



Parcs
Canada

Parks
Canada

TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL

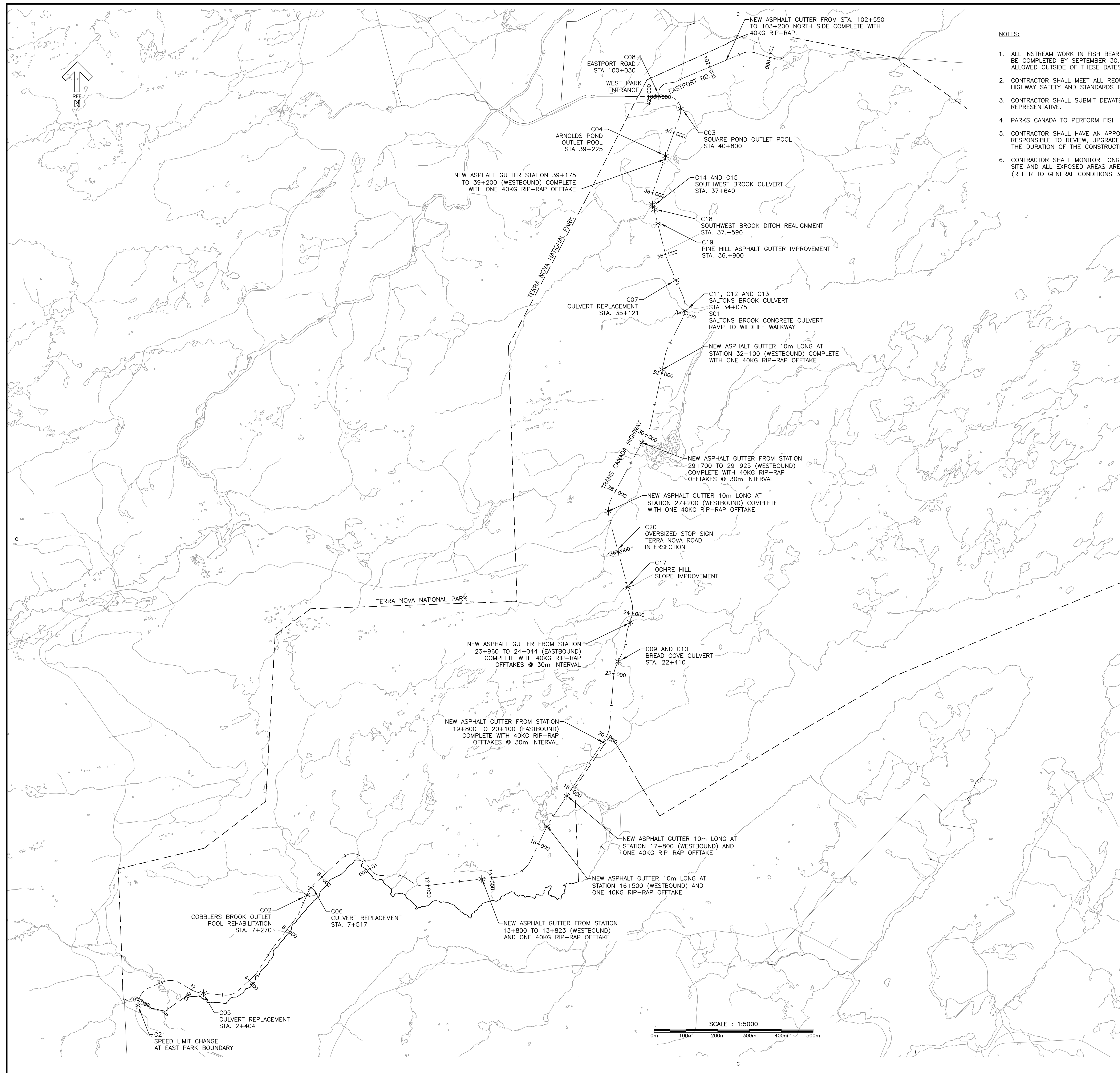
PCA PROJECT NO. 676

DRAWING LIST

CIVIL

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- C02 COBBLERS BROOK OUTLET POOL REHABILITATION PLAN AND PROFILE
- C03 SQUARE POND OUTLET POOL IMPROVEMENT
- C04 ARNOLDS POND OUTLET POOL IMPROVEMENT
- C05 2+404 CULVERT REPLACEMENT PLAN AND PROFILE
- C06 7+517 CULVERT REPLACEMENT PLAN AND PROFILE
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- C08 EASTPORT ROAD STA. 100+030 CULVERT PLAN AND PROFILE VIEW
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NOTES:

1. ALL INSTREAM WORK IN FISH BEARING WATERCOURSES SHALL NOT COMMENCE BEFORE JUNE 1 AND SHALL BE COMPLETED BY SEPTEMBER 30. INSTREAM WORK IN FISH BEARING WATERCOURSE WILL NOT BE ALLOWED OUTSIDE OF THESE DATES.
2. CONTRACTOR SHALL MEET ALL REQUIREMENTS OUTLINED IN THE BASIC IMPACT ANALYSIS - TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-20, TERRA NOVA NATIONAL PARK.
3. CONTRACTOR SHALL SUBMIT DEWATERING PLAN FOR EACH CULVERT LOCATION FOR APPROVAL BY PCA REPRESENTATIVE.
4. PARKS CANADA TO PERFORM FISH RESCUE IF NECESSARY.
5. CONTRACTOR SHALL HAVE AN APPOINTED EROSION AND SEDIMENT CONTROL PERSON. THIS PERSON IS RESPONSIBLE TO REVIEW, UPGRADE AND MAINTAIN THE EROSION AND SEDIMENT CONTROL MEASURES FOR THE DURATION OF THE CONSTRUCTION UNTIL THE COMPLETE SITE IS STABILIZED.
6. CONTRACTOR SHALL MONITOR LONG-TERM WEATHER FORECASTS ON A DAILY BASIS, AND ENSURE THAT THE SITE AND ALL EXPOSED AREAS ARE PROPERLY STABILIZED (REFER TO GENERAL CONDITIONS 3.4.5, 4.2 AND 4.3).



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01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL

drawing
OVERALL LOCATION PLAN

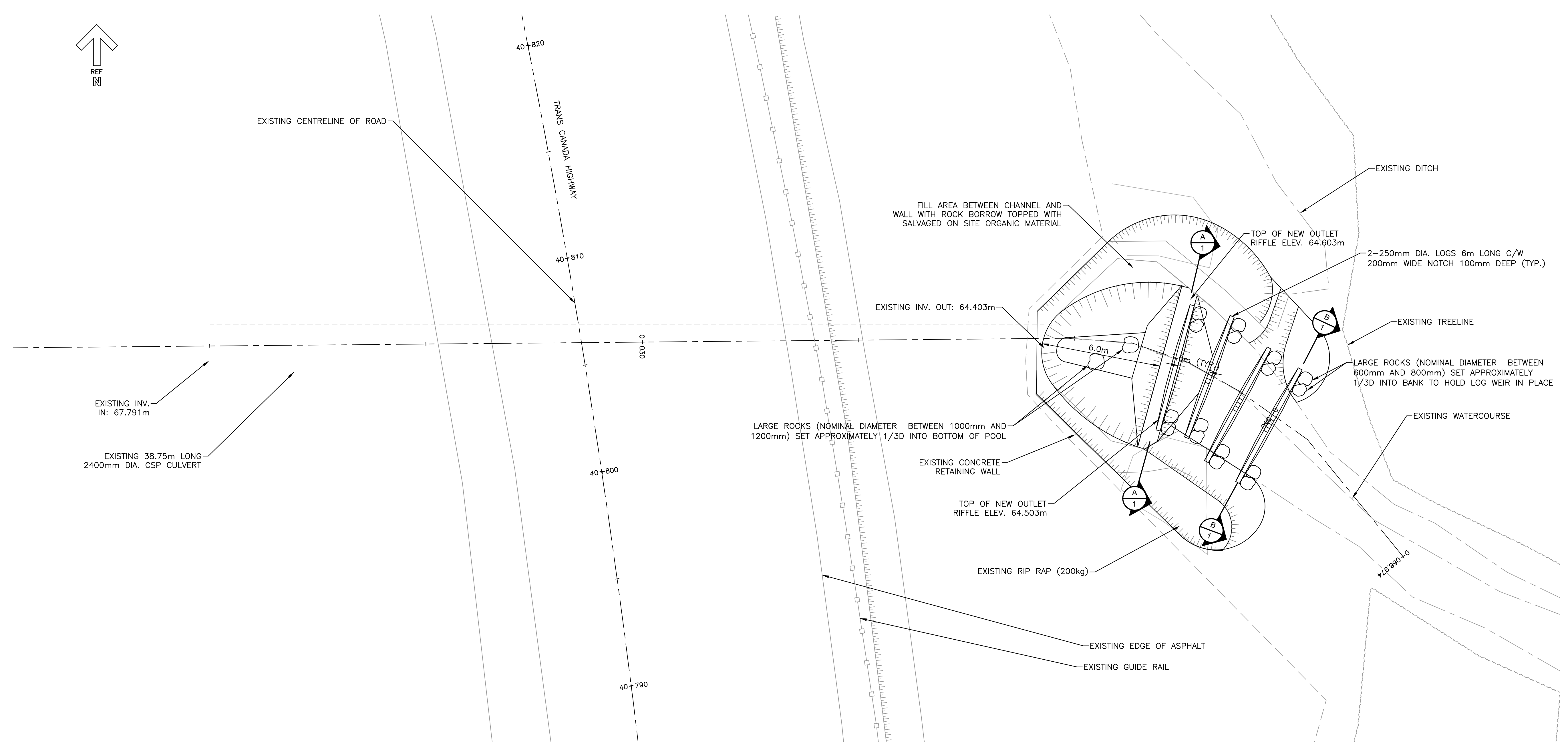
designed	PETER ALLABY, P.ENG.	conçu
date	JANUARY 31, 2019	
drawn	A.CALDWELL / K. WARD	dessiné
date	JANUARY 31, 2019	
approved	JULIEN BABIN, P.ENG.	approuvé
date	JANUARY 31, 2019	
Tender		Submission

PCA Project Manager Administrateur de projets APC
 project number no. du projet
676

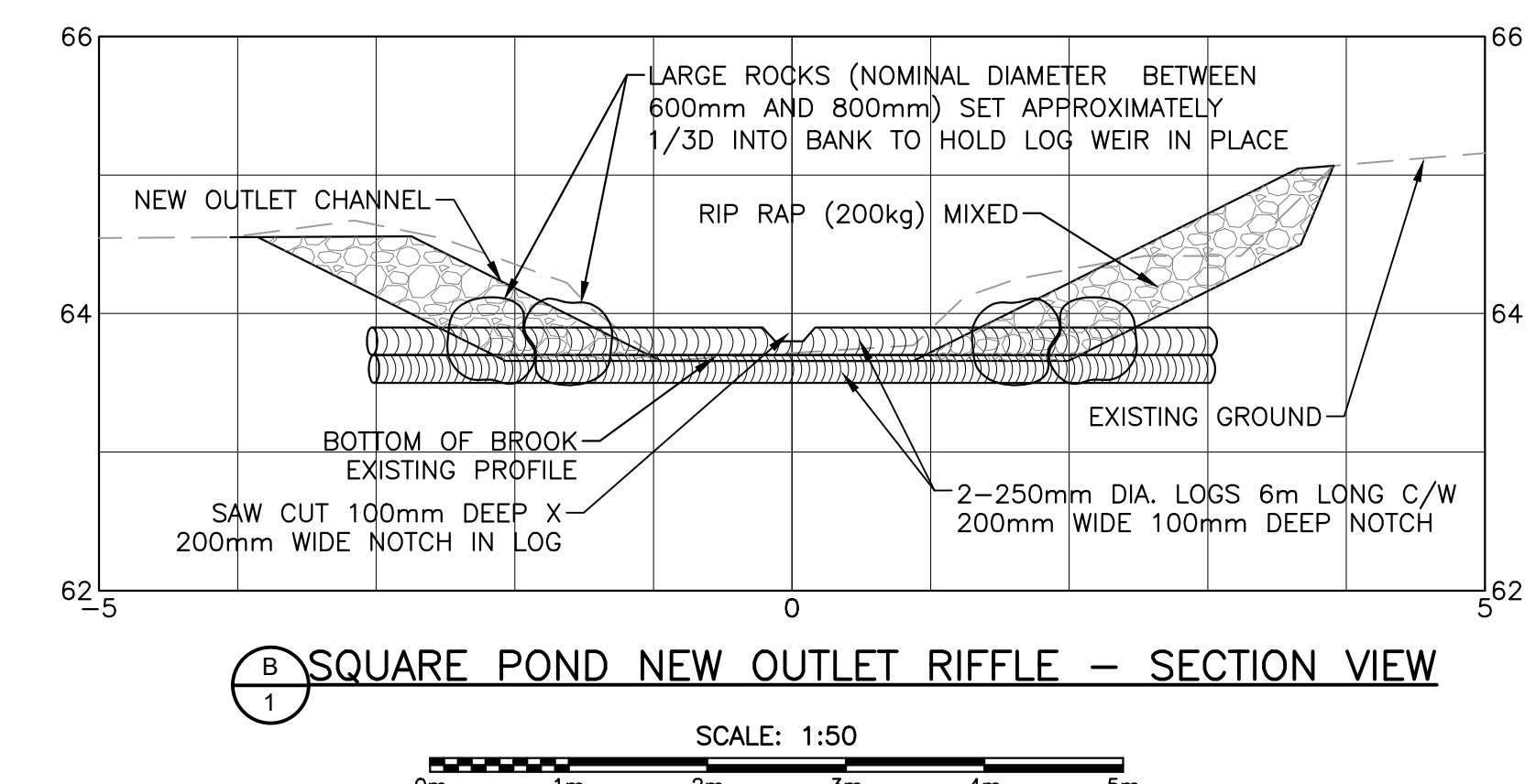
drawing no. no. du dessin
C01



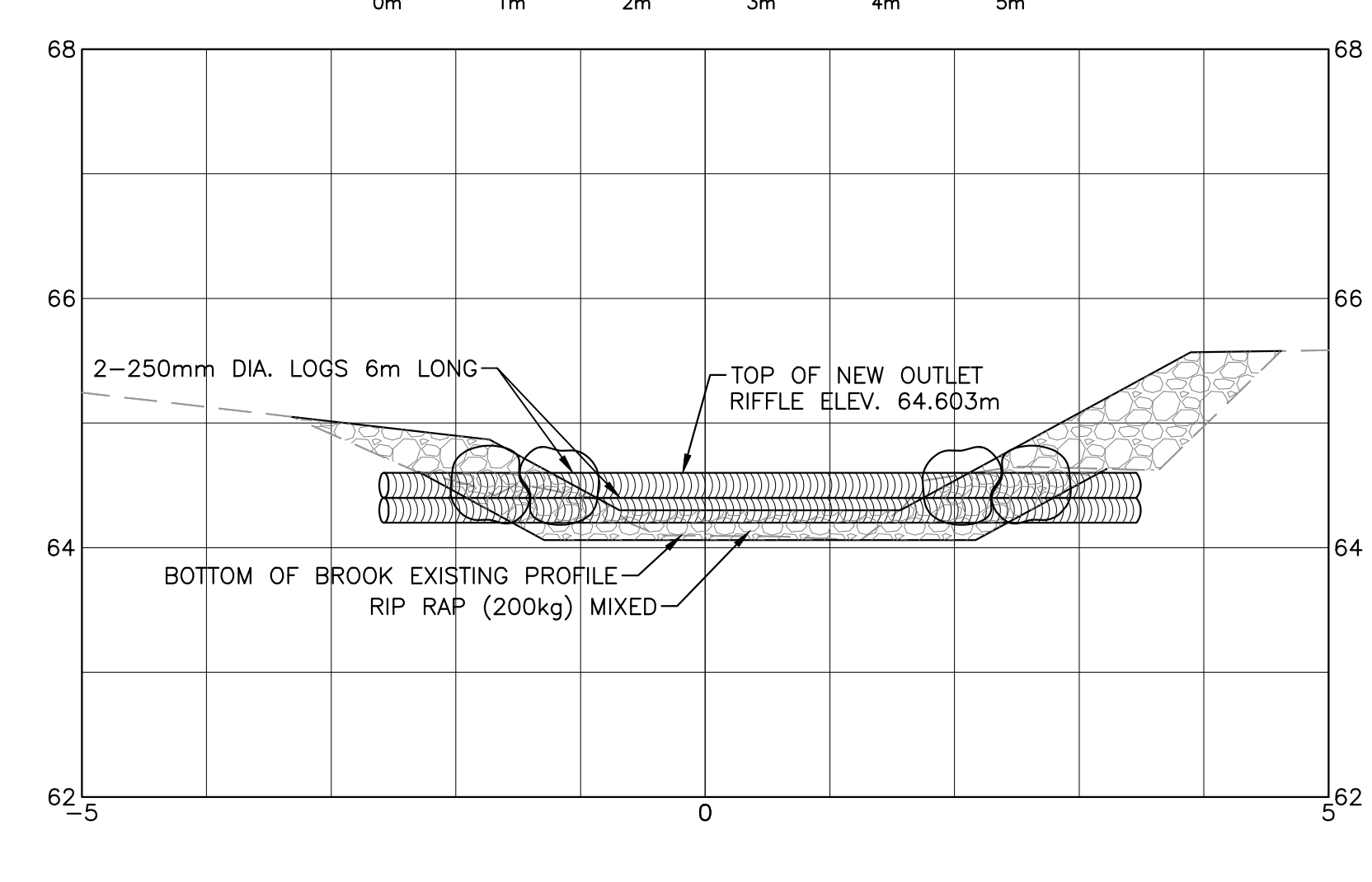
MONCTON 1077 Blvd. St. George Blvd. 1077
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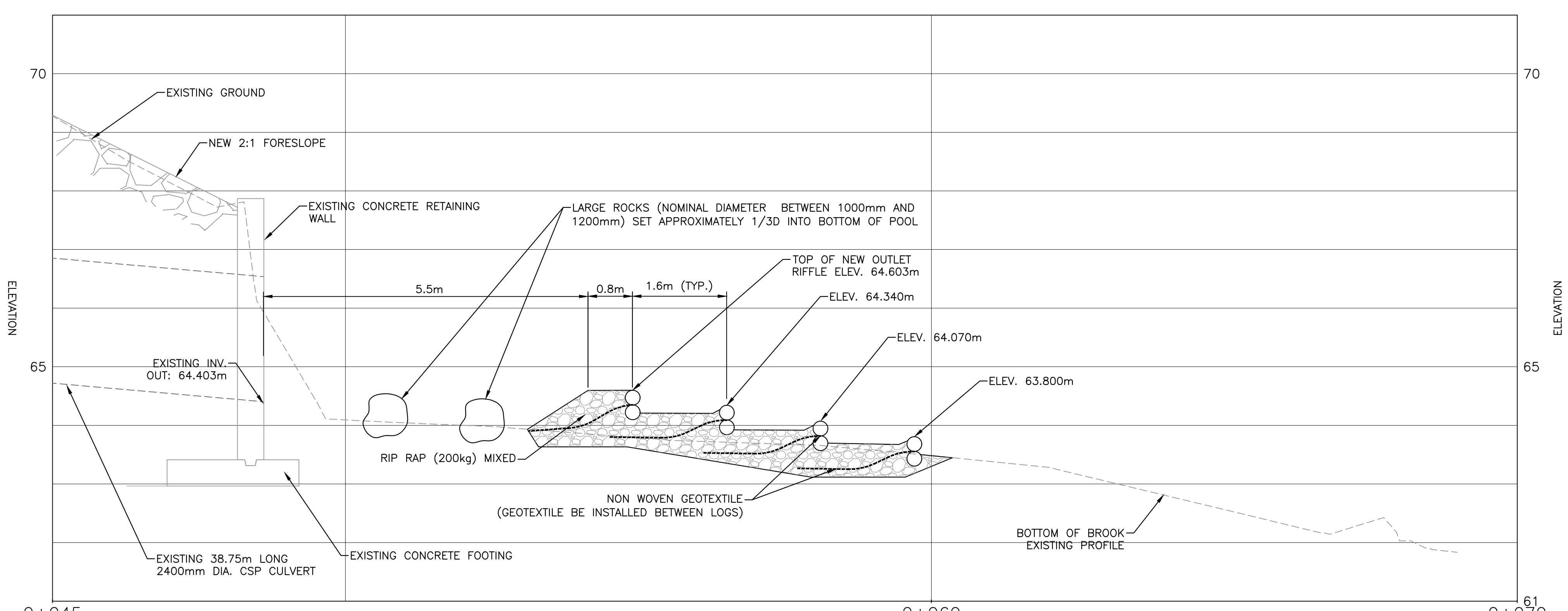
SQUARE POND - PLAN
 SCALE: 1:100



SQUARE POND NEW OUTLET RIFFLE - SECTION VIEW B



SQUARE POND NEW OUTLET RIFFLE - SECTION VIEW A



SQUARE POND - PROFILE VIEW

SCALE: 1:50



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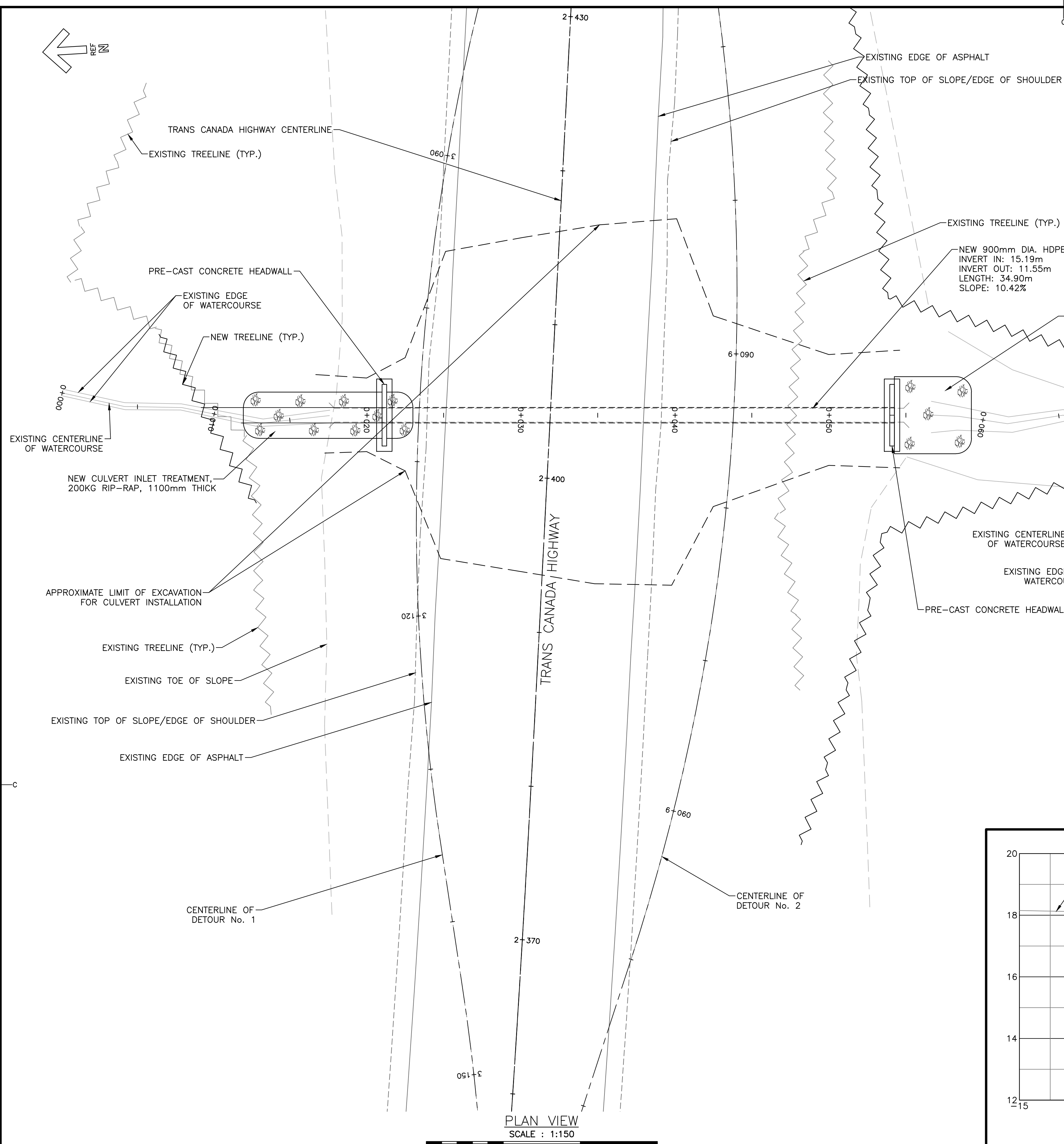
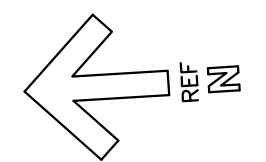
drawing
SQUARE POND OUTLET POOL IMPROVEMENT

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender		Soumission

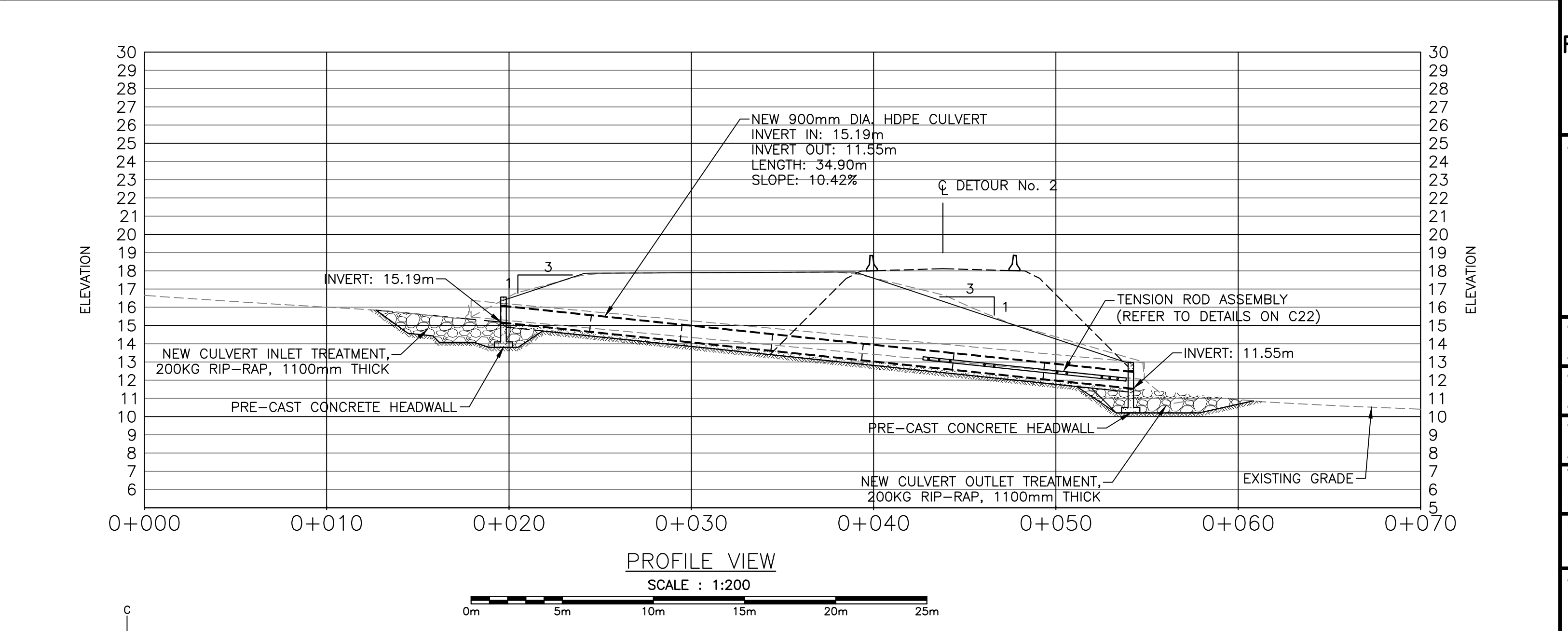
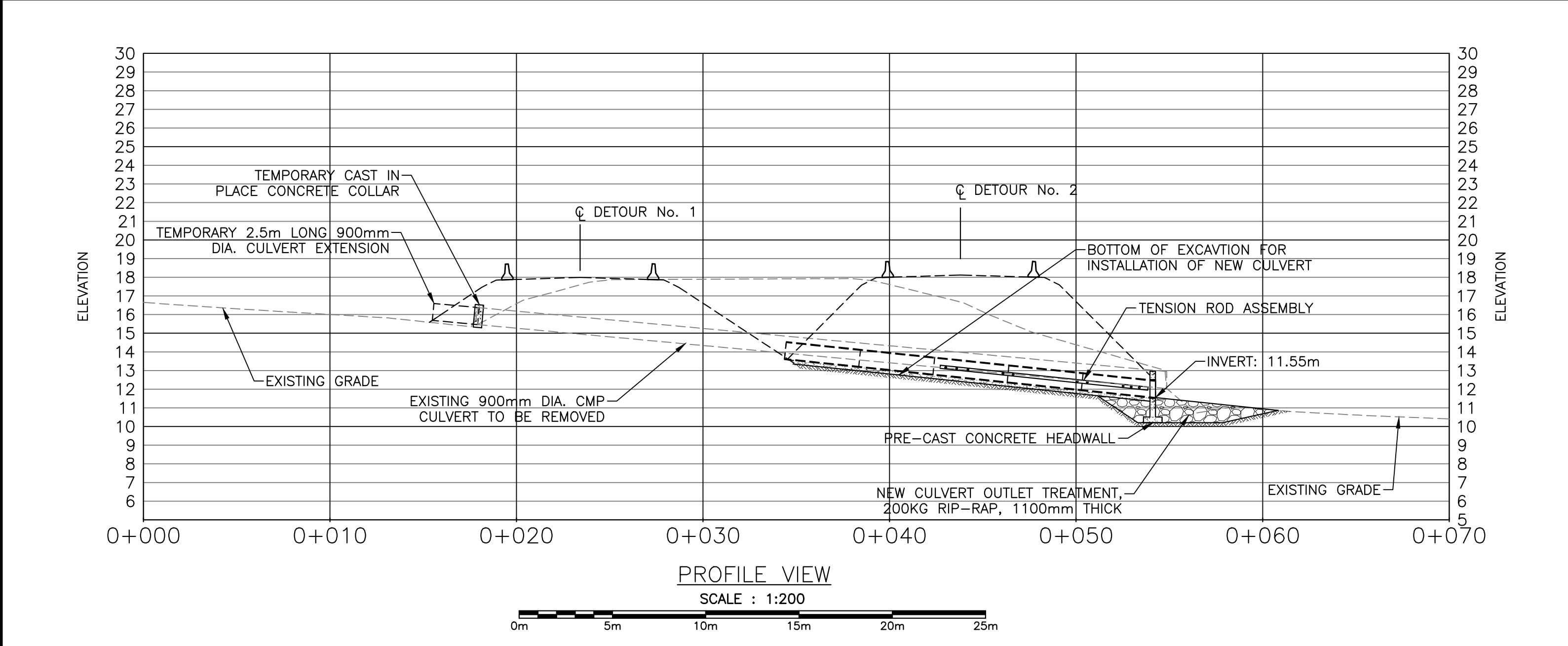
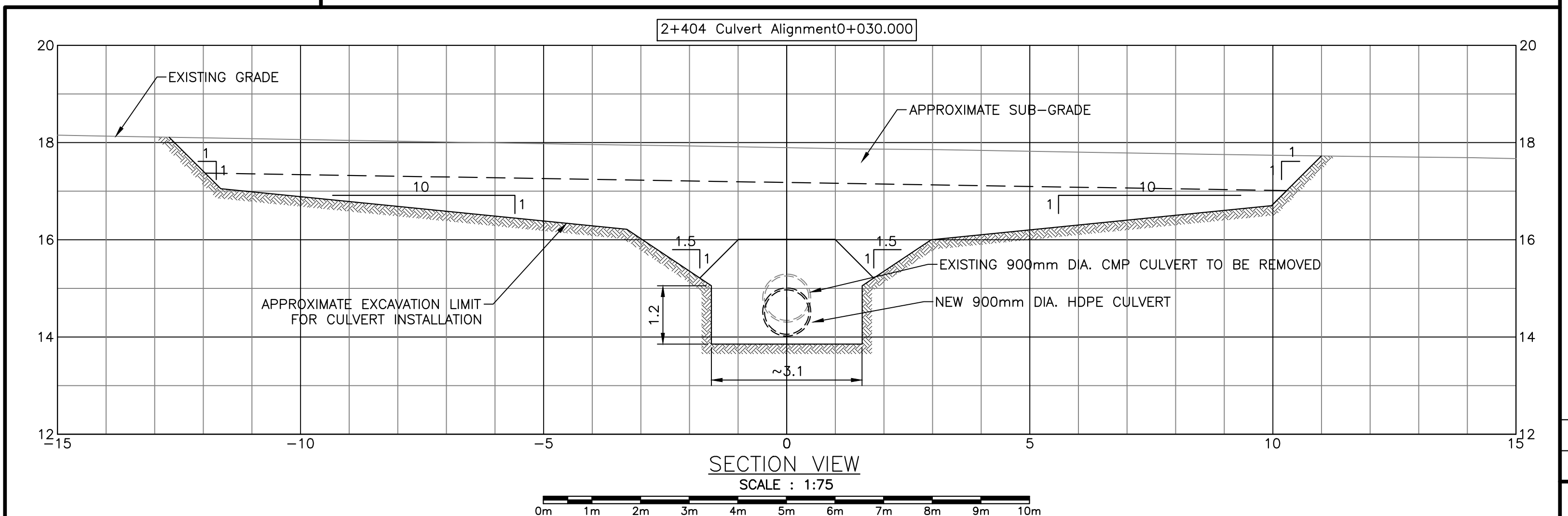
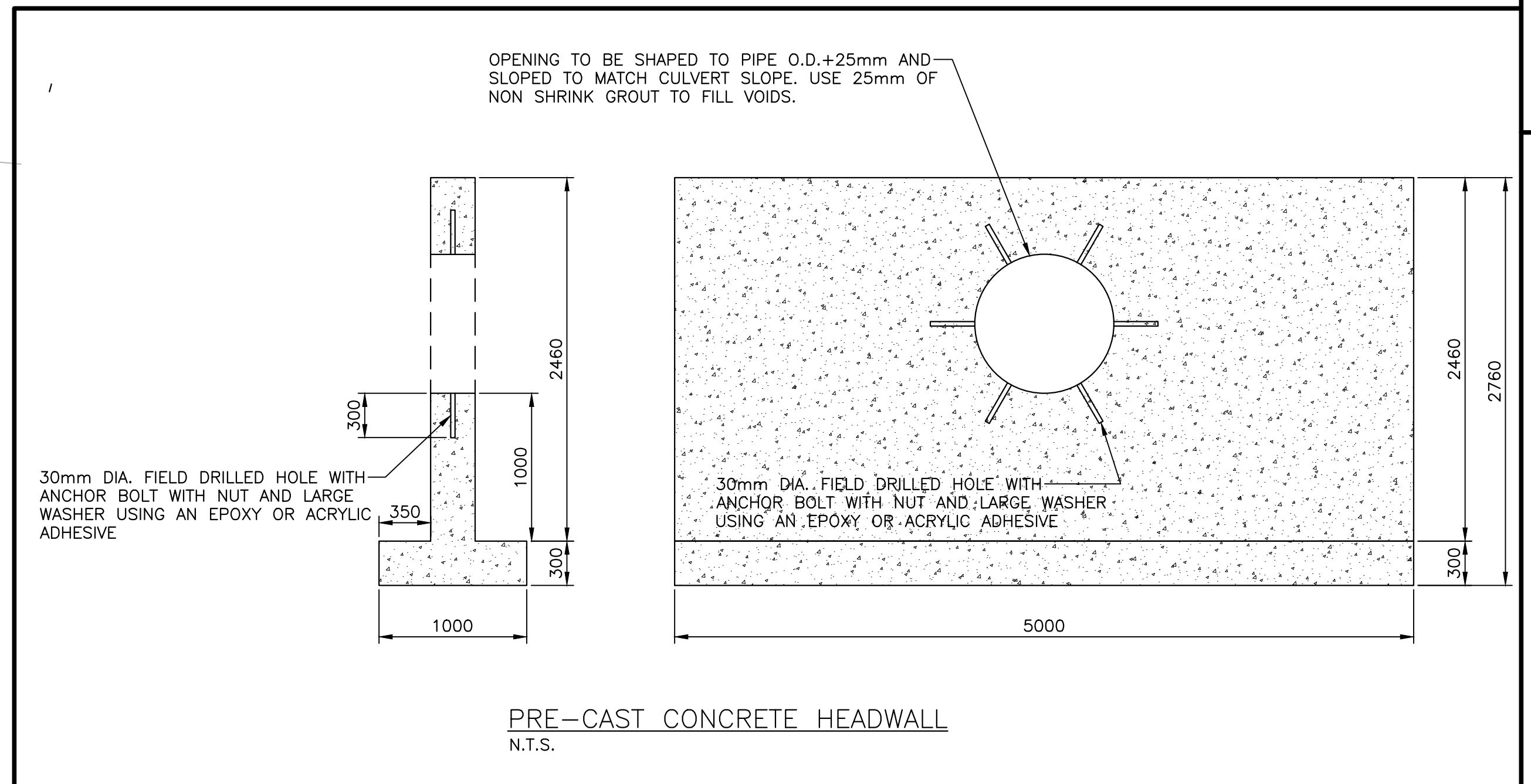
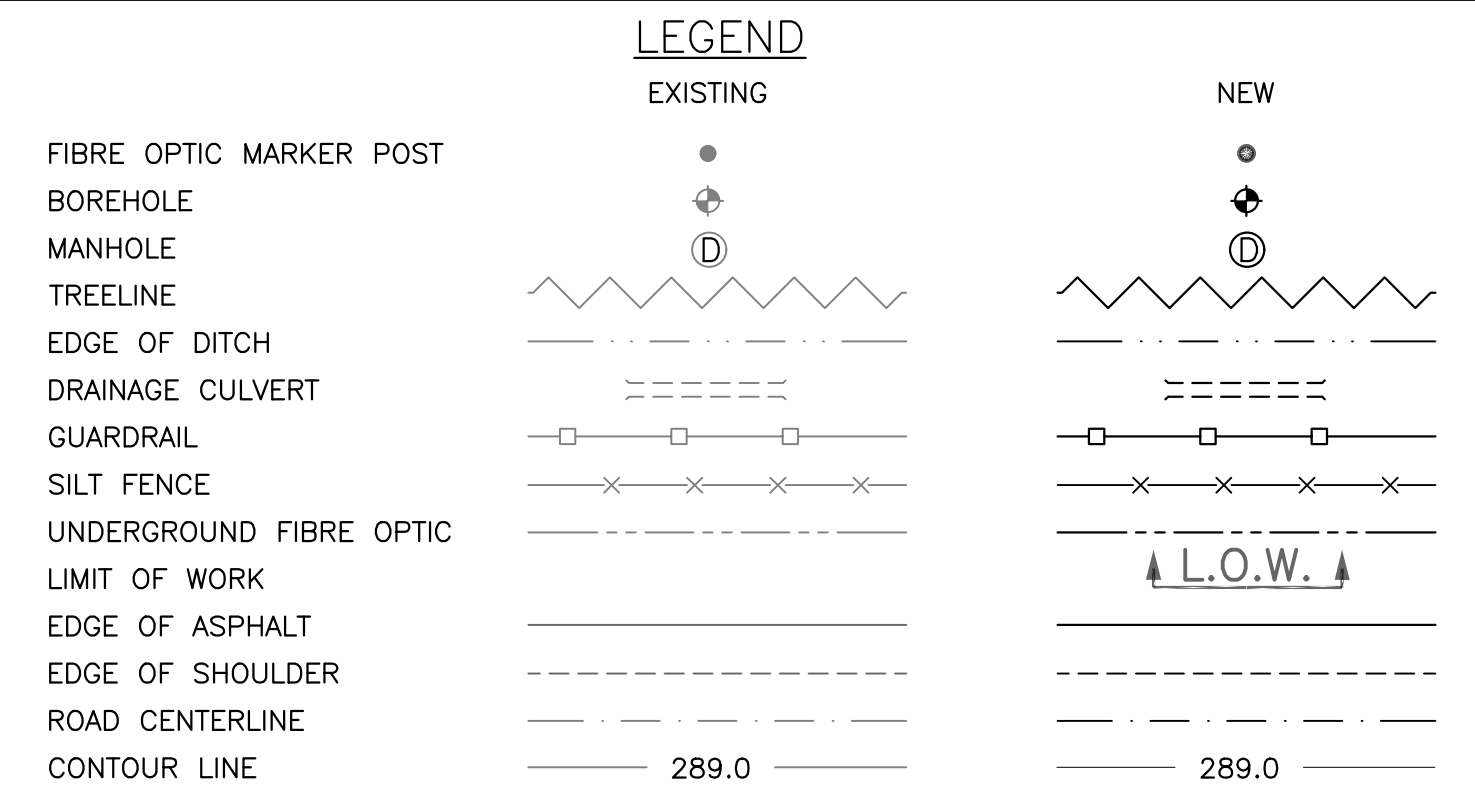
PCA Project Manager Administrateur de projets APC
 project number no. du projet

676

drawing no. no. du dessin
C03



NOTE:
 CONTRACTOR IS RESPONSIBLE FOR DESIGN OF TEMPORARY DETOURS / DIVERSION AS PER CONTRACT.
 TEMPORARY DETOUR DESIGN REQUIREMENTS:
 - DESIGN SPEED 50 Km/h TO TAC
 - POSTED SPEED 50 Km/h
 - TWO LANES MINIMUM 3.5m WIDE EACH + 1.0m SHOULDERS
 - 1:1 MAXIMUM SLOPE
 - ACCOMMODATE LARGE TRUCKS (WB-20) IN EACH DIRECTION



Parcs Canada Parks Canada

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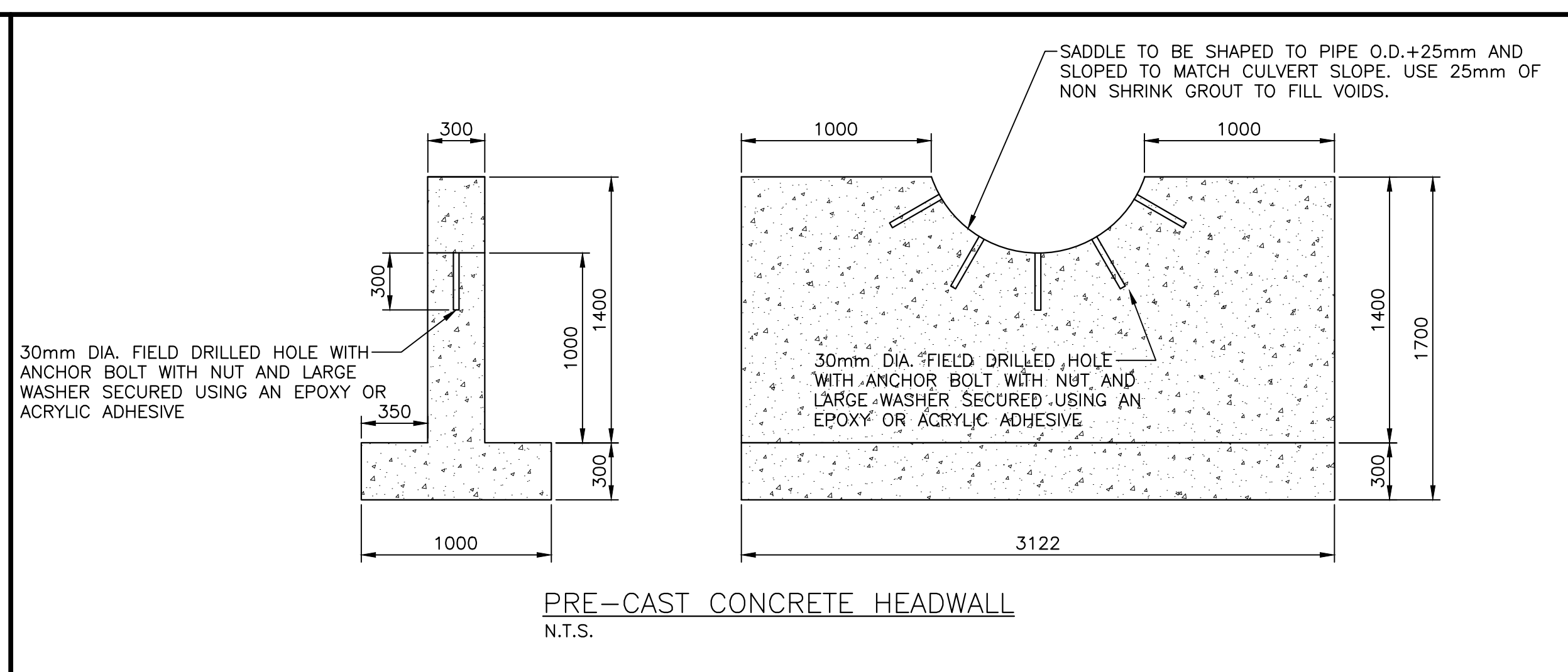
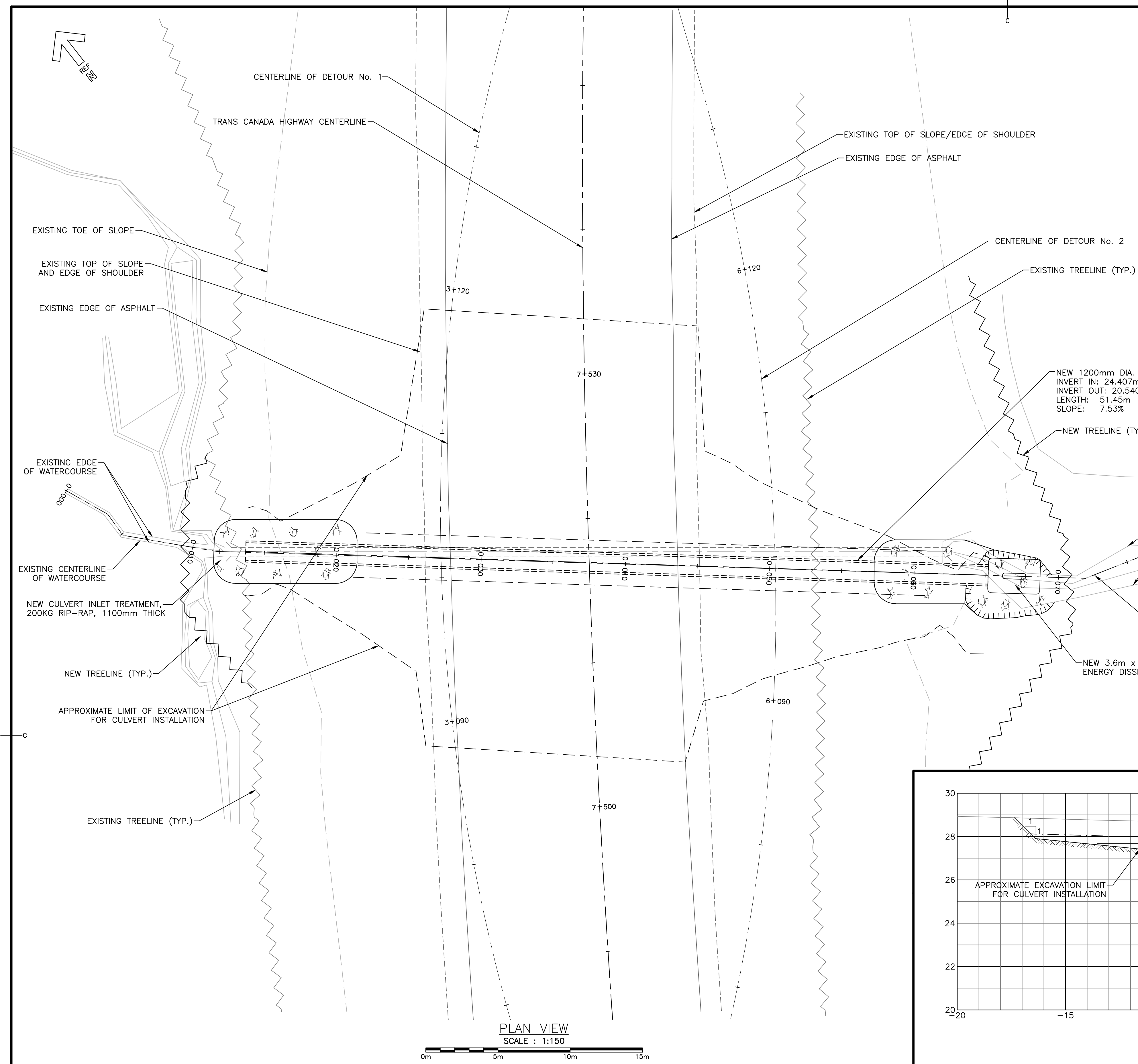
TRANS-CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
 TERRA NOVA NATIONAL PARK, NL

STA. 2+404 CULVERT REPLACEMENT PLAN AND PROFILE

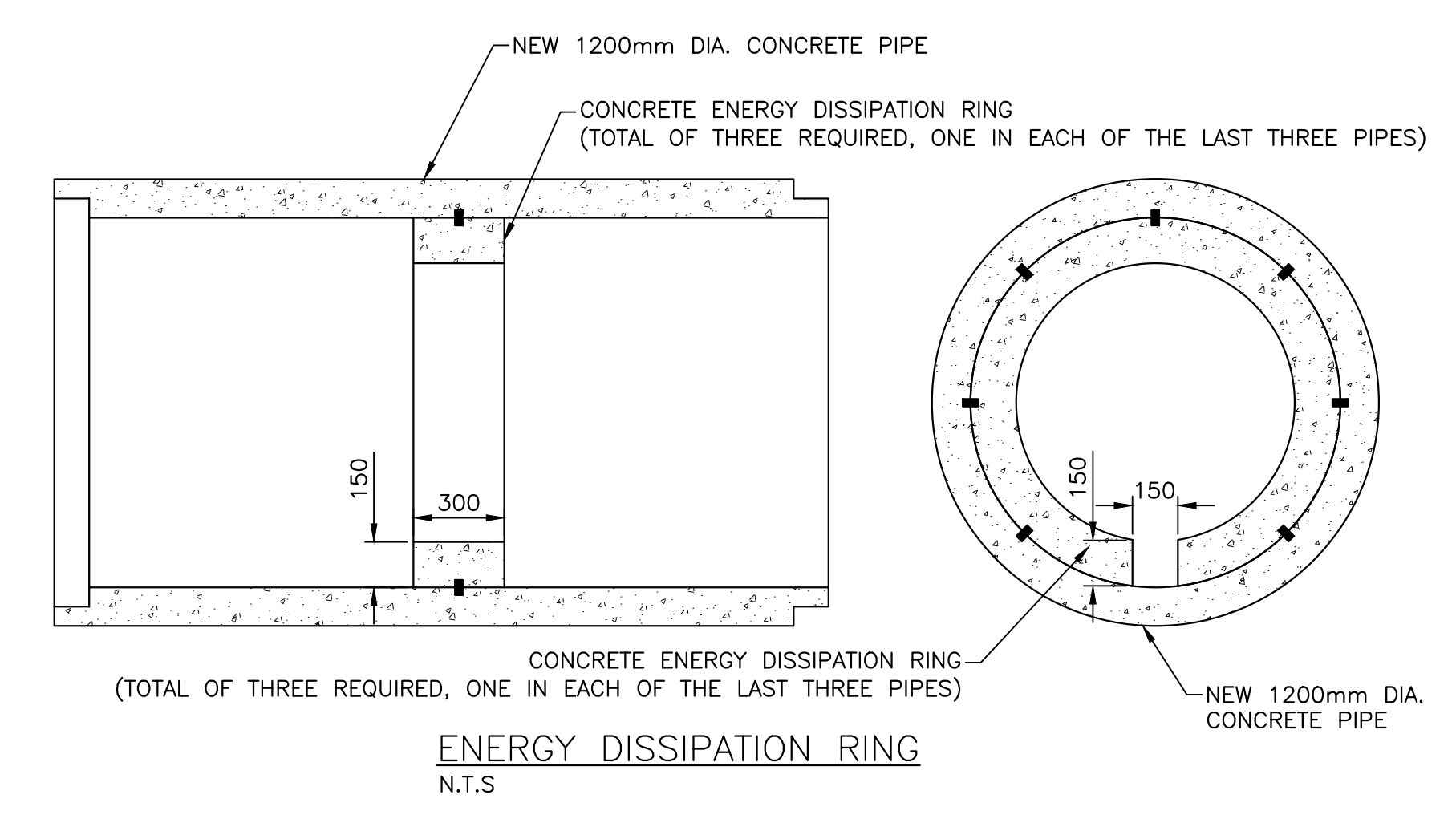
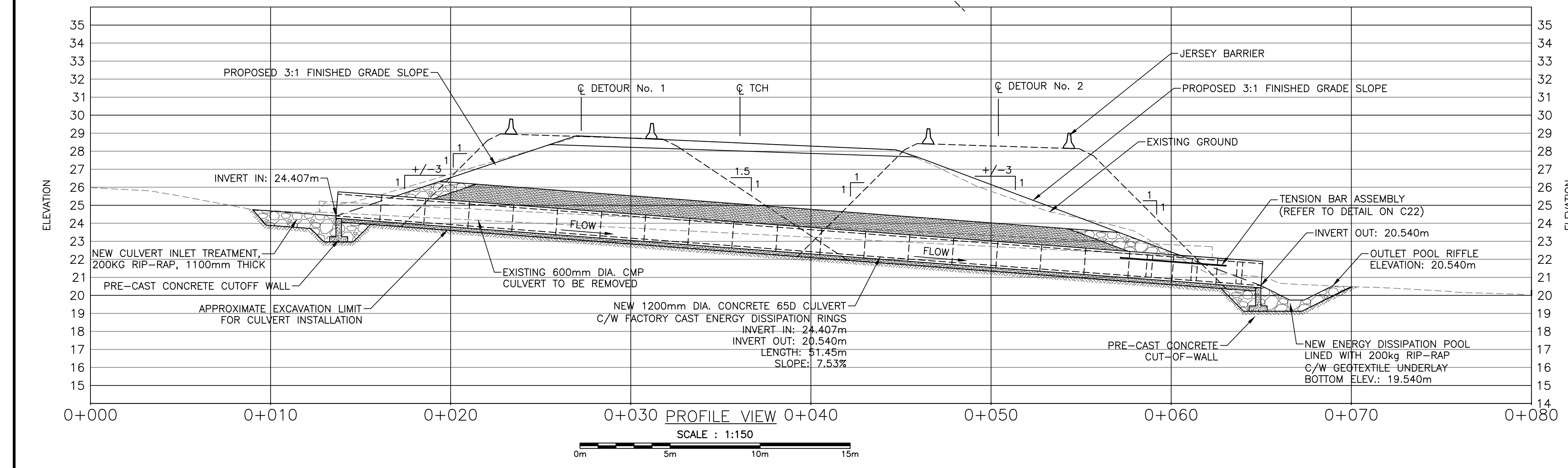
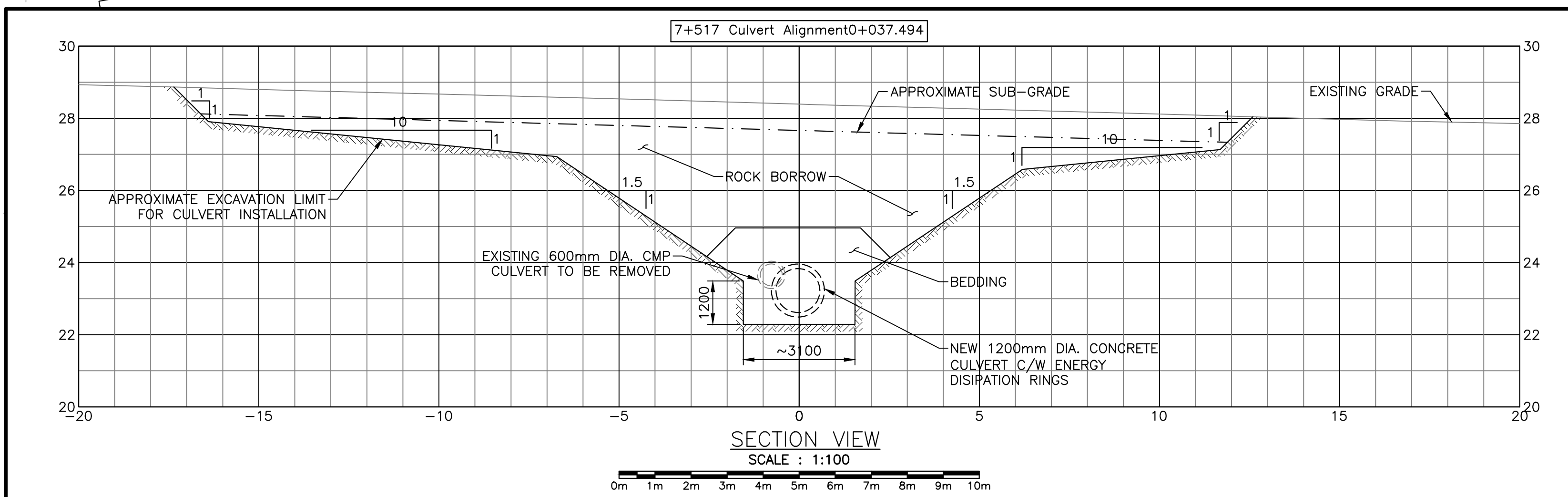
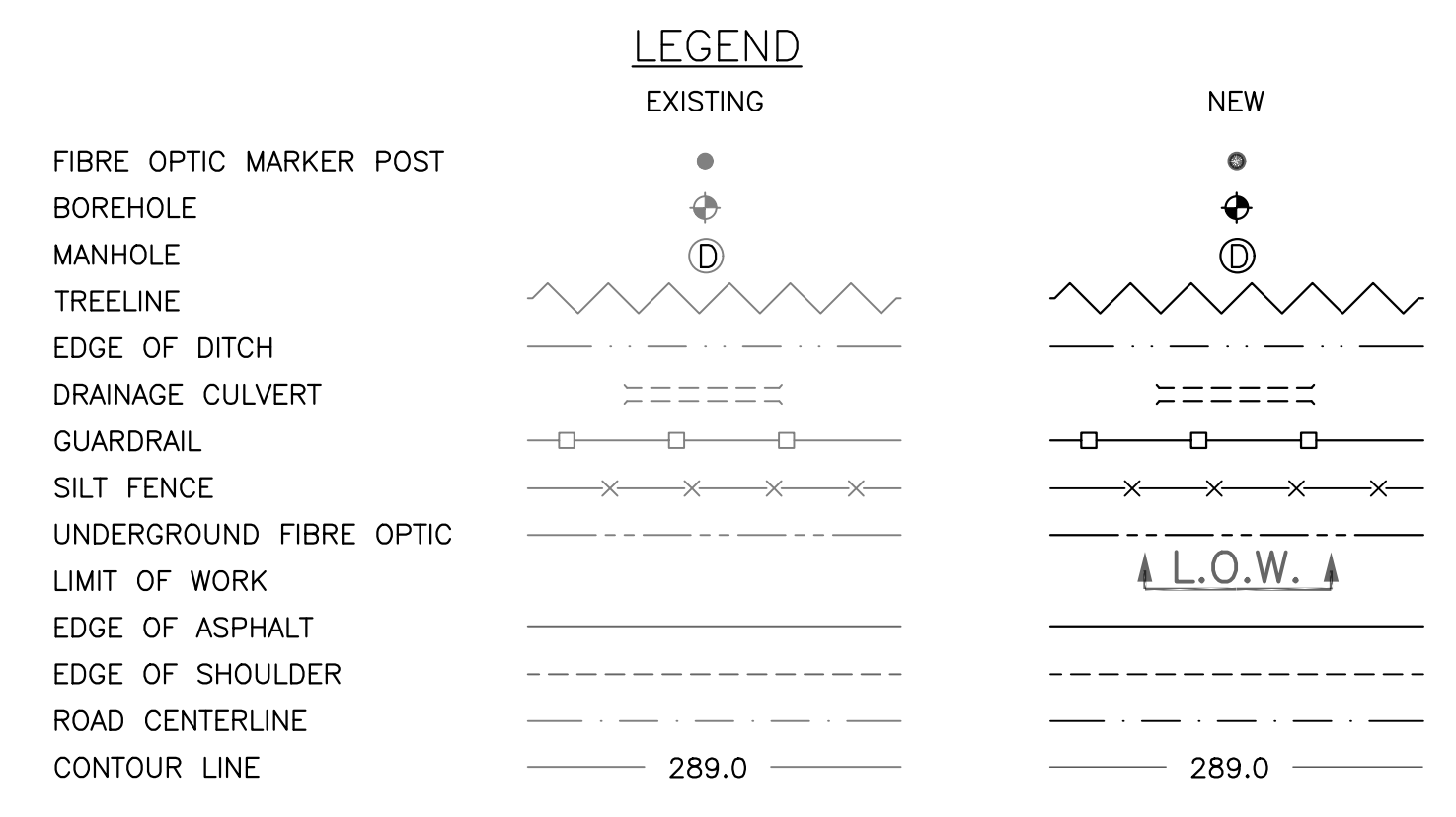
designed J. BURGESS	conçu
date JANUARY 30, 2019	
drown J. BURGESS	dessiné
date JANUARY 30, 2019	
approved J. BABIN	approuvé
date JANUARY 30, 2019	
Tender	Soumission
PCA Project Manager Administrateur de projets APC	no. du projet
project number	676
drawing no.	C05



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NOTE:
 DETOUR / DIVERSION SHOWN ARE SUGGESTIONS ONLY. CONTRACTOR IS RESPONSIBLE FOR FINAL DESIGN OF TEMPORARY DETOURS / DIVERSION AS PER CONTRACT.
 TEMPORARY DETOUR DESIGN REQUIREMENTS:
 - DESIGN SPEED 50 Km/h TO TAC
 - POSTED SPEED 50 Km/h
 - TWO LANES MINIMUM 3.5m WIDE EACH + 1.0m WIDE SHOULDERS
 - 1:1 MAXIMUM SLOPE
 - ACCOMMODATE LARGE TRUCKS (WB-20) IN EACH DIRECTION



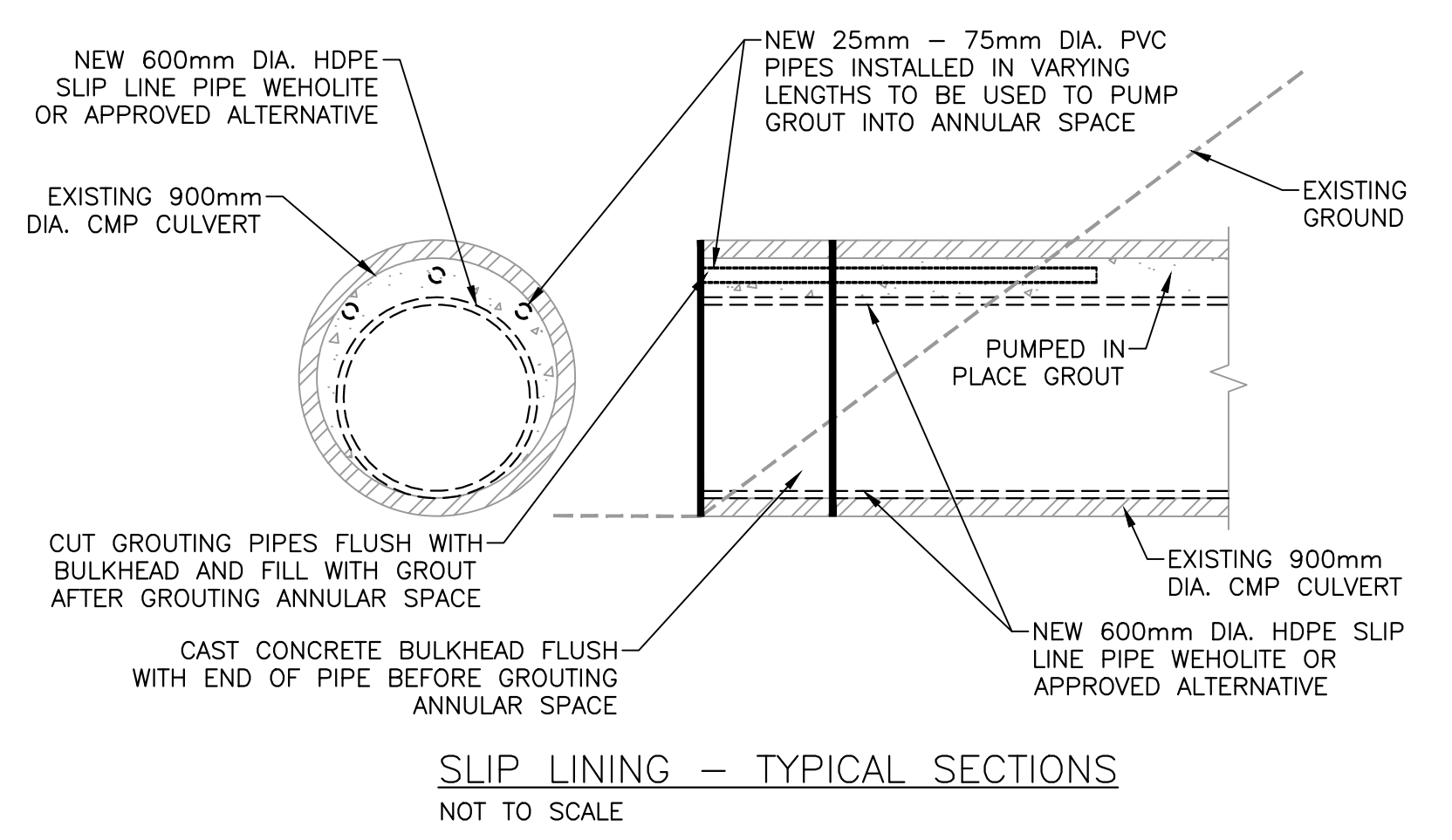
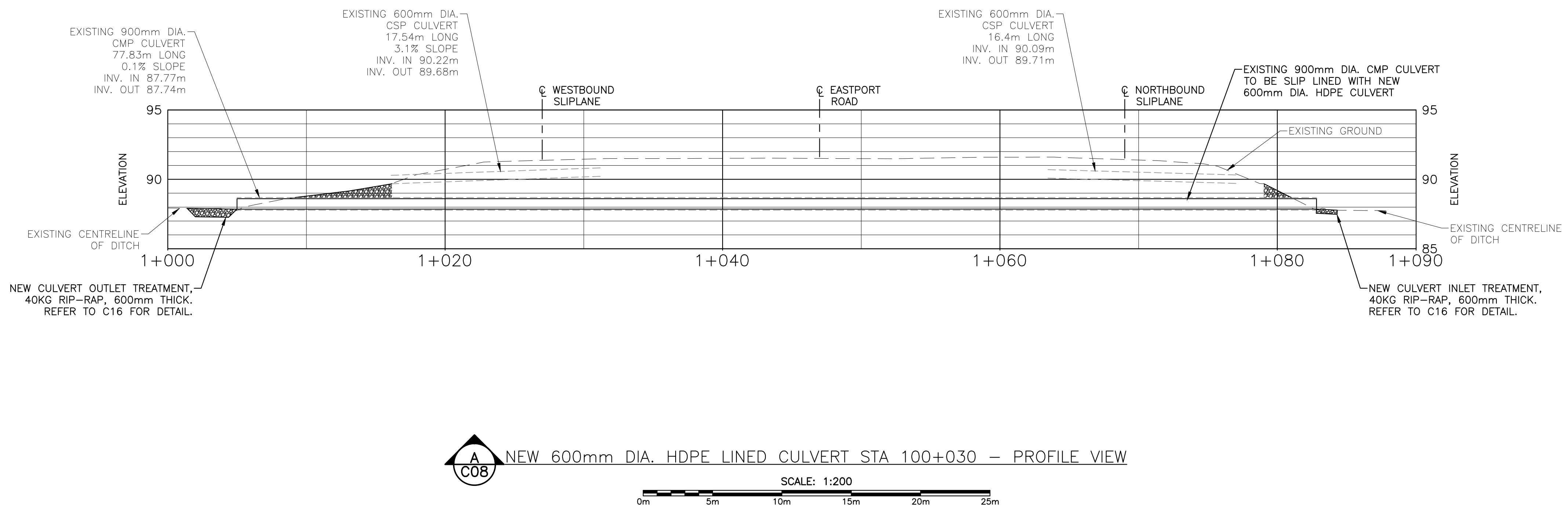
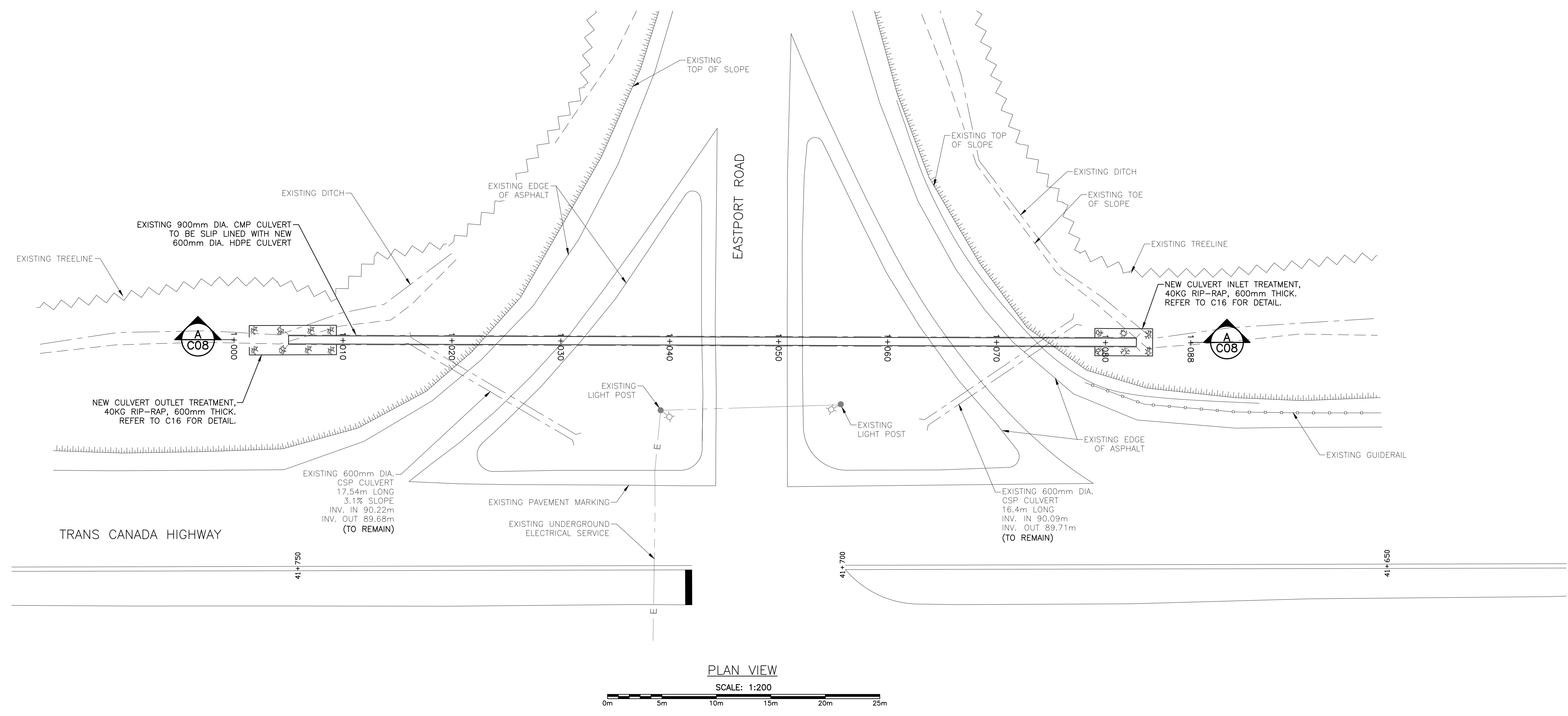
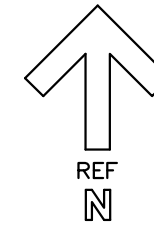
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 JULIEN BABIN
 CRANDELL ENGINEERING LTD.

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revisions		date

TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
 TERRA NOVA NATIONAL PARK, NL

STA. 7+517
 CULVERT REPLACEMENT
 PLAN AND PROFILE

designed J. BURGESS	conçu
date JANUARY 30, 2019	
drawn J. BURGESS	dessiné
date JANUARY 30, 2019	
approved J. BABIN	approuvé
date JANUARY 30, 2019	
Tender	Soumission
PCA Project Manager Administrateur de projets APC	
project number 676	no. du projet
drawing no. C06	no. du dessin



- NOTES:**
- PIPE SHALL BE SLIP LINED BY EITHER JACKING HDPE LINER FROM INLET END OR THROUGH FROM OUTLET TO INLET.
 - CONTRACTOR TO SUBMIT DETAILED CONSTRUCTION AND SHOP DRAWING PLAN TO DEPARTMENTAL REPRESENTATIVE FOR APPROVAL, PRIOR TO EXCAVATING THE SLIP LINING.
 - AREA OF WORK DISTURBANCE MUST BE SUBMITTED TO DEPARTMENTAL REPRESENTATIVE FOR APPROVAL PRIOR TO MOBILIZATION TO SITE. WORK MUST BE MAINTAINED WITHIN THE APPROVED WORK AREA AT ALL TIMES.



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LEGEND:

	EXISTING EDGE OF ASPHALT
	EXISTING GUIDE RAIL
	EXISTING TREELINE
	EXISTING DITCH
	EXISTING TOP OF SLOPE
	EXISTING TOE OF SLOPE
	EXISTING CULVERT
	EXISTING UNDERGROUND ELECTRICAL



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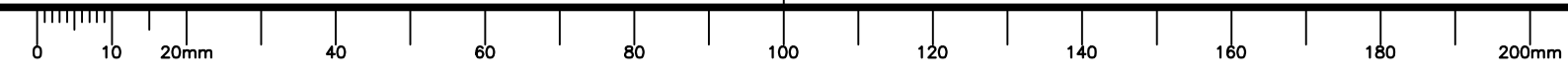
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project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
TERRA NOVA NATIONAL PARK, NL

drawing design
EASTPORT ROAD STA. 100+030 CULVERT PLAN AND PROFILE VIEW

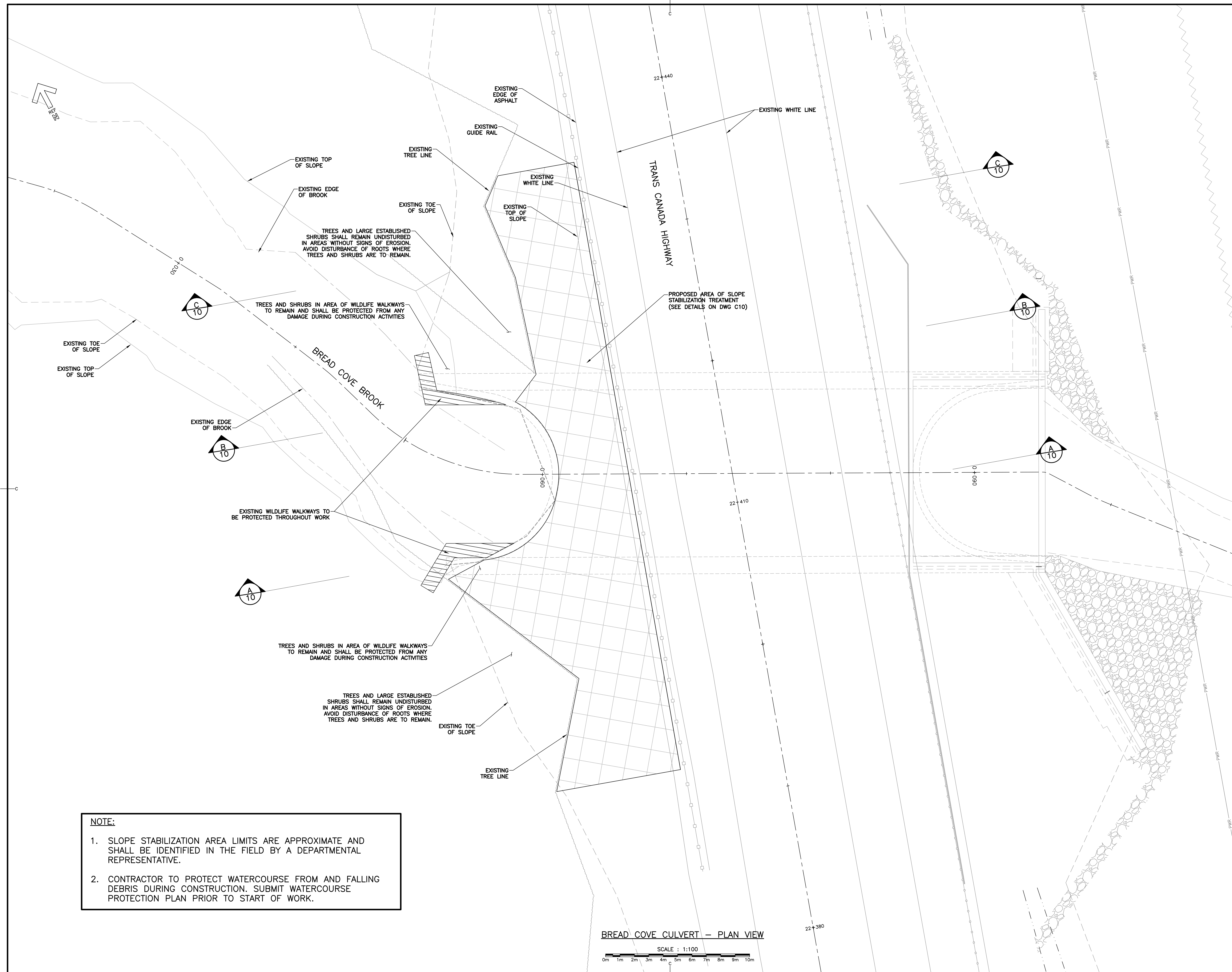
designed	PETER ALLABY, P.ENG.	conçu
date	JANUARY 31, 2019	
drawn	KEVIN WARD, PTECH	dessiné
date	JANUARY 31, 2019	
approved	PETER ALLABY, P.ENG.	approuvé
date	JANUARY 31, 2019	
Tender		Soumission

PCA Project Manager	Administrateur de projets PCA
project number	no. du projet
676	
drawing no.	no. du dessin
C08	





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NOTE:

1. SLOPE STABILIZATION AREA LIMITS ARE APPROXIMATE AND SHALL BE IDENTIFIED IN THE FIELD BY A DEPARTMENTAL REPRESENTATIVE.
2. CONTRACTOR TO PROTECT WATERCOURSE FROM AND FALLING DEBRIS DURING CONSTRUCTION. SUBMIT WATERCOURSE PROTECTION PLAN PRIOR TO START OF WORK.

BREAD COVE CULVERT — PLAN VIEW

SCALE : 1:100
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



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 JULIEN BABIN
 CRANDALL ENGINEERING LTD.

01	ISSUED FOR TENDER	APR 8 2019
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revisions project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
TERRA NOVA NATIONAL PARK, NL

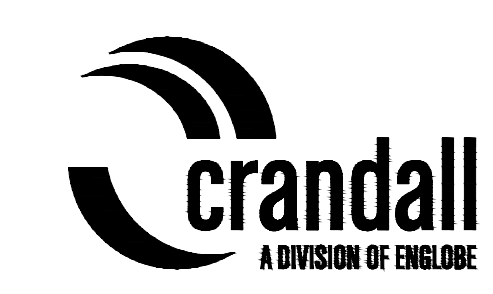
drawing design
BREAD COVE CULVERT UPSTREAM END EROSION MITIGATION PLAN VIEW

designed JULIEN BABIN P.ENG conq
 date JAN 23, 2019
 drawn ANDY CALDWELL P.TECH dessiné
 date JAN 23, 2019
 approved JULIEN BABIN P.ENG approuvé
 date JAN 23, 2019

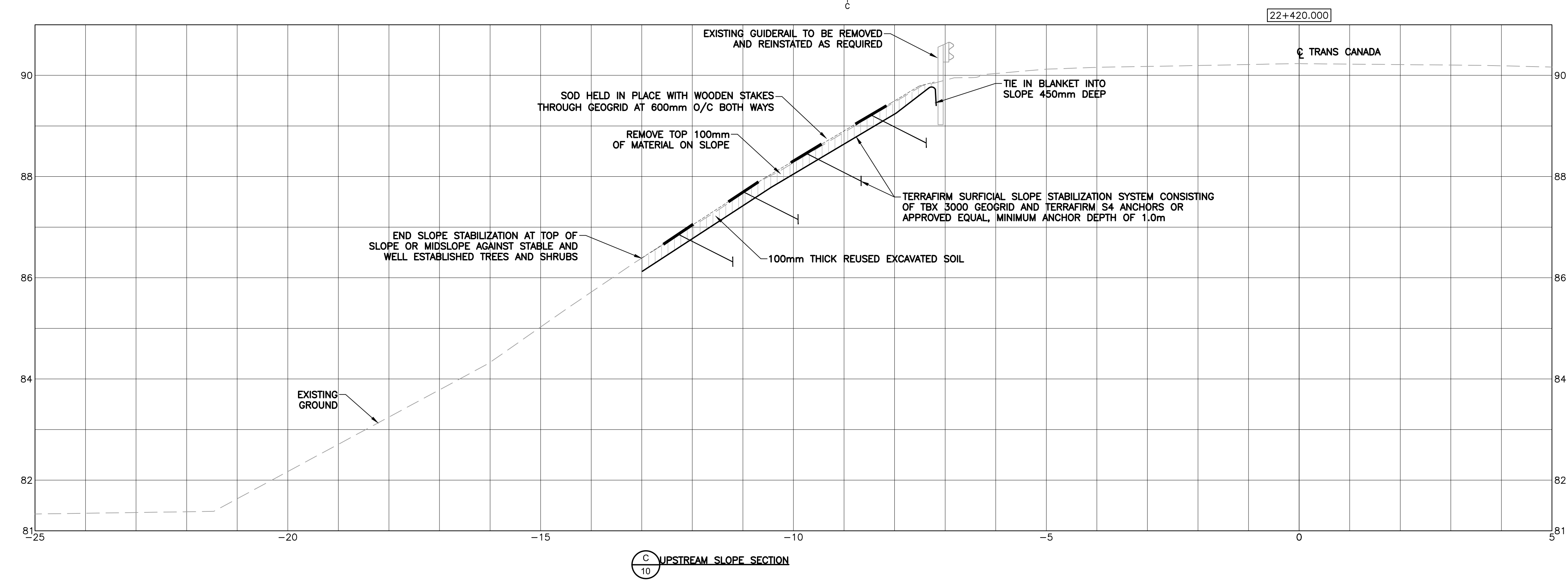
Tender Submission
 PCA Project Manager Administrateur de projets APC
 project number no. du projet

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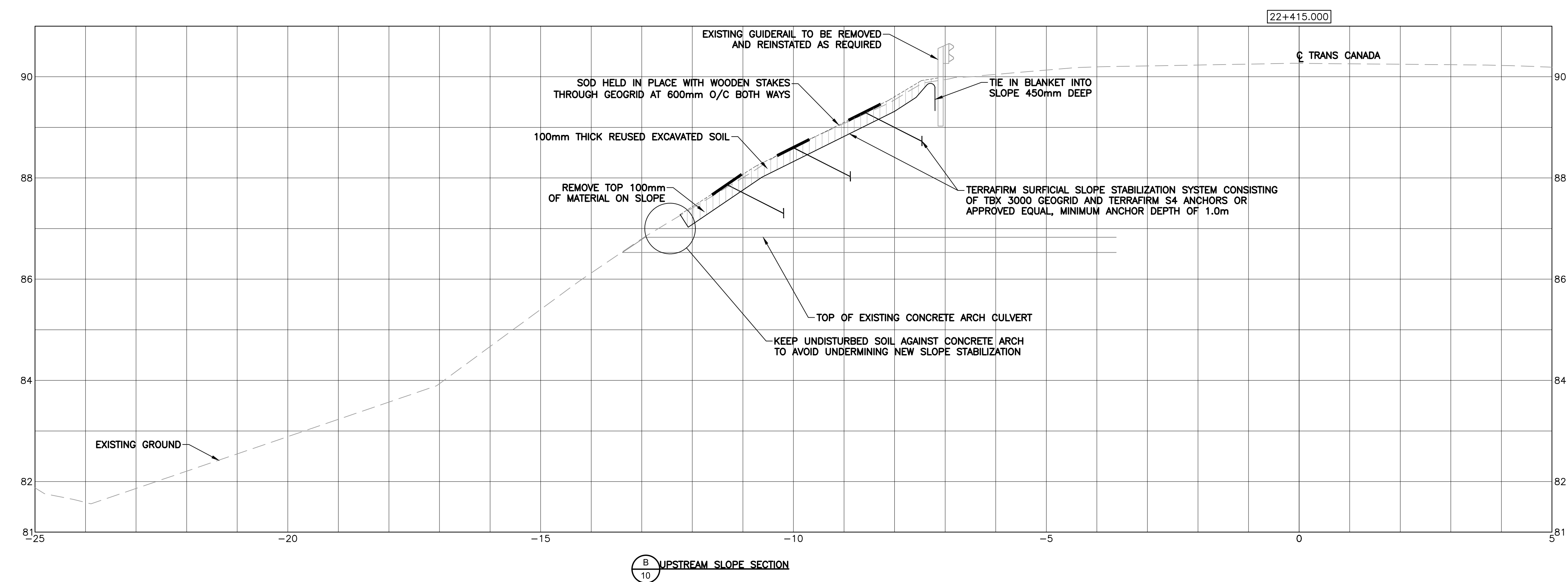
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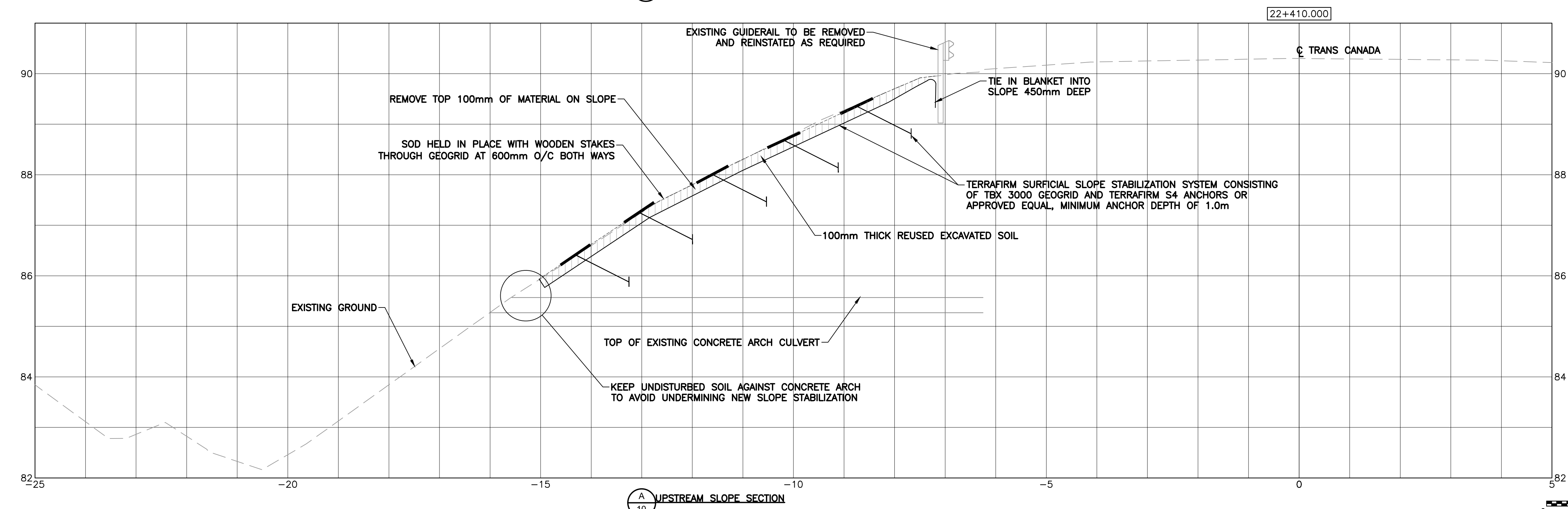
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C10 UPSTREAM SLOPE SECTION



B10 UPSTREAM SLOPE SECTION



A10 UPSTREAM SLOPE SECTION



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 2019
 CRANDALL ENGINEERING LTD.
 To practice Professional Engineering in New Brunswick and Labrador, permit No. as issued to Project Reg. 2019, which is valid for the year 2019.

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project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL

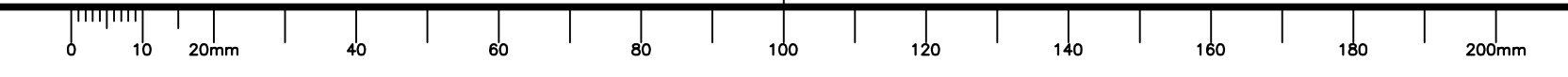
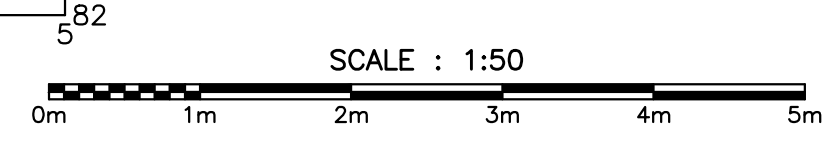
drawing design
BREAD COVE CULVERT UPSTREAM END EROSION MITIGATION CROSS SECTIONS

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	

Tender Submission
 PCA Project Manager Administrateur de projets APC
 project number no. du projet

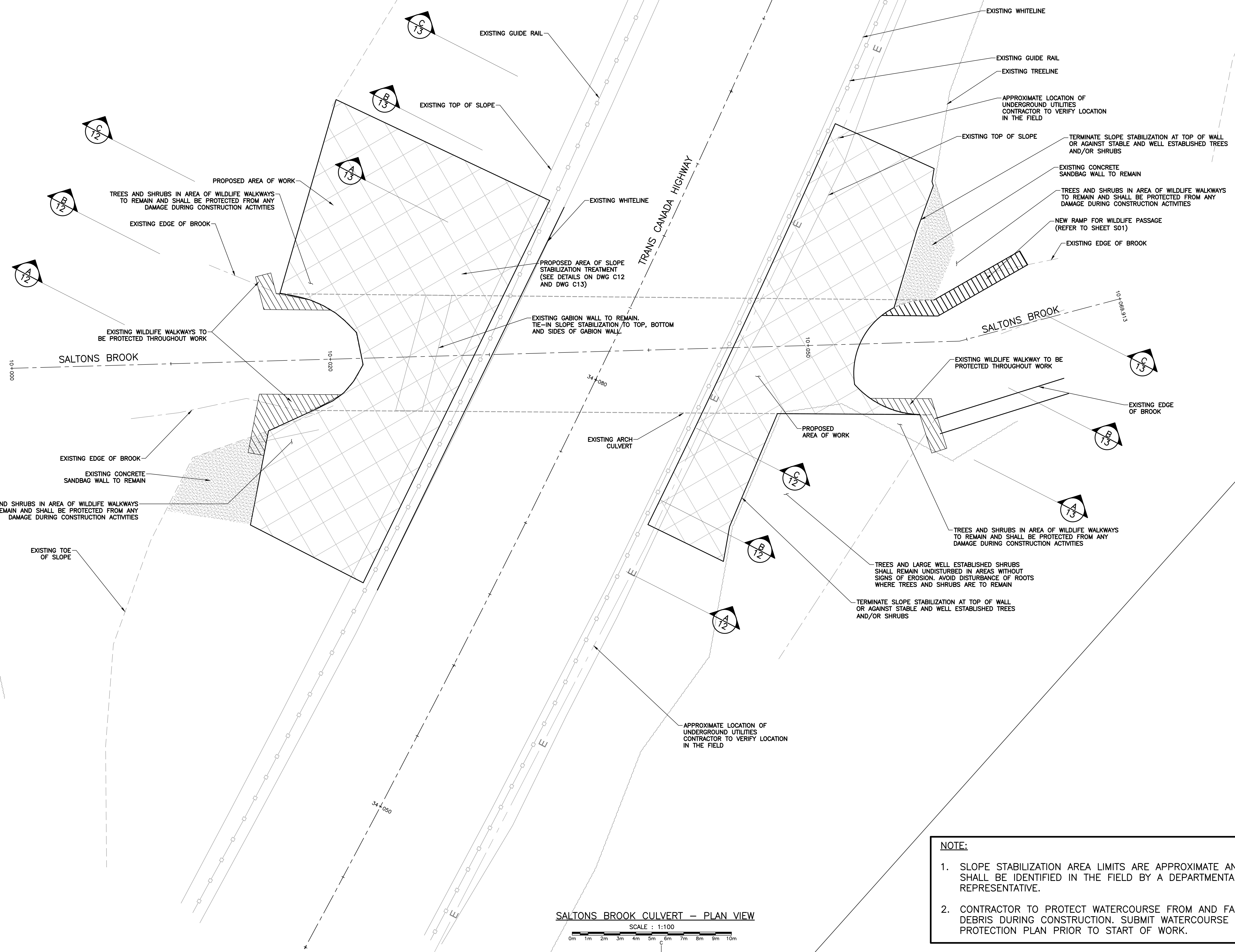
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drawing no. no. du dessin
C10





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SALTONS BROOK CULVERT - PLAN VIEW

SCALE : 1:100
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

NOTE:

1. SLOPE STABILIZATION AREA LIMITS ARE APPROXIMATE AND SHALL BE IDENTIFIED IN THE FIELD BY A DEPARTMENTAL REPRESENTATIVE.
2. CONTRACTOR TO PROTECT WATERCOURSE FROM AND FALLING DEBRIS DURING CONSTRUCTION. SUBMIT WATERCOURSE PROTECTION PLAN PRIOR TO START OF WORK.



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 PERMIT HOLDER
 CRANDALL ENGINEERING LTD.
 To provide Professional Engineering
 or Architectural and related
 services as defined in the Reg. 212
 which is used for the purpose of

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revisions		date

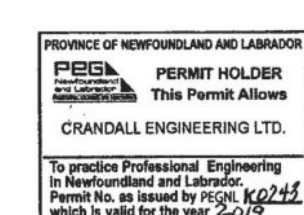
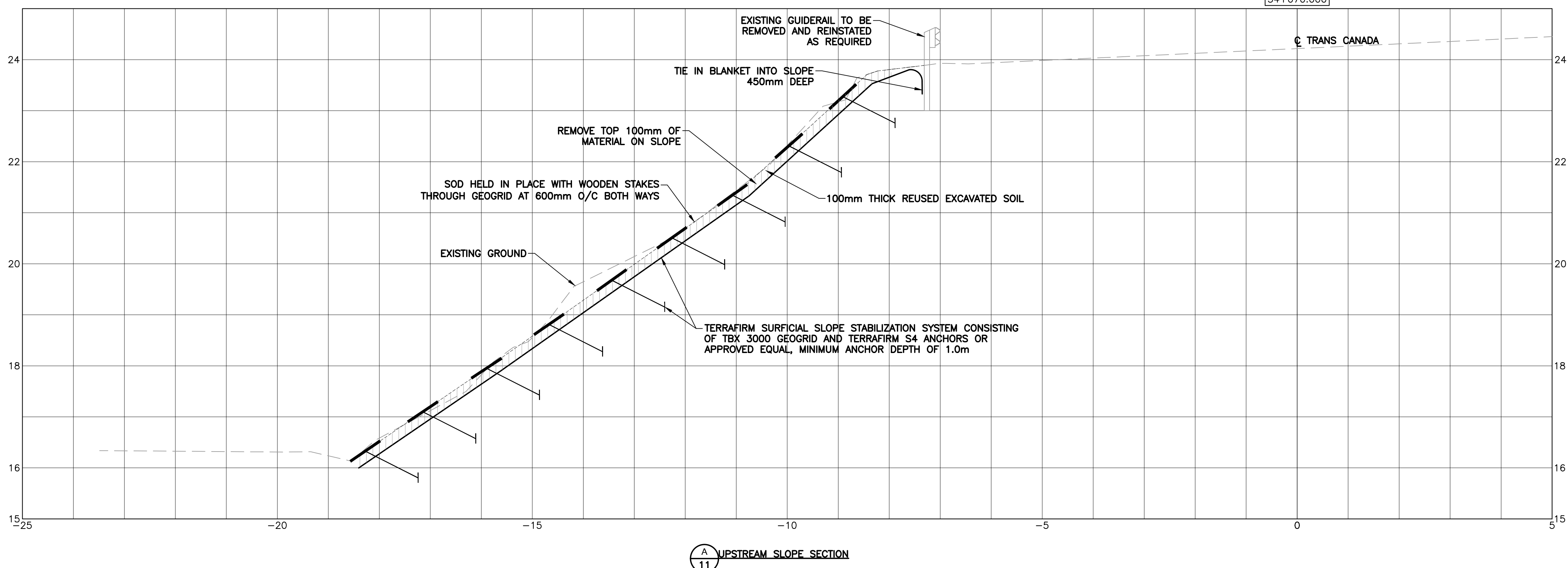
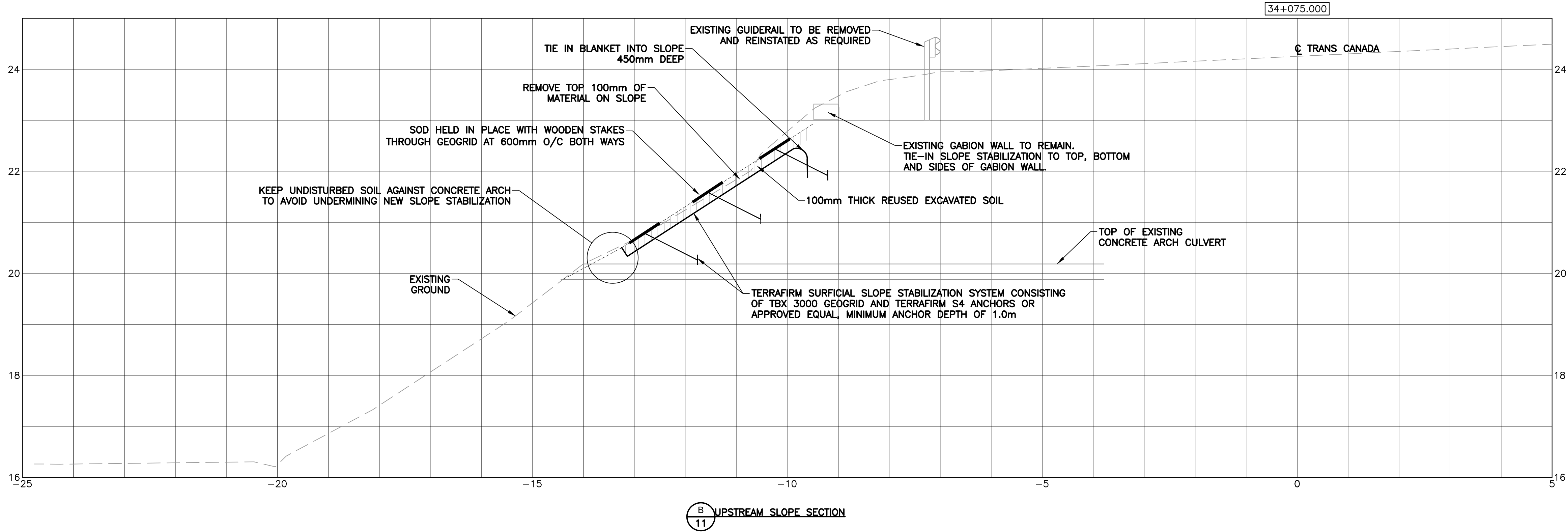
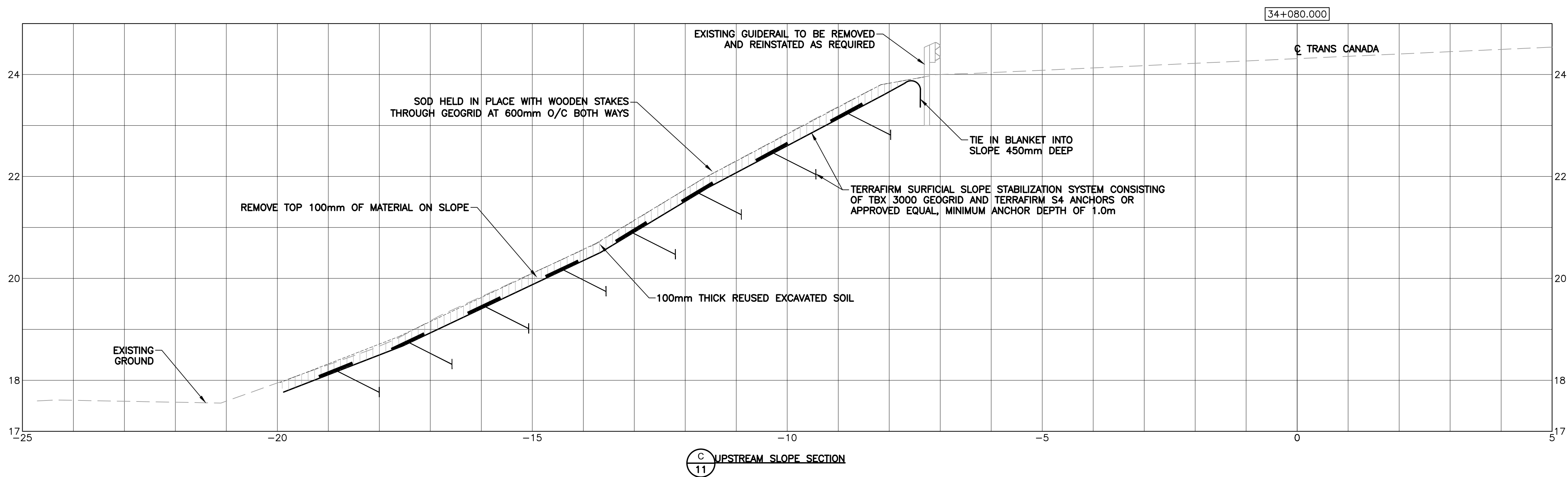
project
**TRANS CANADA HIGHWAY
 SAFETY AND STANDARDS
 REHABILITATION 2019-2020
 TERRA NOVA
 NATIONAL PARK, NL**

drawing design
**SALTONS BROOK CULVERT
 UPSTREAM AND
 DOWNSTREAM END
 EROSION MITIGATION
 PLAN VIEW**

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
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PCA Project Manager	Administrateur de projets APC	
project number	no. du projet	
	676	
drawing no.	no. du dessin	
	C11	



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 644 Prospect Street
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 Fax: (506) 852-2222 Fax: (506) 852-2222 Fax: (506) 852-2222
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01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
TERRA NOVA NATIONAL PARK, NL

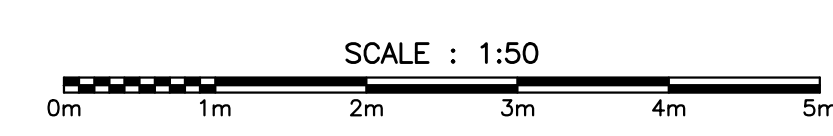
drawing
SALTONS BROOK CULVERT UPSTREAM END EROSION MITIGATION OPTIONS CROSS SECTIONS

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender		Soumission

PCA Project Manager Administrateur de projets APC
 project number no. du projet

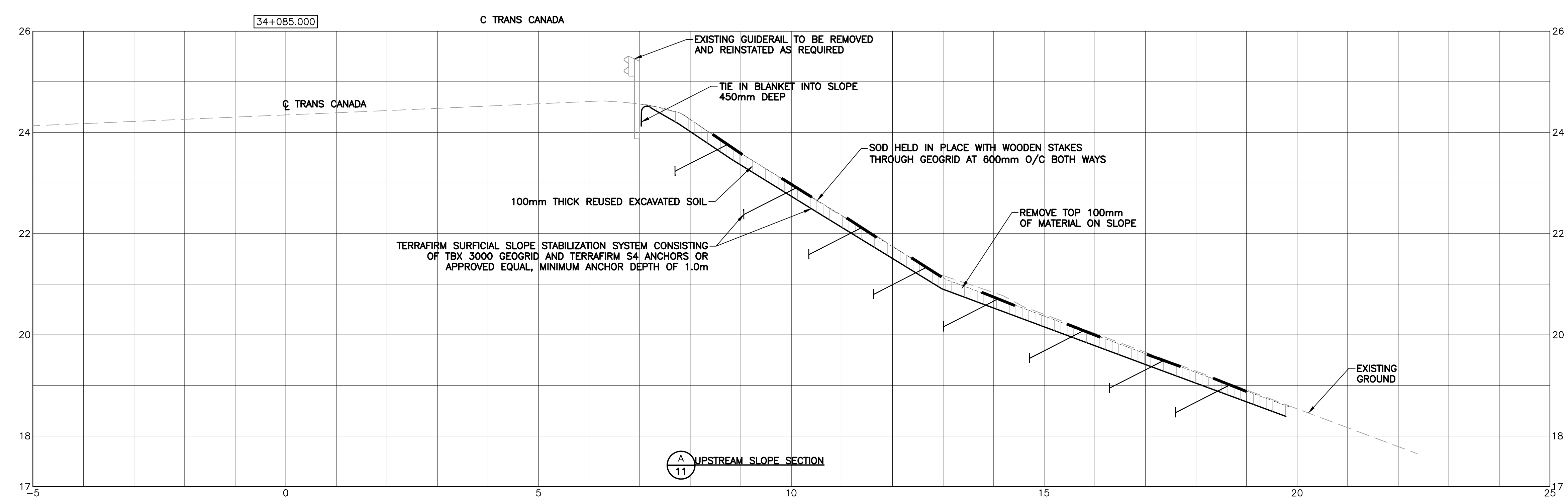
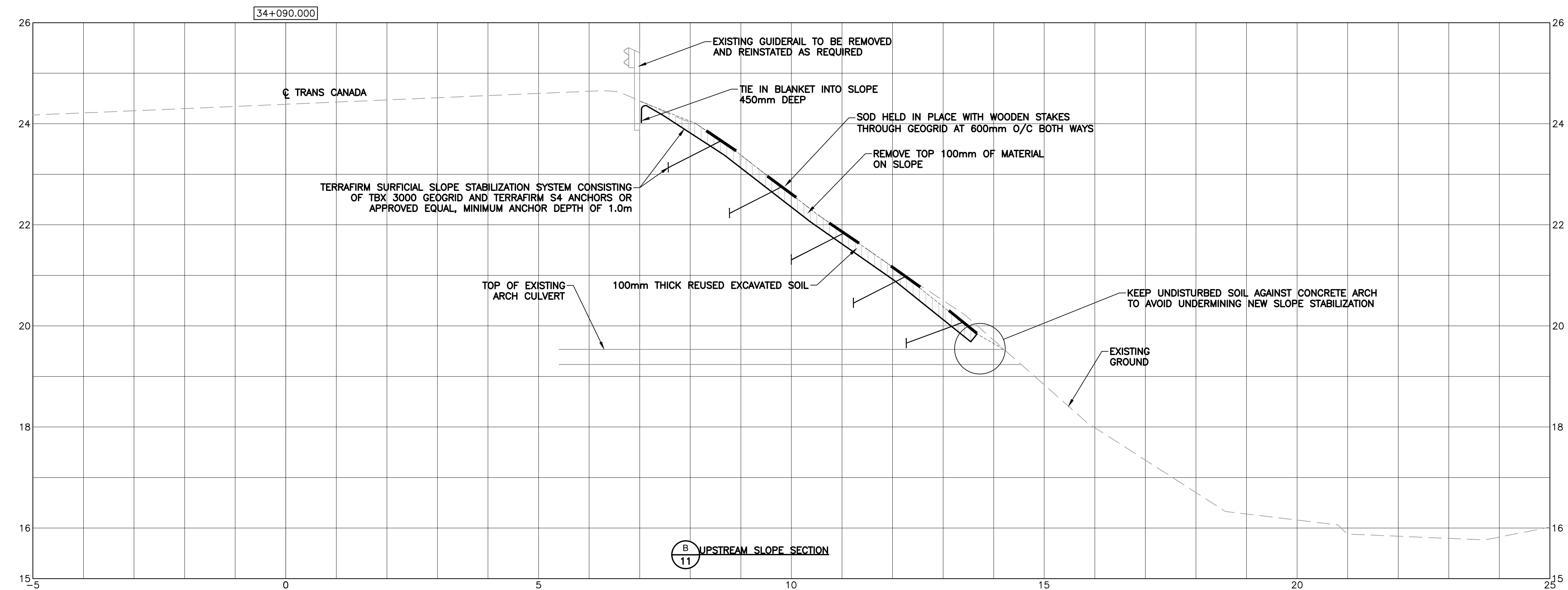
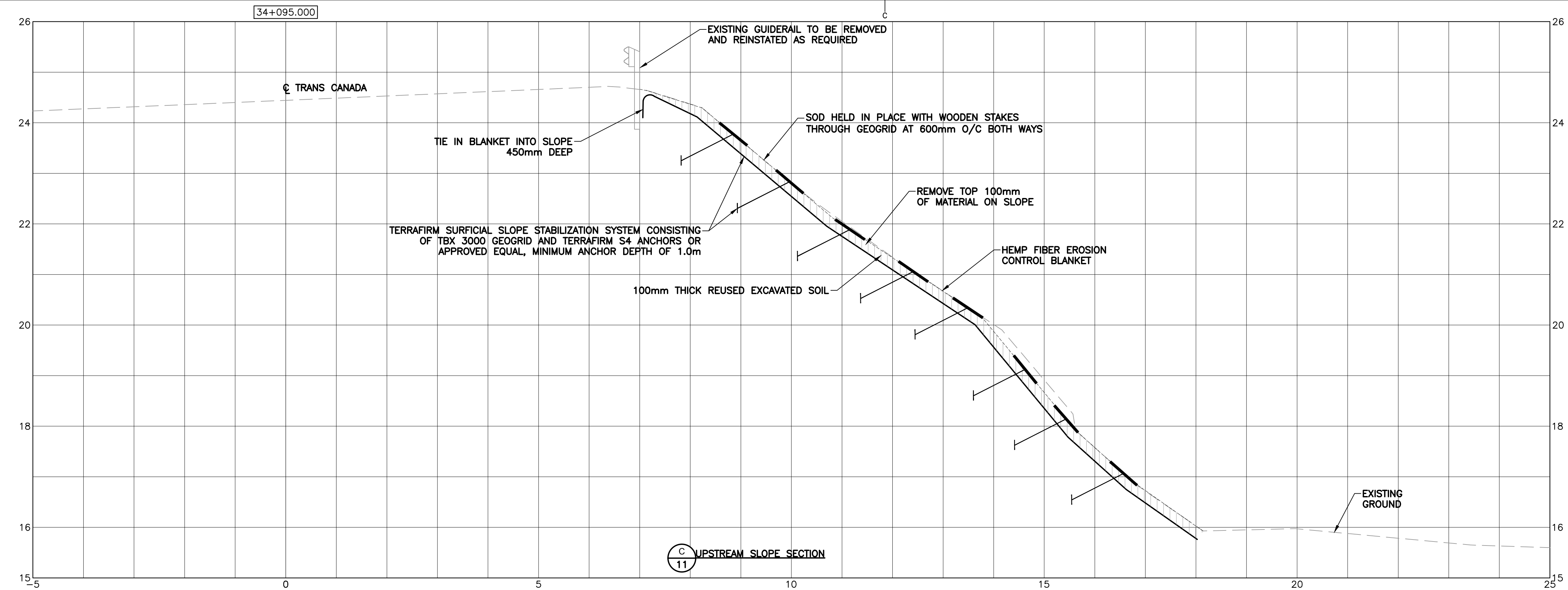
676

drawing no. no. du dessin
C12





MONCTON 1777 St. George Street, Moncton, N.B. Canada
 SAINT JOHN 122 Pine Street, Saint John, N.B. Canada
 FREDERICTON 64 Prospect Street, Fredericton, N.B. Canada
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 P. ENG. JULIEN BABIN
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revisions		date

TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
 TERRA NOVA NATIONAL PARK, NL

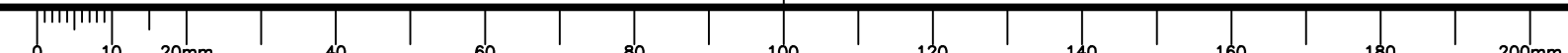
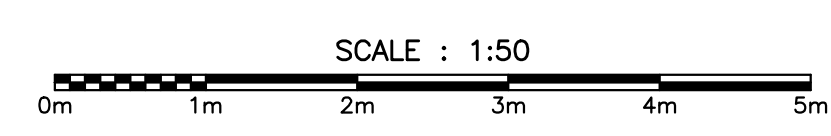
SALTONS BROOK CULVERT DOWNSTREAM END EROSION MITIGATION OPTIONS CROSS SECTIONS

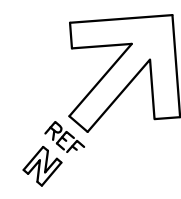
designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender		Soumission

PCA Project Manager Administrateur de projets APC

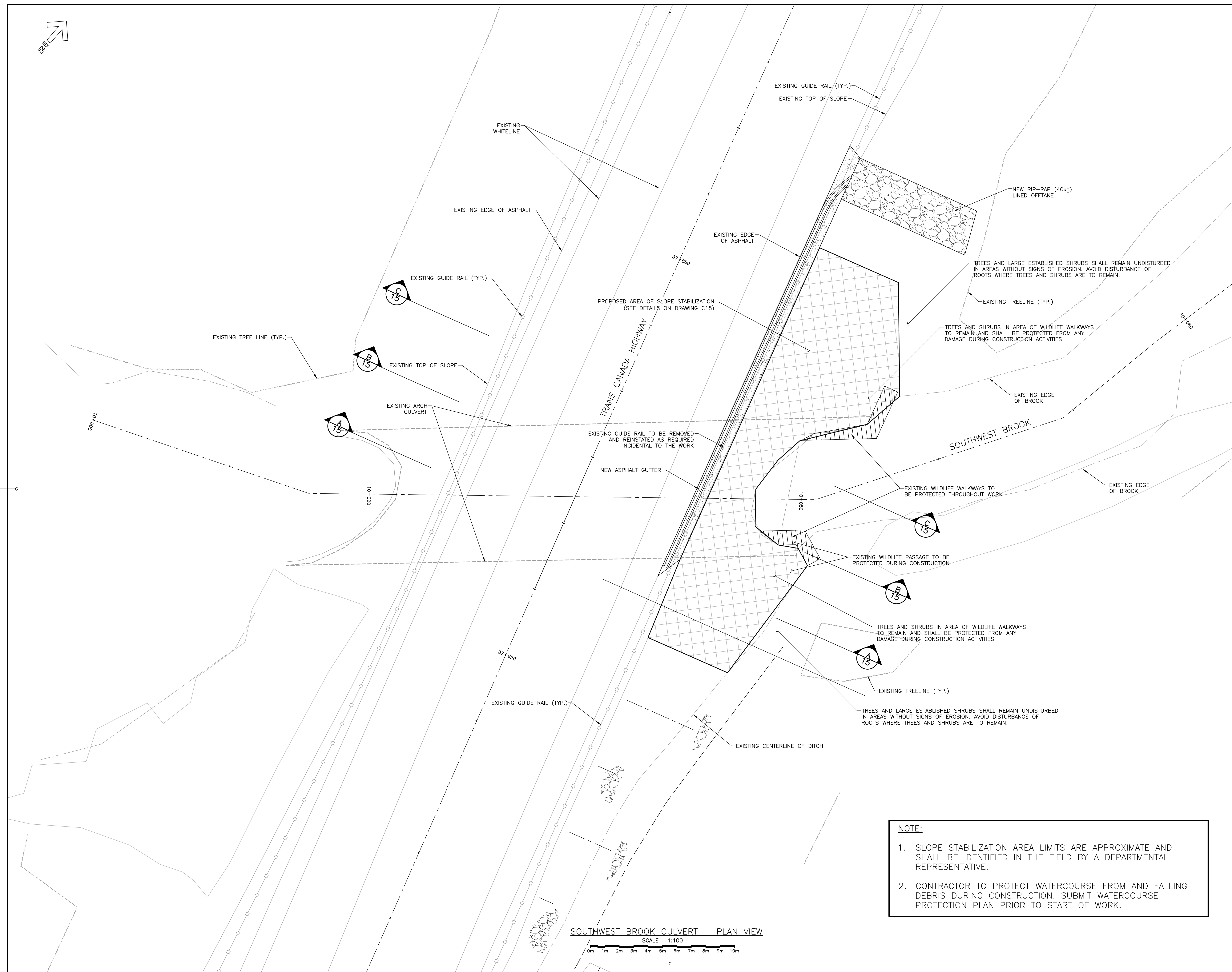
project number no. du projet
676

drawing no. no. du dessin
C13

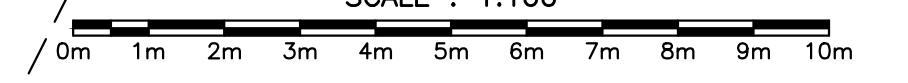




MONCTON 1077 Blvd. St. George Blvd. 1000
 SAINT JOHN 133 Pictou William Street 200
 FREDERICTON 564 Prospect Street 200
 1000 M.B. Canada 1000 M.B. Canada 1000
 Tel: (506) 857-2777 Tel: (506) 857-2777 Tel: (506) 857-2777
 Fax: (506) 857-2775 Fax: (506) 857-2775 Fax: (506) 857-2775
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SOUTHWEST BROOK CULVERT - PLAN VIEW
 SCALE : 1:100



NOTE:

1. SLOPE STABILIZATION AREA LIMITS ARE APPROXIMATE AND SHALL BE IDENTIFIED IN THE FIELD BY A DEPARTMENTAL REPRESENTATIVE.
2. CONTRACTOR TO PROTECT WATERCOURSE FROM AND FALLING DEBRIS DURING CONSTRUCTION. SUBMIT WATERCOURSE PROTECTION PLAN PRIOR TO START OF WORK.



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01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
TERRA NOVA NATIONAL PARK, NL

drawing design
SOUTHWEST BROOK CULVERT DOWNSTREAM END EROSION MITIGATION PLAN VIEW

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender		Soumission

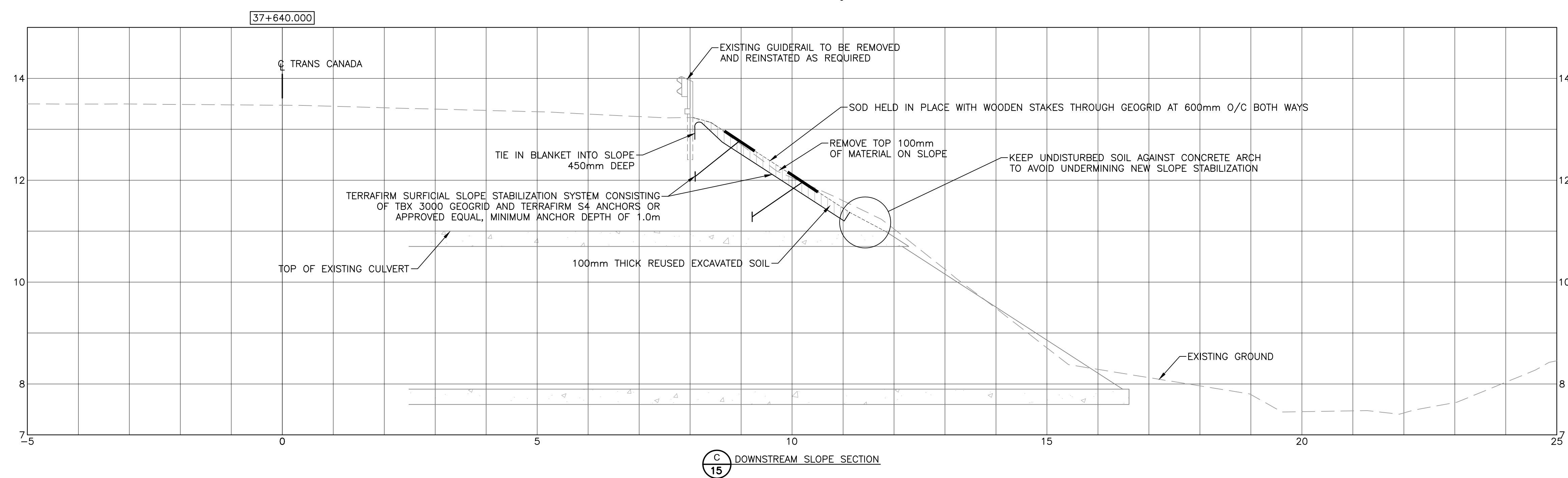
PCA Project Manager Administrateur de projets APC
 project number no. du projet

676

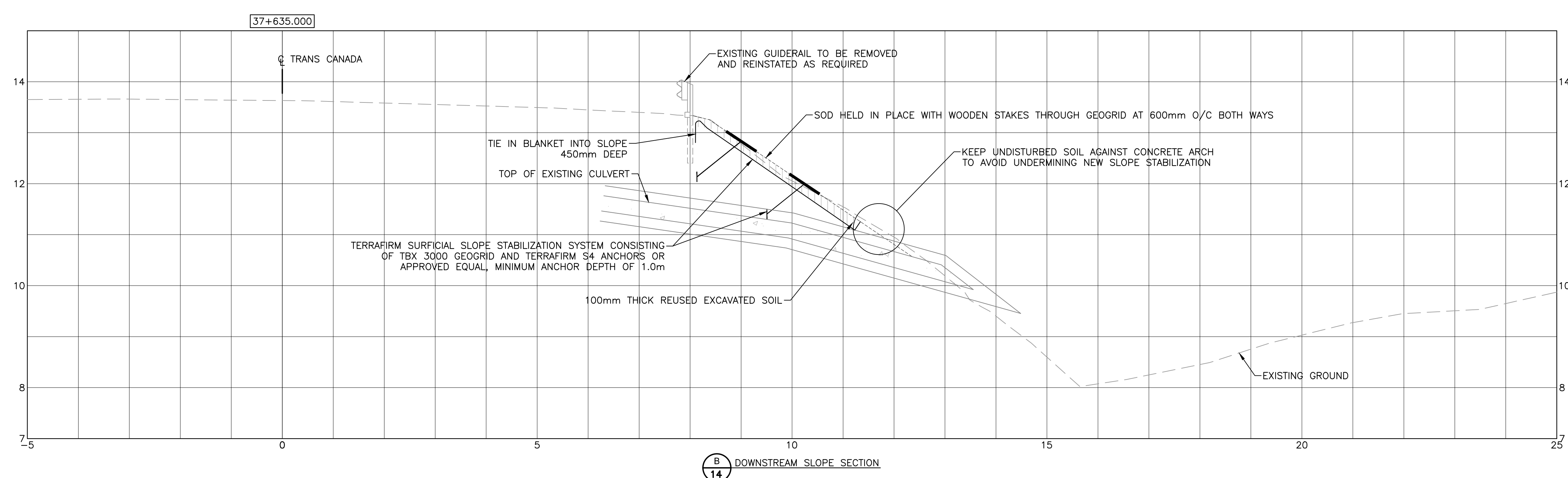
drawing no. no. du dessin
C14



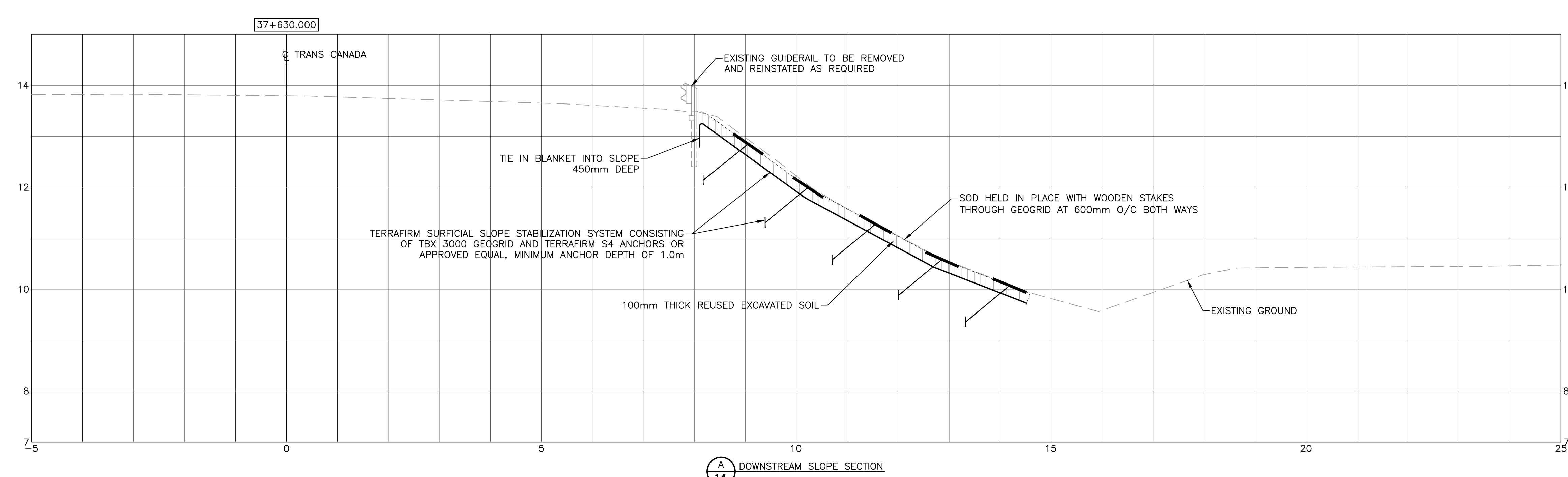
MONCTON 1077 Blvd. St. George Blvd. Suite 402 Moncton, N.B. Canada E1C 2G6 Tel: (506) 853-2777 Fax: (506) 857-2753
 SAINT JOHN 133 Pictou William Street Suite 703 Saint John, N.B. Canada E7B 0G4 Tel: (506) 653-0885 Fax: (506) 653-2850
 FREDERICTON 564 Prospect Street Suite 101 Fredericton, N.B. Canada E1B 0G4 Tel: (506) 461-6468 Fax: (506) 463-2500
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C 15 DOWNSTREAM SLOPE SECTION



B 14 DOWNSTREAM SLOPE SECTION



A 14 DOWNSTREAM SLOPE SECTION



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 P.Eng. JULIEN BABIN
 CRANDALL ENGINEERING LTD.
 To practice Professional Engineering in New Brunswick and Labrador, Permit No. as issued to Project Reg. 2019, which is valid for the year 2019.

01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL

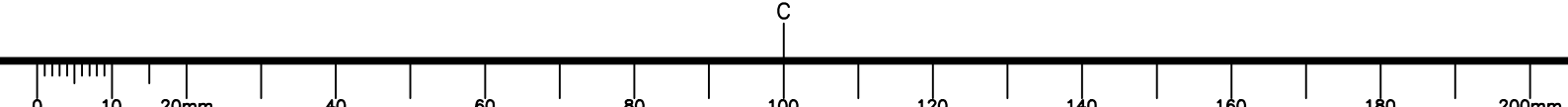
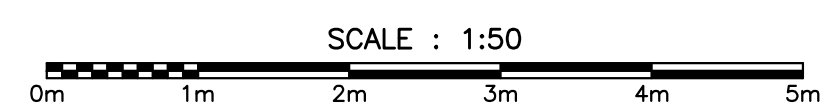
drawing dessin
SOUTHWEST BROOK CULVERT DOWNSTREAM END EROSION MITIGATION CROSS SECTIONS

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	

Tender Soumission
 PCA Project Manager Administrateur de projets APC
 project number no. du projet

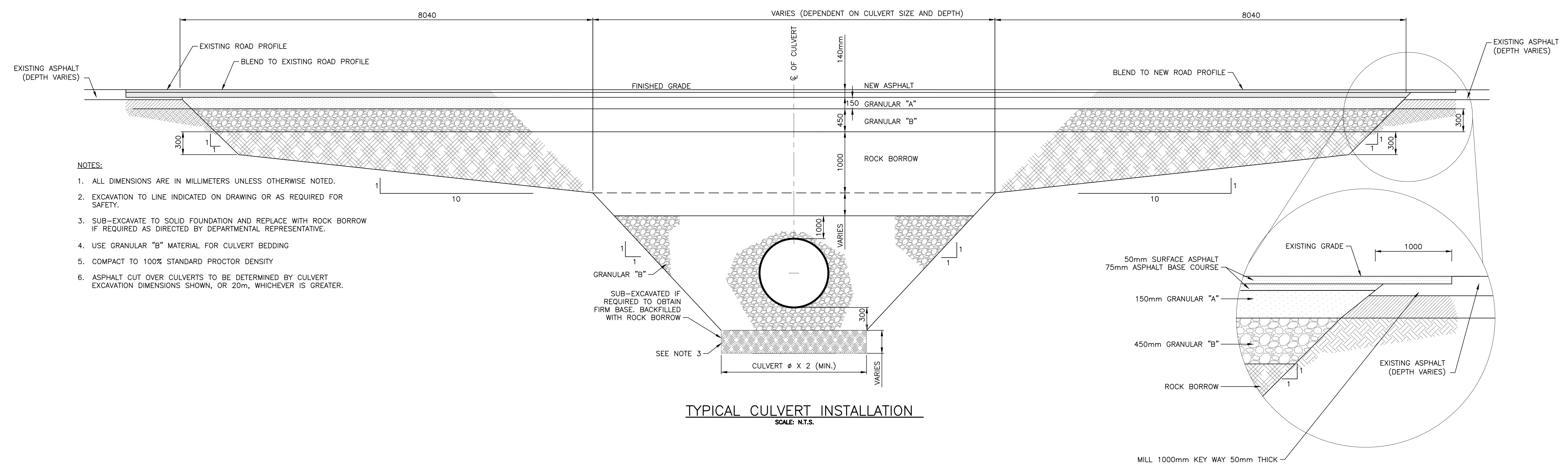
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drawing no. no. du dessin
C15

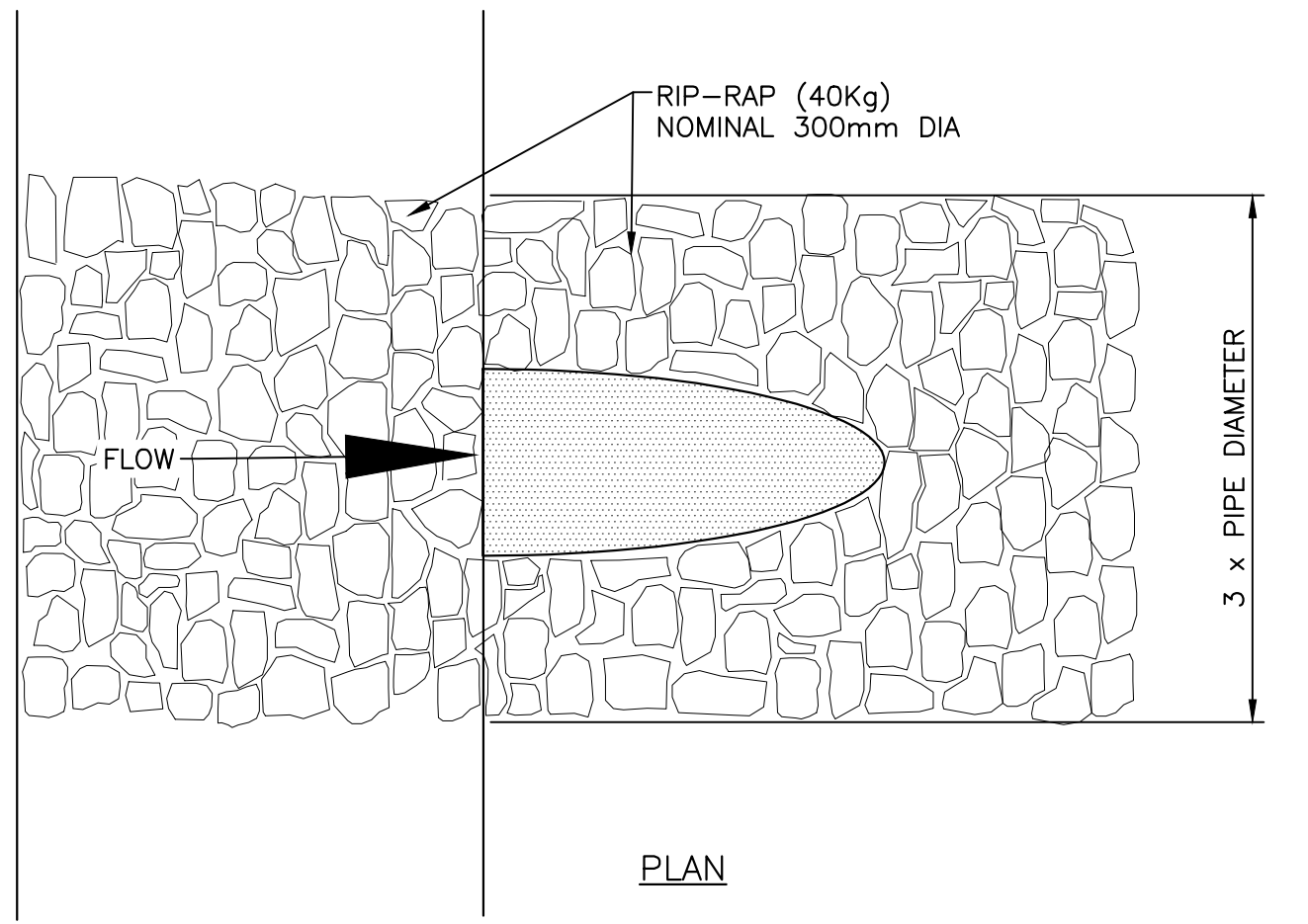
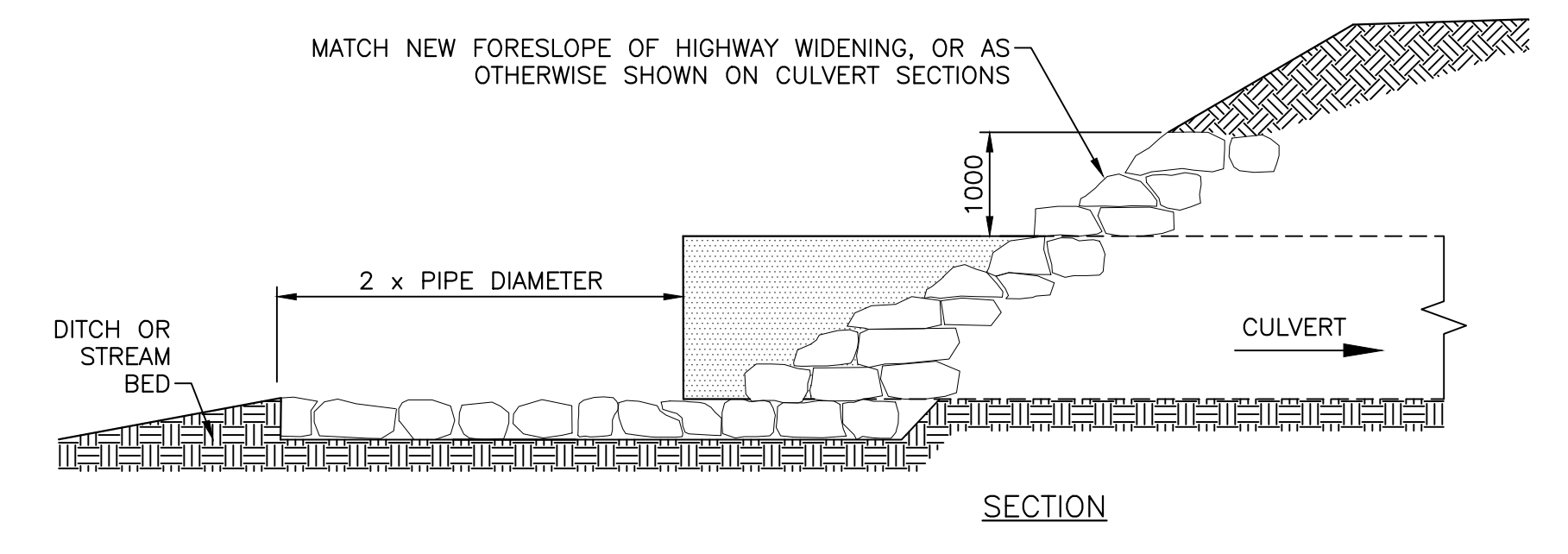




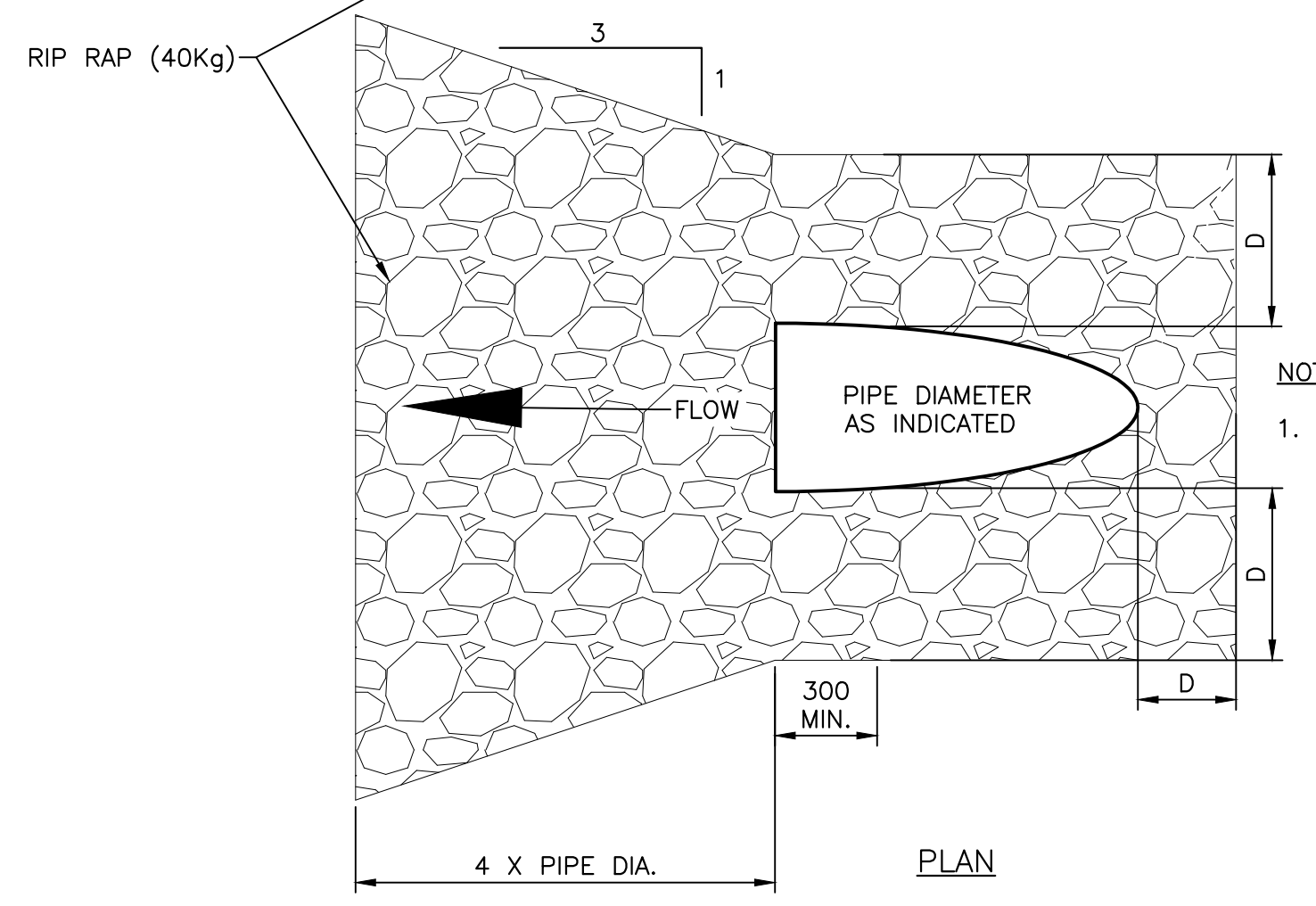
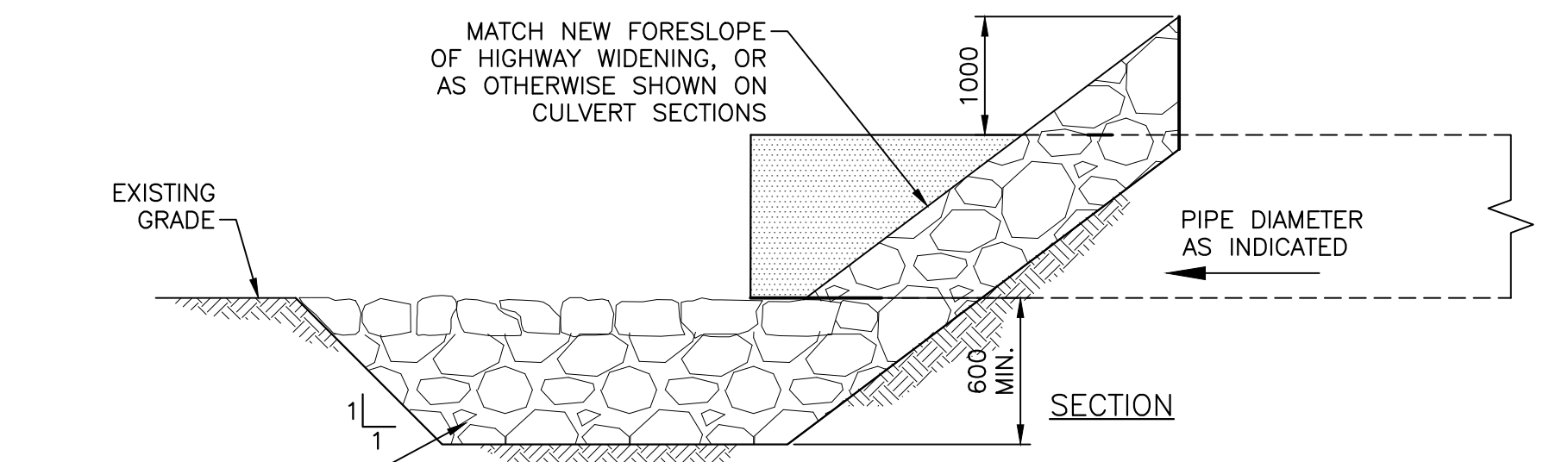
MONCTON 1077 Blvd. St. George Blvd. Suite 402 Moncton, N.B. Canada Tel: (506) 857-2777 Fax: (506) 857-2753
 SAINT JOHN 133 Prince William Street Suite 202 Saint John, N.B. Canada Tel: (506) 653-0883 Fax: (506) 653-2350
 FREDERICTON 554 Prospect Street Suite 101 Fredericton, N.B. Canada Tel: (506) 451-4440 Fax: (506) 653-2350
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TYPICAL CULVERT INSTALLATION
SCALE: N.T.S.



RIP-RAP TREATMENT AT CULVERT INLET EXTENSIONS (TYP.)
SCALE: N.T.S. (1) C16



RIP-RAP APRON AT CULVERTS OUTLET EXTENSIONS (TYP.)
SCALE: N.T.S. (2) C16



PROVINCE OF NEWBRUNSWICK AND LABRADOR
 PETER ALLABY
 P.Eng. License No. 08250
 CRANDALL ENGINEERING LTD.
 1000 Professional Engineering
 in New Brunswick and Labrador
 Permit No. as issued to Project Reg. 2019
 which is valid for the year 2019

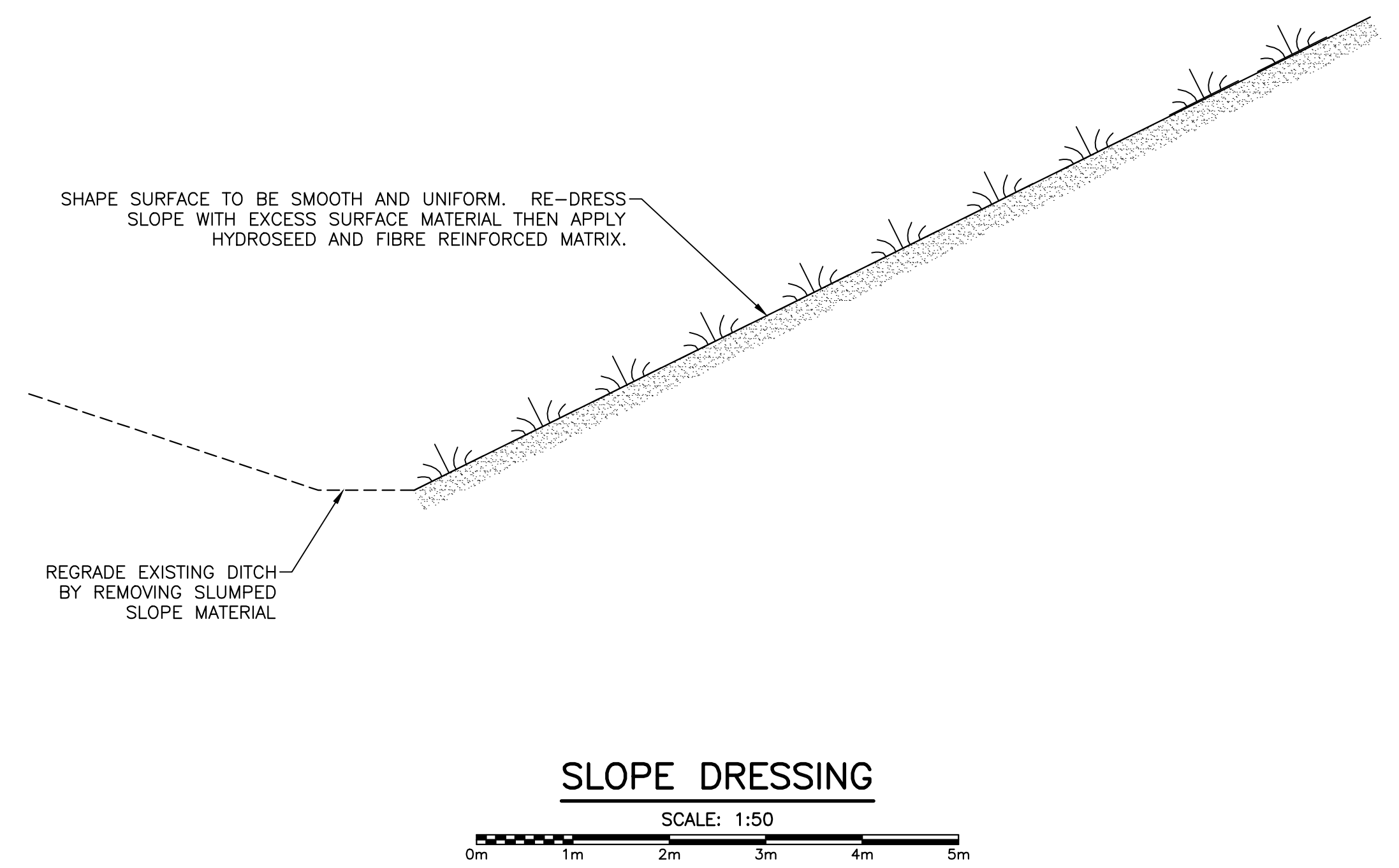
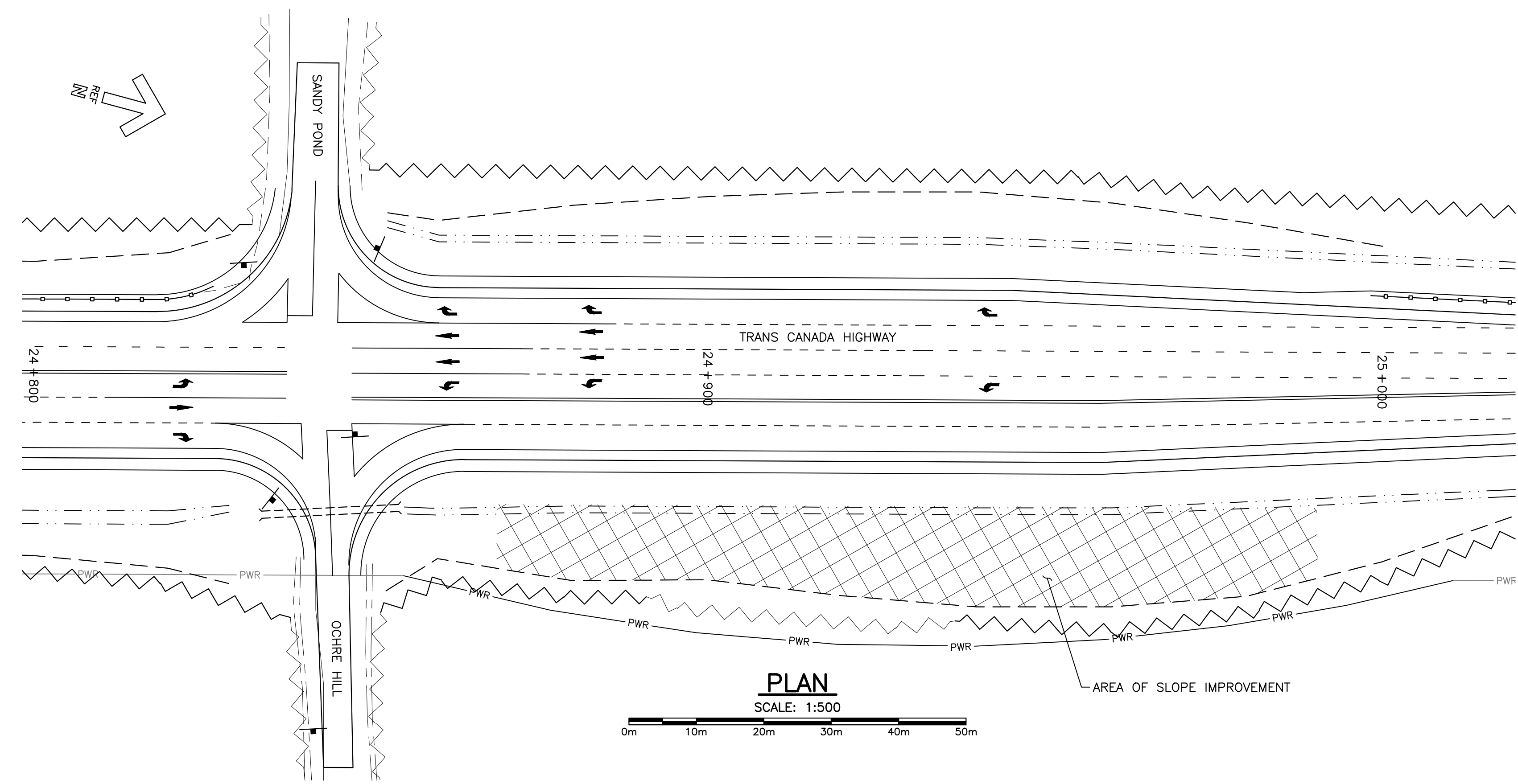
01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
 TERRA NOVA NATIONAL PARK, NL

designed PETER ALLABY, P.ENG. conq
 date JANUARY 31, 2019
 drawn KEVIN WARD P.TECH dessin
 date JANUARY 31, 2019
 approved PETER ALLABY, P.ENG. approuv
 date JANUARY 31, 2019
 Tender Submission
 PCA Project Manager Administrateur de projets APC
 project number no. du projet
 676
 drawing no. no. du dessin
 C16



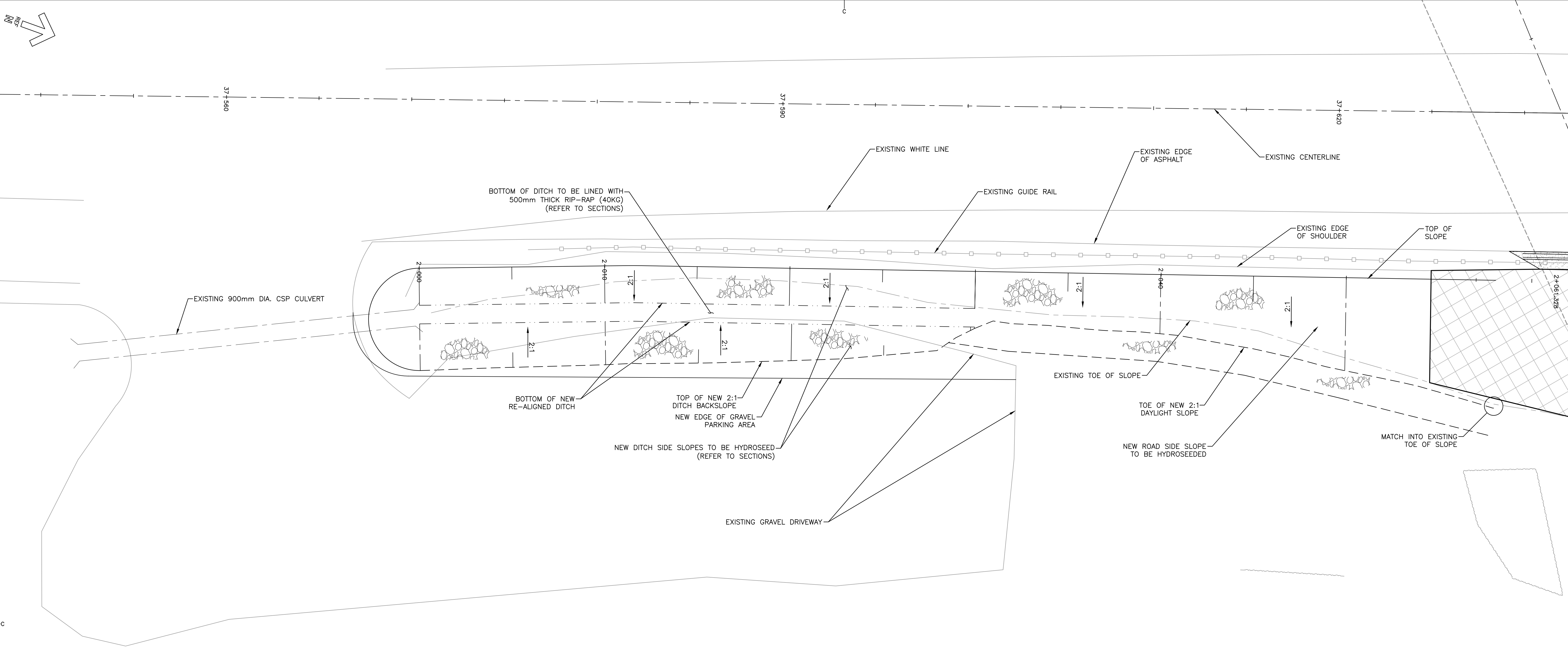
MONCTON 1077 Blvd. St. George Blvd. Suite 402 Moncton, N.B. Canada Tel: (506) 853-2777 Fax: (506) 857-2753
 SAINT JOHN 133 Pictou William Street Suite 202 St. John's, N.B. Canada Tel: (506) 853-0883 Fax: (506) 853-2850
 FREDERICTON 564 Prospect Street Suite 101 Fredericton, N.B. Canada Tel: (506) 453-4443 Fax: (506) 453-2500
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 P. Babin
 JULIEN BABIN
 CRANDALL ENGINEERING LTD.
 To practice Professional Engineering in New Brunswick and Labrador, Permit No. as issued to Project Reg. 2019, which is valid for the year 2019.

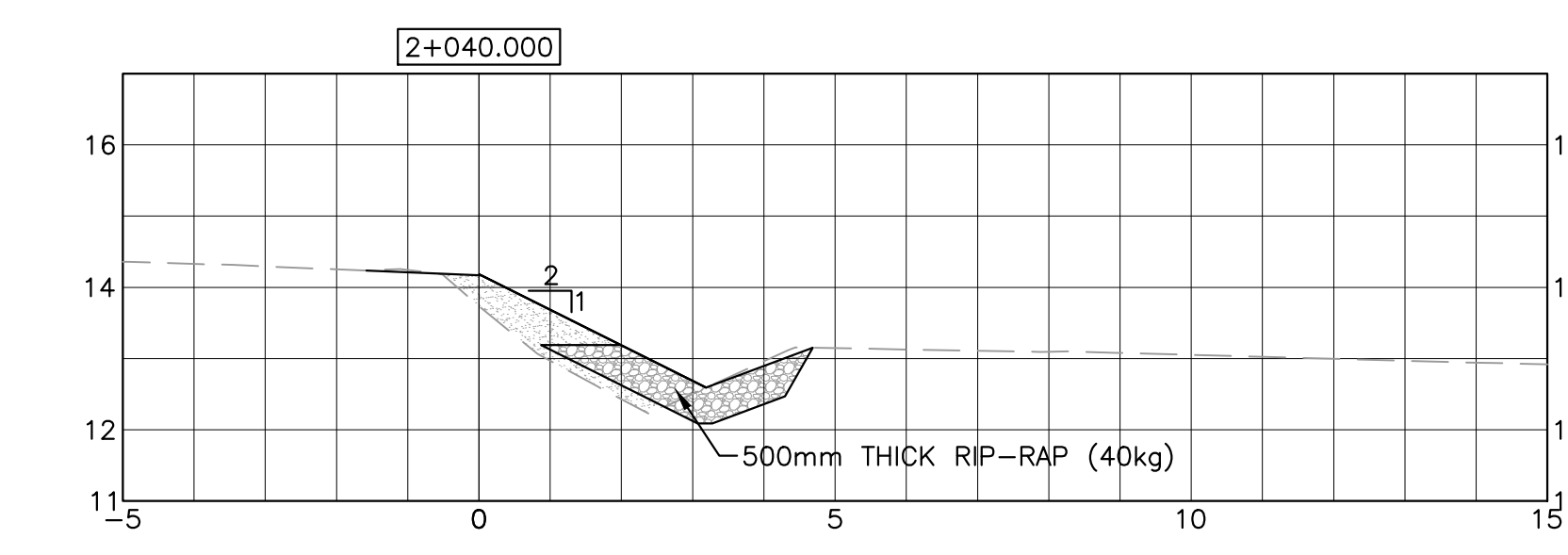
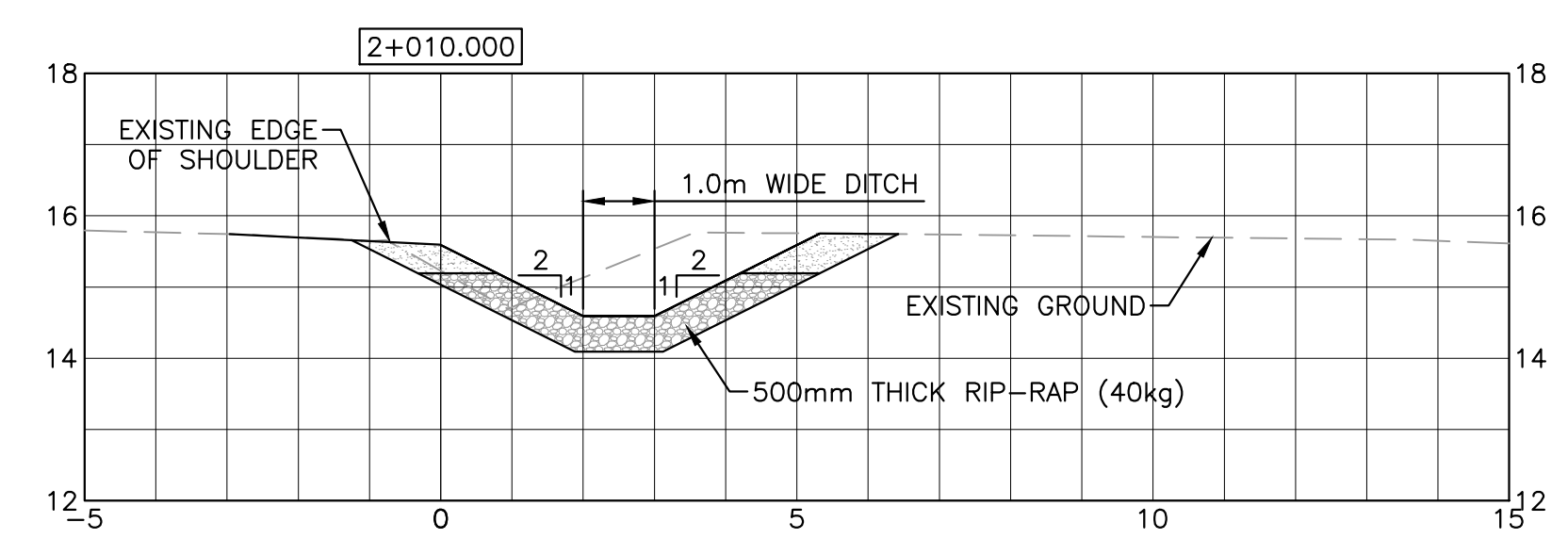
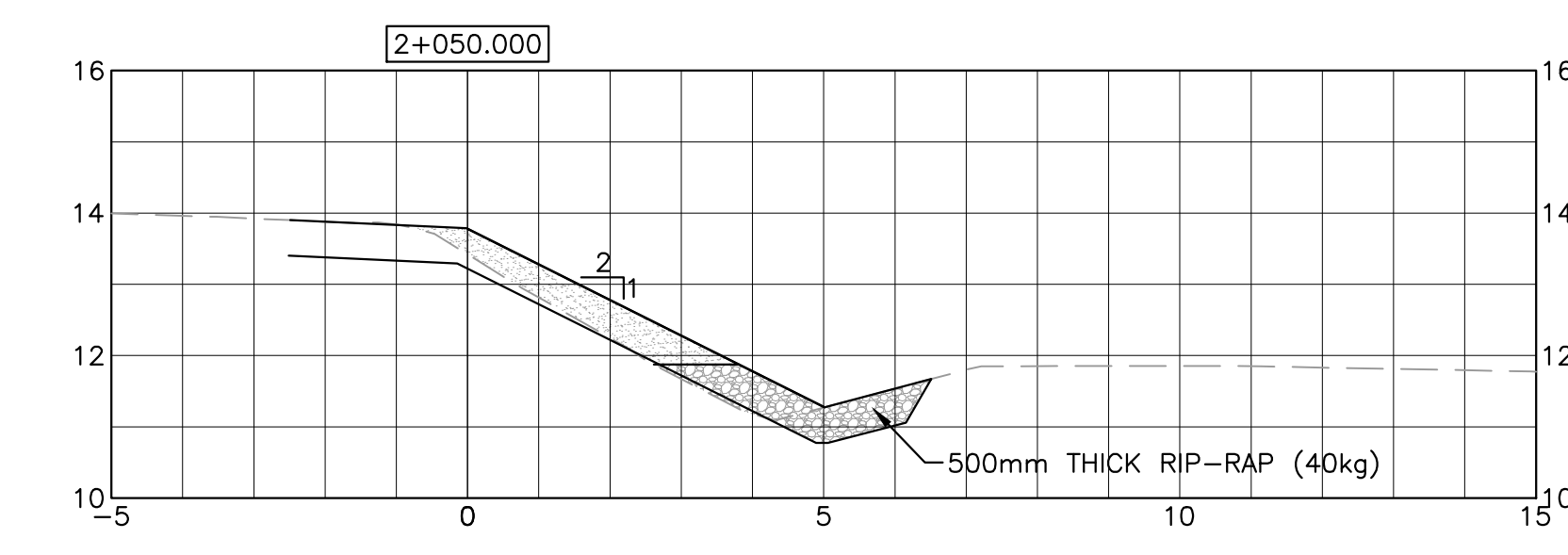
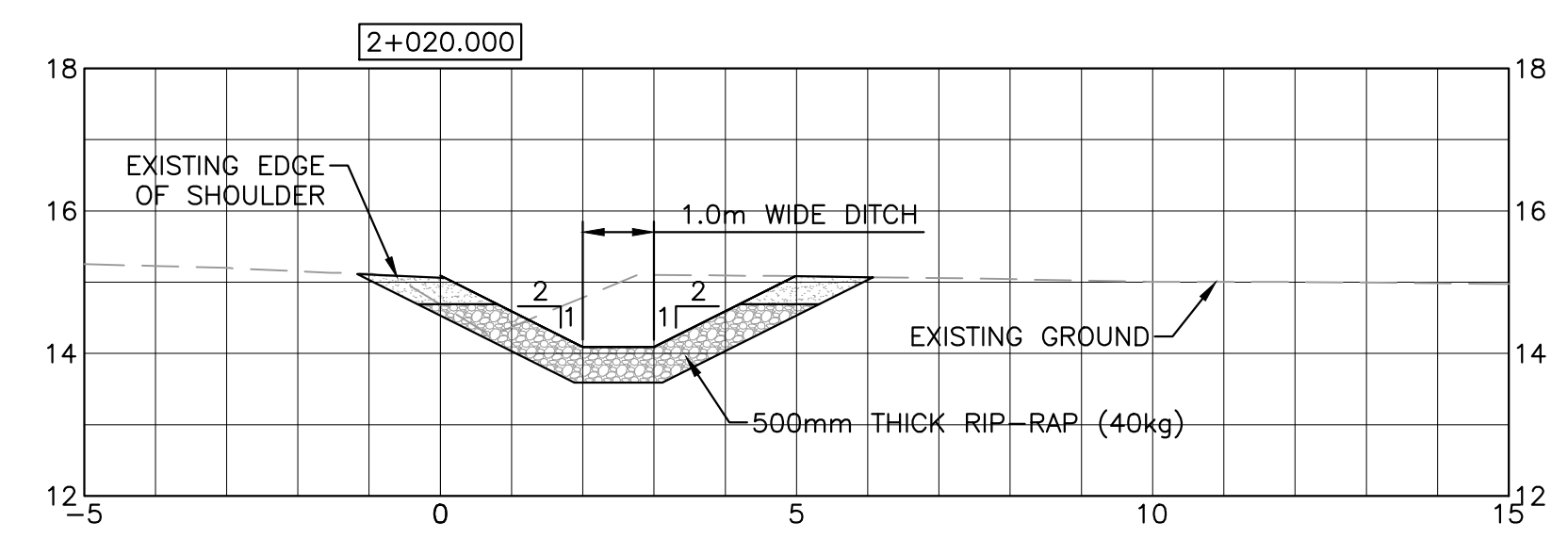
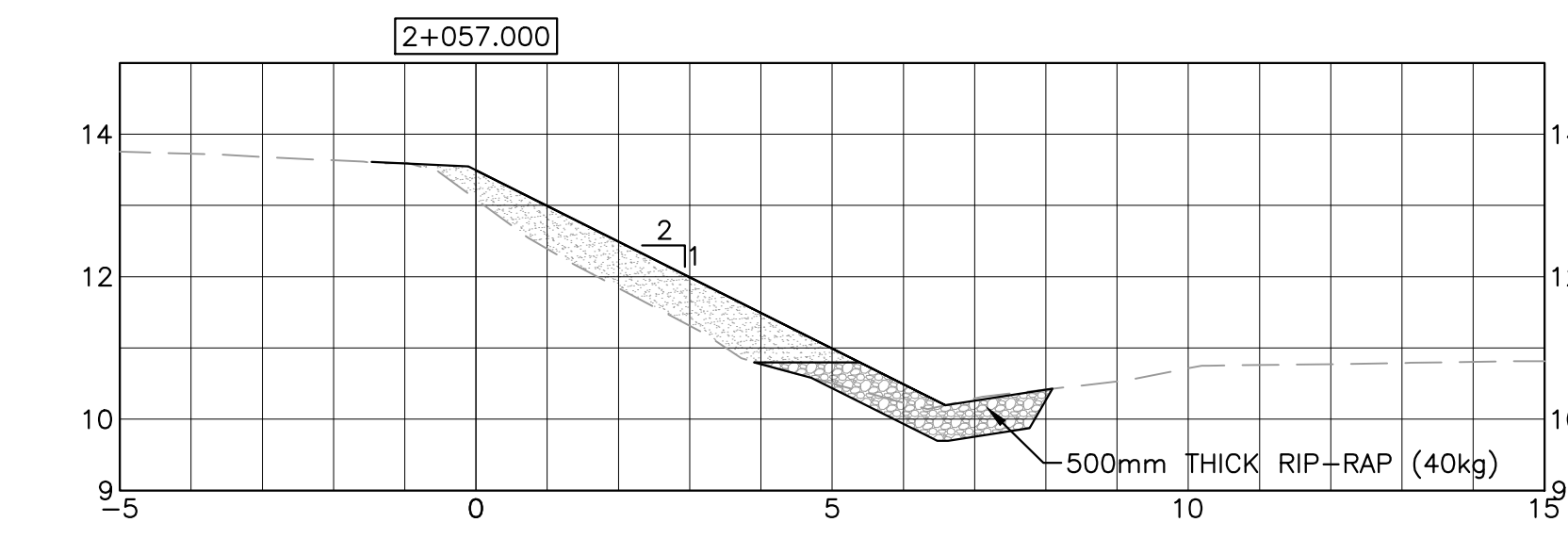
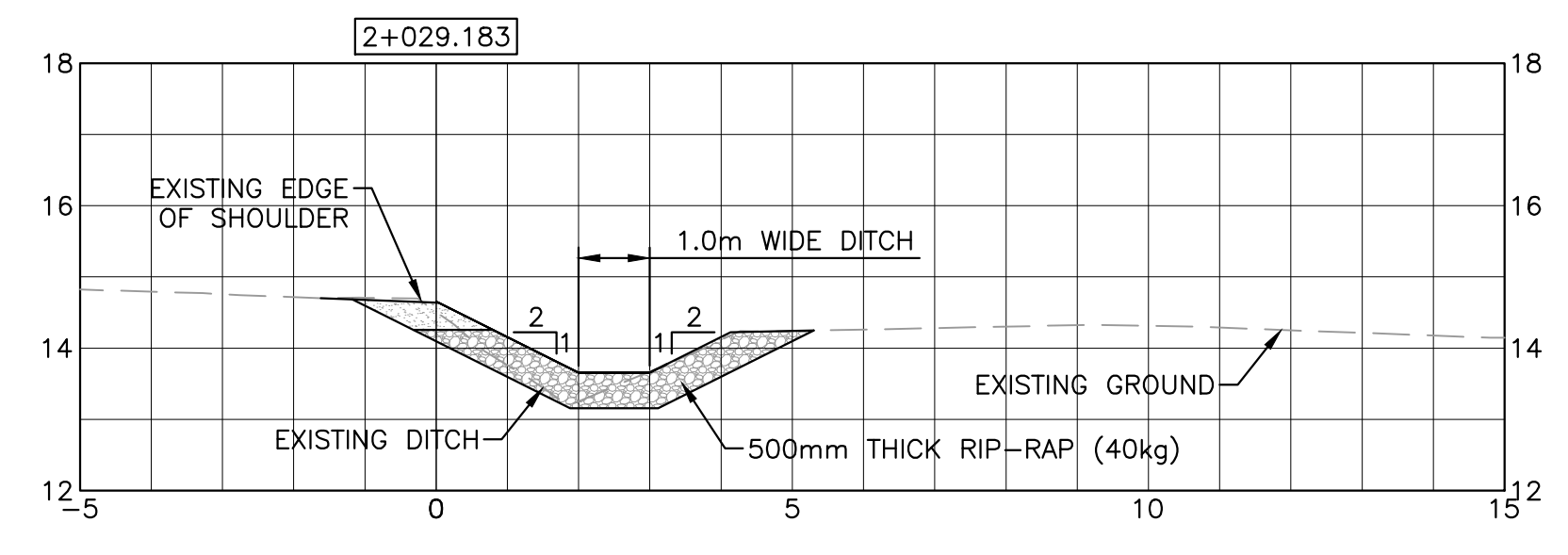
01	ISSUED FOR TENDER	APR 8 2019
revisions		date
project	TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL	
drawing	OCHRE HILL SLOPE IMPROVEMENT	

designed	PETER ALLABY, P.ENG.	conçu
date	FEBRUARY 21, 2019	
drawn	KEVIN WARD P.TECH	dessiné
date	FEBRUARY 21, 2019	
approved	PETER ALLABY, P.ENG.	approuvé
date	FEBRUARY 21, 2019	
Tender		Submission
PCA Project Manager	Administrateur de projets APC	
project number	676	no. du projet
drawing no.	C17	no. du dessin



MONCTON: 1077 Blvd. St. George Blvd. Suite 402 Moncton, N.B. Canada Tel: (506) 853-2777 Fax: (506) 857-2753
 SAINT JOHN: 133 Pique William Street Suite 203 Saint John, N.B. Canada Tel: (506) 463-0885 Fax: (506) 463-2550
 FREDERICTON: 544 Prospect Street Suite 101 Fredericton, N.B. Canada Tel: (506) 463-4443 Fax: (506) 463-2550
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- NOTES:**
1. CONTRACTOR TO BLEND DITCH INTO EXISTING DAY USE AREA.
 2. CONTRACTOR TO AVOID IMPACT TO EXISTING WILDLIFE PASSAGE.



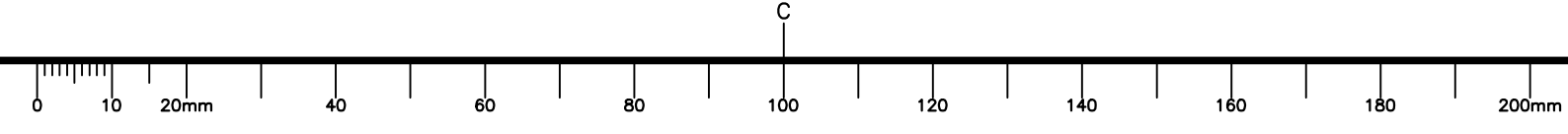
PROVINCE OF NEWBRUNSWICK AND LABRADOR
 ENGINEERING
 JULIEN BABIN
 CRANDALL ENGINEERING LTD.
 To practice Professional Engineering in New Brunswick and Labrador, Permit No. as issued to Project Reg. 2019, which is valid for the year 2019.

01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
TERRA NOVA NATIONAL PARK, NL

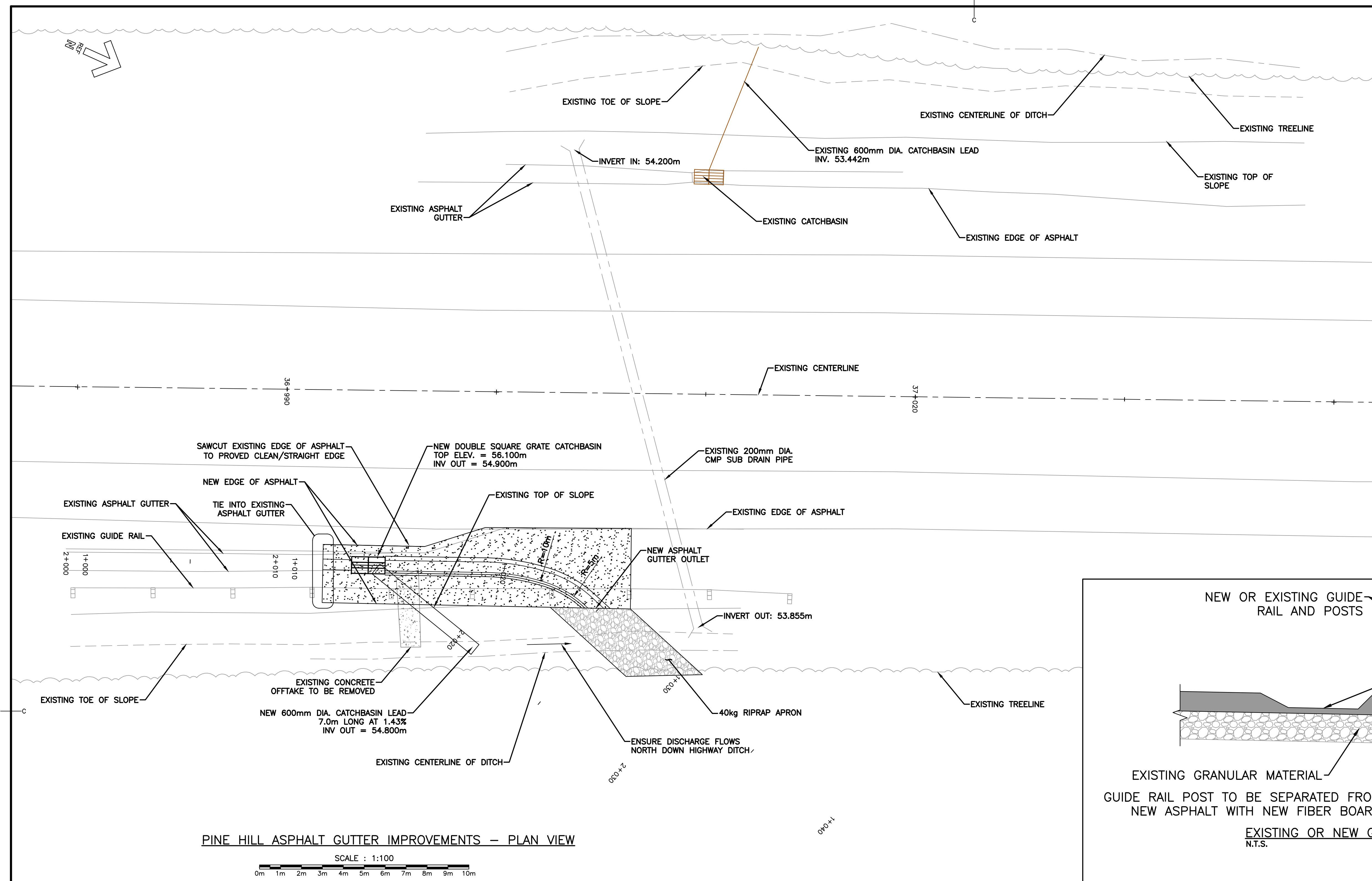
drawing
SOUTHWEST BROOK DITCH REALIGNMENT PLAN VIEW

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender		Soumission
PCA Project Manager	Administrateur de projets APC	
project number		no. du projet
	676	
drawing no.		no. du dessin
	C18	

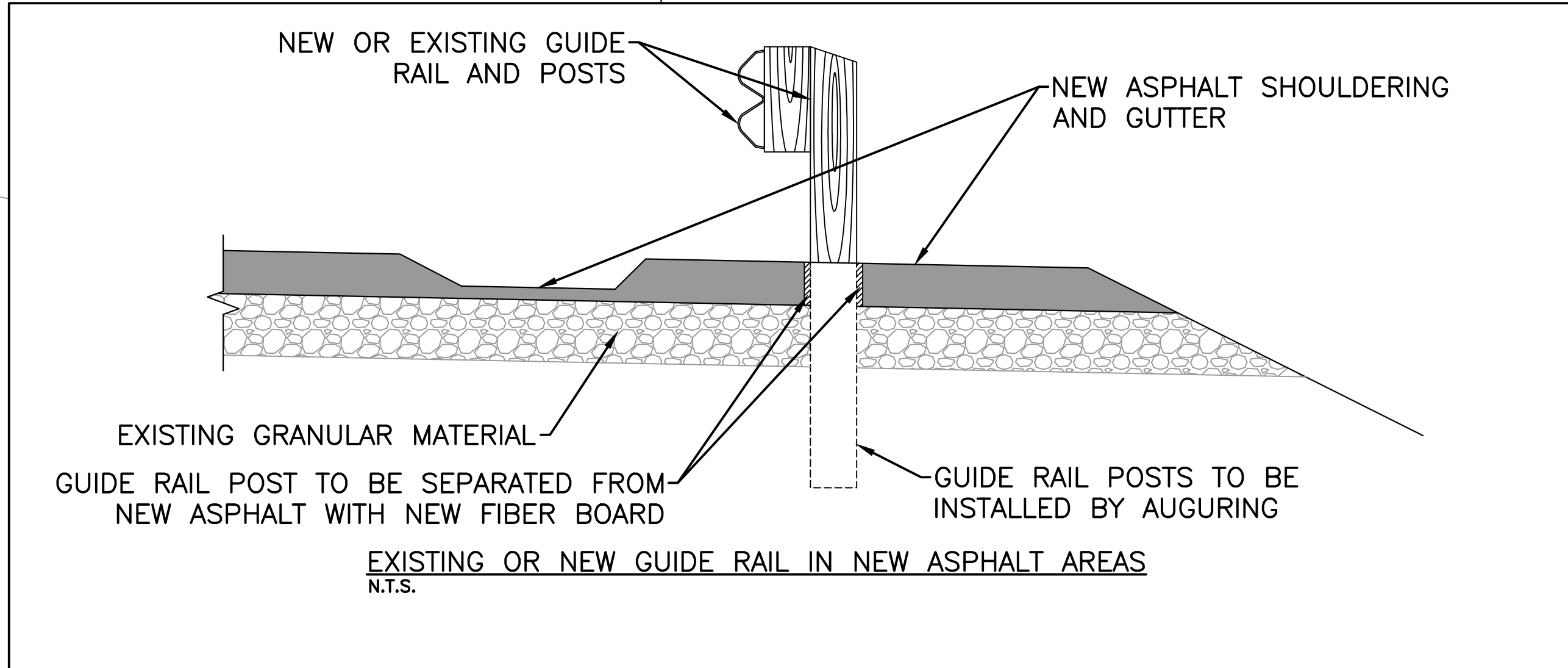




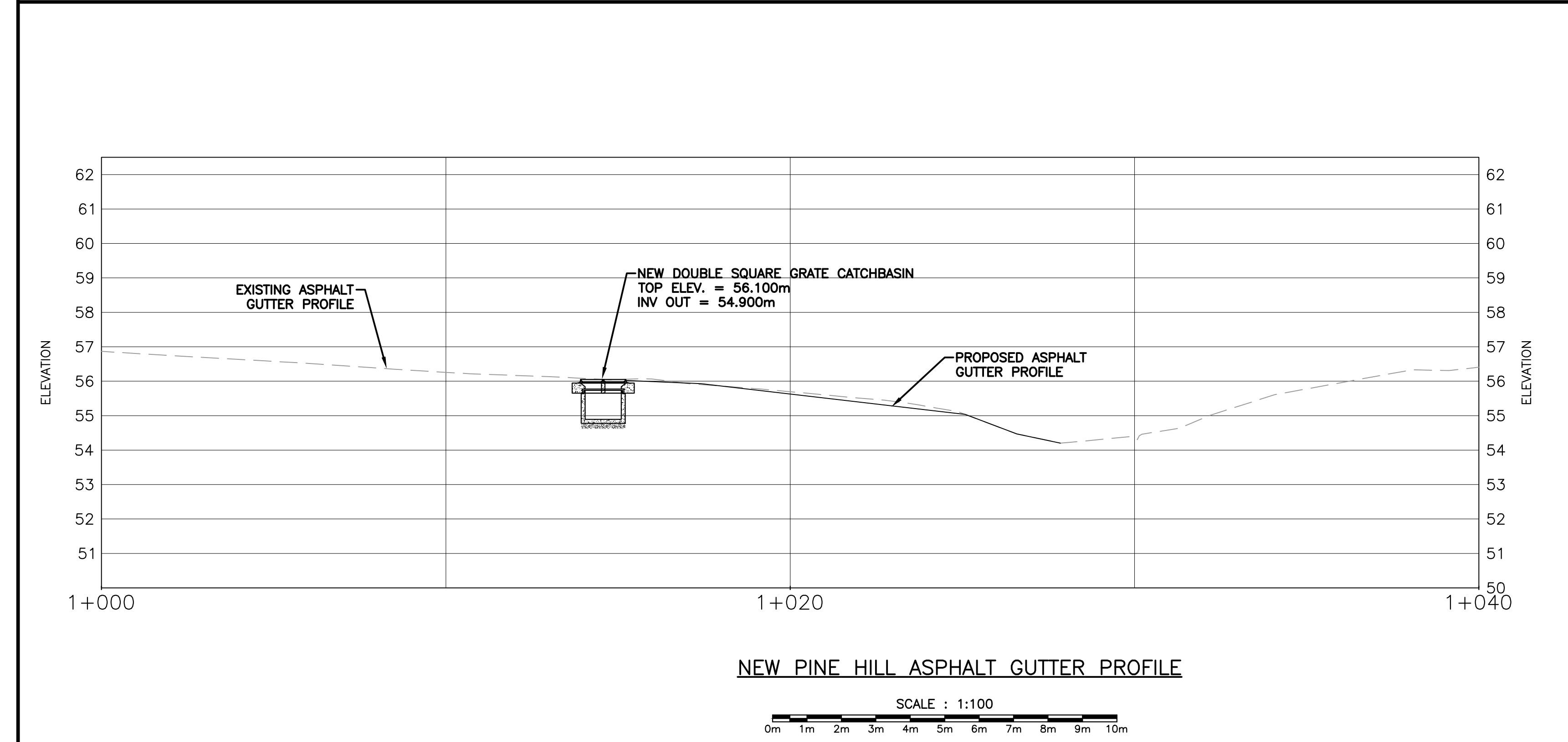
MONCTON 1077 Blvd. St. George Blvd. FREDERICTON 604 Prospect Street
 1000 10th St. S. M.B. Canada 1000 10th St. S. M.B. Canada
 Tel: (506) 859-2777 Fax: (506) 859-2775 Tel: (506) 853-2885 Fax: (506) 853-2885
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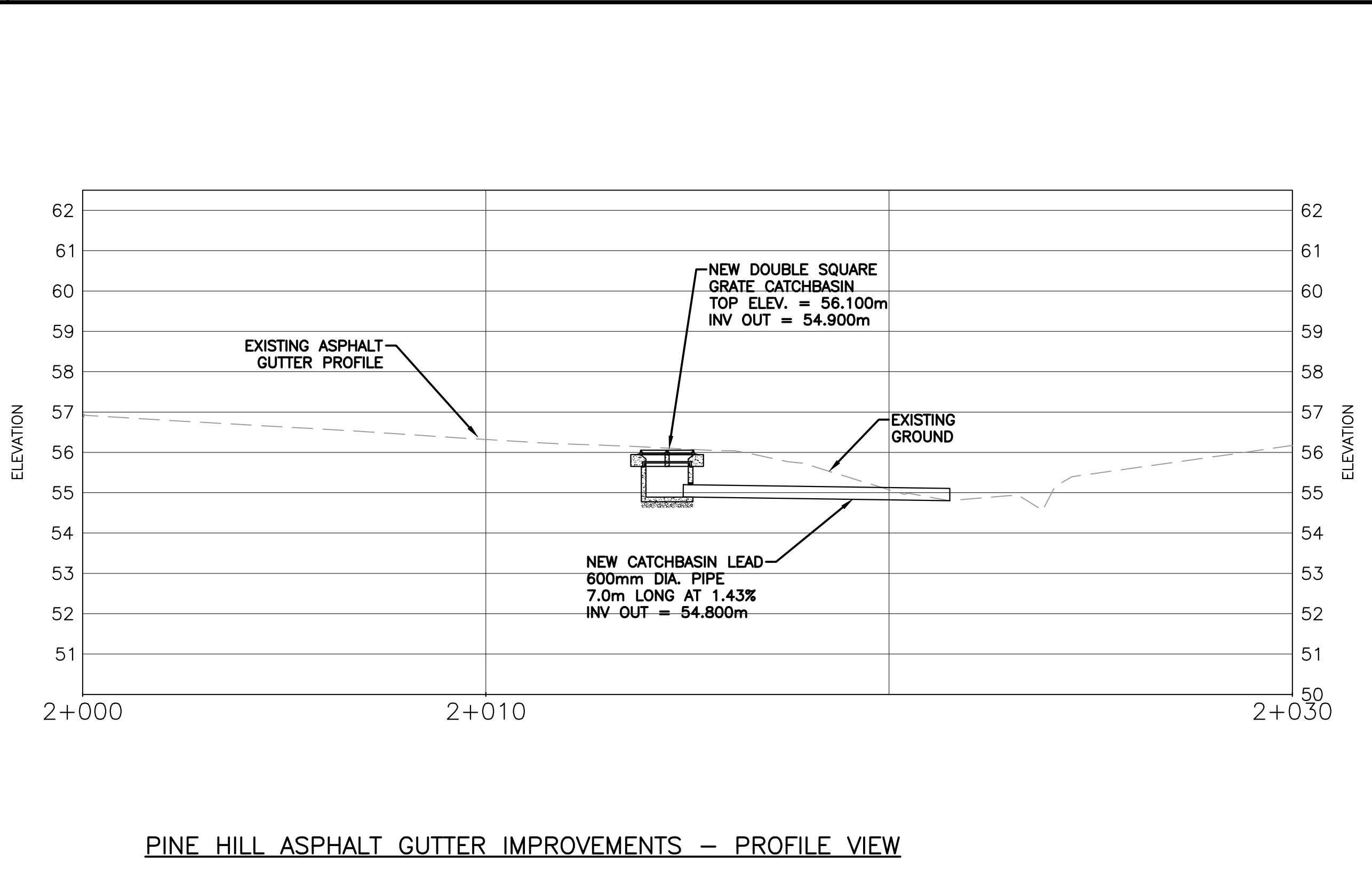
PINE HILL ASPHALT GUTTER IMPROVEMENTS – PLAN VIEW
 SCALE : 1:100
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



PINE HILL ASPHALT GUTTER IMPROVEMENTS – PROFILE VIEW
 SCALE : 1:100
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



NEW PINE HILL ASPHALT GUTTER PROFILE
 SCALE : 1:100
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



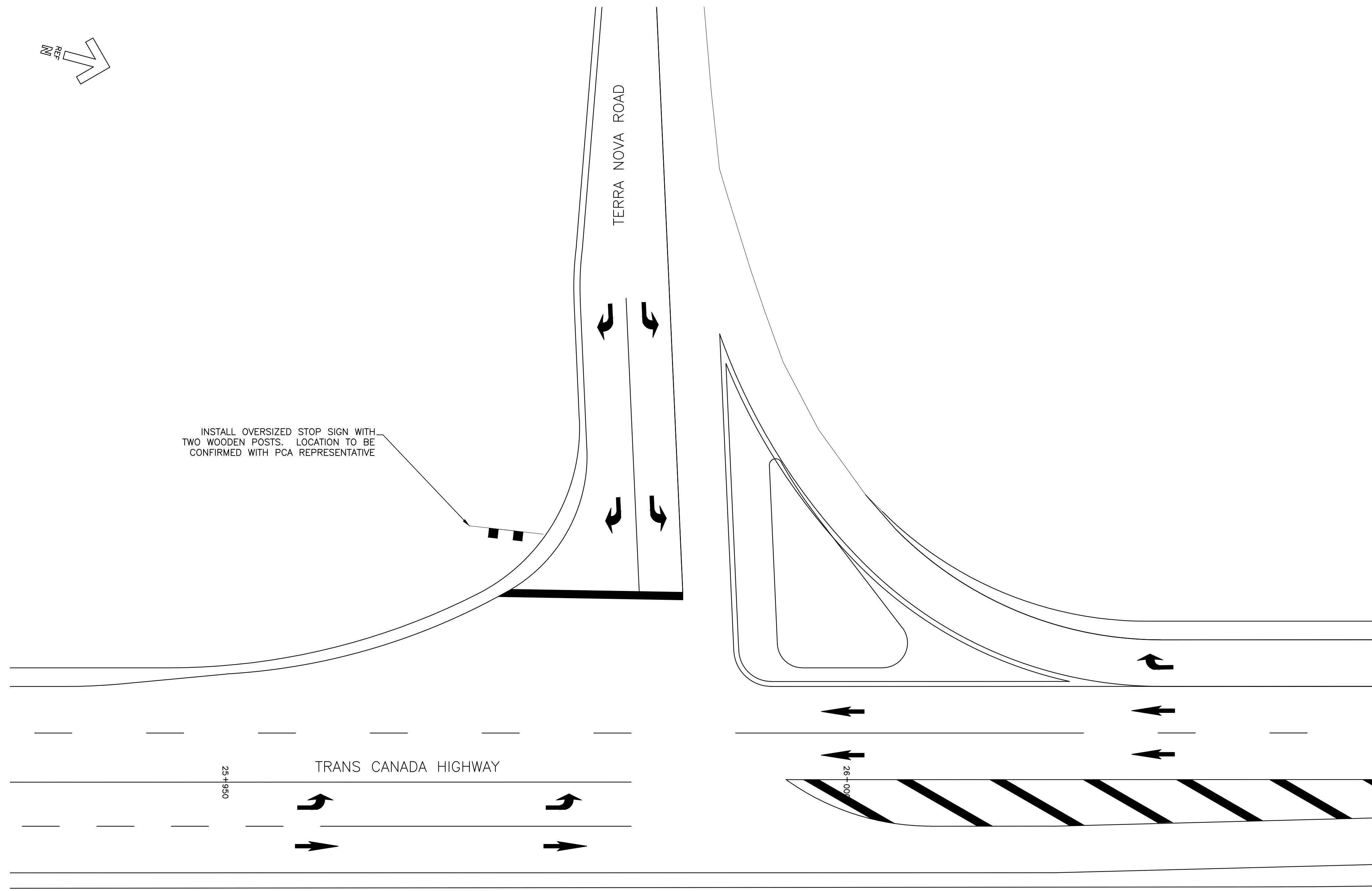
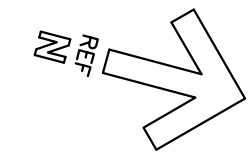
PINE HILL ASPHALT GUTTER IMPROVEMENTS – PROFILE VIEW
 SCALE : 1:100
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



PROVINCE OF NEW BRUNSWICK AND LABRADOR
 PERMIT HOLDER
 CRANDALL ENGINEERING LTD.
 10, rue des Professionnels
 1000, 10th St. S. M.B. Canada
 Tel: (506) 859-2777 Fax: (506) 859-2775

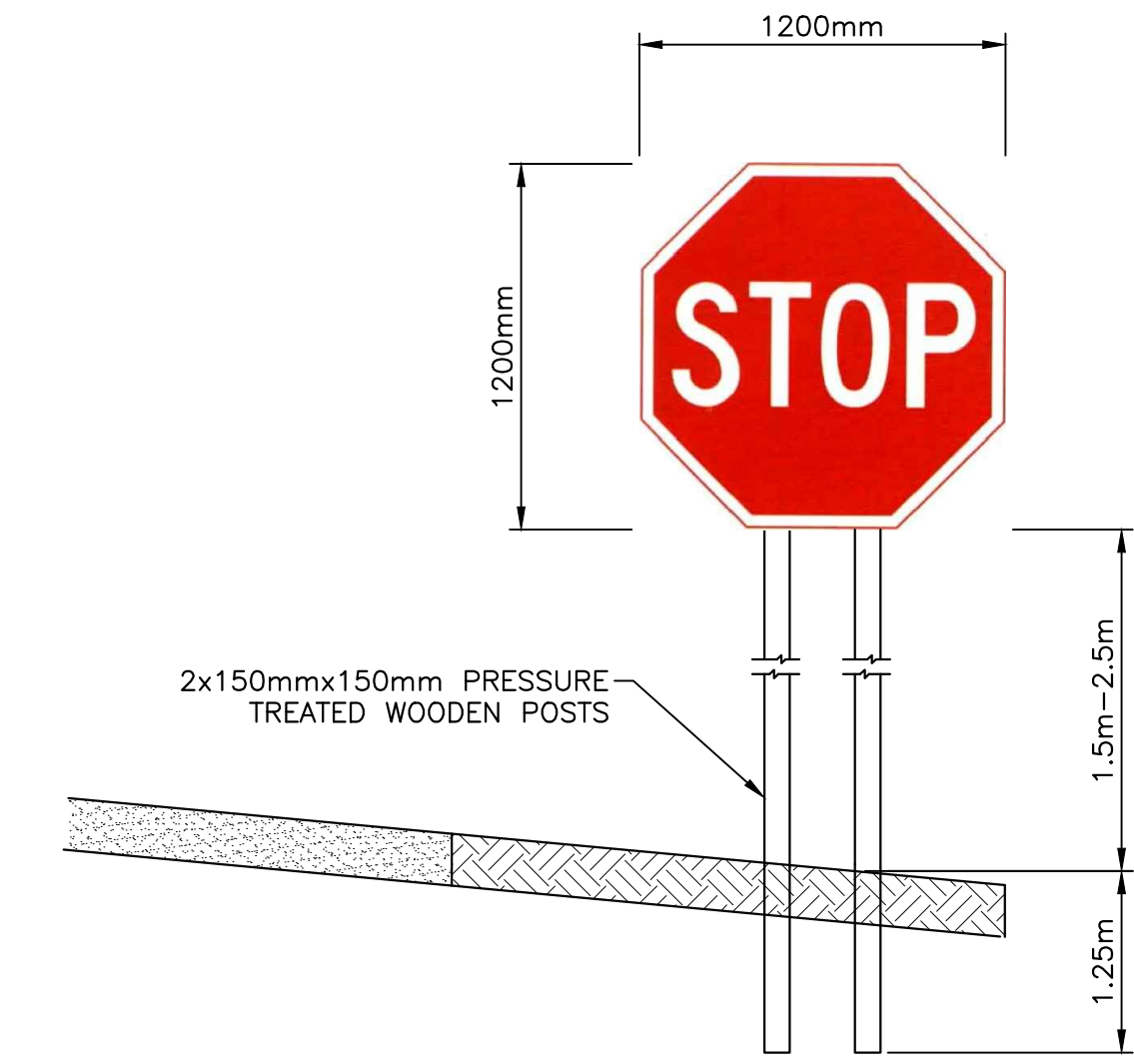
01	ISSUED FOR TENDER	APR 8 2019
revisions		date
project	TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL	
drawing	PINE HILL ASPHALT GUTTER IMPROVEMENT PLAN AND PROFILE VIEWS	

designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender	Soumission	
PCA Project Manager	Administrateur de projets APC	
project number	676	
drawing no.	C19	



PLAN VIEW

SCALE : 1:200



TYPICAL SIGN PLACEMENT
SCALE: N.T.S



MONCTON: 1077 Blvd. St. George Blvd. 1077
 SAINT JOHN: 133 Pictou William Street 133
 FREDERICTON: 544 Prospect Street 544
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 P.E.N.L. JULIEN BABIN
 CRANDALL ENGINEERING LTD.

01	ISSUED FOR TENDER	APR 8 2019
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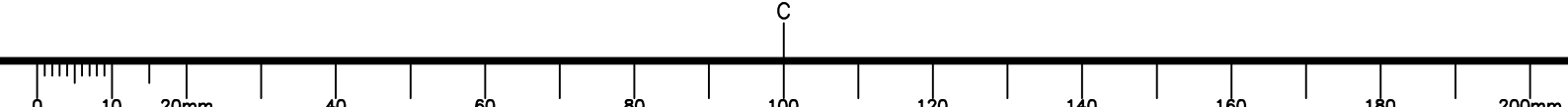
revisions date
 project projet
**TRANS CANADA HIGHWAY
 SAFETY AND STANDARDS
 REHABILITATION 2019-2020
 TERRA NOVA
 NATIONAL PARK, NL**

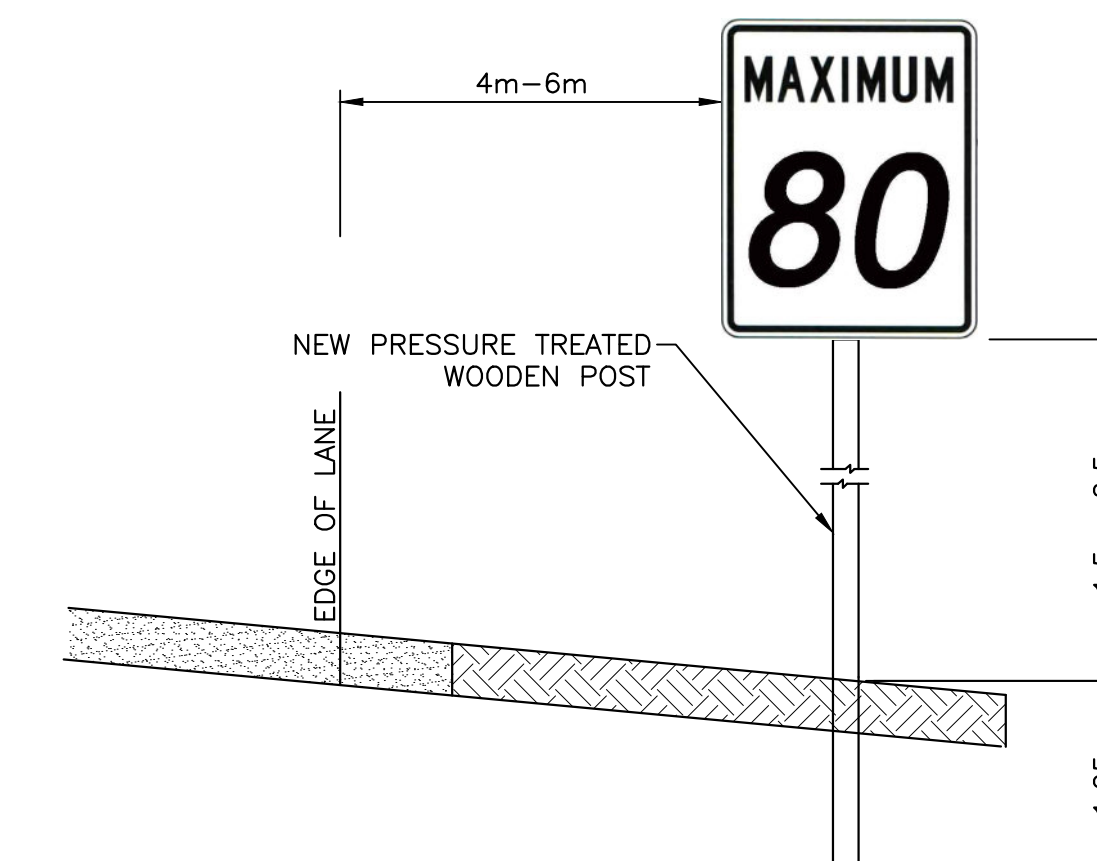
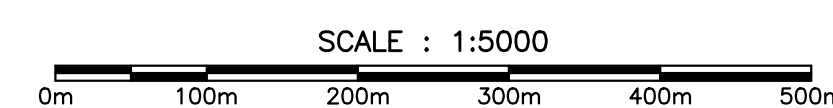
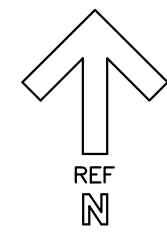
drawing dessin
**OVERSIZED STOP SIGN
 AT TERRA NOVA ROAD
 INTERSECTION**

designed PETER ALLABY, P.ENG. conçu
 date FEBRUARY 21, 2019
 drawn KEVIN WARD P.TECH dessiné
 date FEBRUARY 21, 2019
 approved PETER ALLABY, P.ENG. approuvé
 date FEBRUARY 21, 2019

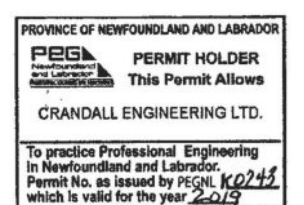
Tender Soumission
 PCA Project Manager Administrateur de projets APC
 project number no. du projet
676

drawing no. no. du dessin
C20





TYPICAL SIGN PLACEMENT
SCALE: N.T.S



01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project
**TRANS CANADA HIGHWAY
 SAFETY AND STANDARDS
 REHABILITATION 2019-2020
 TERRA NOVA
 NATIONAL PARK, NL**

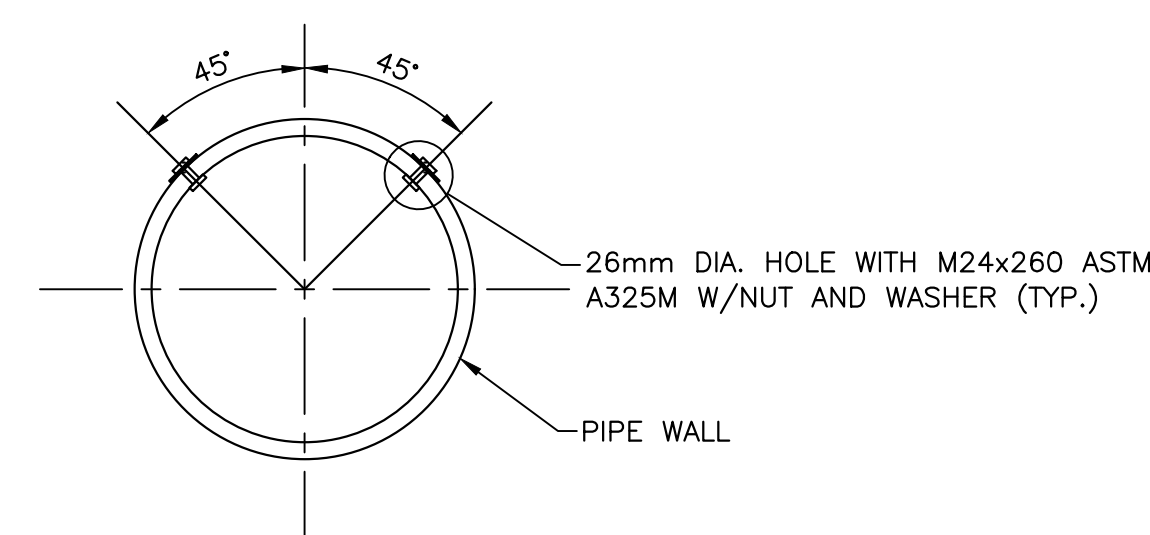
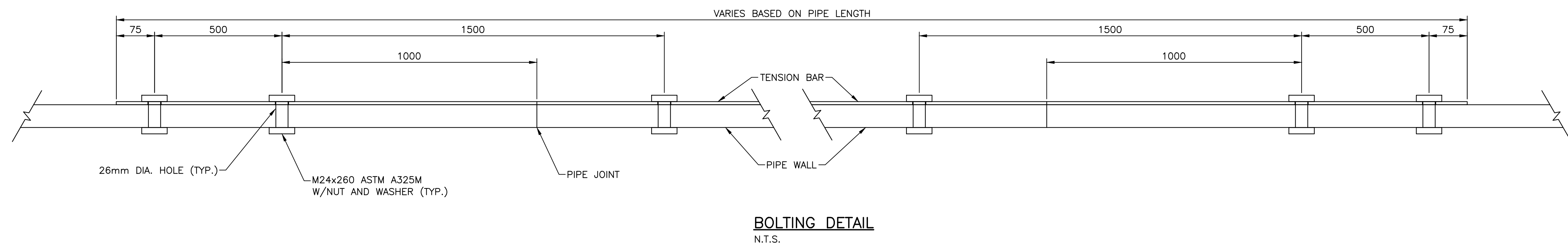
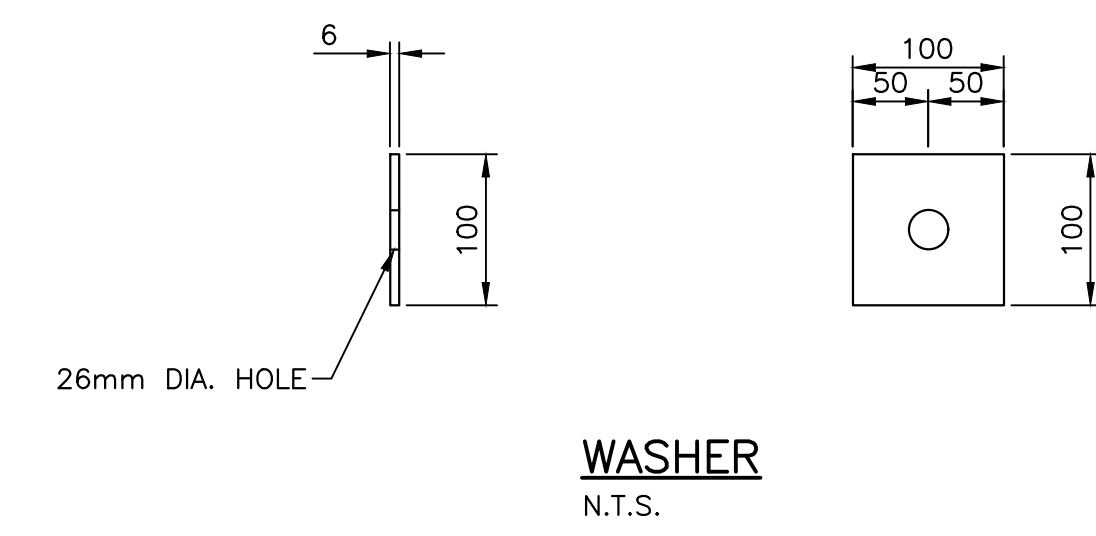
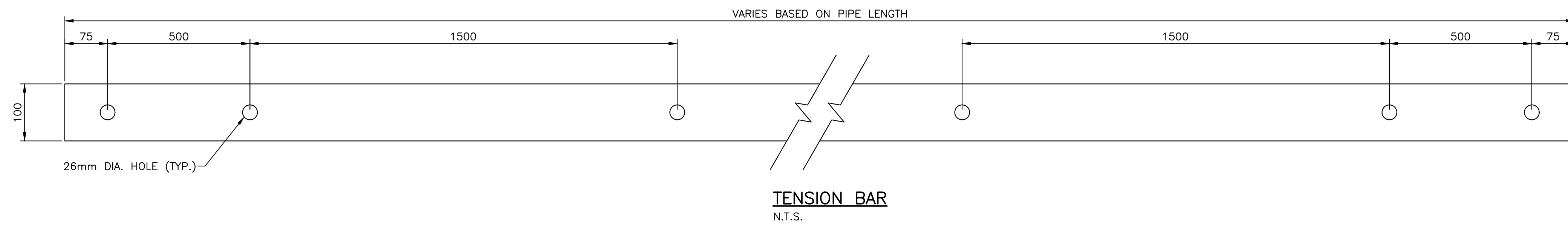
drawing
**SPEED LIMIT CHANGE
 AT EAST PARK
 BOUNDARY**

designed	PETER ALLABY, P.ENG.	conçu
date	FEBRUARY 21, 2019	
drawn	KEVIN WARD P.TECH	dessiné
date	FEBRUARY 21, 2019	
approved	PETER ALLABY, P.ENG.	approuvé
date	FEBRUARY 21, 2019	

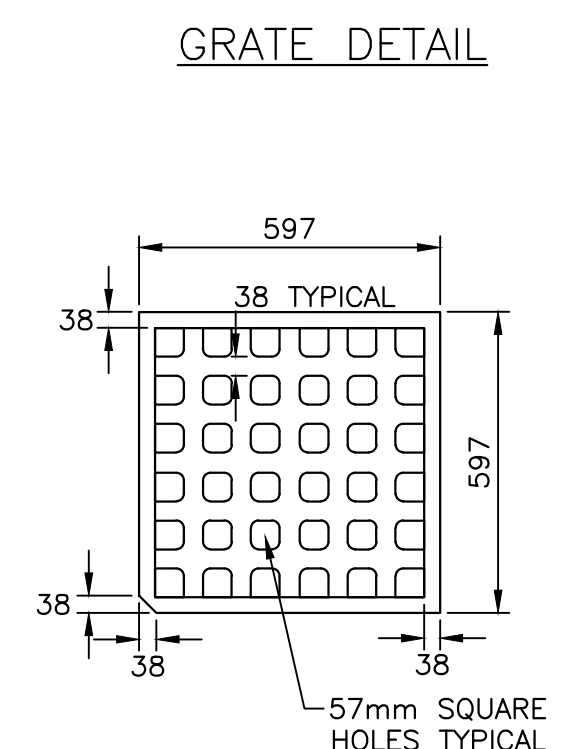
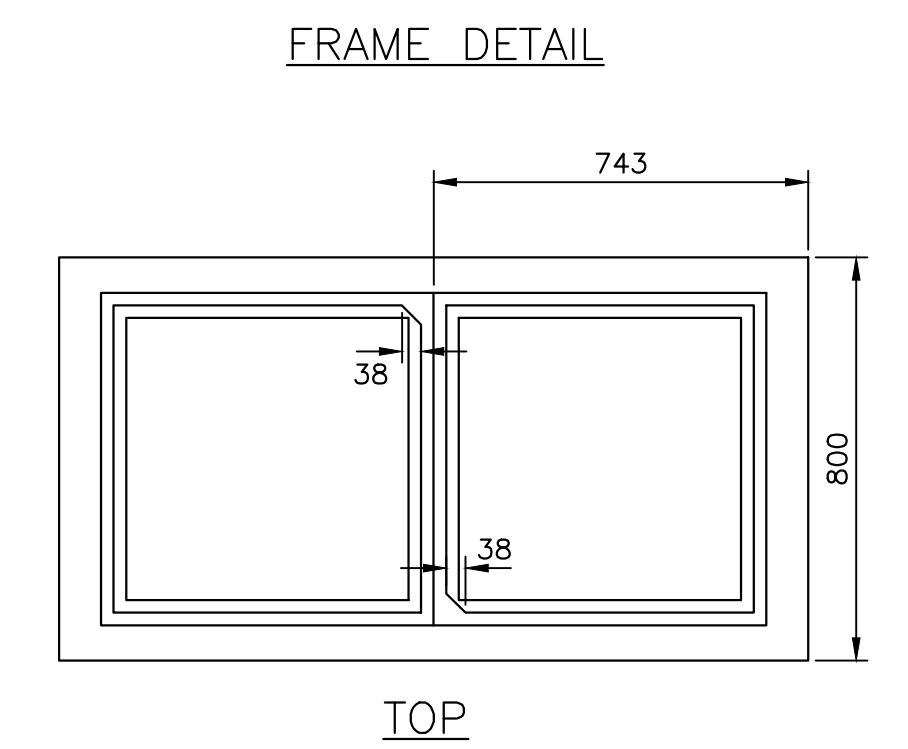
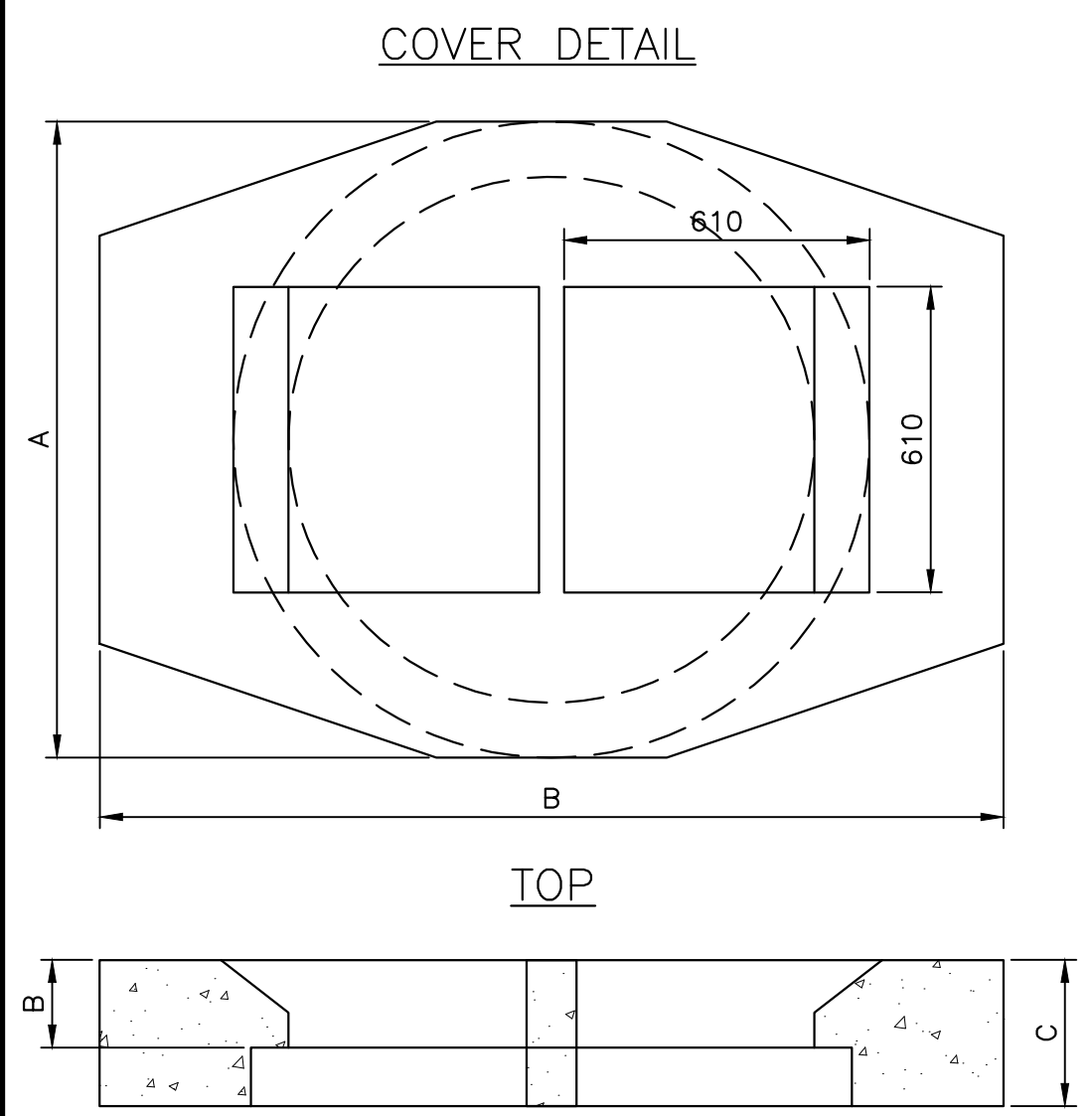
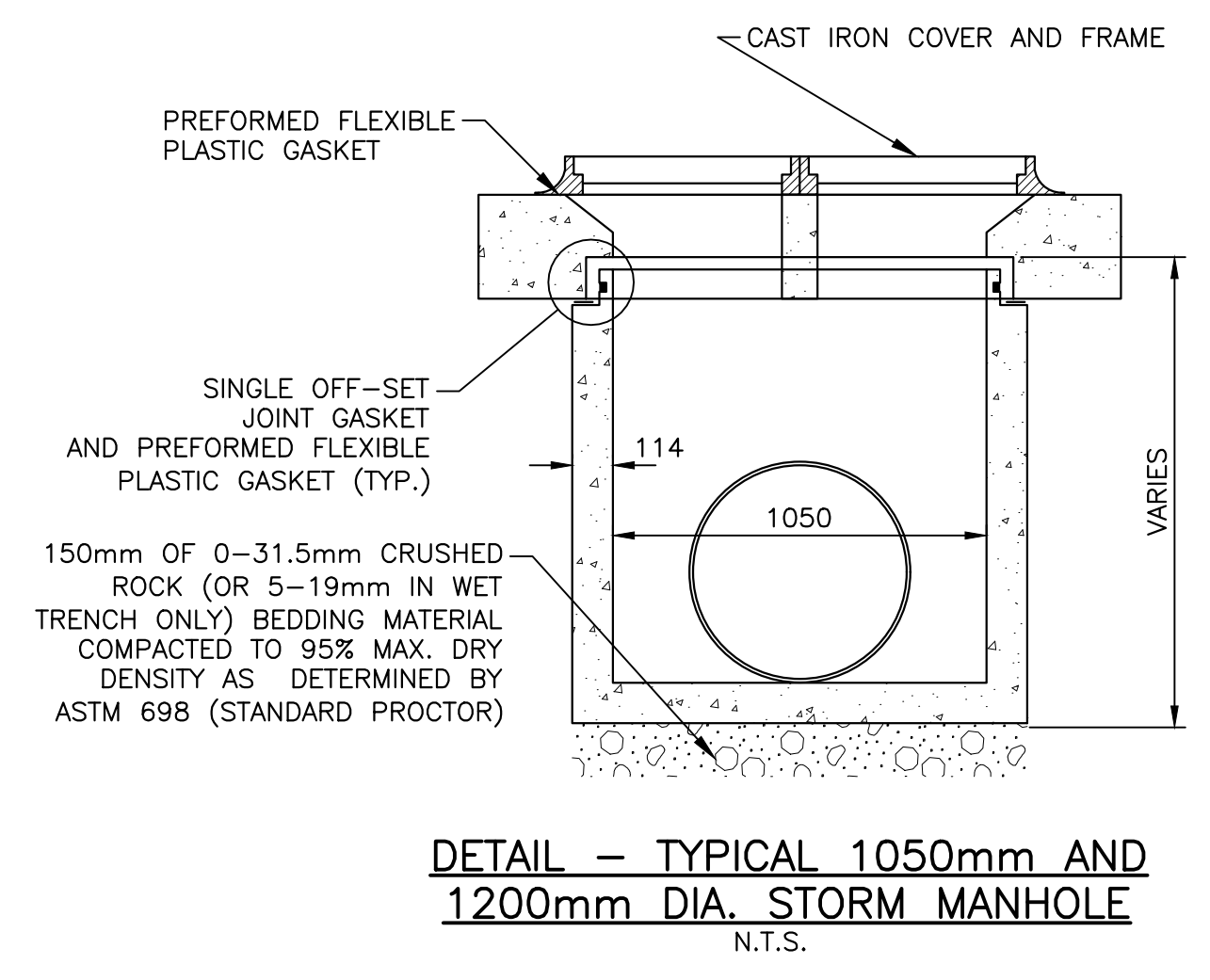
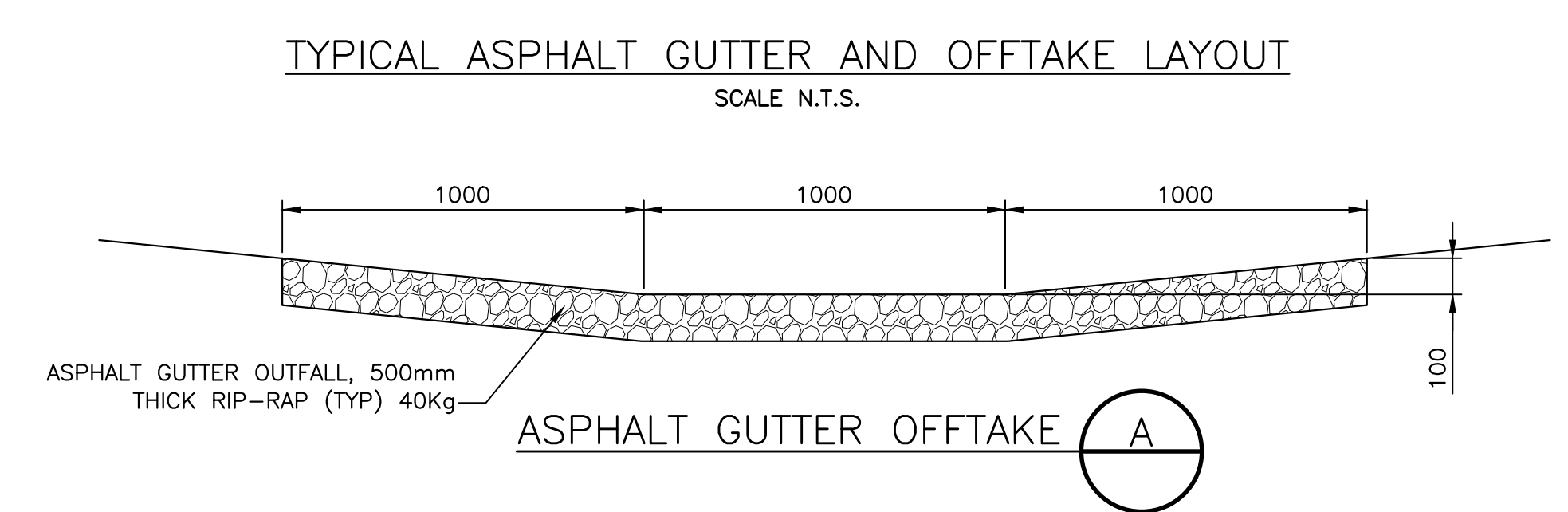
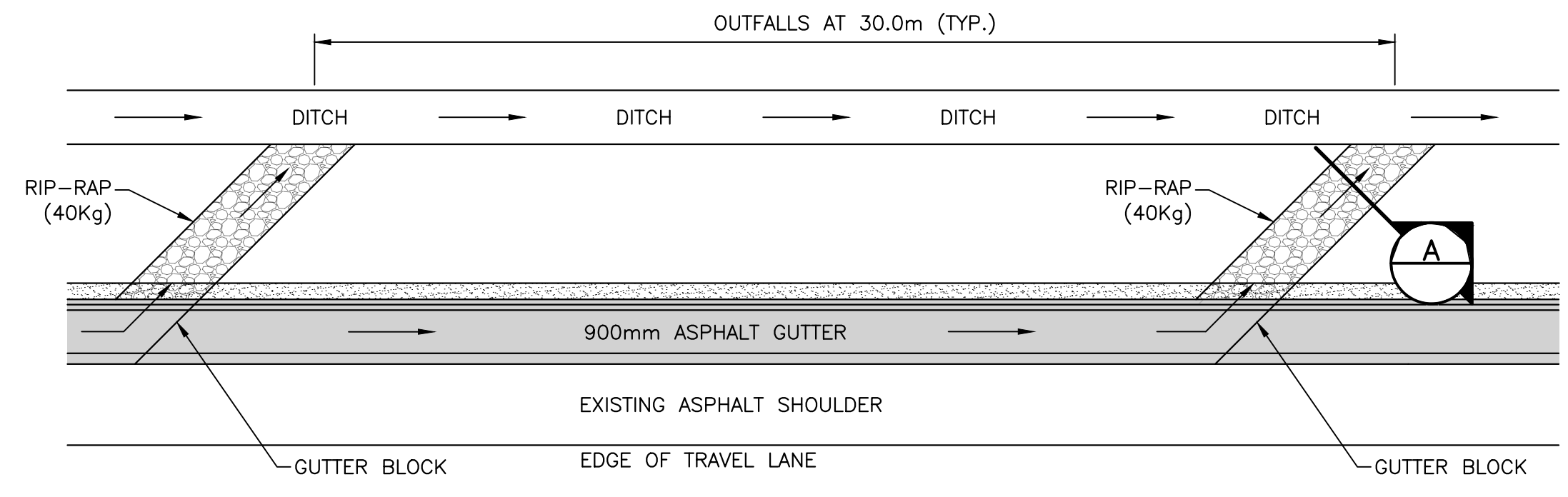
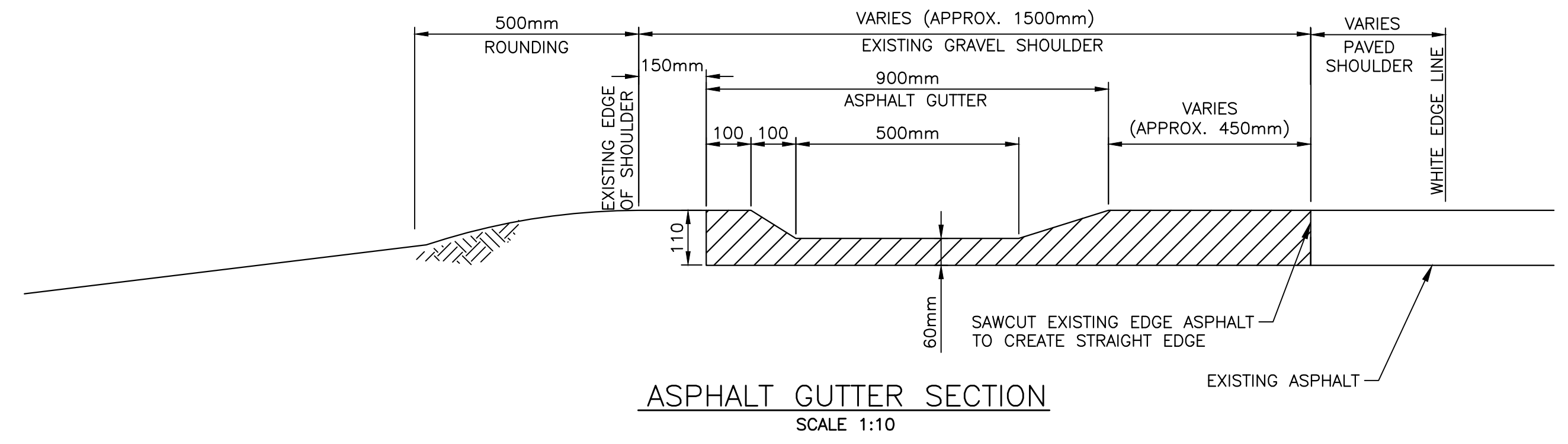
Tender Soumission
 PCA Project Manager Administrateur de projets APC

project number no. du projet
676

drawing no. no. du dessin
C21

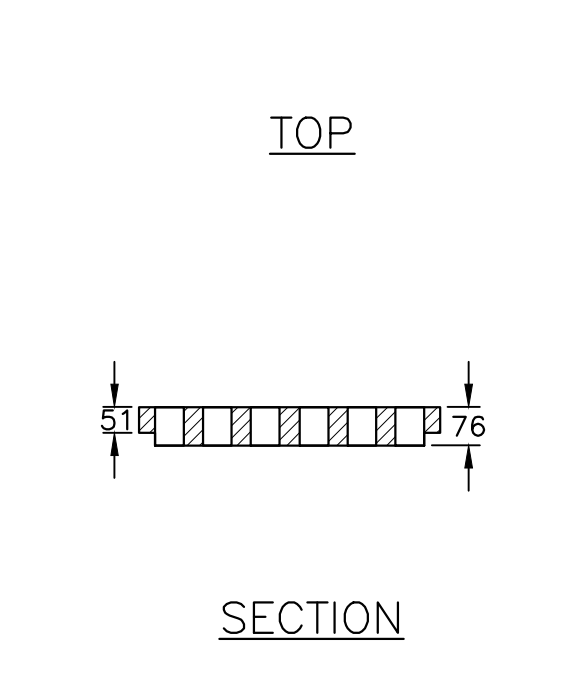
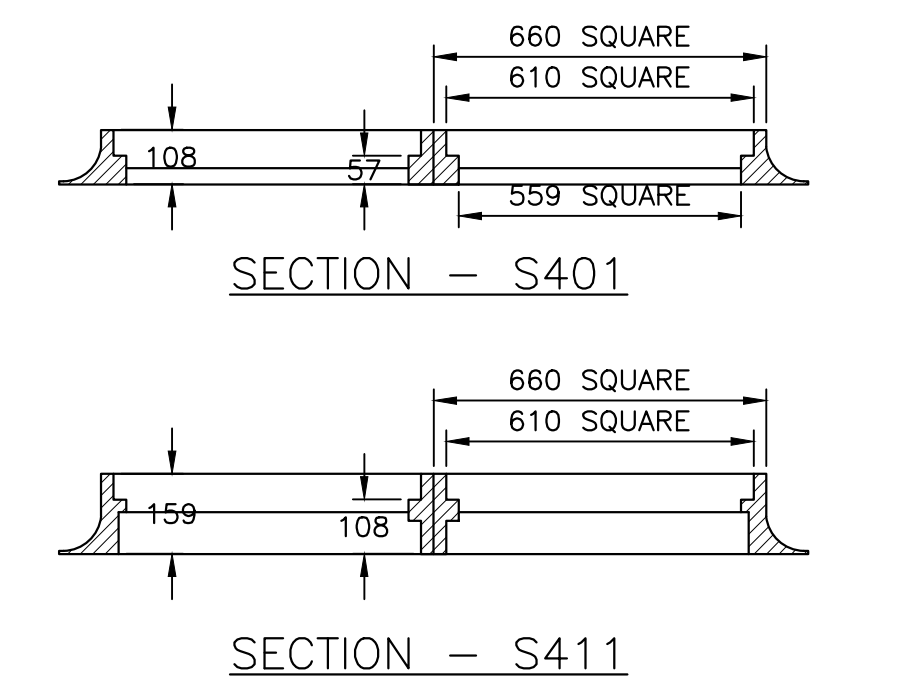


- TENSION BAR PLACEMENT DETAIL**
1. TENSION RODS ARE TO SPAN TWO JOINTS (OVERALL LENGTH WILL DEPEND ON PIPE LENGTH).
 2. STEEL SHALL BE PER CSA G40.12 300W.
 3. TENSION RODS, NUTS AND WASHERS SHALL BE GALVANIZED PER CSA G164-M92, TO MINIMUM MASS OF 610g/m².
 4. TENSION BAR SHALL BE USED AS TEMPLATE FOR CONTRACTOR TO FIELD DRILL HOLES IN INSTALLED PIPE.
 5. NUTS SHALL NOT BE OVER TIGHTENED.
 6. BOLT LENGTH PROTRUDING MORE THAN 25mm BEYOND TIGHTENED NUT SHALL BE CUT OFF FLUSH WITH NUT.



SECTION

MANHOLE Ø	A	B	C
1050	1050	305	190
1500	1500	324	203
1800	1800	330	203



DETAIL - DOUBLE CATCH BASIN FRAME AND COVER
N.T.S.

NEW ASPHALT GUTTER REQUIRED

OVERALL LOCATION	START STATION	END STATION	EASTBOUND/WESTBOUND	OFFTAKE TYPE	OFFTAKE SPACING
TRANS CANADA HIGHWAY	Sta. 13+800	Sta. 13+823	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 16+500	Sta. 16+510	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 17+800	Sta. 17+810	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 19+800	Sta. 20+100	EASTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 23+960	Sta. 24+044	EASTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 27+200	Sta. 27+210	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 29+700	Sta. 29+925	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 32+100	Sta. 32+110	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 36+900	Sta. 36+910	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 37+620	Sta. 37+630	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
TRANS CANADA HIGHWAY	Sta. 39+175	Sta. 39+200	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS
EASTPORT ROAD	Sta. 102+550	Sta. 103+200	WESTBOUND LANE	40kg RIP-RAP	AS PER DETAILS

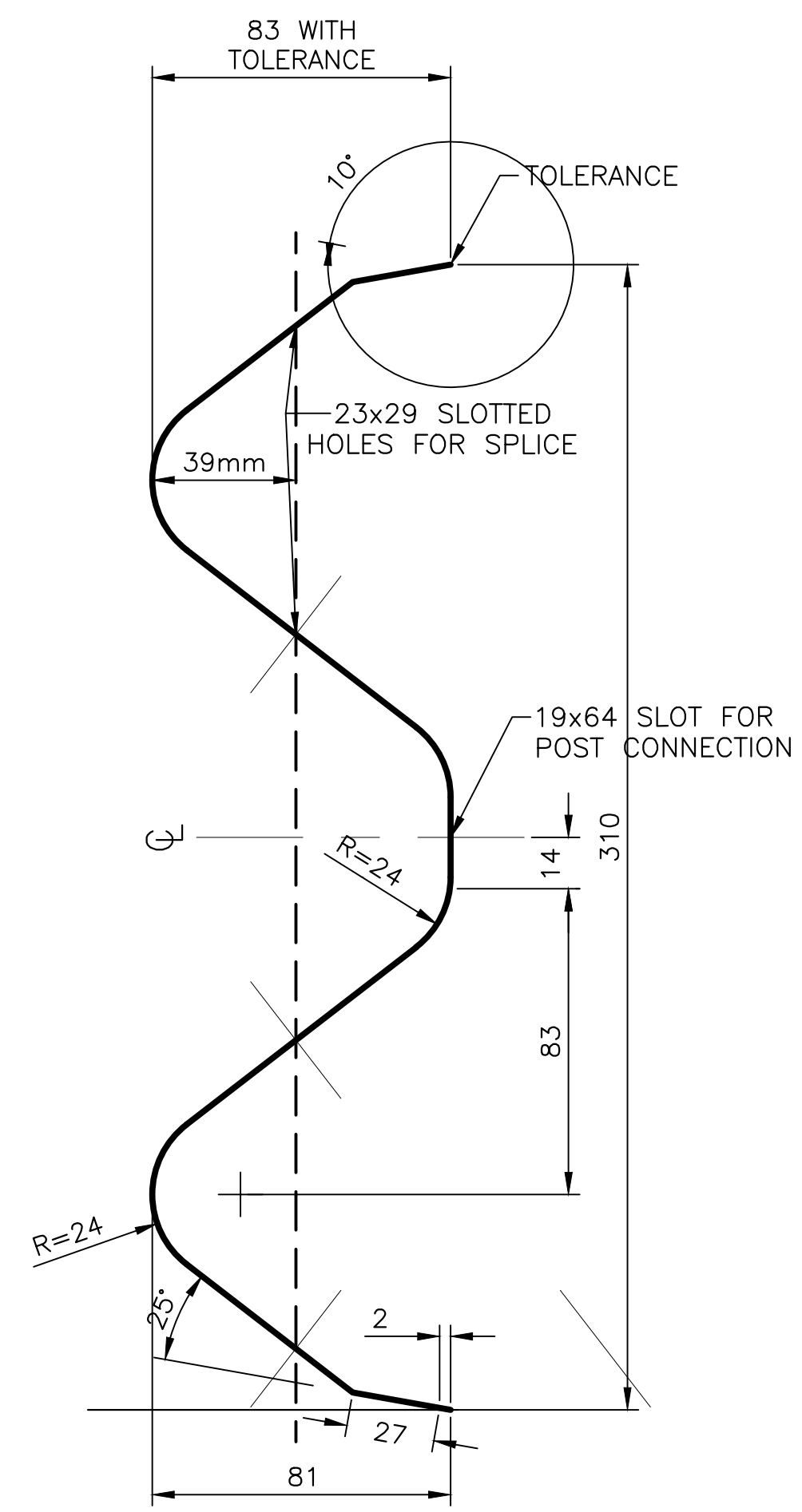


01	ISSUED FOR TENDER	APR 8 2019
revisions		date

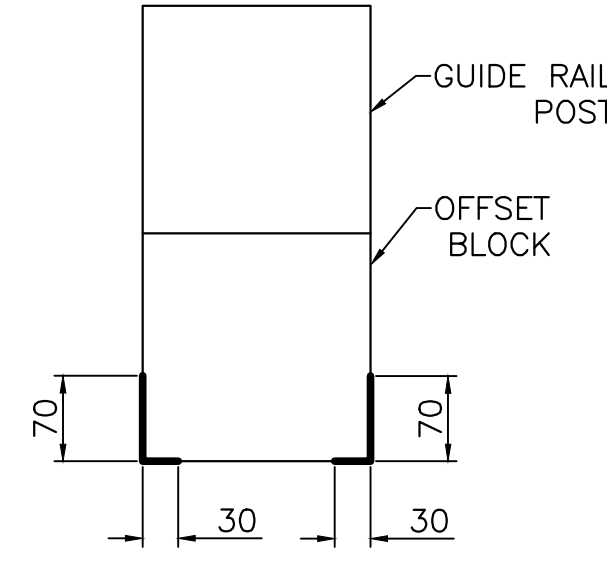
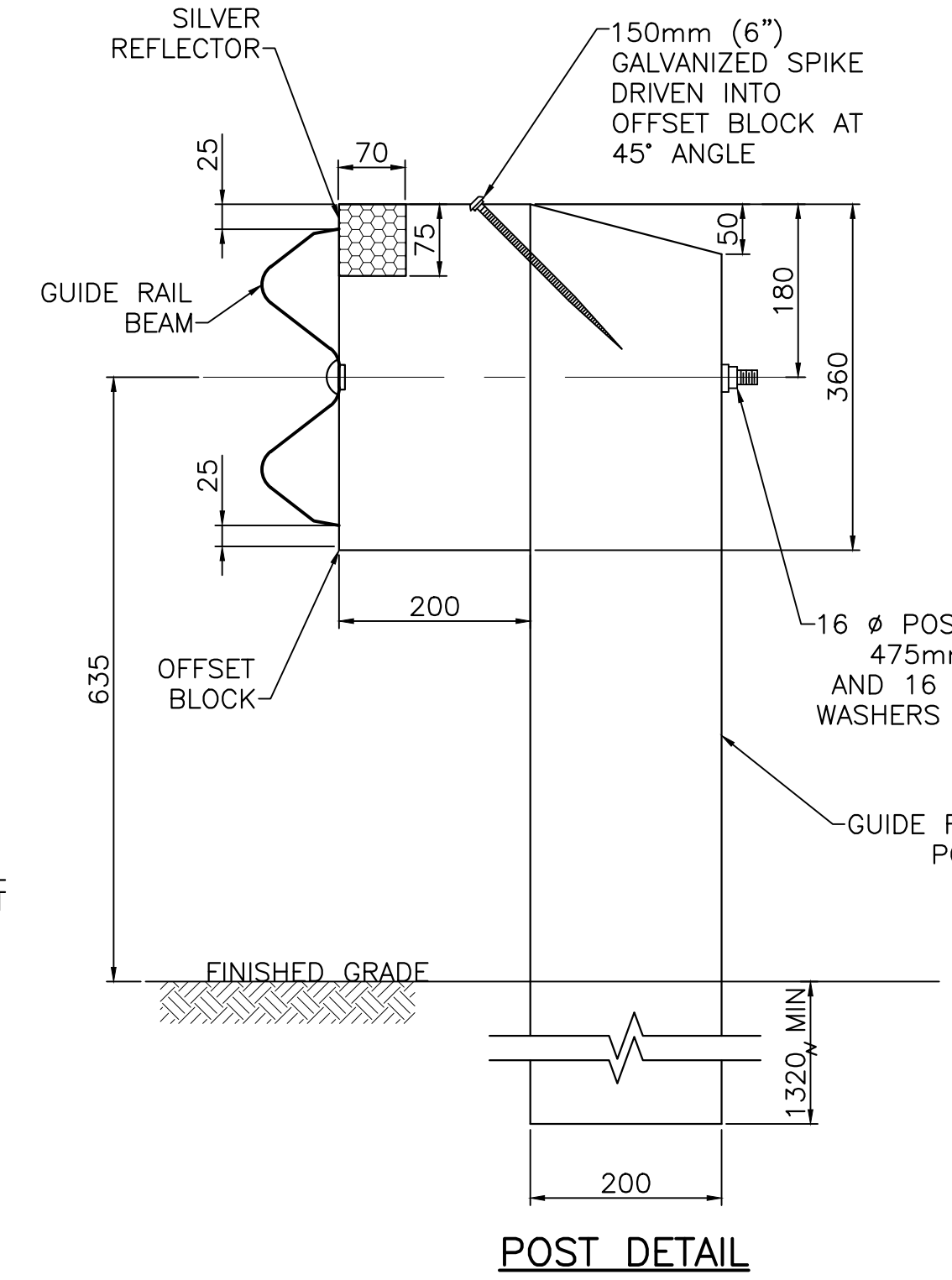
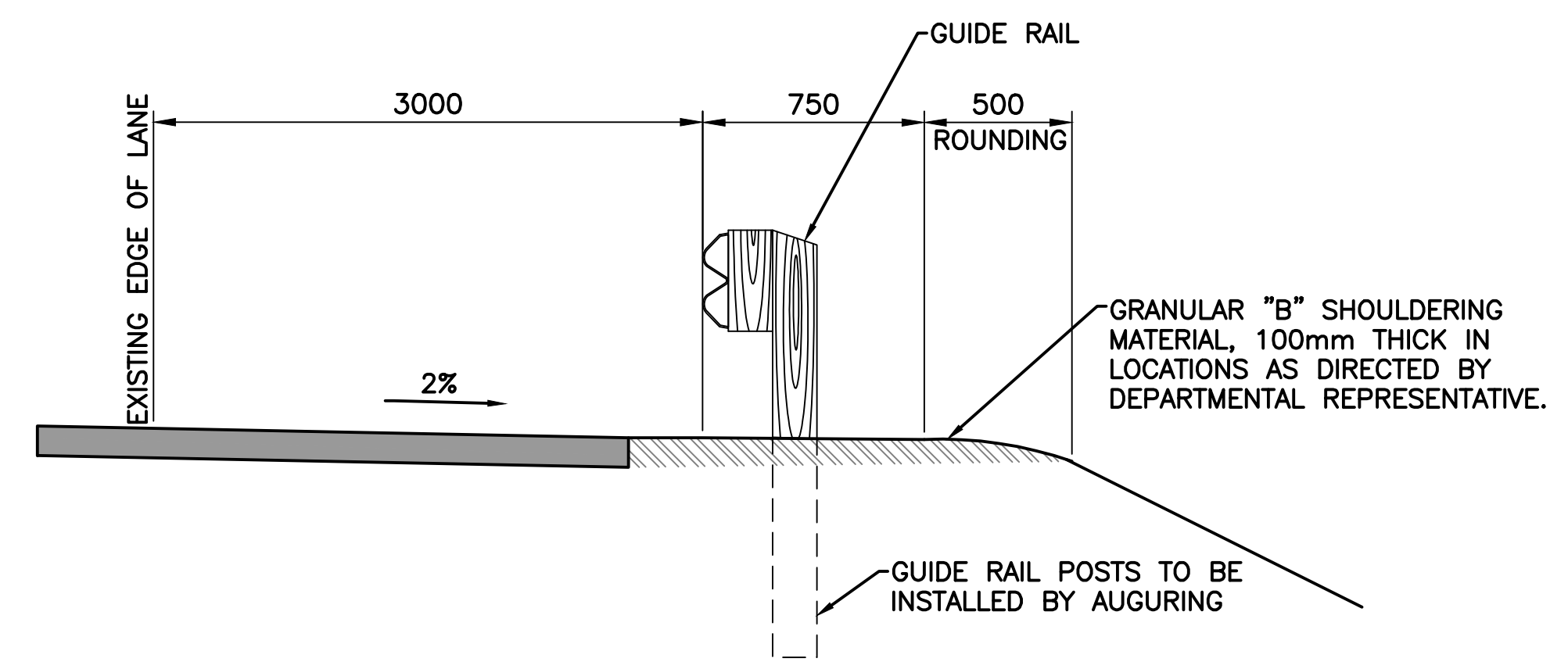
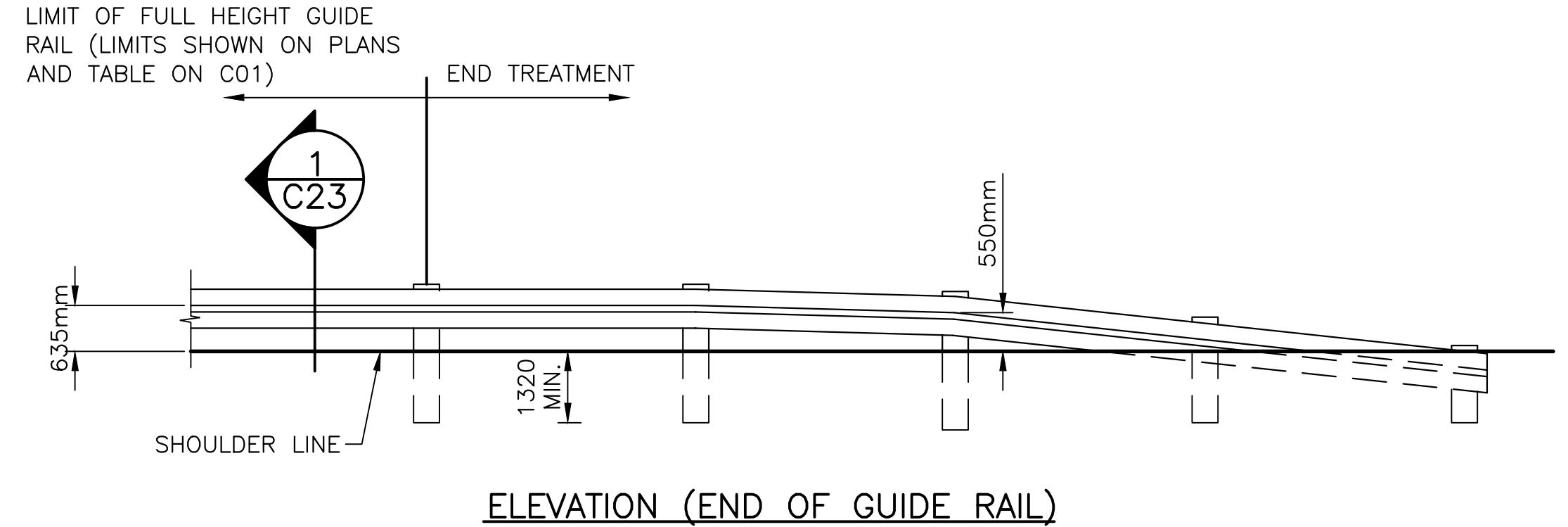
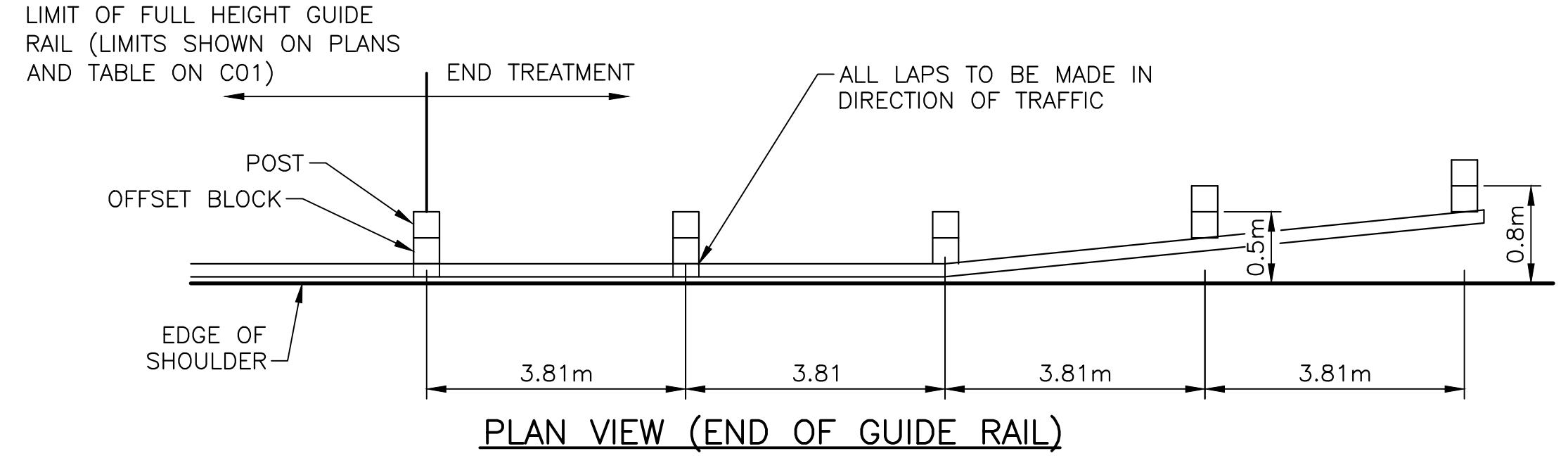
project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020 TERRA NOVA NATIONAL PARK, NL

drawing
TYPICAL CONSTRUCTION DETAILS AND ASPHALT GUTTER TABLE

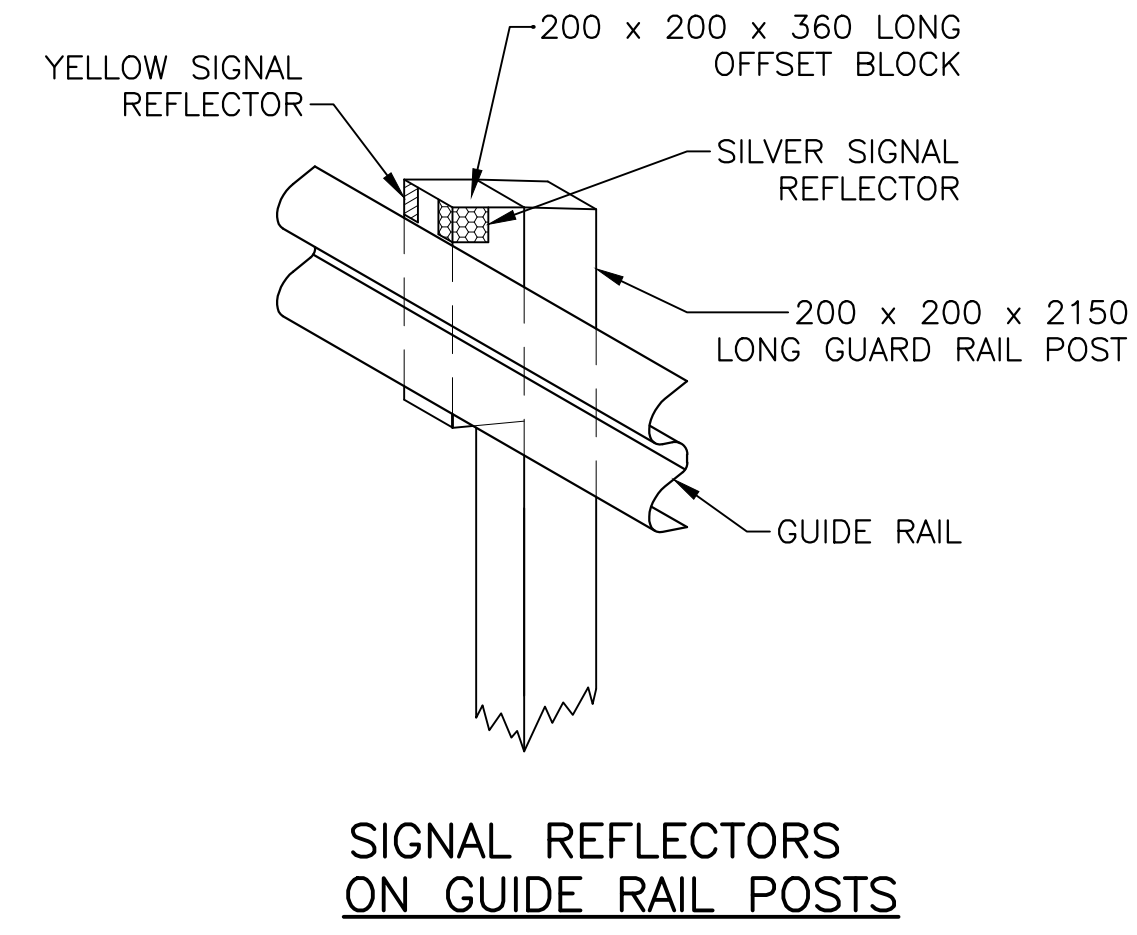
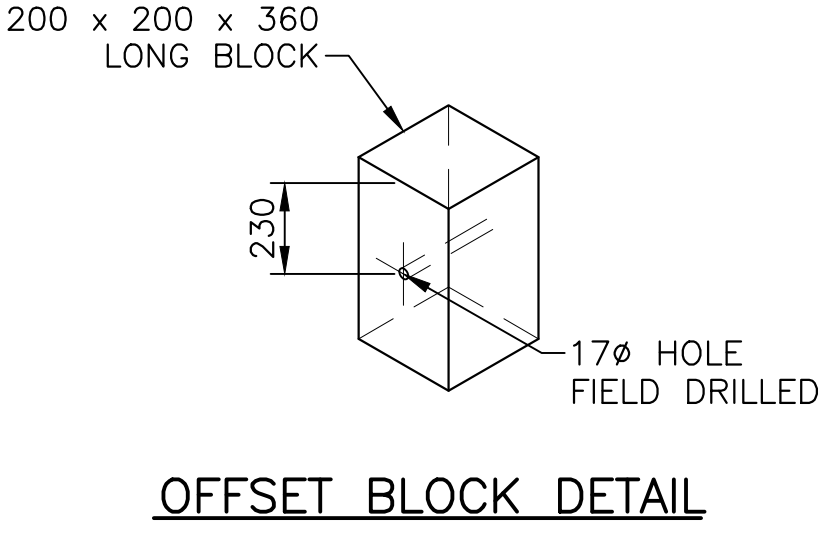
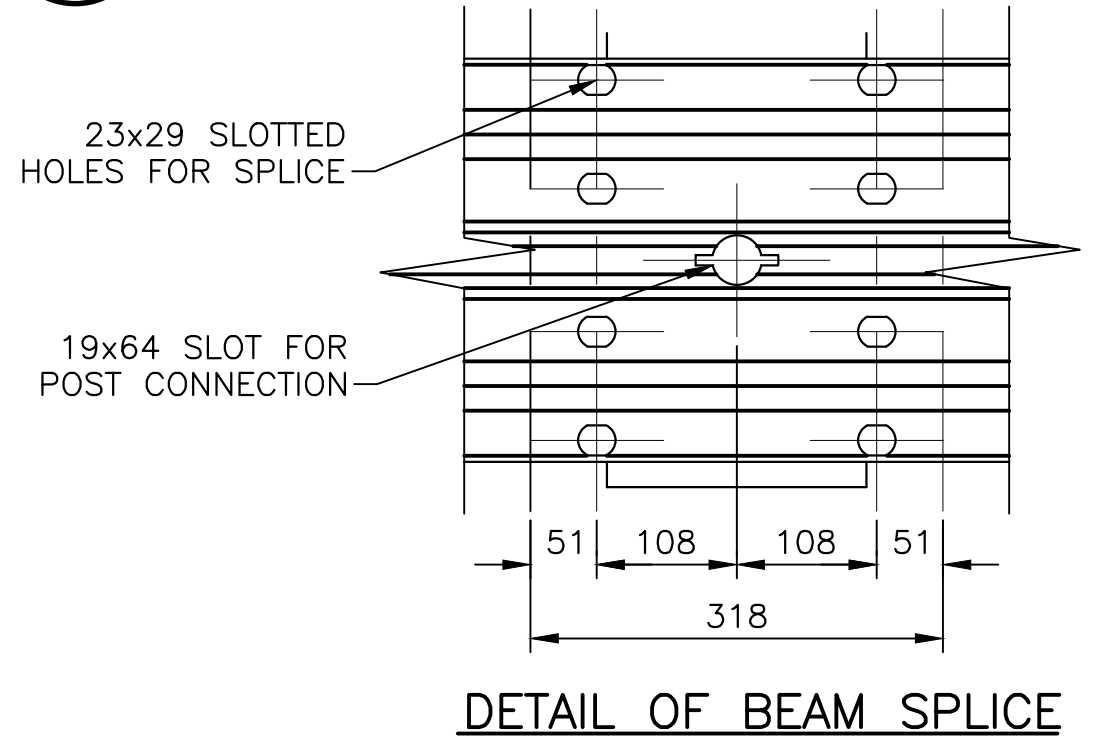
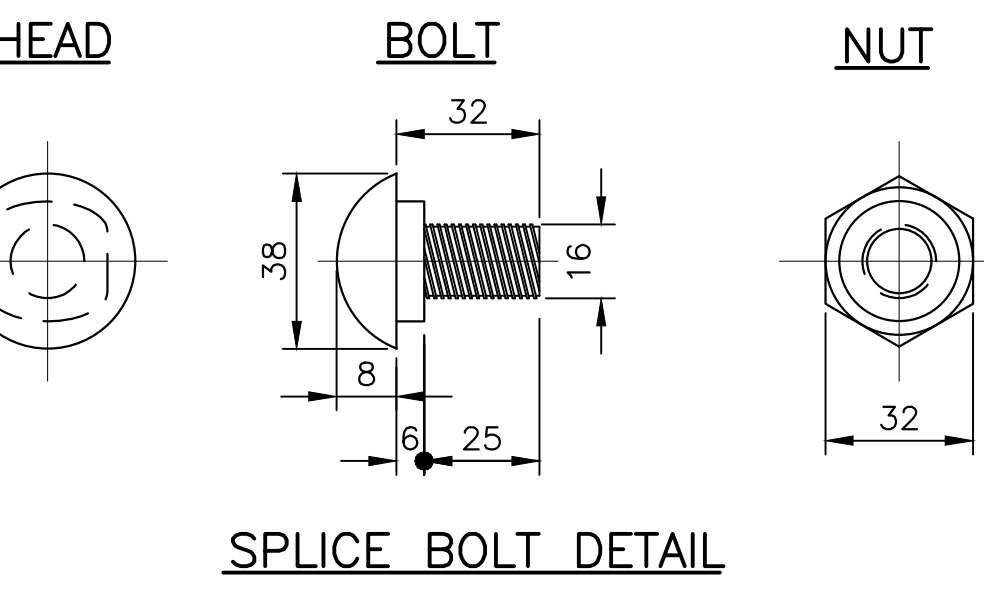
designed	JULIEN BABIN P.ENG	conçu
date	JAN 23, 2019	
drawn	ANDY CALDWELL P.TECH	dessiné
date	JAN 23, 2019	
approved	JULIEN BABIN P.ENG	approuvé
date	JAN 23, 2019	
Tender		Submission
PCA Project Manager	Administrateur de projets APC	
project number	676	no. du projet
drawing no.	C22	no. du dessin



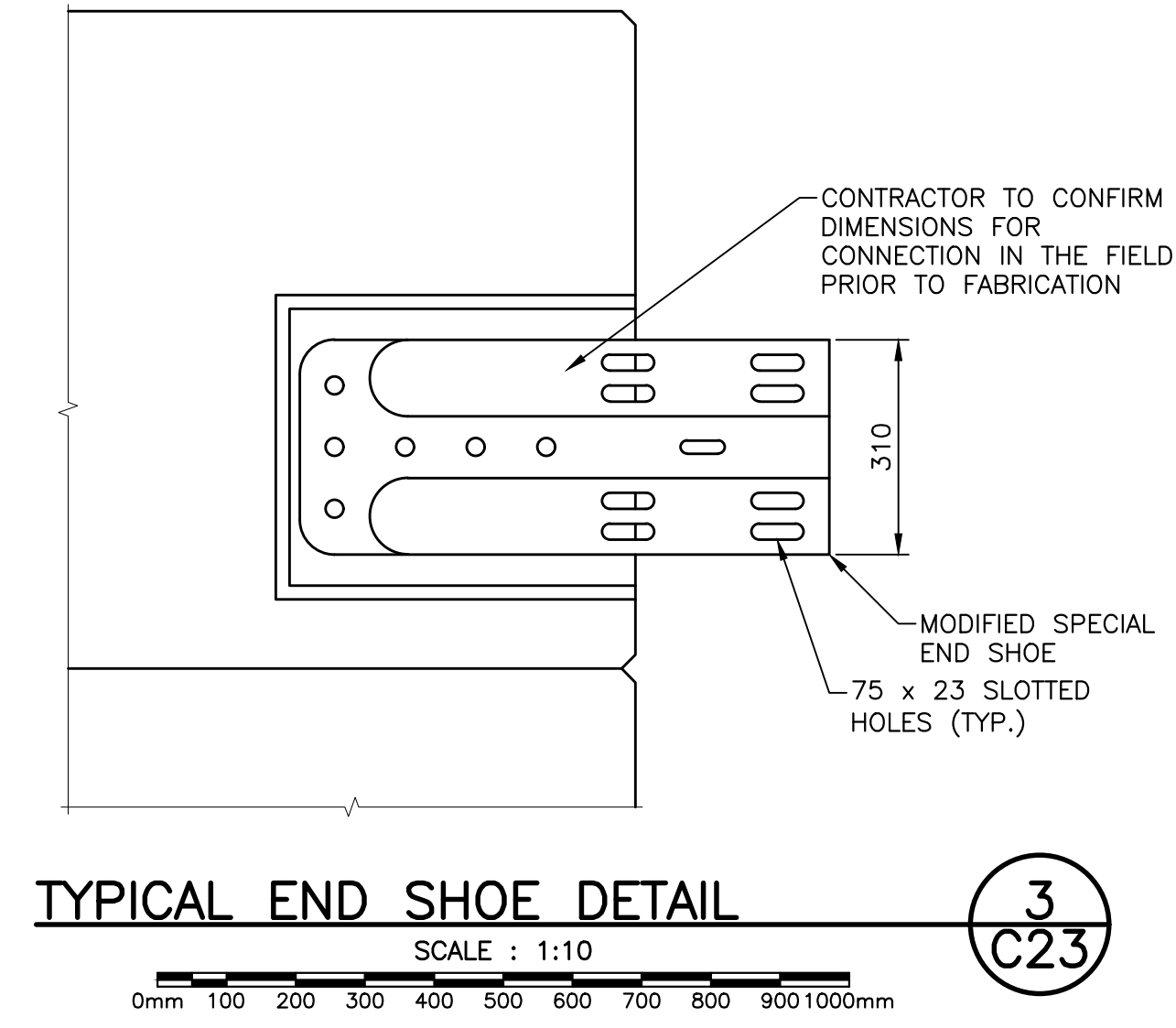
TYPICAL GUIDE RAIL BEAM SECTION 1
SCALE : N.T.S. C23



FRONT OF BLOCK (GUIDE RAIL NOT SHOWN)
SILVER REFLECTOR ON RIGHT,
YELLOW REFLECTOR ON LEFT

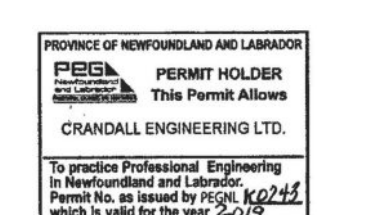


TYPICAL GUIDE RAIL DETAILS 2
SCALE : N.T.S. C23



TYPICAL END SHOE DETAIL 3
SCALE : 1:10 C23

- NOTES:**
- IF REQUIRED RADIUS OF CURVATURE FOR RAIL IS LESS THAN 45m, FLEX BEAM MUST BE ORDERED BY SPECIFIC RADIUS SO IT CAN BE CURVED IN SHOP. STATE WHETHER TRAFFIC FACE IS CONVEX OR CONCAVE.
 - FOR STRONG POST GUIDE RAIL SYSTEM, POST SPACING IS 1905mm



01	ISSUED FOR TENDER	APR 8 2019
revisions		date

project
TRANS CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
TERRA NOVA NATIONAL PARK, NL

TYPICAL GUIDE RAIL DETAILS

designed	PETER ALLABY, P.ENG.	conçu
date	JANUARY 31, 2019	
drawn	KEVIN WARD, PTECH	dessiné
date	JANUARY 31, 2019	
approved	PETER ALLABY, P.ENG.	approuvé
date	JANUARY 31, 2019	
Tender		Soumission
PCA Project Manager	Administrateur de projets APC	
project number		no. du projet
	676	
drawing no.		no. du dessin
	C23	

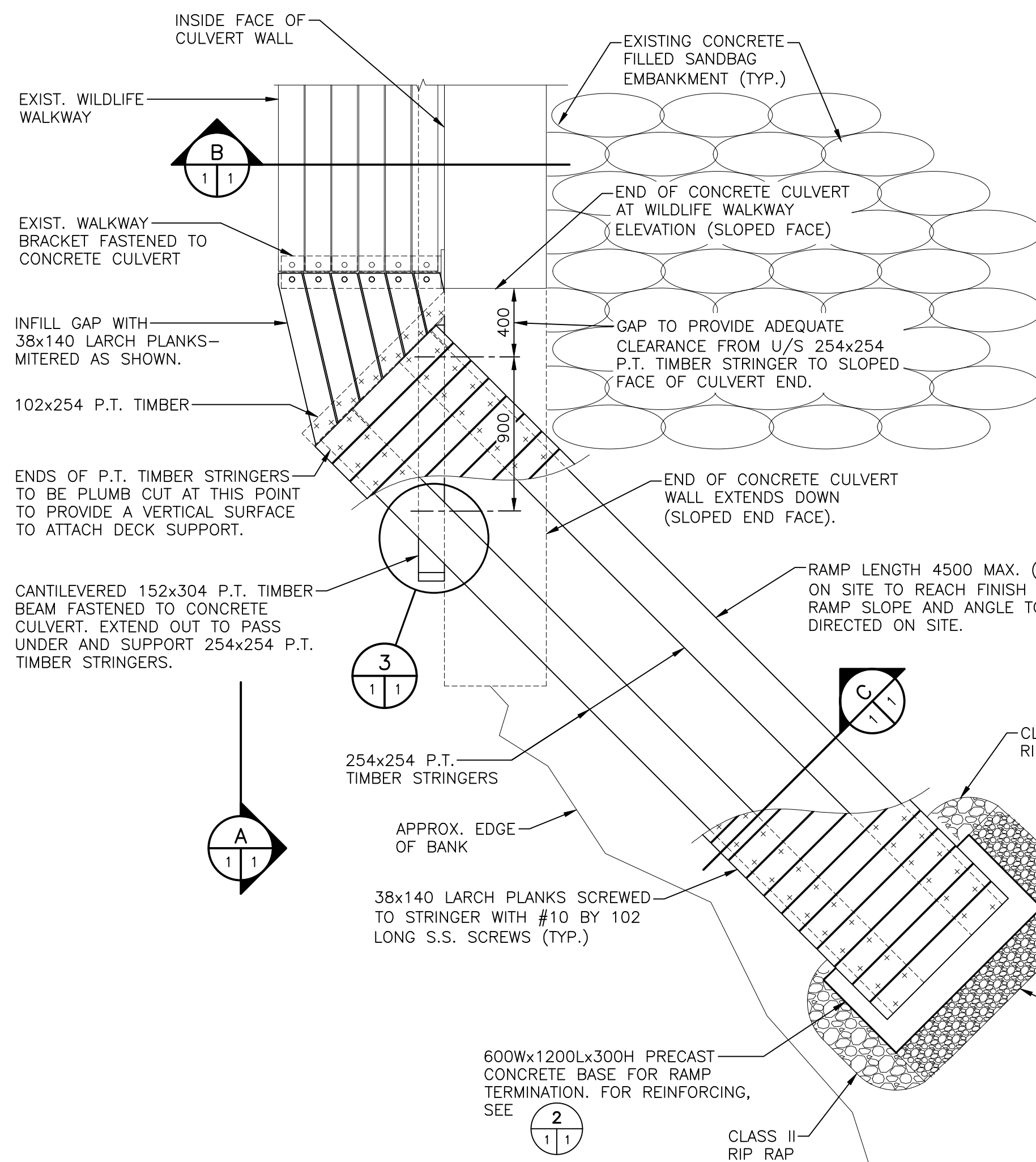


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 CRANDALLENGINEERING.CA

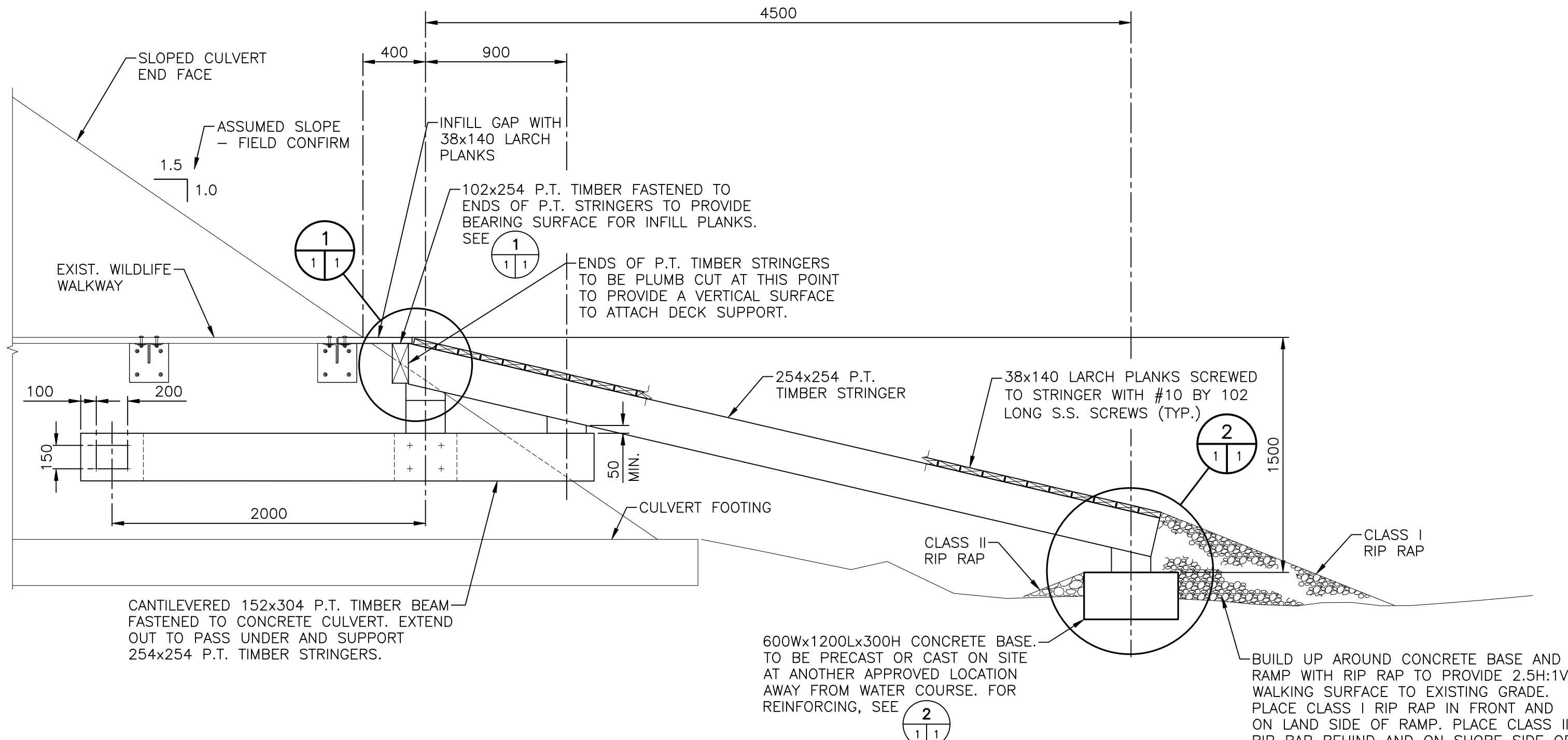


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 Project No. 19040
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 Email: valron@valron.ca

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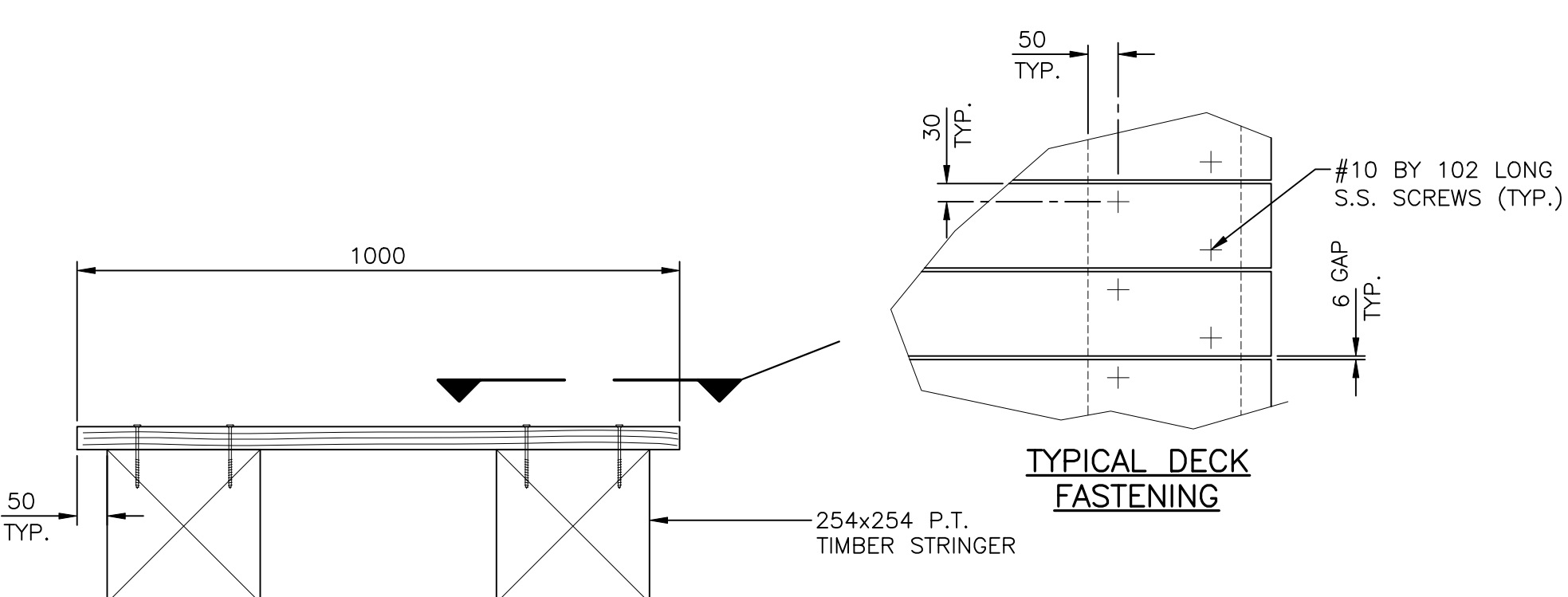


NOTE: PROTECT VEGETATION DURING INSTALLATION. DO NOT CUT ANY TREES OR SHRUBS FOR THE INSTALLATION OF THE WILDLIFE RAMP OTHER THAN THE FOOTPRINT OF THE CONCRETE BASE. THE CONTRACTOR SHALL USE ANY EQUIPMENT AND METHOD NECESSARY TO AVOID CUTTING ANY TREES, SHRUBS OR BRANCHES ADJACENT TO THE WILDLIFE RAMP.

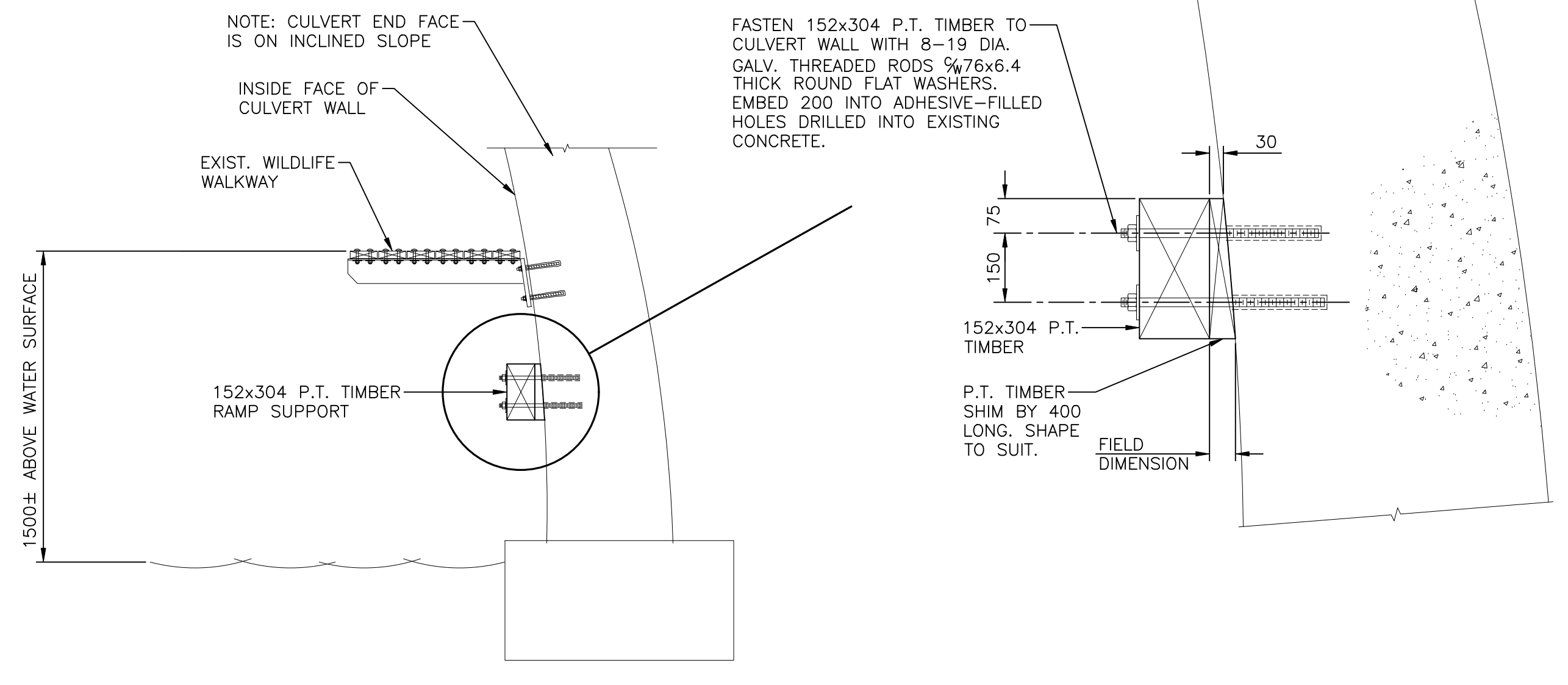


LONGITUDINAL SECTION - RAMP TO WILDLIFE WALKWAY
 SCALE: 1:25

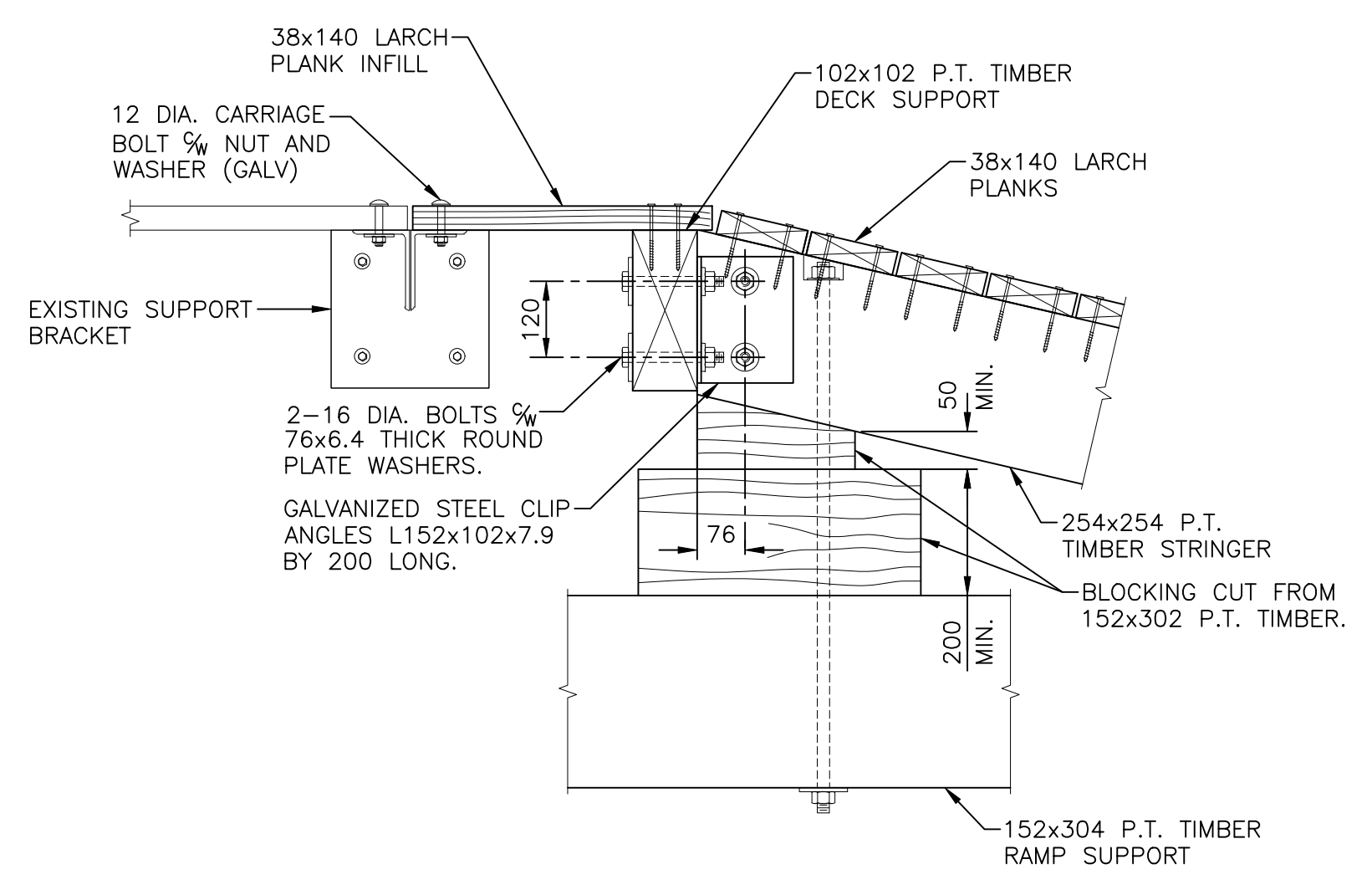
PLAN VIEW - RAMP TO WILDLIFE WALKWAY
 SCALE: 1:25



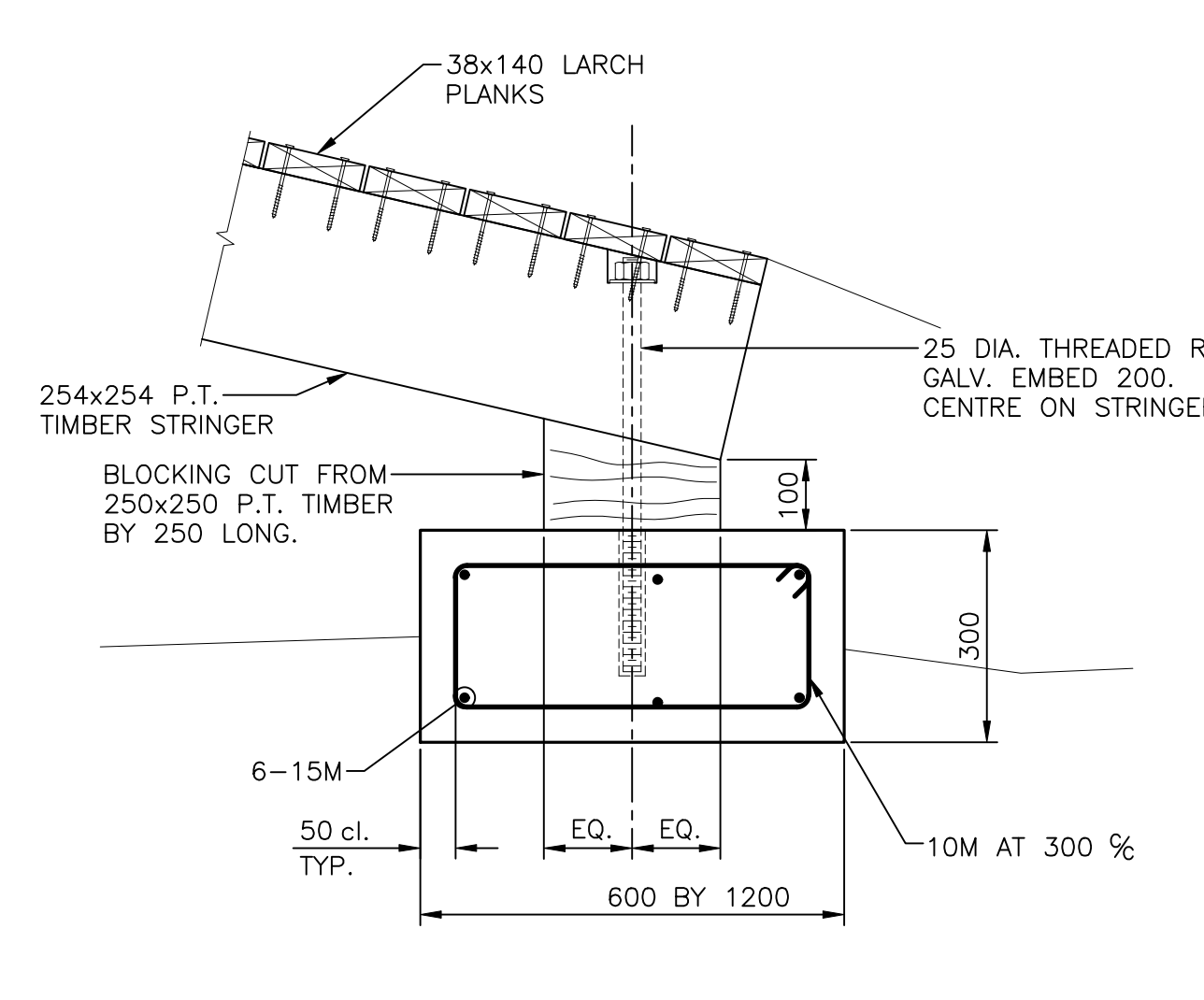
TYPICAL SECTION THRU RAMP
 SCALE: 1:10



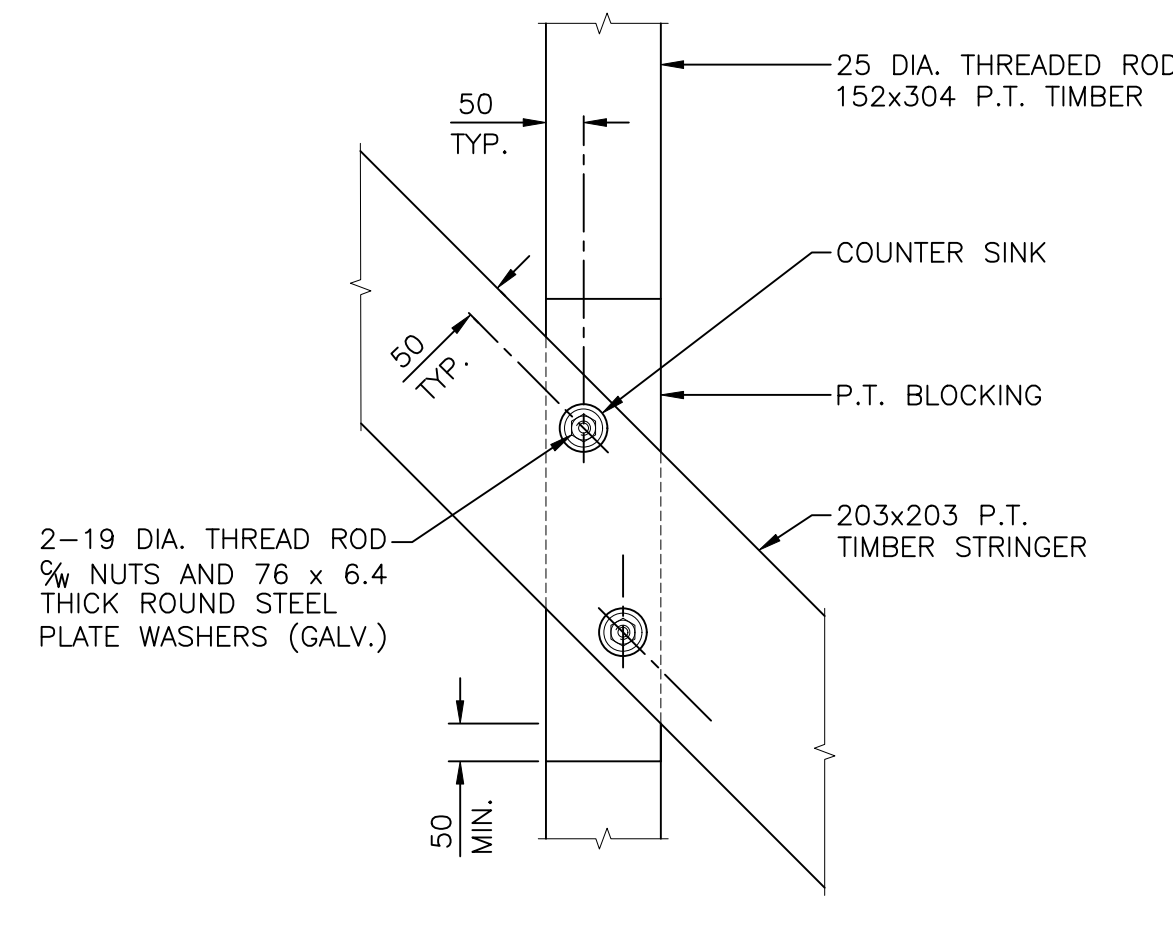
SECTION VIEW - RAMP TO WILDLIFE WALKWAY
 SCALE: 1:25



DETAIL AT TOP/RAMP
 SCALE: 1:10



PRECAST BASE DETAIL AT BOTTOM/RAMP
 SCALE: 1:10



TYPICAL SUPPORT DETAIL
 SCALE: 1:10

CONSTRUCTION NOTES:

1. DETAILS OF CONSTRUCTION MAY REQUIRE SOME ADJUSTMENT TO SUIT FIELD CONDITIONS.
2. CONTRACTOR TO CONFIRM ALL SITE CONDITIONS AND MAKE REQUIRED ADJUSTMENTS TO RAMP ASSEMBLY, TO THE APPROVAL OF THE DEPARTMENTAL REPRESENTATIVE, PRIOR TO FABRICATION.
3. EXACT LOCATION OF RAMP TERMINATION AT GRADE TO BE AS DIRECTED BY DEPARTMENTAL REPRESENTATIVE.
4. CONCRETE FOR RAMP BASE TO BE IN ACCORDANCE WITH CAN/CSA A23.1/A23.3, EXPOSURE CLASS F1, f_c = 30 MPa.
5. PRESERVATIVE TREATED (P.T.) TIMBER TO MEET THE FOLLOWING REQUIREMENTS:
 - .1 TO MEET THE GRADING REQUIREMENTS FOR No.1 GRADE HEMLOCK.
 - .2 TO BE IN ACCORDANCE WITH CAN/CSA-080.1-15 SPECIFICATION FOR TREATED WOOD.
 - .3 WOOD PRESERVATIVE TREATMENT TO BE COPPER AZOLE TYPE B (CA-B), MINIMUM PRESERVATIVE RETENTION TO BE 3.3 kg/m³ IN ACCORDANCE WITH AWPA P32 (AMERICAN WOOD PROTECTION ASSOCIATION).
6. ALL STEEL COMPONENTS, INCLUDING ANGLES AND THREADED RODS, TO BE TO CSA G40.20/G40.21, GRADE 300W, OR BETTER.
7. ALL STEEL ASSEMBLIES, FASTENERS, AND HARDWARE TO BE HOT-DIP GALVANIZED TO ASTM A123/A123M (600 g/m²). FIELD TOUCH-UP OF ALL SCRATCHED OR DAMAGED SURFACES. USE 99% SOLIDS ZINC TOUCH-UP, ZINGA, OR APPROVED ALTERNATE.
8. SCREWS FOR FASTENING RAMP DECK TO THE PT STRINGERS TO BE TYPE 316 STAINLESS STEEL.
9. LARCH PLANKS TO MATCH EXISTING WALKWAY IN SIZE. GRADE TO BE No.1 OR No.2.



revisions	date
05	ISSUED FOR TENDER APR 8 2019
04	RS-4 TENDER REVIEW MAR 25 2019
03	RS-4 99% SUBMISSION MAR 13 2019
02	RS-3 SUBMISSION FEB 22 2019
01	RS-2 SUBMISSION JAN 31 2019

TRANS-CANADA HIGHWAY SAFETY AND STANDARDS REHABILITATION 2019-2020
 TERRA NOVA NATIONAL PARK, NL

SALTON'S BROOK CONCRETE CULVERT RAMP TO WILDLIFE WALKWAY

designed RBV	conçu
date JAN 31, 2019	
drawn RK	dessiné
date JAN 31, 2019	
approved	approuvé
date JAN 31, 2019	
Tender	Soumission
PWGSC Project Manager	Administrateur de projets TPSC
project number	no. du projet
drawing no.	no. du dessin