



Underground Alignment of the Bow River Crossing (Option D)

ISSUED FOR ROUTE SELECTION

PACKAGE NUMBER: 357549-TS-DWVG-N1-FP-AL5000 VER: A

HATCH

CAD FILE: 357549-TS-DWG-N1-FP-GE0001.dwg
PLOT DATE: August 12, 2016 - 3:34 PM
ISS/REV: A

DRAWING NUMBER	DRAWING TITLE	REVISION
357549-TS-DWG-N1-FP-GE0001	COVER SHEET	A
357549-TS-DWG-N1-FP-GE0002	DRAWING LIST	A
357549-TS-DWG-N1-FP-GE0003	LEGEND PAGE AND GENERAL NOTES	A
357549-TS-DWG-N1-FP-AL1160	TRACK PLAN AND PROFILE - CENTRE CITY OB CENTRELINE - STA 201+190.00 - STA 201+900.00	C
357549-TS-DWG-N1-FP-AL1161	TRACK PLAN AND PROFILE - CENTRE CITY OB CENTRELINE - STA 201+900.00 - STA 202+650.00	C
357549-TS-DWG-N1-FP-AL1162	TRACK PLAN AND PROFILE - CENTRE CITY OB CENTRELINE - STA 202+650.00 - STA 203+343.05	C
357549-TS-DWG-N1-FP-AL1163	TRACK PLAN AND PROFILE - CENTRE CITY OB CENTRELINE - STA 203+343.05 - STA 204+100.00	C
357549-TS-DWG-N1-FP-AL1164	TRACK PLAN AND PROFILE - CENTRE CITY OB CENTRELINE - STA 204+100.00 - STA 204+856.88	C
357549-TS-DWG-N1-FP-AL0023	CENTRE CITY - STA 204+600 CENTRE STREET TRENCH AT 2200 BLOCK CROSS SECTION - TANGENT	B
357549-TS-DWG-N1-FP-AL0410	CENTRE CITY TYPICAL SECTION - TWIN BORED RUNNING TUNNELS - TANGENT	A
357549-TS-DWG-N1-FP-AL0200	CENTRE CITY TYPICAL SECTION - STATION CROSS SECTION - CUT AND COVER	A
357549-TS-DWG-N1-FP-AL0300	CENTRE CITY TYPICAL SECTION - STATION CROSS SECTION - SEM	A

NOTES:

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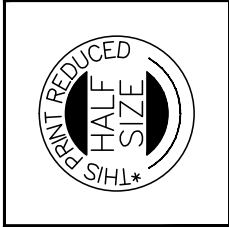
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APEGA PERMIT TO PRACTICE
NO. P03481

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HATCH PROJECT No. 357549





REVISIONS			
REV.	DATE	ISSUED FOR	AUTH. BY
A	2016/08/17	Issued for Route Selection	C.M.



GREEN LINE – NORTH
LRT CENTRE CITY ROUTE SELECTION
DRAWING LIST

DWG. BY:
J. RICHARD

CHK. BY:
K. MILLER

DWG. NO.:

DATE:
2016/08/17

SHEET:
1 of 11

DWG. NO.:
357549-TS-DWG-N1-FP-GE0002

REV. NO.
A

LEGEND:

TRANSITWAY

CENTRE LINE OF PROPOSED LRT TRACK

PROPOSED SET OFF TRACK

SHADOW TRACK

#8 DOUBLE CROSSOVER

#8 SINGLE CROSSOVER

GL-N CORRIDOR BOUNDARY

GL-N PROPERTY BOUNDARY

LRT CENTRE LOAD STATION

LRT SIDE LOAD STATION

POINT OF SWITCH

BOREHOLE

GEOMETRY DEFLECTION POINTS

STRUCTURAL

LRT PORTAL TRENCH

LRT TUNNEL

CUT AND COVER

LRT ELEVATED STRUCTURE

TUNNELING (METHOD TO BE CONFIRMED)

MISCELLANEOUS EXISTING FEATURES

CHAIN LINK FENCE

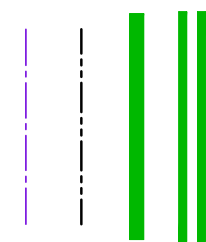
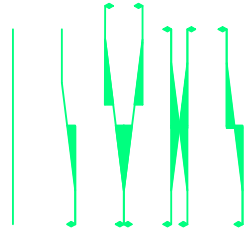
BARBED WIRE FENCE

POST AND CABLE FENCE

FENCE (OTHER)

RAILWAY TRACK

EXISTING GROUND



NOTES:

GENERAL NOTES:

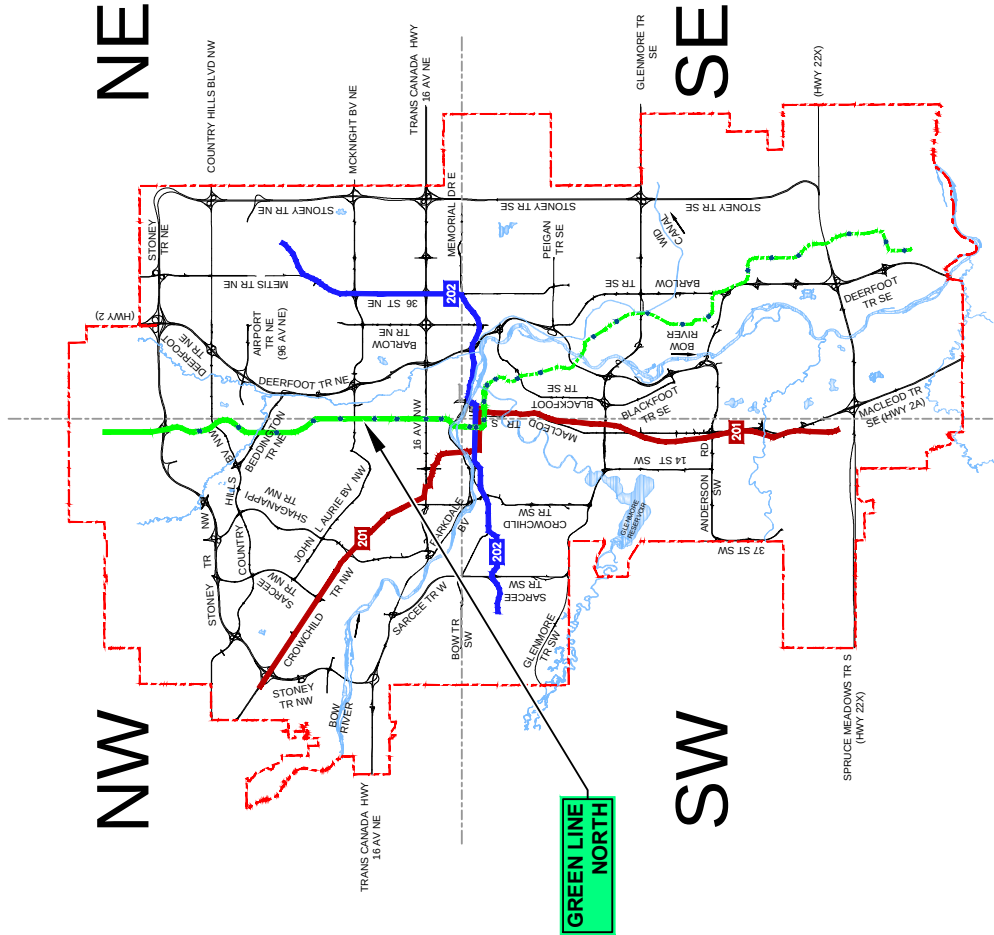
- ROUTE SELECTION PLAN AND PROFILES DO NOT INCLUDE ROAD DESIGN.
- ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- STRUCTURAL DETAILS ARE ILLUSTRATIVE. EXACT STRUCTURAL DETAILS TO BE CONFIRMED.
- THE COORDINATES FOR THE GREEN LINE LRT PROJECT ARE GRID COORDINATE SYSTEM BASE OF THE A15 GRID SYSTEM.
- ALL STATIONING AND DIMENSIONS ARE IN METRIC UNITS.
- ALL ELEVATIONS ARE IN METERS.
- ALL ALIGNMENT GRADES ARE IN PERCENT (%).
- ALL EARTHWORKS AND SLOPES ARE IN THE RATIO (i.e. 2:1 HOR:VERT)
- ALL SURVEY NOTIONS ARE IN AZIMUTH.
- STRUCTURAL LINES AND ROADWAY ELEVATIONS SHOWN ARE APPROXIMATE.

ABBREVIATIONS - HORIZONTAL GEOMETRY

- CS CURVE TO SPIRAL
I TOTAL CENTRAL ANGLE OR TOTAL DEFLECTION ANGLE
Dc DISTANCE FROM TS OR ST TO THE POINT AT WHICH THE TANGENT OF THE PROJECTION OF THE CIRCULAR CURVE IS PARALLEL TO THE TANGENT AT TS OR ST RESPECTIVELY.
Eo END OF THE VERTICAL CURVE
k LENGTH OF CIRCULAR CURVE
Lc LENGTH OF SPIRAL
Ll LONG SPIRAL TANGENT
P OFFSET CIRCULAR CURVE FROM TANGENT AT DISTANCE K FROM TS OR ST
TC TANGENT TO CURVE
PI POINT OF INTERSECTION
CT CURVE TO TANGENT
R RADIUS OF CURVE
SC SPIRAL TO CURVE
ST SPIRAL TANGENT
Tc TANGENT LENGTH OF CIRCULAR PORTION OF CURVE
Ts TANGENT LENGTH FROM TC TO MAIN PI
Ts TANGENT LENGTH FROM TS TO MAIN PI
Ts TANGENT TO SPIRAL
X DISTANCE FROM TS TO SC AND FROM ST TO CS WHERE "X" IS THE DIMENSION MEASURED PARALLEL TO THE TANGENT THROUGH TS OR ST AND "Y" IS THE DIMENSION PERPENDICULAR TO THE TANGENT.
Y

ABBREVIATIONS - VERTICAL GEOMETRY

- BVC BEGINNING OF THE VERTICAL CURVE
PVI VERTICAL POINT OF INTERSECTION
EVC END OF THE VERTICAL CURVE
VC LENGTH OF THE VERTICAL CURVE



KEY PLAN

N.T.S.

REVISIONS			
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A	2016/08/17	Issued for Route Selection	C.M.



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HATCH PROJECT No. 357549

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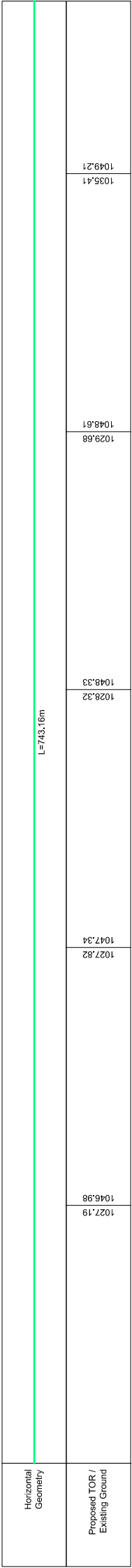
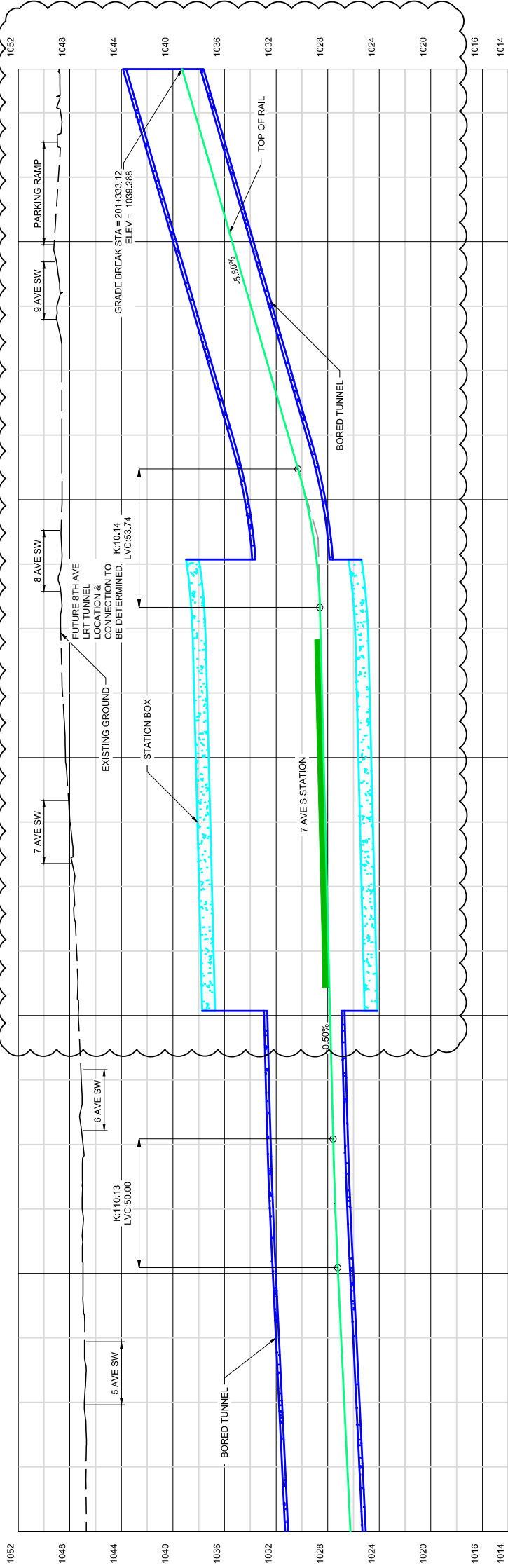
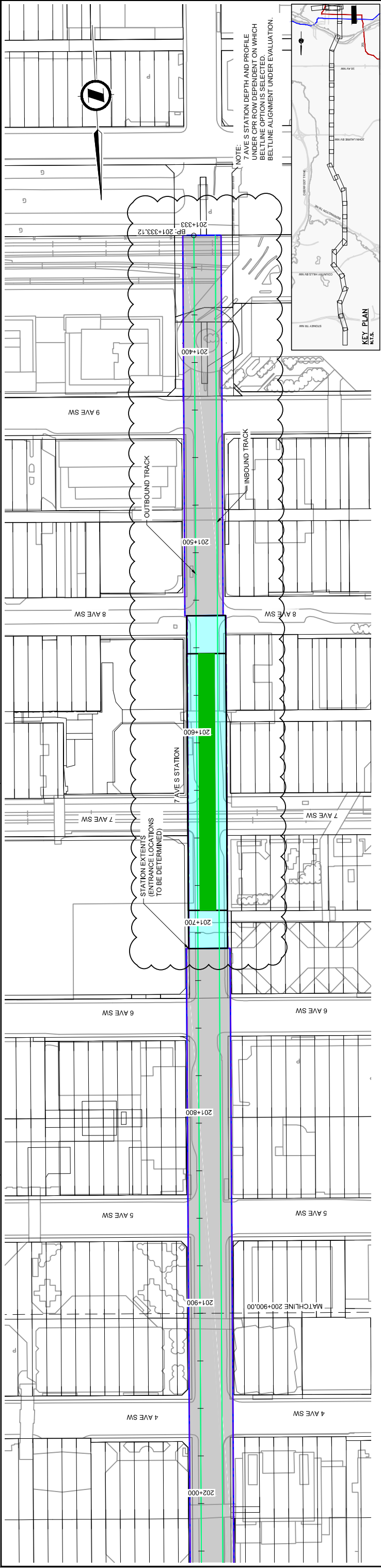
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GREEN LINE – NORTH
LRT PLAN AND PROFILE DRAWINGS
LEGEND PAGE AND GENERAL NOTES

DWG. BY: N. AGUILA
CHK. BY: K. MILLER
DATE: 2016/08/17

DWG. NO.: 357549-TS-DWG-N1-FP-GE0003
SHEET: 2 of 11

DWG. NO.: 357549-TS-DWG-N1-FP-GE0003
REV. NO.: A



HORIZONTAL SCALE 1:1000

VERTICAL SCALE 1:200

NOTES:

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PROJECT NO. 357549

stantec



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A	2016/04/29	Issued for Information	C.M.
B	2016/05/26	Issued for Information	C.M.
C	2016/08/17	Issued for Route Selection	C.M.

REVISIONS	

Calgary

GREEN LINE – NORTH
TRACK PLAN AND PROFILE – CENTRE CITY
OB CENTRELINE – STA 201+333.12 – STA 201+900.00

DWG. BY: N. AGUILA

CHK. BY: K. MILLER

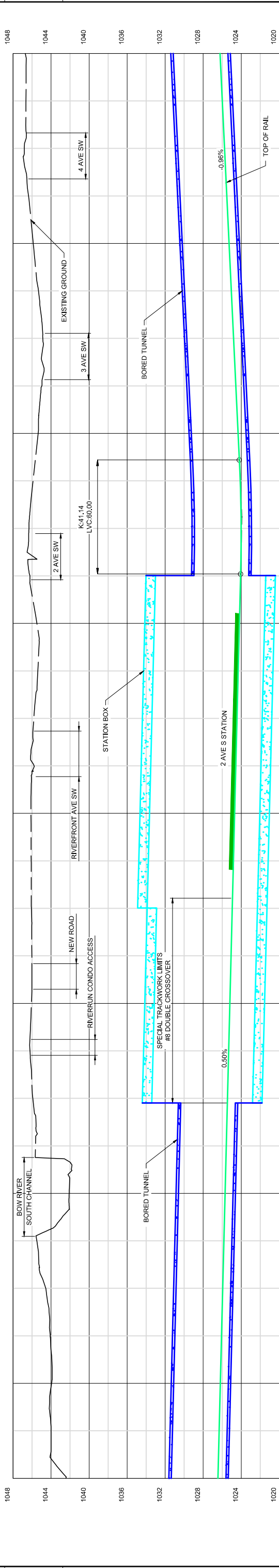
DATE: 2016/04/29

SHEET: 3 of 11

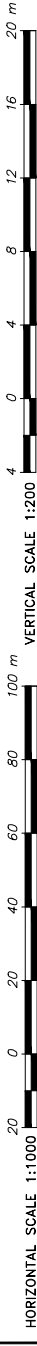
DWG. NO.: 357549-TR-DWG-N1-FP-AL1160

REV. NO. C

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Horizontal Geometry	L=192.08m R=250.00m	L=23.00m	L=337.39m	L=20.00m	L=43.72m R=2500.00m	L=20.00m	L=743.16m
Proposed TOR / Existing Ground	1026.20 1043.94	1025.69 1042.10	1025.19 1046.06	1024.69 1046.11	1024.19 1045.49	1024.32 1045.37	1025.28 1045.87



HORIZONTAL SCALE 1:1000



VERTICAL SCALE 1:200

NOTES:

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NO. P03481

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HATCH PROJECT No. 357549



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B	2016/05/26	Issued for Information	C.M.
C	2016/08/17	Issued for Route Selection	C.M.

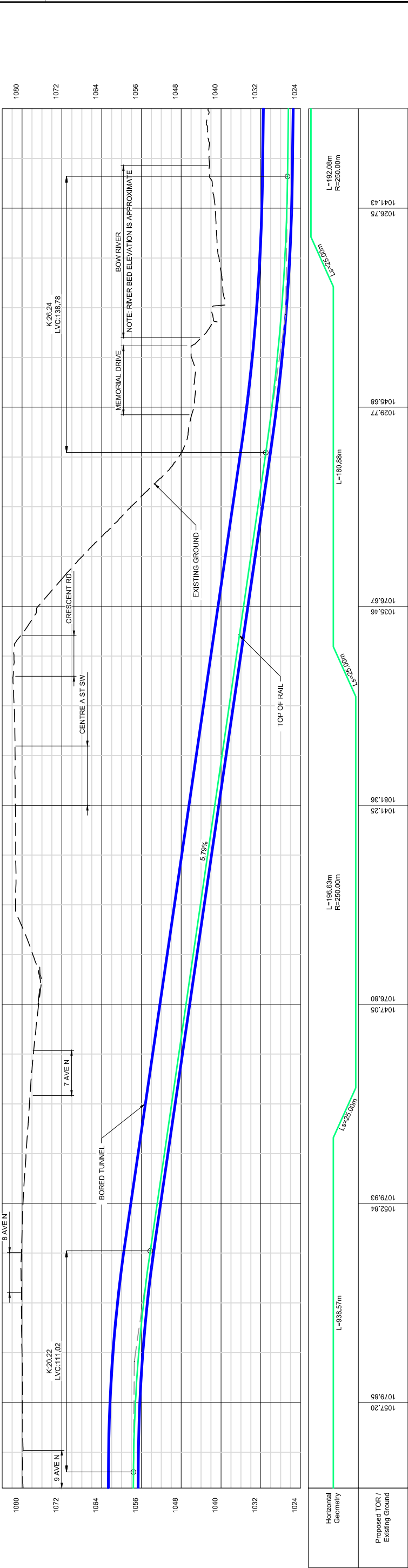


GREEN LINE – NORTH
TRACK PLAN AND PROFILE – CENTRE CITY
OB CENTRELINE – STA 201+900.00 – STA 202+650.00
DWG. BY: N. AGUILA
CHK. BY: K. MILLER
DATE: 2016/04/29
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DWG. NO.: 357549-TR-DWG-N1-FP-AL1161
REV. NO. C

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Underground Alignment of the Bow River Crossing (Option D)



DOUBLE VERTICAL SCALE

Calgary

GREEN LINE – NORTH

TRACK PLAN AND PROFILE – CENTRE CITY

OB CENTRELINE – STA 202+650.00 – STA 203+343.05

DWG. BY: N. AGUILA

CHK. BY: K. MILLER

DATE: 2016/04/29

DWG. NO.: 357549-TR-DWG-N1-FP-AL1162

REV. NO: C

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SHEET

REV. DATE ISSUED FOR AUTH. BY

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stangerarchitecture

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Stantec

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HORIZONTAL SCALE 1:1000

VERTICAL SCALE 1:400

20 0 20 40 60 80 100 m

32 24 16 8 0 8 200 300

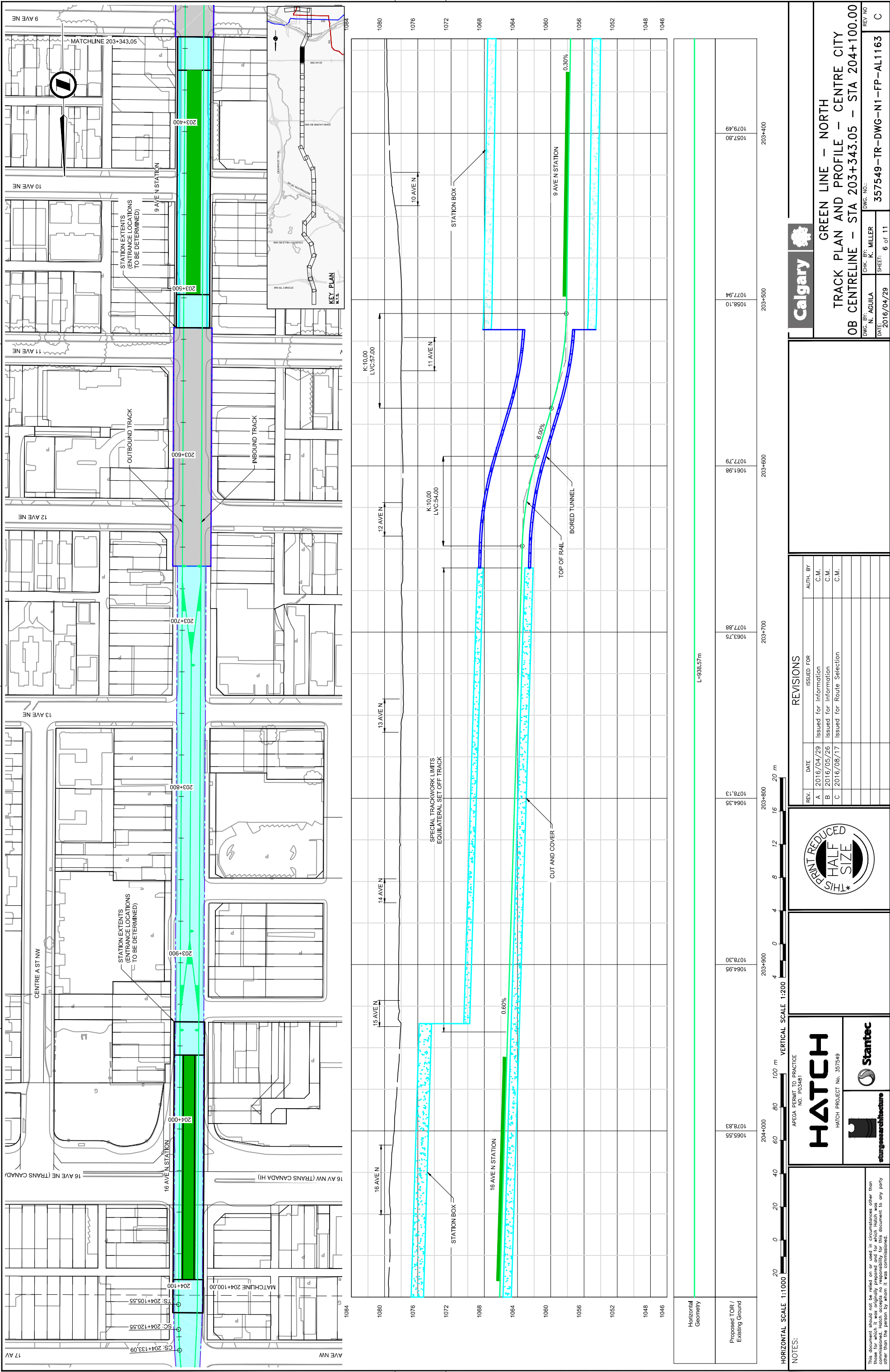
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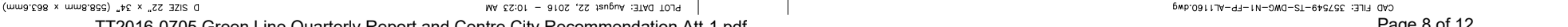
TT2016-0705 Green Line Quarterly Report and Centre City Recommendation Att-1.pdf

ISC: Unrestricted

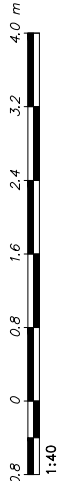
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Underground Alignment of the Bow River Crossing (Option D)

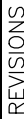




1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2. GUIDEWAY SECTIONS ALWAYS SHOWN IN THE DIRECTION OF INCREASING STATION UNLESS NOTED OTHERWISE.
3. TRANSITION FROM DIRECT FIXATION TRACK TO EMBEDDED TRACK TO OCCUR IN TRENCH: G



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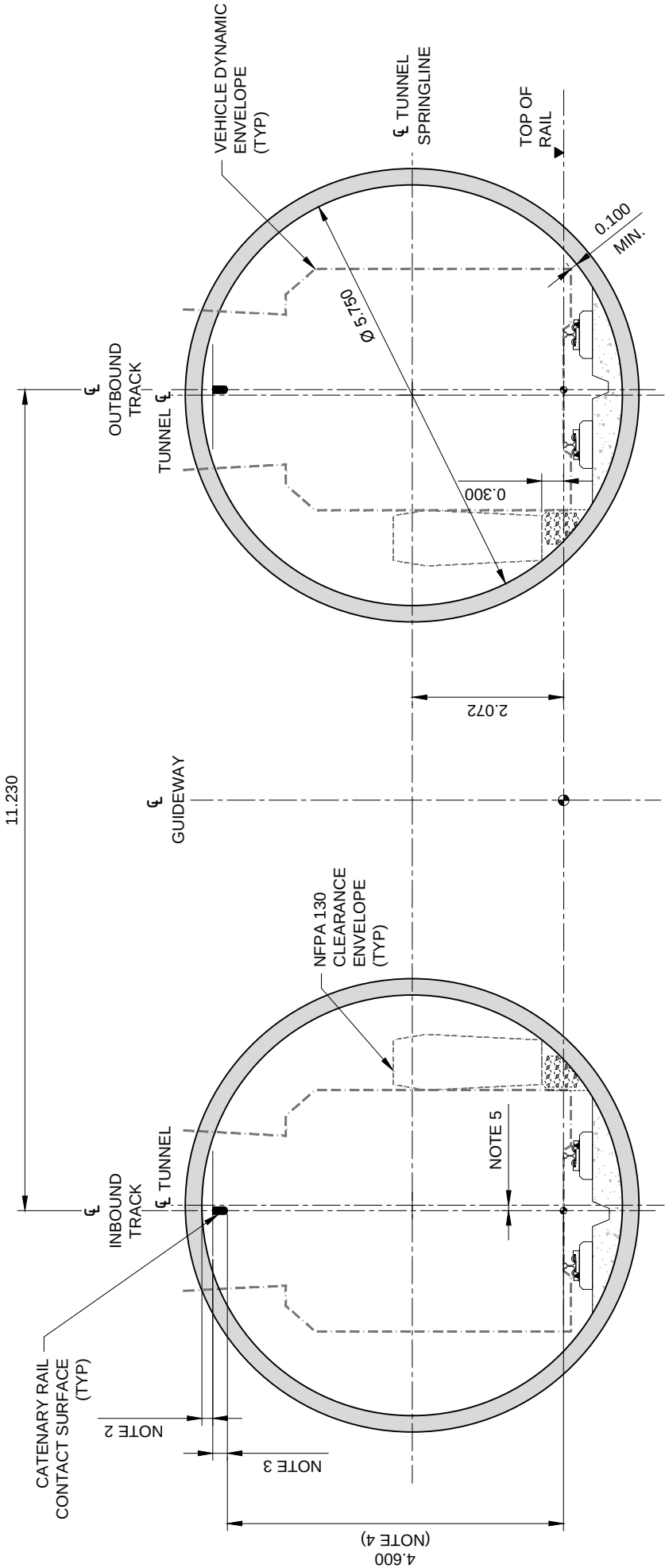
GREEN LINE – NORTH
PREFERRED CENTRE CITY ALIGNMENT – STA 204+375
CENTRE STREET TRENCH
CROSS SECTION – TANGENT

DWG. BY: N. LOPPE	CHK. BY: K. MILLER	DWG. NO.: 3575
DATE: 2016/05/03	SHEET: 8 of 11	

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NOTES:

1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2. 0.190 m MINIMUM ELECTRICAL CLEARANCE BETWEEN LIVE PARTS AND CEILING.
(CSA C21.1-15, TABLE 30)
3. DIMENSION VARIES DEPENDING ON MANUFACTURERS DESIGN DIMENSIONS.
4. 4.60 m MINIMUM ELECTRICAL CLEARANCE BETWEEN RAILS AND FIXED CATENARY RAIL. (CSA C22.3 No. 1-15, TABLE 4)
5. CENTRELINE OF TRACK IS OFFSET FROM CENTRELINE OF TUNNEL TO ACCOMMODATE WALKWAY/DUCTBANK.



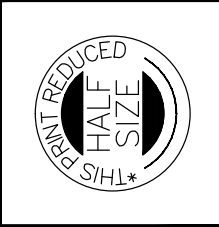
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REV.	DATE	ISSUED FOR	AUTH. BY
A	2016/08/17	Issued for Route Selection	C.M.

GREEN LINE – NORTH
CENTRE CITY – TYPICAL SECTION
TWIN BORED RUNNING TUNNELS
TANGENT

DWG. BY:
N. LOPPE

CHK. BY:
K. MILLER

DWG. NO.:
357549-TS-DWG-N1-FP-AL0410

DATE:
2016/08/17

SHEET:
9 of 11

REV NO:
A

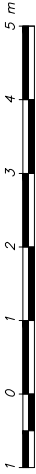
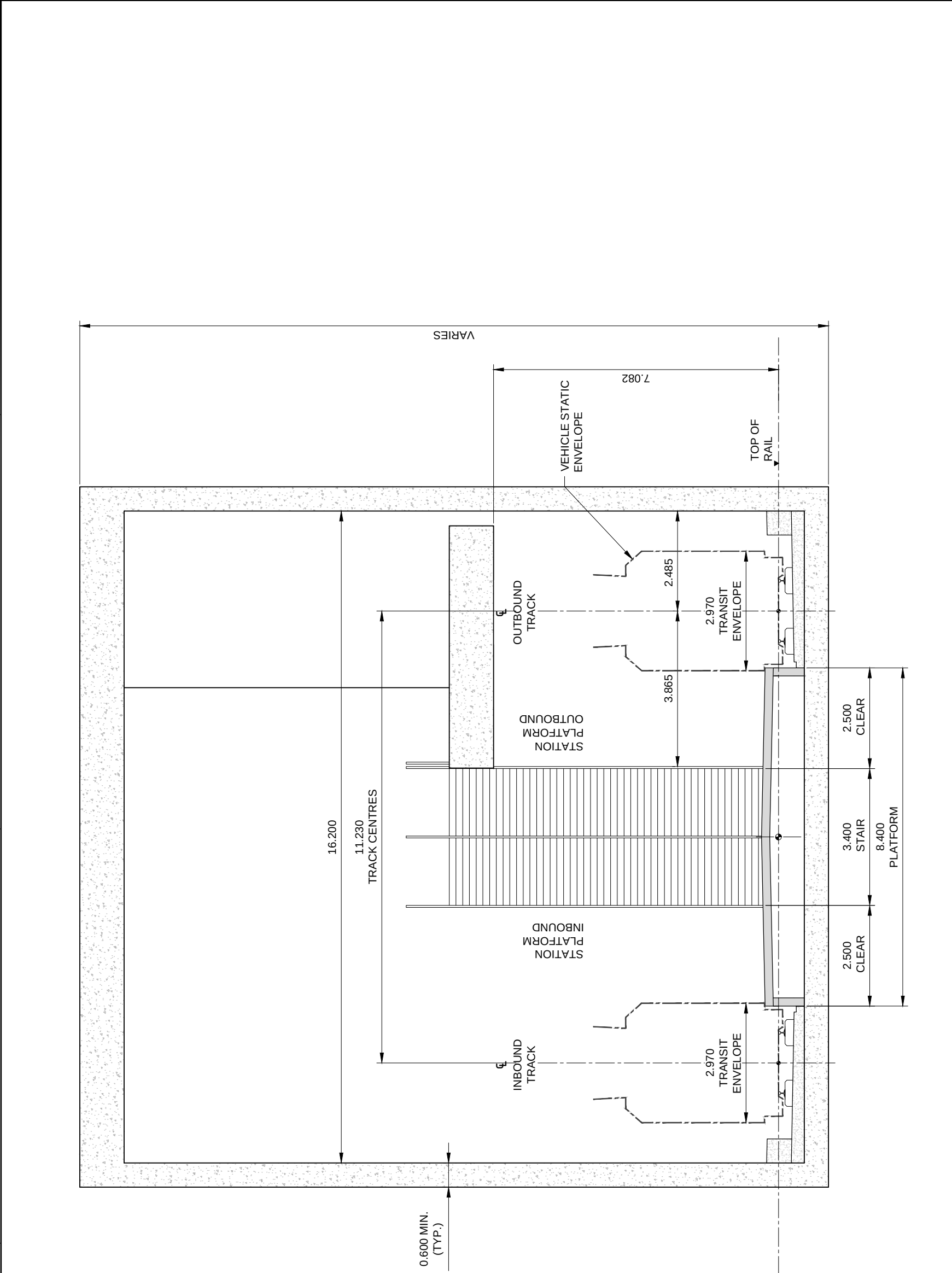
- NOTES:
1.

ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2.

GUIDEWAY SECTIONS ALWAYS SHOWN IN THE DIRECTION OF INCREASING STATION UNLESS NOTED OTHERWISE.
3.

TRANSITION FROM DIRECT FIXATION TRACK TO EMBEDDED TRACK TO OCCUR IN TRENCH.
4.

DEPTH OF PLATFORM BELOW EXISTING GROUND VARIES.

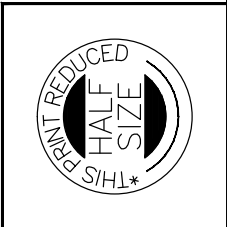


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A	2016/08/17	Issued for Route Selection	

GREEN LINE – NORTH
CENTRE CITY – TYPICAL SECTION
STATION CROSS SECTION
CUT AND COVER

DWG. BY:
N. LOPPE

CHK. BY:
K. MILLER

DWG. NO.:
357549-TS-DWG-N1-FP-AL0200

DATE:
2016/08/17

SHEET:
10 of 11

REV. NO:
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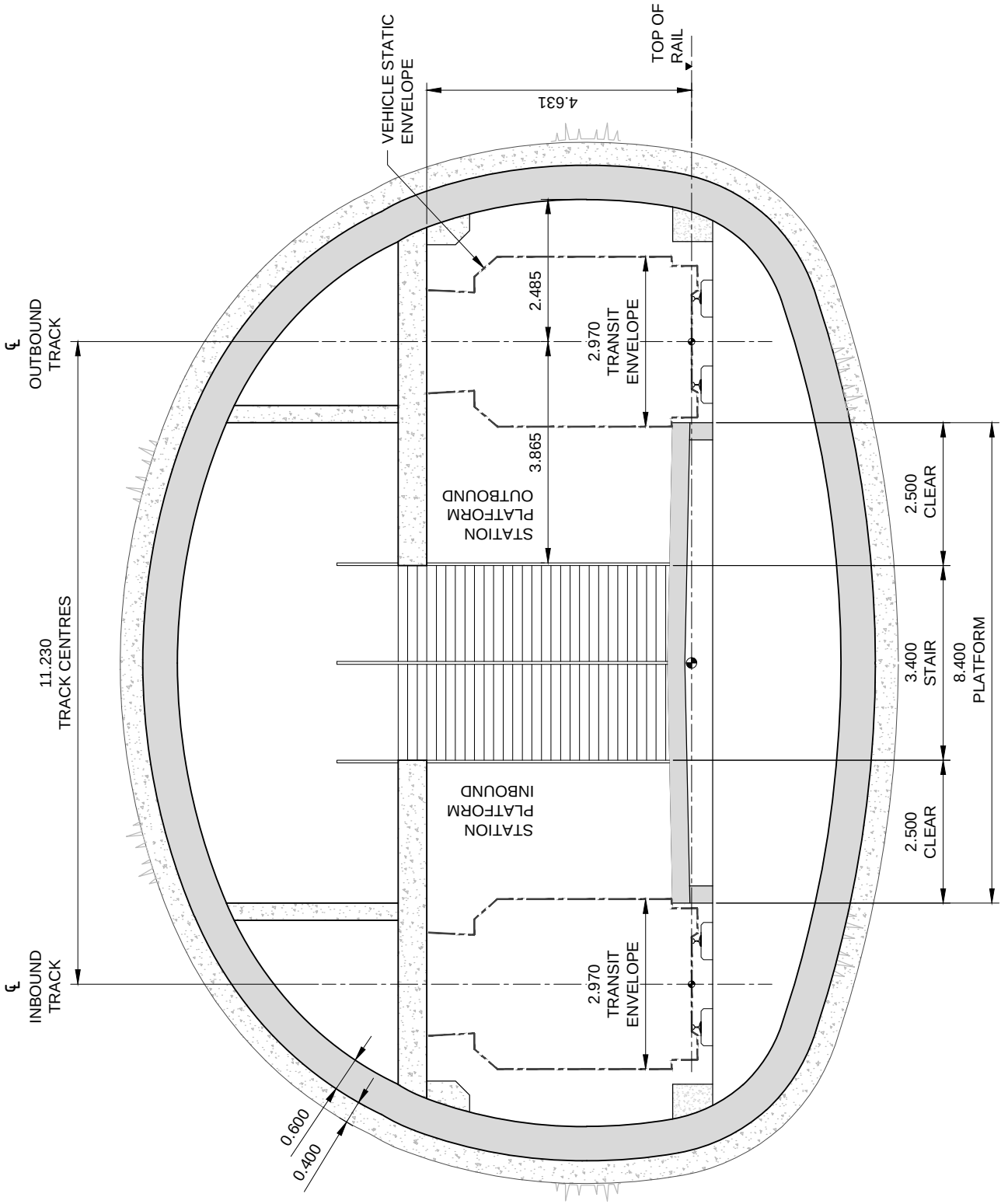
- NOTES:
1.

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GREEN LINE – NORTH
CENTRE CITY – TYPICAL SECTION
STATION CROSS SECTION
SEM

DWG. BY: N. LOPPE	CHK. BY: K. MILLER	DWG. NO.:	REV. NO.
DATE: 2016/08/17	SHEET: 11 of 11	357549-TS-DWG-N1-FP-AL0300	A