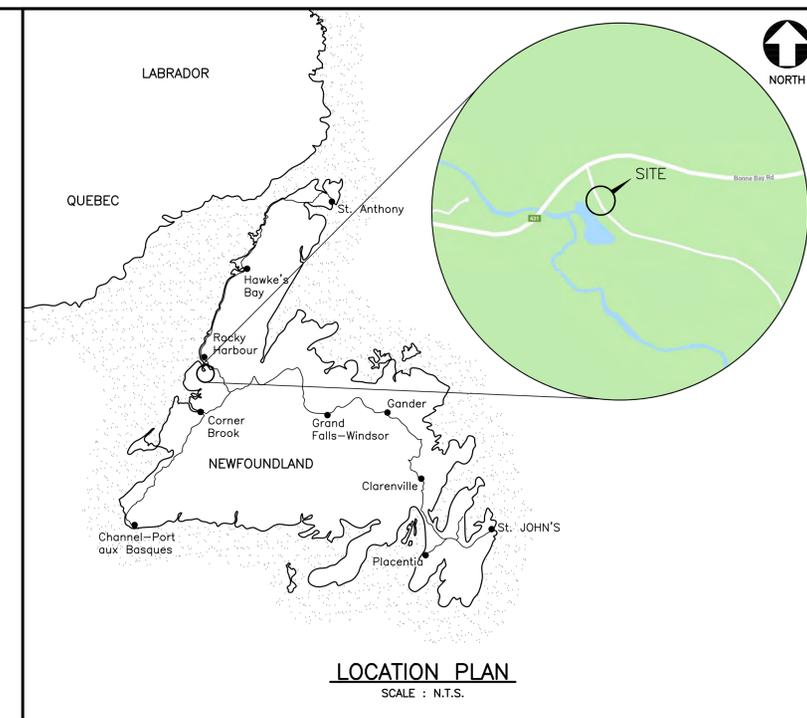




Parcs
Canada

Parks
Canada



MCKENZIES BROOK FOREST ACCESS BRIDGE REPLACEMENT NEWFOUNDLAND AND LABRADOR

DRAWING LIST

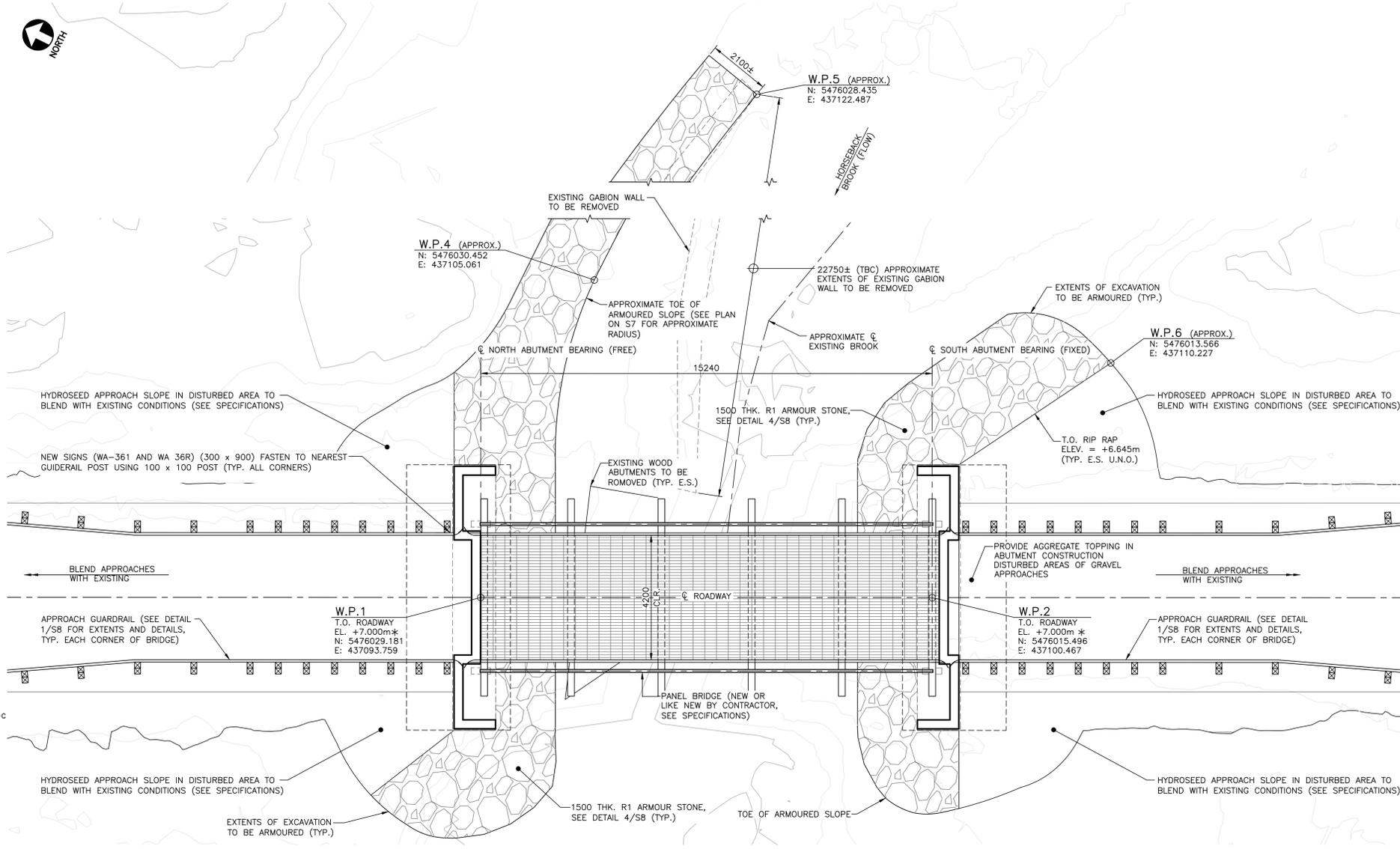
STRUCTURAL

- S1 GENERAL ARRANGEMENT PLAN AND PROFILE
- S2 BRIDGE ELEVATIONS (EAST AND WEST)
- S3 NORTH ABUTMENT PLAN AND SECTIONS
- S4 SOUTH ABUTMENT PLAN AND SECTIONS
- S5 MISCELLANEOUS DETAILS
- S6 REINFORCING SECTIONS AND DETAILS
- S7 CIVIL PLAN AND SECTIONS
- S8 CIVIL DETAILS

PROJECT NO. 1955

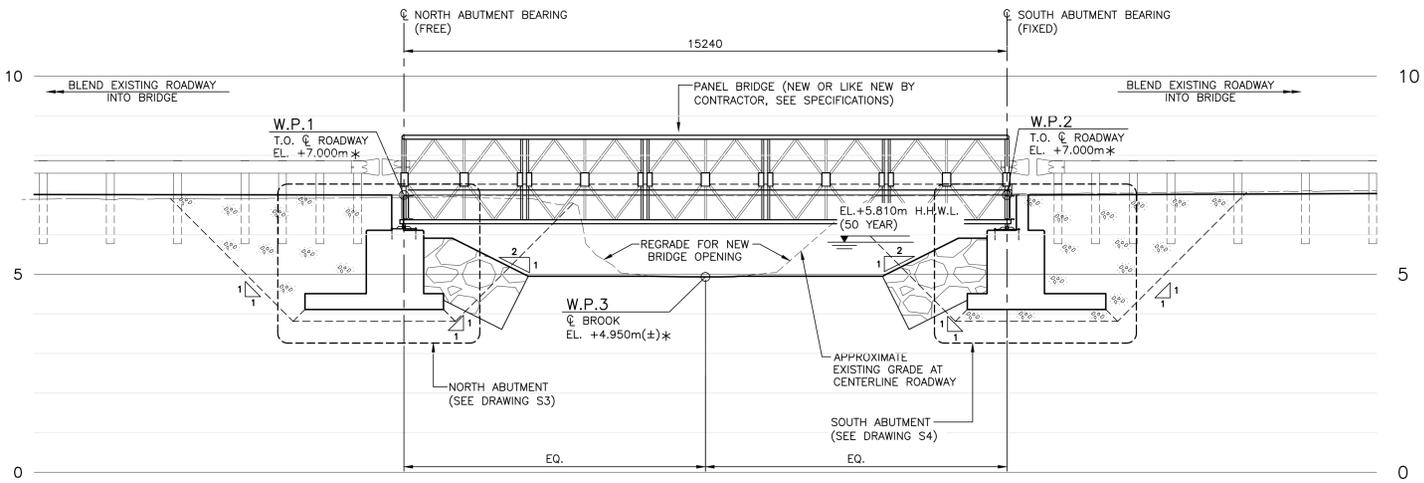


Canada



PLAN - GENERAL ARRANGEMENT

SCALE : 1:75



PROFILE AT CENTERLINE BRIDGE

SCALE : 1:75

GENERAL NOTES:

- GENERAL REQUIREMENTS GOVERNING DESIGN, MATERIALS, AND CONSTRUCTION ARE AS FOLLOWS:
 - LOADING AND GENERAL DESIGN TO CAN/CSA-S6-14, WITH LATEST REVISIONS, LIVE LOAD CL-625
 - CONCRETE MATERIALS AND METHODS OF CONSTRUCTION TO CAN/CSA-A23.1 AND METHODS FOR TEST FOR CONCRETE TO CAN/CSA-A23.2.
- ALL DIMENSIONS SHOWN IN MILLIMETRES. ELEVATIONS SHOWN IN METERS AND ARE TO CANADIAN GEODETIC DATUM NAD 83 (UNO). COORDINATES TO CVSD 2013. ALLEXISTING INFORMATION IS BASED ON LIDER DATA PROVIDED BY LEADING EDGE GEOMATICS.
- ALL STANDARDS AND SPECIFICATION NOTES TO REFLECT THE "LATEST EDITION", AT TIME OF TENDER.
- TO AVOID SURCHARGING ABUTMENTS DURING CONSTRUCTION, CRANES AND CONSTRUCTION EQUIPMENT (EXCEPT FOR LIGHT COMPACTION) SHALL BE KEPT 3.0m MINIMUM AWAY FROM APPROACH FACE OF ABUTMENT BEAM SEAT.
- FOUNDATION DESIGN BASED ON INFORMATION PROVIDED IN HARBOURSIDE GEOTECHNICAL ENGINEERING REPORT NUMBER 183008, DATED MAY 29, 2018.
- ALIGNMENT BASED ON BEST-FITTING NEW BRIDGE INTO EXISTING ROAD ALIGNMENT. EXISTING ELEVATIONS ARE BASED ON AERIAL BASED LIDAR DATA WHICH HAS INHERENT INACCURACY COMPARED TO TRADITIONAL LAND BASED SURVEY. PRIOR TO INITIATING CONSTRUCTION, CONTRACTOR TO COMPLETE ACCURATE LAND BASED SURVEY OF WP1, WP2 AND WP3 (EXISTING ELEVATION) IN THE COORDINATE SYSTEM NOTED ABOVE IN NOTE 2 AND PROVIDE TO THE DEPARTMENTAL REPRESENTATIVE FOR CONSIDERATION PRIOR TO PROCEEDING WITH WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY ROAD MAINTENANCE, NECESSARY TO SAFELY ACCESS THE SITE DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE DURING THE TENDER PERIOD AND DETERMINE THE MAINTENANCE WORK NECESSARY TO ACCESS BOTH SIDES OF THE BROOK WITH ALL NECESSARY EQUIPMENT. IN ADDITION, THE CONTRACTOR SHALL CONDUCT ALL WORK IN CONFORMANCE WITH THE ENVIRONMENTAL REQUIREMENTS OF THE PROJECT. REFERENCE THE PROJECT SPECIFICATIONS FOR FURTHER DETAILS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL ENVIRONMENTAL CONTROLS FOR THE PROJECT. THE CONTRACTOR'S ENVIRONMENTAL MITIGATION PLANS SHALL BE SUBMITTED FOR APPROVAL TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO CONSTRUCTION. ALL APPROVED ENVIRONMENTAL CONTROLS SHALL BE MAINTAINED IN GOOD WORKING CONDITION THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, SUPPLY, TRANSPORTATION AND ERECTION OF THE PANEL BRIDGE SUPERSTRUCTURE. THE PANEL BRIDGE SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CONTRACT DOCUMENTS AND SHALL BE NEW, OR LIKE NEW CONDITION. NO DAMAGED OR WORN COMPONENTS WILL BE ACCEPTED IN THE FINAL CONSTRUCTED WORKS. REFERENCE THE PROJECT SPECIFICATIONS FOR FURTHER DETAILS, INCLUDED IN THIS ITEM IS THE TRUSSES, BRACKING, DECK, BRIDGE BARRIER, EXPANSION JOINT PLATES (IF REQUIRED), BEARINGS AND BEARING ANCHORAGES, AS WELL AS ALL CONNECTIONS NECESSARY TO CONFORM TO THE BRIDGE SUPERSTRUCTURE DESIGN. ALL PANEL BRIDGE STEEL COMPONENTS, INCLUDING BEARINGS AND ANCHOR BOLTS, TO BE HOT-DIPPED GALVANIZED AS PER PROJECT SPECIFICATIONS. THE PANEL BRIDGE DESIGN DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF NEWFOUNDLAND AND LABRADOR.
- THE PANEL BRIDGE GEOMETRIC REQUIREMENTS ARE AS NOTED ON THE DRAWINGS. ANY DISCREPANCIES BETWEEN THE DIMENSIONS ASSUMED FOR DESIGN AND THE AS-BUILT BRIDGE SUPERSTRUCTURE SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO CONSTRUCTION. CONFIRM ALL DIMENSIONS WITH BRIDGE MANUFACTURER PRIOR TO CONSTRUCTION.
- ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DEPARTMENTAL REPRESENTATIVE PRIOR TO PROCEEDING WITH CONSTRUCTION.
- CONSTRUCTION SHALL BE CARRIED OUT AS PER CAN/CSA-S6-14, WITH LATEST REVISIONS.
- ASSUMED SPECIFIED (UNFACTORED) BEARING REACTIONS PER CORNER:
 - LIVE LOAD: 207 kN
 - DEAD LOAD: 37 kN
 - BREAKING LOAD (SOUTH ABUTMENT): 90 kN
 ANY DISCREPANCIES BETWEEN THE ASSUMED AND DESIGN REACTION LOADS SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO CONSTRUCTION.
- WATER CONTROL TO CONSTRUCT ABUTMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. IF WATER CONTROL STRUCTURES ARE REQUIRED, THE DESIGN OF SUCH TEMPORARY STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL DESIGNS SHALL BE STAMPED BY PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF NEWFOUNDLAND AND LABRADOR.

CONCRETE AND REINFORCING NOTES:

- CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS.
 - ABUTMENTS, 45MPa WITH 20mm MAX. AGGREGATE SIZE AND 6% ±1% AIR ENTRAINMENT (AIR VOID SPACING REQUIREMENTS AS PER PROJECT SPECIFICATIONS), MAX. WATER-CEMENT RATIO 0.35.
- CONCRETE COVER TO REINFORCING STEEL AS NOTED ON DRAWINGS.
- REINFORCING STEEL TO BE GRADE 400W DEFORMED BARS AS PER PROJECT SPECIFICATIONS WITH MIN. YIELD STRENGTH OF 400 MPa (WELDABLE). ALL REINFORCING TO BE BLACK (UNCOATED) STEEL.
- BENT REINFORCING BAR TYPES REFER TO R.S.I.C. REINFORCING STEEL MANUAL OF STANDARD PRACTICE TYPICAL BAR BENDS EXCEPT BAR BEND DIAMETERS AS PER PROJECT SPECIFICATIONS (U.N.O.). FIELD BENDING OF BARS NOT PERMITTED.
- BACKFILL IMMEDIATELY BEHIND ABUTMENTS TO BE "FILL AGAINST STRUCTURES" MATERIAL AS PER PROJECT SPECIFICATIONS. EXTENTS AS SHOWN ON THE DRAWINGS.
- LOCATION OF ANCHOR BOLTS FOR TEMPORARY BRIDGE BEARINGS SHALL BE VERIFIED WITH THE TEMPORARY BRIDGE MANUFACTURER. IF CAST IN ANCHORS ARE USED, THE CONTRACTOR SHALL PROVIDE CASTING TEMPLATES TO ACCURATELY POSITION AND HOLD THE BOLT GROUP IN PLACE DURING CASTING. IF DRILLED AND EPOXIED ANCHORS ARE PROVIDED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR POSITIONS PRIOR TO CASTING CONCRETE TO ENSURE NO ABUTMENT REINFORCING IS INTERCEPTED DURING DRILLING OPERATIONS. THE DESIGN OF ALL BRIDGE BEARING ANCHOR BOLT ASSEMBLIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- EACH PHASE OF WORK TO BE INSPECTED BY THE ENGINEER PRIOR TO PROCEEDING TO THE NEXT PHASE OF WORK.
- CONCRETE MATERIALS AND CONSTRUCTION TO CAN/CSA-A23.1, METHODS TEST FOR CONCRETE TO CAN/CSA-A23.2.
- 25 X 25 CHAMFERS SHALL BE PROVIDED AT ALL CORNERS OF C.I.P. CONCRETE.
- LOCATION OF CONSTRUCTION JOINTS AND SEQUENCE OF CONCRETE PLACEMENT TO BE APPROVED BY THE DEPARTMENTAL REPRESENTATIVE.
- ALL CONSTRUCTION JOINTS TO BE INTENTIONALLY ROUGHENED TO 5mm +/- AMPLITUDE, 15mm +/- SPACING AND HAVE LAITANCE REMOVED PRIOR TO CASTING CONCRETE.

MISCELLANEOUS STEEL NOTES:

- ARMOUR ANGLES AND MISCELLANEOUS STEEL TO CAN/CSA-G40.21-350W.
- SHEAR STUD CONNECTORS SHALL BE MANUFACTURED FROM COLD DRAWN STEEL CONFORMING TO ASTM A29, GRADES 1010 TO 1020.
- FABRICATE, DELIVER TO SITE AND ERECT STEELWORK IN ACCORDANCE WITH CAN/CSA-S6-14, WITH LATEST REVISIONS.
- ALL MISCELLANEOUS STEEL TO BE GALVANIZED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- WELDING TO CAN/CSA-W59 (LATEST EDITION).
- HOLES TO BE DRILLED 2mm LARGER THAN BOLT/THREADBAR DIAMETER U.N.O.



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***NOTE:**
SEE NOTE 6.

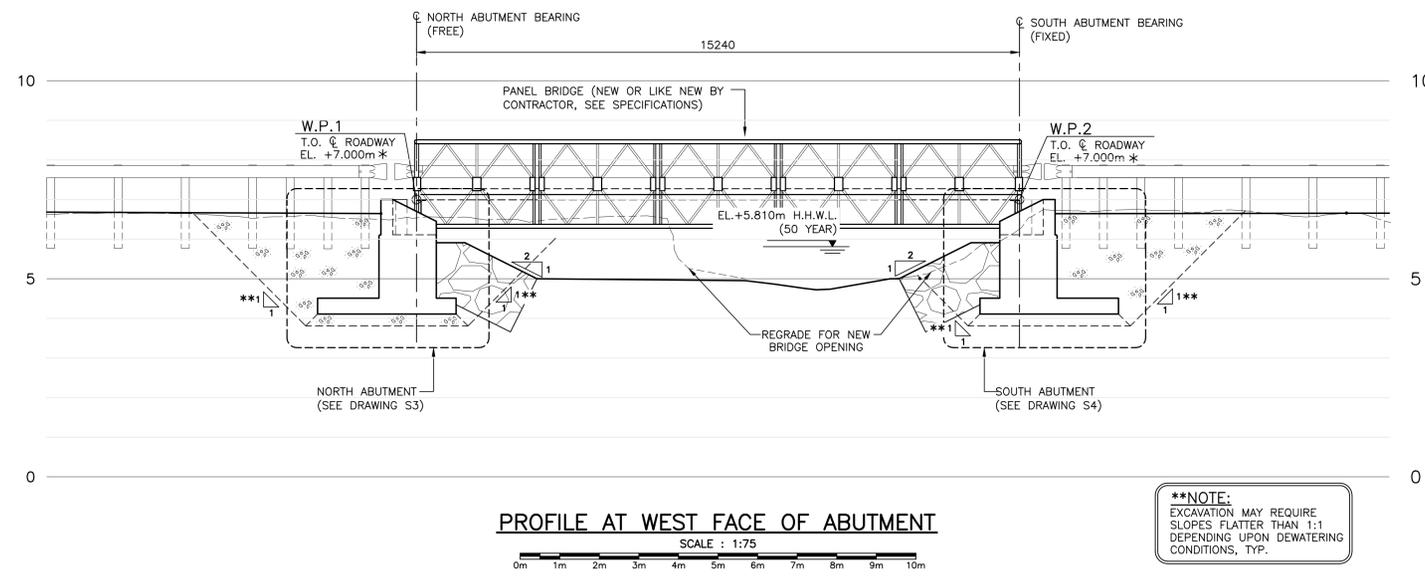
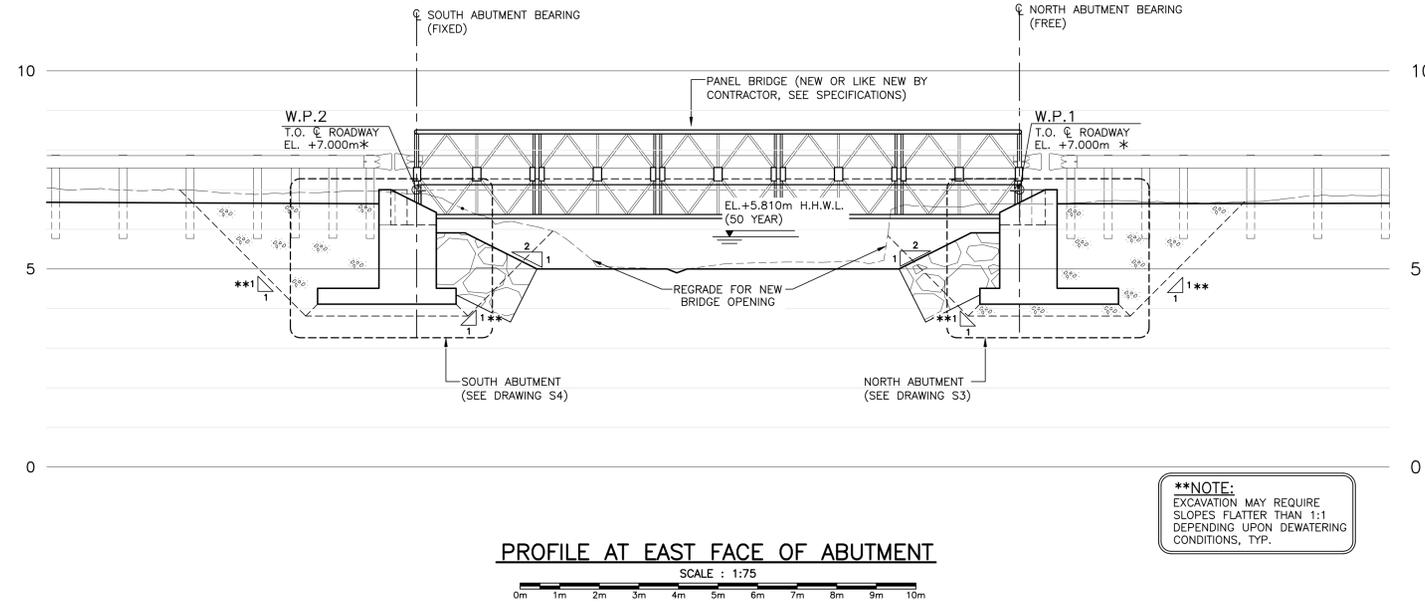
0	ISSUED FOR TENDER	06/13 2018
revisions		date

project
MCKENZIES BROOK FOREST ACCESS BRIDGE REPLACEMENT GROS MORNE NATIONAL PARK
drawing design

GENERAL ARRANGEMENT PLAN AND PROFILE

designed PAUL BURKE	conçu
date MAY 2018	
drawn NICK YOUNG	dessiné
date MAY 2018	
approved ROBBIE FRASER	approuvé
date JUNE 2018	
Tender	Soumission
PWSC Project Manager	Administrateur de projets TPSC
project number	no. du projet
1955	
drawing no.	no. du dessin
S1	

*NOTE:
SEE NOTE 6/S1.



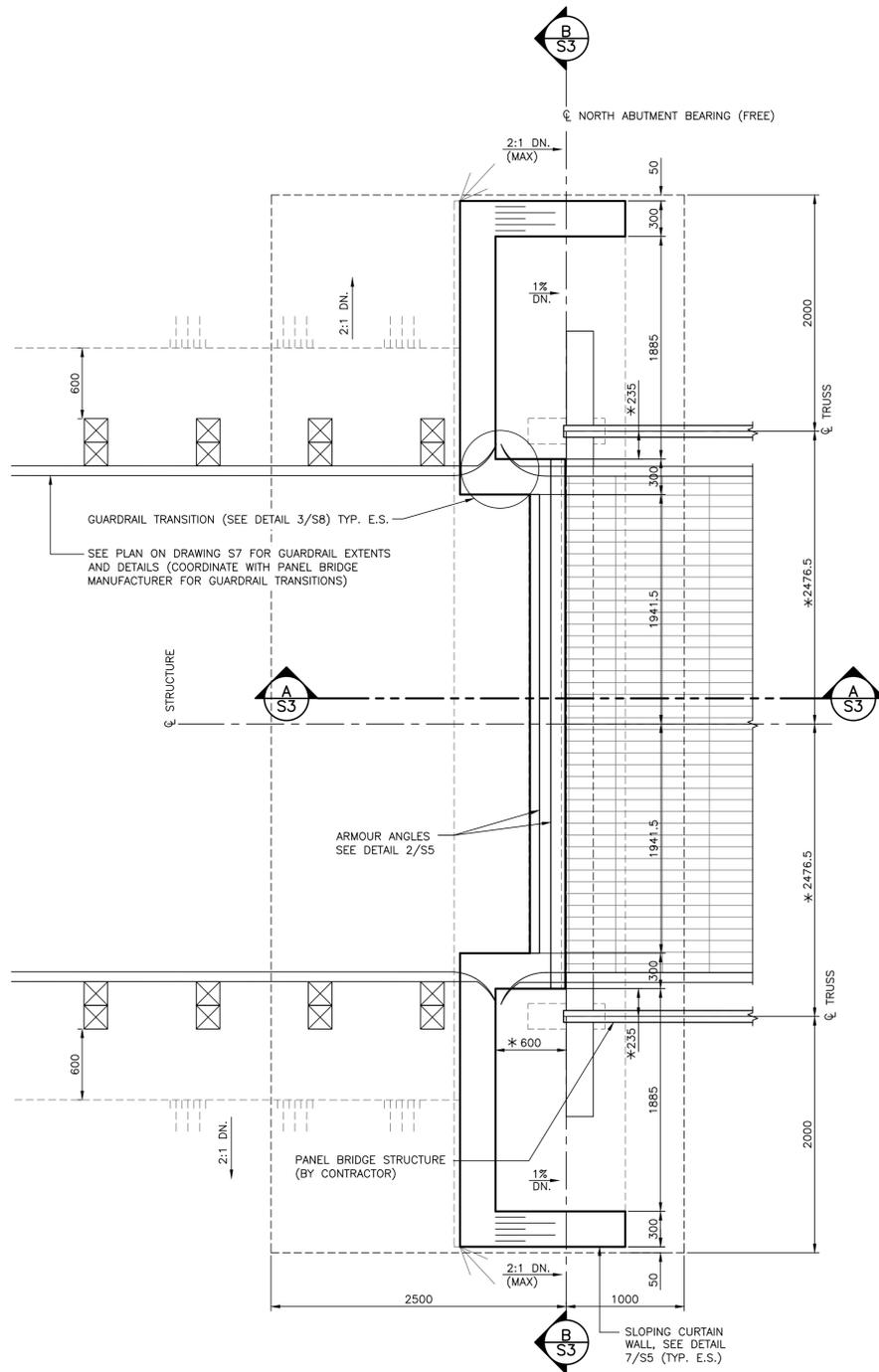
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project
**MCKENZIES BROOK FOREST
ACCESS BRIDGE
REPLACEMENT
GROS MORNE
NATIONAL PARK**

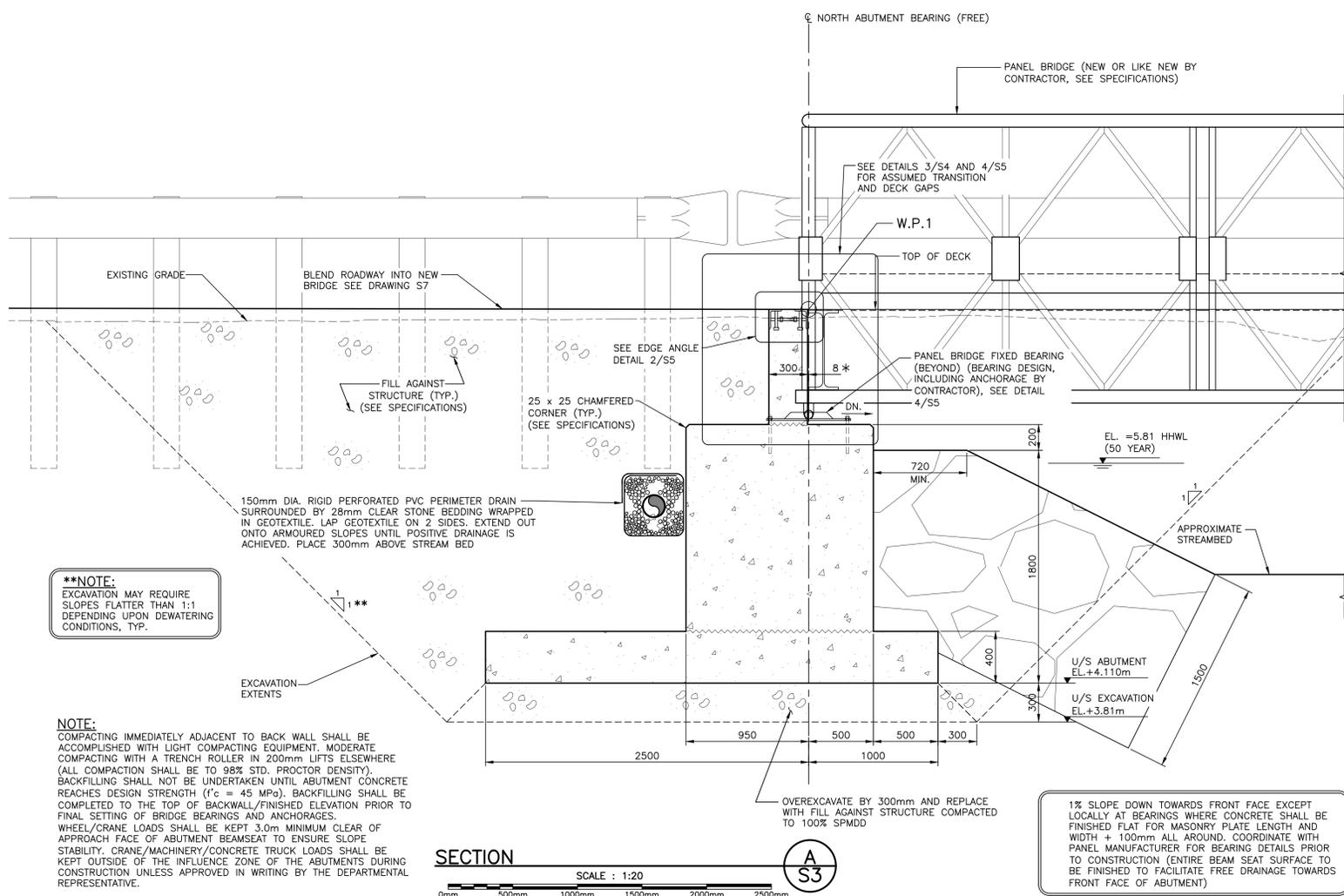
drawing
**BRIDGE ELEVATIONS
(EAST AND WEST)**

designed	PAUL BURKE	conçu
date	FEBRUARY 2018	
drawn	NICK YOUNG	dessiné
date	APRIL 2018	
approved	ROBBIE FRASER	approuvé
date	JUNE 2018	
Tender		Soumission
PWGC Project Manager	Administrateur de projets TPSC	
project number	1955	no. du projet
drawing no.	S2	no. du dessin



PLAN - NORTH ABUTMENT
SCALE : 1:25

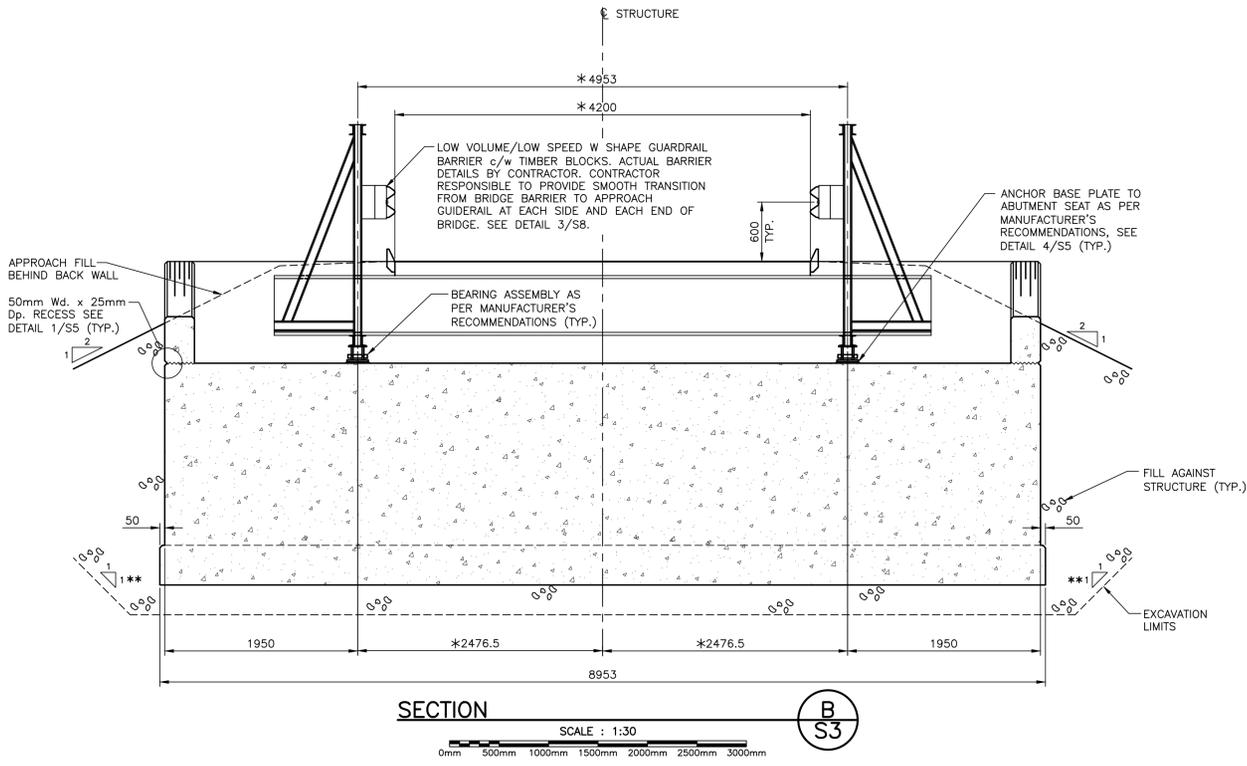
*** DENOTES:**
ASSUMED GEOMETRY FOR ABUTMENT DESIGN. ANY DISCREPANCIES IN AS-BUILT PANEL BRIDGE DIMENSIONS SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO CONSTRUCTION.



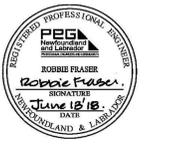
SECTION A-S3
SCALE : 1:20

****NOTE:**
EXCAVATION MAY REQUIRE SLOPES FLATTER THAN 1:1 DEPENDING UPON DEWATERING CONDITIONS, TYP.

NOTE:
COMPACTING IMMEDIATELY ADJACENT TO BACK WALL SHALL BE ACCOMPLISHED WITH LIGHT COMPACTING EQUIPMENT. MODERATE COMPACTING WITH A TRENCH ROLLER IN 200mm LIFTS ELSEWHERE (ALL COMPACTATION SHALL BE TO 98% STD. PROCTOR DENSITY). BACKFILLING SHALL NOT BE UNDERTAKEN UNTIL ABUTMENT CONCRETE REACHES DESIGN STRENGTH ($f_c = 45 \text{ MPa}$). BACKFILLING SHALL BE COMPLETED TO THE TOP OF BACKWALL/FINISHED ELEVATION PRIOR TO FINAL SETTING OF BRIDGE BEARINGS AND ANCHORAGES. WHEEL/CRANE LOADS SHALL BE KEPT 3.0m MINIMUM CLEAR OF APPROACH FACE OF ABUTMENT BEAMSEAT TO ENSURE SLOPE STABILITY. CRANE/MACHINERY/CONCRETE TRUCK LOADS SHALL BE KEPT OUTSIDE OF THE INFLUENCE ZONE OF THE ABUTMENTS DURING CONSTRUCTION UNLESS APPROVED IN WRITING BY THE DEPARTMENTAL REPRESENTATIVE.

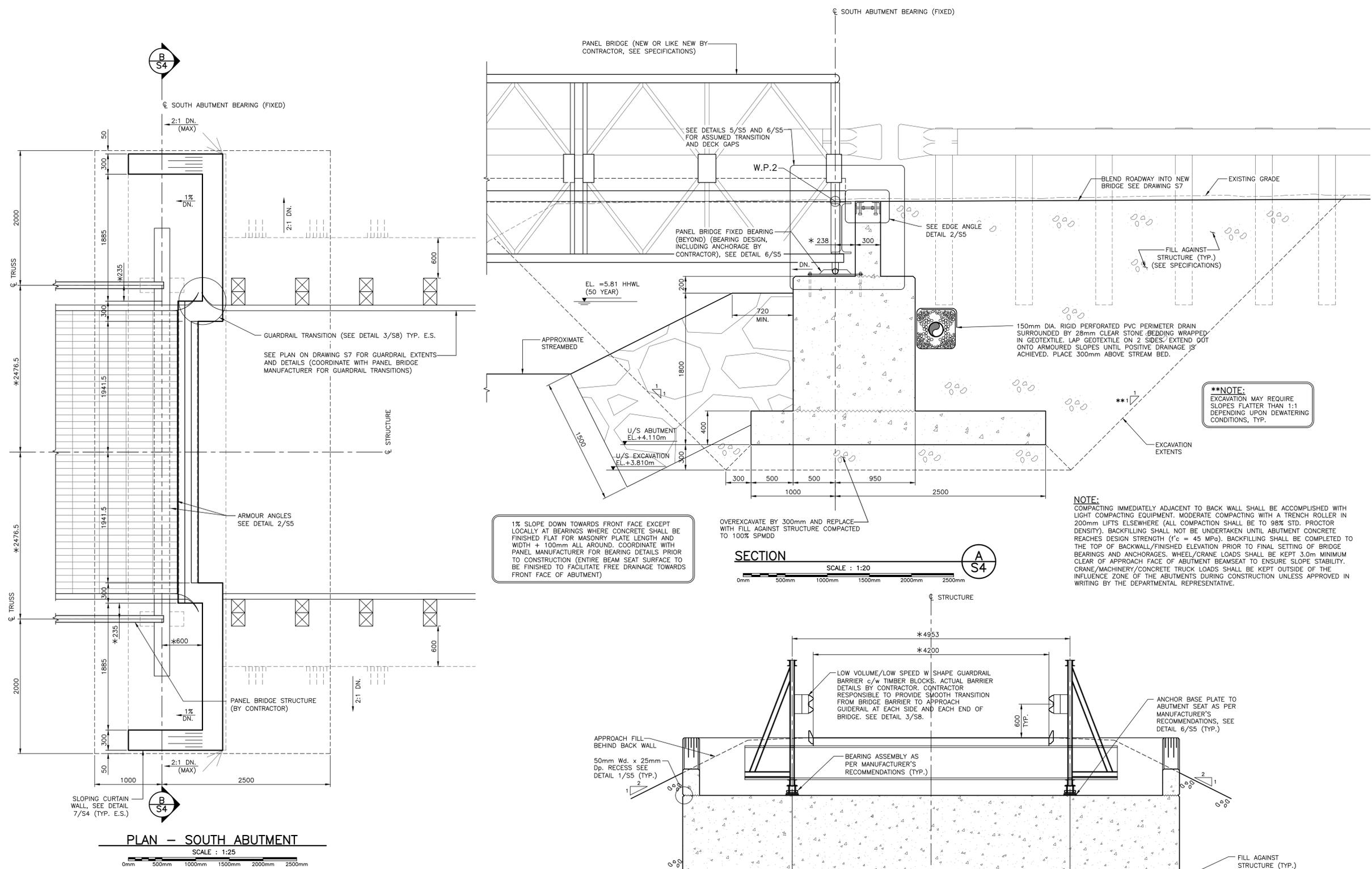


SECTION B-S3
SCALE : 1:30



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0	ISSUED FOR TENDER	06/13/2018
revisions		date
project	MCKENZIES BROOK FOREST ACCESS BRIDGE REPLACEMENT GROS MORNE NATIONAL PARK	
drawing	design	
designed	PAUL BURKE	congr
date	FEBRUARY 2018	
drawn	NICK YOUNG	dessiné
date	APRIL 2018	
approved	ROBBIE FRASER	approuvé
date	JUNE 2018	
Tender	Submission	
PWOSC Project Manager	Administrateur de projets TPSCC	
project number	no. du projet	
	1955	
drawing no.	no. du dessin	
	S3	



*** DENOTES:**
 ASSUMED GEOMETRY FOR ABUTMENT DESIGN. ANY DISCREPANCIES IN AS-BUILT PANEL BRIDGE DIMENSIONS SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO CONSTRUCTION.

NOTE:
 COMPACTING IMMEDIATELY ADJACENT TO BACK WALL SHALL BE ACCOMPLISHED WITH LIGHT COMPACTING EQUIPMENT. MODERATE COMPACTING WITH A TRENCH ROLLER IN 200mm LIFTS ELSEWHERE (ALL COMPACTION SHALL BE TO 98% STD. PROCTOR DENSITY). BACKFILLING SHALL NOT BE UNDERTAKEN UNTIL ABUTMENT CONCRETE REACHES DESIGN STRENGTH ($f'c = 45 \text{ MPa}$). BACKFILLING SHALL BE COMPLETED TO THE TOP OF BACKWALL/FINISHED ELEVATION PRIOR TO FINAL SETTING OF BRIDGE BEARINGS AND ANCHORAGES. WHEEL/CRANE LOADS SHALL BE KEPT 3.0m MINIMUM CLEAR OF APPROACH FACE OF ABUTMENT BEAMSEAT TO ENSURE SLOPE STABILITY. CRANE/MACHINERY/CONCRETE TRUCK LOADS SHALL BE KEPT OUTSIDE OF THE INFLUENCE ZONE OF THE ABUTMENTS DURING CONSTRUCTION UNLESS APPROVED IN WRITING BY THE DEPARTMENTAL REPRESENTATIVE.



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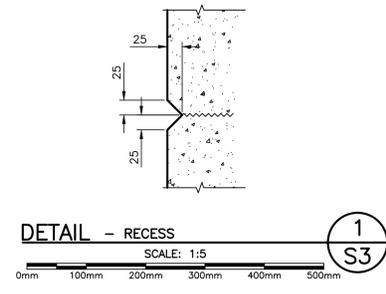
project
MCKENZIE'S BROOK FOREST ACCESS BRIDGE REPLACEMENT GROS MORNE NATIONAL PARK

drawing
SOUTH ABUTMENT PLAN AND SECTIONS

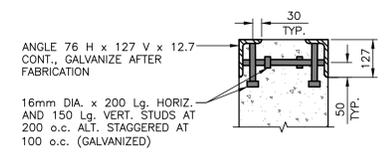
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date	FEBRUARY 2018	
drawn	NICK YOUNG	dessiné
date	APRIL 2018	
approved	ROBBIE FRASER	approuvé
date	JUNE 2018	
Tender		Submission

PWSC Project Manager	Administrateur de projets TPSC
project number	1955
drawing no.	S4

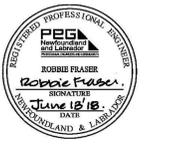
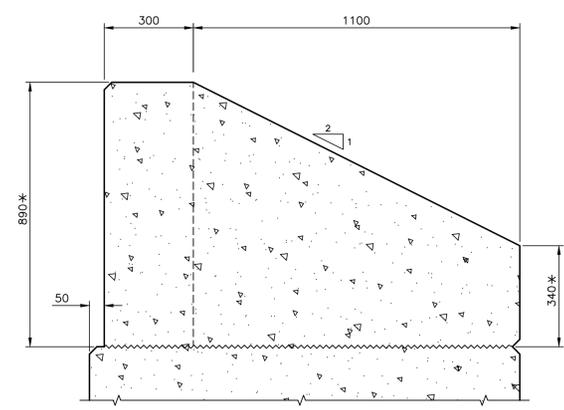
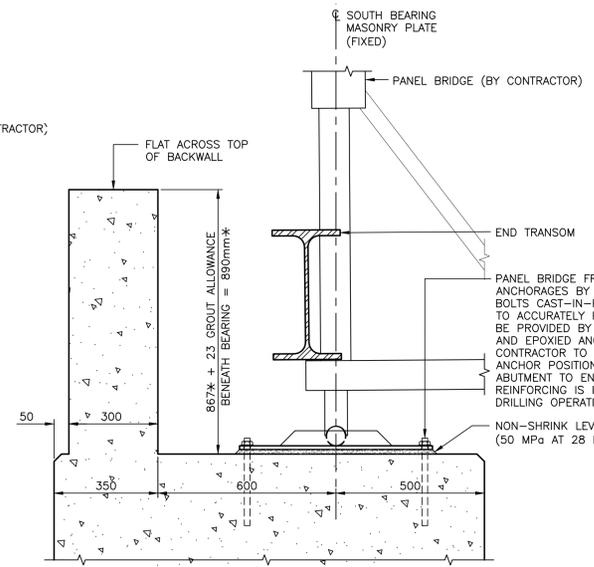
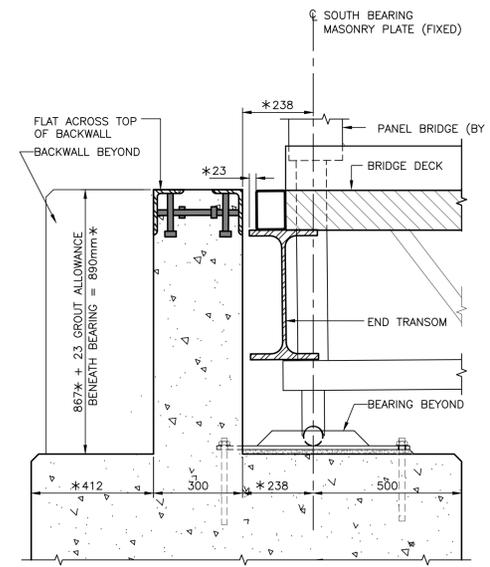
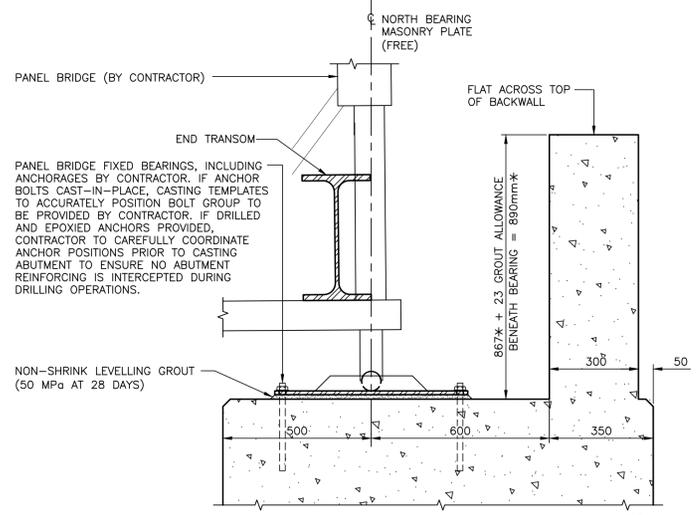
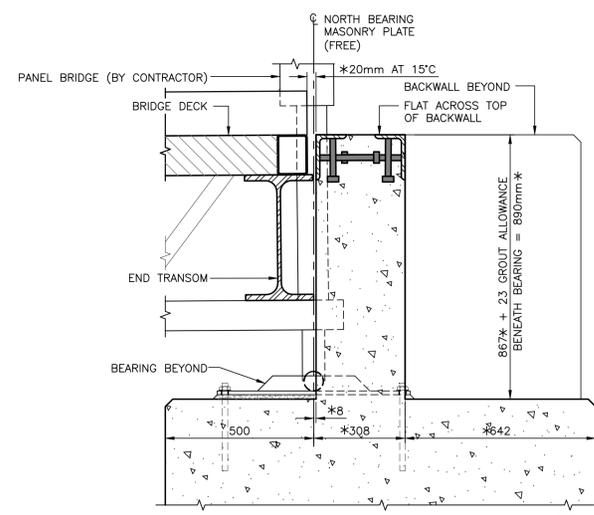
*** DENOTES:**
ASSUMED GEOMETRY FOR ABUTMENT DESIGN. ANY DISCREPANCIES IN AS-BUILT PANEL BRIDGE DIMENSIONS SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO CONSTRUCTION.



NOTE: EDGE ANGLE HORIZONTAL STUDS TO BE STAGGERED RELATIVE TO ADJACENT EDGE ANGLE TO PROVIDE ADEQUATE BOND BETWEEN THE HORIZONTAL STUD AND CONCRETE BACKWALL.



DETAIL
SCALE: 1:10



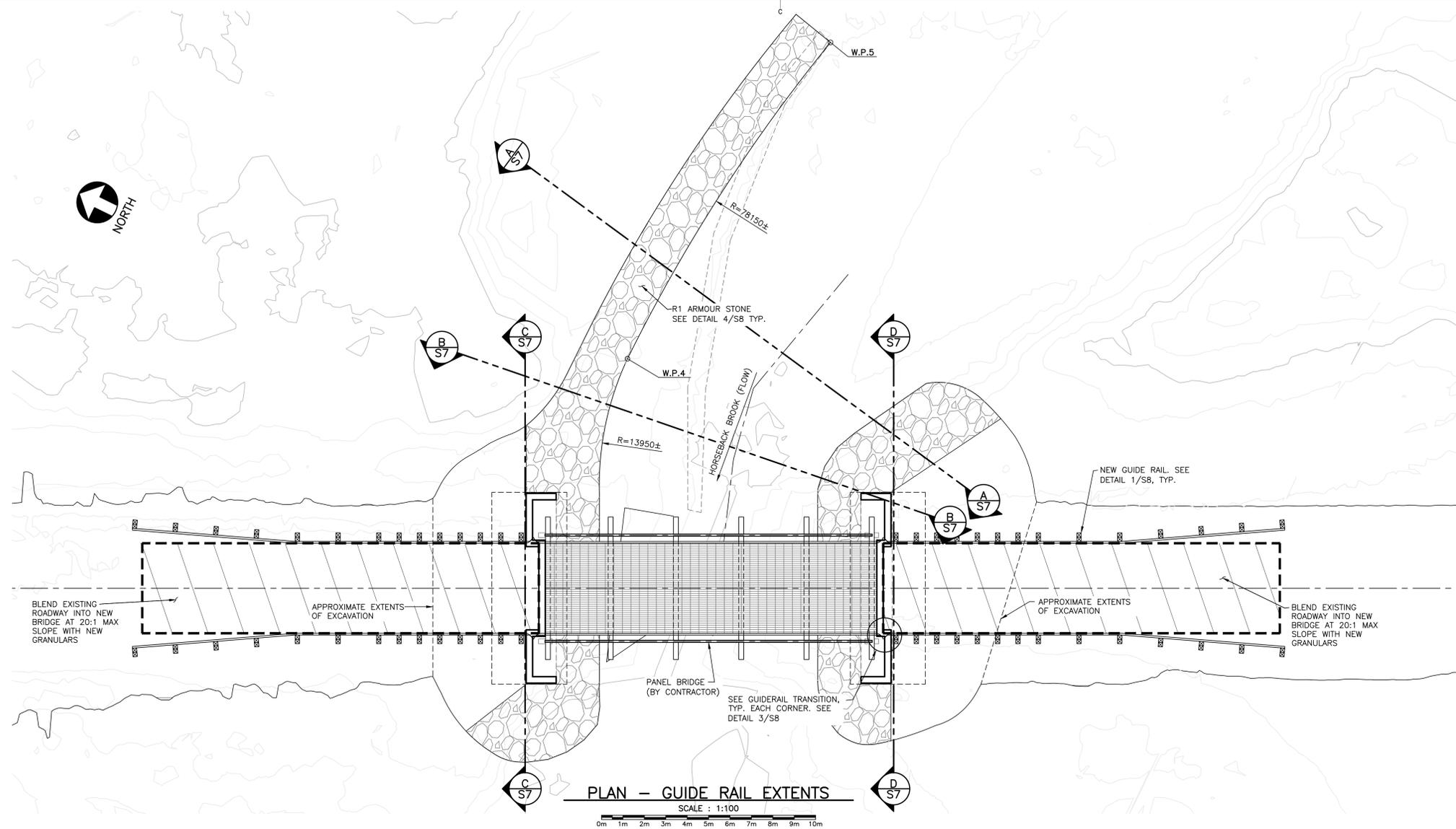
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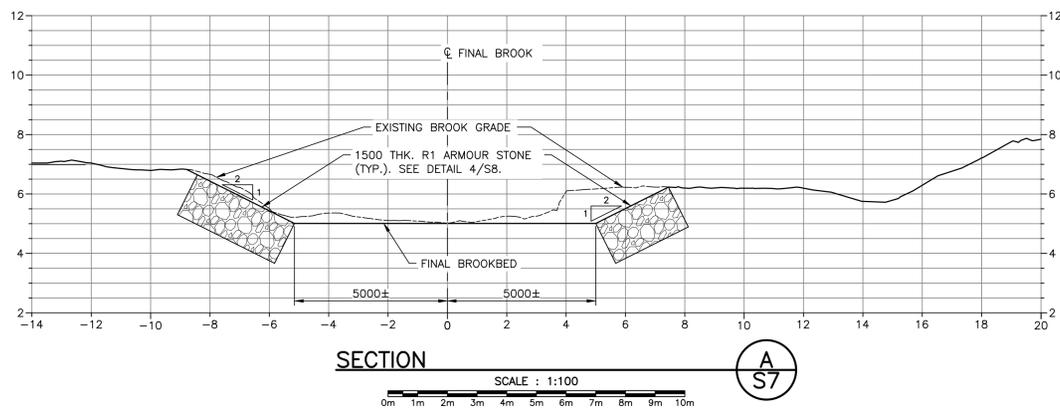
project
MCKENZIES BROOK FOREST ACCESS BRIDGE REPLACEMENT GROS MORNE NATIONAL PARK

designed PAUL BURKE
date FEBRUARY 2018
drawn NICK YOUNG
date APRIL 2018
approved ROBBIE FRASER
date JUNE 2018

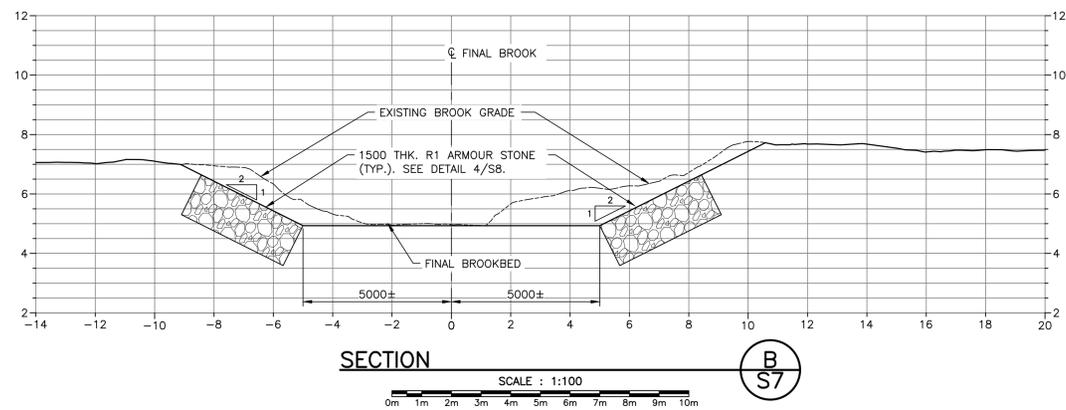
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project number no. du projet
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drawing no. no. du dessin
S5



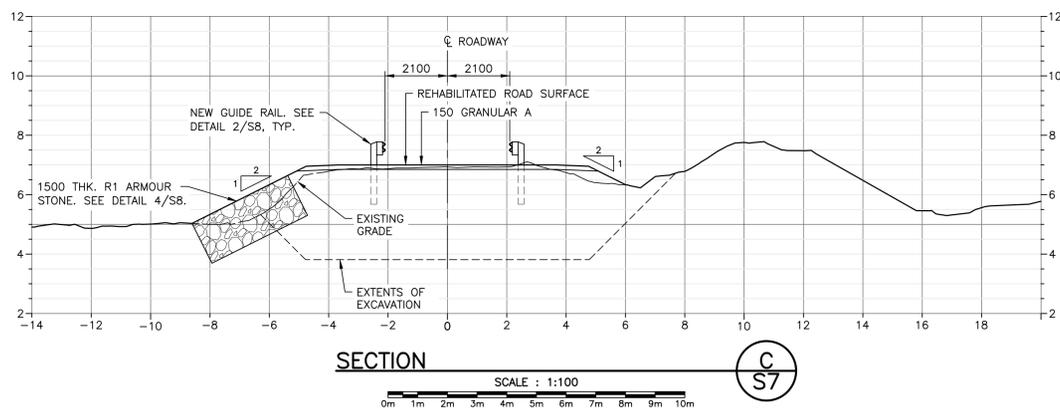
PLAN - GUIDE RAIL EXTENTS
SCALE : 1:100



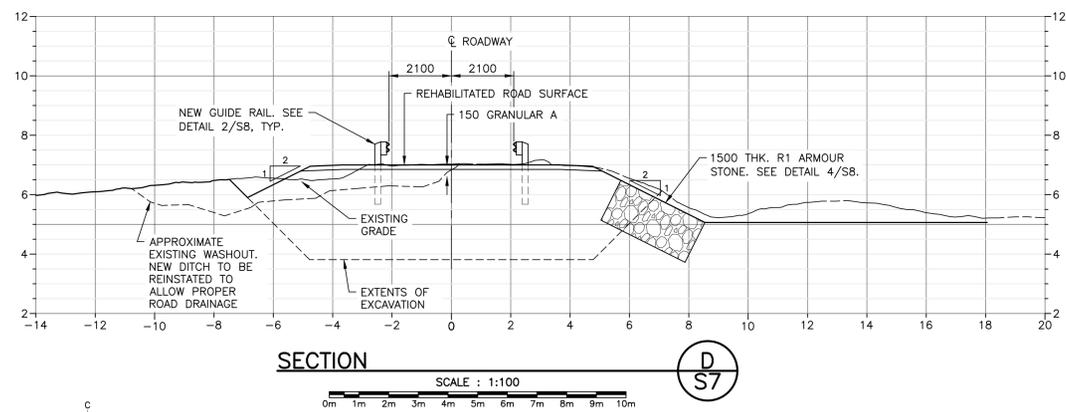
SECTION A S7
SCALE : 1:100



SECTION B S7
SCALE : 1:100



SECTION C S7
SCALE : 1:100



SECTION D S7
SCALE : 1:100



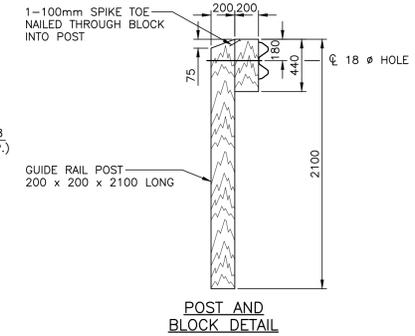
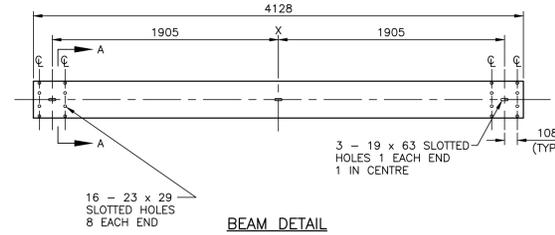
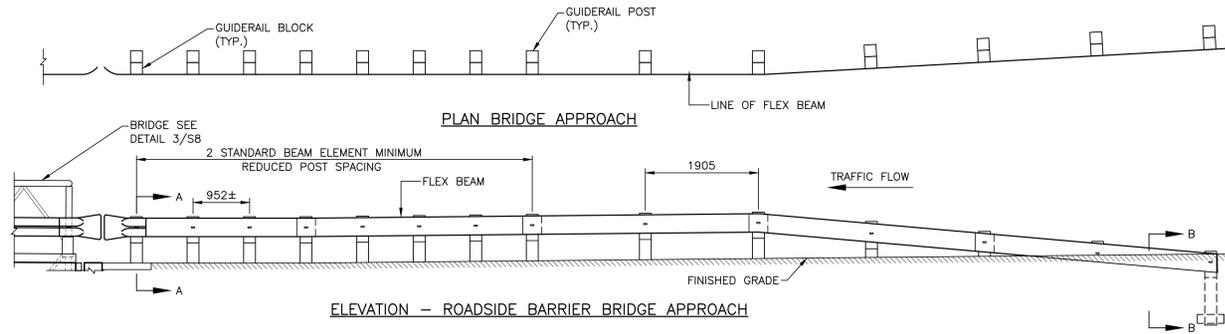
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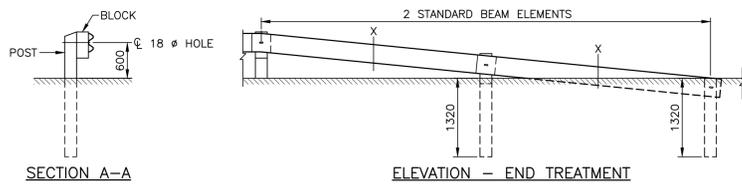
project MCKENZIES BROOK FOREST ACCESS BRIDGE REPLACEMENT GROS MORNE NATIONAL PARK

drawing design
CIVIL PLAN AND SECTIONS

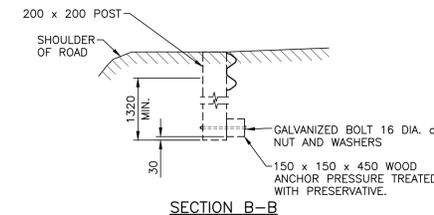
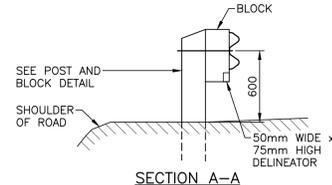
designed	PAUL BURKE	conçu
date	FEBRUARY 2018	
drawn	NICK YOUNG	dessiné
date	APRIL 2018	
approved	ROBBIE FRASER	approuvé
date	JUNE 2018	
Tender		Soumission
PWOSC Project Manager	Administrateur de projets TPOSC	
project number		no. du projet
	1955	
drawing no.		no. du dessin
	S7	



- NOTES:
1. STRONG POST SYSTEM TO BE USED ON ALL NEW GUIDERAIL.
 2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
 3. GENERAL DETAIL SHOWN. REFERENCE PLAN ON S7 FOR GUIDE RAIL EXTENTS AT EACH CORNER OF BRIDGE.
 4. FOR TYPICAL POST AND RAIL SEE DETAIL 2/S8

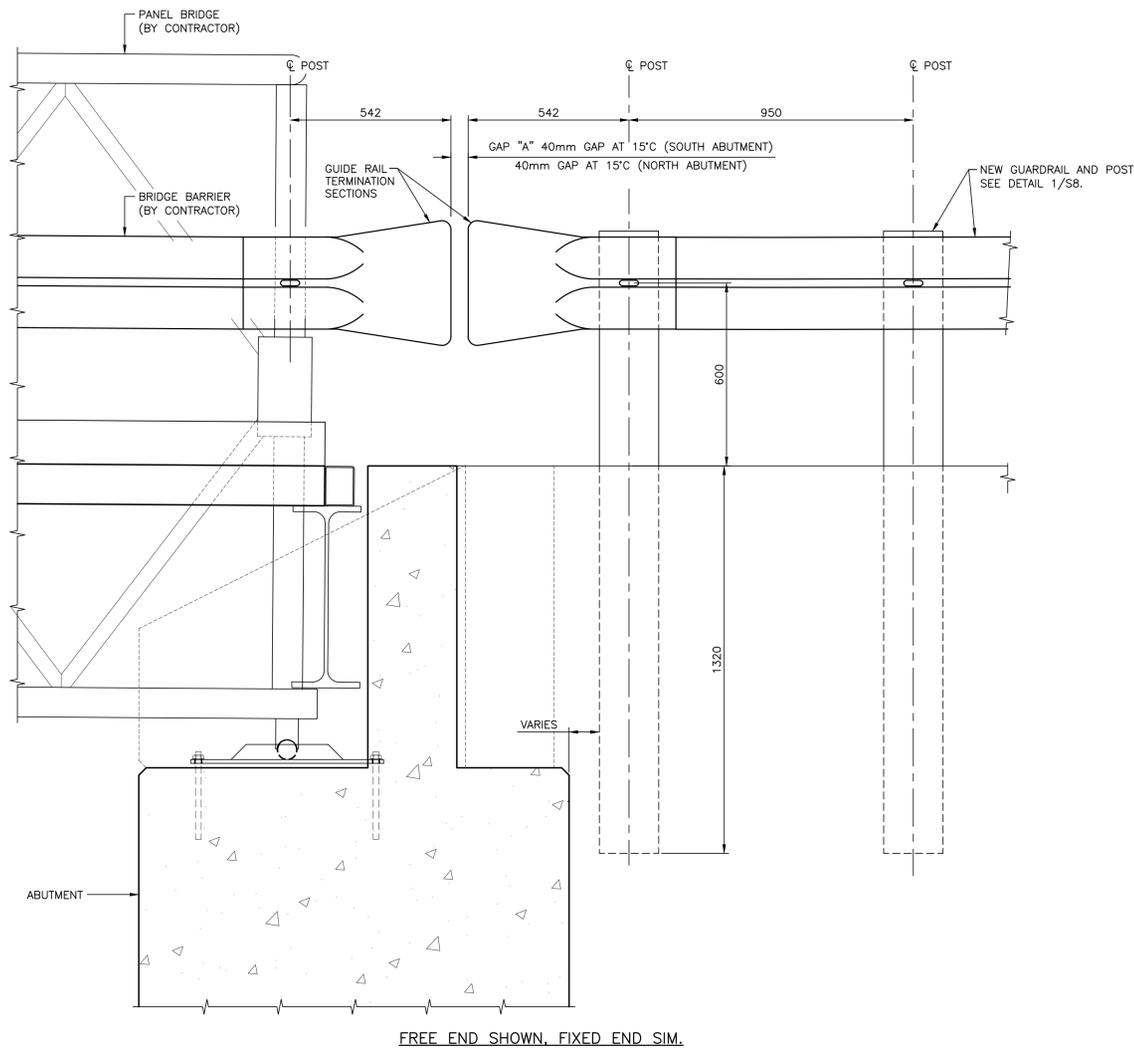


DETAIL - GUARDRAIL AND POST DETAILS
SCALE : 1:50
1 S1

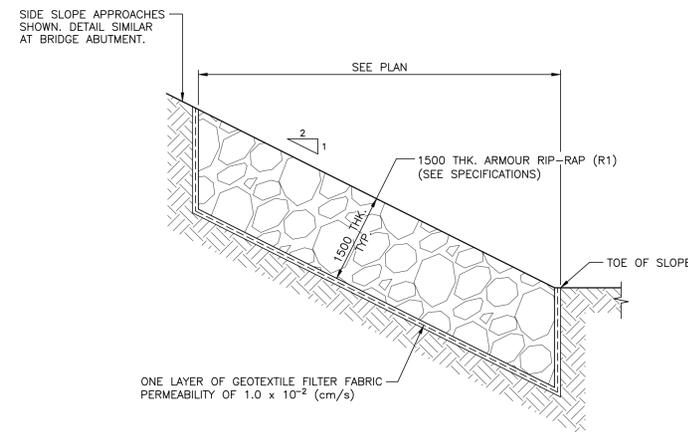


- NOTES:
1. STRONG POST SYSTEM TO BE USED ON ALL NEW GUIDERAIL.
 2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
 3. DELINEATORS TO BE PLACED ON BOTTOM CORNER OF BLOCK. YELLOW WILL BE VISIBLE FROM OPPOSING DIRECTION, WHITE VISIBLE IN DIRECTION OF TRAVEL.

DETAIL - ROADSIDE BARRIER
SCALE : 1:25
2 S7



DETAIL - GUARDRAIL GAP
SCALE : 1:10
3 S2



DETAIL - ARMOUR STONE
SCALE : 1:50
4 S1



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HARBORSIDE ENGINEERING CONSULTANTS
To practice Professional Engineering
in Newfoundland and Labrador.
Permit No. as issued by PEG 324
which is valid for the year 2018

0	ISSUED FOR TENDER	06/13/2018
revisions		date

project MCKENZIES BROOK FOREST ACCESS BRIDGE REPLACEMENT GROS MORNE NATIONAL PARK

drawing CIVIL DETAILS

designed PAUL BURKE	conçu
date FEBRUARY 2018	
drawn NICK YOUNG	dessiné
date APRIL 2018	
approved ROBBIE FRASER	approuvé
date JUNE 2018	
Tender	Submission

PWGSC Project Manager Administrateur de projets TPWSC
project number 1955
drawing no. S8