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Project name:

Annacis Auto Terminal Rehabilitation Project

Project ref:

From:

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Date

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Memo

Subject: Construction Traffic Management and Staging Plan

1. Introduction

The objective of this project is to consolidate the two existing auto terminal operations: Annacis Auto Terminal (AAT) and Richmond Auto Terminal (RT) into the one terminal site within the Port of Vancouver. The consolidated auto terminal at Annacis Island will be optimized to accommodate the combined operations and serve forecasted demand for auto imports and exports. The scope of work includes:

- expanding the two existing rail yards:
 - expanding the tracks of one rail yard (Rail side 1),
 - adding new tracks and switches to the second railyard (Rail side 2)
- installing electric charging stations, and
- demolish and replace the existing facilities to the extent permitted under the project budget.

<u>Purpose and Limitations</u>: AECOM has provided this document to provide a traffic access guidance/frame work, based on the overall design, for reference only. It will be the sole responsibility of any subsequently selected Contractor to prepare a detailed Traffic Management Plan in advanced of construction works and seek approval from the Owner and Road Authorities.

2. Project Area

The project area is located at the Auto Terminal on Annacis Island in Delta. There will be three construction zones within the project site (refer to **Figure 1** for the project area):

- Rail Side 1 construction zone at the east end of the Terminal
- Rail Side 2 at the west end of the Terminal
- The facility construction zone at the mid south region of the Terminal.

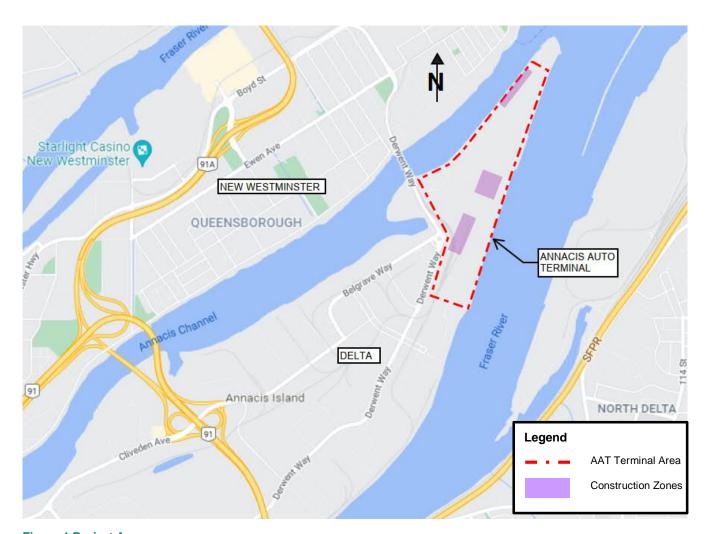


Figure 1 Project Area

Figure 1 shows the location of the AAT. The red dashed line outlines the Terminal area and the purple hatches shows the three construction zones.

3. Transportation Network

The Annacis Island is an industrial area that is serviced by a series of public roads and rails. There are two main roadways that provide access to and from Annacis Island: Hwy 91 (Alex Fraser Bridge) and Derwent Way (Annacis Island Swing Bridge). There a series of public roads (owned by City of Delta) that provides access to properties on Annacis Island and railways for business operations. This section will focus on the transportation networks to access the Terminal.

3.1 Roads

The City owned roadways on Annacis Island will provide access to the entrance of the Terminal, but there is a security gate that will only permit authorized access to enter the Terminal. There are two private roads that are the only access along the perimeter of the Terminal:

- Annacis Parkway
- Dock Road.

Within the Terminal area, there are a series of internal access routes that are only for business operations and are not to be used for access.

Existing Roadway	Road	Road Conditions	Signalized	Modes of Trans	portations		
	Classification		Intersection	Walking	Cycling	Transit	Truck route *
Derwent Way (South of Annacis Channel, within Delta)	Collector (between Eaton Way and Audley Blvd) Local (between Audley Blvd and Swing Bridge)	 City of Delta is the Road Authority Two travel lanes Dedicated turning lane(s) at various intersections Dedicated center turning lanes as various sections Property driveways fronting along Derwent Way On-street parking permitted at various sections Multiple stop controlled intersections Roundabout at Derwent Way and 	Derwent Way and Chester Road	Sidewalks at various sections	Shared lanes (no special treatments)	Bus route 104	Dedicated truck route (Industrial zone)
Derwent Way (North of Annacis Channel, within New Westminster)	Major Road Network	Belgrave Way City of New Westminster is the Road Authority Two travel lanes Turns into Boyd St	Derwent Way and Ewen Ave	No sidewalks	Boyd Street Bike Trail	Not a transit route	Designated truck route (City of New Westminster)
Annacis Parkway	Private access road	Two travel lanes Security gate at Derwent Way and Annacis Parkway (restricted access) Driveway frontage along Annacis Parkway Single access point for entry and exit	No signals	No sidewalks	• N/A	No bus route	Trucks permitted (private access)
Dock Road	Private access road	 Two travel lanes Only access road to the Terminal facility buildings Connects with Annacis Parkway No continuous access 	No signals	No sidewalks	• N/A	No bus route	Trucks permitted (private access)
Aldford Ave	• Local	 Two travel lanes No through road. Access ends at the Terminal property (gated access) Driveway frontage along Aldford Ave. 	No signals	No sidewalks	Not a bicycle route	No bus route	Dedicated truck route (Industrial zone)

Hwy 91 (Alex Fraser Bridge)	Road	Road Conditions	Signalized	Modes of Trans	portations		
	Classification		Intersection	Walking	Cycling	Transit	Truck route *
Audley Blvd	 Collector Local (south of Cundy Ave) 	 Two travel lanes separated by a wide center median. One way direction at each side of the median Stop controlled intersections Two at-grade railway crossings Roundabout at Audley Blvd and Cundy Ave Driveway frontage along Audley Blvd 	No signals	No sidewalks	Shared lanes (no special treatments)	No bus route	Dedicated truck route (Industrial zone)
Hwy 91 (Alex Fraser Bridge)	Highway	Multi-lane highwayOn and off ramps at Cliveden to access Annacis Island	No signals	No sidewalks	Not a bicycle route	• Bus route 301, 388, 340	Provincial truck route
Belgrave Way	• Local	 Two travel lanes Stop controlled intersections Two at-grade railway crossings Roundabout at Derwent Way and Belgrave Way On-street parking permitted at various sections Driveway frontage along Belgrave Way. 	No signals	No sidewalks	Shared lanes (no special treatments)	Bus route 104	Dedicated truck route (Industrial zone)
Cliveden Ave	Collector	 Two travel lanes Access to Hwy 91 Dedicated turning lane(s) at various intersections Dedicated center turning lanes as various sections Property driveways fronting along Derwent Way On-street parking permitted at various sections Multiple stop controlled intersections 	Signals at ramp intersections (Hwy 91) Chester Road and Cliveden Ave Various intersections west of Hwy 91	No sidewalks	Shared lanes (no special treatments)	Bus route 104	Dedicated truck route (Industrial zone)

^{*} based on the Road Authority's bylaw definition of a truck route

3.2 Railways

There are two existing rail yards within the Terminal. The main purpose of the rail yards is to load and transport vehicles after the vehicles are shipped and processed within the Terminal. The Southern Railway of British Columbia (SRY) are the Rail Authority for the rail tracks outside of the Terminal area. The rail tracks inside the Terminal area are owned by the Terminal (private tracks) and SRY spots the rail cars on the terminal. Each rail yard is a vital source for the Terminal to export vehicles. Only one rail yard can be closed for construction at one time and the other must be fully operational. The Contractor must provide advanced notice to the Terminal Operator and obtain approval before construction can commence at each rail yard. See Figure 2 below for the existing rails within the Terminal area.



Figure 2 Existing Railways

3.3 Terminal Layout

There are multiple internal accesses within the Terminal that are created based on the placement of the parked vehicles. Each access within the Terminal are coordinated by the Terminal Operator and are used strategically by the Terminal. The direction and access within the Terminal could change based on their operational needs. The Contractor and or anyone in the construction workforce are not permitted to use any of the access within the Terminal except for the two private roadways: Annacis Parkway and Dock Road. The Contractor can only use the specified areas within the Terminal during construction and must obtain approval by the Terminal Operator if additional space is needed within the Terminal area.

3.4 Site Access

Annacis Island is classified as an industrial area by the City of Delta where all public roadways within Annacis Island can be used as a truck route. Derwent Way and Aldford Ave are the two public roadways that are closest public road to access the Terminal. Annacis Parkway can be used off Derwent Way to access the northeast region of the Terminal and Dock Road can be used to access the south and west (up to mid Terminal) regions of the Terminal. There is a security gate at Derwent Way and Annacis Parkway to secure and restrict public access into the Terminal. The Contractor and all members of the construction workforce must obtain permission by the Terminal Operator before they are permitted to use the private roads within the Terminal, however access does not permit the Contractor or any member of the construction workforce to use the internal access routes inside the Terminal operating area (bounded by chain-link fences). There are three construction zones that will need prior approval from the Terminal before access to each construction zones can be permitted. Refer to Figure 3 for the site access layout and Appendix B for the conceptual traffic access plans.



Figure 3 Site Access Layout

Figure 3 shows the Terminal area (AAT). There are three construction zones shown in green hatch, however access within the Terminal area shown in red hatch is not permitted. Only specific designated areas are permitted for construction use only. The private roads shown in dashed blue lines are the only access roads that can be used to access the construction zones. The Contractor will be given specific instructions where they are permitted to access within the Terminal without compromising the Terminal's daily operations. The public roadways shown in sold blue lines are the routes that construction vehicles may use to access Annacis Island and the Terminal. Construction vehicles are only permitted to access the Terminal area to the designated construction zone via Annacis Parkway or Dock Road. All other access routes in the Terminal area are strictly prohibited unless prior approval is given by the Terminal.

Table 1. Existing Traffic Volumes

Wookdoy Ayorago Volumos	Derwent Way betwee Blvd and Caldew St	n Audley	Belgrave Way betwee Blvd and Caldew St	en Audley
Weekday Average Volumes	2017 EB and WB	2021 projected EB and WB	2017 EB and WB	2021 projected EB and WB
AM peak *	189	204	196	212
PM Peak *	214	231	280	303
Daily Total	2,480	2,684	2,836	3,070

Source: City of Delta vehicular traffic data (count year 2017)

Both Derwent Way and Belgrave Way can be considered as uninterrupted flow since the closest signals along Derwent Way and Belgrave Way is at Chester Road and another at Ewen Ave (traffic signals are more than 3km apart). The theoretical base capacity for uninterrupted flow for a two-lane highway (based on ideal road conditions) is estimated about 3,200 passenger vehicles per hour for both directions (1,700 passenger vehicles per hour for one direction). If we consider the corridors (Derwent Way and Belgrave Way) between Audley Blvd and Caldew St to be modelled as an uninterrupted flow, but use the 85th percentile to accommodate transit vehicle stoppages on a travel lane and for interruptions of vehicles ingress/egress at driveway between traffic flow gaps then we can assume a theoretical capacity of 2,720 passenger vehicles per hour for both directions to compare with the existing traffic volumes.

On the other hand, if we consider the Derwent Way and Belgrave Way corridors (between Audley Blvd and Caldew St) to be interrupted flow since there will be transit stopping on travel lanes and driveway access that could interrupt the traffic flow pattern then we will need to use the theoretical saturated flow rate (1,900 passenger cars per hour of green time per lane) and assume a ratio of effective green time to signal cycle length to calculate a theoretical interrupted capacity. A conservative assumption for the ratio of effective green time to signal cycle can be 0.5 (assume effective green time about 30 seconds and typical cycle time about 65 seconds) therefore the base theoretical interrupted capacity could be 950 passenger cars per hour per lane. But, a factor should be included to accommodate for transit and driveway access interruptions so the 85th percentile can be use again. In addition, it would be ideal to have an interrupted flow on a travel lane to operate at an optimal level (65% capacity) as opposed to having it operate at a saturated level. With all the factors applied, the theoretical base capacity operating at an optimal level (65% of 800 pc/hr/ln capacity) should be about 520 passenger cars per hour per lane or an estimated daily traffic capacity of 5,200 vehicles per direction (based on the assumption that the peak hour represents approximately 10% of daily traffic).

The available traffic data was from year 2017, therefore a 2% annual growth was projected to estimate the traffic volumes for year 2021. It was estimated that a maximum of ten to fifteen trucks per hour (one truck every four mins to six mins) can be expected during construction at the Terminal in addition to the traffic from the construction workforce. The traffic generated by the construction workforce is considered negligible since the construction workforce would be expected to arrive on-site in the morning and leave in the evening (two trips) and should be outside of peak travel hours.

It does not appear that the additional truck volumes during construction would affect the road capacity since the pre-construction peak hour traffic volumes appears to be operating well below the estimated theoretical capacity (interrupted or uninterrupted) even with the estimated maximum fifteen trucks per hour. This is not expected to saturate the road capacity on Derwent Way or Belgrave Way. There are two access routes to Annacis Island:

- Highway 91 (Hwy 91), and
- Derwent Way from New Westminster.

^{*} peak hour varies depending on the day

Hwy 91 is a busy multilane highway that provides access across multiple municipalities and it provides a direct access to Annacis Island via the on/off ramps. Hwy 91 is expected to be at capacity or over saturated during the AM and PM peak periods. The available traffic counts from the BC Ministry of Transportation shows that the northbound traffic on Hwy 91 (north of Cliveden) has an AM peak hour around 7am and is above the estimated theoretical capacity. However, the traffic volumes shows a decreasing trend after the AM peak hour indicating there will be less northbound traffic after 7am. No traffic data was available for the southbound traffic, however, it can be assumed that the traffic characteristics would be similar but opposite to the AM northbound traffic where we can expect the southbound PM peak to be over capacity. At a high-level assessment, the estimated ten to fifteen construction vehicles per hour would be insignificant to the existing highway traffic, but the Contractor should coordinate construction vehicle access traveling on or off the highway to avoid the peak hours.

The alternative access to Annacis Island would be on Derwent Way from the City of New Westminster, but construction vehicles will have to navigate through the City of New Westminster just to access southbound on Derwent Way. Derwent Way from the New Westminster has a traffic volume (AADT) of 5,039 vehicles in both directions (count year 2009). Using the same 2% growth projection, an estimated volume in year 2021 would be 6,400 vehicles in both directions which indicates that traffic on Derwent Way (New Westminster side) would have sufficient capacity (estimated daily traffic capacity of 5,200 vehicles per direction on Derwent Way) to accommodate the estimated maximum ten to fifteen trucks per hour.

4. Traffic Control

The following is a list of general traffic control requirements and recommendations for the project:

4.1 Traffic Signage and Control Devices

- All traffic signs and traffic control devices must be designed and executed in accordance with the BC Traffic Management Manual for Work on Roadways.
- The Contractor must supply all traffic control devices that are required to perform traffic control services for the project. Signs and traffic control devices not applying to existing conditions shall be temporarily removed or covered (with approval from the Road Authority or Owner) to avoid confusion. Where operations are carried out in stages, only those traffic control devices that apply to the current stage are to be left in place. The Contractor is responsible to uncover or reinstall the existing signs after construction.
- All traffic signs must be placed on the roadway where they will be visible to all road users. The required spacing and sign
 placement on the road is specified in the BCMOTI Traffic Management Manual for Work on Roadways.
- It shall be the responsibility of the Contractor to supply, install, maintain and remove all works-related signing. The location and type of each sign shall be indicated on the approved Traffic Control Plan(s)
- Signs shall be checked daily for legibility, damage, suitability and location. Signs and delineators shall be cleaned as frequently as necessary to ensure visibility and reflectivity.

4.2 Construction Zone Protection

The BCMOTI standards shall be used during construction and the traffic control devices and their placement shall be in accordance with the Traffic Management Manual for Work on Roadways. At a minimum, the following should be available for use in the construction zones (not listed in any order):

- Tubular Markings or traffic cones
- Flexible drums
- Barricades
- Flashing arrow board (FAB)
- Road barriers

- Fences
- Buffer vehicles
- High level warning devices (HLWD)

4.3 Traffic Control Personnel (Flaggers)

- If required, the Contractor must have professionally trained Traffic Control Personnel(s) to safely direct vehicle, bicycle and pedestrian traffic in and around the construction zone, and where indicated on the Contractor's traffic control plan.
- If traffic personnel(s) are being used, the Contractor is required to place warning signs (as per BC Traffic Management Manual for Work on Roadways guidelines) on the roadway in advanced of the any location where traffic control personnel(s) will be working.
- There must be sufficient Traffic Control Personnel(s) on site (if required) to appropriately and safely direct traffic and construction access in and out of the construction zone.
- If required, Traffic Control Personnel(s) must be utilized when:
 - traffic is required to pass work vehicles, equipment or personnel, which may block all or part of the roadway;
 - traffic is rerouted or detoured;
 - the access entrance/exits at construction zones might require more time for a construction vehicle to maneuver in/out or need more room on a roadway for oversteering.
 - construction vehicle traffic is heavy;
 - construction access could be in conflict with the terminal operation
 - Any other situation where there is a perceived conflict between activities of the work and traffic, or as determined by the Traffic Engineer.

4.4 Abrupt Changes in Surface Elevations

Minimal abrupt changes in roadway elevation shall be left exposed to traffic during both working and non-working hours. A wedge of asphalt must be used as a transition to vertical differences in travelled areas and have a recommended slope of 4:1 or shallower. Appropriate signage is required to be installed to identify any hazard(s).

4.5 Temporary Parking Areas

- The Terminal might be able to provide a dedicated parking area at the north lot (NE corner of Annacis Parkway and Derwent Way) for construction workers. But, the number of parking may be limited and the Contractor must coordinate and arrange for car-pooling from the parking area to the construction zones since space will be limited within each construction zone and staff parking will not be available within the construction zones.
- If the Terminal cannot provide a dedicated parking area then the Contractor shall arrange for an off-site parking and coordinate car-pool for all construction workers including all sub contractors to access the Terminal in order to minimize their construction footprint and to reduce impact to the Terminal.
- Parking associated with construction is not permitted to occur within the Terminal area, Annacis Parkway, Dock Road or
 on any private properties. Any on-street parking must be done in accordance with the posted regulations.

4.6 Staging Area/Holding Area

Construction vehicles (dump trucks, concrete trucks, etc.) are not permitted to stage or wait on any public roadway, private roadway or inside the Terminal area before access to the construction zone is available. Each construction zone will have minimal working space available in order to minimize the impact to the Terminal's daily operation, as a result there will be no space available for construction vehicle staging or holding area within the designated construction zones. If the Terminal cannot

provide a staging or holding area at north lot (NE corner of Annacis Parkway and Derwent Way) then the Contractor will need to find a temporary off-site area for construction staging/holding area in case there is a need for a construction vehicle(s) to park and wait temporarily before construction vehicle(s) can access into the designated construction zone.

4.7 Emergency Response Plan

The Contractor shall develop an Emergency Response Plan to include, at a minimum:

- must coordinate with the Terminal Operator and all emergency services to ensure emergency access route(s) and access to properties will be maintained during construction.
- Details on how the Emergency Response Plan incorporated into the traffic management plan is consistent with the overall Project Safety Plan and the responsibility of the Contractor,
- Procedures to ensure the safe passage of Emergency Service(s) vehicles within the Terminal. This may include temporary changes in construction zones to allow passage during times of vehicle queuing or other potential blockages, and Emergency access routes during construction.

4.8 Communications Requirements

The Contractor shall provide the Owner, Terminal Operator and any affected stakeholders (Road Authority, Emergency Services, nearby business owners, etc.) advanced notice and updates regarding traffic conditions before starting construction and during construction. The Contractor will need to coordinate communications with the Terminal Operator and provide written notice prior to any traffic disruption or change in traffic operation (Terminal Operator shall specify the minimum notice duration). At a minimum, the Contractor shall:

- Provide notification given to all Emergency Services when construction will alter the normal traffic flow,
- Notify the Road Authority and/or Terminal Operator to issue traffic updates to all stakeholders within the project area.

5. Traffic Management

The Construction Traffic Management and Staging Plan is a guideline of suggestions for the Contractor to consider during construction. The main objective of the Construction Traffic Management and Staging Plan is to provide access and to minimize the daily business operations within the Terminal during the three construction phases of the project.

As previously mentioned, the Terminal is a secured access and space for construction will be restricted due to the Terminal's daily operations, therefore a plan must be implemented before the start of construction to provide assurance to the Terminal that construction will not impact their daily operations within the Terminal. This Construction Traffic Management and Staging Plan was created at a desktop level and is believed to be feasible, but the Contractor must confirm, verify and develop their own detailed Traffic Management Plan to satisfy all required parameters for the project. The Contractor shall review the Construction Traffic Management and Staging Plan for construction and identify any possible issues to Terminal and the Engineer to work out a solution. All consideration is to be given to strategies to reduce the impact on the Terminal area. The conceptual traffic management and construction staging is shown in Table 2. The conceptual construction zones and laydown areas are shown in Appendix A and the conceptual traffic access plans are shown in Appendix B.

The minimum parameters related to the preparation of Traffic Management Plan by the Contractor during construction are listed below:

1. This Construction Traffic Management and Staging Plan is not a stand alone document. The Construction Traffic Management and Staging Plan is to provide a guidance for the traffic requirements during construction. All design related information shown in the Construction Traffic Management and Staging Plan is for information only. All design information must be taken from the actual design drawings.

- 2. The Contractor must work with the Terminal Operator and provide their required duration(s) to give advanced notice(s) for any traffic related.
- 3. Contractor to coordinate their traffic controls with the Terminal, and other Tenant within the area.
- 4. The Contractor must not access any part of the Terminal area without prior approval from the Terminal. The Contractor is only permitted to use the pre-approved construction zones and the two private roads (Annacis Parkway and Dock Road).
- 5. Contractor should determine when the peak volume of traffic will occur on Annacis Parkway and coordinate with construction vehicle access on Annacis Parkway to avoid conflict with the peak access volumes. It is assumed that the peak volume on Annacis Parkway and in the Terminal should occur during the morning and evening periods when Terminal workers (and other tenants in the area) arrive and leave work.
- 6. Only one construction zone can be implemented (active construction) at a time. The construction zone must be completed, operational/commissioned, and returned to the Terminal Operator before the next construction zone is permitted to commence.
- 7. The Contractor must minimize their construction footprint for each of the construction zone. The Contractor must obtain approve for their construction zone before proceeding.
- 8. There is limited on-site parking available for the personal vehicles for the construction workforce. The Contractor must coordinate with their construction workforce and provide carpooling to access the Terminal.
- 9. The Contractor must coordinate with the Rail Authority and Terminal Operator prior to closing the rail yard(s) to rail traffic for the duration of construction, and maintain all required safety clearances and regulations.
- 10. At least one rail yard will need to be operational at all times. Construction activities cannot occur on both rail yards at the same time.
- 11. Rail Side 1 construction will be planned with no interruptions to current operations, except the extended length of Track 4.
- 12. Construction on Rail Side 1 must be planned and executed without any interruption to terminal operations outside of Rail Side 1 construction and laydown area.
- 13. Construction on Rail Side 2 must be planned and executed without any interruption to terminal operations outside of Rail Side 2 construction and laydown area except during the installation of the switch to service the new siding tracks and the infrequent impact to track 8.
- 14. Construction access to the Rail Side 2 will be via Alford Ave. The entrance to the Terminal from Alford Ave is currently secured with a locked swing gate. The Contractor must maintain the secure access at Alford Ave during construction.
- 15. Rail Side 2 construction staging requires planning for the laydown and staging area to build new tracks and switches. Rail Side 2 construction should be planned with minimum interruption for switch tie-ins and extended interruptions confined to Track 8. The Contractor must submit a working plan to the Terminal for approval before Rail Side 2 construction can commence.
- 16. Contractor must coordinate with the Terminal Operator to determine dates and times for the berth and truck loading schedules. The Contractor shall plan their construction activities to avoid busy operating periods within the Terminal to avoid conflicts with business operations.
- 17. Contractor shall provide adequate barricades and lighting around and adjacent to any open excavation or other potentially dangerous location(s), as required.
- 18. Contractor shall ensure that at the end of each workday, and at other times when construction operations are suspended for any reason, minimize the construction zone by removing unused equipment, obstructions, and barriers.
- 19. Contractor shall ensure that the construction activities shall be carried out in such a manner that will not prohibit traffic access or impact with the Terminal operations at all times.
- 20. Contractor shall take every precaution so that material or equipment will be stored where it will not interfere with traffic, or in such a manner that it may create a hazard.

Table 2 Traffic Management and Staging Recommendations

Construction Zone	Estimated Duration	Expected Construction Tasks	Traffic Expectations and Impact		
Rail Side 1 **	2 weeks	Relocate transformer from north side of track 1. Get locates done, all utilities in the area under construction disconnected and saw cut, construction area and the lay-down area fenced and secured.	 The Contractor must plan and execute the scope of work for Rail Side 1 without any interruptions to the terminal operations outside of the construction zone (including the laydown area). 		
	2 wooks	Construction equipment and contractor move in.	Contractor to contact the Terminal to obtain permission for the construction workforce to access through the secured gate at Annacis Parkway.		
	3 weeks	Track area dug up and all the material hauled off site. If any of the base gravel is considered suitable for rail bed, will be piled up in the lay-down area. Install underground services as required and prepare the track bed.	 Contractor to work with the Terminal to reserve a designated area for construction parking and a staging/holding area at the north gravel lot. The Contractor must arrange to have their construction workforce transported from the designated 		
	3 Weeks	Lay down the ties, track, ballast and tamp.	 parking area to the construction zone. Individual vehicles are not permitted to park at the construction zone unless permitted by the Terminal Operator. 		
			 Annacis Parkway will be used as the access route to the Rail Side 1. Dock Road should not be used. There is existing fencing along Annacis Parkway. The 		
	1 week	Align the tracks and weld joints.	Contractor should use the existing openings for construction vehicle access. The Contractor must seek approval from the Terminal to remove any fencing during construction. A temporary fencing will be required in place of any removed		
	2 weeks	Install metal racks for bridge plates, pave the areas around and between the tracks as required and clean up.	section and the fence must be reinstated after construction.		
	1 week	<u> </u>	 Contractor will need to coordinate with the Terminal to fence off the laydown are within the Terminal. 		
			inspection and deficiency list as required.	 A turn around area within the designated construction zone should be maintained to permit construction vehicles to maneuver with the construction zone and to exit out on Annacis Parkway. 	
				 No equipment, materials, vehicles or workers are permitted to go beyond the designated construction zone for any reason. 	
			 Traffic access along Annacis Parkway must be maintained at all times. No construction vehicle or equipment is permitted to be on Annacis Parkway or Dock Road. 		
			Contractor must coordinate with the Terminal and remove all construction related material and restore the area back to the pre-construction condition.		
			 The designated construction zone at Rail Side 1 must be restored, Rail Side 1 must be commissioned, and in full operation before Rail Side 2 can commence. 		
			 Terminal Operator must approve of the reinstated area and provide approval before the Contractor can commence on to Rail Side 2 or the next construction zone. 		
Rail Side 2	1 week	Get locates done, all utilities in the area under construction disconnected and saw cut, construction area and the lay-down area fenced and secured. Construction equipment and contractor's trailer relocated.	The Contractor must plan and execute the scope of work for Rail Side 2 without any interruptions to the terminal operations outside of the construction zone (including the laydown area) except during the switch installation and the occasional impacts from Track 8. The Contractor must provide advanced		
	2 weeks	Track area dug up and all the material hauled off site. If any of the base gravel is considered suitable for rail bed, will be piled up in the lay-down area.	 notifications to the Terminal and the Rail Authority prior to any impact. Aldford Ave will be only roadway to access the Rail Side 2. No other internal access within the Terminal can be used. 		

Construction Zone	Estimated Duration	Expected Construction Tasks	Traffic Expectations and Impact
	4 weeks	Install underground services as required and prepare the track bed. Lay down the track, install turnouts, including on SRY main line. Ballast, tamp, align and weld joints.	 The designated parking area at the north gravel lot could be available for use. However, the construction crew are not permitted to use any access routes within the Terminal to access Rail Side 2.
	1 week	Install metal racks along the tracks. Pave the areas around and between the tracks as required and clean up. Remove fencing, final inspection and deficiency list as required.	 Construction crew may choose to use on-street parking (municipal/public roadways), but they are responsible to comply with the posted on-street parking regulations. The Terminal Operator is not responsible for any incidents relating to on-street parking.
			 Contractor will need to coordinate with the Terminal to get access through the swing gate at Aldford Ave and to fence off the construction zone within the Terminal. A traffic flagger or security guard might be required at the gate to permit access and to ensure the gate is locked at the end of the work day or any time construction is inactive.
			 The security gate at Aldford Ave must remain closed after every access. The Contractor is responsible to ensure the gate is properly closed to prevent unauthorized access.
			 A turn around area within the designated construction zone should be maintained to permit construction vehicles to maneuver with the designated area and to exit out on Aldford Ave.
			 No equipment, materials, vehicles or workers are permitted to go beyond the designated construction zone for any reason.
			• Contractor must minimize their construction zone as much as possible to minimize impact to the Terminal.
			 The designated construction zone at Rail Side 2 must be restored, Rail Side 2 must be commissioned, and in full operation before the New Processing Building can commence.
			Terminal Operator must approve of the reinstated area and provide approval before the Contractor can commence on to the New Processing Building.
Processing Building and EV Chargers ***	6 weeks	Locates and utilities disconnected. Construction start up, Contractor mobilization, removal and disposal of hazardous material.	The Contractor will need to coordinate with the Terminal Operator to arrange for an escorted access through the Terminal area to access the New Processing Building construction zone via Annacis Parkway. The Contractor and the
	4 weeks	Demolition of existing buildings and earthwork.	 construction crew are not permitted to use any other access routes within the Terminal except for designated escorted access.
	4 weeks	Excavation and underground improvements (concrete columns) and underground services (utilities.)	 Parking inside the Terminal area is not permitted. Construction parking is only permitted within the designated area only and construction workers must be escorted to the designated construction zone within the Terminal.
	5 weeks	Foundation preparation work and concrete work.	The Contractor is responsible to ensure anyone involved in construction of the New Processing Building will need to follow the escorted access route and not to
	4 weeks	Structural steel erection.	 use the access route without being an escorted. The Contractor must coordinate every construction access within the Terminal
	4 weeks	Siding and Roofing.	and minimize the number escorted accesses to reduce the impact to the Terminal operation.

Construction Zone	Estimated Duration	Expected Construction Tasks	Traffic Expectations and Impact
	7 weeks	Inside services build and other inside facilities.	 Annacis Parkway and Dock Road maybe permitted to be used as an alternative access route to the New Processing Building construction zone. However, the
	5 weeks	Building inside finishing and other installations including racks, lifts and other shop equipment.	Contractor must obtain permission from the Terminal Operator before an alternative access route can be used during construction.
	1 week	Final inspection and deficiency list as required.	 The Contractor must ensure the use of the alternative access route will not impact with the Terminal operation especially during berth receiving periods since Dock Road will intersect the loading access routes.
EV Charging Stations	2 weeks	Planning and construction start up.	The Contactors must work with the Terminal Operator to determine the periods when the Terminal will be receiving shipment or any other time when the Terminal
	4 weeks	Concrete base installation.	 area will have frequent movements to avoid conflicts between construction access/staging and the busy operating periods in the Terminal.
	2 weeks	Equipment installation and final inspection.	Contractor will need to coordinate with the Terminal to fence off the construction zone within the Terminal.
Parts Warehouse	4 weeks	Locates and utilities disconnected as required. Removal and disposal of hazardous material, construction start up.	The Contractor must reduce their construction zone to avoid impact to the Terminal operations.
	6 weeks	Removal of existing floor, earthwork improvements, underground services.	 A turn around area within the designated construction zone should be maintained to permit construction vehicles to maneuver with the designated area to exit out on Annacis Parkway.
	4 weeks	Foundation, concrete work.	The Contractor must not interfere with any Terminals business operations.
	3 weeks	Interior build up.	 The Contractor shall ensure that at the end of each workday, and at other times when construction operations are suspended for any reason, maximize Terminal access.
	1 week	Final inspection.	At the end of the project, the Terminal Operator must approve of the reinstated area and provide approval before the Contractor is relieved from their obligations to the contract.
Paint and Body Shop Demolition (Paint and body shop floor NOT	3 weeks	Locates and utilities disconnected as required. Relocate material and equipment stored inside the building. Secure/enclose electrical distribution panel located at the north-west corner of the building. Removal and disposal of hazardous material.	- to the contract.
to be demolished)	4 weeks	Demolish above ground portion of the building, cut foundation walls and columns to the floor level.	-
	2 weeks	Repair floor and cut-up foundation bases as required. Final clean up inspection.	_

** Assumptions: Construction permit from Local Authorities (If Required) has been secured. Track material has been ordered and delivery of material confirmed.

*** Assumptions:

- All "Remove and Relocate" items listed below are completed by VFPA before start of construction and contractor mobilization. All hazardous material locations identified and marked.
- Remove and relocate First Aid Trailer.
- Remove and relocate Emergency Siren.
- Remove and relocate Cardboard Bin.
- Remove and relocate Garbage Compactor.
- Relocate WWS Crew Vehicles access from Cafeteria area to parking area in front of the River Shop.
- Remove all Equipment from Building Accessory Shop #2 and Mechanical Shop #1(lighting to be saved and reused if possible).
- Move all required Equipment from Building Accessory Shop # 2 and Mechanical Shop #1 to Paint and Body Shop.

6. Conclusion

The overall construction staging plan for the Annacis Auto Terminal Rehabilitation project consists of three main areas to be upgraded: Rail Side 1, Rail Side 2 and the Processing Building including the Electric Vehicle Charging Stations. Electric Vehicle Charging Stations are at the South-East corner of the processing building. Total duration for the project is expected to take 15 months with Rail Side 1 – 3 months, Rail Side 2 – 2 months and Processing Building – 10 months.

The additional estimated ten to fifteen construction vehicles will add to the existing traffic capacity along the adjacent road network during construction at the Terminal. The local road network (Municipal roads) appears to have capacity to accommodate the additional anticipated construction vehicles during construction. However, the adjacent reginal road network (Hwy 91) appears to be operating at capacity and will require the Contractor to schedule construction access during off-peak hours to avoid traffic congestions and delays.

Construction vehicles are required to use the designated access routes in the Terminal to access each designated construction zones:

- Annacis Parkway will be used to access the Rail Side 1 construction zone.
- Aldford Ave will be used to access Rail Side 2 construction zone.
- An escorted access (to be determined by the Terminal Operator) via Annacis Parkway will be used to access the Processing Building construction zone.

A designated parking area for the construction workforce will need to be located off-site and the construction workforce will need to carpool to the active construction zone in order to minimize the impacts inside the Terminal area during construction.

Appendix A Conceptual Work Zones and Laydown Areas





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ANNACIS AUTO TERMINAL

VEHICLE PROCESSING FACILITY

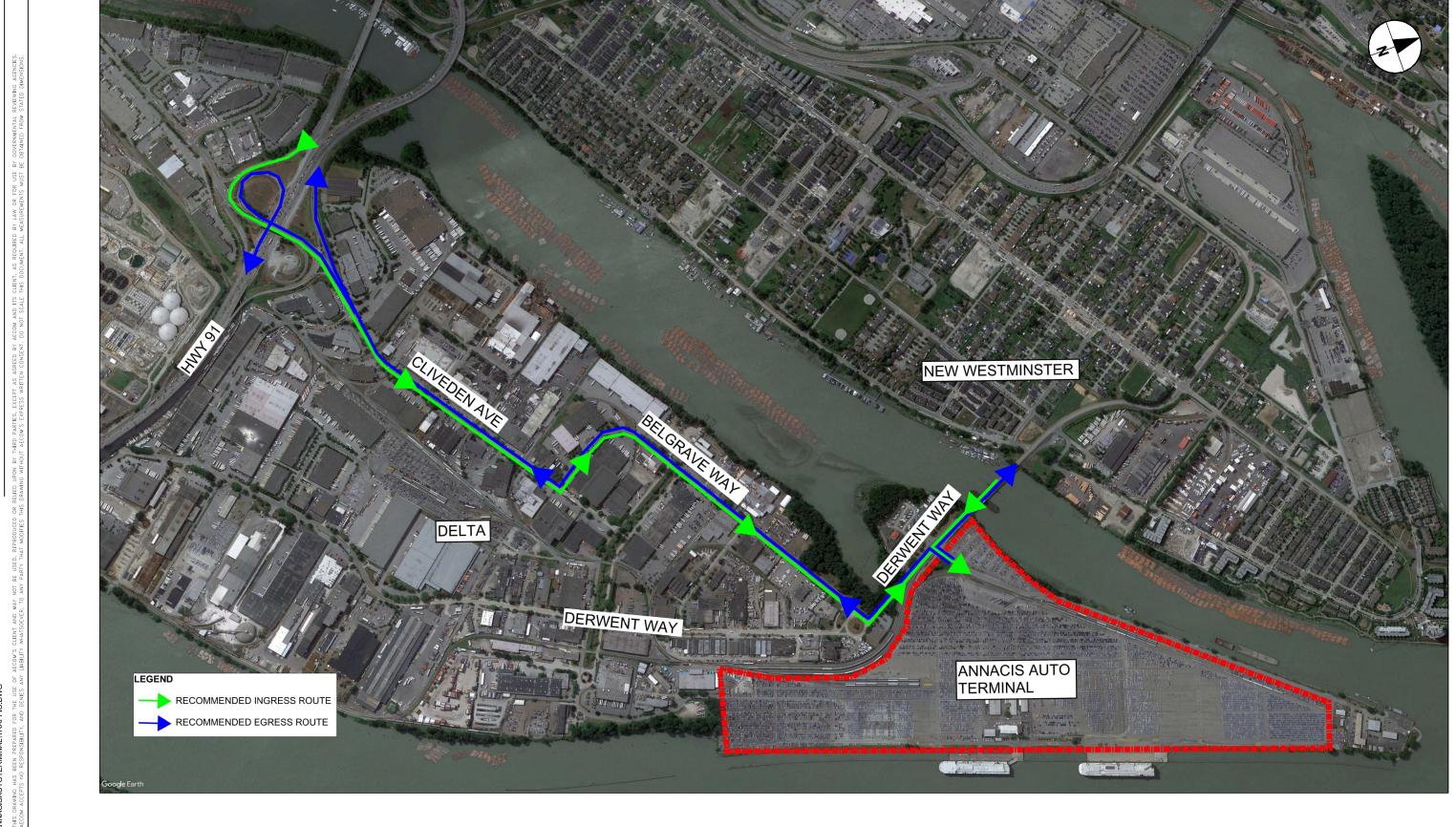
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RIAL AND LAY DOWN OVERALL SITE

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Appendix B Conceptual Traffic Access Plans



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ANNACIS AUTO TERMINAL CONCEPTUAL TRAFFIC CONTROL PLAN SITE ACCESS

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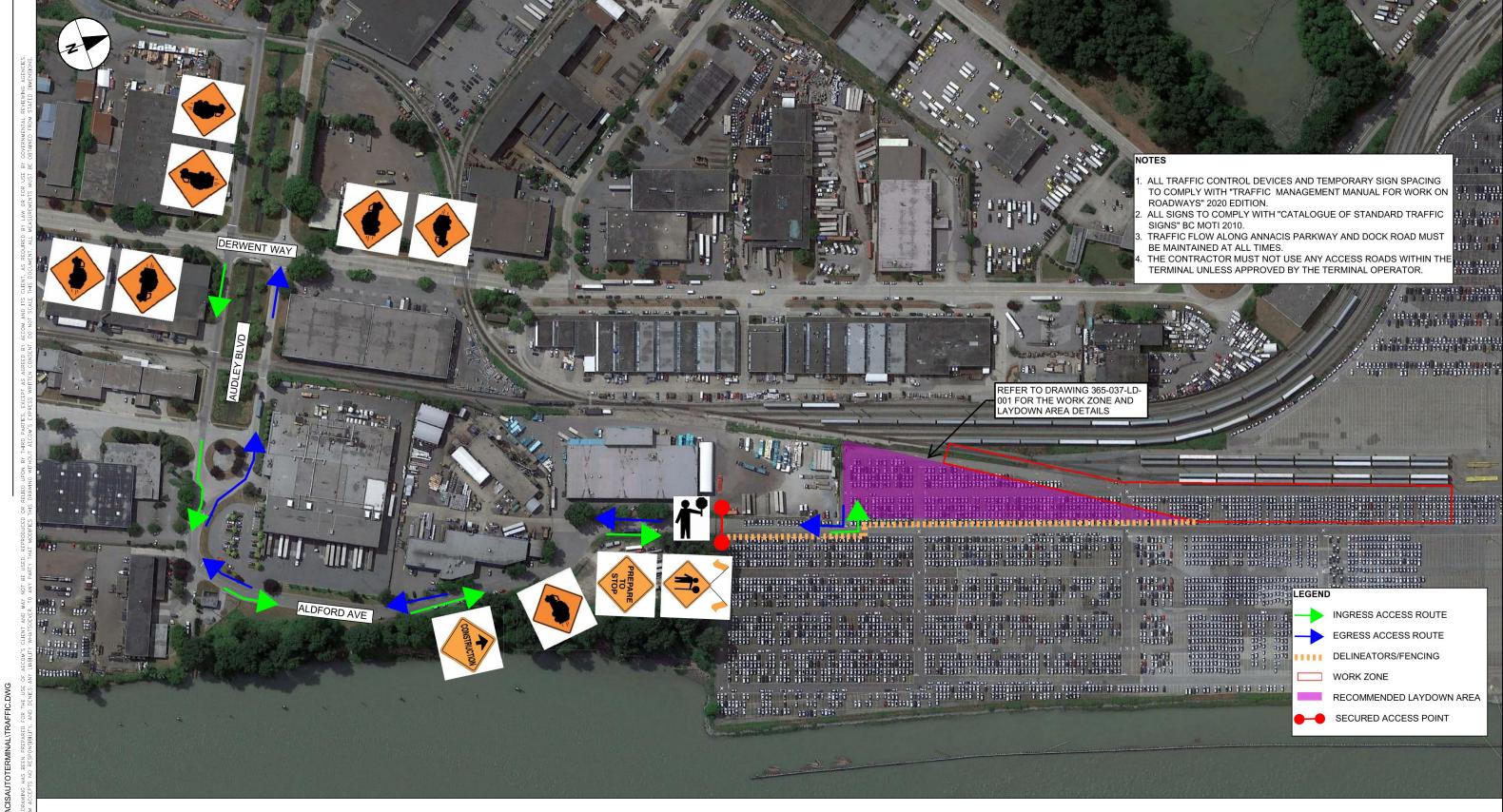
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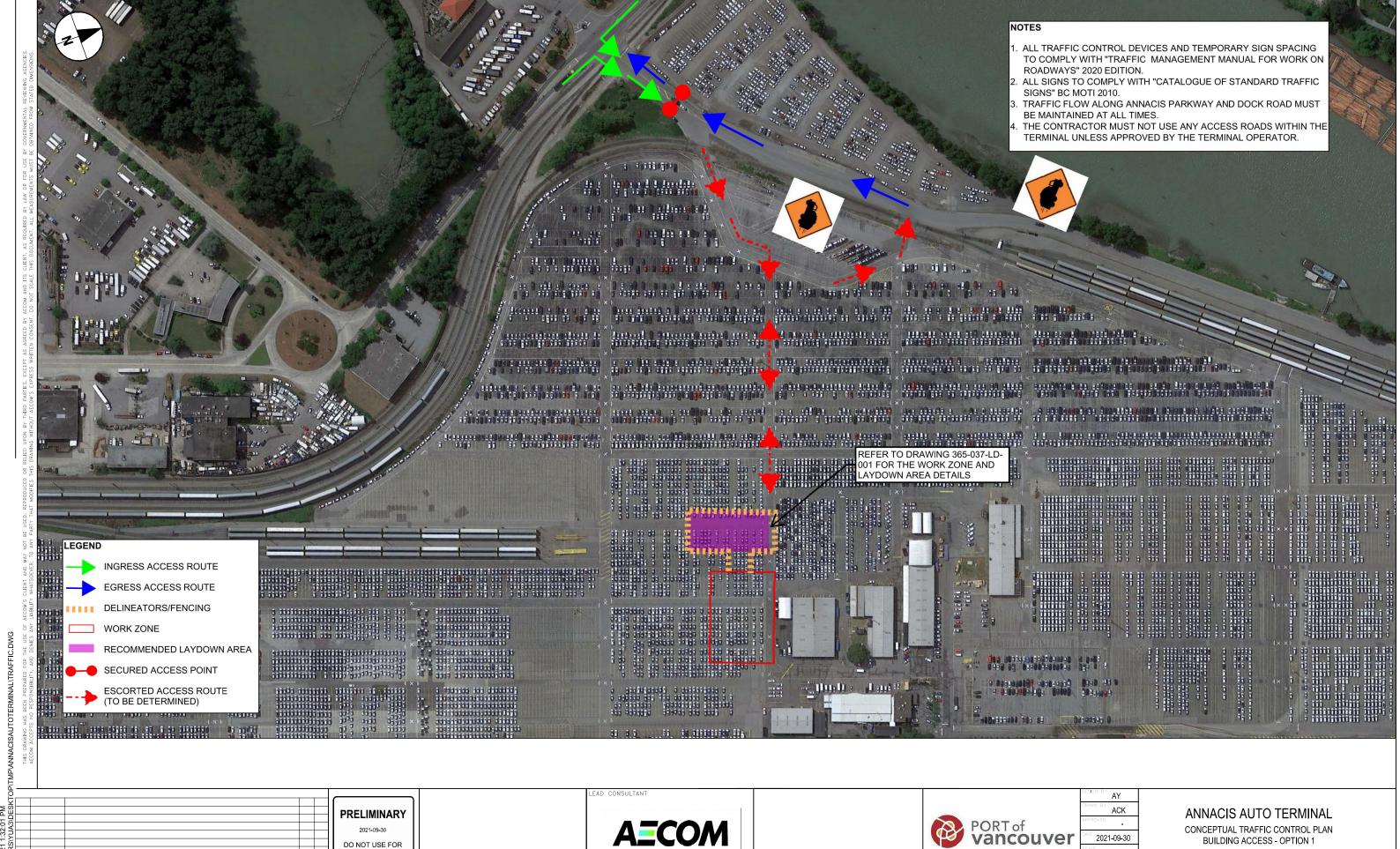
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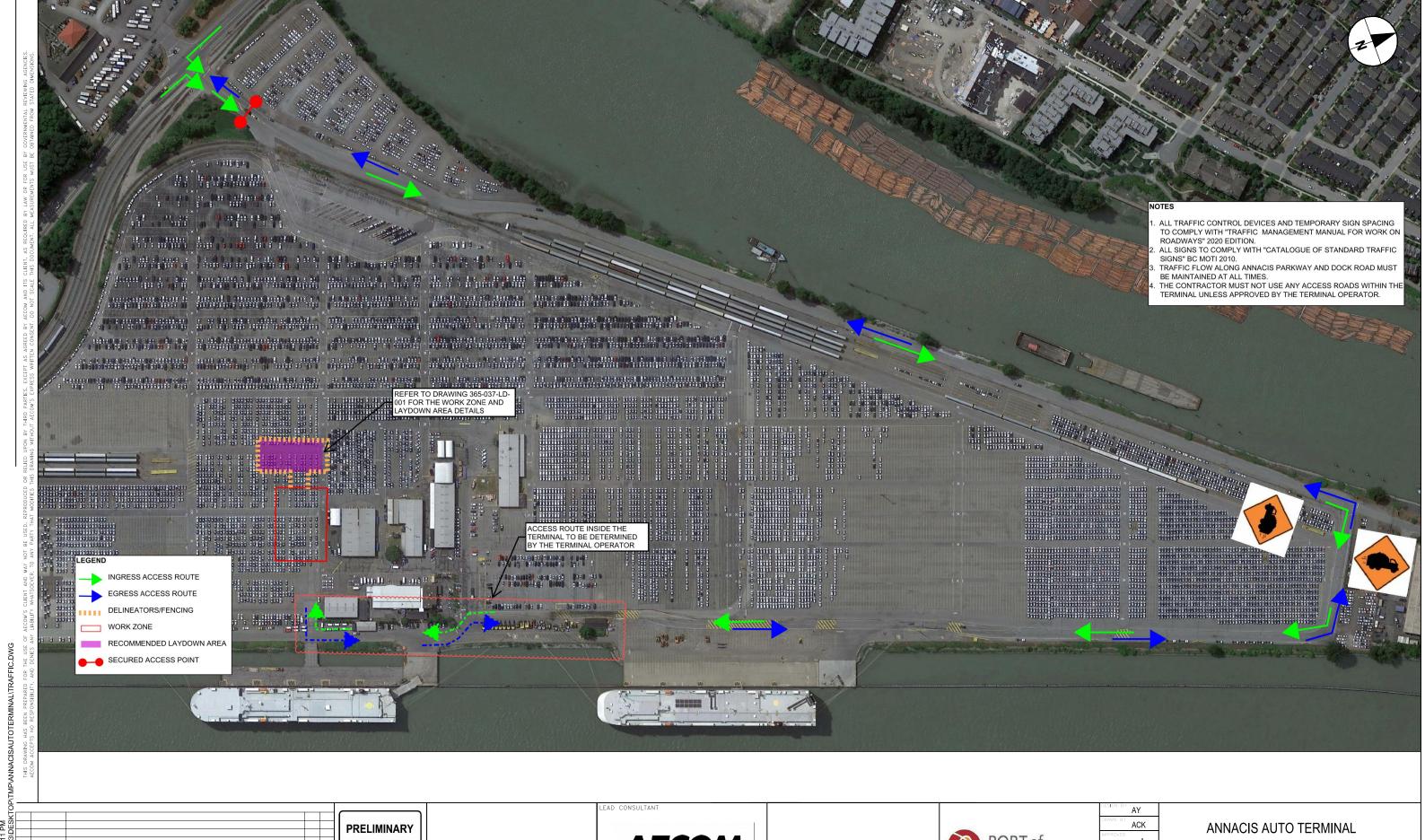
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CONCEPTUAL TRAFFIC CONTROL PLAN BUILDING ACCESS - OPTION 2

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