

From: "Sibley, Marc" <Marc.Sibley@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Traffic Operations" <traffic.operations@vancouver.ca>
"Traffic - Temporary Permit Decals" <Traffic.Decals@vancouver.ca>
CC: "Elford, Dan" <dan.elford@vancouver.ca>
Date: 9/28/2018 4:48:42 AM
Subject: RE: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Brian: Yes I believe they were replaced.

I will have a WO created to head back there and attend to this
Unfortunately this not likely to happen till Monday or Tuesday of next week
As today, being Friday we have low staff and a high volume of work for the weekend

Jason/Traffic Ops. admin: could I please have a WO created as per Brian's email
Please use CEM975004

Derek: Let's see if we can free someone up for a couple of hours to anchor the IRS's back in place

Cheers
Marc

From: Gould, Brian
Sent: Thursday, September 27, 2018 9:59 AM
To: Sibley, Marc; Traffic Operations
Cc: Elford, Dan
Subject: RE: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Hi Marc,

Attached photo from last night around 9pm, IRS bollards still out. Unclear whether work request to reinstate was completed in the meantime, either way we appreciate your attention and understanding.

The hose is to get a handle on who is driving through the bollards, but clearly we'll get a different result if the bollards are still missing. I've asked for the hose to be left in place longer.

From: Gould, Brian
Sent: Thursday, September 20, 2018 2:32 PM
To: Sibley, Marc; Traffic Operations
Cc: Elford, Dan
Subject: RE: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Thanks Marc, and especially for double checking. I assume that Fire is just trying not to annoy the neighbours, so I'm hesitant to ask them to go lights-and-sirens if we knew going in that they would be doing this frequently.

We've got the okay to re-open a conversation about automated bollards, but that seems a long way off even if it works this time. I am skeptical of one of our other thoughts, although EQS didn't completely shoot it down, which is basically a knock-down gate that slowly raises itself back up. The other category would be getting Fire to buy-in to us using a ground clearance based strategy, possibly with more of a rubberized curb since we've already done some testing with them around a similar product.



A few thoughts on IRS in the meantime:

- Any interest in using this as an opportunity to durability test various products? E.g. PEXCO bollards on the Cambie Bridge.
- If the repeated installs are damaging the asphalt, shifting things a bit east or west should always be fine, but it would be nice to not totally chew everything up.
- Thoughts on using a different pattern and/or more at one time in the hopes that losing a few is less of a problem? Normally this sort of arrangement irritates me, but it's more of a visual barrier, would allow us to install quite a few bollards in multiple rows. Would also be more likely for a fire truck wheel to directly run over a bollard, which I presume is bad for the hinge.



From: Sibley, Marc
Sent: Wednesday, September 19, 2018 5:29 AM
To: Gould, Brian; Traffic Operations
Cc: Elford, Dan
Subject: RE: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Morning Brian

I had a look last night and found that three were missing
I have asked my admin. staff to create a work order and this should be repaired shortly

Last week we has a work order to remove all of the IRS³ for a special event (East Side 10k Run)
Removing the IRS³ for events is not helping the situation

My crews have witnessed Fire Trucks driving over the bollards without their lights on
If you are not getting buy-in from them, and the bollards look to the general public like there is no problem, just drive over them
This will obviously continue to be a problem

Traffic Operations is going to struggle to allocate time to maintain these. At this rate

Cheers
Marc

From: Gould, Brian
Sent: Tuesday, September 18, 2018 10:16 AM
To: Traffic Operations
Cc: Sibley, Marc; Elford, Dan
Subject: RE: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Good morning,

I've received multiple reports of the yellow IRS bollards on Alexander east of Main (shown on the below referenced drawing and in more detail on DOC/2018/262460) being completely out of position again.

Given this renders the diverter completely toothless, please repair ASAP and (Dan, Marc, etc) let me know your thoughts on the below to see if we can work out something better for everyone.

From: Gould, Brian
Sent: Thursday, August 23, 2018 11:59 AM
To: Elford, Dan
Cc: Sibley, Marc
Subject: RE: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Hi Dan,

The paint changes are basically just to trade right arrows for left arrows, you can see them on DOC /2018/303920 which was part of the overall Form 1 for the Alexander project.

Should it be relevant, note that although we missed showing an existing stop bar on Alexander west of Main (and there was a previous question of where to put back the east stop bar that was removed through the thin-lift overlay), we're intending crosswalks and stop bars at the intersection to be the same as before all work in the area started.

While I have you, I understand that the IRS bollards just east of here on Alexander are being knocked out repeatedly and were out of position again within the last few days. Since these are the only things preventing general traffic while allowing fire trucks, I would appreciate continued maintenance attention here while I search for a better long term strategy. If you have any advice or ways to help things out (for example, do they have all their bolts and epoxy, are they starting to rip up the asphalt, etc) in the meantime, please let me know.

Thanks,
Brian

From: Elford, Dan
Sent: Thursday, August 23, 2018 11:48 AM
To: Gould, Brian
Cc: Sibley, Marc
Subject: PAINT PLAN FOR MAIN ST SOUTH OF ALEXANDER

Brian can you give the vandocs # or provide a pdf
thx

Dan Elford
Superintendent 1
Streets, Traffic and Electrical

604-829-4305

:

From: "Yau, Adrian" <Adrian.Yau@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 3/2/2017 11:41:16 AM
Subject: RE: Powell-Alexander Traffic Counts

Hi Brian,

For reference here is where I'm saving my drawings and PDFs for Powell-Alexander conceptual design work (for now):

s.15(1)(l)

Adrian Yau

From: Gould, Brian
Sent: Wednesday, February 22, 2017 4:32 PM
To: Yau, Adrian; Khayat, Jad
Subject: Powell-Alexander Traffic Counts

A quick summary from Jad's analysis:

Midweek Daily Average

Block	Total	EB	WB
0	1371		1371
100	2159	980	1179
200	4393	2045	2348
400	2518	1241	1277
700	1602	735	867

East leg of Main is going to be tricky, but we're well over 1000/day all along the street. This should be fun.

From: Yau, Adrian
Sent: Tuesday, February 21, 2017 2:57 PM
To: Khayat, Jad
Cc: Gould, Brian
Subject: Traffic Count Maps

Hi Jad,

Here are some network traffic count maps I made for 800 Robson and Smithe St.

Adrian Yau

Transportation Design Branch | Engineering Services
604-873-7034 | adrian.yau@vancouver.ca

From: "Sandhu, Bhopinder" <Bhopinder.Sandhu@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
CC: "Sibley, Marc" <Marc.Sibley@vancouver.ca>
"Hatton, Rommel" <Rommel.Hatton@vancouver.ca>
"Woods, Belinda" <Belinda.Woods@vancouver.ca>
Date: 12/17/2019 2:13:17 PM
Subject: RE: WO#1151318 - 200 Alexander St. - Delineators Down

Thank you Brian for understanding our situation.

Glad to hear that you've made some progress with this site.

From: Gould, Brian
Sent: Tuesday, December 17, 2019 2:06 PM
To: Sandhu, Bhopinder
Cc: Traffic Operations; Sibley, Marc; Hatton, Rommel; Woods, Belinda
Subject: RE: WO#1151318 - 200 Alexander St. - Delineators Down

Hi Bhopinder,

Recognizing the unusual circumstances here, please use CER-00220-HH-01.

We coincidentally had a productive meeting with VFRS this morning; previously we understood that they were having issues driving over the IRS bollards, but no ideas for what they would prefer as lockable bollards is asking a lot for multiple responses per day. Our current working plan is to use concrete, mountable and painted yellow as necessary, and not to have any bollards or signs in the way of VFRS access. It will take us some time to agree on details and implement, but we have a path forward finally.

From: Sandhu, Bhopinder
Sent: Tuesday, December 17, 2019 7:54 AM
To: Gould, Brian
Cc: Traffic Operations; Sibley, Marc; Hatton, Rommel; Woods, Belinda
Subject: FW: WO#1151318 - 200 Alexander St. - Delineators Down

Good morning Brian,

200 Alexander is an ongoing issue for Traffic Operations crews with respect to the maintenance of the IRS delineators installed for a capital project.

Would it be possible to re-activate CEM975004? I would appreciate capturing charges associated with the on-going maintenance of capital work completed at this location.

Please contact me if you have any questions,

Thank you,

Bhapinder Sandhu Superintendent I
Traffic Operations (TEOD) 8-4305
Office: 604.829.4305
Mobile: 604.603.2783
bhapinder.sandhu@vancouver.ca

From: Traffic Operations
Sent: Thursday, December 12, 2019 3:02 PM
To: Sandhu, Bhapinder
Subject: RE: WO#1151318 - 200 Alexander St. - Delineators Down

CEM975004 that was previously used for this location is now closed.

Thanks,

Oliver Thomas

Traffic, Electrical Operations & Design Branch

City of Vancouver | 604.871.6258

From: Sandhu, Bhapinder
Sent: Thursday, December 12, 2019 2:48 PM
To: Hatton, Rommel; Traffic Operations; Sibley, Marc
Cc: Traffic - Temporary Permit Decals
Subject: RE: WO#1151318 - 200 Alexander St. - Delineators Down

Let's review after we know the extent of the damage.

Is the capital number still active or has it been closed?

From: Hatton, Rommel
Sent: Thursday, December 12, 2019 9:54 AM
To: Traffic Operations; Sibley, Marc; Sandhu, Bhapinder
Cc: Traffic - Temporary Permit Decals
Subject: RE: WO#1151318 - 200 Alexander St. - Delineators Down

Placed in the Friday, December 13th 2019 folder for crew assignment.

Bhupinder: Please advise if you would prefer to charge any costs associated with the scope of maintenance work at this location to the original capital project funding source.

Thank you.

Rommel.Hatton@vancouver.ca
Traffic Ops | TEOD Branch | 8-6779

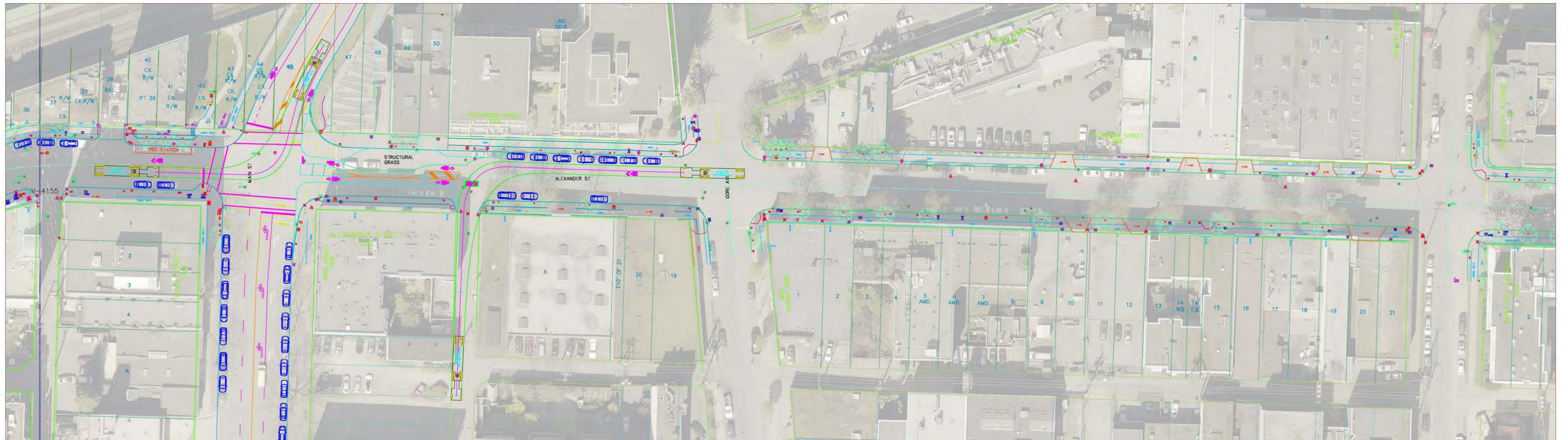
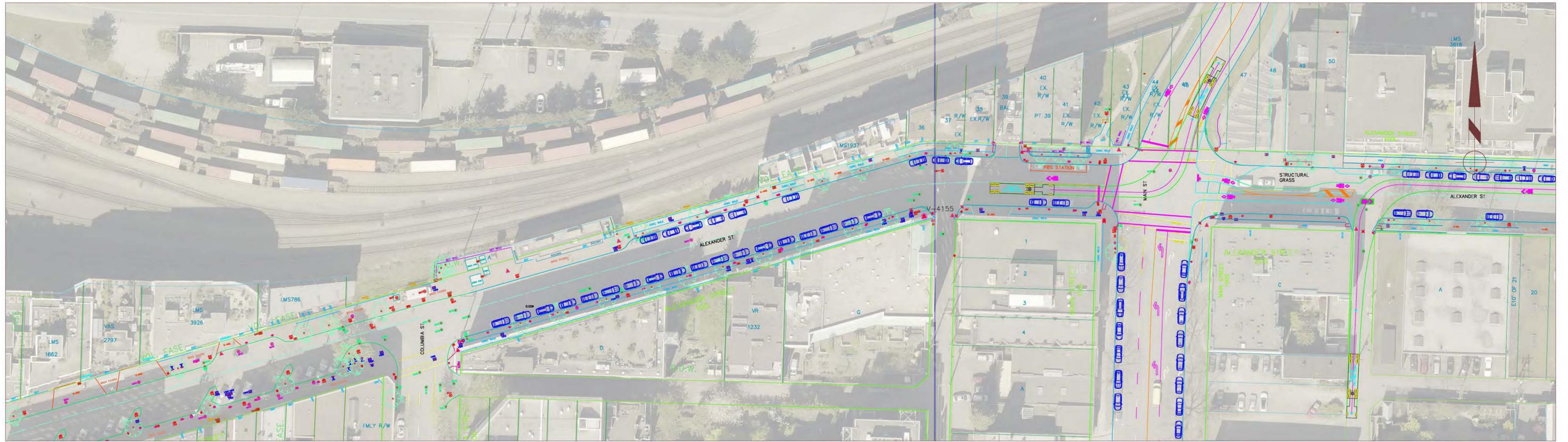
From: Traffic Operations
Sent: Thursday, December 12, 2019 8:38 AM
To: Sibley, Marc; Hatton, Rommel; Sandhu, Bhupinder
Cc: Traffic - Temporary Permit Decals
Subject: WO#1151318 - 200 Alexander St. - Delineators Down

Hello

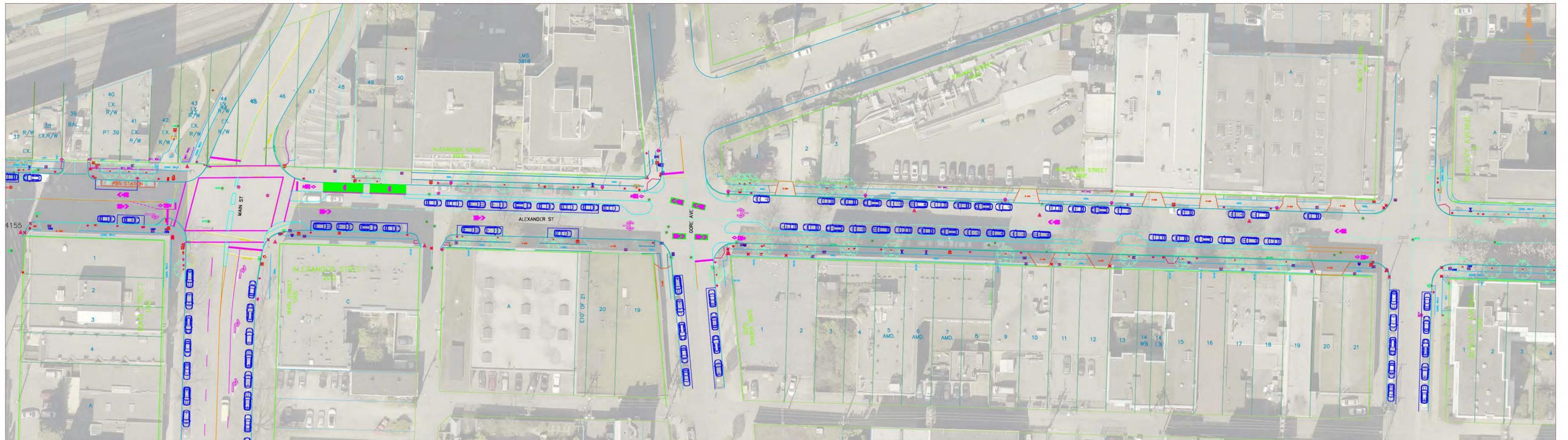
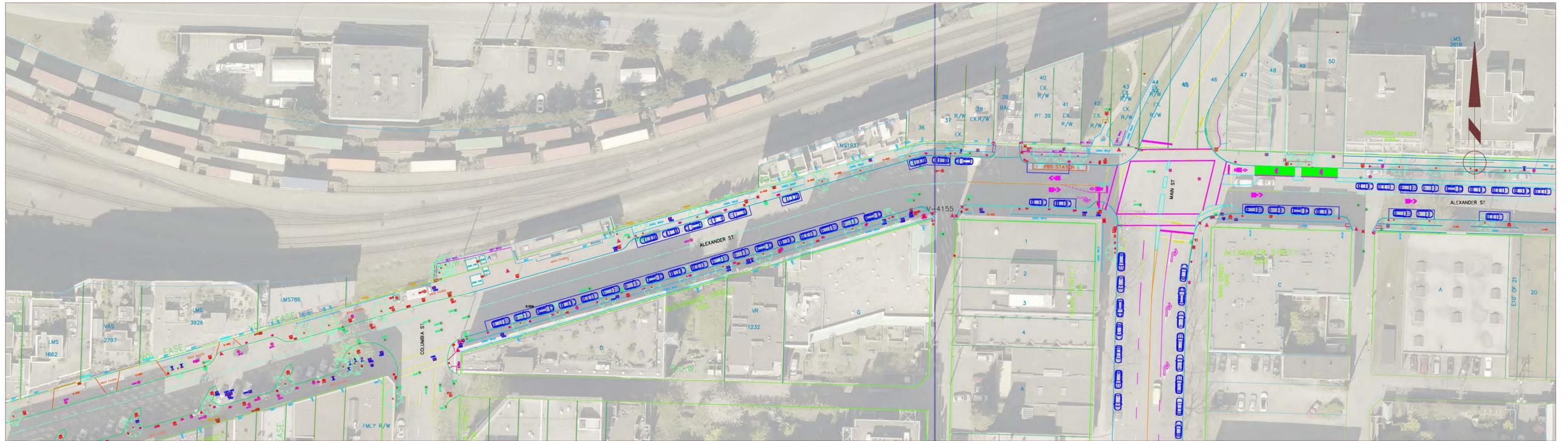
Sending WO#1151318 down to the TO Printer. Let me know if there are any issues.

Thank you,
Ian Schultz
ian.schultz@vancouver.ca
Streets, Traffic, Electrical Operations

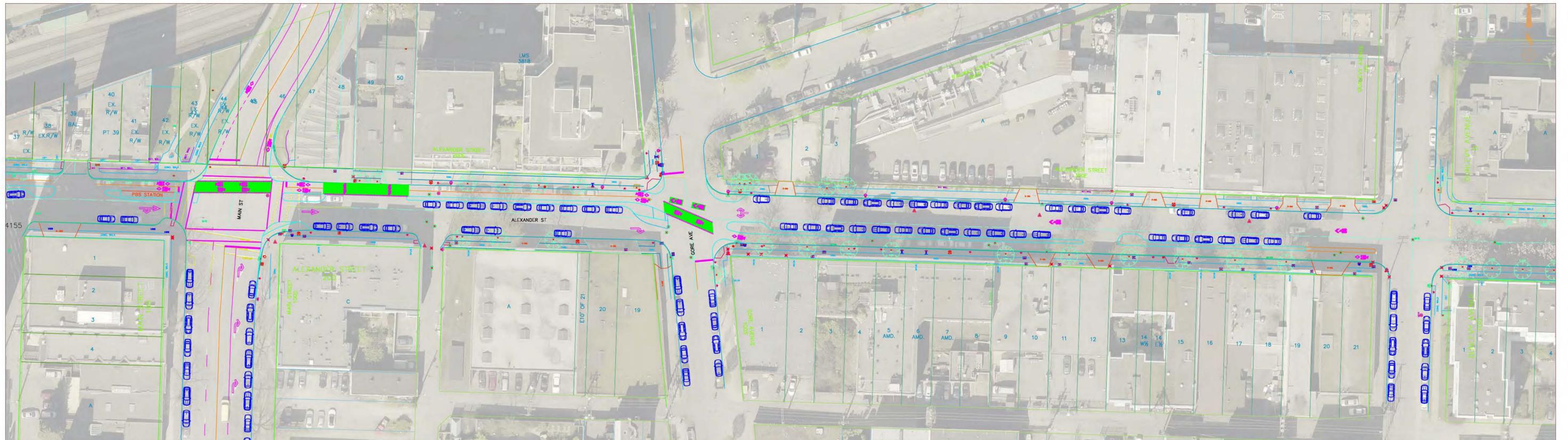
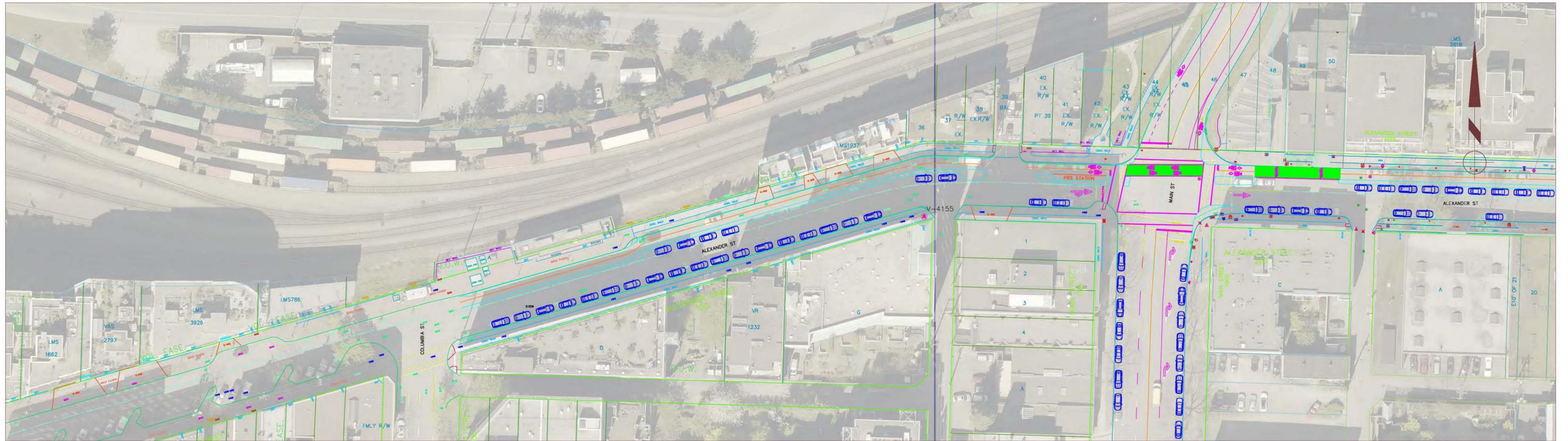
City of Vancouver | 604-673-8334



SEAL	DIRECTOR OF TRANSPORTATION	DATE	DATE		ENGINEERING SERVICES	PROJECT NUMBER
	TRANSPORTATION DESIGN	DATE	2017-04-05		TRANSPORTATION DIVISION	ENGIS NUMBER
	TRANSPORTATION PLANNING	DATE	DESIGNER	POWELL & ALEXANDER COLUMBIA TO DUNLEVY OPTION A	STREETS PROJECT NUMBER	
	TRAFFIC AND DATA MANAGEMENT	DATE	AY		REFERENCE	
	PARKING MANAGEMENT	DATE	CHECKER	DESIGN VEHICLE: WB-15 SU-9 BIKE FACILITIES: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> BUS ROUTE: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> TRUCK ROUTE: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> RAILWAY CROSSING: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	SCALE: 1:500	SHEET-SET 1 OF 1



SEAL	DIRECTOR OF TRANSPORTATION	DATE	DATE	 ENGINEERING SERVICES TRANSPORTATION DIVISION	PROJECT NUMBER
	TRANSPORTATION DESIGN	DATE	2017-04-05		ENGINE NUMBER
	TRANSPORTATION PLANNING	DATE	ENGINEER OF RECORD BG		STREETS PROJECT NUMBER
	TRAFFIC AND DATA MANAGEMENT	DATE	DESIGNER AY		REFERENCE
	PARKING MANAGEMENT	DATE	DRAFTER AY		
			CHECKER	DESIGN VEHICLE: WB-15 SU-9 BIKE FACILITIES: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> BUS ROUTE: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> TRUCK ROUTE: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> RAILWAY CROSSING: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	SCALE: 1:500 SHEET-SET 1 OF 1



SEAL	DIRECTOR OF TRANSPORTATION	DATE	DATE	2017-04-11	 ENGINEERING SERVICES TRANSPORTATION DIVISION	PROJECT NUMBER
	TRANSPORTATION DESIGN	DATE	ENGINEER OF RECORD	BG		ENGS NUMBER
	TRANSPORTATION PLANNING	DATE	DESIGNER	AY		STREETS PROJECT NUMBER
	TRAFFIC AND DATA MANAGEMENT	DATE	DRAFTER	AY		REFERENCE
	PARKING MANAGEMENT	DATE	CHECKER		DESIGN VEHICLE WB-15 SU-9 BIKE FACILITIES YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> BUS ROUTE YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> TRUCK ROUTE YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> RAILWAY CROSSING YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	SCALE: 1:500 SHEET-SET 1 OF 1

Alexander Bikeway - incl Maple Tree Square, Main, and Hawks			
Project Number and Name <i>e.g. VanDocs container # and name</i>	13-1400-30/0000127 ENG - TDE - Alexander-Powell - 2017		
Design Number <i>e.g. ENGIS #(s), Hansen #, Posse #</i>	2014-87 2017-59 2018-17 2017-160	Other Numbers <i>e.g. DE #, RE #, etc.</i>	
Target Design Completion Date	Q4 2017 (Hawks), Q1 2018 (remainder)		
Summary of Design Work Scope <i>(i.e. what)</i>	Inaugurate the Alexander Bikeway, aim for All Ages and Abilities standards		
Summary of Design Work Objectives <i>(i.e. why)</i>	Improve comfort and safety of people cycling along Alexander St Connect to existing protected bike lanes on Carrall St and the Powell Overpass Maintain access to homes and businesses Ensure that loading and delivery needs are addressed Keep as much on-street parking as possible		

Issuance Log

Revision	Date (YYYY-MM-DD)	Description	EoR Initials
0	2018-02-09	2017-160-C-GP-00 Issued to SED	bg
1	2018-03-13	2017-160-C-GP-01 Issued to SED	bg
0	2018-03-06	2017-87-C-G-00 Issued to SED	bg

Design Team/Personnel

Roles	Name
Designer(s)	Ryan O'Donnell/Mike Komiya (Detailed), Adrian Yau (Conceptual)
Checker(s)	Tibor Mate and Alipasha Larijani
Engineer of Record	Brian Gould
Project Manager / Project Coordinator	Fiona Keating

Stakeholder Branches

Branch	Name	Role
TDM	Winnie Wong (was Toby Lewis), Lacey Hirtle	Signals, intersection operations
TPL	Rachel Magnusson	Engagement
TPL	Justine Clift (was Stephanie McNeely)	Water St and Gastown
TPL	Carol Kong	Port
TPL	Kati Tamashiro	Active Transportation Networks
PMB	Diane Hiltz	Tour buses, curb use
PBS	Lysa Morishita	Bike share stations
Street Activities	Kathleen Corey	Maple Tree Square

Design Planning

Relevant Background Information

Include only information relevant to the design scope.

Design Inputs (drawings, surveys, volume counts, etc.)

Input	Source	Checking/Verification Note
Orthophotos	2015	Used for conceptual design work
Survey	2017 - 173072	At Hawks: Completed for this design project
Survey	2013 - 133044	At Hawks: Used for conceptual design work
Survey	2014 - 143224	200 and 300 Alexander
Survey	2015 - 143225	000 and 100 Alexander

Design Criteria

Criterion	Desirable or Min/Max	Notes
Crosswalk, width	3.2m min	Standard outside downtown
Clear sidewalk width	Maintain existing, 1.8m min	
Travel lane (general), width	3.0m min	
Painted bike lane, width	1.5m min	
Combined bike lane/parking, width	4.0m min	
Mobi station, width	1.6m plus 0.3m if drainage	Supplied by Public Bike Share
Mobi station back-up zone, width	1.1m minimum	Can overlap with bike lane
Protected bike lane radius, bend	10m min, 5m absolute min	
Protected bike lane radius, int	2.5m-3m typical	
Protected bike lane width, bidirectional	3.0m min, 2.7m absolute min depending on edge conditions	
Bike path width, bidirectional	2.5m min	TAC, more applicable off-street
Bike separation	0.8m pref (0.9m w/parking), 0.6m min, 0.4m abs min	
Treed median, width	1.2m plus 0.15m per curb	
Curb bulge, width	1.8m-2.0m, R2.5 and R4	Per standard; deeper possible if does not negatively affect bicycles riding in mixed traffic
Bollard spacing	1.8m-2.0m	
Sharrow Placement	Min 3.4m, max 4.0m, desired per design standard	

Initial Design Assumptions and Constraints

Description	Comment
For Maple Tree Square, shorten walking and cycling crossings by reducing number and width of travel lanes, as well as converting 000 block Alexander to one-way eastbound MVs. Increase public space.	The design for Maple Tree Square has evolved based on public and Gastown BIA comment, but has remained consistent with these initial principles.
For Columbia, two-way conversion may be	Ultimately, extending the two-way conversion is

required depending on the option for at least the first block	<p>supported by Transportation and the Gastown BIA, though the necessary signal work means that implementation will lag the Alexander bikeway.</p> <p>A sign and paint plan for the full length has been produced and will be advanced subsequent to the drawings necessary for the Alexander Bikeway implementation.</p>									
At Main, options include a full closure just east of Main, alternating one-ways, or a two-way protected bike lane.	Alternating one-ways with contra-flow protected bike lanes proved problematic for VFRS, preference was for a permeable full closure just east of Main. Unclear preference of immediately impacted residents/businesses.									
The two-way stop favouring Dunlevy can be rotated to favour Alexander.	<p>Confirmed by a count on 2018-02-14 which shows the following:</p> <table border="1" data-bbox="824 657 1427 751"> <thead> <tr> <th>MVs/hr</th> <th>Dunlevy</th> <th>Alexander</th> </tr> </thead> <tbody> <tr> <td>8-9am</td> <td>75</td> <td>385</td> </tr> <tr> <td>16:40-17:40pm</td> <td>82</td> <td>409</td> </tr> </tbody> </table> <p>At approximately 80/hr in the peak, the Dunlevy approaches are far from the 4-way stop warrant of 200/hr average over eight hours. Likewise, Alexander is significantly busier than Dunlevy, indicating favouring Alexander would be more intuitive.</p> <p>Note that although traffic calming is expected to significantly reduce vehicle volumes along Alexander, the end result should be the same: a target of fewer than 100 MVs/hr on Alexander and expectation of 100 or more bikes/hr will result in Alexander being busier than Dunlevy, and likely significantly so.</p>	MVs/hr	Dunlevy	Alexander	8-9am	75	385	16:40-17:40pm	82	409
MVs/hr	Dunlevy	Alexander								
8-9am	75	385								
16:40-17:40pm	82	409								
At Hawks, protected bike lane can be bent around corner from Powell onto Hawks and join mixed traffic if MV traffic on Hawks is restricted to one-way southbound	Through discussions with adjacent businesses, NB throughs are accommodated to allow large trucks to Sunrise Soya, but the WBR remains restricted.									
Emergency vehicle access	VFRS to be physically able to make right turns from Powell to Hawks and to Alexander. Emergency vehicle permeability along Alexander, particularly from Hall #2 at Main and Cordova, is critical to emergency response in the DTES.									

Design Tools and Software

Name/Description	Version	Manufacturer
AutoCAD	2015	AutoDesk
AutoTURN	9.1	Transoft Solutions

Note: an on-going list of reference standards and guidelines cited is to be maintained at the end of the Design Execution section, similar to a bibliography.

Design Execution

Alternative Design Options Explored

Optional: Summarize any alternative design options initially explored

Summary	Details
Various other Maple Tree Square permutations	<p>The Maple Tree Square design has evolved significantly, two key alternative designs that were explored include:</p> <ul style="list-style-type: none"> • Providing physically separate walking and cycling introduced more fixed obstacles to events and was not supported by the BIA; alignments and paint were also adjusted based on a series of conversations • Providing two lanes to Water provides little benefit to MVs while worsening amount of public space and lengthening crossings • Removing chains was supported at a staff level and at Design Branch Heads based on BIA interest. With the exception of south of the Carrall crosswalk and east of the Powell crosswalk, it is legal to cross the roadway anywhere on foot provided one yields to traffic outside crosswalks. Thus, given agreement between GHAPC for heritage, the BIA, and Transportation, some or all other lengths of chain may be removed in the future to facilitate permeability and make removal for events easier.
Locate full closure immediately east of Main Street, use automated bollards to manage entry for large film trucks.	<p>Due to TDM concerns about allowing some private vehicles to control bollards at a signal, as well as a lack of alternate ways to accommodate these vehicles, closure was relocated just east of lane. This should provide some advantages for film studio and seniors home, but requires attention to warning signage to drivers to avoid them turning onto Alexander Street. Additional signage will be required.</p>
Extend protected bike lane down Powell St and connect at Heatley	<p>In order to provide two-way protected bike lane on Powell and right turn lane from Powell to Hawks (in order to maintain right turn), approximately 20 parking spaces would need to be removed. Additionally, many complications of the design at Hawks would instead happen at Heatley, including a turn ban but with additional removal of parking from the east side (8 spaces) and unclear access restrictions to allow for two-way bikes between sidewalk and overpass.</p>
Extend bike path further along Hawks to avoid conflicts outside Sunrise Soya and to maintain two-way motor vehicle traffic along Hawks	<p>Ultimately, this became the recommended design at Hawks, more information below.</p>
Extend bike path an additional 20m along Alexander by removing a further three trees	<p>The path as currently designed ends just after the bend onto Alexander and the end of truck turning movements as predicted by AutoCAD. Extending it by about 20m would take it beyond what was observed in the field as well as mitigate some concerns about sightlines for people cycling eastbound.</p>
Minor revision to the geometric at Hawks	<p>In order to accommodate Hydro poles in a very constrained industrial area, it became necessary to update the geometric</p>

	<p>with a minor revision which has been approved and issued by TDE for 3D design.</p> <p>Issues with Hydro:</p> <ul style="list-style-type: none"> • Both the north and south poles identified for relocation have significant spans and require anchors if they remain • The northern pole could be removed entirely, but only at great cost by undergrounding the connection between the east-west line and north-south line. In this scenario, the eastern pole would actually be more difficult to relocate and the entire endeavor is not considered practical since the eastern pole is more problematic • Relocating the northern pole out to an extended bulge is workable; however, the required 2.1m from pole to guy wire anchor limits the width of the bike path and thus the bike path has been routed between pole and anchor while maintaining 2.5m vertical clearance from guy wire (even if not installed exactly on PL) and 0.3m from pole. For reference, BC Hydro has provided assurances that the guy wire will be attached at 12.8m above ground and that a single anchor and guy wire are possible for each pole • Relocating the eastern pole to an extended bulge, however, was not possible without assuming risk as it would be located immediately adjacent to a MH which is a junction of combined sewer mains; the pole has therefore been left in place as it is possible to accommodate NB cycling between the pole and a replacement anchor, with SB cycling re-routed around the pole. <p>Implications for the design and implementation:</p> <ul style="list-style-type: none"> • Additional on-street motor vehicle parking has been removed as a result of these changes to accommodate Hydro • New catchbasin(s) are required to accommodate the extended bulge on Alexander, which will require 2-3 months of sewer design and implementation after 3D design completes • The bulges, and particularly the eastern one, do improve sight-lines, however • Hydro will need to relocate an anchor near the PL with the CP tracks, which will require additional approvals • Although better than the existing dismount at a Hydro pole east of the Powell Overpass, the design is considerably less satisfying aesthetically now.
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Overview of Design and Changes

Were initial design criteria met and why not?

Summary	Details
Redesign of Maple Tree Square	The general design approach, in response to current user behaviour, is to facilitate walking and cycling crossings of Water

	<p>Street in the middle of Maple Tree Square. Space for cycling within the square is lightly delineated by benches and a custom zebra/elephants' feet crossing pattern. This pattern emphasizes the crosswalk side, at the BIA's request, and forms the bike crossing out of negative space. The single row of large elephants' feet reinforce the yield condition, are visually strong, and match the crosswalk bar widths. The Street & Traffic Bylaw amendment covers crosswalks "marked by elephants' feet markings on one or both sides" as not requiring signing to permit cycling, thus this layout is covered. Although not our typical pattern, large feet and this layout have been seriously considered for multiple projects including the Arbutus Greenway.</p> <p>To support heritage character and meet a BIA request to provide minimum delineation to start, green paint will not be used, nor will cycling space initially be stenciled or otherwise painted through the square. To reach the crossing of Water, NB bike traffic will be directed to cross Carrall Street.</p> <p>In recognition of only one through lane on Water and a desire to narrow crossings as much as possible, one of the two travel lanes on Powell will be a dedicated left turn lane to Carrall with the other to serve primarily Water and to a lesser extent local access to Alexander. Advanced warning of this change will be provided before the square, while a solid line will be painted to divide these lanes within the square.</p> <p>Design vehicles are as follows:</p> <ul style="list-style-type: none"> • WBL (to Carrall south) is a B-14M • WBT (to Water) is a B-14M with at least 1.5m for cycling • WBR (to Alexander, Carrall north) is an SU-9 <p>Control vehicle for all movements is a ladder truck</p> <p>Recognizing the WBR onto Alexander is an unusual movement with drivers turning onto a one-way except bikes, a short contra-flow bike lane is painted before the square that also helps direct people cycling away from oncoming traffic turning from Powell. Right-of-way for people cycling joining the Alexander roadway will be confirmed by a standard "turning vehicles yield to pedestrians and bicycles" sign just after the Powell crosswalk. As people cycling are travelling across the Alexander crosswalk, elephants' feet are not required and would be potentially confusing legally and practically in terms of where bicycles are intended to travel.</p> <p>Preferred bollard spacing, with or without chains, is 2m to match existing and per Eileen Curran for SED on accessibility. A dotted paint line is offset 0.45m from centre (or about 0.3m from edge) to add visibility and provide some additional shy distance. All new bollards are redesigned by EQS to be completely removable, including bolts, by the use of sleeves. Sign posts within the space will be mounted on similarly removable flanges. Likewise, benches will be removable for events. Where possible, bike racks, sign posts benches, and other objects will be used rather</p>
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	<p>than bollards, particularly to lightly separate walking and cycling.</p> <p>Signs for Maple Tree will be minimized and/or located before the square where possible. TDM have recommended right-of-way be assigned to walking and cycling at the adjacent crossings, and have specified a custom sign based the US "State Law Yield to Peds" and similar precedents, used without RA-4 signs. TDE have adopted these recommendations, and request a TDM field review of sign visibility and monitoring of the situation immediately following installation to confirm the TDM recommendations, including compliance and size.</p> <p>The decision to assign right-of-way to both people walking and cycling is based on an analysis of context and anticipated user behaviour. In both cases, assigning to people cycling the same right-of-way as people walking avoids a situation where these parallel crossings have people cycling yielding to crossing drivers, who are in turn yielding to people walking. This situation is particularly problematic for inexperienced users and our target "all ages and abilities" cycling demographics. Where two local or two arterial streets cross, the Design Guidelines for AAA Cycling Routes state that right-of-way should favour the AAA cycling facility if possible, and also indicates that even a two lane major street crossing may not require a traffic signal if crossing enhancements are made.</p> <p>All users are entering a unique space in Vancouver, featuring unconventional pavement and geometry, which contributes to heightened awareness. Likewise, Maple Tree Square/Water Street crosswalks are busy, and drivers expect to need to slow and potentially yield. With the conversion of 000 block Alexander to one-way eastbound motor vehicles, there are no longer any crossing conflicts between motor vehicles in the space. As a result, the crosswalks/bike crossings can be considered as if they were midblock crossings.</p> <p>In the case of the Carrall crossing, the turning motor vehicle volume is approximately 250/peak hour. This is similar to expected walking/cycling volumes, and in busy summer times it is likely there will be more people crossing on foot and bicycle. Requiring drivers to yield while turning is also an expected behaviour. The northbound protected bike lane becomes less delineated and turns to cobbles before the crossing, encouraging awareness and slower cycling speeds.</p> <p>In the case of the Water crossing, motor vehicle volumes are likely to be higher but it is hard to predict how many people will choose to use the new crossing. Since this location is in the centre of the square, there are clear sightlines in all directions. The single, short crossing without turning motor vehicles simplifies the potential conflict. Again, being on cobbles with low delineation is expected to help slow cycling speeds. When busy, motor vehicle traffic to Water Street is very commonly slow, or</p>
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	<p>stop-and-go, where drivers would be expected to yield frequently regardless. Visibility of the signs, particularly the one on the left given the curve, should be good for approaching drivers.</p> <p>Bicycle wayfinding through the space is intentionally limited given the low delineation. The crossings serve as stepping stones, while wayfinding signs and paint/bollards confirm at either end that people cycling are to “wiggle” over and join the plaza. “Bicycles yield to pedestrians” signs will be installed at those entry points.</p> <p>For the new crosswalk, grates at the bottom of the Gassy Jack mound pose an accessibility concern. An effort was made to identify a cost-effective alternative grate, but was not successful. Similarly, closing off some of the grates was not supported. Unless/until another solution can be reached, the benches have been adjusted to facilitate using the “bike” side as little as possible to maneuver around the grates for those with mobility needs.</p> <p>The existing tour bus zone on Powell may be shifted east to accommodate a loading zone at business request and to help reduce illegal stopping within the square. It should also help tour bus drivers make the left turn onto Carrall given desires to reduce volumes on Water in the short and longer term. However, the situation is complicated by the tour bus being co-located with a taxi zone and adjacent an accessible parking space. The accessible parking space is in a particularly unusual location, but relocation is likely to cause public concern. Relocating the tour/taxi zone past the accessible parking space is achievable, but displaces three of the four metered parking spaces on that block. It would appear that the bus stop ID can be relocated and bus zone reduced, but these details would need to be confirmed through a separate drawing given timelines.</p> <p>Bollards between the Alexander crosswalk and diagonal parking have been designed around a potential public bike share station. Locations for Mobi have been difficult to find agreement between parties such as the Gastown BIA and FASE, and the previous planned location on the north leg of Carrall was out of the way while requiring a patio relocation the BIA no longer supports. This new location should support 20 docks in double-loaded configuration without the bicycles encroaching on through sidewalk width or past bollards, and without the station conflicting with utilities. PBS will run a separate process for this station subsequent to approvals; this may be a good location for movable furniture if unsuccessful.</p> <p>In addition to existing patios, movable furniture, and the planned benches, additional public space activations and furniture within the space will be encouraged. Recognizing the ongoing Gastown planning process, all interventions here are interim to a final design.</p>
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<p>Design of two-way conversion of Columbia</p>	<p>The interim conversion of one block of Columbia will add paint lines and stencils that will need to be eradicated to convert the remainder, which is unfortunate. This is due to the need to relocate the centre lane line when it becomes the DDL, as well as TDM's request for painted turn arrows to help ensure drivers do not encounter oncoming traffic across Powell.</p> <p>The sign plan is relatively straightforward, including the necessary changes to regulations and rotating parking signs; at the north end, the northbound "must right" except bicycles is in anticipation of changes to the 000 block of Alexander (one-way eastbound except bikes), but this sign plan can be implemented in advance of construction on Alexander overall so that the needed southbound motor vehicle traffic can be accommodated (westbound motor vehicle traffic on the 100 block of Alexander having nowhere else to go).</p>
<p>Design of full closure east of Main</p>	<p>In order to accommodate regular use by VFRS, the closure makes use of flexible and impact resisting barriers. The preferred option is a flexible fence product TDE will be testing with VFRS shortly, but alternatively IRS bollards could be used. Ultimately this proposed design will be considered interim, with traffic pattern changes and durability monitored to help inform a permanent design. This could include automated bollards, in this location or closer to Main St.</p> <p>Please note that the unusual design of this closure is mostly due to semi-truck access requirements of two businesses, one on each side of the closure. Parking east of the closure is restricted both to allow these movements, as well as to accommodate 3-point turns and minimize the number of drivers searching for parking on this block.</p>
<p>Bulges and changes to sidewalks, particularly around Main to Gore</p>	<p>There was a desire from residents, particularly in the NW corner of Gore and Alexander, for measures to tighten up intersections to discourage fast, soft turns (for example, to Railway). As the design for this section is considered interim, bulges at Gore and Main are very possible but should not be implemented until the success of this interim treatment is determined as alternate designs are likely to require their removal.</p>
<p>Protected bike lane radius, bend</p>	<p>The transition of the bike path from Hawks back onto the Alexander roadway uses minimum 5m radii</p>
<p>Protected bike lane radius, int</p>	<p>The bike lane bend from Powell onto Hawks has an inside radius of 4m, which meets typical radii for bikes at intersections (3m or less) but not a bend within a continuous bike path (5m or more)</p>
<p>Bike path width, bidirectional</p>	<p>2.5m, the minimum from TAC more commonly used for off-street paths, is essentially all that can be provided, but edge conditions are favourable</p>
<p>Bike separation</p>	<p>While retaining loading zone, two-way motor vehicle traffic, and sidewalk, only 0.6m remain for separations</p>
<p>Curb bulge, width</p>	<p>Curb bulges 2.5m deep are used to transition to and from a narrower roadway just north of Powell. Negative impacts on cycling are not expected.</p>

Decision Log

Details of decisions, direction to vary from standards, meeting notes, etc. include information on source (email, phone conversation etc.)

Date (YYYY-MM-DD)	Notes
2018-05-09	Decision to remove existing SB right-on-red at Hawks/Powell along with removal of bike box. Likely to be reinstated for a future Hawks Bikeway, though not strictly required today. Was of some benefit to WB bikes downhill from Powell. Redlined on the sign plan by Alipasha Larijani during Form 1 Approvals.
2018-05-09	Confirmation with Lacey Hirtle for TDM to proceed to Director approval followed by a minor revision including changing signs that assign right-of-way to bicycle traffic joining Alexander at the crosswalk.
2018-05-08	Transportation Design Branch Heads meeting: decision to proceed with approving the Maple Tree Square design, including new yield signs for the active transportation crossings with monitoring.
2018-03-27	Meeting between Lon LaClaire and Gastown BIA Public Realm Committee: explanation of reasons why City is proceeding with this general design approach, confirmation that markings of parallel crosswalk/crossbike will be explored
2018-03-16	Direction from Paul Storer to proceed with a phased implementation of the Hawks design, implementing the portion south of the lane in 2018 with the remainder to follow in 2019 subsequent to work resolving hydro, sewer, and rail requirements.
2018-03-14	Transportation Design Branch Heads meeting: decision to proceed with this concept in principle, report back to Gastown BIA and prepare for implementation
2018-01-24	Transportation Design Branch Heads meeting: proceed with an interim full closure east of Main Street
2017-11-09	VFRS requests: ladder apparatus to be able to physically make turns from Powell to Hawks and Powell to Alexander at Maple Tree Square. Closure east of Main to be designed for frequent emergency response, else alternating one-ways to be designed around frequent wrong-way response (likely no contraflow PBLs).
2017-11-01	Transportation Design Branch Heads meeting: proceed to public open house with preferred Hawks design as the recommended option, including the WBR turn restriction from Powell to Hawks. Recognition that there are compromises inherent in this design for all modes and user groups. Prepare for potential construction in 2018. Explore full conversion of Columbia to two-way traffic north of Pender (south of Pender is already two-way).
2017-10-23	Film and Special Events (Rick Clark) has the following feedback: <ul style="list-style-type: none"> • No significant change in curb space that can be TSZ'd for filming on 200 Alexander is appreciated • Bollards at Main St meeting operational needs of Ironworks Studio should suffice • Single-unit truck access to 000 Alexander is sufficient • No specific concerns about loading/tour zone relocation and two-way Columbia as proposed • Standing AAA bike detour around 000 Alexander may be required for regular filming
2017-08-10	Direction from Paul Storer to explore suggestions from Sunrise Soya (allow NB MVs from Hawks while continuing to restrict WBR turn from Powell, locate bike path on east side of Hawks in boulevard/sidewalk space) while raising possible driveway consolidation with Ron Fisher for 825 Powell.
2017-06-27	Prioritize thin lift overlay repaving of Alexander

Design Check and Acceptance Log

Document or design milestone	Originator / Author (Signature, YYYY-MM-DD)	Checker/Reviewer (Signature, YYYY-MM-DD)	Engineer of Record (Signature, YYYY-MM-DD)	Checker/Reviewer Comments	EoR Response
Review for 100% Approvals at Hawks (TDE)	Brian Gould		2017-12-18	<p>Notes from discussion with Paul Storer at his initial approval on 2017-12-05:</p> <ul style="list-style-type: none"> Explore two curb ramps in SE corner (tighter radius, wider crosswalks, shifted ramps as needed) but full-time parking reduces need Show curb ramps in NE corner as 1.8m deep to provide flat spaces for wheelchairs Exit point of bike path to be discussed, but continue as shown for now Can keep shared path wide around bend until it reaches narrow section on north side of Alexander 	<ul style="list-style-type: none"> Pair of ramps in SE corner is possible and has been incorporated Curb ramps in NE corner shown as 1.8m deep This exit point allows people cycling more information to decide whether to connect to path immediately or at driveway, preserves three trees and several rose bushes, and generally minimizes scope. It may be briefly obstructed by certain truck maneuvers and visibility of Hawks is still limited. On balance it remains preferred. Incorporated.
Review for 100% Approvals at Hawks (TDM)	Brian Gould		2017-12-18	<p>Notes from Alipasha at his review 2017-12-12:</p> <ul style="list-style-type: none"> Confirm MHs in SE corner not shown on drawing are not in conflict with bulge New poles for walking signals on refuge, not expecting to relocate existing signal poles Confirm buses can stop properly aligned at WB Powell FS Hawks PMB to comment on parking around curve As path would lead people walking into the roadway with no good alternate sidewalk, mark as bike path rather than shared path 	<ul style="list-style-type: none"> Some MHs were inadvertently hidden when plotted last, they are not in conflict Acknowledged, this is compatible with geometric Kenji has confirmed this design meets the 1:3 entry taper requirements and the AutoCAD test was successful. However, there is little room for error, and CMBC should be alerted as this change is being implemented to confirm the new design. Most practical way to address would be to shift the stop westward at the expense of parking. Agreed, but this curb is not being relocated, so expect no change to where parking is permitted which would be through sign plan This seemed to be ATPC preference, but can support change given main users would be people parking along the north curb
Review for 100% Approvals at Hawks (TPL)	Brian Gould		2018-01-24	<p>Comments provided by Kati Tamashiro:</p> <ol style="list-style-type: none"> Hawks Street will be included in the next iteration of the 5-year cycling map as it addresses a gap in our network and connects major destinations. The timeline for the formalization of this bikeway is unknown, however given the community's interests and the changes happening in the surrounding areas (ie. Gastown Plan, False Creek Flats), we can expect an implementation in the short / mid-term. If this corridor facility is implemented in the next 7-9 years, could you please inform how this design will provide for this ultimate condition? 	<ol style="list-style-type: none"> By the 7-9 year timeframe, other major triggers such as the removal of the Heatley overpass and changes to Powell further west are likely to come into play. There may be different adjacent business needs to take into account, or possible redevelopment (Sunrise Soya is particularly impactful on the operations of this street). Barring any of these, however, there is no opportunity to build, for example, a full protected intersection. However, Alexander-Hawks connections could initially be made via the roadway (which will not be particularly busy) and the WBL could be provided via a two-stage turn box if the signal is converted to fixed time. The WB FS bus stop would need to be relocated westward at that time,

				<ol style="list-style-type: none"> 2. Formalizing Hawks St as the bikeway opens opportunities for the implementation of public spaces and better pedestrian designs along Heatley St @ Alexander St, after the removal of the overpass. This will also trigger changes to the surrounding infrastructure. Once this occurs, we assume the design of Alexander / Hawks will have to be reviewed. 3. Pedestrian infrastructure is not been improved as part of this design. There is a current pinched point location in the sidewalk, which is also substandard (narrow). As per the changes in Q1 and Q2, pedestrian improvements along this corridor are/will be required. 4. Redevelopment of the adjacent properties are likely to occur, though unknown in terms of timelines. The redevelopment of the Sunrise site and the Port's parking lot will also have an impact on the design. 	<p>removing some parking.</p> <ol style="list-style-type: none"> 2. As above, different constraints could lead to a design that is better not only for cycling on Hawks, but for cycling on Alexander, for walking, etc. It is likely the design would be mostly replaced by a new one. As the current design provides part of the cycling space from the roadway and part from the sidewalk, an interim solution is not possible other than to minimize costs such as signal modifications and material costs. 3. Unfortunately, responding to site constraints did not provide an opportunity to improve walking conditions on the sidewalk, although there is more space overall in the corner by adding the refuge spaces and the narrow sidewalks pinched by signals are an existing condition on both Powell and Hawks due to the Powell Overpass project. As space is limited, a sidewalk on the east side can only be accomplished by removing parking and/or reducing the amount of space for semi-truck maneuvers in the corner of the roadway, both of which would be contentious. 4. I understand that seeking dedication through any future redevelopment (which is when the sidewalk would become valuable) is an acceptable option for Hawks, and that redevelopment building a sidewalk on Alexander by removing parking may be the best way to move forward. Redevelopment of the Sunrise site would have the most impact on what is possible here.
Additional comment from TPL at Hawks	Brian Gould		2018-02-08	Request received from Kati on 2018-02-08 to comment on the length of the bulge north of the driveway on the east side of Hawks.	<p>The default NSAT at a driveway is 1.5m from the crossing, typically taken as the flare. This design provides an additional 6m from where that flare would have landed had there been no bulge, thus the design already provides one car length more corner clearance than the bylaw which is similar to Hornby, for example; restricting more parking would have diminishing returns in an area already very sensitive to parking impacts.</p> <p>As an alternative, the bulge both ensures parking keeps clear as well as pushing the driveway crossing out toward the road. As a result, this relatively steep driveway will help ensure drivers slow before the bike</p>

					<p>crossing and have time to look for SB bikes.</p> <p>Furthermore, we expect faster moving bicycle traffic will mostly keep to the road and enter the bike path at the driveway, thus avoiding the conflicts in a different way.</p> <p>As the Hydro pole just north is no longer expected to be relocated (just the anchor), extending the bulge would furthermore not provide any additional usable width for walking and cycling.</p>
Subsequent comments from Toby Lewis at Hawks	Brian Gould		2018-01-24	<p>Comments from Toby 2018-01-24:</p> <ul style="list-style-type: none"> The offset in the east curb experienced by NB traffic is significant at 0.7m, may require object marker There is limited space for people walking in the NE corner of Hawks and Powell 	<ul style="list-style-type: none"> Although the curb is offset, the DDL has been realigned to straight across the intersection. The bulge in the SE corner of the intersection could be expanded to 3.2m deep to match the curb alignment; at 2.5m it is already relatively deep and the object marker in the NE corner would be typical regardless. Recommend the existing design. These two issues are related, in that the offset above is created by maximizing the amount of space. Through the 3D design, there may be an opportunity to use shorter ramps given the expanded sidewalk space works against the crown of the roadway. Signal design should consider retaining the existing push buttons as well as any new buttons/poles.
Comment from Winston Chou and TDM at 100% approval of Main	Brian Gould		2018-03-01	<p>Comments from Winston 2018-03-01:</p> <ul style="list-style-type: none"> Although push buttons are not currently needed because the signal is set to min recall, we expect to put the signal on a more typical semi-actuated operation that rests on green for Main St (given reduced motor vehicle volumes on Alexander). 	<ul style="list-style-type: none"> I was under the impression the signal was already being operated semi-actuated and thus needed the push buttons. I understand the decision, but may have preferred retaining the recall to avoid cost and prioritize walking and cycling along the new bikeway.

If referring to a document on the table below, include any one of the following information for easy file retrieval: document name, number, and location.

Reference Standards and Guidelines

Indicate any exceptions or variations from noted standard or guideline

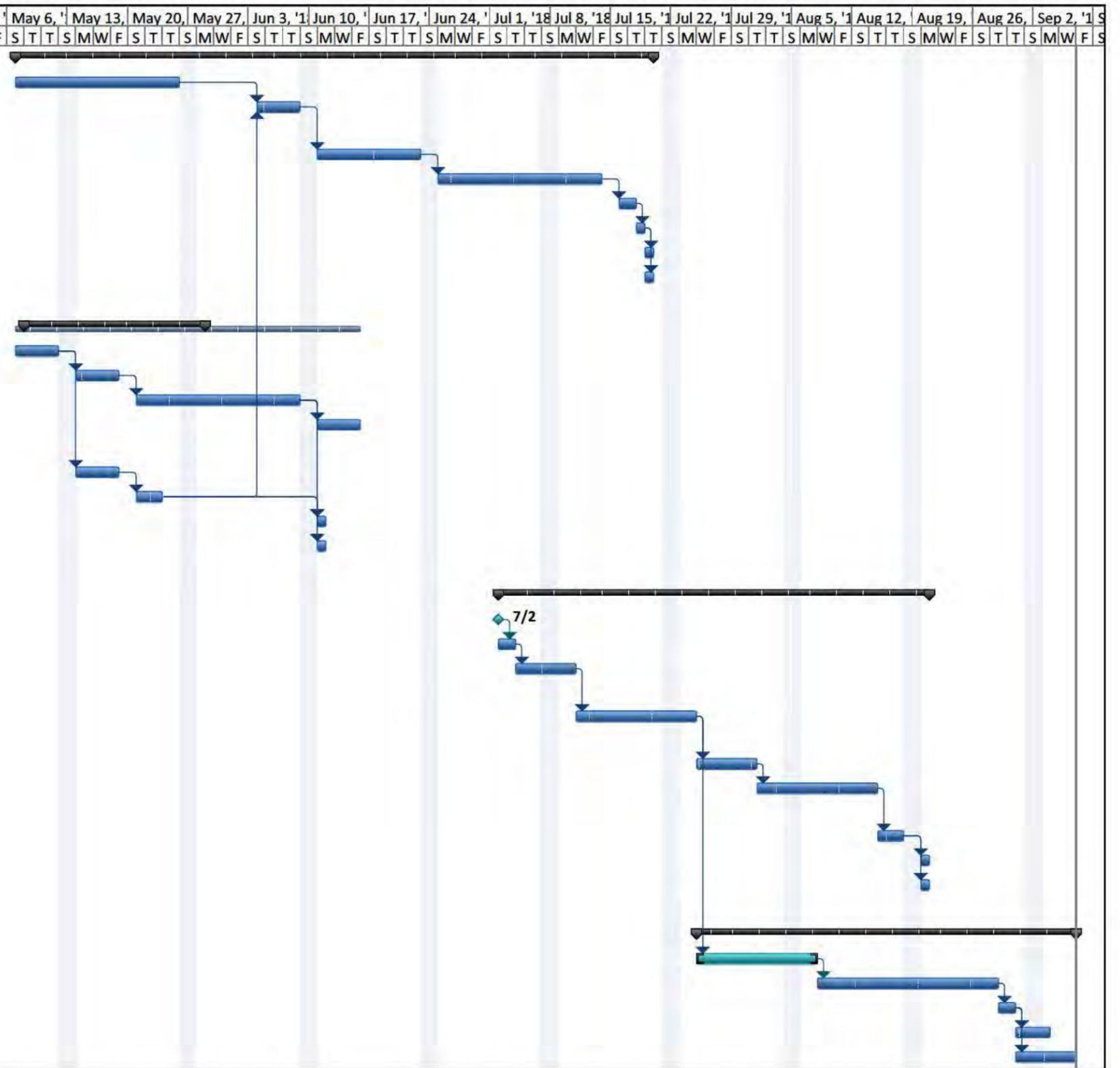
Document Title	Author / Institution	Year / Version	Type	Notes
Manual of Uniform Traffic Control Devices for Canada	TAC	2014/5th Edition		Basis for City's sign code and all sign plans
Geometric Design Guide for Canadian Roads	TAC	2017		Basis for City's geometric design practices
Manual of Uniform Traffic Control Devices	US DoT & FHWA			TDM reference for "Yield to Ped and Bike" signs at Maple Tree Square
Engineering Department Transportation Division Policy and Procedure Manual	CoV	Various		Includes Transportation Design Guidelines: All Ages and Abilities Cycling Routes. Departures from typical practice are captured in the absolute minimums section of the Design Criteria. Size of elephants' feet and lack of green paint at Maple Tree Square in response to historic character departs from these guidelines, but is consistent with relevant legislation.
City of Vancouver Sign Code Inventory	City of Vancouver	2017 Edition	G	-
Street Restoration Manual	City of Vancouver	2008	G	-

* Document types:

G = guideline

S = standard

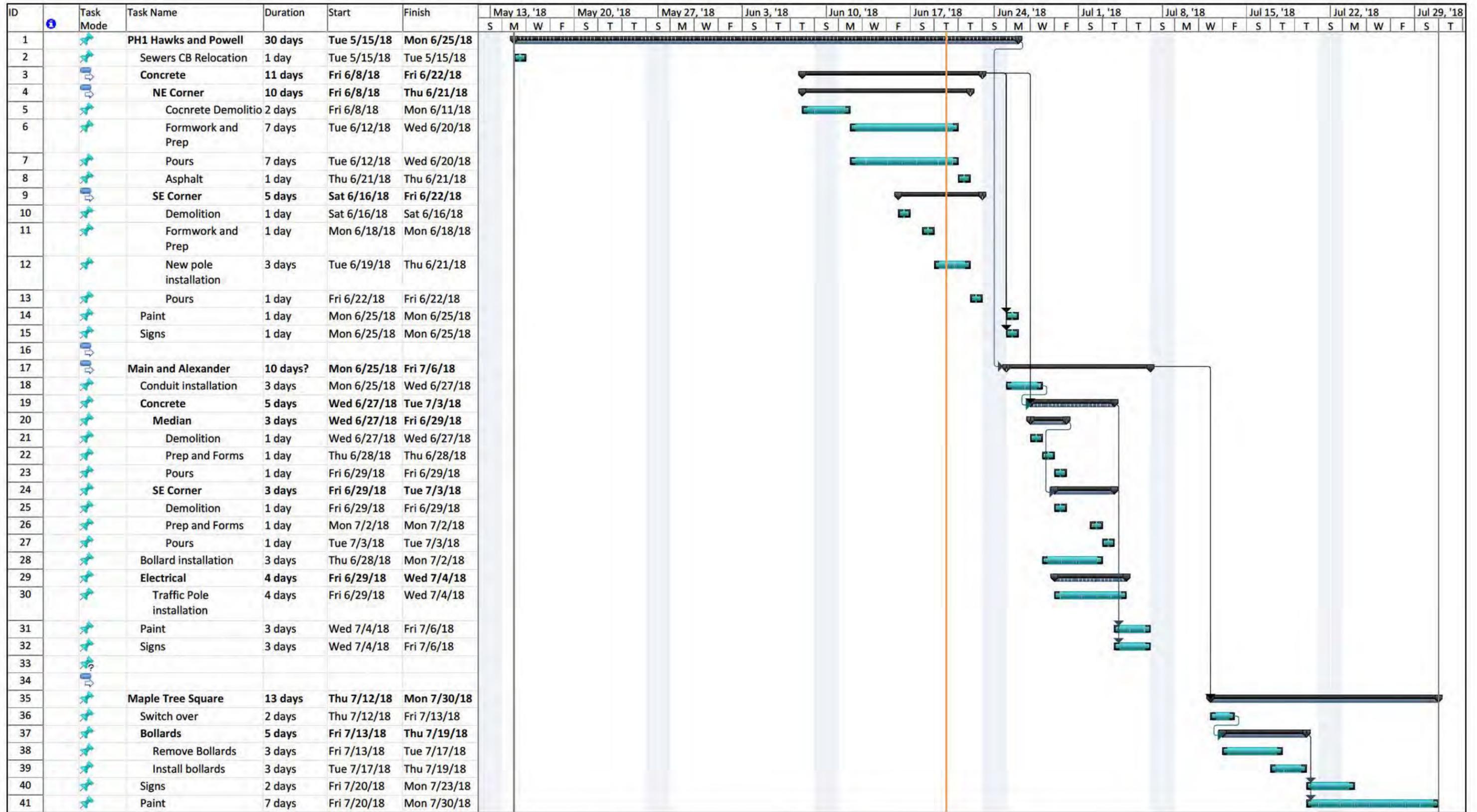
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	9, '18	May 6, '18	May 13, '18	May 20, '18	May 27, '18	Jun 3, '18	Jun 10, '18	Jun 17, '18	Jun 24, '18	Jul 1, '18	Jul 8, '18	Jul 15, '18	Jul 22, '18	Jul 29, '18	Aug 5, '18	Aug 12, '18	Aug 19, '18	Aug 26, '18	Sep 2, '18
1		PH1 HAWKS AND POWELL	54 days?	Mon 5/7/18	Thu 7/19/18																				
2		Sewers CB relocation SE corner	15 days	Mon 5/7/18	Fri 5/25/18																				
3		Concrete Mobilization & Demolition	5 days	Mon 6/4/18	Fri 6/8/18	2FS+5 days,17																			
4		Traffic Signal Pole Relocate	10 days	Mon 6/11/18	Fri 6/22/18	3																			
5		Prep and Forms	15 days	Mon 6/25/18	Fri 7/13/18	4																			
6		Concrete Pours	2 days	Mon 7/16/18	Tue 7/17/18	5																			
7		Asphalt Bikeway	1 day	Wed 7/18/18	Wed 7/18/18	6																			
8		Paint	1 day?	Thu 7/19/18	Thu 7/19/18	7																			
9		Signs	1 day?	Thu 7/19/18	Thu 7/19/18	7																			
10																									
11		MAIN AND ALEXANDER (GORE)	15 days	Tue 5/8/18	Mon 5/28/18																				
12		Demolition	5 days	Mon 5/7/18	Fri 5/11/18																				
13		Curb and Gutter Prep	5 days	Mon 5/14/18	Fri 5/18/18	12																			
14		Push button rough in	15 days	Mon 5/21/18	Fri 6/8/18	13																			
15		Sidewalk/Curb Bulge repairs/install	5 days	Mon 6/11/18	Fri 6/15/18	14																			
16		Median form and pour	5 days	Mon 5/14/18	Fri 5/18/18	12																			
17		Bollard Install	3 days	Mon 5/21/18	Wed 5/23/18	16																			
18		Paint	1 day	Mon 6/11/18	Mon 6/11/18	17,14																			
19		Signs	1 day	Mon 6/11/18	Mon 6/11/18	17,14																			
20																									
21		COLUMBIA AND POWELL	36 days	Mon 7/2/18	Mon 8/20/18																				
22		Traffic Signal Pole Arrives	0 days	Mon 7/2/18	Mon 7/2/18																				
23		Demolition for new base	2 days	Mon 7/2/18	Tue 7/3/18	22																			
24		Install new base, update conduits	5 days	Wed 7/4/18	Tue 7/10/18	23																			
25		Install new Traffic Signal Pole	10 days	Wed 7/11/18	Tue 7/24/18	24																			
26		Switch Over	5 days	Wed 7/25/18	Tue 7/31/18	25																			
27		Remove existing pole and base	10 days	Wed 8/1/18	Tue 8/14/18	26																			
28		Concrete repair	3 days	Wed 8/15/18	Fri 8/17/18	27																			
29		Paint	1 day	Mon 8/20/18	Mon 8/20/18	28																			
30		Signs	1 day	Mon 8/20/18	Mon 8/20/18	28																			
31																									
32		MAPLE TREE SQUARE	32 days	Wed 7/25/18	Thu 9/6/18																				
33		Remove existing bollards	10 days	Wed 7/25/18	Tue 8/7/18	25																			
34		Install new bollards	15 days	Wed 8/8/18	Tue 8/28/18	33																			
35		Paint Removals	2 days	Wed 8/29/18	Thu 8/30/18	34																			
36		New Paint	2 days	Fri 8/31/18	Mon 9/3/18	35																			
37		New Signs	5 days	Fri 8/31/18	Thu 9/6/18	35																			



Project: ENG - SED - DC - Alexandre Date: Fri 4/20/18	Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline	
	Split		External Tasks		Inactive Summary		Manual Summary		Progress	
	Milestone		External Milestone		Manual Task		Start-only			
	Summary		Inactive Task		Duration-only		Finish-only			

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Calendar: Apr 22, '18 - Jul 29, '18																											
1		PH1 HAWKS AND POWELL	59 days?	Mon 5/7/18	Thu 7/26/18		[Gantt bar for PH1 HAWKS AND POWELL]																											
2		Sewers CB relocation SE corner	20 days	Mon 5/7/18	Fri 6/1/18		[Gantt bar for Sewers CB relocation SE corner]																											
3		Concrete Mobilization & Demolition	5 days	Mon 6/11/18	Fri 6/15/18	2FS+5 days,17	[Gantt bar for Concrete Mobilization & Demolition]																											
4		Traffic Signal Pole Relocate	10 days	Mon 6/18/18	Fri 6/29/18	3	[Gantt bar for Traffic Signal Pole Relocate]																											
5		Prep and Forms	15 days	Mon 7/2/18	Fri 7/20/18	4	[Gantt bar for Prep and Forms]																											
6		Concrete Pours	2 days	Mon 7/23/18	Tue 7/24/18	5	[Gantt bar for Concrete Pours]																											
7		Asphalt Bikeway	1 day	Wed 7/25/18	Wed 7/25/18	6	[Gantt bar for Asphalt Bikeway]																											
8		Paint	1 day?	Thu 7/26/18	Thu 7/26/18	7	[Gantt bar for Paint]																											
9		Signs	1 day?	Thu 7/26/18	Thu 7/26/18	7	[Gantt bar for Signs]																											
10																																		
11		MAIN AND ALEXANDER (GORE)	15 days	Tue 5/8/18	Mon 5/28/18		[Gantt bar for MAIN AND ALEXANDER (GORE)]																											
12		Demolition	5 days	Mon 5/7/18	Fri 5/11/18		[Gantt bar for Demolition]																											
13		Curb and Gutter Prep	5 days	Mon 5/14/18	Fri 5/18/18	12	[Gantt bar for Curb and Gutter Prep]																											
14		Push button rough in	15 days	Mon 5/21/18	Fri 6/8/18	13	[Gantt bar for Push button rough in]																											
15		Sidewalk/Curb Bulge repairs/install	5 days	Mon 6/11/18	Fri 6/15/18	14	[Gantt bar for Sidewalk/Curb Bulge repairs/install]																											
16		Median form and pour	5 days	Mon 5/14/18	Fri 5/18/18	12	[Gantt bar for Median form and pour]																											
17		Bollard Install	3 days	Mon 5/21/18	Wed 5/23/18	16	[Gantt bar for Bollard Install]																											
18		Paint	1 day	Mon 6/11/18	Mon 6/11/18	17,14	[Gantt bar for Paint]																											
19		Signs	1 day	Mon 6/11/18	Mon 6/11/18	17,14	[Gantt bar for Signs]																											
20																																		
21		COLUMBIA AND POWELL	55 days	Mon 5/21/18	Fri 8/3/18		[Gantt bar for COLUMBIA AND POWELL]																											
22		TEMP Signal Modifications	10 days	Mon 5/21/18	Fri 6/1/18		[Gantt bar for TEMP Signal Modifications]																											
23		Paint	1 day	Mon 6/4/18	Mon 6/4/18	22	[Gantt bar for Paint]																											
24		Signs	1 day	Mon 6/4/18	Mon 6/4/18	22	[Gantt bar for Signs]																											
25		Traffic Signal Pole Arrives	0 days	Mon 7/9/18	Mon 7/9/18		[Gantt bar for Traffic Signal Pole Arrives]																											
26		Remove existing poles	10 days	Mon 7/9/18	Fri 7/20/18	25	[Gantt bar for Remove existing poles]																											
27		Stand up new poles	10 days	Mon 7/23/18	Fri 8/3/18	26	[Gantt bar for Stand up new poles]																											
28																																		
29		MAPLE TREE SQUARE	27 days	Tue 6/5/18	Wed 7/11/18		[Gantt bar for MAPLE TREE SQUARE]																											
30		Remove existing bollards	10 days	Tue 6/5/18	Mon 6/18/18	22,23,24	[Gantt bar for Remove existing bollards]																											
31		Install new bollards	10 days	Tue 6/19/18	Mon 7/2/18	30	[Gantt bar for Install new bollards]																											
32		Paint Removals	2 days	Tue 7/3/18	Wed 7/4/18	31	[Gantt bar for Paint Removals]																											
33		New Paint	2 days	Thu 7/5/18	Fri 7/6/18	32	[Gantt bar for New Paint]																											
34		New Signs	5 days	Thu 7/5/18	Wed 7/11/18	32	[Gantt bar for New Signs]																											

Project: ENG - SED - DC - Alexandre Date: Mon 5/7/18	Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline	
	Split		External Tasks		Inactive Summary		Manual Summary		Progress	
	Milestone		External Milestone		Manual Task		Start-only			
	Summary		Inactive Task		Duration-only		Finish-only			



Project: Alexander preliminary sch Date: Wed 6/20/18	Task		Summary		External Milestone		Inactive Summary		Manual Summary Rollup		Finish-only	
	Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Deadline	
	Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Progress	

LESSONS LEARNED REPORT

Project Name: Alexander Street - Gastown, Main Street, and Hawks Avenue

Project Number: 13-4200-10/0000155

Project Manager: Fiona Keating (Joel Clary developed this report)

Change History:

Revision	Date	Description	Created/ Revised by
0	2018-10-16	Original version	Joel Clary

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1. PROJECT BACKGROUND INFORMATION

Brief Project Description	Alexander Street was identified by Transportation as requiring some modifications in order to promote safer cycling pathways through East Vancouver
Project Scope	<ul style="list-style-type: none"> Gastown, (Maple Tree Square): Bollard realignment, and Alexander directional change Main Street: Bollard installation Hawks Avenue: Bike Lane Extension Powell and Columbia Intersection: 1 way street conversion to 2 way street and Intersection Modification
Key Project Metrics	On Budget and On Schedule
Total Project Cost	\$485k
Multi-Year?	No
Project Start Date	Q2 2018
Project Completion Date	
Project Type	Transportation
Project Sponsor(s)	Eric Mital and Paul Storer
Project Manager	Fiona Keating (Joel Clary filled out this report)
Project Team Members	Brian Gould

2. LESSONS LEARNED

2.1 Successes

(List down the top three successes in each applicable knowledge area and phase)

Stage	Theme	Successes	Impact (or Consequence)	Recommendation
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			

2.2 Challenges

(List down the top three challenges in each applicable knowledge area and phase)

Stage	Theme	Challenges	Impact (or Consequence)	Recommendation
Implementation	Integration Management	Changing the direction of vehicular traffic was difficult to implement as it was unclear what phases were required and what the necessary signage was.	Negative impact to vehicular traffic Additional resources required by Operations	When major traffic changes are implemented, a phase design is required that notes how the change is to be implemented and what signage is required

				for each phase.
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			
Choose an item.	Choose an item.			

3. ADDITIONAL COMMENTS/RECOMMENDATIONS

3.1.

3.2.

4. APPROVALS

Role/Position	Name	Signature	Date
Project Manager			
Project Sponsor(s)			

From: [Kumar, Arun](#)
To: [Keating, Fiona](#)
Subject: RE: Alexander WBS
Date: Wednesday, April 11, 2018 9:31:50 AM
Attachments: [image001.png](#)

Hi Fiona,
Estimate for Alexander Street Project:-

Columbia and Powell - \$45,000
Hawks and Powell - \$55,000
Main and Alexander - \$50,000

Estimate consists of 20% Contingency and only include electrical work and sidewalk restoration(only portion which is impacted due to electrical work)

Thanks,
Arun Kumar
Electrical Design
Streets & Electrical Design Branch, City of Vancouver
P: 604.871.6823 | E: arun.kumar@vancouver.ca

From: Keating, Fiona
Sent: Wednesday, April 11, 2018 8:26 AM
To: Kumar, Arun
Subject: RE: Alexander WBS

Yes please!

From: Kumar, Arun
Sent: Wednesday, April 11, 2018 8:25 AM
To: Keating, Fiona
Subject: RE: Alexander WBS

Not yet, I can prepare it if you require.

Arun Kumar
Electrical Design
Streets & Electrical Design Branch, City of Vancouver
P: 604.871.6823 | E: arun.kumar@vancouver.ca

From: Keating, Fiona
Sent: Wednesday, April 11, 2018 8:24 AM
To: Kumar, Arun
Subject: RE: Alexander WBS

Do you actually have an estimate for the electrical at Main/Alexander and Hawks/Powell too?

From: Kumar, Arun
Sent: Wednesday, April 11, 2018 8:09 AM
To: Keating, Fiona
Subject: RE: Alexander WBS

Hi Fiona,

What's the budget we have for Powell and Columbia intersection. I am just curious because we have to replace 2 decorative type poles and fixtures along with new bases and its estimate is around 26,000.

Arun Kumar
Electrical Design
Streets & Electrical Design Branch, City of Vancouver
P: 604.871.6823 | E: arun.kumar@vancouver.ca

From: Keating, Fiona
Sent: Tuesday, April 10, 2018 3:03 PM
To: Kumar, Arun
Subject: RE: Alexander WBS

Drawing Package deadline is April 27

From: Kumar, Arun
Sent: Tuesday, April 10, 2018 2:54 PM
To: Keating, Fiona
Subject: RE: Alexander WBS

Thanks Fiona.

Arun Kumar
Electrical Design
Streets & Electrical Design Branch, City of Vancouver
P: 604.871.6823 | E: arun.kumar@vancouver.ca

From: Keating, Fiona
Sent: Tuesday, April 10, 2018 2:53 PM
To: Kumar, Arun
Cc: Chan, Phillip
Subject: Alexander WBS

Hi Arun,

Here is the WBS I received for Alexander Bikeway.

2018 Active Transp Corridors - Cap	CER-00216
- Alexander St Bikeway	CER-00216-NN
▶ 1.0 Internal Crews	CER-00216-NN-01
▶ 2.0 External Consultant	CER-00216-NN-02
▶ 3.0 Miscellaneous Soft	CER-00216-NN-03
- 4.0 Internal Crews	CER-00216-NN-04
▶ Streets Ops	CER-00216-NN-04-AA
▶ Traffic Ops	CER-00216-NN-04-BB
▶ Electrical Ops	CER-00216-NN-04-CC
▶ Sewer Ops	CER-00216-NN-04-DD
▶ Water Ops	CER-00216-NN-04-EE
▶ 5.0 External Contractor	CER-00216-NN-05
▶ 6.0 Miscellaneous Hard	CER-00216-NN-06

Thanks,

Fiona Keating P.Eng.
Project Manager
City of Vancouver | Streets & Electrical Design
Tel: 604-326-4814 | Fax: 604-873-7212
Email: fiona.keating@vancouver.ca

This notice contains important information that may affect you. Please ask someone to translate it for you.

此通告刊載有可能影響閣下的重要資料。請找人為你翻譯。

ਇਸ ਨੋਟਿਸ ਵਿਚ ਮਹੱਤਵਪੂਰਨ ਜਾਣਕਾਰੀ ਹੈ ਜੋ ਕਿ ਤੁਹਾਡੇ ਲਈ ਜ਼ਰੂਰੀ ਹੋ ਸਕਦੀ ਹੈ। ਕਿਰਪਾ ਕਰਕੇ ਕਿਸੇ ਨੂੰ ਇਸ ਦਾ ਉਲੱਥਾ ਕਰਨ ਲਈ ਆਖੋ।

Thông báo này có tin tức quan trọng có thể ảnh hưởng đến quý vị. Xin nhờ người phiên dịch hộ.

Este aviso contiene información importante que puede afectarles personalmente. Pídale a alguien que se lo traduzca.

Ce document contient des renseignements importants qui pourraient vous concerner. Veuillez demander à quelqu'un de vous le traduire.

April 13, 2018

Dear Resident, Property or Business Owner,

RE: INTERSECTION MODIFICATION - ALEXANDER ST AND MAIN ST

The City of Vancouver will be altering the intersection of Alexander Street and Main Street. Work is scheduled to begin at the end of April and will carry on through June.

As part of the project, there will be some changes made to the intersection, including:

- Extended curb bulge at southwest corner of Alexander Street and Main Street
- New traffic signal push buttons
- Installation of traffic barriers (concrete medians, and bollards) east of Main Street on Alexander Street

We will make every effort to minimize noise. Some of the sounds you can expect to hear throughout the day will be from machinery such as dump trucks, compaction equipment and vibratory rollers. An additional notification letter will be provided should construction work be required outside of times permitted by the City's Noise Control By-law.

During this time some lane closures and traffic diversions will be in effect. Closures will be marked through construction signage and/or traffic flaggers.

If you have any questions or concerns, please do not hesitate to speak to the supervisor on site or contact myself at 604-326-4814. I would like to thank you in advance for your patience and apologize for any inconvenience this project may cause.

Yours truly,
Fiona Keating
Streets Project Coordination
604-326-4814

From: [Chan, Phillip](#)
To: [Keating, Fiona](#)
Subject: RE: Main and Alexander - Estimate
Date: Wednesday, April 11, 2018 2:03:31 PM

Hi Fiona,

Here's the high level estimate for Alexander and Main is **\$75,000**:

And includes the following assumptions:

- 50% contingency (for streets scope)
- Assume sidewalk where curb bulges out
- Provision for civil/electrical for 2 push button operators (2x\$15,000)
- Provision for traffic ops (stencils and bollards - \$15,000)

Cheers,

Phil Chan
Engineering Project Coordinator
Streets and Electrical Design, City of Vancouver

From: Keating, Fiona
Sent: Wednesday, April 11, 2018 7:34 AM
To: Chan, Phillip
Subject: Main and Alexander - Estimate

Hi Phil,

Electrical design is starting on this stuff, but realized we don't have our own estimate for this location yet.

Sorry to dump another one on you. Can you please get me something today if possible?

Thank you,

Fiona Keating P.Eng.
Project Manager
City of Vancouver | Streets & Electrical Design
Tel: 604-326-4814 | Fax: 604-873-7212
Email: fiona.keating@vancouver.ca



Project: Alexander St, Gastown, Main St, and Hawks Av

Date: May 09, 2018

Time: 1:00pm-2:00pm

Location: Alexander St, Gastown, Main St, and Hawks Av

MINUTES

Subject:	Project Management Meeting			Meeting No.	
Attendees:	George Ledo	Jack Durnford	John Pasin	Vince Paccani	
	Fiona Keating	Doug Moore	Ron Borger	Josh Veillard	
Apologies:					
Distribution:					
Chair:	Fiona Keating		Recorded by: Josh		
Item	Comments			Action by	Date
1.0	Design				
1.1	Sign and paint plan need to be issued (completed)			Transportation	
1.2	Civil to contact electrical about clarifying crossings (drawing unclear)			George Ledo	
1.3	Cut Sheets still required for NE corner of Powell and Hawks (completed)			Survey	
3.0	Construction				
3.1	Schedule				
3.1.2	Sewers to start CB relocation this week Hawks and Powell - Estimated time 3 weeks Main and Alexander - Estimated time 1 week				
3.2	TMP				
3.2.1	Meeting with Sherwood this Friday to discuss street closures				
3.2.2	Powell St to close one lane and either direct traffic into one lane or close parking lane and have 2 travel lanes				
3.2.3	Alexander East of Main St to be closed.				
4.0	Stakeholders				
4.1	BIA				
4.2	Construction letters have been sent out				



Project: Alexander St, Gastown, Main St, and Hawks Av

Date: May 11, 2018

Time: 2:30 pm-3pm

Location: Room 306 Crossroads

MINUTES

Subject:	Project Management Meeting			Meeting No.	
Attendees:	Fiona Keating	Josh Veillard	Greg Nowak		
Apologies:	Sherwood Plant				
Distribution:					
Chair:	Fiona Keating		Recorded by: Josh		
Item	Comments			Action by	Date
1.0	TMP				
1.1	Columbia/Powell				
1.1.1	Maintain 1 lane minimum SB Columbia				
1.1.2	Maintain 2 lane NB Columbia (1 turn, 1 through)				
1.1.3	Maintain 2 lanes EB/WB Powell (after 9:30AM)				
1.1.4	Accepted				
1.2	Hawks/Powell				
1.2.1	Powell to be closed on Northernmost lane				
1.2.2	Southern parking lane to have prohibited parking and be a travel lane during construction				
1.2.3	Hawks to have no parking along construction site				
1.2.4	Accepted				
1.3	Main/Alexander				
1.3.1	Alexander, east of Main to be closed with limited traffic permitted				
1.3.2	Alexander, west of Main no traffic issues				
1.3.3	Accepted				
1.4	Maple Tree Square				
1.4.1	Interim conditions accepted as per attached				



WORKING TO MAKE A DIFFERENCE

Notice of Project

NOP Confirmation number: E780492

Owner information

Account #:
Name: Fiona
Country: Canada
Address: 507 W Broadway

City: Vancouver
Province: British Columbia
Postal code:

Prime contractor or employer information

Account #:
Name: City of Vancouver
Country: Canada
Address: 701 National Ave

City: Vancouver
Province: British Columbia
Postal code:

Person in charge of project

Name: Jack Durnford
Job title: Streets - Superintendent II
Email:
Phone number: (604) 871-6771 Ext:

Person completing this form

Name: Fiona Keating
Email:
Phone number: (604) 326-4814 Ext:

Has a prime contractor agreed in writing with the owner to be the prime contractor?

Required documents and additional information to be submitted

Additional documents:
Delivery method:
Sent date:

NOP Confirmation number: E780492

Construction Project (OH&S Regulation 20.2) - At least 24 hours notice required.

General construction

Commercial:
 Institutional:
 Residential
 Single family:
 Multi-family wood:
 Multi-family concrete:
 Industrial:
 Recreational:
 Number of floors:
 Floor area:
 Recreational explanation:
 Industrial explanation:

Site preparation

Pile driving:
 Remediation:
 Ground preparation:

Service construction

New:
 Repair:
 Sewer line:
 Water line:
 Gas line:
 Power line:

Road construction

Length (kilometers):
 New: Yes
 Resurfacing:
 Alignment:

Heavy construction

Bridge:
 Bridge length (meters):
 Bridge height (meters):
 Pier, wharf, or dry-dock:
 Dam, dyke, or reservoir:

Other type of general construction (explain)

Explanation:

Addition of curb bulges, extension of protected bike lane, and a paved bike path. New curb ramps. Relocated traffic signals, change in traffic flow and direction, new signs and paint.

Project Information

Project cost greater than \$100,000: Yes

Designed by a professional engineer: Yes

Work in cofferdam or in a compressed air environment other than an underground working:

Ground support drawings available:

Work in an excavation over 1.2 m (4 ft) deep:

Work in a trench over 30 m (100 ft) long:

A building more than 2 storeys or 6 m (20 ft) high:

Bridge:

Earth or water retaining structure more than 3 m (10 ft) high:

Silo, chimney or other similar structure more than 6 m (20 ft) high:

Estimated project cost

Cost:

Person responsible for co-ordinating health and safety activities

Name: Jack Durnford

Electrical declaration

With respect to electrical safety for portable electrical equipment at this location, it is declared

The project will use GFCI protection of installed receptacles in accordance with the requirements of the BC Electrical Code: Yes

Where GFCI protection indicated above is not intended to be provided, the electrical contractor(s) will make application(s) to the applicable electrical authority for variance(s) to the BC Electrical Code requirements for the referenced GFCI protection based on a declaration by the prime contractor that an assured grounding program is implemented at the work site. Where the variance(s) is granted, it is the responsibility of the prime contractor to ensure that the assured grounding program at the site is used in accordance with WorkSafeBC published guidelines and practices set out in OHS Guideline 19.15(1) Ground fault circuit interrupters and other acceptable means:

Not applicable. No portable electrical equipment, including temporary lighting, will be used on this site:

NOP Confirmation number: E780492

Project site locations

Site Location	Start date	Project city	Duration	Unit	Project site location
1	2018/06/04	Vancouver	4	Months	Hawks Avenue - from Alexander to Powell including the intersection and south of Powell.
2	2018/06/04	Vancouver	4	Months	Alexander Street - Columbia to Gore
3	2018/07/02	Vancouver	4	Months	Maple Tree Square - intersection of Carrall, Water, Alexander, Powell and the approaches to this intersection
4	2018/07/02	Vancouver	4	Months	Alexander Street - Maple Tree Square to Columbia

Please note that if the information on the NOP significantly changes, the new information must be submitted to WorkSafeBC as soon as possible and posted at the project site.

To send required documents, additional information or changes to the NOP information to WorkSafeBC, along with your NOP confirmation number E780492 and a brief project site description:

Email: prevnop@WorkSafeBC.com
 (if your attachments are over 10 MB, send multiple emails or email us for further instructions)

Fax: 604.276.3247

Mailing address: WorkSafeBC, Prevention Division
PO Box 5350 Stn Terminal, Vancouver BC V6B 5L5

Questions?

If you have any questions or issues with the NOP form, please contact Prevention Support Services at:

Telephone: 604.276.3100 in the Lower Mainland, or 1.888.621.7233 Toll Free in BC

Email: prevnop@WorkSafeBC.com

Engineering Services / Streets & Electrical Design /
Project Coordination

PROJECT CHARTER

(November 20 2017)

Alexander Street: Gastown (Maple Tree Square), Main
Street, and Hawks Avenue

Project Number: 13-4200-10/0000155

Change History:

Revision	Date	Description	Author	Approver
0	02 Feb 18	Pre-Stage Gate Review	FK	MLB
1		Sponsor Approval	FK	

Executive Summary

Project Title	Alexander Street: Gastown, Main Street, and Hawks Avenue
Approved Project Classification Size	Level 2
Scope Summary	<ul style="list-style-type: none"> Gastown, (Maple Tree Square): Bollard realignment, and Alexander directional change Main Street: Bollard installation Hawks Avenue: Bike Lane Extension Powell and Columbia Intersection: 1 way street conversion to 2 way street and Intersection Modification
Estimated Duration/Phasing	Q2/Q3 2018
Total Charter Budget (incl. contingency)	Transportation = Gastown: \$70,000 Main Street: \$125,000 Hawks Avenue: PH1 \$245,000, PH2 \$120,000 Powell and Columbia: \$45,000
Participating Branches	Streets - PM Transportation - 2D Design Streets - 3D Design Street Ops - Construction/Installation
Specific Public Impacts	<ul style="list-style-type: none"> Gastown (Maple Tree Square): rolling traffic closures depending on how much realignment needs to occur and the type of bollard and install method required. Main Street: No post barriers will be installed along with IRS bollards as the interim before medians will be constructed. Permanent change to the flow of traffic at this location so signage will be required. Hawks Avenue: Changes to parking access during construction. Businesses will need to be notified of specific dates of impact. Powell and Columbia: Change of direction of 2 lanes on Columbia between Alexander and Powell. South of intersection NB west lane turning into a left turn only lane. New signage and paint required.
Specific Project Dependencies	Perform work in 2018 (May - August 2018)

1. Overview

1.1 Background

Alexander Street was identified by Transportation as requiring some modifications in order to promote safer cycling pathways through East Vancouver.

The intersection of Water Street, Carrall Street, Alexander Street and Powell Street (also known as Maple Tree Square) currently has bollards set up to passively direct traffic through the pedestrian heavy area. It was identified that cyclists were shortcutting in unsafe manners to bypass passenger vehicles trying to navigate through this area. A shift of the bollards is being implemented in order to better direct vehicular traffic as well as make crossings and flow obvious to cyclists as well.

The east side of the Main and Alexander Street intersection was identified as requiring a closure to vehicular traffic in order to maintain a more pedestrian and cyclist friendly pathway. However, a film studio on the NE corner of Main and Alexander requires access for their freight trucks, and the VFD

also requires regular access to respond to calls. In order to provide this access while achieving a closure for the general public, a concrete median with IRS bollards is to be implemented so that emergency vehicles can still drive through if required. The barrier will be installed after the film studio so they can maintain their access. Transportation was initially researching the use of Automated Bollards. The installation would allow approved users to use passive RFID to have the bollards recess into the ground in order to open the street as required. There wasn't enough time to vet this option for this particular project.

The intersection of Powell Street and Hawks Avenue currently sees the end of a protected westbound bike lane. This project intends to extend that bike lane directly to the intersection and then north onto Hawks Avenue. This will direct cyclist traffic onto Alexander Street.

The intersection of Powell and Columbia will be modified to allow people traveling east bound on Alexander to go south along Columbia and go west along Powell. This will require Columbia in between Alexander and Powell to be converted from a 1 way north bound to a 2 way street.

1.2 Project Description

This project has three distinct work packages:

- Work Package 1: Bollard reconfiguration at Gastown (Maple Tree Square)
- Work Package 2: Bollard installation at Main Street
- Work Package 3: Bike Lane Extension at Hawks
- Work Package 4: Powell and Columbia Traffic Signal and 1-way Street to 2-way Street Conversion

Work Package 1: Bollard reconfiguration at Gastown (Maple Tree Square)

The current arrangement of the bollards in the intersection of Carrall Street, Water Street, Alexander Street and Powell Street leaves a lot of room for cyclists and vehicles to be confused as to where they should be traveling. This project is meant to create very distinct pathways for vehicles and cyclists that will cause less points of conflict.

The type of bollard connections will also be researched, as the current ones leave obstructions proud of the ground, which are dangerous for cycling events through the area.

New bollard connections have been fabricated in house that are flush with the ground so if removed won't be a safety hazard to cyclists.

Work Package 2: Bollard Installation at Main Street

Alexander Street at Main Street has been identified as a spot where vehicle access should be restricted. To achieve this, a barrier needs to be installed at the east side of the intersection at Alexander Street. The barrier system still needs to allow Fire Truck access, as the Vancouver Fire Department uses this route to respond to calls quite frequently.

A film company at the North East corner of Alexander and Main also has truck deliveries to their facility.

Transportation is currently researching an Automated Bollard system, which would allow an authorized user to employ passive RFID technology to retract the bollards into an underground foundation box. The technology requires dedicated power, and a well thought administrative process for handing out access. In the interim of sorting out the details of this endeavor, a hard plastic bollard barrier (IRS bollards) will be installed alongside concrete medians. This system will allow emergency vehicles to drive through/over the barrier if absolutely required.

Before the installation of the concrete medians, no post barriers will be installed strategically to still allow VFD access.

Upgrades to the intersection at Main and Alexander will include installing new LED lights to current light poles and installing cyclist push buttons to poles for east bound and west bound cyclists.

Work Package 3: Bike Lane Extension at Hawks

The West Bound protected bike lane along Powell currently ends just short of the intersection of Powell Street and Hawks Avenue. In order to fill a gap in the bike network, the bike lane will be extended to the intersection and north onto Hawks Avenue which will turn into Alexander Street. In order to achieve this, the barrier will be extended as per the geometric design.

Hydro poles will also have to be relocated, and anchors adjusted in order to accommodate the bike lane. This requires BC Hydro's involvement. The hydro pole won't be relocated until 2019.

Work Package 4: Powell and Columbia Traffic Signal and 1-way Street to 2-way Street Conversion

Alexander will be reversing direction from 1 way west bound to 1 way east bound from Maple Tree Square to Columbia. Columbia in between Alexander Street and Powell Street will be converted from a 1 way street north bound to a 2 way street. The 2 lanes being converted to south bound will be a right turn only onto Powell. The opposing lane on Columbia south of the intersection will be a left turn only lane. New signs, paint and traffic signals will be required.

1.3 Alignment with Policies and Programs

This project aligns with the Streets Capital (City Major Roads and Sidewalk Rehab) program and Transportation 2040 by supporting active transportation and improving the bike network.

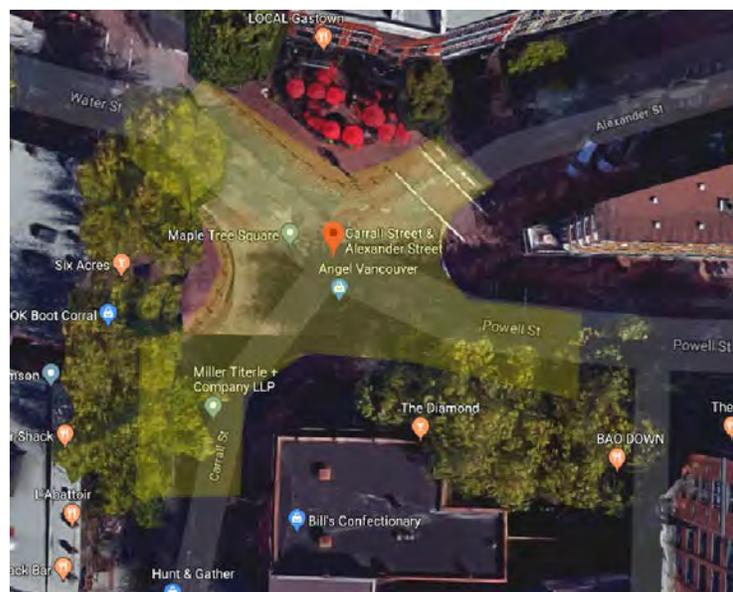
2. Scope

2.1 In Scope

Project Boundaries

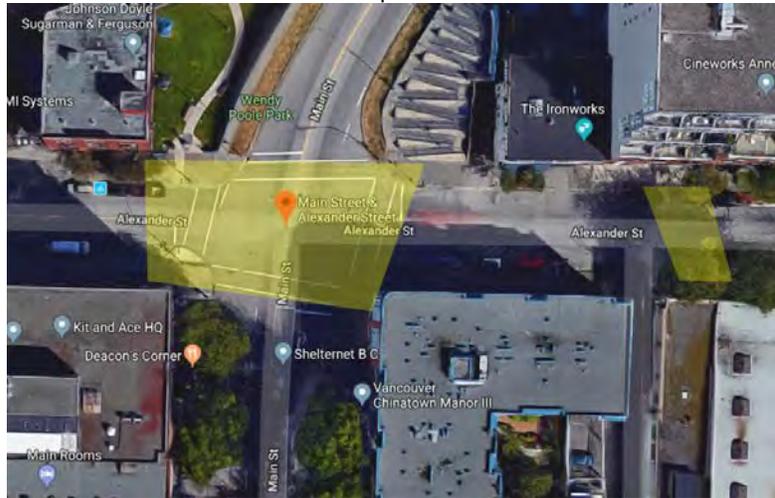
Bollard Reconfiguration at Gastown (Maple Tree Square):

The intersection of Water Street, Carrall Street, Alexander Street and Powell Street



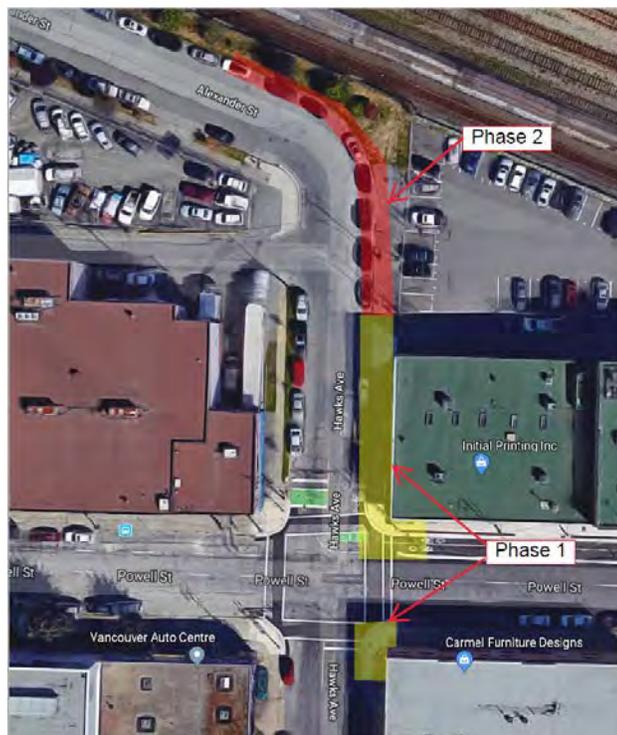
Bollard installation at Main Street:

The east side of the intersection of Main Street and Alexander Street (EB/WB approach). Upgrades to Intersection of Main and Alexander will also be implemented.



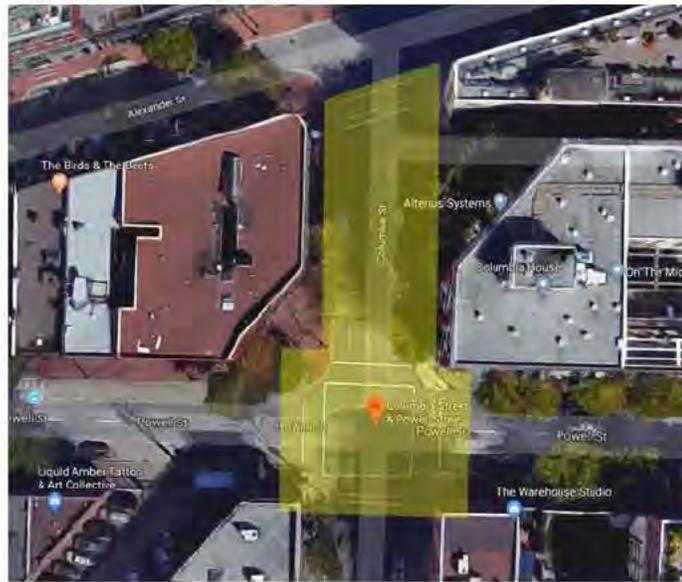
Bike Lane Extension at Hawks:

Powell Street just east of Hawks Avenue, the corner of the intersection of Powell Street and Hawks Avenue, northbound on Hawks Avenue and into the furthest east portion of Alexander Street



Street Conversion and intersection modification at Powell and Columbia:

Intersection of Powell and Columbia, and Columbia in between Powell and Alexander.



2.2 Out of Scope

Grind and Pave

Other than new asphalt at the bike lane at Hawks Avenue, the road should be untouched in terms of grind and pave. No paving has been identified for this project.

3. Schedule

3.1 Key Milestones and Deliverables

Key milestones for this project are identified in Table 3-1.

Table 3-1: Project Milestone Dates

Milestone	Completion Date
Stage Gate Review - PLANNING	January 12, 2018
**Work Package 1 Commence: Bollard Reconfiguration at Maple Tree Square	July 12, 2018
Work Package 1 Complete	July 30, 2018
Work Package 2 Commence: Bollard/Barrier solution at Main and Alexander	June 25, 2018
Work Package 2 Complete	July 6, 2018
Work Package 3 Commence: Protected Bike Lane at Hawks Ave	May 15, 2018
Work Package 3 Complete	June 25, 2018
Work Package 4	Completed
Substantial Completion	August 31, 2018
Total Completion	November 16, 2018
Stage Gate Review - CLOSEOUT	January 11, 2019

**Maple Tree Square is currently dependent on a traffic signal change at Powell and Columbia and traffic direction switch over between Maple Tree Square and Columbia.

4. Financials

4.1 Budget and Cash flow

An overview of the project budget and its proposed cash flow (by quarter) is provided in Table 4-1.

Table 4-1: Project Budget and Proposed Cash Flow (Quarterly)

Program	Project Budget	Time Period			
		Q1 2018	Q2 2018	Q3 2018	Q4 2018
<i>Maple Tree Square</i>	\$70,000		\$70,000		
<i>Powell and Columbia</i>	\$45,000		\$45,000		
<i>Main Street</i>	\$125,000		\$125,000		
<i>Hawks and Powell</i>	\$365,000		\$245,000		
<i>Sub-total</i>	\$605,000		\$485,000 (100%)		
Contingency*	Included		Included		
Total	\$605,000		\$485,000 (80%)		

4.2 Funding

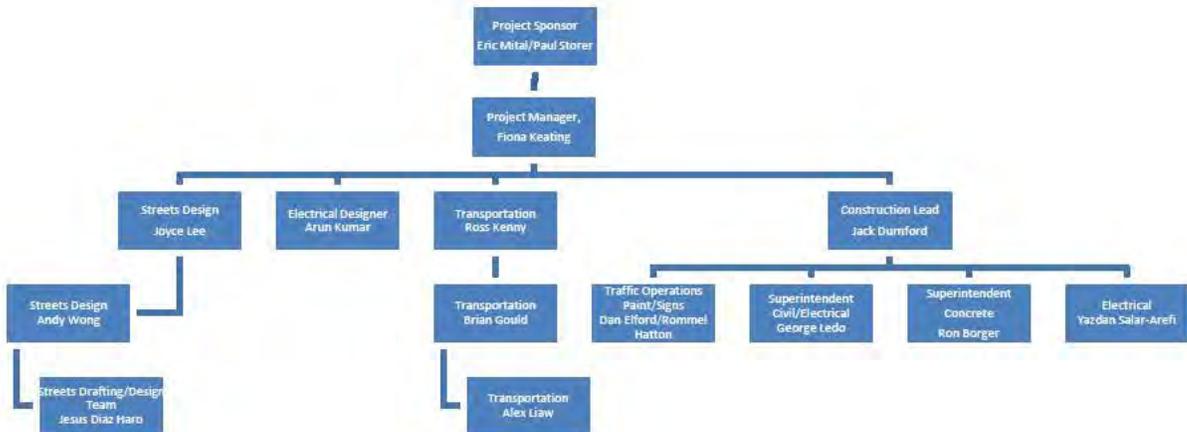
Funding for this project will be provided from:

1. Active Transportation Corridors Capital (\$670,000 with 8% including overhead and including a 50% contingency)

5. Key Roles

5.1 Organization Chart

Figure 5-1: Proposed Project Team Structure - Overview



5.2 Reporting Structure and Frequency

As a Level 2 project, stage gate review will be conducted by the Streets Project Sponsor at the end of the following phases:

- Initiation (includes Project Charter approval);
- Design (includes Project Execution Plan and allows the project to proceed into construction); and
- Close-Out.

In addition to the stage gates required for this project, ongoing project status reporting will also be undertaken and distributed by the Project Manager to the project team as per the following frequencies:

Design Phase: Monthly status reporting
 Construction Phase: Weekly status reporting

6. Stakeholders

A high-level overview of the stakeholders involved in this project is outlined in Table 6-1.

Table 6-1: Project Stakeholders

Stakeholder	Interest	Engagement Goal
Internal Departments		
Transportation Design	Stakeholder that is driving these designs and changes. This project was initiated by TDE.	Regular check-ins as appropriate. TDE to be consulted for any deviations to the plans or issues in design or in construction. TDE to manage the design conversations and handle relationships with respective BIAs.
Streets Design	Project Manager assigned under Streets; project will deliver major Streets capital plan project.	Key individuals across Streets Design will attend ongoing project meetings.
Street Ops	Cut and Fill sheets for concrete work at Hawks and Powell, and Alexander and Main.	Key individuals representing the Streets construction crews have attended site meetings with the Project Manager.
Environmental	Unexpected Environmental issues may arise during construction	Project Manager reviewed the Potential Areas of Environmental Concerns map, which did not identify any environmental concerns. The Project Manager will notify

		Environmental Services if any environmental issues arise during construction.
Archaeological	No known sites in the area.	If anything unusual comes up during ground disturbing activities, PM to follow PMO Chance Find Management protocol.
Special Events	Scheduling of special events may be impacted. July 11 The Gastown Grand Prix goes through Maple Tree Square.	Project Manager has notified Emma for Road Ahead and Plan It.
Engineering Coordination	Coordination with other capital projects across Engineering.	Provide regular updates to the Engineering Coordination Lead.
PMO	Project Management Framework.	Liaise with the PMO as necessary to ensure PM framework is being followed.
Corporate Communications	Coordination with notifying stakeholders.	Corporate Communications assisted with drafting the notification letter.
Other Interested Parties		
Local residents	Abutting and local property owners would like to know project details and impacts.	A construction notification letter will be delivered to all residents and businesses within one block of the project site prior to construction. Any construction activity outside of the allowable working hours will be communicated to residents following an approved noise variance permit.
BIA	Businesses will be affected by these changes in access.	Transportation has already engaged the BIA. PM to stay in close contact with Transportation to be able to relay any important information as required.
Vancouver Fire Department	Main and Alexander is a main route for VFD	Collaboration with VFD on implemented construction elements as well as ensuring there is emergency access during construction.
Road Users	This work will affect EB/WB traffic.	TMP to be developed by TDM and traffic closures will be posted on Road Ahead.
Other	TBD	Will be determined when stakeholder engagement need is identified, discussed with Communications and added to PEP.

7. Risks

Table 7-1 provides a high-level overview of the risks identified for this project during its Initiation phase.

Table 7-1: High-level Risk Assessment (Initiation Phase)

Risk/Issue	Rating	Impact	Mitigation
Traffic Impacts - Vehicles EB/WB traffic will be impacted	Low/Medium	Traffic will be impacted by single lane alternating closures during concrete construction. No paving.	TMP will be developed with TDM for any closures required to implement the work.
Local Resident/Business Feedback - Traffic Commuting or local traffic may create complaints.	Low/Medium	Traffic impacts may result in negative feedback from community - potential harm to City reputation.	TMP will be developed with TDM and in. Communication letters to be sent to residents/businesses notifying them of construction impacts. Any questions/concerns by the public will be responded to by the PM within a reasonable amount of time.
Local Resident/Business Feedback - Construction Noise Local residents complaining of construction noise.	Low	Abutting properties of residents/businesses along Powell, Hawks, Alexander, and Maple Tree Square may experience construction noise.	Construction activities are proposed to be completed during normal, bylaw-approved times. Work outside of these hours will be notified to residents. Any questions/concerns by the public will be responded to by the PM within a reasonable amount of time.
Weather Poor weather may delay project	Low	Paving work is weather dependent and could delay the project	PM to work with Paving Superintendent to ensure the paving crew is flexible

and/or increase costs.		schedule and add costs to the project if weather becomes an issue.	about paying times. PM to ensure adequate time is scheduled for paving in case of weather delays.
Special Events To be reviewed during PEP with final schedule.	Low	Possibility of filming in the area.	Check with Rick Clark (Manager of Filming and Special Events) prior to setting work schedule.
Environmental Factors Contaminated Soils.	Low	Unforeseen environmental issues can impact the project schedule and budget.	An initial review of the contaminated soils maps has not identified any major concerns for this project.

Approval


 Project Sponsor or Steering Committee Member AVL 7/18
 Date

Kevin Gault for PDS
 Project Sponsor or Steering Committee Member 2018-08-08
 Date

Appendices

Project Classification Tool

PROJECT CLASSIFICATION FORM

Submitting Department(s)/Division(s) Engineering
Street
Evaluator Fiona Keating

Project Title Alexander Street - Gastown, Main Street and Hawks Avenue
Estimated Value TBD
Date (DD-MMM) 20-Nov-2017

PROJECT OBJECTIVE(S)

Alexander Street has three locations where work is occurring to improve transit pathways for cyclists.
 Gastown: bollards are going to be realigned at the intersection of Alexander, Powell, Carrall and Water Street to promote safer and more defined traffic flow.
 Main Street: bollards are to be placed at the east side of the intersection of Alexander and Main Street. This is to promote pedestrian and cyclist traffic only down Alexander. However, a film studio and the fire department require access to be available to them at all times. To remedy this, an automated bollard solution is being researched.
 Hawks Avenue: Hawks Avenue at Powell Street has a bike lane that ends at the east approach. In order to continue this bike lane along Alexander, an extension of the bike lane is being implemented along Hawks Avenue. Changes to the curb and gutter is required along Hawks Avenue from Powell to Alexander.

PROJECT SUMMARY

- Bollard reconfiguration
- New Bollard installation
- New bike lane, curb and gutter and landscaping

IS THE PROJECT ROUTINE?

YES NO

- The work is routine, but the project itself is not. The project will result in changed access for vehicular traffic and an extended protected bike lane.

IS THE PROJECT HIGH RISK?

YES NO

- There will be management of vehicles and pedestrians, which will be done through a TMP from TDM

IS THE PROJECT HIGHLY COMPLEX?

YES NO

If automated bollards are being installed, this will be a new construction type that operations will be adding to their repertoire. Training, supervision and feedback will be required by the supplier.
 The remainder of the project is routine for operations.

PROJECT CLASSIFICATION

Enter Level:

2


Evaluator

12-DEC-2017

Date

DD-MMM-YYYY


Approval

05-JAN-2018

Date

DD-MMM-YYYY

PROJECT EXECUTION PLAN



Streets & Electrical Design
Engineering Services

PROJECT EXECUTION PLAN

(04/24/2018)

Alexander Street - Gastown, Main Street, and Hawks Avenue
Project Number: 13-4200-10/0000155

Change History:

Revision	Date	Description	Author	Approver
0		Pre-Stage Gate Review	FK	MLB
1		Sponsor Approval Stage Gate Review	FK	EM and PS 

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Overview

Please see the attached Project Charter in the appendices for an overview on the project.

Background

Alexander Street was identified by Transportation as requiring some modifications in order to promote safer cycling pathways through East Vancouver.

The intersection of Water Street, Carrall Street, Alexander Street and Powell Street (also known as Maple Tree Square) currently has bollards set up to passively direct traffic through the pedestrian heavy area. It was identified that cyclists were shortcutting in unsafe manners to bypass passenger vehicles trying to navigate through this area. A shift of the bollards is being implemented in order to better direct vehicular traffic as well as make crossings and flow obvious to cyclists as well.

The east side of the Main and Alexander Street intersection was identified as requiring a closure to vehicular traffic in order to maintain a more pedestrian and cyclist friendly pathway. However, a film studio on the NE corner of Main and Alexander requires access for their freight trucks, and the VFD also requires regular access to respond to calls. In order to provide this access while achieving a closure for the general public, a concrete median with IRS bollards is to be implemented so that emergency vehicles can still drive through if required. The barrier will be installed after the film studio so they can maintain their access. Transportation was initially researching the use of Automated Bollards. The installation would allow approved users to use passive RFID to have the bollards recess into the ground in order to open the street as required. There wasn't enough time to vet this option for this particular project.

The intersection of Powell Street and Hawks Avenue currently sees the end of a protected westbound bike lane. This project intends to extend that bike lane directly to the intersection and then north onto Hawks Avenue. This will direct cyclist traffic onto Alexander Street.

During design it was brought to light, that Columbia north of Powell is to be converted to two-way traffic which would trigger the switch of one way traffic on Alexander from westbound to eastbound. Maple Tree Square construction is dependent on this two way conversion.

Project Description

This project has three distinct work packages:

Work Package 1: Bollard reconfiguration at Gastown (Maple Tree Square)

Work Package 2: Bollard installation at Main Street

Work Package 3: Bike Lane Extension at Hawks

Work Package 4: Powell and Columbia Traffic Signal and 1-way Street to 2-way Street Conversion

Work Package 1: Bollard reconfiguration at Gastown (Maple Tree Square)

The current arrangement of the bollards in the intersection of Carrall Street, Water Street, Alexander Street and Powell Street leaves a lot of room for cyclists and vehicles to be confused as to where they should be traveling. This project is meant to create very distinct pathways for vehicles and cyclists that will cause less points of conflict.

The type of bollard connections will also be researched, as the current ones leave obstructions proud of the ground, which are dangerous for cycling events through the area.

New bollard connections have been fabricated in house that are flush with the ground so if removed won't be a safety hazard to cyclists.

Work Package 2: Bollard Installation at Main Street

Alexander Street at Main Street has been identified as a spot where vehicle access should be restricted. To achieve this, a barrier needs to be installed at the east side of the intersection at Alexander Street. The barrier system still needs to allow Fire Truck access, as the Vancouver Fire Department uses this route to respond to calls quite frequently.

A film company at the North East corner of Alexander and Main also has truck deliveries to their facility.

Transportation is currently researching an Automated Bollard system, which would allow an authorized user to employ passive RFID technology to retract the bollards into an underground foundation box. The technology requires dedicated power, and a well thought administrative process for handing out access. In the interim of sorting out the details of this endeavor, a hard plastic bollard barrier (IRS bollards) will be installed alongside concrete medians. This system will allow emergency vehicles to drive through/over the barrier if absolutely required.

Before the installation of the concrete medians, no post barriers will be installed strategically to still allow VFD access.

Upgrades to the intersection at Main and Alexander will include installing new LED lights to current light poles and installing cyclist push buttons to poles for east bound and west bound cyclists.

Work Package 3: Bike Lane Extension at Hawks

The West Bound protected bike lane along Powell currently ends just short of the intersection of Powell Street and Hawks Avenue. In order to fill a gap in the bike network, the bike lane will be extended to the intersection and north onto Hawks Avenue which will turn into Alexander Street. In order to achieve this, the barrier will be extended as per the geometric design.

Hydro poles will also have to be relocated, and anchors adjusted in order to accommodate the bike lane. This requires BC Hydro's involvement. The hydro pole won't be relocated until 2019.

Work Package 4: Powell and Columbia Traffic Signal and 1-way Street to 2-way Street Conversion

Alexander will be reversing direction from 1 way west bound to 1 way east bound from Maple Tree Square to Columbia. Columbia in between Alexander Street and Powell Street will be converted from a 1 way street north bound to a 2 way street. The 2 lanes being converted to south bound will be a right turn only onto Powell. The opposing lane on Columbia south of the intersection will be a left turn only lane. New signs, paint and traffic signals will be required.

Scope

Detailed scope can be found in the IFC drawings attached in the appendices.

In Scope	
Hawks and Powell	
Geographic Location	SE corner of Hawks and Powell,

Key components	NE corner of Hawks and Powell, East side of Hawks New curb bulge, relocated CB, relocated SL/TS pole with new pushbutton, extended concrete sidewalk, extended asphalt bike path, new/relocated curb ramps at NE corner, new paint, new signs
Disciplines / stakeholders involved	SED, TDE, TDM, STEOB, Sewer Ops
Specifications	SRM
Deliverables	Extended protected bike lane
Alexander - Columbia to Gore (Main Street)	
Geographic Location	North side of Alexander, just east of Columbia SW corner of Main and Alexander East of Main and Alexander
Key components	Concrete medians, new curb bulge, new cyclist pushbuttons (2), IRS bollards, new paint and new signs
Disciplines / stakeholders involved	SED, TDE, TDM, STEOB
Specifications	SRM
Deliverables	Dedicated Bike Way, preparation for switch in direction of one-way traffic at Alexander and Columbia
Gastown - Maple Tree Square	
Geographic Location	Maple Tree Square - Intersection of Carrall, Water, Alexander, and Powell
Key components	Bollard reconfiguration, change in mounting detail to provide a flush condition when bollards and signs are removed.
Disciplines / stakeholders involved	SED, TDE, TDM, STEOB
Specifications	SRM
Deliverables	Switch in traffic flow direction. Change to how bikes travel through this intersection
Powell and Columbia	
Geographic Location	Intersection of Powell and Columbia, Columbia in between Alexander and Powell,

	Part of Columbia south of the intersection
Key components	New signs, new paint, new traffic poles, new light pole, new signal heads
Disciplines / stakeholders involved	SED, TDE, TDM, STEOB
Specifications	SRM
Deliverables	1 way street to 2 way street conversion of Columbia between Alexander and Powell. Western travel lane on Columbia south of Powell and Columbia intersection to become a left turn only lane.

Out of Scope	
Paving	
Geographic Location	All trench patching (to be added to cut sheets if required). No full width paving. All paint to be hydroblasted.
Components	Street/Road Paving
Disciplines excluded	Paving crew - streets

Dependencies and Assumptions	
Dependencies	Transportation Design, Sewer Ops and Columbia/Powell two-way conversion. Dependent upon getting all the IFC drawings by our deadline of April 27. Maple Tree Square to start after Gastown Grandprix Main and Alexander to start once Hawks and Powell is completed
Assumptions	Assuming that the bollard attachment solution works in the existing brick material in Gastown.

Change Control

See PMO website for details on the Engineering's Change Control process:

<http://gilwire.city.vancouver.bc.ca/engpmo/project-management-framework/index.htm>.

Levels of Authority

Internally Sourced: Commitments, Payments and Change Orders

SCHEDULE OF AUTHORITY			
Level of Authority	Design Lead and/or Construction Lead	Project Manager	Sponsor
Cost Limits (≤ \$)	N/A	\$5,000	\$25,000
Schedule Limits (≤ Days)	N/A	2 days	15 days
Reporting	N/A	Approved by PM; Reported to Sponsor	Recommended by PM; Approved by Sponsor

Schedule

This section refers to the Schedule Management Standards and approved departmental practices, and summarizes how the project milestones defined in the charter will be achieved:

GANTT Chart Schedule

	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1 Planning (since Nov 2017)										
2 Design										
3 Implementation										
4 Close Out										

Please see the attached GANTT chart schedule in the appendices for a detailed construction schedule.

Schedule Management

PM to do a site visit at least once a week to discuss schedule updates with the foreman on site. For urgent schedule changes, the Superintendent overseeing the work should discuss any changes with the PM

immediately. Engineering branches concerned with this project, such as TDE and TDM to be regularly updated on progress as well as traffic impacts as they occur.

Schedule Dependencies and Assumptions

The concrete crew originally dedicated to this project is Scott’s crew. He is currently on 10th and Kingsway and will move to the Adanac Spot Improvements. The scope at Main is so limited, that it makes sense to wait until Sewers is complete at Hawks and Powell before mobilizing to the area. Before work can commence at Maple Tree Square the directional change along Alexander must be implemented. Work at Maple Tree Square to commence once the Gastown Grand Prix is over. The event is scheduled for July 11.

Financials

This section refers to the Financial Management Standard, the Estimating and Cost Management Standard, and approved departmental practices. It summarizes how the project budget defined in the charter will be managed, and how cost management will take place on the project.

Budget and Cost Estimate Summary

Provide a detailed breakdown of the budget, consistent with the work back schedule and/or project deliverables, and a snapshot of the current estimation. Clarify the basis of the cost estimation. Include a detailed budget in the appendix. This section is likely to develop with the PM Framework to include approved budget, current cost estimate, and contingency/project reserve amounts.

CBS Code	Item Description	Approved Budget Per Charter (APR)			Cash Flow OPTIONAL	
		Estimate	Contingency	Total	2018	2019
1.0	Transportation	\$455,000	Included (50%)	\$455,000	\$335,000	120,000
2.0	TDM – Signals	\$150,000	Included (20%)	\$150,000	\$150,000	
TOTAL HARD COSTS		\$605,000		\$605,000	\$485,000	\$120,000
TOTAL CONTINGENCY						
TOTAL						

Cost Management

The PM will monitor actual costs in SAP and report variances over \$50,000 to the Sponsor.

Budget Dependencies and Assumptions

All above costs are allocated under the 2018 capital programs and it is expected that all actual costs will be in SAP by December 31, 2018.

Project Delivery

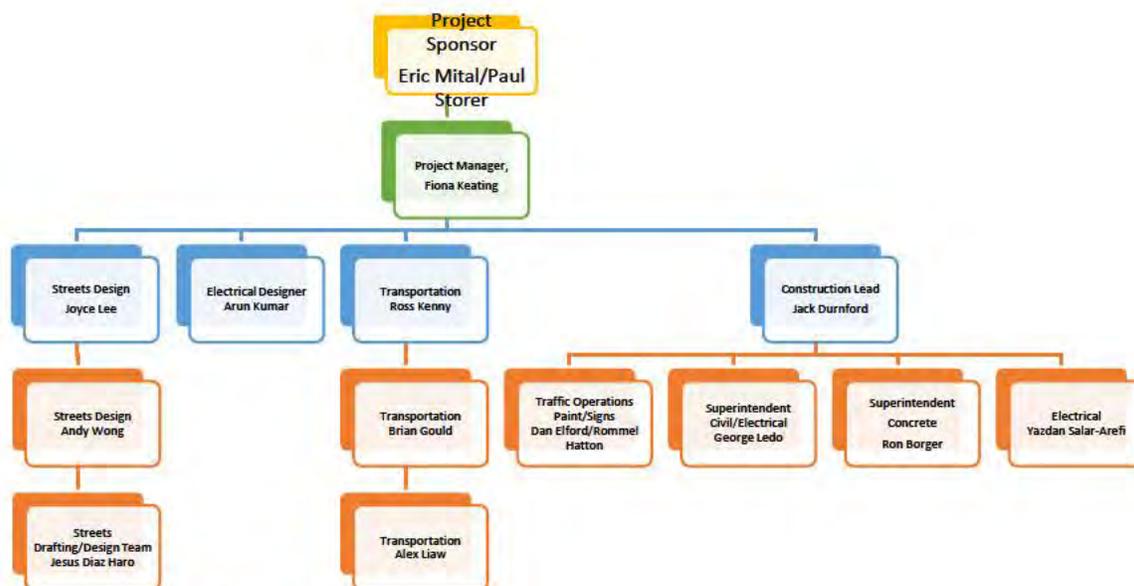
This section refers to the Procurement Management Standard and approved departmental practices, and summarizes how the project will be procured and delivered.

Delivery Method

Internal crews will be used to construct this project.

Human Resources Management

Project Team Organization



Project Team Contact Information

The Project Contact List (DOC/2018/068398) provides contact information for all key individuals within the project team.

Project Team Roles & Responsibilities

The following tables should provide a customized overview and allocation of duties of the project team members Roles & Responsibilities over the Project Lifecycle.

Core PMF Roles

This table should contain the Roles and Responsibilities of the core PMF roles.

Role	Roles & Responsibilities
Project Sponsor(s)	Accountable for the successful delivery of the Project Identifies the Project objectives and priorities Confirms or modifies proposed resource allocation for the Project submitted by

Role	Roles & Responsibilities
	<p>the Project Manager</p> <p>Provides direction to the Project Manager and takes ownership of major project approvals (e.g. Council presentation)</p> <p>Takes a lead role on major project decisions</p> <p>Reviews and approves key project deliverables (e.g., Project Charter, PEP)</p> <p>Introduces and champions project at Stage Gate Review Panel meetings</p>
Project Manager	<p>Responsible for the delivery of all project management aspects related to scope, schedule, budget, risk, contingency, traffic and quality – including tracking and reporting through ongoing status report updates</p> <p>Compiles / oversees the completion of all PMF documents, and submits / presents to Project Sponsor(s) and the Stage Gate Review Panel as required</p> <p>Identifies and recommends project resourcing requirements for approval by the Project Sponsor (including consultation / coordination with functional branch requirements)</p> <p>Leads and oversees all project communications and stakeholder engagement (both amongst project team members, and with other City departments and with the public) – this may be delegated to functional branches for specific technical matters or where a communications resource is identified for that project</p> <p>Manages the Change Control process</p> <p>Escalates and provides proposed recommendations to the Project Sponsor for any project issues / conflicts that cannot be resolved at the project level</p> <p>Oversees the Design Lead, Construction Lead and project consultancies to ensure their responsibilities are being delivered as per project requirements</p> <p>Ensures that quality management is applied on the project and mentors Project Team members as necessary</p>
Design Lead	<p>Coordinates and oversees all efforts of the Project’s design sub-disciplines (e.g., such as identifying functional requirements, establishing specifications, scope definition and overseeing the preparation of drawing sets and design package delivery)</p> <p>Provides advice, as required, on technical matters to the Project Manager through the full project lifecycle</p> <p>Ensures all design sub-disciplines have compiled with all applicable OQM standards</p> <p>Identifies and recommends to the Project Manager the resolution for any third party utility conflicts and/or private property impacts associated with the Project</p> <p>Oversees the development of Class D / Class C unit-rate-based cost estimates and schedules (in consultation with the Construction Lead)</p> <p>Monitors works delivered by the Construction Lead to ensure compliance with the established project specifications</p> <p>Provides inputs to the Project Manager as required for PMF documents and Change Control procedures</p> <p>Completes record drawings as required</p>
Construction Lead	<p>Coordinates and oversees all efforts of the Project’s construction sub-disciplines for on-site work activities (including third party and / or subcontractor works) and ensures these are undertaken according to the approved safety, quality and environmental management plans</p> <p>Provides advice, as required, on constructability to the Project Manager through the full Project Lifecycle</p>

Role	Roles & Responsibilities
	<p>Oversees the development of Class B / Class A bottom-up-based cost estimates and schedules (in consultation with the Design Lead)</p> <p>Monitors, tracks and reports out on construction progress (including daily and weekly construction reports)</p> <p>Completes red line markups and submit to Design Lead as part of the Close-out procedures</p> <p>Provides inputs to the Project Manager as required for the PMF documents and Change Control procedures</p> <p>Responsible for on-site safety</p> <p>Ensures that reviews at appropriate stages are undertaken on design drawings/specifications and that applicable OQM requirements are followed</p>

As needed project roles

Related Roles in associated functions	Roles & Responsibilities
Quality	<p>Conducts Pre-Stage Gate Reviews & Quality Audit</p> <p>Ensures that nonconformities/ opportunities for improvement resulting from audits are dealt with in a timely manner</p>

Stakeholder Management

Stakeholder Register

Please refer to Stakeholder Register document.

Communications Plan

Notification letters were reviewed and approved by Streets prior to delivery. Transportation also issued their own letter, as well as notified the BIA prior to construction. No noise variance is required at this time. The notification letter for Maple Tree Square was delivered on May 10, 2018; for Powell and Columbia, Hawks and Powell, and Main and Alexander on April 13, 2018.

A noise variance is required for the switch of direction of Alexander in between Maple Tree Square and Columbia as the switch will occur at night.

Project Communication Tactics

Communication Type	Objective	Medium	Frequency	Stakeholders	Owner	Deliverable
Public Project Notifications	Identify and appraise impact. Inform residents & businesses	Letters City website 3-1-1	Once before construction and once before paving	Local residents and businesses	Project Manager	Letters
Kickoff Meeting	Introduce the project team and the project. Review project objectives and management approach.	Face to Face	Once	PM Project Coordinator Ops	Project Manager	Agenda Meeting Minutes
Field Reports	Report the status of the project including activities, progress, costs and issues.	Email	Weekly (min) Daily (preferred)	Project Sponsor Project Team Stakeholders PMO	Project Manager	Project Status Report Project schedule SG approvals

Risks

Risk Register

Please refer to the Risk Register document.

Escalation Plan

In all emergency situations requiring ambulance, fire or police follow the standard procedures:

Call 911

Please refer to the Project Contact List for all other situations.

Quality Management

Quality Standards

All Streets work to follow the SRM and OQM requirements. This project is classified as a Level 2a project for Streets Design and does not require the EoR to witness any of the work. The EoR will be updated on progress via regular Field Reports (refer to EoR On-Site Witness Points DOC/2018/113548).

Document Management

All documentation to follow OQM requirements and to be placed in VanDocs.

Quality Audit/Project Reviews

Annual internal audits on Level 2 projects are expected. An EGBC OQM audit may happen on this project.

Metrics

Defines which mandatory metrics will be recorded, tracked and reported to the Sponsor and PMO:

Indicator	Metric	Unit	Target	Frequency and/or Date of Reporting	Responsible Party	Submitted To	Comments
Public Impact	311 & other calls response time	hr	<24	Following Total Completion	PM	Sponsor	
	Emails and web enquiries	hr	<24	Following Total Completion	PM	Sponsor	
Health and Safety	Inspections	#	0	Following Total Completion	PM	Sponsor	
	Incidents	#	0	Following Total Completion	PM	Sponsor	
Schedule	Construction Duration @ Charter / Forecast	Weeks	18 weeks	Following Total Completion	PM	Sponsor	

Indicator	Metric	Unit	Target	Frequency and/or Date of Reporting	Responsible Party	Submitted To	Comments
Budget	Construction Duration @ Implementation Stage Gate / Forecast	Weeks	11 weeks	Following Total Completion	PM	Sponsor	
	Budget @ Charter / Forecast	\$	\$590,000	Following Total Completion	PM	Sponsor	
	Budget @ Implementation Stage Gate / Forecast	\$	\$485,000	Following Total Completion	PM	Sponsor	

Health and Safety Management

Overview of Methodology	Site assessment done by Operations Identify relevant standards Undertake hazard mitigation Consult with Design Lead and Construction Lead (safety by design) as needed
Key parties involved	Construction Crew
Key milestones	Completion of Construction Health and Safety Plan Site orientation

High Level Hazard Identification

In consultation with the Construction Lead, Design Lead, branch personnel, OHS, and other key stakeholders, develop a high level assessment of project site hazards as they apply to the entirety of the construction period. Refer to the OHS website for a listing of hazards, and the H&S Plan for a sample hazard listing.

Hazard	Description	Suggested Control Measures	Action Log
Traffic	Scope of work includes working adjacent to travel lanes.	TCP to develop traffic management plans for each closure.	
Pedestrians	Scope of work includes closing sidewalk, working adjacent to sidewalks and redirecting pedestrians.	TCP to develop traffic management plans for each closure.	

Environmental Management

PM reviewed Environmental Areas of Concern map and there are no areas of concern within the project boundaries.

Archaeological Management

PM reviewed Archaeological Areas of Concern map and there are no areas of concern within the project boundaries.

Public Impact

Traffic Management

All Traffic Management to be discussed with Sherwood Plant and Greg Nowak.

Property and Business Impacts

Businesses will be affected in terms of access and parking.

Gastown is a very heavily occupied area, and especially during the fair weather/sunny days, it is detrimental to business when construction is underway.

Project Close-Out

Acceptance and Commissioning

Following concrete, pushbutton, paint, sign and bollard installation a walk through will be completed with the PM, PC and Operations to identify any deficiencies, which will be completed prior to Total Completion. The PM will fill out the Substantial and Total Completion forms.

Lessons Learned

PM to maintain a lessons learned project throughout the project.

Appendices

- Project Charter
- Project Estimates
- Detailed Project Schedule
- Project Risk Register
- Project Stakeholder Register
- Project Contact List
- IFC List:
 - Traffic Signal IFC: Main and Alexander (DOC/2018/220745)
 - Traffic Signal IFC: Hawks and Powell (DOC/2018/220746)
 - Traffic Signal IFC: Powell and Columbia (DOC/2018/220744)

PROJECT RISK REGISTER

Project	Alexander Street - Gastown, Main Street, and Hawks Avenue	Project Number	13-4200-10/0000155
Project Manager	Fiona Keating	Date	25-Apr-2018
Branch/Division	Streets	Revision	0
Stage	Design	Status	On-going

IDENTIFICATION					ANALYSIS								TREATMENT					
ID	Risk Title	Risk Category	Risk Classification(s)	Description	L	I	Rating	Assigned To	OPTIONAL					Description	Risk Management Strategy	Action By	Date (DD-MMM)	Status
									Estimated Consequence			Weighted Consequence						
									(\$)	(days)*	Other	(\$)	(days)*					
	Traffic Impacts	Public Engagement	Reputational	Traffic will be impacted in two ways - during construction, curb lane closures and full closures at Alexander and Columbia and Main and Alexander. Permanent closure at Main and Alexander, and traffic pattern/flow switch.	4	5	20	PM	\$ -	0 days		\$ -	0 days	Follow TMP	Ac - Accept	PM	20-Feb-2018	Accepted
	Local Residents / Businesses Impacts	Public Engagement	Reputational	Traffic impacts may result in negative feedback from community - potential harm to City reputation.	4	5	20	PM	\$ -	0 days		\$ -	0 days	Follow TMP	Ac - Accept	PM	20-Feb-2018	Accepted
	Construction Noise	Public Engagement	Reputational	Abutting properties are located on or close to Alexander Street and therefore residents/businesses may experience construction noise.	2	2	4	PM	\$ -	0 days		\$ -	0 days	Apply for noise variances if needed	Ac - Accept	PM	20-Feb-2018	Accepted
	Weather	Schedule	Operational	Paint is dependent on dry and warm weather - crucial to have paint and signs in immediately after construction is complete	3	3	9	PM	\$ -	0 days		\$ -	0 days	Monitor weather, schedule and budgets closely. Look for weekend work where possible.	M - Mitigate	PM	20-Feb-2018	Accepted
	Sewer Delay	Schedule	Operational	At Hawks and Powell SE corner - CB relocation. Concrete can't mobilize until this is done.	2	4	8	PM	\$ -	0 days		\$ -	0 days	Communicate schedule to Sewers	Ac - Accept	PM	20-Feb-2018	Accepted
	Electrical Delay	Schedule	Operational	Columbia and Powell - two way conversion could impact Maple Tree Square schedule and cause issues with BIA and events	5	5	25											
	Special Events	Public Engagement	Reputational	Gastown - very sensitive to events especially as summer approaches. July 11 - Global Relay Gastown Grand Prix	4	5	20	PM	\$ -	0 days		\$ -	0 days	Work with Road Ahead and Special Events	Ac - Accept	PM	20-Feb-2018	Accepted
	Contaminated Materials	Environmental	Health, Safety &/or Environmental	Unforeseen environmental issues can impact the project schedule and budget.	1	4	4	PM	\$ -	0 days		\$ -	0 days	Review environmental map	Ac - Accept	PM	20-Feb-2018	Accepted
	Tree Removal	Public Engagement	Reputational	No trees identified to be removed	0	3	0	PM	\$ -	0 days		\$ -	0 days	Call parks if required	Ac - Accept	Ops	20-Feb-2018	Accepted

Level	Score	Frequency	Quality	Scope	Schedule	Resources	Stakeholders	Internal Processes	External Impacts	Environmental	Human Safety	Mitigation/Response	Probability	Impact
Critical	5	More than 80%	Operational failure	Project is unable to meet its deliverables and responsibilities	Project stopped	Project resources halt working on project deliverables and are reassigned	Project Sponsor and/or Branch Manager and project stakeholders question project viability and benefits that can be realized	Substantial breach of City practices resulting in resulting in criminal prosecution of Council, Board member, or management, or an employee	Extreme serious adverse media coverage with long term impact to the program and the City	Death and/or significant permanent disability of public or staff	Irreparable, significant damage to environment	likelihood that the risk does not occur. Another purpose of mitigation is to ensure that if the risk occurs, the negative impact of the risk is minimized. For the purposes of the Ten Step Project Management Process, it is generally assumed that Risk Response Activities are put in place to mitigate the risk.	will occur	Closed
Major	4	51% - 80%	Major operational disruption	Project is struggling to meet its deliverables	Project is significantly delayed, Escalated to Project Sponsors	Planned timelines missed, project resources cannot react to new work and quality of project work declines	Project Sponsor and/or Branch Manager and project stakeholders question project viability and benefits that can be realized	Serious breach of City and ENG practices and codes of conduct	Serious adverse media/publicity coverage with potential impact to program and the City	Serious injuries to public or staff resulting in some permanent disability	Major environmental damages - extended clean-up required/ some permanent damage	<p>Avoid</p> <p>Avoiding the risk means that the condition that is causing the problem is eliminated. One example is that if you find that a part of the project has high risk associated with it, that whole part of the project is eliminated. The risks associated with a particular vendor, for instance, might be avoided if another vendor is used instead. This is a very effective way to eliminate risks but obviously can be used only in certain unique circumstances. In another example, you may have a project risk associated with implementing a solution in multiple locations. Once the risk is identified, the sponsor may change the scope of the project to only implement in one location. In this way, the risk of implementing at multiple locations has been avoided.</p>	<p>Exploit</p> <p>Exploiting a positive risk is about ensuring everything is in place to increase the probability of the occurrence of the risk. By taking the initiative and exploiting a positive risk, PM ensures organization will benefit from the opportunity.</p>	
Moderate	3	21% - 50%	Moderate operational impact	Project activities cannot be adequately performed and scope creep/changes arise	Some project deliverables cannot be achieved per plan	Project resources unable to perform/react/meet project deadlines	Project faces loss of operational credibility and reduced sponsorship support	Breach of established internal processes and guidelines resulting in an investigation, Internal review or inquiry	Adverse negative media/publicity coverage of the project and program	Serious injuries to public/staff	Moderate environmental damage with moderate clean-up effort required, no permanent damage	<p>Transfer</p> <p>In some instances, the responsibility for managing a risk can be removed from the project by assigning the risk to another entity or third party. For instance, outsourcing a function to a third party might eliminate that risk for the project team. The third party might have particular expertise that allows them to do the work without the risk. Even if the risk is still present, it now is up to another party to resolve.</p> <p>Another example of transferring risk is buying insurance. In a simple example, you may have a very fragile and valuable piece of equipment that needs to be shipped to your project team. There is some risk that the material will be damaged. You might move the financial risk by purchasing insurance on the shipment. Of course, if the shipment is damaged, you may still lose time waiting for a replacement part to be shipped. However, you no longer have the financial risk. In exchange for an insurance premium payment, the insurer now has the financial risk.</p>	<p>Share</p> <p>Sometimes team / department / organization does not have ability to exploit a positive risk on its own. Sharing a positive risk means collaboration with another department or organization to exploit a positive risk and realize benefits of an opportunity.</p>	
Minor	2	6% - 20%	Minimal operational impact	Less critical work pushed back for a few weeks	Small delay to project deliverables	Project resources reprioritize some tasks or defer some project work to accommodate schedule change	Some stakeholder resistance impacting project schedule	Some breach of established internal processes (SOPs, hiring guidelines, SCM guidelines etc)	Project receives some media/publicity in the short term	Minor injuries	Minor or non-permanent environmental damage requiring very limited clean-up efforts	<p>Accept</p> <p>In this approach, the project manager looks at the risk and decides to do nothing. This can happen for one of three reasons.</p> <ul style="list-style-type: none"> The project manager may decide that the potential impact of the risk on the project is not substantial enough to require a risk response. This would typically be the case for low-level risks and many medium-level risks. The project manager may feel that the risk should be managed, but that the negative impact of the risk is not worth the cost and effort required to manage the risk. There may not be any reasonable and practical activities available to manage the risk. This is different from the prior reason where the cost was more than the benefit. In this case, there are no practical way to manage the risk, even if the risk has been identified as high. For instance, it is possible that there is a risk of your sponsor leaving and a new sponsor canceling the project. In fact, you may know that the sponsor is up for a promotion and that this scenario has some possibility of occurring. However, you may not be in a position to do much about it as long as the current sponsor is in place, and you may just need to leave it and see how events play out. 	<p>Accept</p> <p>If the opportunity of positive-risk presents itself, PM will take advantage of it, but they are not proactively pursuing the opportunity.</p>	
Insignificant	1	Less than 5%	Little or no operational impact	Less critical work pushed back temporarily	Insignificant delay to project resources	Little or no impact to project resources	Active engagement, sponsorship and participation	Insignificant process steps missed/partially followed, but no breach of established internal processes	No reputational impacts to project, ENG or the City	Results in no injuries	Very minor, non-permanent environmental damages requiring little or no clean-up			

STAGE GATE APPROVAL FORM



Stage Gate Approval Form

Project Title: Alexander Street - Gastown, Main Street, and Hawks Avenue
Project Level: 2
Participating Branches: Streets and Electrical Design, STEOB, Sewers, Transportation Design, Traffic & Data Management
Project Manager: Fiona Keating
Project Sponsor: Eric Mital
Attendance: Fiona Keating, Eric Mital, Joel Clary
Signing Roles: Branch Manager
Stage Gate: Planning - Project Charter

Project deliverables submitted for review:

Project Charter

Recommendation from Project Manager:

Approval to move from Initiation Phase to Design Stage

Stage Gate review panel commentary / direction:

Reclassify Project? (Y/N) N Indicate project level: 2

Location of Stage Gate Meeting Minutes (VanDocs #): 13-4200-10/0000155

Stage Gate Decision (enter number)

1

1. PROCEED to next stage
2. REVISE in line with direction above
3. CANCEL project with immediate effect
4. DEFER project to a future date

[Signature] / Aug 7/18 (SED)
Approver Date
[Signature] / 2018-08-09 (TDE)
Approver Date

PROJECT STAKEHOLDER REGISTER

Project	Alexander Street - Gastown, Main Street, and Hawks Avenue	Project Number	13-4200-10/0000155
Project Manager	Fiona Keating	Date	25-Apr-2018
Branch/Division	Streets	Revision	0
Stage	Implementation	Status	On-going

Stakeholder Group	Interests and Goals	Action	Schedule		Action By	Status	Contact Info	Notes
			Timing	Frequency				
Streets Design	Project Manager assigned under Streets; project will deliver major Streets capital plan project.	PM to keep Branch Manager (Sponsor) informed throughout project via reporting and stage gates.	As needed	As needed	PM	On-going	Fiona Keating - 604-326-4814	
Street Ops	Required to construct concrete, civil, electrical, traffic ops (painting, signage) and asphalt scope	Key individuals representing the Streets construction crews have attended site meetings with the Project Manager. Regular communication between the PM, Superintendents and Foreman is required on an on going basis.	As needed	As needed	PM	On-going	Fiona Keating - 604-326-4814	
Transportation Design	TDE is driving this project. Provided geometrics and initiated the need for this to be implemented. Interested in changing Alexander to a designated bike way with a directional switch.	Constant communication with Brian Gould, and his replacement when he goes on holidays in May.	As-needed	As-needed	PM	N/A	Fiona Keating - 604-326-4814	

TDM	Signal work at Columbia and Powell to make Columbia north a two-way. Addition of cyclist pushbuttons at Main and Alexander.	Sherwood/Greg to be notified - coordination meeting. Arrange temporary condition with Winnie Wong for two way conversion	Upfront prior to construction and as-needed basis throughout.	As needed	PM	In progress	Winnie Wong 604 829-2074 Sherwood Plant 604-829-4336
Electrical Design	Providing IFC's for Columbia/Powell, Main/Alexander and Hawks/Powell	Signed IFC's required. Arun Kumar is contact.	On-going	As-needed	PM	In progress	Arun Kumar 86823
Sewers Design and Construction	CB Relocation at Hawks and Powell	Design complete. Construction to be scheduled. Needs to be completed prior to concrete crew mobilizing	In progress	Site visits at least once per week	PM	In progress	Lorenzo (foreman)
Environmental	Unexpected Environmental issues may arise during construction	Project Manager reviewed the Potential Areas of Environmental Concerns map, which did not identify any environmental concerns. The Project Manager will notify Environmental Services if any environmental issues arise during construction.	As needed	As needed	PM	Currently	Fiona Keating - 604-326-4814
Parks	No scope	NA	NA	NA	NA	NA	NA
Special Events	Scheduling of special events may be impacted.	PM has linked Road Ahead and Plan It contact Emma Mendoza with the work schedule	As needed	As needed	PM	On-going	Fiona Keating - 604-326-4814
Engineering Coordination	General FYI and coordination	FYI to Sherwood Plant/Greg Nowak, Joe Walls Etc	On-going	Duration of Project	PM	On-going	Fiona Keating - 604-326-4814
PMO	Project Management Framework.	Stage Gate reviews to be done with Quality Manager.	Prior to Stage Gates	At the end of: Planning Phase Design Phase Close Out	Quality Manager	On-going	Maria Luisa

Corporate Communications	Coordination with notifying stakeholders. TDE reviewed prior to delivery to confirm content. TDE issued separate notification notice	Corporate Communications assisted with drafting the notification letter.	To be completed	Once	Amanda McCuaig Rachel Magnusson	Complete	Amanda McCuaig
Local residents / Schools	Noise, parking restrictions and changes to access and direction of traffic flow	Construction notification was issued to the businesses. BIA was also notified directly	Completed	As-needed	PM	Completed	
Road Users	Partial closures and change in flow of traffic. Traffic will have to be redirected during times of construction.	TMP to be developed by TDM and traffic closures will be posted on Road Ahead.	As needed	As needed	PM	On-going	Fiona Keating - 604-326-4814
BC Hydro	Hydro pole relocation design on Ph2 of Hawks and Powell.	Continue the discussion for 2019 construction	As needed	As needed	PM/TDE	On-going	Fiona Keating - 604-326-4814 Brian
BIA	Interested in impacts to their respective areas	TDE to carry on these discussions	As-needed	As-needed	TDE	On-going	Brian Gould

Notes:

(notes)

Form 1 - Transportation Division Regulatory Changes

Design Acceptance & Approval to Install

Hansen #:	<i>optional</i>	Engineering Analysis:	<i>mandatory (VanDocs # or N/A)</i>
Block(s):	100-700 Blk & 100 Blk	Documented Check:	DOC/2018/249730
Street(s):	Alexander St & Hawks Ave	Account#:	CER-00216-NN-04-BB <i>mandatory</i>
Project/Program:	Alexander Bikeway	OQM Design Brief#:	DOC/2017/085421
Requestor:	<i>optional</i>	Shop Filing #:	<i>optional</i>
VanDocs #:	DOC/2018/206472	Site Investigation (s):	<i>mandatory (VanDocs #)</i>
Associated DWG(s)#:	DOC/2018/157578 (Columbia St 2018-17-C-SP-00) DOC/2018/262464 (Columbia St 2018-17-C-SP-01) Revised Sign Plan superseded DOC/2018/303920 (Columbia St 2018-17-C-SP-02) Revised Sign Plan DOC/2018/142377 (Alexander St 2014-87-C-G-00) DOC/2018/249238 (Alexander St 2014-87-C-G-01) DOC/2018/262460 (Alexander St 2014-87-C-G-02) DOC/2018/148016 (Hawks Ave & Powell St 2017-160-C-GP-01)		

Design Rationale

Refer to OQM Design Brief DOC/2017/085421. This Form 1 covers all sign changes for the full length of Alexander St, as well as Hawks/Powell, including the areas covered by geometrics 2014-87 and 2017-160. It abuts changes on Columbia and at Maple Tree Square.

Design Acceptance and Approval to Install

*If branch head(s) signed for design acceptance in the Design Brief and/or on the associated drawing(s), the comment "See Design Brief" or "See Drawing Signature" may be used in lieu of a signature. Note, acceptance of complex designs is to be done on the drawing itself, not on the Form 1.

Signature Req'd	Approval Level	Signature	Date (YYYY-MM-DD)	Phone
Yes	Author	Ryan O'Donnell	2018-05-07	84828
Yes	Supervisor/Engineer of Record	Brian Gould	2018-05-07	86277
<input checked="" type="checkbox"/>	Parking Management*	Jennifer Draper	2018-05-08	8-7370
<input checked="" type="checkbox"/>	Traffic & Data Management*	Winston Chou	2018-05-10	87913
<input checked="" type="checkbox"/>	Transportation Design*	Paul Storer	2018-05-07	87693
<input type="checkbox"/>	Transportation Planning*			
Yes	Director of Transportation	Lon LaClaire	2018-05-11	87336

Operations

Installation by/coordinated with:

<input checked="" type="checkbox"/> Traffic and Electrical Ops	<input checked="" type="checkbox"/> Parking Ops	<input type="checkbox"/> Other:
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Instructions

As per Approved Sign & Paint Plan-DOC/2018/206315 DOC/2018/262464-DOC/2018/303920.

Please use Records Numbers when listing plans ie DOC/2013/12345

Inventory

RB 39 x1	RB 54-3.2 (<-) x1	RB 21R	RB CLZ-3.2 (->) x1
RB CLZ-3.2 (<-) x1	RB 11-1 x2	RB 54-11.2 (<->) x1	RB PZ (<-) x1
RB PZ (->) x1	RB 55-1 (<->) x4	RB 55-1 (<-) x2	RB 55-1 (->) x2
RB 14L-1 x8	RB 14R-1 x3	RB 24 x2	RB 1-2 x20
RB 23 x2	RB 23-1 x2	RA 1 x2	RA 2-10.3R x1
RC 15-2 x1	WA 36L-1 x1	WA 36R x6	WA 36R-1 x4
WA 145 x4	WA 145S-1 x4	WB 1 x2	WB 3 x1
WC 7 x1	WD 11 x9	POST & BASE OR SLEEVE x37	CUSTOM-"ALEXANDER ON ROADWAY" x1
CUSTOM-"ALEXANDER WAYFINDING" x 18	CUSTOM-"BACK IN ONLY" x6	CUSTOM-"LOCAL ACCESS ONLY-RT TURN" x2	CUSTOM-"LOCAL ACCESS ONLY-LT TURN" x2
CUSTOM-"ALEXANDER ENDS/POWELL OVERPASS" x1	OVERHEAD STREET NAME "HAWKS AVE" C/W BIKE ICON x1	OVERHEAD STREET NAME "ALEXANDER ST" C/W BIKE ICON x2	OVERHEAD STREET NAME "MAIN ST" x1
STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 100 BLK" x1	STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 200 BLK" x1	STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 300 BLK" x1	STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 400 BLK" x1
STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 500 BLK" x2	STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 600 BLK" x1	STREET NAME BLADE C/W BIKE ICON-"ALEXANDER ST 700 BLK" x2	SADDLE MOUNT FOR CONCRETE BARRIER x2

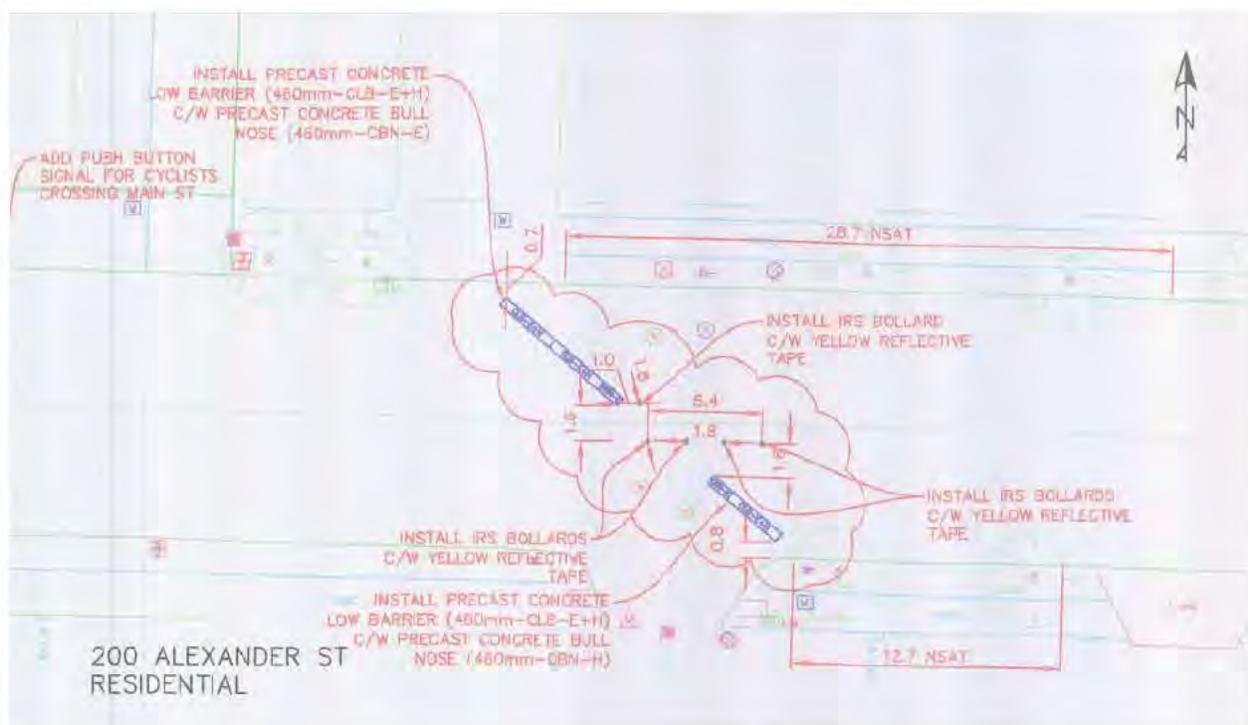
Installed by:	Date (YYYY-MM-DD)	Field Review by:	Date (YYYY-MM-DD)
Installed per Design?	<input type="checkbox"/> Yes <input type="checkbox"/> No - <i>Note changes and reasons on drawing or in instructions box above.</i>		

Project Number and Name <i>e.g. VanDocs container # and name</i>	13-1400-30/0000127 ENG - TDE - Alexander-Powell - 2017		
Design Number <i>e.g. ENGIS #(s), Hansen #, Posse #</i>	2014-87	Other Numbers <i>e.g. DE#, RE#, etc.</i>	

Site Instruction Number <i>(coding is project-specific)</i>	01	Drawing Number <i>(related drawings or specs)</i>	2014-87-C-G-02 143224C
Date (YYYY-MM-DD)	2018-06-20	Time Issued	5:00 pm

Instructions:

Install gravity barriers on Alexander St between Main St and Gore St as per design revision (DOC/2018/262460) below. Concrete medians have been deleted to allow modifications in the future. Survey to lay out the location of concrete barriers.



	<i>Name</i>	<i>Signature</i>	<i>Date (YYYY-MM-DD)</i>
Issued by	Alex Liaw	Alex Liaw	2018-06-20
Instructed by	Fiona Keating	Fiona Keating	2018-06-21
Checked by <i>(as required)</i>			
Issued to	Jack Durnford		2018-06-20

Project Number and Name <i>e.g. VanDocs container # and name</i>	13-1400-30/0000127 ENG - TDE - Alexander-Powell - 2017		
Design Number <i>e.g. ENGIS #(s), Hansen #, Posse #</i>	2014-87	Other Numbers <i>e.g. DE#, RE#, etc.</i>	

Site Instruction Number <i>(coding is project-specific)</i>	02	Drawing Number <i>(related drawings or specs)</i>	2014-87-E-SP-SI
Date (YYYY-MM-DD)	2018-07-16	Time Issued	10:00am

Instructions:

Install signs on 000 block Alexander as per 2014-87-E-SP-SI (DOC/2018/295104) when executing the relevant Form 1.

These changes address conflicts identified by Traffic Operations on a pre-implementation check of the 000 block of Alexander Street between vegetation and the approved sign plan as issued by Form 1. The revised sign plan is simply an alternate configuration with the same regulatory meaning.

Specifically:

- The planter on the west side of Pole 1/50 has been relocated by Gastown BIA to the east side of the pole to allow the installation of RC 15-2 for (north)eastbound traffic.
- The planter on the west side of Pole 3/50 has been similarly been relocated and the RB 1-2 on Pole 3/50 has been removed (duplicate of RB 1-2 on Pole 6/50)
- The custom bicycle wayfinding sign has been relocated to Pole 3/50 from Pole 2/50 (which has planters on both sides)
- The 3x RB 14L-1 on Poles 6/50, 10/50, and 14/50 have been replaced with 3x RB 21L-1, a smaller sign with the same regulatory meaning which can be installed below the planters
- The custom “back in only” on Pole 22/50 has been relocated to the adjacent new post and sleeve

Please note that these instructions intend for parking regulations (NSAT, custom “back in only”) and “one way except bicycles” to be installed below the level of the planters. In all cases, signs should be installed sensitive to the aesthetic result.

	<i>Name</i>	<i>Signature</i>	<i>Date (YYYY-MM-DD)</i>
Issued by	Brian Gould	Brian Gould	2018-07-16
Instructed by	Fiona Keating	Fiona Keating	2018-07-16
Checked by <i>(as required)</i>			
Issued to			

APPROVED FOR CONSTRUCTION

NOTES:

- FOR ALL CONSTRUCTION SPECIFICATIONS REFER TO THE STREETS RESTORATION MANUAL (SRM) REVISED AUGUST 2008 UNLESS NOTED.
- CONTACT BC 1 CALL 604-257-1900 TO OBTAIN UTILITY LOCATION INFORMATION 1-2 WEEKS PRIOR TO CONSTRUCTION.
- INSTALL ELECTRICAL CONDUIT AT BACK OF CURB TO ALLOW FOR TREE PLANTING IN BOULEVARD.
- FOR ALL DROP RAMP CONTACT DAN ELFORD AT 604-829-4305 PRIOR TO CONSTRUCTION TO HAVE CREWS GHOST IN CROSSWALK LOCATIONS.
- SCORING PATTERNS FOR DROP RAMP SHALL CONFORM TO CITY STANDARDS MF-137-L-5 OR MF-137-L-3 AND INDICATE DIRECTION OF TRAVEL IN TO CROSSWALK.
- INFILTRATION BULGES SHALL CONFORM TO CITY STANDARDS MF-137-AS-1 AND MF-137-AS-2.
- INSTALL ALL SIGNAGE, PARKING METER AND BUS ID SLEAVES AS PER DRAWING MF-137-AO OF THE SRM.
- FOR REMOVAL OF STREET FURNITURE CONTACT SHANNON BLACKWOOD AT 604-829-2061 2 WEEKS PRIOR TO CONSTRUCTION.
- IF THERE ARE ANY QUESTIONS OR PROPOSED FIELD CHANGES PLEASE CONTACT FIONA KEATING AT 604-326-4814.

CONCRETE NETWORK NUMBERS

ITEM	NETWORK
CURB - HEAVY CURVED	CERD79423
SIDEWALK - BROOM FINISHED	CERD79424
MEDIAN - POUR IN PLACE	CERD79425

ASPHALT NETWORK NUMBERS

ITEM	NETWORK
ASPHALT CURB SLOT	CERD79426

MISCELLANEOUS NETWORK NUMBERS

ITEM	NETWORK
TRAFFIC CONTROL - CONCRETE	CERD79427
SITE SAFETY	CERD79428

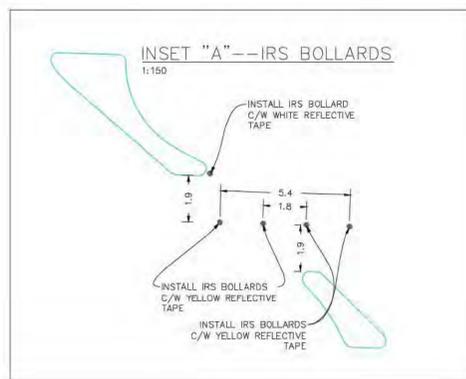
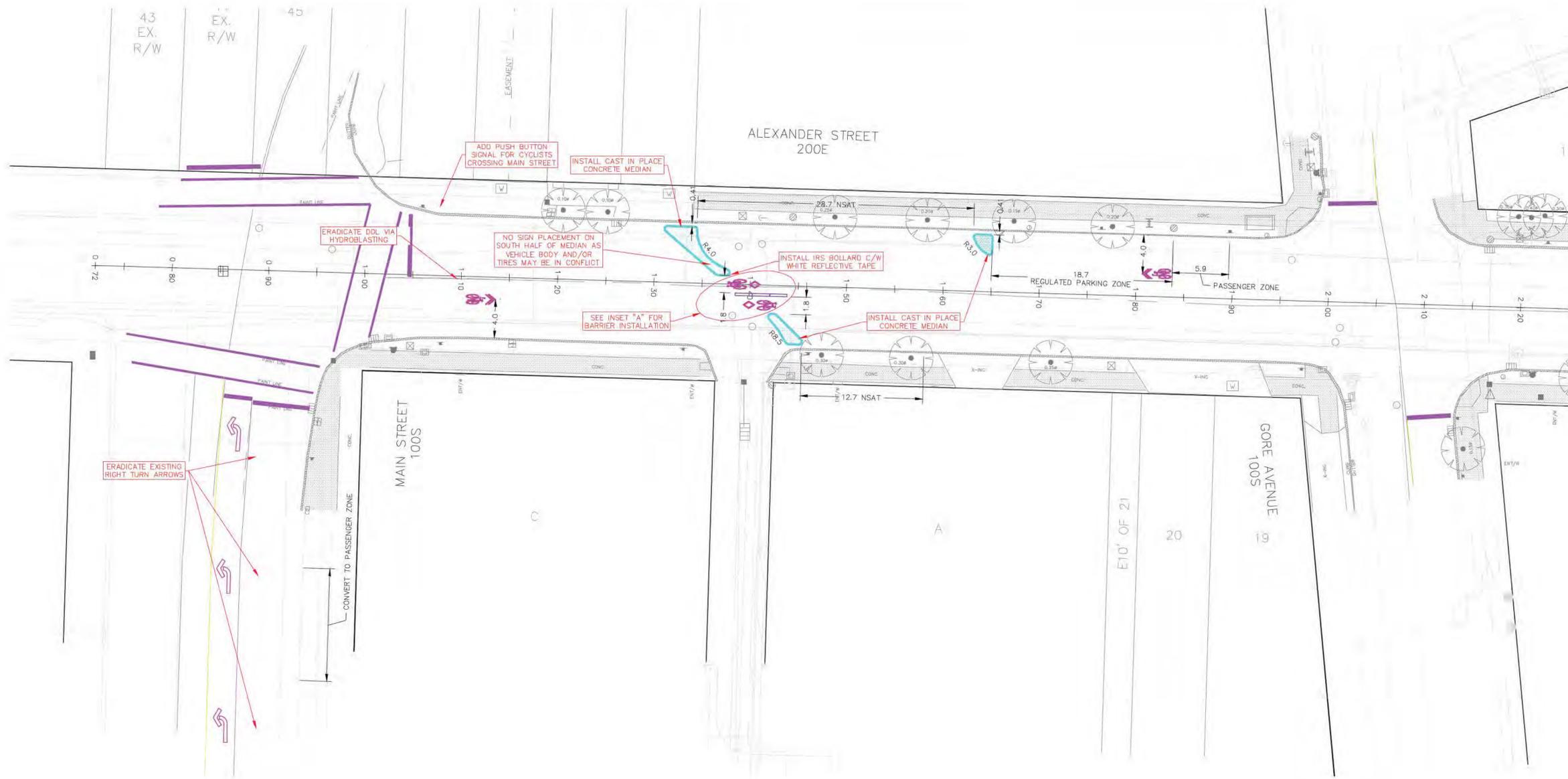
REFERENCE DRAWINGS

TYPE	PLAN NUMBER



ATTENTION

THE CITY OF VANCOUVER ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS OF THE INFORMATION SHOWN. ALL DIMENSIONS SHOWN ON THIS PLAN ARE AS DESIGNED AND NOT AS CONSTRUCTED, AND SHOULD BE FIELD CHECKED BY APPLICANT OR THEIR AGENT. ELEVATIONS & COORDINATES SHOWN ON THIS PLAN ARE IN METRES BASED ON G.V.R.D. NAD83 DATUM (ISSUED MARCH 31, 2005).



LEGEND	
	CURB AND GUTTER
	DESIGN CATCH BASIN
	DESIGN GRADE
	PRE-CAST BARRIER
	RETAINING WALL
	PAVERS DRIVEWAY
	LANDSCAPING
	SIDEWALK BROOM FINISHED
	SIDEWALK EXPOSED AGGREGATE
	CONCRETE ROAD
	CONCRETE CROSSING
	ASPHALT - GRIND & OVERLAY
	ASPHALT BIKE PATH
	TRAFFIC SIGN
	WATER CHAMBER
	FIXED BENCH
	TREE
	EXISTING SIDEWALK TO REMAIN
	LAMP STANDARD
	JUNCTION BOX
	CHAMBER
	MANHOLE
	ANCHOR
	VALVE COVER
	WOODEN POLE
	FIRE HYDRANT
	HYDRO POLE
	CLEANOUT
	EXISTING CATCH BASIN
	BIKE RACK
	CONTROL POINT
	LEAD PLUG
	PARKING METER
	TRAFFIC LIGHT
	BUSH

NO.	DATE	REVISION	BY	CHK	CHECKS

CITY OF VANCOUVER - ENGINEERING SERVICES

DIV./BR. STREETS AND ELECTRICAL DESIGN	SCALE: H: 1:250 V: 1:10
DATE: 2018/04/19	DWG. NO. 143224C
PC: F.K. DESIGN	REFS:
DWG: G.C. CHK:	SHEET 1 OF 1 REVISION: 0

**ALEXANDER STREET
MAIN STREET
TO GORE AVENUE**

APPROVED FOR CONSTRUCTION

NOTES:

- FOR ALL CONSTRUCTION SPECIFICATIONS REFER TO THE STREETS RESTORATION MANUAL (SRM) REVISED AUGUST 2008 UNLESS NOTED.
- CONTACT BC 1 CALL 604-257-1900 TO OBTAIN UTILITY LOCATION INFORMATION 1-2 WEEKS PRIOR TO CONSTRUCTION.
- INSTALL ELECTRICAL CONDUIT AT BACK OF CURB TO ALLOW FOR TREE PLANTING IN BOULEVARD.
- FOR ALL DROP RAMP CONTACT DAN ELFORD AT 604-829-4305 PRIOR TO CONSTRUCTION TO HAVE CREWS GHOST IN CROSSWALK LOCATIONS.
- SCORING PATTERNS FOR DROP RAMP SHALL CONFORM TO CITY STANDARDS MF-137-L-5 OR MF-137-L-3 AND INDICATE DIRECTION OF TRAVEL IN TO CROSSWALK.
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CONCRETE NETWORK NUMBERS

ITEM	NETWORK
CURB - HEAVY CURVED	CERD79423
SIDEWALK - BROOM FINISHED	CERD79424
MEDIAN - POUR IN PLACE	CERD79425

ASPHALT NETWORK NUMBERS

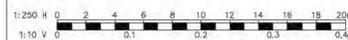
ITEM	NETWORK
ASPHALT CURB SLOT	CERD79426

MISCELLANEOUS NETWORK NUMBERS

ITEM	NETWORK
TRAFFIC CONTROL - CONCRETE	CERD79427
SITE SAFETY	CERD79428

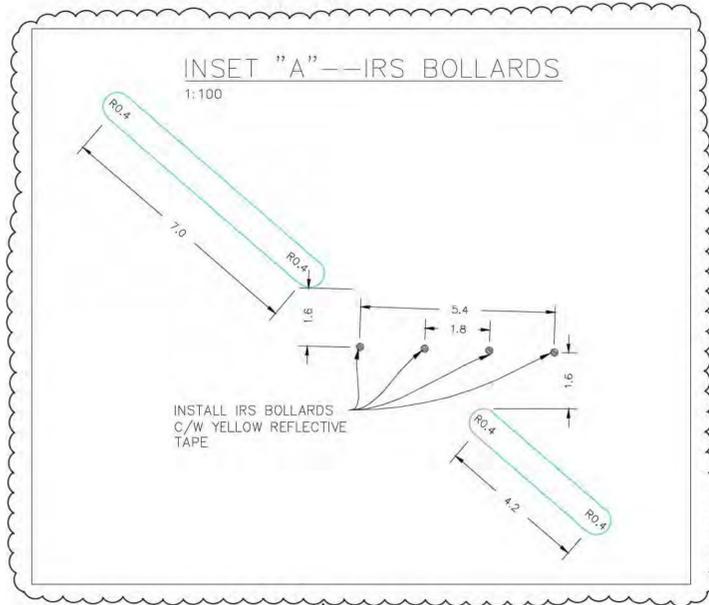
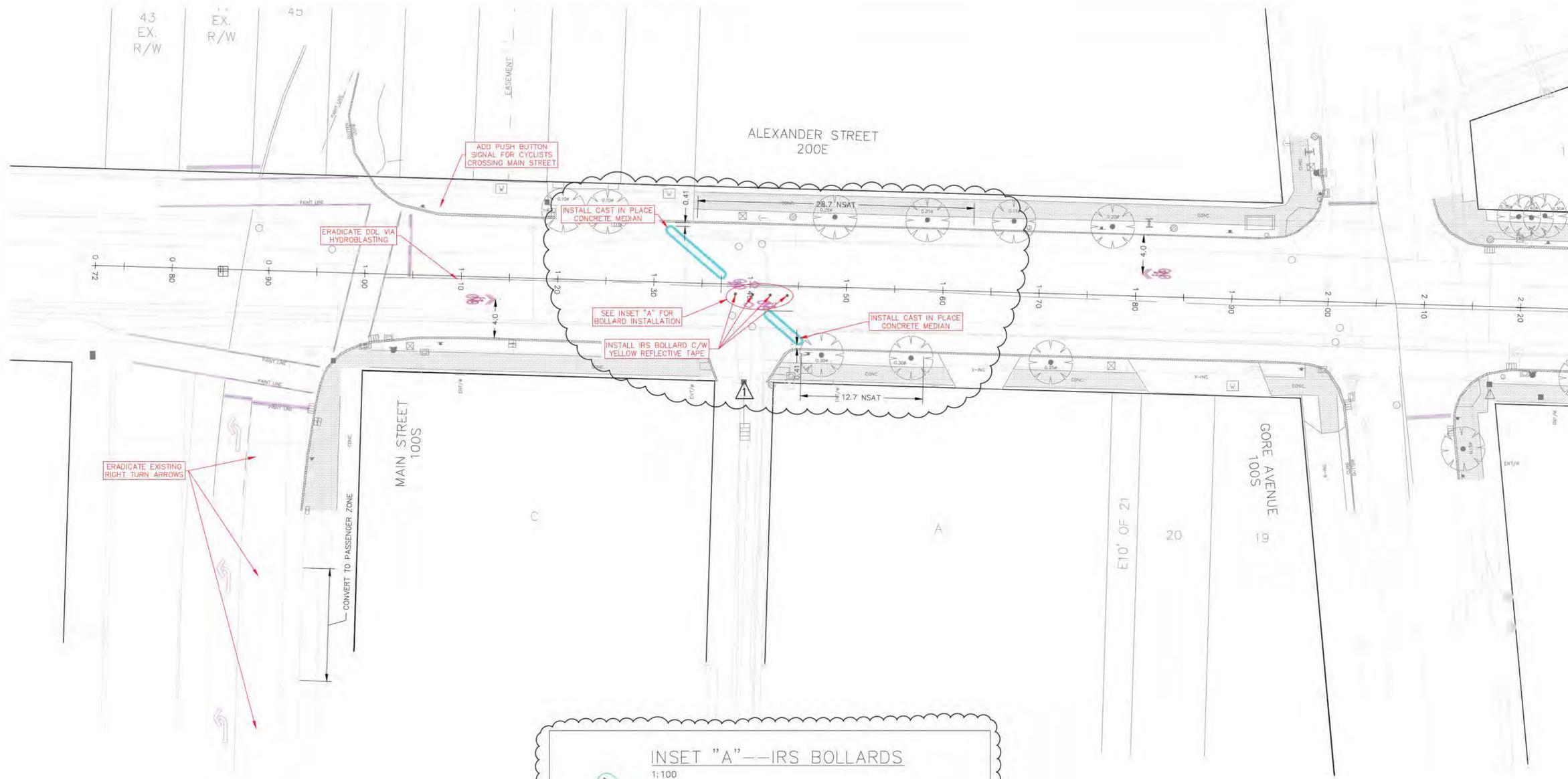
REFERENCE DRAWINGS

TYPE	PLAN NUMBER



ATTENTION

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LEGEND	
	CURB AND GUTTER
	DESIGN CATCH BASIN
	DESIGN GRADE
	PRE-CAST BARRIER
	RETAINING WALL
	PAVERS DRIVEWAY
	LANDSCAPING
	SIDEWALK BROOM FINISHED
	SIDEWALK EXPOSED AGGREGATE
	CONCRETE ROAD
	CONCRETE CROSSING
	ASPHALT - GRIND & OVERLAY
	ASPHALT BIKE PATH
	TRAFFIC SIGN
	LAMP STANDARD
	JUNCTION BOX
	HYDRO POLE
	MANHOLE
	ANCHOR
	EXISTING CATCH BASIN
	VALVE COVER
	WATER CHAMBER
	WOODEN POLE
	FIRE HYDRANT
	CLEANOUT
	EXISTING CATCH BASIN
	BIKE RACK
	FIXED BENCH
	SURVEY POINT
	CONTROL POINT
	LEAD PLUG
	PARKING METER
	TRAFFIC LIGHT
	TREE
	EXISTING SIDEWALK TO REMAIN

NO.	DATE	REVISION	BY	CHK	CHECKS
0	2018/05/17	ISSUED FOR CONSTRUCTION	J.D.H.	F.K.	DESIGNER:
1	2018/06/08	RE-SHAPED CONCRETE MEDIAN ISLANDS NORTH OF LANEWAY & REMOVED CONCRETE MEDIAN ISLAND FOR PARKING BETWEEN MAIN ST & GORE AVE.	J.D.H.	A.W.	DATE: PROJECT COORD:
					DATE: TRANSPORTATION:
					DATE:

CITY OF VANCOUVER - ENGINEERING SERVICES	
DIV./BR. STREETS AND ELECTRICAL DESIGN	SCALE: H: 1:250 V: 1:10
DATE: 2018/04/19	DWG. NO. 143224C
PC: F.K. DESIGN: J.D.H.	REFS:
DWG: G.C. CHK: A.W.	SHEET 1 OF 1 REVISION: 1

RECORD DRAWINGS
(BASED ON IFC REV 1 DRAWINGS DATED JUNE 8, 2018
ISSUED BY ANDY WONG, P.ENG.
DATE AUGUST 6, 2020
ALL FIELD CHANGES, SITE INSTRUCTIONS, AND NCRs ARE NOTED

RECORD DRAWING
SEE NOTE ON SHEET 1

- NOTES:**
- FOR ALL CONSTRUCTION SPECIFICATIONS REFER TO THE STREETS RESTORATION MANUAL (SRM) REVISED AUGUST 2008 UNLESS NOTED.
 - CONTACT BC 1 CALL 604-257-1900 TO OBTAIN UTILITY LOCATION INFORMATION 1-2 WEEKS PRIOR TO CONSTRUCTION.
 - INSTALL ELECTRICAL CONDUIT AT BACK OF CURB TO ALLOW FOR TREE PLANTING IN BOULEVARD.
 - FOR ALL DROP RAMP CONTACT DAN ELFORD AT 604-829-4305 PRIOR TO CONSTRUCTION TO HAVE CREWS GHOST IN CROSSWALK LOCATIONS.
 - SCORING PATTERNS FOR DROP RAMP SHALL CONFORM TO CITY STANDARDS MF-137-L-5 OR MF-137-L-3 AND INDICATE DIRECTION OF TRAVEL IN TO CROSSWALK.
 - INFILTRATION BULGES SHALL CONFORM TO CITY STANDARDS MF-137-AS-1 AND MF-137-AS-2.
 - INSTALL ALL SIGNAGE, PARKING METER AND BUS ID SLEAVES AS PER DRAWING MF 137-AO OF THE SRM.
 - FOR REMOVAL OF STREET FURNITURE CONTACT SHANNON BLACKWOOD AT 604-829-2061 2 WEEKS PRIOR TO CONSTRUCTION.
 - IF THERE ARE ANY QUESTIONS OR PROPOSED FIELD CHANGES PLEASE CONTACT FIONA KEATING AT 604-326-4814.

CONCRETE NETWORK NUMBERS

ITEM	NETWORK
CURB - HEAVY CURVED	CERD79423
SIDEWALK - BROOM FINISHED	CERD79424
MEDIAN - POUR IN PLACE	CERD79425

ASPHALT NETWORK NUMBERS

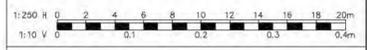
ITEM	NETWORK
ASPHALT CURB SLOT	CERD79426

MISCELLANEOUS NETWORK NUMBERS

ITEM	NETWORK
TRAFFIC CONTROL - CONCRETE	CERD79427
SITE SAFETY	CERD79428

REFERENCE DRAWINGS

TYPE	PLAN NUMBER

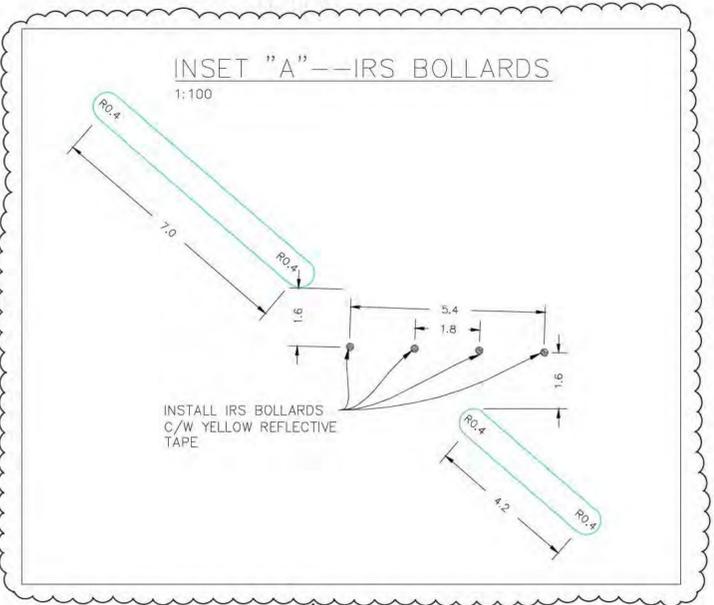
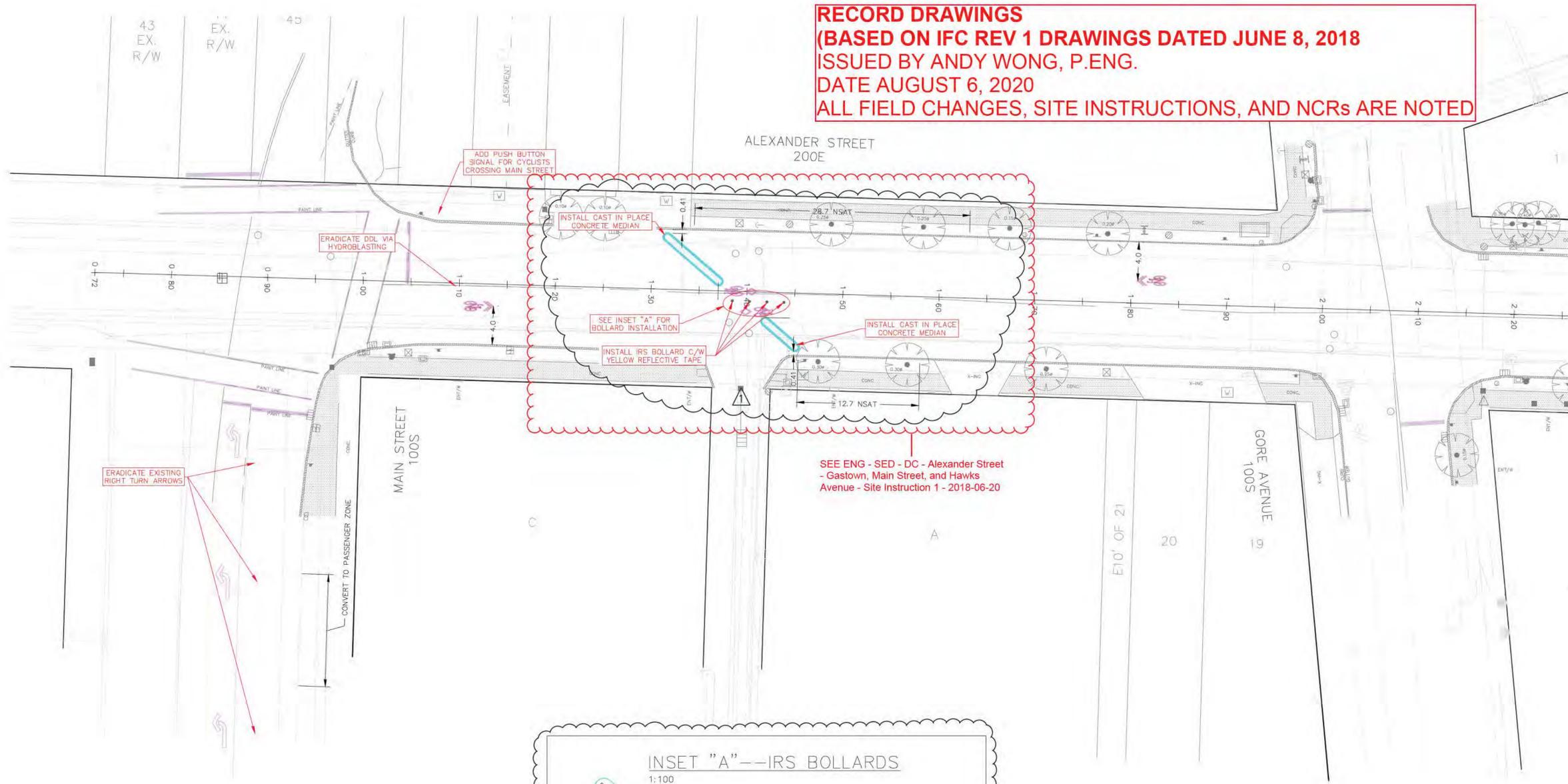


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LEGEND

	LANDSCAPING		WATER CHAMBER		TREE
	SIDEWALK BROOM FINISHED		WOODEN POLE		EXISTING SIDEWALK TO REMAIN
	SIDEWALK EXPOSED AGGREGATE		FIRE HYDRANT		
	CONCRETE ROAD		CLEANOUT		
	CONCRETE CROSSING		EXISTING CATCH BASIN		
	ASPHALT - GRIND & OVERLAY		BIKE RACK		
	ASPHALT BIKE PATH				

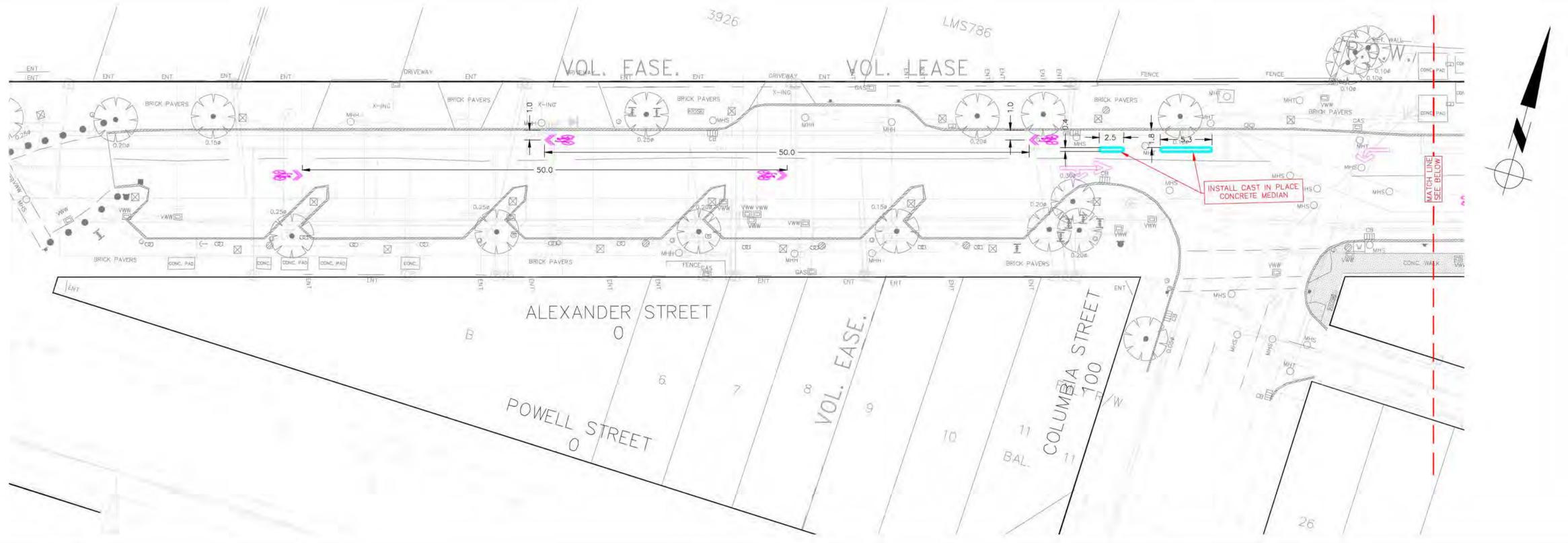
NO.	DATE	REVISION	BY	CHK	CHECKS
0	2018/05/17	ISSUED FOR CONSTRUCTION	J.D.H.	F.K.	DESIGNER:
1	2018/06/08	RE-SHAPED CONCRETE MEDIAN ISLANDS NORTH OF LANEWAY & REMOVED CONCRETE MEDIAN ISLAND FOR PARKING BETWEEN MAIN ST & GORE AVE.	J.D.H.	A.W.	DATE: PROJECT COORD:
					DATE: TRANSPORTATION:
					DATE:

CITY OF VANCOUVER - ENGINEERING SERVICES

DIV./BR. STREETS AND ELECTRICAL DESIGN	SCALE: H: 1:250 V: 1:10
DATE: 2018/04/19	DWG. NO. 143224C
PC: F.K. DESIGN: J.D.H.	REFS:
DWG: G.C. CHK: A.W.	SHEET 1 OF 1 REVISION: 1

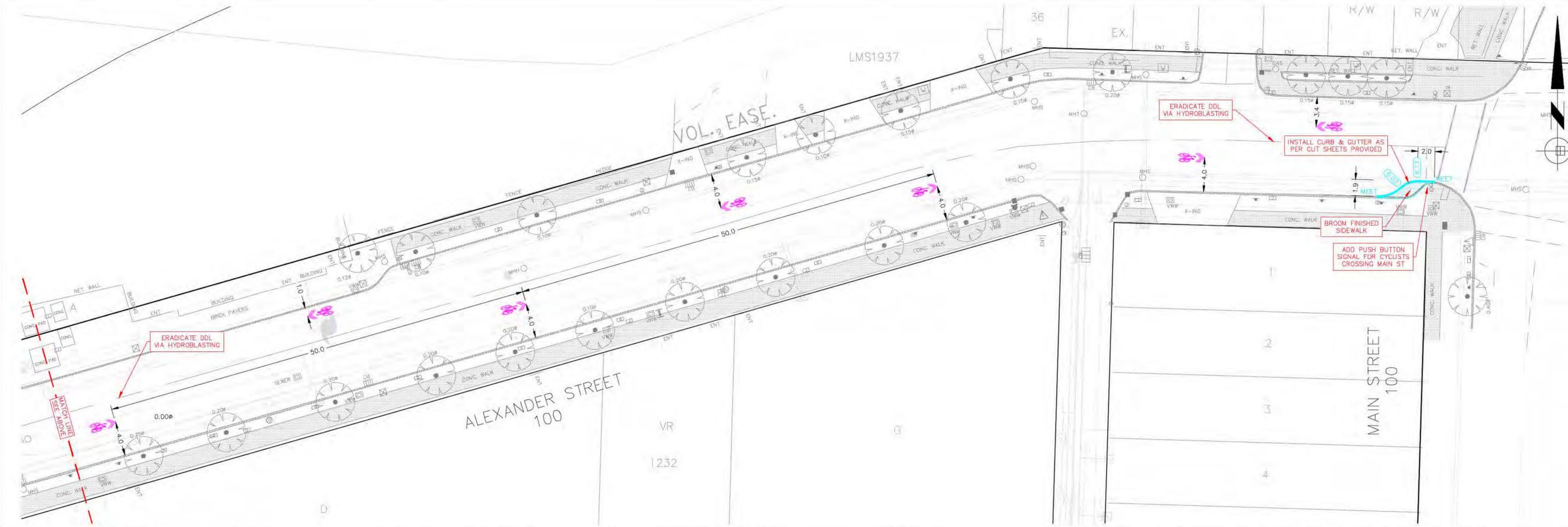
APPROVED FOR CONSTRUCTION

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CONCRETE NETWORK NUMBERS

ITEM	NETWORK
CURB - HEAVY CURVED	CERD79423
SIDEWALK - BROOM FINISHED	CERD79424
MEDIAN - POUR IN PLACE	CERD79425



ASPHALT NETWORK NUMBERS

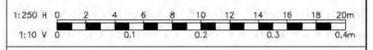
ITEM	NETWORK
ASPHALT CURB SLOT	CERD79426

MISCELLANEOUS NETWORK NUMBERS

ITEM	NETWORK
TRAFFIC CONTROL - CONCRETE	CERD79427
SITE SAFETY	CERD79428

REFERENCE DRAWINGS

TYPE	PLAN NUMBER



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LEGEND		LANDSCAPING		TRAFFIC SIGN		WATER CHAMBER		FIXED BENCH		TREE	
	CURB AND GUTTER		SIDEWALK BROOM FINISHED		TRAFFIC SIGN		WATER CHAMBER		FIXED BENCH		TREE
	DESIGN CATCH BASIN		SIDEWALK EXPOSED AGGREGATE		LAMP STANDARD		WOODEN POLE		SURVEY POINT		EXISTING SIDEWALK TO REMAIN
	DESIGN GRADE		CONCRETE ROAD		JUNCTION BOX		FIRE HYDRANT		CONTROL POINT		LEAD PLUG
	PRE-CAST BARRIER		CONCRETE CROSSING		CHAMBER		MANHOLE		CLEANOUT		PARKING METER
	RETAINING WALL		ASPHALT - GRIND & OVERLAY		ANCHOR		EXISTING CATCH BASIN		TRAFFIC LIGHT		VALVE COVER
	PAVERS DRIVEWAY		ASPHALT BIKE PATH		VALVE COVER		BIKE RACK		BUSH		

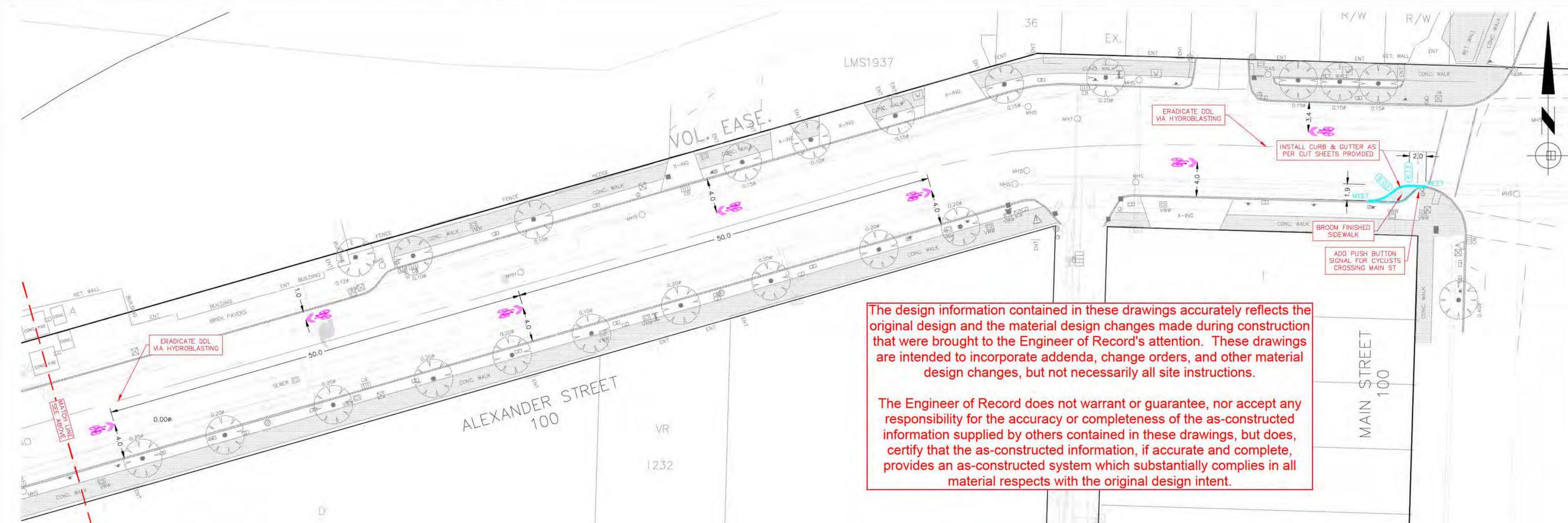
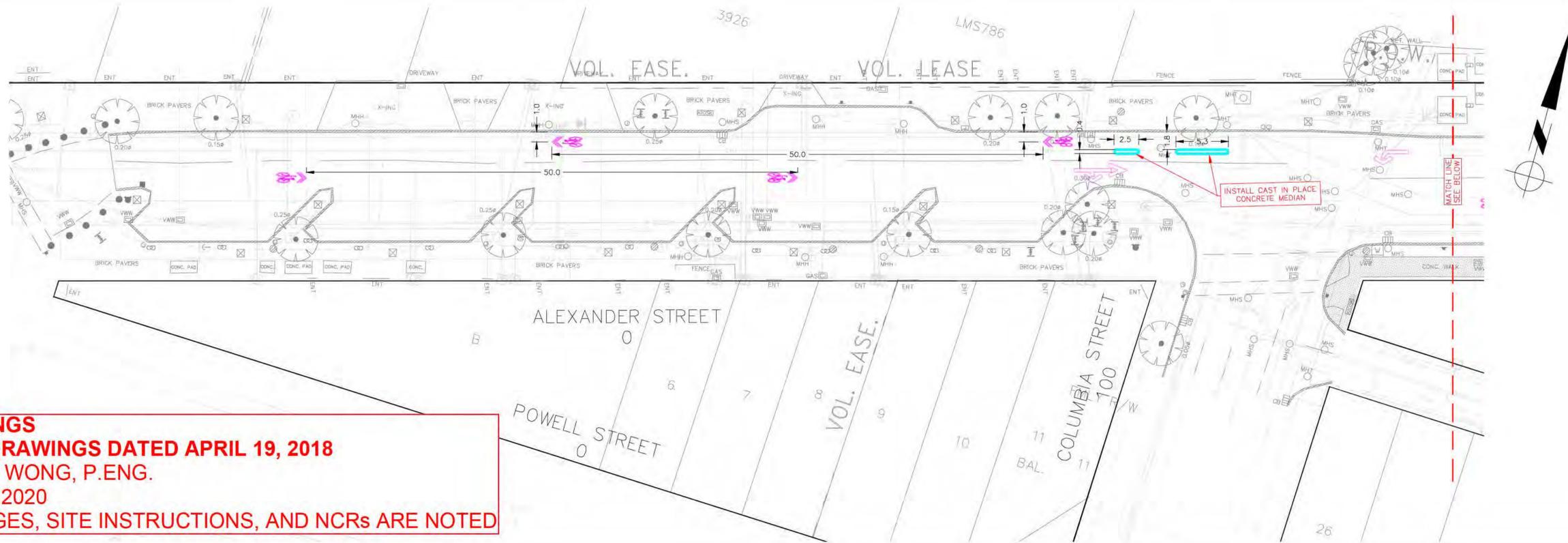
CITY OF VANCOUVER - ENGINEERING SERVICES	
DIV./BR. STREETS AND ELECTRICAL DESIGN	SCALE: H: 1:250 V: 1:10
DATE: 2018/04/19	DWG. NO. 143225C
PC: F.K. DESIGN	REFS:
DWG: G.C. CHK:	SHEET 1 OF 1 REVISION: 0

**RECORD DRAWING
SEE NOTE ON SHEET 1**

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**RECORD DRAWINGS
(BASED ON IFC DRAWINGS DATED APRIL 19, 2018
ISSUED BY ANDY WONG, P.ENG.
DATE AUGUST 6, 2020
ALL FIELD CHANGES, SITE INSTRUCTIONS, AND NCRs ARE NOTED)**



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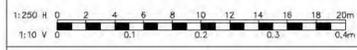
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CONCRETE NETWORK NUMBERS	
ITEM	NETWORK
CURB - HEAVY CURVED	CERD79423
SIDEWALK - BROOM FINISHED	CERD79424
MEDIAN - POUR IN PLACE	CERD79425

ASPHALT NETWORK NUMBERS	
ITEM	NETWORK
ASPHALT CURB SLOT	CERD79426

MISCELLANEOUS NETWORK NUMBERS	
ITEM	NETWORK
TRAFFIC CONTROL - CONCRETE	CERD79427
SITE SAFETY	CERD79428

REFERENCE DRAWINGS	
TYPE	PLAN NUMBER



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LEGEND	
	CURB AND GUTTER
	DESIGN CATCH BASIN
	DESIGN GRADE
	PRE-CAST BARRIER
	RETAINING WALL
	PAVERS DRIVEWAY
	LANDSCAPING
	SIDEWALK BROOM FINISHED
	SIDEWALK EXPOSED AGGREGATE
	CONCRETE ROAD
	CONCRETE CROSSING
	ASPHALT - GRIND & OVERLAY
	ASPHALT BIKE PATH
	TRAFFIC SIGN
	LAMP STANDARD
	JUNCTION BOX
	CHAMBER
	MANHOLE
	ANCHOR
	VALVE COVER
	WATER CHAMBER
	WOODEN POLE
	FIRE HYDRANT
	HYDRO POLE
	CLEANOUT
	EXISTING CATCH BASIN
	TRAFFIC LIGHT
	BIKE RACK
	TREE
	EXISTING SIDEWALK TO REMAIN
	FIXED BENCH
	SURVEY POINT
	CONTROL POINT
	LEAD PLUG
	PARKING METER
	TRAFFIC LIGHT
	BUSH

NO.	DATE	REVISION	BY	CHK	CHECKS

CITY OF VANCOUVER - ENGINEERING SERVICES

DIV./BR. STREETS AND ELECTRICAL DESIGN

DATE: 2018/04/19

PC: F.K. DESIGN

DWG: G.C. CHK:

**ALEXANDER STREET
CARRALL STREET
TO MAIN STREET**

SCALE: H: 1:250 V: 1:10

DWG. NO. 143225C

REFS:

SHEET 1 OF 1 REVISION: 0

From: "O'Donnell, Ryan" <Ryan.O'Donnell@vancouver.ca>
To: "Wong, Andy" <Andy.Wong@vancouver.ca>
CC: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Mate, Tibor" <tibor.mate@vancouver.ca>
Date: 2/2/2018 9:59:29 AM
Subject: 2014-87 Cast in Place Concrete Median Offsets from Existing Gutterline
Attachments: 2014-87 200 Alexander St_Concrete Median Offsets.JPG

Hi Andy,

As discussed, we are proposing cast in place concrete median islands on Alexander St btw Gore & Main St (see attached). Currently, we are proposing them to be offset 410mm (width of gutter pan) for existing gutter line. Would these be constructable up against the gutter pan lip? Or would crews require additional offset for their concrete forms? I'm suspecting the latter and typically we would provide a minimum of 350mm for form work, which would indicate that at minimum 760mm off existing gutterline. Please advise as to what would be an agreeable offset to construct these medians. Much appreciated.

Regards,

Ryan O'Donnell
Geometric Designer



From: "Wong, Andy" <andy.wong@vancouver.ca>
To: "Diaz Haro, Jesus" <Jesus.DiazHaro@vancouver.ca>
Date: 3/12/2018 5:48:30 PM
Subject: Alexander Street Design (173072, 143224, 143225)

Hi Jesus,

The Alexander Street project is separated into two distinct sections:

1. Gore Street to Carrall Street (143224 and 143225). I saved the approved and final geometric in the two file folders:

s.15(1)(l)

2. Hawks Ave and Powell Street (173072). The survey is actually incomplete. I've asked Marius to add survey data from 133044 into 173072. The geometric is also undergoing a few changes and is not final. Therefore, I've saved a copy of the preliminary geometric in the working folder below (for your information only):

s.15(1)(l)

Please review and let me know if you have any questions, comments or concerns.

Thanks,
Andy

From: "O'Donnell, Ryan" <Ryan.O'Donnell@vancouver.ca>
To: "Traffic Operations" <traffic.operations@vancouver.ca>
"Parking Operations - Maintenance" s.15(1)(l)
"Streets Design" <Streets.Design@vancouver.ca>
CC: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Liaw, Alex" <Alex.Liaw@vancouver.ca>
"Larijani, Alipasha" <Alipasha.Larijani@vancouver.ca>
"Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Brown, Patrick" <patrick.brown@vancouver.ca>
"Wong, Andy" <Andy.Wong@vancouver.ca>
"Lee, Joyce \ (ENG\)" <joyce.w.lee@vancouver.ca>
"Mate, Tibor" <tibor.mate@vancouver.ca>
"Darwent, Christopher" <Christopher.Darwent@vancouver.ca>
"Epa, Duminda" <Duminda.Epa@vancouver.ca>
Date: 5/15/2018 11:49:40 AM
Subject: Approved: Form 1 100-700 Blk Alexander St Bikeway DOC/2018 /206472
Attachments: Alexander_Form_1.tr5

Hello All,

Please accept this e-mail as notification of approval for Transportation project 2014-87 (Alexander St Corridor). The form 1 has been approved by Transportation.

Regards,

Ryan O Donnell

Geometric Designer

Transportation Design

City of Vancouver | Engineering Services

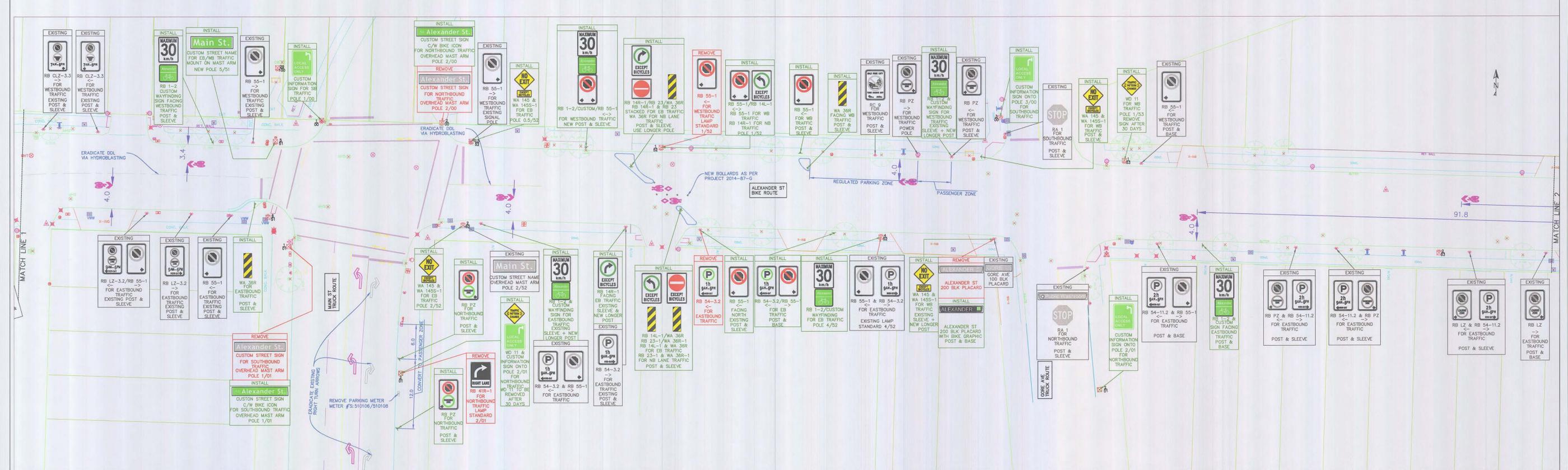
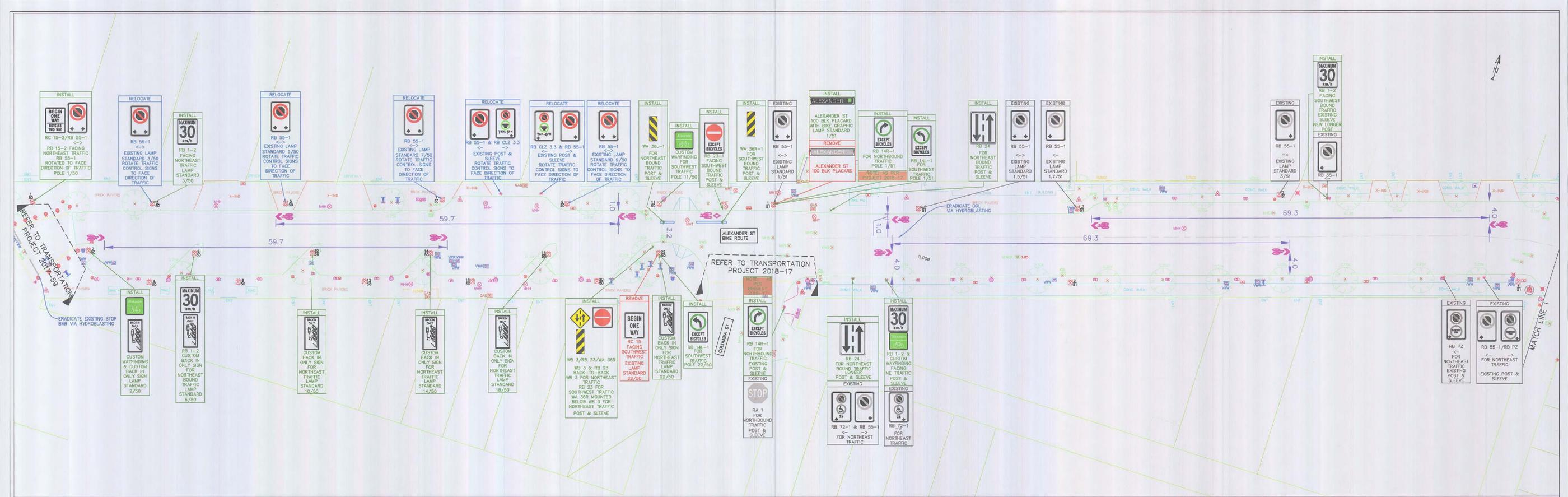
507 West Broadway

Vancouver, B.C. V5Z 0B4

t: 604.326.4828

f: 604.871 6192

e: Ryan.O'Donnell@vancouver.ca



SIGN INVENTORY

RB CLZ-3.2 X 1	RB CLZ-3.2 X 1	RB 11-1 X 3	RB 54-11.2 X 1	RB PZ X 1	RB PZ X 1	RB 55-1 X 4	RB 55-1 X 2	RB 55-1 X 2	RB 14-1 X 5	RB 14-1 X 3	RB 24 X 2	RB 1-2 X 20	RC 15-2 X 1	WA 36L-1 X 1	WA 36R X 8	WA 36R-1 X 2	WD 11 X 9	WB 1 X 2	WG 7 X 1	WA 145 X 4	CUSTOM ALEXANDER ON ROADWAY X 1	RB 39 X 1	RB 54-3.2 X 1
WA 145S-1 X 4	WB 3 X 1	RB 23 X 2	RB 23-1 X 2	RA 1 X 2	CUSTOM "BACK IN ONLY" X 8	CUSTOM "ALEXANDER WAYFINDING" X 18	CUSTOM "LOCAL ACCESS ONLY-RT TURN" X 2	CUSTOM "LOCAL ACCESS ONLY-LT TURN" X 2	CUSTOM "ALEXANDER ENDS /POWELL OVERPASS" X 1	OVERHEAD STREET NAME "HAWKS AVE" WITH BIKE ICON X 1	OVERHEAD STREET NAME "ALEXANDER ST" WITH BIKE ICON X 2	OVERHEAD STREET NAME "MAIN ST" X 1	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 100 BLK" X 1	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 200 BLK" X 1	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 300 BLK" X 1	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 400 BLK" X 1	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 500 BLK" X 2	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 600 BLK" X 1	STREET NAME BLADE WITH BIKE ICON "ALEXANDER ST 700 BLK" X 2	POST & BASE OR SLEEVE X 35	RA2-10.3R X 1	RB 21R X 1	

SEAL	DIRECTOR OF TRANSPORTATION	DATE	2018-05-04	PROJECT NUMBER	133044
	TRANSPORTATION DESIGN	DATE	2018-05-04	ENGINEER OF RECORD	BG
	TRANSPORTATION PLANNING	DATE		DESIGNER	RD
	TRAFFIC AND DATA MANAGEMENT	DATE		DRAWER	RD
	PARKING MANAGEMENT	DATE		CHECKER	AL

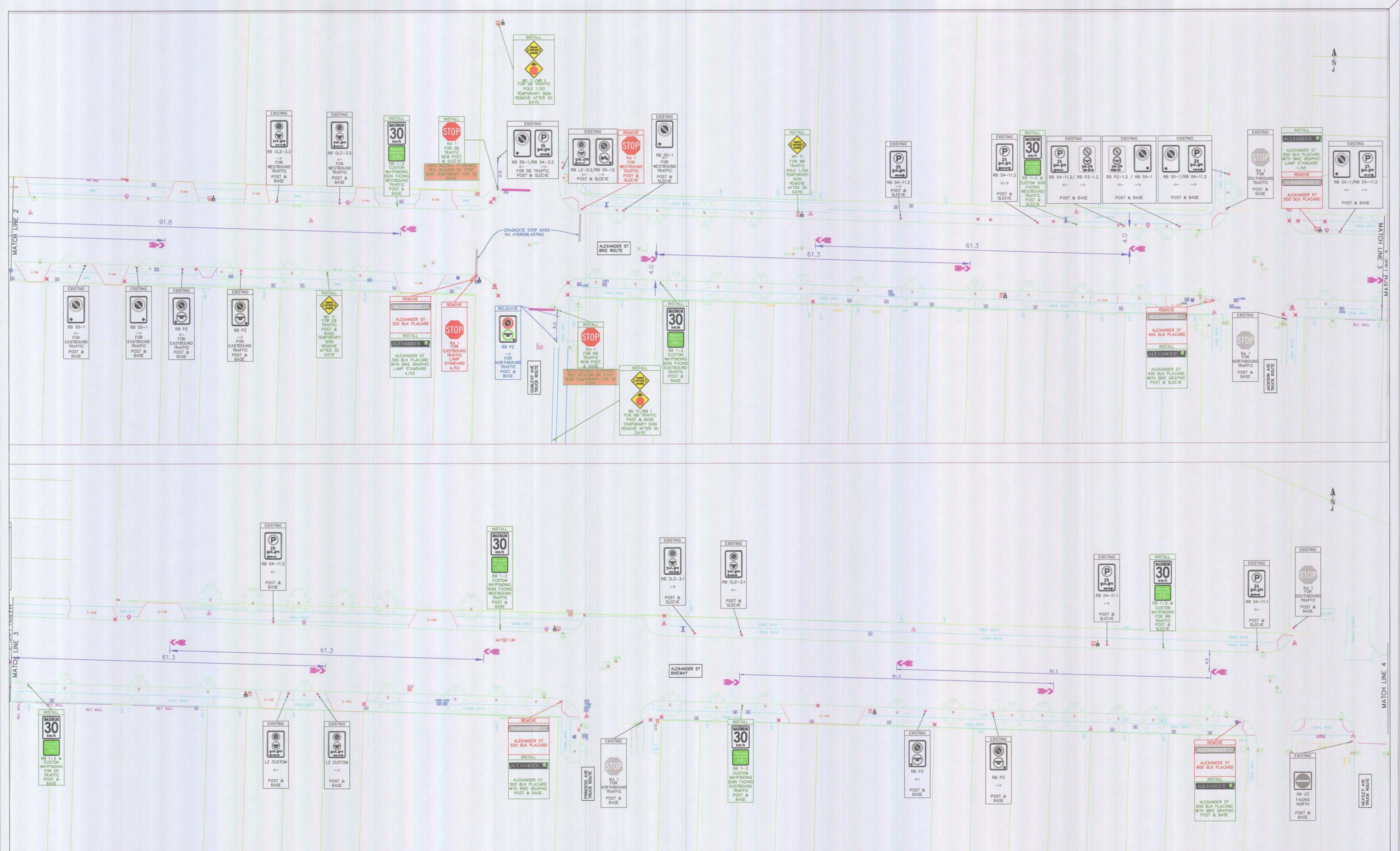
ALEXANDER BIKEWAY SIGN & PAINT PLAN

STREETS PROJECT NUMBER: 143222/143223, 143224/143225, 173072

REVISIONS: 2014-07-02/17-160-GPT-1045

DATE: 2018-05-04

1 OF 3



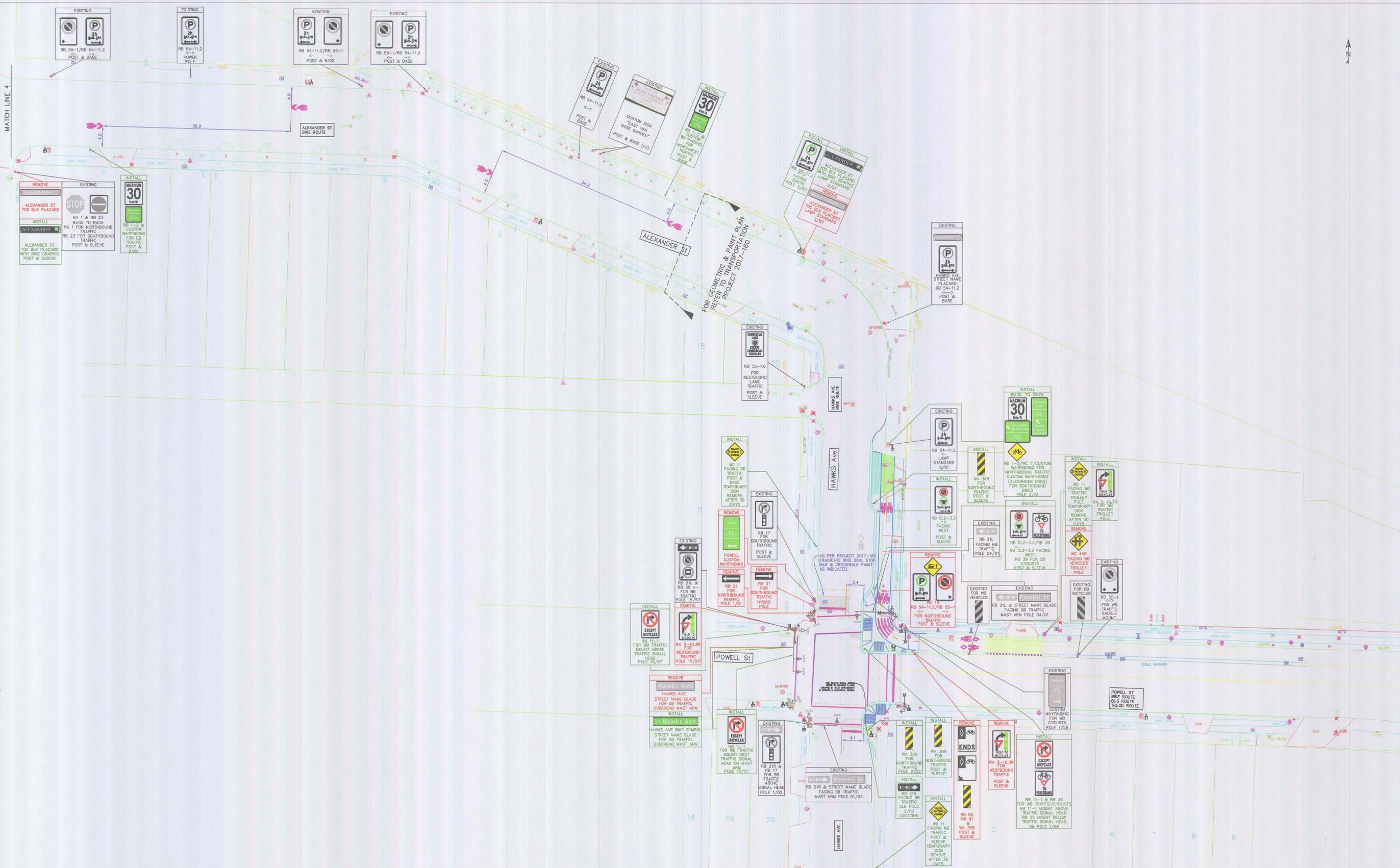
SIGN INVENTORY

RB CLZ-3.2 X 1	RB CLZ-3.2 X 1	RB 11-1 X 3	RB 54-11.2 X 1	RB PZ X 1	RB PZ X 1	RB 55-1 X 4	RB 55-1 X 2	RB 55-1 X 2	RB 14L-1 X 5	RB 14R-1 X 3	RB 24 X 2	RB 1-2 X 20	RC 15-2 X 1	WA 36L-1 X 1	WA 36R X 8	WA 36R-1 X 2	WD 11 X 9	WB 1 X 2	WC 7 X 1	WA 145 X 4	CUSTOM ALEXANDER ON ROADWAY X 1	RB 39 X 1	RB 54-3.2 X 1	
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SEAL	DIRECTOR OF TRANSPORTATION DESIGN	DATE	2018-05-04	ENGINEER OF RECORD	BG
	TRANSPORTATION DESIGN	DATE		DESIGNER	RO
	TRANSPORTATION PLANNING	DATE		DRAWER	RO
	TRAFFIC AND DATA MANAGEMENT	DATE		CHECKER	AL
	PARKING MANAGEMENT	DATE			

DESIGN NUMBER	2014-87-E-59
PROJECT NUMBER	2014-87-E-59
STREET'S PROJECT NUMBER	13304 14322/143223 14324/143225 173072
SCALES	1:100 1:200 1:500 1:1000
DATE	2018-05-04
SHEET	461
TOTAL SHEETS	2

**ALEXANDER BIKEWAY
SIGN & PAINT PLAN**



SIGN INVENTORY

SEAL	DIRECTOR OF TRANSPORTATION	DATE	2018-05-04		ENGINEERING SERVICES TRANSPORTATION DIVISION	PROJECT NUMBER	2014-47-E-SP
	TRANSPORTATION DESIGN	DATE			ENGINEER OF RECORD	BO	STREETS PROJECT NUMBER
	TRANSPORTATION PLANNING	DATE		DESIGNER	RO	143222/143223	
	TRAFFIC AND DATA MANAGEMENT	DATE		DRAWER	RO	143224/143225	
	PARKING MANAGEMENT	DATE		CHECKER	AL	173072	
						REFERENCE	2014-67-02017-160-GPIT-1045
						DESIGN VEHICLE	2014-022-12506 Page 11 of 48 1 OF 3

From: [O'Donnell, Ryan](#)
To: [Keating, Fiona](#)
Cc: [Gould, Brian](#); [Kenny, Ross](#)
Subject: 2014-87 Sleeve Location Revision 1
Date: Wednesday, June 06, 2018 3:08:02 PM
Attachments: [2014-87-C-S Sleeves R1.pdf](#)

Hey Fiona,

As discussed, attached is a revised sleeve location plan that now corresponds with the latest geometric revision. Please contact me should you have any questions.

Sign plan revision is in the works now.

Regards,

Ryan O'Donnell
Geometric Designer

From: [Liaw, Alex](#)
To: [Durnford, Jack](#)
Cc: [Borger, Ron](#); [Kenny, Ross](#); [Gould, Brian](#); [Keating, Fiona](#); [Mate, Tibor](#); [O'Donnell, Ryan](#)
Subject: Alexander & Main - Site Instruction 001 - Install Gravity Barriers Instead of Cast-in-Place
Date: Friday, June 22, 2018 8:53:26 AM
Attachments: [ENG - TDE - 143224 - Alexander St & Main St - Site Instruction Form 001 - 2018-06-20.tr5](#)

Hi Jack,

Please find attached site instruction 01 for the installation of gravity barriers instead of cast-in-place medians for the closure on Alexander between Main and Gore.

Regards,
Alex

From: [Keating, Fiona](#)
To: [Borger, Ron](#)
Cc: [Durnford, Jack](#); [Elford, Dan](#)
Subject: Alexander - Cut Sheets for Hawks and Main
Date: Wednesday, May 30, 2018 8:44:00 AM
Attachments: [ENG - SED - DC - Alexander Street - Gastown, Main Street, and Hawks Avenue - Main Street - Cut Sheet - Curb Return - South West Corner - 2018-05-16.tr5](#)
[ENG - SED - DC - Alexander Street - Gastown, Main Street, and Hawks Avenue - Hawks - Cut Sheet - Curb Return - North East Corner - 2018-05-16.tr5](#)
[ENG - SED - DC - Alexander Street - Gastown, Main Street, and Hawks Avenue - Hawks - Cut Sheet - Curb Return - South East Corner - 2018-04-25.tr5](#)

Hi Ron,

As discussed - please find attached links to the cut sheets.
Please keep me informed about schedule as much as possible - the closure at Main/Gore requires signage to be installed ahead of time.

Thank you,
Fiona