



Parks Canada

Parcs Canada

**NORTH ASPY RIVER (NORTH)
BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK
VICTORIA COUNTY
NOVA SCOTIA**

PROJECT NO. 324

DRAWING LIST

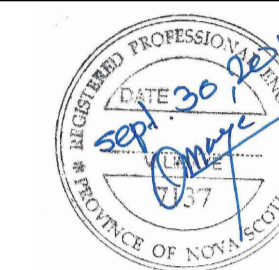
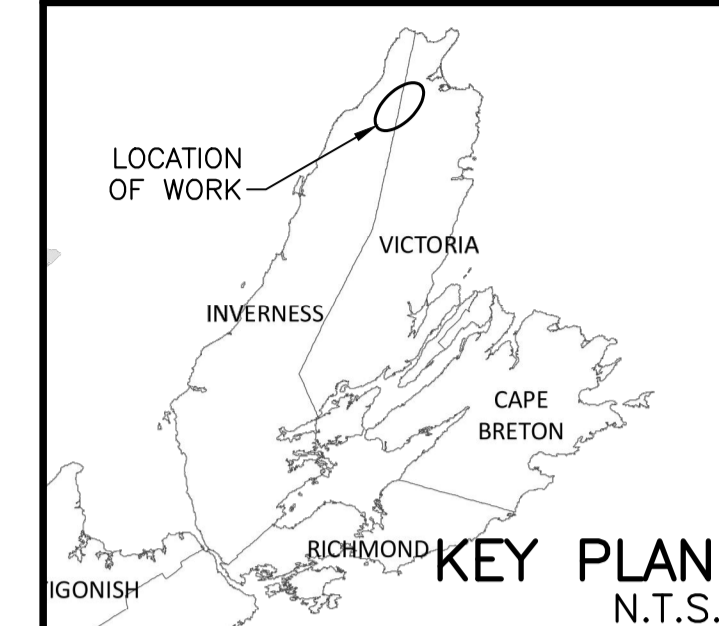
CIVIL DRAWINGS:

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- C-4 PLAN AND PROFILE - STA 0+060 TO 0+180
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Canada



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revisions		date
project		project

**NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA**

drawing no. dessin

SITE PLAN

designed VIDYA LIMAYE conçu

date

drawn MATT MACLEOD dessiné

date SEP. 30, 2015

approved VIDYA LIMAYE approuvé

date

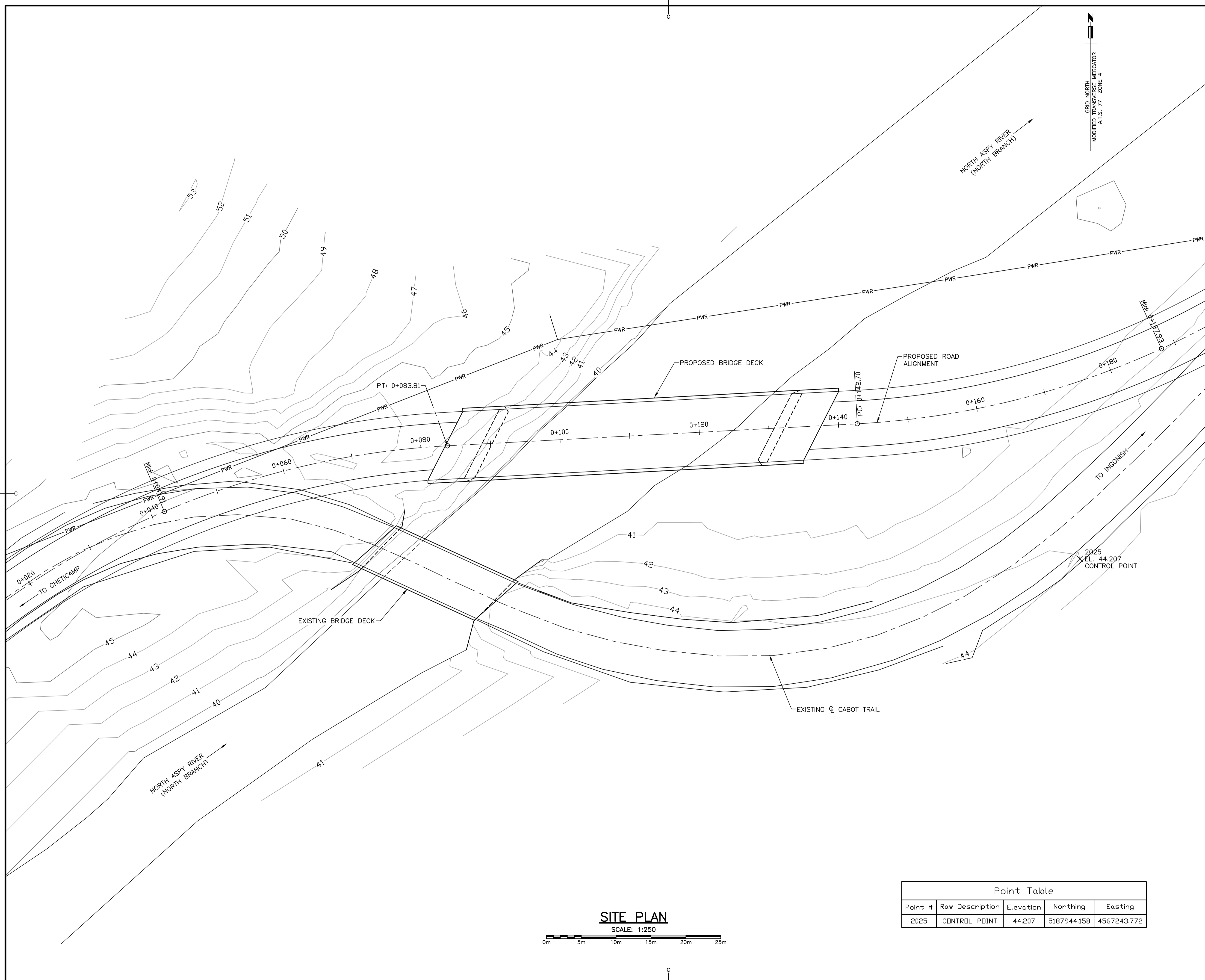
Tender *John Wiley* Soumission
Parks Canada Project Manager Administrateur de projets Parcs Canada

project number no. du projet

324

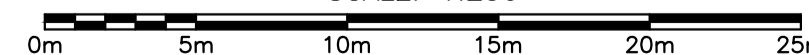
drawing no. no. du dessin

S-1

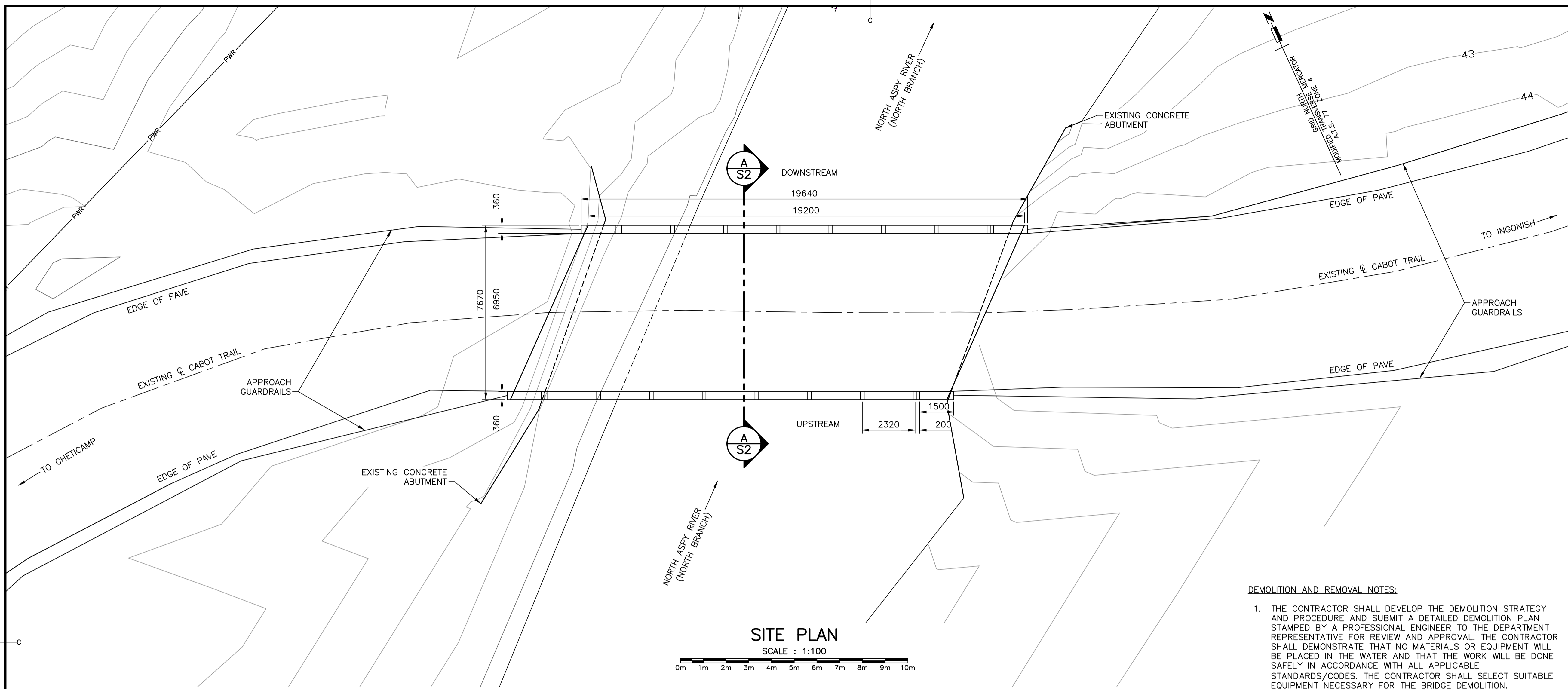
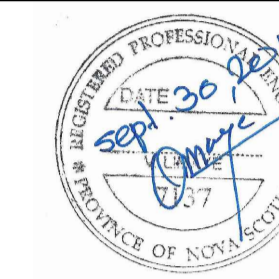
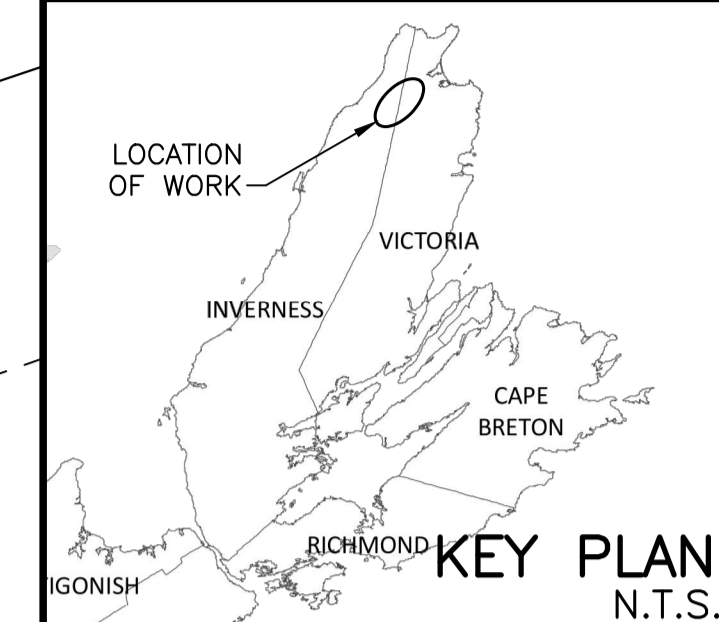


SITE PLAN

SCALE: 1:250

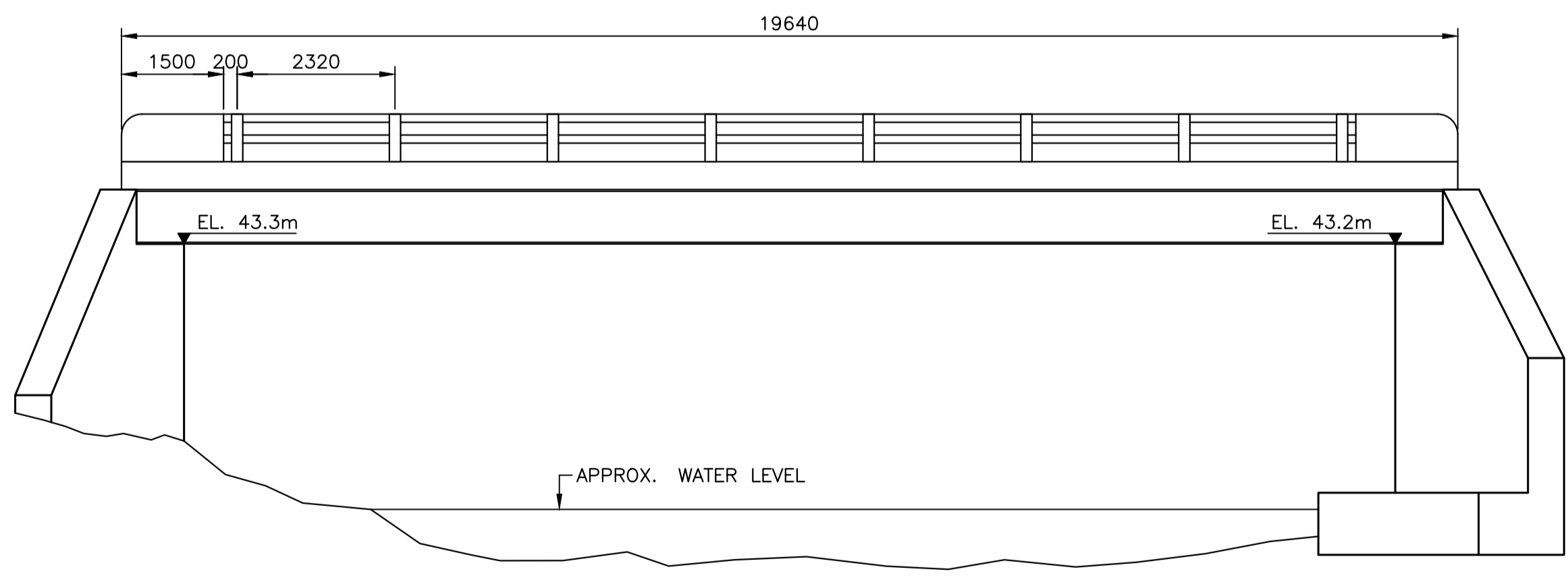


Point #	Raw Description	Elevation	Northing	Easting
2025	CONTROL POINT	44.207	5187944.158	4567243.772

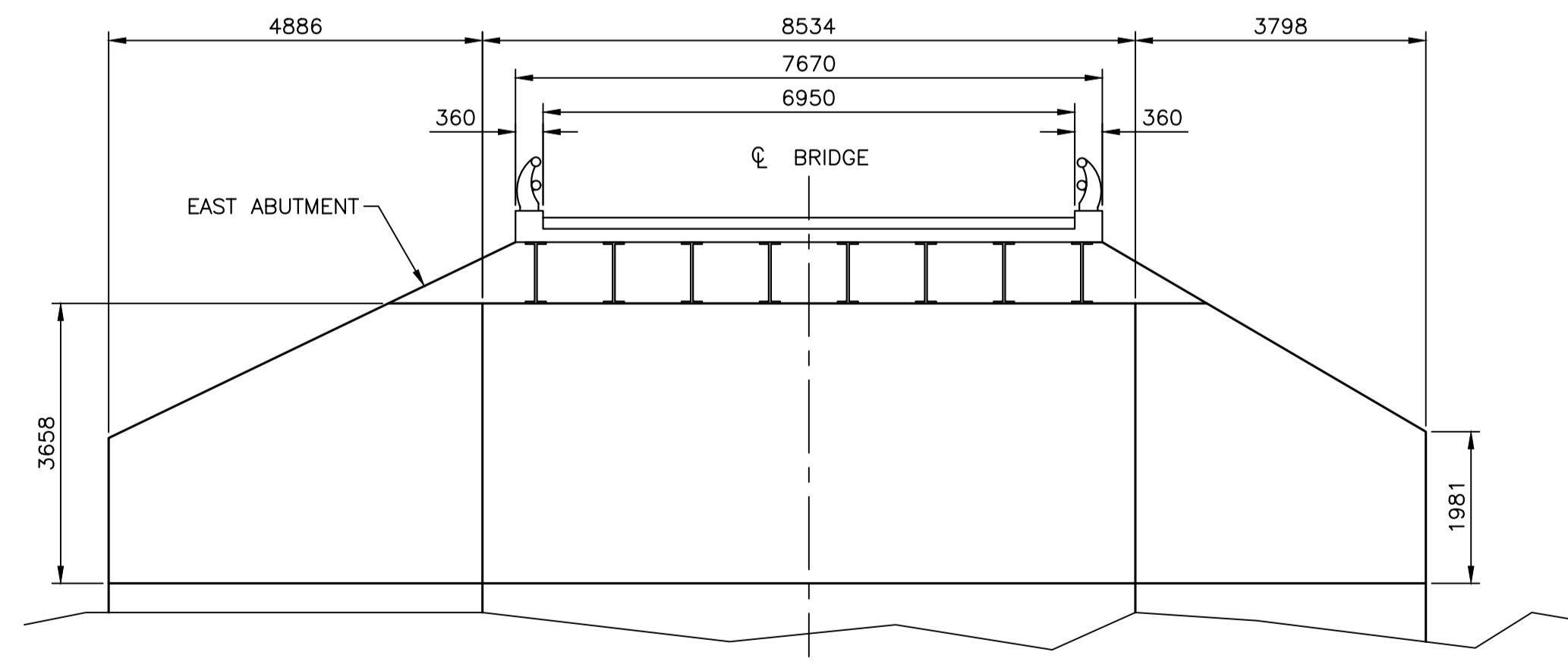


SITE PLAN
SCALE : 1:100

- DEMOLITION AND REMOVAL NOTES:**
1. THE CONTRACTOR SHALL DEVELOP THE DEMOLITION STRATEGY AND PROCEDURE AND SUBMIT A DETAILED DEMOLITION PLAN STAMPED BY A PROFESSIONAL ENGINEER TO THE DEPARTMENT REPRESENTATIVE FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL DEMONSTRATE THAT NO MATERIALS OR EQUIPMENT WILL BE PLACED IN THE WATER AND THAT THE WORK WILL BE DONE SAFELY IN ACCORDANCE WITH ALL APPLICABLE STANDARDS/CODES. THE CONTRACTOR SHALL SELECT SUITABLE EQUIPMENT NECESSARY FOR THE BRIDGE DEMOLITION.
 2. THE CONTRACTOR SHALL SUBMIT A DETAILED ENVIRONMENTAL PROTECTION PLAN (EPP). EITHER AS PART OF THE EPP, OR AS STAND ALONE DOCUMENTS, THE CONTRACTOR MUST ALSO SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW: PROPOSED SURFACE WATER CONTROL PLAN, WITH DIAGRAM, AS WELL AS A SEDIMENTATION AND EROSION CONTROL PLAN, WITH DIAGRAM, BOTH STAMPED BY A PROFESSIONAL ENGINEER.



ELEVATION
SCALE : 1:75



SECTION THROUGH DECK
SCALE : 1:75

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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

drawing

EXISTING BRIDGE PLAN, ELEVATION, AND SECTION

designed VIDYA LIMAYE

date

drawn MATT MACLEOD

date SEP. 23, 2015

approved VIDYA LIMAYE

date

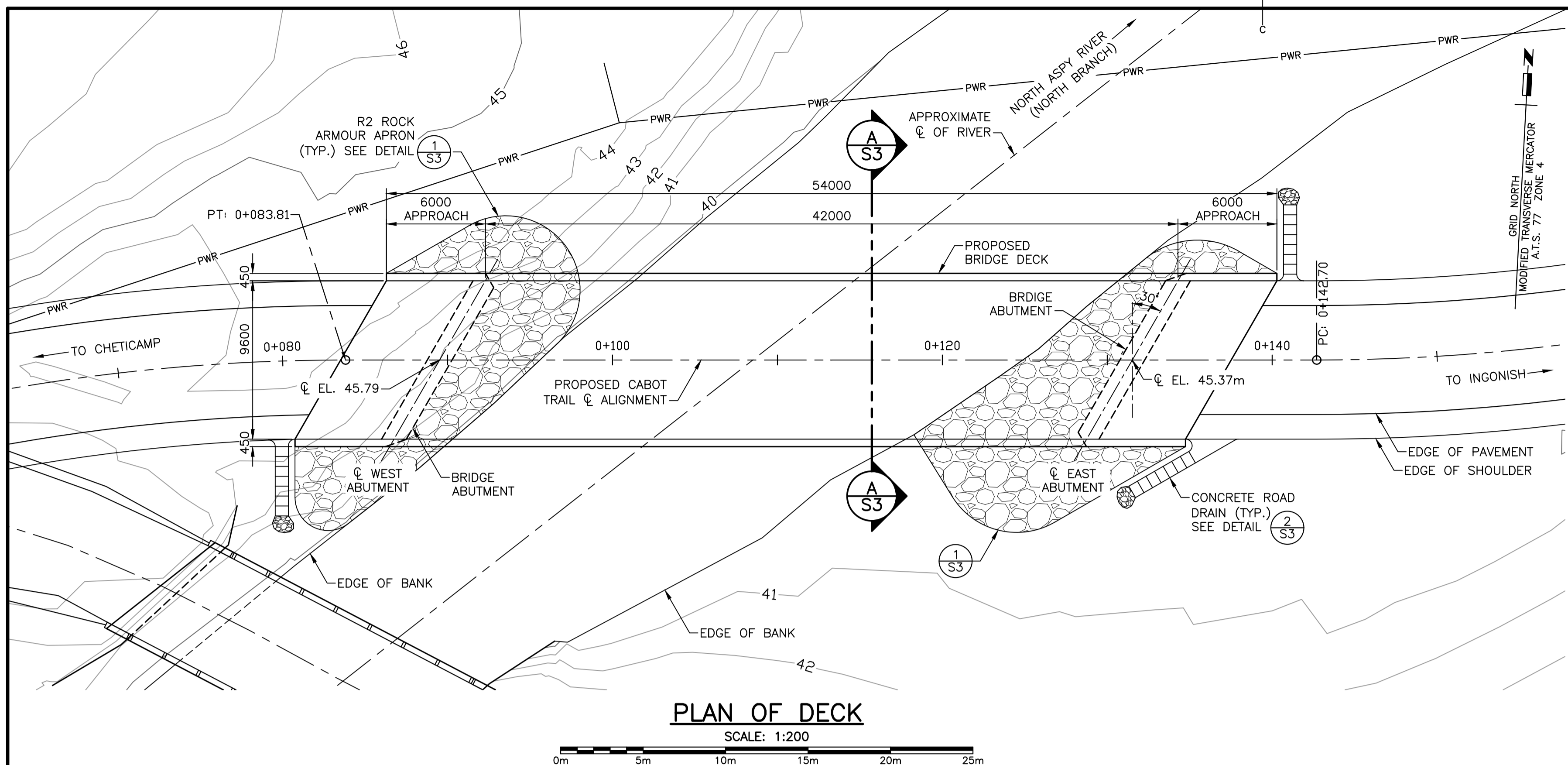
Tender Administrator de Projets
Parcs Canada Project Manager

project number

324

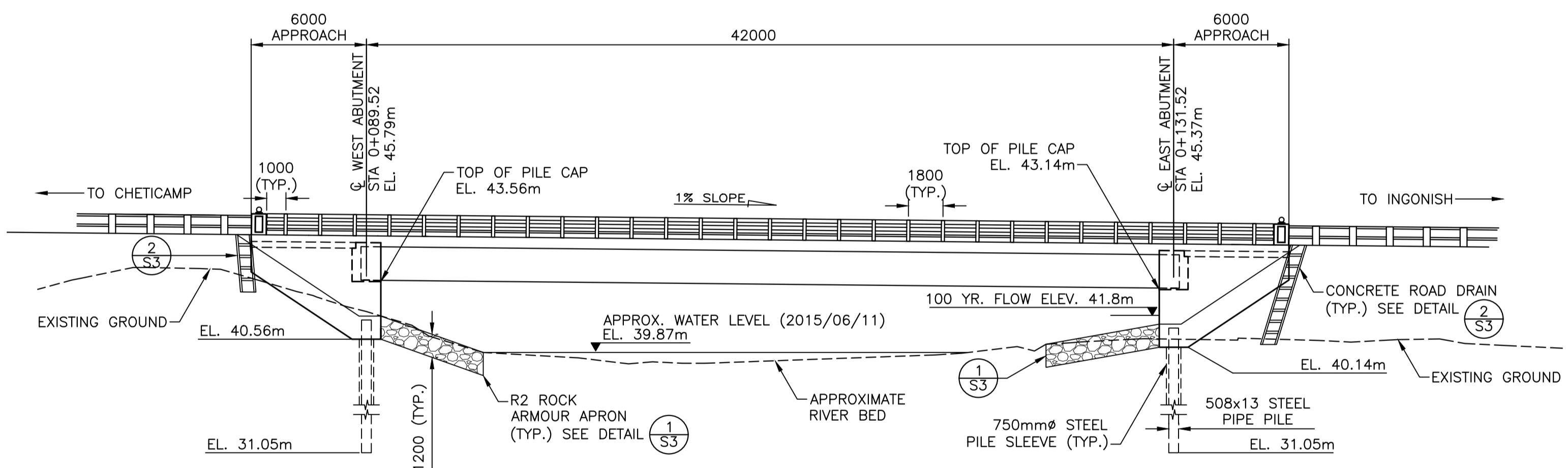
drawing no.

S-2



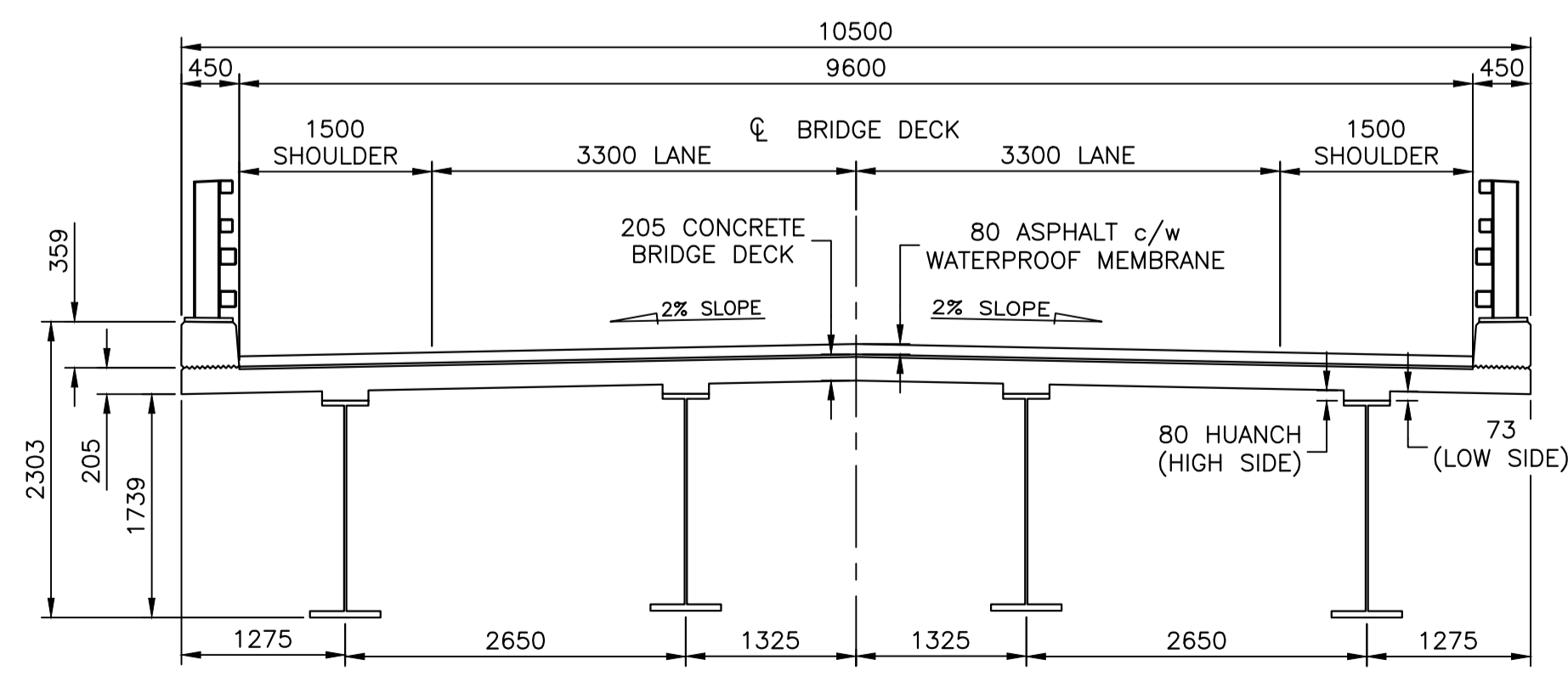
PLAN OF DECK

SCALE: 1:200



ELEVATION LOOKING DOWNSTREAM

SCALE: 1:200



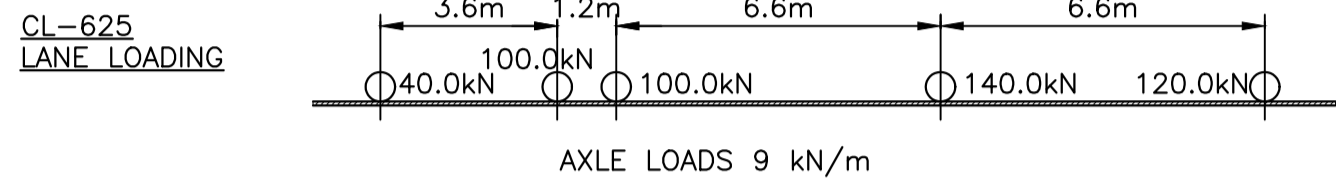
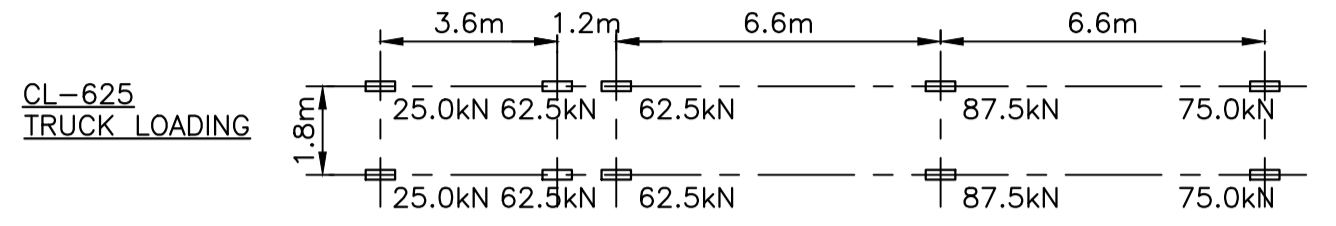
SECTION THROUGH DECK

SCALE: 1:50



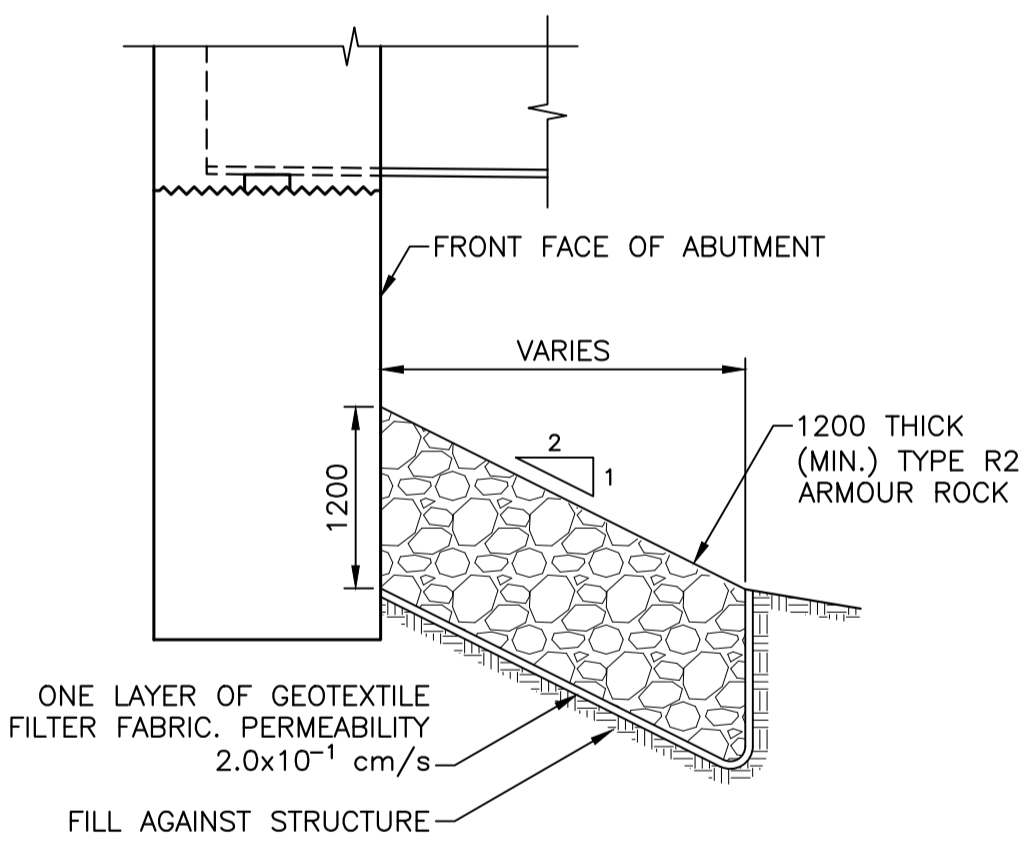
GENERAL NOTES:

- GENERAL REQUIREMENTS GOVERNING DESIGN, MATERIALS, AND CONSTRUCTION ARE AS FOLLOWS:
 - LOADING AND GENERAL DESIGN TO CAN/CSA-S6-06, WITH LATEST REVISIONS.
 - NOVA SCOTIA STANDARD DESIGN AND INFRASTRUCTURE RENEWAL (NSTIR), STANDARD SPECIFICATION.
 - CONCRETE MATERIALS AND METHODS OF CONSTRUCTION TO CSA - A23.1, AND METHODS OF TEST FOR CONCRETE TO CSA-A23.2.
 - REINFORCING STEEL TO NSTIR STANDARD SPECIFICATIONS WITH YIELD STRENGTH OF 400 MPa (WELDABLE). GFRP BARS IN ACCORDANCE WITH CAN CSA 3807-10.149
 - CONCRETE (MINIMUM 28 DAY COMP. STRENGTH)
 - DECK, BARRIERS, ABUTMENTS, AND APPROACH SLABS: HPC AS PER DIV. 5, SECTION 18 OF STD. SPEC.. $f'c = 45$ MPa, AIR CONTENT 6%, $\pm 1\%$ (AIR VOID SPACING REQUIREMENTS STD. SPEC.), W/C = 0.35 MAX.
- ALL DIMENSIONS ARE IN MILLIMETERS (mm), UNLESS NOTED OTHERWISE, STATIONS AND ELEVATIONS ARE GIVEN IN METERS (m).
- FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALING.
- ALL SPECIFICATION NOTES TO REFLECT THE "LATEST EDITION" AT TIME OF TENDER.
- LIVE LOAD: CL-625



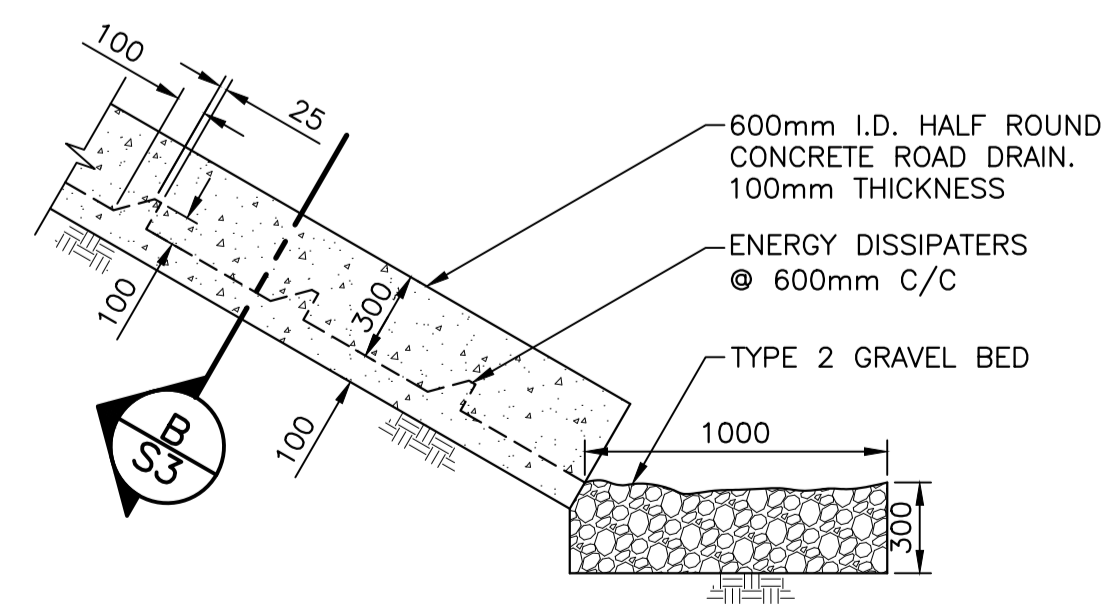
AXLE LOADS 9 kN/m

- CONTRACTOR IS TO ENSURE THAT ALL WORK IS CARRIED OUT IN ACCORDANCE WITH NOVA SCOTIA OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS.
- CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF THE EXISTING STRUCTURE AND ALL REQUIRED DEMOLITION PERMITS TO AGENCIES.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE AN EROSION AND SEDIMENTATION CONTROL PLAN TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO DEMOLITION OR OTHER SITE WORKS. CONTRACTOR IS TO MAINTAIN CONTROLS DURING THE ENTIRE PROJECT.
- BACKFILL IMMEDIATELY BEHIND WINGWALLS TO BE "FILL AGAINST STRUCTURE" MATERIAL AS PER NSTIR STANDARDS.
- EACH PHASE OF WORK TO BE INSPECTED AND APPROVED BY THE DEPARTMENTAL REPRESENTATIVE PRIOR TO PROCEEDING TO THE NEXT PHASE OF WORK.
- CONTRACTOR TO COORDINATE WITH UTILITY OWNERS AND PARKS CANADA REPRESENTATIVE.
- CONTRACTOR SHALL ENSURE STABILITY OF ALL COMPONENTS DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR SHALL DESIGN, INSTALL, AND MAINTAIN TEMPORARY BRACING, SHORING, AND FORMWORK OF ALL STRUCTURAL ELEMENTS FOR STABILITY AND SAFETY WHERE REQUIRED DURING CONSTRUCTION. TO BE APPROVED BY DEPARTMENTAL REPRESENTATIVE.
- FOR COMPLETE INFORMATION ON BOREHOLE DATA AND GEOTECHNICAL CONDITIONS REFER TO CONQUEST ENGINEERING LTD. GEOTECHNICAL INVESTIGATION REPORT, NORTH ASPY BRIDGE REPLACEMENT, CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA, DATED 2015/03/31.



ABUTMENT ROCK ARMOUR APRON

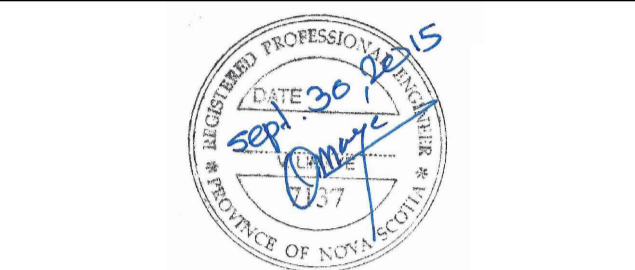
SCALE: 1:50



ELEVATION

CONCRETE ROAD DRAIN DETAIL

SCALE: 1:25



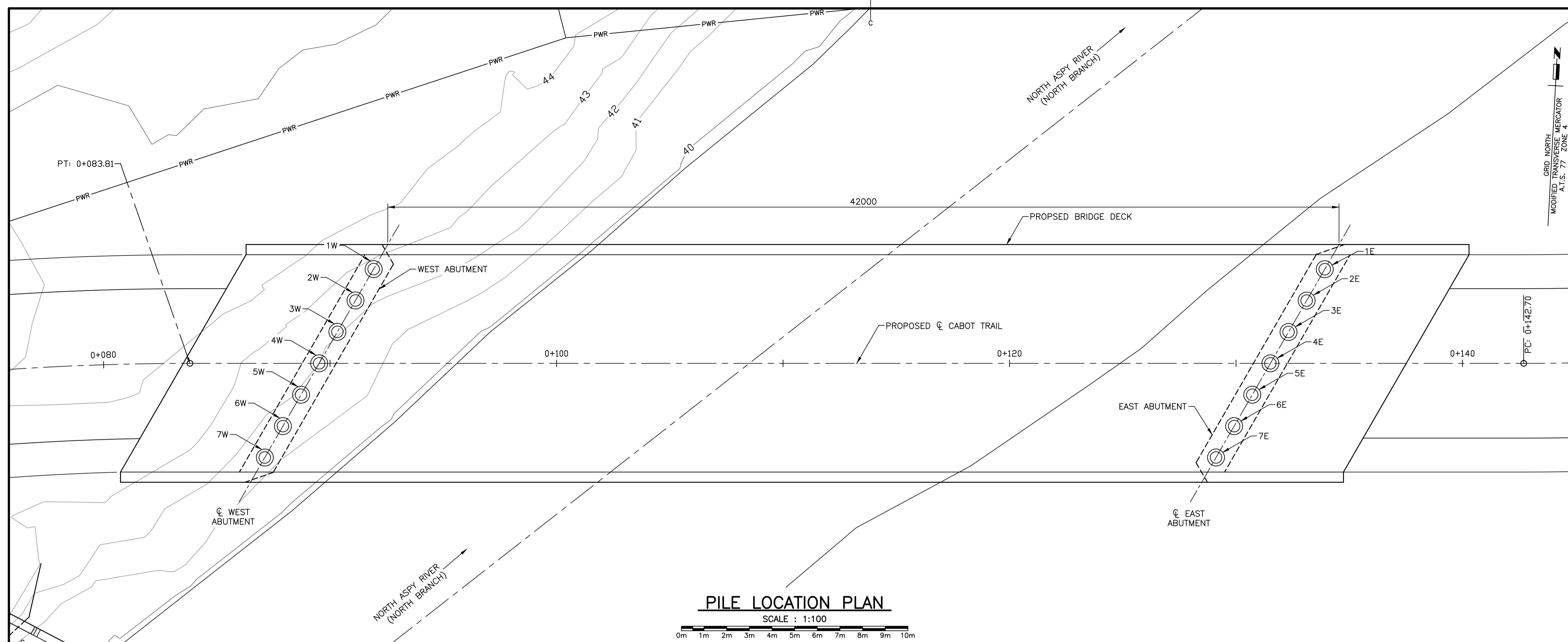
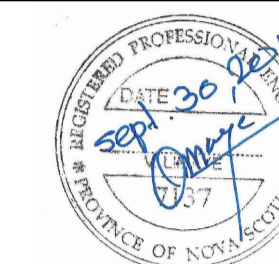
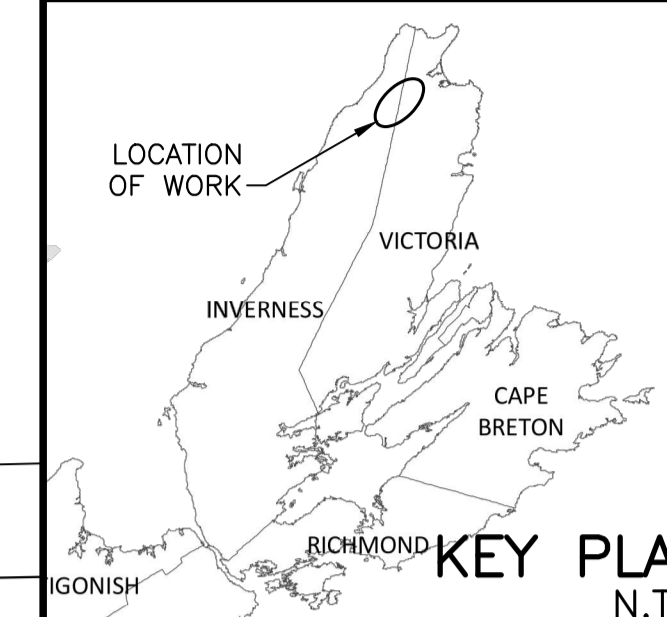
INNOVATIVE ENGINEERING AND DESIGN

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project		project

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

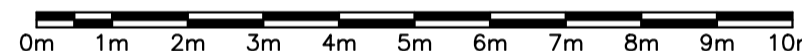
GENERAL ARRANGEMENT

designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date SEP. 30, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender <i>John Wiley</i>	Soumission
Parks Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet
324	
drawing no.	no. du dessin
S-3	

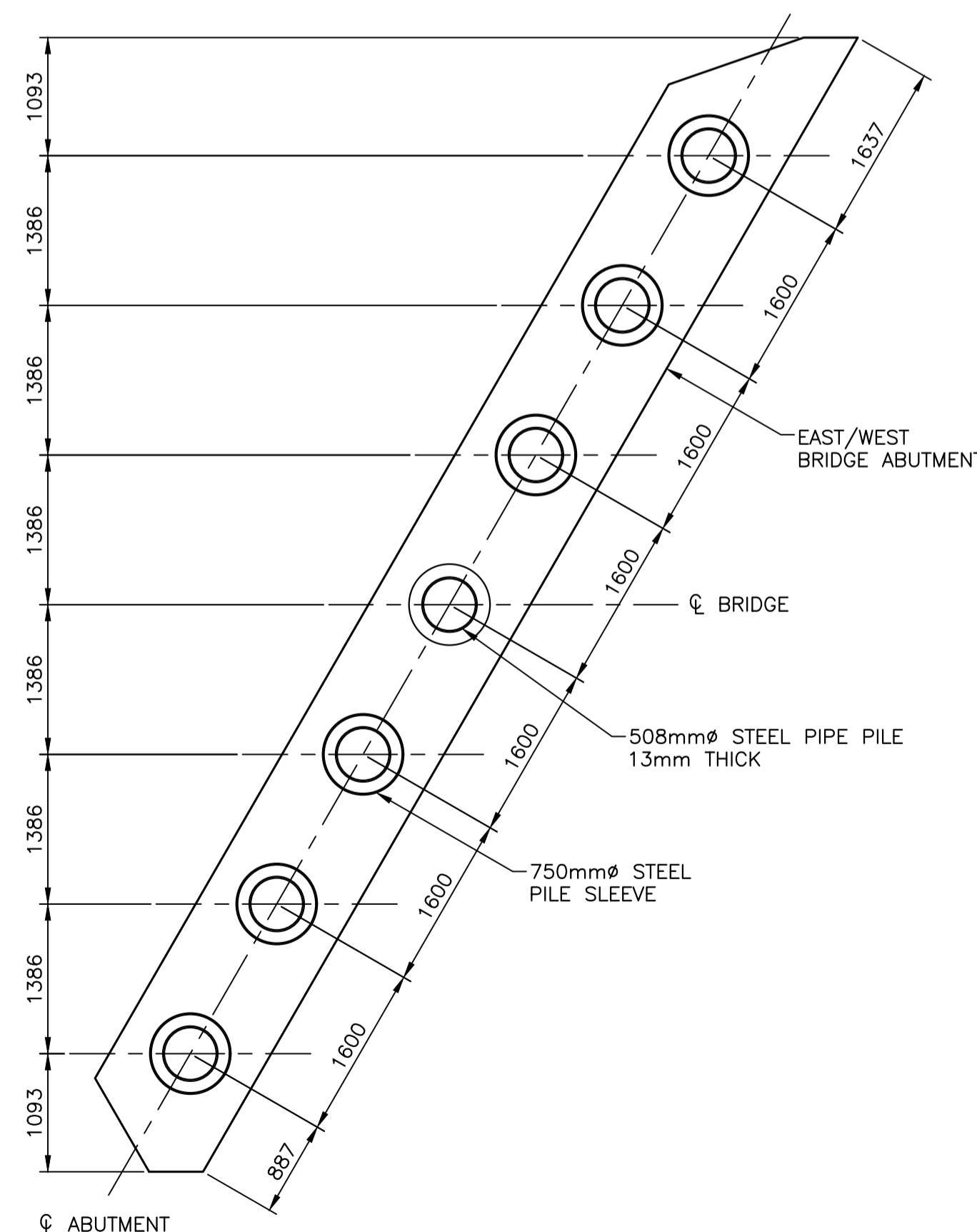


PILE LOCATION PLAN

SCALE : 1:100

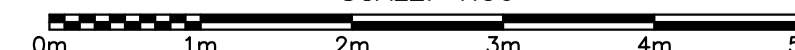


PILE CENTRE LOCATION CONTROL DATA						
LOCATION	PILE NUMBER	EASTING	NORTHING	TOP ELEVATION (m)	PILE TOE ELEVATION (m)	PILE LENGTH (m)
PILE CAP WEST	1W	4567160.915	5187964.977	41.56	31.05	10.51
	2W	4567160.190	5187963.551			
	3W	4567159.465	5187962.124			
	4W	4567158.737	5187960.692			
	5W	4567158.012	5187959.265			
	6W	4567157.288	5187957.839			
	7W	4567156.563	5187956.412			
PILE CAP EAST	1E	4567202.851	5187967.218	41.14	31.05	10.09
	2E	4567202.127	5187965.791			
	3E	4567201.402	5187964.365			
	4E	4567200.677	5187962.939			
	5E	4567199.952	5187961.512			
	6E	4567199.228	5187960.086			
	7E	4567198.503	5187958.659			



ABUTMENT PILE LAYOUT PLAN

SCALE: 1:50



PILE NOTES

- FOUNDATION DESIGN BASED ON INFORMATION PROVIDED IN CONQUEST ENGINEERING LTD. REPORT NO. 656-001, DATED MARCH 31, 2015
- PIPE MATERIAL:
 - STEEL PIPE PILES, 508mmØ X 12.7mm THICK, $F_y = 350$ MPa (MIN.)
 - STEEL PLATES AND BAR STOCK TO G40.21 - 04, GRADE 350W
 - WELDING MATERIAL TO CSA W48 SERIES
 - WELDING TO BE IN ACCORDANCE WITH CSA W59 - M
- PILES ARE TO BE DRIVEN CLOSED-ENDED WITH EACH PILE FURNISHED WITH A CLOSED-ENDED DRIVING SHOE
- SPLICING OF PILES IS NOT PERMITTED UNLESS WITH WRITTEN APPROVAL OF DEPARTMENTAL REPRESENTATIVE
- INSTALL DRIVING CAP PRIOR TO DRIVING TO ELIMINATE DAMAGE TO PILE
- PILE "SET CRITERIA" (REFERENCE CONQUEST ENGINEERING LTD. REPORT NO. 656-001, DATED MARCH 31, 2015):
 - RATED ENERGY OF THE HAMMER SHALL BE LIMITED TO 6×10^6 J MULTIPLIED BY THE CROSS SECTIONAL AREA OF THE PILE
 - DRIVE EACH PILE TO PILE TIP ELEVATION AS SHOWN ON DRAWING S-4
 - NOTIFY DEPARTMENTAL REPRESENTATIVE IF MORE THAN 5 BLOWS PER 25mm HAS OCCURRED AT THE DESIGN ELEVATION
 - DESIGN PILE CAPACITY AT ULTIMATE LIMIT STATES = 1415 kN (C) for 508mmØ X 12.7mm THICK PIPE PILES
 - SEE SPECIFICATIONS FOR PDA TESTING REQUIREMENTS
 - CONTRACTOR SHALL PROVIDE TO THE DEPARTMENTAL REPRESENTATIVE FULL DETAILS ON THE METHOD OF INSTALLATION AND EQUIPMENT PRIOR TO COMMENCING WORK

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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

drawing _____ dessin _____

FOUNDATION LAYOUT

designed VIDYA LIMAYE conçu _____
 date _____
 drawn MATT MACLEOD dessiné _____
 date SEP. 23, 2015

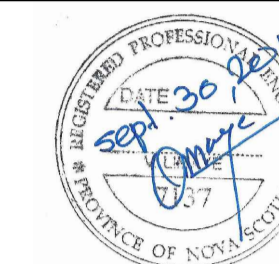
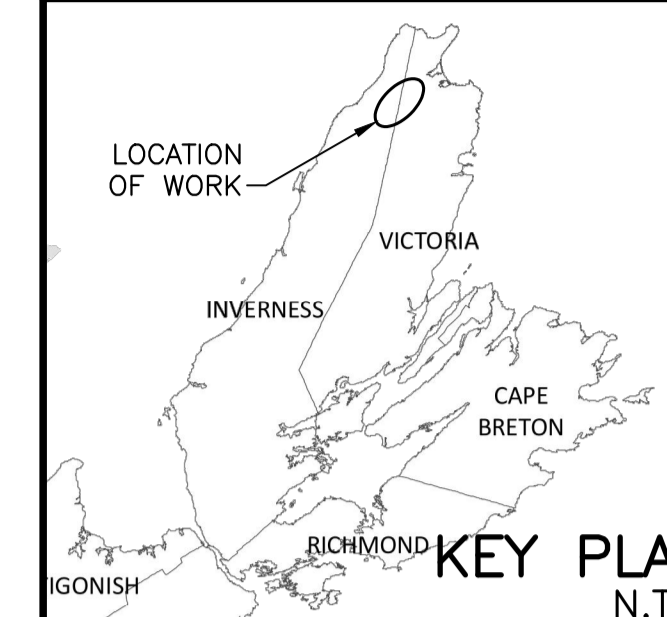
approved VIDYA LIMAYE approuvé _____
 date _____
 Tender John Macky Soumission _____
 Parks Canada Project Manager Administrateur de projets Parcs Canada

project number _____ no. du projet _____

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drawing no. _____ no. du dessin _____

S-4



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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

drawing _____ dessin _____

ABUTMENT AND WINGWALL CONCRETE AND WINGWALL DETAILS (1 OF 2)

designed VIDYA LIMAYE conçu

date _____

drawn MATT MACLEOD dessiné

date SEP. 30, 2015

approved VIDYA LIMAYE approuvé

date _____

Tender *John Wiley* Soumission
 Parks Canada Project Manager Administrateur de projets Parcs Canada

project number _____ no. du projet

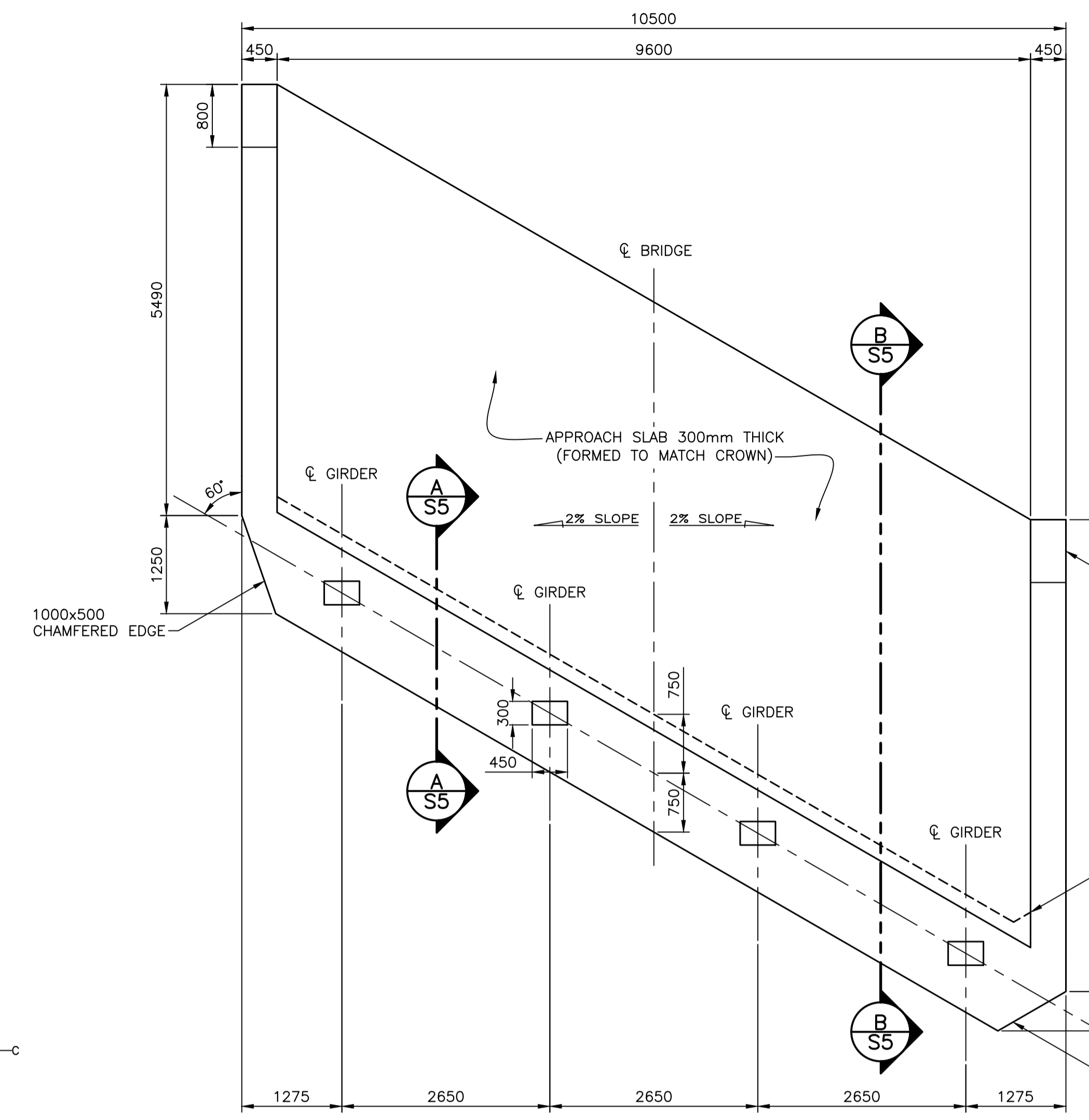
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drawing no. _____ no. du dessin

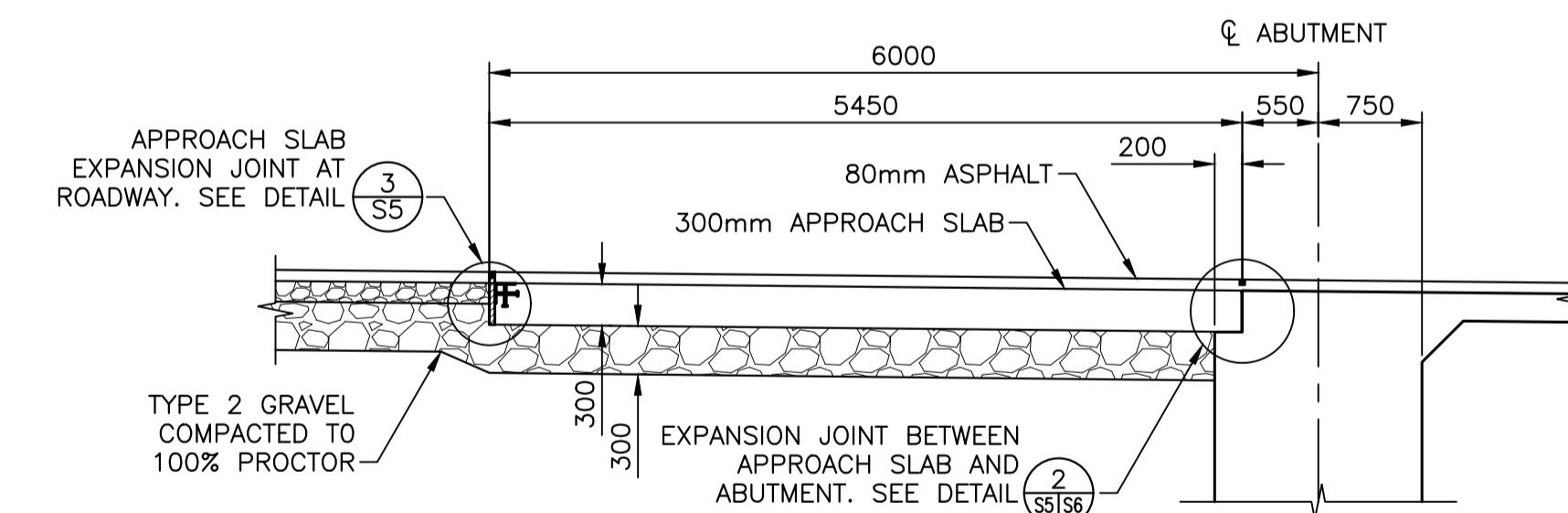
S-5

E-DRM/GDD-E

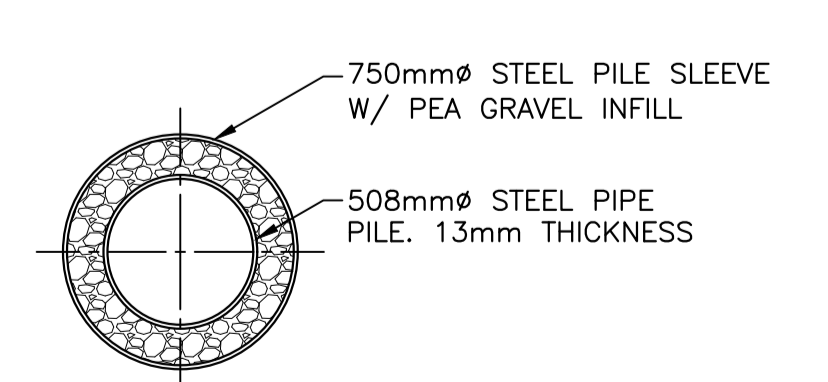
- ABUTMENT CONCRETE CONSTRUCTION SEQUENCE**
- CONCRETE OF ABUTMENTS, DECK SLAB, AND WINGWALLS SHOULD BE CARRIED OUT IN THE FOLLOWING SEQUENCE:
1. PILECAP AND WING WALLS SHALL BE CAST UP TO CONSTRUCTION JOINT AT BOTTOM OF GIRDER SEAT SHOWN ON DRAWINGS;
 2. GIRDERS SHALL BE PLACED AND ALIGNED AS SHOWN ON DRAWINGS AND ADEQUATELY BRACED UNTIL DECK SLAB IS CAST;
 3. CONCRETE FOR DECK SLAB SHALL BE CAST FIRST, BEGINNING AND ENDING APPROXIMATELY 0.5m AWAY FROM THE INNER EDGE OF ABUTMENT;
 4. CONCRETE FOR THE REMAINDER OF ABUTMENTS, WING WALLS, AND DECK SLAB SHALL BE CAST IMMEDIATELY AFTER CASTING OF DECK SLAB CONCRETE IS COMPLETED.



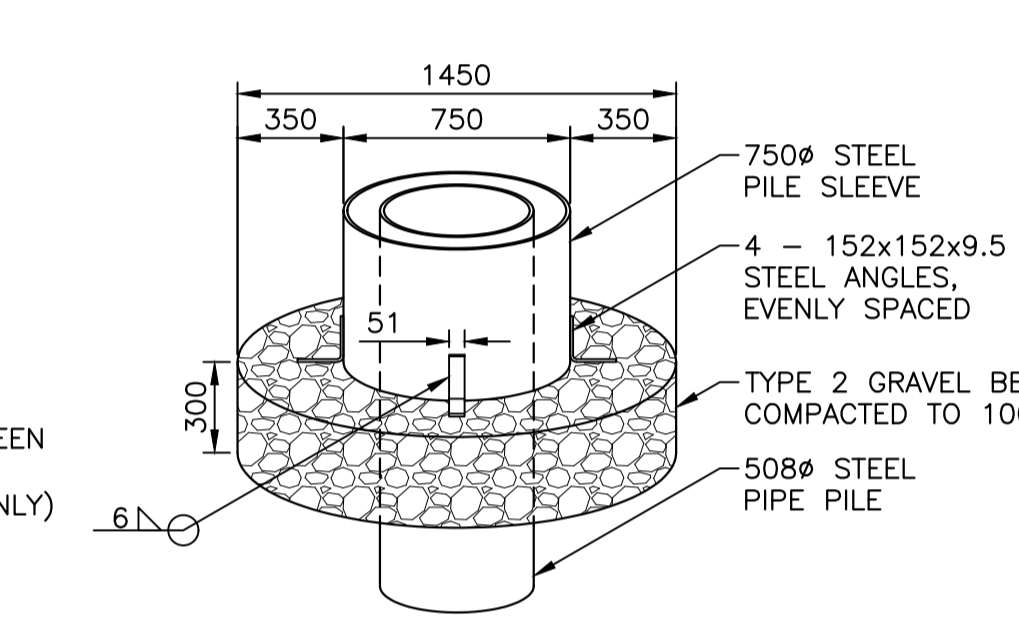
ABUTMENT BEARING SEAT PLAN
 SCALE: 1:50



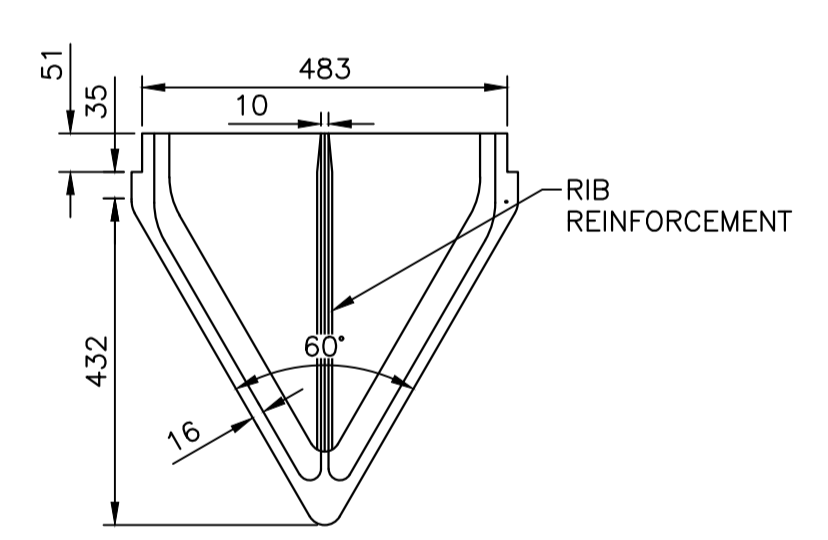
TYPICAL APPROACH SLAB SECTION B S5
 SCALE: 1:50



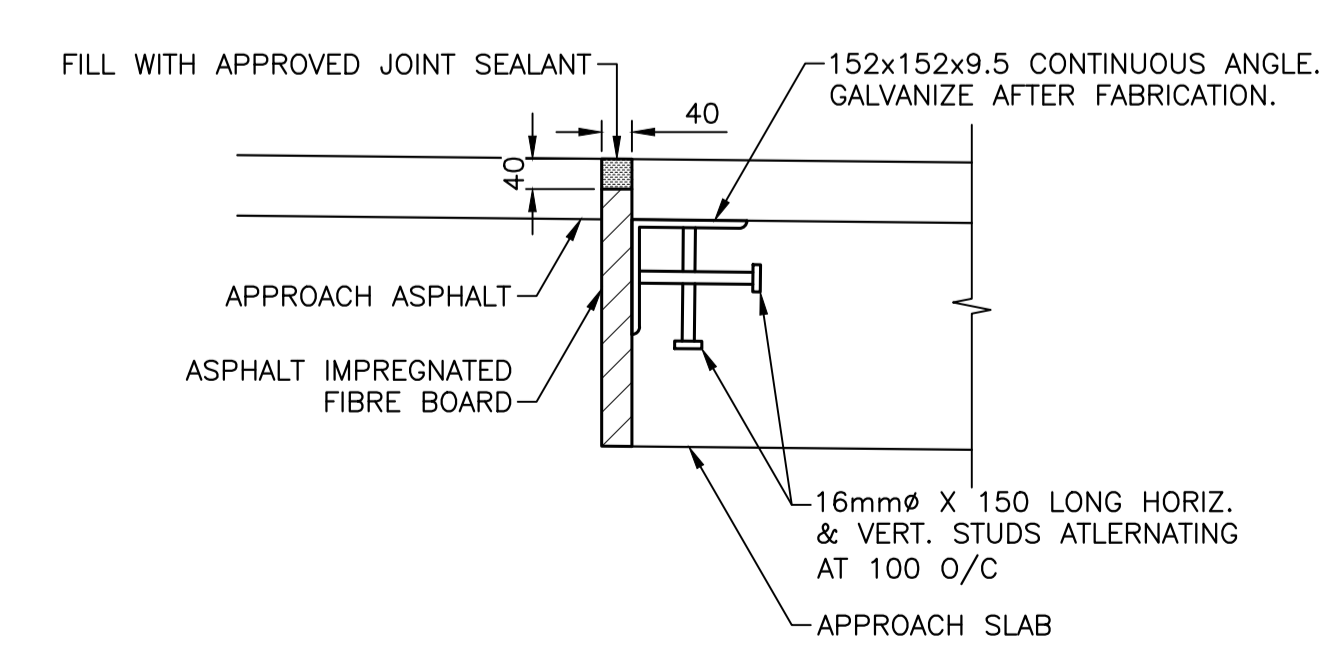
TYPICAL PILE SECTION C S5
 SCALE: 1:25



PIPE SLEEVE PAD DETAIL 1 S5
 SCALE: 1:25

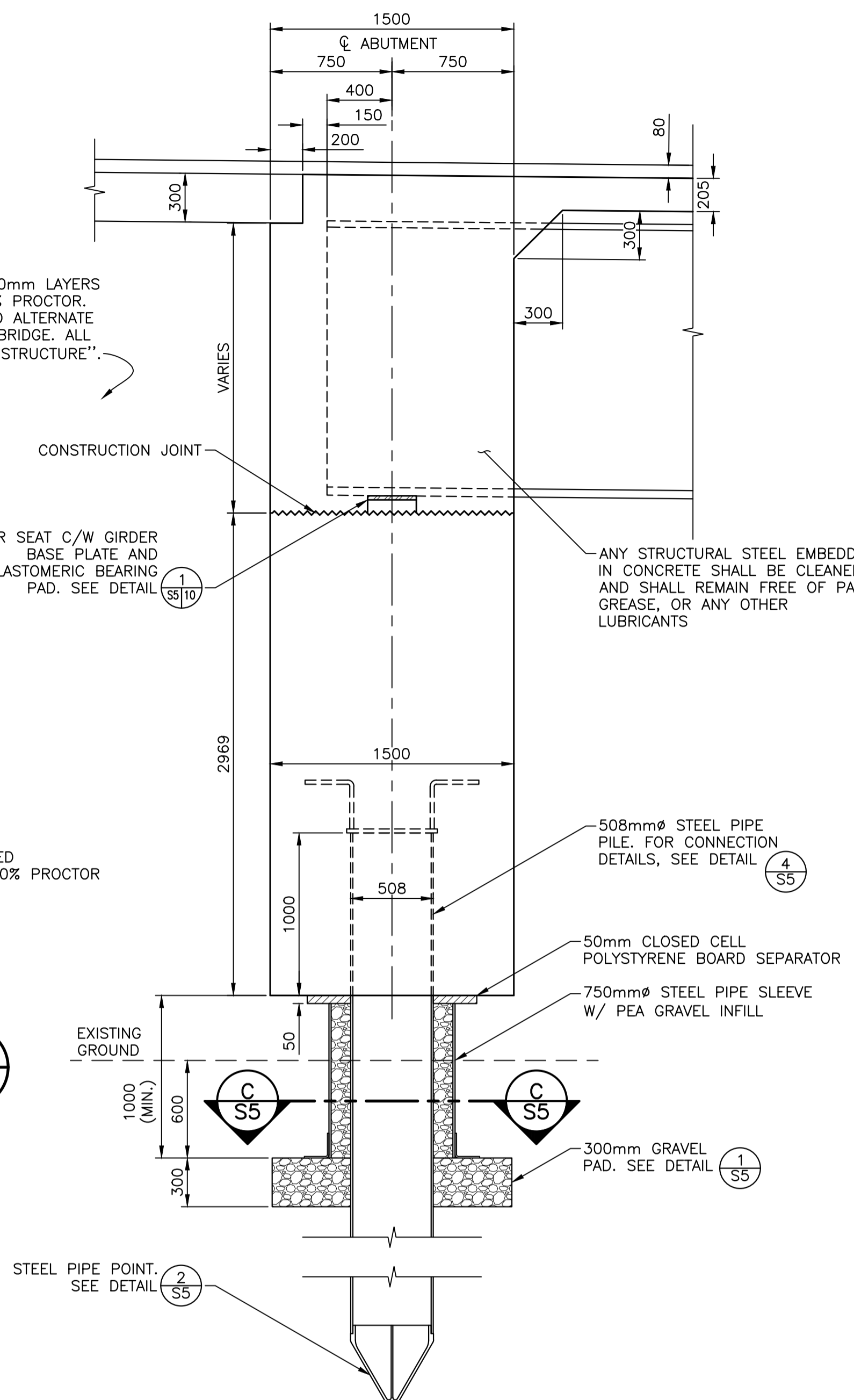


PILE TIP DETAIL 2 S5
 SCALE: 1:10

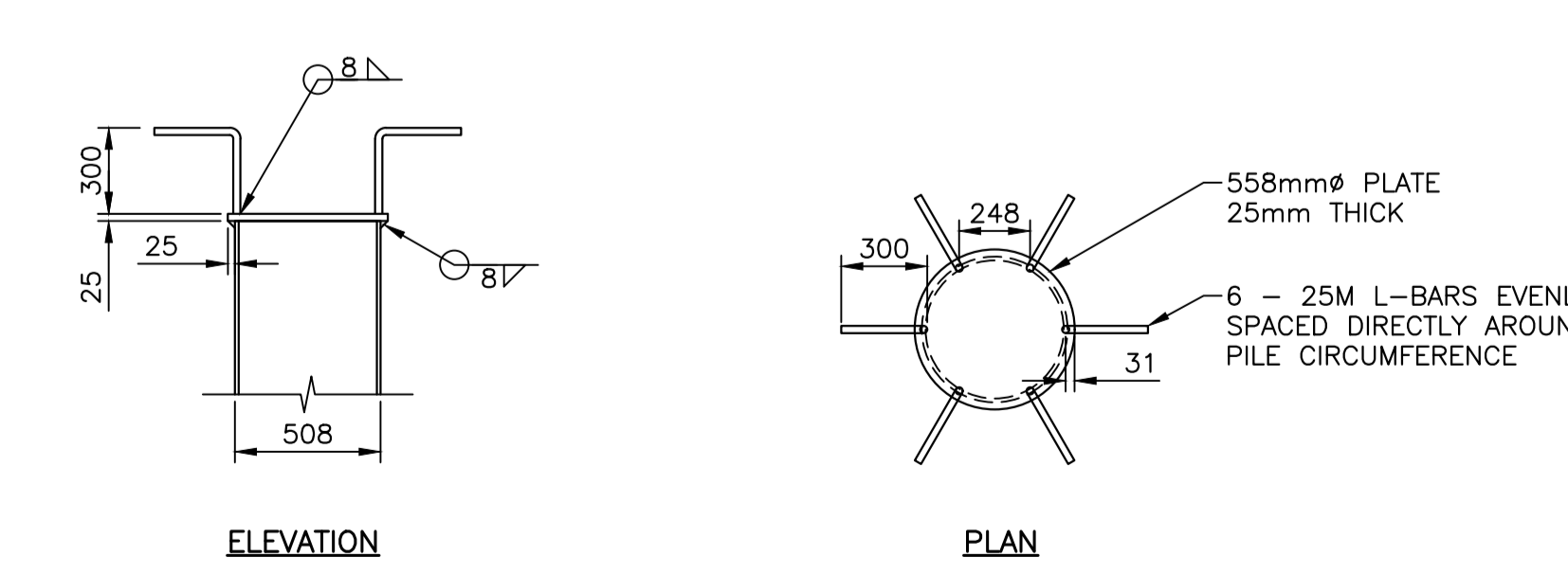


APPROACH SLAB ANGLE AND EXPANSION JOINT 3 S5
 SCALE: 1:10

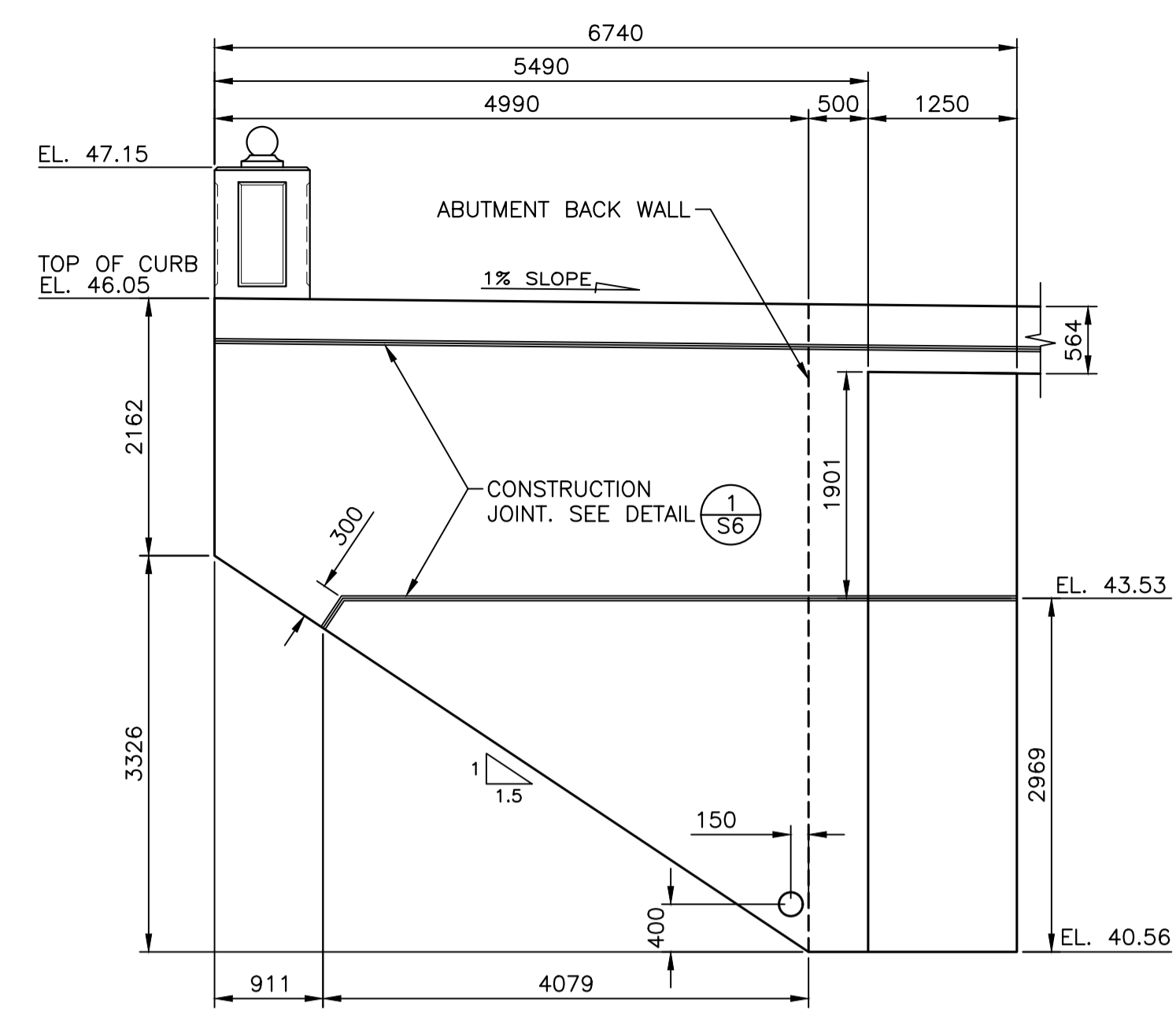
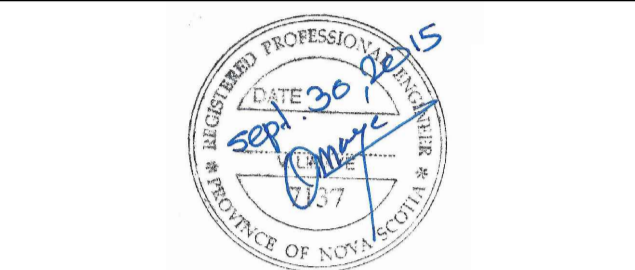
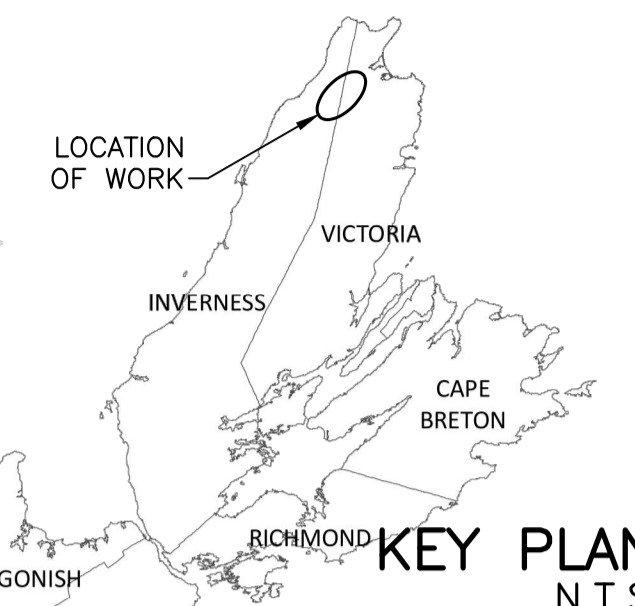
FILL TO BE PLACED IN 300mm LAYERS AND COMPACTED TO 90% PROCTOR. PLACEMENT OF LAYERS TO ALTERNATE BETWEEN EACH SIDE OF BRIDGE. ALL FILL TO BE "FILL AGAINST STRUCTURE".



TYPICAL SECTION THROUGH ABUTMENT A S5
 SCALE: 1:25

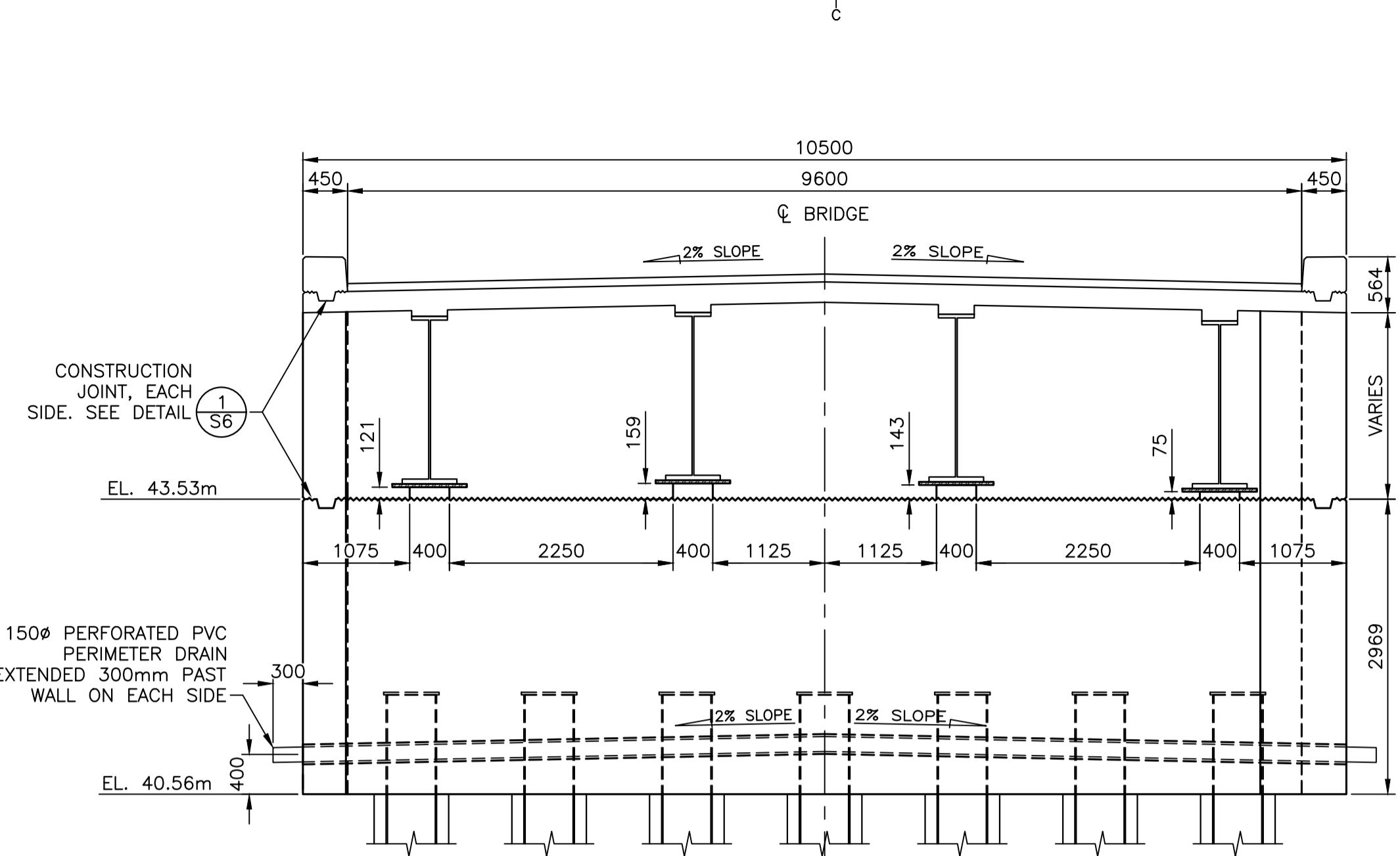


TYPICAL PILE CONNECTION 4 S5
 SCALE: 1:25



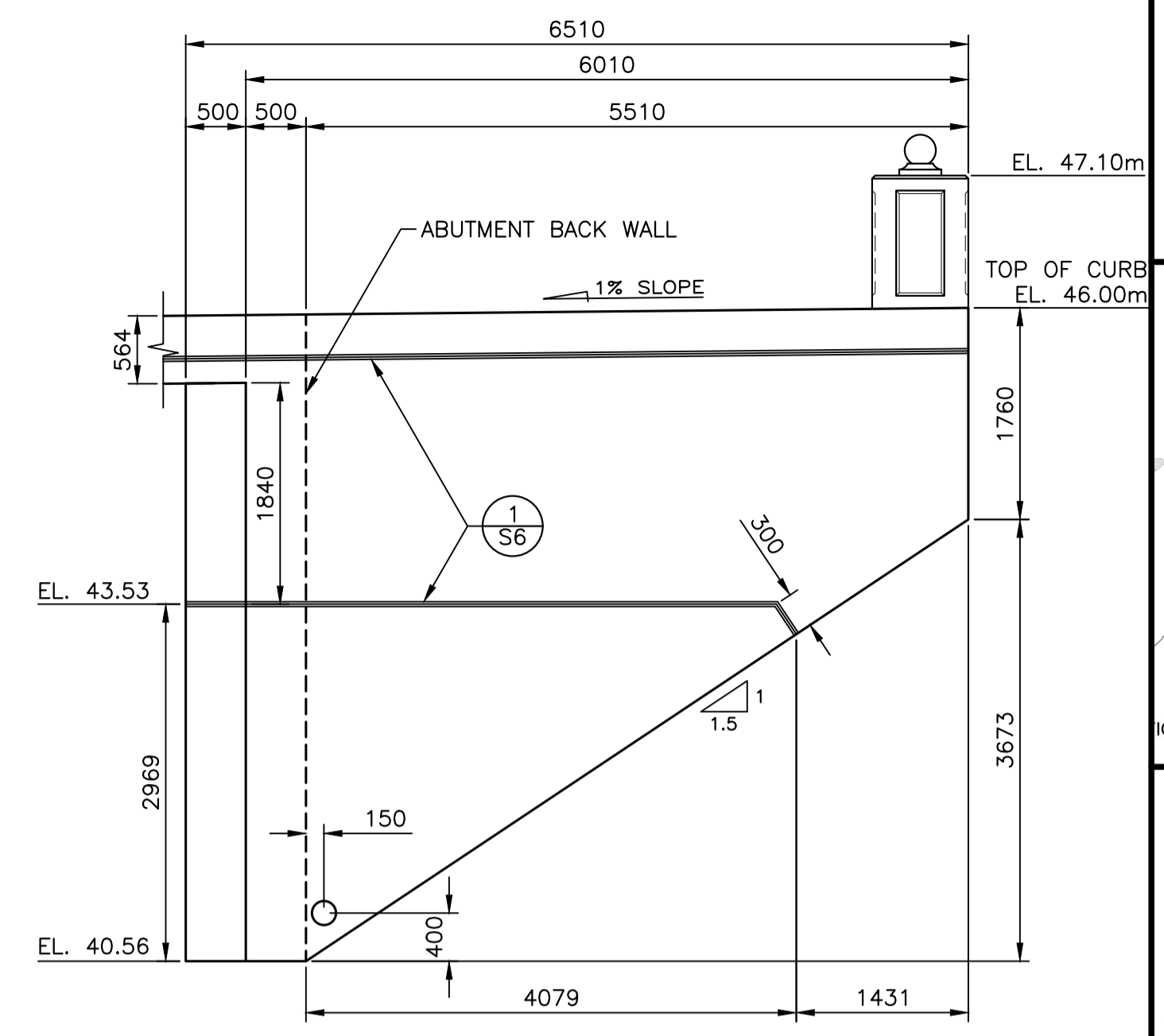
WEST ABUTMENT - SOUTH WINGWALL

SCALE: 1:50



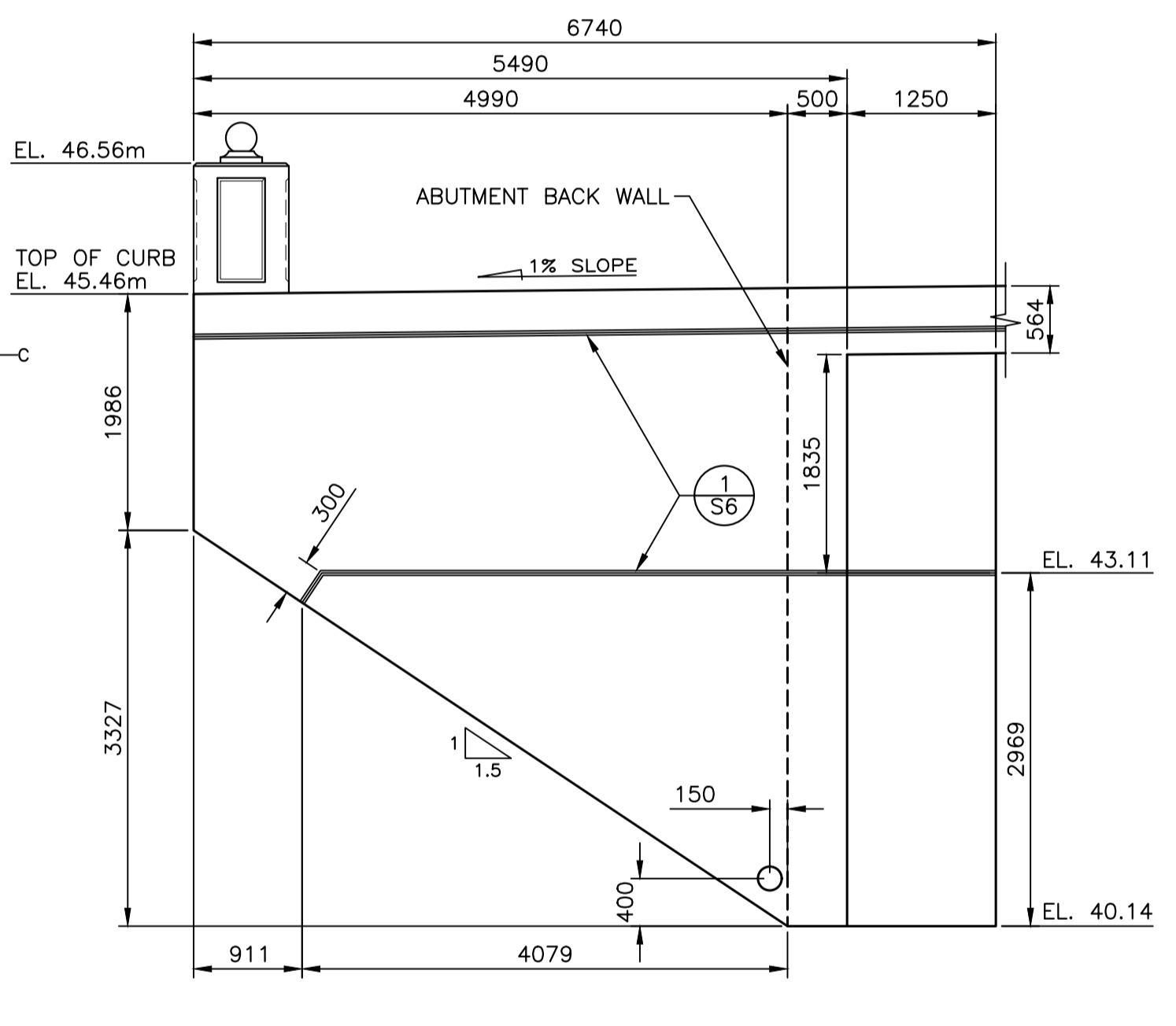
WEST ABUTMENT FRONT ELEVATION

SCALE: 1:50



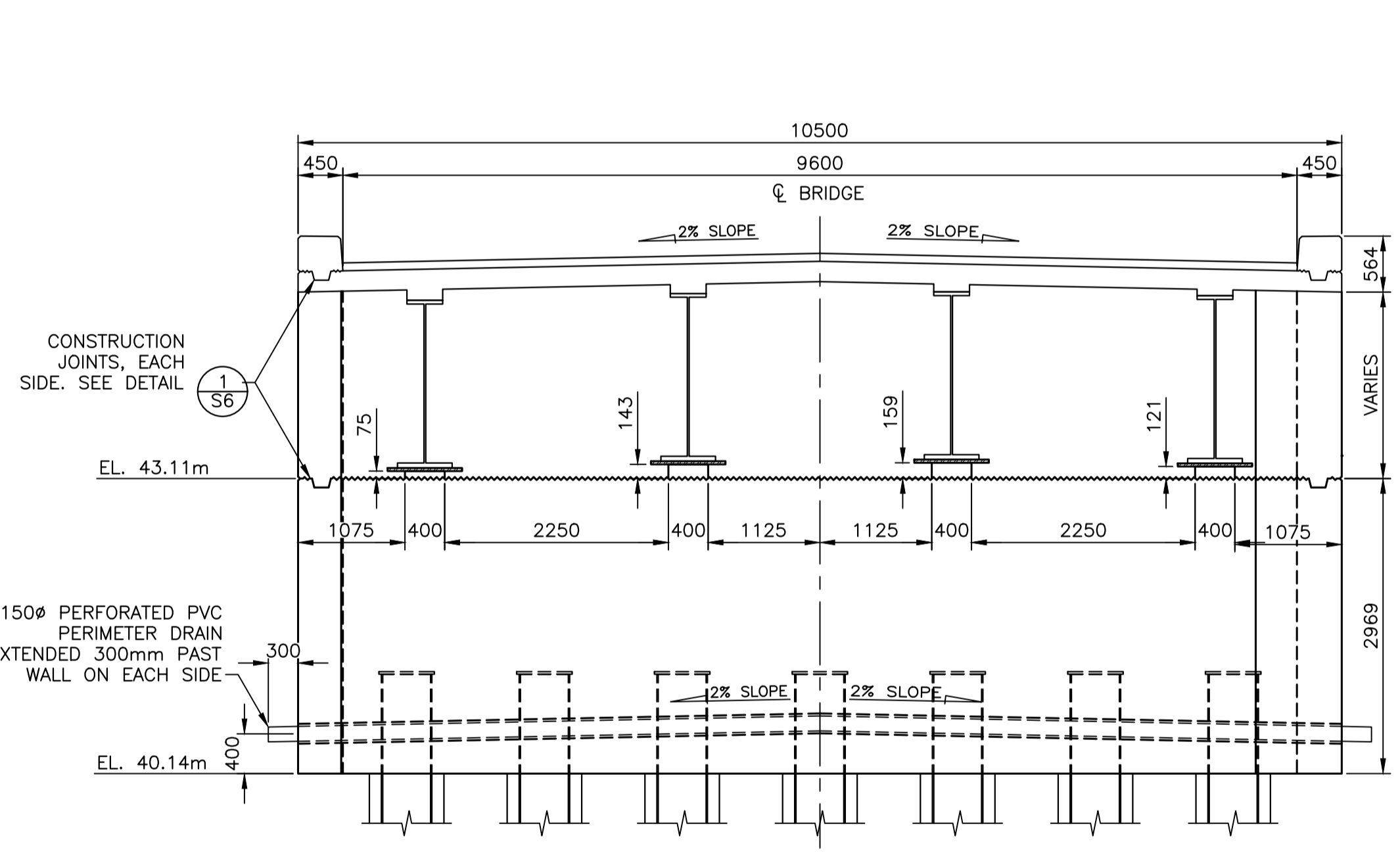
WEST ABUTMENT - NORTH WINGWALL

SCALE: 1:50



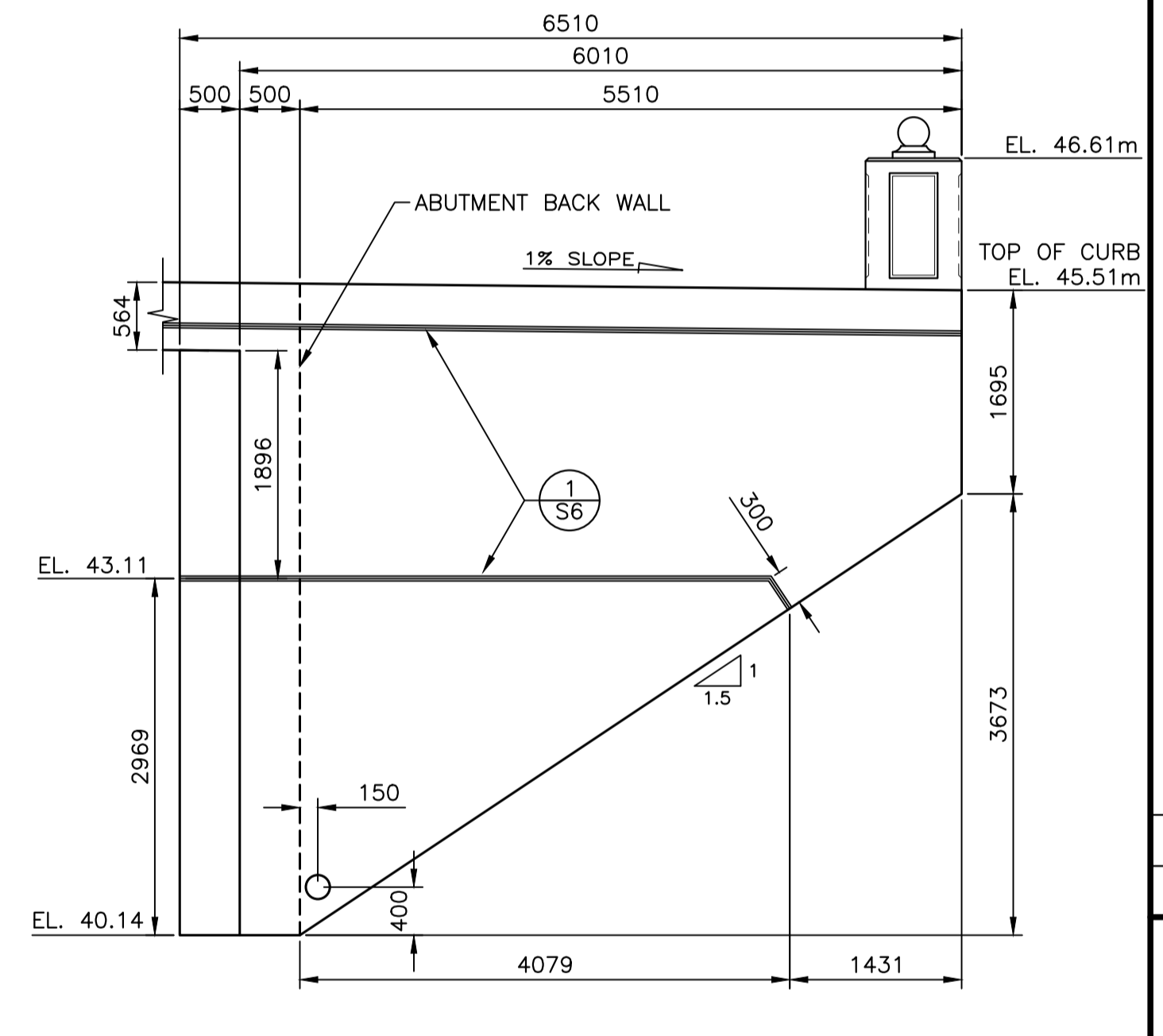
EAST ABUTMENT - NORTH WINGWALL

SCALE: 1:50



EAST ABUTMENT FRONT ELEVATION

SCALE: 1:50



EAST ABUTMENT - SOUTH WINGWALL

SCALE: 1:50

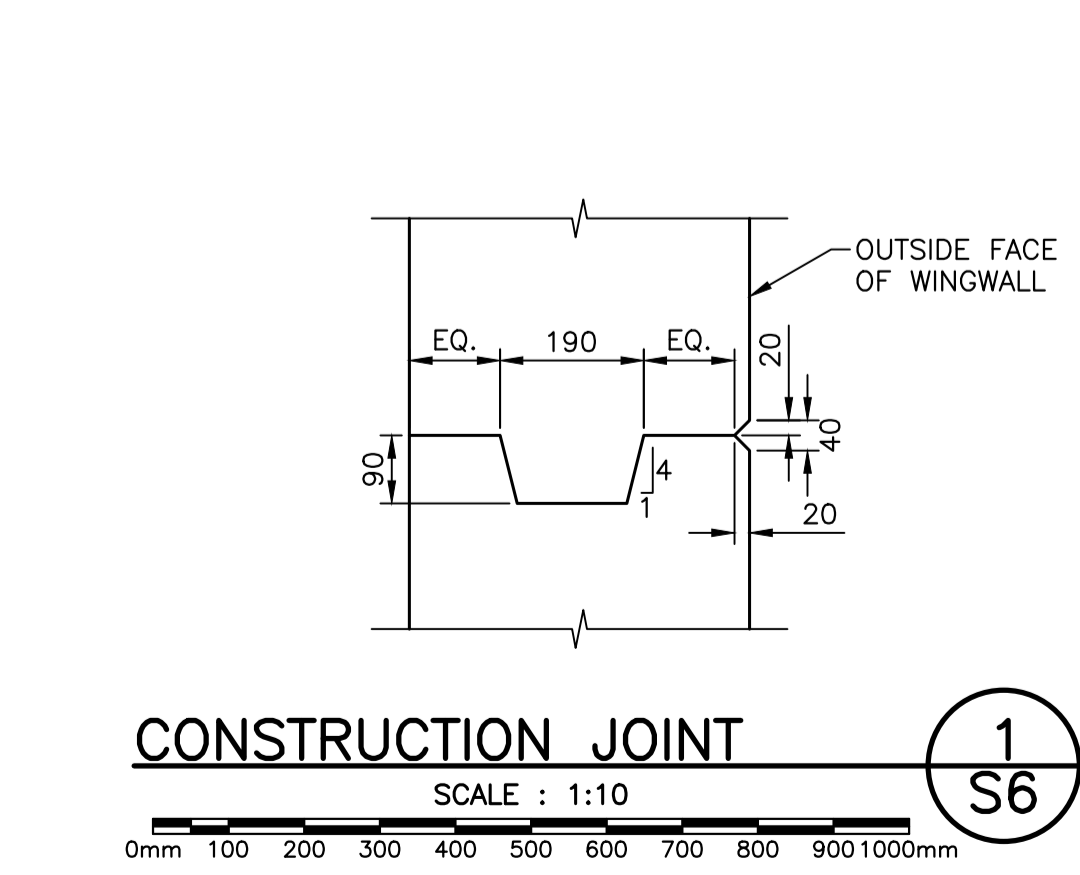
0	ISSUED FOR TENDER	09/30/2015
revisions		date
project		project

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

ABUTMENT AND WINGWALL CONCRETE AND DETAILS (2 OF 2)

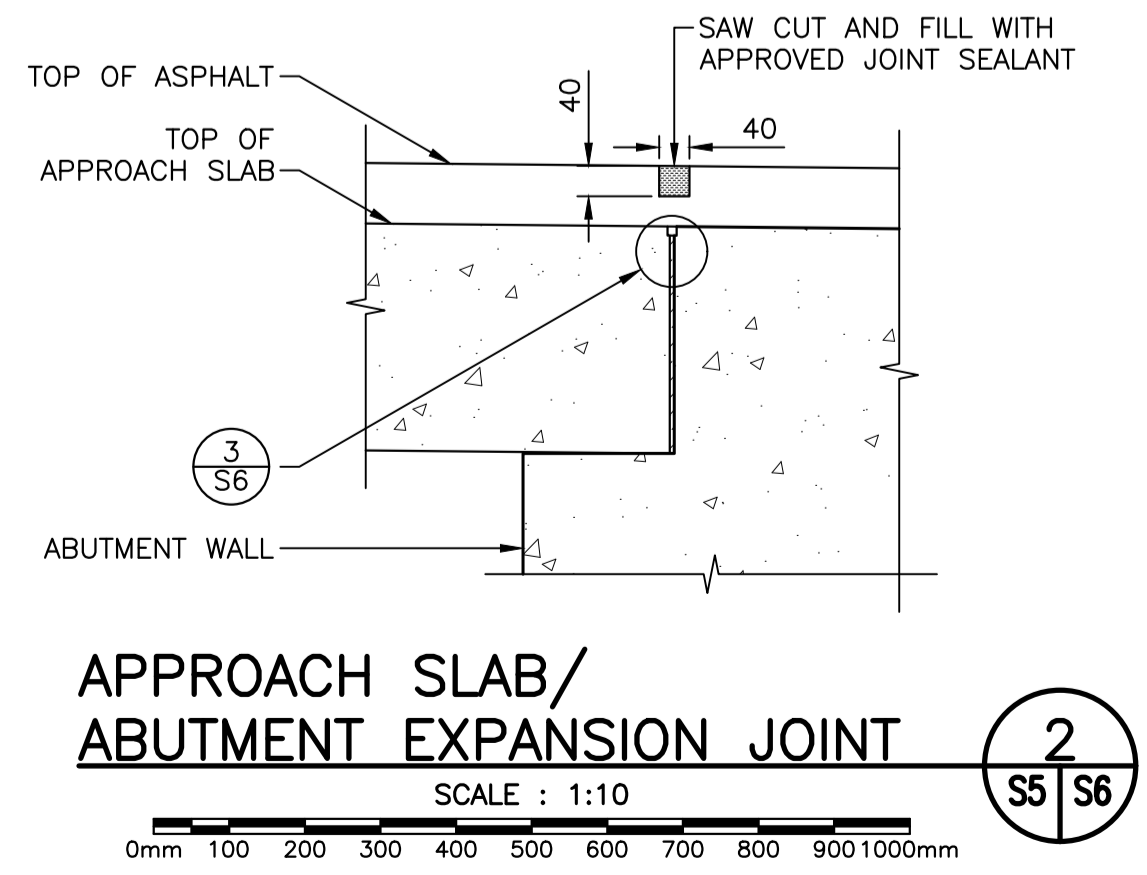
designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date SEP. 21, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender <i>John Wiley</i>	Soumission
Parcs Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet
324	

drawing no. **S-6** no. du dessin



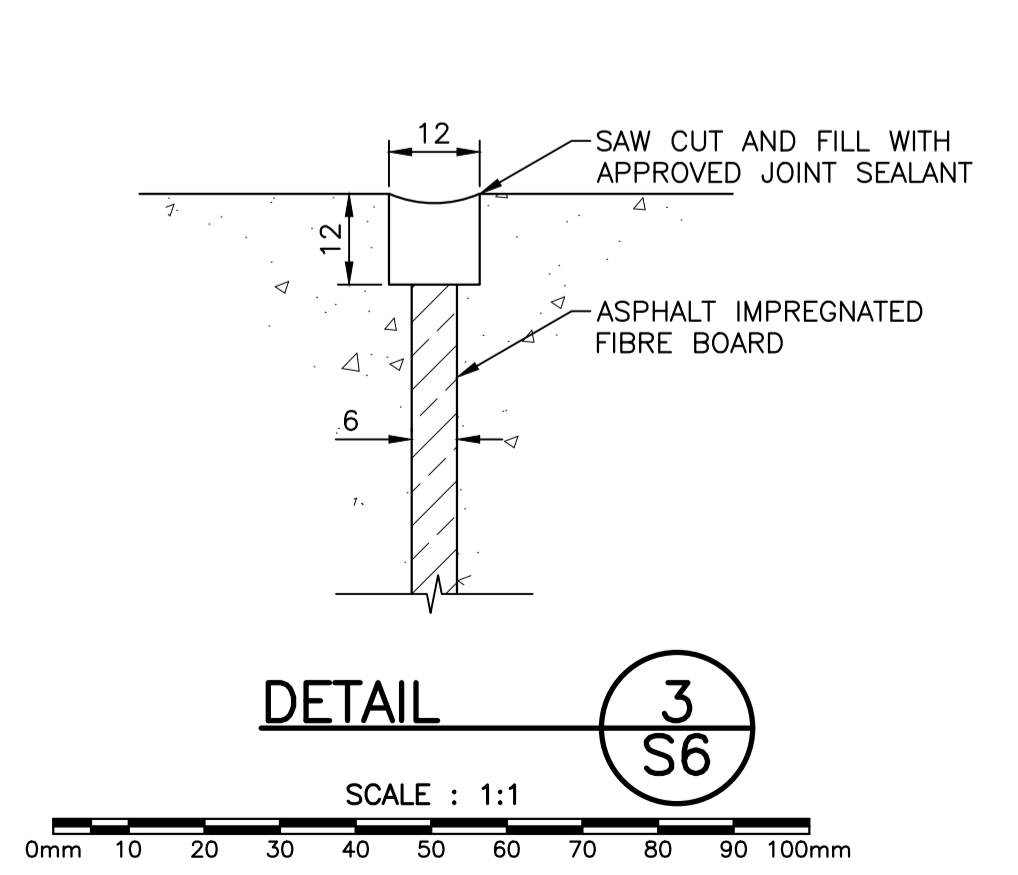
CONSTRUCTION JOINT (1/S6)

SCALE: 1:10



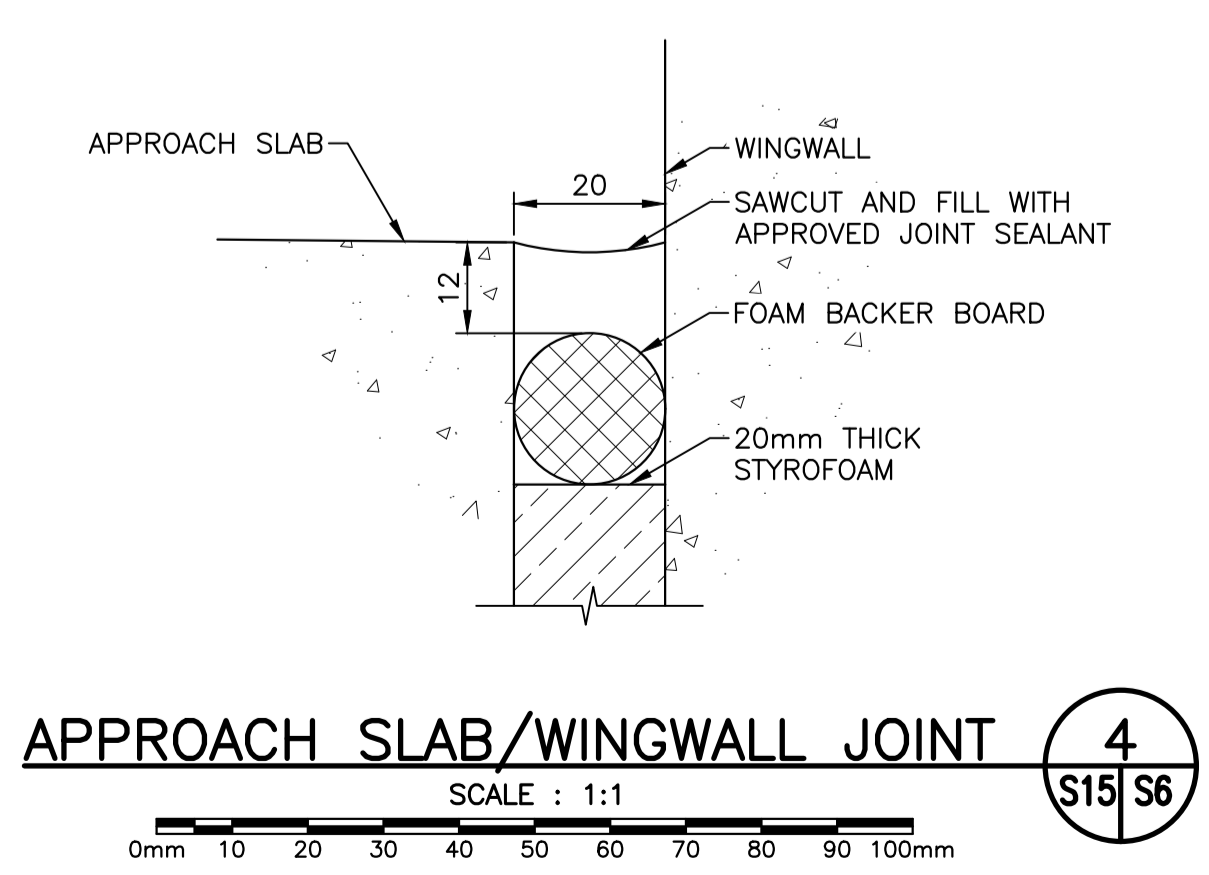
APPROACH SLAB/ABUTMENT EXPANSION JOINT (2/S5/S6)

SCALE: 1:10



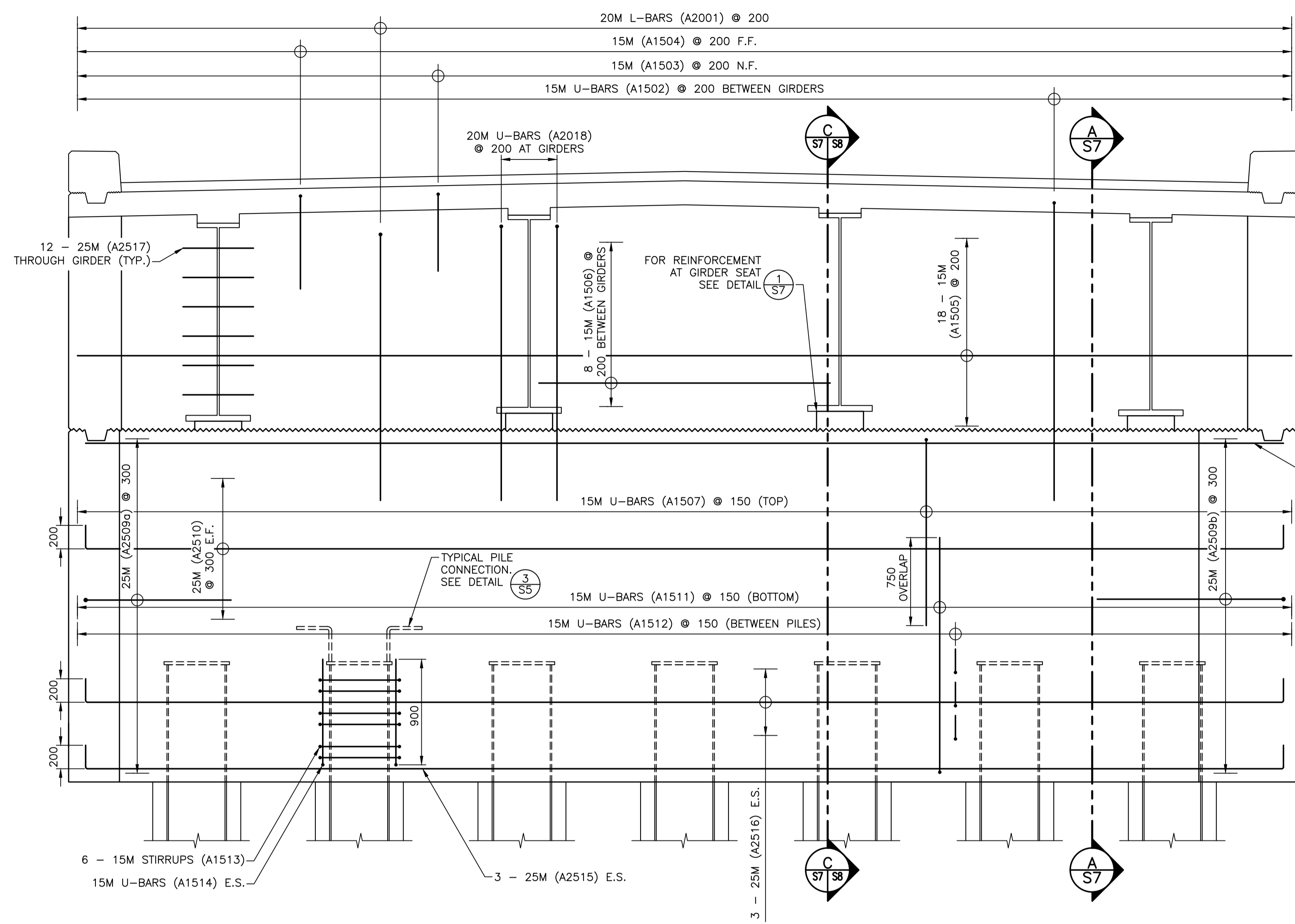
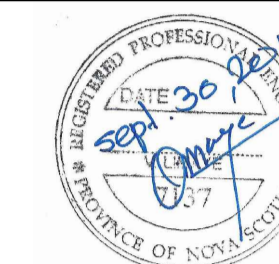
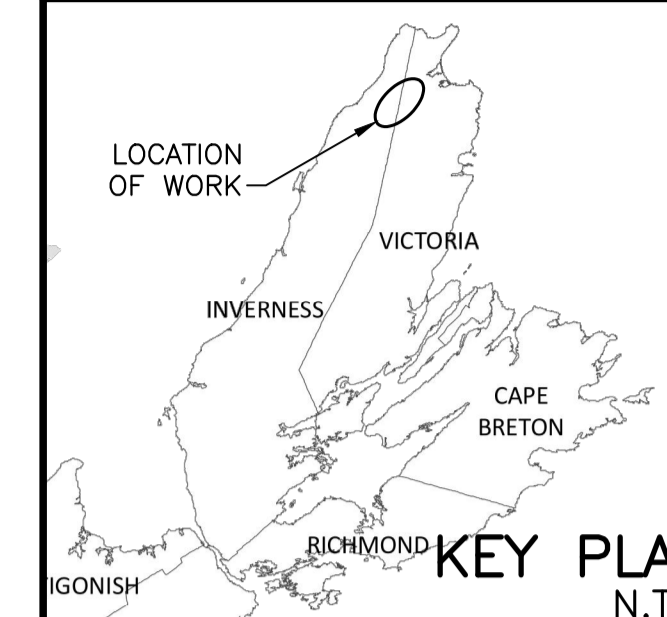
DETAIL (3/S6)

SCALE: 1:1



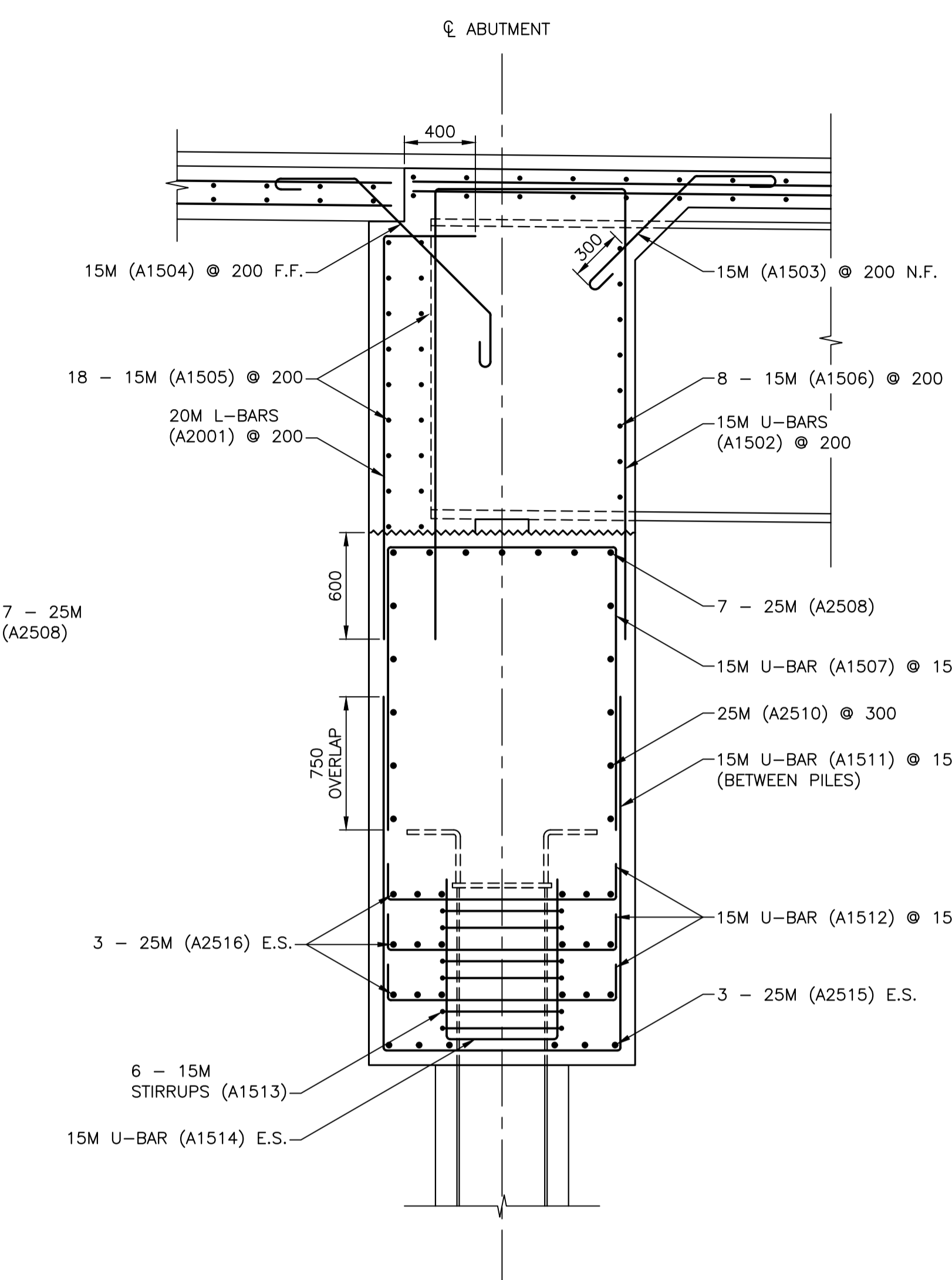
APPROACH SLAB/WINGWALL JOINT (4/S15/S6)

SCALE: 1:1



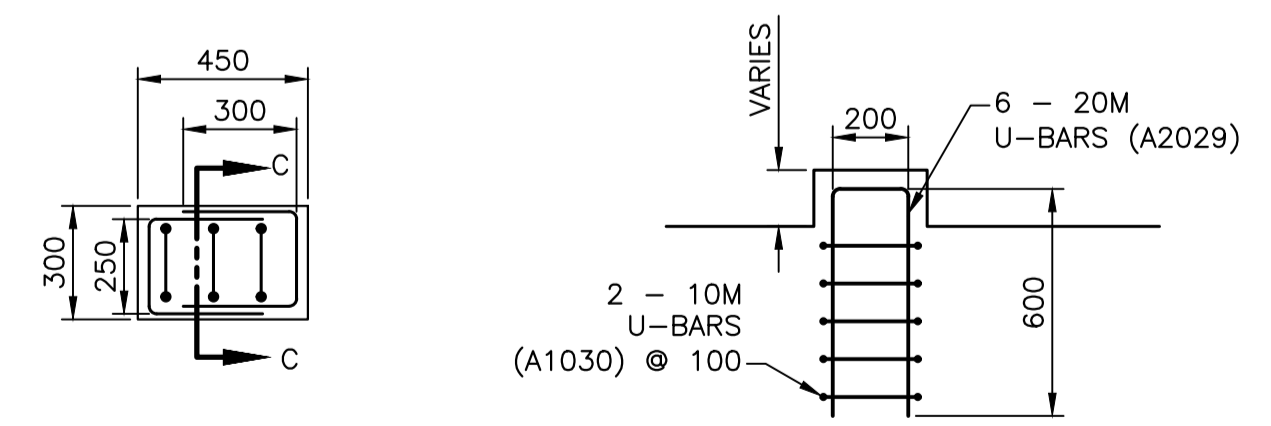
ABUTMENT REINFORCEMENT - FRONT ELEVATION

SCALE: 1:25
0mm 500mm 1000mm 1500mm 2000mm 2500mm



ABUTMENT REINFORCEMENT BETWEEN GIRDERS

SCALE: 1:25
0mm 500mm 1000mm 1500mm 2000mm 2500mm



REINFORCEMENT AT GIRDER SEAT

SCALE: 1:20
0mm 500mm 1000mm 1500mm 2000mm 2500mm

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project		projct

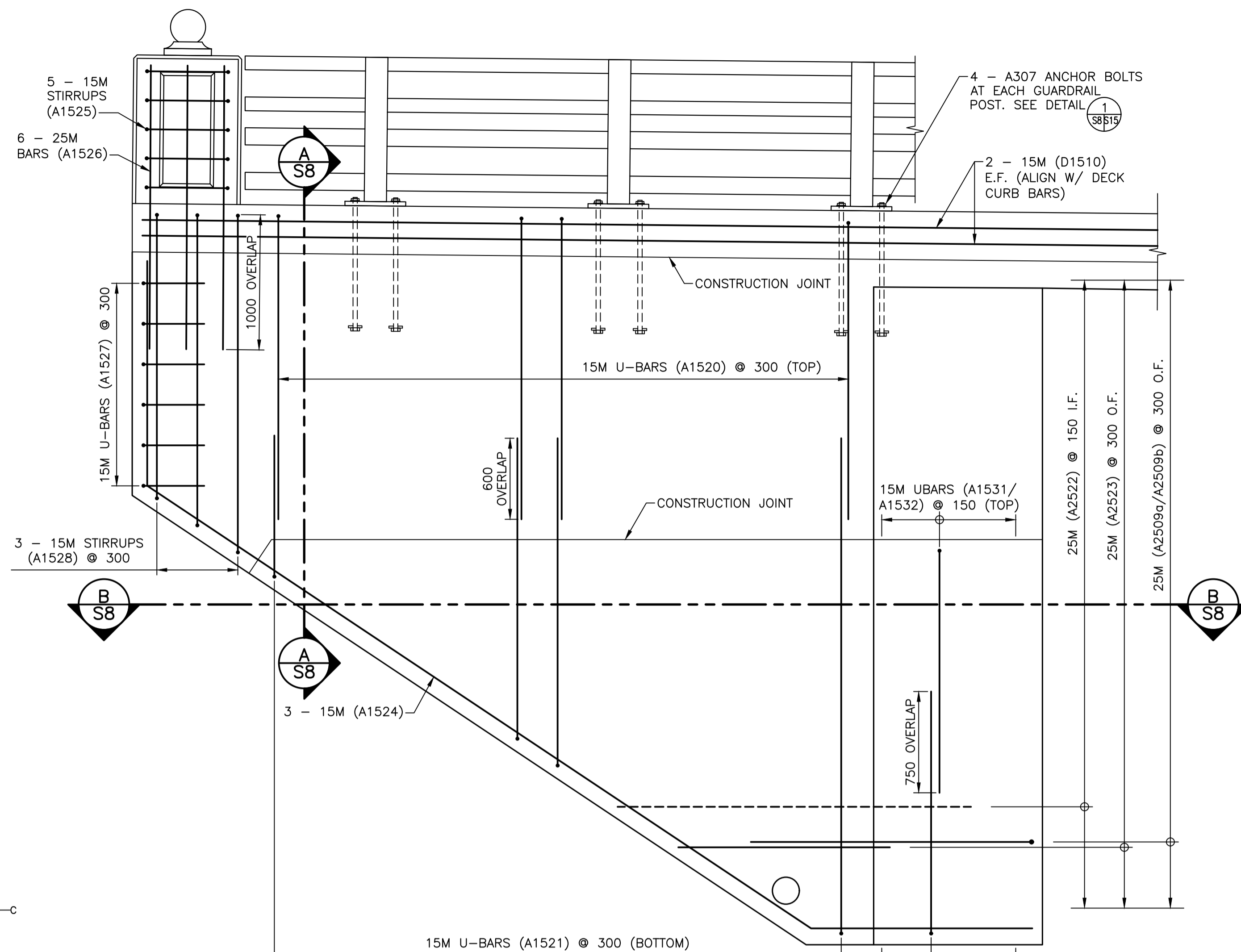
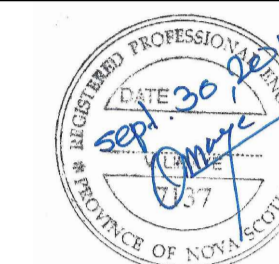
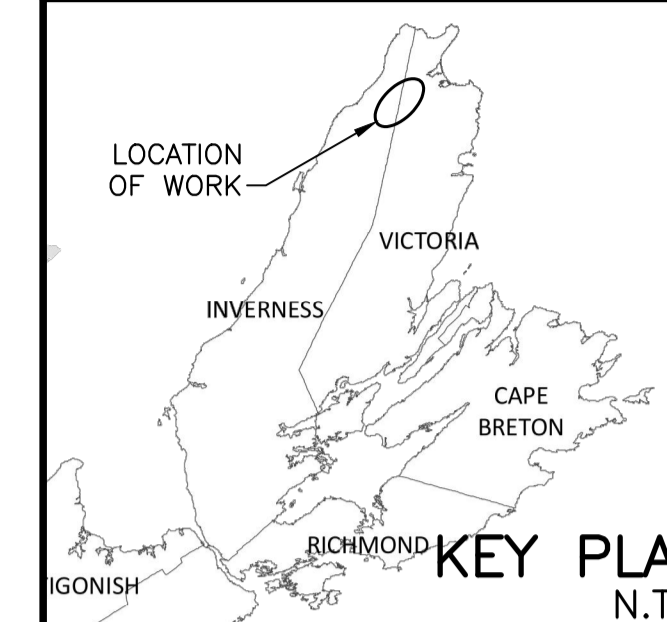
NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

ABUTMENT AND WINGWALL REINFORCEMENT (1 OF 2)

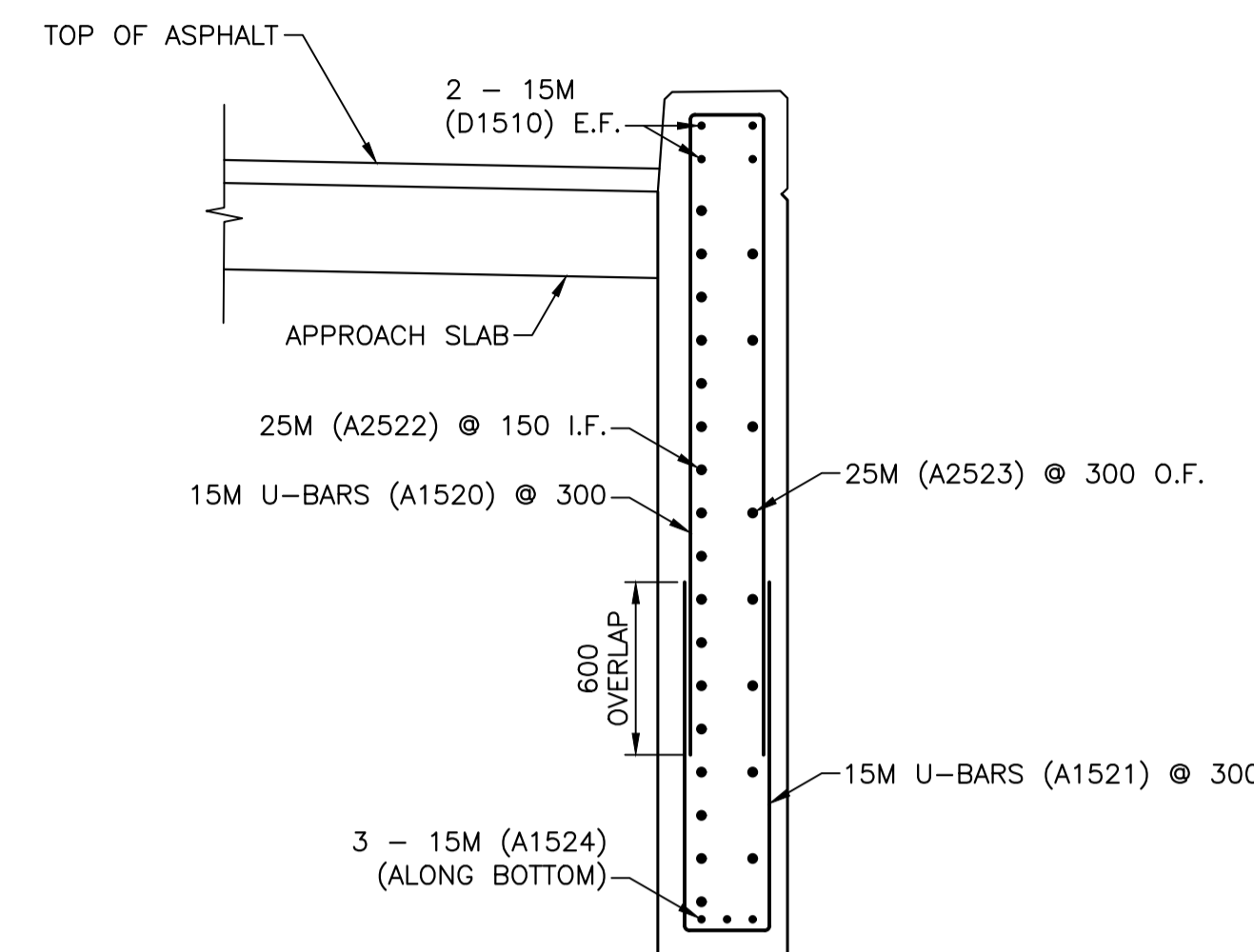
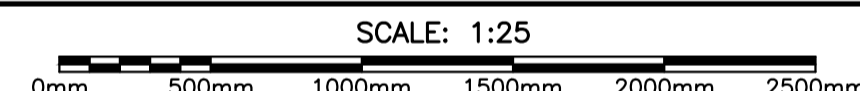
designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date SEP. 21, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender <i>John Wiley</i>	Soumission
Parcs Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet

324

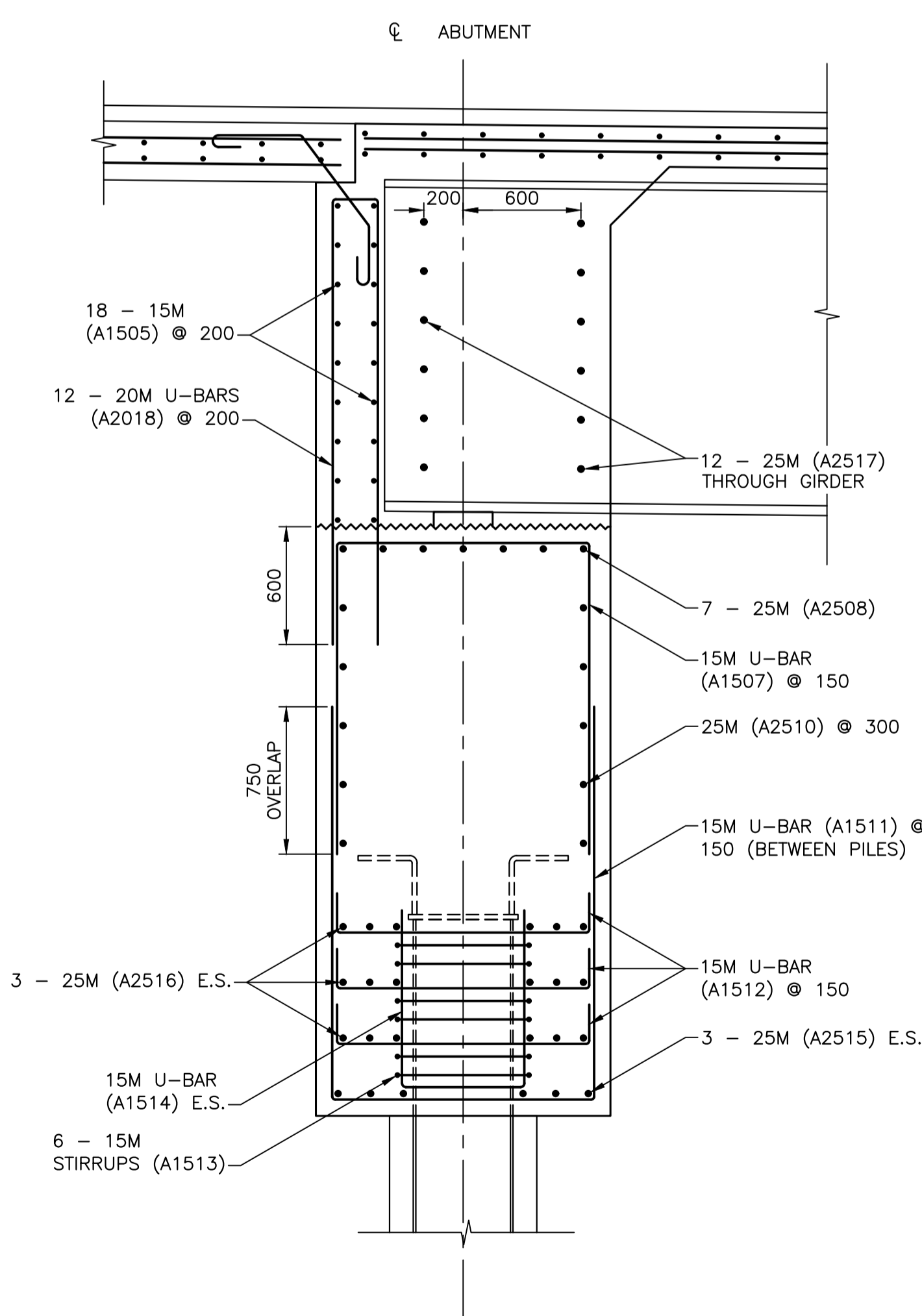
drawing no. S-7 no. du dessin



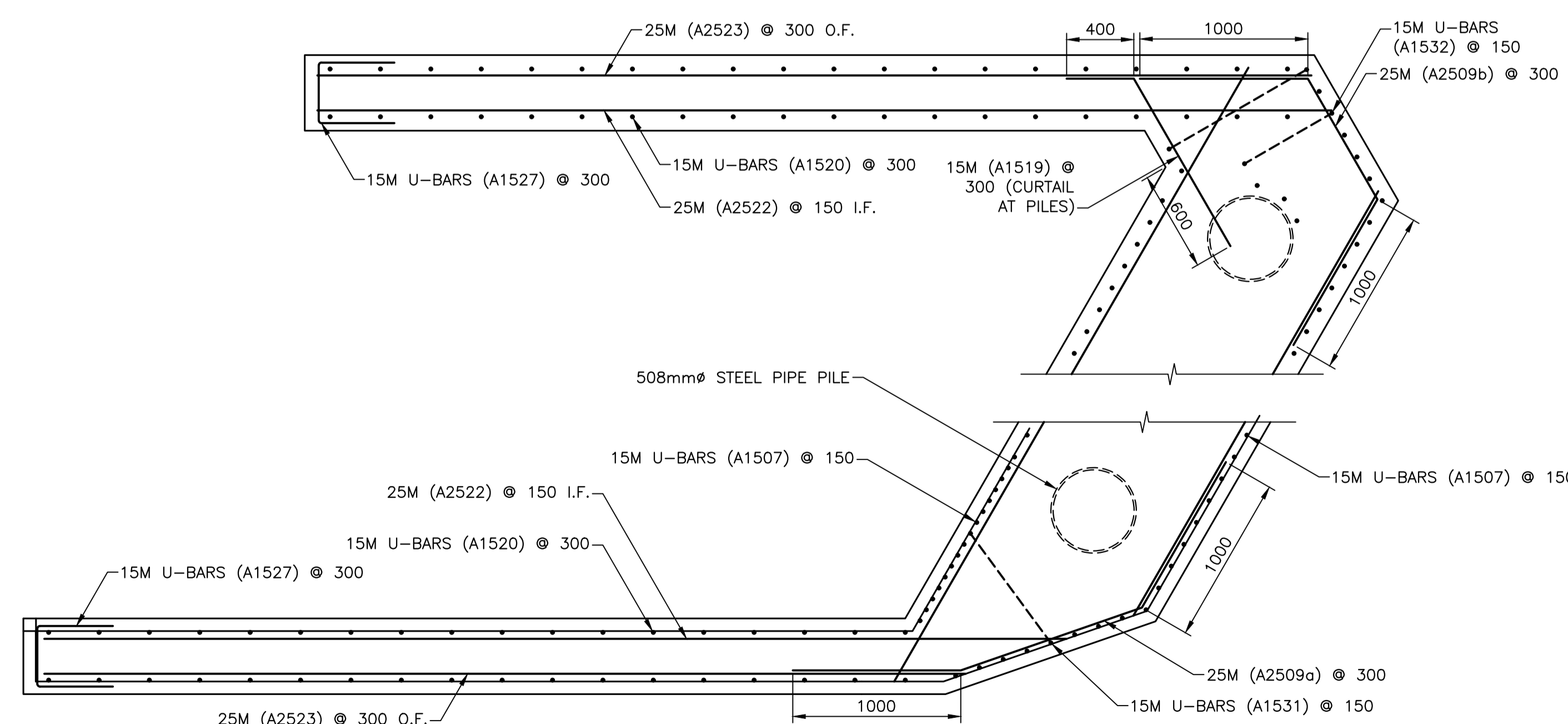
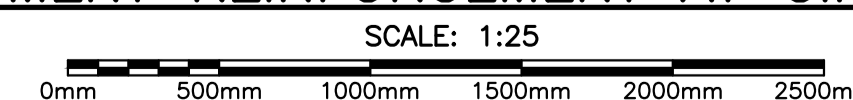
TYPICAL WINGWALL REINFORCEMENT



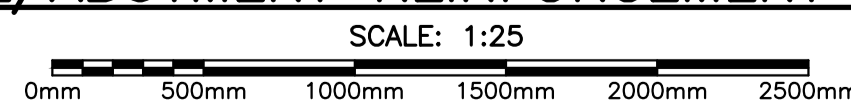
WINGWALL REINFORCEMENT SECTION A S8



ABUTMENT REINFORCEMENT AT GIRDERS C S7/S8



WINGWALL/ABUTMENT REINFORCEMENT SECTION B S8

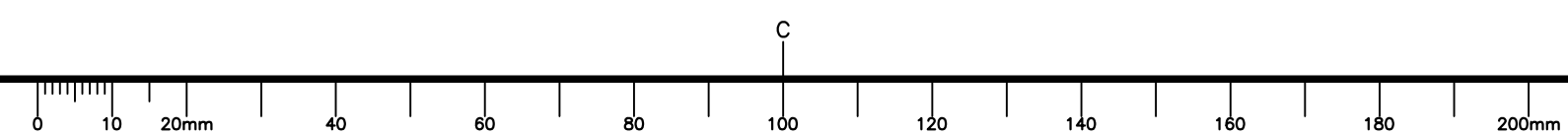


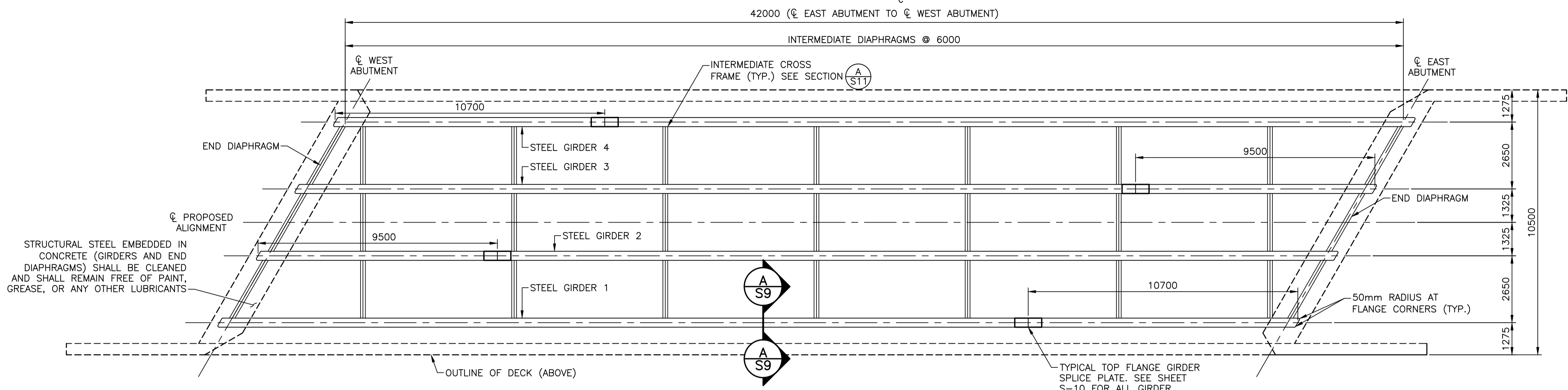
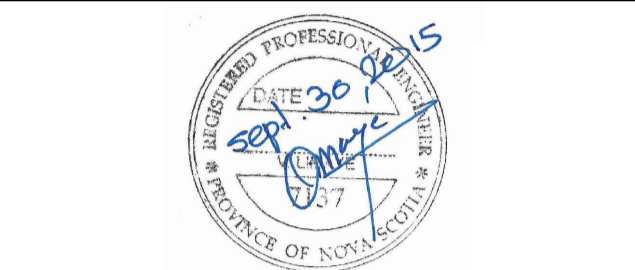
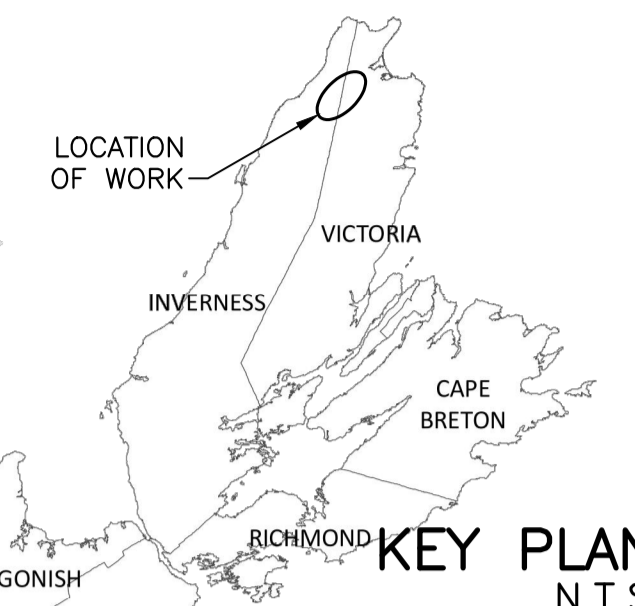
0	ISSUED FOR TENDER	09/30/2015
revisions		date
project		projet

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

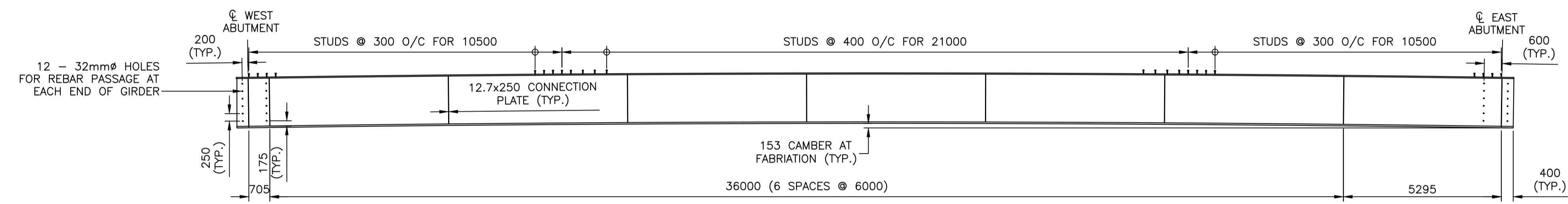
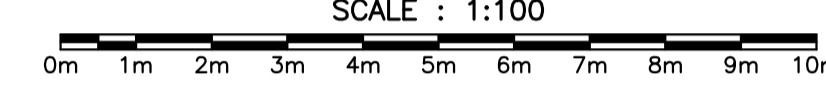
ABUTMENT AND WINGWALL REINFORCEMENT (2 OF 2)

designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date SEP. 22, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender <i>John Wiley</i>	Soumission
Parcs Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet
324	
drawing no.	no. du dessin
S-8	

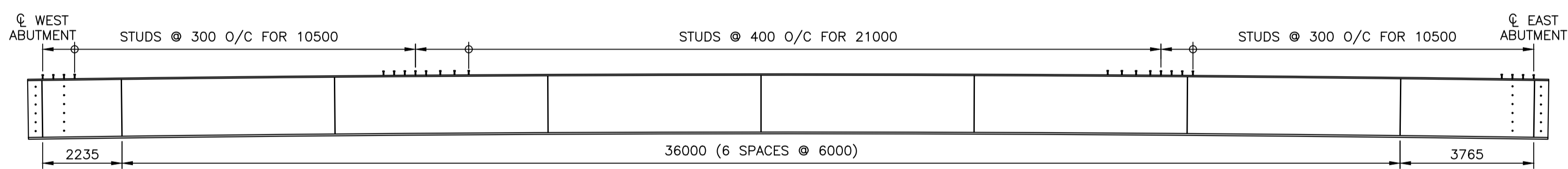
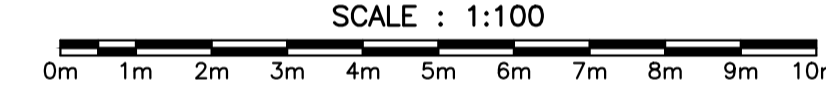




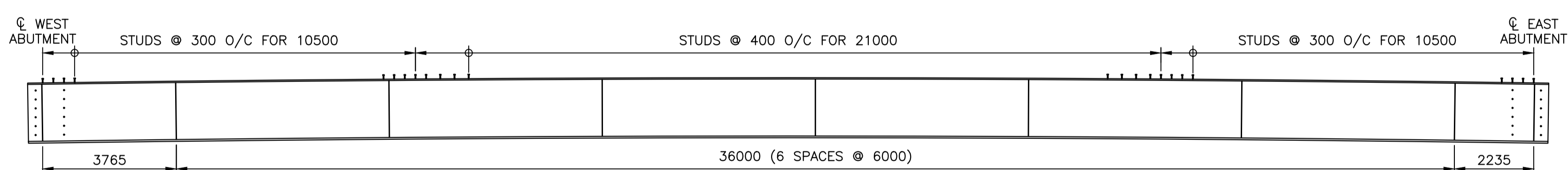
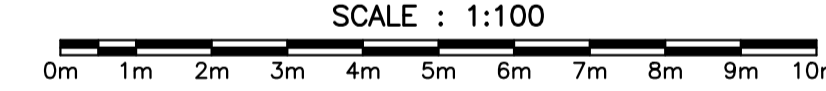
GIRDER LAYOUT PLAN
SCALE : 1:100



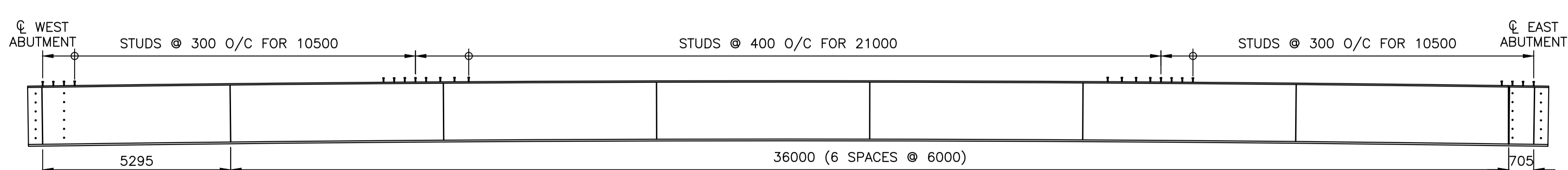
GIRDER 4 - ELEVATION
SCALE : 1:100



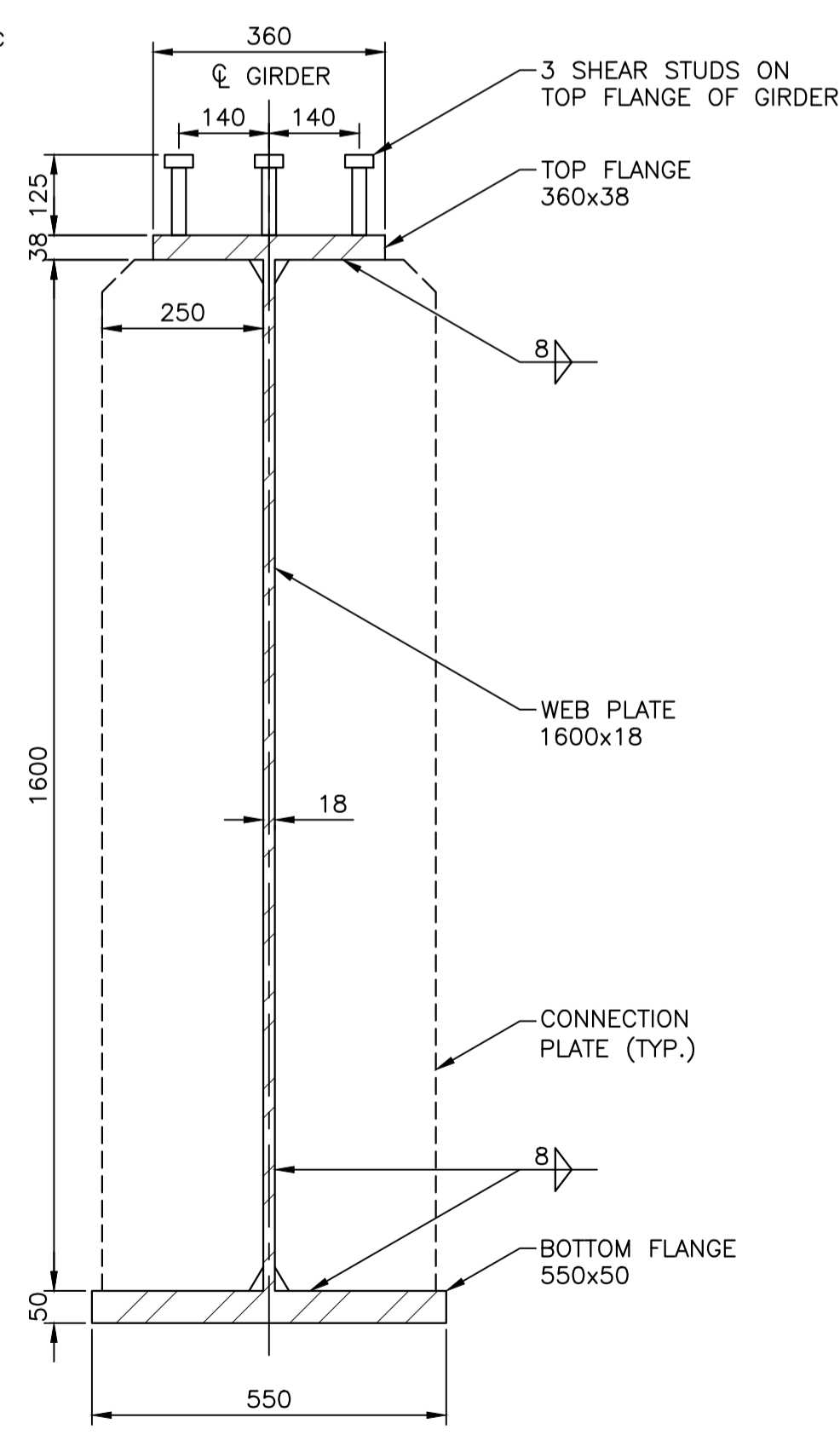
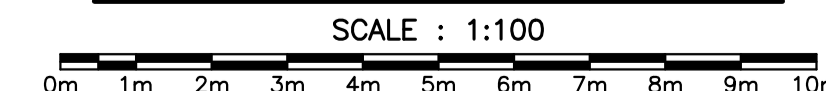
GIRDER 3 - ELEVATION
SCALE : 1:100



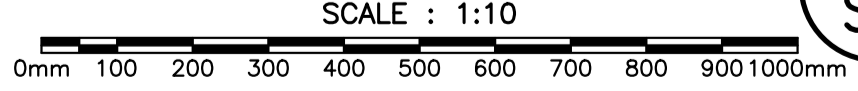
GIRDER 2 - ELEVATION
SCALE : 1:100



GIRDER 1 - ELEVATION
SCALE : 1:100



STEEL GIRDER SECTION
SCALE : 1:10



NOTES:

- FOR GENERAL NOTES SEE SHEET NO. S-3

STRUCTURAL STEEL:

- MATERIALS:**
 - GIRDER WEBS, FLANGES, STIFFENERS, ANGLES, TEES AND PLATES TO CSA G40.20/G40.21-M-350WT CATEGORY 2
 - HIGH STRENGTH BOLTS TO ASTM A325, TYPE 1
 - EXCLUDE THREADS FROM SHEAR PLANES
 - ANCHOR BOLTS TO CSA G40.20/G40.21 350A
 - SHEAR STUDS TO ASTM A-108-73
- FABRICATION:**
 - CAMBER GIRDERS TO VALUES SHOWN ON DRAWING
 - ENDS OF GIRDERS AND ALL STIFFENERS TO BE VERTICAL UNDER FULL DEAD LOAD
 - ALL LENGTHS IN HORIZONTAL PLANE @ 20°C
- WELDING:**
 - TO CSA W49-M-89
 - WELDING SHALL ONLY BE UNDERTAKEN BY A COMPANY CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA STANDARD W47.1-92, CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES
- BOLTING:**
 - ALL CONNECTIONS DESIGNED AS SLIP CRITICAL, UNO
 - PRETENSION HIGH STRENGTH BOLTS IN ACCORDANCE WITH CAN/CSA-S6-06, CLAUSE 10.24.6.3, TURN OF NUT TIGHTENING
- PAINT STEEL IN ACCORDANCE WITH SPECIFICATION SECTION 09 97 13 - STEEL COATINGS**
- ALL STEEL DIAPHRAGMS, WITH THE EXCEPTION OF END DIAPHRAGMS, TO BE GALVANIZED AFTER FABRICATION**
- STRUCTURAL STEEL EMBEDDED IN CONCRETE SHALL BE CLEANED PRIOR TO POURING OF CONCRETE AND SHALL REMAIN FREE OF PAINT, GREASE, OR ANY OTHER LUBRICANTS**
- ERECTION:**
 - ENSURE STABILITY OF ALL STRUCTURAL COMPONENTS DURING HANDLING, TRANSPORTATION AND ERECTION UNTIL THE DECK CONCRETE HAS REACHED 75% OF SPECIFIED 28 DAY STRENGTH
 - PLACEMENT OF DECK CONCRETE WILL NOT BE PERMITTED IF WIND SPEEDS OF MORE THAN 50 KPH ARE FORECAST FOR THE NEXT 3 DAYS
 - GUARDRAILS MUST NOT BE INSTALLED UNTIL DECK CONCRETE HAS REACHED 100% OF SPECIFIED 28 DAY STRENGTH

0	ISSUED FOR TENDER	09/30/2015
revisions		date

project	project
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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

drawing	dessin
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GIRDER LAYOUT PLAN AND DETAILS

designed VIDYA LIMAYE	conçu
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date	
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drawn MATT MACLEOD	dessiné
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date SEP. 30, 2015	
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approved VIDYA LIMAYE	approuvé
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date	
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Tender	Soumission
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Parks Canada Project Manager	Administrateur de projets Parcs Canada
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project number	no. du projet
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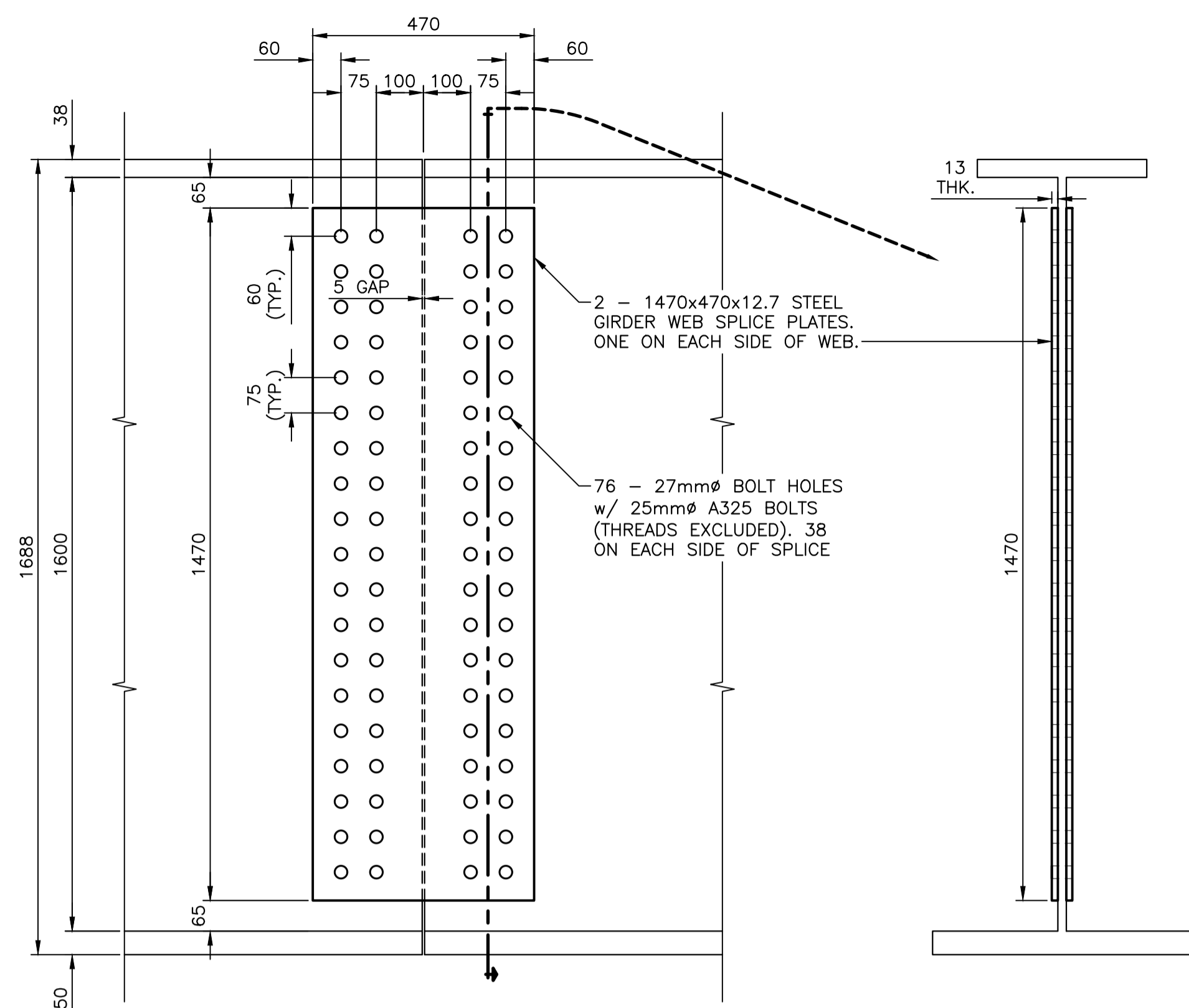
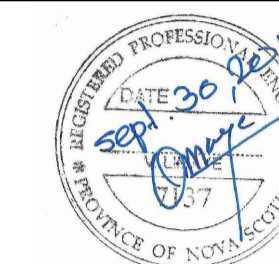
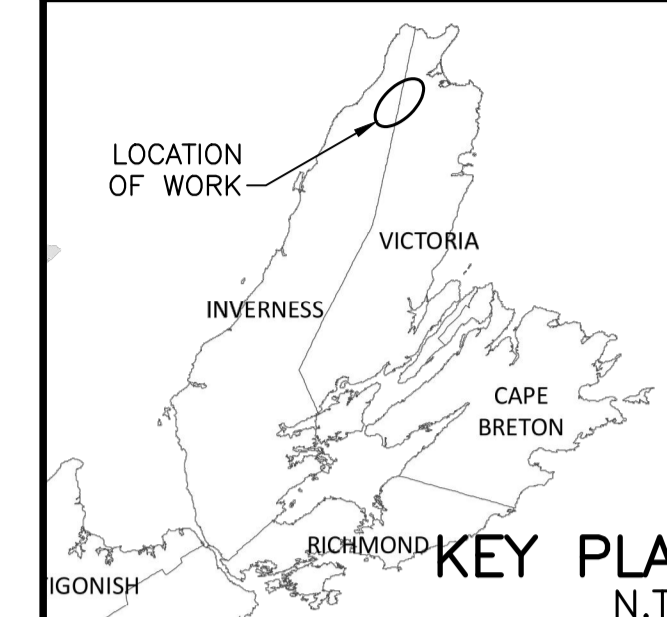
324

drawing no.	no. du dessin
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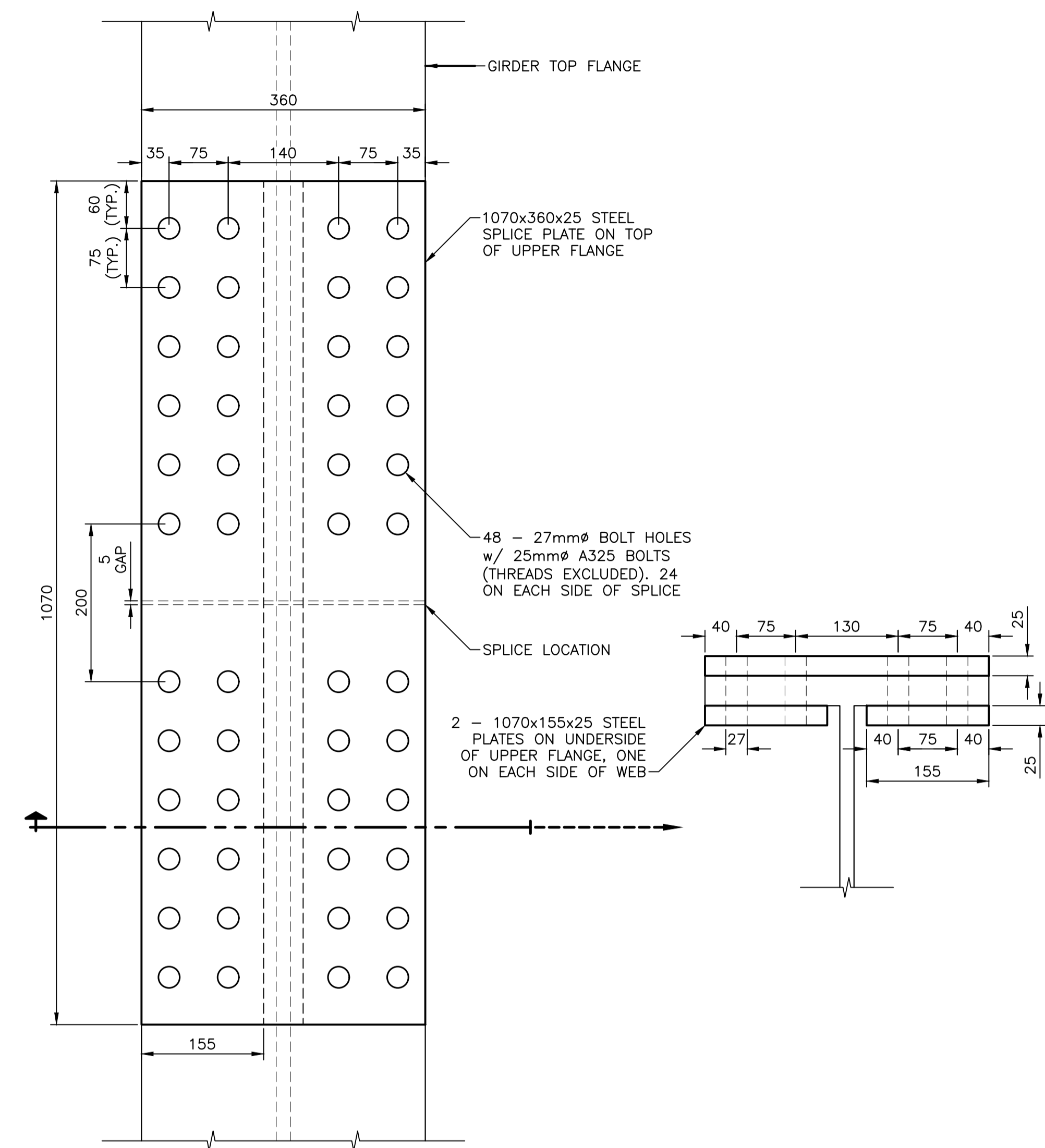
S-9

drawing no.	no. du dessin
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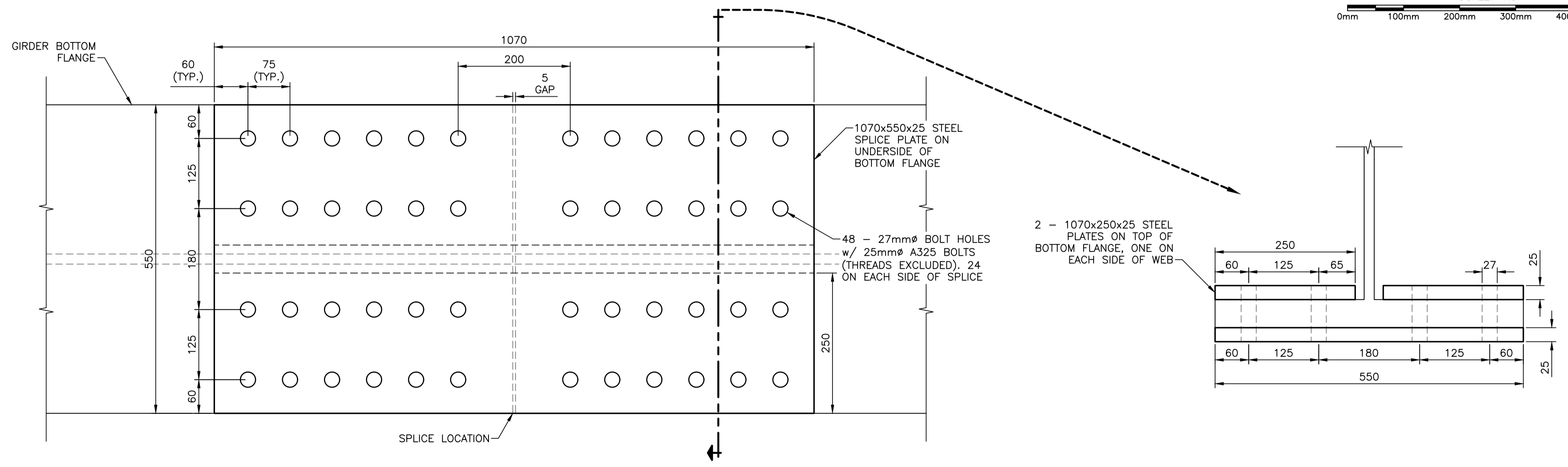
S-9



WEB SPLICE PLATES DETAIL 1
SCALE: 1:10
0mm 100 200 300 400 500 600 700 800 900 1000mm



TOP FLANGE SPLICE PLATES DETAIL 2
SCALE: 1:5
0mm 100mm 200mm 300mm 400mm 500mm



BOTTOM FLANGE SPLICE PLATES DETAIL 3
SCALE: 1:5
0mm 100mm 200mm 300mm 400mm 500mm

0	ISSUED FOR TENDER	09/30/2015
revisions		date

project _____ projet _____

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

drawing _____ dessin _____
GIRDER SPLICE DETAILS

designed VIDYA LIMAYE conçu _____
date _____

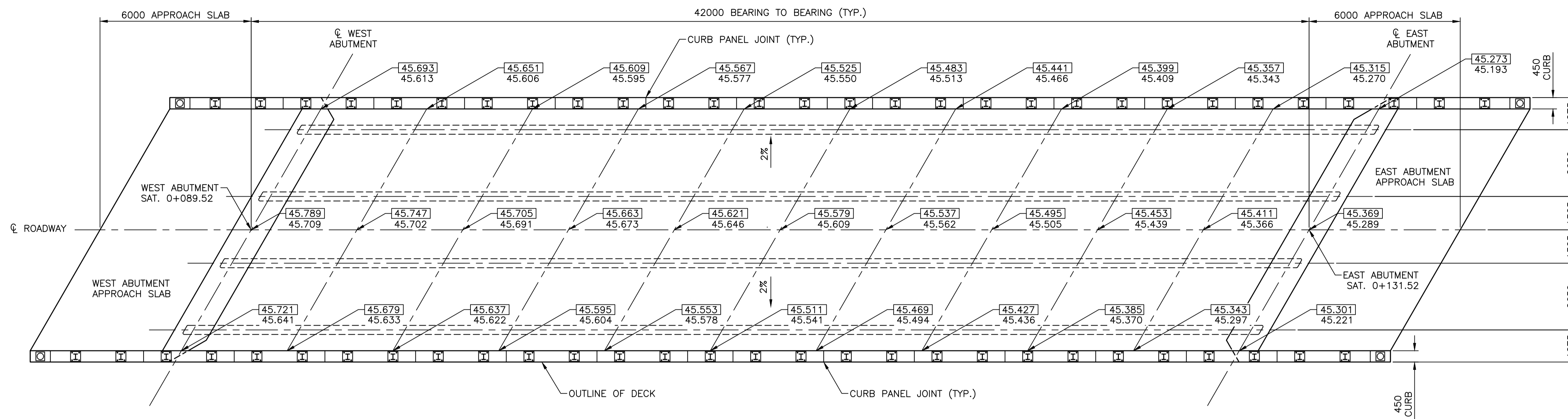
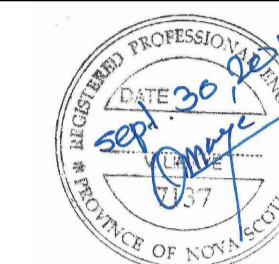
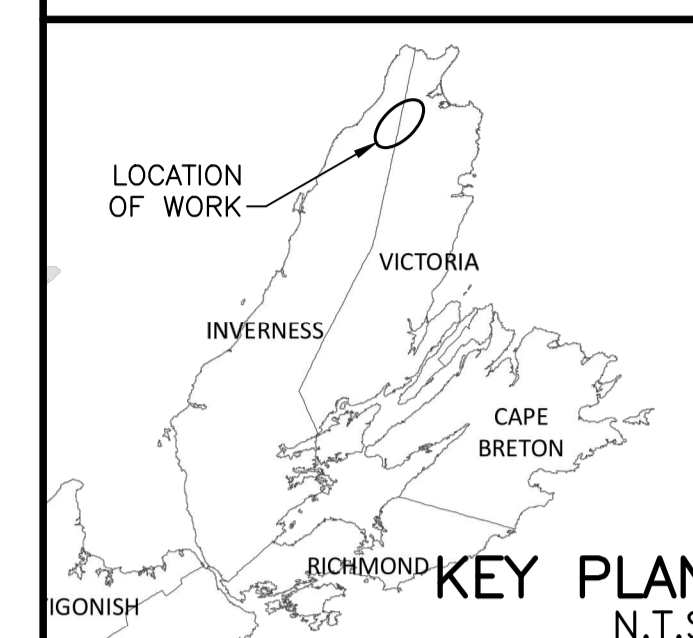
drawn MATT MACLEOD dessiné _____
date SEP. 30, 2015

approved VIDYA LIMAYE approuvé _____
date _____

Tender *Debra Dickey* Soumission _____
Parcs Canada Project Manager Administrateur de projets Parcs Canada

project number _____ no. du projet _____
324

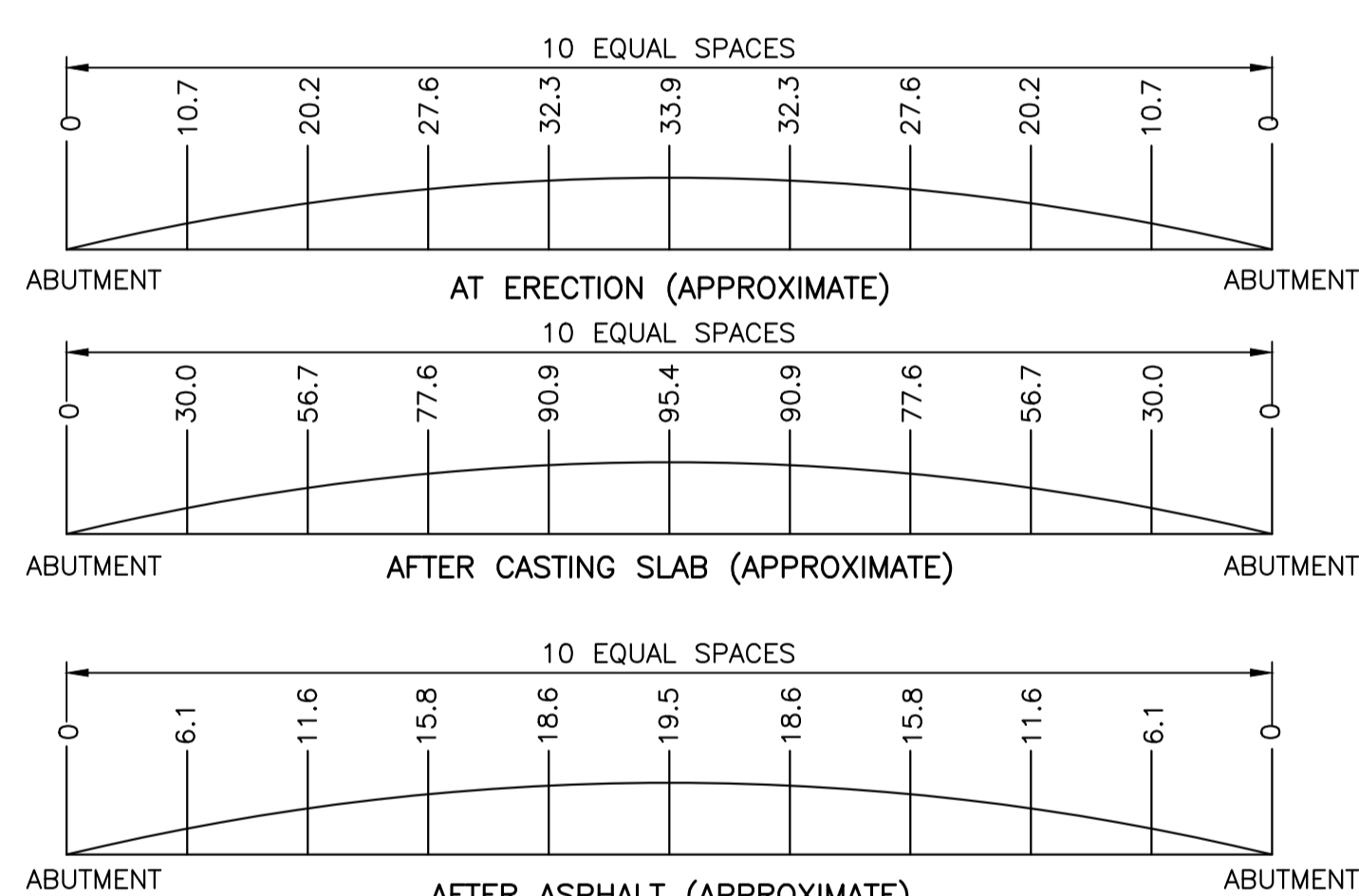
drawing no. _____ no. du dessin _____
S-10



DECK PLAN
SCALE : 1:100



LEGEND:
45.369 FINISHED GRADE
45.289 SCREED ELEVATION



NOTE:
VALUES ARE SHOWN FOR GUIDANCE ONLY. CONTRACTOR SHALL
MAKE THEIR OWN CALCULATIONS/ESTIMATES OF GIRDER CAMBER.

CAMBER PROFILES
N.T.S.

Finished Asphalt Elevations

Span (L)	42 (m)											
x/L	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	
x	0	4.2	8.4	12.6	16.8	21	25.2	29.4	33.6	37.8	42	
Slab Edge (North)	5.25	45.684	45.642	45.600	45.558	45.516	45.474	45.432	45.390	45.348	45.306	45.264
Curb side	4.8	45.693	45.651	45.609	45.567	45.525	45.483	45.441	45.399	45.357	45.315	45.273
Girder 4	3.975	45.710	45.668	45.626	45.584	45.542	45.500	45.458	45.416	45.374	45.332	45.290
Girder 3	1.325	45.763	45.721	45.679	45.637	45.595	45.553	45.511	45.469	45.427	45.385	45.343
Bridge Centreline	0	45.789	45.747	45.705	45.663	45.621	45.579	45.537	45.495	45.453	45.411	45.369
Girder 2	-1.325	45.770	45.728	45.686	45.644	45.602	45.560	45.518	45.476	45.434	45.392	45.350
Girder 1	-3.975	45.732	45.690	45.648	45.606	45.564	45.522	45.480	45.438	45.396	45.354	45.312
Curb side	-4.8	45.721	45.679	45.637	45.595	45.553	45.511	45.469	45.427	45.385	45.343	45.301
Slab Edge (south)	-5.25	45.714	45.672	45.630	45.588	45.546	45.504	45.462	45.420	45.378	45.336	45.294

Finished Concrete Elevation

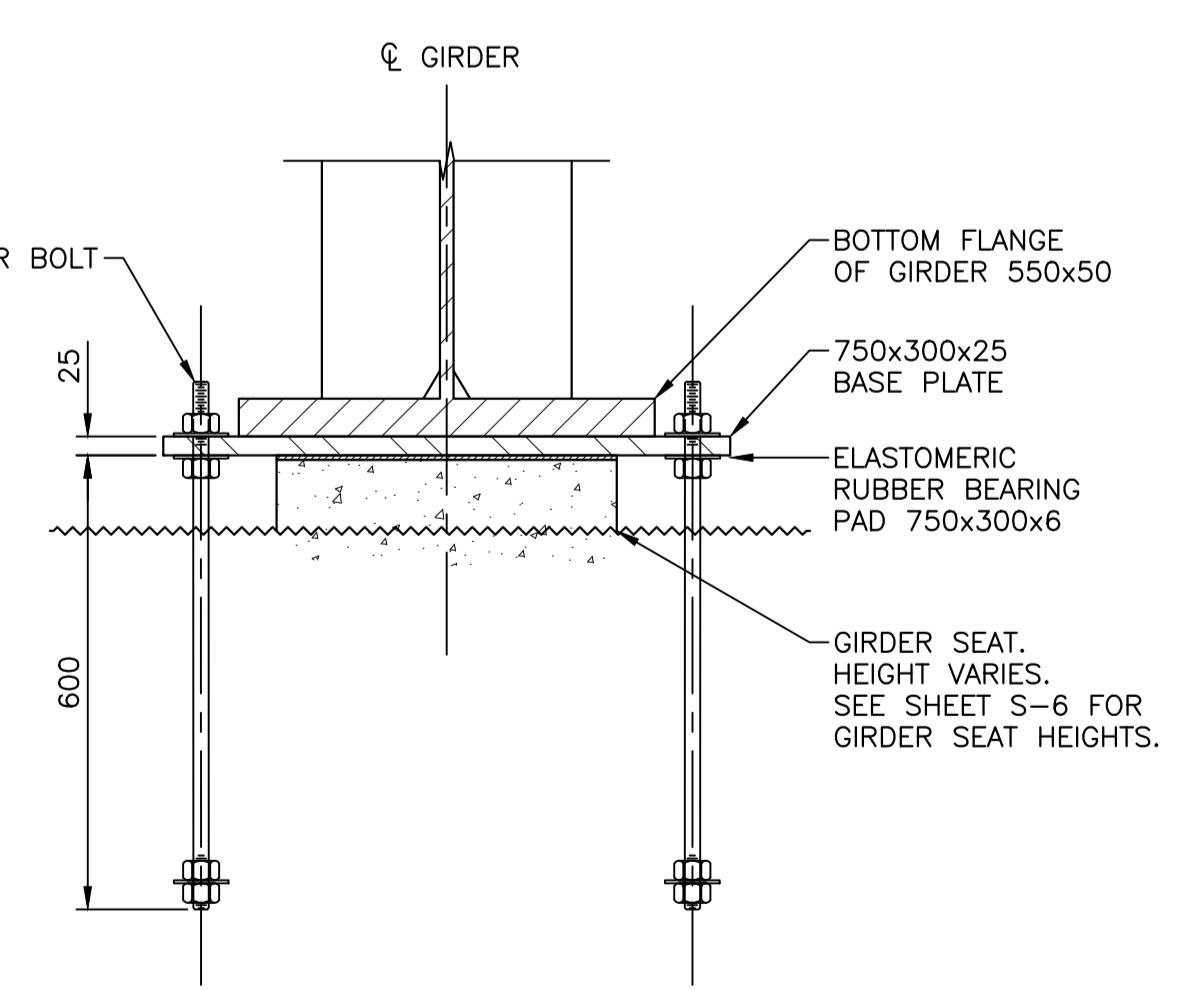
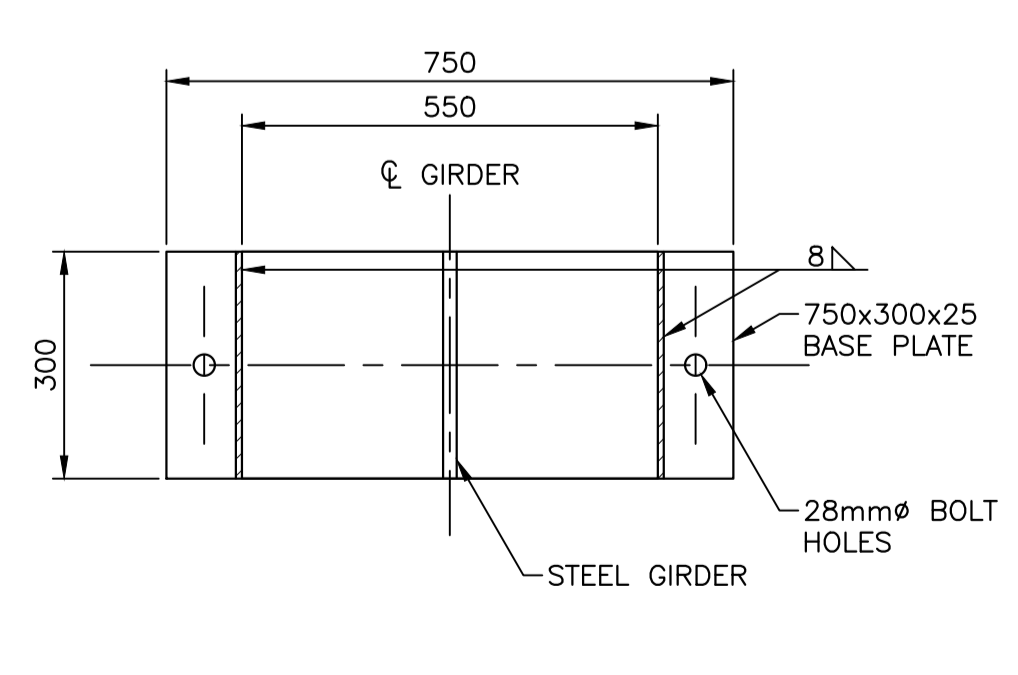
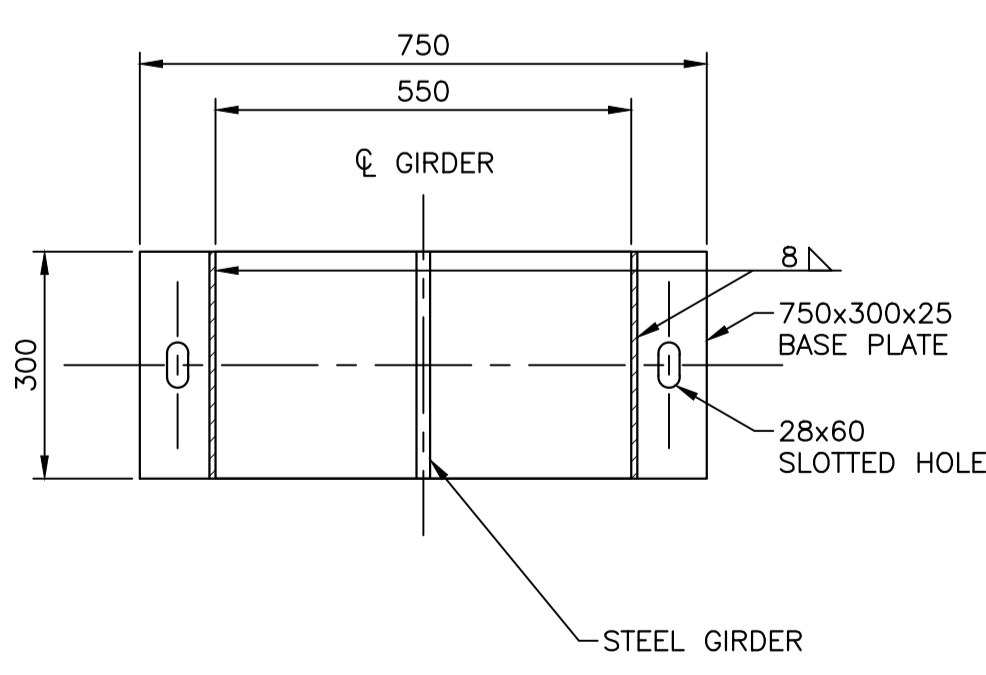
Span (L)	42 (m)											
x/L	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	
x	0	4.2	8.4	12.6	16.8	21	25.2	29.4	33.6	37.8	42	
Slab Edge (North)	5.25	45.604	45.562	45.520	45.478	45.436	45.394	45.352	45.310	45.268	45.226	45.184
Curb side	4.8	45.613	45.571	45.529	45.487	45.445	45.403	45.361	45.319	45.277	45.235	45.193
Girder 4	3.975	45.630	45.588	45.546	45.504	45.462	45.420	45.378	45.336	45.294	45.252	45.210
Girder 3	1.325	45.683	45.641	45.599	45.557	45.515	45.473	45.431	45.389	45.347	45.305	45.263
Bridge Centreline	0	45.709	45.667	45.625	45.583	45.541	45.499	45.457	45.415	45.373	45.331	45.289
Girder 2	-1.325	45.690	45.648	45.606	45.564	45.522	45.480	45.438	45.396	45.354	45.312	45.270
Girder 1	-3.975	45.652	45.610	45.568	45.526	45.484	45.442	45.400	45.358	45.316	45.274	45.232
Curb side	-4.8	45.641	45.599	45.557	45.515	45.473	45.431	45.389	45.347	45.305	45.263	45.221
Slab Edge (South)	-5.25	45.634	45.592	45.550	45.508	45.466	45.424	45.382	45.340	45.298	45.256	45.214

Screeed Elevation

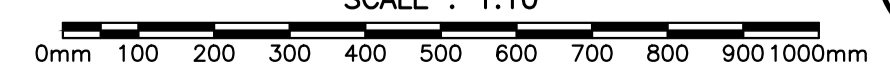
Span (L)	42 (m)											
x/L	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	
x	0	4.2	8.4	12.6	16.8	21	25.2	29.4	33.6	37.8	42	
Slab Edge (North)	5.250	45.604	45.597	45.586	45.568	45.541	45.504	45.457	45.400	45.334	45.261	45.184
Curb side	4.800	45.613	45.606	45.595	45.577	45.550	45.513	45.466	45.409	45.343	45.270	45.193
Girder 4	3.975	45.630	45.622	45.611	45.593	45.567	45.530	45.483	45.425	45.359	45.286	45.210
Girder 3	1.325	45.683	45.675	45.664	45.646	45.620	45.583	45.536	45.478	45.412	45.339	45.263
Bridge Centreline	0.000	45.709	45.702	45.691	45.673	45.646	45.609	45.562	45.505	45.439	45.366	45.289
Girder 2	-1.325	45.690	45.683	45.672	45.654	45.627	45.590	45.543	45.486	45.420	45.347	45.270
Girder 1	-3.975	45.652	45.645	45.634	45.616	45.590	45.553	45.506	45.448	45.382	45.309	45.232
Curb side	-4.800	45.641	45.633	45.622	45.604	45.578	45.541	45.494	45.436	45.370	45.297	45.221
Slab Edge (South)	-5.250	45.634	45.627	45.616	45.598	45.571	45.535	45.487	45.430	45.364	45.291	45.214

Deflection Table

Span (L)	42 (m)										
x/L	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
x	0	4.2	8.4	12.6	16.8	21	25.2	29.4	33.6	37.8	42
Deflection - Girder Self Weight	0.0	10.7	20.2	27.6	32.3	33.9	32.3	27.6	20.2	10.7	0.0
Deflection - Slab & Haunches	0.0	30.0	56.7	77.6	90.9	95.4	90.9	77.6	56.7	30.0	0.0
Deflection - Asphalt	0.0	4.7	8.9	12.1	14.2	14.9	14.2	12.1	8.9	4.7	0.0
Deflection - Curbs	0.0	1.4	2.7	3.7	4.4	4.6	4.4	3.7	2.7	1.4	0.0
Deflection - Total	0.0	46.7	88.4	121.0	141.7	148.8	141.7	121.0	88.4	46.7	0.0



GIRDER BASE PLATE DETAIL
SCALE : 1:10



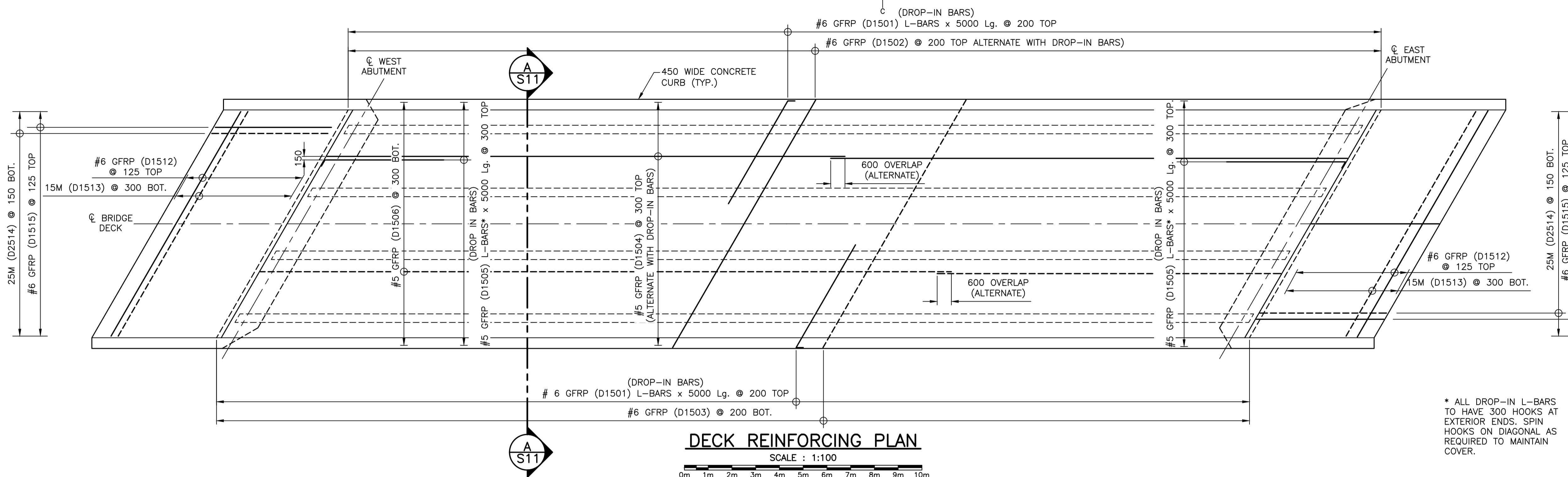
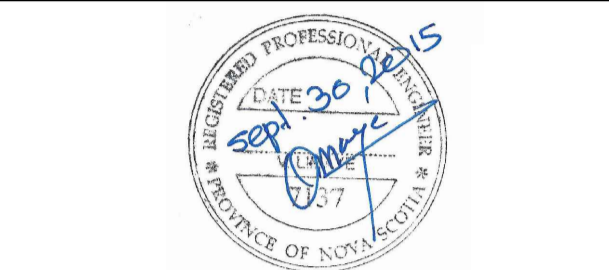
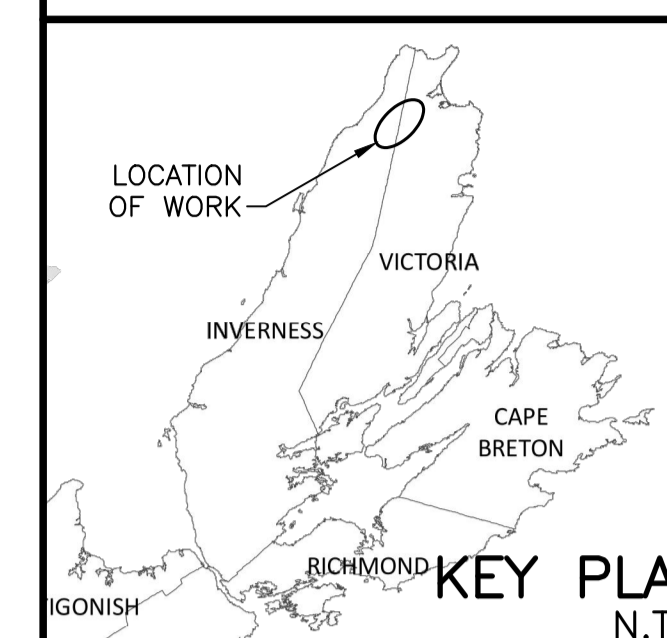
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project		projct

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

DECK PLAN AND SCREED ELEVATIONS LAYOUT

designed	VIDYA LIMAYE	conçu
date		
drawn	MATT MACLEOD	dessiné
date	SEP. 22, 2015	
approved	VIDYA LIMAYE	approuvé
date		
Tender	<i>John Wiley</i>	Soumission
	Administrateur de projets Parcs Canada	
project number		no. du projet
	324	
drawing no.		no. du dessin
	S-11	

DECK ELEVATIONS TABLE

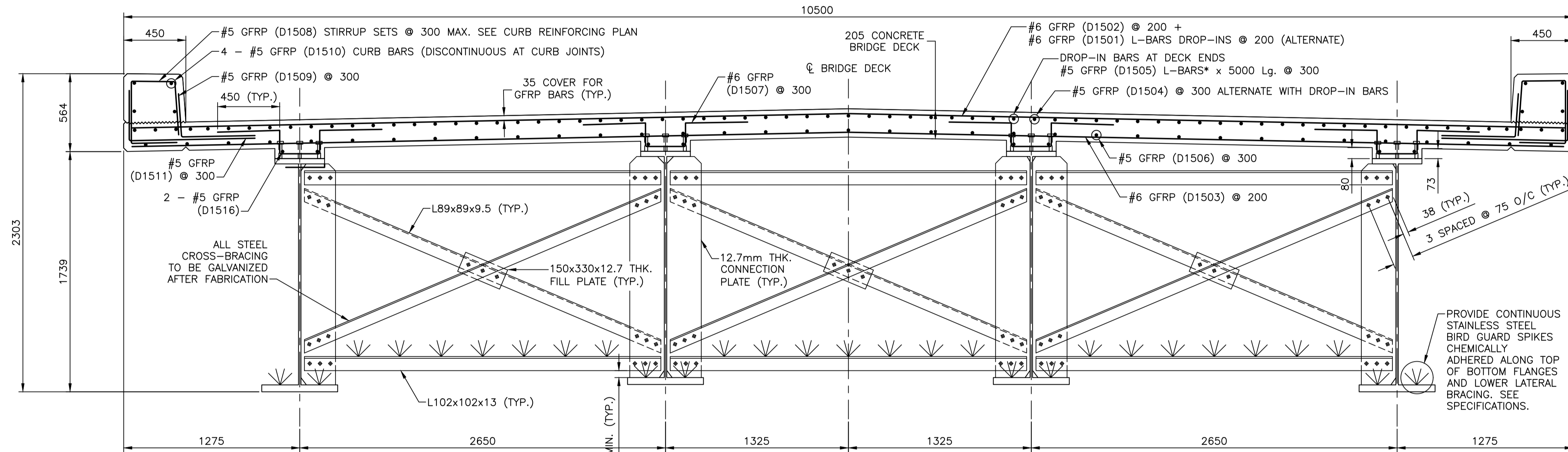


* ALL DROP-IN L-BARS TO HAVE 300 HOOKS AT EXTERIOR ENDS. SPIN HOOKS ON DIAGONAL AS REQUIRED TO MAINTAIN COVER.

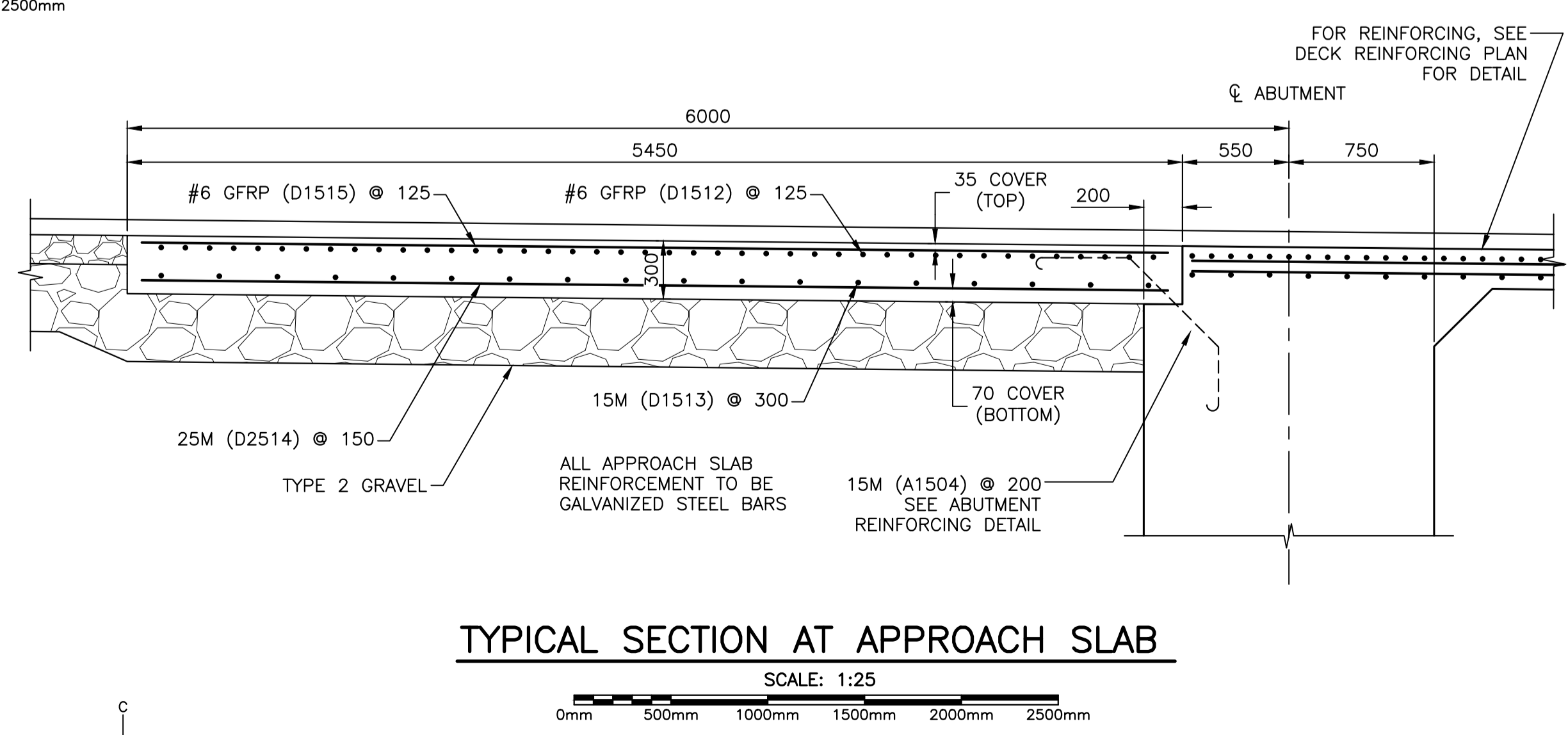
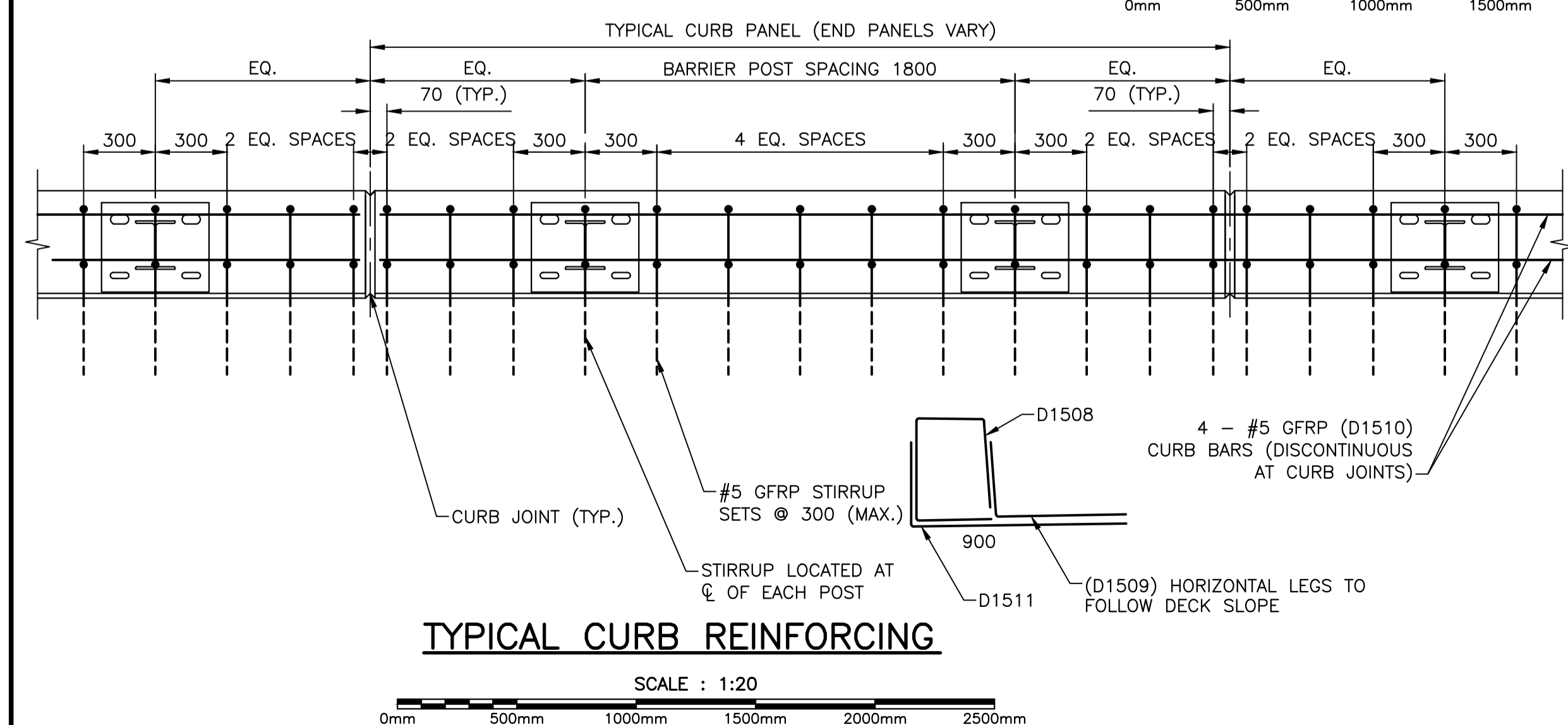
REINFORCING LEGEND:

- N.F. NEAR FACE
- F.F. FAR FACE
- E.F. EACH FACE
- E.W. EACH WAY
- I.F. INSIDE FACE
- O.F. OUTSIDE FACE
- CVR. COVER

NOTE:
ALL DECK REINFORCEMENT TO BE GLASS FIBRE REINFORCED POLYMER (GFRP) UNLESS NOTED OTHERWISE. GFRP REINFORCEMENT SHALL BE GRADE III GFRP BARS IN ACCORDANCE WITH CAN/CSA-S807-10.



PROVIDE CONTINUOUS STAINLESS STEEL BIRD GUARD SPIKES CHEMICALLY ADHERED ALONG TOP OF BOTTOM FLANGES AND LOWER LATERAL BRACING. SEE SPECIFICATIONS.



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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

DECK AND APPROACH SLAB REINFORCEMENT

designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date SEP. 30, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender Administrator	Soumission
Parcs Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet

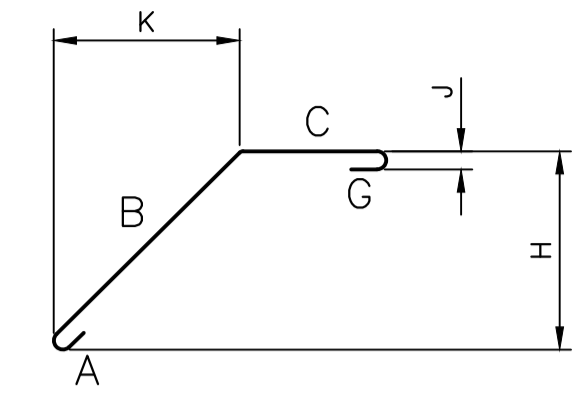
324

S-12

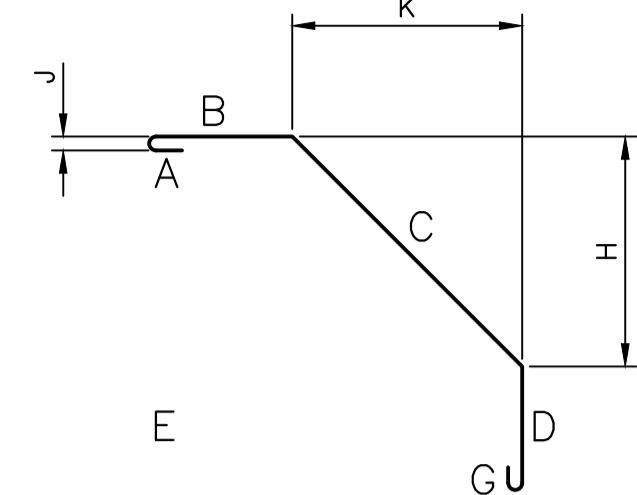
MARK	QTY	SIZE	LENGTH (mm)	T Y P E	A	B	C	D	E	F	G	H	H1	H2	J	K	K1	K2	TOTAL LENGTH (m)	WEIGHT (kg)	REMARKS
GALVANIZED STEEL — ABUTMENTS, WINGWALLS, APPROACH SLAB																					
A2001	104	20	2785	17		2270	515												290	683	
A1502	90	15	6145	17		2535	1070	2535											553	869	
A1503	104	15	2700	SP1	140	860	450				140	608			60	608			281	442	
A1504	104	15	3465	SP2	140	450	1075	300			140	760			60	760			361	567	
A1505	36	15	11950	ST															430	676	
A1506	48	15	2890	ST															139	219	
A1507	138	15	4455	17		1600	1350	1600											615	966	
A2508	14	25	11950	ST															168	660	LENGTH VARIES
A2509a	38	25	3340	SP4		1000	1265	1000					414	866			1195	500	127	499	
A2509b	38	25	2830	SP4a		1000	880	1000					762	866			440	500	108	424	
A2510	16	25	12350	17		200	11950	200											198	778	LENGTH VARIES
A1511	138	15	5335	17		2000	1350	2000											737	1158	
A1512	210	15	1750	17		200	1350	200											368	578	
A1513	84	15	2930	T1	125	670	670	670	670	125									247	388	
A1514	28	15	2425	17		900	625	900											68	107	
A2515	12	25	12350	17		200	11950	200											149	585	LENGTH VARIES
A2516	36	25	12350	17		200	11950	200											445	1747	LENGTH VARIES
A2517	96	25	600	ST															58	228	
A2018	24	20	4765	17		2270	225	2270											115	271	
A1519	38	15	1550	SP5		400	1150					1000				580			59	93	LENGTH VARIES
A1520	56	15	4730	17		2225	280	2225											265	417	LENGTH VARIES
A1521	56	15	7620	17		3670	280	3670											427	671	LENGTH VARIES
A2522	124	25	6050/6210	ST															761	2987	LENGTH VARIES
A2523	62	25	5900/5480	ST															353	1386	LENGTH VARIES
A1524	12	15	9215	SP3		1665	5910	1640				3280				4925			111	174	LENGTH VARIES
A1525	20	15	1950	T1	125	600	250	600	250	125									39	62	
A2526	24	25	2100	ST															51	201	
A1527	22	15	1200	17		450	300	450											27	43	
A1528	16	15	5810	T1	125	280	2495	280	2495	125									93	147	LENGTH VARIES
A2029	24	20	1400	17		600	200	600											34	81	
A1030	80	10	850	17		300	250	300											68	54	
A1531	32	15	3760	17		1780	600	1780											121	190	LENGTH VARIES
A1532	24	15	3960	17		1780	800	1780											96	151	LENGTH VARIES
D1513	40	15	10920	ST															437	687	
D2514	128	25	4890	ST															626	2457	

MARK	QTY	SIZE	LENGTH (mm)	T Y P E	A	B	C	D	E	F	G	H	H1	H2	J	K	K1	K2	TOTAL LENGTH (m)	
GFRP — DECK SLAB, CURB, APPROACH SLAB																				
D1501	430	#6 GFRP	5300	17		5000	300												2279	
D1502	215	#6 GFRP	12040	ST															2589	
D1503	215	#6 GFRP	12040	ST															2589	
D1504	70	#5 GFRP	21810	ST															1527	
D1505	70	#5 GFRP	5300	17		5000	300												371	
D1506	70	#5 GFRP	21810	ST															1527	
D1507	576	#6 GFRP	1530	SP6	450	170	290	170	450				13	7					882	
D1508	386	#5 GFRP	1480	SP7	330	450	315	385				7				28			572	
D1509	386	#5 GFRP	845	SP8		310	535					9				22			327	
D1510	8	#5 GFRP	53900	ST															432	
D1511	386	#5 GFRP	1260	SP8		360	900					18							487	
D1512	88	#6 GFRP	11000	ST															968	
D1515	154	#6 GFRP	5360	ST															826	
D1516	8	#5 GFRP	43030	ST															345	
																			#5 GFRP — TOTAL	5588
																			#6 GFRP — TOTAL	10133

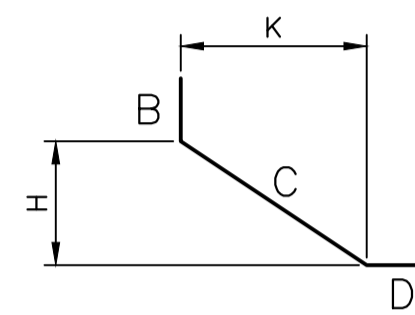
BENDING SKETCHES



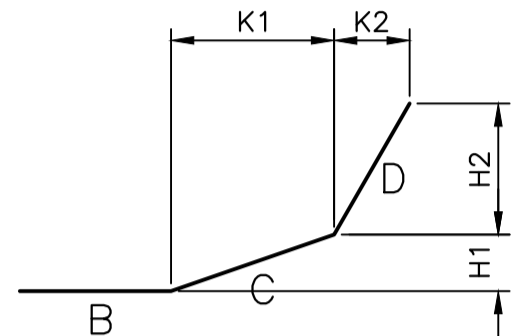
TYPE SP1



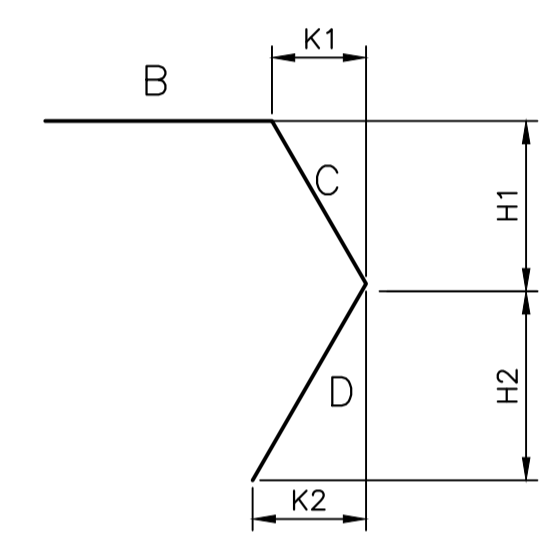
TYPE SP2



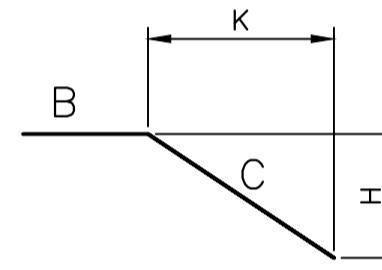
TYPE SP3



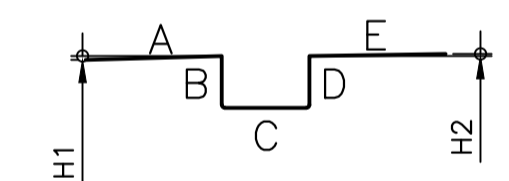
TYPE SP4



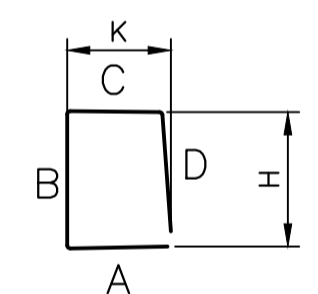
TYPE SP4a



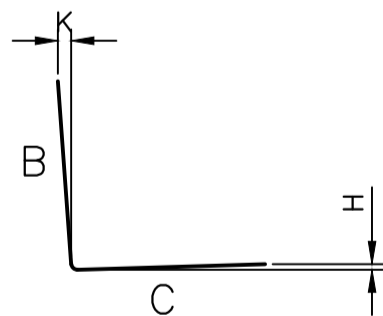
TYPE SP5



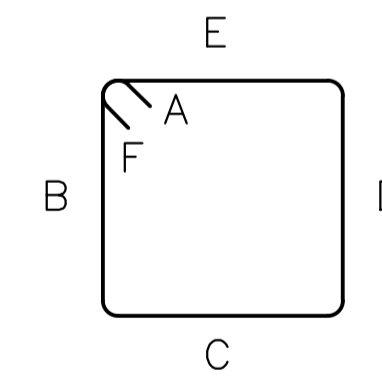
TYPE SP6



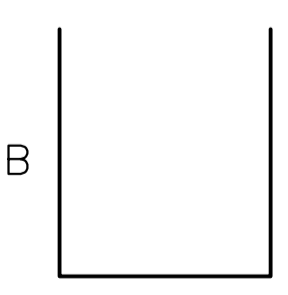
TYPE SP7



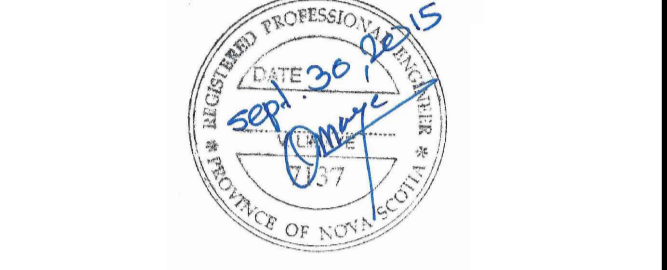
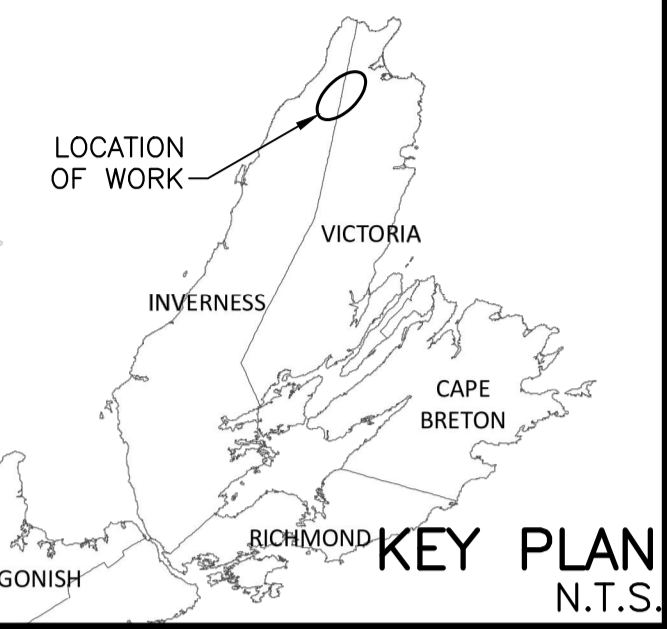
TYPE SP8



TYPE T1



TYPE 17



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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

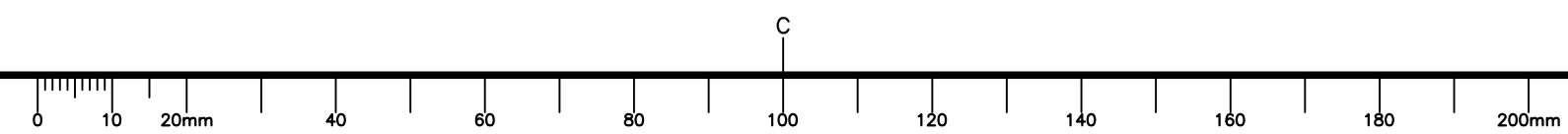
REINFORCING SCHEDULE

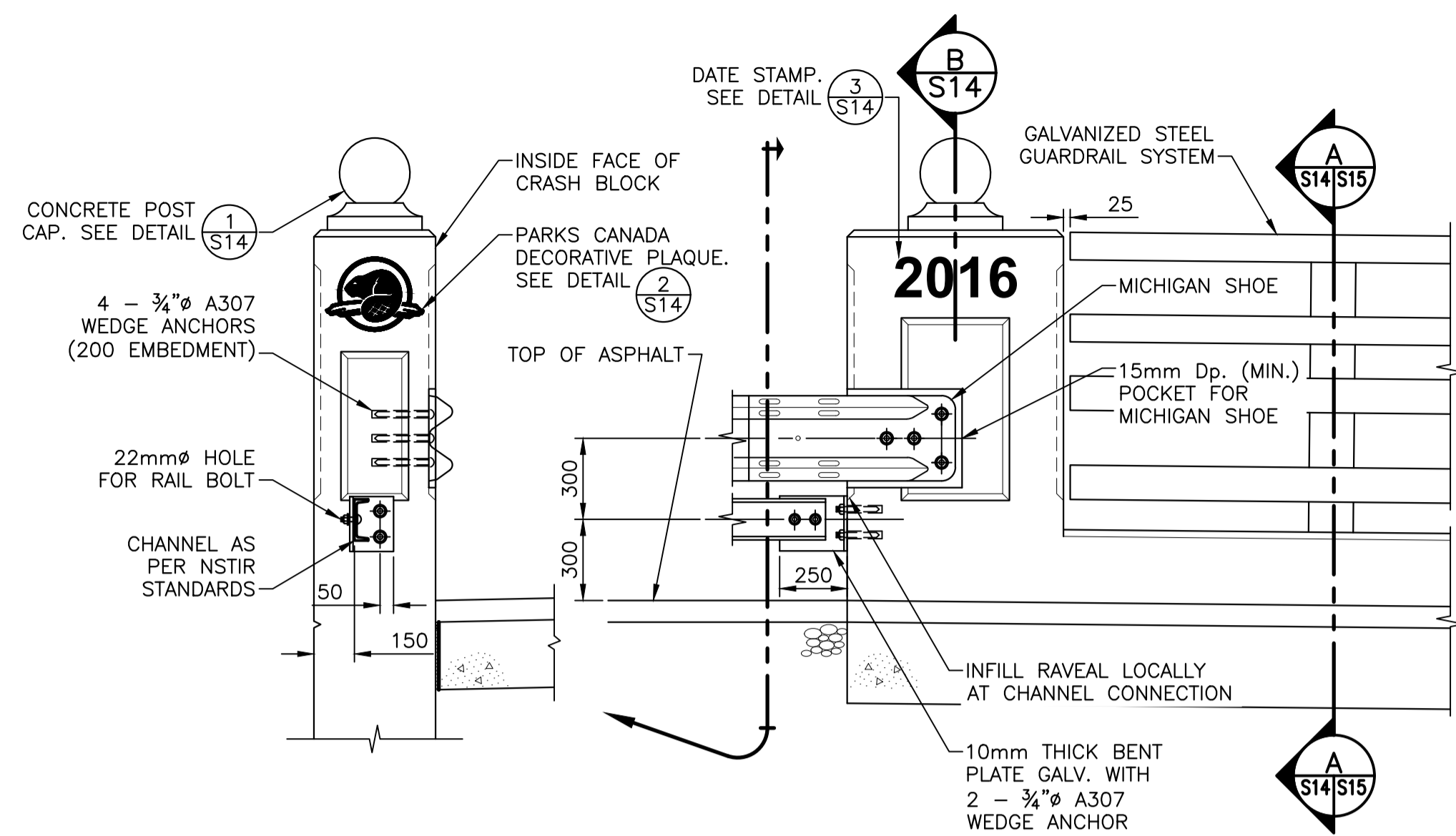
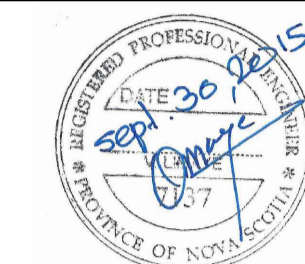
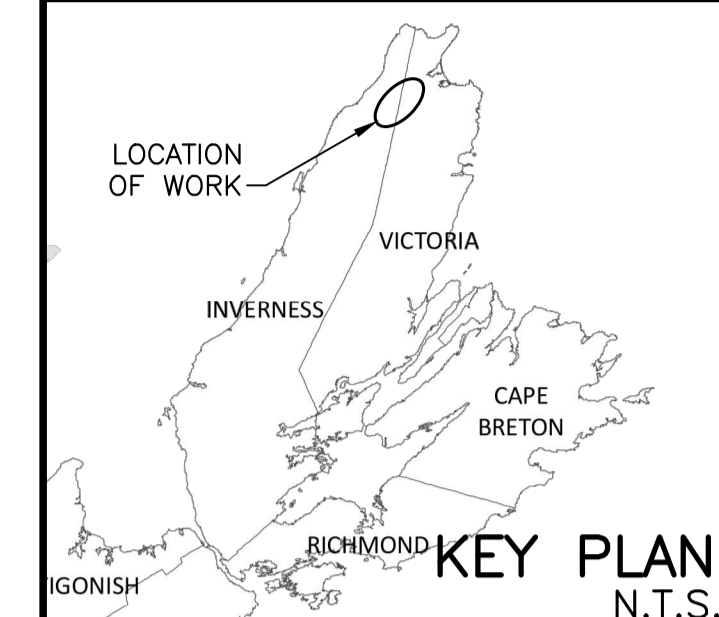
designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date SEP. 30, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender Administrator	Soumission
Parcs Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet

324

drawing no. no. du dessin

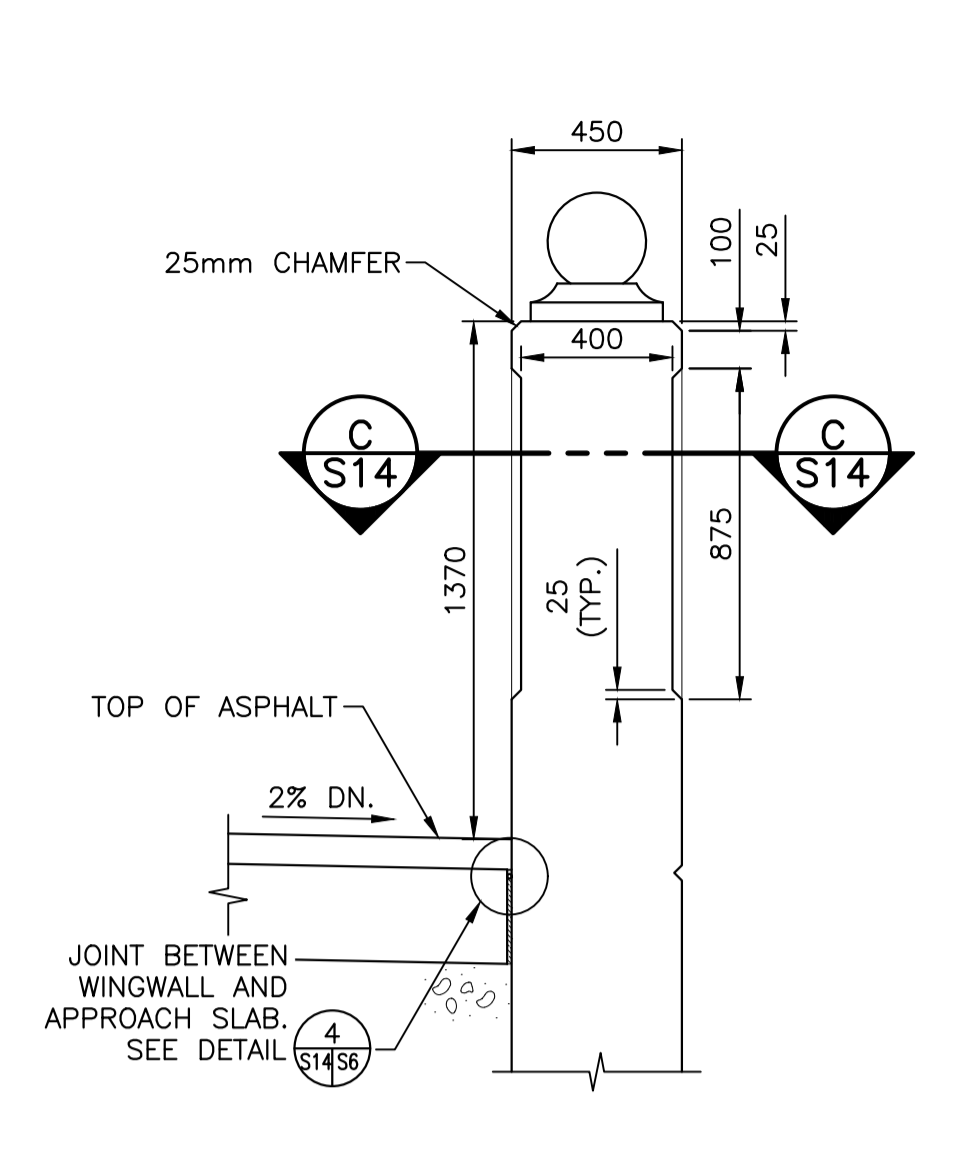
S-13





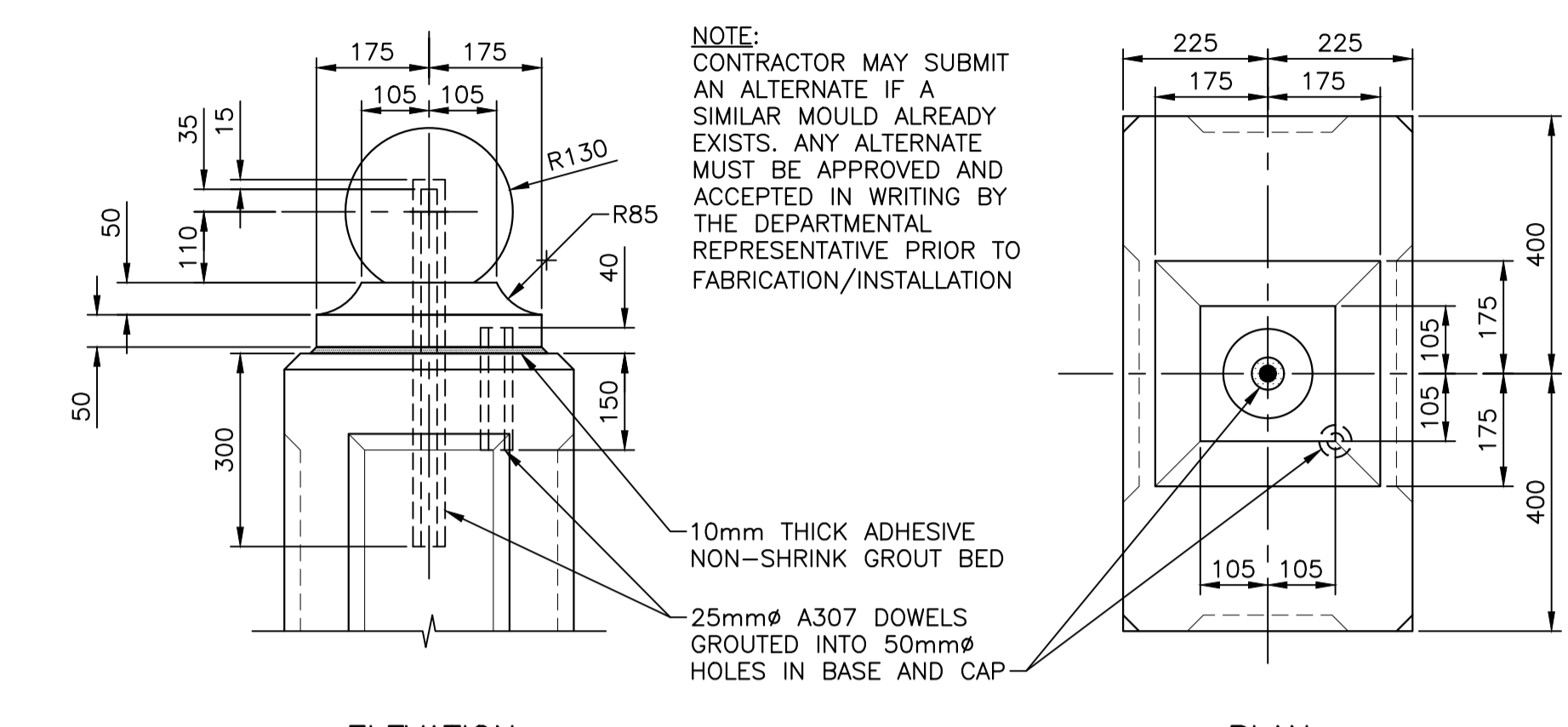
GUARDRAIL TO CRASH BLOCK CONNECTION

SCALE : 1:20
0mm 500mm 1000mm 1500mm 2000mm 2500mm



TYPICAL CRASH BLOCK SECTION

SCALE : 1:20
0mm 500mm 1000mm 1500mm 2000mm 2500mm



ELEVATION

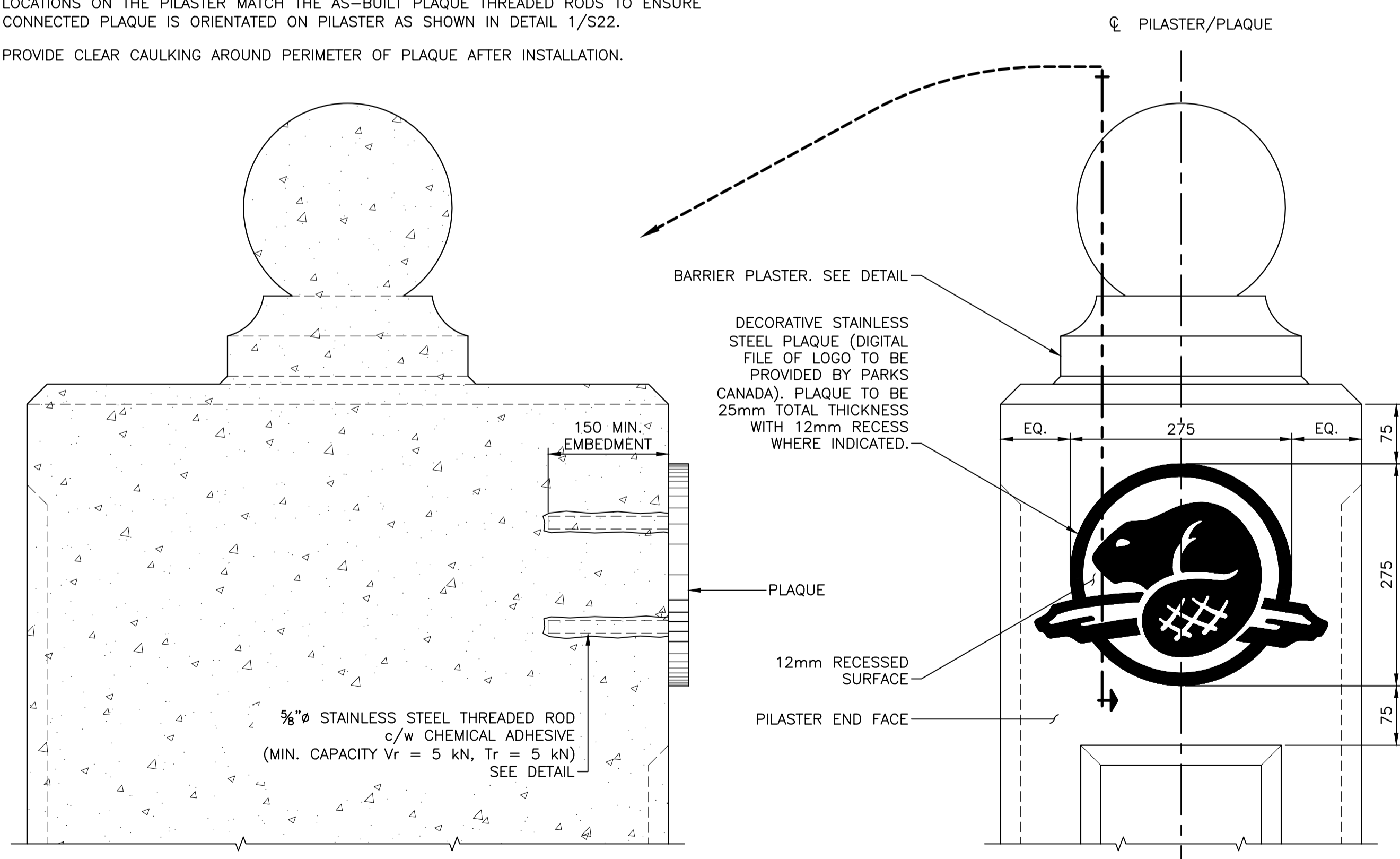
PLAN

TYPICAL CONCRETE POST CAP DETAIL

SCALE : 1:10
0mm 100 200 300 400 500 600 700 800 900 1000mm

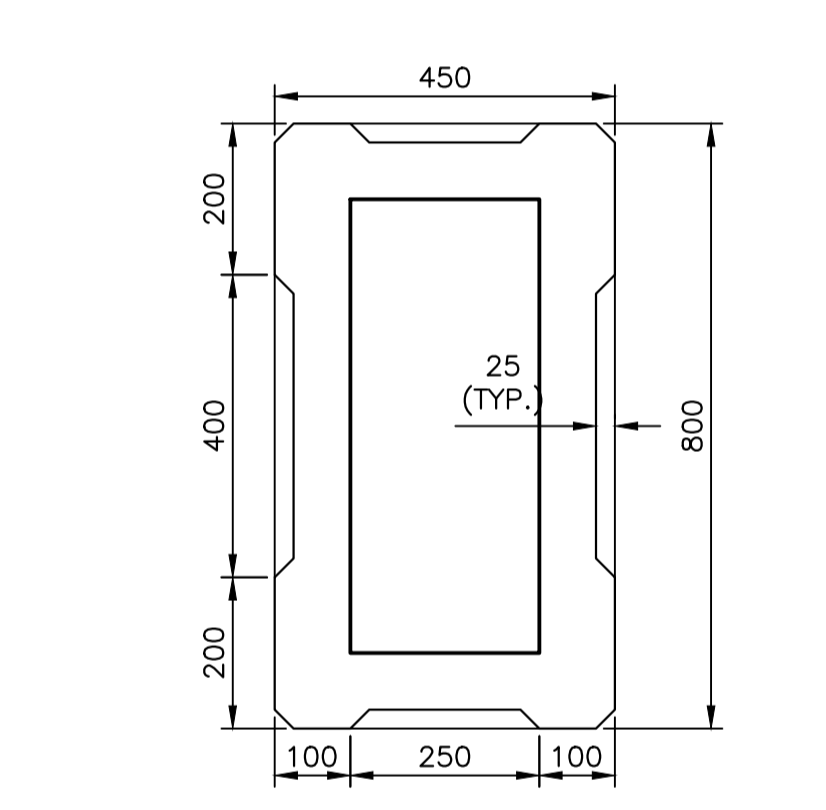
PLAQUE NOTES:

- DIGITAL FILE OF LOGO TO BE PROVIDED BY PARKS CANADA.
- PLAQUE TO BE FABRICATED FROM STAINLESS STEEL PLATE TO ASTM A240 - TYPE 316L.
- STAINLESS STEEL THREADED RODS TO ASTM F593 - TYPE 316L.
- ALL WELDING IN ACCORDANCE WITH CSA STANDARD W59 LATEST EDITION.
- HOLES IN PILASTER FOR THREADED ROD ANCHORS SHALL BE DRILLED AND CLEANED AS PER THE CHEMICAL ADHESIVE MANUFACTURER'S RECOMMENDATIONS.
- CARE SHALL BE TAKEN WHEN DRILLING HOLES IN PILASTER TO ENSURE THE HOLE LOCATIONS ON THE PILASTER MATCH THE AS-BUILT PLAQUE THREADED RODS TO ENSURE CONNECTED PLAQUE IS ORIENTATED ON PILASTER AS SHOWN IN DETAIL 1/S22.
- PROVIDE CLEAR CAULKING AROUND PERIMETER OF PLAQUE AFTER INSTALLATION.



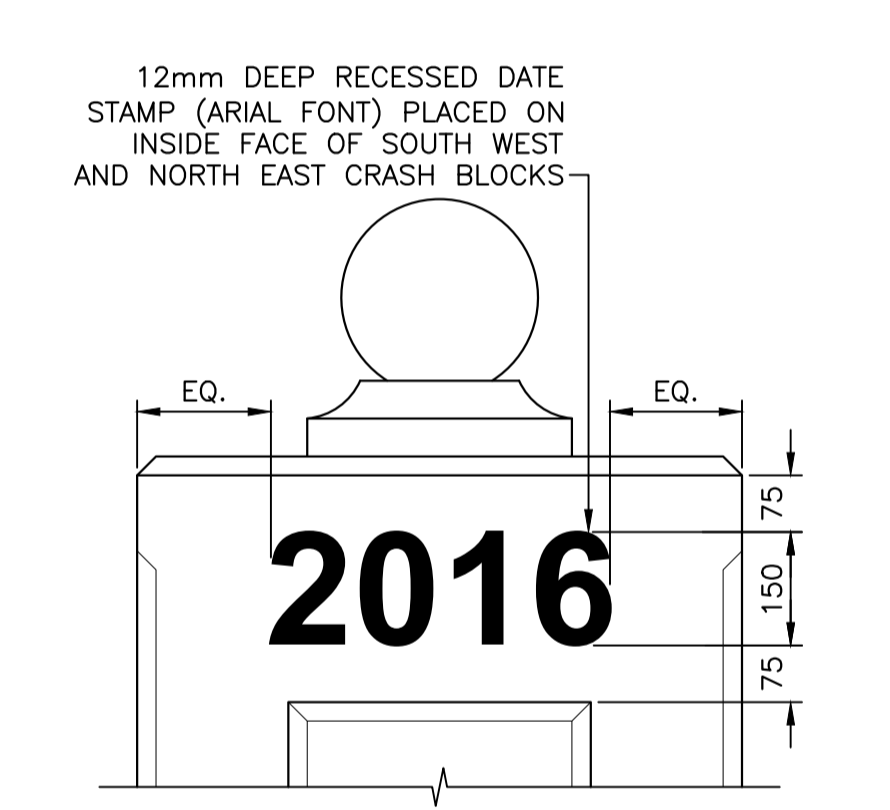
DECORATIVE PLAQUE DETAIL

SCALE: 1:5
0mm 100mm 200mm 300mm 400mm 500mm



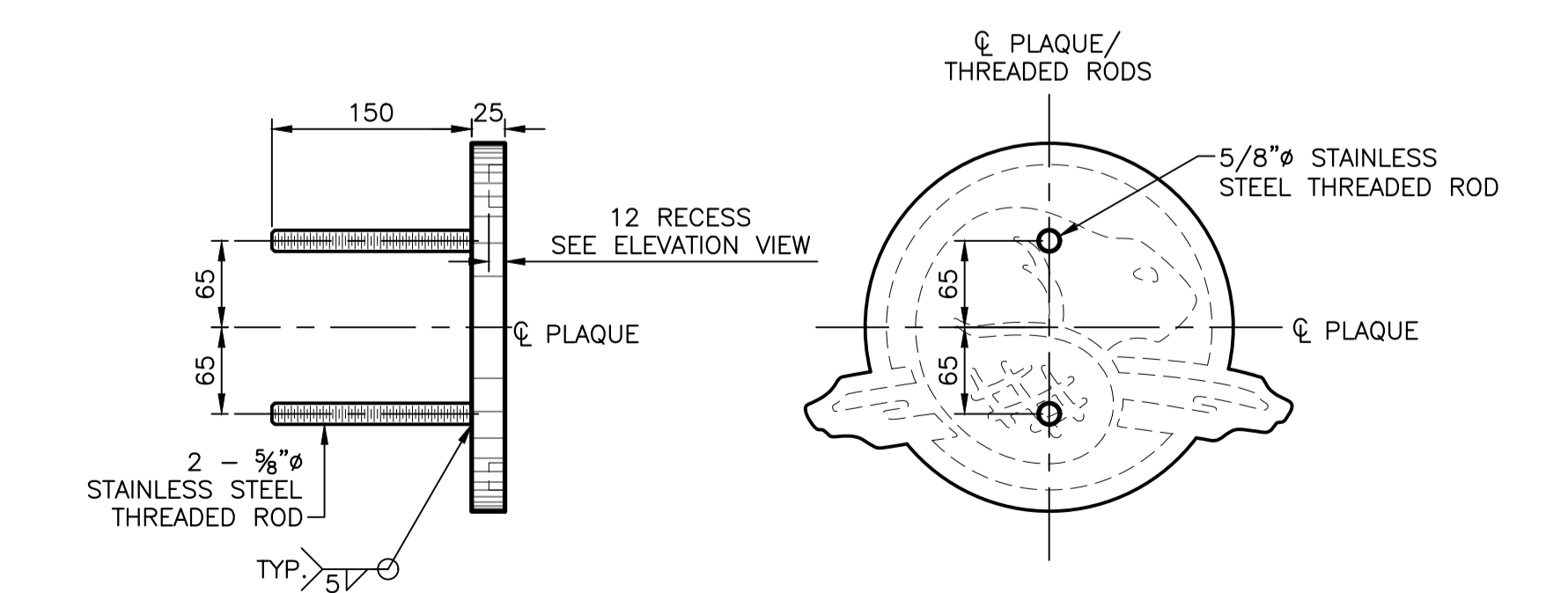
SECTION

SCALE : 1:10
0mm 100 200 300 400 500 600 700 800 900 1000mm



DATE STAMP REVEAL DETAIL

SCALE : 1:10
0mm 100 200 300 400 500 600 700 800 900 1000mm



THREADED ROD CONNECTION DETAIL

SCALE: 1:5
0mm 100mm 200mm 300mm 400mm 500mm

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NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

drawing

CRASH BLOCK DETAILS

designed VIDYA LIMAYE

date

drawn MATT MACLEOD

date SEP. 30, 2015

approved VIDYA LIMAYE

date

Tender Administrator de Projets

Parcs Canada Project Manager

project number

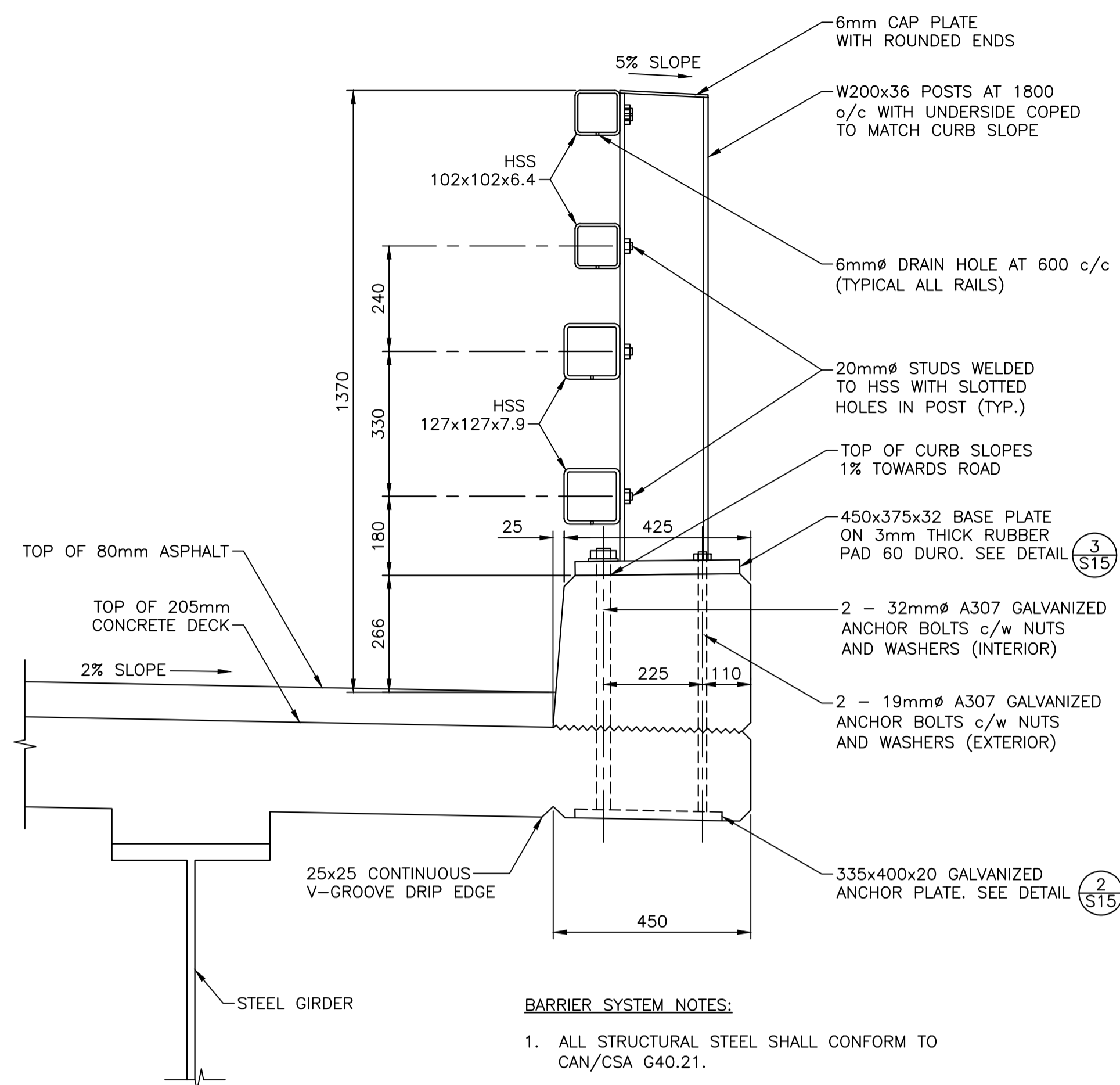
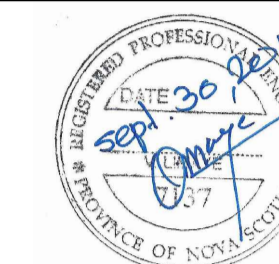
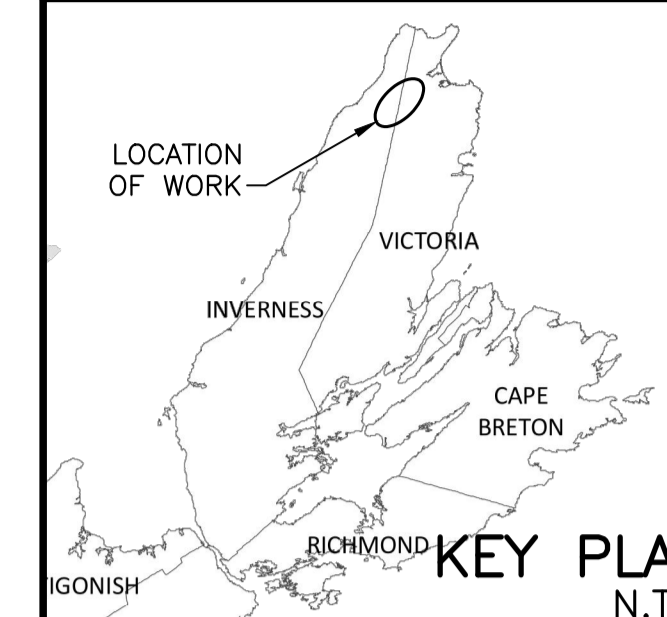
no. du projet

324

drawing no.

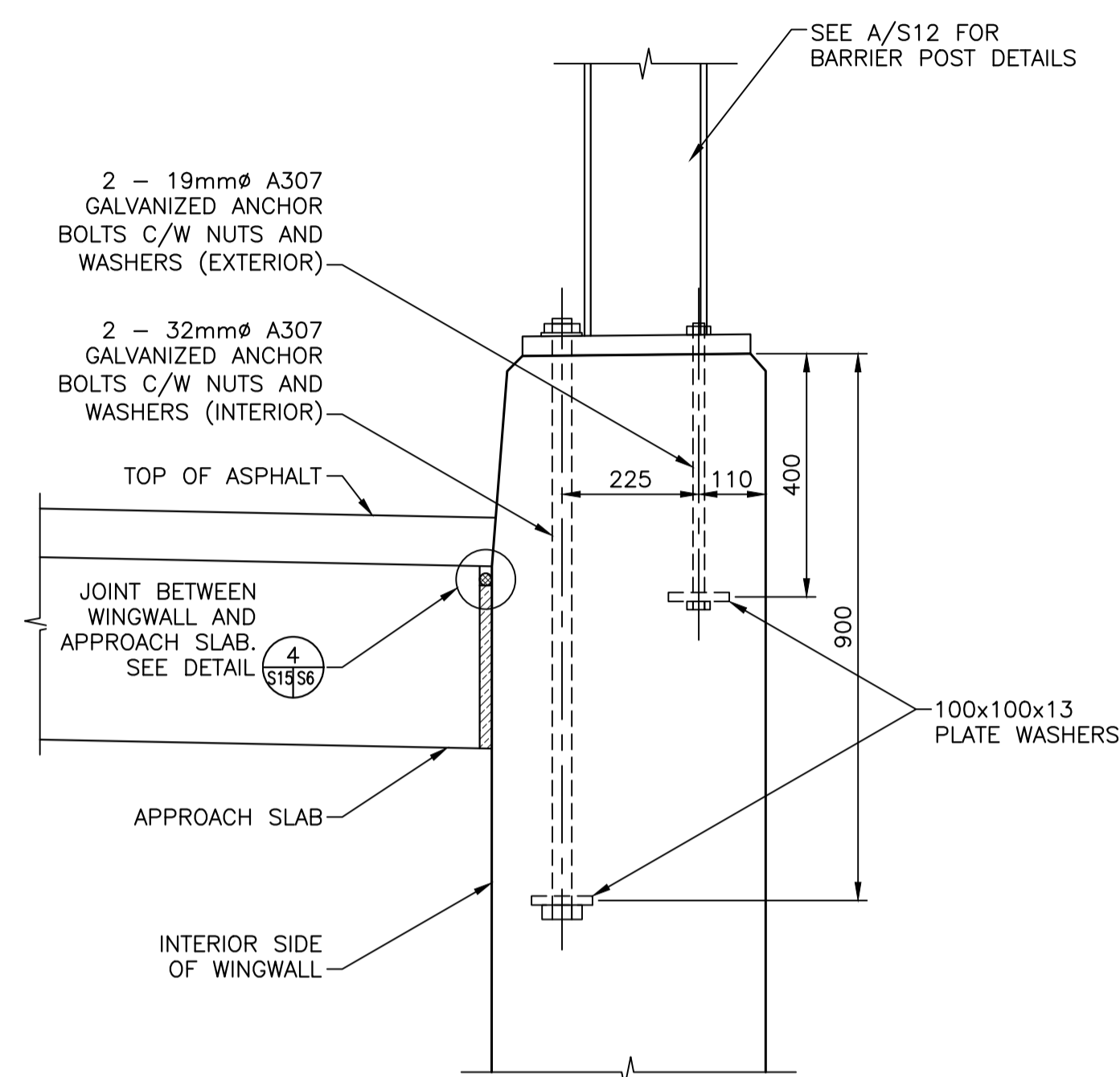
no. du dessin

S-14

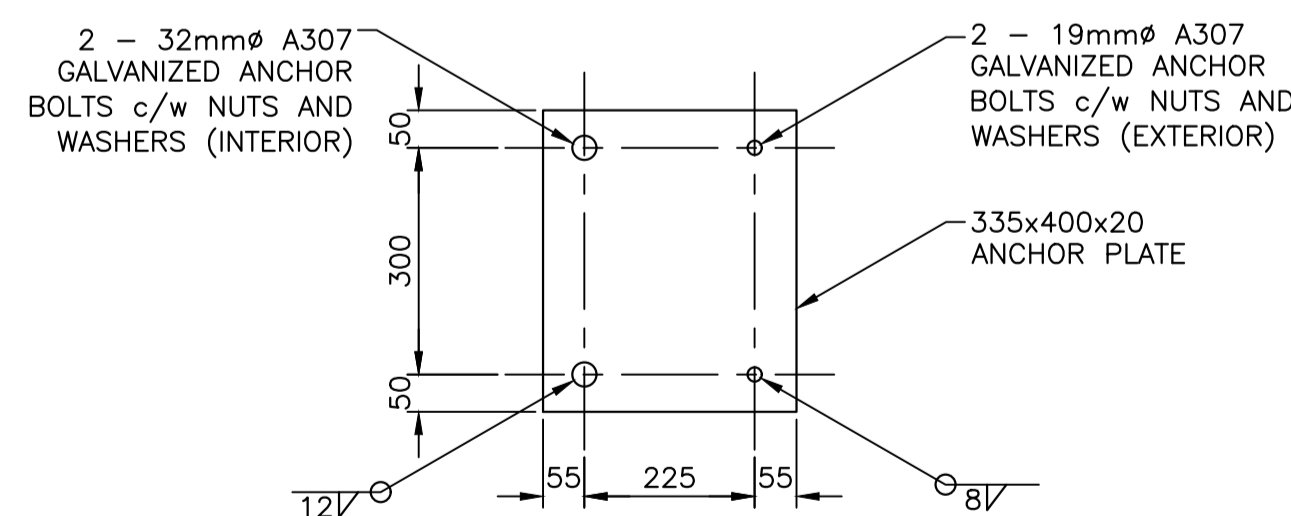


- BARRIER SYSTEM NOTES:**
1. ALL STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.21.
 2. ALL ASSEMBLIES (RAILS, POSTS, HARDWARE, ETC.) TO BE GALVANIZED TO G164 AFTER FABRICATION.

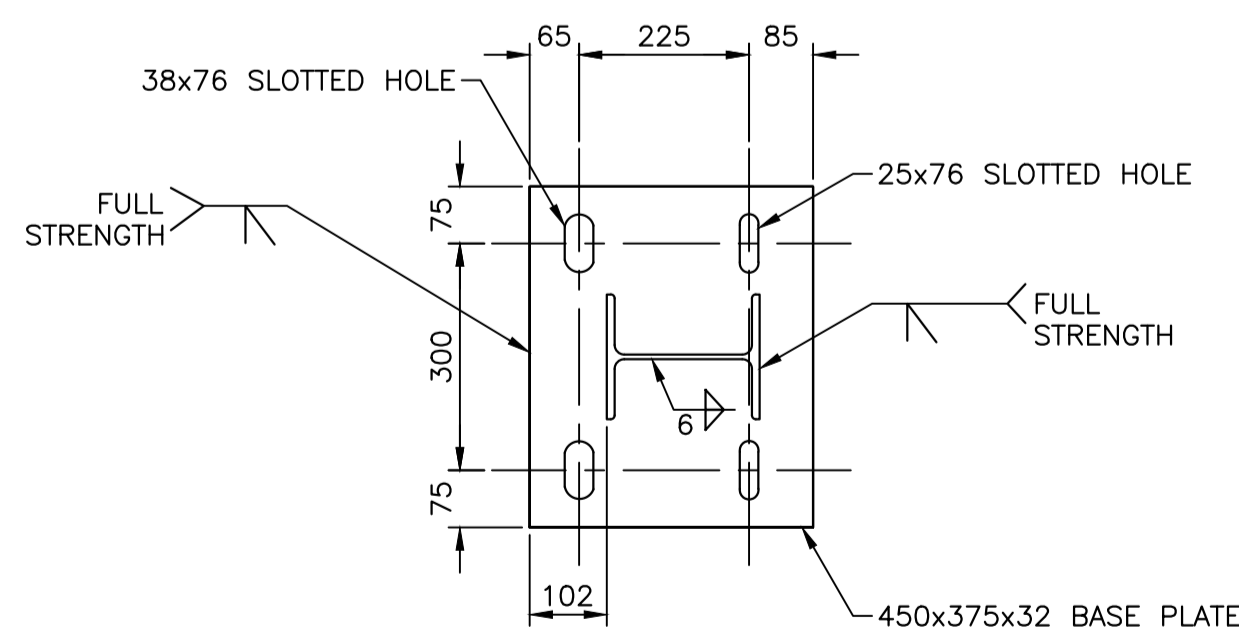
TYPICAL BARRIER SECTION (A) S14/S15
SCALE : 1:10



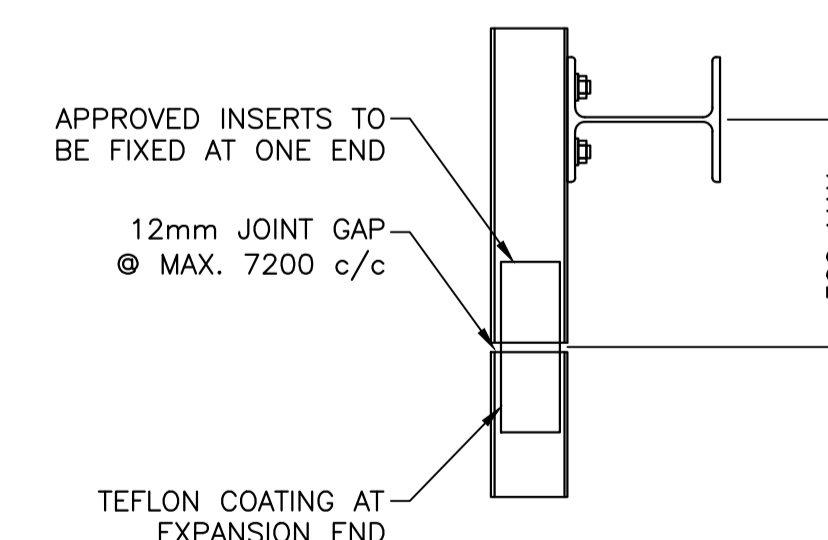
BARRIER POST ANCHORAGE AT ABUTMENT WINGWALL (1) S8/S15
SCALE : 1:10



CAST-IN ANCHOR PLATE DETAIL (2) S15
SCALE : 1:10



POST BASE PLATE DETAIL (3) S15
SCALE : 1:10



BARRIER RAILS CONNECTION DETAIL (4) S15
SCALE : 1:10

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project

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

BARRIER SYSTEM DETAILS

designed VIDYA LIMAYE conçu

date

drawn MATT MACLEOD dessiné

date SEP. 30, 2015

approved VIDYA LIMAYE approuvé

date

Tender Administrator de

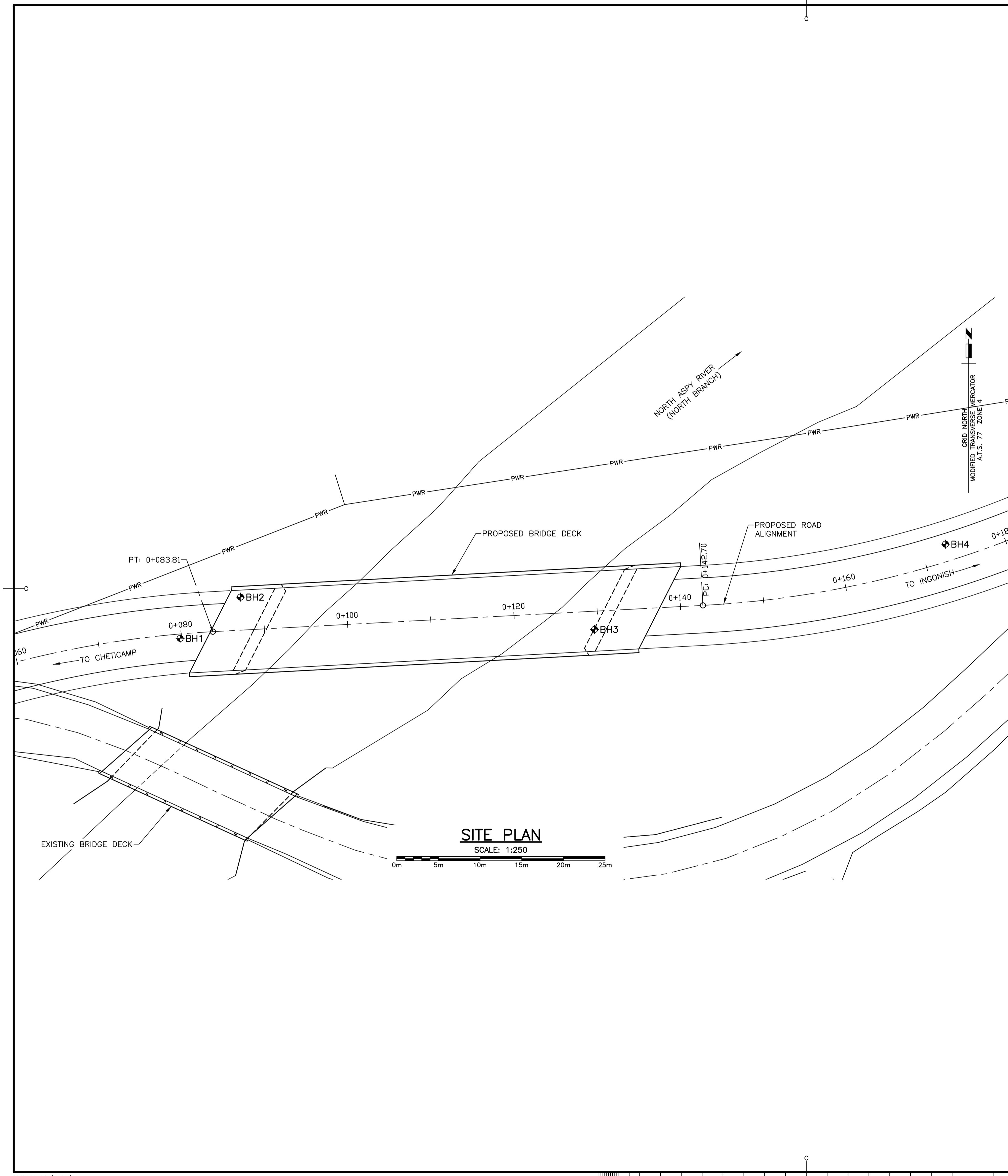
Parcs Canada Project Manager projets Parcs Canada

project number no. du projet

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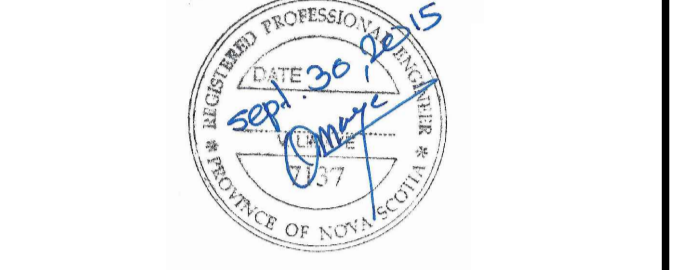
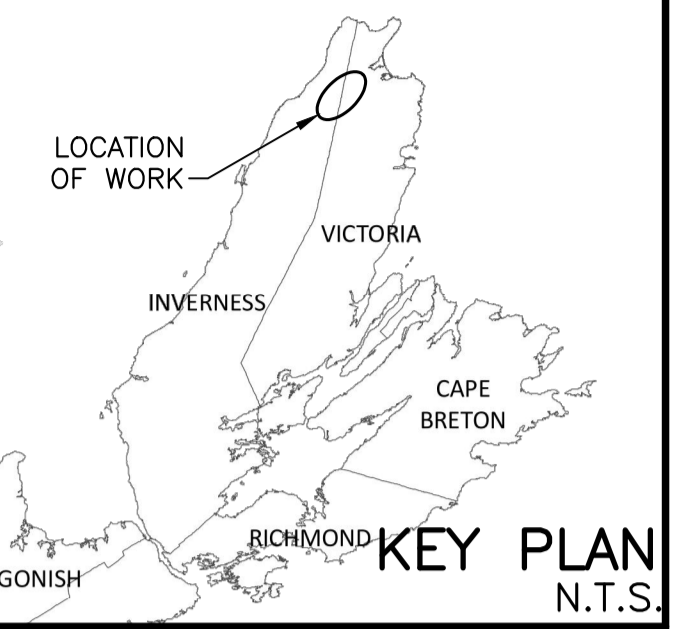
drawing no. no. du dessin

S-15



CE Conquest Engineering Ltd.						BOREHOLE RECORD				
Project Name: North Aspy Bridge Geotechnical Investigation						Borehole No.: 1				
Project No.: 656-001						Page: 1 of 2				
Client: SHM Canada Consulting						Date Drilled: March 12, 2015				
Site Location: Cape Breton, NS						Datum: Geodetic				
Water Level Date: -						Coord. System: -				
Borehole Location: -										
Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)	SPT (N)
0							ROOTMAT	44.8		
0.5		SS	1	150	14		FILL: Compact to very dense reddish brown sand with silt and gravel - some to frequent cobbles	44.5		
1.0		SS	2	200	12					
1.5		SS	3	610	31					
2.0		SS	4	355	32					
2.5		SS	5	355	16					
3.0										
3.5		SS	6	180	62		TILL: Compact to dense reddish brown sand with silt and gravel - trace to some cobbles - some boulders	40.8		
4.0		SS	7	305	64					
4.5		SS	8	180	50					
5.0		SS	9	510	71					
5.5		SS	10	305	78					
6.0										
6.5		NQ	11	510	-					
7.0										
7.5										
8.0										
8.5										
9.0										
9.5										
10.0		NQ	12	0	-					

CE Conquest Engineering Ltd.						BOREHOLE RECORD				
Project Name: North Aspy Bridge Geotechnical Investigation						Borehole No.: 1				
Project No.: 656-001						Page: 2 of 2				
Client: SHM Canada Consulting						Date Drilled: March 12, 2015				
Site Location: Cape Breton, NS						Datum: Geodetic				
Water Level Date: -						Coord. System: -				
Borehole Location: -										
Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)	SPT (N)
11.0		SS	13	200	23					
11.5		SS	14	305	39					
12.0		SS	15	355	45					
12.5		SS	16	250	31					
13.0		SS	17	100	78					
13.5										
14.0										
14.5										
15.0										
15.5										
16.0										
16.5										
17.0										
17.5										
18.0								26.4		
18.5							End of Borehole at 18.4 m - no bedrock encountered			
19.0										
19.5										
20.0								24.8		



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project		projct

NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA

BOREHOLE LOGS
1 OF 2

designed VIDYA LIMAYE	conçu
drawn MATT MACLEOD	dessiné
approved VIDYA LIMAYE	approuvé
Tender Administrator	Soumission
Parks Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet

324

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BOREHOLE RECORD
 Project Name: North Aspy Bridge Geotechnical Investigation
 Project No.: 656-001 Borehole No.: 2
 Client: SHM Canada Consulting Page: 1 of 2
 Site Location: Cape Breton, NS Date Drilled: March 13, 2015
 Water Level Date: - Datum: Geodetic
 Borehole Location: - Coord. System: -

Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)				SPT (N)					
									Wp	Wo	WL	WL	Blows/300mm	Blows/300mm	Blows/300mm	Blows/300mm		
0		SS	1	200	46		ROOTMAT/TOPSOIL FILL: Compact to very dense reddish brown sand with silt and gravel - trace to some cobbles	44.9										
1																		
2		SS	2	405	31													
3		SS	3	305	43													
4		SS	4	610	32		TILL: Compact to very dense reddish brown sand with silt and gravel - trace to some cobbles	40.3										
5		SS	5	280	51													
6		SS	6	250	72													
7		SS	7	100	66													
8		SS	8	280	20													
9		SS	9	280	25													
10		SS	10	200	42													



BOREHOLE RECORD
 Project Name: North Aspy Bridge Geotechnical Investigation
 Project No.: 656-001 Borehole No.: 3
 Client: SHM Canada Consulting Page: 1 of 3
 Site Location: Cape Breton, NS Date Drilled: March 14, 2015
 Water Level Date: - Datum: Geodetic
 Borehole Location: - Coord. System: -

Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)				SPT (N)					
									Wp	Wo	WL	WL	Blows/300mm	Blows/300mm	Blows/300mm	Blows/300mm		
0							ROOTMAT/TOPSOIL SAND: Compact reddish brown to light brown sand with silt and gravel - some cobbles	40.5										
1																		
2		SS	1	305	25													
3		SS	2	305	46													
4		SS	3	300	56													
5		SS	4	300	57													
6		SS	5	330	38													
7		SS	6	330	23													
8		SS	7	280	79													
9		SS	8	280	55													
10		SS	9	280	79													
11		SS	10	150	38													
12		SS	11	205	68													



BOREHOLE RECORD
 Project Name: North Aspy Bridge Geotechnical Investigation
 Project No.: 656-001 Borehole No.: 3
 Client: SHM Canada Consulting Page: 3 of 3
 Site Location: Cape Breton, NS Date Drilled: March 14, 2015
 Water Level Date: - Datum: Geodetic
 Borehole Location: - Coord. System: -

Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)				SPT (N)					
									Wp	Wo	WL	WL	Blows/300mm	Blows/300mm	Blows/300mm	Blows/300mm		
0		SS	24	150	18		End of Borehole at 20.4 m - no bedrock encountered	20.1										
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		



BOREHOLE RECORD
 Project Name: North Aspy Bridge Geotechnical Investigation
 Project No.: 656-001 Borehole No.: 2
 Client: SHM Canada Consulting Page: 2 of 2
 Site Location: Cape Breton, NS Date Drilled: March 13, 2015
 Water Level Date: - Datum: Geodetic
 Borehole Location: - Coord. System: -

Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)				SPT (N)					
									Wp	Wo	WL	WL	Blows/300mm	Blows/300mm	Blows/300mm	Blows/300mm		
11		SS	11	180	46													
12		SS	12	455	35													
13		SS	13	150	67													
14		SS	14	255	26													
15		SS	15	200	78													
16		SS	16	200	58													
17		SS	17	0	61													
18							End of Borehole at 14.9 m - no bedrock encountered	30.0										
19																		
20								24.9										



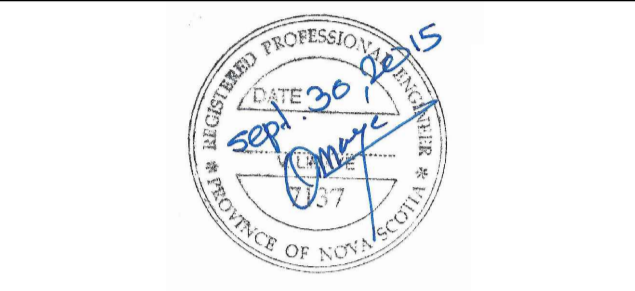
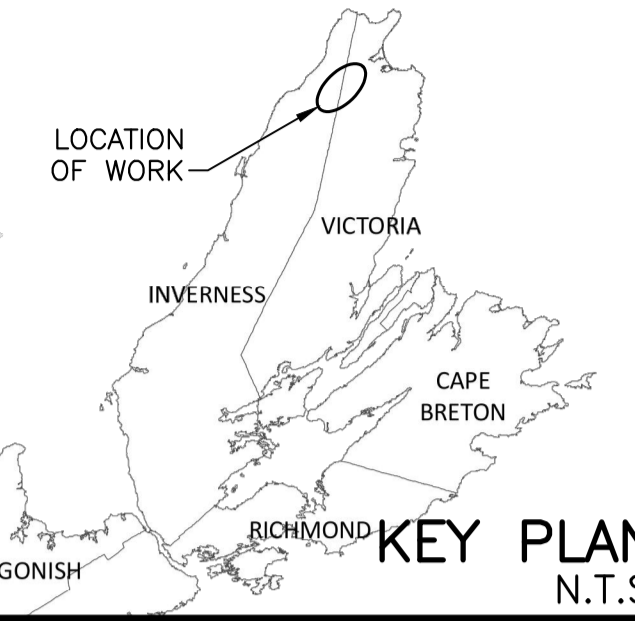
BOREHOLE RECORD
 Project Name: North Aspy Bridge Geotechnical Investigation
 Project No.: 656-001 Borehole No.: 3
 Client: SHM Canada Consulting Page: 2 of 3
 Site Location: Cape Breton, NS Date Drilled: March 14, 2015
 Water Level Date: - Datum: Geodetic
 Borehole Location: - Coord. System: -

Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)				SPT (N)					
									Wp	Wo	WL	WL	Blows/300mm	Blows/300mm	Blows/300mm	Blows/300mm		
11		SS	12	330	63													
12		SS	13	230	36													
13		SS	14	255	28													
14		SS	15	330	81													
15		SS	16	100	13													
16		SS	17	510	10													
17		SS	18	355	23													
18		SS	19	0	17													
19		SS	20	150	15													
20		SS	21	25	14													
21		SS	22	75	28													
22		SS	23	150	17													
23		SS	24	180	18													



BOREHOLE RECORD
 Project Name: North Aspy Bridge Geotechnical Investigation
 Project No.: 656-001 Borehole No.: 4
 Client: SHM Canada Consulting Page: 1 of 1
 Site Location: Cape Breton, NS Date Drilled: March 15, 2015
 Water Level Date: - Datum: Geodetic
 Borehole Location: - Coord. System: -

Depth (m)	Water Level (m)	Sample Type	Sample Number	Recovery (mm)	N Value or RQD %	Symbols	SOIL AND/OR ROCK DESCRIPTION	Elevation (m)	Moisture Content (%)				SPT (N)					
									Wp	Wo	WL	WL	Blows/300mm	Blows/300mm	Blows/300mm	Blows/300mm		
0							ROOTMAT/TOPSOIL	40.9										
1		SS	1	200	32		TILL: Compact to dense reddish brown sand with silt and gravel - trace to some cobbles	40.6										
2		SS	2	150	27													
3		SS	3	150	42													
4		SS	4	250	32													
5		SS	5	300	40													
6		SS	6	150	48													
7							End of Borehole at 4.3 m - no bedrock encountered	36.6										
8																		
9																		
10								30.9										



0	ISSUED FOR TENDER	09/30 2015
revisions		date
project		projct

**NORTH ASPY RIVER (NORTH) BRIDGE REPLACEMENT
 CAPE BRETON HIGHLANDS NATIONAL PARK, NOVA SCOTIA**

**BOREHOLE LOGS
 2 OF 2**

designed VIDYA LIMAYE	conçu
date	
drawn MATT MACLEOD	dessiné
date AUG. 11, 2015	
approved VIDYA LIMAYE	approuvé
date	
Tender <i>John Wiley</i>	Soumission
Parcs Canada Project Manager	Administrateur de projets Parcs Canada
project number	no. du projet

324

drawing no. no. du dessin