

MONARCH CREEK - PHASE 2

CULVERT REPLACEMENT & BANK STABILIZATION

KICKING HORSE CAMPGROUND, BC

SEPTEMBER 2016
ISSUED FOR CONSTRUCTION

FOR

PARKS CANADA AGENCY
MMM PROJECT NO. 5215074-000



MMM Group Limited
48 Quarry Park Blvd SE, Suite 220
Calgary, AB, Canada T2C 5P2
t:403.269.7440 | f:403.269.7422
www.mmmgrouplimited.com

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KICKING HORSE CAMPGROUND , BC

ISSUED FOR CONSTRUCTION

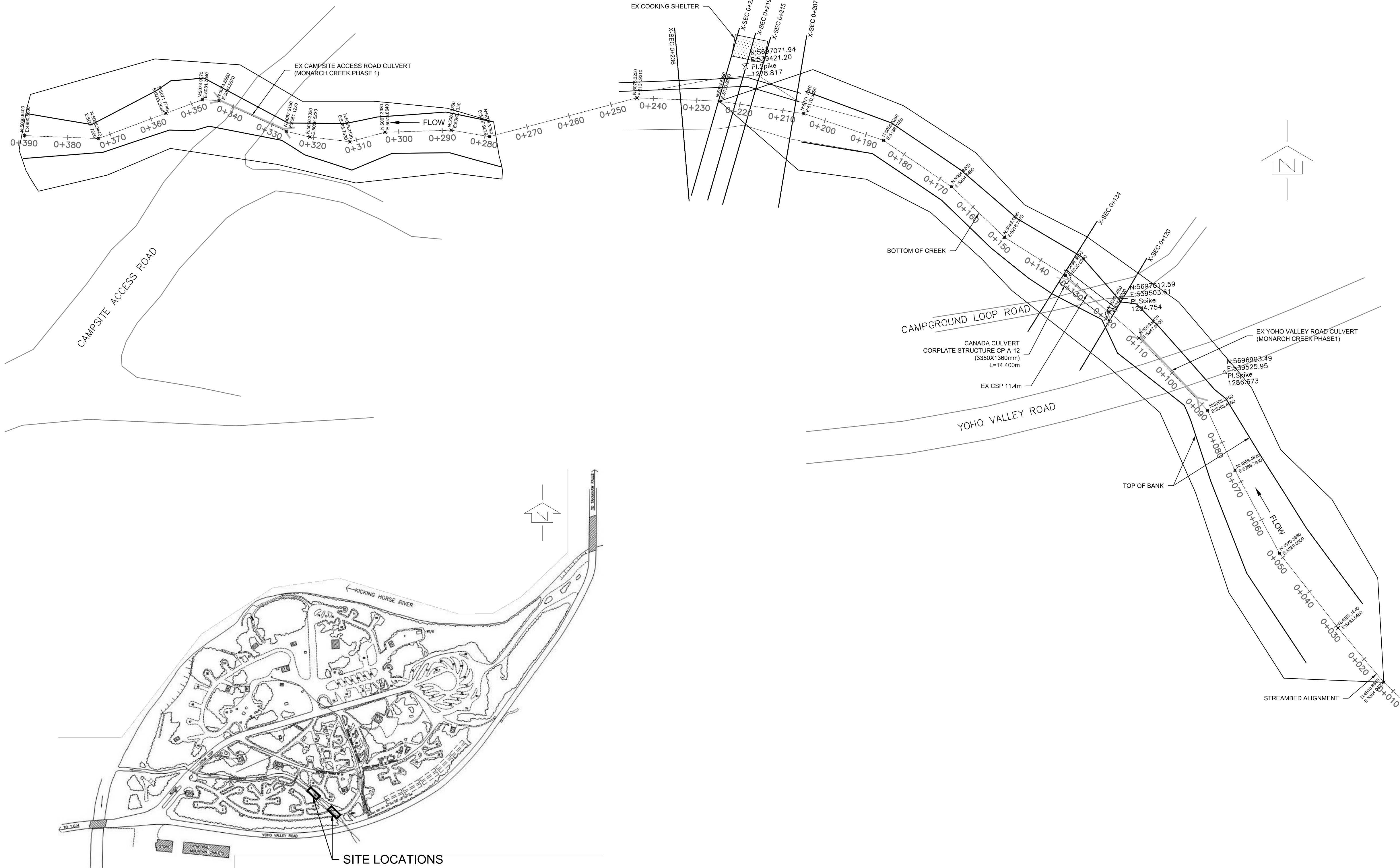


DRAWING INDEX	
DWG NO.	DRAWING TITLE
-	COVERPAGE
-	DRAWING INDEX
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PROJECT NO: 5215074-000
ISSUED FOR: ISSUED FOR CONSTRUCTION
DATE: SEPTEMBER 2016
CLIENT NAME: PARKS CANADA AGENCY



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KEY PLAN
SCALE: NTS

Table: Alignments				
Station	Northing	Easting	Distance	Direction
0+000.00	4931.7840	5313.5490	12.995m	313° 06' 25.76"
0+012.99	4940.6640	5304.0620	16.334m	319° 55' 55.70"
0+029.33	4953.1640	5293.5480	21.894m	321° 52' 14.52"
0+051.22	4970.3860	5280.0300	21.671m	331° 47' 02.84"
0+072.89	4989.4820	5269.7840	15.211m	335° 25' 47.26"
0+088.10	5003.3160	5263.4590	22.929m	316° 28' 44.86"
0+111.03	5019.9420	5247.6700	9.261m	310° 53' 50.06"
0+120.29	5026.0050	5240.6700	13.003m	309° 55' 26.57"
0+133.30	5034.3500	5230.6980	16.533m	302° 11' 43.08"
0+149.83	5043.1590	5216.7070	16.919m	313° 34' 12.86"
0+166.75	5054.8200	5204.4490	19.005m	304° 17' 37.62"
0+185.75	5065.5280	5188.7480	19.374m	288° 35' 21.33"
0+205.13	5071.7040	5170.3850	19.670m	278° 17' 11.89"

Table: Alignments				
Station	Northing	Easting	Distance	Direction
0+224.80	5074.5390	5150.9200	19.005m	272° 22' 12.92"
0+243.80	5075.3250	5131.9310	35.137m	255° 14' 59.57"
0+278.94	5066.3790	5097.9520	8.943m	279° 38' 09.99"
0+287.88	5067.8760	5089.1350	15.278m	268° 12' 25.78"
0+303.16	5067.3980	5073.8640	8.400m	254° 55' 23.35"
0+311.56	5065.2130	5065.7530	9.294m	276° 43' 44.13"
0+320.86	5066.3020	5056.5230	5.557m	283° 39' 58.19"
0+326.41	5067.6150	5051.1230	17.069m	294° 28' 19.24"
0+343.48	5074.6860	5035.5870	3.829m	273° 18' 30.50"
0+347.31	5074.9070	5031.7640	8.973m	249° 33' 48.72"
0+356.28	5071.7740	5023.3560	16.631m	249° 28' 45.98"
0+372.92	5065.9440	5007.7800	17.261m	272° 18' 39.27"
0+390.18	5066.6400	4990.5330	0.000m	272° 18' 39.27"

E	16/09/06	ISSUED FOR CONSTRUCTION	TC	ML
D	16/02/19	100% SUBMISSION	TC	BL
C	16/01/20	90% SUBMISSION	TC	BL
B	15/12/18	REVISED 60% SUBMISSION	EMK	BL
A	15/12/01	60% SUBMISSION	TC	BL

No.	Date/Date	Description/Description	Drawn by Dessiné par	Approved Approuvé
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Revision / Revision	
A	detail number numéro de détail
B	source drawing no. de dessin no.
C	detail on drawing no. détail sur dessin no.

Consultant's Stamp
Sceau de l'expert-conseil

Eng. Stamp
Sceau de l'ingénieur

Client/client

Parks Canada Agency

L'Agence Parcs Canada

Consultant's Name
Nom de l'expert-conseil

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Project title/Titre du projet

**MONARCH CREEK - PHASE 2
CULVERT REPLACEMENT &
BANK STABILIZATION
KICKING HORSE CAMPGROUND, BC**

Drawing title/Titre du dessin

**CULVERT REPLACEMENT
PLAN**

Surveyed by/Arpenté par JOHN HENNEBURY & WAYNE PICHE	Drawn by/Dessiné par T.C.	Date/Date 2015/11/12
Designed by/Concept par G.I.	Reviewed by/Revisé par B.L.	Scale/Échelle 1:500

Parks Canada Project Manager/Administrateur de Projets Parcs Canada
JOHN GIBBONS

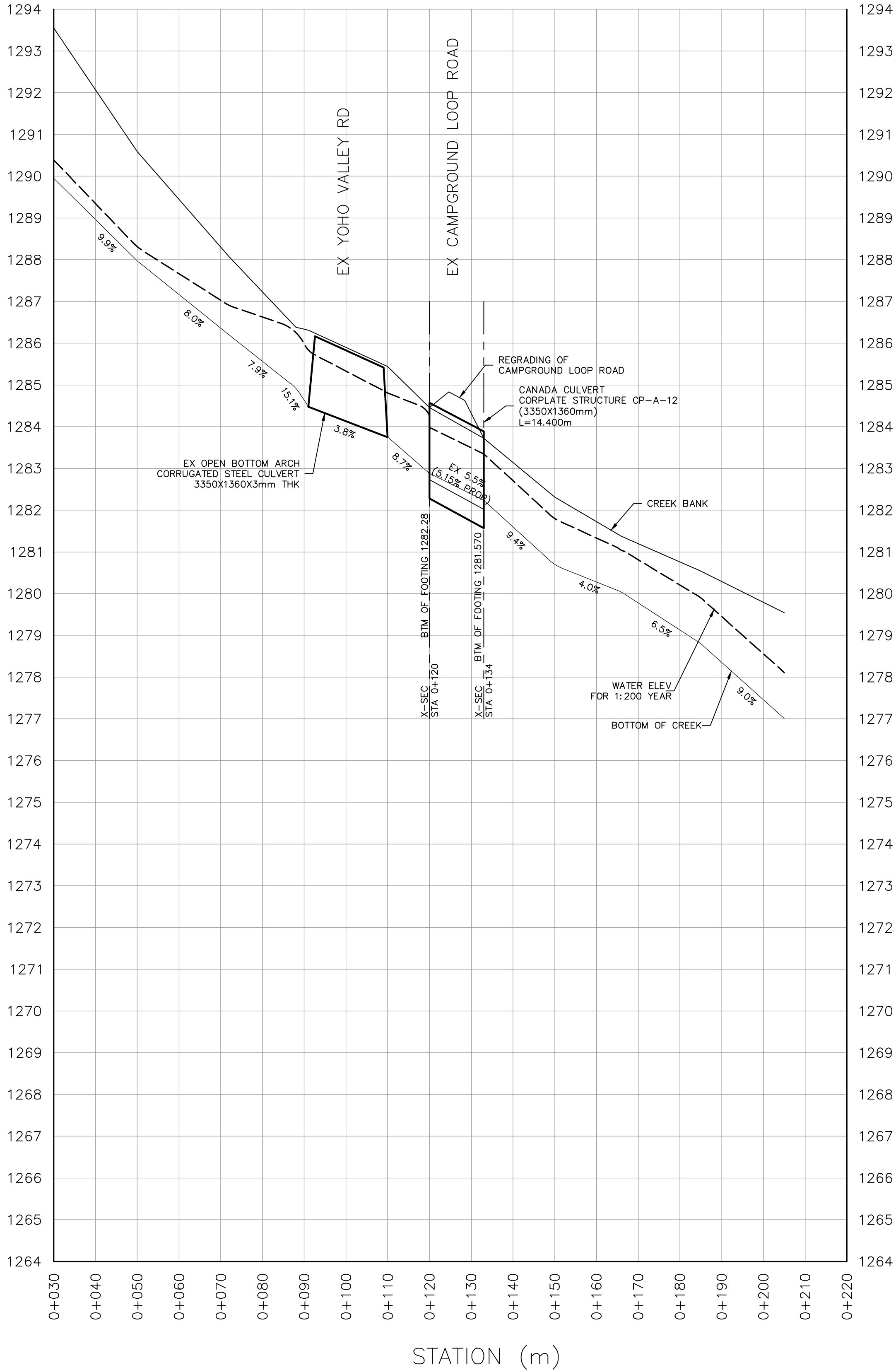
Client Acceptance/Acceptation du client
Approved by/Approuvé par

Parks Canada Responsible Officer/Agent Responsable Parcs Canada
Parks Canada Project Manager/Administrateur de Projets Parcs Canada

Project No./No. du projet 5215074-000	Asset No./No. du bien -	Sheet No./ No. de la feuille C03
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Drawing Reference No./No. de référence du dessin

ELEVATION
(m)



E	16/09/06	ISSUED FOR CONSTRUCTION	TC	ML
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Revision / Revision

A

C

A

B

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numéro de détail

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de dessin no.

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détail sur dessin no.

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Sceau de l'expert-conseil

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KICKING HORSE CAMPGROUND, BC

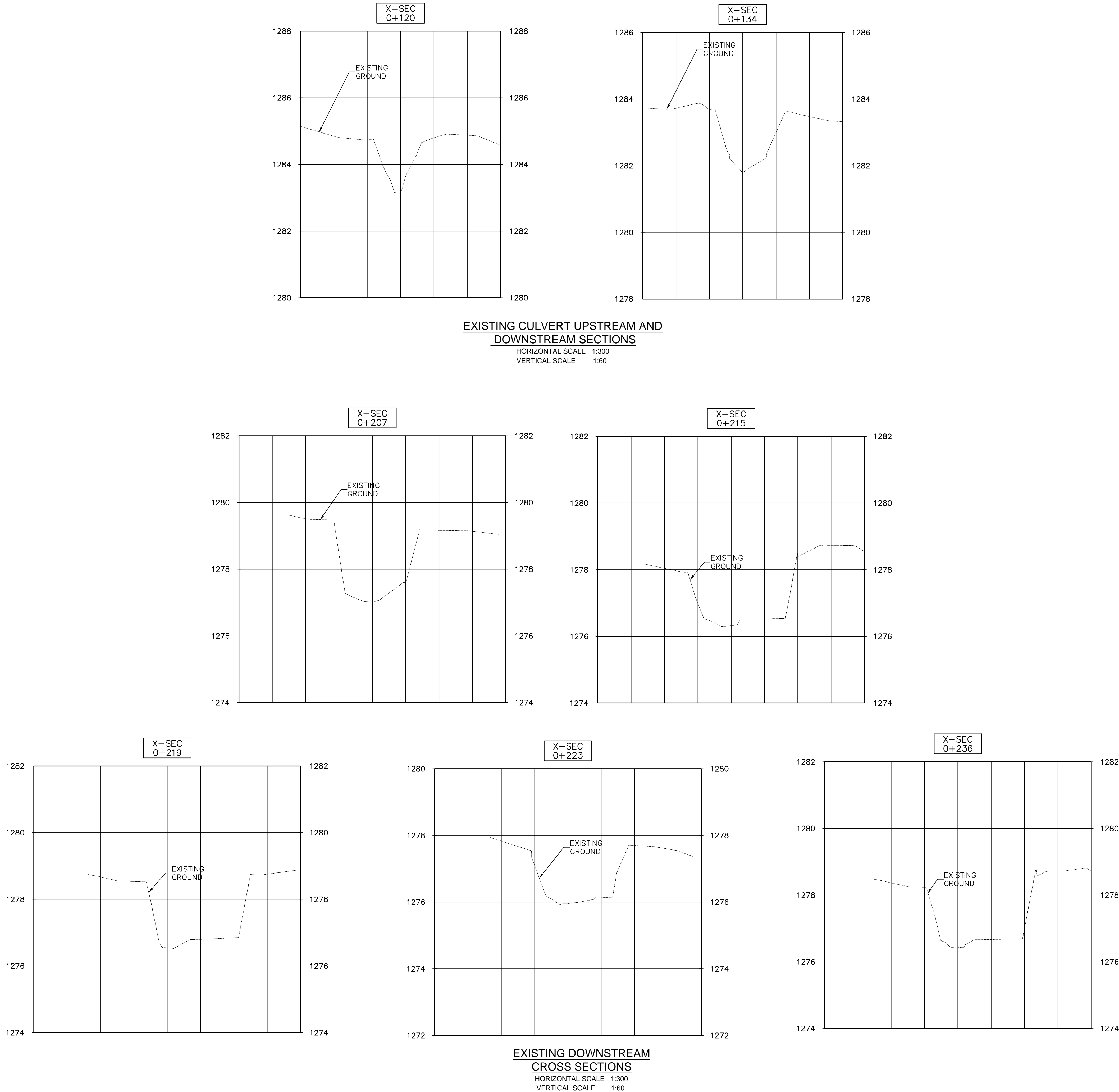
Drawing title/Titre du dessin

CULVERT REPLACEMENT

PROFILE

Surveyed by/Arpenté par JOHN HENNEBURY & WAYNE PICHE	Drawn by/Dessiné par T.C.	Date/Date 2015/11/12
Designed by/Conçeut par G.I.	Reviewed by/Revisé par B.L.	Scale/Echelle H: 1:750 V: 1:75
Parks Canada Project Manager/Administrateur de Projets Parcs Canada JOHN GIBBONS		
Client Acceptance/Acceptation du client		Approved by/Approuvé par
Parks Canada Responsible Officer/Agent Responsable Parcs Canada		Parks Canada Project Manager/Administrateur de Projets Parcs Canada
Project No./No. du projet 5215074-000	Asset No./No. du-bien -	Sheet No./ No. de la feuille C04
Drawing Reference No./No. de référence du dessin		

September 06, 2016 - 10:14:35 Planname: P-5215074-000 Monarch Creek P1P2 CW#5000 Professional Services-510 Design Technical-5412 Drawings/Current-5515074-005 EX Sections.dwg JG X-SEC



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EXISTING
CROSS-SECTIONS

Surveyed by/Arpenté par JOHN HENNEBURY & WAYNE PICHE	Drawn by/Dessiné par T.C.	Date/Date 2015/11/12
Designed by/Concept par G.I.	Reviewed by/Revisé par B.L.	Scale/Echelle AS NOTED

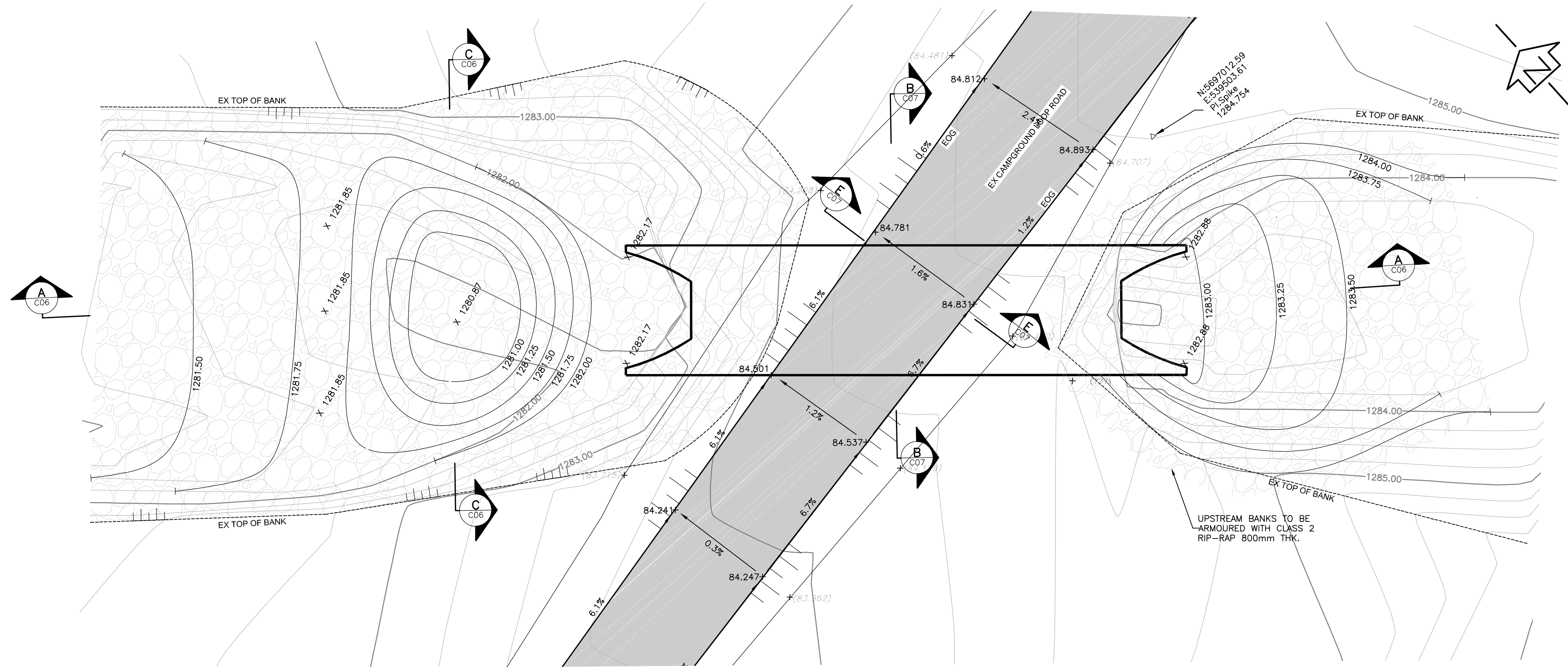
Parks Canada Project Manager/Administrateur de Projets Parcs Canada
JOHN GIBBONS

Client Acceptance/Acceptation du client
Approved by/Approuvé par

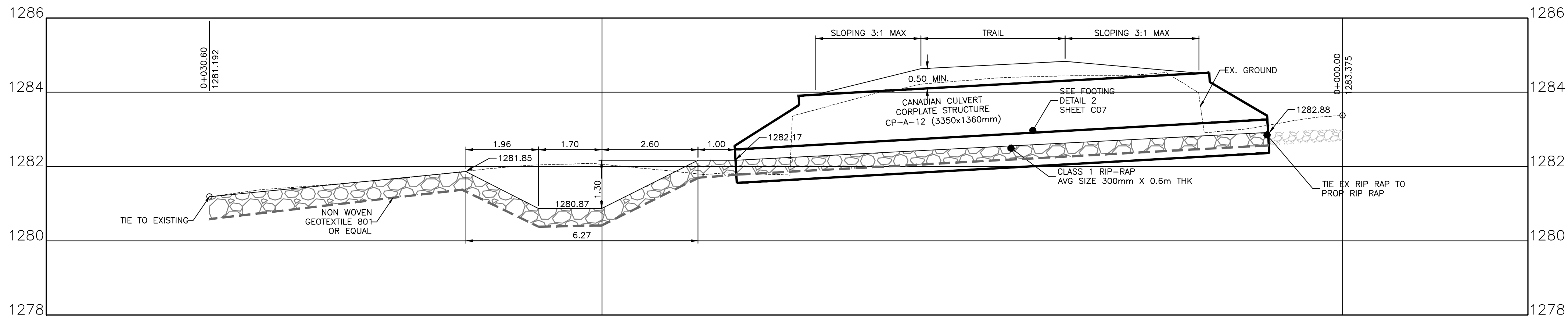
Parks Canada Responsible Officer/Agent Responsable Parcs Canada

Parks Canada Project Manager/Administrateur de Projets Parcs Canada

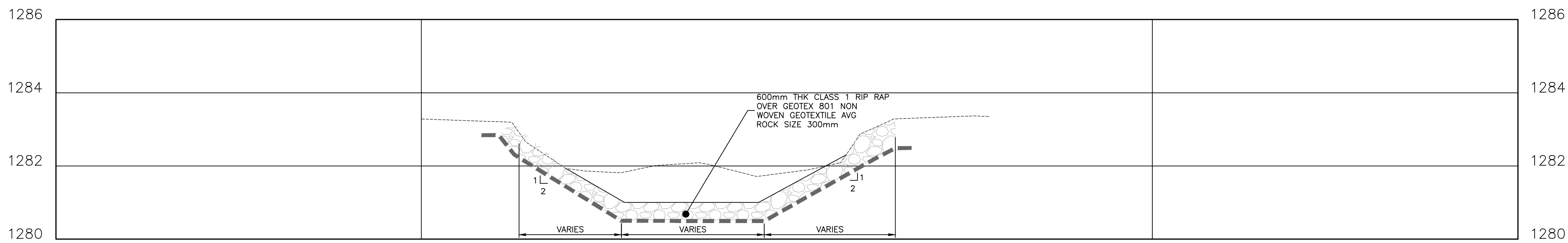
Project No./No. du projet 5215074-000	Asset No./No. du-bien -	Sheet No./ No. de la feuille C05
Drawing Reference No./No. de référence du dessin		



1 PLAN VIEW
C06 SCALE: 1:75



A-A CROSS SECTION
C06 SCALE: H=1:75 V=1:75



C-C DOWN STREAM APPROACH CROSS SECTION
C06 SCALE: H=1:75 V=1:75

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Drawing title/Titre du dessin

CULVERT PLAN AND SECTIONS

Surveyed by/Représenté par JOHN HENNEBURY & WAYNE PICHE	Drawn by/Dessiné par T.C.	Date/Date 2015/11/16
Designed by/Concept par G.I.	Reviewed by/Revisé par B.L.	Scale/Echelle AS NOTED

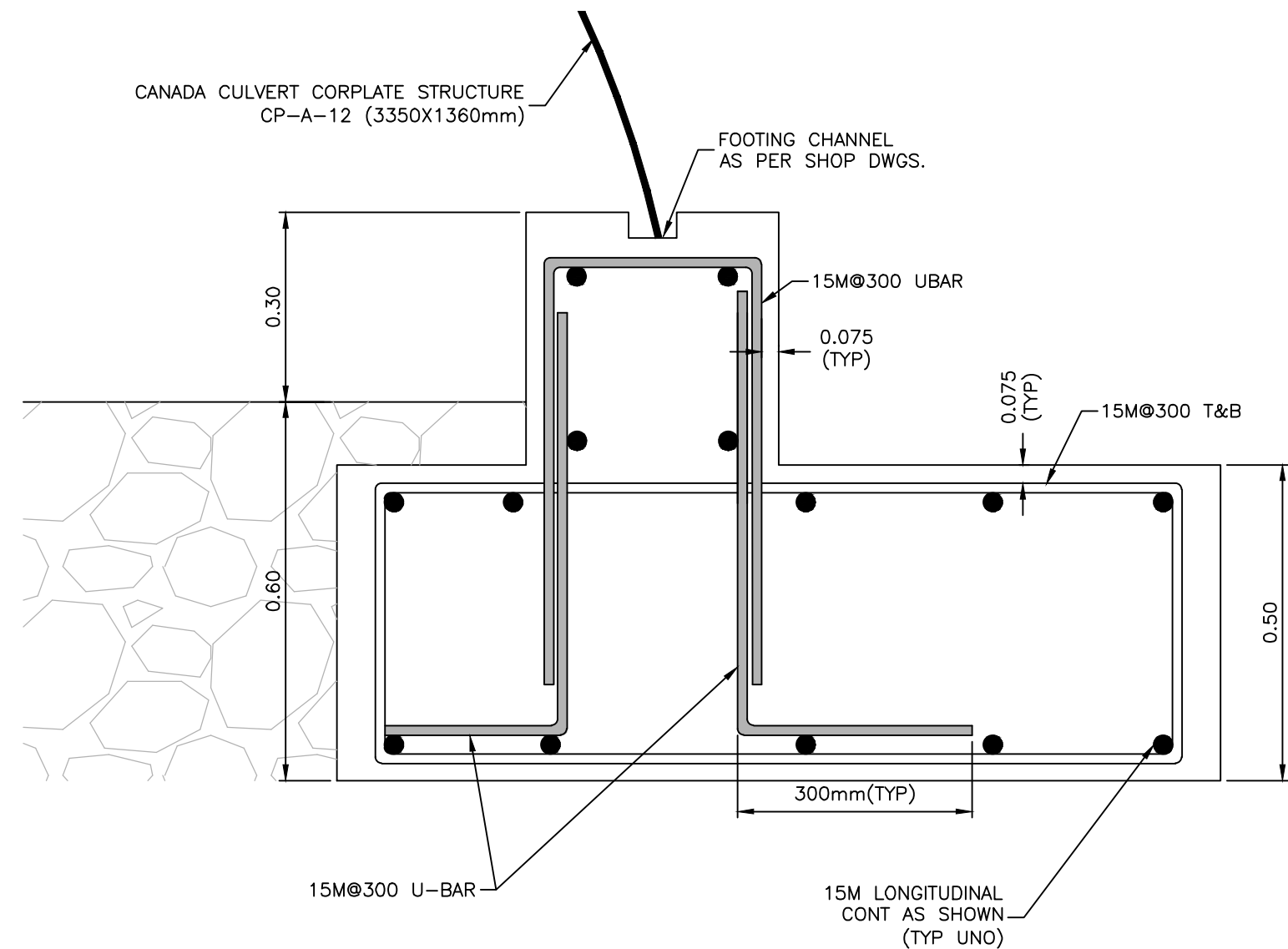
Parks Canada Project Manager/Administrateur de Projets Parcs Canada
JOHN GIBBONS

Client Acceptance/Acceptation du client
Approved by/Approuvé par

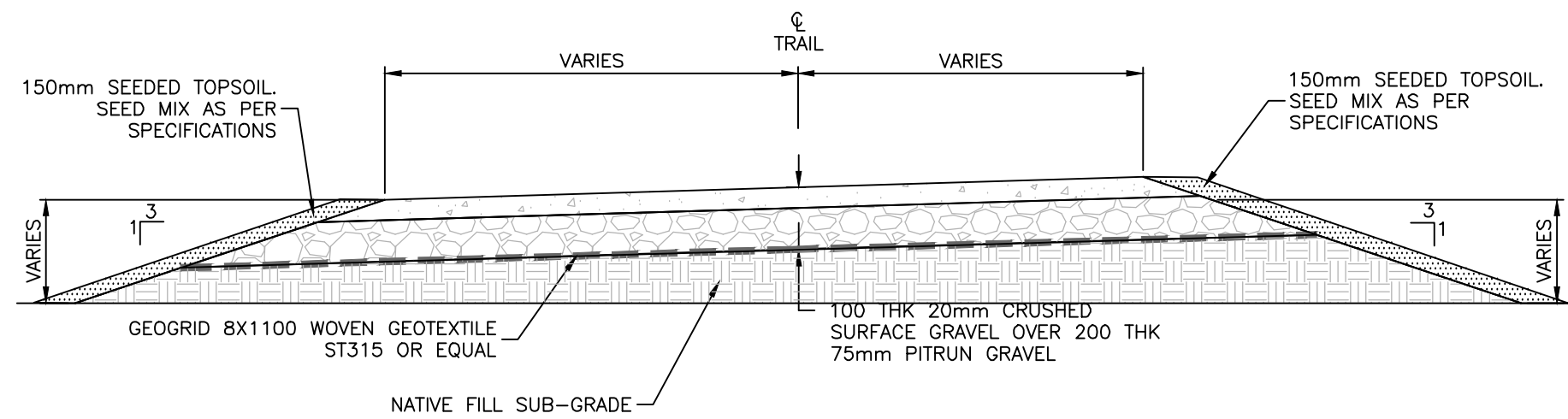
Parks Canada Responsible Officer/Agent Responsable Parcs Canada
Parks Canada Project Manager/Administrateur de Projets Parcs Canada

Project No./No. du projet 5215074-000	Asset No./No. du bien -	Sheet No./No. de la feuille C06
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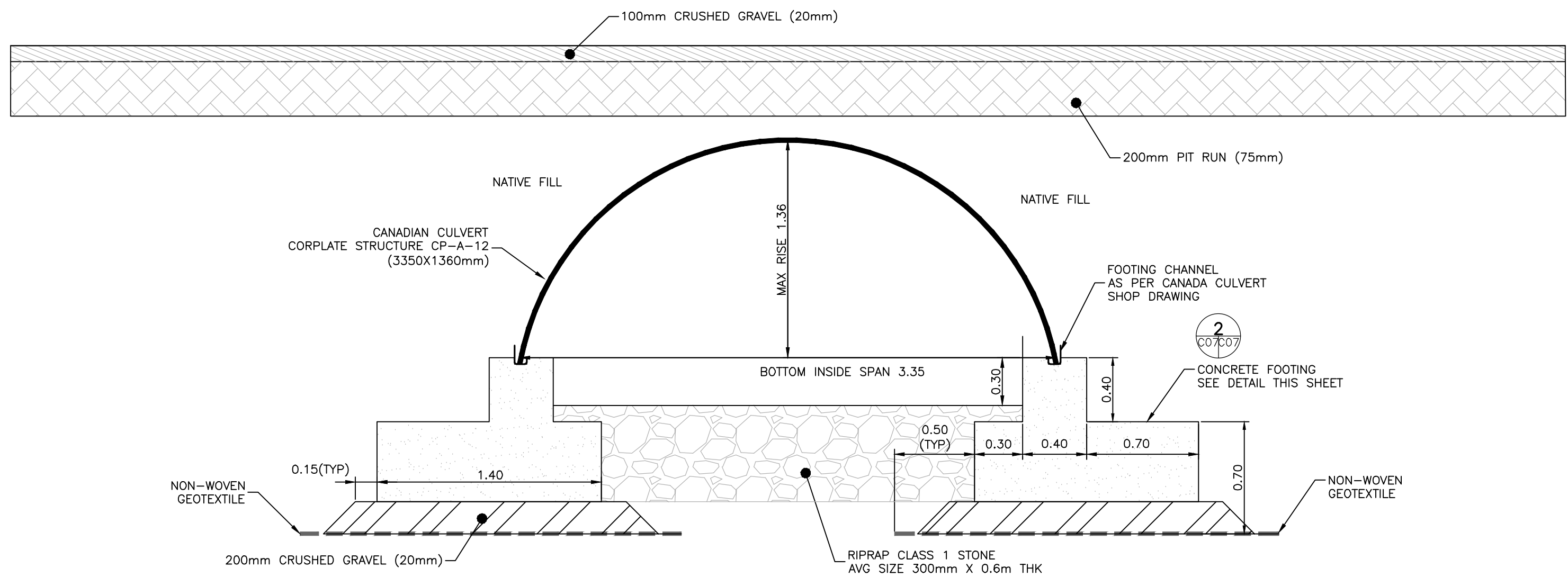
Drawing Reference No./No. de référence du dessin



2
C07 CONCRETE FOOTING (PRE-CAST)
SCALE: 1:10



E-E
C07 TRAIL SECTION
SCALE: N.T.S.



B-B
C07 CULVERT CROSS SECTION
SCALE: H=1:25 V=1:25

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Consultant's Stamp Sceau de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
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Client/client	Parks Canada Agence	L'Agence Parcs Canada
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Consultant's Name Nom de l'expert-conseil	MMM Group Limited 48 Quarry Park Blvd SE, Suite 220 Calgary, AB, Canada T2C 5P2 t:403.269.7440 f:403.269.7422 www.mmmgrouplimited.com
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Project title/Titre du projet
MONARCH CREEK - PHASE 2 CULVERT REPLACEMENT & BANK STABILIZATION KICKING HORSE CAMPGROUND, BC

Drawing title/Titre du dessin
CULVERT DETAILS

Surveyed by/Inspecté par JOHN HENNEBURY & WAYNE PICHÉ	Drawn by/Dessiné par T.C.	Date/Date 2015/11/16
Designed by/Concept par G.I.	Reviewed by/Revisé par B.L.	Scale/Echelle AS NOTED

Parks Canada Project Manager/Administrateur de Projets Parcs Canada JOHN GIBBONS		
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Project No./No. du projet 5215074-000	Asset No./No. du bien -	Sheet No./ No. de la feuille C07
Drawing Reference No./No. de référence du dessin		

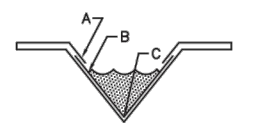
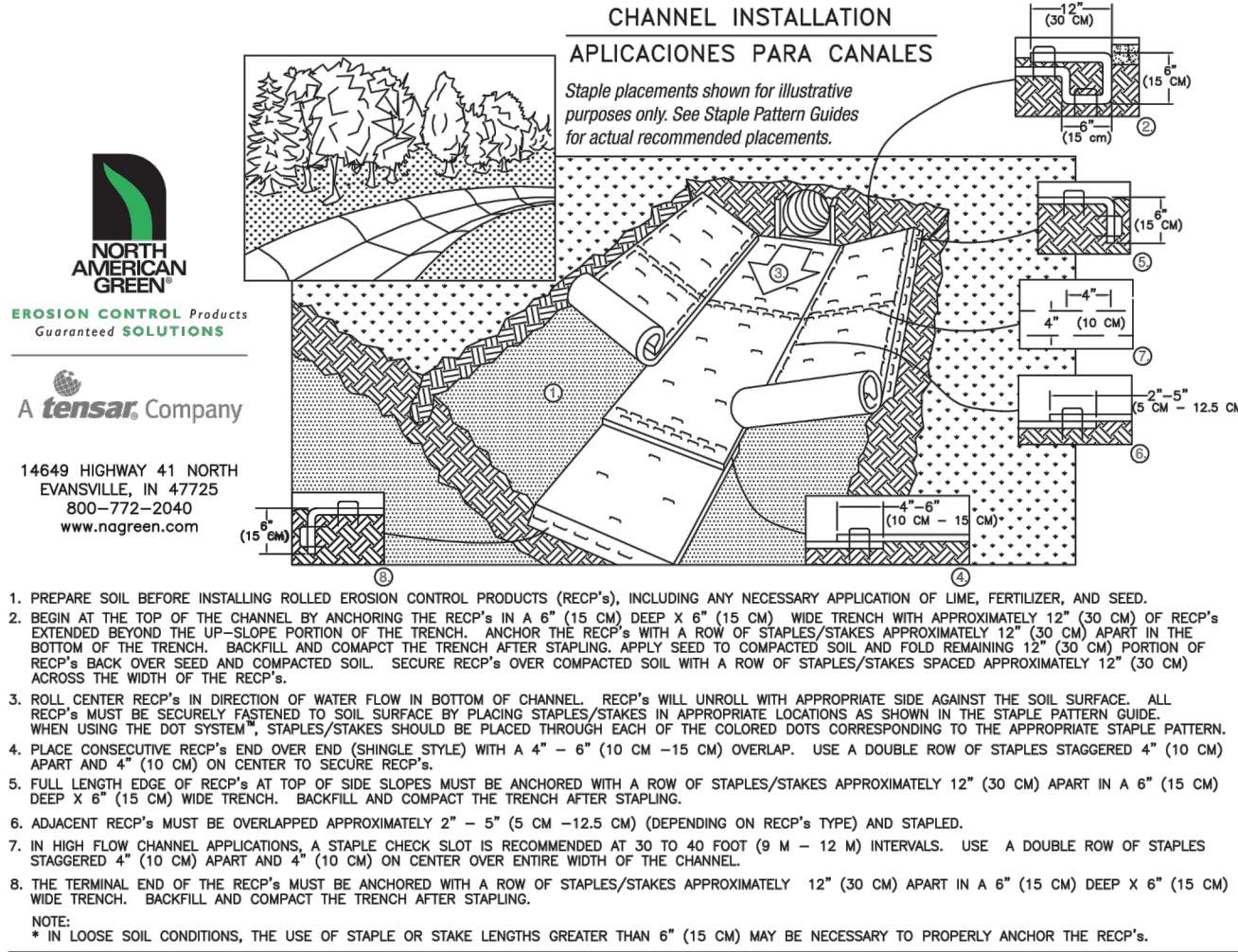


QTY	SCIENTIFIC NAME	COMMON NAME	PLANT SIZE
420	Salix spp	Willow (species available)	Live Cutting

PROFILE VIEW RETAINING WALL
SCALE: H=1:150 V=1:75

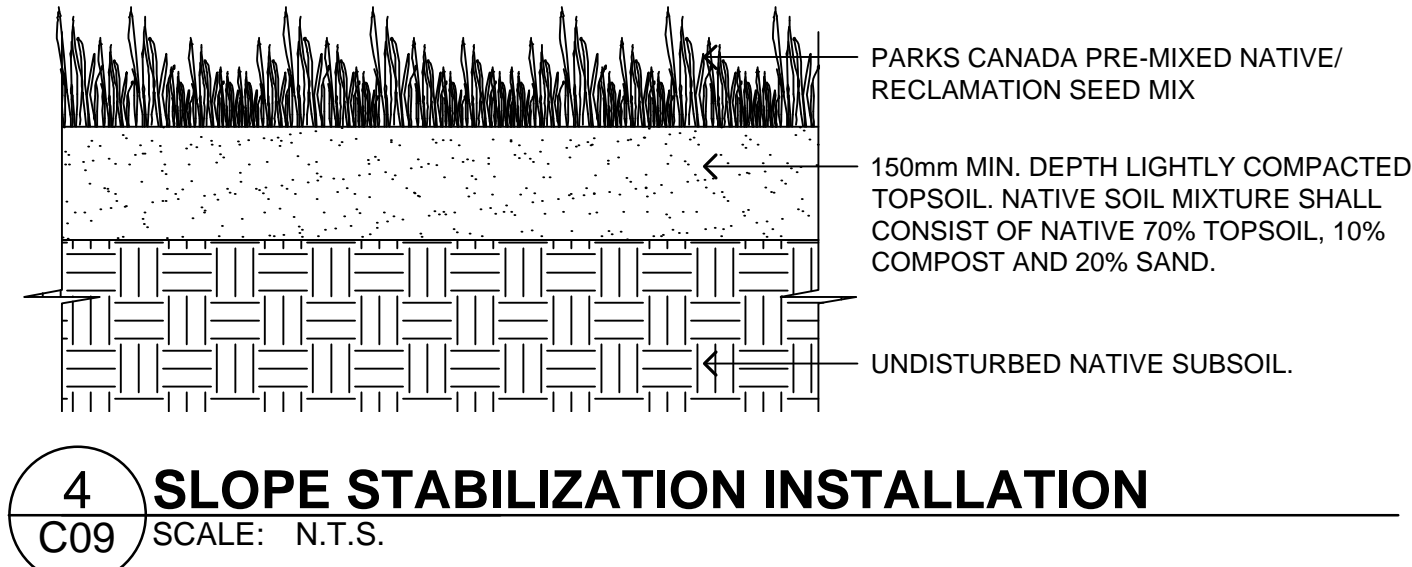
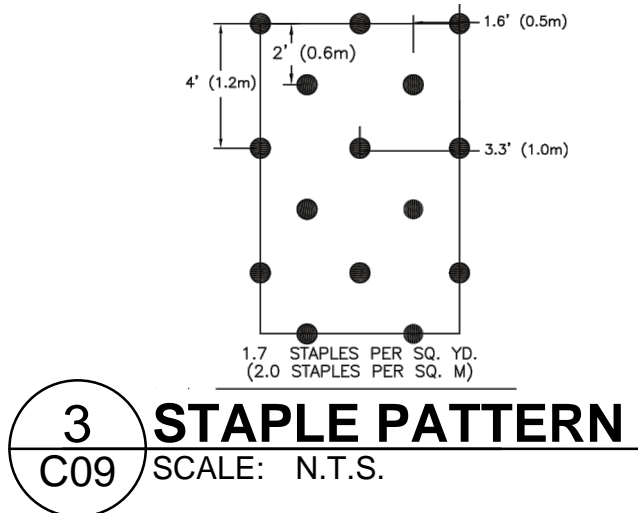
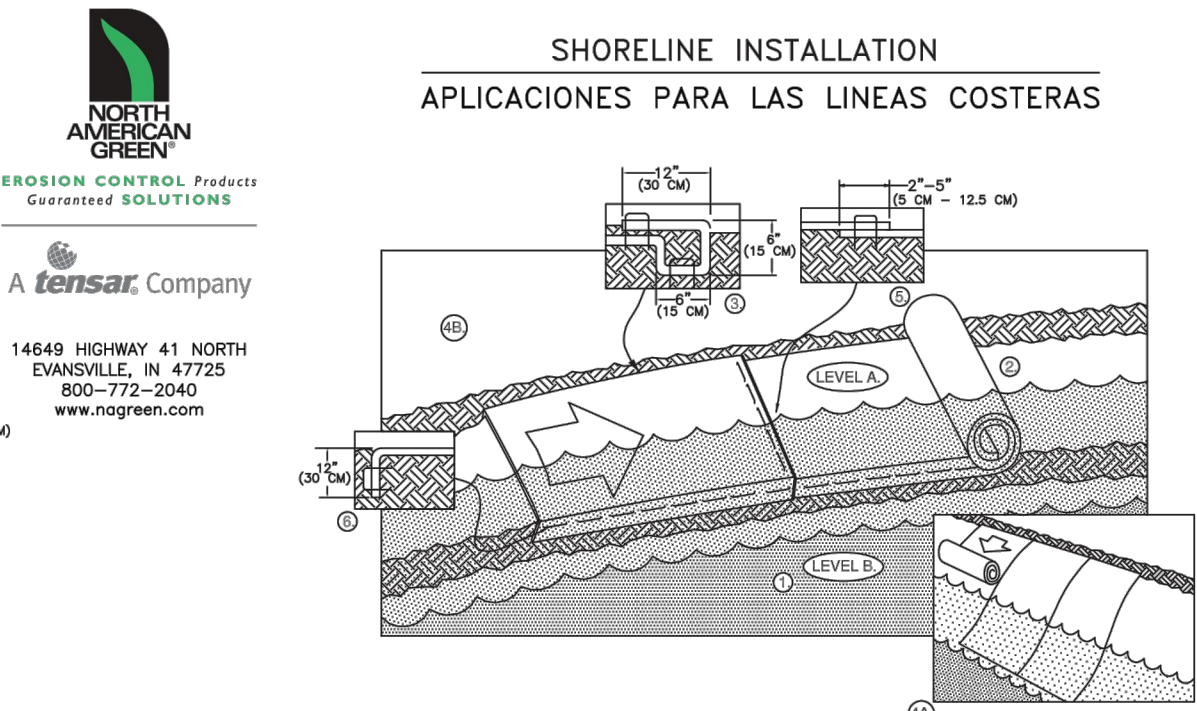
Project No./No. du projet 5215074-000		Asset No./No. du bien -	Sheet No./ No. de la feuille C08
Drawing Reference No./No. de référence du dessin			

Filename: P:\5115074-000 Monarch Creek PRC\DWG\000 Professional Services\510_Design\Technical\4112_Drawing\Current\5115074-C09 Erosion Control Details.dwg;C:09
Sheet: September 06, 2016, 10:10:24
AT 841 x 594 mm



CRITICAL POINTS
A. DOWNSLOPE AND SEAM
B. UP-SLOPE WATER LINE
C. CHANNEL BOTTOM/SLOPE
SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



1 SLOPE STABILIZATION INSTALLATION
C09 SCALE: N.T.S.

2 SLOPE STABILIZATION INSTALLATION
C09 SCALE: N.T.S.

4 SLOPE STABILIZATION INSTALLATION
C09 SCALE: N.T.S.

LANDSCAPE NOTES

1. GENERAL NOTES:

- CONTRACTOR TO CALL ALBERTA ONE-CALL AT 1-800-242-3447 TO HAVE EXISTING UTILITIES LOCATED PRIOR TO START OF ANY CONSTRUCTION.
- CONTRACTOR IS TO VISIT THE SITE TO CONFIRM ALL SITE CONDITIONS PRIOR TO MOBILIZING FOR CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE CONSULTANT FOR CLARIFICATION.
- LIMITS OF THE WORK ARE TO BE CLEARLY UNDERSTOOD BY THE CONTRACTOR PRIOR TO ANY WORK TAKING PLACE ON SITE. THE CONTRACTOR IS TO CONTACT THE CONSULTANT FOR CLARIFICATION IF REQUIRED.
- THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE CONSULTANT FOR FURTHER DIRECTION.
- LAYOUT IS TO BE APPROVED BY THE CONSULTANT PRIOR TO THE START OF CONSTRUCTION.
- ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE NOTED.
- ANY AMBIGUITY IN THIS DRAWING OR ACCOMPANYING DETAILS IS TO BE REPORTED TO THE CONSULTANT FOR CLARIFICATION. THE CONTRACTOR IS NOT TO PROCEED IN UNCERTAINTY.
- CONTRACTOR IS TO PROVIDE FIELD NOTES DOCUMENTING ALL FIELD CHANGES TO DRAWINGS. CONTRACTOR IS TO SUBMIT FIELD NOTES TO CONSULTANT TO BE USED AS RECORD (AS-BUILT) DRAWINGS. CONSULTANT TO DISCUSS ANY FIELD CHANGES WITH DEVELOPMENT COORDINATION AND PARKS WHEN SUBMITTING REDLINES AND CONSIDERING CHANGES ADDED FOR AS-BUILTS.

2. PERMITS AND STANDARDS NOTES:

- THE CONTRACTOR IS TO ENSURE THAT ALL NECESSARY ARRANGEMENTS ARE MADE WITH UTILITY COMPANIES CONCERNING THE MOVEMENT OF MATERIALS AND EQUIPMENT NEAR ANY UTILITY RIGHTS OF WAY.
- ALL ANCILLARY WORK NORMALLY ASSOCIATED WITH THIS TYPE OF CONSTRUCTION SHALL BE DEEMED TO BE PART OF THE CONTRACT.

3. SITE WORK NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TREE PROTECTION (SNOW FENCE OR HOARDING) FOR ALL TREES WITHIN (5) FIVE METERS OF PROJECT SITE OR ADJACENT TO CONSTRUCTION AREAS. PROTECTION REQUIREMENTS INCLUDE:
 - SNOW FENCING FOR TREES WITHIN 3-5 METERS.
 - 13mm TH. PLYWOOD X 1.22 M HGT. WITHIN 1-3 METERS.
- IN THE EVENT DAMAGE OCCURS TO TREE(S) WITHIN AREA OF PROTECTION, CITY OF EDMONTON PARKS AND RECREATION IS TO BE ADVISED. CALL (780) 469-8733.
- THE CONTRACTOR SHALL SUPPLY ALL MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS. ANY DISCREPANCIES IN QUANTITIES SHALL BE REPORTED TO THE CONSULTANT IMMEDIATELY FOR CLARIFICATION.
- NO SUBSTITUTIONS OF MATERIAL, PRODUCTS, OR QUANTITIES SHALL BE PERMITTED WITHOUT PRIOR CONSENT OF THE CONSULTANT.
- THE CONTRACTOR IS RESPONSIBLE FOR THE HAULING OF ALL EXCESS MATERIALS OFF THE SITE TO A LOCATION DESIGNATED BY THE CONSULTANT.
- THE CONTRACTOR IS RESPONSIBLE FOR GENERAL SITE CLEAN-UP.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO LANDSCAPED AREAS AND MUST MAKE ALL NECESSARY RESTORATIONS AND REPAIRS.

4. UTILITY SETBACKS NOTES:

- CONTRACTOR TO LOCATE ALL SITE UTILITIES PRIOR TO CONSTRUCTION AND PLANT NO CLOSER THAN THE FOLLOWING DIMENSIONS FROM THE SERVICES.
 - 1.0M FROM POWER LINES
 - 3.5M FROM ALL POWER HARDWARE
 - 2.5M FROM WATER MAINS, WATER SERVICES, AND WATER VALVES
 - 2.0M FROM SEWER MAINS, MANHOLES, SERVICES, CATCH BASINS, AND CATCH BASIN MANHOLES
 - 1.5M FROM GAS (CONTACT UTILITY)
 - 1.8M FROM SERVICES
 - 7.5M FROM STREET CORNERS
 - 3.5M FROM FIRE HYDRANTS
 - 1.5M FROM DRIVEWAYS
 - 1.0M FROM SIDEWALKS, OR AS PER APPROVED ENG. CROSS SECTIONS
 - 3.5M FROM TRANSIT ZONES
 - 2.0M FROM COLLECTOR AND LOCAL ROAD CURB FACE
 - 3.5M FROM YIELD AND STOP SIGNS
 - 3.5M FROM BUS STOP SIGNS
 - 2.0M FROM ALL OTHER SIGNS
 - 1.0M FROM OTHER UNDERGROUND UTILITIES
 - 3.5M FROM TELUS PEDESTALS
 - 2.0M FROM TELUS DUCT STRUCTURE
 - 1.0M FROM TELUS CABLE FACILITIES

THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES AND LIABILITIES INCURRED BY DAMAGES TO SITE UTILITIES.

5. PLANTING NOTES:

- A TOPSOIL TEST IS REQUIRED BEFORE INSTALLATION. THE SOIL ANALYSIS REPORT IS TO BE SUBMITTED TO THE CONSULTANT PRIOR TO INSTALLATION.
- ALL AREAS TO HAVE **SEED** ARE TO HAVE TOPSOIL TO A DEPTH OF **150MM** ON THE SLOPE

6. LIVE CUTTING NOTES:

- CUTTINGS SHALL BE HARVESTED AND PLANTED WHEN THE SHRUBS ARE DORMANT, BETWEEN LATE FALL (AFTER THE FIRST FEW FROSTS) AND EARLY SPRING (BEFORE BUD BREAK).
- INSTALL CUTTINGS IMMEDIATELY AFTER HARVEST. DURING THE PLANTING AND HARVEST OPERATIONS, THE CUTTINGS ARE TO BE STORED IN A COOL, SHADED AND MOIST LOCATION. IF CUTTINGS ARE NOT INSTALLED THE SAME DAY THEY SHOULD BE SOAKED IN WATER FOR AT LEAST 24 HOURS BEFORE INSTALLATION.
- USE HEALTHY, STRAIGHT AND LIVE WOOD WITH SMOOTH BARK BETWEEN 2 AND 5 YEARS OLD AND FROM 20 TO 75 mm IN DIAMETER AND A MINIMUM OF 1.5m IN LENGTH; THE THICKER THE CUTTING THE LONGER IT SHOULD BE. AVOID USING SUCKERS OF THE CURRENT YEARS GROWTH.
- MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION. USE A PILOT BAR IN FIRM SOILS.
- ALL STAKES TO BE NATIVE AND LOCALLY SOURCED. REFER TO PLANT LIST FOR SPECIES.

7. SEEDING NOTES:

- CONTRACTOR TO DELIVER GRASS SEED IN ORIGINAL CONTAINERS. CONTRACTOR TO PROVIDE CONSULTANT WITH ORIGINAL IDENTIFICATION TAGS AS TO ANALYSIS OF SEED MIXTURE, PERCENTAGE OF SEED, YEAR OF SEED, NET WEIGHT OF SEED.
- CONTRACTOR IS DELIVER SEED TO SITE ONLY WHEN REQUIRED.
- PREPARATION, INSTALLATION, FERTILIZATION, WARRANTY AND MAINTENANCE OF SEEDING IS TO BE IN ACCORDANCE WITH CEDCS, SECTION 02920.
- SEED TO MATCH CEDCS MIX FOR PARKS NATURALIZATION MIX (NON-MAINTAINED). SEE PLANTING LEGEND.
- SEEDING IS TO OCCUR BETWEEN MAY 1ST - SEPT. 15TH. SEEDING OUTSIDE THE RECOMMENDED SEASON WILL REQUIRE CONSULTANT APPROVAL PRIOR TO START OF WORK.

B	16/09/06	ISSUED FOR CONSTRUCTION	KH	BL
A	16/02/19	100% SUBMISSION	KH	BL
No.	Date/Date	Description/Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision	
A	detail number numéro de detail
B	source drawing no. de dessin no.
C	detail on drawing no. detail sur dessin no.
Consultant's Stamp Sceau de l'expert-conseil	
Eng. Stamp Sceau de l'ingénieur	

Client/client	Parks Canada Agency	L'Agence Parcs Canada
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Consultant's Name Nom de l'expert-conseil	MMM GROUP	MMM Group Limited 48 Quarry Park Blvd SE, Suite 220 Calgary, AB, Canada T2C 5P2 t:403.269.7440 f:403.269.7422 www.mmmgrouplimited.com
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Project title/Titre du projet

**MONARCH CREEK - PHASE 2
CULVERT REPLACEMENT &
BANK STABILIZATION
KICKING HORSE CAMPGROUND, BC**

Drawing title/Titre du dessin

**LANDSCAPE DETAILS
AND NOTES**

Surveyed by/Arpenté par JOHN HENNEBURY & WAYNE PICHE	Drawn by/Dessiné par T.C./K.H.	Date/Date 2015/11/16
Designed by/Concept par G.I.	Reviewed by/Revisé par B.L.	Scale/Echelle AS NOTED
Parks Canada Project Manager/Administrateur de Projets Parcs Canada JOHN GIBBONS		
Client Acceptance/Acceptation du client Approved by/Approuvé par		
Parks Canada Responsible Officer/Agent Responsable Parcs JOHN GIBBONS		
Project No./No. du projet 5215074-000	Asset No./No. du bien -	Sheet No./ No. de la feuille C09
Drawing Reference No./No. de référence du dessin		



Consultant's Name
Nom de l'expert-conseil


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ROAD GRADING PLAN

41. 841 x 594 mm