MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

the Counties SDG

STORMONT · DUNDAS · GLENGARRY

BENJAMIN DE HAAN, P.Eng
DIRECTOR OF
TRANSPORTATION SERVICES

JANUARY 2025

MORRISON HERSHFIELD now Stantec

LIST OF DRAWINGS:

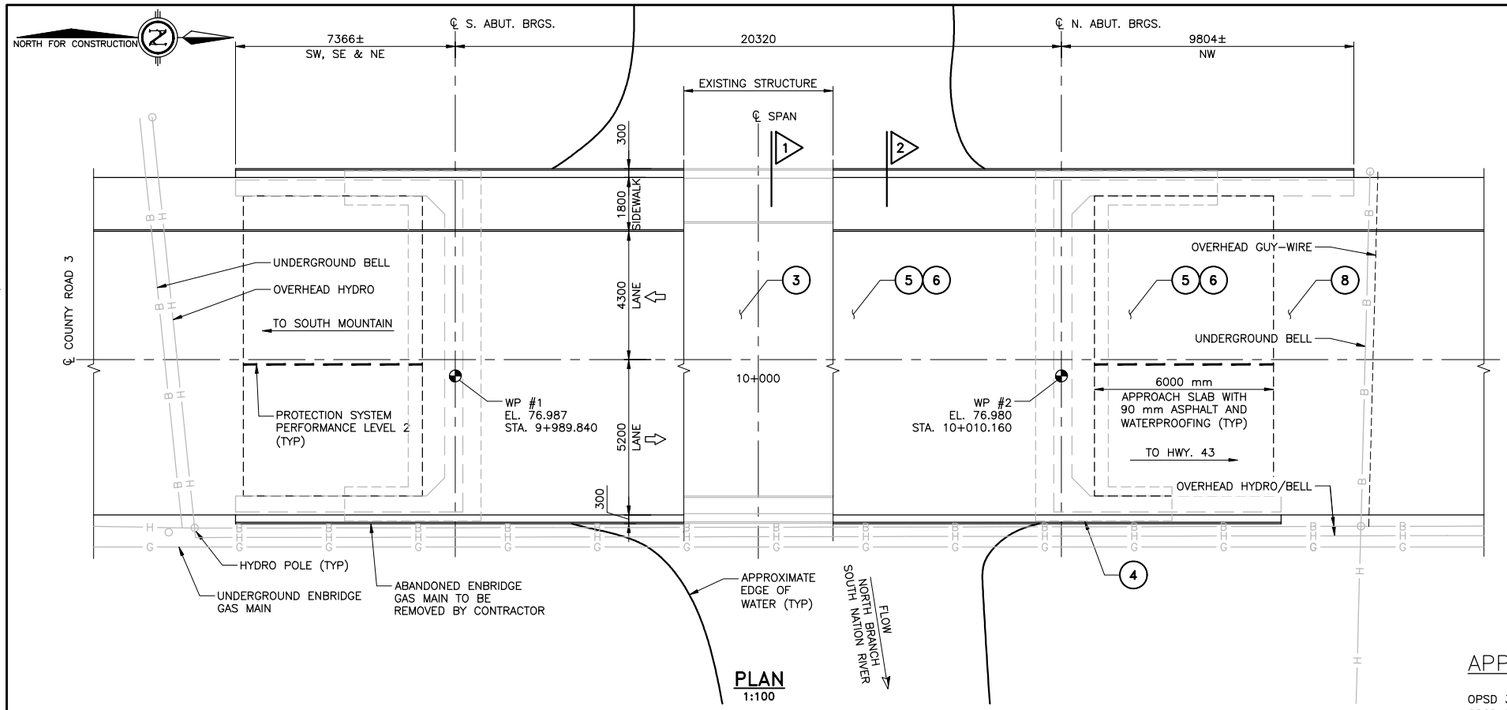
INKERMAN BRIDGE REPLACEMENT

STRUCTURE No. 03–124

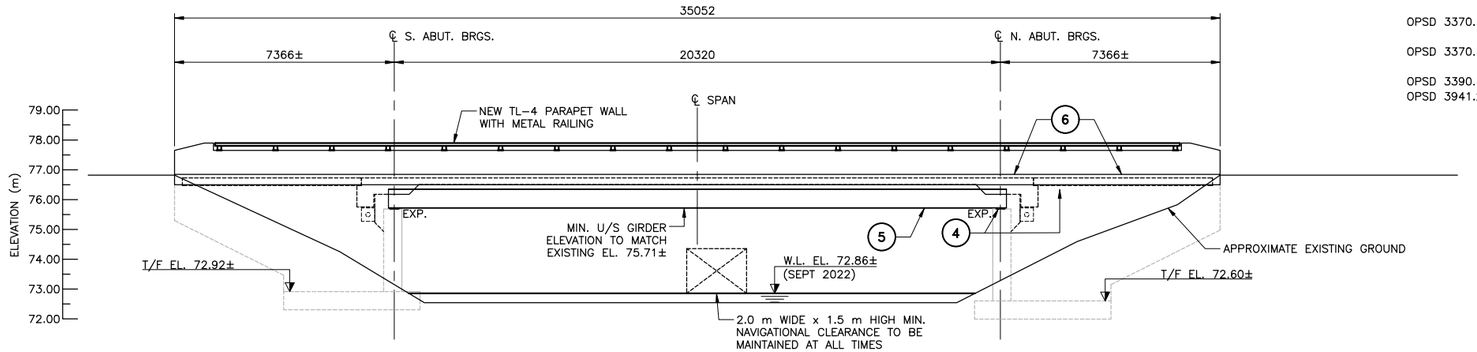
CONTRACT No. 2025–03–124

ISSUED FOR TENDER

FILE NAME: \\CA0158-PPFSS01\SHARED_PROJECTS\132800102\09. CAD\07 Sheets\220341700 – S00 Cover Sheet.dwg
MODIFIED: 2025-01-09 14:58



PLAN
1:100



ELEVATION
1:100

WORKING POINT COORDINATES (m)			
WP No.	NORTHING	EASTING	T/P EL. (m)
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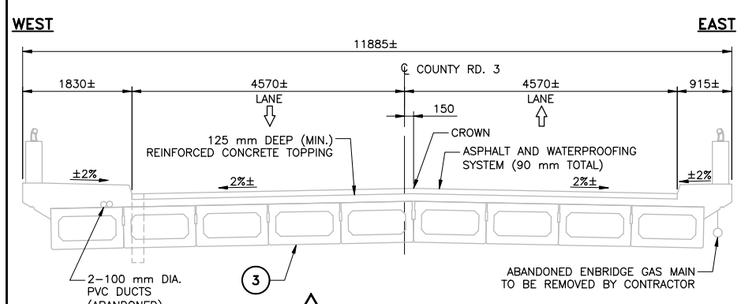
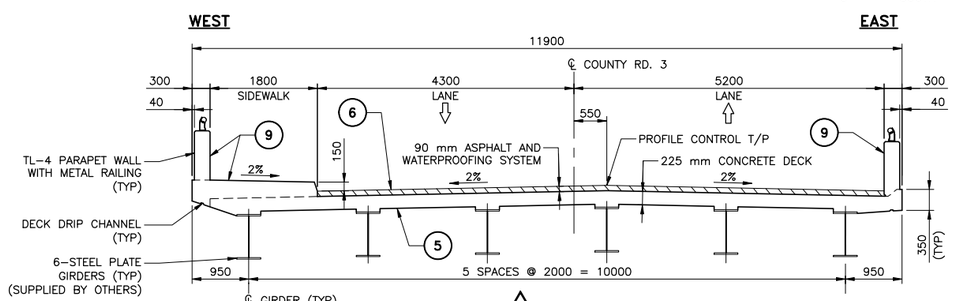
2	4988878.023	391855.188	76.980



1 EXISTING SECTION
SCALE 1:50



2 NEW SECTION
SCALE 1:50

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

DRAWING NOT TO BE SCALED

100mm ON ORIGINAL DRAWING

SCOPE OF WORK:

THE FOLLOWING SCOPE OF WORK IS NOT INTENDED TO BE AN EXHAUSTIVE LIST OF ALL ITEMS REQUIRED TO COMPLETE THE REHABILITATION WORK, NOR IS IT INTENDED TO PROVIDE A SEQUENCE OF CONSTRUCTION ACTIVITIES.

1. ERECT CONSTRUCTION SIGNAGE AND TEMPORARY TRAFFIC SIGNALS.
2. INSTALL TEMPORARY CONCRETE BARRIERS AND DIVERT TRAFFIC TO ONE HALF OF STRUCTURE FOR STAGE 1 CONSTRUCTION (SEE STAGING DRAWINGS).
3. REMOVE EAST HALF OF EXISTING SUPERSTRUCTURE.
4. RECONSTRUCT BEARING SEAT, BALLAST WALL, AND UPPER PORTION OF WINGWALLS. COMPLETE PARTIAL DEPTH REPAIRS TO ABUTMENTS AND WINGWALLS AS DIRECTED BY CONTRACT ADMINISTRATOR.
5. ERECT NEW STEEL GIRDERS (SUPPLIED BY OTHERS). CONSTRUCT WEST HALF OF SUPERSTRUCTURE AND APPROACH SLABS.
6. WATERPROOF AND PAVE DECK AND APPROACH SLABS. CONSTRUCT APPROACH CURB AND PAVE APPROACHES.
7. RELOCATE TEMPORARY CONCRETE BARRIERS FOR STAGE 2 (SEE STAGING DRAWINGS). COMPLETE STEPS 3 TO 6 FOR OPPOSITE HALF OF STRUCTURE.
8. RECONSTRUCT APPROACHES AS SHOWN IN ROADWAYS DRAWINGS.
9. APPLY CONCRETE SEALER TO SIDEWALK AND PARAPET WALL.

APPLICABLE STANDARD DRAWINGS:

OPSD 3101.150	ABUTMENT WALL MINIMUM BACKFILL REQUIREMENTS
OPSD 3102.100	WALL ABUTMENT BACKFILL DRAIN
OPSD 3311.100	DECK GIRDERS, STEEL, METHOD OF OBTAINING SCREED ELEVATIONS
OPSD 3329.100	DECK, REINFORCEMENT, SUPPORTS FOR REINFORCING STEEL FOR SLAB DEPTHS 300mm OR LESS
OPSD 3370.100	DECK WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD DETAILS
OPSD 3370.101	DECK WATERPROOFING HOT APPLIED ASPHALT MEMBRANE AT ACTIVE CRACKS GREATER THAN 2mm AND CONSTRUCTION JOINTS
OPSD 3390.100	DECK DRIP CHANNEL
OPSD 3941.200	FIGURES IN CONCRETE, SITE NUMBER AND DATE LAYOUT

LIST OF ABBREVIATIONS:

ABUT.	ABUTMENT	S	SOUTH
BOT	BOTTOM	SE	SOUTHEAST
BRGS.	BEARINGS	STA.	STATION
℄	CENTRELINE	SW	SOUTHWEST
CJ	CONSTRUCTION JOINT	T/F	TOP OF FOOTING
DIA.	DIAMETER	T/P	TOP OF PAVEMENT
EE	EACH END	TYP	TYPICAL
EF	EACH FACE	U/S	UNDERSIDE
EL.	ELEVATION	W.L.	WATER LEVEL
ES	EACH SIDE	WP	WORKING POINT
EXIST.	EXISTING		
EXP.	EXPANSION		
EXT.	EXTERIOR		
IF	INSIDE FACE		
MID	MIDDLE		
MIN.	MINIMUM		
N	NORTH		
NE	NORTHEAST		
NW	NORTHWEST		
OF	OUTSIDE FACE		
RD.	ROAD		
S	SOUTH		

LEGEND:

REMOVAL

NEW CONCRETE

NEW ASPHALT

GENERAL NOTES:

CLASS OF CONCRETE
30MPa

CLEAR COVER TO REINFORCING STEEL

DECK TOP	70 +/-20
BOTTOM	40+/-10
REMAINDER	70 +/-20 UNLESS NOTED OTHERWISE

REINFORCING STEEL
REINFORCING STEEL SHALL BE GRADE 500W.

UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES FOR REINFORCING STEEL BARS SHALL BE CLASS B.

STAINLESS REINFORCING STEEL SHALL BE TYPE 316LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500 MPa, UNLESS OTHERWISE SPECIFIED.

BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.

GLASS FIBRE REINFORCED POLYMER REINFORCING BARS SHALL BE GRADE III AS SPECIFIED IN THE CONTRACT DRAWINGS. THE NOMINAL DIAMETER, TENSILE MODULUS OF ELASTICITY AND GUARANTEED MINIMUM TENSILE STRENGTH SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.

BAR MARKS WITH THE PREFIX 'G' DENOTE GRADE III GLASS FIBRE REINFORCED POLYMER BARS.

BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS112-1, UNLESS INDICATED OTHERWISE. HOOKS AND BENDS FOR GFRP BARS SHALL HAVE A MINIMUM BEND-RADIUS-TO-BAR-DIAMETER RATIO (r/d) OF 4.0.

CONSTRUCTION NOTES:
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS AND ELEVATIONS OF THE EXISTING STRUCTURE THAT ARE RELEVANT TO THE WORK SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR AND THE PROPOSED ADJUSTMENT OF THE WORK REQUIRED TO MATCH THE EXISTING STRUCTURE SHALL BE SUBMITTED FOR APPROVAL.

FOR STAGING AND MAINTENANCE OF TRAFFIC, SEE STAGING DRAWINGS AND SPECIFICATIONS.

SAWCUTS AT LIMITS OF REMOVAL SHALL BE 25mm DEEP, OR TO THE FIRST LAYER OF REINFORCING STEEL, WHICHEVER IS LESS, UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY PROTECTION SYSTEMS, TEMPORARY CONSTRUCTION PLATFORMS, DEBRIS CONTAINMENTS SYSTEMS, ETC.

BACKFILL SHALL NOT BE PLACED AGAINST ANY CONCRETE COMPONENT UNTIL CONCRETE HAS REACHED 70% OF ITS DESIGN STRENGTH.

BACKFILL AGAINST THE SUPERSTRUCTURE SHALL BE PLACED SIMULTANEOUSLY AT BOTH ENDS OF THE STRUCTURE KEEPING THE HEIGHT OF BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN HEIGHT OF BACKFILL BE GREATER THAN 500mm.

ALL MATERIALS SHALL BE IN ACCORDANCE WITH MTO DESIGNATED SOURCES FOR MATERIALS (DSM).

STABILITY AND INTEGRITY OF THE STRUCTURE SHALL BE MAINTAINED AT ALL STAGES OF CONSTRUCTION.

ALL EXPOSED CONCRETE EDGES SHALL HAVE A 20mm x 20mm CHAMFER.

THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESSES FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESSES ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATA, THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT.

UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING UTILITIES DURING ALL STAGES OF THE WORK.

ALL AREAS AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE FULLY REINSTATED TO PRE-CONSTRUCTION CONDITIONS OR BETTER TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF ANY WORK ON SITE.

ALL ELEVATIONS ARE TO GEODETIC DATUM.

FOR COUNTY ROAD 3 VERTICAL PROFILE REFER TO SHEET 19.

LICENSED PROFESSIONAL ENGINEER
G. K. LOUISY
100215018
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
N.H. BAKKER
100087992
01/10/2025
PROVINCE OF ONTARIO

REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE JAN 2025
DRAWN	CTB	CHK	GKL	SITE 03-124		DWG S01

the Counties SDG
STORMONT-DUNDAS-GLENGARRY

CONT 2025-03-124
STRUCT No. 03-124

INKERMAN BRIDGE REPLACEMENT

GENERAL ARRANGEMENT

SHEET 1

MORRISON HERSHFIELD now Stantec

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

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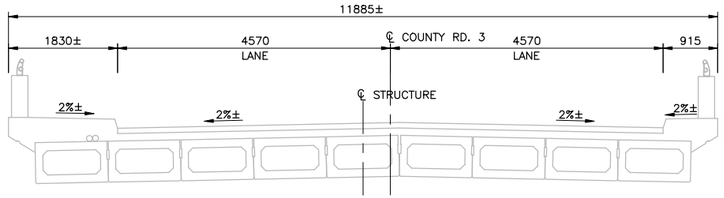
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

the Counties SDG	
CONT 2025-03-124 STRUCT No. 03-124	
INKERMAN BRIDGE REPLACEMENT CONSTRUCTION STAGING	SHEET 2
MORRISON HERSHFIELD now Stantec	

WEST **EAST**



EXISTING
1:50

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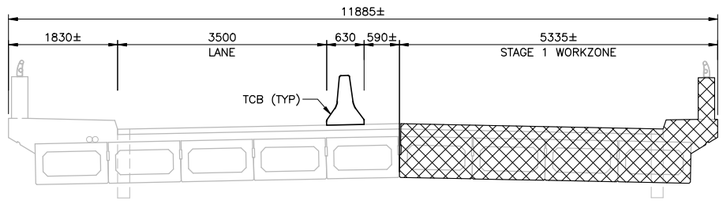
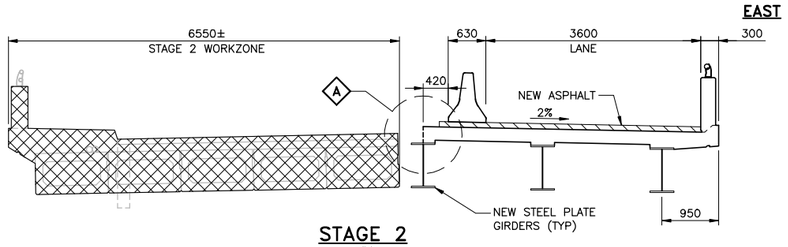


STAGE 1
1:50

WEST **EAST**



STAGE 2
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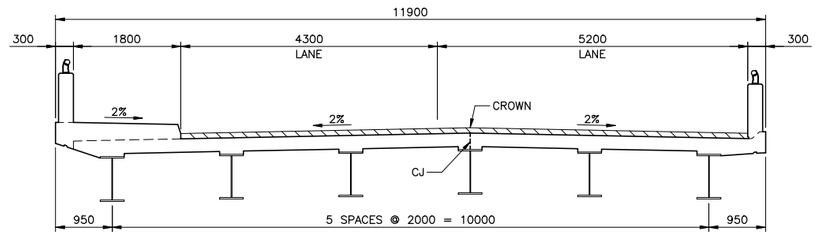
WEST **EAST**



FINAL
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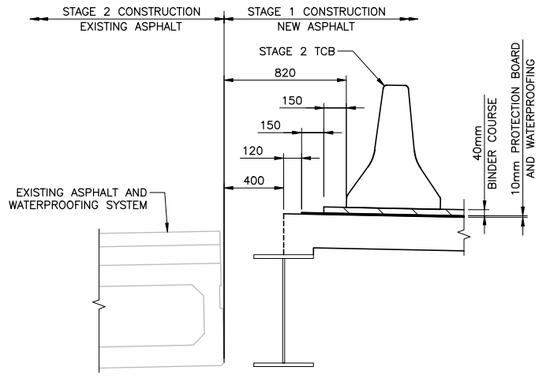

A TYPICAL ASPHALT AND WATERPROOFING SYSTEM LAP
SCALE 1:20

NOTES:

1. THE CONTRACTOR SHALL MAINTAIN ONE LANE OF TRAFFIC AT ALL TIMES, WITH THE EXCEPTION OF SHORT DURATION CLOSURES FOR SPECIFIC WORKS AS SPECIFIED IN THE CONTRACT DOCUMENTS.
2. REFER TO ROADWAY STAGING DRAWINGS FOR TRAFFIC CONTROL RESTRICTIONS AND LAYOUT DETAILS.
3. THE CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN ACCESS ACROSS THE STRUCTURE AT ALL TIMES.
4. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT-SPECIFIC TRAFFIC MANAGEMENT PLAN AND AS PER THE ONTARIO TRAFFIC MANUAL, BOOK 7.

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REVISIONS		
JAN. 10/25	GKL	ISSUED FOR TENDER
DATE	BY	DESCRIPTION

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025		
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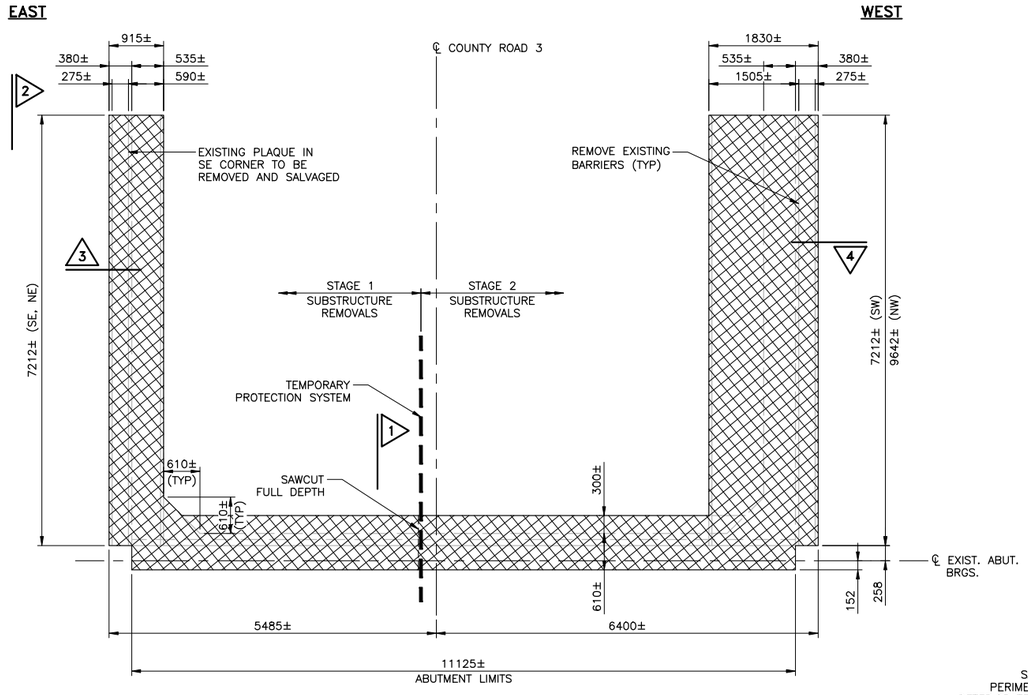
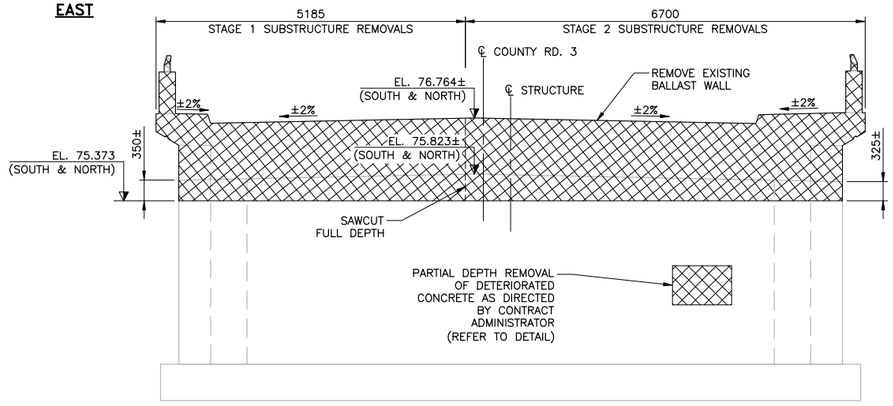
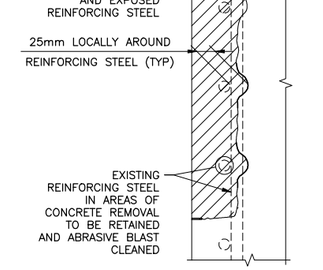


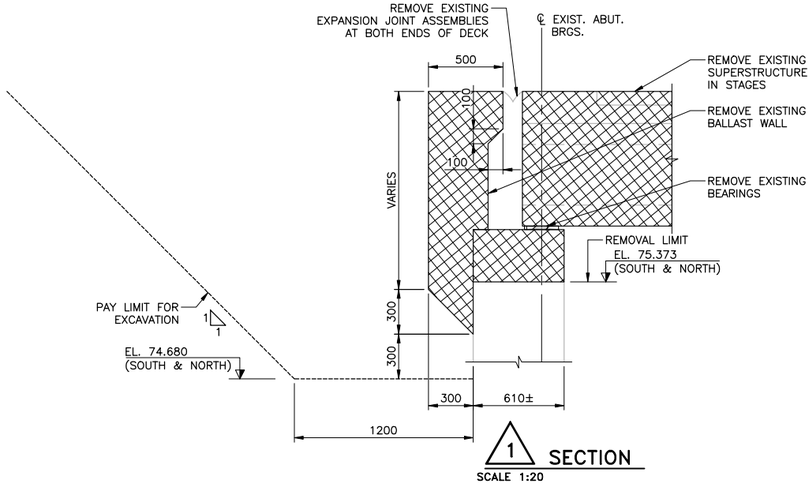
PLAN
1:50
(SOUTH ABUT. SHOWN, NORTH ABUT. SIMILAR)



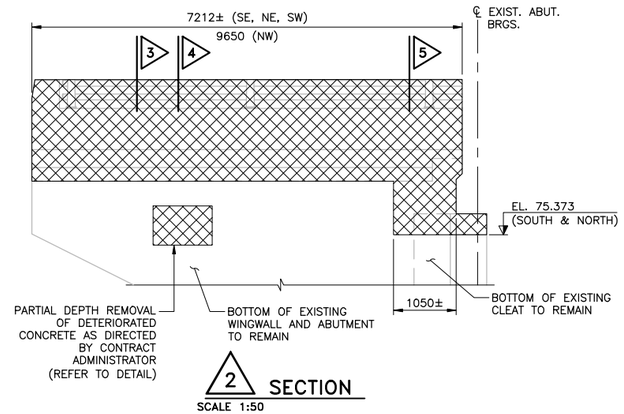
ELEVATION
1:50
(EXISTING GIRDERS AND BEARINGS NOT SHOWN FOR CLARITY)



PARTIAL DEPTH REMOVAL DETAIL – VERTICAL SURFACE
N.T.S.



1 SECTION
SCALE 1:20



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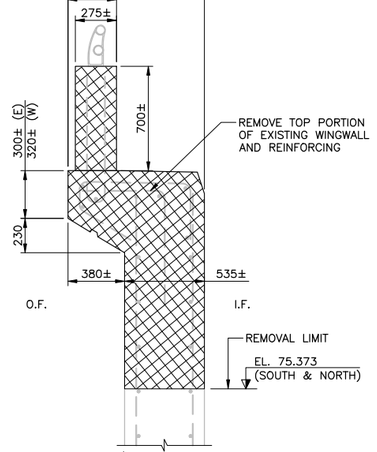
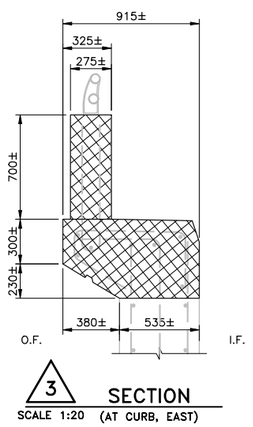
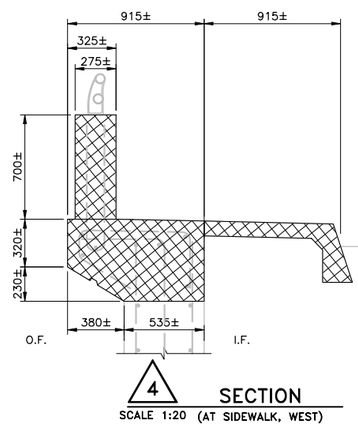
SCALE 1:50



5 SECTION
SCALE 1:20



3 SECTION
SCALE 1:20 (AT CURB, EAST)



4 SECTION
SCALE 1:20 (AT SIDEWALK, WEST)

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

the Counties SDG
CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
ABUTMENT REMOVALS
SHEET 3
MORRISON HERSHFIELD now Stantec

NOTES:

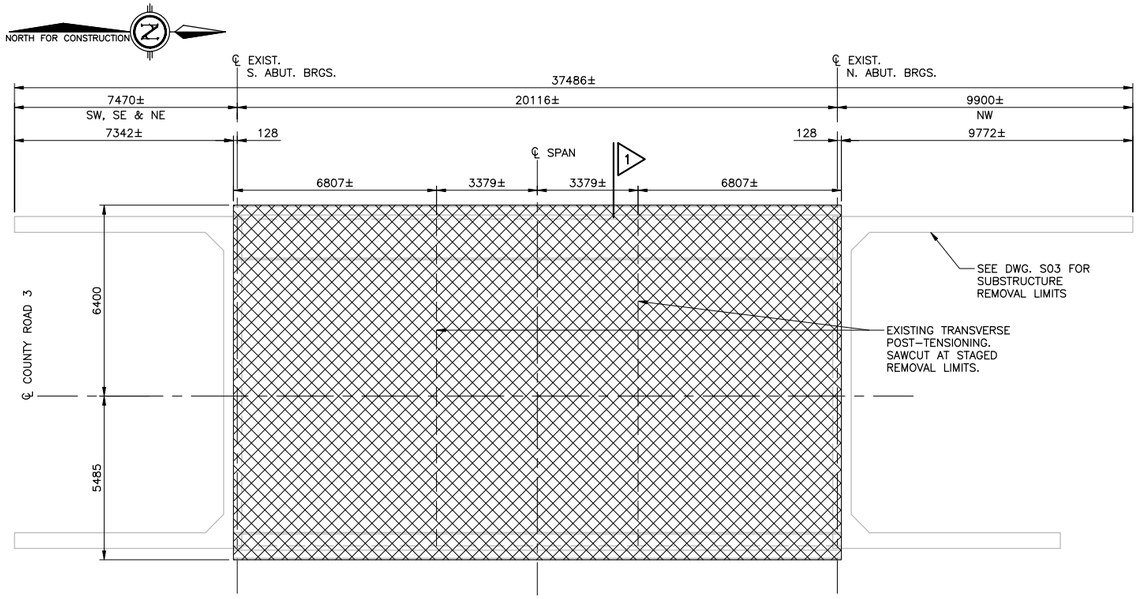
1. ALL REINFORCING STEEL SHALL BE REMOVED IN AREAS OF FULL DEPTH REMOVAL UNLESS OTHERWISE NOTED.
2. EXISTING DIMENSIONS, ELEVATIONS AND DETAILS GIVEN ARE THEORETICAL AND ESTABLISHED FROM ORIGINAL AND REHABILITATION DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS AND ELEVATIONS OF THE EXISTING STRUCTURE THAT ARE RELEVANT TO THE WORK SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR AND THE PROPOSED ADJUSTMENT OF THE WORK REQUIRED TO MATCH THE EXISTING STRUCTURE SHALL BE SUBMITTED FOR APPROVAL. SEE SPECIFICATIONS FOR PRE-CONSTRUCTION SURVEY REQUIREMENTS.
3. THE CONTRACTOR SHALL PROVIDE DEBRIS PLATFORMS TO ENSURE DEBRIS DOES NOT ENTER THE WATERCOURSE BELOW THE STRUCTURE.
4. THE CONTRACTOR SHALL COORDINATE REMOVALS WITH CONSTRUCTION STAGING.
5. LIMITS OF REMOVALS TO BE SAWCUT TO A DEPTH OF 25mm OR TO FIRST LAYER OF REINFORCING STEEL, WHICHEVER IS LESS, UNLESS NOTED OTHERWISE.
6. PARTIAL DEPTH CONCRETE REMOVALS IN THE WINGWALLS AND ABUTMENT STEMS SHALL BE AS DETERMINED BY THE CONTRACT ADMINISTRATOR.
7. CLEARING AND GRUBBING ALONG WINGWALLS TO BE COMPLETED BY CONTRACTOR.

LICENSED PROFESSIONAL ENGINEER G.K. LOUISY 100215018 PROVINCE OF ONTARIO

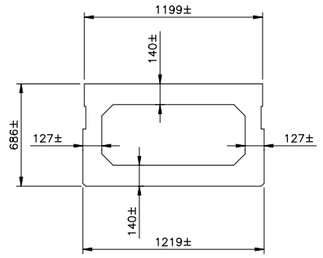
LICENSED PROFESSIONAL ENGINEER N.H. BAKKER 100087992 01/10/2025 PROVINCE OF ONTARIO

REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

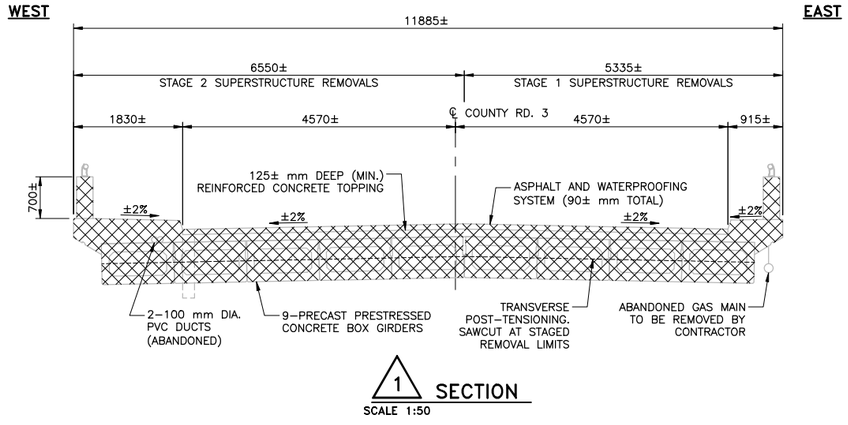
DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	DAS	CHK	GKL	SITE 03-124		DWG	S03



PLAN
1:100



TYPICAL CONCRETE BOX GIRDER
1:20



1 SECTION
SCALE 1:50

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
SUPERSTRUCTURE REMOVALS
SHEET 4

MORRISON HERSHFIELD now Stantec

NOTES:

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3. THE CONTRACTOR SHALL COORDINATE REMOVALS WITH CONSTRUCTION STAGING.
4. LIMITS OF REMOVALS TO BE SAWCUT TO A DEPTH OF 25mm OR TO FIRST LAYER OF REINFORCING STEEL, WHICHEVER IS LESS, UNLESS NOTED OTHERWISE.
5. SOME UTILITIES ARE NOT SHOWN FOR CLARITY. REFER TO THE GENERAL ARRANGEMENT DRAWING FOR UTILITIES WHICH ARE NOT SHOWN.

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REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025	
DRAWN	DAS	CHK	GKL	SITE 03-124		DWG	S04	

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

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MODIFIED: 2025-01-10 08:02

METRIC
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DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
ABUTMENT MODIFICATIONS I
SHEET 5

MORRISON HERSHFIELD now Stantec

NOTES:

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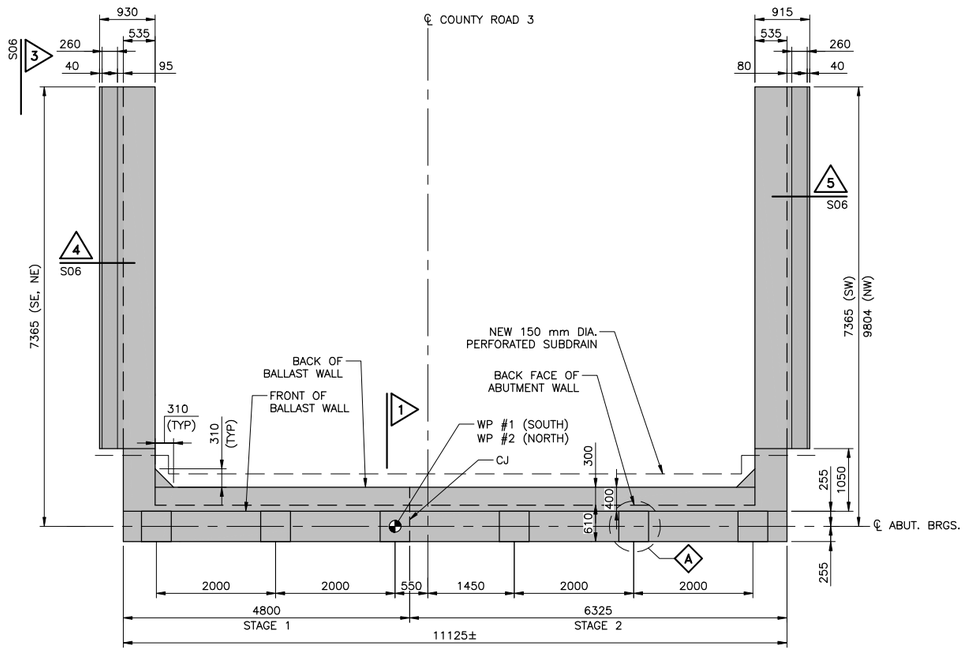
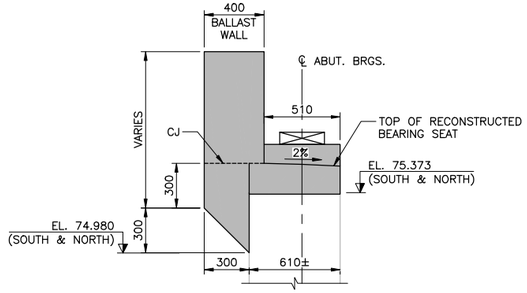
2. EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE SHALL BE ROUGHENED TO A SURFACE PROFILE OF MINIMUM 5 mm AS PER OPSS 904 PRIOR TO PLACING CONCRETE.

EAST **WEST**

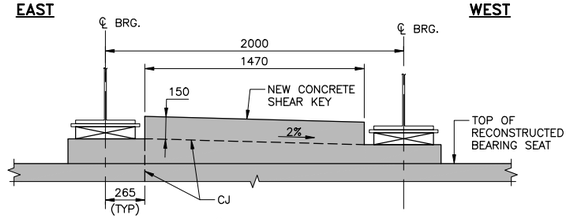


PLAN
1:50
(SOUTH ABUT. SHOWN, NORTH ABUT. SIMILAR)



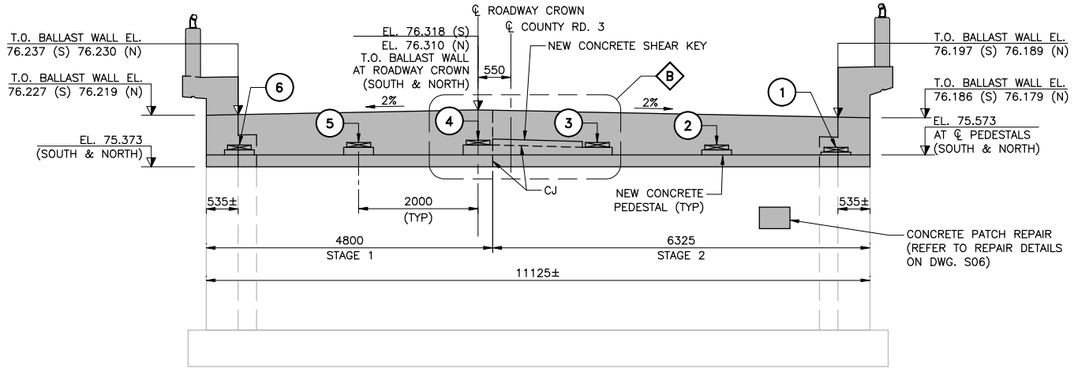
1 SECTION
SCALE 1:20

EAST **WEST**

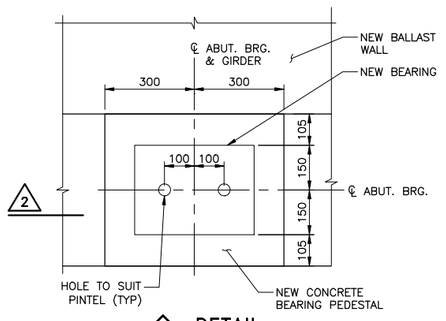


B DETAIL
SCALE 1:20

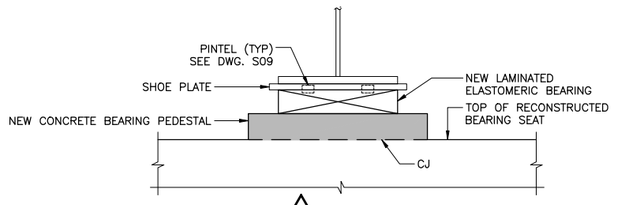
EAST **WEST**



ELEVATION
1:50



A DETAIL
SCALE 1:10



2 SECTION
SCALE 1:10

BEARING DATA (BOTH ABUTMENTS)

TYPE	LAMINATED ELASTOMERIC (NATURAL RUBBER)
SIZE (mm)	400x300x80
NUMBER REQUIRED	12
SERVICEABILITY LIMIT STATES (SLS)	
PERMANENT LOAD (kN)	300
TOTAL LOAD (kN)	710
MOVEMENT (mm)	10 (3 EXP./7 CONT)
PERMANENT LOAD ROTATION (radians)*	0.0179
LIVE LOAD ROTATION (radians)	0.0031
TOTAL ROTATION (radians)*	0.0210
SHEAR RATE AT 20°C (kN/mm)	1.50
ULTIMATE LIMIT STATES (ULS)	
PERMANENT LOAD (kN)	375
TOTAL LOAD (kN)	1120

* ROTATIONS INCLUDE 0.0085 ROTATION TOLERANCE PER CHBDC.

TOP OF NEW ABUTMENT BEARING ELEVATIONS (m)*

LOCATION	1	2	3	4	5	6
NORTH ABUTMENT	75.717	75.757	75.797	75.837	75.797	75.757
SOUTH ABUTMENT	75.724	75.764	75.804	75.844	75.804	75.764

* REFER TO CONSTRUCTION NOTES ON DRAWING S01

LICENSED PROFESSIONAL ENGINEER G.K. LOUISY 100215018 PROVINCE OF ONTARIO

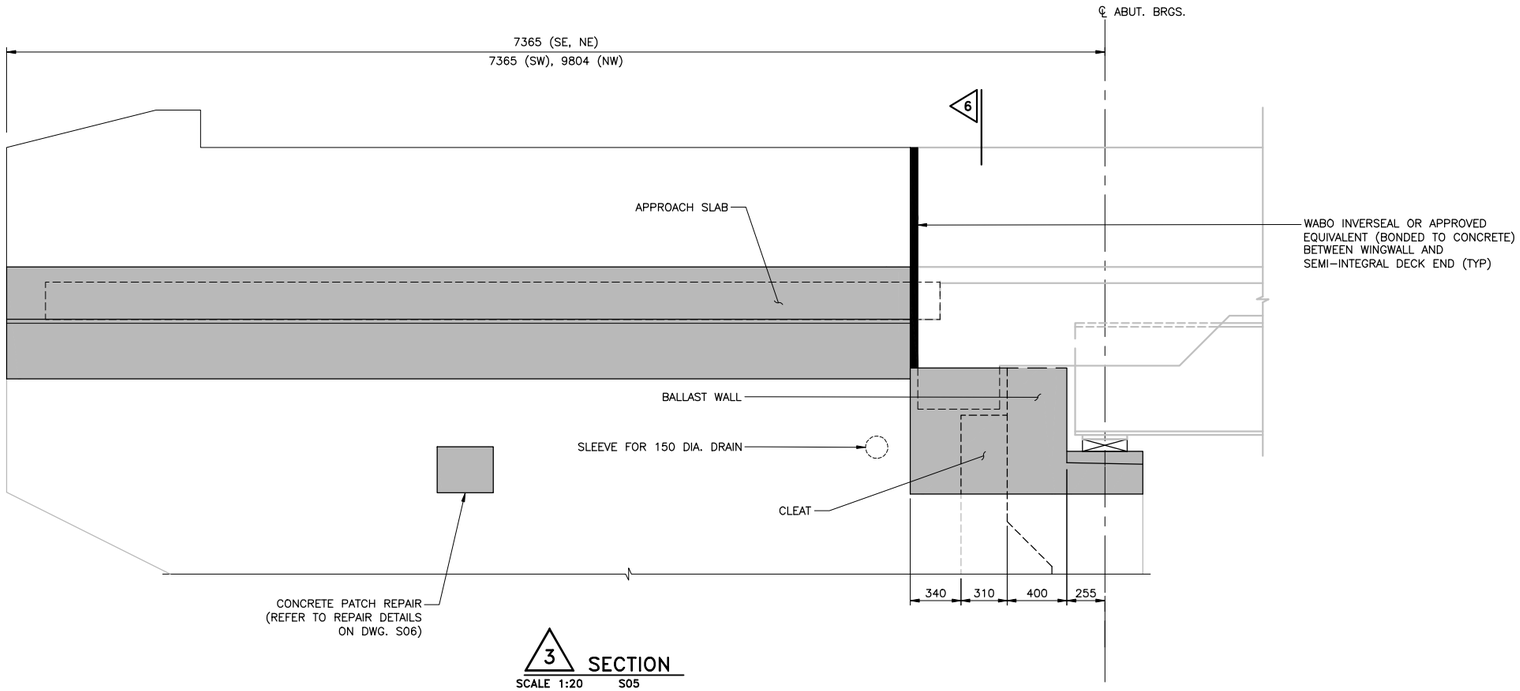
LICENSED PROFESSIONAL ENGINEER N.H. BAKKER 100087992 01/10/2025 PROVINCE OF ONTARIO

REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

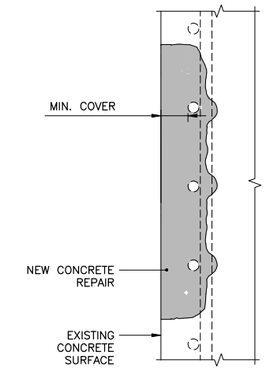
DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	DAS	CHK	GKL	SITE 03-124		DWG	S05

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

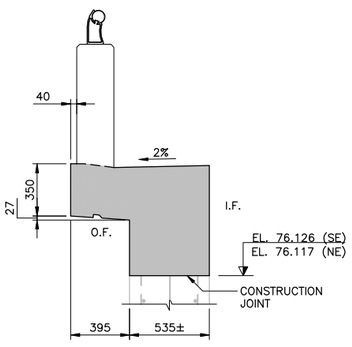
the Counties SDG	
CONT 2025-03-124 STRUCT No. 03-124	
INKERMAN BRIDGE REPLACEMENT ABUTMENT MODIFICATIONS II	SHEET 6
MORRISON HERSHFIELD now Stantec	



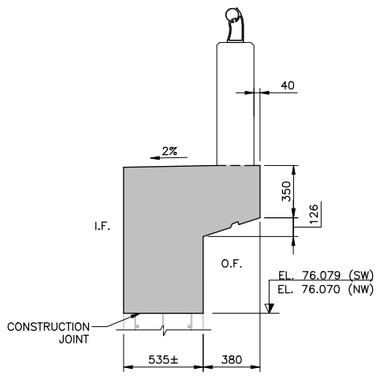
3 SECTION
SCALE 1:20 S05



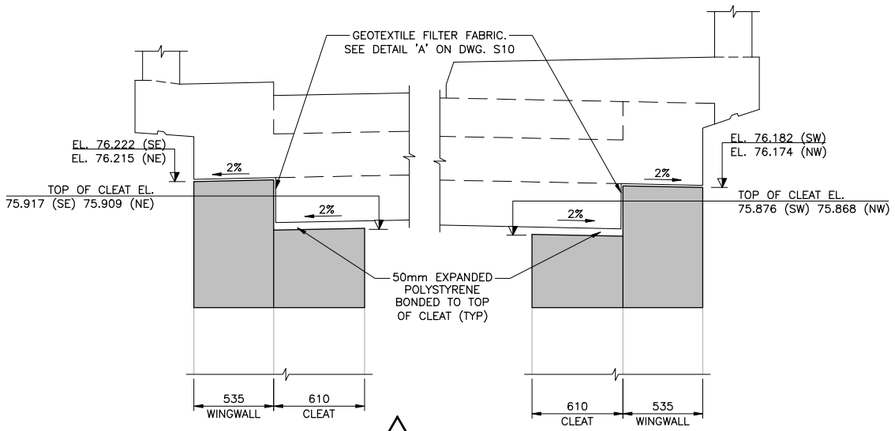
CONCRETE REPAIR DETAIL – VERTICAL SURFACE
(CONCRETE COVER > 50mm)
N.T.S.



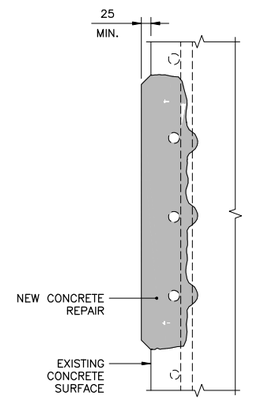
4 SECTION
SCALE 1:20 S05
(AT CURB, EAST)



5 SECTION
SCALE 1:20 S05
(AT SIDEWALK, WEST)



6 SECTION
SCALE 1:20



CONCRETE REPAIR DETAIL – VERTICAL SURFACE
(CONCRETE COVER <= 50mm)
N.T.S.

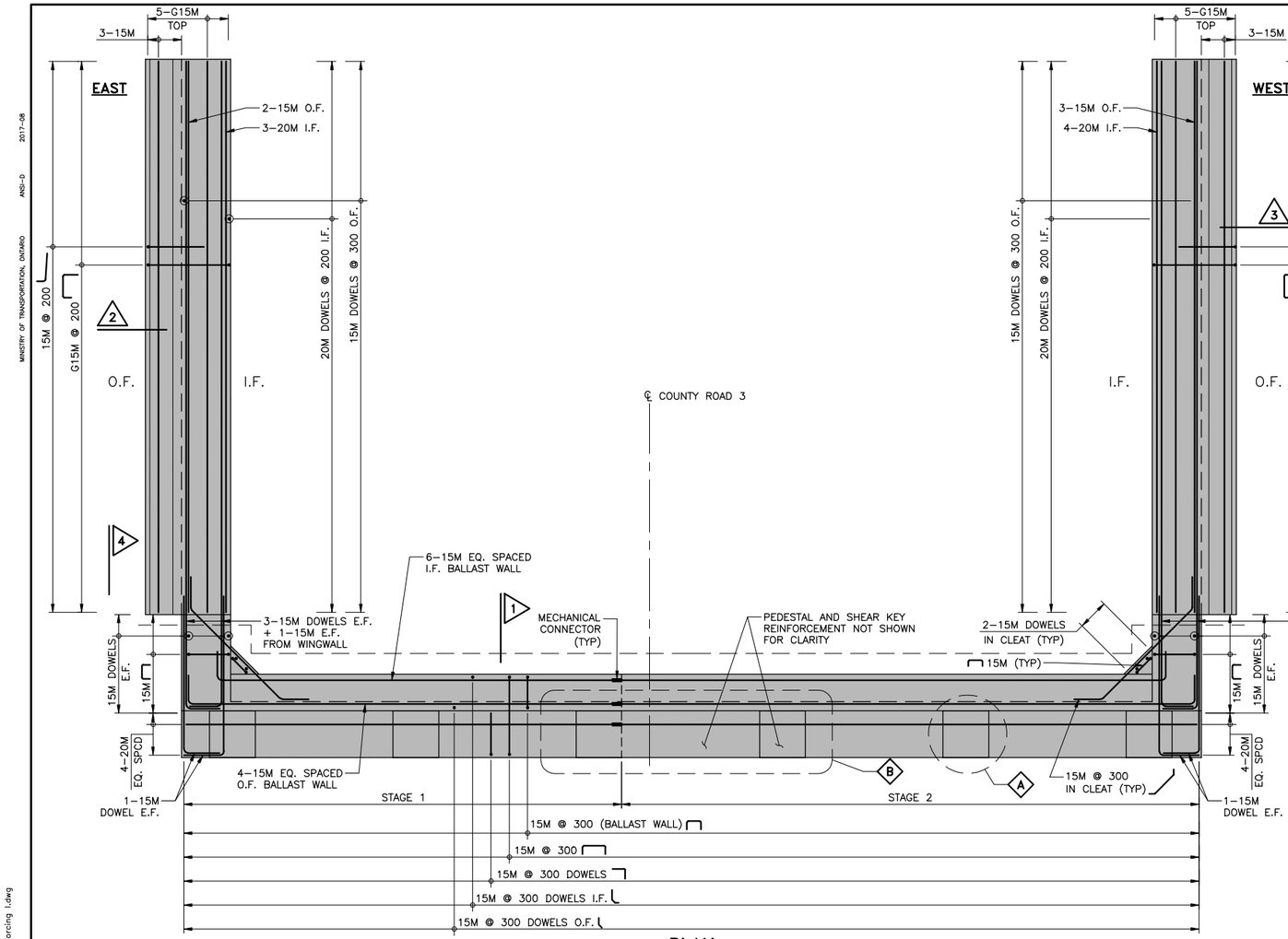
LICENSED PROFESSIONAL ENGINEER
G.K. LOUISY
100215018
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
N.H. BAKKER
100087992
01/10/2025
PROVINCE OF ONTARIO

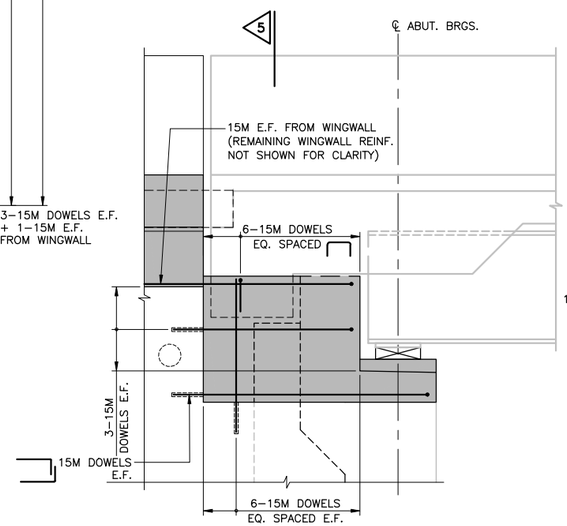
REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025	
DRAWN	DAS	CHK	GKL	SITE 03-124		DWG	S06	

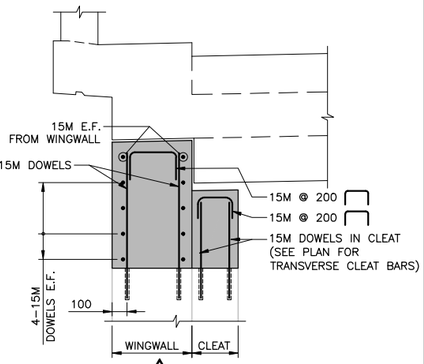
FILE NAME: \\CA0158-PPFSS01\SHARED_PROJECTS\132800102\09. CAD\07 Sheets\220341700 - S06 Abut Modifications II.dwg
MODIFIED: 2025-01-10 07:56



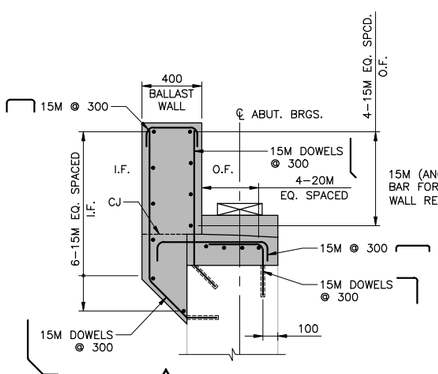
PLAN
1:30
(SOUTH ABUT. SHOWN, NORTH ABUT. SIMILAR)



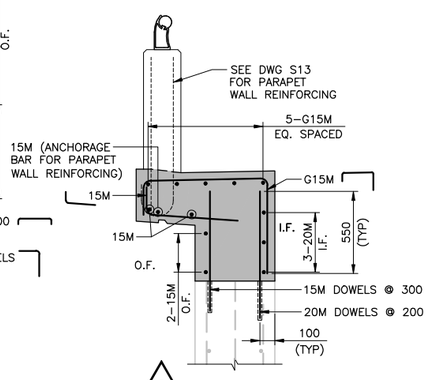
4 SECTION
SCALE 1:20



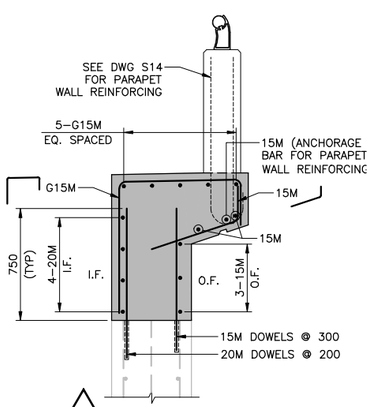
5 SECTION
SCALE 1:20



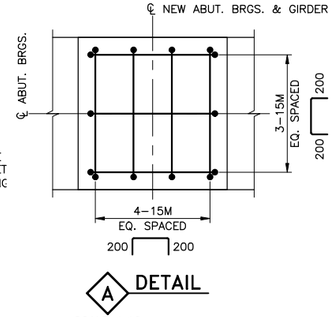
1 SECTION
SCALE 1:20



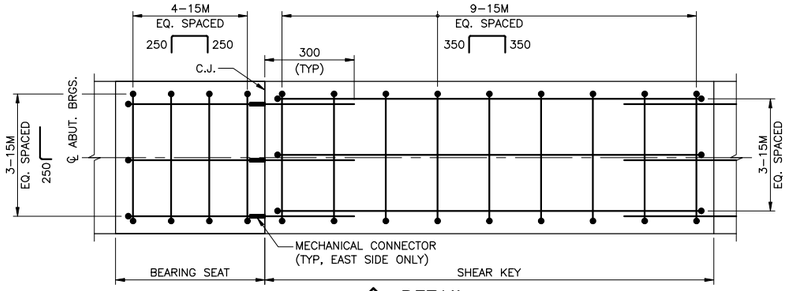
2 SECTION
SCALE 1:20 (AT CURB, EAST)



3 SECTION
SCALE 1:20 (AT SIDEWALK, WEST)



A DETAIL
SCALE 1:10



B DETAIL
SCALE 1:10

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

theCounties SDG
CONT 2025–03–124
STRUCT No. 03–124
INKERMAN BRIDGE REPLACEMENT
ABUTMENT REINFORCING
SHEET 7

MORRISON HERSHFIELD now Stantec

NOTES:

1. EXISTING DIMENSIONS, ELEVATIONS AND DETAILS GIVEN ARE THEORETICAL AND ESTABLISHED FROM ORIGINAL DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND DETAILS OF THE EXISTING STRUCTURE THAT ARE RELEVANT TO THE WORK SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR AND THE PROPOSED ADJUSTMENT OF THE WORK REQUIRED TO MATCH THE EXISTING STRUCTURE SHALL BE SUBMITTED FOR APPROVAL. SEE SPECIFICATIONS FOR PRE–CONSTRUCTION SURVEY REQUIREMENTS.
2. UNLESS NOTED OTHERWISE, THE MINIMUM DOWEL EMBEDMENT AND DESIGN INFORMATION SHALL BE AS SHOWN IN DOWEL TABLE.

DOWEL TABLE

BAR	HOLE DIA. (mm)	EMBEDMENT (mm)
15M	20	200
20M	25	250

G. K. LOUISY 100215018 PROVINCE OF ONTARIO — LICENSED PROFESSIONAL ENGINEER

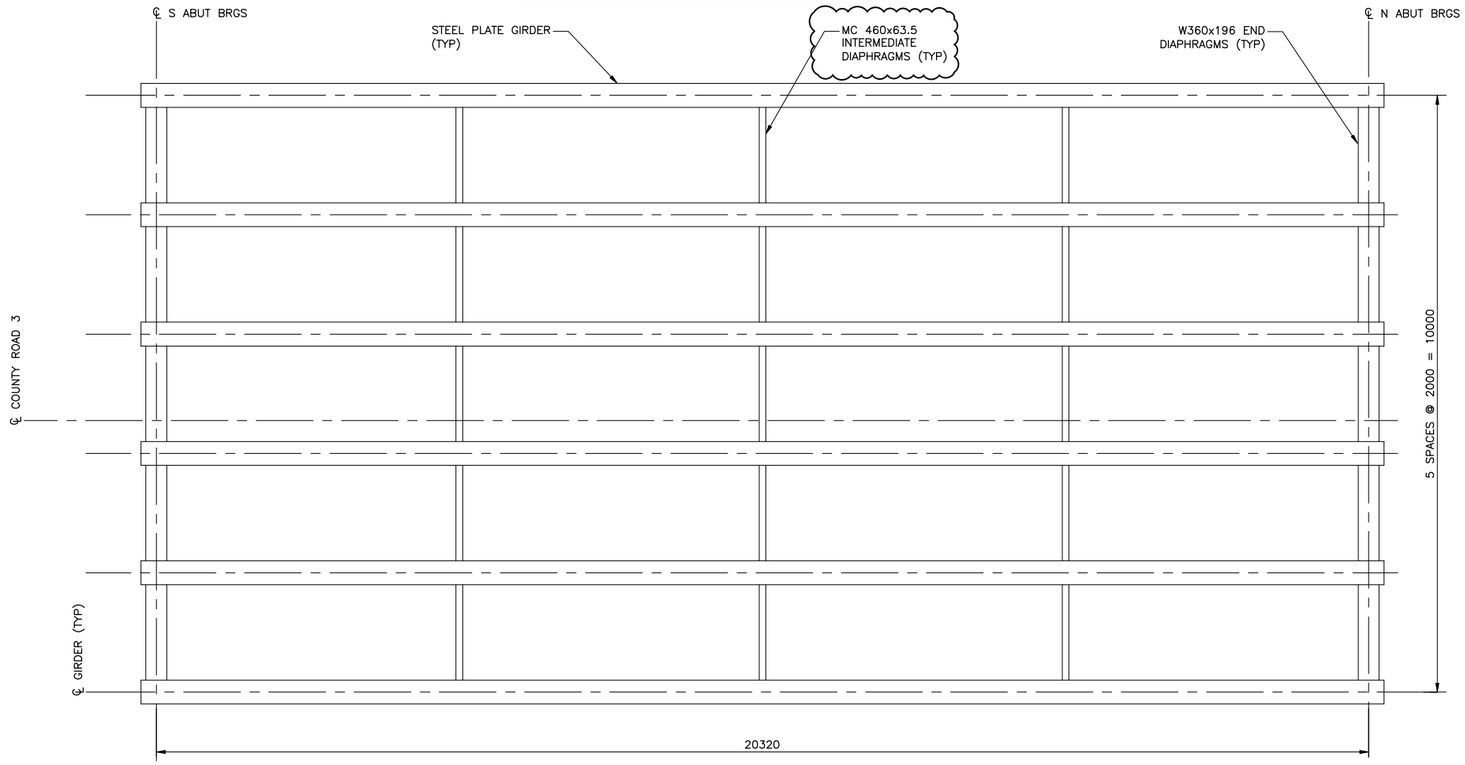
N.H. BAKKER 100087992 01/10/2025 PROVINCE OF ONTARIO — LICENSED PROFESSIONAL ENGINEER

REVISIONS	DATE	BY	DESCRIPTION
	JAN. 10/25	GKL	ISSUED FOR TENDER

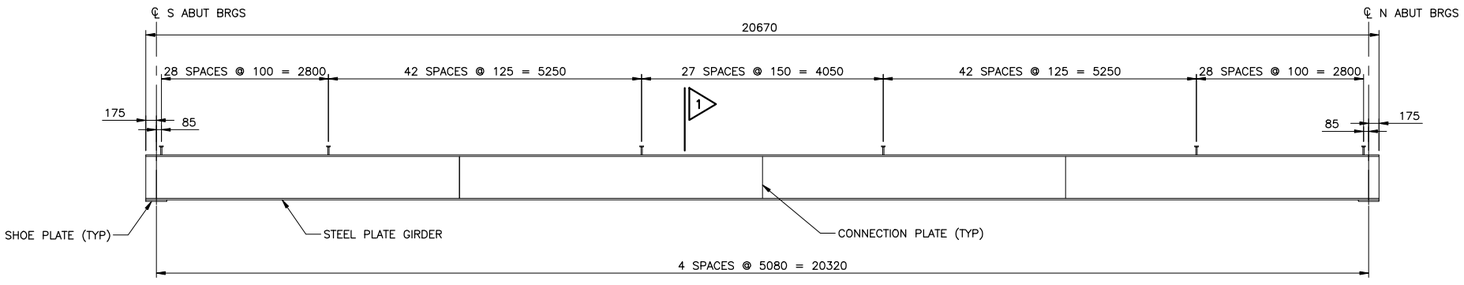
DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL–625–ONT	DATE JAN 2025
DRAWN	CTB	CHK	GKL	SITE 03–124		DWG S07

NORTH FOR CONSTRUCTION

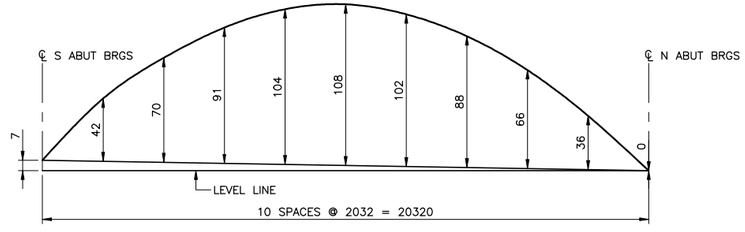
SUPPLIED BY OTHERS.
FOR INFORMATION PURPOSES ONLY.



PLAN
1:50

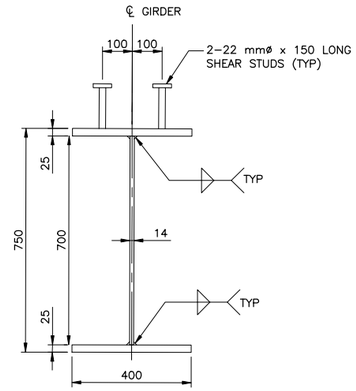


GIRDER ELEVATION
1:50

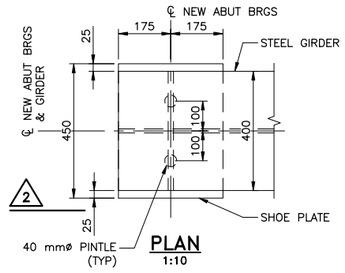


RELAXED CAMBER DIAGRAM
N.T.S.

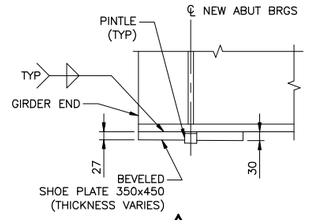
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING



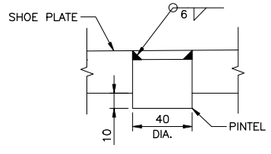
1 SECTION
SCALE 1:10



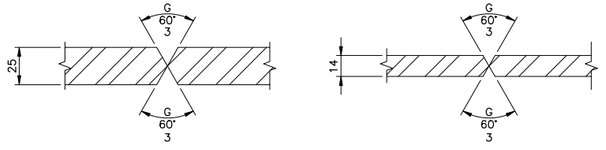
PLAN
1:10



2 SECTION
SCALE 1:10



PINTEL DETAIL
1:2



FLANGE WEB

TYPICAL SHOP SPLICE DETAILS (IF REQUIRED)
1:2

NOTES:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20/G40.21 GRADE 350AT. THE CHARPY IMPACT ENERGY REQUIREMENTS SHALL BE 27 JOULES AND THE TEST TEMPERATURE SHALL BE –20°C. ROLLED SECTIONS SHALL CONFORM TO CSA G40.20/G40.21 or ASTM A588/A588M.
2. BOLTS ON ATMOSPHERIC CORROSION RESISTANT STEEL SHALL BE ASTM F3125/F3125M, GRADE A325M TYPE 3, M22. BOLTS ON COATED STEEL SHALL BE GALVANIZED GRADE A325M TYPE 1, M22. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANES.
3. STUD SHEAR CONNECTORS SHALL BE 22 mm DIA. AND CONFORM TO ASTM A108 AND CSA W59.
4. ALL LENGTHS SHOWN ARE IN THE HORIZONTAL PLANE AND MEASURED AT 20°C.
5. GIRDERS SHALL BE CAMBERED TO VALUES SHOWN IN THE RELAXED CAMBER DIAGRAM.
6. RELAXED CAMBER ORDINATES INCLUDE AN ALLOWANCE FOR GIRDER SELF–WEIGHT, CONCRETE DECK, SUPERIMPOSED DEAD LOADS AND PROFILE OF ROADWAY.
7. THE ENDS OF GIRDERS AND BEARING STIFFENERS SHALL BE TRULY VERTICAL UNDER FULL DEAD LOAD.
8. ALL BUTT WELDS IN FLANGE AND WEB SHOP SPLICES SHALL BE FINISHED FLUSH OR SMOOTH AS INDICATED BY GRINDING WHERE NECESSARY IN THE DIRECTION OF APPLIED STRESS. IF SHOP SPLICES ARE REQUIRED, THEIR LOCATION SHALL BE APPROVED BY THE ENGINEER.
9. UNLESS OTHERWISE NOTED THE MINIMUM FILLET WELD SHALL BE AS FOLLOWS:

MATERIAL THICKNESS OF THICKER PART JOINTED (mm)	MINIMUM SIZE OF SINGLE PASS FILLET WELD (mm)
TO 12 INCLUSIVE	5
OVER 12 TO 20	6
OVER 20 TO 40	8
OVER 40 TO 60	10
OVER 60 TO 120	12

10. ALL STRUCTURAL STEEL SURFACES, INCLUDING DIAPHRAGMS, SHALL BE COATED AS FOLLOWS: 1100 mm FROM GIRDER ENDS. THE COLOUR OF THE TOPCOAT SHALL BE 10045 BROWN.
11. THE CONTRACTOR SHALL ENSURE THE STABILITY OF ALL COMPONENTS DURING HANDLING, TRANSPORTATION AND ERECTION AND UNTIL THE STRUCTURAL STEEL IS IN ITS FINAL LOCATION WITH ALL PERMANENT BRACING, CONNECTIONS AND SUPPORTS IN PLACE AND THE CONCRETE IN THE DECK HAS REACHED 75% OF ITS SPECIFIED STRENGTH.
12. ALL DAMAGE TO THE COATING SYSTEM AS A RESULT OF SHIPPING, HANDLING, ERECTION OR ANY OTHER CONSTRUCTION ACTIVITY SHALL BE REPAIRED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

REVISIONS			
NOV. 17/23	ARK	100% DESIGN COMPLETE	
MAR. 08/23	ARK	95% SUBMISSION	
DEC. 15/22	ARK	70% SUBMISSION	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	ARK	CODE CHBDC 2019	LOAD CL–625–ONT	DATE	JAN 2025
DRAWN	SVAS	CHK	GKL	SITE 03–124		DWG	S08

the Counties SDG
STORMONT–DUNDAS–GLENGARRY

CONT 2025–03–124
STRUCT No. 03–124
INKERMAN BRIDGE REPLACEMENT
STRUCTURAL STEEL I
SHEET 8

MORRISON HERSHFIELD now Stantec

MINISTRY OF TRANSPORTATION, ONTARIO ANSI–D 2017–08

FILE NAME: \\CA0158–PPFSS01\SHARED_PROJECTS\132800102\09. CAD\07 Sheets\220341700 – S07 Structural Steel I.dwg
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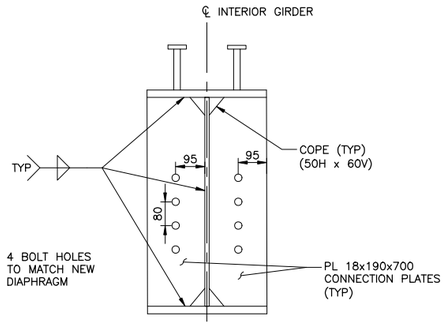
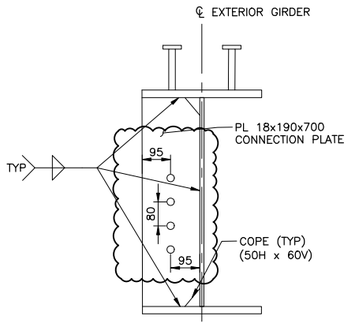


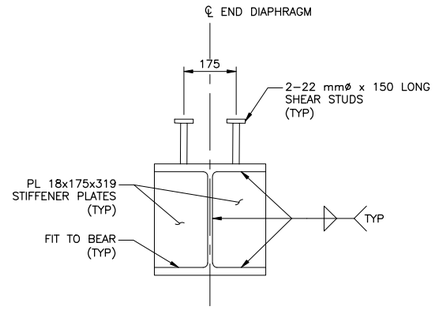
INTERIOR GIRDER

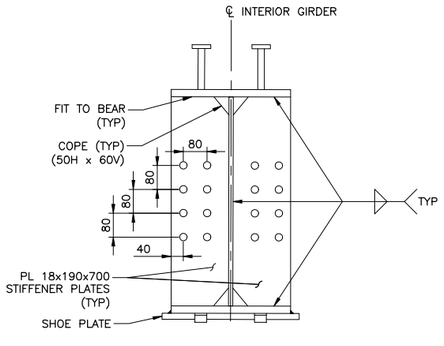


EXTERIOR GIRDER

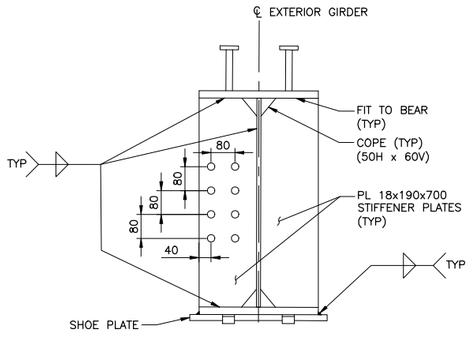
SUPPLIED BY OTHERS.
FOR INFORMATION PURPOSES ONLY.

CONNECTION PLATES FOR INTERMEDIATE DIAPHRAGMS
1:10





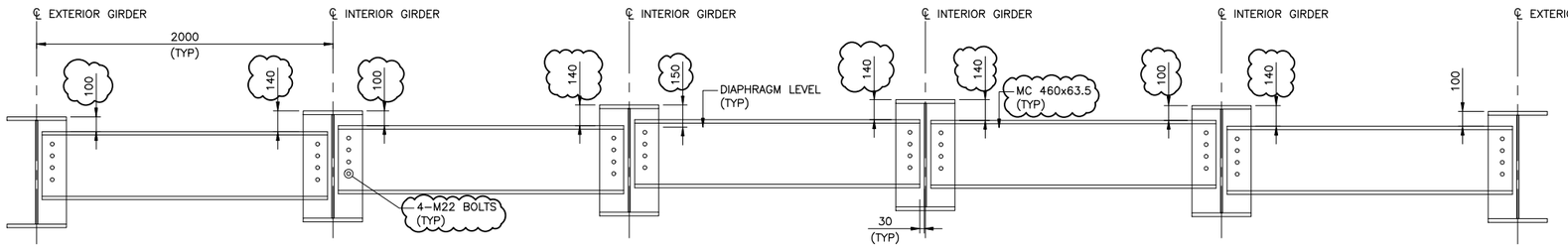
INTERIOR GIRDER BEARING STIFFENER



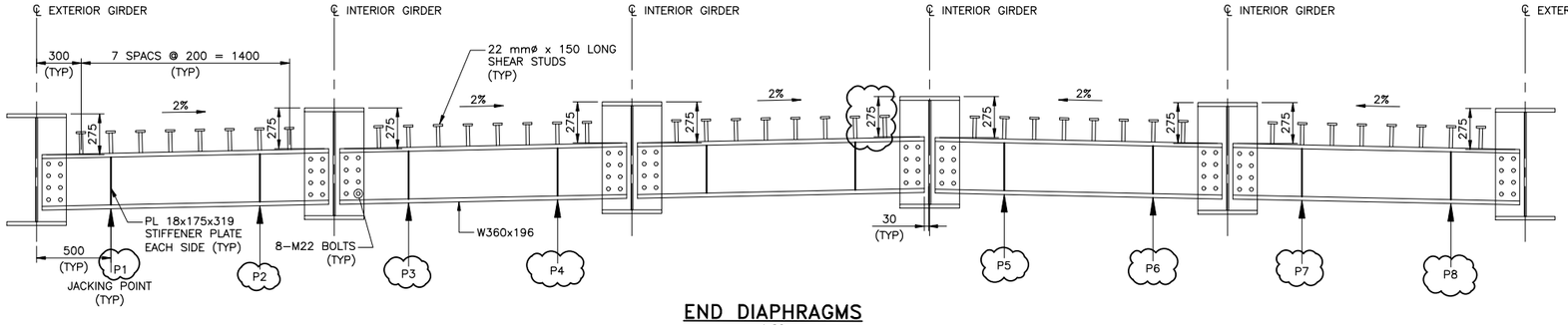
EXTERIOR GIRDER BEARING STIFFENER

JACKING STIFFENERS FOR END DIAPHRAGMS
1:10

CONNECTION PLATES FOR END DIAPHRAGMS
1:10



INTERMEDIATE DIAPHRAGMS
1:20

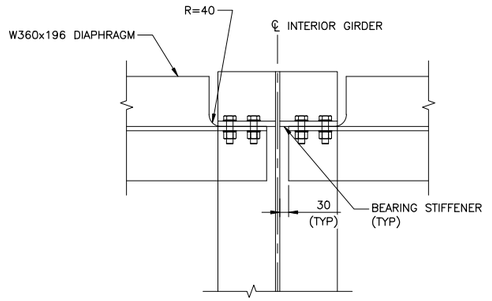


END DIAPHRAGMS
1:20

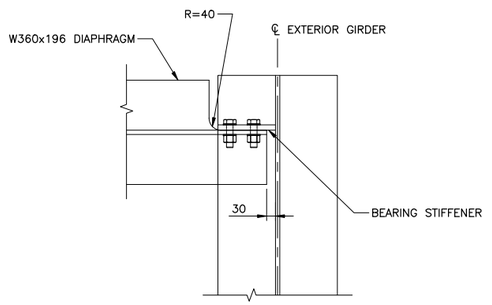
NOTES:

1. JACKING POINTS SHOWN ARE FOR FUTURE BEARING REPLACEMENT.

JACKING LOADS AT EACH ABUTMENT (kN)		
JACKING POINT	UNFACTORED DEAD LOADS	ULS COMBINED DEAD AND LIVE LOADS
P1	380	1455
P2	75	130
P3	75	205
P4	380	1135
P5	380	1135
P6	75	205
P7	75	130
P8	380	1455



INTERIOR GIRDER AND END DIAPHRAGM CONNECTION
1:10



EXTERIOR GIRDER AND END DIAPHRAGM CONNECTION
1:10

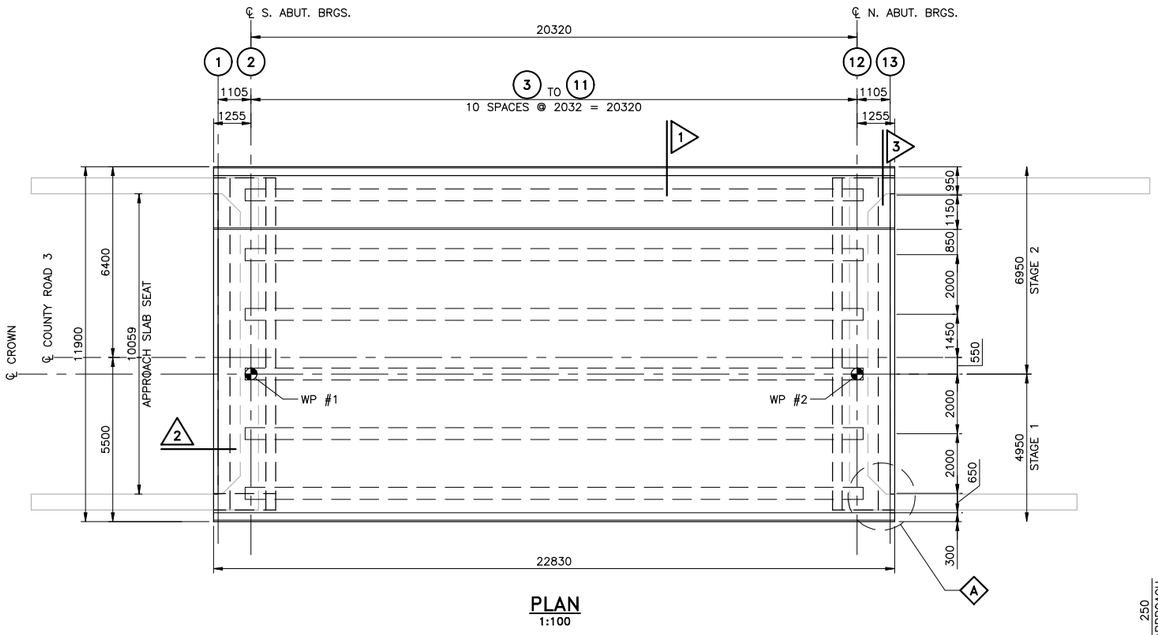
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

the Counties SDG
CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
STRUCTURAL STEEL II
SHEET 9

MORRISON HERSHFIELD now Stantec

REVISIONS			
NOV. 17/23	ARK	100% DESIGN COMPLETE	
MAR. 08/23	ARK	95% SUBMISSION	
DEC. 15/22	ARK	70% SUBMISSION	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	ARK	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	SVAS	CHK	GKL	SITE 03-124		DWG	S09



PLAN
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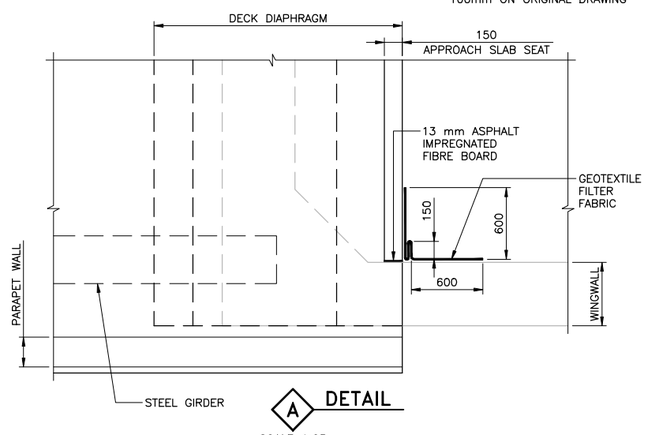
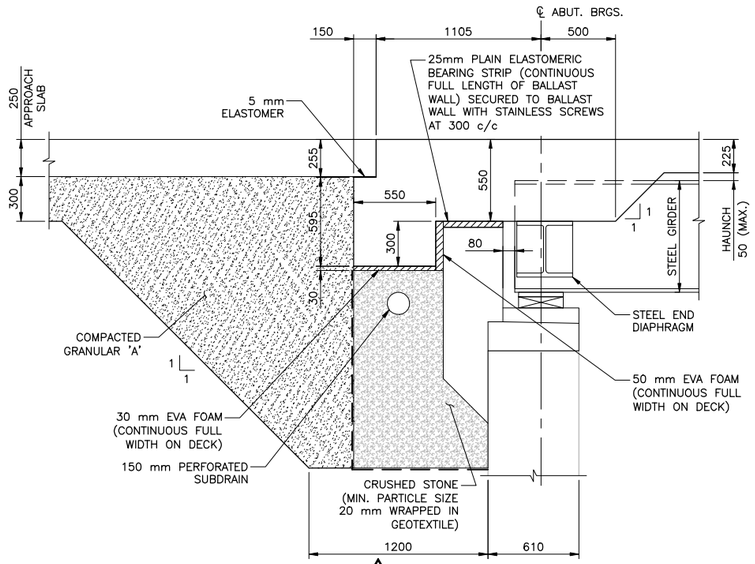
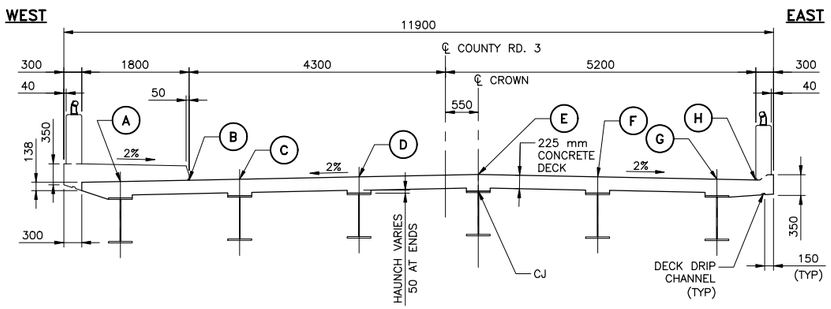


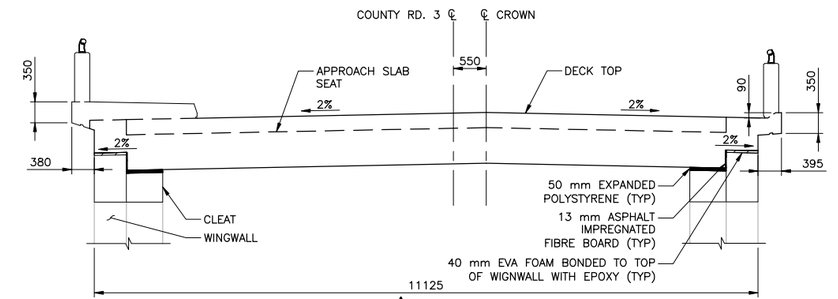
A DETAIL
SCALE 1:25



2 SECTION
SCALE 1:20



1 SECTION
SCALE 1:50



3 SECTION
SCALE 1:50

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

the Counties SDG
CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
DECK DETAILS 1
SHEET 10

MORRISON HERSHFIELD now Stantec

NOTES:

1. SCREED ELEVATIONS ARE TO TOP OF CONCRETE.
2. SCREED ELEVATIONS INCLUDE AN ALLOWANCE FOR ROADWAY PROFILE, WEIGHT OF CONCRETE DECK SLAB AND SUPERIMPOSED DEAD LOAD.
3. CONCRETE IN DECK SLAB SHALL BE RETARDED USING A TYPE B OR D ADMIXTURE TO ENSURE THAT CONCRETE REMAINS PLASTIC FOR THE DURATION OF THE POUR.
4. CONCRETE IN PARAPET WALL AND SIDEWALK SHALL NOT BE PLACED UNTIL CONCRETE IN DECK SLAB HAS REACHED A STRENGTH OF 20 MPa.
5. SEMI-INTEGRAL DECK ENDS SHALL BE CAST INTEGRAL WITH DECK SLAB AND SHALL BE VIBRATED THOROUGHLY.
6. THE CONTRACTOR SHALL PROVIDE THE CONTRACT ADMINISTRATOR WITH DECK HAUNCH CALCULATIONS BASED ON SURVEYED GIRDER ELEVATIONS PRIOR TO PLACEMENT OF THE DECK.
7. CONCRETE DECK SHALL BE CAST IN A SINGLE SEQUENCE PER CONSTRUCTION STAGE.
8. STAY IN PLACE DECK FORMS SHALL NOT BE PERMITTED.

SCREED ELEVATIONS

	A	B	C	D	E	F	G	H
1	76.767	76.790	76.807	76.847	76.887	76.847	76.807	76.794
2	76.777	76.800	76.817	76.857	76.897	76.857	76.817	76.804
3	76.807	76.830	76.847	76.887	76.927	76.887	76.847	76.834
4	76.832	76.855	76.872	76.912	76.952	76.912	76.872	76.859
5	76.851	76.874	76.891	76.931	76.971	76.931	76.891	76.878
6	76.862	76.885	76.902	76.942	76.982	76.942	76.902	76.889
7	76.866	76.889	76.906	76.946	76.986	76.946	76.906	76.893
8	76.861	76.884	76.901	76.941	76.981	76.941	76.901	76.888
9	76.848	76.871	76.888	76.928	76.968	76.928	76.888	76.875
10	76.828	76.851	76.868	76.908	76.948	76.908	76.868	76.855
11	76.802	76.825	76.842	76.882	76.922	76.882	76.842	76.829
12	76.770	76.793	76.810	76.850	76.890	76.850	76.810	76.797
13	76.759	76.782	76.799	76.839	76.879	76.839	76.799	76.786

APPLICABLE STANDARD DRAWINGS:

OPSD 3311.100	DECK GIRDERS, STEEL, METHOD OF OBTAINING SCREED ELEVATIONS
OPSD 3329.100	DECK, REINFORCEMENT, SUPPORTS FOR REINFORCING STEEL FOR SLAB DEPTHS 300mm OR LESS
OPSD 3370.100	DECK WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD DETAILS
OPSD 3370.101	DECK WATERPROOFING HOT APPLIED ASPHALT MEMBRANE AT ACTIVE CRACKS GREATER THAN 2mm AND CONSTRUCTION JOINTS
OPSD 3390.100	DECK DRIP CHANNEL

LICENSED PROFESSIONAL ENGINEER
G. K. LOUISY
100215018
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
N.H. BAKKER
100087992
01/10/2025
PROVINCE OF ONTARIO

REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	DAS	CHK	GKL	SITE 03-124		DWG	S10

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

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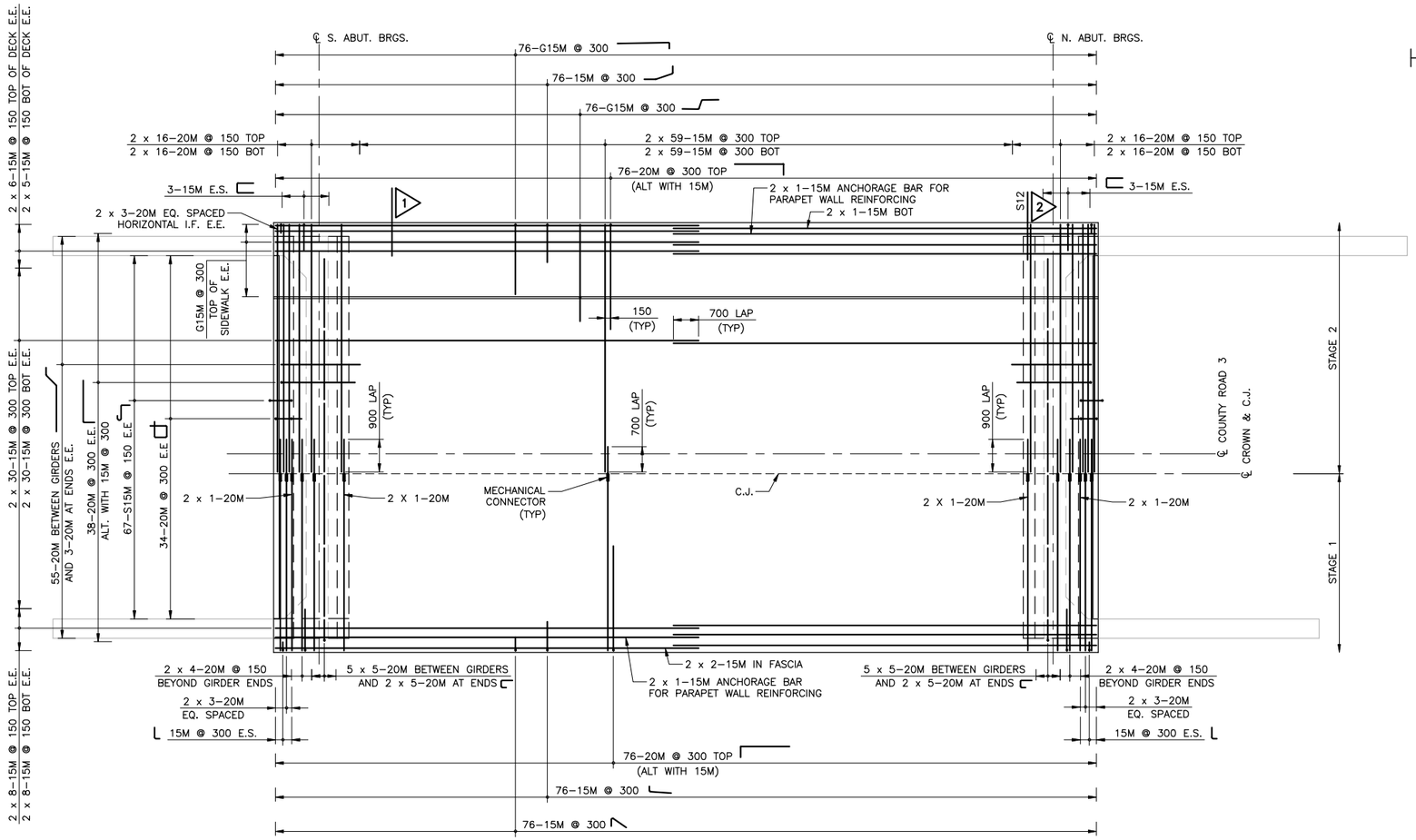
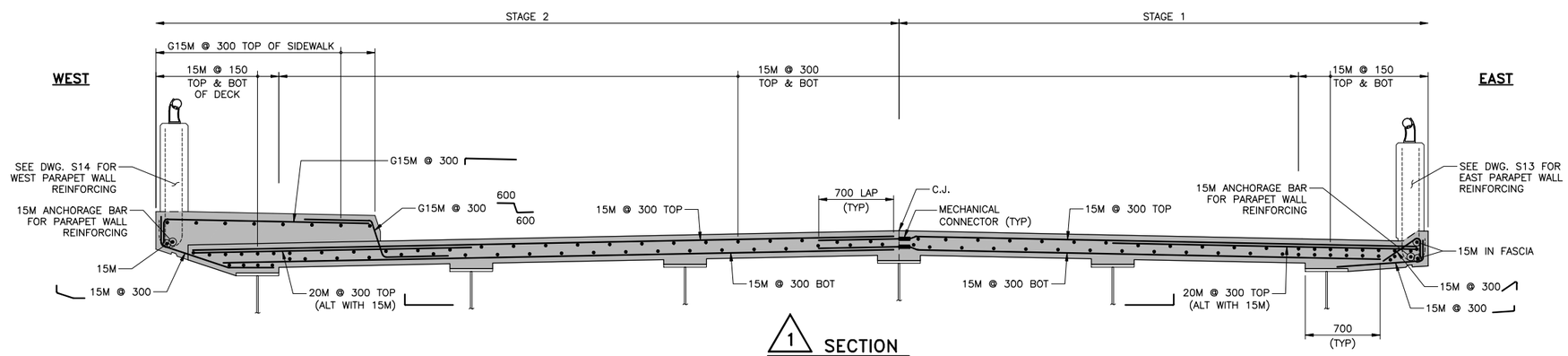
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING



PLAN
1:75



1 SECTION
SCALE 1:25

REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL–625–ONT	DATE JAN 2025			
DRAWN	DAS	CHK	GKL	SITE 03–124		DWG S11			

LICENSED PROFESSIONAL ENGINEER
G.K. LOUISY
100215018
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
N.H. BAKKER
100087992
01/10/2025
PROVINCE OF ONTARIO

the Counties SDG
CONT 2025–03–124
STRUCT No. 03–124
INKERMAN BRIDGE REPLACEMENT
DECK DETAILS II
SHEET 11

MORRISON HERSHFIELD now Stantec

MINISTRY OF TRANSPORTATION, ONTARIO ANSI–D 2017–08

FILE NAME: \\CA0158–PFPSS01\SHARED_PROJECTS\132800102\09. CAD\07 Sheets\220341700 – SG9B Deck Details II.dwg
MODIFIED: 2025–01–10 08:23

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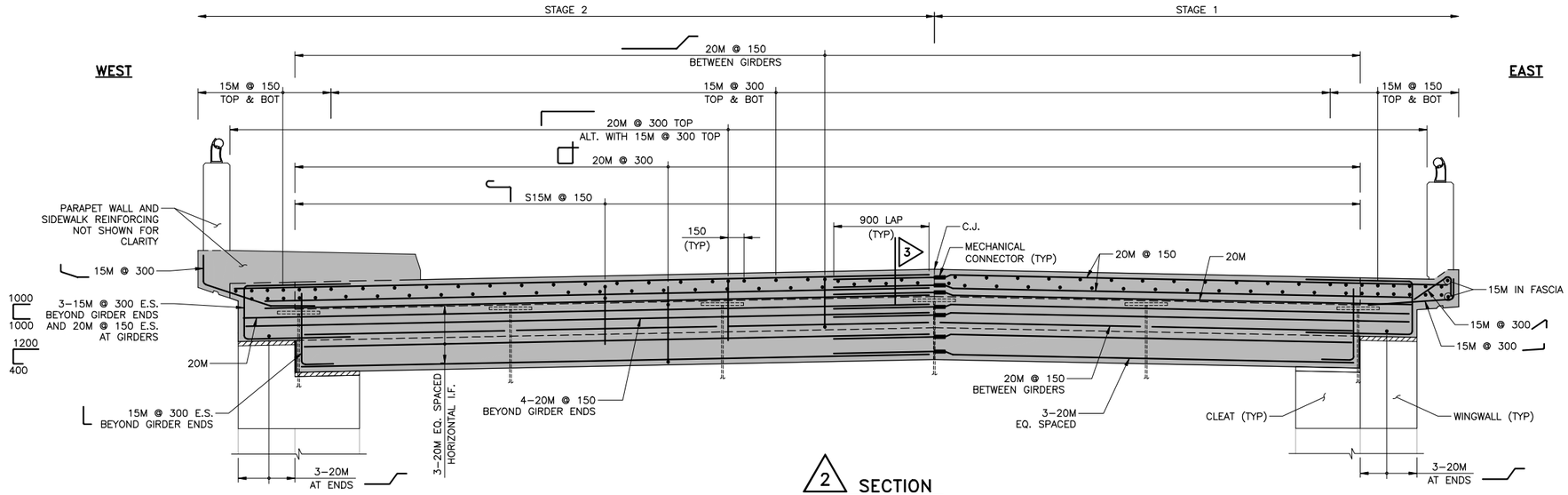
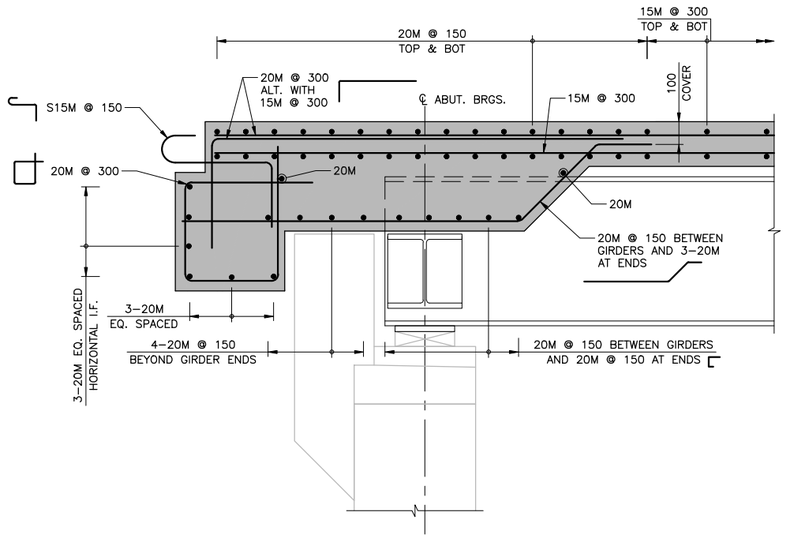
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

the Counties SDG
CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
DECK DETAILS III
SHEET 12
MORRISON HERSHFIELD now Stantec



2 SECTION
SCALE 1:25 S11
(NORTH ABUT. SHOWN, SOUTH ABUT. SIMILAR)



3 SECTION
SCALE 1:15

LICENSED PROFESSIONAL ENGINEER G.K LOUISY 100215018 PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER N.H. BAKKER 100087992 01/10/2025 PROVINCE OF ONTARIO

REVISIONS			
DATE	BY	DESCRIPTION	
JAN. 10/25	GKL	ISSUED FOR TENDER	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	DAS	CHK	GKL	SITE 03-124		DWG	S12

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

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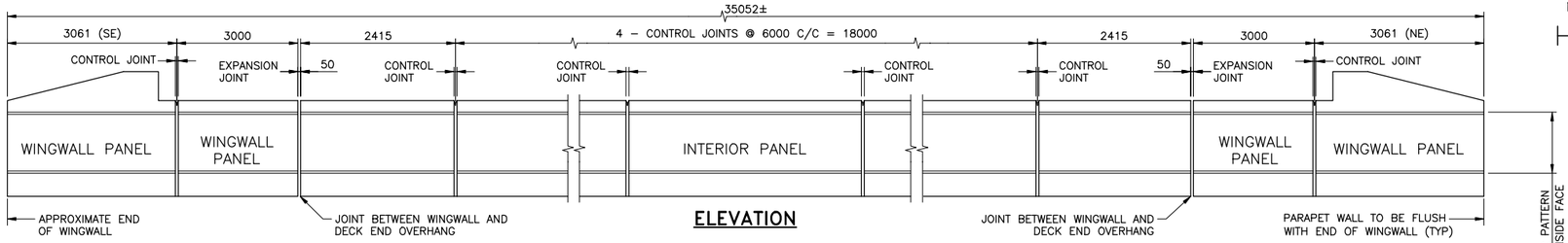
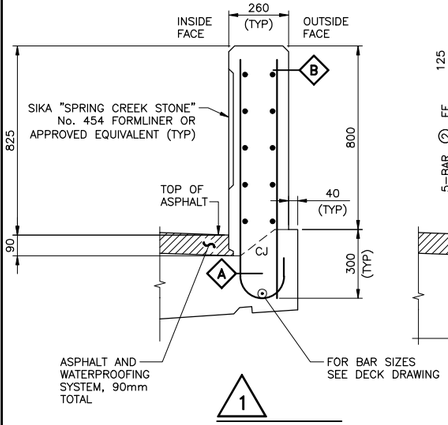
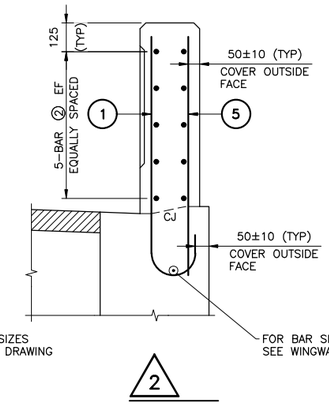
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

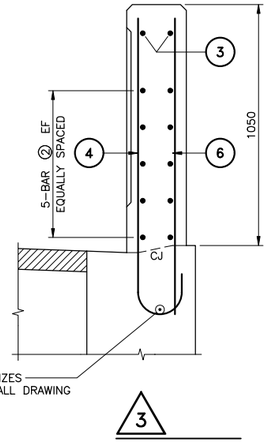


ELEVATION

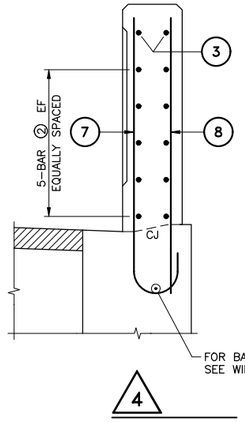


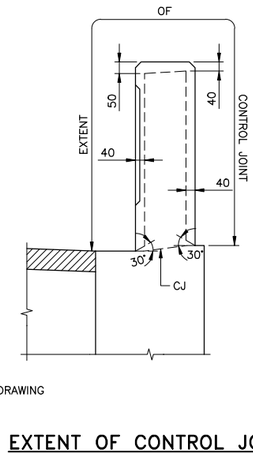
CONCRETE PARAPET ON DECK (AT EAST)
(TYPICAL DIMENSIONS (FOR BAR NUMBERS SEE 2))





CONCRETE PARAPET ON WINGWALL
TYPICAL REINFORCING

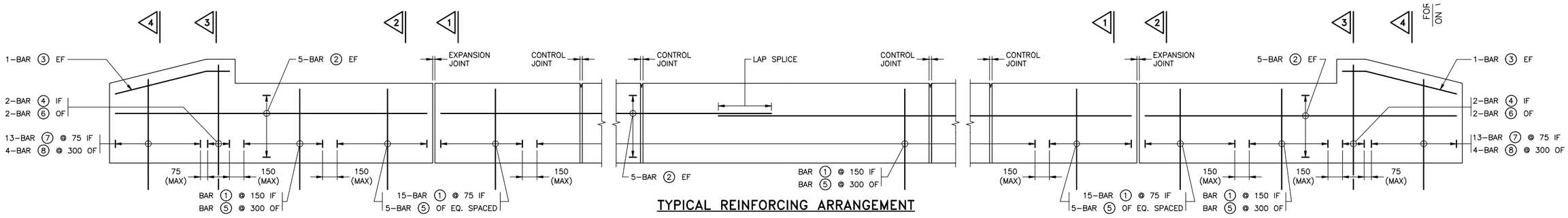




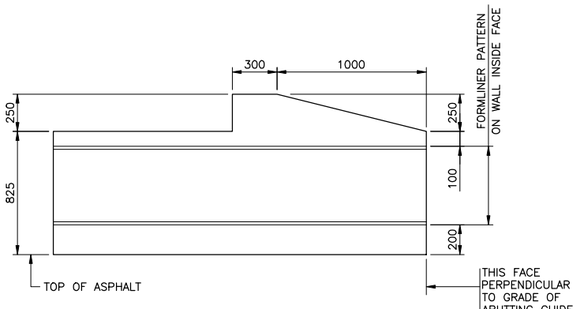
EXTENT OF CONTROL JOINT IN PARAPET WALL

BAR MARK	SIZE	SHAPE
1	G20	80, 190, 945
2	G15	STRAIGHT
3	G15	240, 970, 235
4	G20	80, 190, 1195
5	G15	STRAIGHT
6	G15	STRAIGHT
7	G20	80, 190, VARIES
8	G15	STRAIGHT, LENGTH VARIES

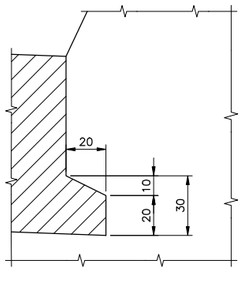
NOTES:
1. SYSTEM CONFIGURATION MEETS THE REQUIREMENTS OF NCHRP 350.
2. CONCRETE COVER TO REINFORCING BAR 60±10mm EXCEPT AS NOTED.
3. REINFORCING SHALL BE GLASS FIBRE REINFORCED POLYMER (GFRP) GRADE III. SIZE IN THE BAR SCHEDULE INDICATES DESIGNATED BAR DIAMETER, AND SHALL HAVE A CROSS SECTIONAL AREA ACCORDING TO CSA S-807.
4. BAR LAP SPLICE FOR HORIZONTAL REINFORCEMENT MUST NOT LAP THROUGH CONTROL JOINT.
5. MINIMUM BAR LAP SPLICE TO BE 550mm, UNLESS OTHERWISE SHOWN.
6. LENGTH OF HORIZONTAL BAR TO SUIT CONTRACTOR'S OPERATIONS. BAR LENGTHS NEED NOT MATCH DISTANCE BETWEEN CONTROL JOINTS.
7. CONTROL JOINT TO BE FORMED.
8. SAWCUTS NOT PERMITTED.
9. CONTROL JOINT FORM HARDWARE NOT TO BE LEFT IN PLACE.
10. CHASE REQUIRED ON HIGH AND LOW SIDE OF CROSSFALL.
11. THIS STANDARD DRAWING MAY BE SUBSTITUTED WITH STANDARD DRAWING SS110-90.
12. LEGEND: EF – DENOTES EACH FACE
IF – DENOTES INSIDE FACE
OF – DENOTES OUTSIDE FACE
CJ – CONSTRUCTION JOINT

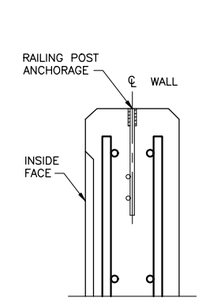


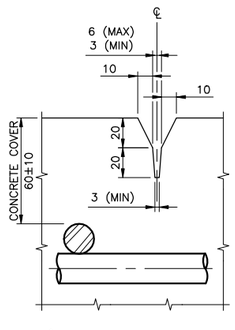
TYPICAL REINFORCING ARRANGEMENT

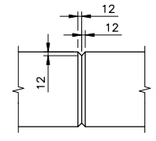


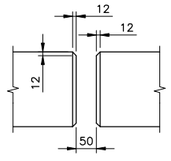
ELEVATION OF PARAPET ON WINGWALL

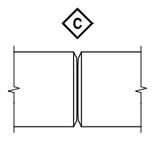












theCounties SDG
CONT 2025-03-124
STRUCT No. 03-124
INKERMAN BRIDGE REPLACEMENT
EAST PARAPET WALL WITH RAILING TL-4
(GFRP GRADE III REBAR)
SHEET 13
MORRISON HERSHFIELD now Stantec

LICENSED PROFESSIONAL ENGINEER G.K. LOUISY 100215018 PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER N.H. BAKKER 100087992 01/10/2025 PROVINCE OF ONTARIO

APPLICABLE STANDARD DRAWING:
SS110-21 RAILING FOR BARRIER/PARAPET WALL

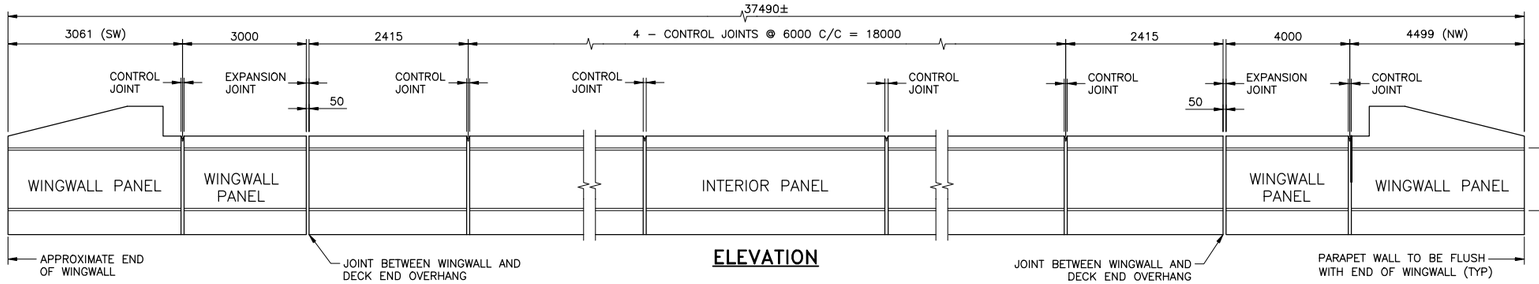
MODIFIED

STANDARD DRAWING FEBRUARY 2021	SS110-59

EAST PARAPET WALL WITH RAILING, TL-4 (GFRP GRADE III REBAR)

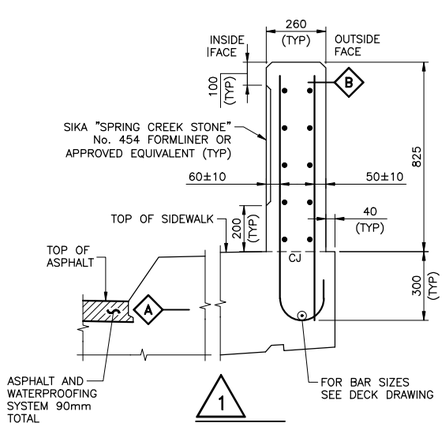
REVISIONS		
JAN. 10/25	GKL	ISSUED FOR TENDER
DATE	BY	DESCRIPTION

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	SVAS	CHK	GKL	SITE 03-124		DWG	S13



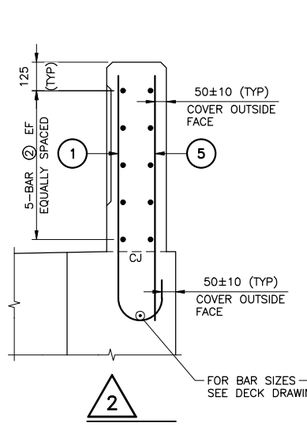
ELEVATION

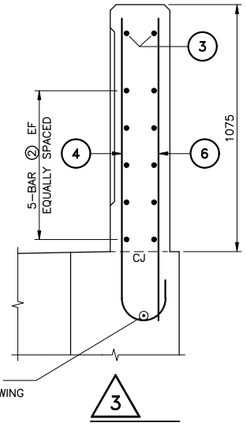
FORMLINER PATTERN ON WALL INSIDE FACE



CONCRETE PARAPET ON DECK (AT WEST)

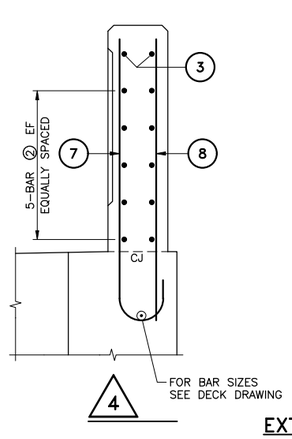
TYPICAL DIMENSIONS (FOR BAR NUMBERS SEE 2)

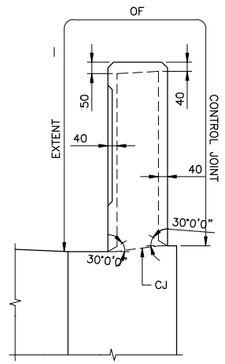




CONCRETE PARAPET ON WINGWALL

TYPICAL REINFORCING





EXTENT OF CONTROL JOINT IN PARAPET WALL

BAR MARK	SIZE	SHAPE
1	G20	80, 190, 970
2	G15	STRAIGHT
3	G15	870, 235
4	G20	80, 190, 1220
5	G15	STRAIGHT
6	G15	STRAIGHT
7	G20	80, 190, VARIES
8	G15	STRAIGHT, LENGTH VARIES

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

DRAWING NOT TO BE SCALED

100mm ON ORIGINAL DRAWING

the Counties SDG
STORMONT · DUNDAS · GLENGARRY

CONT 2025-03-124

STRUCT No. 03-124

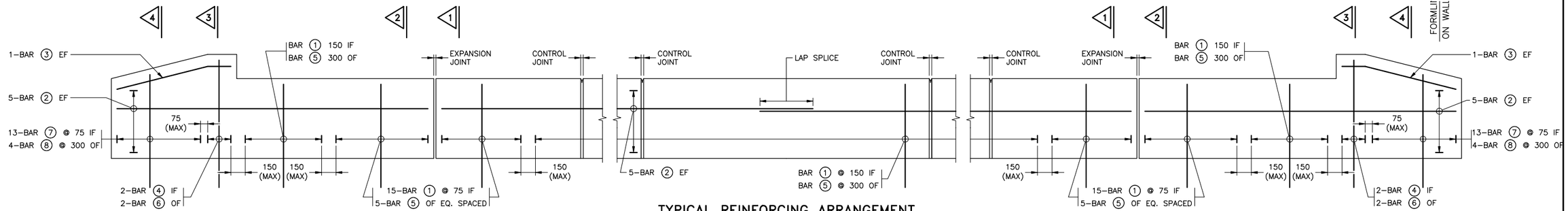
INKERMAN BRIDGE REPLACEMENT WEST PARAPET WALL WITH RAILING ON SIDEWALK, TL-4 (GFRP GRADE III REBAR)

SHEET 14

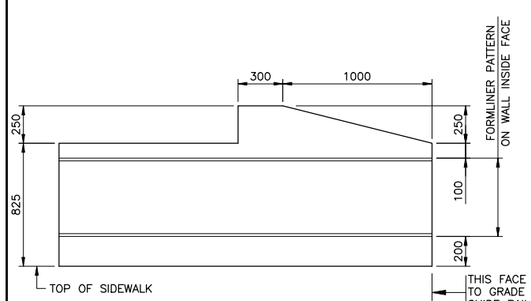
MORRISON HERSHFIELD now Stantec

NOTES:

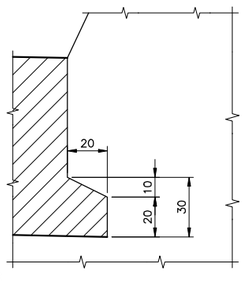
1. SYSTEM CONFIGURATION MEETS THE REQUIREMENTS OF NCHRP 350.
2. CONCRETE COVER TO REINFORCING BAR 60±10mm EXCEPT AS NOTED.
3. REINFORCING SHALL BE GLASS FIBRE REINFORCED POLYMER (GFRP) GRADE III. SIZE IN THE BAR SCHEDULE INDICATES DESIGNATED BAR DIAMETER, AND SHALL HAVE A CROSS SECTIONAL AREA ACCORDING TO CSA S-807.
4. BAR LAP SPLICE FOR HORIZONTAL REINFORCEMENT MUST NOT LAP THROUGH CONTROL JOINT.
5. MINIMUM BAR LAP SPLICE TO BE 550mm, UNLESS OTHERWISE SHOWN.
6. LENGTH OF HORIZONTAL BAR TO SUIT CONTRACTOR'S OPERATIONS. BAR LENGTHS NEED NOT MATCH DISTANCE BETWEEN CONTROL JOINTS.
7. CONTROL JOINT TO BE FORMED.
8. SAWCUTS NOT PERMITTED.
9. CONTROL JOINT FORM HARDWARE NOT TO BE LEFT IN PLACE.
10. CHASE REQUIRED ON HIGH AND LOW SIDE OF CROSSFALL.
11. THIS STANDARD DRAWING MAY BE SUBSTITUTED WITH STANDARD DRAWING SS110-98.
12. LEGEND: EF – DENOTES EACH FACE
    IF – DENOTES INSIDE FACE
    OF – DENOTES OUTSIDE FACE
    CJ – CONSTRUCTION JOINT



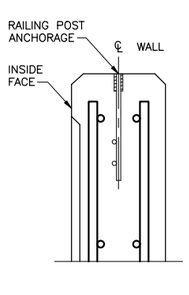
TYPICAL REINFORCING ARRANGEMENT



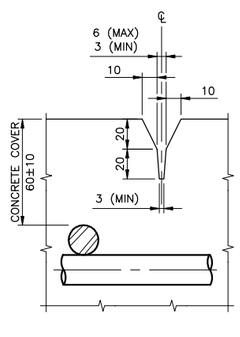
ELEVATION OF PARAPET WALL ON WINGWALL



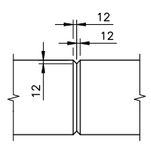
A CHASE DETAIL



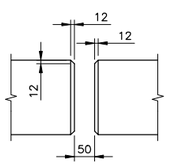
B POST ANCHORAGE DETAIL



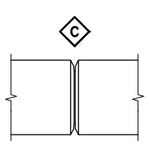
C CONTROL JOINT DETAIL



TYPICAL OPTIONAL CONSTRUCTION JOINT



TYPICAL EXPANSION JOINT



TYPICAL CONTROL JOINT

APPLICABLE STANDARD DRAWING:

SS110-21 RAILING FOR BARRIER/PARAPET WALL

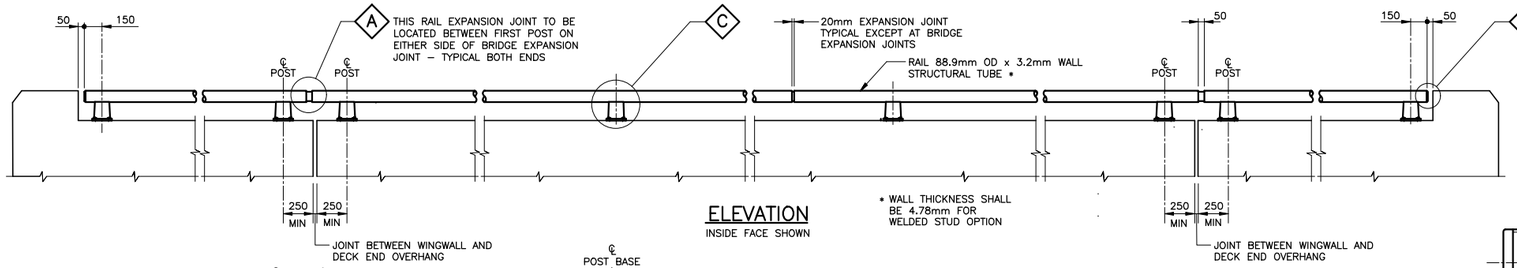
MODIFIED

STANDARD DRAWING FEBRUARY 2021	SS110-97

WEST PARAPET WALL WITH RAILING ON SIDEWALK, TL-4 (GFRP GRADE III REBAR)

REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

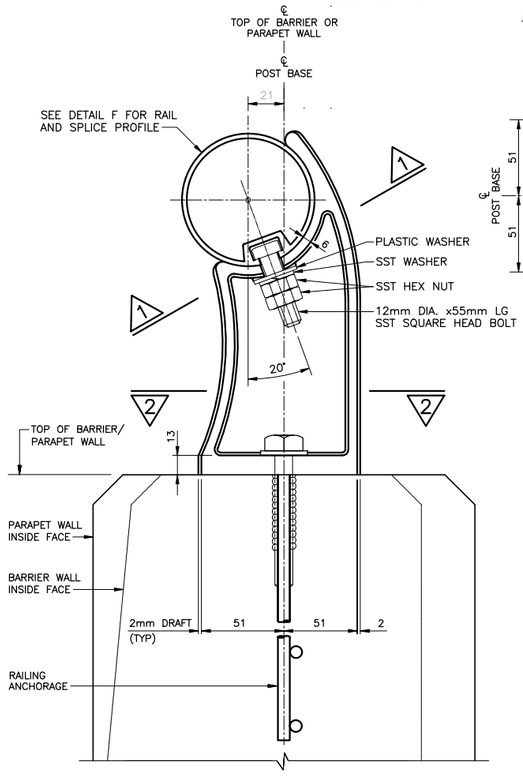
DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL-625-ONT	DATE	JAN 2025
DRAWN	SVAS	CHK	GKL	SITE 03-124		DWG	S14



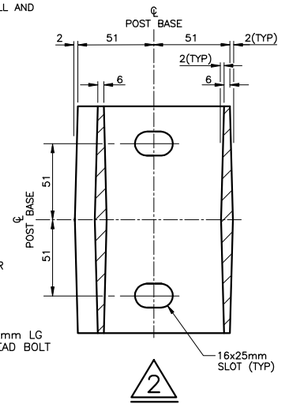
ELEVATION

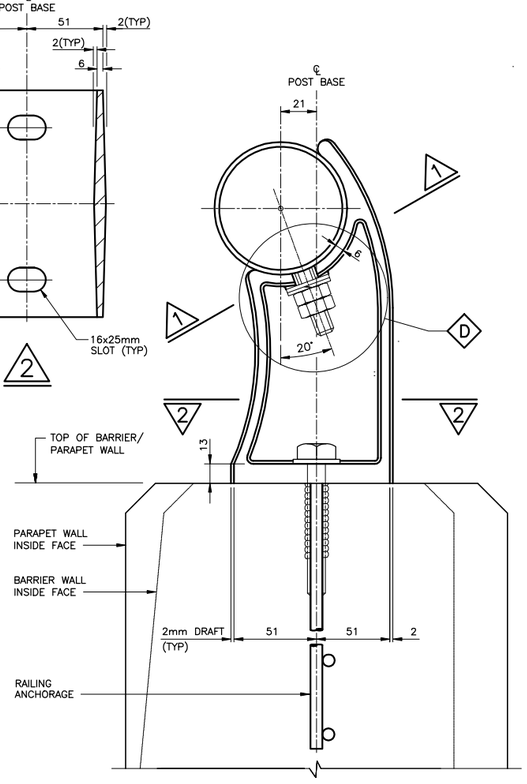
INSIDE FACE SHOWN

* WALL THICKNESS SHALL BE 4.78mm FOR WELDED STUD OPTION

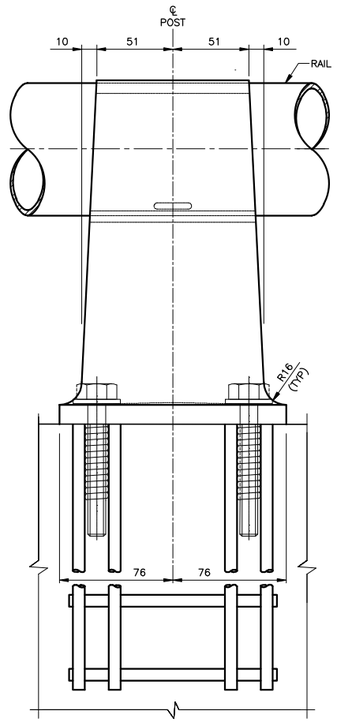


TYPICAL CROSS SECTION ALUMINUM RAIL OPTION

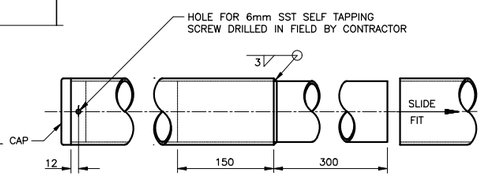




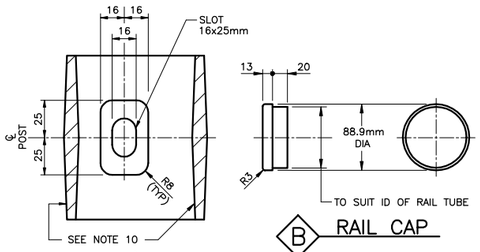
TYPICAL CROSS SECTION STEEL RAIL OPTION



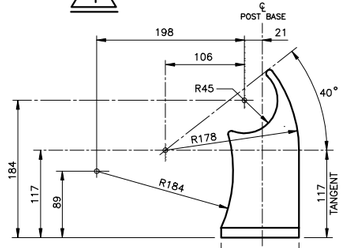
C BACK VIEW



A DETAIL



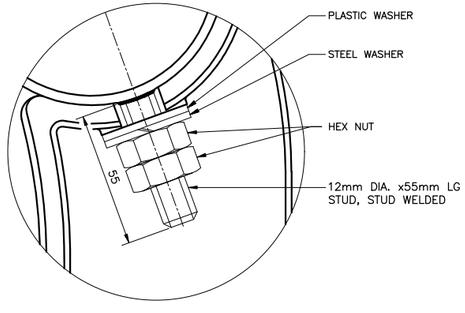
B RAIL CAP



POST DETAILS

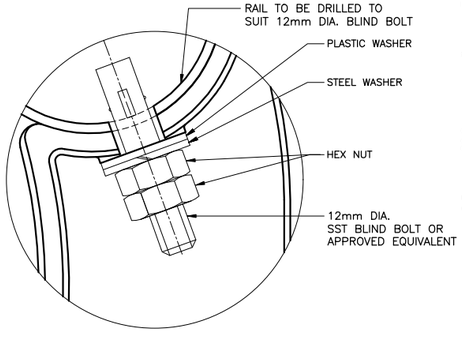
	MAXIMUM
POST* SPACING FOR STEEL RAIL	3500mm
POST* SPACING FOR ALUMINUM RAIL	2500mm

* POSTS MAY BE STEEL OR ALUMINUM

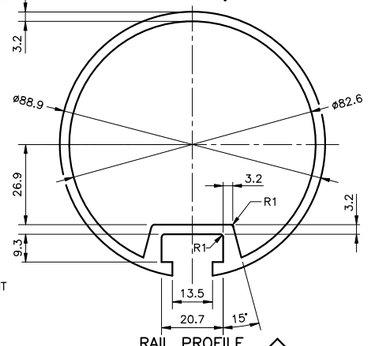


D DETAIL FULL–THREADED WELDED STUD

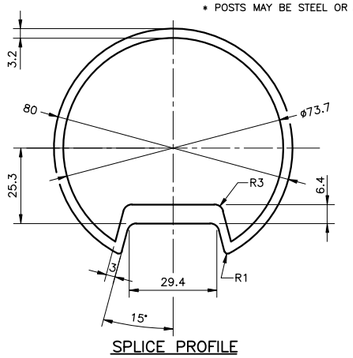
(FOR ALTERNATIVE SEE E)



E DETAIL BLIND BOLT



RAIL PROFILE



SPLICE PROFILE

F DETAIL EXTRUDED ALUMINUM RAIL

NOTES:

1. ALL NON–STAINLESS STEEL BOLT, NUT AND WASHER FOR FASTENING STEEL RAIL TO POSTS SHALL BE HOT–DIP GALVANIZED.
2. ALL WELDED STUDS OR BLIND BOLTS OR SQUARE HEAD BOLTS SHALL BE INSTALLED AT THE MIDDLE OF THE SLOT AND SHALL BE TIGHTENED TO A CONDITION THAT WILL ALLOW RAIL MOVEMENT.
3. RAILS SHALL BE SUPPLIED IN LENGTHS TO BE ATTACHED TO A MINIMUM OF THREE (3) POSTS EXCEPT WHEN THE WINGWALL LENGTH OF A BRIDGE WITH EXPANSION JOINTS DOES NOT PERMIT THIS. IN THIS CASE, THE RAIL LENGTH CAN BE ATTACHED TO TWO (2) POSTS ON THE WINGWALL.
4. POST AND ANCHORAGES TO INCLUDE ALL BOLTS AND WASHERS.
5. RAILING ANCHORAGE TO BE PLACED PRIOR TO CONCRETING.
6. RAIL SHALL BE PREBENT TO FOLLOW ROAD CURVATURE WHERE RADIUS IS LESS THAN 150m.
7. RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE.
8. WHERE LAYOUT OF POSTS IS NOT SHOWN, POST LOCATION SHALL BE DETERMINED BY THE CONTRACTOR.
9. WHEN CONNECTING TO EXISTING RAILING, RAIL MUST BE MADE CONTINUOUS AND POST SPACING DETERMINED WITH REFERENCE TO EXISTING POSTS.
10. THE COMBINATION OF STEEL RAIL AND ALUMINUM POSTS IS PERMITTED.
    – WHEN AN EXTRUDED POST IS USED, THE ALLOY SHALL BE 6061 ALLOY T–6 HEAT TREATED. THE POST DIMENSIONS SHALL NOT BE SMALLER THAN THE DETAILS SHOWN IN THE DRAWING. WALLS OF EXTRUDED POST ARE NOT TAPERED AND SHALL HAVE A UNIFORM THICKNESS OF 8mm MINIMUM.
    – WHEN A CAST POST IS USED THE ALLOY SHALL BE A444.0–T4.
11. RAIL CAP MATERIAL SHALL BE STEEL OR ALUMINUM, RAIL CAP CAN BE SAND CAST 356 ALUMINUM ALLOY. RAIL CAP TO INCLUDE SST SELF TAPPING FASTENERS.

NOTES FOR STEEL RAIL OPTION:

1. RAIL SHALL BE STRUCTURAL TUBING GRADE 350W.
2. STEEL IN POST SHALL BE CAST STEEL SUPPLIED IN ACCORDANCE WITH ASTM A27/A27M–08 GRADE 65–35.
3. GALVANIZE RAIL TUBING MATING SURFACES TO HAVE A 2± 0.5mm GAP ALL AROUND TO ENSURE A SLIDE FIT.
4. FULL THREAD STUDS. WASHERS AND NUTS FOR FASTENING RAIL TO POST SHALL CONFORM TO ASTM A108.
5. POSTS AND RAILS SHALL BE HOT–DIP GALVANIZED AFTER FABRICATION.
6. RAIL MAY BE CUT AS REQUIRED IN FIELD WITH PIPE CUTTERS, CUT TO BE REPAIRED AS SPECIFIED IN OPSS 908.

NOTES FOR ALUMINUM RAIL OPTION:

1. ALUMINUM RAIL SHALL BE 6061 ALLOY T–6 HEAT TREATED.
2. STAINLESS STEEL BOLTS, WASHERS AND LOCK NUTS SHALL BE TYPE 304 IN ACCORDANCE TO ASTM A314.

LEGEND:

SST – STAINLESS STEEL

APPLICABLE STANDARD DRAWINGS

OPSD 3419.150 BARRIERS AND RAILINGS – STEEL SINGLE RAILING ANCHORAGE

MODIFIED

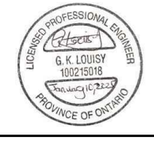
STANDARD DRAWING MARCH 2015 — **SS110–21**

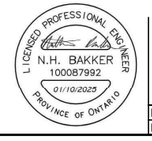
RAILING FOR BARRIER/PARAPET WALL

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

the Counties SDG
CONT 2025–03–124
STRUCT No. 03–124
INKERMAN BRIDGE REPLACEMENT
RAILING FOR PARAPET WALL
SHEET 15

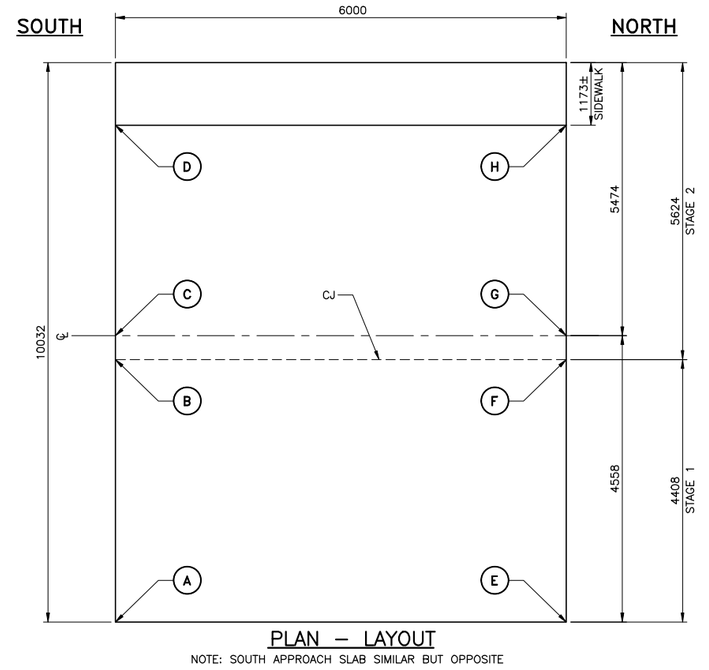
MORRISON HERSHFIELD now Stantec





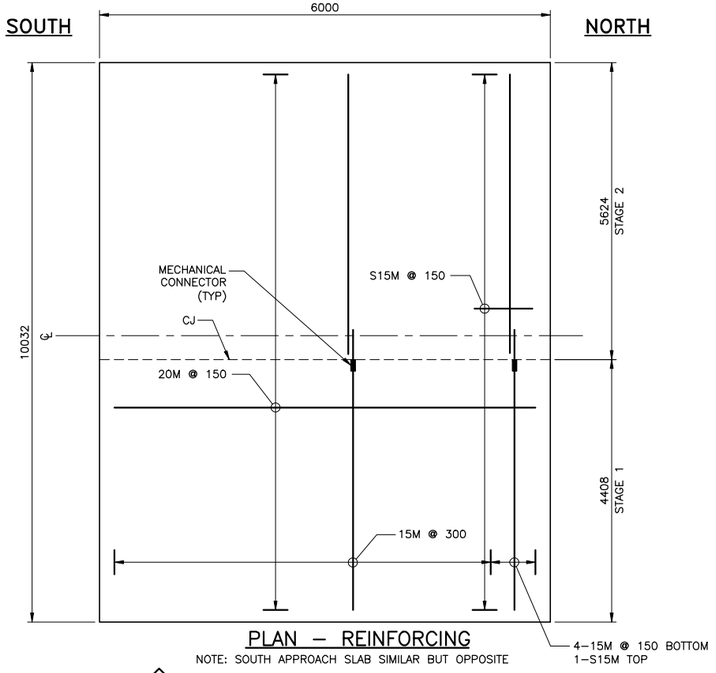
REVISIONS			
JAN. 10/25	GKL	ISSUED FOR TENDER	
DATE	BY	DESCRIPTION	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL–625–ONT	DATE	JAN 2025
DRAWN	SVAS	CHK	GKL	SITE 03–124		DWG	S15



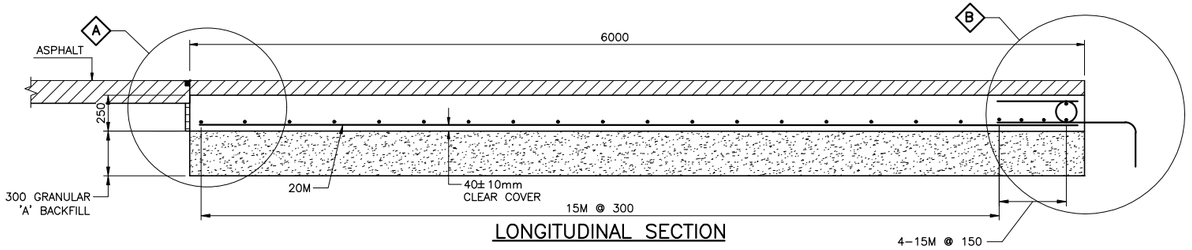
PLAN – LAYOUT

NOTE: SOUTH APPROACH SLAB SIMILAR BUT OPPOSITE

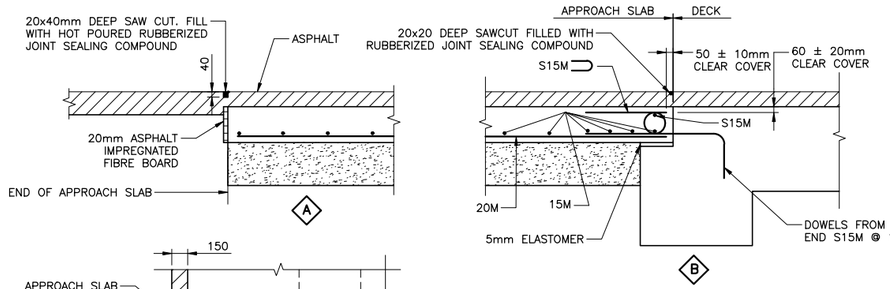


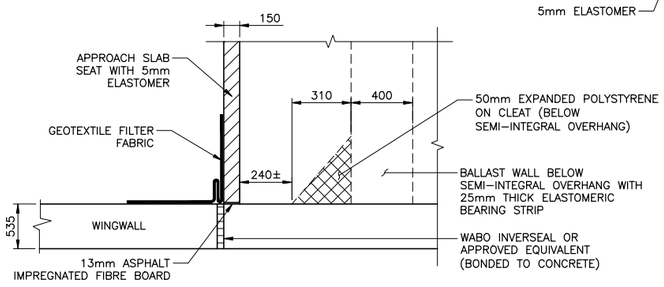
PLAN – REINFORCING

NOTE: SOUTH APPROACH SLAB SIMILAR BUT OPPOSITE

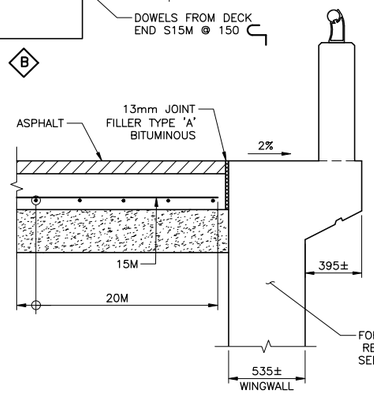


LONGITUDINAL SECTION

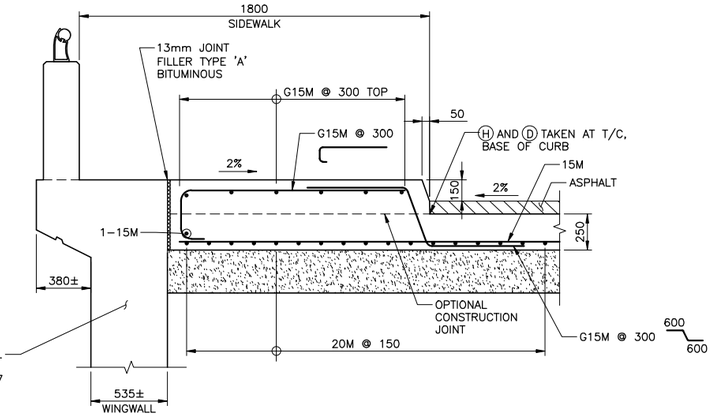




DETAIL AT APPROACH SLAB SEAT



SECTION AT EAST WINGWALL



SECTION AT WEST WINGWALL

TOP OF CONCRETE ELEVATIONS (m)			
NORTH APPROACH SLAB		SOUTH APPROACH SLAB	
A	76.798	A	76.732
B	76.874	B	76.808
C	76.879	C	76.812
D	76.872	D	76.715
E	76.810	E	76.807
F	76.885	F	76.882
G	76.890	G	76.887
H	76.793	H	76.790

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

DRAWING NOT TO BE SCALED

100mm ON ORIGINAL DRAWING

theCounties SDG

CONT 2025–03–124

STRUCT No. 03–124

INKERMAN BRIDGE REPLACEMENT

6000 mm APPROACH SLAB

SHEET 16

MORRISON HERSHFIELD now Stantec

NOTES:

1. COVER CLEAR TO REINFORCING STEEL 70 ± 20mm EXCEPT AS NOTED.
2. LAYOUT OF REINFORCING STEEL WILL BE SIMILAR FOR LEFT HAND AND ZERO DEGREE SKEW.
3. STAINLESS STEEL BARS SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500MPa.
4. WATERPROOFING AT JOINT BETWEEN BRIDGE AND APPROACH SLAB TO BE IN ACCORDANCE WITH OPSD 3370.100.
5. WATERPROOFING FOR BRIDGES WITHOUT EXPANSION JOINTS (RIGID FRAMES AND INTEGRAL ABUTMENTS) TO BE IN ACCORDANCE WITH OPSD 3370.101. WATERPROOFING SHALL EXTEND THE FULL LENGTH OF THE APPROACH SLAB.
6. BARS MARKED WITH PREFIX S DENOTE STAINLESS STEEL BARS.

LICENSED PROFESSIONAL ENGINEER
G.K. LOUISY
100215018
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
N.H. BAKKER
100087992
01/10/2025
PROVINCE OF ONTARIO

APPLICABLE STANDARD DRAWINGS

OPSD 3370.100 DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD

OPSD 3370.101 DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE AT ACTIVE CRACKS GREATER THAN 2mm WIDE AND CONSTRUCTION JOINTS

MODIFIED

STANDARD DRAWING MARCH 2016 — SS116–1

6000 mm APPROACH SLAB

REVISIONS			
DATE	BY	DESCRIPTION	
JAN. 10/25	GKL	ISSUED FOR TENDER	

DESIGN	GKL	CHK	NHB	CODE CHBDC 2019	LOAD CL–625–ONT	DATE	JAN 2025
DRAWN	SVAS	CHK	GKL	SITE 03–124		DWG	S16

MINISTRY OF TRANSPORTATION, ONTARIO ANSI–D 2017–08

FILE NAME: \\CA0158–PFPSS01\SHARED_PROJECTS\132800102\09. CAD\07 Sheets\220341700 – S13 Approach Slab Details.dwg

MODIFIED: 2025–01–10 08:51

NOTES:

1. THIS DRAWING SHALL FORM PART OF THE CONTRACTOR'S TRAFFIC MANAGEMENT PLAN. NOT ALL CONSTRUCTION SIGNAGE IS SHOWN.
2. ALL CONSTRUCTION SIGNAGE TO BE SUPPLIED, INSTALLED, MAINTAINED AND REMOVED BY THE CONTRACTOR. SIGNAGE SHALL CONFORM WITH ONTARIO TRAFFIC MANUAL(OTM) BOOK 7.
3. TRAFFIC THROUGH CONSTRUCTION ZONE TO BE PRIMARILY CONTROLLED BY TEMPORARY TRAFFIC SIGNALS. THE CONTRACTOR IS RESPONSIBLE FOR THE SUPPLY AND PLACEMENT OF THE TEMPORARY TRAFFIC SIGNALS INCLUDING THE OPERATIONAL TIMING AND RATE REQUIREMENTS TO MEET SITE CONDITIONS.
4. THE CONTRACTOR SHALL MAINTAIN ONE LANE OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION, EXCEPT AS NOTED IN THE CONTRACT SPECIFICATIONS.
5. RATE OF FLARE OF TCB TO BE IN ACCORDANCE WITH OPSD 911.232.
6. TEMPORARY RELOCATION OF TCB MAY BE REQUIRED TO ACCOMMODATE STRUCTURAL WORK AND NEW PAVEMENT CONSTRUCTION.
7. ACCESS TO DRIVEWAYS TO BE MAINTAINED.
8. EAT TO BE AS PER EITHER OPSD 924.132 OR 924.135 (TL-2).

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

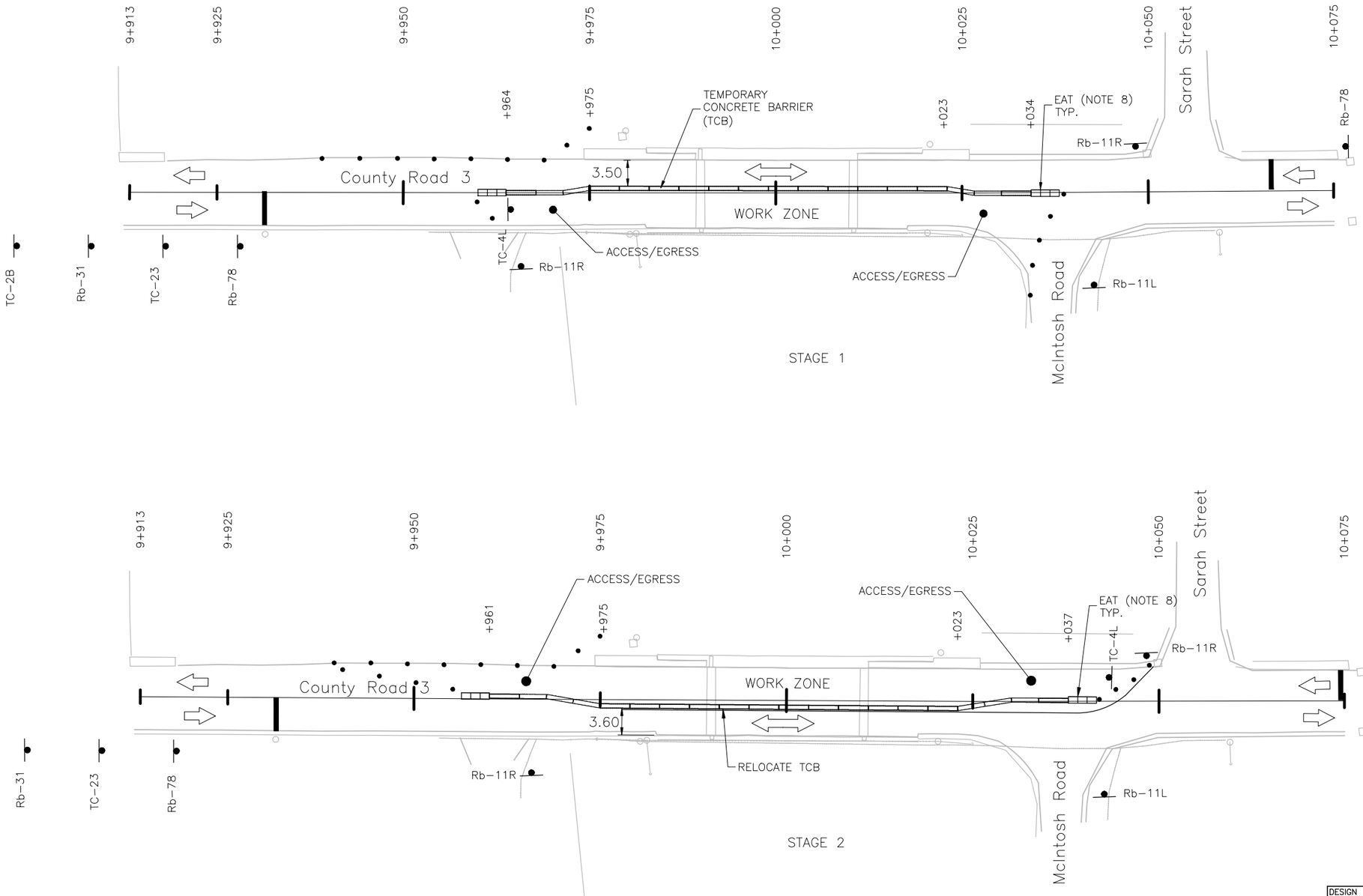
LICENSED PROFESSIONAL ENGINEER
B. K. H. HEWTON
100123247
1/10/25
PROVINCE OF ONTARIO

the Counties SDG

CONT 2022-03-124	
STRUCT No. 03-124	
INKERMAN BRIDGE REPLACEMENT	SHEET 17
TRAFFIC STAGING	

MORRISON HERSHFIELD now Stantec

LEGEND
- TC-54 BARREL
- SIGN



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DRAWN	CY	CHK	MH	SITE	03-124		DWG

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MODIFIED: 2025-01-09 15:11

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

REMOVALS LEGEND

- ASPHALT REMOVAL (FULL DEPTH)
- ASPHALT REMOVAL (PARTIAL DEPTH)
- CONCRETE REMOVAL
- EARTH EXCAVATION
- CCRG — REMOVAL OF CONCRETE CURB AND GUTTER

NEW CONSTRUCTION LEGEND

- FULL DEPTH ASPHALT HL3 HOT MIX PAVING (40 mm SURFACE ON 2 LIFTS OF 50 mm BASE COURSE)
- NEW CONCRETE
- PARTIAL DEPTH ASPHALT (40mm)

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS.
2. CONTRACTOR TO CONFIRM ALL UTILITY LOCATION INFORMATION PRIOR TO ANY CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.

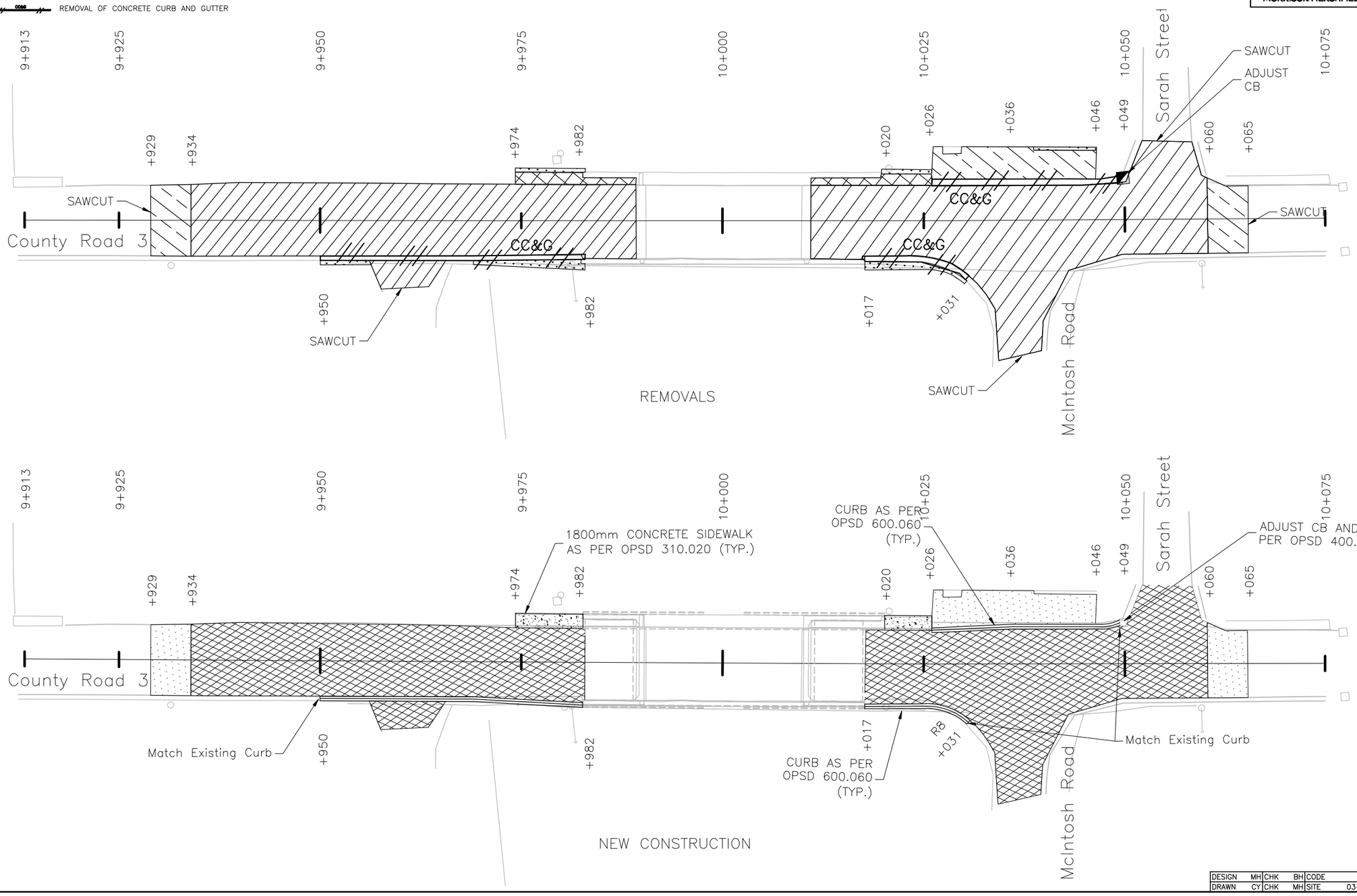
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

LICENSED PROFESSIONAL ENGINEER
B. K. H. HEWTON
100123247
1/10/25
PROVINCE OF ONTARIO

the Counties SDG

CONT 2022-03-124	
STRUCT No. 03-124	
INKERMAN BRIDGE REPLACEMENT ROADWAYS REMOVAL & RECONSTRUCTION	SHEET 18

MORRISON HERSHFIELD now Stantec



SCALE
0m 10 25

DESIGN	MH	CHK	BH	CODE		LOAD	DATE 01/10/25
DRAWN	CY	CHK	MH	SITE	03-124		DWG

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

FILE NAME: U:\1328001021\09. CAD\07 Sheets\Highways\220341700_H18_Rem-NC.dwg
MODIFIED: 2025-01-09 15:10

NOTES:

1. THE PROFILE CONTROL IS THE CENTERLINE OF COUNTY ROAD 3.

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

LICENSED PROFESSIONAL ENGINEER
B. K. H. HEWTON
100123247
1/10/25
PROVINCE OF ONTARIO

the Counties SDG

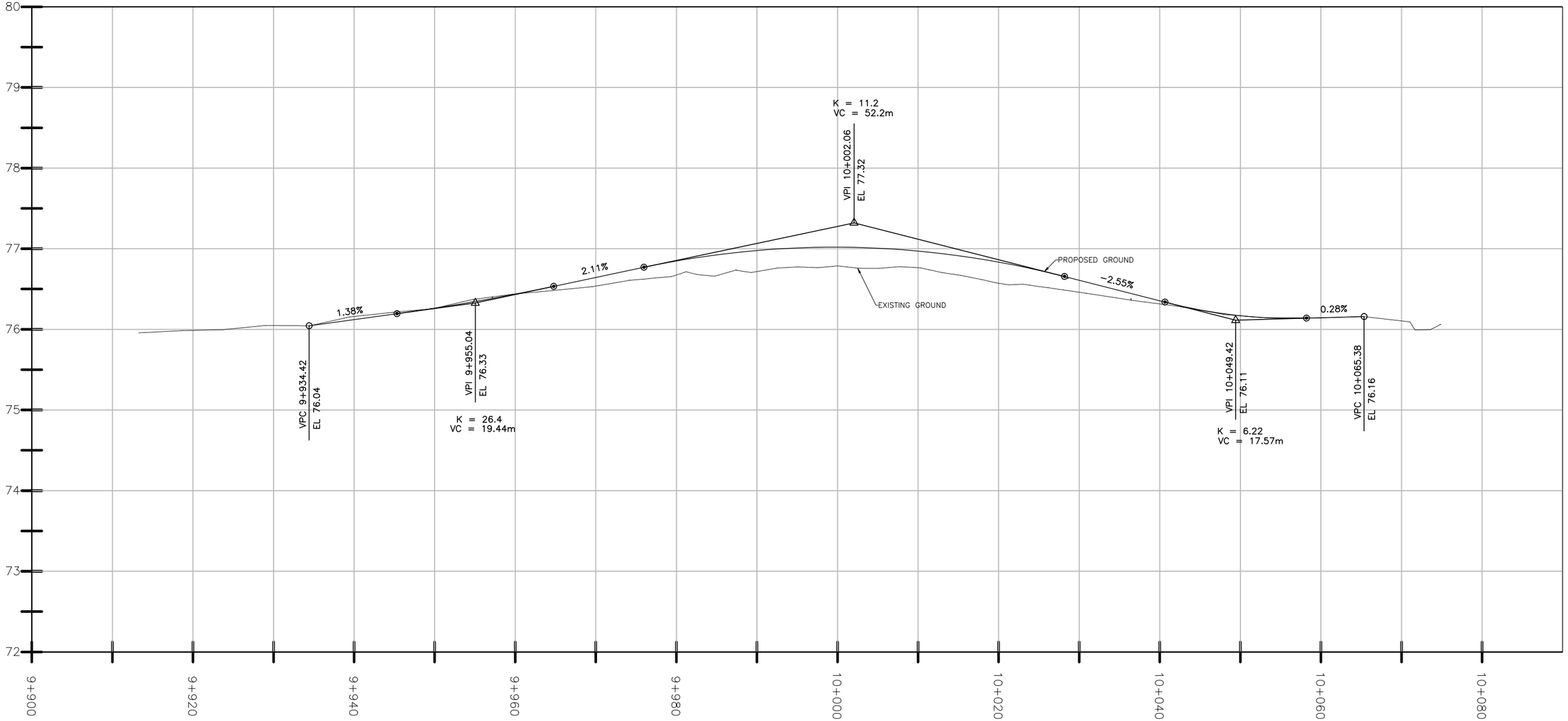
CONT 2022-03-124
STRUCT No. 03-124

INKERMAN BRIDGE REPLACEMENT

PROFILE

SHEET 19

MORRISON HERSHFIELD now Stantec



SCALE
0m 0.5 1m
VERTICAL

SCALE
0m 5 10
HORIZONTAL

DESIGN	MH	CHK	BH	CODE		LOAD		DATE	01/10/25
DRAWN	MH	CHK	BH	SITE	03-124			DWG	

MINISTRY OF TRANSPORTATION, ONTARIO ANSI-D 2017-08

FILE NAME: U:\132800102\09. CAD\07 Sheets\Highways\220341700_H19_Profile.dwg
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