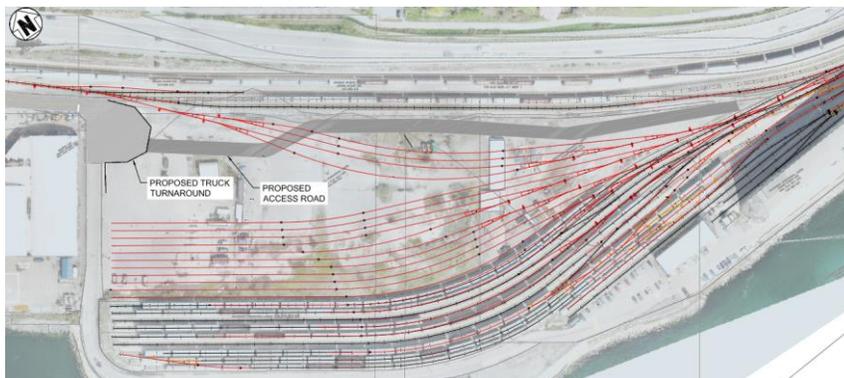
Figure 1.1: Project Area



To complement the rail yard expansion, two new road components will be included into the site for vehicles:

- A truck turnaround at the entrance of the site; and
- An emergency vehicle access road within the site.

Figure 1.2: Road Components of Project (Proposed Tracks in Red)



This report summarizes the inputs and design of the two road components by Mott MacDonald.

2 Traffic Volumes

2.1 Traffic Generation

The project is not anticipated to generate any additional traffic above today's volumes. The predicted throughput volume increases will come from increased operation efficiency allowed for by additional on-terminal rail capacity as opposed to through additional shifts worked.

Richardson terminals currently has parking spaces for approximately 70 private vehicles. There are no plans for increasing that number with this project.

Furthermore, upon completion, the project will not generate any additional truck traffic.

2.2 Traffic Distribution and Routing

Traffic access to the site is primarily through Victory Ship Way leading to St George's Ave and onto Esplanade E where the traffic can disperse throughout the local traffic network.

Alternative emergency access is possible through the adjacent property to the east, Cargill Terminals.

The primary change to traffic distribution will be for vehicles that erroneously continue east on Victory Ship Way past the adjacent property to the west, Seaspan. Currently vehicles which make a wrong turn have to continue into Richardson's parking lot before having an opportunity to turn around. After completion of the project, vehicles will use the new truck turnaround, reducing wasted travelled kilometres.

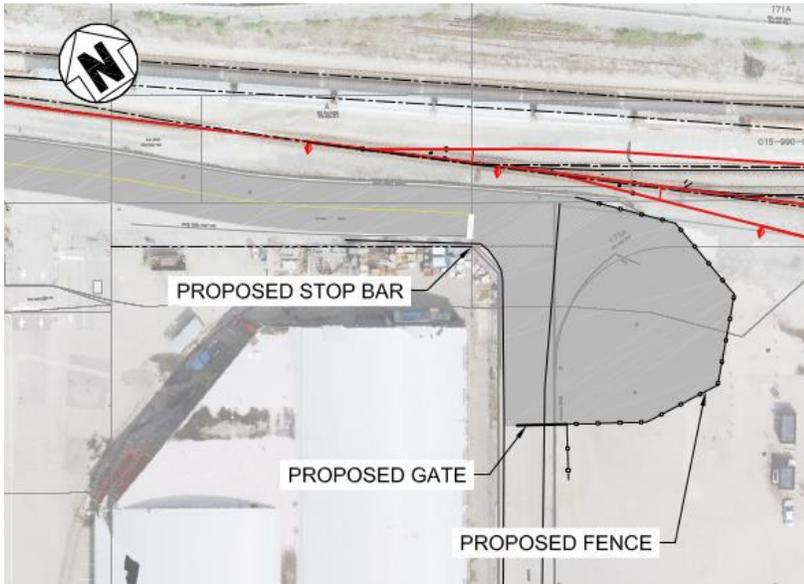
2.3 Construction Traffic Management Plan

A Construction Traffic Management Plan will be submitted to the Vancouver Fraser Port Authority at a later date once a Construction Plan has been determined.

3 Truck Turnaround

A paved area is implemented north of the proposed entrance gate of the site to allow for unauthorized vehicles to turnaround and depart without entering the site (Figure).

Figure 3.1: Truck Turnaround



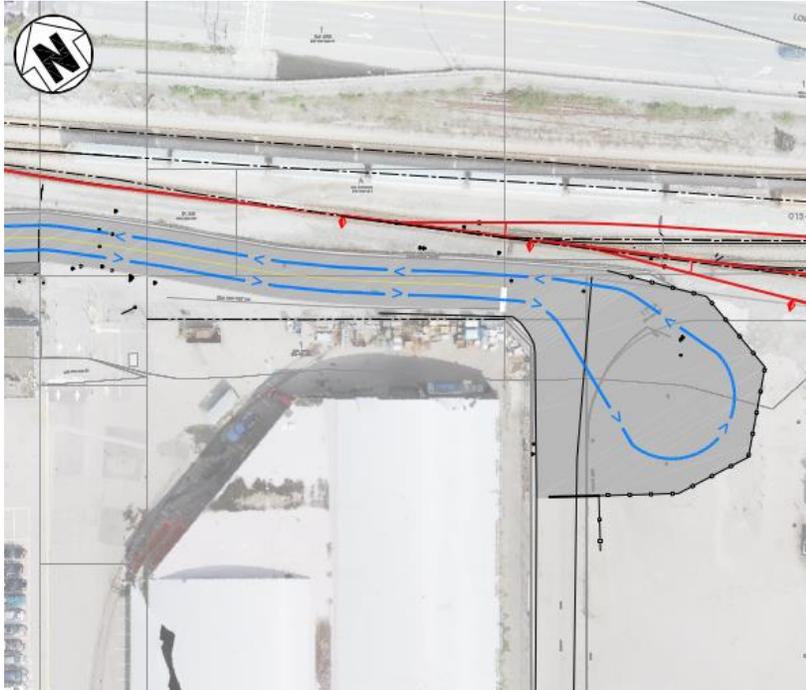
The paved area extrudes approximately 30 m by 37 m into the Richardson property. The traffic lanes are 4.2 m each, allowing for one WB-20 truck to enter the site while a WB-20 truck exits in the opposite direction. With these lane widths, there is a minimum of 1.3 m at the proposed stop bar location for a pedestrian pathway without encroaching into the adjacent Seaspan property.

Figure 3.2: Truck Turnaround Dimensions



The truck turnaround is designed assuming a WB-20 truck approaches the Richardson site on the existing road. As indicated by the blue traffic flow line in the figure below, the truck will stop at the intersection, notice the gate and pull towards the paved area to turn and depart on the opposing lane.

Figure 3.3: Direction of Traffic Flow



The turnaround uses has a radius of 14.7 m (Figure).

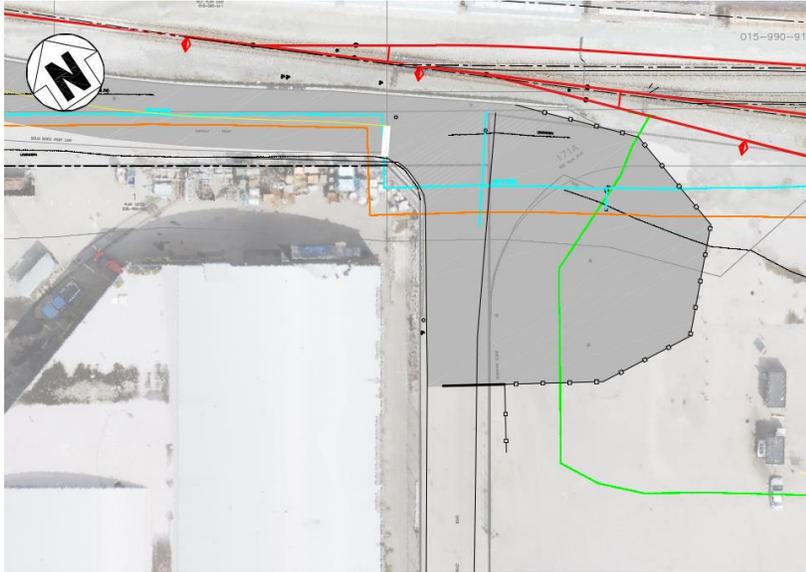
Figure 3.4: Turning Radius of Truck Turnaround Area



As illustrated in Figure below, the paved area of the truck turnaround is will be over a number of underground utilities:

- One watermain running across the paved area West to East (blue line);
- One gas line running across the paved area West to East just south of the watermain (orange line); and
- One storm line running across the paved area North to South (green line).

Figure 3.5: Underground Utilities of Truck Turnaround

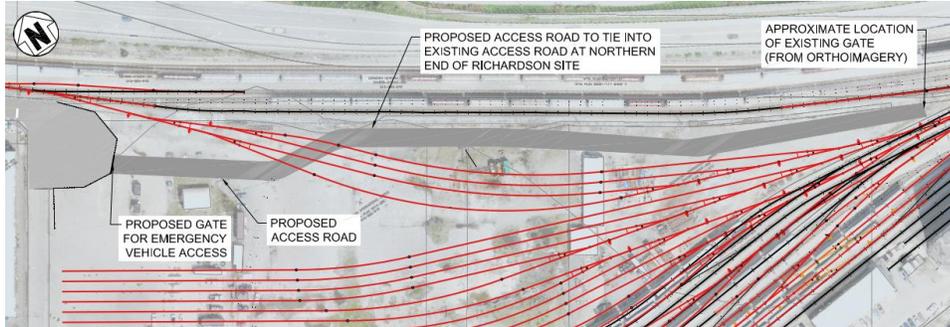


The depths of the utilities are to be determined by a hydrovac excavation, and the appropriate utility protection is to be implemented prior to the road construction.

4 Emergency Vehicle Access

An access route is added to allow emergency vehicles to access the site as required. The proposed path of the vehicle is to enter through a gate at the above discussed truck turnaround paved area and cross the proposed Tracks 640 to 643 through a timber crossing to connect with the existing access road on the north end of the site.

Figure 4.1: Emergency Access Road



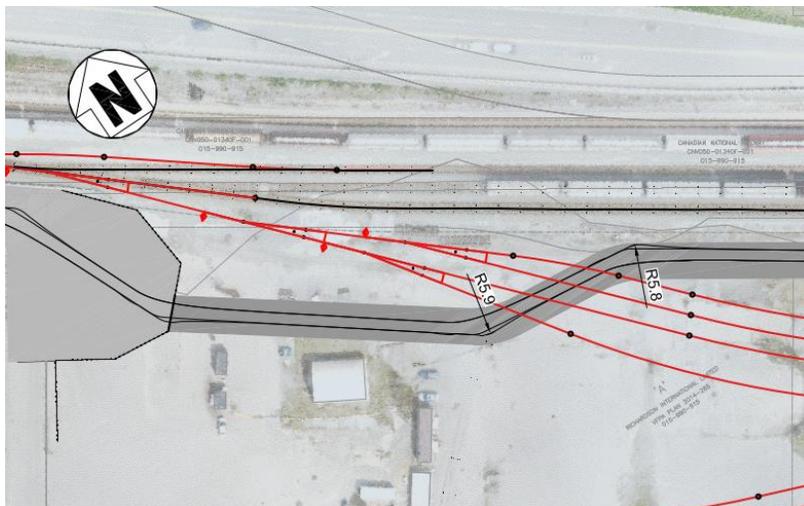
The road is designed for a US Pumper Firetruck, with dimensions noted in the table below.

Table 4.1: Pumper Firetruck Dimensions

Item	Dimension
Overall Length	12.192 m
Overall Width	2.489 m
Overall Body Height	2.361 m
Track Width	2.489 m
Max Wheel Angle	45.00 °

The vehicle uses turning radii of 5.9 m and 5.8 m leading to the tie-in to the existing access road (Figure).

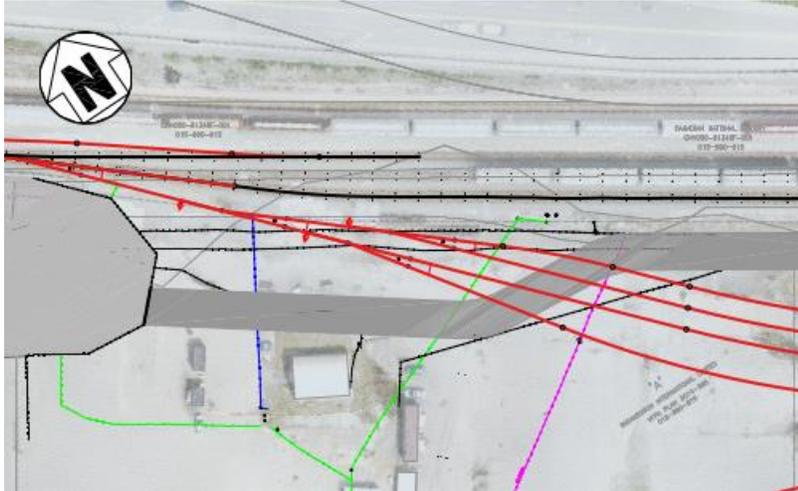
Figure 4.2: Turning Radii of Emergency Access Road



As illustrated in Figure below, the path of the proposed access road is also expected to pass over several underground utilities:

- One sanitary line at the start of the road (blue line);
- One storm line around the first turn of the road (green line); and
- One unknown underground utility around the tie into the existing road (magenta line).

Figure 4.3: Underground Utilities of Emergency Access Road



The depths of the utilities are to be determined by a hydro vac inspection, and the appropriate utility protection is to be implemented prior to the road construction.

