


# HALIFAX

P.O. Box 1749  
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**Item No. 4**  
**Halifax Regional Council**  
**June 16, 2015**

**TO:** Mayor Savage and Members of Halifax Regional Council

**SUBMITTED BY:** Original signed by   
\_\_\_\_\_  
Richard Butts – Chief Administrative Officer

**DATE:** May 22, 2015

**SUBJECT:** Cessation of Train Whistle – King Street Railway Crossing, Dartmouth

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## **INFORMATION REPORT**

### **ORIGIN**

This report originates with a request from the developer at Kings Wharf relative to the Standard Construction Crossing Agreement between HRM, the Canadian National Railway Company and The Anchorage at Dartmouth Cove Property Development Limited (Kings Wharf).

### **LEGISLATIVE AUTHORITY**

Under Halifax Regional Municipality Charter ss.318(2) and 322, the Municipality is a road authority for purposes of the Railway Safety Act R.S.C., 1985, c.32 (4th Supp.) s. 23.1, which permits the prohibition of using a train whistle on any railway equipment in an area within a municipality, with certain exceptions, on the decision of the Minister of Transport.

### **BACKGROUND**

A new at-grade railway crossing was established on King Street in Dartmouth to provide vehicle and pedestrian access to the Kings Wharf development. A warning whistle is sounded in close proximity to residential uses each time a train uses the crossing. Train activity at this crossing is approximately 28 movements per week (roughly four per day). Use of the whistle has been found to be disturbing by some residents within the immediate area and the level of disturbance is particularly evident during regularly occurring evening and overnight rail operations.

As part of the crossing approval process, HRM entered into a three-party Standard Crossing Construction Agreement which sets out conditions for the installation and maintenance of crossing infrastructure. HRM, CN Rail and King's Wharf were all party to that agreement and it contains a clause authorizing the municipality and CN Rail to pursue the elimination of the use of the train whistle. The developer at Kings Wharf has requested that HRM and CN explore all options to have the use of the train whistle ceased at this location.

## **DISCUSSION**

Standard procedure to facilitate the elimination of a train whistle consists of four basic steps:

1. conduct a professional engineer's safety study of the crossing and determine what changes to the crossing infrastructure are required to ensure safety without the use of the whistle;
2. install the infrastructure alterations required to ensure safety without the use of whistle;
3. notify the public and any "relevant associations or organizations" that cessation of the whistle is being considered; and
4. adopt a local government resolution expressing the intent to eliminate the use of the whistle.

### **1. Safety Study / Required Infrastructure Alterations**

A professional engineer with expertise in railway operations was contracted by Kings Wharf to produce an assessment of this crossing based on relevant regulations and railway industry best practices (see appendix A). That assessment included an initial list of infrastructure alterations that would allow safe operation of the crossing without the use of the whistle.

These alterations were reviewed by municipal staff, King's Wharf and CN Rail. Appendix B lists the relevant items, notes the current status and identifies the party responsible for their installation. One item relating to traffic control on Alderney Drive remains unresolved at this time and HRM and CN have sought clarification from Transport Canada on that issue (see item 4 on Appendix B). That clarification process is ongoing as of the time of the preparation of this information report.

### **2. Installation**

Some of these alterations are within the authority of CN, some are the responsibility of King's Wharf and some are on public roads under the jurisdiction of the municipality. Appendix B notes the relevant authority for the installation of these alterations. Both CN and the developer have agreed to deliver the alterations within their authority at their cost and the remaining minor alterations will be provided by the Municipality.

In most circumstances, costs for these types of alterations would be absorbed by the developer who would be the primary beneficiary of the elimination of the whistle. However, in this case, staff believes the use of the train whistle impacts the community beyond Kings Wharf to an extent not wholly anticipated at the time of the original development approval. Staff intends to proceed with the minor alterations within the road system for the following reasons:

- The elimination of the whistle reduces the noise impacts on existing and future residents and commercial tenants at Kings Wharf;
- The elimination of the whistle would reduce the noise nuisance for residents in the general area beyond Kings Wharf; and
- With the exception of the one outstanding item noted above, the improvements within Halifax's authority that have been approved by CN are one-time minor roadway alterations that represent non-material cost and effort. These can be delivered under the existing road maintenance program and budget. Staff estimates the incremental cost of the alterations approved to date would be under \$500. The cost for the outstanding traffic signalization item cannot be determined until the full scope of the alteration is confirmed through consultation with Transport Canada.

### **3. Statutory Notifications**

Once the aforementioned safety related infrastructure alterations are completed, Federal regulations require the municipality to conduct public and industry notification before the whistle can be discontinued:

- a) The municipality must notify each "relevant association or organization" of Council's intent to adopt a motion to discontinue the use of the whistle. These organizations are formally identified

by the Federal Minister of Transportation and are listed in Appendix C to this report. Staff will notify those organizations electronically and by mail once the related infrastructure alterations are complete. That notification will include:

- i. notice of the Municipality's intent to cease the use of the whistle
  - ii. the date that Council will consider a formal motion to cease the use of the whistle
  - iii. methods for the organization to provide comment and access additional information prior to Council's consideration of any motion.
- b) The municipality must issue a public notice of its intent to adopt a motion to discontinue the use of the whistle. Federal Regulations do not stipulate a specific procedure for this notice. Staff will use a notification process similar to what would be used for a municipal bylaw amendment. This will provide for notification in a location, manner and timeline familiar to the local community. It will include notice on HRM's website and the placement of two separate newspaper advertisements no less than 2 weeks prior to the consideration of any motion. Those notices will include the same information outlined in item 1 above.

#### **4. Council Motion**

Once the safety related alterations are installed and the required notifications are completed, Council may declare by resolution that whistles should not be used in this area. Staff will bring forward a report providing Council with confirmation of the completion of the required alterations along with the appropriate motion for consideration.

#### **FINANCIAL IMPLICATIONS**

Municipal contributions are to be delivered within the existing 2015/16 work plan and budget.

#### **COMMUNITY ENGAGEMENT**

While there is an element of public notification associated with this report, there is no formal community engagement program.

#### **ENVIRONMENTAL IMPLICATIONS**

None

#### **ATTACHMENTS**

Appendix A - Safety Study  
Appendix B - Final Infrastructure alteration list  
Appendix C - "Relevant association or organization"

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Steven Higgins – Executive Assistant to the Chief Administrative Officer, 902.490.2292

## APPENDIX A

Feb 27, 2015

Fares & Co Development Inc.  
50 Kings Wharf Place  
Dartmouth, NS  
B2Y 0B4

Dear Mr. Gord Gamble,

Re : Grade Crossing Safety Assessment :  
King St,  
Dartmouth Sub - Mile 12.99

A safety assessment of the above captioned grade crossing was undertaken on February 11, 2015. The crossing was assessed to examine the feasibility of eliminating whistling at this public crossing.

The fundamental objectives of the assessment:

- Reduce crash risk at the grade crossing
- Verify the safety of all grade crossing users
- Verify compliance of the RTD 10 technical standards referred to Railway safety
- Make recommendation to improve safety for grade crossing users

The assessment team assembled for this review includes:

- Marcel Turcotte – Senior Rail Specialist
- Christine Dyck – Eng. Railway Signals

Data on the crossing were collected in accordance with the Transport Canada Field Guide for conducting Detailed Safety Assessments and RTD-10. Completed field data forms are attached.

For the purposes of this report, King Street crossing is described in a north-south orientation, while the rail line is described in an east-west orientation. The crossing has flashing lights warning devices and gates. The crossing is in close proximity to a cross-intersection between King Street and Alderney Drive.

Note:

*The safety assessment of the grade crossing covers physical features which may affect road and rail user safety and it has sought to identify potential safety hazards. Adoption of the recommendations should improve the level of safety of the facility.*

The report includes:

- Grade Crossing Safety Assessment
- Table 1 – Observations/Suggestions and Comments
- Annex A – Pictures
- Annex B – Board Plan

Sincerely,

Produced by:  
Christine Dyck, Eng



Checked by:  
Marcel Turcotte, Senior Rail Specialist

**Table 1: Observations / Suggestions**

Observations	Suggested Actions	To	Client Response
1 NW quadrant - Crossing sign hidden by lights (see photo 9).	Adjust position of crossing sign and lights	Railway	Comments
2 NW Quadrant - Evidence of routine unauthorized access (trespassing) on the rail line (see photo 11)	Sidewalk is needed as well as fencing to prevent trespassing.	Railway/Road authority	
3 NW Quadrant - Advanced warning sign is not at the appropriate distance from the North side.	Reposition WA-18 sign on King St. 110m from crossing.	Road authority	
4 NW Quadrant – Potential Traffic queuing onto intersecting roadway from crossing	No right turn on red signal needed for right turn from Alderney Drive to King Street towards crossing.	Road authority	
5 NW/NE Quadrant - crossing sign obscured by trees (see photo 8)	Trim or remove trees to improve visibility of crossing signs	Road authority	
6 NE Quadrant – Sidewalk not protected by gates and lights	Pedestrian gates and lights are needed for sidewalk on the NE side of crossing.	Railway	
7 SE Quadrant - Advanced warning sign is not at the appropriate distance from the crossing.	Add WA-18 signs on King St. 110m from crossing.	Road authority	
8 SE Quadrant - Pavement markings are missing.	All required pavement markings should be applied: “X” marking, “No Passing” lines, and “Stop” bars.	Road authority	
9 SE Quadrant -- Traffic queuing onto crossing from intersection	Do not stop on track sign needed for South approach.	Road authority	

10	SW Quadrant – partial sidewalk/pathway not protected by gates and lights.	Pedestrian gates and lights are needed. Sidewalk should be completed on the SW side of crossing.	Road authority		
11	Crossing surface – Elevation of top rail is 40mm below crossing surface.	Crossing surface should be adjusted to be less than 25mm above the top of rail.	Railway/Road authority		
12	Gate descent time was measured at 7 seconds and gate arm delay was measured at 6 seconds	Gate descent time should be adjusted to be within 10 to 15 seconds and gate arm delay should be adjusted to 7 seconds.	Railway		
13	Parking lots on both sides of the road in the south approach to the crossing do not have light unit coverage (see photos 12 and 13)	Additional light units are required for drivers as they begin to turn onto the approach road from the two parking lots.	Railway/Road authority		

# Grade Crossing Safety Assessment

A: LOCATION DESCRIPTION					
Railway Authority:	CN	Mileage:	12.99		
Subdivision/Spur:	Dartmouth	Date:	February 11, 2015		
City/Town	Dartmouth	Completed By:	Christine Dyck, HMM		
Highway/Road/Street:	King St.	Approved By:	Marcel Turcotte, HMM		
Road Authority:	HRM				
Type of Grade Crossing:	Restricted <input type="checkbox"/>	Unrestricted <input checked="" type="checkbox"/>	Active <input checked="" type="checkbox"/>	Passive <input type="checkbox"/>	
B: COLLISION HISTORY (5 YEAR PERIOD)					
Number of Property damage collisions (a):	0		Number of Fatalities:	0	
Number of Personal Injury Collisions (b):	0		Number of Personal Injuries:	0	
Number of Fatal Injury Collisions (c):	0		Are there details of Collisions? (provide if available)		
Total collisions in last 5 year period (a+b+c)=	0		N/A		
C: TRAIN/RAILWAY DATA					
Number of passenger trains	Weekly	Daily		Timetable Max Speed	
	0	Day		East	N/A
Number of freight trains	28	Night		West	N/A
		Day		East	10
Daily Train Traffic		4	Design Train Speed	10	mph
Switching	No <input type="checkbox"/>	If yes, Day	Night		
Can two trains occupy the crossing at the same time?			Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Can one train block the motorist's view of another train at the crossing?			Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Train illumination?			Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
D: ROAD DATA					
Posted Speed	North	50	Km/h	Max Operating Speed	50 Km/h
	South	50	Km/h	Design Speed	50 Km/h
Remarks:			Advisory Speed	N/A	Km/h
Roadway Illumination:	If yes, describe:		Is crossing on a School Bus route?		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Standard lighting - both sides of road		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Are there public transit stops within vicinity of crossing?			Do Dangerous Goods trucks use this roadway?		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Surrounding land use:	Residential, commercial		Urban <input checked="" type="checkbox"/> Rural <input type="checkbox"/>		
Any schools, retirement homes, etc. nearby? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			If yes, what? Condos		
Is vehicle parking allowed in vicinity of crossing which may obstruct sightlines?			Any conflicts between the indications given by road and railway signs and nearby traffic signals?		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Provide details: Parking lot for Marina		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Describe: no right turn on red needed on Alderney Dr.	
E: VEHICLE DATA					
Design Vehicle type	Standard Single Unit Buses (B 12)		12.2 m		
Regular use of crossing by persons with Assistive Devices			Other special road users? Type:		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			Daily volume: N/A		
Avg. Annual Daily Traffic, AADT (vpd):		8000	vpd	Year of count	N/A
Forecasted AADT		8000	vpd	Forecast year	2014



F: ROAD CROSSING GEOMETRY								
Clearance Distance (cd)	10.4	m	Vehicle departure time	7.3	sec			
Vehicle Travel Distance (S)	22.6	m	(t)					
Maximum approach grade within "S"	4.0	%		1.3				
<b>Design Vehicle Departure Time: <math>T_d = J + T + K</math></b>			T = t x adjustment factor		9.5	sec		
J=2 seconds perception & reaction								
K=additional time due to crossing conditions: 0 sec $T_d = 11$ sec								
Pedestrian Clearance Distance	10.4	m	Pedestrian, cyclist & assistive devices			7.4	sec	
Do field acceleration times exceed $T_d$ ?			No			Departure Time, $T_p$		
Distance D, should not be less than 30m for either approach if train speed exceeds 15 mph (fig 5-1) (40m N-E)	Is D insufficient such that road vehicles might queue onto the rail tracks?		Yes	<input type="checkbox"/>	Comments:			
	Is D insufficient such that road vehicles turning from a side street might not see warning devices for the crossing?		Yes	<input checked="" type="checkbox"/>	Comments:			
Add light in advance of warning sign								
Is the crossing smooth enough to allow road vehicles, pedestrians, cyclists and other road users to cross at their normal speed without consequence?								
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
If no, describe: crossing surface not level.								
Grade crossing surface type:	Asphalt		Approach road surface type:	Asphalt				
Grade crossing surface condition:	Good		Approach road surface condition:	Good				
Grade Crossing Surface width Fig. 6-1	14.0	m	Grade Crossing Surface extension beyond travel lanes Fig. 6-1 (min 0.5 m)	?	m	East		
				?	m	West		
Traveled Portion of Road on Approaches	?	m	Roadway extension beyond travel lanes	?	m	East		
				?	m	West		
Distance from centerline of sidewalk to centerline of the signal mast (13.8)			?	m	East			
			?	m	West			
Are separate light units required for sidewalk? (only if distance greater than 3.6 metres)			Yes	East				
			Yes	West				
Distance between Travel Lane and Edge of Sidewalk			?	m	East			
			?	m	West			
Sidewalk / path / trail extension beyond sidewalk (min=0.5 m)	East	?	m	Sidewalk / path / trail crossing width (min. 1.5 m)	?	m	East	
	West	N/A	m		N/A	m	West	
Flangeway width (max. 76 or 100 mm)	62	mm	Flangeway depth (min 50 / max 76 or none) Fig 6-2	52	mm			
Side Grinding width (max. 50 or 0 if frequent use by person using assistive devices)	N/A	mm	Side Grinding depth (min 38 mm) Fig 6-2	N/A	mm			
Elevation of Top Rail above road surface (max: 13 if frequent use by person using assistive devices, 25 or 50) Fig. 6-2			mm	Elevation of Top Rail below road surface (min -7 if frequent use by person using assistive devices, 25 or 50) Fig. 6-2	40	mm		
G: ROAD GEOMETRY								
Are horizontal and vertical alignments smooth and continuous throughout SSD? Sec. 7-1		Is horizontal alignment straight beyond rails for a distance $\geq$ design vehicle length L? Sec. 7-1			Are the road lanes at least the same width on the crossing as on the road approaches? Sec. 7-5			
Direction	North	No	Direction	North	Yes	Direction	North	
Direction	South	No	Direction	South	Yes	Direction	South	
Slope within 8 m of nearest rail (max. 2%) Sect 7-1	4.0 %		North	Slope within 8 m & 18 m of nearest rail (max. 5% or 10%) Sect 7-1	4.0%	North		
	1.0 %		South		1.0%	South		
General Approach Grade	4.0 %		North	1.0 %	South			
If crossing is only for pedestrians, cyclist or person using assistive devices. Slope within 5 m of nearest rail (max. 1 or 2%)	N/A	East	Are rail tracks super-elevated?					No
	N/A	West						

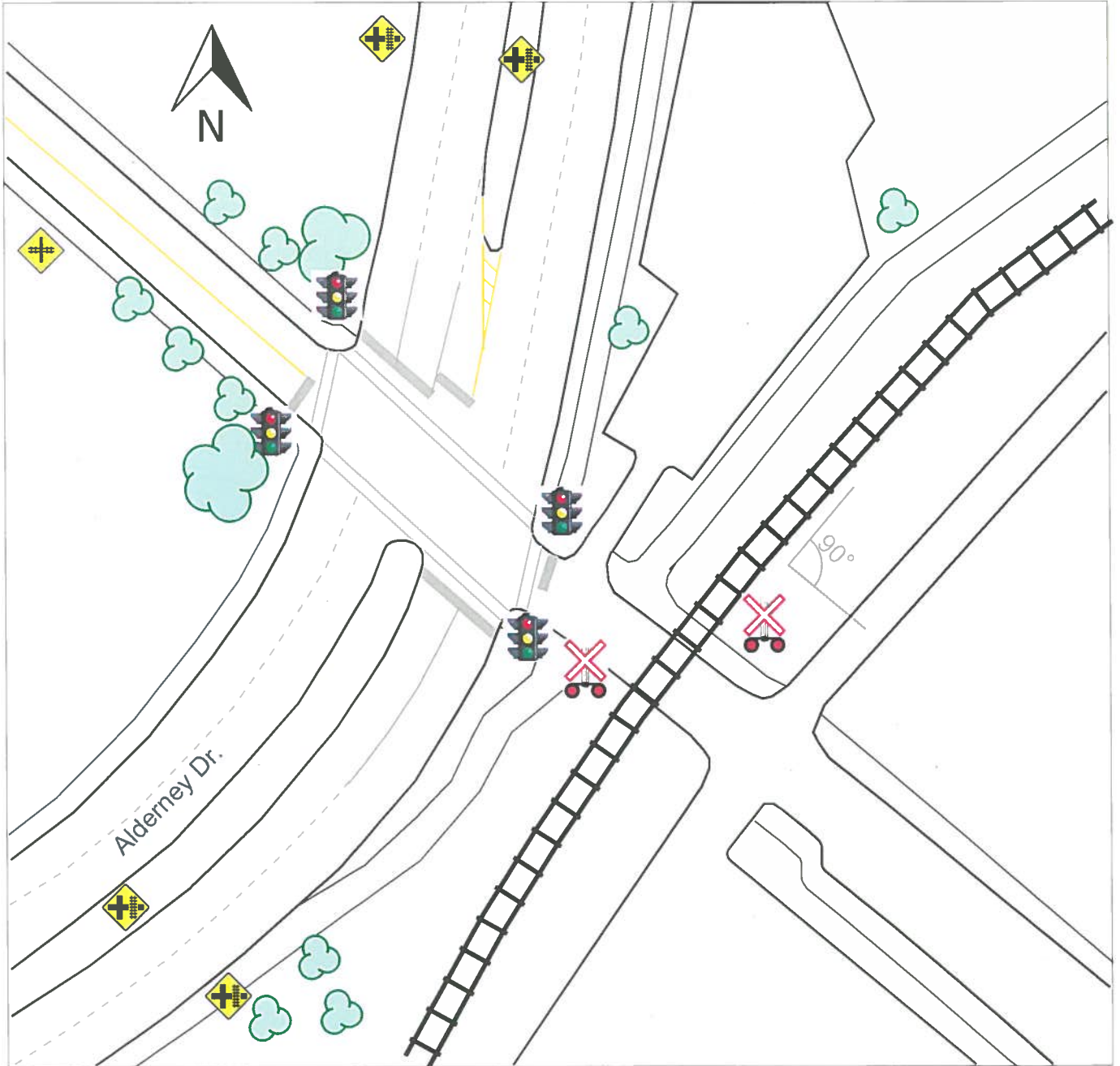
If train speeds exceed 15 mph, what is the angle between the crossing and the roadway? (70° min w/o warning system; 45° with warning system)	N/A	Is there any evidence that "low bed" trucks have difficulty negotiating the crossing (i.e might they bottom-out or get stuck)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Condition of road approaches (e.g. anything that might affect stopping or acceleration)		traffic light , grade elevation of rail	
<b>H: SIGHTLINES:</b>			
Are sightlines within the rail ROW clear of bushes / vegetation; 15 m on each side of the track and, 30 m along the track, on each side of the crossing? If not, detail the location.			
SE & SW quadrant railway sightlines blocked			
Are sightlines on the road ROW within 15 m of the rail crossing clear of bushes / vegetation? If not, detailed the location. sightlines blocked by fencing but gates and lights are existing.			
Stopping Sight Distance, SSD (Table 4-5)	110 m (required)		
SSD actual:	110 m	North	110 m South
<b>Warning: some formulas are based on Imperial units while others are Metric</b>			
$D_{SSD}$			
$D_{SSD}$ minimum (ft) = $1.47 V_T \times T_{SSD}$ (calculated or use table 8-1)	Where $V_T$ = max railway operating speed $T_{SSD}$ = is the greater of $[(SSD+cd+L)/0.28V]$ or 10 sec. ( $V$ =max. road operating speed in km/h)		
$D_{SSD}$ minimum:	N/A ft	#VALUE! m	
	Actual (m)		Actual (m)
$D_{SSD}$ - NE Q to driver's left	N/A	$D_{SSD}$ - SW Q to driver's left	N/A
$D_{SSD}$ - NW Q to driver's right	N/A	$D_{SSD}$ - SE Q to driver's right	N/A
$D_{STOPPED}$			
$D_{STOPPED}$ minimum (ft) = $1.47 V_t \times T_d$ (calculated or use table 8-1 and with $T_d$ from page 2)			
$D_{STOPPED}$ minimum:	164 ft	50 m	
	Actual (m)		Actual (m)
$D_{STOPPED}$ - NE Q to driver's left	60	$D_{STOPPED}$ - SW Q to driver's left	49
$D_{STOPPED}$ - NW Q to driver's right	100	$D_{STOPPED}$ - SE Q to driver's right	49
Ped. / Cyclist $D_{STOPPED}$			
<b>Ped. / Cyclist <math>D_{STOPPED}</math> (m)</b> (using table 8-1 and $T_p$ from page 2)			
Ped./Cyclist $D_{STOPPED}$ min:	147 ft	45 m	
	Actual (m)		Actual (m)
$D_{STOPPED}$ - NE Q to driver's left	60	$D_{STOPPED}$ - SW Q to driver's left	49
$D_{STOPPED}$ - NW Q to driver's right	100	$D_{STOPPED}$ - SE Q to driver's right	49
Are there any obstacles within the sight triangles (fig 8-1) other than traffic signs/utility poles that might affect visibility?			
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, explain: see pictures			
Clear view along railway right of way met?		Minimum sightlines met? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Describe: Not required with warning system	
Note: 1. For a grade crossing with a grade crossing warning system, subject to the conditions included in subsection 8(b) (RTD-10), sightings of an approaching train with the distance $D_{stopped}$ must not be obstructed by: trees, brush, other vegetation, or material stored on the railway right of way: and the installation of additional equipment housing, tool sheds or any other buildings or structures.			
Observe:			
Visibility along the track impaired due to the angle of crossing?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Special consideration for large trucks?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Can sightlines be maintained on an ongoing basis?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Check visibility at all pedestrian crossing points.		Good	

<b>I: WARNING SYSTEM</b>					
Potential for traffic queuing on crossing or within 2.4 meters of the nearest track?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/>	High <input checked="" type="checkbox"/>	Low <input type="checkbox"/>	Describe: No stoping on tracks sign needed on King St.
Potential traffic queuing from crossing onto intersecting roadways?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/>	High <input checked="" type="checkbox"/>	Low <input type="checkbox"/>	Describe: No right turn sign on red needed from Alderney Dr
Grade crossing plans available?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	If yes, provide copy of plans		
<b>J: ROAD SIGNS AND PAVEMENT MARKINGS</b>					
Manual of Uniform Traffic Control Devices for Canada (Except "Maximum Speed Sign" - Ontario Traffic Manual)					
<b>RAILWAY CROSSING SIGN</b>					Not Required <input type="checkbox"/>
Location: North	Height: ?	m	Location: South	Height: m	
Retroreflective material on back of crossing signs?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Front & back on post?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Distance from nearest rail to sign:	m		North		
	m		South		
Distance from road to sign:	m		North		
	m		South		
Number of track sign? (RA-6S):	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Required <input checked="" type="checkbox"/>		
<b>DO NOT STOP ON TRACK</b>					Not Required <input type="checkbox"/>
Does queued traffic routinely encroach closer than 5m from the crossing surface?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Are these signs present on either approach? N/A		
			Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>RAILWAY CROSSING AHEAD (WA 18-20)</b>					Not Required <input type="checkbox"/>
(Shall be installed on all road approaches for vehicles leading to grade crossings with an AADT exceeding 100)					
Is AADT > 100?	Yes		Is area urban such that WA 18-20 is not required?		
Location: North	95	m	Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>
South		m		Poor <input type="checkbox"/>	missing <input type="checkbox"/>
Required distance from nearest rail to Railway Crossing Ahead Sign:	110		m		
Is the Railway Crossing Ahead sign located the proper distance from the nearest rail?	North		No		
	South		No		
Type of Advance Warning signs present:	WA-18				
Appropriate orientation of symbol	Yes				
<b>OPTIONAL ATTACHED SPEED TAB - WA-7S</b>					Not Required <input checked="" type="checkbox"/>
Location: North	m		Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>
South	m			Poor <input type="checkbox"/>	missing <input type="checkbox"/>
<b>PREPARE TO STOP WITH AMBER FLASHING - WB-6</b>					Not Required <input checked="" type="checkbox"/>
Location: North	m		Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>
South	m			Poor <input type="checkbox"/>	missing <input type="checkbox"/>
<b>ADVISORY SPEED SIGN</b>					Not Required <input checked="" type="checkbox"/>
(Normally used in conjunction with WA 18-20 if reduced speeds are necessary to provide adequate sight distance)					
Are they present on both approaches?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Are they required on either approach?		
Posted speed limit:	Km/h		Yes <input type="checkbox"/>	No <input type="checkbox"/>	
<b>STOP SIGN (RA-1)</b>					Not Required <input checked="" type="checkbox"/>
Location: North	m		Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>
South	m			Poor <input type="checkbox"/>	missing <input type="checkbox"/>
<b>STOP SIGN AHEAD</b>					Not Required <input checked="" type="checkbox"/>
Is sign present of either approach?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is sign required on either approach? Yes <input type="checkbox"/>		
			No <input type="checkbox"/>		
Is there an advisory tab with a track symbol present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	What is the distance from the nearest rail to the sign?		
	Location: North		m		
	South		m		
<b>MAXIMUM SPEED SIGN - RB-1</b>					Not Required <input checked="" type="checkbox"/>
Location: North	km/h		Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>
South	km/h			Poor <input type="checkbox"/>	missing <input type="checkbox"/>

PAVEMENT MARKINGS					Not Required <input type="checkbox"/>		
Are pavement markings consistent with the MUTCD manual?					No See Below		
Are there lines to delineate sidewalks / paths?					Yes	Explain: crosswalks	
"X" Marking							
	Required	Actual		Required	Actual		
Location	North	100.0 m	missing	Location	South	100.0 m missing	
Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
Are "X" markings located at the proper distance?							
North			No		South No		
"No Passing" Lines							
	Required	Actual		Required	Actual		
Location	North	30.0 m	missing	Location	South	30.0 m missing	
Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
Are "No Passing Lines" the correct length?							
North			No		South No		
"STOP" Bars							
	Required	Actual		Required	Actual		
Location	North	5.0 m	missing	Location	South	5.0 m missing	
Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	Condition	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
Are "Stop Bars" the correct distance from the nearest rail?							
North			No		South No		
Any special features required as a result of nearby roadway intersections?					Yes		
General comments, any missing data elements?					None		
Items within and outside the road and railway right of way that may distract driver attention from the grade crossing							
Intersections on road approaches			<input checked="" type="checkbox"/>	Light intensity <input type="checkbox"/>			
Merging traffic lanes or driveways			<input type="checkbox"/>	Traffic control <input type="checkbox"/>			
Vehicle parking			<input checked="" type="checkbox"/>	Sunlight <input type="checkbox"/>			
Bus Stops			<input type="checkbox"/>	Other signage <input type="checkbox"/>			
Highway or commercial signs			<input type="checkbox"/>				
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	If Yes <input type="checkbox"/>					
K: TRAIN ILLUMINATION							
Flood lighting is required if all of the following exist:							
Unrestricted grade crossing							
Road speed limit is $\geq 50$ km/h							
Routinely equipment on rails after dark is either stopped or traveling at 15 mph							
Are luminaries required? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>							
Are luminaries present on both approaches? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>							
L: WARNING SYSTEM WARRANTS							
Cross product (1000 min)			80000	Number of tracks			
Are sightlines obscured? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				(if >2, can trains pass one another? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Lights Units	Condition:		Bells	Condition:			
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Good		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Good			
Gates	Condition:		Cantilever lights	Condition:			
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Good		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Good			
Distance from rail/road to warning system housing:							
Location			Rail (min 8m)	Road (min 9m)			
			8.9	11.6			
Is the warning system housing located the correct distance from the road and rail? Yes							
Top of warning signal foundation to ground level (maximum 100 mm)							
			? mm	North			
			? mm	South			
Are warning signal assemblies and cantilevers are in accordance with figures 18-1 and 18-3							
			Yes		North		
			No		South		
Have all light units been aligned?							
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			Date? 9/26/2012	Design Approach Warning Time		33 sec	
Is warning time less than 35 sec (without gates) or 55 sec (with gates) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comments:							
Gate arm clearance time		Gate arm delay time		Actual gate arm delay tim			
9 sec (calculate)		7 sec (Table 4-8)		6			
				Difference between Actual and Req'd:		-1 sec	
Gate arm descent:		7 sec		Req'd 10-15 sec		Is gate arm descent time compliant? No	
Gate arm ascent:		7 sec		Req'd 6-12 sec		Is gate arm ascent time compliant? Yes	
Do gates conform to standards depicted in fig 18-2? Yes							
				Bungalow Power:		60	

FLASHING LIGHT UNITS			
Minimum distance for primary light units (from T 19-1)	110 m	Recommended distance for primary light units (from T 19-1)	125 m
Are flashing light units located within 5° horizontally of the centerline of the road (throughout the approach distance above)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Can back lights be seen by all stopped drivers?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Does horizontal / vertical curvature necessitate supplemental units?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Are lights obscured by vehicles stopped on adjacent intersections?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Are additional light units required for drivers as they begin to turn onto an approach road from an intersecting road/lane/parking lot, etc.		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<b>Cantilever light units</b>	Does D <sub>R</sub> exceed 7.7 m?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	Does D <sub>L</sub> exceed 8.7 m?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>Multiple Lanes</b>	Can front light units be seen by drivers in all lanes (would T/T obscure?)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	Can back light units be seen by all stopped drivers in all lanes?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<b>PREPARE TO STOP AT RAILWAY CROSSING SIGN (Reference MUTCD sign WB-6)</b>			<b>Not Required</b> <input checked="" type="checkbox"/>
Are all front lights units obscured within minimum distance above?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Do environmental conditions frequently obscure signal visibility?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Distance from the sign to 2.4 m beyond the furthest rail	m	Distance from the sign to the closest gate	m
Does sign flash during operation of grade crossing warning system?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Does the sign flash before the actuation of the crossing warning system by the time required to travel from the sign to clear the crossing? Sec	Yes <input type="checkbox"/> No <input type="checkbox"/>
Does the flashing sign precede the actuation of the descent of the gate arms by the time required to travel from the sign to clear the closest gate? Sec 14.2 b	Yes <input type="checkbox"/> No <input type="checkbox"/>	Time required for all queued vehicles to resume to maximum road operating speed	
<b>M: AREAS WITHOUT TRAIN WHISTLING</b>			
Is train whistling prohibited at this crossing? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Is there evidence of routine unauthorized access (trespassing) on the rail line in the area of the crossing? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Explain:			
<b>N: COMMENTS AND RECOMMENDATIONS</b>			
Recommendation are included in the crossing inspection report.			

# M.12.99- King St. Sketch



Drawing not to scale



Annex A – Dstopped



Photo 1: Dstopped - NW Q to driver's right



Photo 2: Dstopped - NE Q to driver's left



Photo 3: Dstopped - SE Q to driver's left



Photo 4: Dstopped SW Q to driver's right

Annex A – Road and track approaches

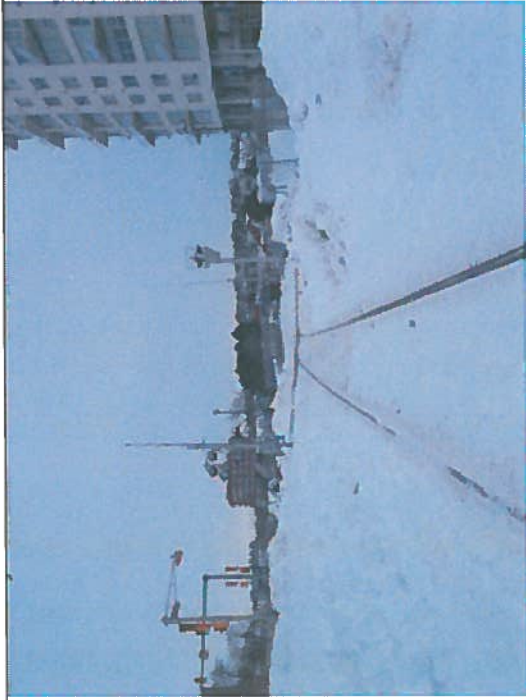


Photo 5: West side of the track, Q looking East



Photo 7: East side of the track, Q looking West



Photo 6: From South side of the road

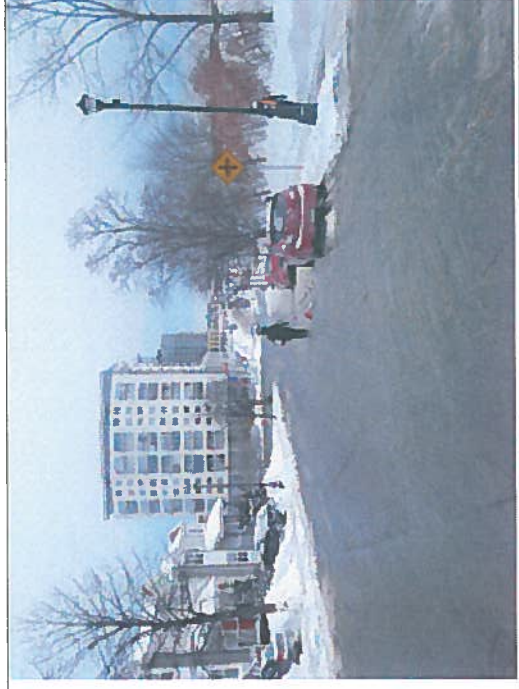


Photo 8: From North side of the road



Annex A – Additional pictures



Photo 9:



Photo 10:



Photo 11:



Photo 12:

Annex A – Additional pictures

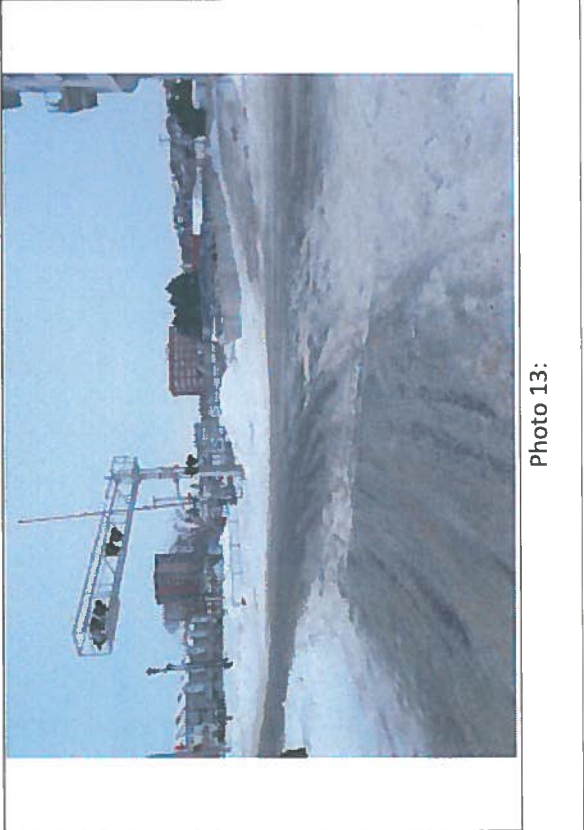
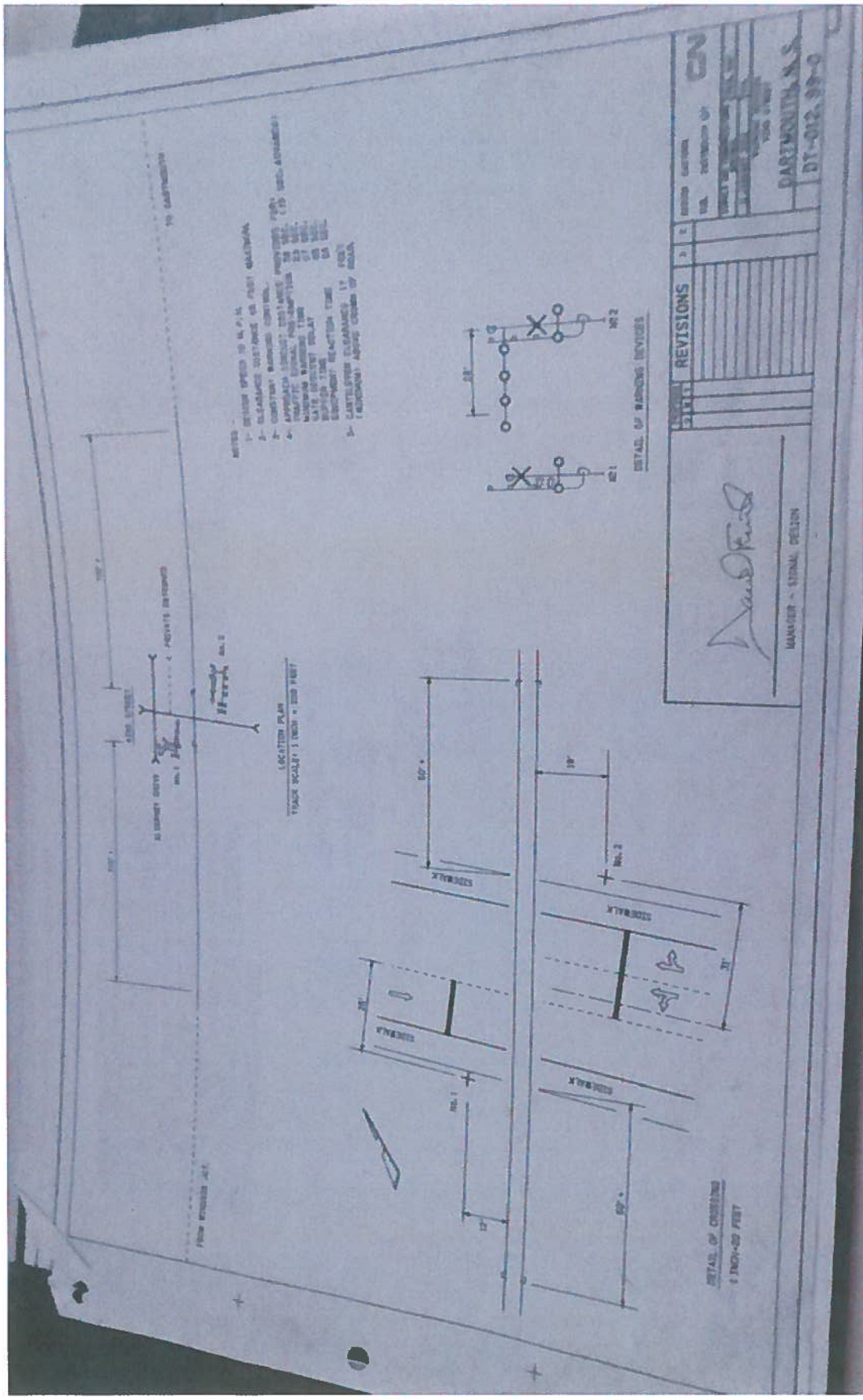


Photo 13:

Annex B – Board Plan



Requirement (received Feb 28 <sup>15</sup> from Hatch Mott and Macdonald).	Suggested Action	Responsibility	Status/Next Steps
1. NW quadrant – Crossing Sign hidden by lights.	Adjust position of crossing sign and lights	CN Rail	CN to adjust / relocate sign.
2. NW Quadrant – Evidence of routine unauthorized access (trespassing) on the rail line	Sidewalk is needed as well as fencing to prevent trespassing	CN Rail / Kings Wharf	Dexter Construction to complete as part of original contract.
3. NW Quadrant- Advanced warning sign is not at the appropriate distance from the North Side.	Reposition WA-18 sign on King St. 110m from crossing	HRM	Signage location was reviewed and determined that current placement is appropriate. CN agreed.
4. NW Quadrant – Potential Traffic queuing onto intersecting roadway from crossing.	No right turn on red sign needed for right turn from Alderney Drive to King Street towards crossing.	HRM	HRM is currently in discussions with Transport Canada to determine appropriate operation of traffic signal / grade crossing warning system interconnect as per the Grade Crossing Standards. This item is still outstanding, but is in progress.
5. NW/NE Quadrant – crossing sign obscured by trees.	Trim or remove trees to improve visibility of crossing signs.	HRM	HRM Urban Forestry was tasked with evaluating the situation and trim trees as appropriate.
6. NE Quadrant – Sidewalk not protected by gates and lights.	Pedestrian gates and lights are needed for sidewalk on the NE side of crossing.	CN Rail	CN Rail has determined this to be unnecessary.
7. SE Quadrant – Advanced warning sign is not at the appropriate distance from the crossing.	Add WA-18 signs on King's Wharf Place 110m from the crossing.	HRM	An appropriate location has been identified for this roadway approach and signage will be installed. CN in agreement.
8. SE Quadrant – Pavement markings are missing.	All required pavement markings should be applied 'X' marking. "No Passing" lines and stop bars.	HRM	HRM to install double stop bars at the grade crossing. "X" markings are not required. CN is in agreement with this approach.
9. SE Quadrant – Traffic queuing onto crossing from intersection.	Do not stop on track sign needed for South approach.	HRM	HRM to install "Do not stop on track" sign, but cross-hatching will not be required.
10. SW Quadrant – partial sidewalk/pathway not protected by gates and lights.	Pedestrian gates and lights are needed. Sidewalk should be completed on the side of crossing.	HRM	CN Rail has determined this to be unnecessary.
11. Crossing surface – Elevation of top rail is 40mm below crossing surface	Crossing surface should be adjusted to be less than 25mm above the top of rail.	CN Rail / HRM	Crossing surface to be reviewed at next scheduled maintenance and rehab date. Not required to request whistle cessation.



12.	Gate descent time was measured at 7 seconds and gate arm delay was measured at 6 seconds.	Gate decent time should be adjusted to be within 10 to 15 seconds and gate arm delay should be adjusted to 7 seconds.	CN Rail	CN has indicated that the equipment at the location is working properly and is in compliance with requirements.
13.	Parking lots on both sides of the road in the south approach to the crossing do not have light unit coverage	Additional light unit are required for drivers as they begin to turn onto the approach road from the two parking lots.	CN Rail / Kings Wharf	CN has determined that additional lights are required. They have provided a cost to have the lights supplied / installed and are requesting payment before scheduling the work.
14.	Access to Parking Garage during train crossing may be blocked causing queuing on tracks. (added by CN Rail)	Requires "hatching: in front of access to parking garage to prevent cars from blocking entry.	HRM	HRM will install additional signage related to blocking of the driveway as well as additional "Do not stop on tracks" signage. Painted hatching will not required.

***Relevant Associations or Organizations as declared by the Minister of Transport***

**Associations or Organizations Formed to Represent the Interests of Persons Employed by a Railway Company**

- Travailleurs Unis Transport (1843)
- Teamsters Canada Rail Conference
- Teamsters Canada Rail Conference – Maintenance of Way Employees Division (TCRC-MWED)
- Teamsters Canada Rail Conference/Rail Canada Traffic Controllers
- Signal and Communications Council of the International Brotherhood of Electrical Workers
- International Association of Machinists and Aerospace Workers
- UNIFOR
- United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union
- Amalgamated Transit Union Local 279
- Transportation Communications International Union System Board
- Brotherhood of Locomotive Engineers and Trainmen (BLET)
- United Transportation Union (UTU)

**Associations or Organizations Formed to Represent the Interests of Owners or Lessees of Railway Equipment**

- GATX Rail Canada
- Canadian Chemical Producers Associations
- Canadian Fertilizer Institute
- General Electric Railcar Services Corporation
- PLM Railcar Management Services (Canada) Ltd.
- Procor Limited
- Propane Gas Association of Canada Inc.