REALIZED AND ANCITIPATED BENEFITS

The Low Level Road (LLR) project involves the realignment and widening of approximately 2.5km of urban and rural arterial road within the City of North Vancouver boundaries. The project incorporates improvements to road safety, community connections, and increase on a Port trading capacity with the construction of over 7 km of pedestrian and cyclist facilities, a tiered retaining wall system, a vehicle overpass, and three pedestrian bridges.

As the Prime Design Consultant for Port Metro Vancouver, Stantec provided design management and engineering services for civil/roads, rail, structural, utilities/drainage, geotechnical, electrical, landscaping, and traffic engineering; as well as construction support. The design was done in accordance with the Transportation Association of Canada's (TAC) Geometric Design Guide for Canadian Roads, including the BC MOTI Supplement to TAC. The key road safety objectives for the LLR project are to:

- Eliminate rail/road conflicts and associated safety risks at three existing at-grade crossings along the LLR corridor (i.e. at St. Andrew's Ave, south of St. Patrick's Ave, and at the access to Neptune/Cargill port terminals),
- Minimize interaction between motorists and railway operations along the LLR corridor,
- Address existing roadside hazards related to the proximity of vehicles, cyclists and pedestrians to barrier ends, utility poles, and unstable slopes,
- Improve the cross-sectional design of LLR, including wider shoulders and setback distances,
- Improve pedestrian and cyclist facilities on and adjacent to the corridor, including improvements to the North Shore Spirit Trail, a recreational green pathway,
- Enhance operations at the Neptune/Cargill port terminals with improved access, geometry, and laning.

Please refer to the appendices for supporting project photographs, project poster, plan and profile drawing, and signing and pavement marking drawings for the Low Level Road project.

Esplanade Avenue and St. George's Avenue Intersection

The previous intersection has insufficient cyclist lane width (1m instead of the required 1.5m minimum), very sharp vehicle turning movements, and insufficient length for acceleration and deceleration lanes. The 4m-wide Spirit Trail multi-use pathway ended abruptly at St. Georges Avenue without pedestrian connectivity to other facilities along the Low Level Road.

The new intersection provides, generous turning movement for WB 20 design vehicles, protected Left turn lanes, adequate width for cyclist lanes (2.0m), connectivity for all modes of transportation (cyclist, vehicular, pedestrian, rail).

Esplanade Avenue and St. Andrew's Avenue Intersection

The previous intersection was un-signalized and had nonexistent pedestrian sidewalks and crossing facilities. St. Andrews Avenue is a major cycling route in the City of North Vancouver; however no adequate or safe cyclist connection was available between St. Andrews Avenue and LLR's Westbound and Eastbound lanes. There was constant conflict between vehicles

chaotically parked on the North side of Low Level Road/Esplanade Avenue and traffic on LLR's Westbound and Eastbound lanes. Vehicles were entering and exiting adjacent businesses without proper signalization and traffic management. An un-signalized at-grade rail crossing, lacking signs, was also present at the South side of the intersection, causing unsafe crossing conditions.

The new intersection features design opportunities for vehicular, cyclist and pedestrian usage in a unique intersection layout. As a result, it was important to perform a thorough review of any potential areas of conflict or user misinterpretation. Following the review, it was determined that the new design is a feasible option which provides adequate safety precautions and ensures smoothly flowing traffic in all directions. The channelization design at this intersection was clearly demarcated with dotted pavement markings in order to guide vehicles along the lane and signs have been posted to provide additional visual cues for the user.

The pedestrian crossing at Esplanade and St Andrew's Avenue has also been evaluated to provide optimal efficiency and user safety by improving visibility. Left turning traffic from St. Andrew's Avenue to Low Level Road share a conflict point with the pedestrians accessing the Spirit Trail crossing at LLR. The left turning traffic is provided with adequate sightlines and visual cues such as delineation with elephants' foot and other pavement markings. Unlike standard four-leg intersections, there will be no opposing (ie. northbound) through traffic on St. Andrew's Avenue and therefore the southbound left-turning traffic will not be distracted from pedestrian activity by having to locate a gap in opposing traffic prior to turning left. This configuration encourages steady traffic flow by minimizing traffic build-up and prevents unwanted maneuvers onto adjacent roads.

The merging operations for Westbound Esplanade west of St Andrews Avenue is subject to safety considerations associated with skewed lanes including: difficult sightlines, visibility concerns and awkward signing and configurations. The risk of rear-end collisions may be increased caused by following vehicles not being aware of the movement of leading vehicles attempting to merge. The leading vehicle may also have a limited ability to search for available gaps in traffic and maintain awareness of cyclists in the vicinity. To address these safety considerations, traffic control and signs have been provided to assist with the merging operations. Brightly colored green pavement markings and bicycle stencil road markings have been provided to clearly demarcate the bike lane to improve visibility of cyclist activity within the area of conflict.

Low Level Road Corridor

The Low Level Road laneway and cyclist lane were previously directly adjacent to the rail yard and within the dynamic envelope of moving trains, causing conditions for potentially unsafe traffic interactions. To address this, a multi-tiered retaining wall system was implemented along the corridor to grade-separate North Shore residences at the top level, pedestrian and cyclist movement through the Spirit Trail, vehicle movement through LLR, and railroad traffic through a CN yard at the lowest level. By placing each mode at different elevations, traffic interactions can be minimized and the potential for collisions significantly decreased.

Prior to these improvements, the North slope of the existing corridor (from St. Patrick's Ave to Heywood Street) showed significant slope stability issues and failures that raised safety concerns from adjacent residences and traffic participants. Today, 30,000m^2 of retaining walls provide a permanent solution to mitigate long-standing slope stability and landslide issues in the community. The walls utilize industry-leading geogrid technology to reinforce mechanically stabilized earth to cost-effectively, sustainably, and economically minimize the use of limited waterfront space while stabilizing the area. Designated or widened bike lanes, barrier mounted cyclist fences, and multiple safe refuges for cyclists were also implemented along the corridor to enhance cyclist safety.

Spirit Trail Pathway

Both pedestrians and recreational and commuter cyclists may also choose to use the newly widened and landscaped Spirit Trail recreational pathway, which now includes safety elements such as additional lighting, wayfinding signs, adequate cyclist barriers, and cyclist pavement markings. Before these improvements, the trail had a poor drainage system, very low sightlines, no illumination at night, unstable slopes and dense vegetation which raised considerable safety concerns during the Crime Prevention Through Environmental Design **(CEPTED)** review process. The new design features timber stairs that have been constructed to traverse steep slopes and provide connections to two new woodland bridges, which provide safe crossings across embankments and natural creeks in an environmentally sensitive habitat.

The Spirit Trail Overpass, a new steel tied arch pedestrian bridge, ties into the trail at the East end of the project and provides a grade-separated crossing for pedestrians and cyclists to safely cross above the busy LLR and East 3rd Street intersection. This reduces cyclist and foot traffic on the roadway, improving safety and traffic flow through the area.

Neptune/Cargill Intersection (Overpass)

The project effectively addresses the safety concerns at this access road by replacing an at-grade intersection with a grade-separated overpass crossing. The previous intersection layout could not accommodate crossing pedestrian and cyclist traffic and was often blocked by frequent heavy rail traffic passing through the intersection. Significant queues and heavy traffic congestion was observed during peak hours. As this intersection served as the main access to the Neptune/Cargill and Richardson terminals, a significant amount of vehicles were observed to unsafely cross the rail tracks on a red signal. A high number of accidents have been observed by Neptune and Cargill, who are the current tenants of the adjacent port lands. Additionally, there was poor visibility due to traffic signal devices including power cabinets and rail signals being placed within the sight triangle on both Southeast and Southwest corners of the intersection.

The new high standard intersection will span the entire width of the rail yard and provide access to port terminals and properties south of the Low Level Road. The new overpass is expected to significantly reduce the amount of collisions in the area due the grade separation. A designated sidewalk at the West side of the overpass now safely accommodates pedestrian

traffic. The concrete bridge pier located within the rail yard envelope was designed with protective measures in the case of train derailment per AREMA requirements.

Rail Improvements

The key objective of rail improvements along LLR is to provide for the future construction of two additional rail tracks parallel to existing facilities to accommodate port growth. Existing tracks were relocated and aligned to reduce train whistling and switching, thus enhancing rail safety. With the elimination of three at-grade rail crossings throughout the project, traffic delays can be reduced, emergency response capabilities increased, and vehicle idling and greenhouse gas emissions decreased in a sustainable manner.

Low Level Road and East 3rd Street Intersection

The alignment of the Low level Road intersecting with East 3rd Street is an unconventional, skewed intersection where motorists are required to merge onto a single lane travelling eastbound. To address safety concerns associated with the required traffic layout, clear delineation of the traffic lanes is provided through guidance lines. Eastbound cyclist movements through the intersection have also been considered. Routing improvements such as shorter crossing distances and push-button traffic control features reduce vehicle-cyclist conflicts and allow for safer crossings.

Kennard Avenue Intersection

The previous intersection, located at the East end of the project, offered poor cyclist facilities and pedestrian connectivity in the area and did not have sufficient lanes to accommodate future traffic growth estimated with the City's limits. Due to the lack of raised medians and traffic islands, illegal/unsafe movements were often observed through the entire intersection

The new Kennard intersection was designed to decrease the crossing distance through the intersection. Safety benefits associated with the design concept include:

- Reduced zone of conflict at intersections - The south side of the Low Level Road is shifted northward with the added benefit of reducing the effective intersection area and allow for shorter crossing distances. Both travelling lanes have a reduction of up to 13 meters.
- Gentle S-curve alignment along Low Level Road - The S-curve serves as an effective eastbound transition from the high standard, access controlled Low Level Road facility to the more urbanized roadway environment, located east of Kennard Avenue. The curve encourages lower vehicle operating speeds and reduces the safety risk associated with cyclists crossing 3rd Street East. Potential vehicle-cyclist incidents are expected to be reduced in frequency and severity overall. It is anticipated that traction and control will not be a concern for vehicles driven at reasonable operating speeds while executing this turn.
- Increased weaving distance for Gladstone Avenue traffic - The northward shift of the south side of Low Level Road and the reduction in the size of the intersection will also increase the weaving distance for eastbound Low Level Road traffic turning left at Gladstone Avenue. A total of approximately 30 meters of additional weaving distance is provided as eastbound Low Level Road traffic and eastbound 3rd Street East merge together further to the west.

How the potential safety benefits were estimated using information from reliable sources?

Traffic analysis using Synchro 8 software and VISSIM modelling was conducted during the design phase to study the impact of proposed geometric improvements along the LLR corridor. AM and PM peak hour movements were studied at all proposed intersections. Forecasted 2031 horizon traffic volumes from reliable sources including EMME model and available traffic engineering studies were referenced and used in combination with factored existing volumes to analyze worse possible projected traffic volumes. Network traffic signal cycle lengths and offsets for coordinated signals were calculated for design input with the aim of optimizing traffic flow and safety. Based on analysis results, intersection queuing is expected to drop significantly and adequate Levels of Service will be met throughout the project. Improvements to the road alignment, layouts, traffic operations, as well as the installation of additional safety design elements (such as signage and lighting) resulted from the study.

Using VISSIM simulation package all the existing and proposed at grade rail crossing were analyzed to conform a safe coordination between rail and vehicular traffic. The same model was also used to create safe and effective construction staging plans, detours and traffic accommodation.

How is the project evaluated in terms of safety?

In order to evaluate the safety performance of the project, road safety audits were conducted at three critical stages: at 50% detailed design, 100% detailed design, and post-construction (i.e. pre-opening). The objectives of each audit stage were considered within the context of all road users, including pedestrians and cyclists, and are described below:

1. 50% detailed design stage - Identify modifications to design details that could reduce the potential and severity for future collisions, and focus on the safety performance of the following design elements: horizontal and vertical alignment, cross-sectional design elements, intersection layouts, traffic operation, access, interaction between travel modes.

2. 100% detailed design stage - Review design changes and focus on the safety performance of the following design elements: signing, delineation and pavement markings, roadway and roadside hazard protection, use and placement of barriers, lighting, landscaping features, and street furniture that may inhibit sightlines or create other safety issues, traffic signal placement and operation.

3. Post-construction stage - Conduct field investigations to determine the expected safety performance of constructed facilities, and aim to, identify any safety issues before facilities are fully opened to the road/facility users, evaluate the safety of road features that were not apparent or indicated on the detailed design drawings, determine if the needs of all potential road users have been adequately and safety met.

Our project partner, the City of North Vancouver, has also retained additional road safety auditors to conduct quality control and audit processes throughout the duration of the project to ensure safety requirements are met.

DEGREE OF INNOVATION

The local experience and expertise of the design team with projects of this scale and complexity has been critical to developing cost effective solutions to the various constraints and challenges facing the design and construction of the LLR project. 95% of all the components used on the corridor are local and recyclable materials.

Roadway Design
The road alignment elevation was designed to maintain the green buffer zone between the road and adjacent neighborhoods in order to minimize community impact from the new road and to address one of the main community concerns regarding visual impacts to existing views of the North Shore area. View assessments were completed to minimize visual impacts for the current neighbors along Low Level Road. Connections to local pedestrian and cyclist paths were carefully planned to improve road safety and provide connectivity to the existing trail.

Bridge Design
Five different primary structures were designed and built for the LLR project. A context-sensitive suspension bridge, the Spirit Trail Woodland Suspension Bridge, utilizes an efficient and lightweight superstructure to provide a context sensitive solution that blends in to the surrounding vegetated environment and creates a rustic experience for pedestrians, while retaining the sensitive eagle's nest habitat located high above the east abutment. A careful construction sequence was planned in order to mitigate disturbance to the eagle's nests found on the trees. After the bridge erection, eaglets were seen at the top of the undisturbed trees and multiple sightings of adult eagles have been reported in the vicinity of the new bridge.

Geotechnical Design
Situated along a steep slope, the road required support by retaining walls up to 14 meters high. Innovation in the selection of different retaining wall systems depending on the site geotechnical requirements for slope stability and landscaping was achieved. A value engineering analysis including evaluation of different wall options was completed in order to find the most economical retaining wall option. As a result, construction costs were reduced by $15M by revising from a cut type wall to a fill type wall.

Electrical Design
For energy efficiency, LED lighting was utilized for all of the street lighting on the project. This allowed to minimized service requirements without sacrificing lighting quality.

Environmental
Numerous Environmental Impact Assessments were conducted by Port Metro Vancouver to identify sensitive areas along the corridor.
As part of the Environmental Assessment for the Low Level Road project, a noise impact assessment was conducted. The material and shape of noise walls to go on top of retaining walls were used for noise control to meet the needs of the surrounding residents, including specialty acrylic noise wall panels fabricated in Austria which retained the beautiful view of Burrard Inlet.

Community

The project design plan was refined through a public consultation process involving residents, business and staff at the City of North Vancouver to develop a design that takes into consideration local residents and fulfills the community's best interests. Road elevation, view impacts, noise walls, aesthetics, landscaping, and integration with community development were addressed.

During public consultations, a preference for public art themes including First Nations (Coast Salish), the history of Moodyville and the working Port was indicated; all of which have been successfully incorporated in to the project with custom-made precast concrete art panels at two key locations along the project corridor, as well as an art exhibit positioned near the business parking area at the west end of the project.

Economic

While achieving engineering excellence, LLR was designed to provide significant economic benefits to the surrounding community. The Low Level Road improvements will increase rail and port capacity through the addition of mainline rail tracks. The project will enhance safety and permit more efficient rail operations to accommodate anticipated trade, rail and traffic growth and terminal expansion projects planned for the North Shore.

In addition, the Low Level Road project will also improve the local life quality and environmental benefits. Some of these benefits will include a reduced congestion on Low Level Road, increased employment on the North Shore and throughout the Lower Mainland, reduced noise pollution, improved connectivity throughout the Spirit Trial multi-use pathway, and expanded terminal facilities that will increase tax revenues.

TRANSFERABILITY TO OTHER CANADIAN COMMUNITIES AND ORGANIZATIONS

The proposed design of the intersection at Low Level Road and Kennard Avenue was developed to operate as a "Half Diamond" intersection with free flow of traffic on Low Level Road WBL and East 3rd EBL

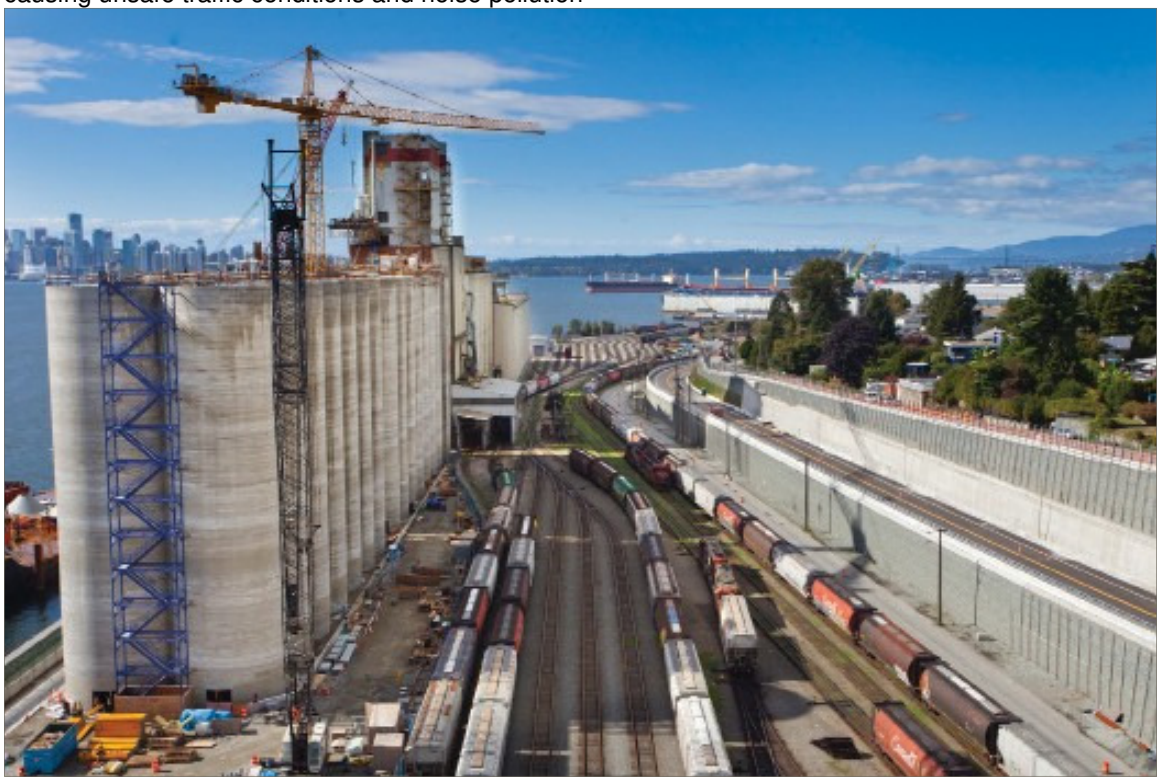
Safety Benefits

Fewer conflict points, conflict point are clearly identifiable, and preventable as the sight lines at the intersection are very long,(almost opposing lines) ,virtually no driver confusion as all the traffic movement are delineated by raised medians, traffic calming features when desired , pedestrian crossings are shorter,(however on this project , all the pedestrian movements are grade separated), better storage between exits, cyclist crossings are developed through the raised medians away from high speed vehicular traffic.

Based on the information collected at a similar intersection in France, the number of collisions can be reduced by aprox. 60%.

Low Level Road Project, is currently under **ENVISION** certification review, and is scheduled to become the first **Gold** Certified infrastructure project in Canada.

West end, before: The Low Level Road and cyclist lane was previously adjacent to the rail tracks, causing unsafe traffic conditions and noise pollution

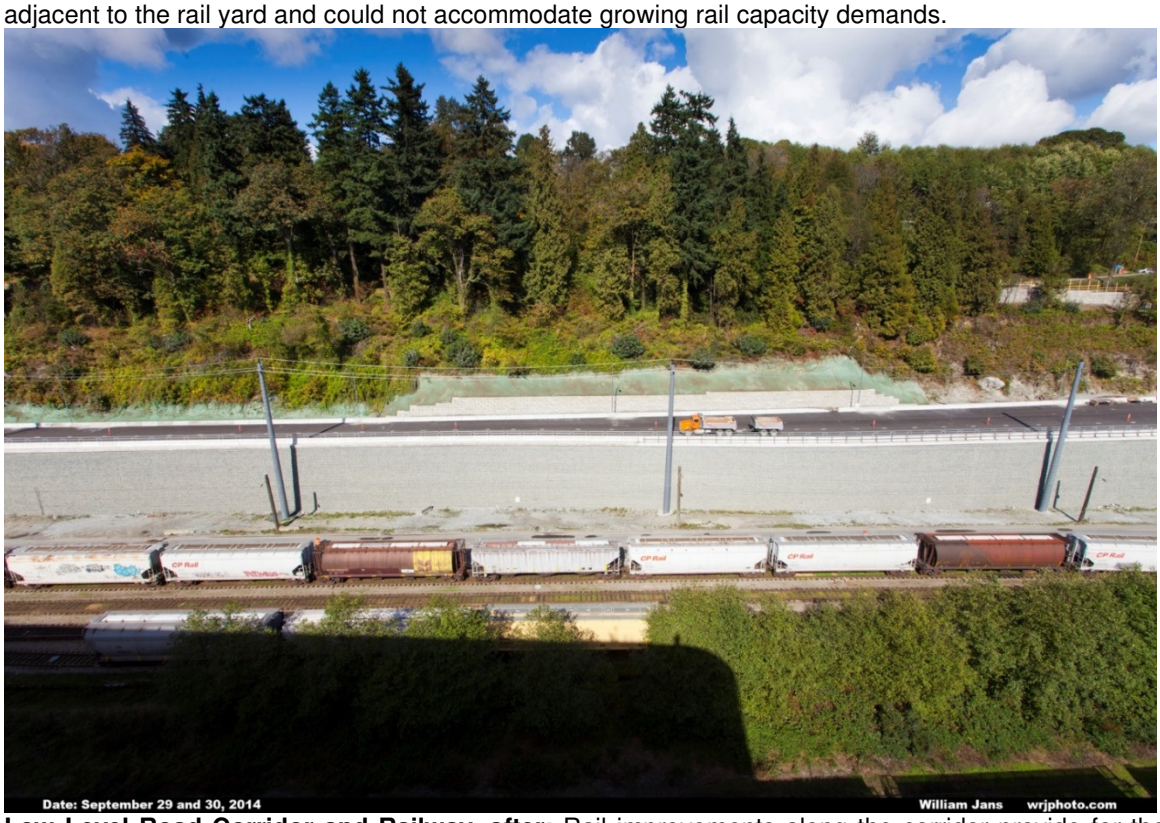


West end, after: New rail tracks, grade-separated from the laneway, increase port operational capacity while addressing safety issues and traffic challenges along the heavily-used Low Level Road Corridor

Low Level Road Corridor, before: The laneway and cyclist lane were previously directly adjacent to the rail yard and within the dynamic envelope of moving trains, causing unsafe conditions.

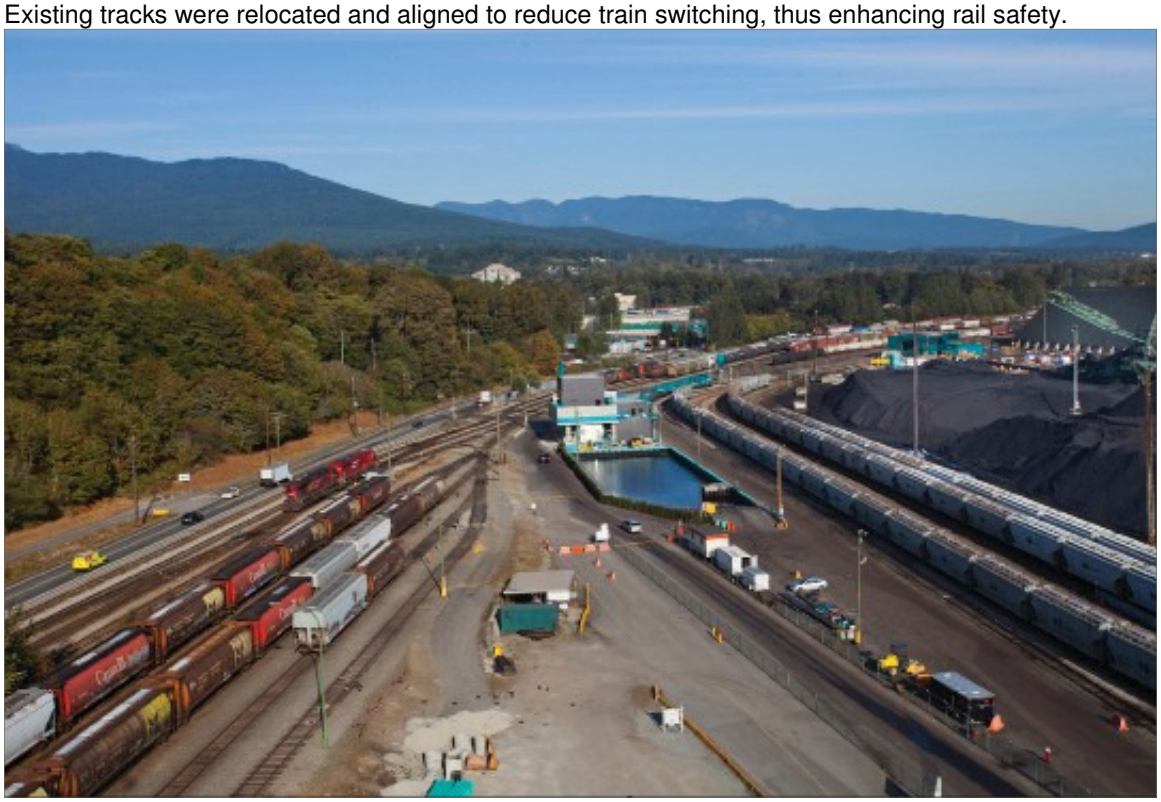
Low Level Road Corridor, after: A multi-tiered retaining wall system was implemented along the corridor to grade-separate motorists, pedestrians, cyclists, and rail traffic away from one another.

Low Level Road Corridor and Railway, before: Narrow rail envelopes were previously directly adjacent to the rail yard and could not accommodate growing rail capacity demands.

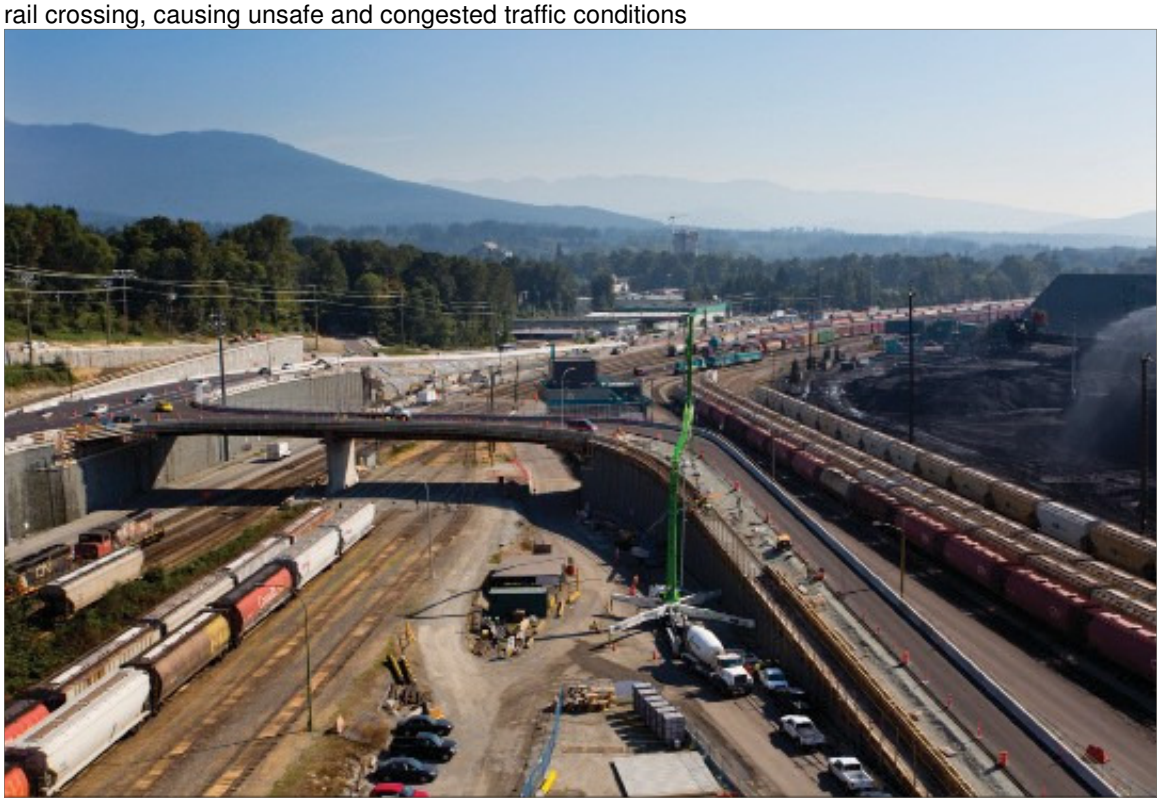


Low Level Road Corridor and Railway, after: Rail improvements along the corridor provide for the future construction of two additional rail tracks parallel to existing tracks to accommodate port growth.

Existing tracks were relocated and aligned to reduce train switching, thus enhancing rail safety.

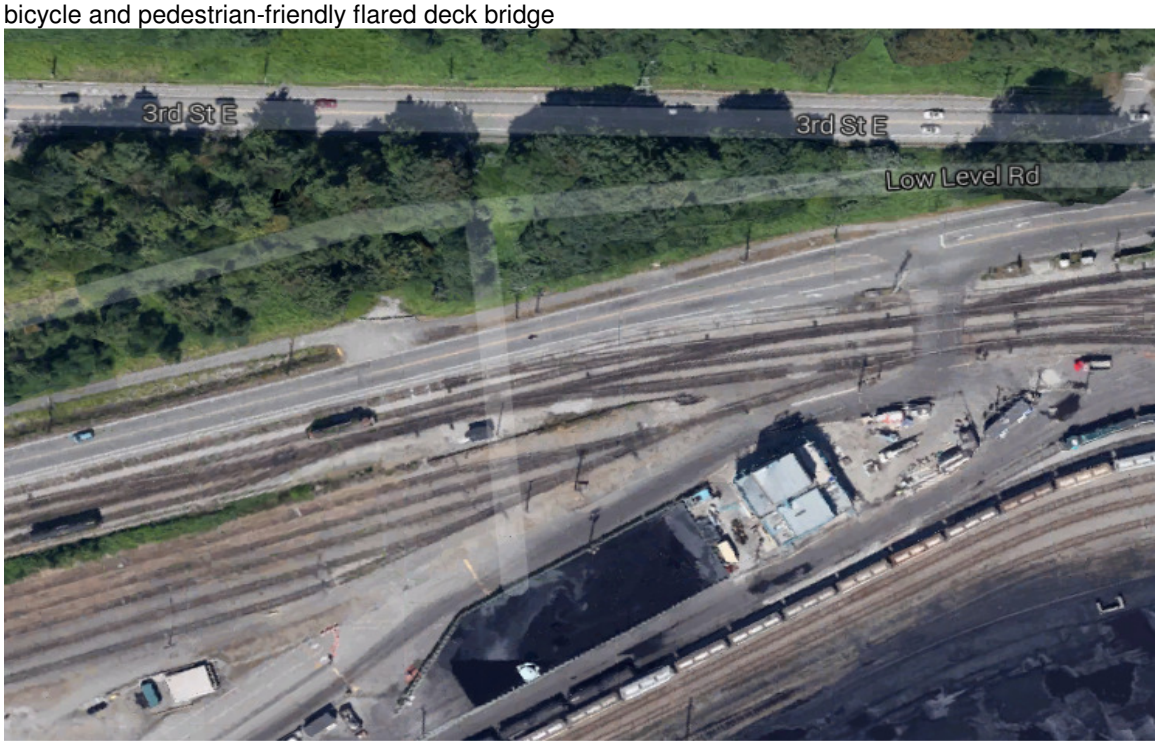


Port access, before: The Neptune and Cargill port terminals were previously accessed by an at-grade rail crossing, causing unsafe and congested traffic conditions



Port access, after: The Neptune/Cargill Overpass replaces the at-grade rail crossing with a unique

bicycle and pedestrian-friendly flared deck bridge



East end, before: The previous intersection configuration could not accommodate crossing pedestrian and cyclist traffic and was often blocked by frequent rail traffic, causing traffic conflicts and congestion. A high number of accidents have been observed.

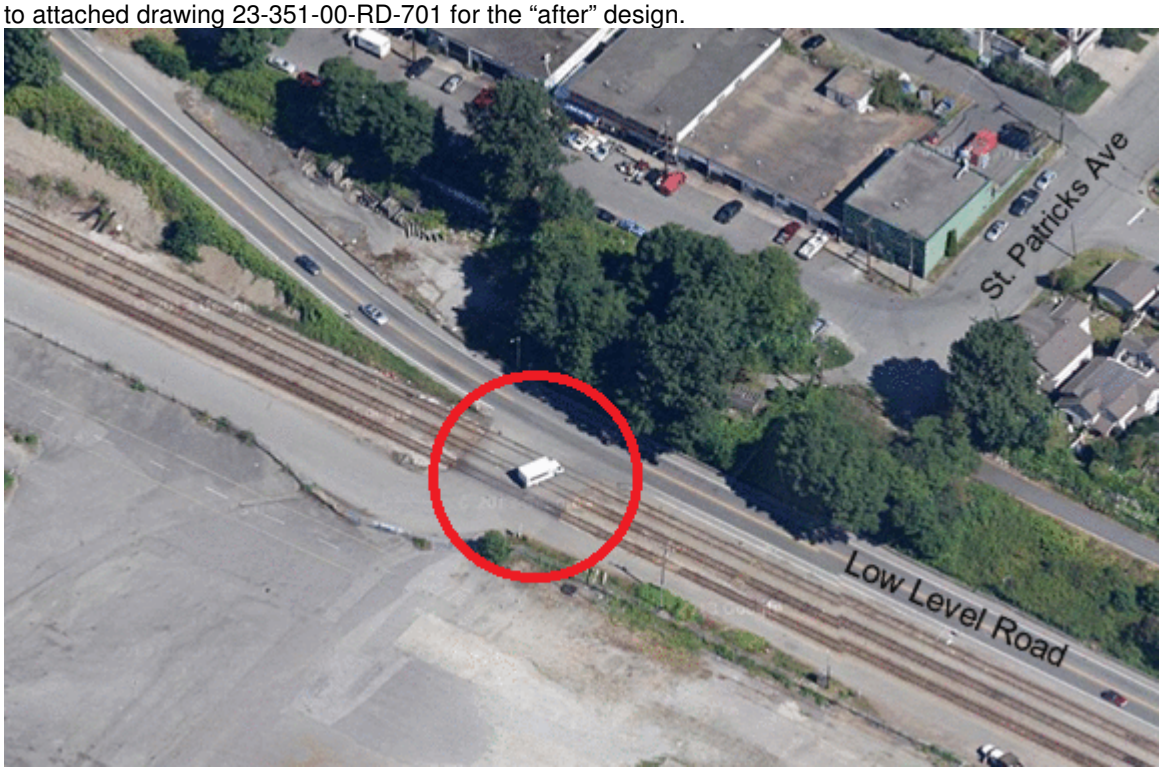
East end, after: Retaining walls form a cost-effective, multi-tiered transportation system to grade-separate residences, East 3rd Ave, the recreational Spirit Trail pathway, Low Level Road, and CN rail tracks. The Neptune/Cargill Overpass connects Low Level Road to port terminals, and the Spirit Trail

Overpass connects the Spirit Trail to the North Shore community for pedestrians and cyclists.

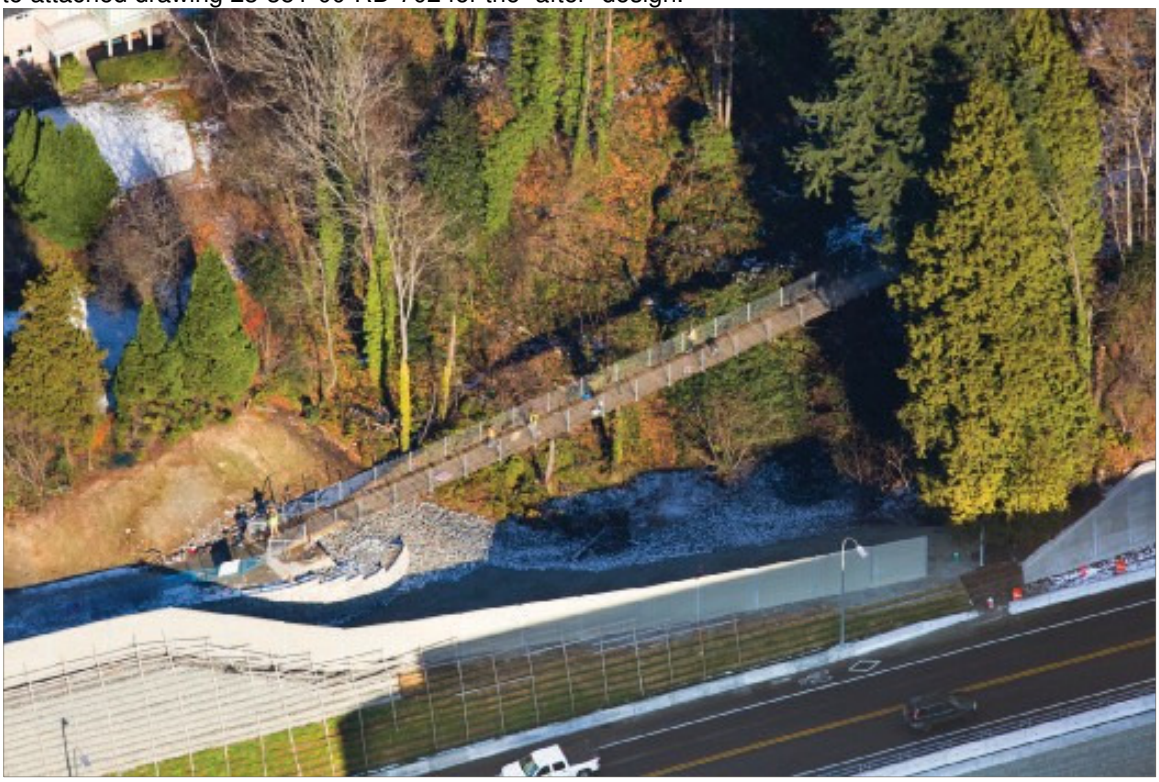
Esplanade Avenue and St. Georges Avenue Intersection, before: The intersection had insufficient cyclist lane width, very sharp vehicle turning movements, unsafe pedestrian connectivity, and short acceleration lanes on the East side. Refer to attached drawing 23-351-00-RD-701 for the "after" design.

Esplanade Avenue and St. Andrews Avenue Intersection, before: The intersection was unsignalized, had nonexistent pedestrian facilities and poor cyclist connectivity, had poor sightlines and

featured an unsafe at-grade crossing on the South side. Illegal movements were often observed. Refer to attached drawing 23-351-00-RD-701 for the “after” design.



Low Level Road and St. Patricks Avenue Intersection, before: The previous intersection featured an at-grade rail crossing (over 3 rail tracks) with nonexistent rail crossing lines, signals, and traffic control devices. Sightlines were poor as LLR rises to the West, and cyclist lanes were too narrow. Refer to attached drawing 23-351-00-RD-702 for the “after” design.



New Spirit Trail Suspension Bridge: The suspension bridge traverses steep slopes and is designed to enhance the Spirit Trail's rustic appeal, reduce environmental impacts as a single-span structure, and protect the existing eagle habitat within the surrounding Moodyville Park.

Low Level Road and East 3rd Street Intersection, before: The alignment required motorists to merge onto a single lane traveling Eastbound. Pedestrian/cyclist movement was not safely accommodated.
Kennard Avenue Intersection, before: The intersection offered poor cyclist facilities and pedestrian connectivity in the area and did not have sufficient lanes to accommodate future traffic growth. The lack of raised medians and traffic islands promoted illegal movements throughout the entire layout.

Kennard Avenue Intersection, after: The signalized Kennard intersection efficiently separates traffic along Low Level Road and East 3rd Ave, has fewer merge lanes, and safely accommodates public transit, pedestrians, and bicycle traffic.

Low Level Road Project

North Vancouver, BC / Transportation

More than just a road - a gateway to a sustainable future.

The Low Level Road Project forms part of Port Metro Vancouver's broader investment into the North Shore Trade Area. The project is comprised of 2.2km of roadway improvements and seven at-grade separated intersection, 5km of pedestrian and cyclist facilities, slope improvements, and 4km of new rail corridors. The primary objective is to increase port operations capacity while addressing safety and traffic challenges along the heavily used east-west corridor. In partnership with the City of North Vancouver and Translink, community involvement and consultation was a crucial components of the project throughout its design and construction phase.

Building infrastructure in a sustainable manner.
Low Level Road is currently targeting Envision™ Gold status.

The project addresses several key challenges:

- **Geotechnical** - unstable, unprotected slopes, adjacent to residential area, poor drainage
- **Traffic safety** - intersection safety; congestion; vehicular/cyclist pathways adjacent to unprotected rail lines; inadequate lighting
- **Pedestrian safety** - multiple points of conflict at intersections and pathways
- **Local community** - pedestrian/cycle pathway connectivity; train-related noise, air quality, and disruptions
- **Environmental** - direct impact on sensitive ecological areas
- **Economic** - accommodation required for Port Metro Vancouver future growth
- **Construction staging** - maintain all existing roads opened during construction

Project Owner: Port Metro Vancouver
Funding Partners: Port Metro Vancouver; City of North Vancouver; TransLink; Transport Canada; CN Rail; CP Rail
Prime Consultant (Design): Stantec Consulting Ltd. ("Stantec")

Landcaping

Planting & hydroseeding minimizes soil erosion; native plant species used

Spirit Trail Bridges

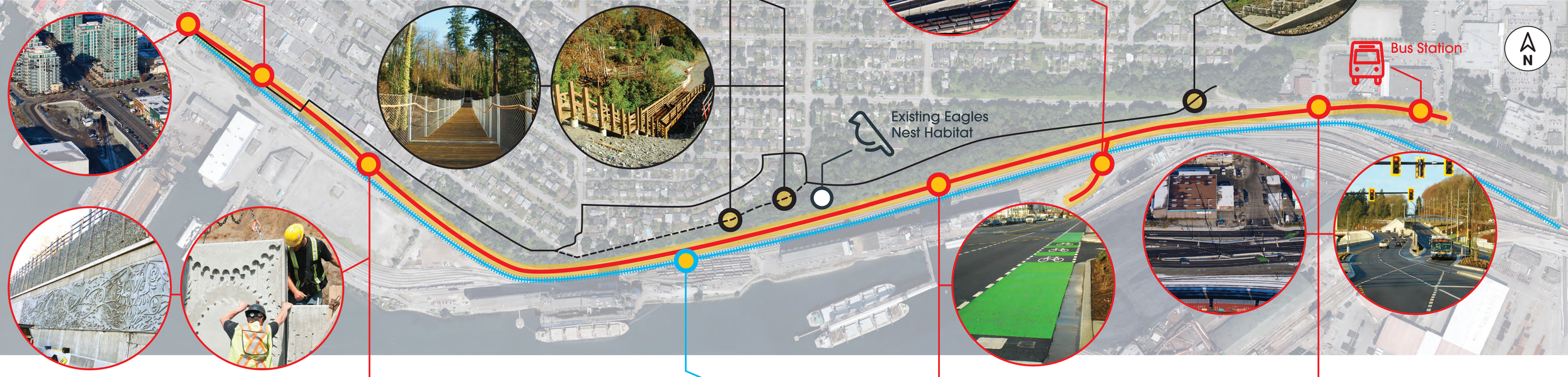
Woodland beam bridge; Suspension bridge; provide connectivity; add rustic ambiance

Neptune/Cargill Overpass

Replaces an unsafe at-grade rail crossing and improves traffic safety

Spirit Trail Pedestrian Overpass

Provides pedestrians and cyclists with grade-separated crossing across a busy traffic corridor



Precast Artwork Panels

Artwork mounted on the concrete facing of the retaining walls carries cultural and historical significance for First Nations and the Moodyville area. (Susan Point Art)

Retaining Walls (30,000m²)

Improves slope stability protects eagle nest, reduces impact on the existing vegetation; grade separation for laneway and rail

Noise walls mitigating road and port related noise pollution

Rail

Eliminated all existing at-grade crossing, Increased rail efficiency; reduced noise

Multi-Modal Low Level Road Corridor

Dedicated and upgraded bike lanes and safe refuges for cyclists

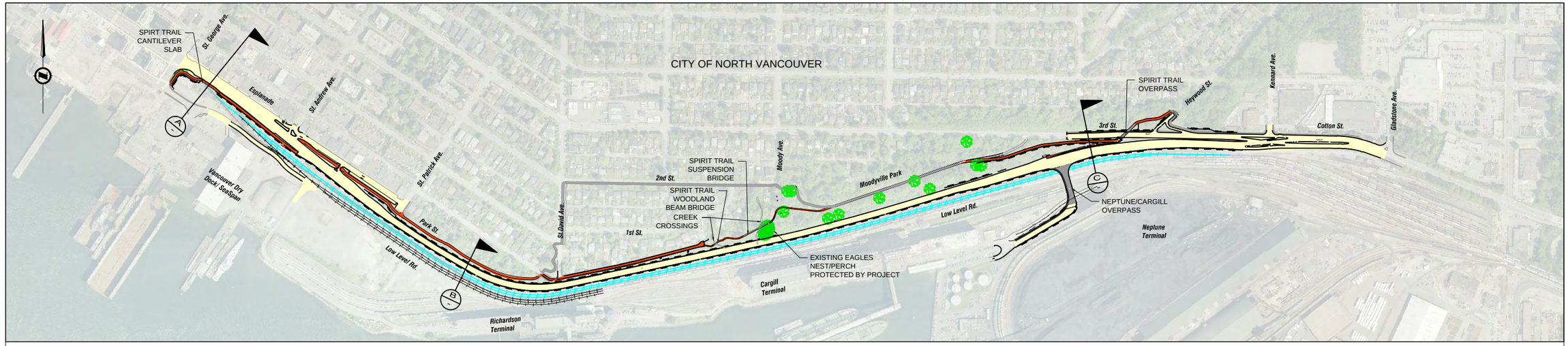
Diverging Diamond Signaled Intersection

Lower noise and emissions; improves safety

Low Level Road
Pedestrian Connector
Spirit Trail
Rail Alignment

TAC ATC TRANSPORTATION ASSOCIATION OF CANADA

Stantec

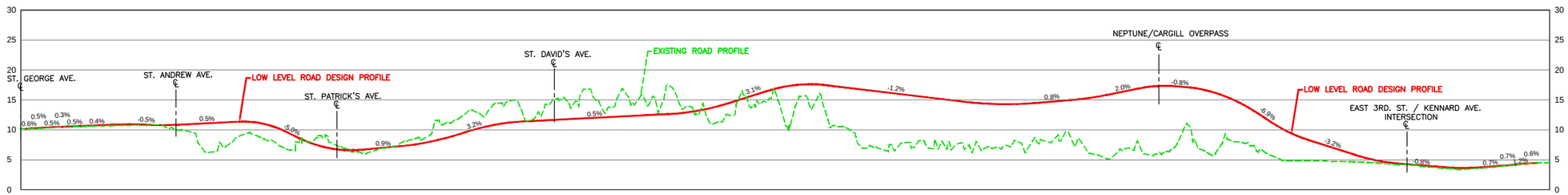


PLAN

SCALE: 1:8000

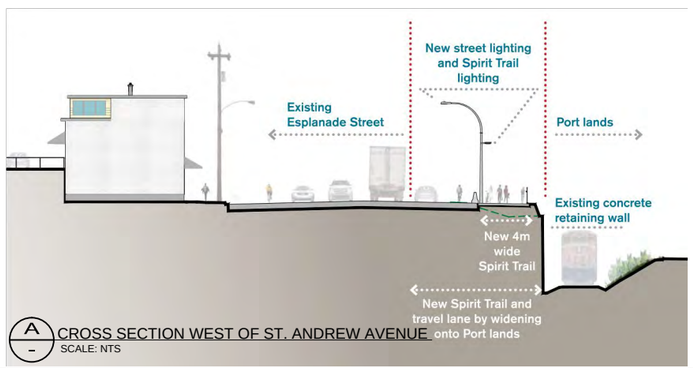
LEGEND:

- PROPOSED FUTURE CN RAIL TRACK
- EXISTING RAIL TRACK CENTRE
- RELOCATED RAIL TRACK
- PROPOSED RETAINING WALL
- PACIFIC YEW TREES
- NEW LOW LEVEL ROAD
- NEW SPIRIT TRAIL CONNECTION
- EXISTING SPIRIT TRAIL



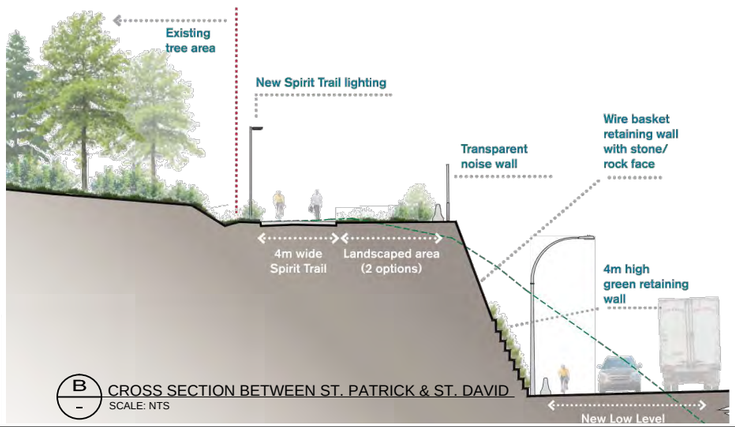
PROFILE

SCALE: H 1:8000, V 1:800



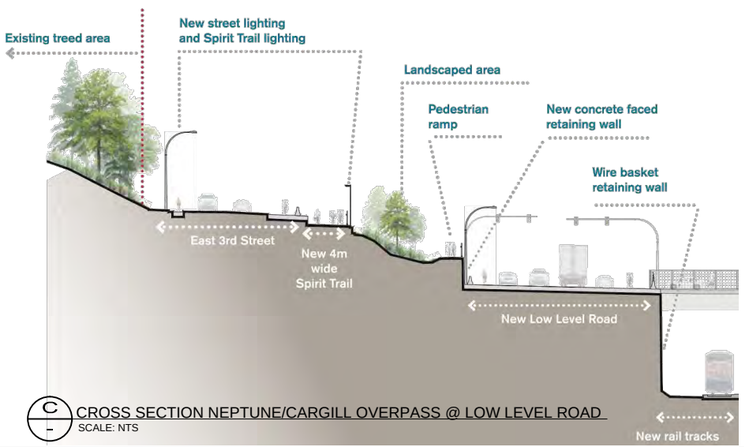
A – CROSS SECTION WEST OF ST. ANDREW AVENUE

SCALE: NTS



B – CROSS SECTION BETWEEN ST. PATRICK & ST. DAVID

SCALE: NTS



C – CROSS SECTION NEPTUNE/CARGILL OVERPASS @ LOW LEVEL ROAD

SCALE: NTS

DATE: 2015/01/19 – 5:32pm
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Stantec

NORTH SHORE TRADE AREA
LOW LEVEL ROAD PROJECT

TITLE BLOCK: DL-TB.dwg

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
R-001	1	1	STA 10+254 SB	STOP
R-002	1	1	STA 10+223 WB	YIELD
R-004-x (50)	1	1	STA 10+107 EB	MAXIMUM SPEED LIMIT
R-009-1	2	2	STA 10+255 NB, STA 10+264 NB	DO NOT ENTER
R-009-3	2	MOUNT WITH R-009-1	STA 10+255 NB, STA 10+264 NB	WRONG WAY
R-014-R	1	1	STA 10+264 WB	KEEP RIGHT
R-015-Rx	1	1	STA 10+282 WB	NO RIGHT TURN
R-016-1Lx	1	MOUNT ON SIGNAL POLE	STA 10+261 SB	TURN LEFT
R-016-1LT-x	DELETED	MOUNT ON SIGNAL POLE	STA 10+261 SB	LEFT TURN ONLY
R-084	1	MOUNT ON EXIST. POLE	STA 10+254 SB	THIS LANE LEFT, THRU OR RIGHT
RB-037	1	1	STA 10+025 WB	TURNING VEHICLES YIELD TO BICYCLES
RB-038	1	1	STA 39+520 EB	TURNING VEHICLES YIELD TO BICYCLES AND PEDESTRIANS
RB-090	1	MOUNT ON SIGNAL ARM	STA 10+252 WB	RESERVED BICYCLE LANE
RB-093	DELETED	DELETED	STA 39+505 NB	SHARED PATHWAY
R-SPECIAL	1	MOUNT WITH R-084	STA 10+254 SB	KEEP INTERSECTION CLEAR
B-G-006-2a	1	1	STA 10+240 EB	BIKE ROUTE

NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION.

MATCH LINE 10+300 SEE DWG NO. 23-351-00-RD-702

ST. GEORGE AVE NBL TO EBL DESIGNED TO WB20

ST. ANDREW AVE AND LLR INTERSECTION DESIGNED FOR WB15

DESIGN SPEED (L100) 50 km/h

DESIGN SPEED (L400) 10 km/h

DESIGN SPEED (L500) 50 km/h

DESIGN SPEED (L1100) 50 km/h

* - DOUBLE SIDED SIGN

SIGNS ASSOCIATED WITH THIS DRAWING (CONT.)

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
PS-003-L	2	2	STA 10+288 EB, STA 10+296 WB	PEDESTRIAN CROSSWALK
PS-003-R	2	2	STA 10+289 EB, STA 10+296 WB	PEDESTRIAN CROSSWALK
W-054-L	1	MOUNT WITH R-014-R	STA 10+264 WB	OBJECT MARKER LEFT
W-054-R	1	1	STA 10+062 EB	OBJECT MARKER RIGHT
WA-050	2	MOUNT WITH PS-003-R	STA 10+289 EB, STA 10+296 WB	SPEED HUMP

SIGNS ASSOCIATED WITH THIS DRAWING (CONT.)

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
G-007-2 OH*	1	MOUNT ON SIGNAL ARM/R-001	STA 9+998	STREET NAME (ESPLANADE AVE.)
G-007-2 OH*	1	MOUNT ON SIGNAL ARM	STA 10+022	STREET NAME (ST. GEORGE'S AVE.)
G-007-1*	1	MOUNT WITH R-001	STA 10+254	STREET NAME (ST. ANDREW'S AVE.)
G-007-1*	1	MOUNT WITH R-001	STA 10+254	STREET NAME (ESPLANADE AVE.)
P-001	1	MOUNT WITH B-G-006-2a	STA 10+240 EB	NO PARKING

Ref.No.	REFERENCE

PREPARED BY:

Stantec
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SEAL

No.	Date	REVISION	Dr'n	Ch'd
3	2014.10.22	ISSUED FOR CONSTRUCTION	AD	CR
2	2013.11.26	ISSUED FOR CONSTRUCTION	AD	CR
1	2013.09.11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

PORT METRO vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

the city of north vancouver

DESIGNED BY: A.DIOQUINO
DRAWN BY: A.DIOQUINO
APPROVED: C.RADU
DATE: 2014.10.22
PMV SITE:
SCALE: 1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 09+950 TO 10+300

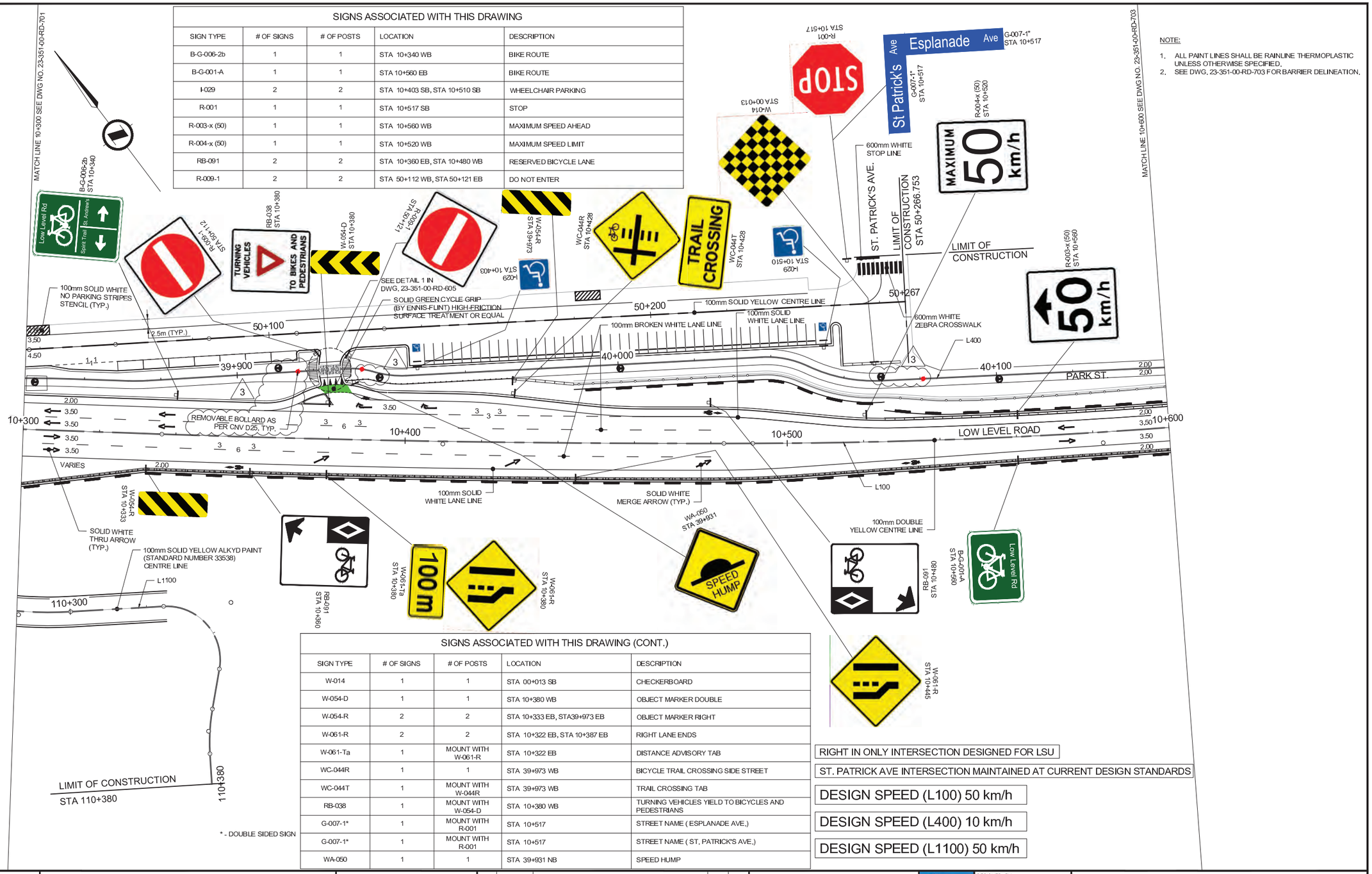
SIZE: D | DWG.: 23-351-00-RD | SHEET: 701 | REV.: 3

DATE: 2014/10/23 – 3:39pm
PATH: L:\transportation\design\drawing\working\civil\sheet_files\700_signing_markings\23-351-00-RD-701.dwg

TITLE BLOCK: DL-TB.dwg

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
B-G-006-2b	1	1	STA 10+340 WB	BIKE ROUTE
B-G-001-A	1	1	STA 10+560 EB	BIKE ROUTE
I-029	2	2	STA 10+403 SB, STA 10+510 SB	WHEELCHAIR PARKING
R-001	1	1	STA 10+517 SB	STOP
R-003-x (50)	1	1	STA 10+560 WB	MAXIMUM SPEED AHEAD
R-004-x (50)	1	1	STA 10+520 WB	MAXIMUM SPEED LIMIT
RB-091	2	2	STA 10+360 EB, STA 10+480 WB	RESERVED BICYCLE LANE
R-009-1	2	2	STA 50+112 WB, STA 50+121 EB	DO NOT ENTER



NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION.

SIGNS ASSOCIATED WITH THIS DRAWING (CONT.)

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
W-014	1	1	STA 00+013 SB	CHECKERBOARD
W-054-D	1	1	STA 10+380 WB	OBJECT MARKER DOUBLE
W-054-R	2	2	STA 10+333 EB, STA39+973 EB	OBJECT MARKER RIGHT
W-061-R	2	2	STA 10+322 EB, STA 10+387 EB	RIGHT LANE ENDS
W-061-Ta	1	MOUNT WITH W-061-R	STA 10+322 EB	DISTANCE ADVISORY TAB
WC-044R	1	1	STA 39+973 WB	BICYCLE TRAIL CROSSING SIDE STREET
WC-044T	1	MOUNT WITH W-044R	STA 39+973 WB	TRAIL CROSSING TAB
RB-038	1	MOUNT WITH W-054-D	STA 10+380 WB	TURNING VEHICLES YIELD TO BICYCLES AND PEDESTRIANS
G-007-1*	1	MOUNT WITH R-001	STA 10+517	STREET NAME (ESPLANADE AVE.)
G-007-1*	1	MOUNT WITH R-001	STA 10+517	STREET NAME (ST. PATRICK'S AVE.)
WA-050	1	1	STA 39+931 NB	SPEED HUMP

* - DOUBLE SIDED SIGN

RIGHT IN ONLY INTERSECTION DESIGNED FOR LSU

ST. PATRICK AVE INTERSECTION MAINTAINED AT CURRENT DESIGN STANDARDS

DESIGN SPEED (L100) 50 km/h

DESIGN SPEED (L400) 10 km/h

DESIGN SPEED (L1100) 50 km/h

Ref.No.	REFERENCE

PREPARED BY:

Stantec
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No.	Date	REVISION	Dr'n	Ch'd
3	2014.10.22	ISSUED FOR CONSTRUCTION	AD	CR
2	2013.11.26	ISSUED FOR CONSTRUCTION	AD	CR
1	2013.09.11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

PORT METRO vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

the city of north vancouver

DESIGNED BY A.DIOQUINO
DRAWN BY A.DIOQUINO
APPROVED C.RADU
DATE 2014.10.22
PMV SITE
SCALE 1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 10+300 TO 10+600

SIZE D | DWG. 23-351-00-RD | SHEET 702 | REV. 3

DATE: 2014/10/23 – 3:47pm
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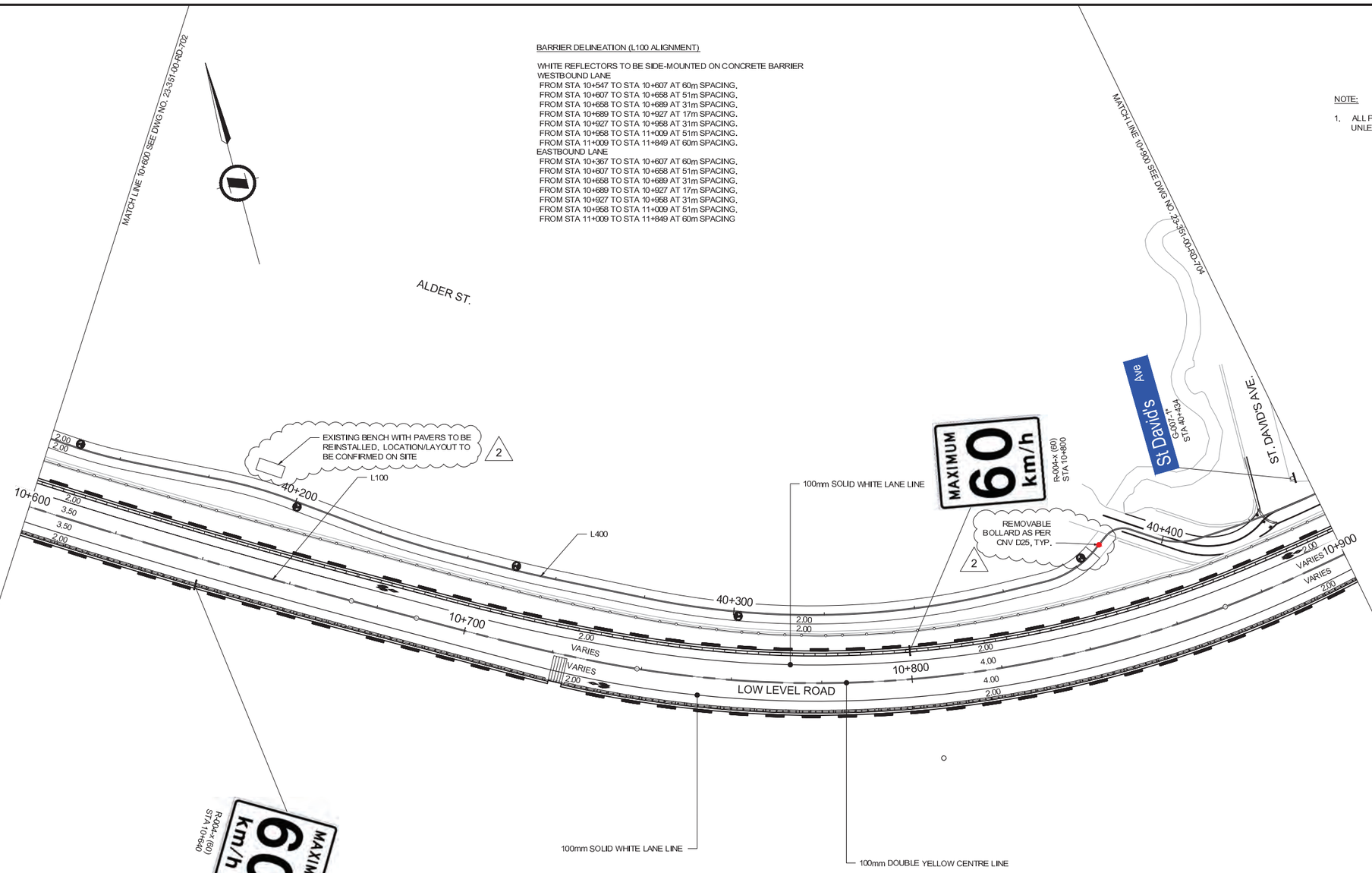

BARRIER DELINEATION (L100 ALIGNMENT)

WHITE REFLECTORS TO BE SIDE-MOUNTED ON CONCRETE BARRIER
WESTBOUND LANE
FROM STA 10+547 TO STA 10+607 AT 60m SPACING,
FROM STA 10+607 TO STA 10+658 AT 51m SPACING,
FROM STA 10+658 TO STA 10+689 AT 31m SPACING,
FROM STA 10+689 TO STA 10+927 AT 17m SPACING,
FROM STA 10+927 TO STA 10+958 AT 31m SPACING,
FROM STA 10+958 TO STA 11+009 AT 51m SPACING,
FROM STA 11+009 TO STA 11+849 AT 60m SPACING.
EASTBOUND LANE
FROM STA 10+367 TO STA 10+607 AT 60m SPACING,
FROM STA 10+607 TO STA 10+658 AT 51m SPACING,
FROM STA 10+658 TO STA 10+689 AT 31m SPACING,
FROM STA 10+689 TO STA 10+927 AT 17m SPACING,
FROM STA 10+927 TO STA 10+958 AT 31m SPACING,
FROM STA 10+958 TO STA 11+009 AT 51m SPACING,
FROM STA 11+009 TO STA 11+849 AT 60m SPACING

NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
R-004-x (60)	2	2	STA 10+640 EB, STA 10+800 WB	MAXIMUM SPEED LIMIT
G-007-1*	1	1	STA 40+434 WB	STREET NAME (ST. DAVID'S AVE.)

* - DOUBLE SIDED SIGN

ALL MOVEMENTS WB20

DESIGN SPEED (L100) 60 km/h

DESIGN SPEED (L400) 10 km/h

Ref.No.	REFERENCE

PREPARED BY:

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No.	Date	REVISION	Dr'n	Ch'd
2	2014,10,22	ISSUED FOR CONSTRUCTION	AD	CR
1	2013,09,11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013,03,01	ISSUED FOR CONSTRUCTION	LY	CR

PORT METRO vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

the city of north vancouver

DESIGNED BY A,DIOQUINO
DRAWN BY A,DIOQUINO
APPROVED C,RADU
DATE 2014,10,22
PMV SITE
SCALE 1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 10+600 TO 10+900

SIZE D | DWG. 23-351-00-RD | SHEET 703 | REV. 2

DATE: 2014/10/23 - 3:50pm
PATH: L:\transportation\design\drawing\working\civil\sheet_files\700_signing_markings\\23-351-00-RD-703.dwg

MATCH LINE 10+900 SEE DWG NO. 23-351-00-RD-703

MATCH LINE 11+200 SEE DWG NO. 23-351-00-RD-705

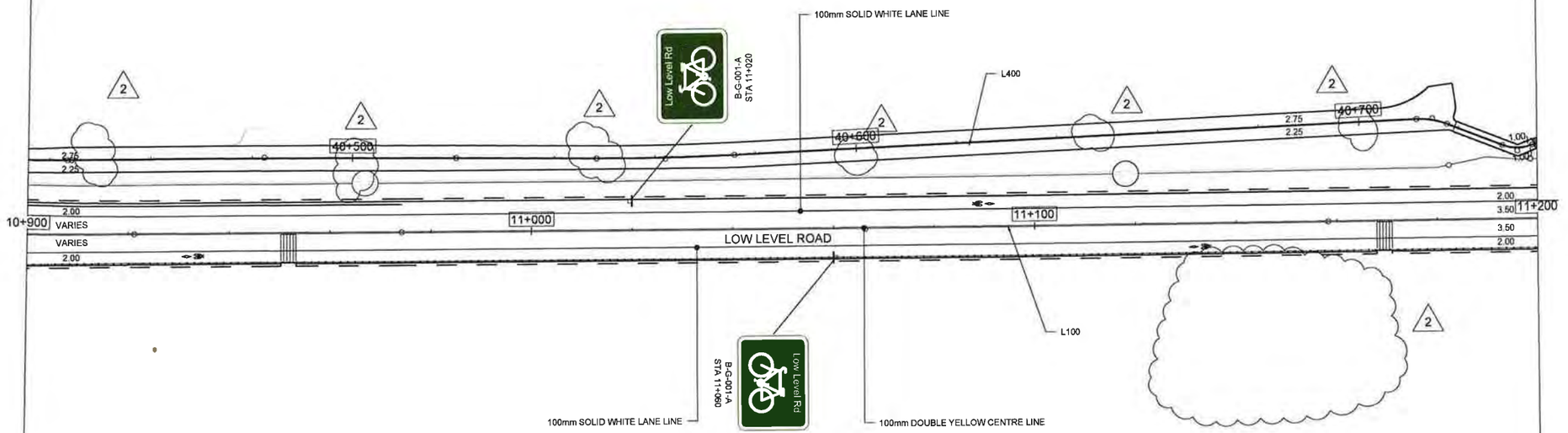
NOTE:

1 ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED
2 SEE DWG 23-351-00-RD-703 FOR BARRIER DELINEATION

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
B-G-001-A	2	2	STA 11+020 WB, STA 11+060 EB	BIKE ROUTE
B-R-101-2	1	1	STA 40+714 EB	CYCLISTS DISMOUNT AND WALK
B-R-101-Tb	1	MOUNT WITH B-R-101-2	STA 40+714 EB	CYCLISTS STOP AND DISMOUNT TAB
B-W-320	DELETED	DELETED	STA 40+707 WB	STEEP HILL

1



ALL MOVEMENTS WB20

DESIGN SPEED (L100) 60 km/h

DESIGN SPEED (L400) 10 km/h

No.	Date	REVISION	Dr'n	Ch'd
2	2014.08.14	ISSUED FOR CONSTRUCTION	AD	CR
1	2013.09.11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

Ref.No. REFERENCE

PREPARED BY:

Stantec
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SEAL

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. RADU
34275
14/08/2014

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGNED BY	A DIOQUINO
DRAWN BY	A DIOQUINO
APPROVED	C RADU
DATE	2013.09.11
PMV SITE	
SCALE	1:500

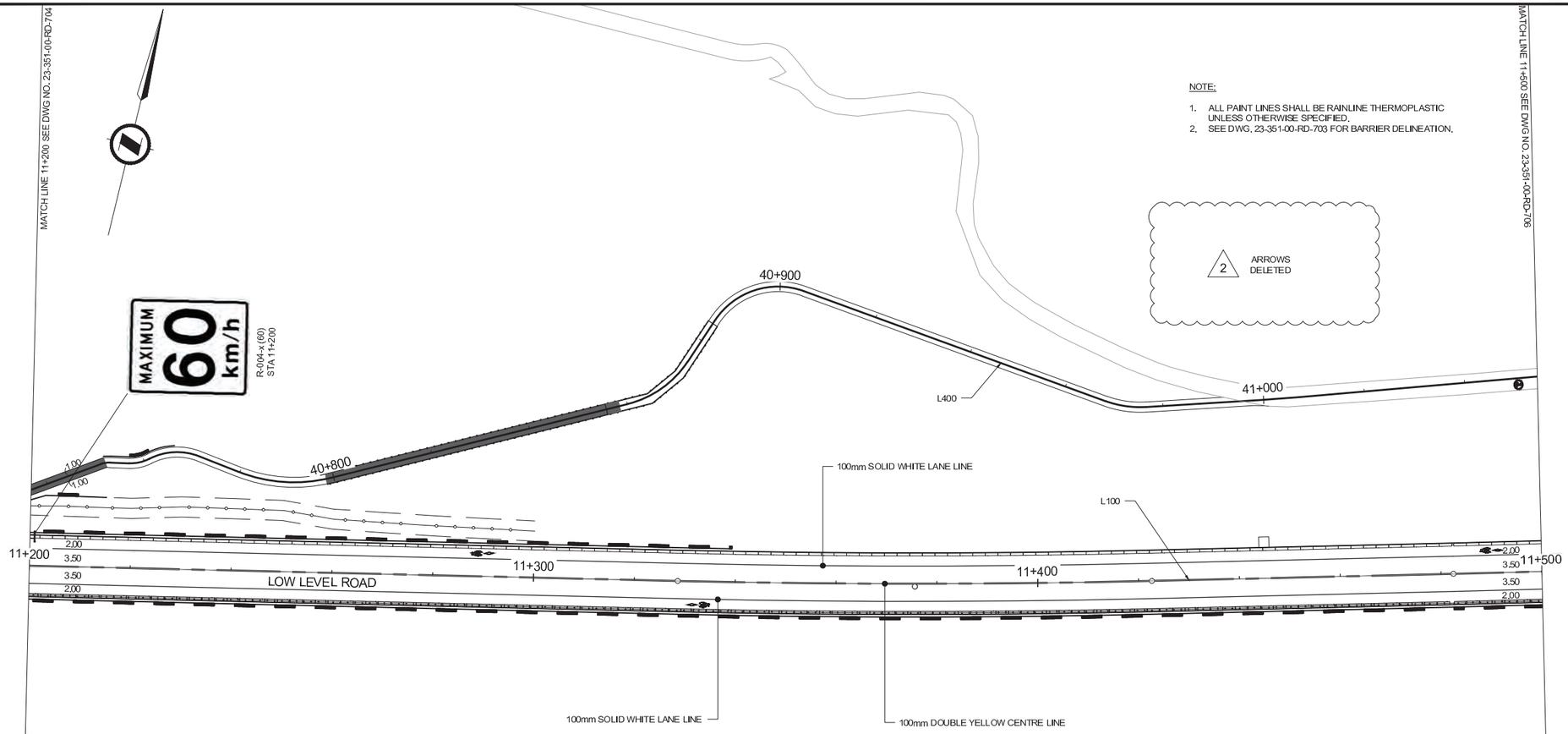
NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 10+900 TO 11+200

SIZE D | DWG 23-351-00-RD | SHEET 704 | REV. 2



NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION.

2 ARROWS DELETED

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
R-004-x (60)	1	1	STA 11+200 WB	MAXIMUM SPEED LIMIT
B-R-101-2	DELETED	DELETED	STA 40+980 WB	CYCLISTS DISMOUNT AND WALK
B-R-101-Tb	DELETED	DELETED	STA 40+980 WB	CYCLISTS STOP AND DISMOUNT TAB

2

ALL MOVEMENTS WB20

DESIGN SPEED (L100) 60 km/h

DESIGN SPEED (L400) 10 km/h

Ref.No.	REFERENCE

PREPARED BY:
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No.	Date	REVISION	Dr'n	Ch'd
2	2014.10.22	ISSUED FOR CONSTRUCTION	AD	CR
1	2013.09.11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

PORT METRO vancouver

the city of north vancouver

DESIGNED BY A.DIOQUINO
DRAWN BY A.DIOQUINO
APPROVED C.RADU
DATE 2014.10.22
PMV SITE
SCALE 1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

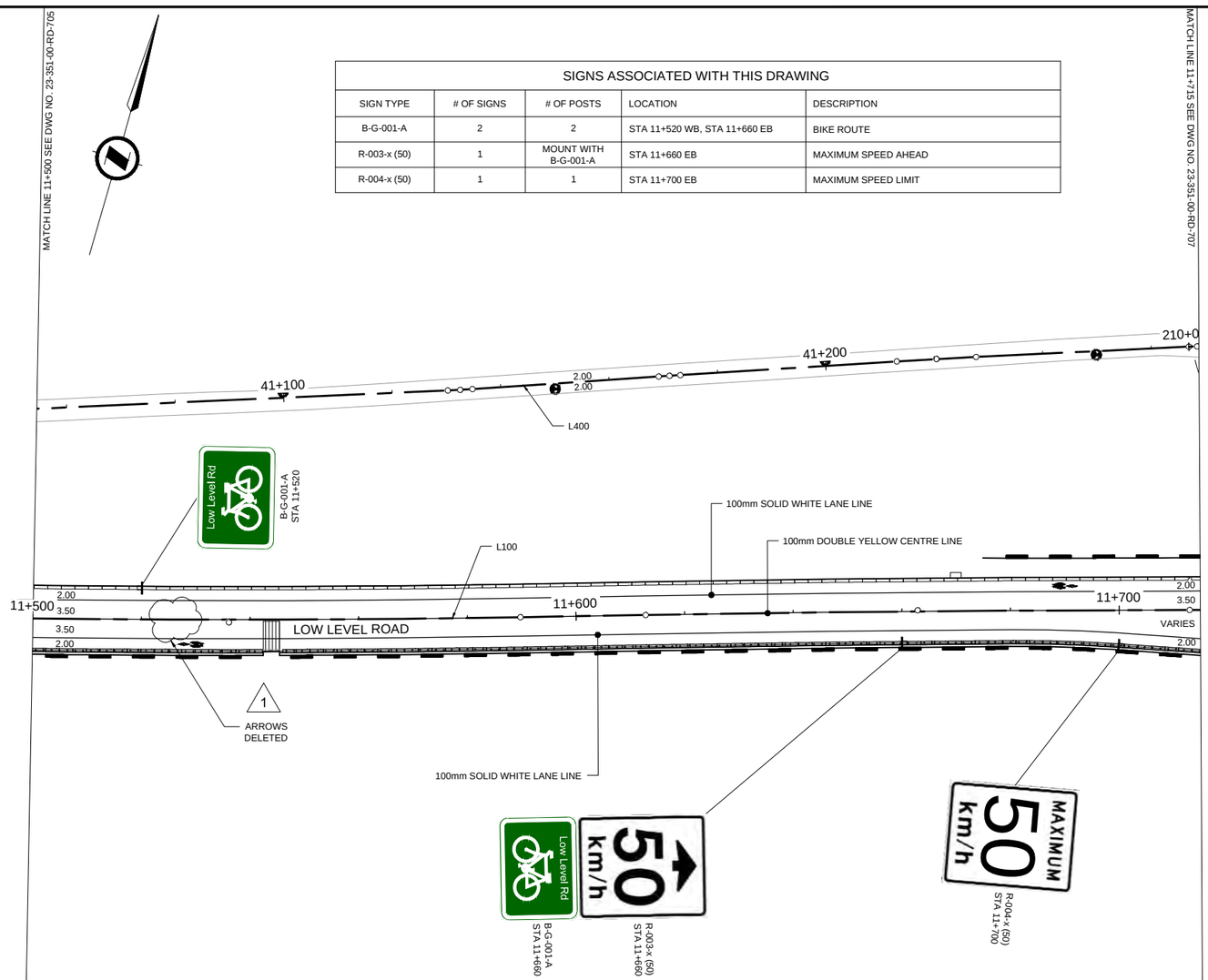
SIGNING AND PAVEMENT MARKINGS

STA: 11+200 TO 11+500

SIZE D | DWG. 23-351-00-RD | SHEET 705 | REV. 2

TITLE BLOCK: DL-TB.dwg

SIGNS ASSOCIATED WITH THIS DRAWING				
SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
B-G-001-A	2	2	STA 11+520 WB, STA 11+660 EB	BIKE ROUTE
R-003-x (50)	1	MOUNT WITH B-G-001-A	STA 11+660 EB	MAXIMUM SPEED AHEAD
R-004-x (50)	1	1	STA 11+700 EB	MAXIMUM SPEED LIMIT



NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION.

ALL MOVEMENTS WB20

DESIGN SPEED (L100) 60 km/h

DESIGN SPEED (L400) 10 km/h

DATE: 2013/09/09 - 3:57pm
PATH: L:\transportation\design\drawing\working\civil\sheet_files\700_signing_markings\23-351-00-RD-706.dwg

Ref.No.	REFERENCE

PREPARED BY:

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No.	Date	REVISION	Dr'n	Ch'd
1	2013.09.11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

PORT METRO vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

the city of north vancouver

DESIGNED BY: A.DIOQUINO
DRAWN BY: A.DIOQUINO
APPROVED: C.RADU
DATE: 2013.09.11
PMV SITE:
SCALE: 1:500

NORTH SHORE TRADE AREA

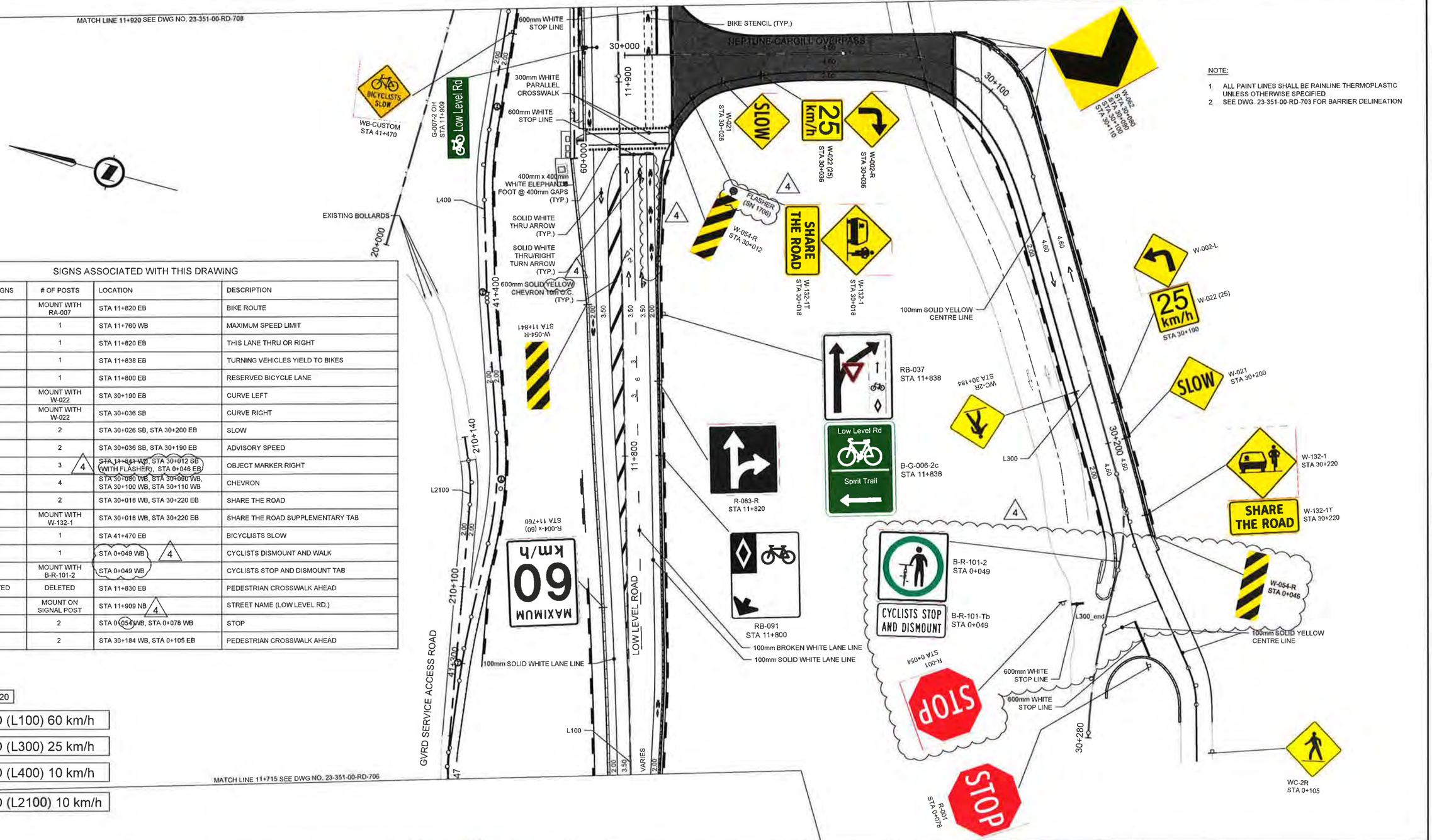
LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 11+500 TO 11+715

SIZE: D | DWG.: 23-351-00-RD | SHEET: 706 | REV.: 1

MATCH LINE 11+920 SEE DWG NO. 23-351-00-RD-708



NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
B-G-006-2c	1	MOUNT WITH RA-007	STA 11+820 EB	BIKE ROUTE
R-004-x (60)	1	1	STA 11+760 WB	MAXIMUM SPEED LIMIT
R-083-R	1	1	STA 11+820 EB	THIS LANE THRU OR RIGHT
RB-037	1	1	STA 11+838 EB	TURNING VEHICLES YIELD TO BIKES
RB-091	1	1	STA 11+800 EB	RESERVED BICYCLE LANE
W-002-L	1	MOUNT WITH W-022	STA 30+190 EB	CURVE LEFT
W-002-R	1	MOUNT WITH W-022	STA 30+036 SB	CURVE RIGHT
W-021	2	2	STA 30+026 SB, STA 30+200 EB	SLOW
W-022 (25 km/h)	2	2	STA 30+036 SB, STA 30+190 EB	ADVISORY SPEED
W-054-R	3	3	STA 11+841 WB, STA 30+012 SB (WITH FLASHER), STA 0+046 EB	OBJECT MARKER RIGHT
W-062	4	4	STA 30+060 WB, STA 30+090 WB, STA 30+100 WB, STA 30+110 WB	CHEVRON
W-132-1	2	2	STA 30+018 WB, STA 30+220 EB	SHARE THE ROAD
W-132 -1T	2	MOUNT WITH W-132-1	STA 30+018 WB, STA 30+220 EB	SHARE THE ROAD SUPPLEMENTARY TAB
WB-CUSTOM	1	1	STA 41+470 EB	BICYCLISTS SLOW
B-R-101-2	1	1	STA 0+049 WB	CYCLISTS DISMOUNT AND WALK
B-R-101-Tb	1	MOUNT WITH B-R-101-2	STA 0+049 WB	CYCLISTS STOP AND DISMOUNT TAB
PS-002	DELETED	DELETED	STA 11+830 EB	PEDESTRIAN CROSSWALK AHEAD
G-007-2 OH	1	MOUNT ON SIGNAL POST	STA 11+909 NB	STREET NAME (LOW LEVEL RD.)
R-001	2	2	STA 0+054 WB, STA 0+078 WB	STOP
WC-2R	2	2	STA 30+184 WB, STA 30+105 EB	PEDESTRIAN CROSSWALK AHEAD

ALL MOVEMENTS WB20

DESIGN SPEED (L100) 60 km/h

DESIGN SPEED (L300) 25 km/h

DESIGN SPEED (L400) 10 km/h

DESIGN SPEED (L2100) 10 km/h

MATCH LINE 11+715 SEE DWG NO. 23-351-00-RD-706

Ref.No.	REFERENCE

PREPARED BY:

Stantec
1100 –111 DUNSMUIR STREET,
VANCOUVER, BC, CANADA, V6B 6A3
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www.stantec.com

SEAL

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA Q. F. ZHANG # 33613

May 23, 2014

No.	Date	REVISION	Dr'n	Ch'd
4	2014.05.22	ISSUED FOR CONSTRUCTION	JT	CR
3	2014.04.14	ISSUED FOR CONSTRUCTION	JT	CR
2	2013.11.26	ISSUED FOR CONSTRUCTION	AD	CR
1	2013.09.11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

PORT METRO vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGNED BY A.DIOQUINO
DRAWN BY A.DIOQUINO
APPROVED C.RADU
DATE 2014.05.22
PWV SITE
SCALE 1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 11+715 TO 11+920

SIZE D | DWG. 23-351-00-RD | SHEET 707 | REV. 4

TITLE BLOCK: DL_TB.dwg
DATE: 2014/05/23 – 1:53pm
PATH: L:\transportation\design\drawing\working\civil\sheet_files\700_signing_markings\23-351-00-RD-707.dwg

TITLE BLOCK: DL-TB.dwg

MATCH LINE 1+920 SEE DWG NO. 23-351-00-RD-707

MATCH LINE 12+220 SEE DWG NO. 23-351-00-RD-709

SIGNS ASSOCIATED WITH THIS DRAWING				
SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
B-G-006-2d	1	MOUNT ON SIGNAL POST	STA 11+922 NB	BIKE ROUTE
B-G-001-A	2	2	STA 12+020 WB, STA 12+060 EB	BIKE ROUTE
R-001	1	1	STA 70+013 SB	STOP
R-004-x (50)	2	2	STA 12+140 WB, STA 20+082 EB	MAXIMUM SPEED LIMIT
R-009-1	2	1; MOUNT WITH W-062	STA 70+018 NB, STA 80+018 SB	DO NOT ENTER
R-009-3	1	MOUNT WITH R-009-1	STA 70+018 NB	WRONG WAY
R-015-R	2	2	STA 20+200 EB, STA 20+260 WB	NO RIGHT TURN
R-086-L	1	1	STA 12+060 WB	LEFT LANE LEFT,RIGHT LANE THRU
RA-002	1	1	STA 60+138 EB	CYCLISTS YIELD
R-081	1	MOUNT ON TYPE 6 POLE ARM	STA 11+970 WB	THIS LANE THRU
R-111-1L	1	1	STA 79+988 EB	PEDESTRIAN / CYCLIST CROSSING
R-111-1R	1	MOUNT WITH R-111-1L	STA 79+988 WB	PEDESTRIAN / CYCLIST CROSSING

NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION.

LOW LEVEL ROAD DESIGNED TO ACCOMODATE WB20

LOW LEVEL ROAD TO HEYWOOD ST. RIGHT IN/RIGHT OUT DESIGNED TO ACCOMODATE MSU

HEYWOOD AVE. MAINTAINED AS IS

DESIGN SPEED (L100) 50 km/h

DESIGN SPEED (L200) 50 km/h

DESIGN SPEED (L400) 10 km/h

DESIGN SPEED (L600) 10 km/h

DESIGN SPEED (L700) 25 km/h

DESIGN SPEED (L800) 25 km/h

4 SIGN DELETED

SIGNS ASSOCIATED WITH THIS DRAWING (CONT.)				
SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
R-082-L	1	MOUNT ON TYPE 6 POLE ARM	STA 11+970 WB	THIS LANE LEFT
RB-091	2	2	STA 20+290 WB, STA 11+977 EB	RESERVED BICYCLE LANE
W-004-R	1	MOUNT ON HYDRO POLE	STA 20+329 WB	SWITCHBACK
W-018	2	1; MOUNT WITH R-015-R	STA 20+132 EB, STA 20+260 WB	ADVANCE LOW CLEARANCE
W-019	2	MOUNT ON STRUCTURE	STA 20+183 EB, STA 20+194 WB	LOW CLEARANCE
W-022 (15 km/h)	1	MOUNT ON HYDRO POLE	STA 20+329 WB	ADVISORY SPEED
W-054-D	1	1	STA 20+300 WB	OBJECT MARKER DOUBLE
W-054-R	2	MOUNT WITH R-004, RB-091	STA 11+977 EB, STA 20+082 EB	OBJECT MARKER RIGHT
W-061-R	2	2	STA 11+946 EB, STA 12+011 EB	RIGHT LANE ENDS
W-061-Ta	1	MOUNT WITH W-061-R	STA 11+946 EB	DISTANCE ADVISORY TAB
W-062	2	2	STA 80+018 NB, STA 80+028 NB	CHEVRON
WB-010	1	MOUNT ON SIGNAL POST	STA 11+922 EB	RESERVED BICYCLE LANE AHEAD
PS-SPECIAL	DELETED	DELETED	STA 20+220 WB	PEDESTRIAN ADVISORY ROUTE
B-W-320	1	1	STA 20+200 WB	STEEP HILL
PS-003-L	1	1	STA 80+049 EB	PEDESTRIAN CROSSWALK
PS-003-R	1	MOUNT WITH PS-003-L	STA 80+049 WB	PEDESTRIAN CROSSWALK

4 DELETED

No.	Date	REVISION	Dr'n	Ch'd
4	2014,10,22	ISSUED FOR CONSTRUCTION	AD	CR
3	2014,04,02	ISSUED FOR CONSTRUCTION	AD	CR
2	2013,11,26	ISSUED FOR CONSTRUCTION	AD	CR
1	2013,09,11	ISSUED FOR CONSTRUCTION	AD	CR
0	2013,03,01	ISSUED FOR CONSTRUCTION	LY	CR

Ref.No. | REFERENCE

PREPARED BY:

Stantec
1100 – 111 DUNSMUIR STREET,
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SEAL

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGNED BY	A.DIOQUINO
DRAWN BY	A.DIOQUINO
APPROVED	C.RADU
DATE	2014,10,22
PMV SITE	
SCALE	1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 11+920 TO 12+220

SIZE D | DWG. 23-351-00-RD | SHEET 708 | REV. 4

DATE: 2014/10/23 – 4:07pm
PATH: L:\transportation\design\drawing working\civil\sheet_files\700_signing_markings\23-351-00-RD-708.dwg

TITLE BLOCK: DL-TB.dwg

SIGNS ASSOCIATED WITH THIS DRAWING				
SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
B-G-006-2e	1	1	STA 12+245 EB	BIKE ROUTE
B-R-118-R	1	MOUNT ON SIGNAL POLE	STA 12+320 WB	BIKE SIGNAL PUSH BUTTON (RIGHT)
G-007-1	1	MOUNT WITH W-015	STA 12+317 SB	STREET NAME (THIRD ST.)
G-011-Ta	2	MOUNT WITH B-G-001-A/B-G-006	STA 12+320 EB, STA 20+515 WB	DIRECTIONAL TAB
B-G-001-A	2	2	STA 12+248 EB, STA 12+560 EB	BIKE ROUTE
B-G-011-Td	2	MOUNT WITH B-G-001-A/B-G-006	STA 12+320 EB, STA 20+515 WB	CROSS HERE WHEN SAFE
R-001	1	1	STA 20+461 SB	STOP
R-004-x (50)	1	MOUNT ON TYPE 'M' POST	STA 12+449 WB	MAXIMUM SPEED LIMIT
RB-091	1	MOUNT ON TYPE 'M' POST	STA 12+449 WB	RESERVED BICYCLE LANE
R-008-1	1	MOUNT WITH R-001	STA 20+461 SB	ONE WAY
R-014-R	4	4	STA 12+273 EB, STA 12+357 EB, STA 20+424 EB, STA 12+472 WB	KEEP RIGHT
G-007-2 OH	1	MOUNT ON TYPE 'M' POST ARM	STA 12+449 WB	STREET NAME (THIRD ST.)
R-121-1u	1	MOUNT ON TYPE 'M' POST ARM	STA 12+449 WB	TRUCK ROUTE

MATCH LINE 12+220 SEE DWG NO. 23-351-00-RD-708

B-G-006-2e STA 20+515 | B-G-011-Td STA 20+515 | G-011-Ta STA 20+515

W-015 STA 12+317 | G-007-1 STA 12+317 | R-001 STA 20+461 | R-008-1 STA 20+461

W-064-D STA 20+509 | W-129-1 STA 20+586

R-014-R STA 20+424 | W-054-L STA 20+424 | W-054-R STA 12+264 | R-025-L STA 20+445 | R-025-R STA 20+469

300mm WHITE PARALLEL CROSSWALK (TYP.) | 600mm WHITE STOP LINE | KENNARD AVE. | LIMIT OF CONSTRUCTION

100mm SOLID WHITE LANE LINE | L200 | COTTON DR. | 20+400 | 20+500 | 20+588 | 12+300 | 12+400 | 12+500

R-004-x (50) STA 12+449 | RB-091 STA 12+449 | R-081 STA 12+449 | G-007-2 OH | 100mm BROKEN WHITE CONTINUITY LINE | 300mm WHITE PARALLEL CROSSWALK | GLADSTONE AVE. LIMIT OF CONSTRUCTION STA 12+551-269

CRASH ATTENUATOR | 100mm SOLID YELLOW LANE LINE | 600mm SOLID WHITE CHEVRON 10m O.C. (TYP.) | 100mm WHITE .5m DASHES @ .5m GAPS | 600mm WHITE STOP LINE (TYP.) | 100mm BROKEN WHITE LANE LINE | L100 | SOLID WHITE LEFT TURN ARROW (TYP.) | EXISTING | 12+566 | SOLID WHITE THRU ARROW (TYP.)

B-R-118-R STA 12+320 | G-011-Ta STA 12+320 | B-G-011-Td STA 12+320 | B-G-001-A STA 12+320 | SOLID GREEN CYCLE GRIP (BY ENNIS-FLINT) HIGH-FRICTION SURFACE TREATMENT OR EQUAL (TYP.)

W-054-L STA 12+357 | R-014-R STA 12+357 | R-121-1u STA 12+449 | R-081-SPECIAL STA 12+449 | LOW LEVEL RD. | G-007-2 OH | R-014-R STA 12+472 | W-054-L STA 12+472

W-129-1 STA 12+267 | W-054-L STA 12+273 | R-014-R STA 12+273 | B-G-001-A STA 12+560

NOTE:

1. ALL PAINT LINES SHALL BE RAINLINE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
2. SEE DWG. 23-351-00-RD-703 FOR BARRIER DELINEATION.

SIGNS ASSOCIATED WITH THIS DRAWING (CONT.)				
SIGN TYPE	# OF SIGNS	# OF POSTS	LOCATION	DESCRIPTION
G-007-2 OH	2	MOUNT ON TYPE 'M' POST ARM	STA 12+449 WB	STREET NAME (LOW LEVEL RD.)
R-025-L	1	1	STA 20+445 EB	STOP LINE
R-025-R	1	1	STA 20+469 WB	STOP LINE
R-081	1	MOUNT ON TYPE 'M' POST ARM	STA 12+449 WB	THIS LANE THRU
R-081-SPECIAL	2	MOUNT ON TYPE 'M' POST ARM	STA 12+449 WB	THIS LANE THRU
R-083-R	DELETED	DELETED	STA 20+535 WB	THIS LANE THRU OR RIGHT
W-015	1	1	STA 12+317 SB	CHECKERBOARD
W-054-L	4	MOUNT WITH R-014R	STA 12+273 EB, STA 12+357 EB, STA 20+424 EB, STA 12+472 WB	OBJECT MARKER LEFT
W-054-R	1	1	STA 12+264 WB	OBJECT MARKER RIGHT
W-054-D	1	1	STA 20+509 WB	OBJECT MARKER DOUBLE
W-129-1	2	1; MOUNT ON POLE	STA 12+267 EB, STA 20+586 WB	CYCLIST CROSSING

LOW LEVEL ROAD DESIGNED TO ACCOMODATE WB20

KENNARD AVE. RIGHT IN/RIGHT OUT DESIGNED TO ACCOMODATE MSU

DESIGN SPEED (L100) 50 km/h

DESIGN SPEED (L200) 50 km/h

Ref.No.	REFERENCE

PREPARED BY:

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0	2013.03.01	ISSUED FOR CONSTRUCTION	LY	CR

PORT METRO vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

the city of north vancouver

DESIGNED BY A.DIOQUINO
DRAWN BY A.DIOQUINO
APPROVED C.RADU
DATE 2014.10.22
PMV SITE
SCALE 1:500

NORTH SHORE TRADE AREA

LOW LEVEL ROAD PROJECT

SIGNING AND PAVEMENT MARKINGS

STA: 12+220 TO 12+551

SIZE D | DWG. 23-351-00-RD | SHEET 709 | REV. 5

DATE: 2014/10/22 - 3:43pm
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