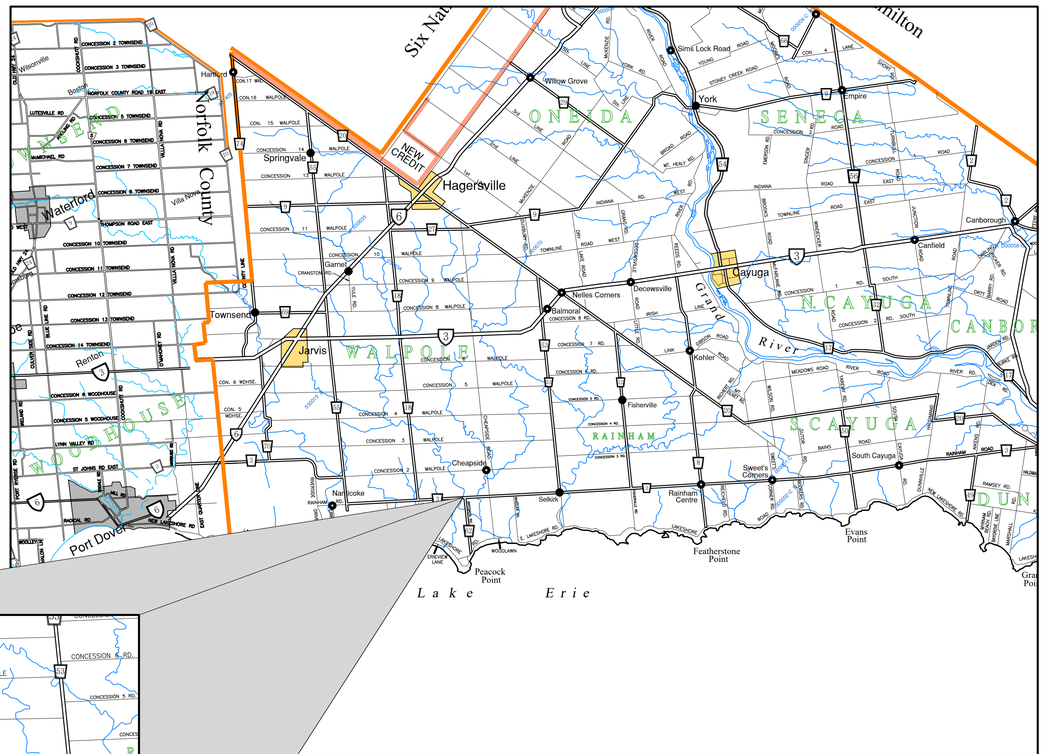
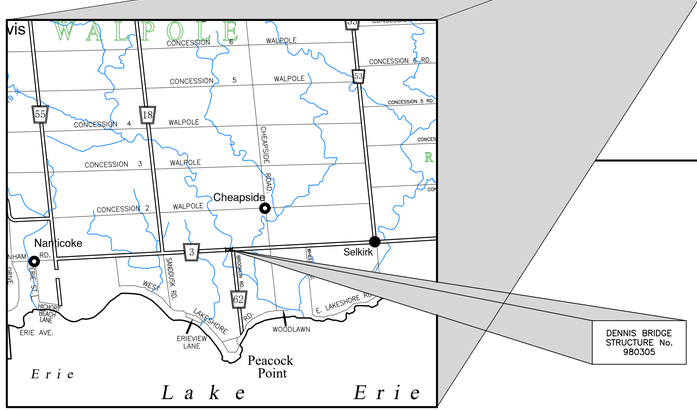
HALDIMAND COUNTY

DENNIS BRIDGE REHABILITATION (STRUCTURE No. 980305)

HALDIMAND COUNTY CONTRACT ENG-50-2019





DENNIS BRIDGE STRUCTURE No. 980305

GENERAL NOTES:

1. DETAILS ON THESE PLANS ARE IN ACCORDANCE WITH THE CHBDC S6-14, CL-625-ONT LOADING.
2. THE WORK DESCRIBED ON THESE PLANS IS SUBJECT TO THE REVIEW AND APPROVAL OF THE LOCAL CONSERVATION AUTHORITY, AND ANY OTHER AUTHORITY HAVING JURISDICTION.
3. IMPLEMENT AND UNDERTAKE ANY MITIGATION REQUIREMENTS AS A RESULT OF OBTAINING THE NECESSARY PERMITS TO UNDERTAKE THE WORK.
4. SUBMIT DETAILED PLANS PER SPECIFICATIONS INDICATING ANY ENVIRONMENTAL PROTECTION, DEMOLITION & CONSTRUCTION METHODS, DEBRIS CONTAINMENT, ETC. FOR REVIEW AND APPROVAL OF THE ENGINEER & ANY PERMITTING AGENCIES SUCH AS CA, MNRF, DFO, ETC. AS PART OF THE PERMIT APPLICATION.
5. SUBMIT DETAILED DRAWINGS (SEALED BY P. ENG.) INDICATING ALL TEMPORARY DAMS, TEMPORARY SUPPORT, JACKING, FALSE WORK, FORM WORK, SCAFFOLDING, RAILINGS, ETC. AS REQUIRED BY THE MINISTRY OF LABOUR, LOCAL CONSERVATION AUTHORITY OR ANY OTHER AUTHORITY HAVING JURISDICTION.
6. ENVIRONMENTAL PROTECTION & MITIGATION MEASURES TO BE MONITORED & MAINTAINED BY THE CONTRACTOR ON A DAILY BASIS TO THE SATISFACTION OF THE ENGINEER AND ANY AUTHORITY HAVING JURISDICTION.
7. UTILITIES SHOWN ON THESE DRAWINGS ARE SCHEMATIC IN NATURE. ALL EXISTING UTILITIES MAY NOT BE SHOWN. LOCATE AND PROTECT ALL EXISTING UTILITIES. ANY UTILITIES THAT ARE IN CONFLICT WITH THE PROPOSED WORK SHALL BE RELOCATED. CONTRACTOR SHALL COORDINATE ALL ASPECTS OF THIS WORK WITH THE APPLICABLE UTILITY COMPANY.
8. EXISTING SIGNS ON THE STRUCTURE SHALL BE SALVAGED BY THE CONTRACTOR AND SURRENDERED TO THE OWNER UPON REQUEST.
9. GEOMETRY & SHAPE OF BRIDGE ELEMENTS WERE OBTAINED FROM ORIGINAL DESIGN DRAWINGS. REFER TO 'DENNIS BRIDGE OVER SANDUSK CREEK' DRAWINGS DATED FEB. 21, 1966 STAMPED BY D.C CRAMM.

BRIDGE REHABILITATION NOTES:

1. ALL CONCRETE REMOVALS TO BE PERFORMED AS DIRECTED BY THE CONSULTANT. DEPTH & AREA OF CONCRETE REMOVAL MAY VARY DEPENDENT UPON LOCATION OF SOUND SUBSTRATE.
2. REMOVAL AREAS AND DEPTH WILL BE DETERMINED ON SITE BY THE ENGINEER BASED ON A VISUAL & DELAMINATION SURVEY BY MEANS OF A CHAIN-DRAG METHOD ON HORIZONTAL SURFACES OR BY THE HAMMER SOUNDING METHOD ON VERTICAL & OVERHEAD SURFACES.
3. SCARIFY CONCRETE ON DECK TO THE DEPTHS INDICATED ON THE DRAWINGS. REMOVE ADDITIONAL CONCRETE ON DECK AS DIRECTED TO THE DEPTHS INDICATED ON THE DRAWINGS OR 25mm BELOW EXPOSED REINFORCING STEEL. DECK PATCHES SHALL BE POURED MONOLITHICALLY WITH THE NEW DECK OVERLAY.
4. EXCAVATE AFTER SCARIFICATION AND PRIOR TO ADDITIONAL DECK REMOVALS. BACKFILL FOLLOWING COMPLETION OF CURING OF DECK OVERLAY.
5. REMOVE DETERIORATED CONCRETE ON BRIDGE ABUTMENT WALLS, WINGWALLS, BALLAST WALLS, SOFFIT, AND PIERS TO THE DEPTHS INDICATED ON THE DRAWINGS OR 25mm BEYOND EXPOSED REINFORCING STEEL AS DIRECTED.
6. NEATLY SAWCUT CONCRETE 25mm TO DELINEATE REMOVAL AREA PRIOR TO CHIPPING. USE APPROPRIATE CARE TO SAFEGUARD EXISTING REINFORCING STEEL, BRIDGE JOINTS, ARMOURING ANGLES, & UTILITIES, ETC. FROM CONCRETE REMOVAL PROCEDURES.
7. ENGINEER TO INSPECT EXISTING STEEL REINFORCEMENT AFTER CONCRETE REMOVALS. REMOVE AND REPLACE DETERIORATED STEEL REINFORCEMENT AS DIRECTED BY THE ENGINEER.
8. SANDBLAST ALL CONCRETE REMOVAL AREAS & EXPOSED STEEL TO A WHITE METAL FINISH.
9. EXISTING STEEL GIRDERS AND ASSOCIATED DIAPHRAGMS, STIFFENERS, CONNECTIONS, ETC. SHALL BE CLEANED OF RUST AND EXISTING PAINT TO THE REQUIREMENTS OF SSPC-SP 10/NACE NO.2 AND COATED WITHIN A FULL ENCLOSURE WITH NEGATIVE PRESSURE AND FILTERING SYSTEM, REFER TO OPSS 911. ALL CLEANED STRUCTURAL & MISC. STEEL INCLUDING CONNECTORS, BUT EXCLUDING SURFACES IN CONTACT WITH CONCRETE AND CONTACT SURFACES OF BOLTED JOINTS SHALL BE COATED.
10. REMOVE AND LEGALLY DISPOSE OF ALL DELETERIOUS MATERIALS AND EXCESS MATERIALS FROM THE SITE.
11. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO THE SATISFACTION OF THE OWNER/CONSULTANT.

CONCRETE:

1. COMPLY WITH CSA-A23.1-14 UNLESS OTHERWISE NOTED. SUBMIT CONCRETE MIX DESIGNS FOR REVIEW.

BALLAST, CLEAT, AND WINGWALL CAPS, BRIDGE ENDPOSTS, BRIDGE CURBS.	C1 (35MPa 19mm AGGR.)
DECK OVERLAY AND DECK ENDS.	C1 (35MPa 13mm AGGR.)
FORMED CONCRETE PATCHWORK	C1 (35MPa 13mm AGGR.) PUMPABLE CONCRETE
SHALLOW DEPTH CONCRETE PATCHWORK	PROPRIETARY PATCHING COMPOUND (35MPa)

2. ALL NEW CONCRETE SHALL HAVE 19mm CHAMFERED CORNERS UNLESS NOTED OTHERWISE.

REINFORCING STEEL:

1. CONFORM TO CSA STANDARD G30.18-M92 GRADE 400.
2. ALL NEW STEEL REINFORCEMENT SHALL BE EPOXY-COATED (2 COATS) UNO.
3. CLEAR COVER (TO TIES):
   TOP OF DECK 70±20mm
   SOFFIT 40±10mm
   REMAINDER 70±20mm
   UNLESS NOTED OTHERWISE
4. ALL BAR LAP LENGTHS, BENDS, AND DEVELOPMENT LENGTHS SHALL CONFORM TO THE CANADIAN HIGHWAY BRIDGE DESIGN CODE (CHBDC) SECTION 8 AND SHALL BE NOTED ON STEEL REINFORCEMENT SHOP DRAWINGS.
5. DUE TO THE NATURE OF THE STRUCTURE AND THE EXISTING CONDITION OF THE CONCRETE AND STEEL REINFORCEMENT, IT MAY BE REQUIRED TO REPLACE AND/OR INSTALL ADDITIONAL REINFORCEMENT.
6. ON SITE CONDITIONS TO BE DETERMINED ONCE DEMOLITION IS COMPLETE; NEW STEEL PLACEMENT SHALL BE AT THE DIRECTION OF THE ENGINEER.

TRAFFIC CONTROL NOTES:

1. SUBMIT DETAILED PLANS SHOWING CONSTRUCTION AND TRAFFIC DETOUR, STAGING, ETC., FOR REVIEW AND APPROVAL BY THE OWNER AND THE CONSULTANT.
2. INSTALL, PROTECT, AND MAINTAIN TRAFFIC CONTROL SYSTEMS, BARRIERS, AND SIGNAGE AT ALL TIMES FOR THE DURATION OF THE PROJECT.

BACKFILL FOR STRUCTURE:

1. UNDER TRAVELED PORTION OF ROADWAY & ROADWAY SHOULDERS USE GRANULAR 'B' TYPE II, COMPACTED TO 100% S.P.M.D.D.
2. BEYOND ROADWAY SHOULDERS USE MATERIAL GAINED FROM EXCAVATION COMPACTED TO 95% S.P.M.D.D.
3. EXCAVATION AND BACKFILL SHALL BE COMPLETED SIMULTANEOUSLY BEHIND BOTH ABUTMENTS/DECK ENDS. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500mm.
4. REMOVE AND LEGALLY DISPOSE OF ALL DELETERIOUS MATERIALS AND EXCESS MATERIALS FROM THE SITE.

BRIDGE JACKING NOTES:

1. COMPLETE BRIDGE JACKING TO REPLACE BEARINGS AND REHABILITATE GIRDERS AND BEARING STRUCTURES.
2. SUBMIT ENGINEERED AND STAMPED JACKING SHOP DRAWINGS AND PROCEDURE FOR REVIEW.
3. TEMPORARILY SUPPORT ALL STRUCTURES TO REMAIN.
4. REMOVE ADDITIONAL STRUCTURES AS REQUIRED TO ENSURE EXPANSION JOINTS, DECK ENDS, AND CURB ENDS ARE FREE TO MOVE, TYPICAL.
5. PLACEMENT OF NEW OVERLAY, EXPANSION JOINTS, DECK ENDS AND BRIDGE CURBS, SHALL BE DONE AFTER JACKING OPERATIONS ARE COMPLETE, REMOVED, AND NEW FINISHED DECK ELEVATIONS HAVE BEEN REVIEWED.

REV. No.	DATE	REVISION
0	FEB. 11, 2019	SUBMIT TO HALDIMAND FOR REVIEW
1	FEB. 26, 2019	ISSUED FOR TENDER

DRAWING LIST

1 COVER PAGE
2 TRAFFIC DETOUR SIGNAGE LAYOUTS
3 PLAN & PROFILE
4 GENERAL ARRANGEMENT
5 SEMI-INTEGRAL DETAILS
6 MISCELLANEOUS CONCRETE DETAILS
7 MISCELLANEOUS STEEL DETAILS
8 BARRIER LAYOUT
9 BARRIER DETAILS

GENERAL NOTES

1. PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL INVESTIGATE THE SITE AND SATISFY THEMSELVES OF THE WORK REQUIRED TO COMPLETE THE PROJECT, AND SHALL DETERMINE ANY REMOVALS, AREA OF CONSTRUCTION TO BE CLEARED AND GRUBBED, REMOVAL OF EXISTING STRUCTURES & GROWTH AFFECTING THE WORK AREA, ETC. THAT MAY BE REQUIRED TO COMPLETE THE WORK.
2. CONTRACTOR SHALL CONFIRM, BY MEANS OF SUBMITTING A BID, THAT THE DETAILED CONDITION SURVEY REPORTS PREPARED BY BRIDGE CHECK CANADA LTD., BCC17018, DATED SEPT. 26, 2017 INCLUDED IN TENDER DOCUMENTS, HAVE BEEN REVIEWED THOROUGHLY.
3. THE CONTRACTOR IS CAUTIONED THAT ALL INQUIRIES DURING THE TENDER PERIOD MUST BE SUBMITTED IN WRITING PRIOR TO THE CLOSE OF TENDER AS NOTED IN THE INSTRUCTIONS TO BIDDERS.

ABBREVIATIONS

@	AT (SPACING C/C)	HSS	HOLLOW STEEL TUBE SECTION
BLL	BOTTOM LOWER LAYER	IF	INSIDE FACE
BOT	BOTTOM	MISC	MISCELLANEOUS
BUL	BOTTOM UPPER LAYER	MRD	MATERIAL RELATIVE DENSITY
CA	CONSERVATION AUTHORITY	OF	OUTSIDE FACE
C/C	CENTRE TO CENTRE	OPSD	ONTARIO PROVINCIAL STANDARDS DRAWINGS
CHBDC	CANADIAN HIGHWAY BRIDGE DESIGN CODE	OPSS	ONTARIO PROVINCIAL STANDARD SPECIFICATIONS
CJ	CONSTRUCTION JOINT		
℄	CENTRE LINE		
CONC	CONCRETE	P	PLATE
CONT	CONTINUOUS	REINF	REINFORCEMENT
C/W	COMPLETE WITH	SIM	SIMILAR
DIA or ø	DIAMETER	SP	SPACED
DIM	DIMENSION	SPMDD	STANDARD PROCTOR MAX DRY DENSITY
DWG	DRAWING	TLL	TOP LOWER LAYER
EC	EPOXY-COATED	TUL	TOP UPPER LAYER
EF	EACH FACE	TYP	TYPICAL
ELEV or EL	ELEVATION	U/N	UNDERNEATH
EQ	EQUAL	UNO	UNLESS NOTED OTHERWISE
EW	EACH WAY	VERT	VERTICAL
EX or EXIST	EXISTING	W	STEEL I-BEAM
GALV	GALVANIZED	W/	WITH
HORIZ	HORIZONTAL	WW	WINGWALL

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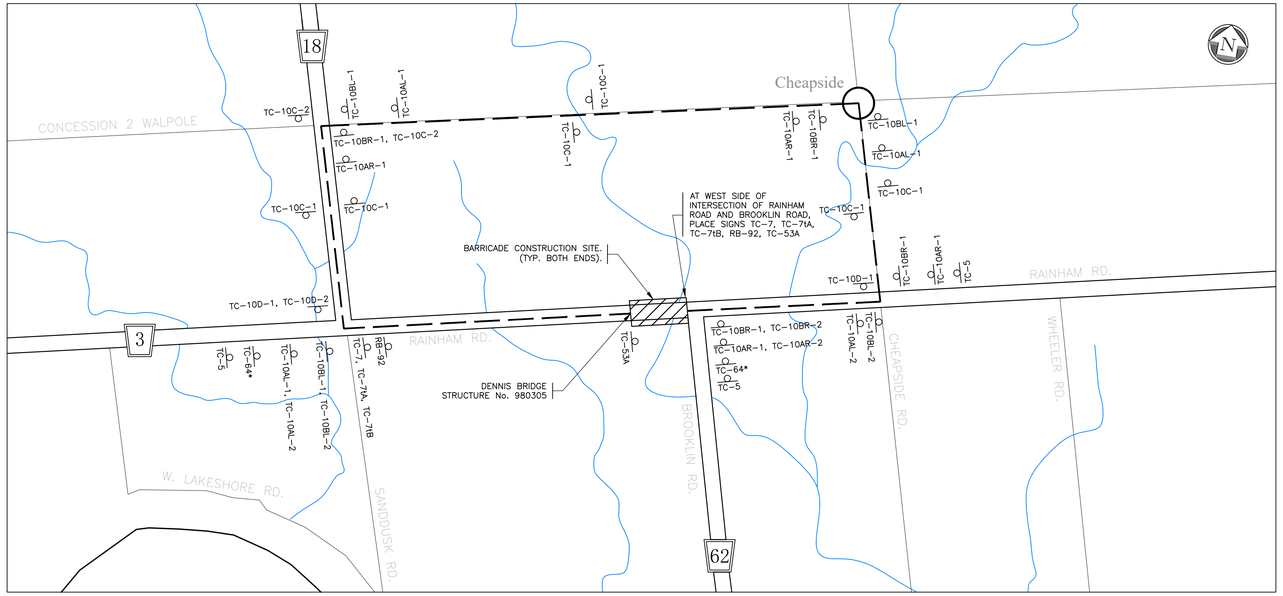
Project Title

HALDIMAND COUNTY
DENNIS BRIDGE REHABILITATION
STRUCTURE No. 980305
RAINHAM ROAD
HALDIMAND COUNTY CONTRACT ENG-50-2019

Drawing Title

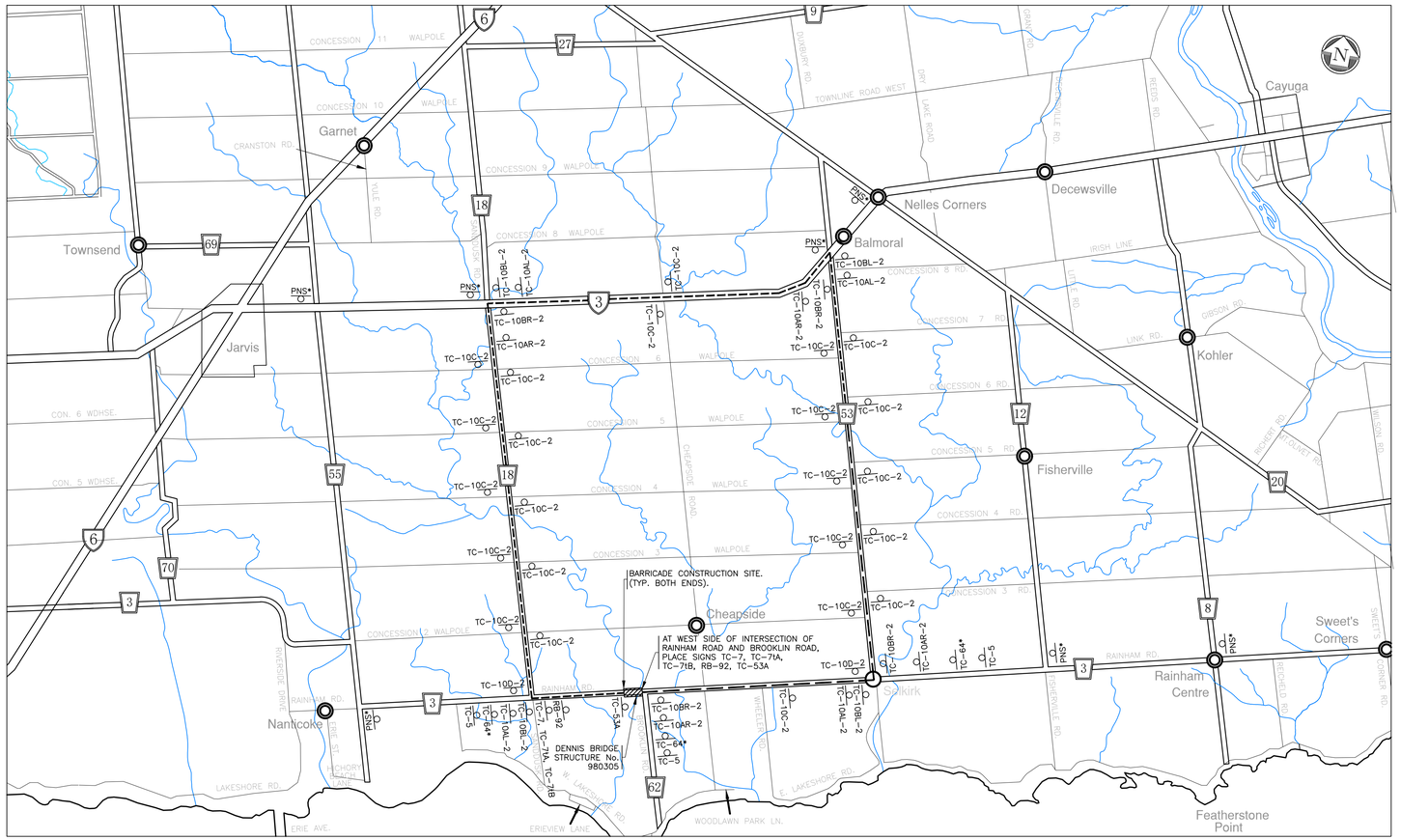
COVER PAGE

Designed by : M.J.R./J.A.T.	Drawn By : B.A.O.
Checked by :	Date Started : JAN. 2019
Drawing Scale : AS NOTED	Drawing No. 1
Project No. 18-039	



1
2 DETOUR 1: LOCAL TRAFFIC DETOUR SIGNAGE LAYOUT

SCALE: NTS



2
2 DETOUR 2: TRUCK TRAFFIC DETOUR SIGNAGE LAYOUT

SCALE: NTS

NOTES:

1. 'DETOUR 1: LOCAL TRAFFIC DETOUR' SIGNAGE NOT SHOWN ON 'DETOUR 2: TRUCK TRAFFIC DETOUR SIGNAGE LAYOUT' FOR CLARITY.
2. THE ROAD WILL BE CLOSED AT THE SITE FOR THE DURATION OF THE PROJECT.
3. INSTALL, PROTECT, AND MAINTAIN TRAFFIC CONTROL SYSTEMS, BARRIERS, AND SIGNAGE AT ALL TIMES FOR THE DURATION OF THE PROJECT.
4. THE LAYOUTS SHOWN ARE GENERAL IN NATURE. FINAL DETAILED TRAFFIC CONTROL PLANS TO BE PREPARED BY THE CONTRACTOR AND SUBMITTED PRIOR TO ROAD CLOSURE.
5. ALL TRAFFIC CONTROL, SIGNS, AND DEVICES SHALL BE PER OTM BOOK 7.
6. SIGNAGE SPACING SHALL BE PER OTM BOOK 7 OR AS DIRECTED BY THE OWNER.
7. TC-64* SIGNS TO BE INSTALLED PRIOR TO CLOSURE OF THE ROAD. REPLACE WITH TC-64 SIGNS UPON APPROVED ROAD CLOSURE AND COMMENCEMENT OF CONSTRUCTION.
8. PNS* SIGNS TO BE INSTALLED PRIOR TO CLOSURE OF THE ROAD. REPLACE WITH PNS SIGNS UPON APPROVED ROAD CLOSURE AND COMMENCEMENT OF CONSTRUCTION.

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LEGEND

TC-10AR-1 · TC-10AR-2 · TC-5 · TC-10BR-1 · TC-10BR-2 · TC-7 · TC-10AL-1 · TC-10AL-2 · TC-7tA · TC-7tB · TC-10BL-1 · TC-10BL-2 · TC-64* · TC-10C-1 · TC-10C-2 · TC-64 · TC-10D-1 · TC-10D-2 · PROJECT NOTIFICATION SIGN* (PNS)* · PROJECT NOTIFICATION SIGN (PNS) · Rb-92 · DETOUR ROUTE · TC-53A

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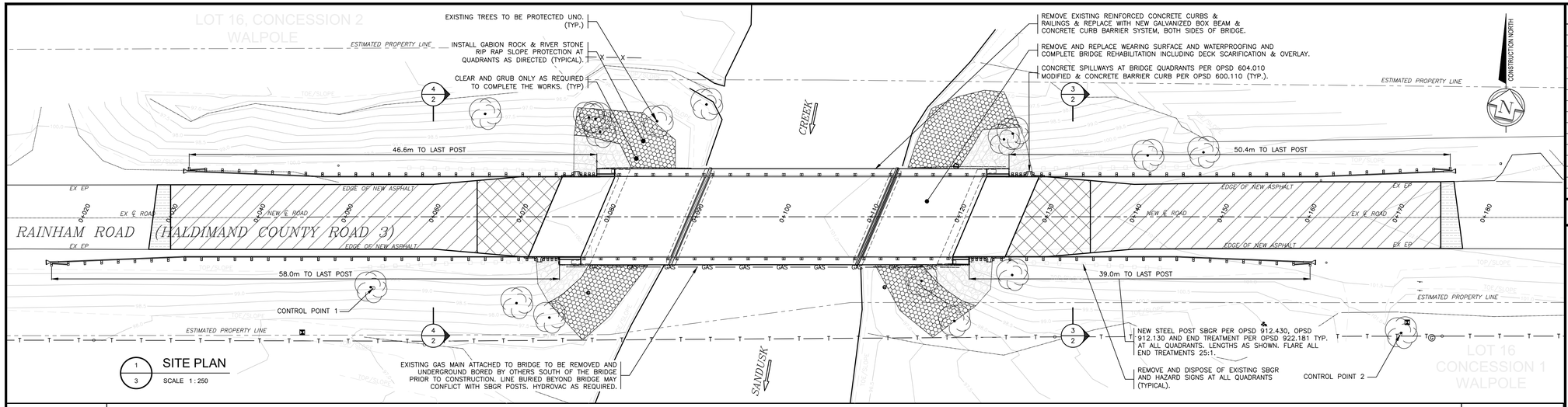
Project Title

HALDIMAND COUNTY
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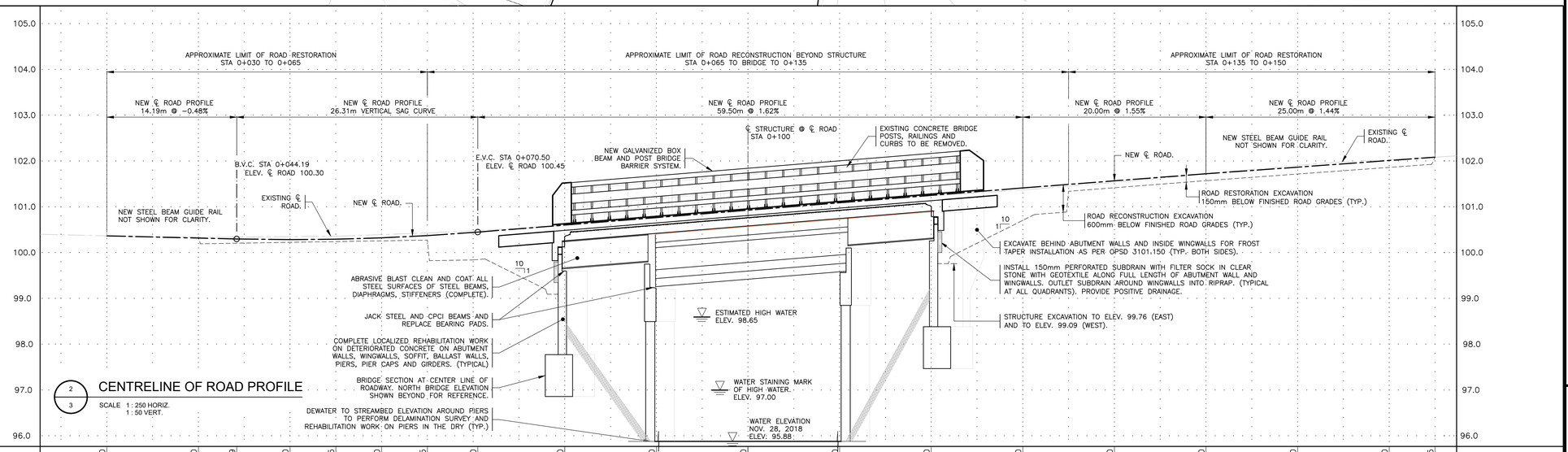
Drawing Title

TRAFFIC DETOUR SIGNAGE LAYOUTS

Designed by : M.J.R./J.A.T.	Drawn By : B.A.O.
Checked by :	Date Started : JAN. 2019
Drawing Scale : AS NOTED	Drawing No. 2
Project No. 18-039	



1/3 SITE PLAN
SCALE 1 : 250



2/3 CENTRELINE OF ROAD PROFILE
SCALE 1 : 250 HORIZ.
1 : 50 VERT.

CHAINAGE	0+030	0+040	0+044.19	0+050	0+055	0+060	0+065	0+070.50	0+080	0+090	0+100	0+110	0+120	0+130	0+140	0+150	0+160	0+170	0+175
NEW CENTRELINE ROAD ELEVATIONS	100.37 MATCH	100.32	100.30	100.29	100.30	100.32	100.37	100.45	100.60	100.77	100.93	101.09	101.25	101.41	101.57	101.72	101.87	102.01	102.09 MATCH
EX. CENTRELINE ROAD ELEVATIONS	100.35	100.34		100.36		100.44		100.54	100.62	100.76	100.92	101.09	101.25	101.28	101.39	101.58	101.80	101.97	102.08

ROAD RECONSTRUCTION:

THE EXISTING ROAD PAVEMENT SHALL BE REMOVED AND THE BASE AND SHOULDERS EXCAVATED TO 600mm BELOW THE PROPOSED FINAL ROAD GRADE AND REPLACED WITH:

- 50mm HL3 OVER 50mm HL4 OVER 50mm HL8 ASPHALT PAVEMENT IN THREE LIFTS AND COMPACTED TO A MINIMUM OF 92% DENSITY (MRD).
- OVER 150mm OF GRANULAR 'A' COMPACTED TO 100% DENSITY (SPMDD).
- OVER 300mm OF GRANULAR 'B' TYPE II COMPACTED TO 100% DENSITY (SPMDD).
- OVER EXISTING IN−SITU SOILS SUITABLE FOR ROAD SUBBASE TO BE PROOF ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER.

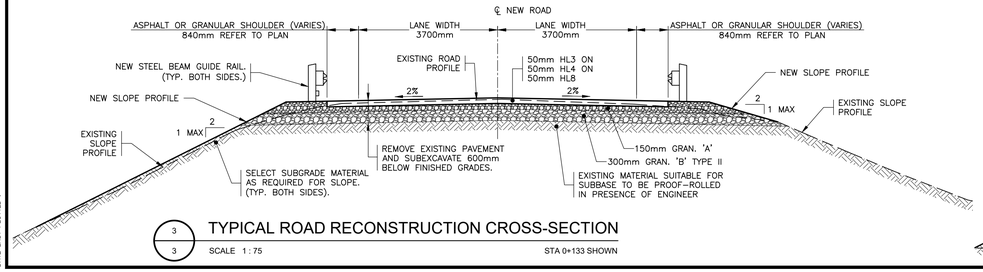
EARTH SLOPES:

- ALL EARTH SLOPES SHALL BE STRIPPED AND BENCHED IN ACCORDANCE WITH OPSD 208.010 AS REQUIRED.
- BEYOND ROADWAY SHOULDERS USE SUITABLE MATERIAL GAINED FROM EXCAVATION COMPACTED TO 95% S.P.M.D.D.

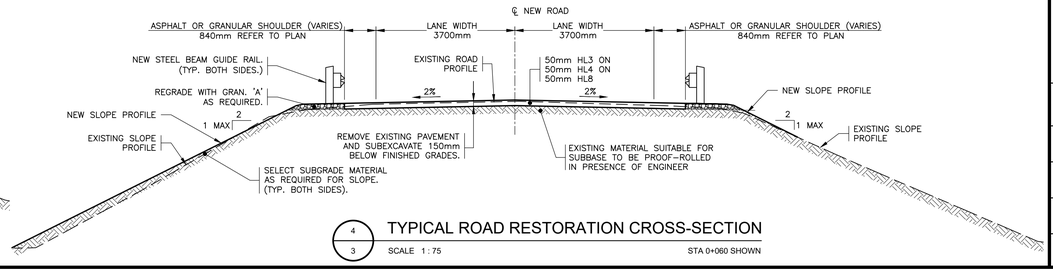
ROAD RESTORATION:

THE EXISTING ROAD PAVEMENT SHALL BE REMOVED AND THE BASE GRADED WITH GRANULAR 'A' TO 150mm MIN. BELOW THE PROPOSED FINAL ROAD GRADE (OR TO PERMIT SUBBASE DRAINAGE) AND REPLACED WITH:

- 50mm HL3 OVER 50mm HL4 OVER 50mm HL8 ASPHALT PAVEMENT IN THREE LIFTS AND COMPACTED TO A MINIMUM OF 92% DENSITY (MRD).
- OVER GRANULAR 'A' AS REQUIRED COMPACTED TO 100% DENSITY (SPMDD).
- OVER EXISTING IN−SITU SOILS SUITABLE FOR ROAD SUB−BASE TO BE PROOF−ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER.



3/3 TYPICAL ROAD RECONSTRUCTION CROSS-SECTION
SCALE 1 : 75 STA 0+133 SHOWN



4/3 TYPICAL ROAD RESTORATION CROSS-SECTION
SCALE 1 : 75 STA 0+060 SHOWN

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NOTES

DIMENSIONS SHOWN ARE APPROXIMATE IN NATURE AND ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. FIELD VERIFY MEASUREMENTS AND NOTIFY THE ENGINEER OF ALL DISCREPANCIES. DO NOT SCALE THE DRAWINGS. ELEVATIONS & STATIONS ARE TYPICALLY SHOWN IN METRES.

CONTOUR LINES SHOWN ARE APPROXIMATE EXISTING AND MAY NOT REPRESENT PROPOSED SURFACE CONTOURS AFTER CONSTRUCTION.

LEGEND:

- APPROXIMATE EXTENT OF RIPRAP OVER GEOTEXTILE SLOPE & EROSION PROTECTION.
- APPROXIMATE EXTENT OF WASHED RIVERSTONE. GEOTEXTILE SLOPE & EROSION PROTECTION.
- ROAD RECONSTRUCTION: APPROXIMATE EXTENT OF NEW ASPHALT SURFACE OF ROAD RECONSTRUCTION.
- ROAD RESTORATION: APPROXIMATE EXTENT OF NEW ASPHALT SURFACE OF ROAD RESTORATION.
- MILL 1−3m AT EXISTING FOR CONSTRUCTION JOINT.
- EXISTING FENCE
- EXISTING BELL
- EXISTING OVERHEAD WIRES
- EXISTING GAS
- GUY WIRE
- BELL PEDESTAL
- GAS LINE MARKER
- EXISTING SIGN
- EXISTING GAS METER

SITE BENCHMARK:

CONTROL POINT 1: SPIKE IN TREE
STA 0+053.16 ELEV. 99.87m (ASSUMED)
O/S FROM ROAD ℄: 8.16m.

CONTROL POINT 2: SPIKE IN TREE
STA 0+170.37 ELEV. 101.45m (ASSUMED)
O/S FROM ROAD ℄: 13.47m.

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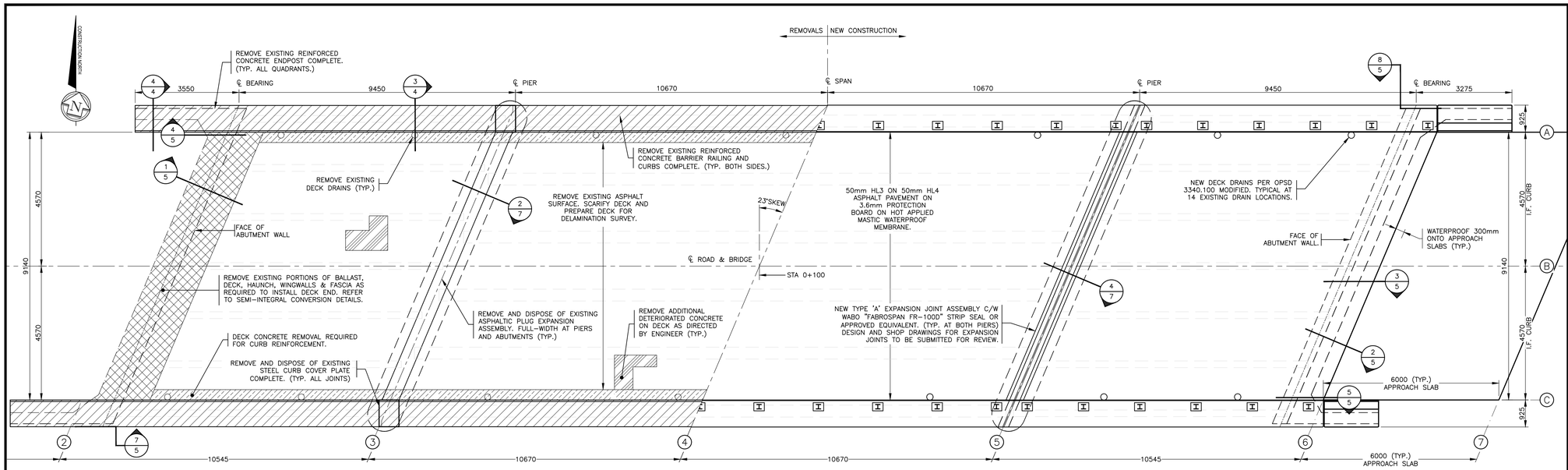
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Project Title
HALDIMAND COUNTY
DENNIS BRIDGE REHABILITATION
STRUCTURE No. 980305
RAINHAM ROAD
LOT 16, CONCESSION 1 & 2 WALPOLE
HALDIMAND COUNTY CONTRACT ENG-50-2019

Drawing Title
PLAN AND PROFILE

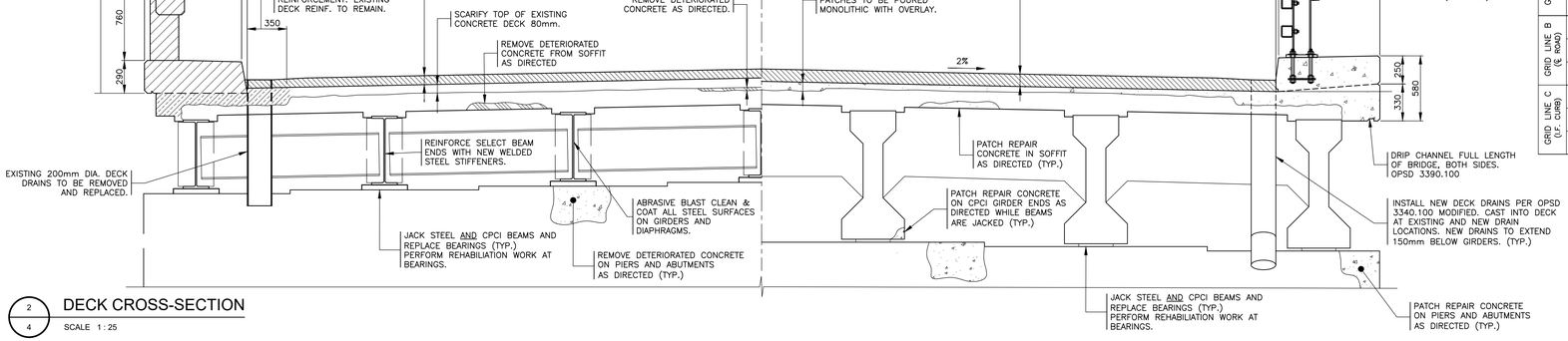
Designed by :	Drawn By :
M.J.R./J.A.T.	J.A.T.
Checked by :	Date Started :
	NOV. 2018
Drawing Scale :	Drawing No.
AS NOTED	3
Project No.	
18-039	

DATE LAST PLOTTED :



DECK PLAN

SCALE 1 : 75

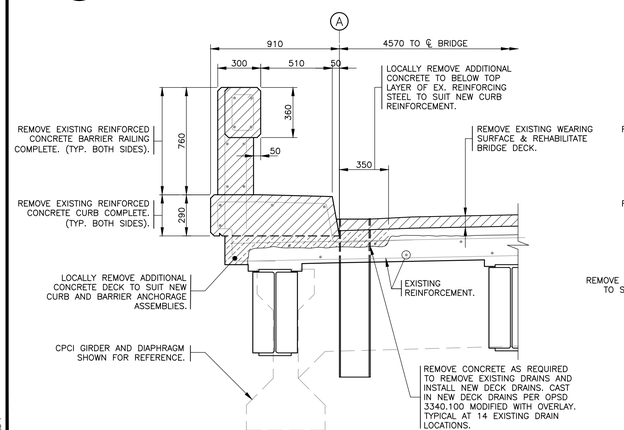


DECK CROSS-SECTION

SCALE 1 : 25

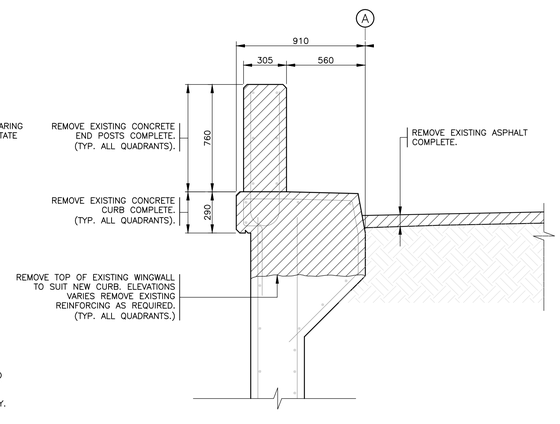
		GRIDLINE						
		1	2	3 (℄ PIER)	4 (℄ SPAN)	5 (℄ PIER)	6	7
GRID LINE A (I.F. CURB)	EXISTING TOP OF ASPHALT	–	–	100.70	100.88	101.04	–	–
	NEW DECK (TOP OF CONCRETE)	100.32	100.42	100.59	100.76	100.93	101.10	101.20
	NEW TOP OF ASPHALT	100.43	100.53	100.70	100.87	101.04	101.21	101.31
GRID LINE B (℄ BEAM)	EXISTING TOP OF ASPHALT	–	–	100.76	100.93	101.10	–	–
	NEW DECK (TOP OF CONCRETE)	100.38	100.48	100.65	100.82	100.99	101.16	101.26
	NEW TOP OF ASPHALT	100.49	100.59	100.76	100.93	101.10	101.27	101.37
GRID LINE C (I.F. CURB)	EXISTING TOP OF ASPHALT	–	–	100.66	100.84	101.02	–	–
	NEW DECK (TOP OF CONCRETE)	100.26	100.36	100.53	100.70	100.87	101.04	101.14
	NEW TOP OF ASPHALT	100.37	100.47	100.64	100.81	100.98	101.15	101.25

FINISHED DECK ELEVATIONS



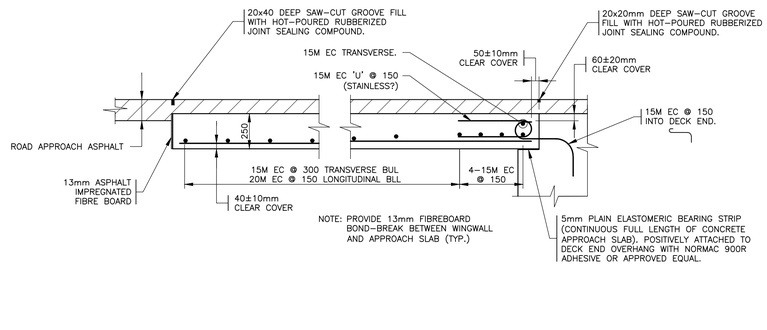
REMOVALS SECTION

SCALE 1 : 20



REMOVALS SECTION AT WINGWALL

SCALE 1 : 20



APPROACH SLAB REINFORCING DETAILS

SCALE 1 : 20

REV. No.	DATE	REVISION
0	FEB. 11, 2019	SUBMIT TO HALDIMAND FOR REVIEW
1	FEB. 26 2019	ISSUED FOR TENDER

NOTES

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GEOMETRY & SHAPE OF BRIDGE ELEMENTS WERE OBTAINED FROM ORIGINAL DESIGN DRAWINGS. REFER TO 'DENNIS BRIDGE OVER SANDUSK CREEK TOWNSHIP OF WALPOLE LOT 16 CON. I & II' C.C. PARKER & ASSOCIATES LTD. DRAWINGS DATED FEBRUARY 1966.

LEGEND:

FULL DEPTH BARRIER REMOVAL

- CONCRETE BARRIER RAILING
- CONCRETE CURB

REMOVALS REQUIRED TO SUIT NEW DECK ENDS

- DECK
- BALLAST WALL TOP
- CLEAT TOP

PARTIAL DEPTH DECK REMOVALS

ELEMENT	REMOVAL DEPTH
• DECK (AFTER DELAMINATION SURVEY)	50mm
• SOFFIT	50mm
• ABUTMENT/WINGWALL/PIER	100mm
• DECK (CONCRETE REQUIRED FOR CURB REINFORCEMENT.)	VARIES

DECK SCARIFICATION

ELEMENT	REMOVAL DEPTH
DECK CONCRETE SCARIFICATION	80mm

A GRAND EXPERIENCE HALDIMAND COUNTY

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Project Title

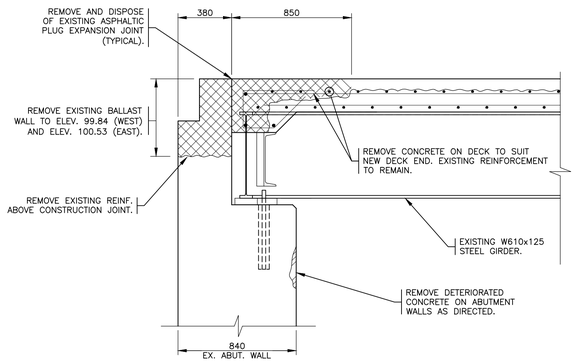
HALDIMAND COUNTY
DENNIS BRIDGE REHABILITATION
STRUCTURE No. 980305
RAINHAM ROAD
LOT 16, CONCESSION 1 & 2 WALPOLE
HALDIMAND COUNTY CONTRACT ENG-50-2019

Drawing Title

GENERAL ARRANGEMENT

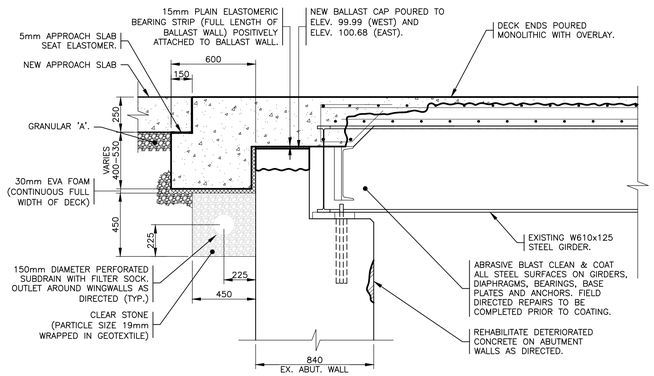
Designed by : M.J.R./J.A.T.	Drawn By : J.A.T.
Checked by :	Date Started : NOV. 2018
Drawing Scale : AS NOTED	Drawing No. 4
Project No. 18-039	

DATE LAST PLOTTED :



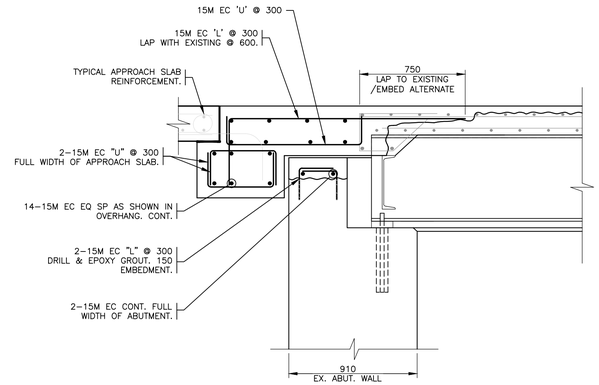
1/5 BALLAST & DECK END REMOVAL

SCALE 1:20 PERPENDICULAR TO ABUTMENT



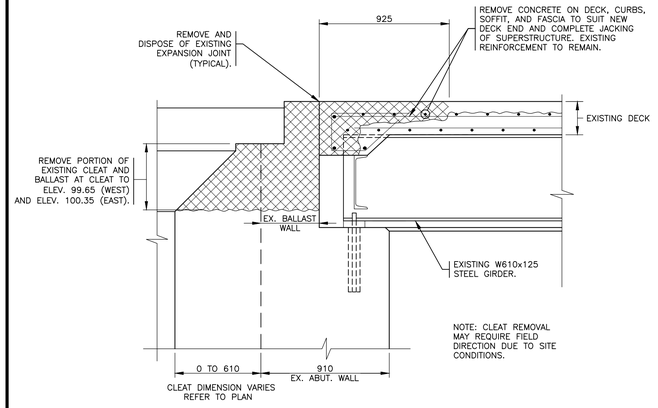
2/5 DECK END OVERHANG AT THE ABUTMENT WALL

SCALE 1:20 PERPENDICULAR TO ABUTMENT



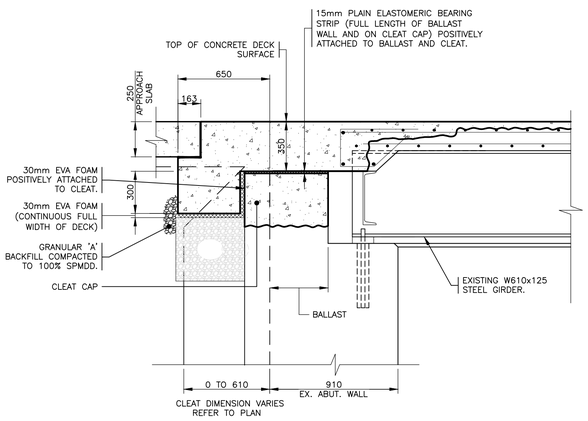
3/5 TYPICAL DECK END OVERHANG REINFORCEMENT

SCALE 1:20 PARALLEL WITH ROAD CENTRELINE



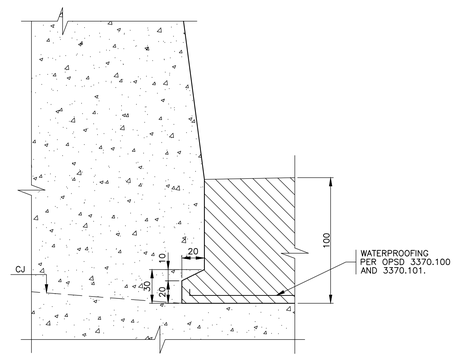
4/5 CLEAT REMOVAL

SCALE 1:20 PARALLEL WITH ROAD CENTRELINE



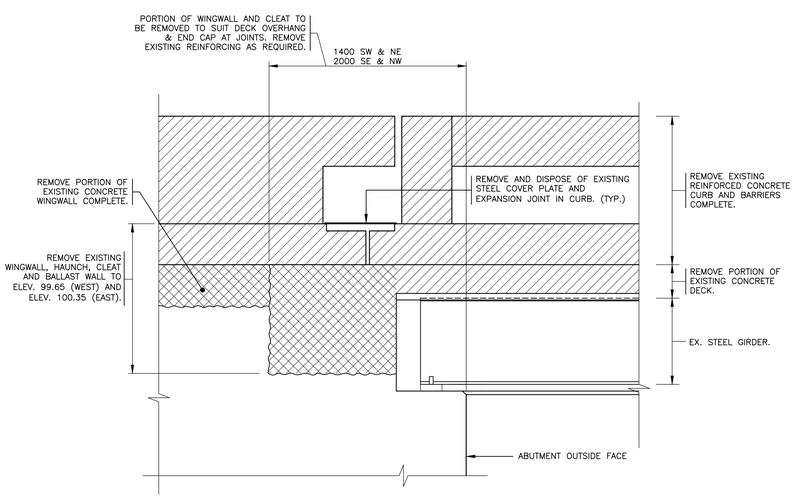
5/5 CLEAT CAP AND DECK END OVERHANG

SCALE 1:20 PARALLEL WITH ROAD CENTRELINE



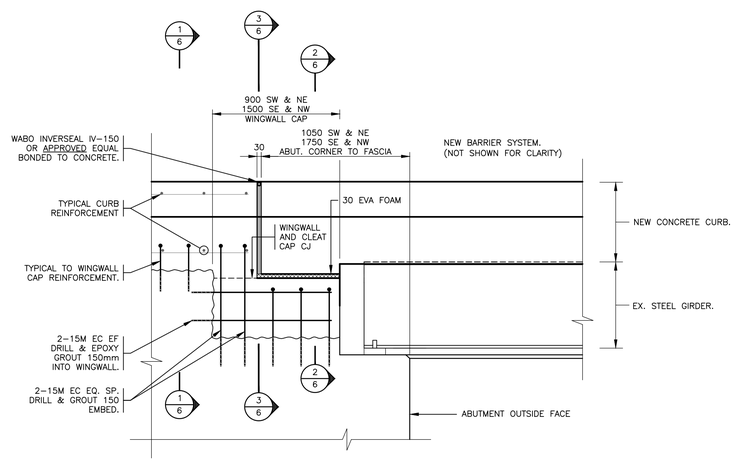
A/5 FORMED CHASE IN CURB

NTS



7/5 FASCIA REMOVAL AT WINGWALL

SCALE 1:20 PARALLEL WITH ROAD CENTRELINE



8/5 FASCIA EXTENSION AT WINGWALL

SCALE 1:20 PARALLEL WITH ROAD CENTRELINE

DATE LAST PLOTTED :

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LEGEND:

FULL DEPTH BARRIER REMOVAL

- CONCRETE BARRIER RAILING
- CONCRETE CURB

REMOVALS REQUIRED TO SUIT NEW DECK ENDS

- DECK
- BALLAST WALL TOP
- CLEAT TOP

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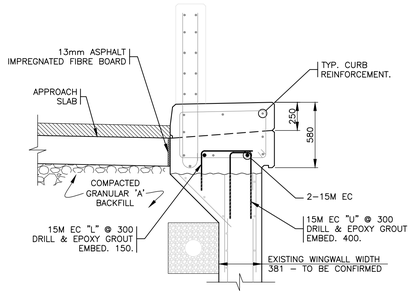
Project Title

HALDIMAND COUNTY
DENNIS BRIDGE REHABILITATION
STRUCTURE No. 980305
RAINHAM ROAD
LOT 16, CONCESSION 1 & 2 WALPOLE
HALDIMAND COUNTY CONTRACT ENG-50-2019

Drawing Title

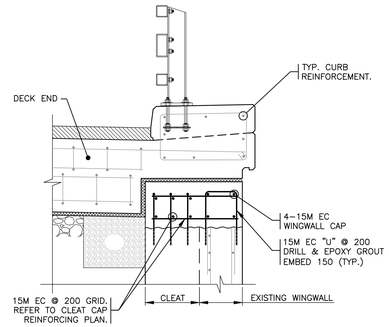
SEMI-INTEGRAL DETAILS

Designed by : M.J.R./J.A.T.	Drawn By : J.A.T.
Checked by :	Date Started : NOV. 2018
Drawing Scale : AS NOTED	Drawing No. 5
Project No. 18-039	



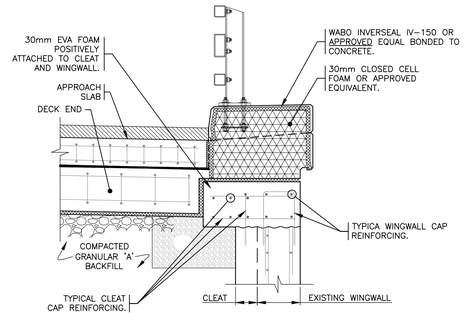
1/6 WINGWALL CAP AT APPROACH SLAB

SCALE 1:25



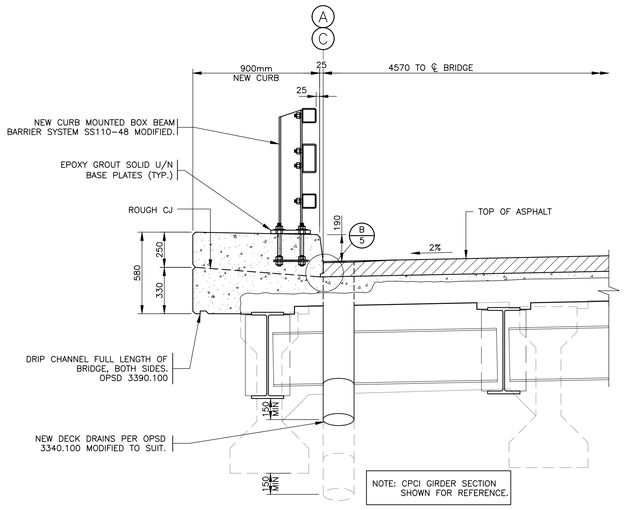
2/6 CLEAT AND WINGWALL CAP REINFORCEMENT

SCALE 1:25



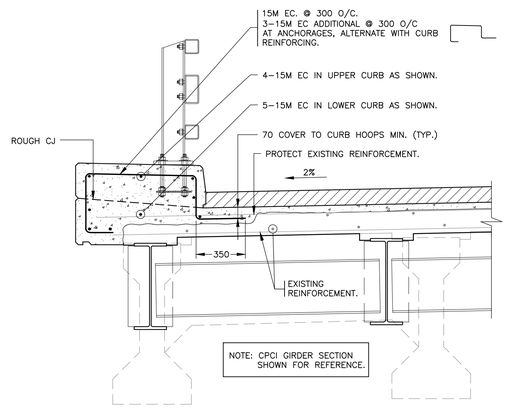
3/6 CURB EXPANSION JOINT SECTION

SCALE 1:25



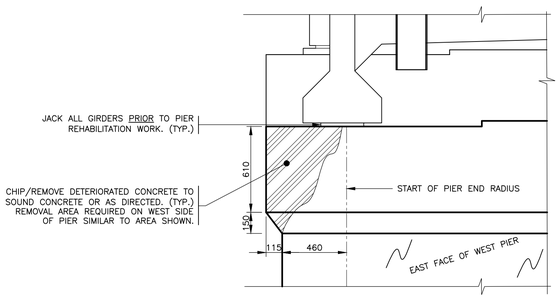
4/6 TYPICAL CURB SECTION

SCALE 1:20



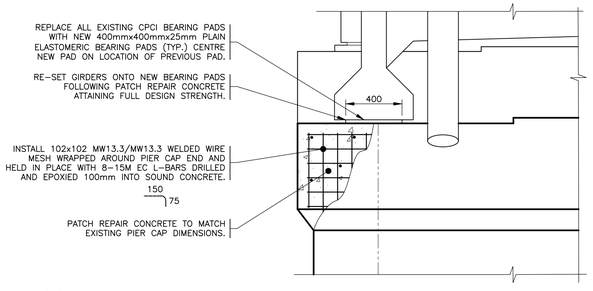
5/6 TYPICAL CURB REINFORCEMENT

SCALE 1:20 PERPENDICULAR TO ROAD CENTRELINE



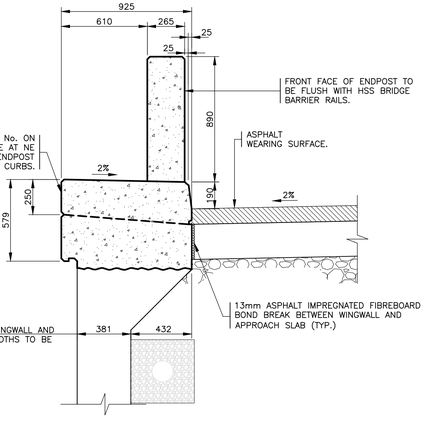
6/6 SOUTHWEST PIER CAP END REMOVAL

SCALE 1:20



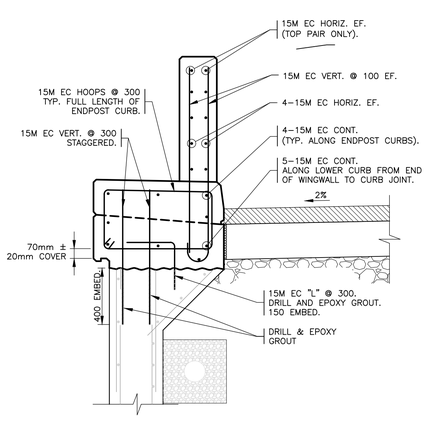
9/6 SOUTHWEST PIER CAP END REPAIR

SCALE 1:20



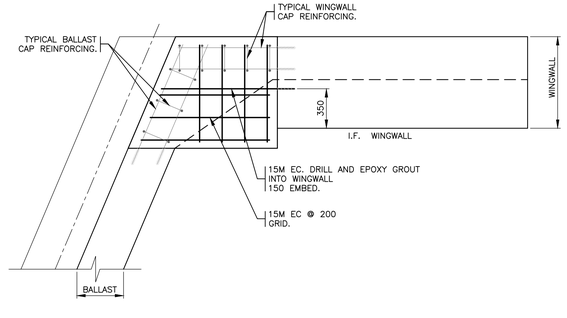
7/6 TYPICAL ENDPOST GEOMETRY

SCALE 1:20



8/6 TYPICAL ENDPOST REINFORCEMENT

SCALE 1:20



10/6 CLEAT CAP REINFORCING PLAN

SCALE 1:25 NE & SW SHOWN (NW & SE SIMILAR)

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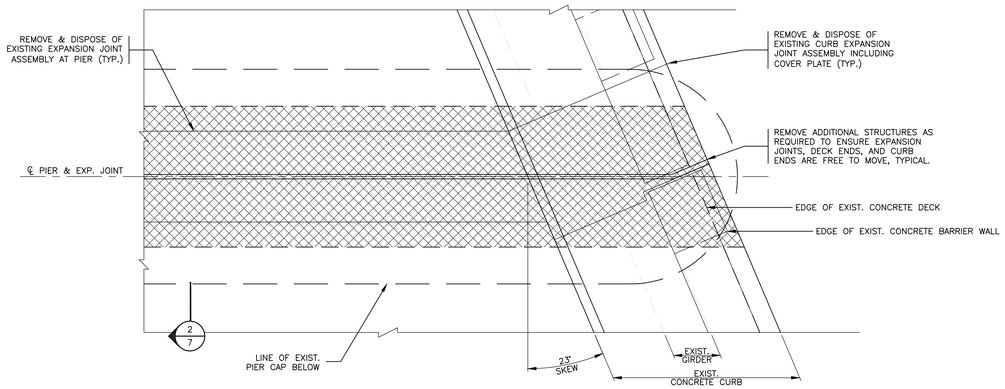
HALDIMAND COUNTY
DENNIS BRIDGE REHABILITATION
STRUCTURE No. 980305
RAINHAM ROAD
LOT 16, CONCESSION 1 & 2 WALPOLE
HALDIMAND COUNTY CONTRACT ENG-50-2019

Drawing Title

MISCELLANEOUS CONCRETE DETAILS

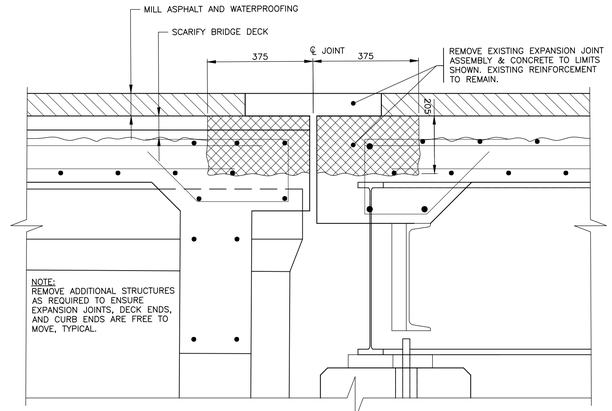
Designed by : M.J.R./J.A.T.	Drawn By : J.A.T.
Checked by :	Date Started : NOV. 2018
Drawing Scale : AS NOTED	Drawing No. 6
Project No. 18-039	

DATE LAST PLOTTED :



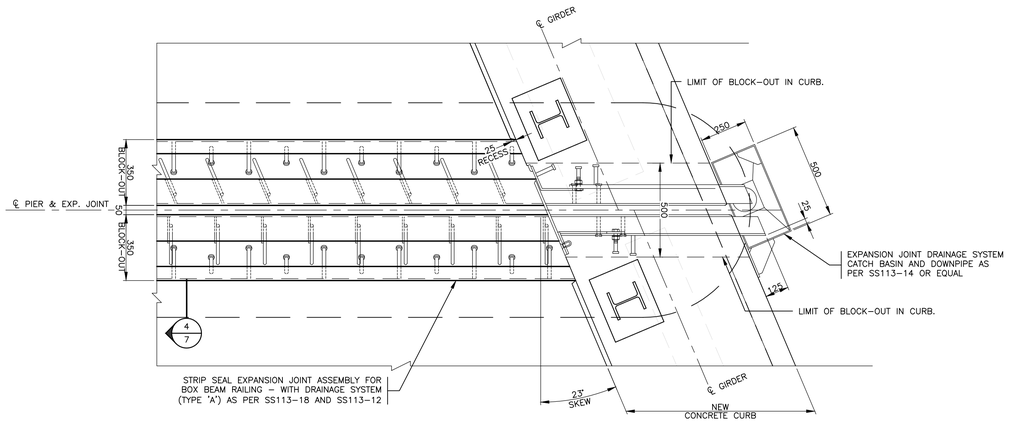
1/7 PLAN AT PIER - EXPANSION JOINT REMOVAL

SCALE 1 : 15 (NORTH END OF EAST PIER SHOWN)



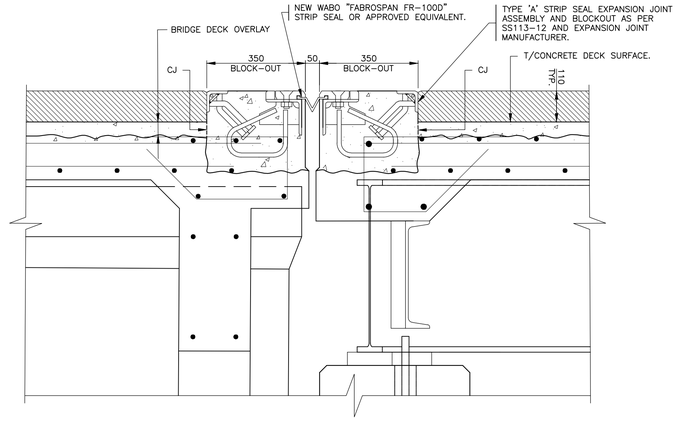
2/7 PIER EXPANSION JOINT REMOVAL

SCALE 1:10 PERPENDICULAR TO PIER



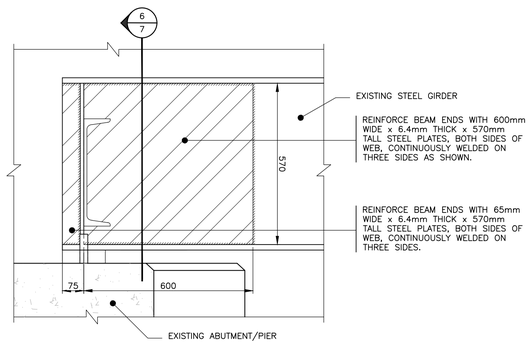
3/7 PLAN SECTION AT PIER - EXPANSION JOINT REPLACEMENT

SCALE 1 : 15 (NORTH END OF EAST PIER SHOWN)



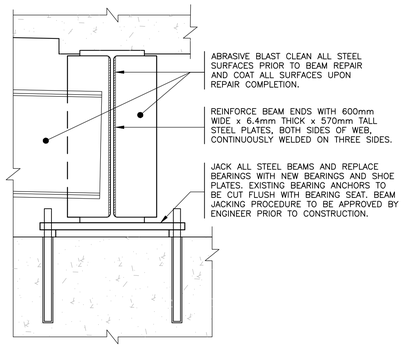
4/7 PIER EXPANSION JOINT REPLACEMENT

SCALE 1:10 PERPENDICULAR TO PIER



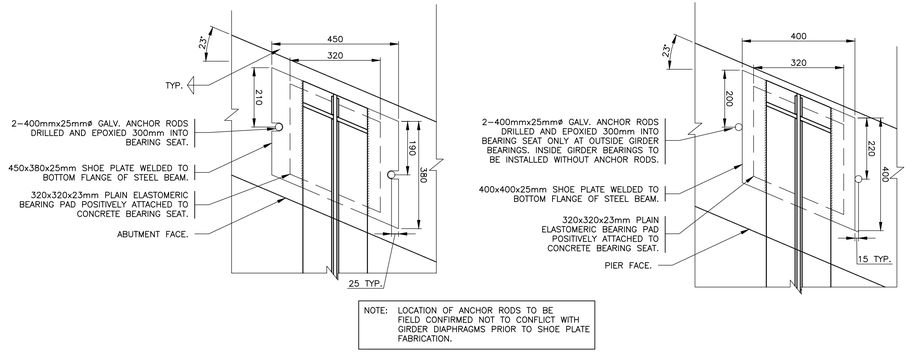
5/7 STEEL BEAM WEB REPAIR DETAIL

SCALE 1 : 10



6/7 STEEL BEAM REPAIR DETAIL

SCALE 1 : 10 EXTERIOR BEAM SHOWN



NOTE: LOCATION OF ANCHOR RODS TO BE FIELD CONFIRMED NOT TO CONFLICT WITH GIRDER DIAPHRAGMS PRIOR TO SHOE PLATE FABRICATION.

7/7 ABUTMENT BEARING REPLACEMENT DETAIL

SCALE 1 : 10

8/7 PIER STEEL BEARING REPLACEMENT DETAIL

SCALE 1 : 10

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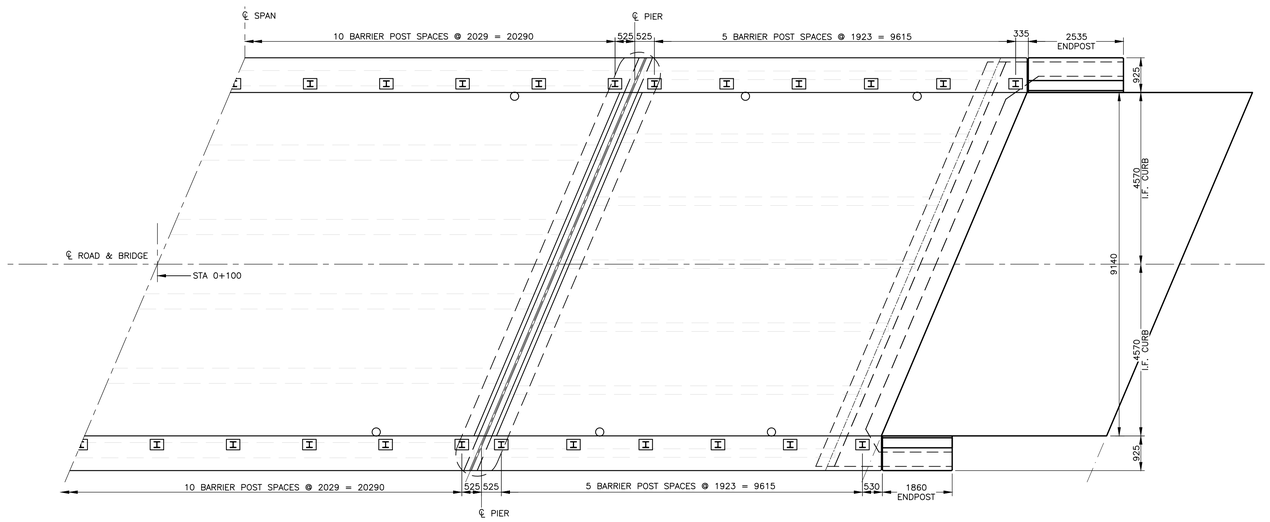
HALDIMAND COUNTY
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Drawing Title

MISCELLANEOUS STEEL DETAILS

Designed by : M.J.R./J.A.T.	Drawn By : J.A.T.
Checked by :	Date Started : NOV. 2018
Drawing Scale : AS NOTED	Drawing No. 7
Project No. 18-039	

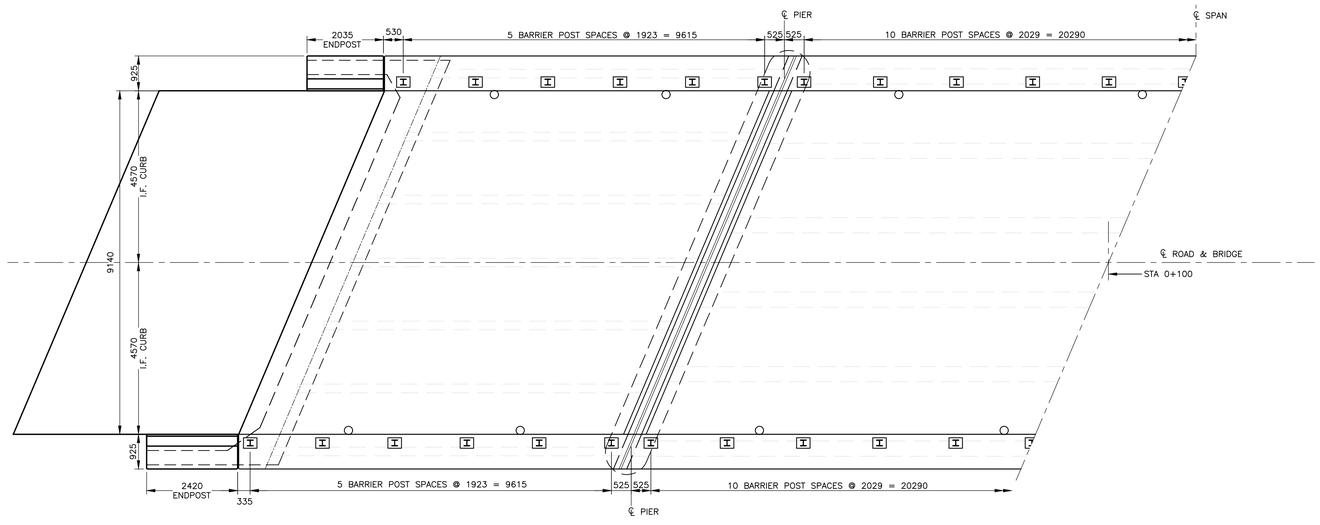
DATE LAST PLOTTED :



1/8 EAST BRIDGE HALF BARRIER LAYOUT

SCALE 1 : 75

POST SPACES TO BE FIELD VERIFIED PRIOR TO ANCHORAGE INSTALLATION (TYP.)



2/8 WEST BRIDGE HALF BARRIER LAYOUT

SCALE 1 : 75

CONSTRUCTION NORTH

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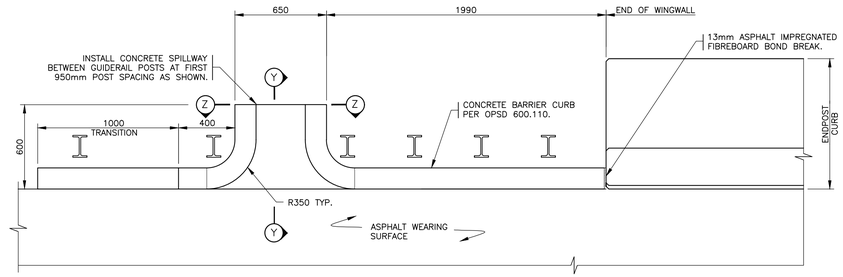
HALDIMAND COUNTY
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Drawing Title

BARRIER LAYOUT

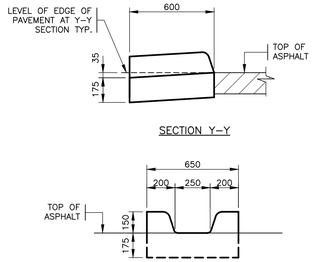
Designed by : M.J.R./J.A.T.	Drawn By : J.A.T.
Checked by :	Date Started : NOV. 2018
Drawing Scale : AS NOTED	Drawing No. 8
Project No. 18-039	

DATE LAST PLOTTED :



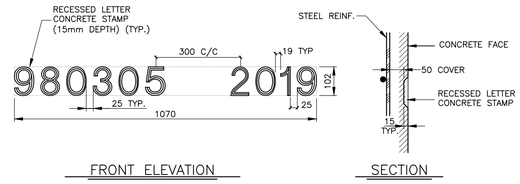
PLAN

NOTE: SBGR AND OFFSET BLOCKS NOT SHOWN FOR CLARITY.



1/9 CONCRETE SPILLWAY DETAIL

SCALE 1 : 20 OPSD 604.010 MODIFIED



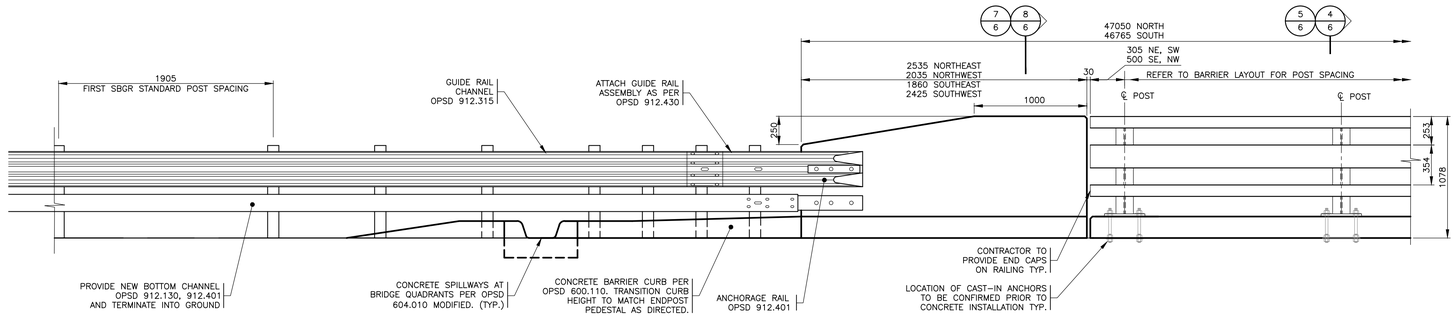
FRONT ELEVATION

SECTION

NOTE:
1. CONTRACTOR TO SUPPLY AND INSTALL FIGURE FORMS AS PER OPSD 3941.200 & OPSD 3940.151. STRUCTURE No. 980305 AND YEAR BUILT.
2. FIGURE FORMS SHALL BE CAST ON BRIDGE FASCIA AS INDICATED AT THE N.E. & S.W. AT QUADRANTS WITH CAST ACRYLIC SHEET OR HIGH IMPACT STYRENE FORMS. WOOD FORMS OF ANY KIND WILL NOT BE ACCEPTED.

2/9 STRUCTURE NUMBER

SCALE 1 : 10



3/9 RAILING ENDPOST ELEVATION

SCALE 1 : 25

NOTES:
1. MOUNTING HEIGHT SHALL BE MEASURED TO THE TOP OF GUIDE RAIL.
2. THIS STANDARD TO BE READ IN CONJUNCTION WITH SS110–48.
3. ALL POSTS TO BE SET VERTICAL & TRUE.
4. ANCHORAGE RAIL SHALL BE INSTALLED TIGHT AGAINST CONCRETE ENDPOST.
5. GUIDERAIL POST ANCHOR LAYOUT TO BE CONFIRMED TO ENSURE BARRIER RAIL WILL MOUNT FLUSH TO EACH ENDPOST PRIOR TO POURING CONCRETE.

NOTES:

A. THIS STANDARD TO BE READ IN CONJUNCTION WITH SS110–48.

B. W150X37 SHALL CONFORM TO THE CURRENT EDITION OF CSA STANDARD G40.21 GRADE 350WT.

C. HSS GUIDE RAIL SHALL CONFORM TO THE CURRENT EDITION OF CSA STANDARD G40.20/G40.21 GRADE 350WT, CLASS C. RAIL ELEMENTS SHALL MEET THE LONGITUDINAL CHARPY V–NOTCH IMPACT TEST REQUIREMENTS OF 27 JOULES AT TEST TEMPERATURE OF –20°C.

D. STEEL PLATE SHALL CONFORM TO THE CURRENT EDITION OF CSA STANDARD G40.21 GRADE 350WT.

E. NOTCH TOUGHNESS REQUIREMENTS OF POSTS AND PLATES SHALL BE THE SAME AS THOSE SPECIFIED IN NOTE C.

F. REINFORCING STEEL SHALL CONFORM TO THE CURRENT EDITION OF CSA STANDARD G30.18 GRADE 400.

G. ANCHOR STUDS, WASHERS AND HEAVY HEX NUTS SHALL CONFORM TO ASTM SPECIFICATION A449.

H. FULL THREAD STUDS, WASHERS, AND NUTS FOR FASTENING GUIDE RAILS TO POST SHALL CONFORM TO ASTM A108.

I. ANCHOR STUD NUTS SHALL BE TIGHTENED TO A SNUG FIT CONDITION AND GIVEN AN ADDITIONAL 1/3 OF A TURN. BOLTS IN RAIL SPLICES SHALL BE TIGHTENED TO A CONDITION THAT WILL ALLOW RAIL MOVEMENT.

J. RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE.

K. WELDING SHALL CONFORM TO THE CURRENT EDITION OF CSA STANDARD W59 AND SHALL BE DONE BY A WELDER QUALIFIED UNDER THE CURRENT EDITION OF CSA STANDARD W47.

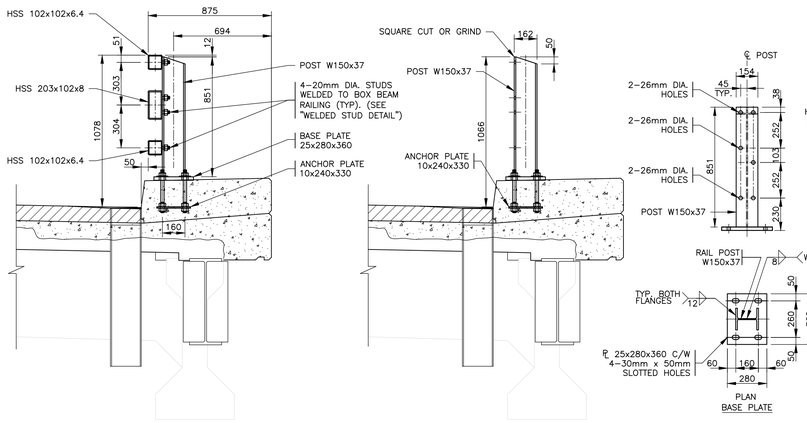
L. ALL POSTS AND ANCHORAGE ASSEMBLIES INCLUDING BOLTS, ANCHOR STUDS, NUTS, WASHERS, AND PLATES SHALL BE HOT DIP GALVANIZED IN CONFORMANCE TO THE CURRENT EDITION OF CSA STANDARD G164. LOCKNUTS SHALL BE ZINC PLATED ACCORDING TO ASTM–B695.

M. HSS GUIDE RAIL, RAIL SPLICES, END CAPS AND FASTENERS SHALL BE HOT DIP GALVANIZED AFTER SHOP FABRICATION IN CONFORMANCE TO THE CURRENT EDITION OF CSA STANDARD G164.

N. GALVANIZING ON MATING SURFACES OF RAILS TO HAVE A UNIFORM THICKNESS NOT EXCEEDING 0.15mm TO ENSURE A SLIDING FIT.

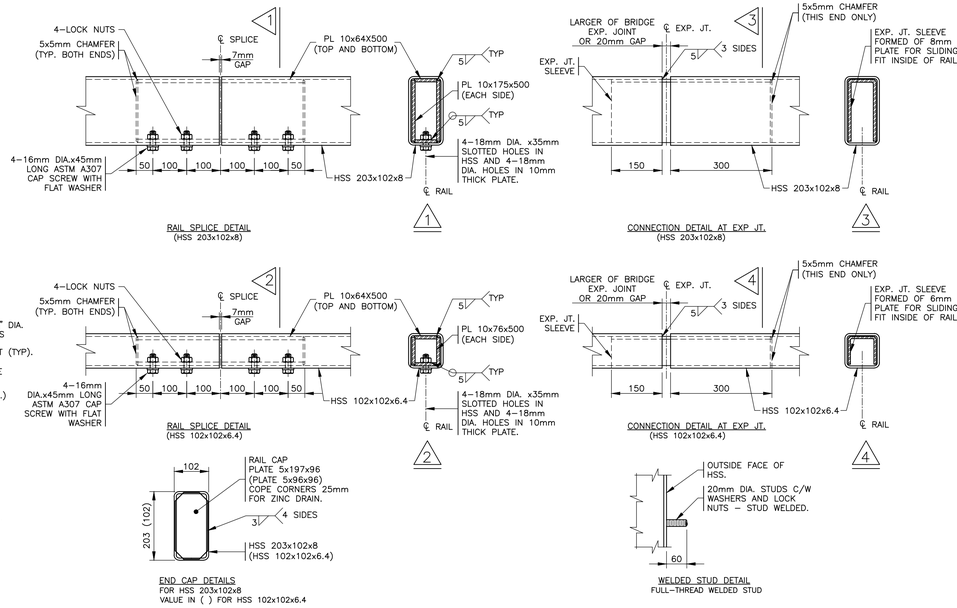
O. GROUT SHALL NOT BE USED UNDER BASE PLATES. A THIN PAD OF EPOXY GROUT MAY BE USED WHEN REQUIRED FOR FILLING THE VOIDS UNDER THE BASE PLATE.

P. RAILINGS SHALL SPAN THREE (3) POST BEAMS MINIMUM AND BE SUPPLIED WITH CAPS, SHOP WELDED TO THE ENDS, COMPLETE WITH DRAIN HOLES. REFER TO END CAP DETAILS.



4/9 BOX BEAM GUIDE RAIL POST DETAIL

SCALE 1 : 20 SS110-48 MODIFIED



5/9 BOX BEAM GUIDE RAIL ASSEMBLY DETAIL

SCALE NTS SS110-48 MODIFIED

REV. No.	DATE	REVISION
0	FEB. 11, 2019	SUBMIT TO HALDIMAND FOR REVIEW
1	FEB. 26, 2019	ISSUED FOR TENDER

NOTES

DIMENSIONS SHOWN ARE APPROXIMATE IN NATURE AND ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. CONTRACTOR TO FIELD VERIFY MEASUREMENTS AND NOTIFY THE ENGINEER OF ALL DISCREPANCIES. DO NOT SCALE THE DRAWINGS. ELEVATIONS & STATIONS ARE TYPICALLY SHOWN IN METRES.

G. DOUGLAS VALLEE LIMITED
2 TALBOT STREET NORTH
SIMCOE, ONTARIO N3Y 3W4
(519) 426-6270

Stamp

PRELIMINARY
ISSUED FOR
TENDER

Project Title

HALDIMAND COUNTY
DENNIS BRIDGE REHABILITATION
STRUCTURE No. 980305
RAINHAM ROAD
LOT 16, CONCESSION 1 & 2 WALPOLE
HALDIMAND COUNTY CONTRACT ENG-50-2019

Drawing Title

BARRIER DETAILS

Designed by : M.J.R./J.A.T.	Drawn By : J.A.T.
Checked by :	Date Started : NOV. 2018
Drawing Scale : AS NOTED	Drawing No. 9
Project No. 18-039	

DATE LAST PLOTTED :