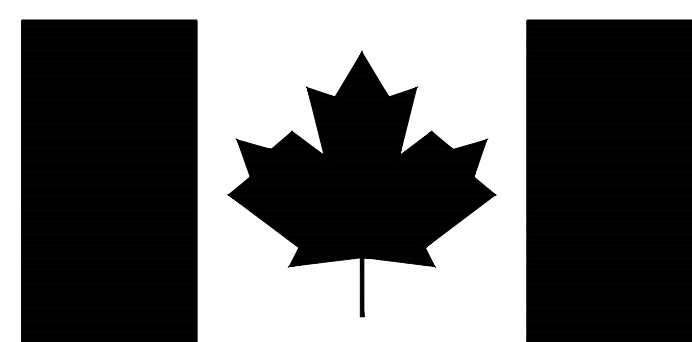




**McElhanney**

**McElhanney Consulting Services Ltd.**

for / pour



Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

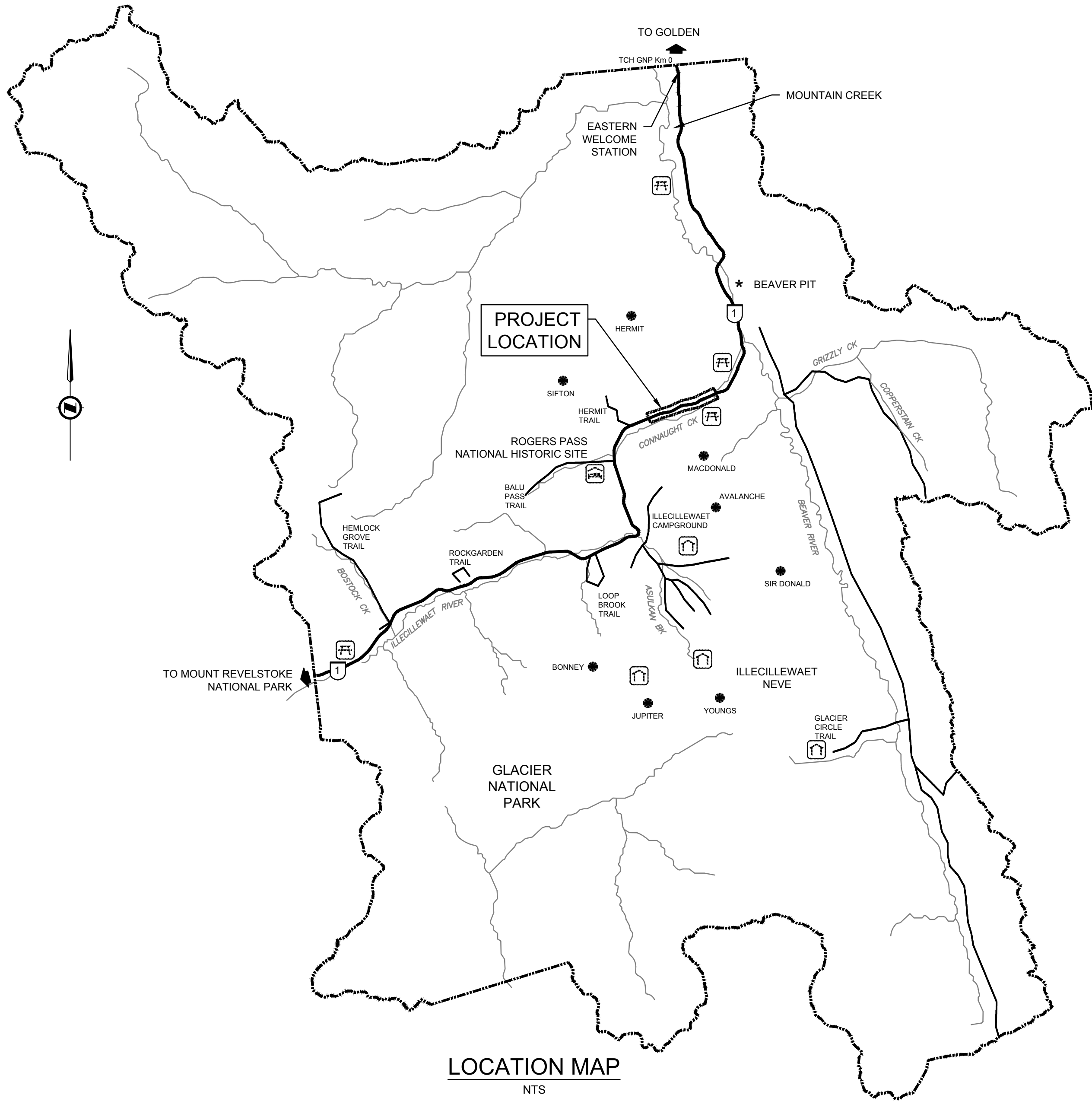
**SNOWSHED DRAINAGE IMPROVEMENTS  
TCH KM 16.5 TO KM 20.0**

**ROGERS PASS  
GLACIER NATIONAL PARK, BC**

**ISSUED FOR TENDER**

FILE: G:\PROJECTS\5251\_00656-00 PARKS TCH AVALANCHE MITIGATION GNP\10.0 DRAWINGS\10.3 SHEET FILES\00656-001 LOCATION PLANS.DWG PLOTTED: 2017/07/26 10:19 AM

Paper Size: ANSI D (22 x 34")



DRAWING INDEX	
SHEET No.	SHEET TITLE
000	COVER SHEET
001	LOCATION MAP, SITE PLAN AND DRAWING INDEX
101	TUPPER TIMBER SNOWSHED DRAINAGE PLAN
101A	TUPPER TIMBER SNOWSHED CLEARING & GRUBBING PLAN
102	TUPPER TIMBER SNOWSHED DITCH PROFILE
103	TUPPER TIMBER SNOWSHED SECTIONS
104	TUPPER TIMBER DETAILS
105	TUPPER TIMBER SNOWSHED ACCESS ROAD PLAN / PROFILE
201	TUPPER 2 SNOWSHED DRAINAGE PLAN
201A	TUPPER 2 SNOWSHED CLEARING & GRUBBING PLAN
202	TUPPER 2 SNOWSHED DITCH PROFILE
203	TUPPER 2 SNOWSHED SECTIONS
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205	TUPPER 2 SNOWSHED ACCESS ROAD PLAN / PROFILE
301	TUPPER 1 SNOWSHED DRAINAGE PLAN
301A	TUPPER 1 SNOWSHED CLEARING & GRUBBING PLAN
302	TUPPER 1 SNOWSHED DITCH PROFILE
303	TUPPER 1 SNOWSHED SECTIONS
304	TUPPER 1 DETAILS
305	TUPPER 1 SNOWSHED ACCESS ROAD PLAN / PROFILE
401	LENS SNOWSHED DRAINAGE PLAN
401A	LENS SNOWSHED CLEARING & GRUBBING PLAN
402	LENS SNOWSHED DITCH PROFILE
403	LENS SNOWSHED SECTIONS
404	LENS DETAILS
405	LENS SNOWSHED ACCESS ROAD PLAN / PROFILE
501	SINGLE BENCH SNOWSHED PLAN
601	SNOW SHED DETAILS

ALIGNMENT ABBREVIATIONS

BC – BEGINNING OF CURVE  
EC – END OF CURVE  
TC – TANGENT TO CURVE  
TS – TANGENT TO SPIRAL  
SC – SPIRAL TO CURVE  
CS – CURVE TO SPIRAL  
ST – SPIRAL TO TANGENT  
CT – CURVE TO TANGENT  
PCC – POINT OF COMPOUND CURVATURE  
POT – POINT ON TANGENT  
POC – POINT ON CURVE  
POS – POINT ON SPIRAL  
BVC – BEGINNING OF VERTICAL CURVE  
EVC – END OF VERTICAL CURVE  
PVI – POINT OF VERTICAL INTERSECTION  
ELEV – ELEVATION  
PI – POINT OF INTERSECTION  
STA – STATION

MISCELLANEOUS ABBREVIATIONS

AT – ALBERTA TRANSPORTATION  
BH – BORE HOLE  
B.O.F. – BOTTOM OF FILL  
BW – BACK OF SIDEWALK  
CB – CATCH BASIN  
C&G – CURB AND GUTTER  
CDB – CONCRETE DRAINAGE BARRIER  
CI – CULVERT INLET  
C.I.P. – CAST IN PLACE CONCRETE  
CO – CULVERT OUTLET  
CULV – CULVERT  
DES – DESIGN  
EB – EASTBOUND  
EOP – EDGE OF PAVEMENT  
EX – EXISTING  
INV. – INVERT  
LOG – LIP OF GUTTER  
LS – LIGHT STANDARD  
LT – LEFT TURN  
MH – MANHOLE  
MoTI – BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
NB – NORTHBOUND  
N.I.C. – NOT IN CONTRACT  
PROP – PROPOSED  
PP – POWER POLE  
RT – RIGHT TURN  
S – SANITARY  
SB – SOUTHBOUND  
ST – STORM  
T.O.C. – TOP OF CUT  
W – WATER  
WB – WESTBOUND

LEGEND

ROAD CONSTRUCTION

EXISTING	DESCRIPTION	PROPOSED
	CONTROL POINT & ID	△ CTRL1455
	CONTROL MONUMENT & ID	● MON2757
	CONTROL BENCHMARK & ID	✕ BM2738
	BORE HOLE & ID	◆ 2015B-BH44
	TEST HOLE & ID	● TH2756
	SURVEY GRID (NAD 83)	
	CONTROL LINE AND STATIONING	67+500
	ALIGNMENT GEOMETRY POINTS & STATIONING	T.S. 55+325.101
	DIRECTIONAL ARROW – HOLLOW	↔
	PAINTED ARROW – SOLID	→
	EDGE OF WATER	
	TREE LINE	
	CANADIAN PACIFIC RAILWAY	
	GUARD RAIL C/W POSTS	— — — — —
	EDGE OF GRAVEL ROAD	— — — — —
	EDGE OF PAVEMENT	— — — — —
	EDGE OF GRAVEL SHOULDER	— — — — —
	SUBGRADE ELEVATION	
	ROOF DRAIN TO BE CLEARED AND MISSING PIPES REPLACED	
	EXISTING VEGETATION ON ROOF TO BE CLEARED AND REPLACED WITH BITUMINOUS GEOMEMBRANE PROTECTION	
	DRAINAGE ROAD SIDE DITCH	
	CULVERT	
	BRUSHING LINE	
	CLEARING LIMIT	
	W-BEAM GUARDRAIL	
	CONCRETE BARRIER	
	GATE	
	POWER POLE	
	UNDERGROUND TEL & MANHOLE	
	POWER POLE WITH LIGHT	
	UTILITY POLE	
	ROAD SIGN (SINGLE POLE)	
	ROAD SIGN (MULTIPLE POLES)	
	ROAD SIGN (DOUBLESIDED)(SINGLE POLE)	
	ROAD SIGN (CANTILEVER)	
	DELINEATOR POLE	

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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

<div>Eng. Stamp Sceau de l'ingénieur</div> <div></div>	<div>Eng. Stamp Sceau de l'ingénieur</div> <div></div>
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Client	<div> Parks Canada Agency Western and Northern Region</div> <div> L'Agence Parcs Canada Ouest et Nord du Canada</div>
--------	---

Consultant's Name Nom de l'expert-conseil	<div> <b>McElhanney</b> McElhanney Consulting Services Ltd.</div>
--	---

Project Title Titre du projet	<b>GLACIER NATIONAL PARK SNOWSHED DRAINAGE IMPROVEMENTS</b> ROGERS PASS GLACIER NATIONAL PARK, BC
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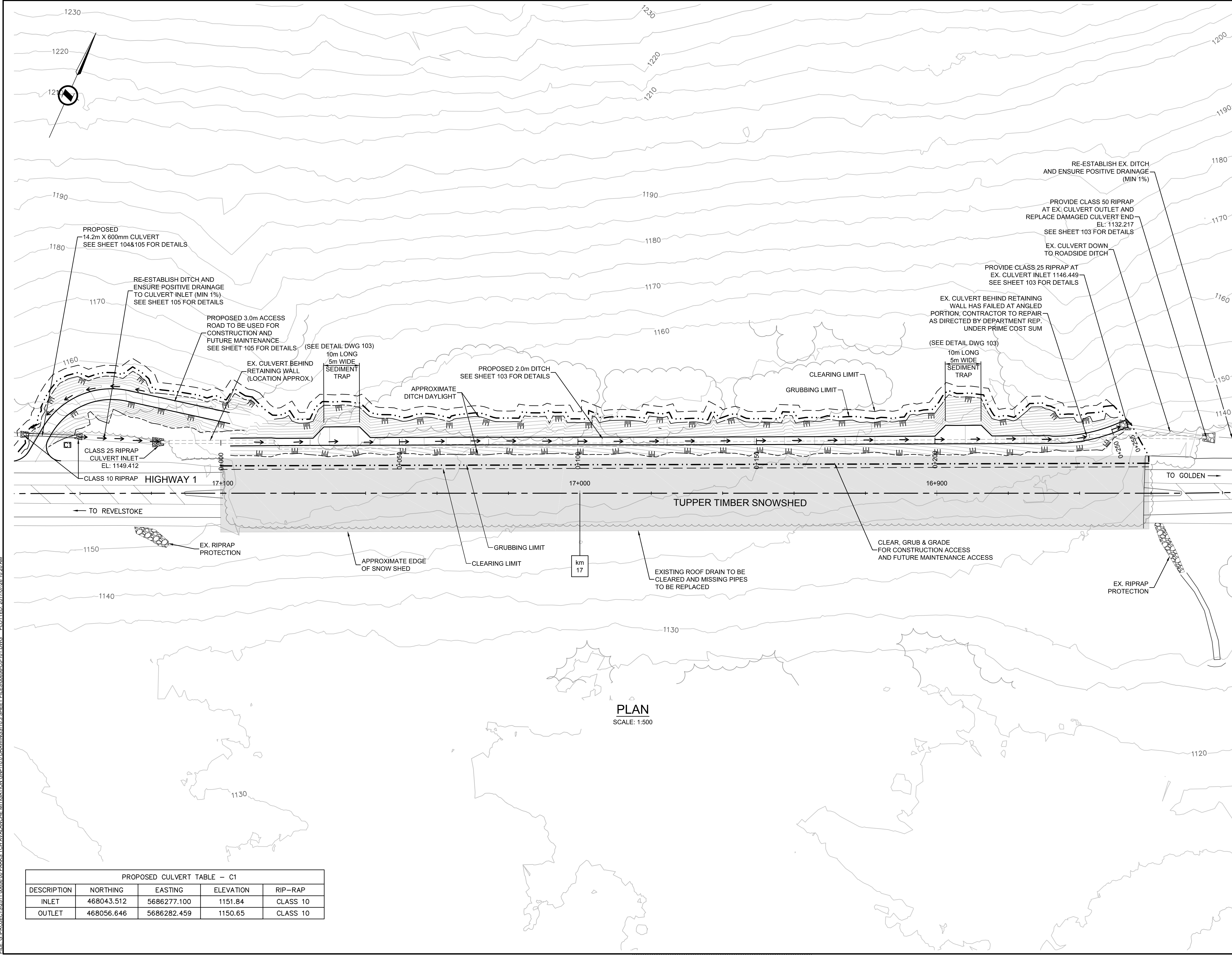
Drawing Title Titre du dessin	<b>LOCATION MAP, SITE PLAN &amp; DRAWING INDEX</b>
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Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Révisé par <b>MM</b>	Scale / Echelle <b>AS SHOWN</b>

Parks Canada Project Manager / Administrateur de Projets Parcs Canada ---		
Client Acceptance / Acceptation du client Parks Canada Responsible Officer / Agent Responsable Parcs Canada		Approved by / Approuvé par Parks Canada Project Manager / Administrateur de Projets Parcs Canada
Project No. / No. du projet <b>2511-00656-00</b>	Asset No. / No. du-bien ---	Sheet No. / No. de la feuille <b>001</b>
Drawing Reference No. / No. de référence du dessin ---		



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PROPOSED CULVERT TABLE - C1				
DESCRIPTION	NORTHING	EASTING	ELEVATION	RIP-RAP
INLET	468043.512	5686277.100	1151.84	CLASS 10
OUTLET	468056.646	5686282.459	1150.65	CLASS 10

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D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ
Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé

A

B

C

A

detail number  
numéro de détail

B

source drawing no.  
de dessin no.

C

detail on drawing no.  
détail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**TUPPER TIMBER SNOWSHED  
DRAINAGE PLAN**

Surveyed by / Arpenté par	Drawn by / Dessiné par	Date
MCSL	AI	2017.07.26
Designed by / Conçu par	Reviewed by / Révisé par	Scale / Echelle
HY/JM	MM	AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

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

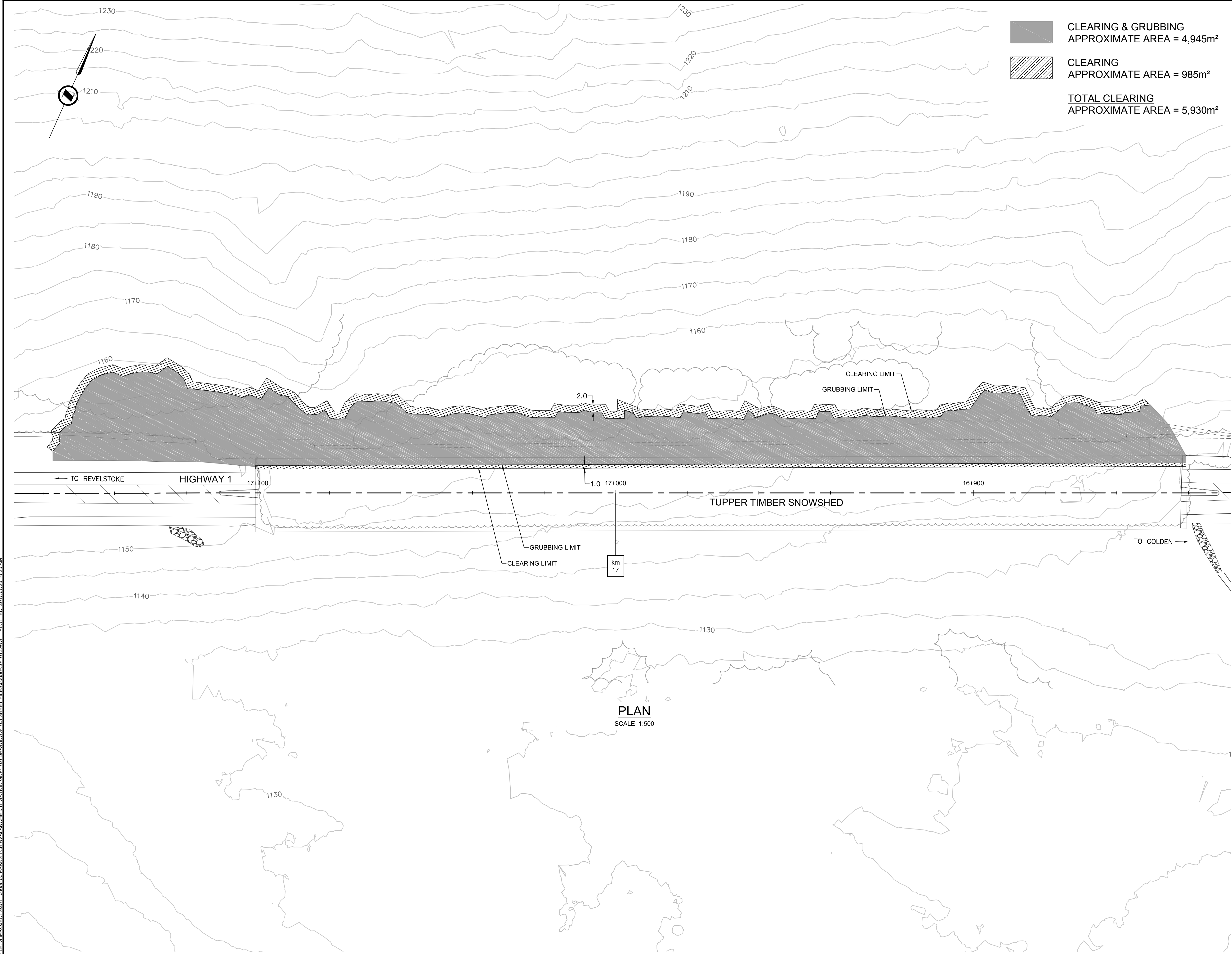
Project No. / No. du projet	Asset No. / No. du-bien	Sheet No. / No. de la feuille
2511-00656-00	---	101

Drawing Reference No. / No. de référence du dessin

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**CLEARING & GRUBBING**  
APPROXIMATE AREA = 4,945m<sup>2</sup>

**CLEARING**  
APPROXIMATE AREA = 985m<sup>2</sup>

**TOTAL CLEARING**  
APPROXIMATE AREA = 5,930m<sup>2</sup>

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B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

B

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A


B

C

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client



Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil



**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**TUPPER TIMBER SNOWSHED  
CLEARING & GRUBBING PLAN**

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Révisé par <b>MM</b>	Scale / Echelle <b>AS SHOWN</b>

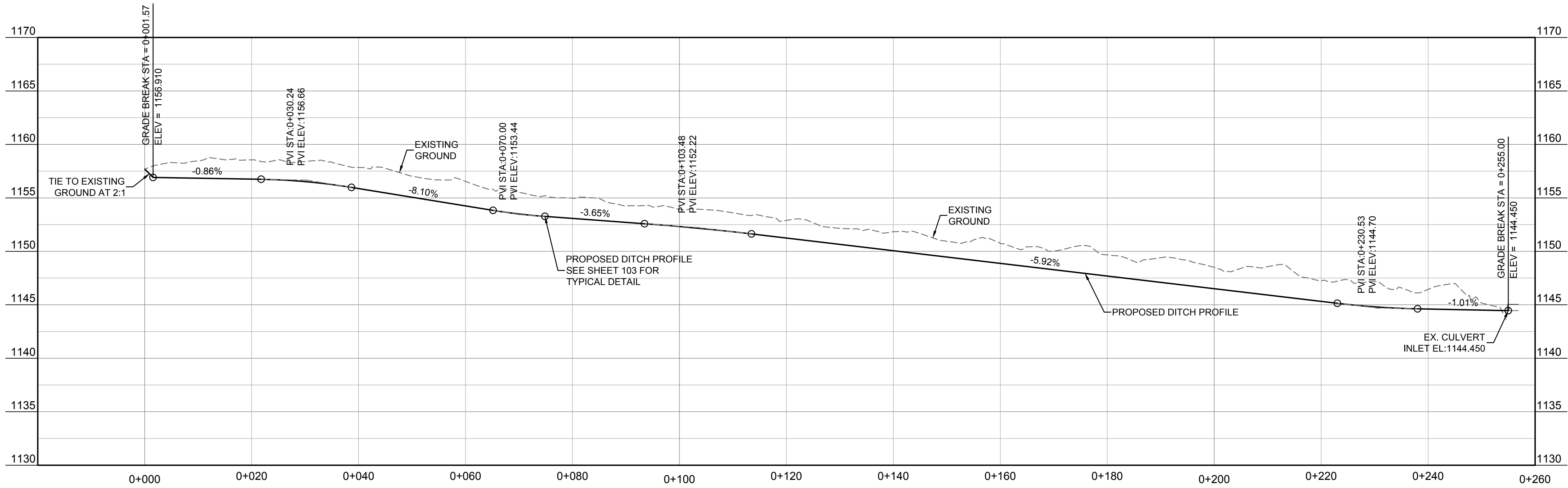
Parks Canada Project Manager / Administrateur de Projets Parcs Canada

Client Acceptance / Acceptation du client	Approved by / Approuvé par
<div>Parks Canada Responsible Officer / Agent Responsable Parcs Canada</div>	<div>Parks Canada Project Manager / Administrateur de Projets Parcs Canada</div>

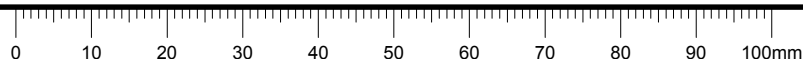
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Drawing Reference No. / No. de référence du dessin ---		



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PROPOSED DITCH PROFILE  
SCALE: 1:500



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B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

C

A

B

C

detail number  
numéro de detail  
source drawing no.  
de dessin no.  
detail on drawing no.  
detail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

McElhanney

McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

TUPPER TIMBER SNOWSHED  
DITCH PROFILE

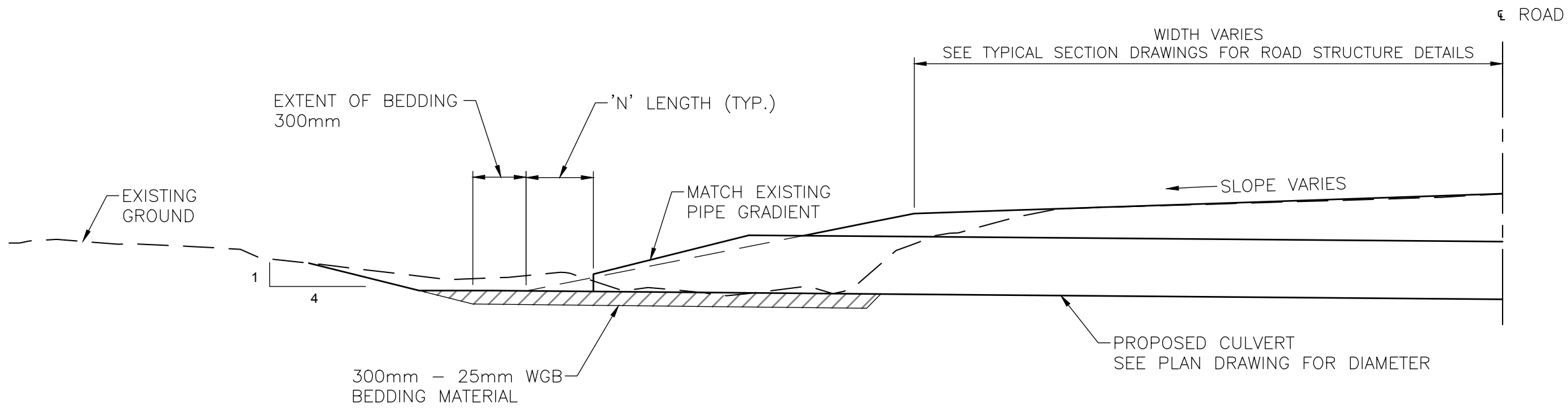
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Designed by / Conçu par HY/JM	Reviewed by / Revisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
Client Acceptance / Acception 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 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 102
Drawing Reference No. / No. de référence du dessin ---		



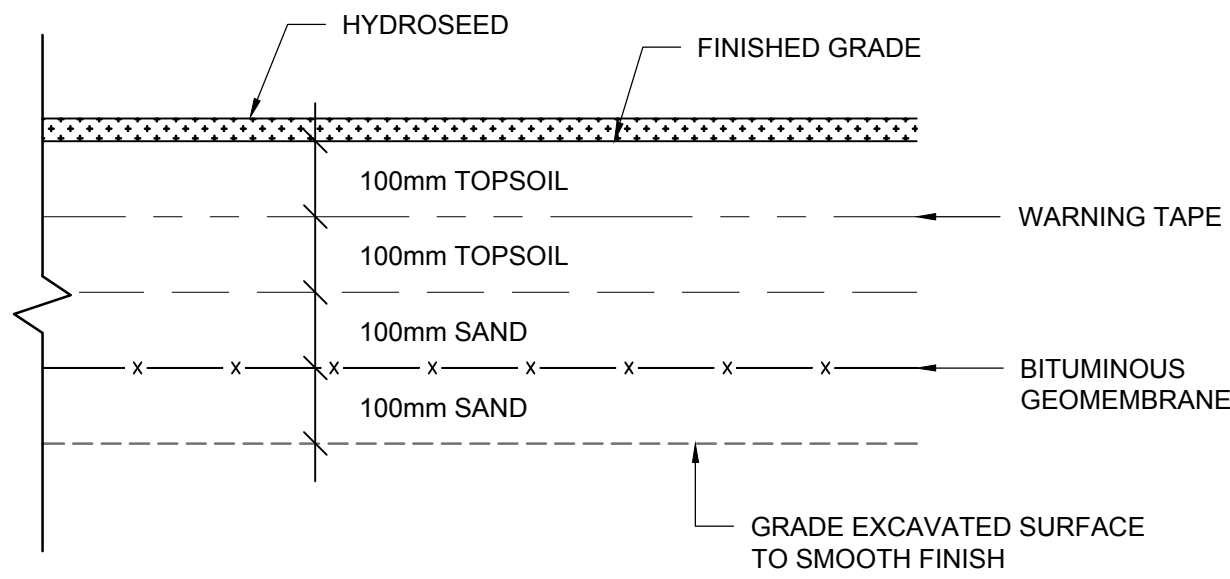


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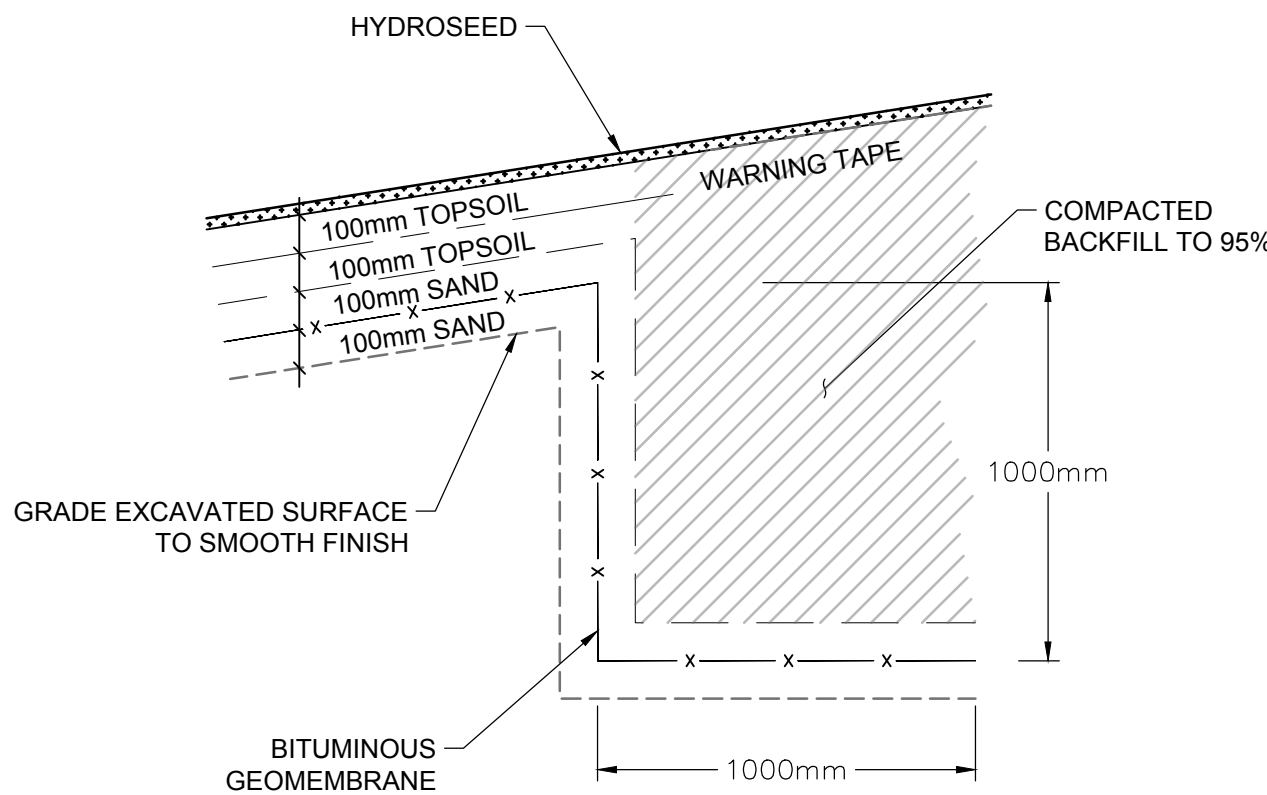
ACCESS ROAD CULVERT TYPICAL SECTION

SCALE: 1:100



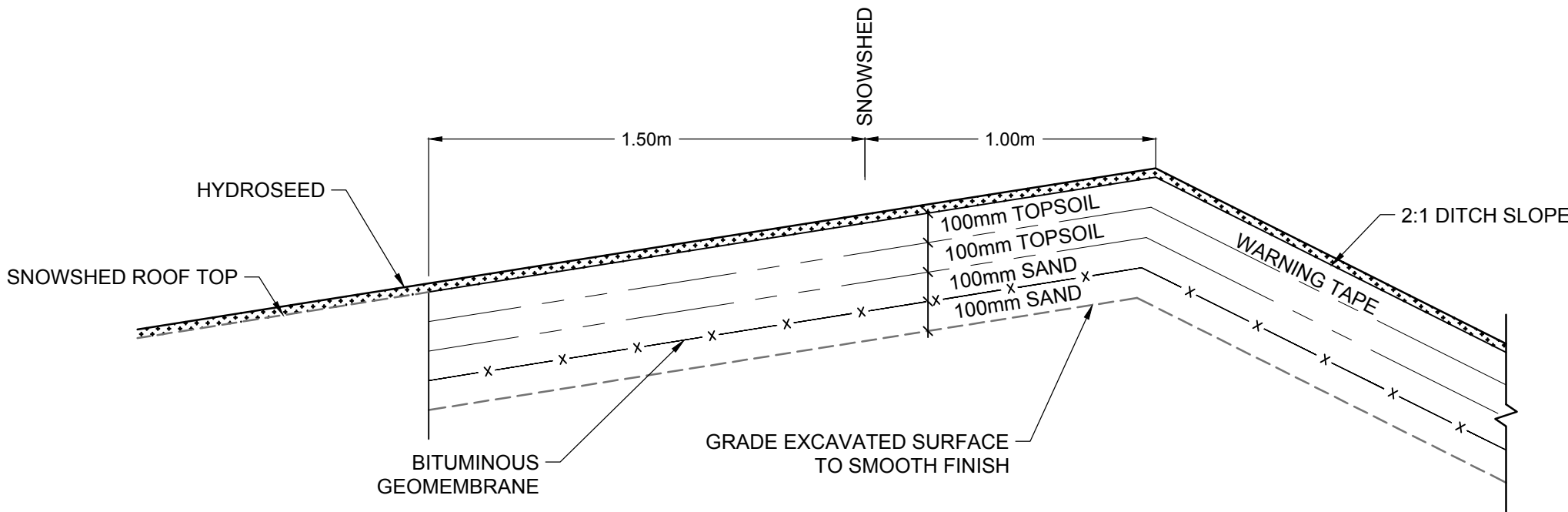
TYPICAL GEOMEMBRANE PLACEMENT

SCALE: 1:10



TYPICAL ANCHORING DITCH DETAIL (MOUNTAIN SIDE)

SCALE: 1:20



TYPICAL ANCHORING DITCH DETAIL (SNOWSHED SIDE)

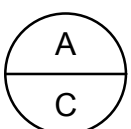
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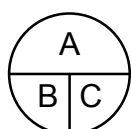
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B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ



A detail number  
numéro de détail  
B source drawing no.  
de dessin no.  
C detail on drawing no.  
détail sur dessin no.



Eng. Stamp Sceau de l'ingénieur 	Eng. Stamp Sceau de l'ingénieur 
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Client 	L'Agence Parcs Canada Ouest et Nord du Canada
------------	---

Consultant's Name Nom de l'expert-conseil 	McElhanney McElhanney Consulting Services Ltd.
--	---

Project Title Titre du projet GLACIER NATIONAL PARK SNOWSHED DRAINAGE IMPROVEMENTS ROGERS PASS GLACIER NATIONAL PARK, BC
--

Drawing Title Titre du dessin TUPPER TIMBER SNOWSHED DETAILS
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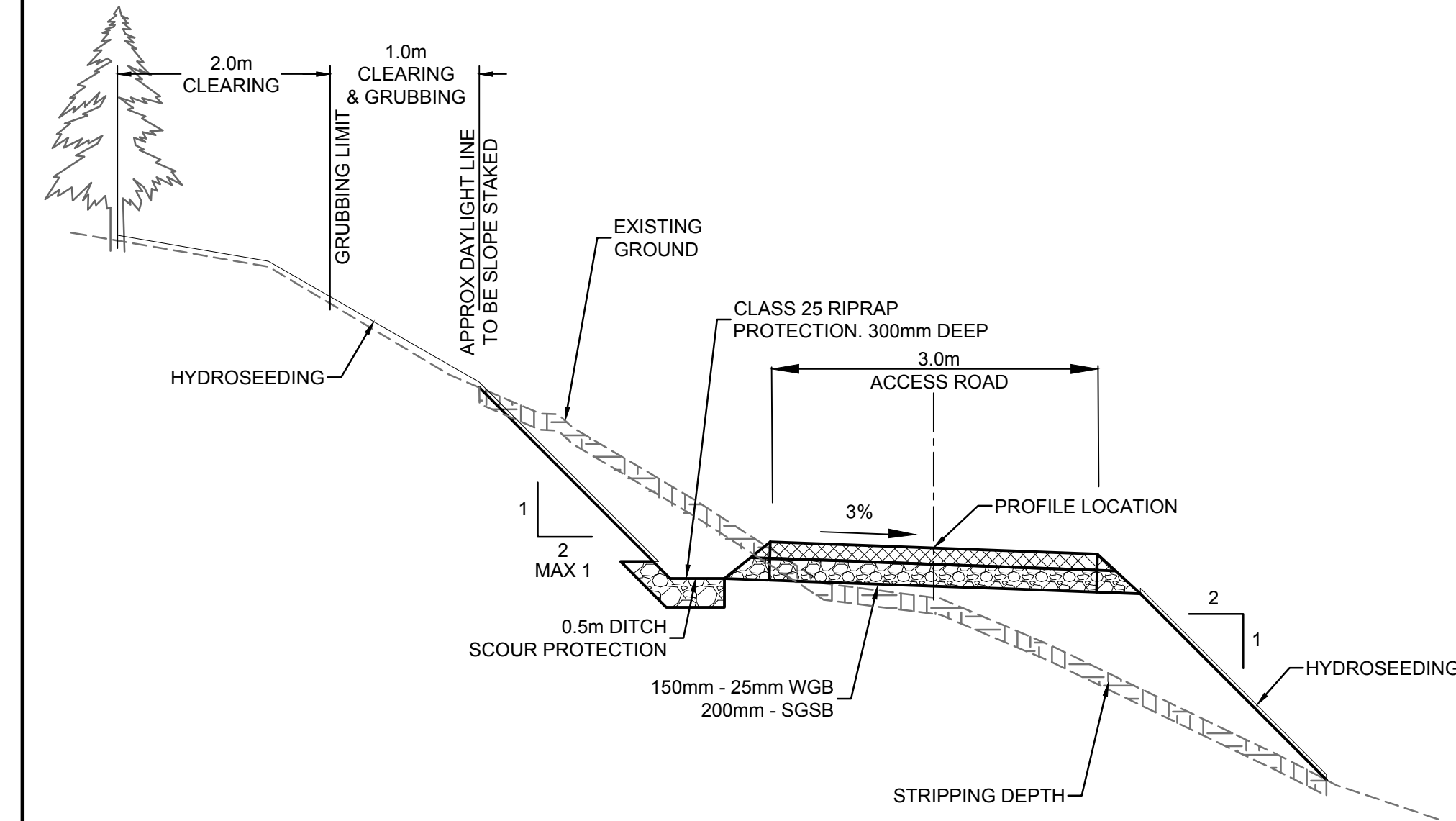
Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Révisé par MM	Scale / Echelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada ---		
Client Acceptance / Acceptation du client Parks Canada Responsible Officer / Agent Responsable Parcs Canada ---		Approved by / Approuvé par Parks Canada Project Manager / Administrateur de Projets Parcs Canada ---
Project No. / No. du projet 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 104
Drawing Reference No. / No. de référence du dessin ---		

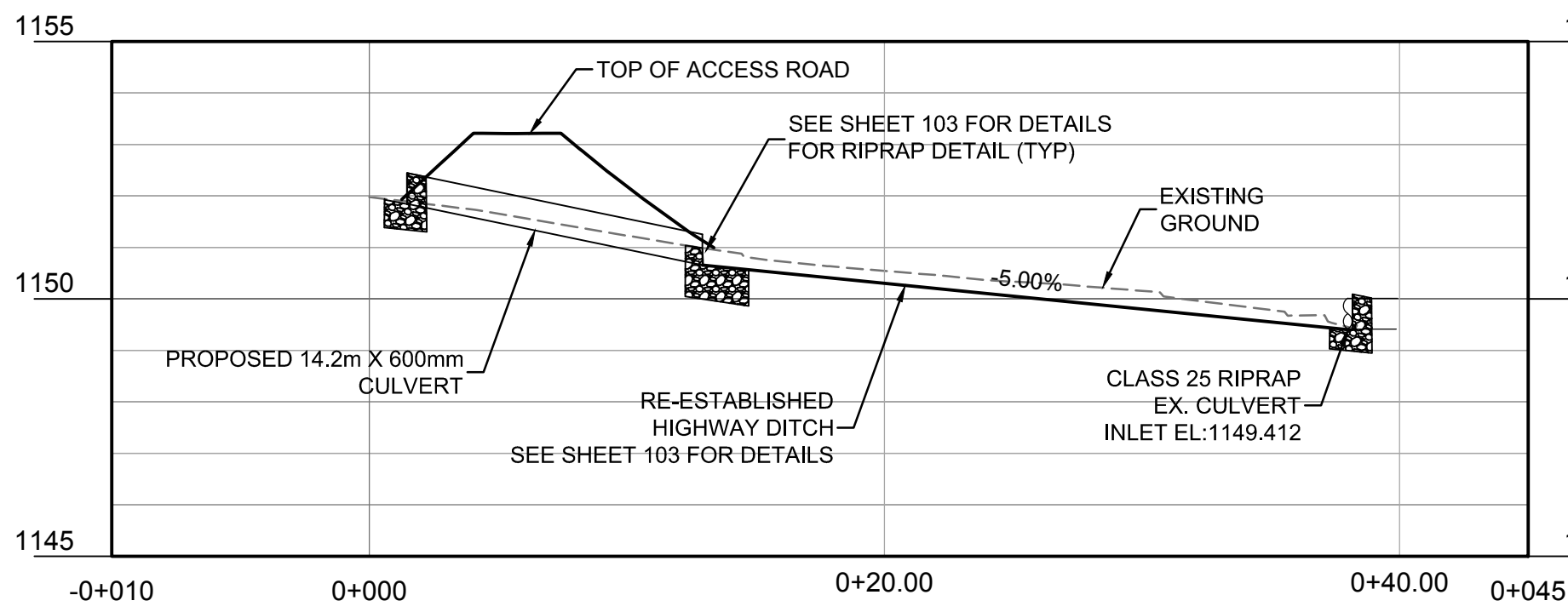




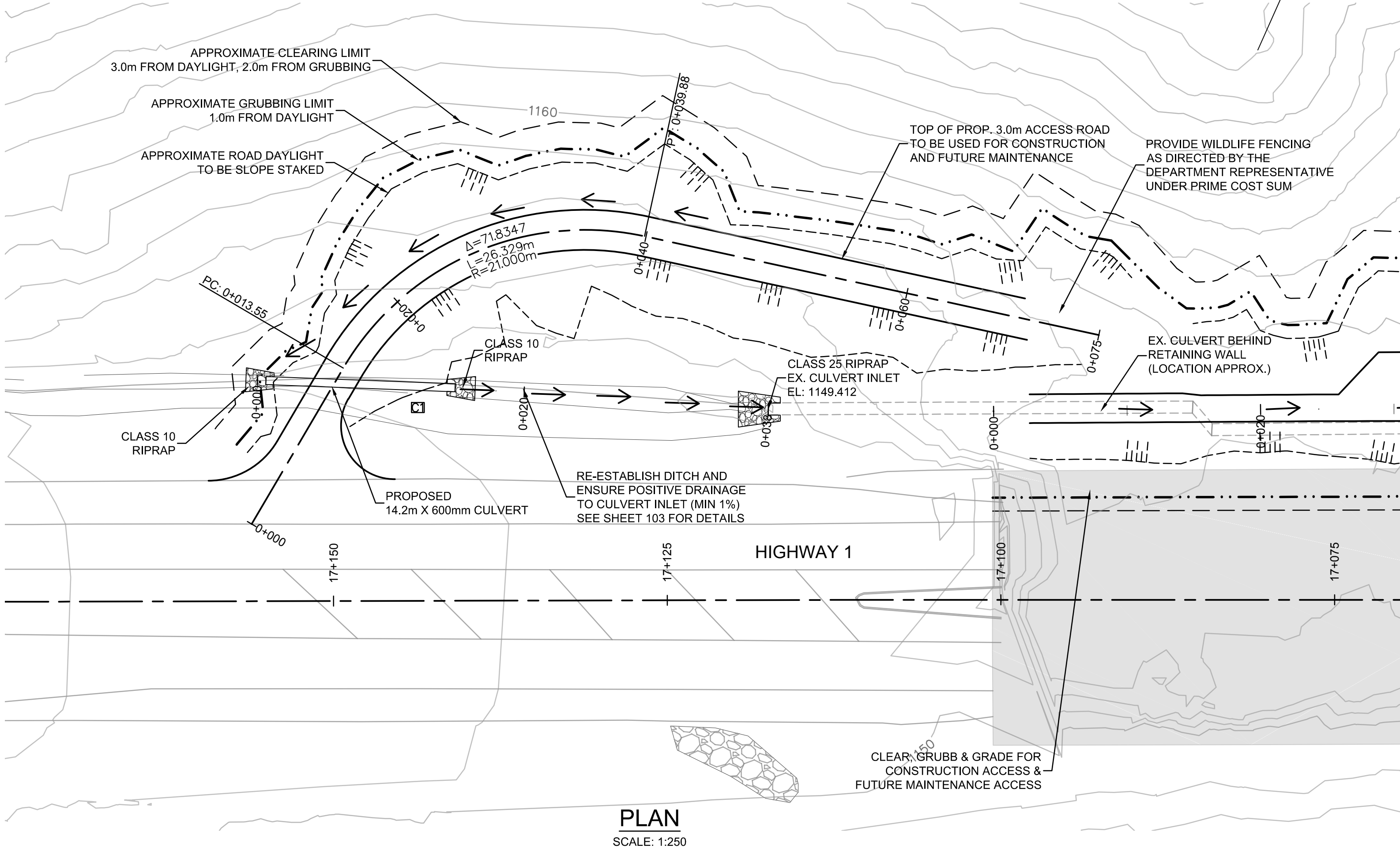
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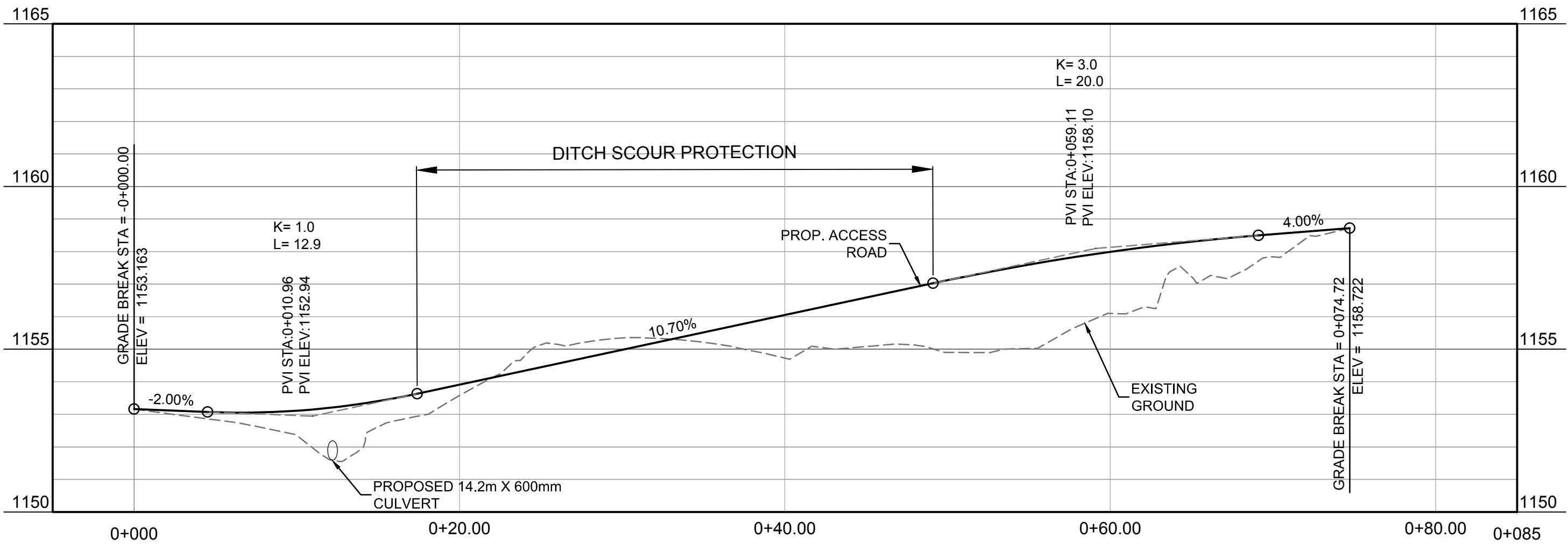
ACCESS ROAD  
TYPICAL SECTION  
SCALE: 1:50



PROFILE  
HIGHWAY DITCH  
SCALE: 1:250



PROFILE  
ACCESS ROAD  
SCALE: 1:250



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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

B

C

A

B

C

Eng. Stamp  
Sceau de l'ingénieur

PROFESSIONAL  
ENGINEER  
M. HERNANDEZ  
JULY 26, 2017

Eng. Stamp  
Sceau de l'ingénieur

PROFESSIONAL  
ENGINEER  
H.A. VADETE  
JULY 26, 2017

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**TUPPER TIMBER SNOWSHED  
ACCESS ROAD PLAN/PROFILE**

Surveyed by / Arpenté par	Drawn by / Dessiné par	Date
MCSL	AI	2017.07.26
Designed by / Conçu par	Reviewed by / Révisé par	Scale / Échelle
HY/JM	MM	AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
---		
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	Asset No. / No. du bien	Sheet No. No. de la feuille
2511-00656-00	---	105
Drawing Reference No. / No. de référence du dessin		---



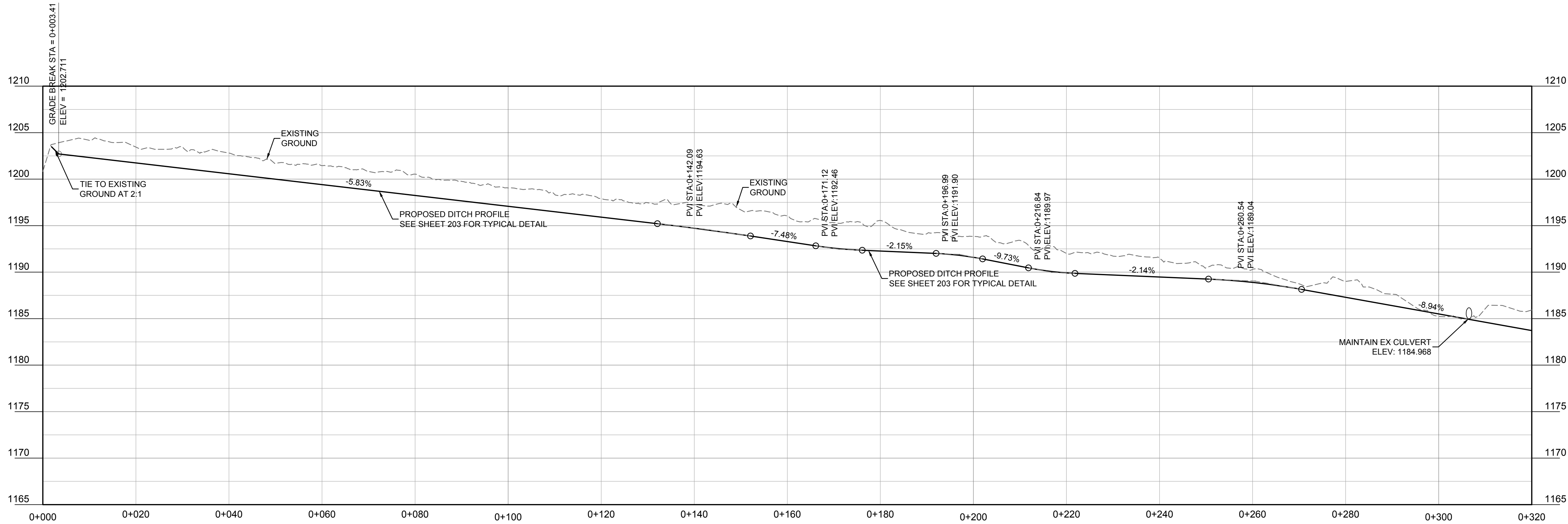




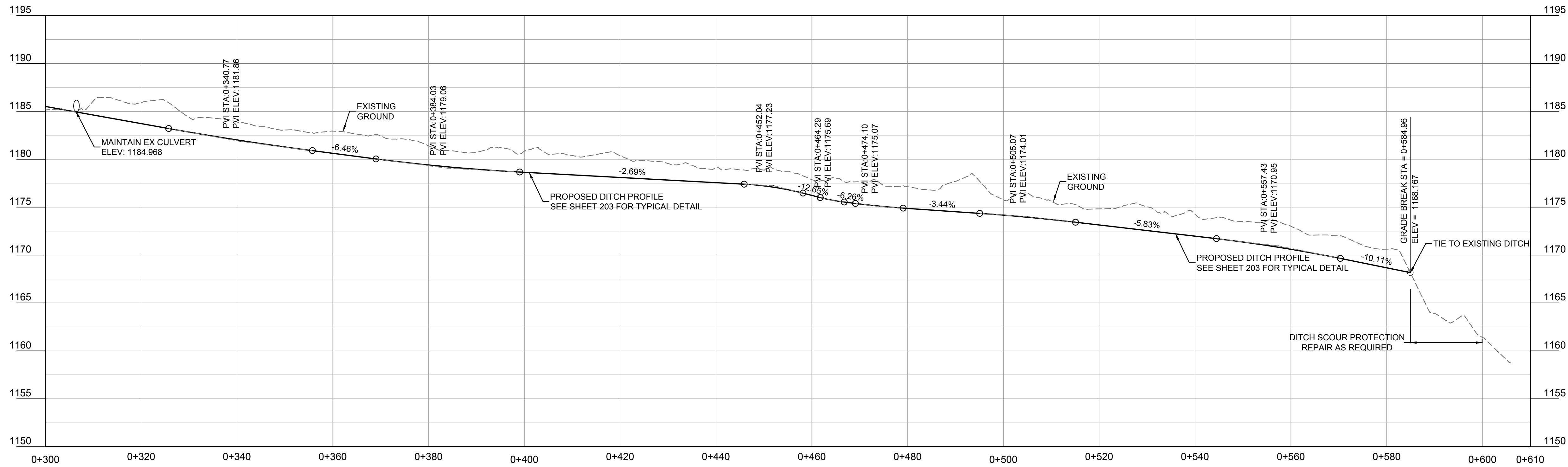




FILE: G:\PROJECTS\2511\_00656-00 PARKS TCH AVALANCHE MITIGATION\ENR\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-2028205 DWG - PLOTTED: 2017/07/26 10:28 AM



PROPOSED DITCH PROFILE  
SCALE: 1:500



PROPOSED DITCH PROFILE  
SCALE: 1:500

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A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

<div><div>A</div><div>C</div></div>	<div>detail number numéro de detail</div> <div>source drawing no. de dessin no.</div> <div>detail on drawing no. detail sur dessin no.</div>	<div><div>A</div><div>B</div><div>C</div></div>
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Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

TUPPER 2 SNOWSHED  
DITCH PROFILE

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Revisé par MM	Scale / Échelle AS SHOWN

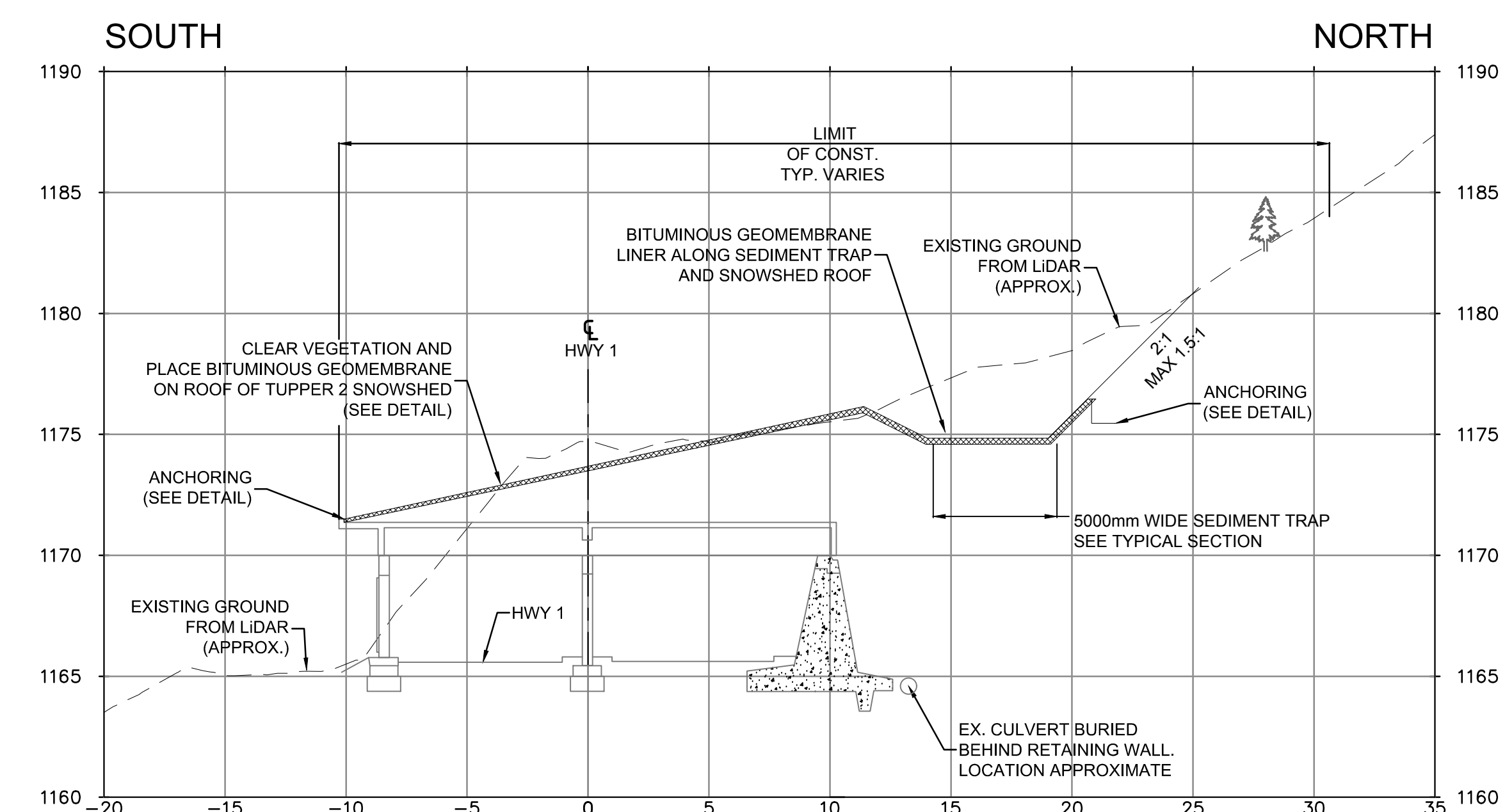
Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
Client Acceptance / Acceptation du client		Approved by / Approuvé par
Parks Canada Responsible Officer / Agent Responsable Parcs Canada		Parks Canada Project Manager / Administrateur de Projets Parcs Canada
Project No. / No. du projet 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 202
Drawing Reference No. / No. de référence du dessin ---		



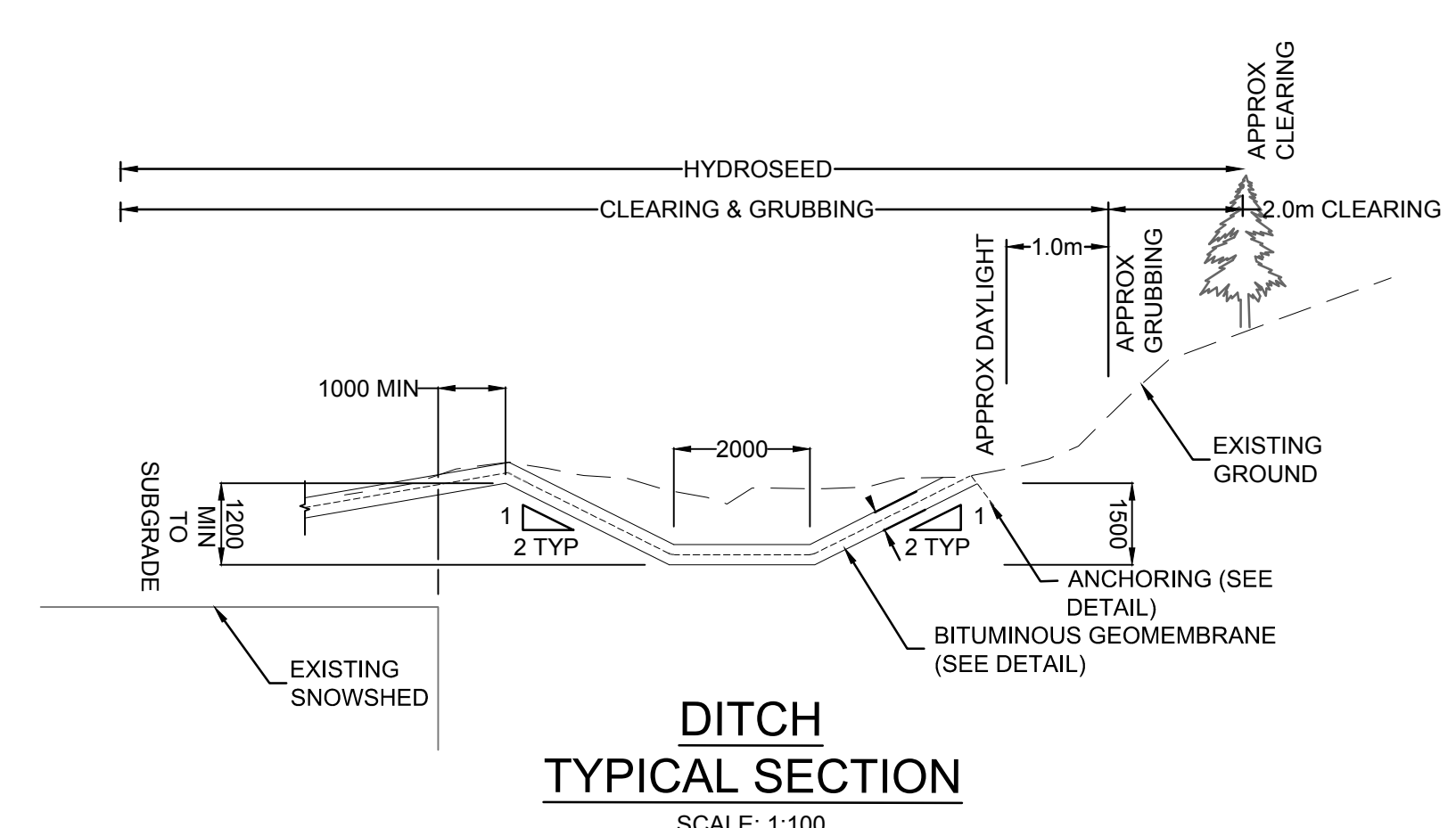


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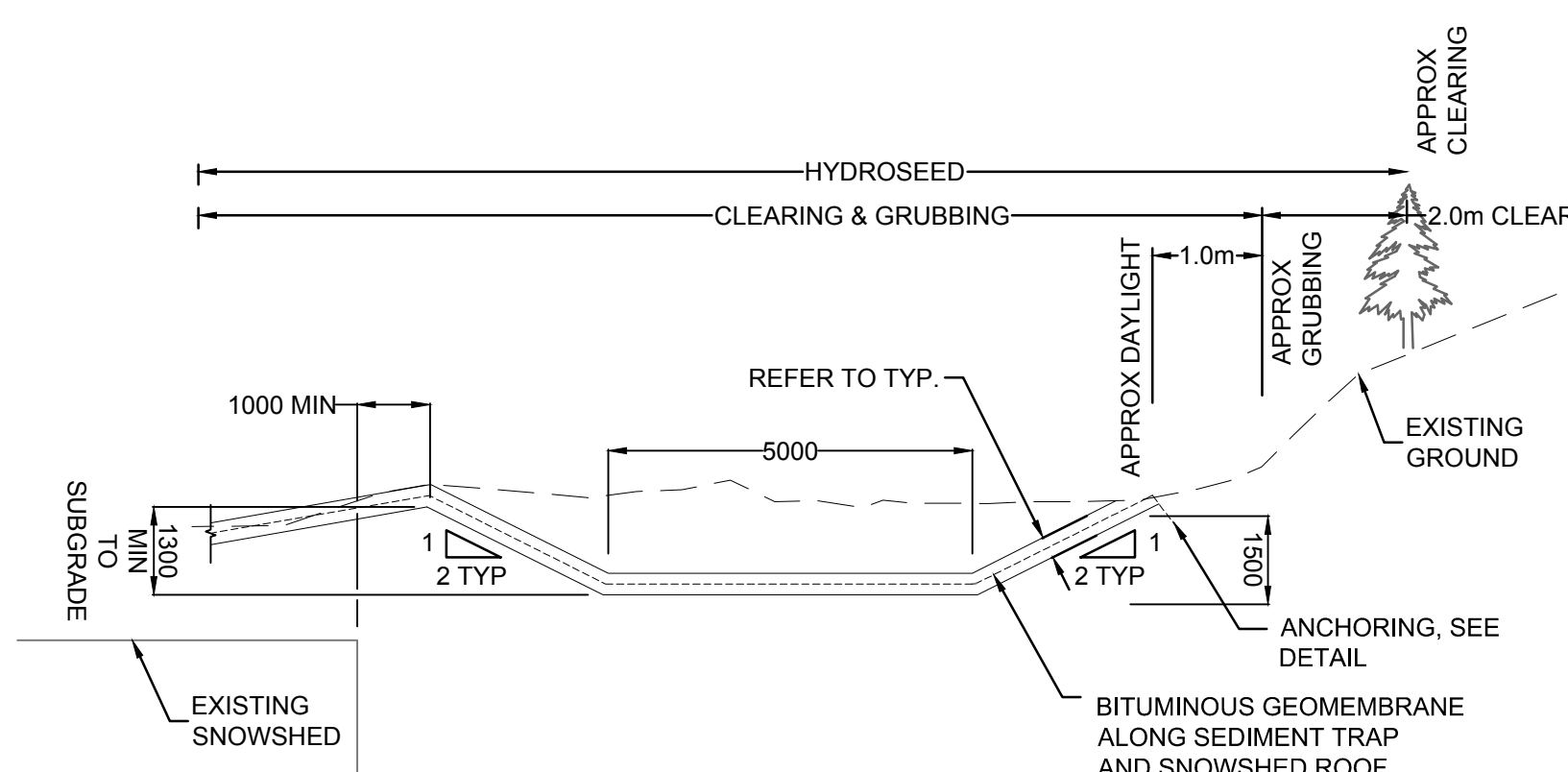
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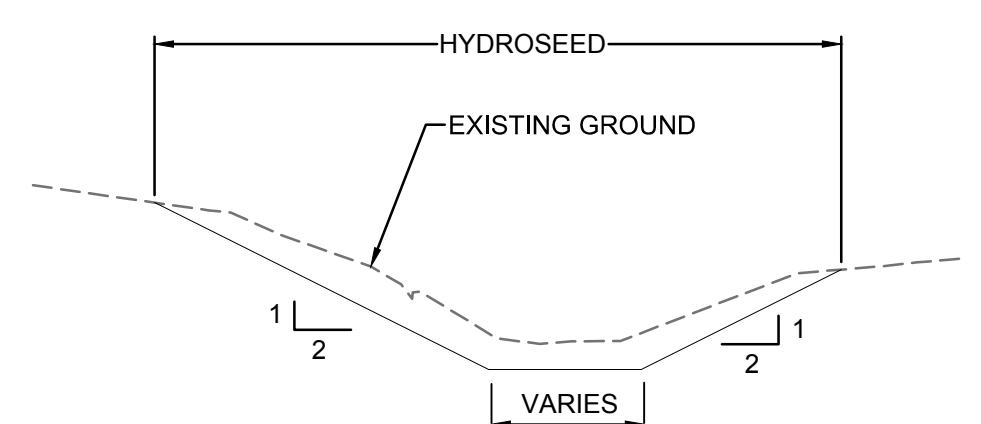
SECTION 1 TCH-STA: 17+360.00  
SCALE: 1:200



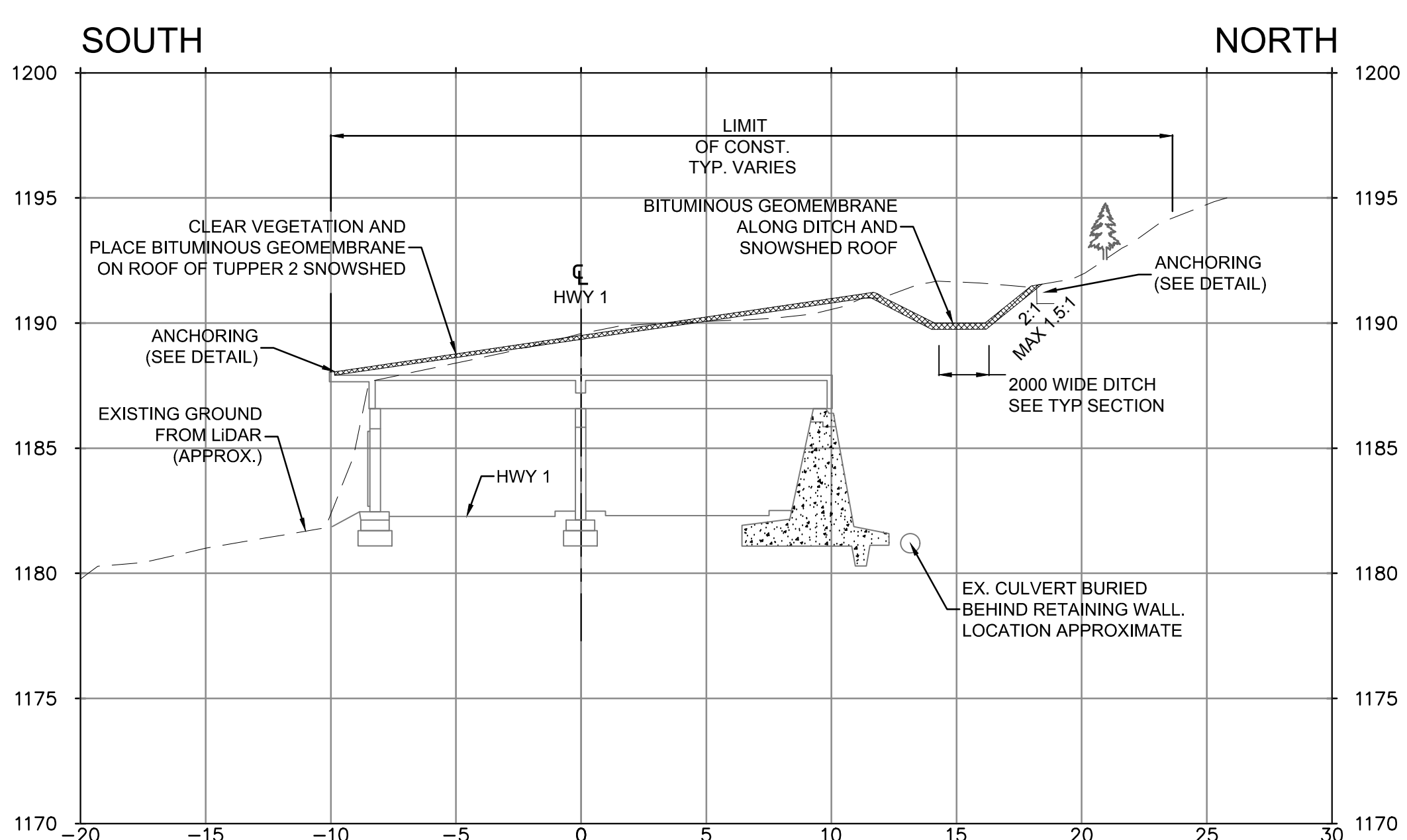
DITCH  
TYPICAL SECTION  
SCALE: 1:100



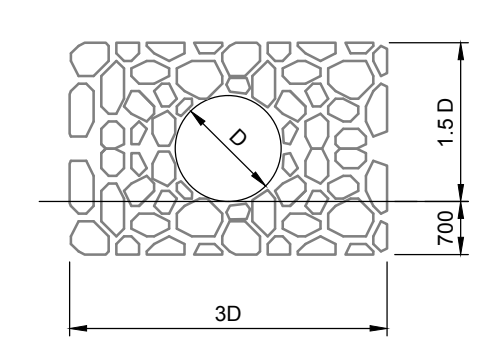
SEDIMENT TRAP  
TYPICAL SECTION  
SCALE: 1:100



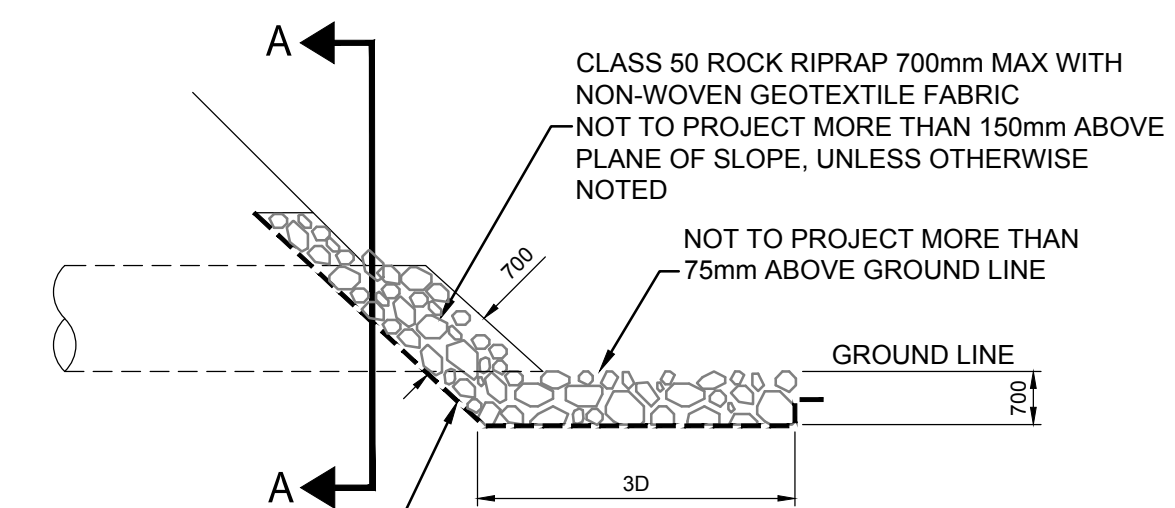
HWY DITCH CLEAN-UP  
TYPICAL SECTION  
SCALE: 1:100



SECTION 2 TCH-STA: 17+625.00  
SCALE: 1:200

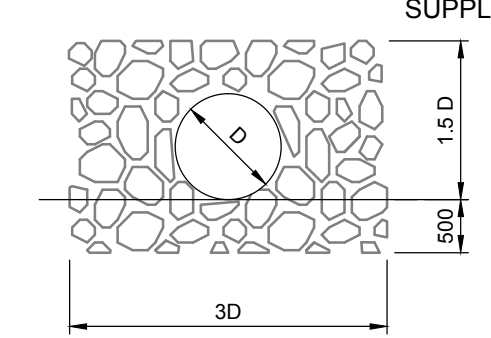


SECTION A-A

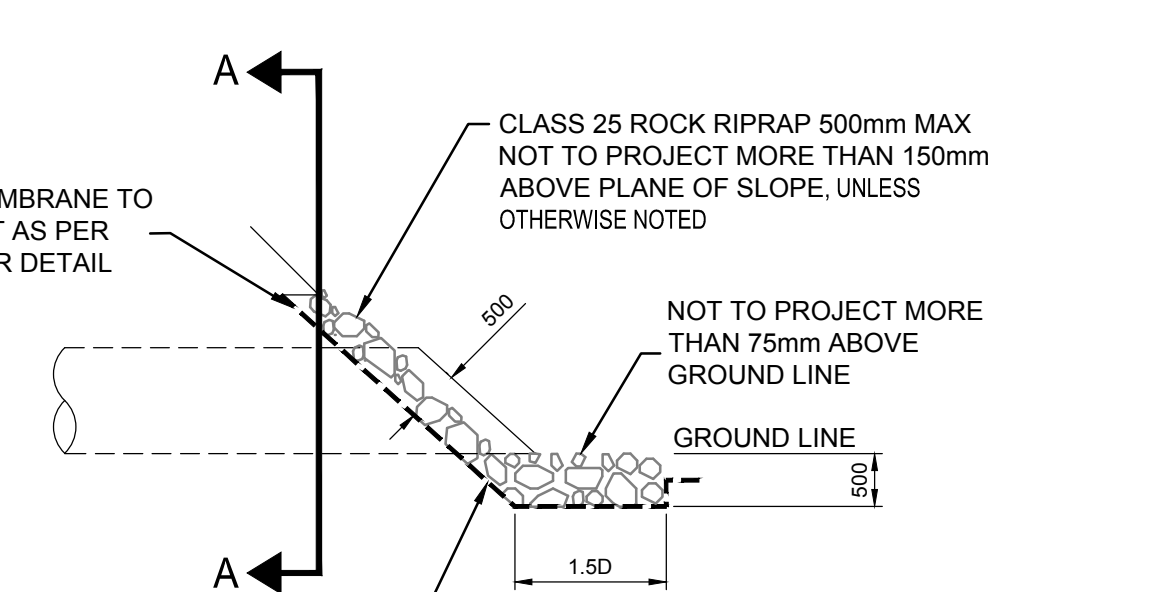


PROFILE VIEW

OUTLET RIPRAP INSTALLATION DETAIL  
SCALE: 1:100



SECTION A-A



PROFILE VIEW

INLET RIPRAP INSTALLATION DETAIL  
SCALE: 1:100

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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

<div><div>A</div><div>B</div><div>C</div></div>	<div>detail number numéro de detail</div> <div>source drawing no. de dessin no.</div> <div>detail on drawing no. detail sur dessin no.</div>	<div><div>A</div><div>B</div><div>C</div></div>
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Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

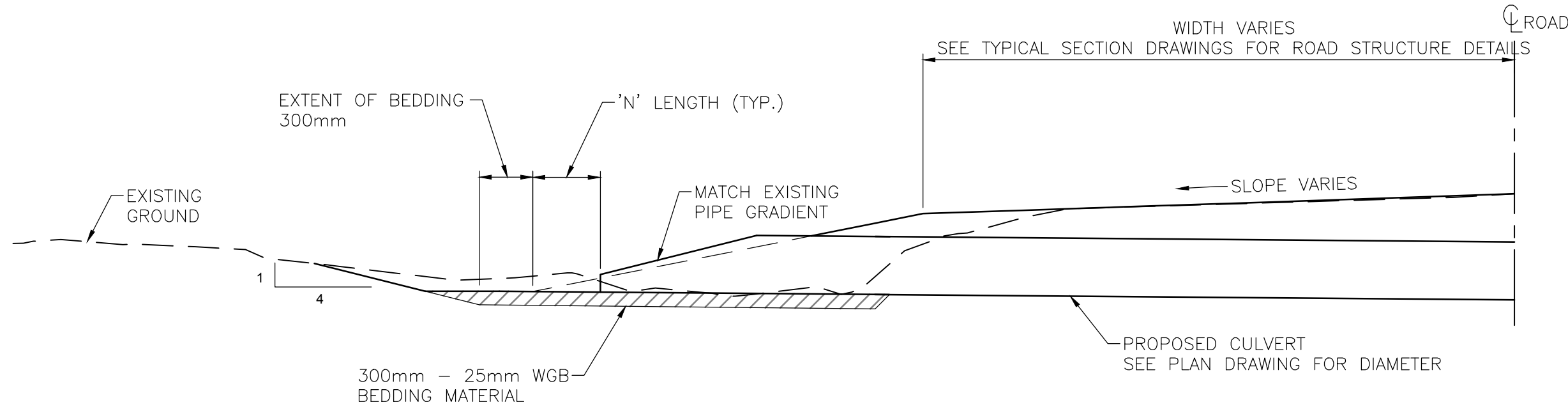
**TUPPER 2 SNOWSHED  
SECTIONS**

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Révisé par <b>MM</b>	Scale / Échelle <b>AS SHOWN</b>

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
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 <b>2511-00656-00</b>	Asset No. / No. du bien ---	Sheet No. No. de la feuille <b>203</b>
Drawing Reference No. / No. de référence du dessin ---		

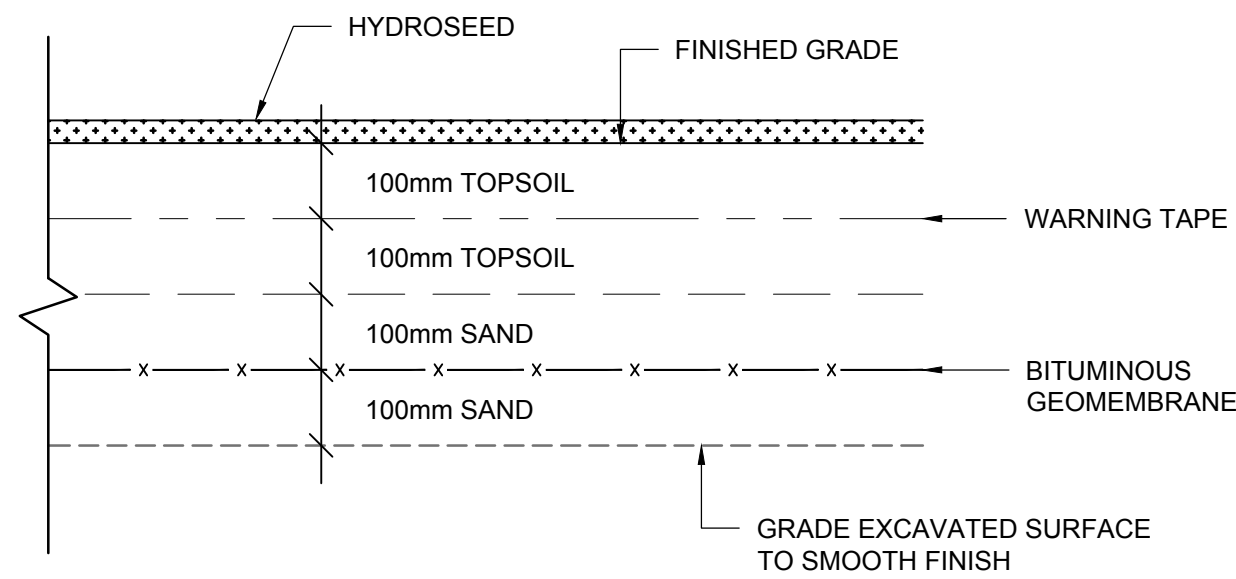


FILE: G:\PROJECTS\2511\_00656-00 PARKS TOC AVALANCHE MITIGATION GNP\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-20&204.DWG PLOTTED: 2017/07/26 10:29 AM



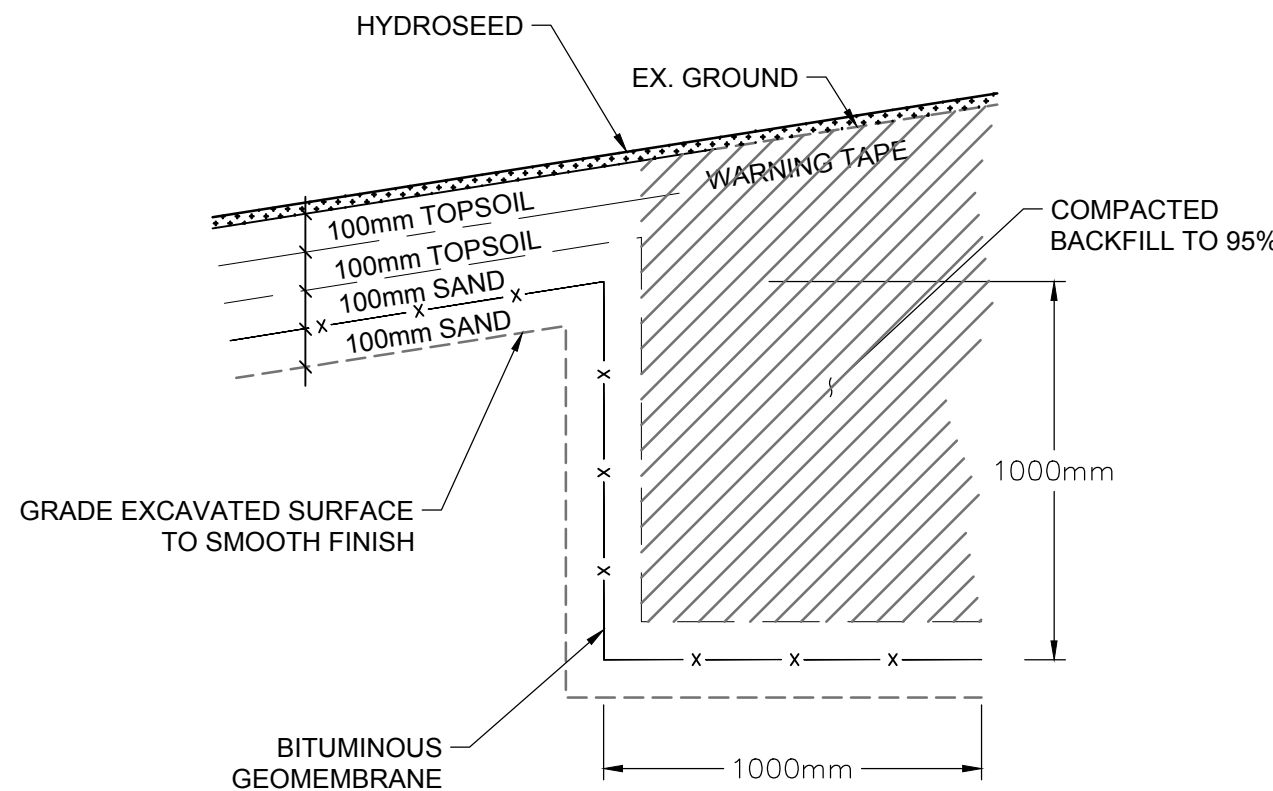
ACCESS ROAD CULVERT TYPICAL SECTION

SCALE: 1:100



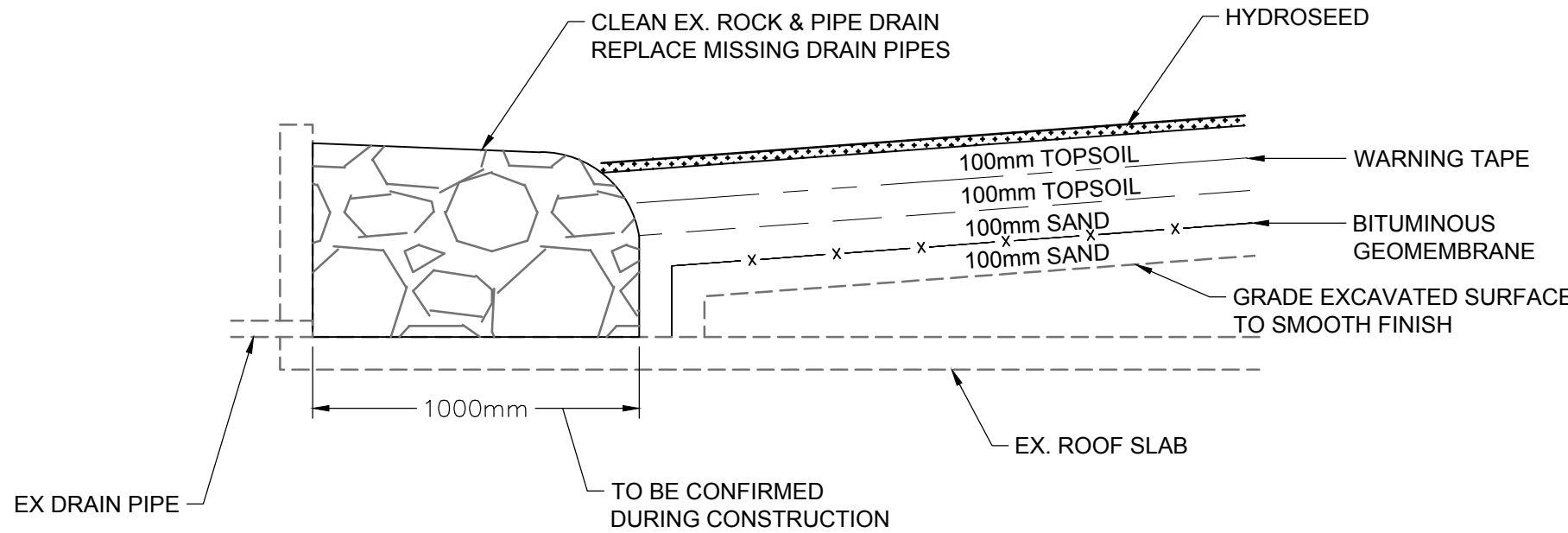
TYPICAL GEOMEMBRANE PLACEMENT

SCALE: 1:10



TYPICAL ANCHORING DITCH DETAIL (MOUNTAIN SIDE)

SCALE: 1:20



TYPICAL ANCHORING AT ROOF DRAIN DETAIL

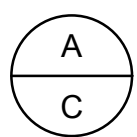
SCALE: 1:20

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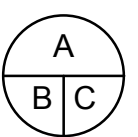
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A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ



A detail number  
numéro de detail  
B source drawing no.  
de dessin no.  
C detail on drawing no.  
detail sur dessin no.



Eng. Stamp  
Sceau de l'ingénieur



Eng. Stamp  
Sceau de l'ingénieur



Client



Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil



**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**TUPPER 2 SNOWSHED  
DETAILS**

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Révisé par <b>MM</b>	Scale / Échelle <b>AS SHOWN</b>

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

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 <b>2511-00656-00</b>	Asset No. / No. du bien ---	Sheet No. No. de la feuille <b>204</b>
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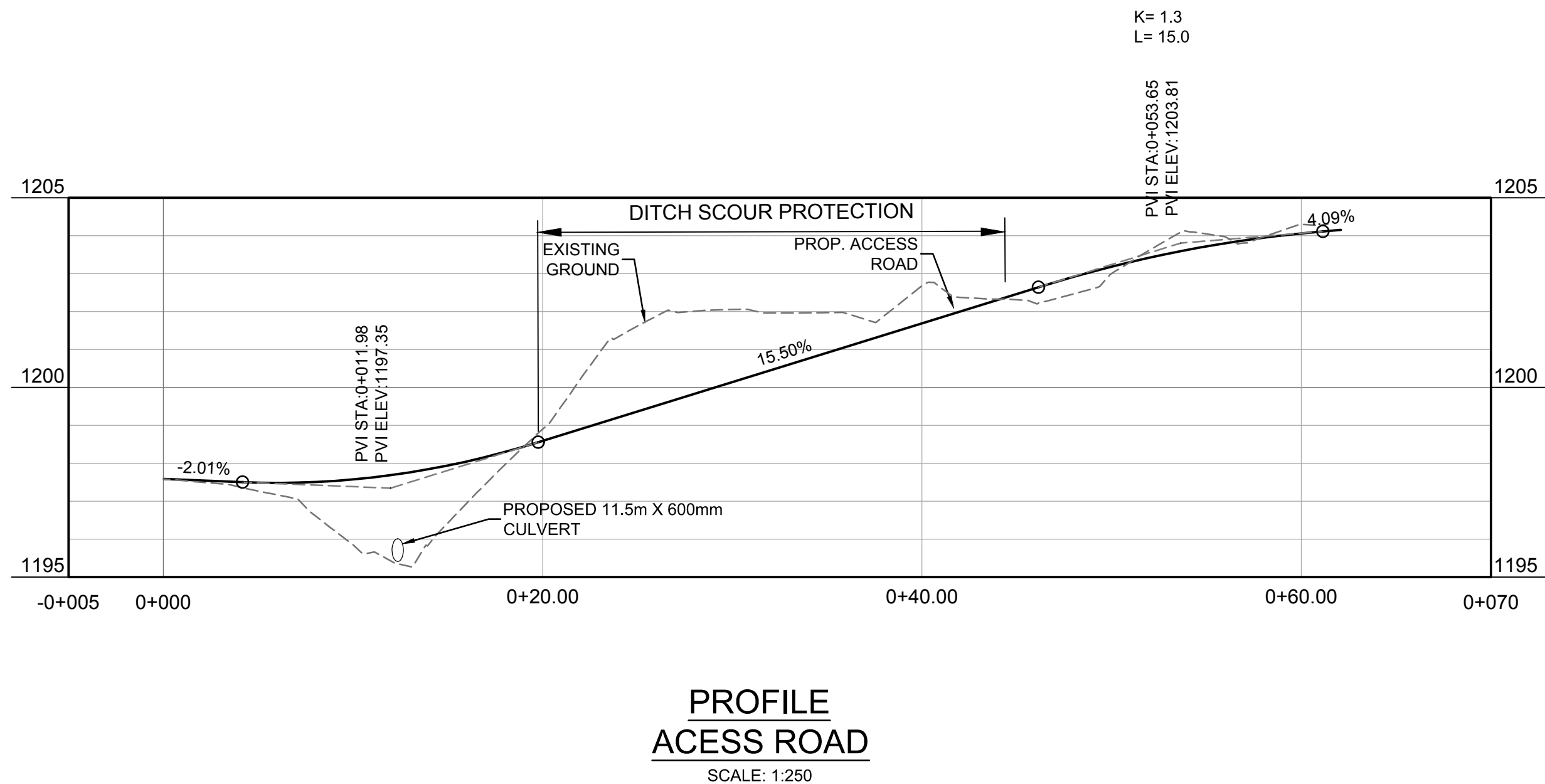
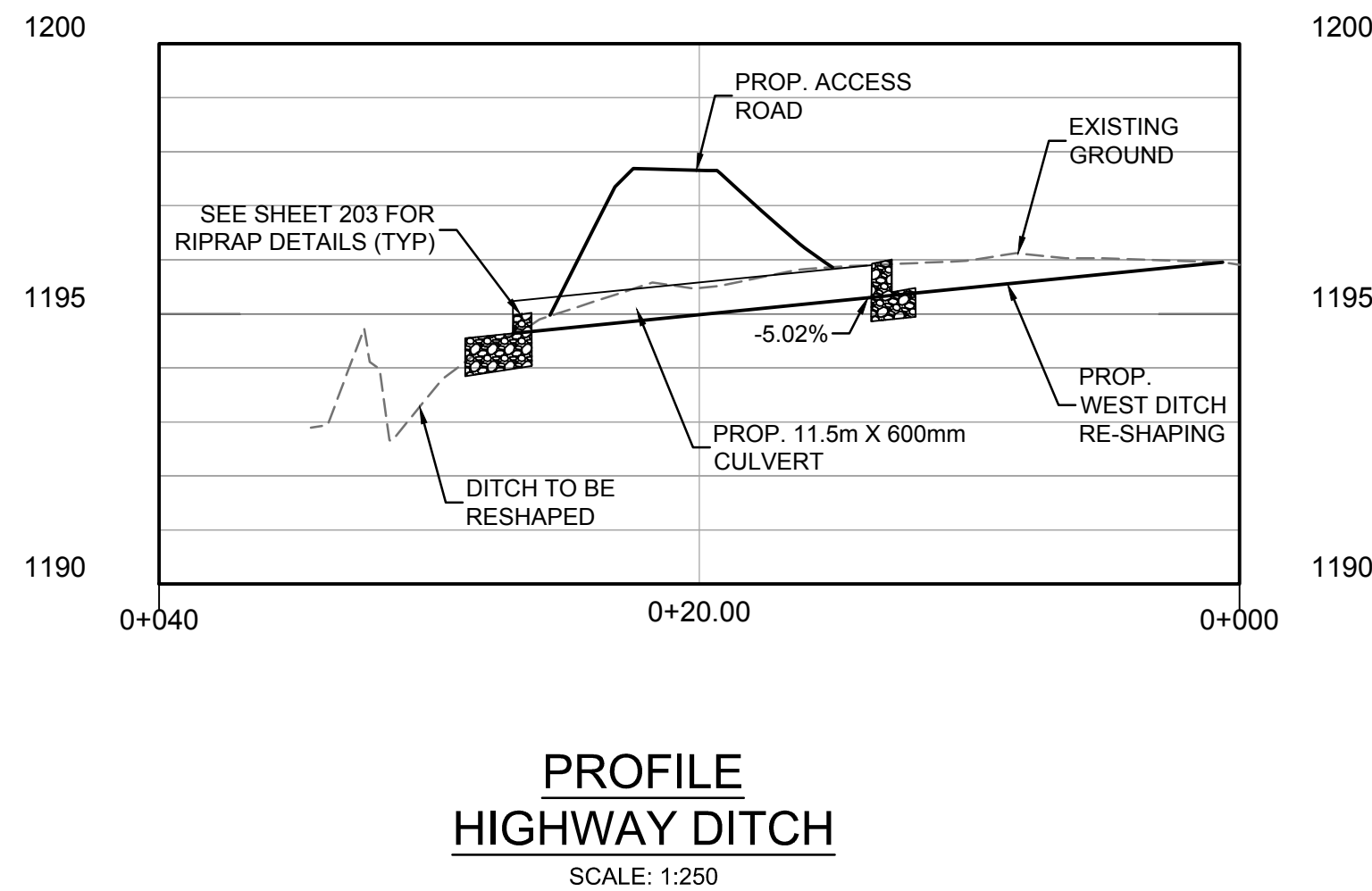
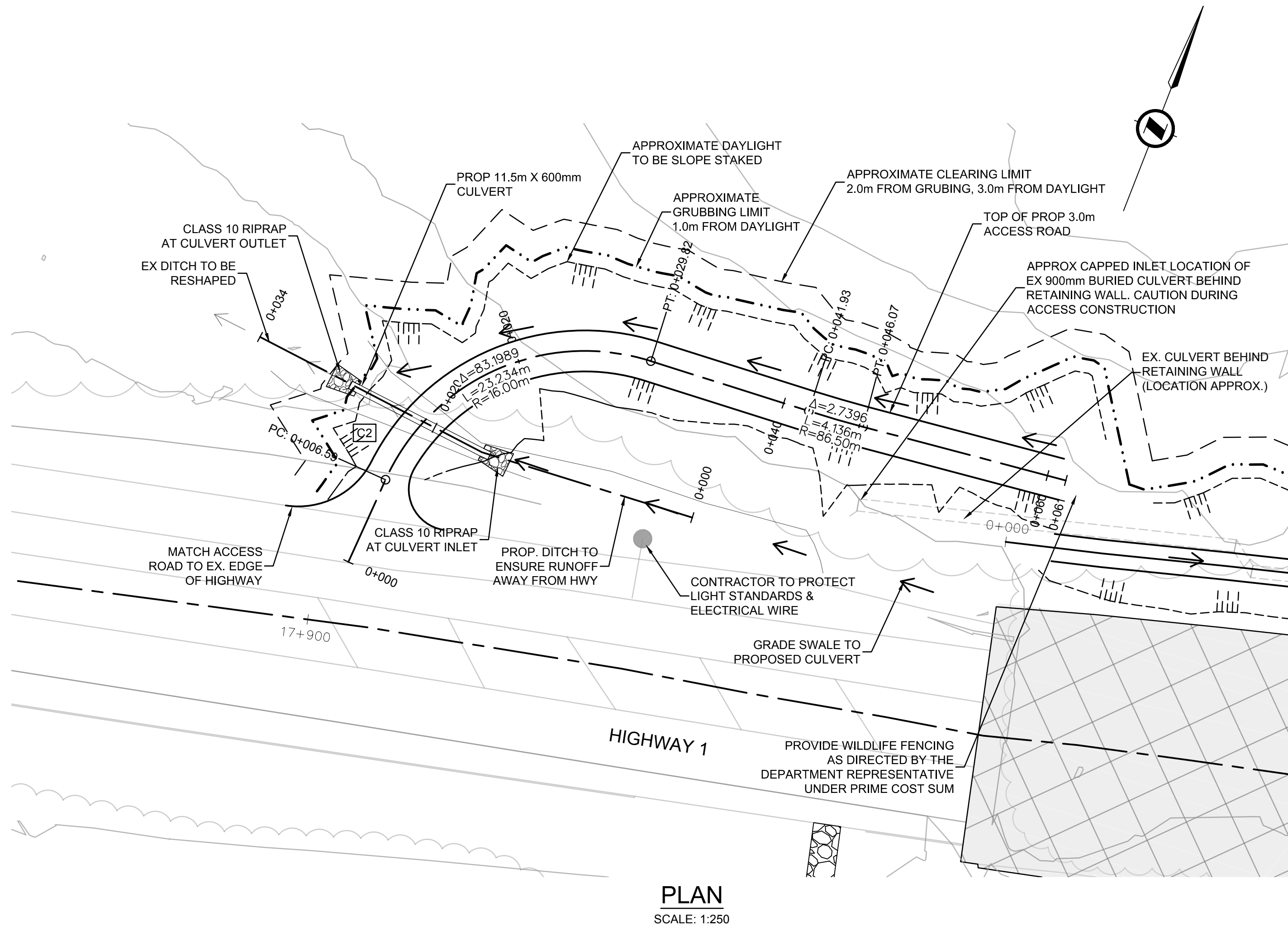
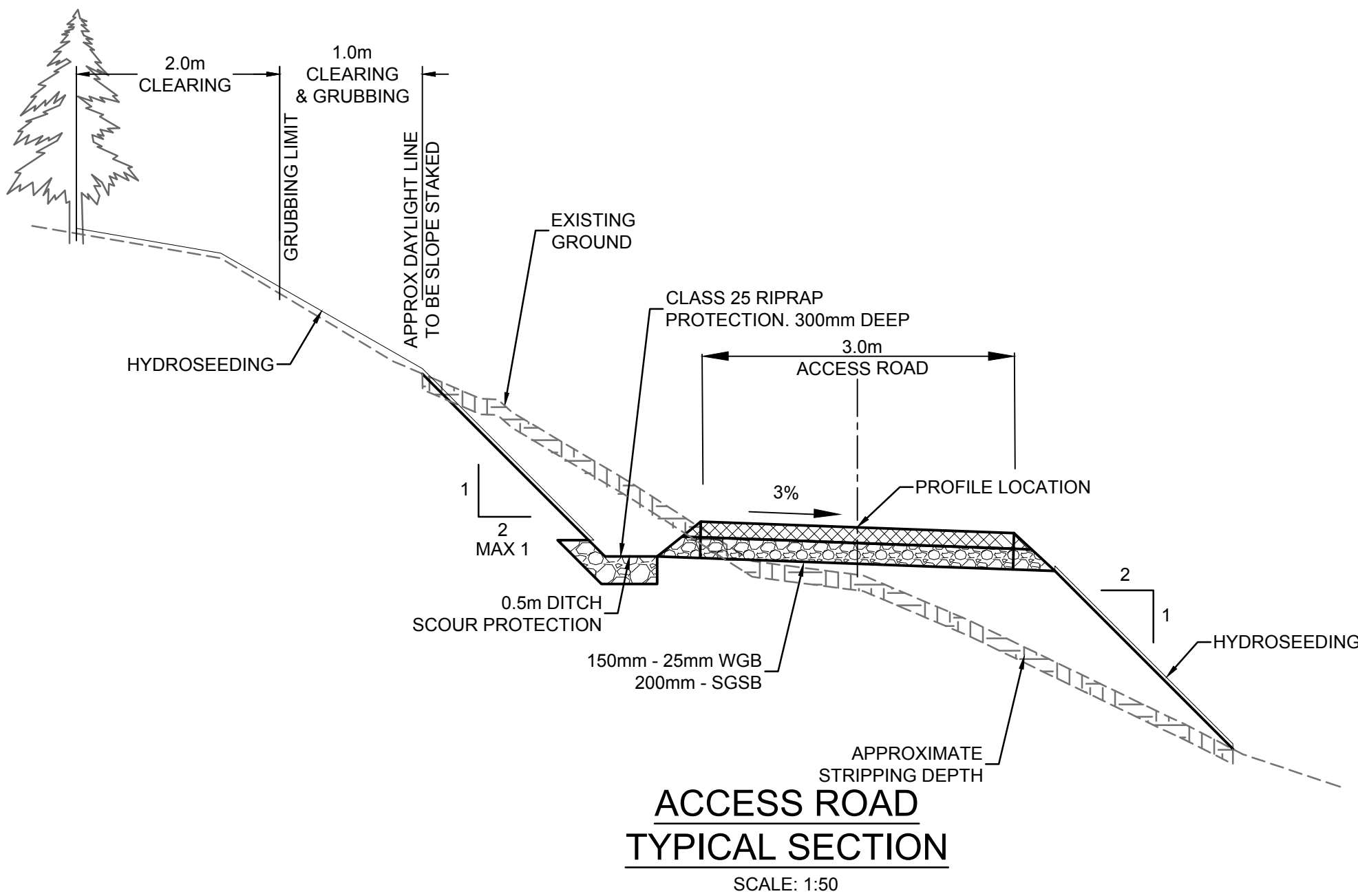
Drawing Reference No. / No. de référence du dessin

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FILE: G:\PROJECTS\2511\_00656-00 PARKS\TCH-AVALANCHE MITIGATION\ENR\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-202&205.DWG PLOTTED: 2017/07/26 10:27 AM

PROPOSED CULVERT TABLE - C2				
DESCRIPTION	NORTHING	EASTING	ELEVATION	RIP-RAP
INLET	467388.426	5685976.467	1195.37	CLASS 10
OUTLET	467373.805	5685977.585	1194.64	CLASS 10



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A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

B

C

A

B

C

detail number  
numéro de détail

source drawing no.  
de dessin no.

detail on drawing no.  
détail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

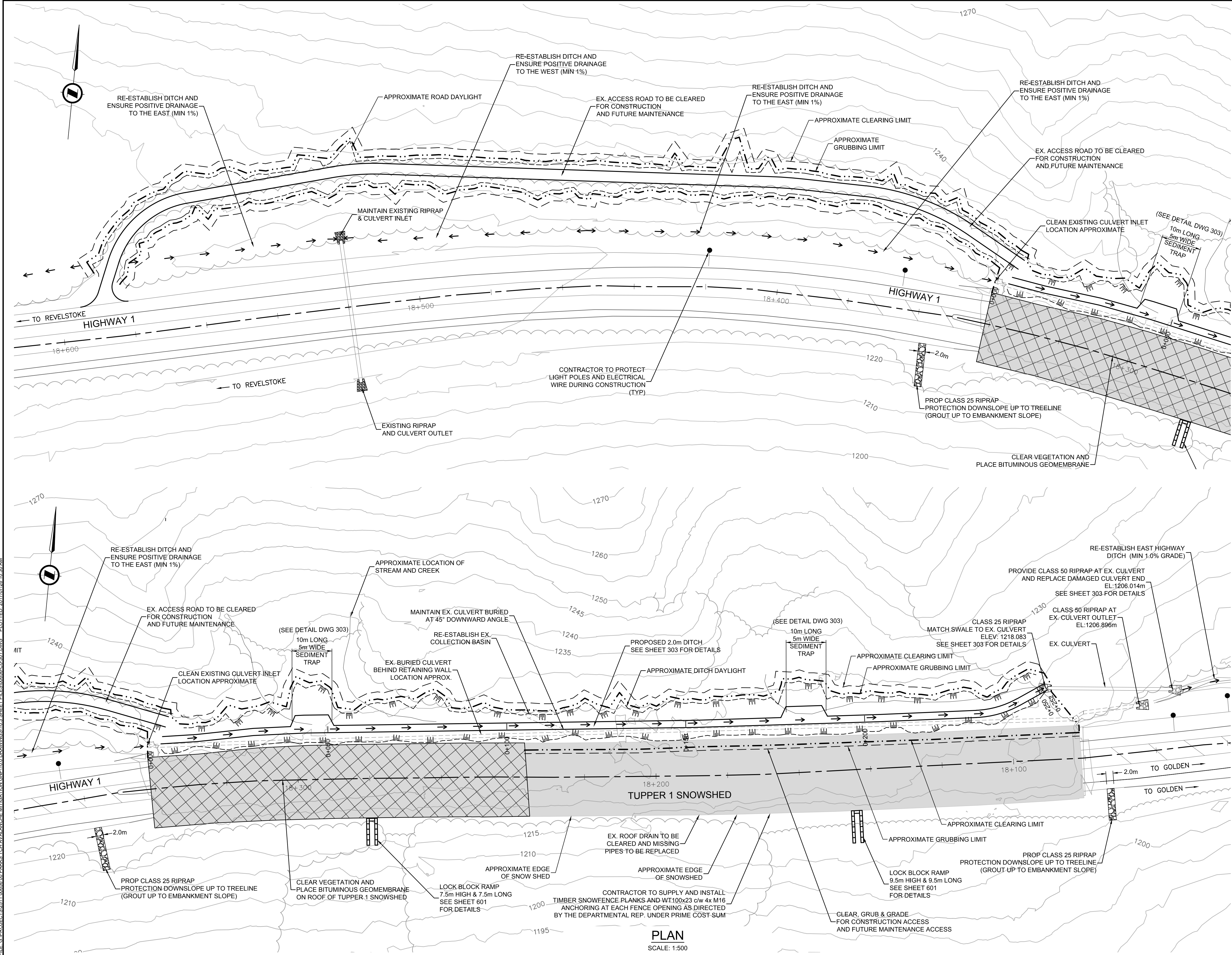
Drawing Title  
Titre du dessin

TUPPER 2 SNOWSHED  
ACCESS ROAD PLAN/PROFILE

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Révisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
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 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 205
Drawing Reference No. / No. de référence du dessin ---		





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D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ
Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé

A

B

C

A

B

C

A

B

C

Eng. Stamp  
Sceau de l'ingénieur

M. HERWARD  
PROFESSIONAL ENGINEER  
JULY 26, 2017

Eng. Stamp  
Sceau de l'ingénieur

H.A. ADETTE  
PROFESSIONAL ENGINEER  
JULY 26, 2017

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**TUPPER 1 SNOWSHED  
DRAINAGE PLAN**

Surveyed by / Arpenté par	Drawn by / Dessiné par	Date
MCSL	AI	2017.07.26
Designed by / Conçu par	Reviewed by / Révisé par	Scale / Echelle
HY/JM	MM	AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

Client Acceptance / Acceptation du client	Approved by / Approuvé par
<div>Parks Canada Responsible Officer / Agent Responsable Parcs Canada</div>	<div>Parks Canada Project Manager / Administrateur de Projets Parcs Canada</div>

Project No. / No. du projet	Asset No. / No. du bien	Sheet No. / No. de la feuille
2511-00656-00	---	301

Drawing Reference No. / No. de référence du dessin

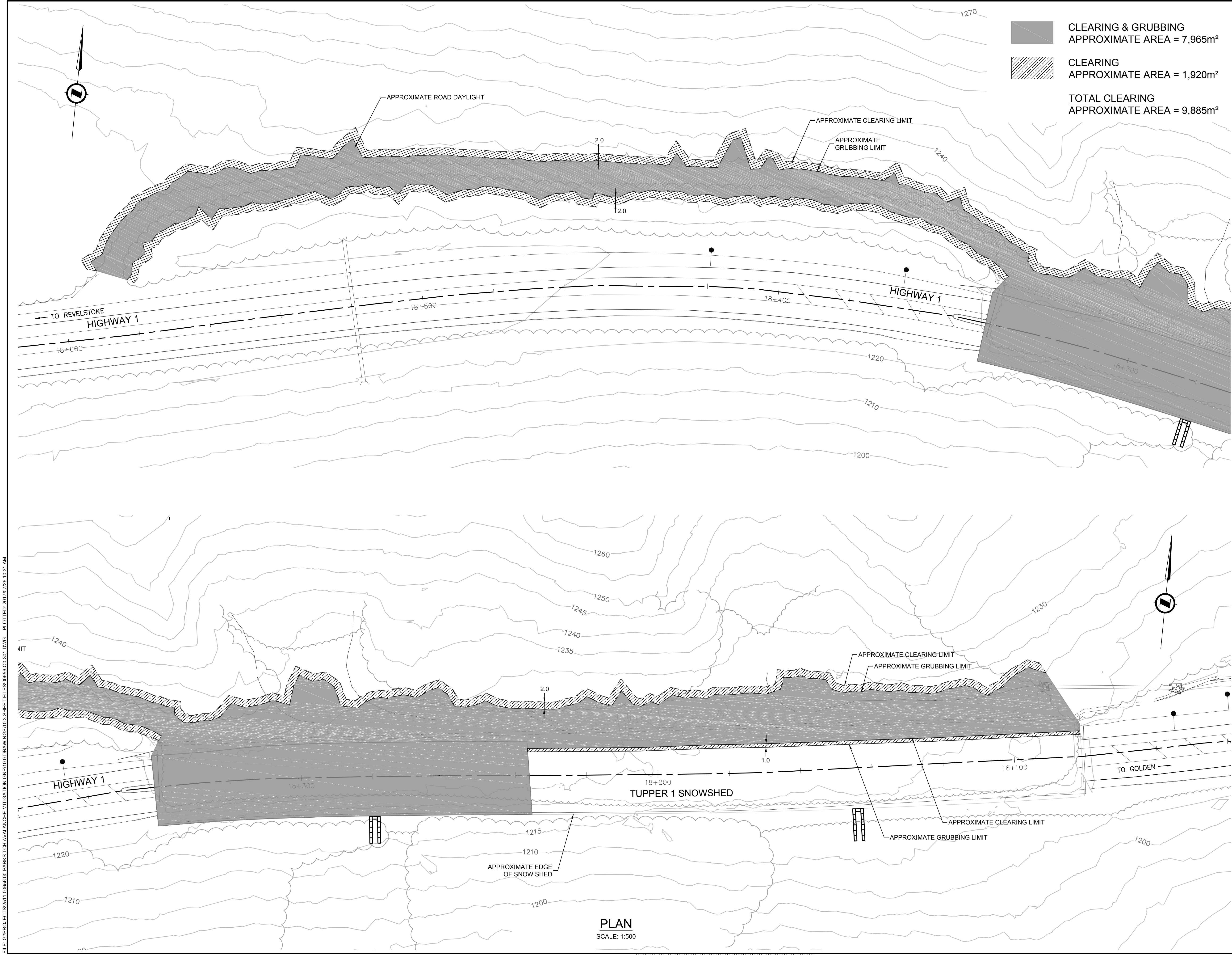
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FILE: G:\PROJECTS\2511-00656-00 PARKS TCH ADVANCE MITIGATION\2511-00 DRAWINGS\10.3 SHEET FILES\00656-00-301.DWG PLOTTED: 2017/07/26 10:30 AM

Paper Size: ANSI D (22 x 34")

0 10 20 30 40 50 60 70 80 90 100mm





CLEARING & GRUBBING  
APPROXIMATE AREA = 7,965m<sup>2</sup>

CLEARING  
APPROXIMATE AREA = 1,920m<sup>2</sup>

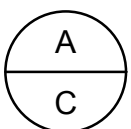
TOTAL CLEARING  
APPROXIMATE AREA = 9,885m<sup>2</sup>

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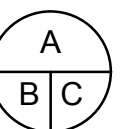
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D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ
Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé



A detail number  
numéro de detail  
B source drawing no.  
de dessin no.  
C detail on drawing no.  
detail sur dessin no.



Eng. Stamp  
Sceau de l'ingénieur



Eng. Stamp  
Sceau de l'ingénieur



Client



Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil



**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**TUPPER 1 SNOWSHED  
CLEARING & GRUBBING PLAN**

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Révisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

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 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 301A
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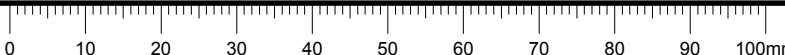
Drawing Reference No. / No. de référence du dessin

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FILE: G:\PROJECTS\2511\_00656-00 PARKS TO AVALANCHE MITIGATION\ENR\100 DRAWINGS\103 SHEET FILES\00656-00-301.DWG PLOTTED: 2017/07/26 10:31 AM

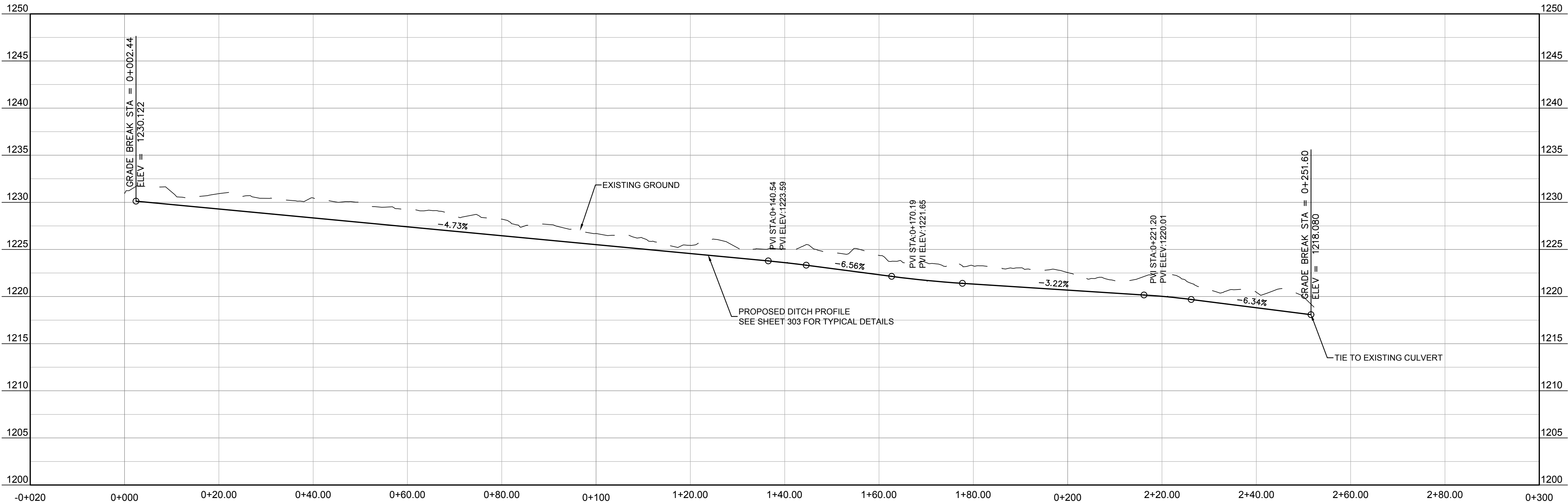
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PLAN  
SCALE: 1:500





FILE: G:\PROJECTS\2511-00656-00 PARKS\TCH-AVALANCHE MITIGATION\ENR\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-302&305.DWG PLOTTED: 2017/07/26 10:39 AM



PROPOSED DITCH PROFILE  
SCALE: 1:500

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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

B

C

detail number  
numéro de detail

source drawing no.  
de dessin no.

detail on drawing no.  
detail sur dessin no.

A

B

C

detail number  
numéro de detail

source drawing no.  
de dessin no.

detail on drawing no.  
detail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

McElhanney

McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

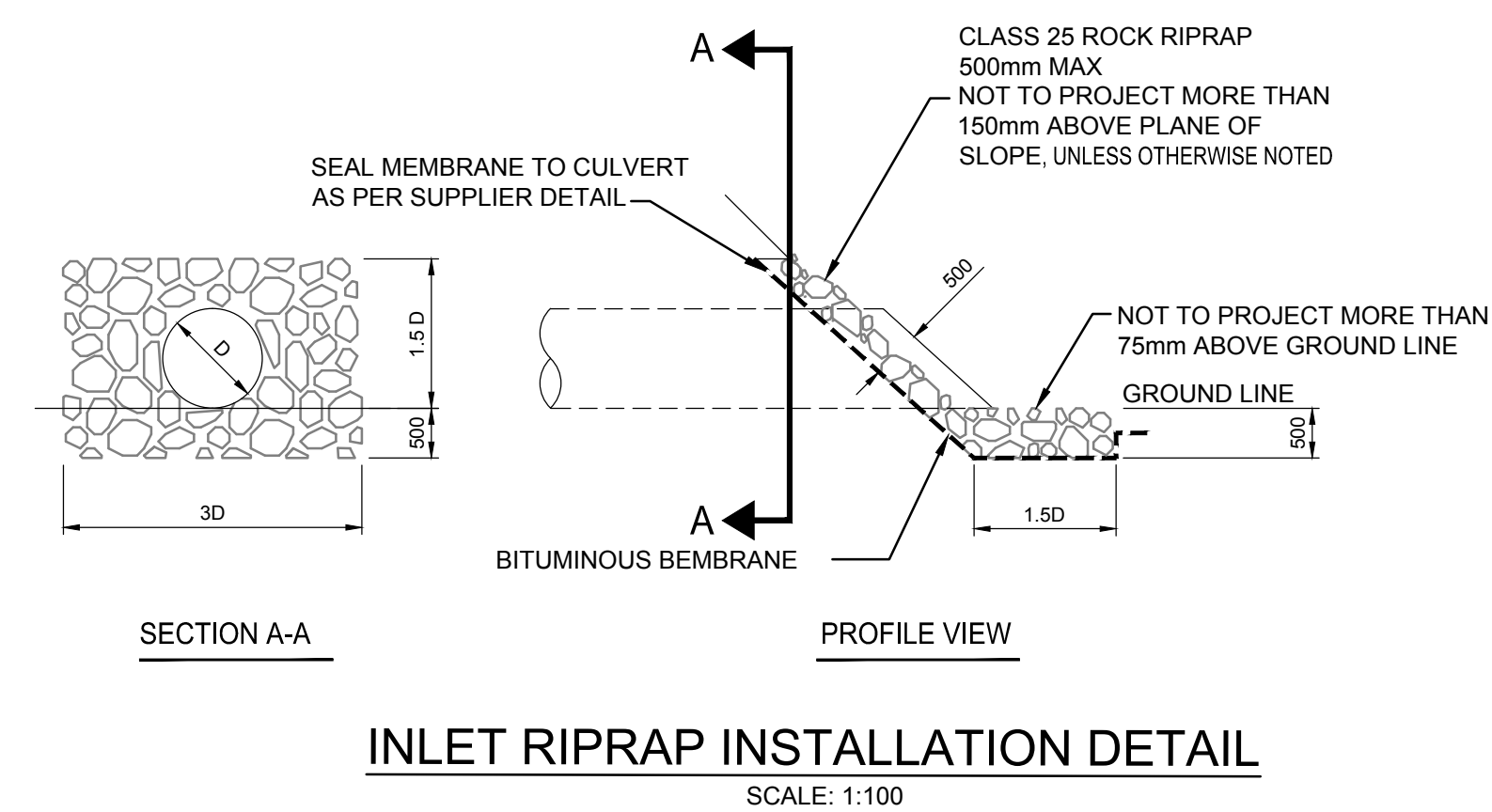
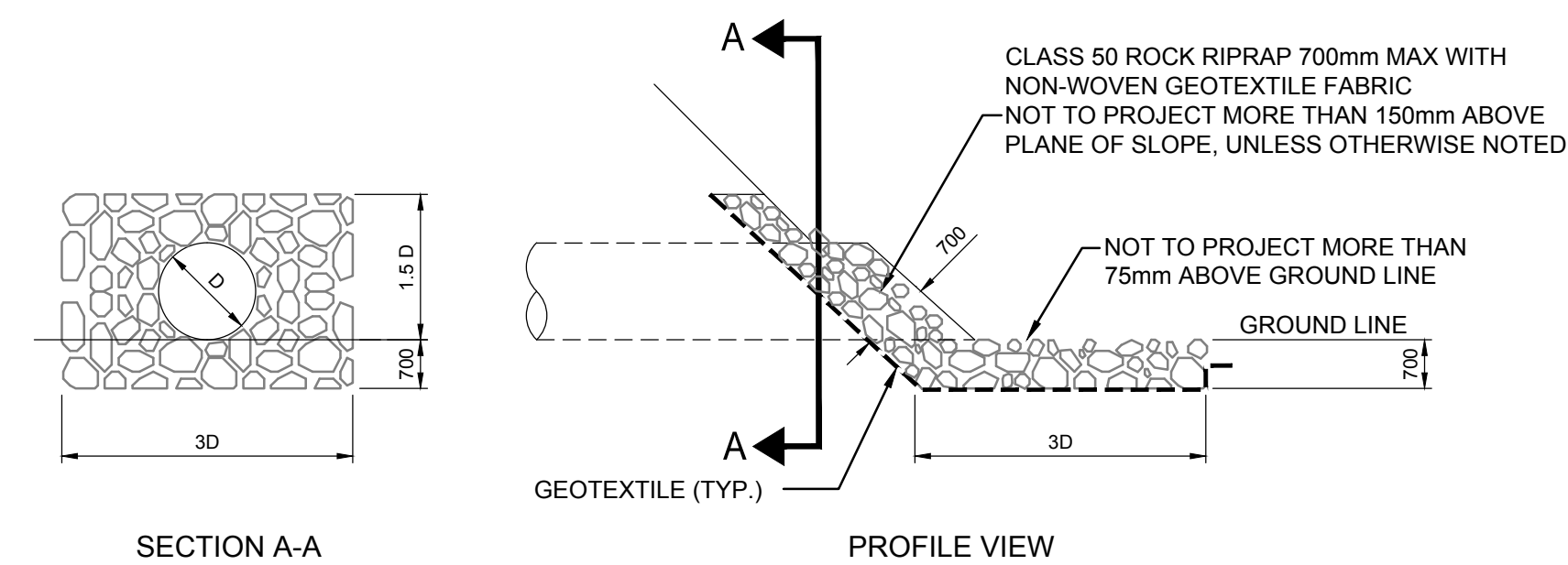
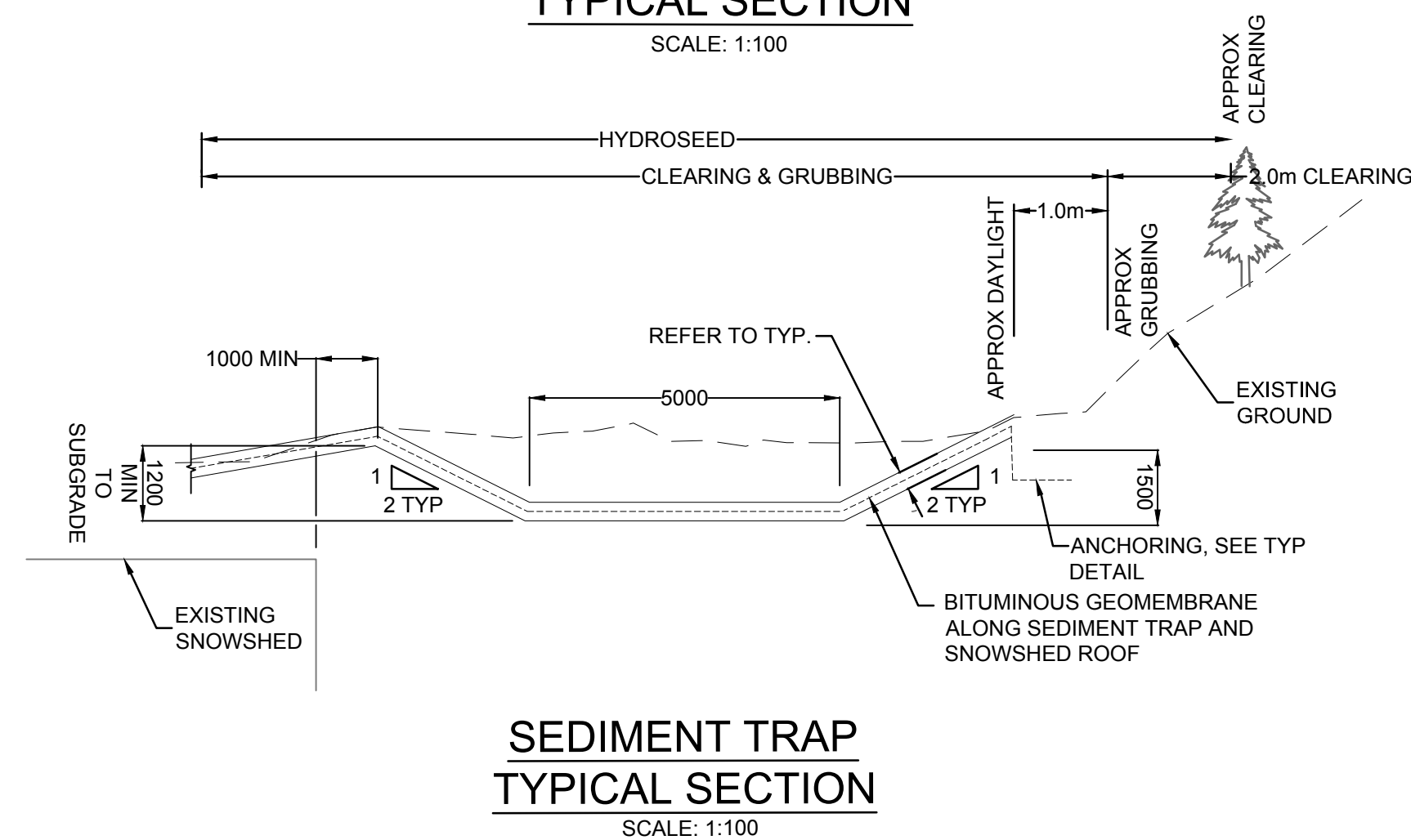
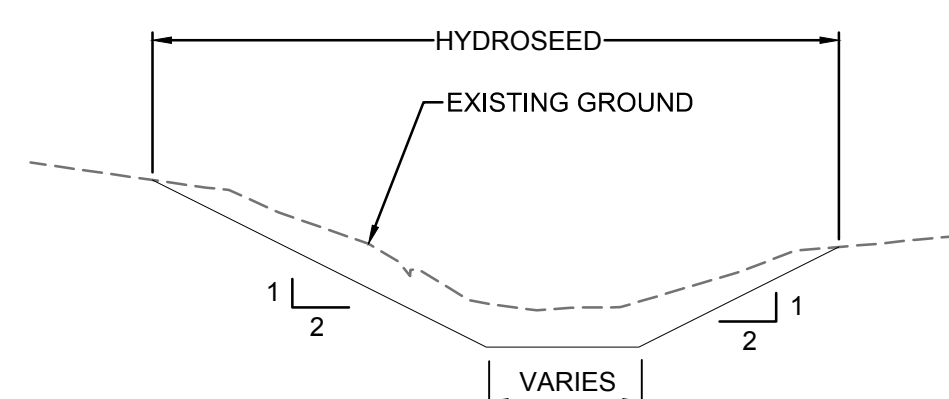
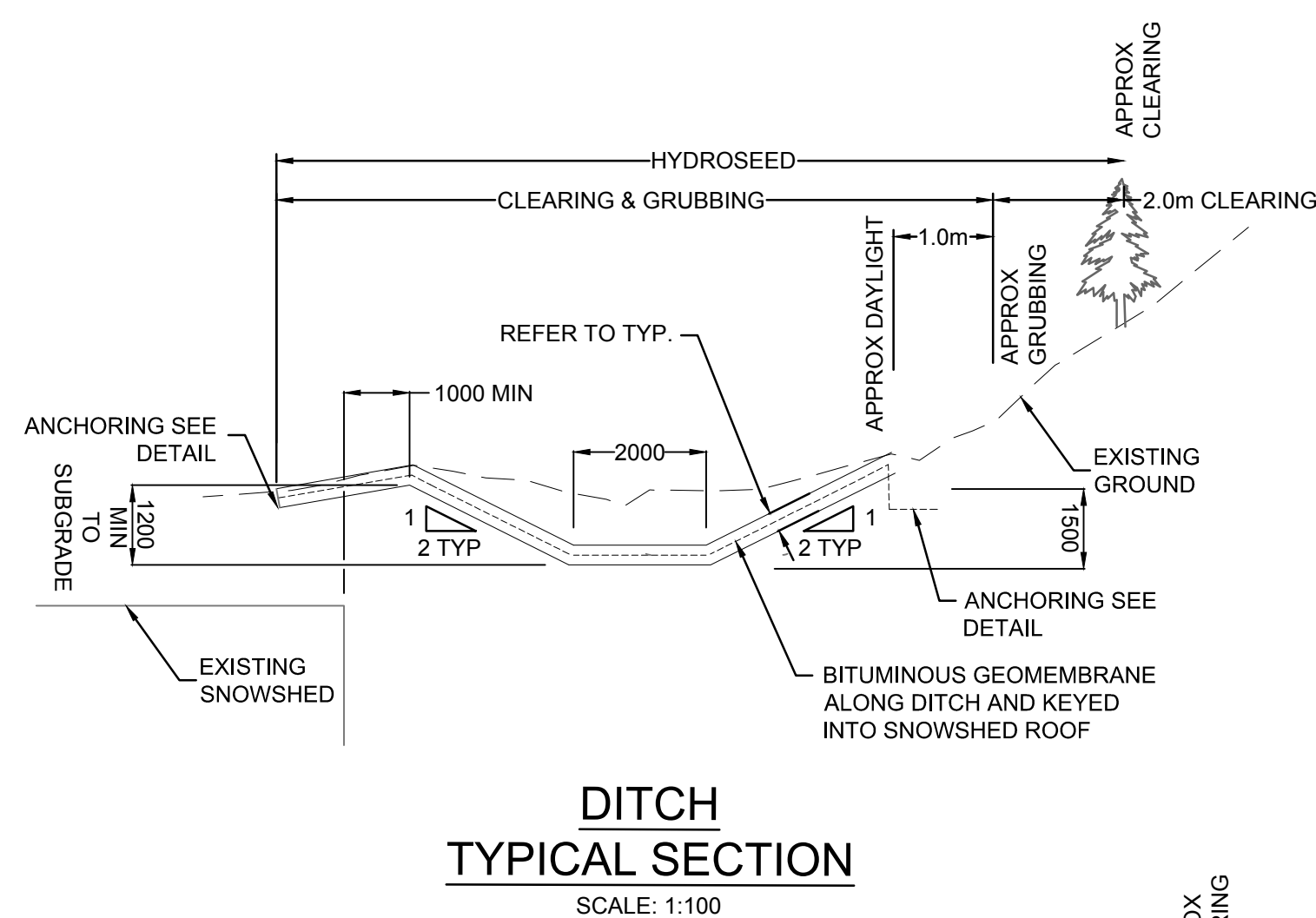
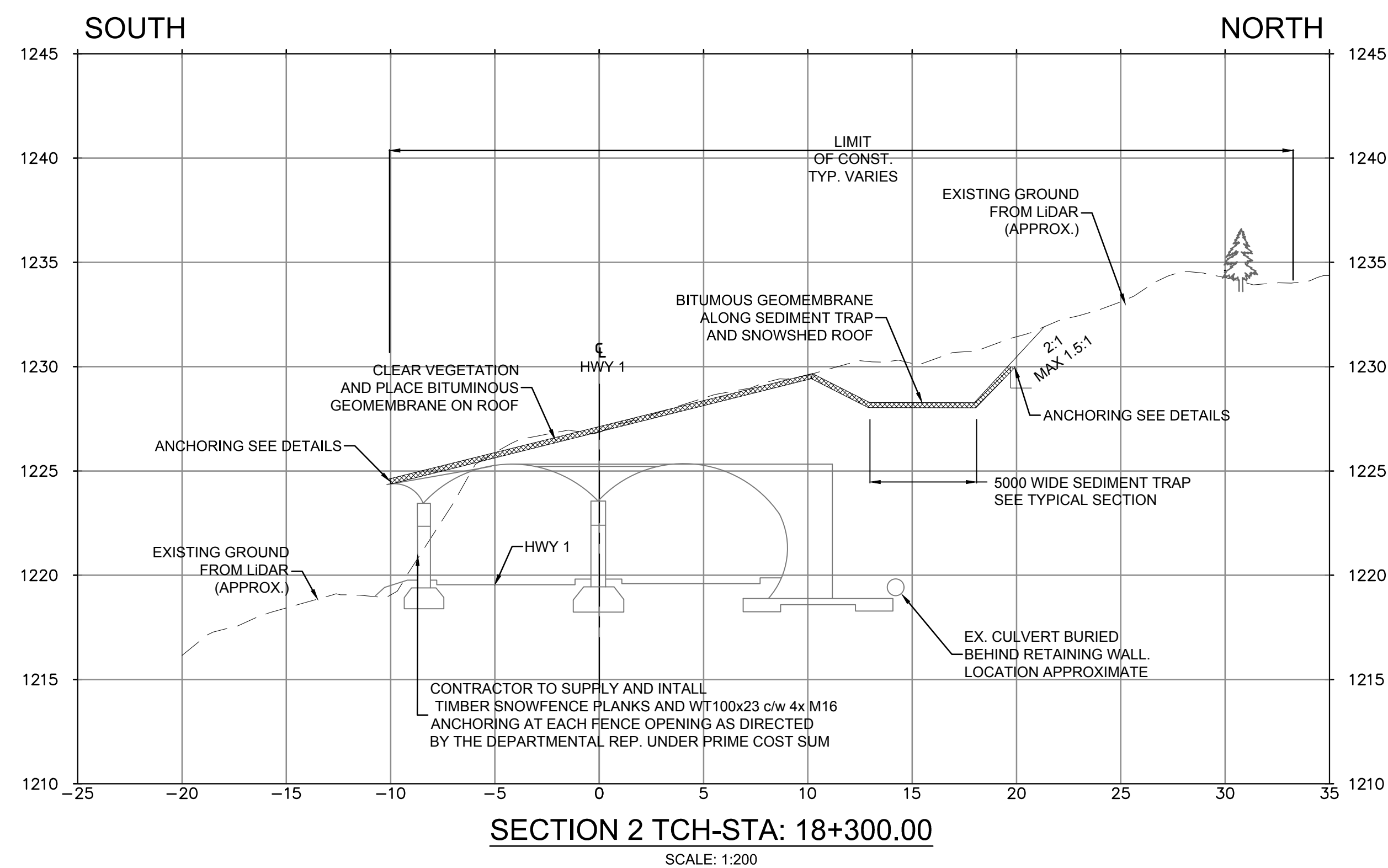
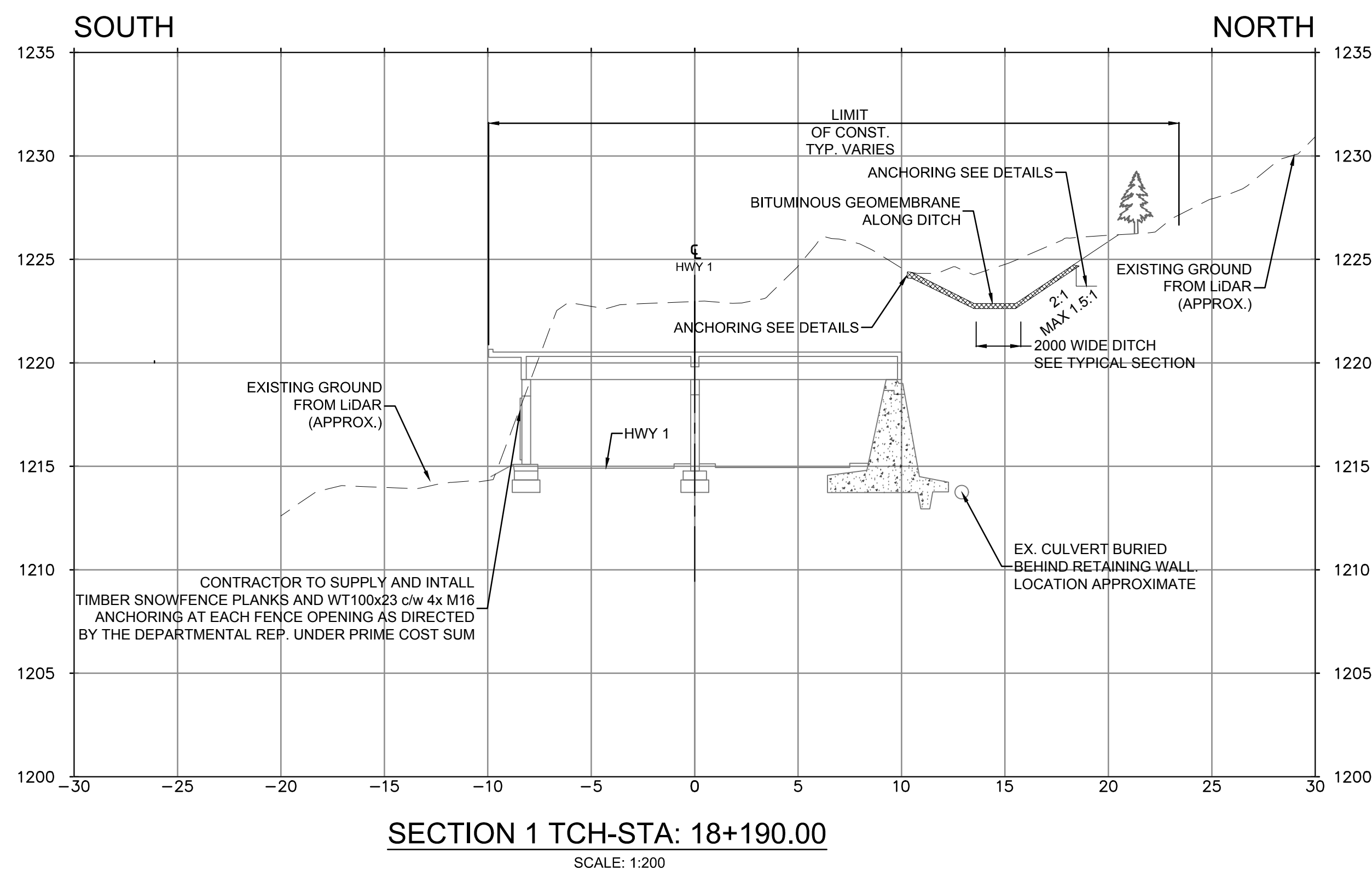
Drawing Title  
Titre du dessin

TUPPER 1 SNOWSHED  
OVER SIZED SWALE / DITCH  
PROFILE

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Revisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
---		
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 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 302
Drawing Reference No. / No. de référence du dessin ---		









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D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ
Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé

	<p>A detail number numéro de détail</p> <p>B source drawing no. de dessin no.</p> <p>C detail on drawing no. détail sur dessin no.</p>	
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<p>Eng. Stamp Sceau de l'ingénieur</p> 	<p>Eng. Stamp Sceau de l'ingénieur</p> 
--	--

Client	 Parks Canada Agency Western and Northern Region	L'Agence Parcs Canada Ouest et Nord du Canada
--------	---	---

Consultant's Name  
Nom de l'expert-conseil

 **McElhanney**  
**McElhanney Consulting Services Ltd.**

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**

ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

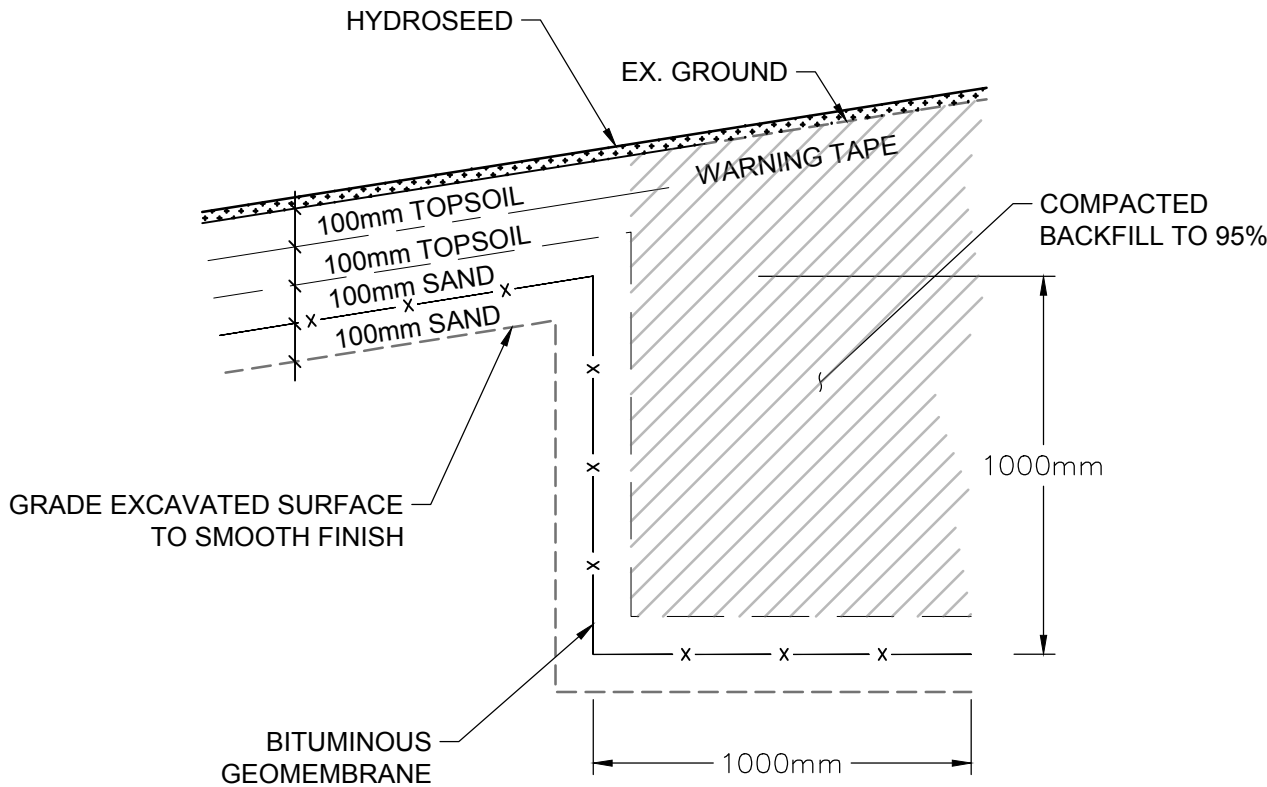
TUPPER 1 SNOWSHED  
SECTIONS

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Révisé par <b>MM</b>	Scale / Échelle <b>AS SHOWN</b>

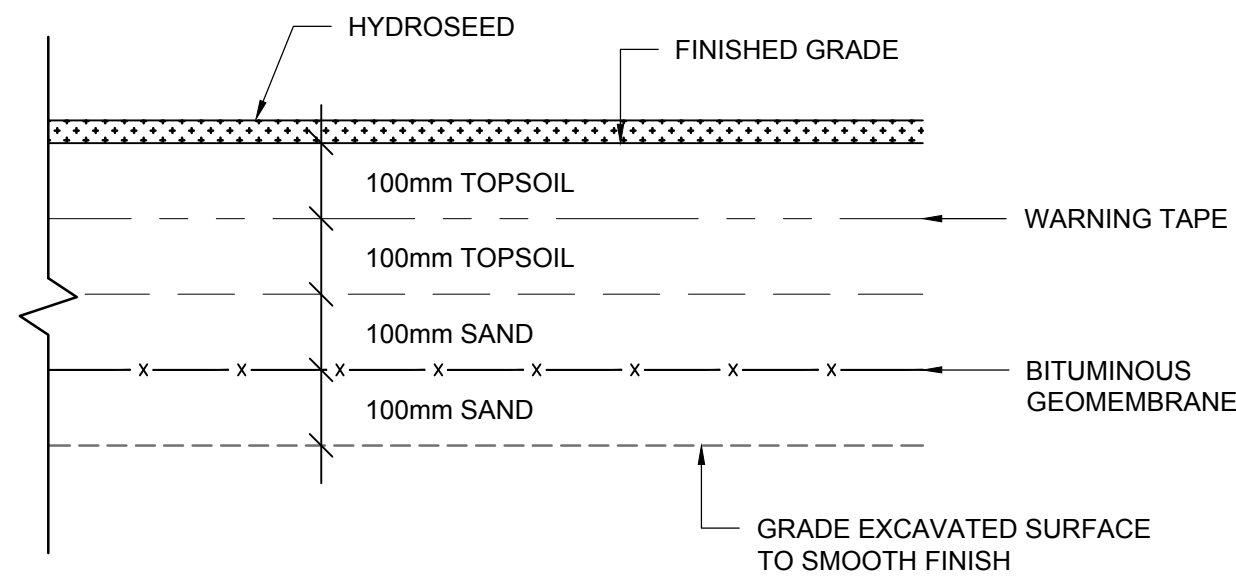
Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
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Client Acceptance / Acceptation du client	Approved by / Approuvé par	
_____	_____	
Parks Canada Responsible Officer / Agent Responsable Parcs Canada	Parks Canada Project Manager / Administrateur de Projets Parcs Canada	
Project No. / No. du projet	Asset No. / No. du bien	Sheet No. No. de la feuille
2511-00656-00	---	303
Drawing Reference No. / No. de référence du dessin		
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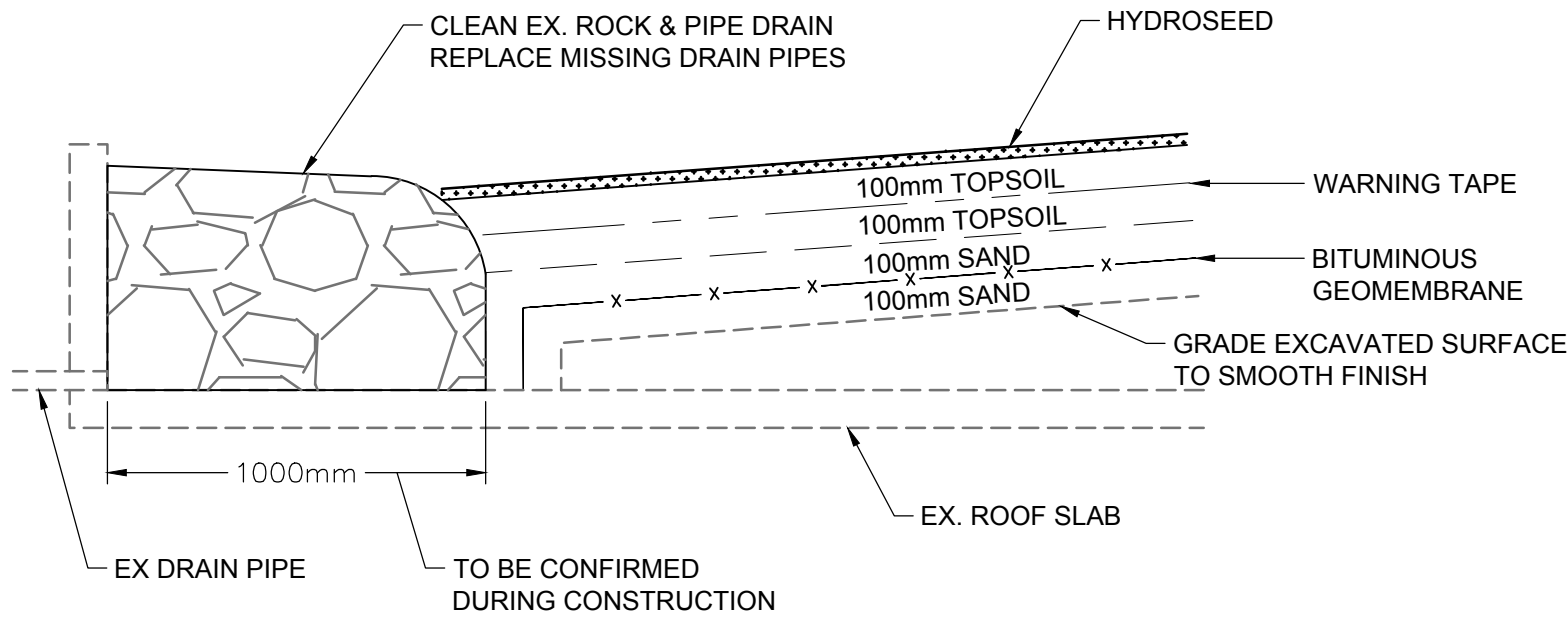
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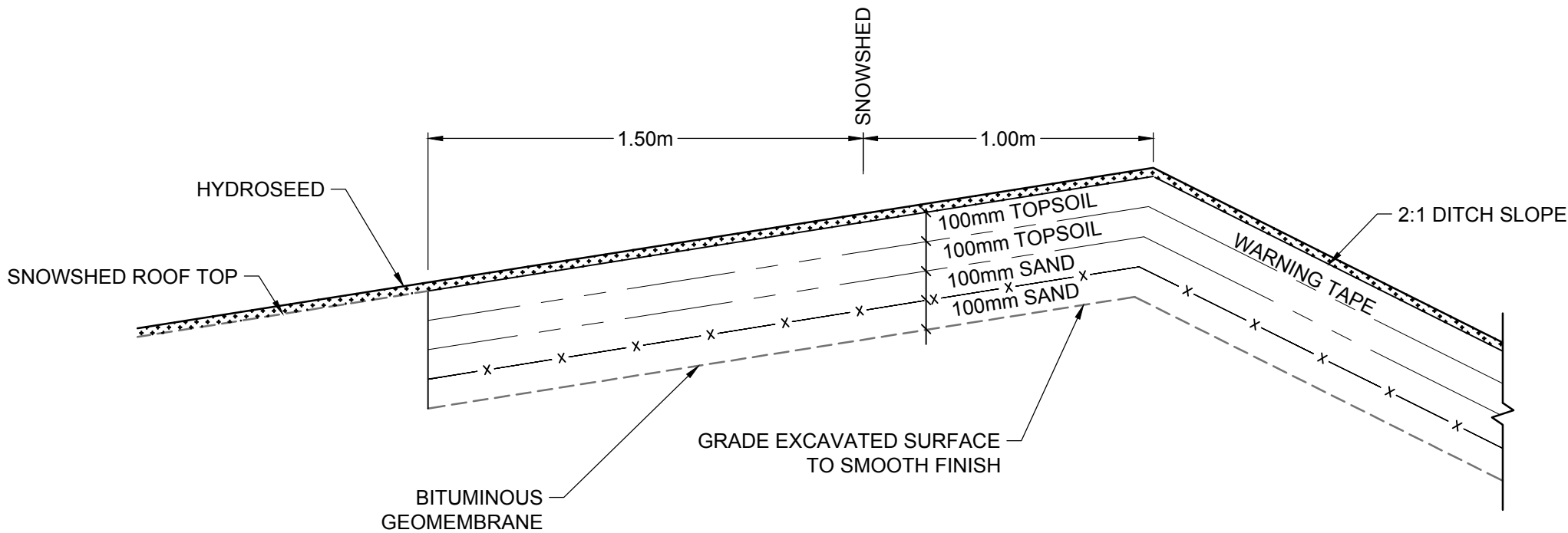
TYPICAL ANCHORING DITCH DETAIL (MOUNTAIN SIDE)  
SCALE: 1:20



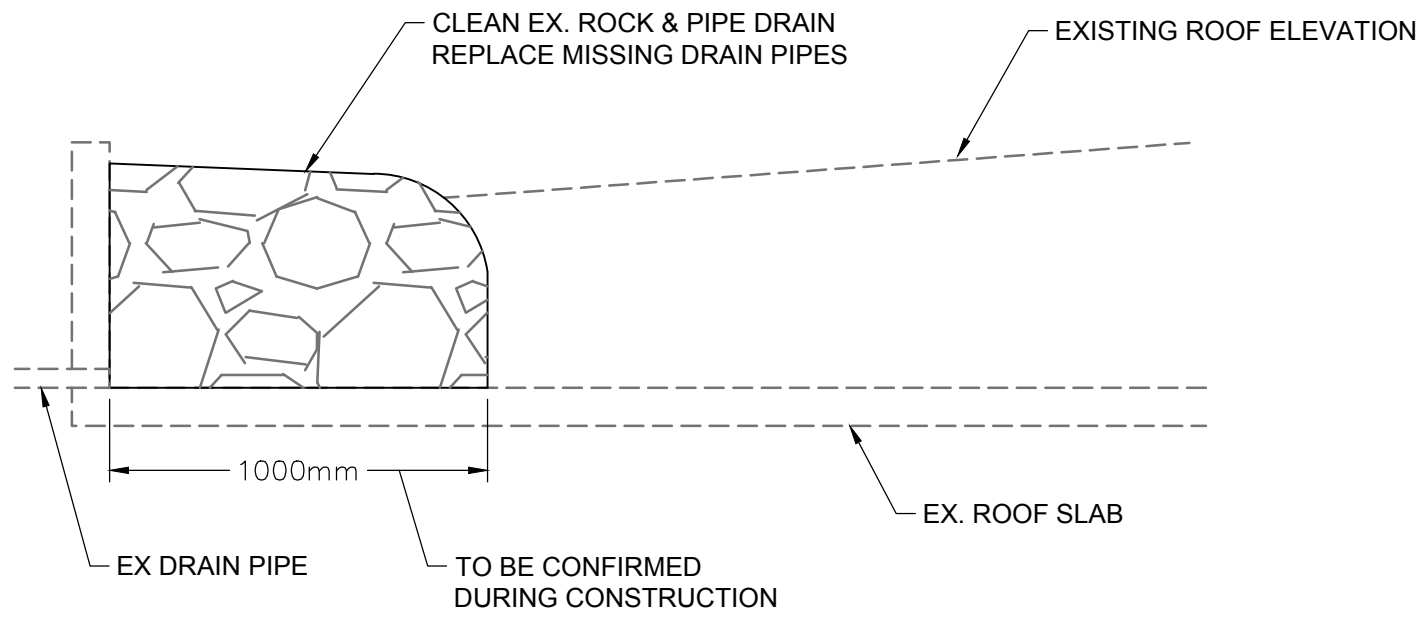
TYPICAL GEOMEMBRANE PLACEMENT  
SCALE: 1:10



TYPICAL ANCHORING AT ROOF DRAIN DETAIL  
SCALE: 1:20



TYPICAL ANCHORING DITCH DETAIL (SNOWSHED SIDE)  
SCALE: 1:20



TYPICAL DRAIN PIPE CLEANING DETAIL  
SCALE: 1:20

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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
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B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A	detail number numéro de detail	A
B	source drawing no. de dessin no.	B
C	detail on drawing no. detail sur dessin no.	C

Eng. Stamp Sceau de l'ingénieur	Eng. Stamp Sceau de l'ingénieur

Client	Parks Canada Agency Western and Northern Region	L'Agence Parcs Canada Ouest et Nord du Canada
--------	---	---

Consultant's Name Nom de l'expert-conseil	 <b>McElhanney</b> McElhanney Consulting Services Ltd.
--	--

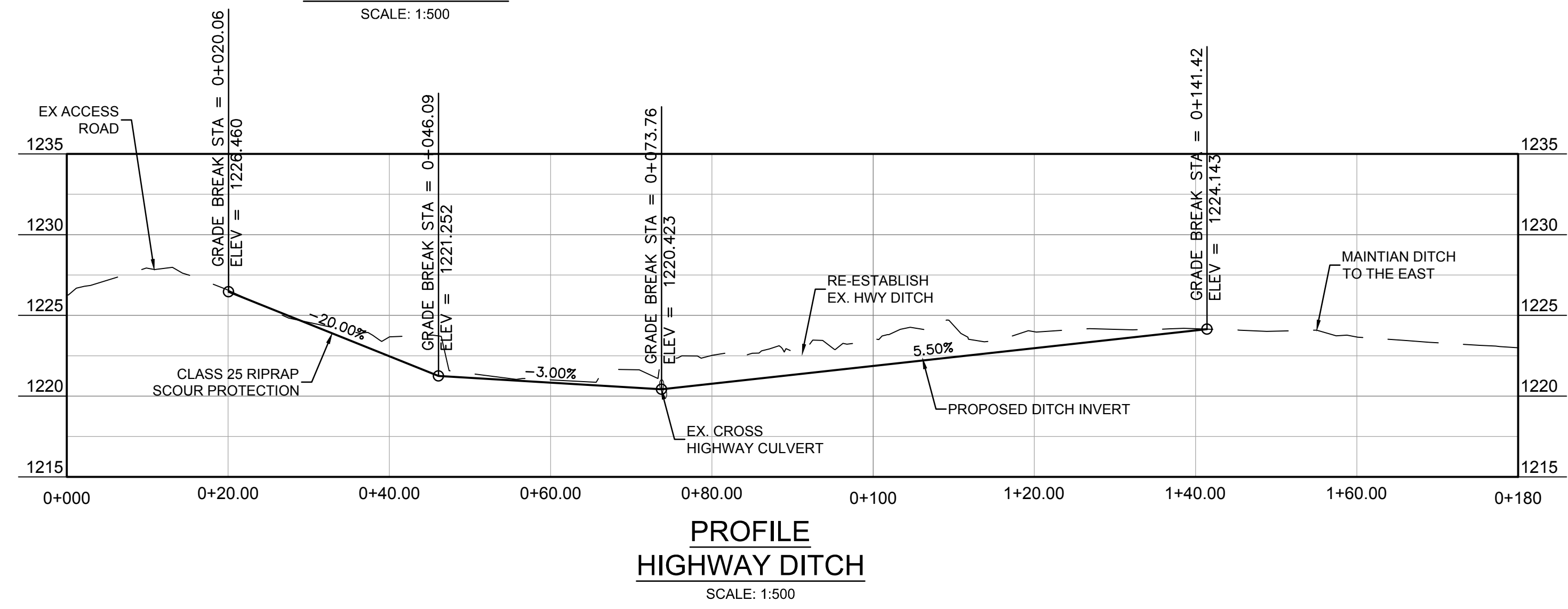
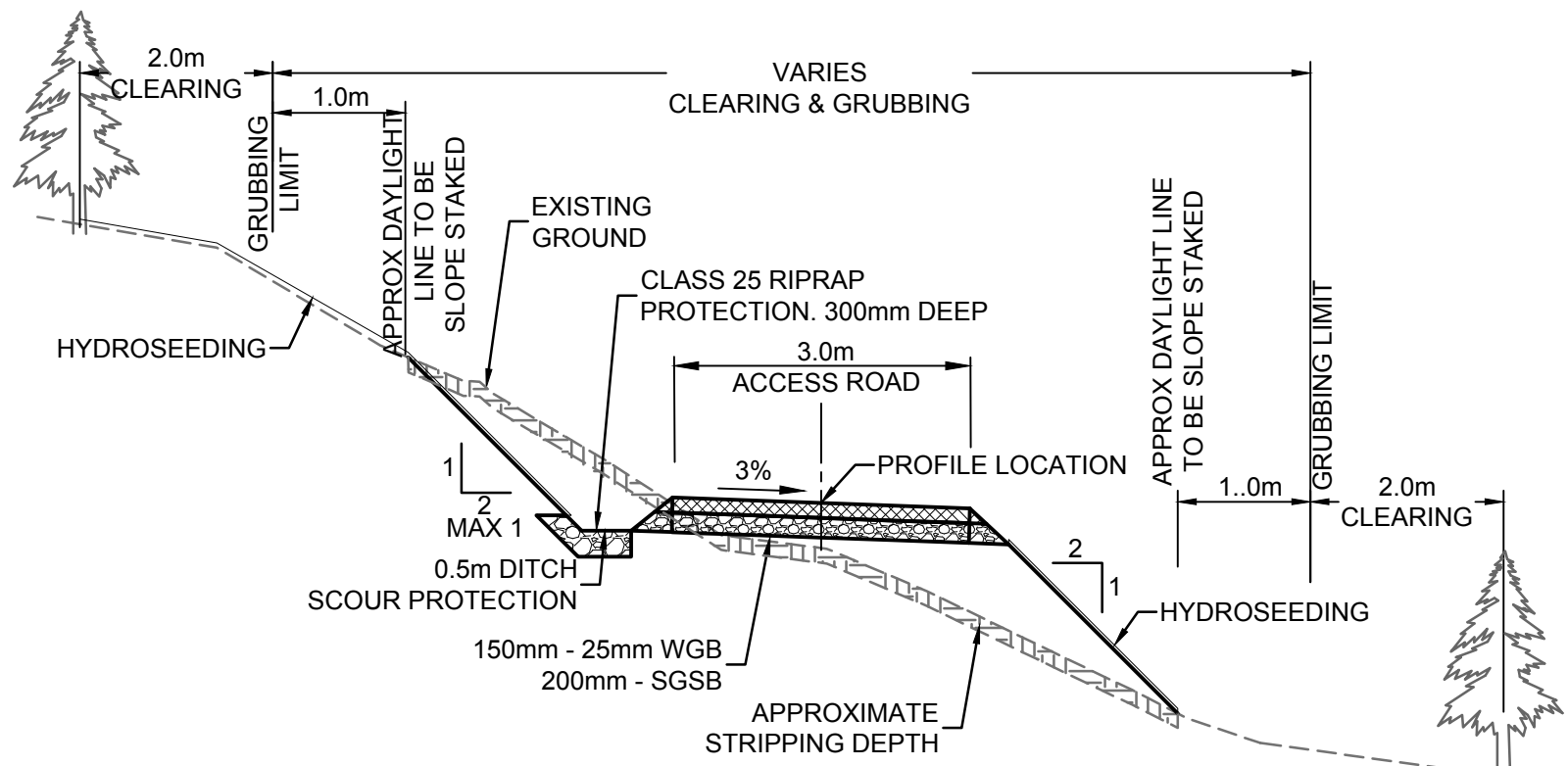
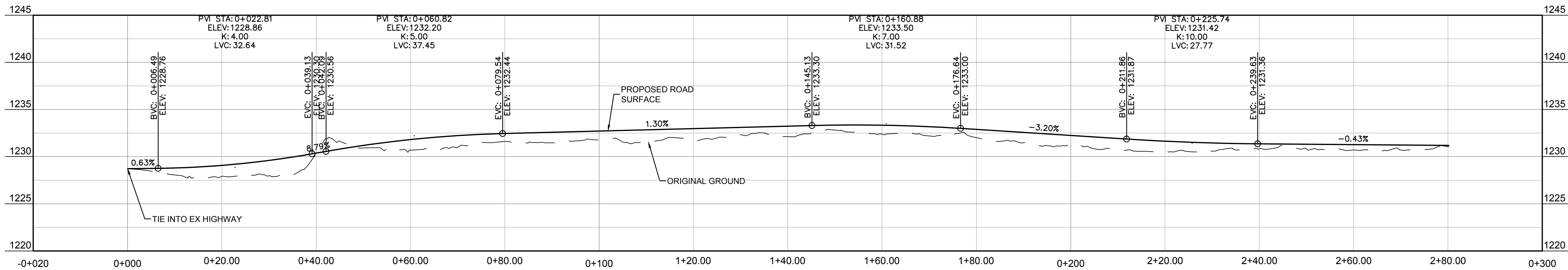
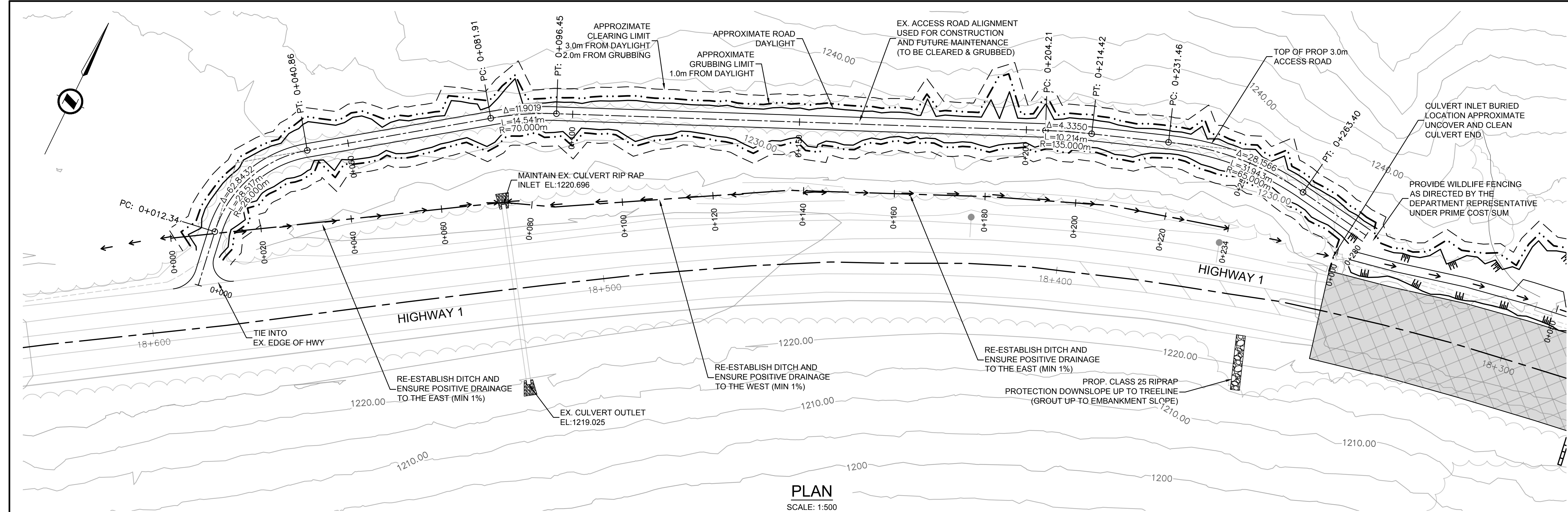
Project Title Titre du projet	<b>GLACIER NATIONAL PARK SNOWSHED DRAINAGE IMPROVEMENTS</b> ROGERS PASS GLACIER NATIONAL PARK, BC
----------------------------------	---

Drawing Title Titre du dessin	<b>TUPPER 1 SNOWSHED DETAILS</b>
----------------------------------	--------------------------------------

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Révisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
---		
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 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 304
Drawing Reference No. / No. de référence du dessin		---





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B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

C

detail number  
numéro de detail  
source drawing no.  
de dessin no.  
detail on drawing no.  
detail sur dessin no.

A

B

C

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client  
 Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

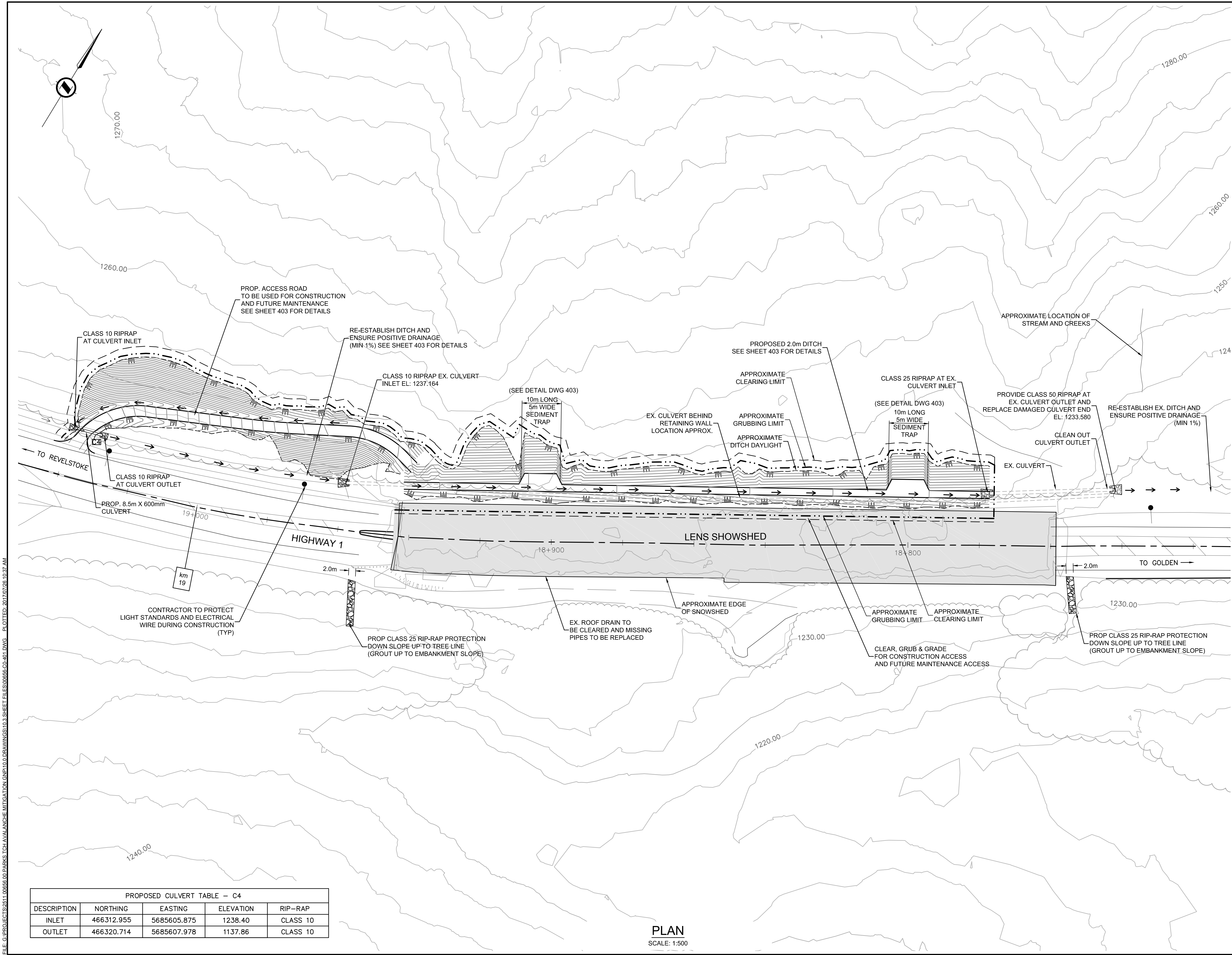
Project Title  
Titre du projet  
**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
 ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin  
**TUPPER 1 SNOWSHED  
ACCESS ROAD PLAN/PROFILE**

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Révisé par <b>MM</b>	Scale / Échelle <b>AS SHOWN</b>
Parks Canada Project Manager / Administrateur de Projets Parcs Canada ---		
Client Acceptance / Acceptation du client ---		Approved by / Approuvé par ---
<small>Parks Canada Responsible Officer / Agent Responsable Parcs Canada</small> Project No. / No. du projet <b>2511-00656-00</b>		<small>Parks Canada Project Manager / Administrateur de Projets Parcs Canada</small> Asset No. / No. du bien --- Sheet No. No. de la feuille <b>305</b>
Drawing Reference No. / No. de référence du dessin ---		



FILE: G:\PROJECTS\2511-00656-00 PARKS ICH AVALANCHE MITIGATION GNP\100 DRAWINGS\103 SHEET FILES\00656-00-401.DWG PLOTTED: 2017/07/26 10:37 AM



PROPOSED CULVERT TABLE - C4				
DESCRIPTION	NORTHING	EASTING	ELEVATION	RIP-RAP
INLET	466312.955	5685605.875	1238.40	CLASS 10
OUTLET	466320.714	5685607.978	1137.86	CLASS 10

PLAN  
SCALE: 1:500



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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
D	2017.07.26	RE-ISSUED FOR TENDER	AI	HY/JM	MM
C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

C

A

B

C

detail number  
numéro de détail

source drawing no.  
de dessin no.

detail on drawing no.  
détail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

LENS SNOWSHED  
DRAINAGE PLAN

Surveyed by / Arpenté par	Drawn by / Dessiné par	Date
MCSL	AI	2017.07.26
Designed by / Conçu par	Reviewed by / Révisé par	Scale / Échelle
HY/JM	MM	AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

Client Acceptance / Acception du client

Approved by / Approuvé par

Parks Canada Responsible Officer / Agent Responsable Parcs Canada

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

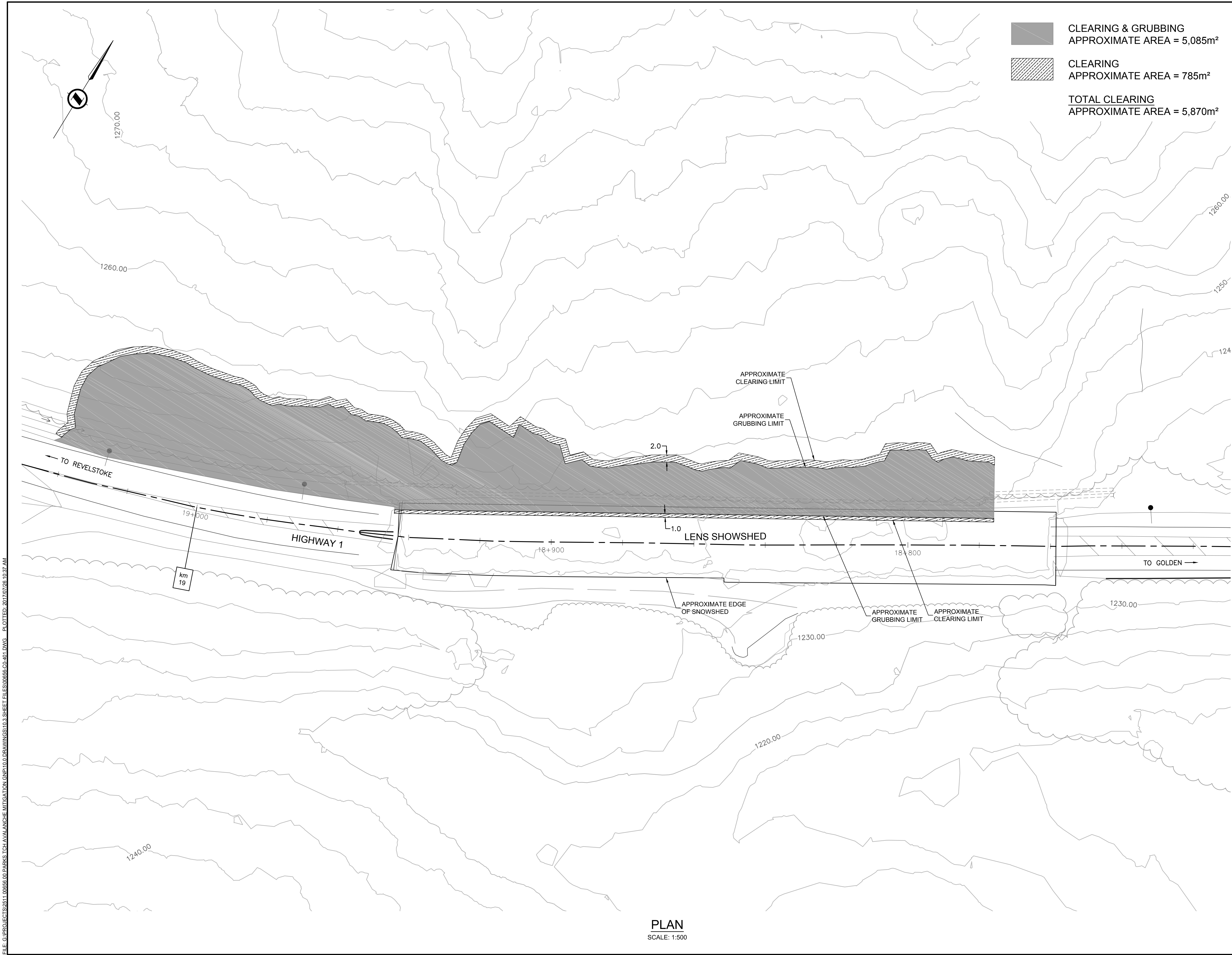
Project No. / No. du projet	Asset No. / No. du bien	Sheet No. No. de la feuille
2511-00656-00	---	401

Drawing Reference No. / No. de référence du dessin

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FILE: G:\PROJECTS\2511-00656-00 PARKS TOC-AVALANCHE MITIGATION-ENR\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-401.DWG - PLOTTED: 2017/07/26 10:37 AM



CLEARING & GRUBBING  
APPROXIMATE AREA = 5,085m<sup>2</sup>

CLEARING  
APPROXIMATE AREA = 785m<sup>2</sup>

TOTAL CLEARING  
APPROXIMATE AREA = 5,870m<sup>2</sup>

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C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ
Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé

A

B

C

A

detail number  
numéro de detail

B

source drawing no.  
de dessin no.

C

detail on drawing no.  
detail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

LENS SNOWSHED  
CLEARING & GRUBBING PLAN

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Révisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

---

Client Acceptance / Acception 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  
2511-00656-00

Asset No. / No. du bien  
---

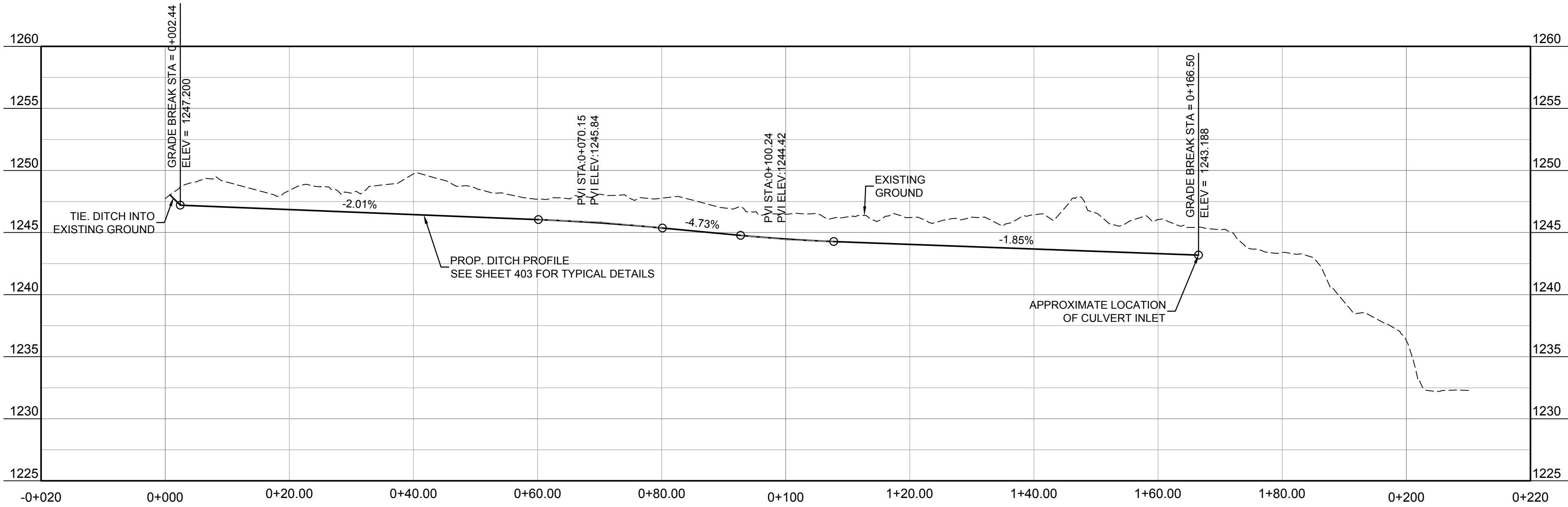
Sheet No.  
No. de la feuille  
401A

Drawing Reference No. / No. de référence du dessin

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FILE: G:\PROJECTS\2511-00656-00 PARKS\TCH-AVALANCHE MITIGATION\ENR\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-402&405.DWG PLOTTED: 2017/07/26 03:39 AM



DITCH PROFILE  
SCALE: 1:500

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C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ

A

C

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B

C

detail number  
numéro de détail

source drawing no.  
de dessin no.

detail on drawing no.  
détail sur dessin no.

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

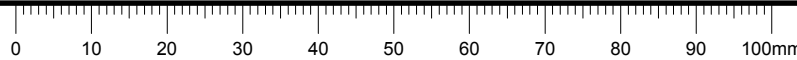
GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

LENS SNOWSHED  
  
DITCH PROFILE

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Revisé par MM	Scale / Échelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada		
---		
Client Acceptance / Accepation 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 2511-00656-00	Asset No. / No. du bien ---	Sheet No. No. de la feuille 402
Drawing Reference No. / No. de référence du dessin ---		

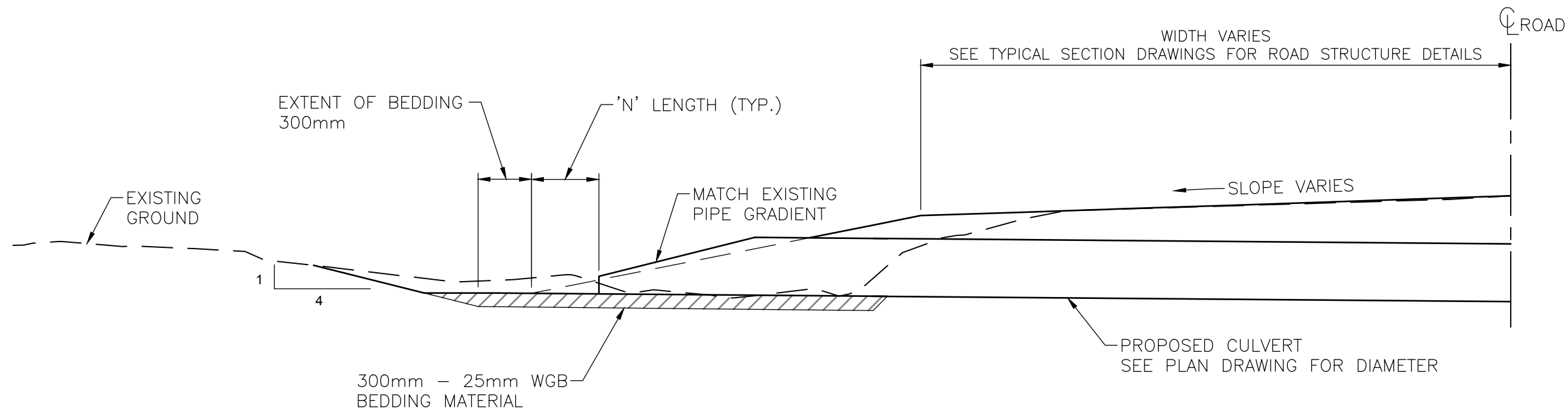






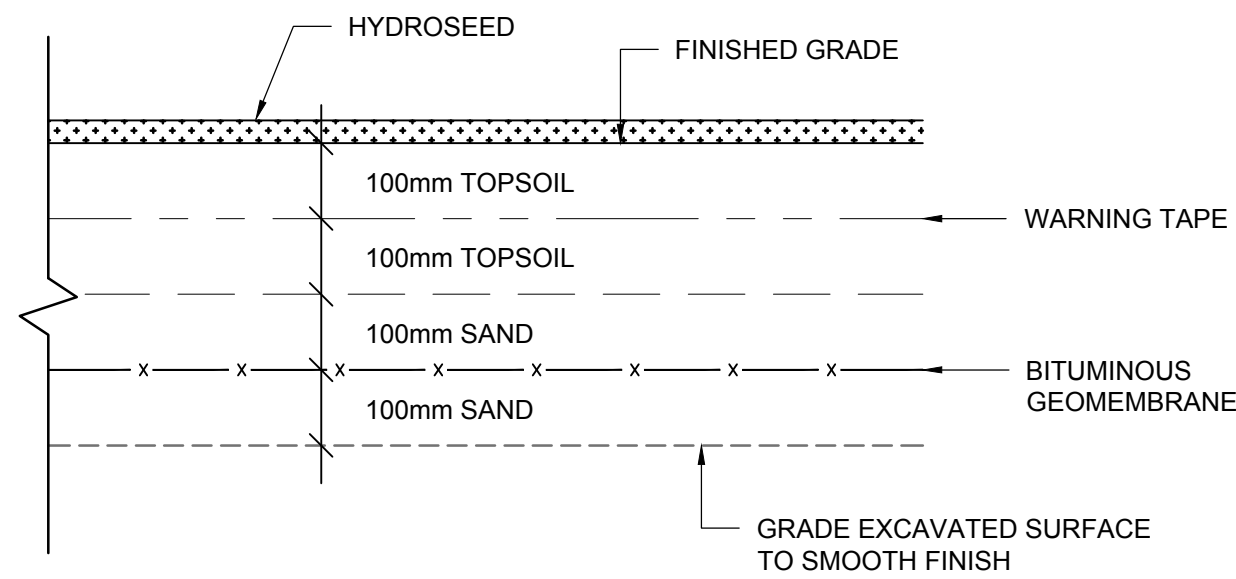


FILE: G:\PROJECTS\2511-00656-00 PARKS TOH AVALANCHE MITIGATION GNP\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-404.dwg PLOTTED: 2017/07/26 10:40 AM



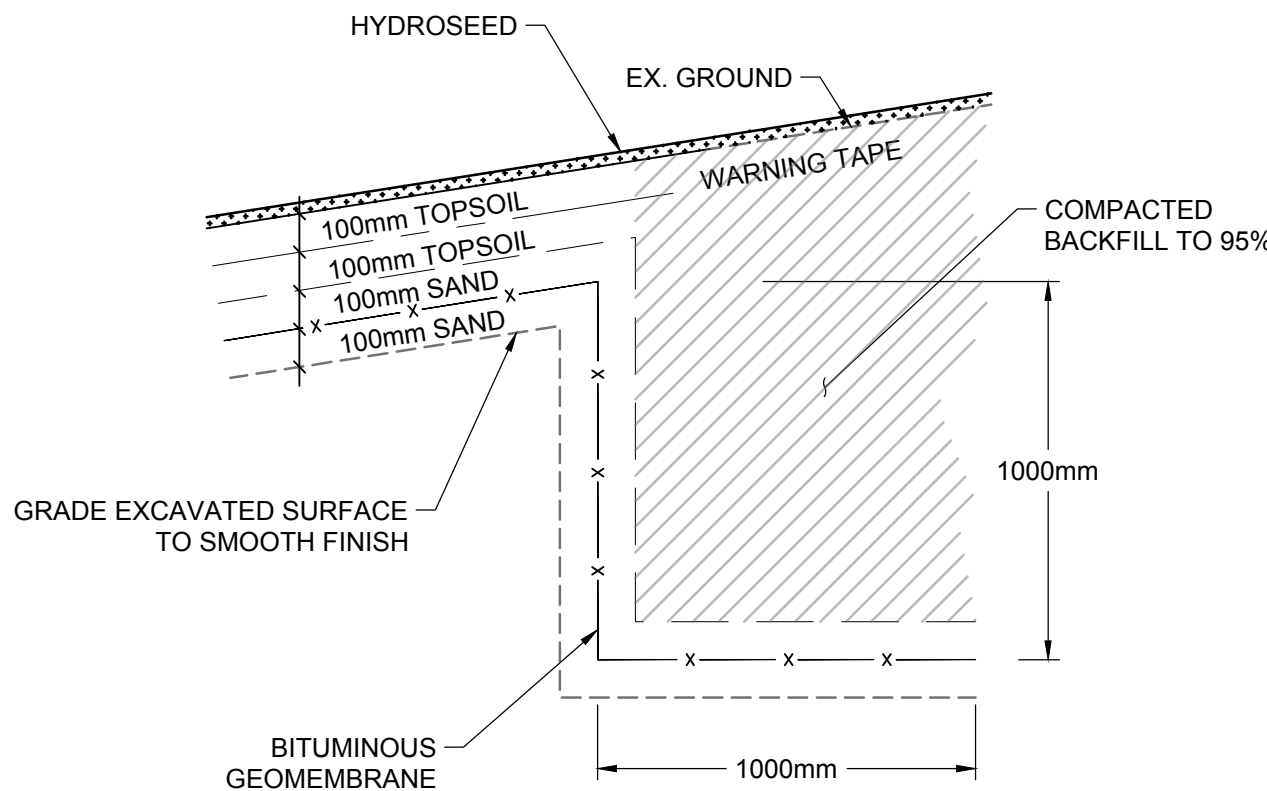
ROAD ACCESS CULVERT TYPICAL SECTION

SCALE: 1:100



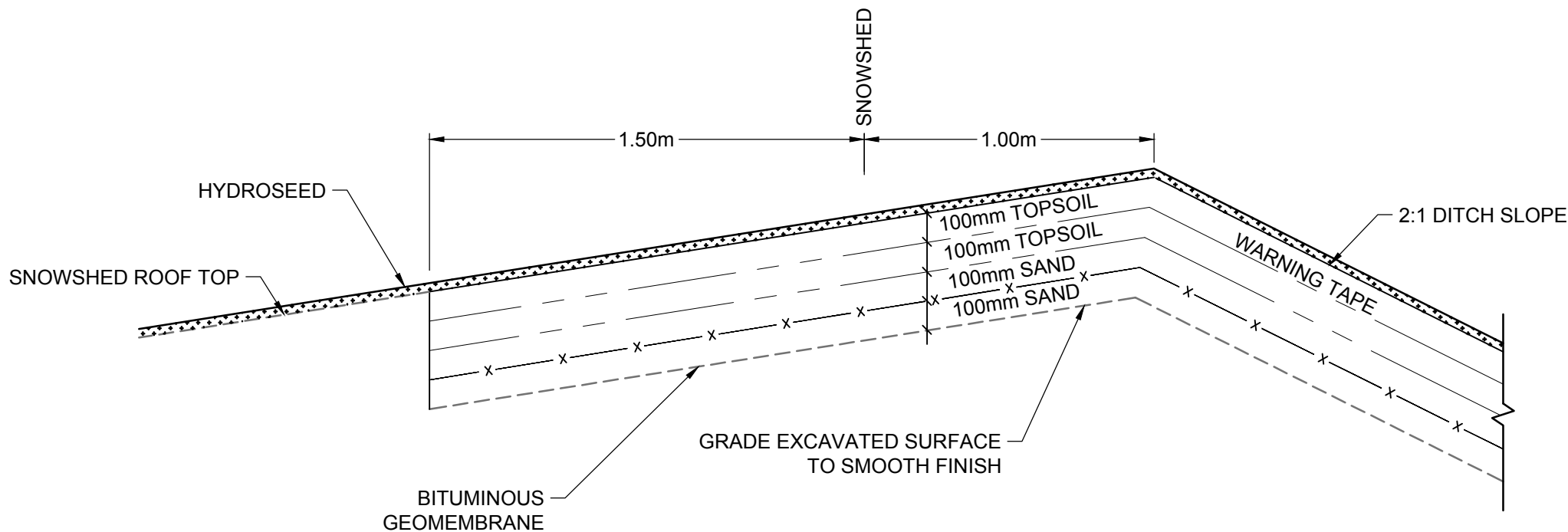
TYPICAL GEOMEMBRANE PLACEMENT

SCALE: 1:10



TYPICAL ANCHORING DITCH DETAIL (MOUNTAIN SIDE)

SCALE: 1:20



TYPICAL ANCHORING DITCH DETAIL (SNOWSHED SIDE)

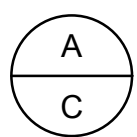
SCALE: 1:20

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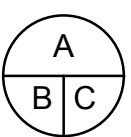
THIS DRAWING HAS BEEN PREPARED FOR THE CLIENT IDENTIFIED, TO MEET THE STANDARDS AND REQUIREMENTS OF THE APPLICABLE PUBLIC AGENCIES AT THE TIME OF PREPARATION. McELHANNEY, ITS EMPLOYEES, SUBCONSULTANTS AND AGENTS WILL NOT BE LIABLE FOR ANY LOSSES OR OTHER CONSEQUENCES RESULTING FROM THE USE OR RELIANCE UPON, OR ANY CHANGES MADE TO THIS DRAWING, BY ANY THIRD PARTY INCLUDING CONTRACTORS, SUPPLIERS, CONSULTANTS, AND STAKEHOLDERS, OR THEIR EMPLOYEES OR AGENTS, WITHOUT McELHANNEY'S PRIOR WRITTEN CONSENT.

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Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé
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A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ



A detail number  
numéro de detail  
B source drawing no.  
de dessin no.  
C detail on drawing no.  
detail sur dessin no.



Eng. Stamp  
Sceau de l'ingénieur



Eng. Stamp  
Sceau de l'ingénieur



Client



Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil



**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**LENS SNOWSHED  
DETAILS**

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Revisé par <b>MM</b>	Scale / Échelle <b>AS SHOWN</b>

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

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 <b>2511-00656-00</b>	Asset No. / No. du bien ---	Sheet No. No. de la feuille <b>404</b>
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Drawing Reference No. / No. de référence du dessin

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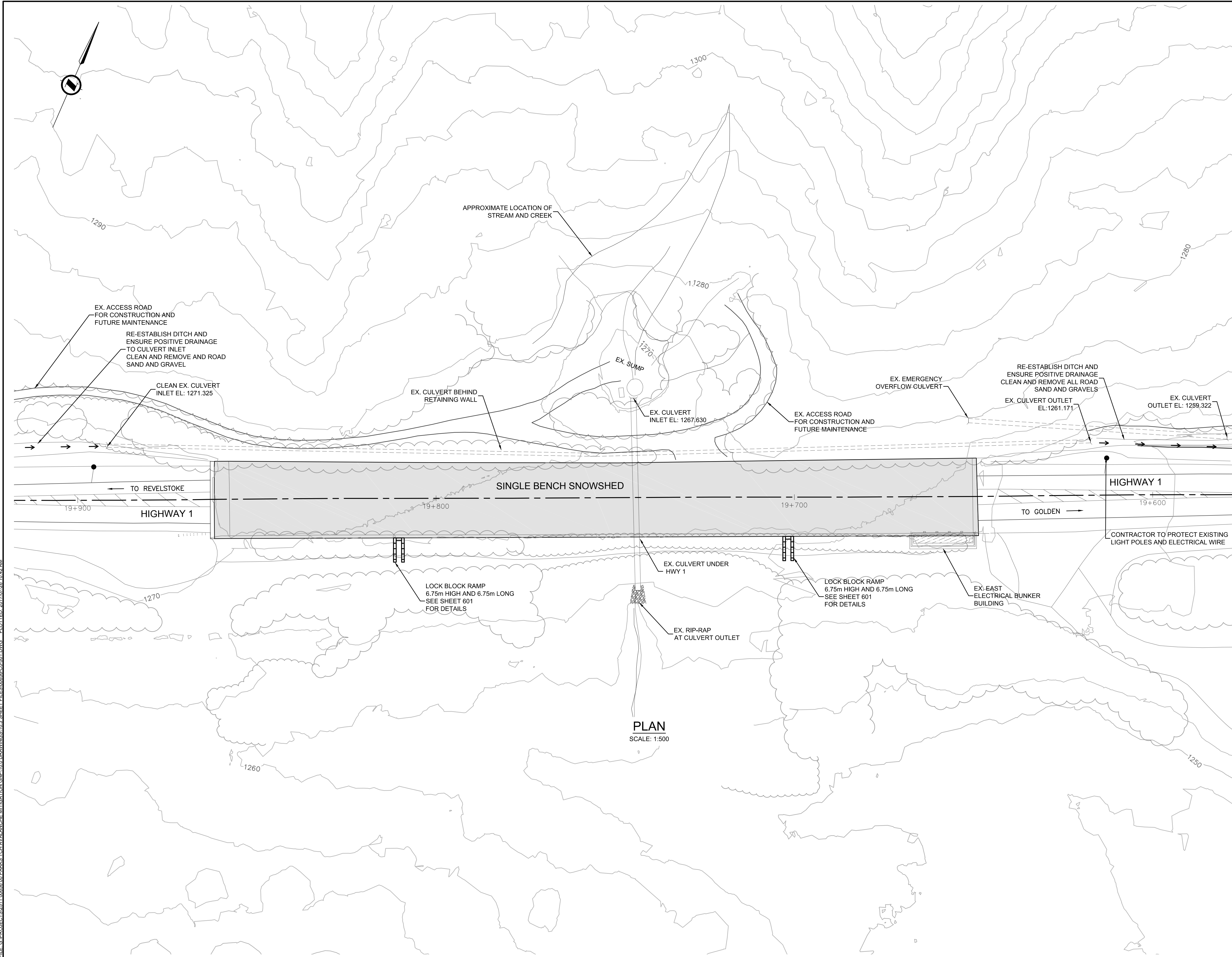








FILE: G:\PROJECTS\2511-00656-00 PARKS TCH AVANGUARD MITIGATION\2511-00 DRAWINGS\10.3 SHEET FILES\00656-00-0501.DWG PLOTTED: 2017/07/26 10:42 AM



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C	2017.06.15	ISSUED FOR TENDER	AI	HY/JM	MM
B	2017.04.21	ISSUED FOR 90%	JKR/AI	HY/JM	NSJ
A	2017.03.07	ISSUED FOR 60%	JKR/AI	HY/JM	NSJ
Rev.	Date	Description	Drawn Dessiné	Designed Conçu	Approved Approuvé

A

B

C

A

B

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B

C

Eng. Stamp  
Sceau de l'ingénieur

PROFESSIONAL  
ENGINEER  
JULY 26, 2017

Eng. Stamp  
Sceau de l'ingénieur

PROFESSIONAL  
ENGINEER  
JULY 26, 2017

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

SINGLE BENCH SNOWSHED  
DRAINAGE PLAN

Surveyed by / Arpenté par MCSL	Drawn by / Dessiné par AI	Date 2017.07.26
Designed by / Conçu par HY/JM	Reviewed by / Révisé par MM	Scale / Echelle AS SHOWN

Parks Canada Project Manager / Administrateur de Projets Parcs Canada

---

Client Acceptance / Acception du client

Approved by / Approuvé par

Parks Canada Responsible Officer / Agent Responsable Parcs Canada

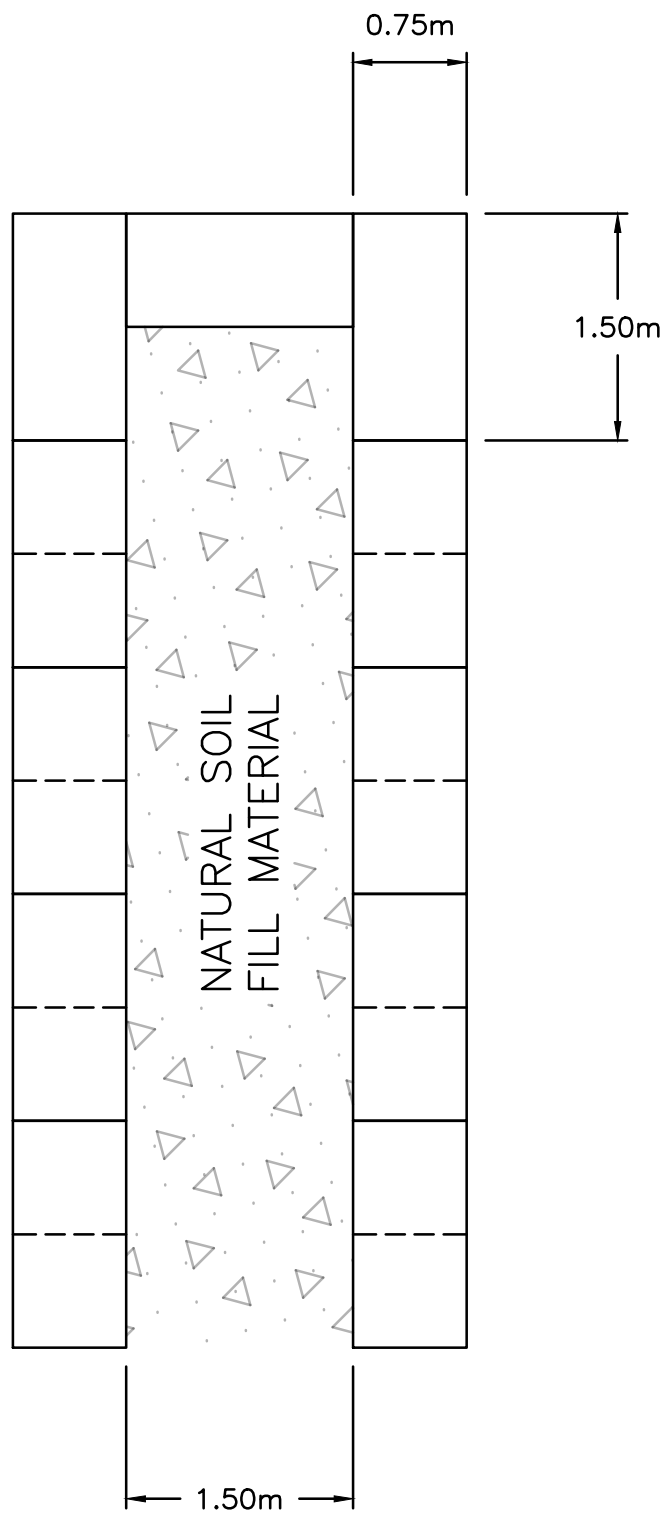
Parks Canada Project Manager / Administrateur de Projets Parcs Canada

Project No. / No. du projet 2511-00656-00	Asset No. / No. du-bien ---	Sheet No. / No. de la feuille 501
Drawing Reference No. / No. de référence du dessin ---		

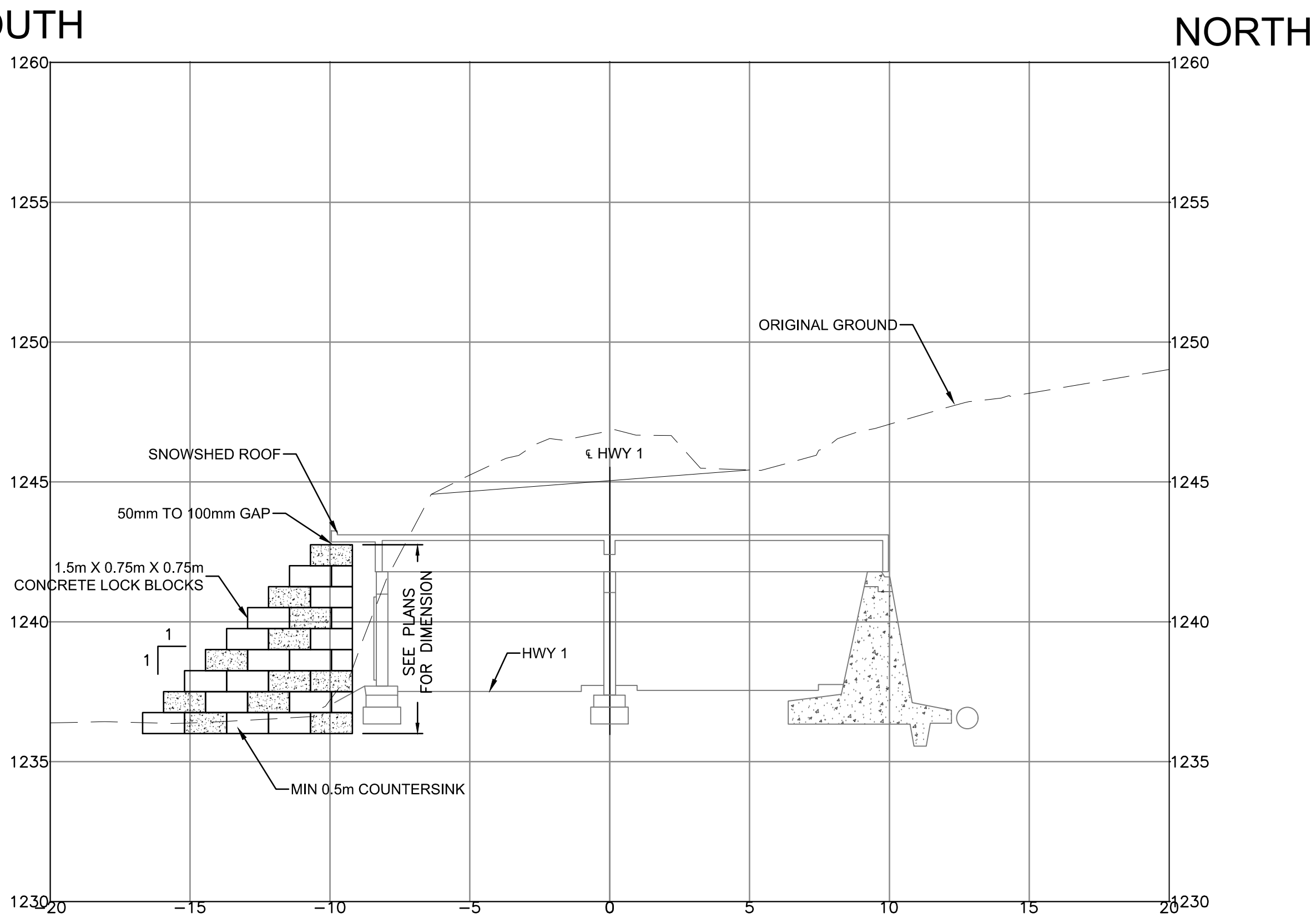


FILE: G:\PROJECTS\2511-00656-00 PARKS TOCH AVALANCHE MITIGATION GNP\10.0 DRAWINGS\10.3 SHEET FILES\00656-00-601.DWG - PLOTTED: 2017/07/26 10:44 AM

LOCK BLOCKS ARRANGEMENT - PLAN VIEW  
SCALE: 1:50



LOCK BLOCKS ARRANGEMENT - PROFILE VIEW  
SCALE: 1:150



NOTE:

- LOCK BLOCK RAMP TO BE INSTALLED AS DIRECTED BY THE DEPARTMENT REPRESENTATIVE UNDER THE PRIME COST SUM.
- BASE PREPARATION COMPACTED TO 100%

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A

B

C

detail number  
numéro de detail  
source drawing no.  
de dessin no.  
detail on drawing no.  
detail sur dessin no.

A

B

C

Eng. Stamp  
Sceau de l'ingénieur

Eng. Stamp  
Sceau de l'ingénieur

Client

Parks Canada Agency  
Western and Northern  
Region

L'Agence Parcs  
Canada  
Ouest et Nord du Canada

Consultant's Name  
Nom de l'expert-conseil

**McElhanney**  
McElhanney Consulting Services Ltd.

Project Title  
Titre du projet

**GLACIER NATIONAL PARK  
SNOWSHED DRAINAGE  
IMPROVEMENTS**  
ROGERS PASS  
GLACIER NATIONAL PARK, BC

Drawing Title  
Titre du dessin

**SNOWSHEDS**  
**TYPICAL DETAILS**

Surveyed by / Arpenté par <b>MCSL</b>	Drawn by / Dessiné par <b>AI</b>	Date <b>2017.07.26</b>
Designed by / Conçu par <b>HY/JM</b>	Reviewed by / Revisé par <b>MM</b>	Scale / Échelle <b>AS SHOWN</b>

Parks Canada Project Manager / Administrateur de Projets Parcs Canada ---		
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 <b>2511-00656-00</b>	Asset No. / No. du bien ---	Sheet No. No. de la feuille <b>601</b>
Drawing Reference No. / No. de référence du dessin ---		

