



Flood Mitigation Measures
Cougar Creek

OPTION ANALYSIS

PROJECT:
Flood Hazard Mitigation Measures - Cougar Creek

Town: **Town of Canmore** Province: **Alberta**

CONTENT: Overview Map
Option C



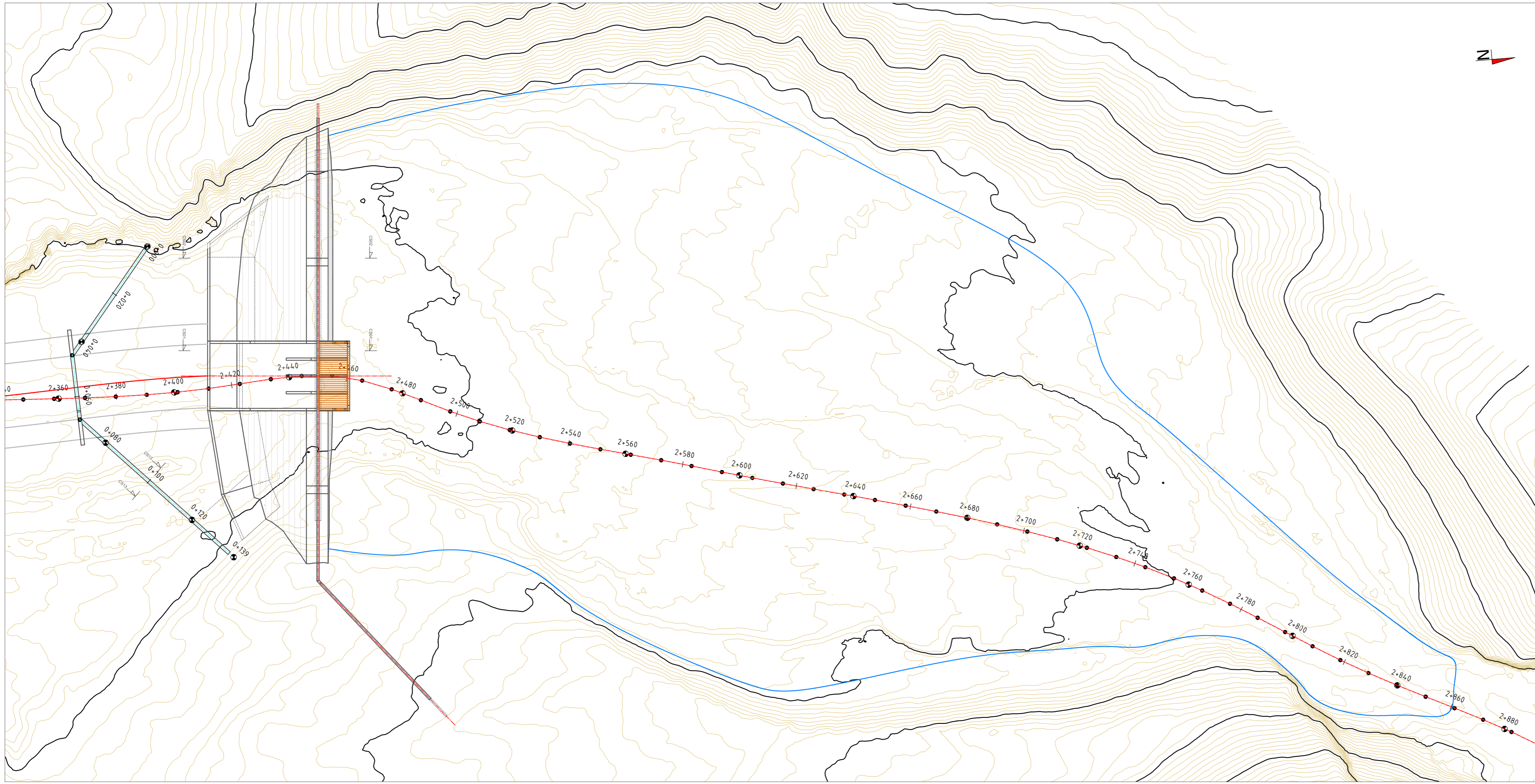
DRAWING/MAP NR.:
16494-OPT.C-001

SCALE:
1:2,500

WORKED OUT BY	SIGN.	ISSUE/REVISION
DRAWING: Powell		2014/07/29
DESIGN: Scheikl		2014/07
CHECKED: Henle		2014/07/31

PROJECT MANAGER:
DATE/SIGNATURE: *Esarte Andy*

ATTACH. NR.:
DW-OPT.C-001



Flood Mitigation Measures Cougar Creek

OPTION ANALYSIS

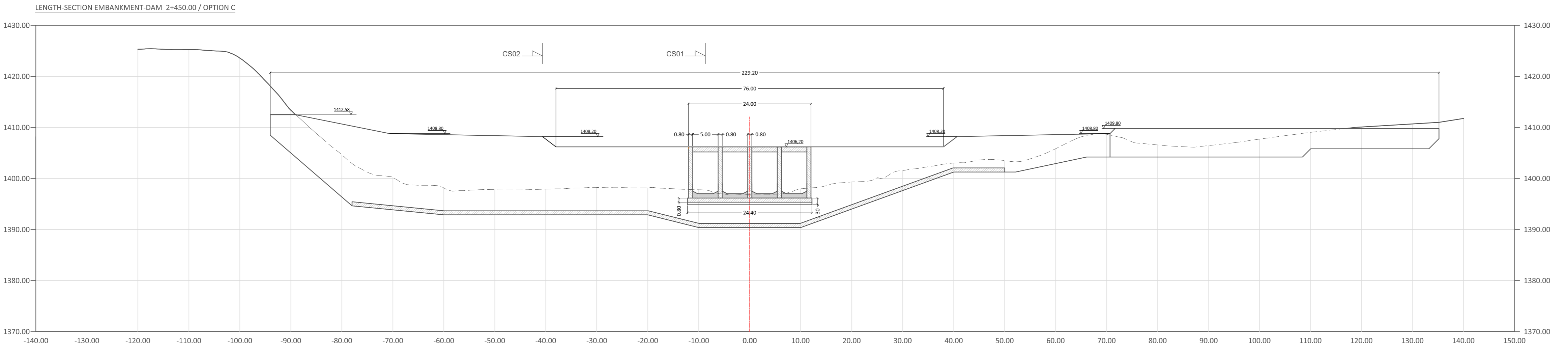
PROJECT:				Flood Hazard Mitigation Measures - Cougar Creek		
Town:		Town of Canmore	Province:		Alberta	
CONTENT: Site Map			ENGINEERING:			
Gravel Retention Structure 2+450			 SALZBURG - INNSBRUCK - WIEN			
DRAWING/MAP NR.:		16494-OPT.C-010				SCALE:
WORKED OUT BY	SIGN.	ISSUE/REVISION		PROJECT MANAGER:		ATTACH. NR.:
DRAWING:	Powell	2014/07/29		DATE/SIGNATURE		DW-OPT.C-010
DESIGN:	Scheikl	2014/07		Esarte Andy		
CHECKED:	Henle	2014/07/31				



Flood Mitigation Measures
Cougar Creek

OPTION ANALYSIS

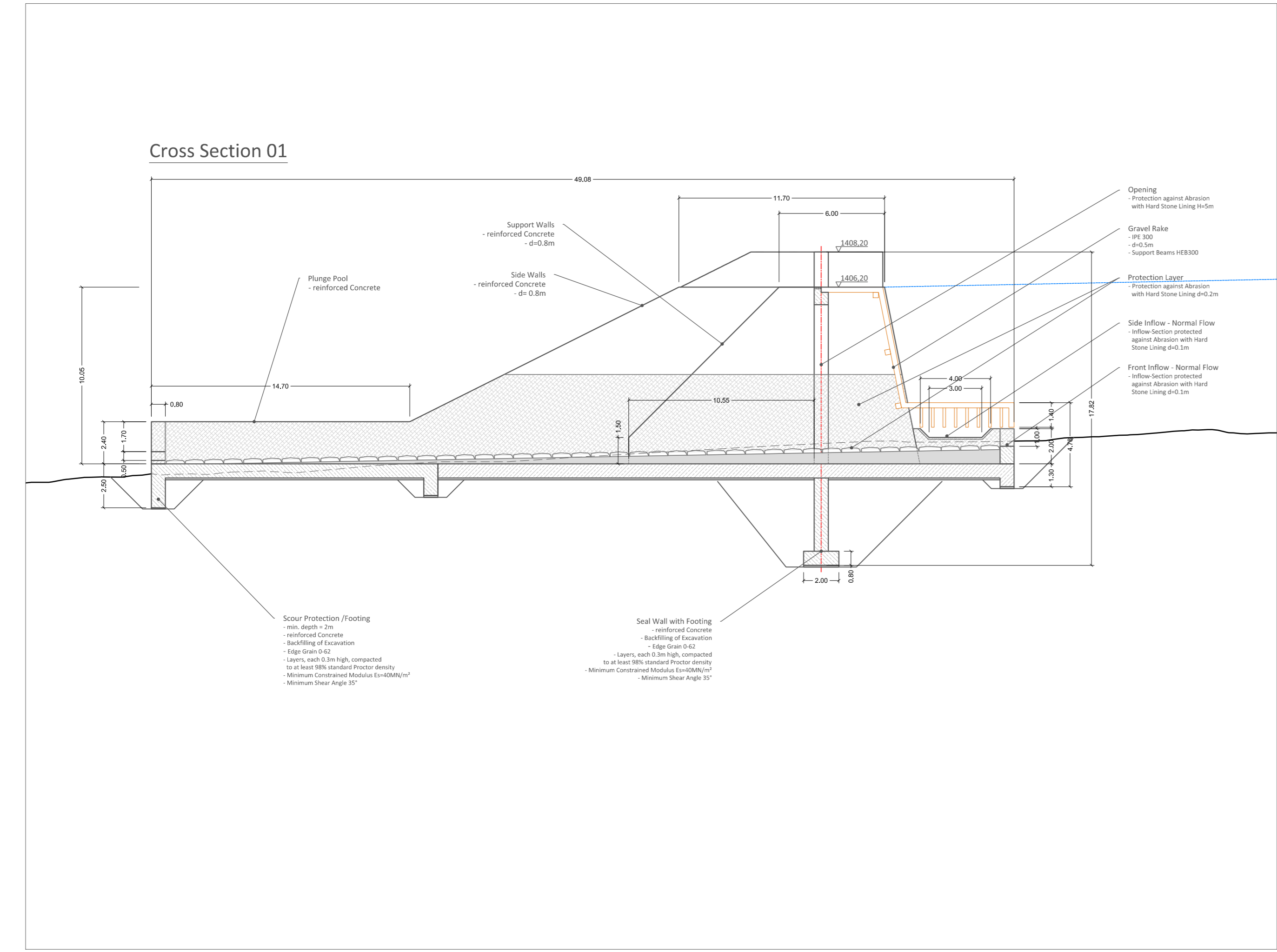
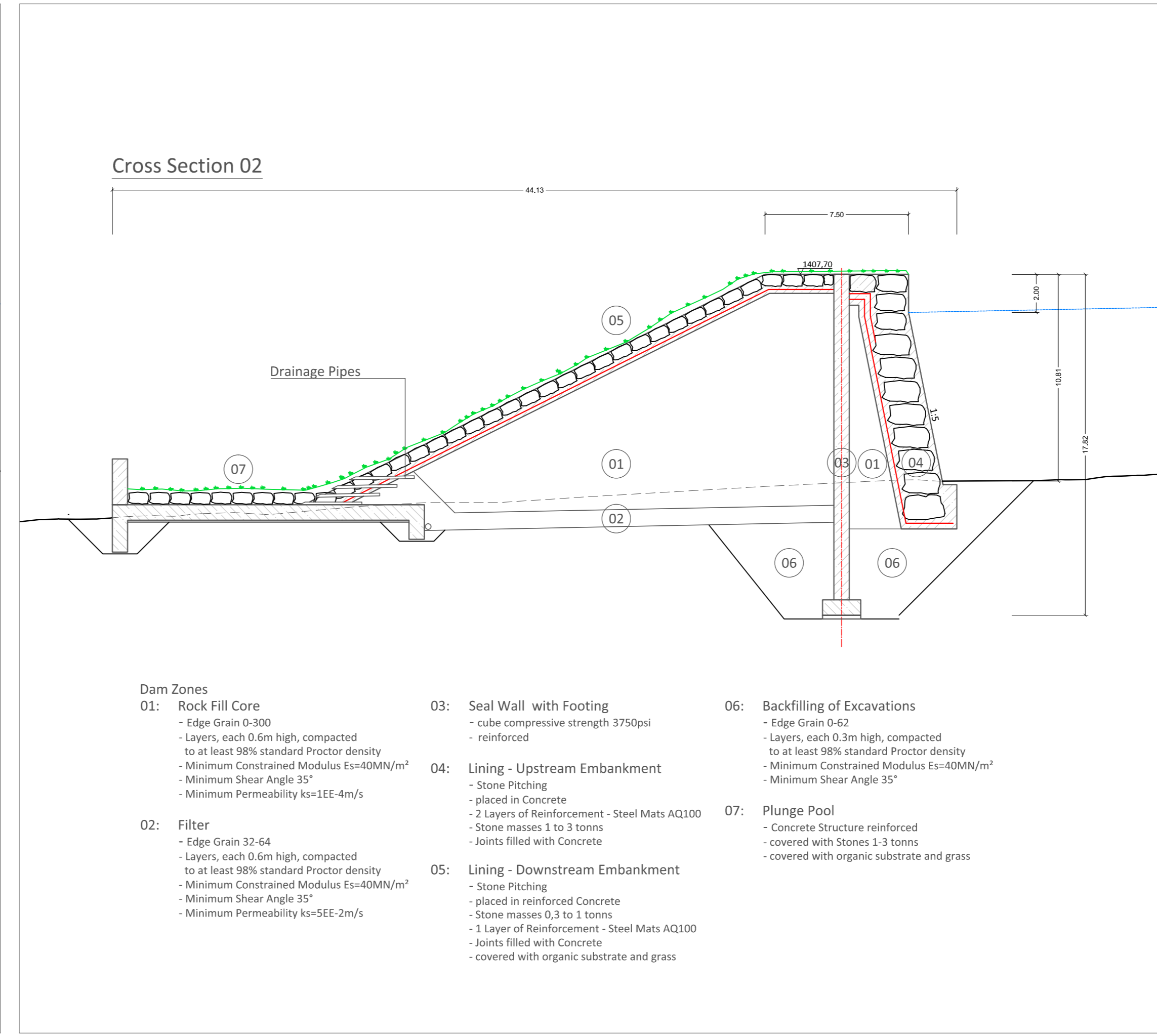
PROJECT:				
Flood Hazard Mitigation Measures - Cougar Creek				
Town: Town of Canmore		Province: Alberta		
CONTENT: Length Section		ENGINEERING:		
Gravel Retention Structure 2+450		 SALZBURG - INNSBRUCK - WIEN		
DRAWING/MAP NR.:	SCALE:			
16494-OPT.C-011	1:500	PROJECT MANAGER: _____ ATTACH. NR.: DW-OPT.C-011 DATE/SIGNATURE: _____ Esarte Andy		
WORKED OUT BY	SIGN.			ISSUE/REVISION
DRAWING: Powell				2014/07/29
DESIGN: Scheikl				2014/07
CHECKED: Henle		2014/07/31		



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Cougar Creek

OPTION ANALYSIS

PROJECT:			Flood Hazard Mitigation Measures - Cougar Creek	
Town:	Town of Canmore	Province:	Alberta	
CONTENT:	Cross Section Gravel Retention Structure 2+450	ENGINEERING:	 SALZBURG - INNSBRUCK - WIEN	
DRAWING/MAP NR.:	16494-OPT.C-012	SCALE:		
WORKED OUT BY		SIGN.	ISSUE/REVISION	PROJECT MANAGER: DATE/SIGNATURE Esarte Andy
DRAWING:	Powell		2014/07/29	
DESIGN:	Scheikl		2014/07	
CHECKED:	Henle		2014/07/31	
			ATTACH. NR.:	DW-OPT.C-012

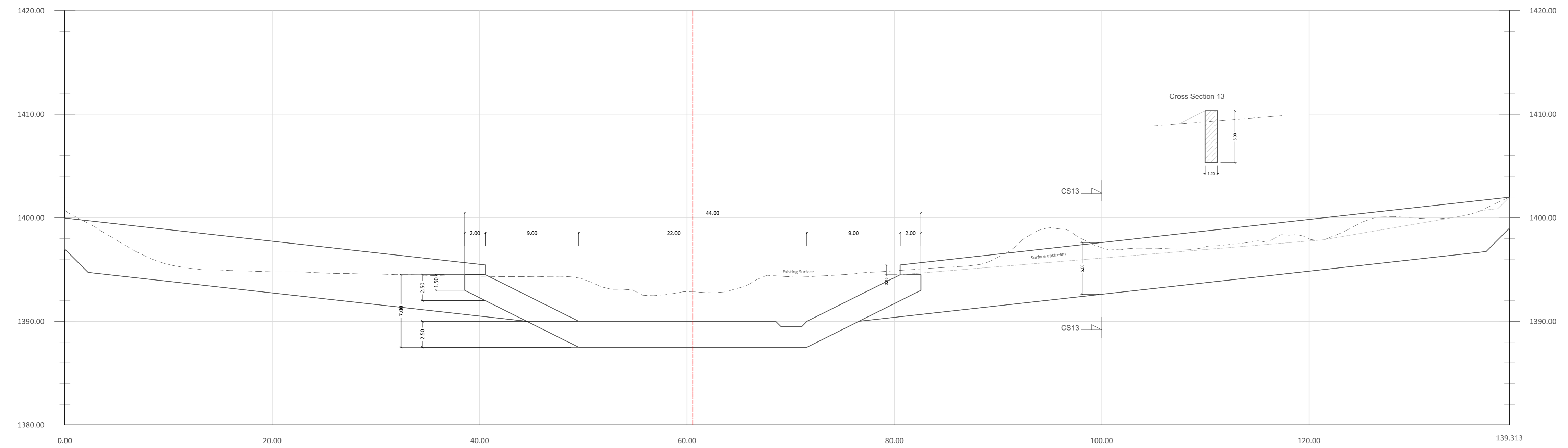


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Cougar Creek

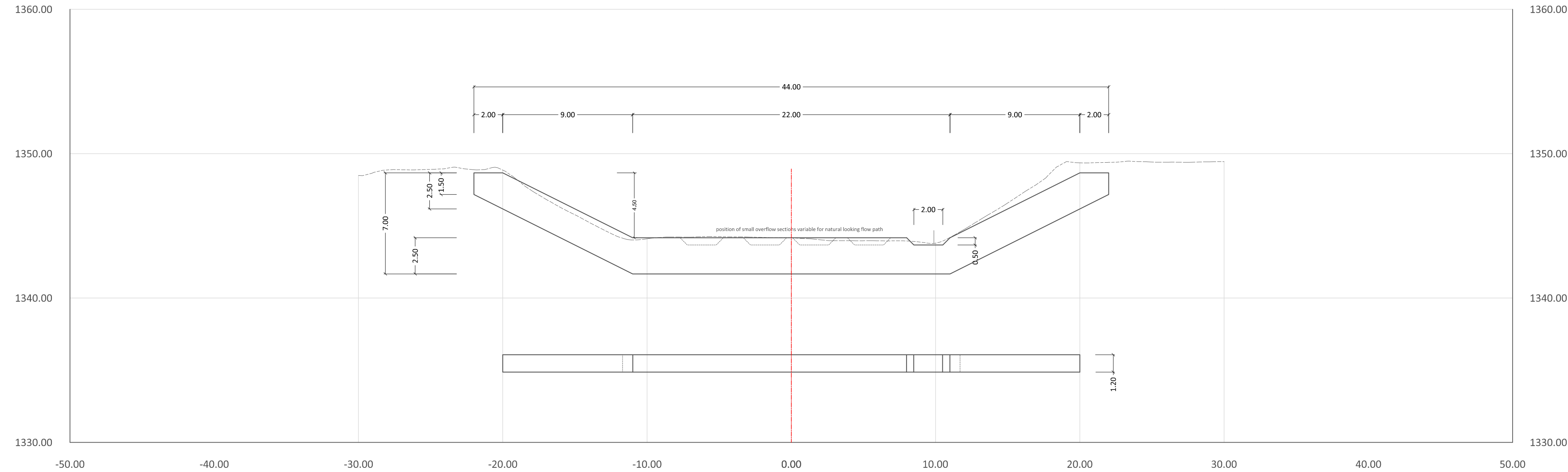
OPTION ANALYSIS

PROJECT:			
Flood Hazard Mitigation Measures - Cougar Creek			
Town: Town of Canmore		Province: Alberta	
CONTENT: Length Section, Cross Section Diverting Structure 2+366		ENGINEERING:	
DRAWING/MAP NR.:		SCALE:	
16494-OPT.C-013		1:250	
WORKED OUT BY	SIGN.	ISSUE/REVISION	
DRAWING: Powell		2014/07/29	
DESIGN: Scheikl		2014/07	
CHECKED: Henle		2014/07/31	
PROJECT MANAGER:		ATTACH. NR.:	
DATE/SIGNATURE _____ Esarte Andy		DW-OPT.C-013	

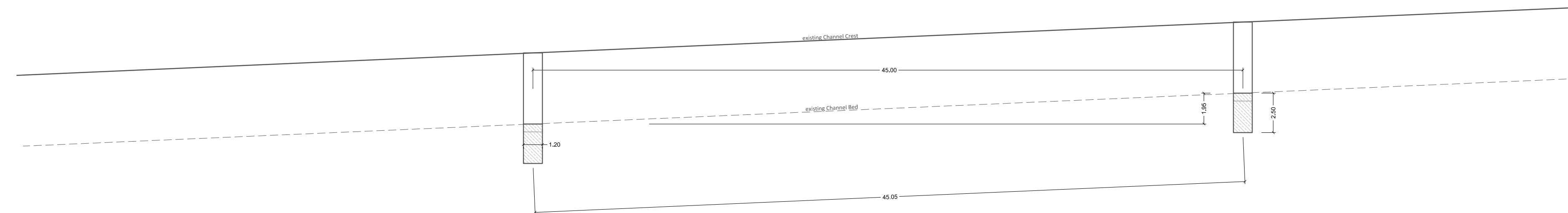
HM 23+65.85
Length-Section Diverting Structure



QP40 - HM 13+00.00
 X-Section Cannel
 Regular Drawing Ground Sills



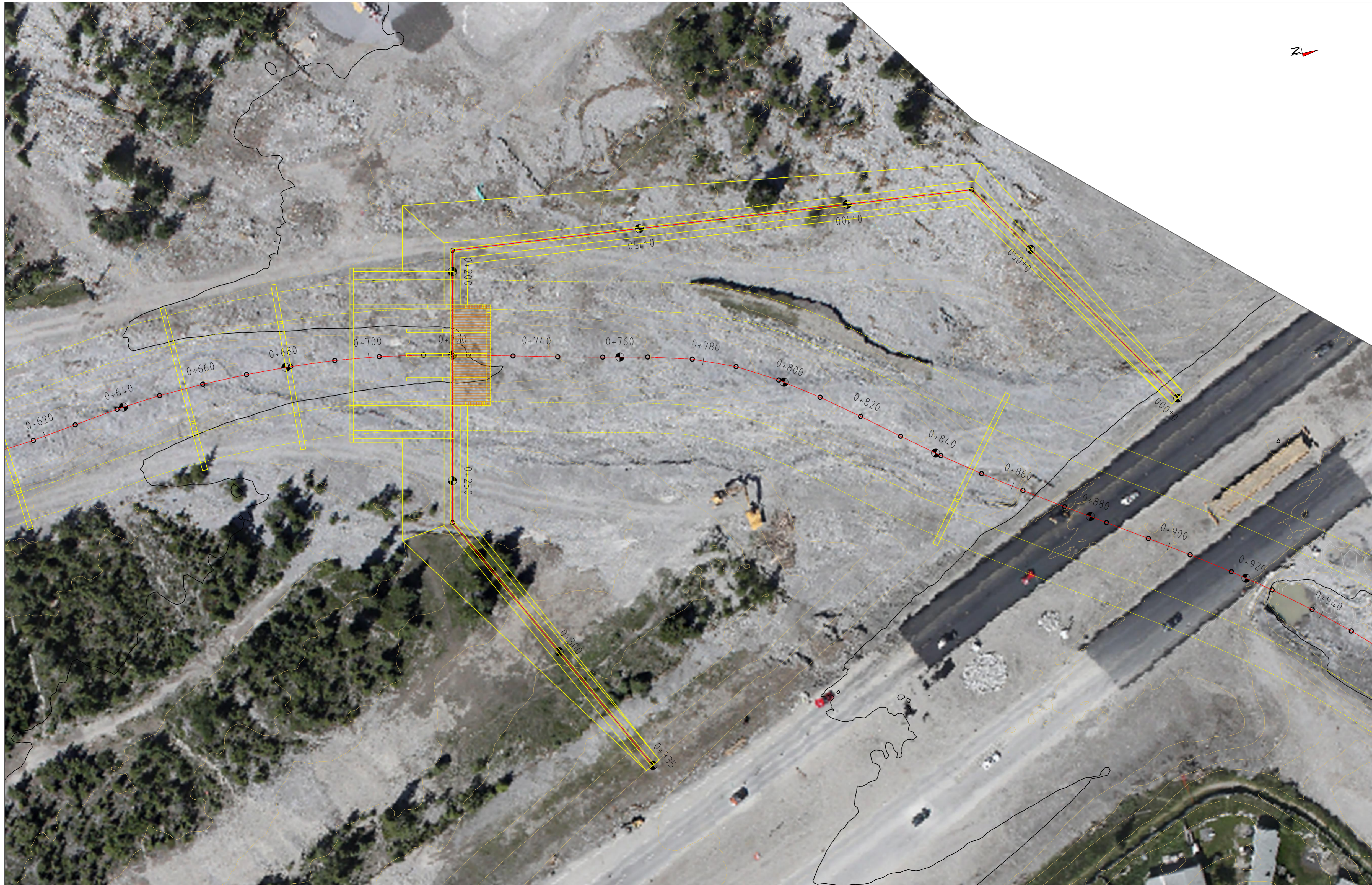
Length Section Channel
 Position of Ground Sills



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PROJECT: Flood Hazard Mitigation Measures - Cougar Creek			
Town: Town of Canmore		Province: Alberta	
CONTENT: Regular Drawing, Cross Section Ground Sills Option C		ENGINEERING: alpinfra SALZBURG - INNSBRUCK - WIEN	
DRAWING/MAP NR.: 16494-OPT.C-020		SCALE: 1:200	
WORKED OUT BY:	SIGN.	ISSUE/REVISION	
DESIGN: Powell		2014/07/29	PROJECT MANAGER:
CHECKED: Henle		2014/07/31	DATE/SIGNATURE Esarte Andy
			ATTACH. NR.: DW-OPT.C-020



Flood Mitigation Measures
Cougar Creek

OPTION ANALYSIS

PROJECT:					
Flood Hazard Mitigation Measures - Cougar Creek					
Town: Town of Canmore			Province: Alberta		
CONTENT: Site Map Gravel Retention Structure 0+720			ENGINEERING:		
DRAWING/MAP NR.: 16494-OPT.C-030			SCALE: 1:500		
WORKED OUT BY		SIGN.	ISSUE/REVISION		PROJECT MANAGER:
DRAWING:	Powell		2014/07/29		ATTACH. NR.:
DESIGN:	Scheikl		2014/07		
CHECKED:	Henle		2014/07/31	DATE/SIGNATURE	DW-OPT.C-030



Esarte Andy



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Cougar Creek

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PROJECT:

Flood Hazard Mitigation Measures - Cougar Creek

Town: **Town of Canmore**

Province: **Alberta**

ENGINEERING:



CONTENT: Length Section
Gravel Retention Structure 0+720

SALZBURG - INNSBRUCK - WIEN

DRAWING/MAP NR.:
16494-OPT.C-031

SCALE:
1:500

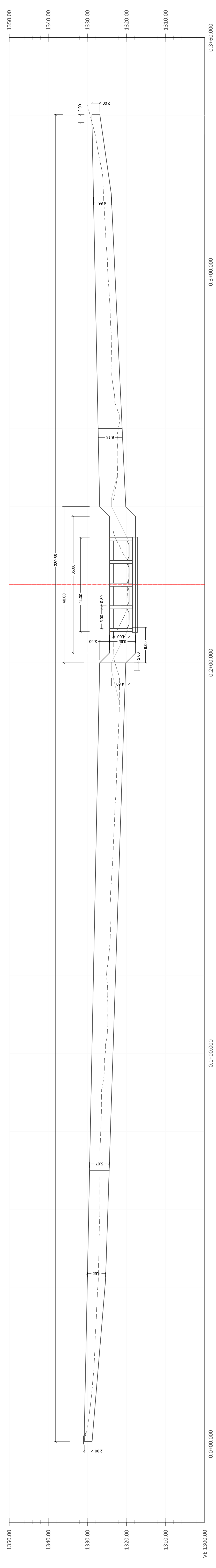
WORKED OUT BY	SIGN.	ISSUE/REVISION
POWELL		2014/07/29
SCHIEKEL		2014/07
HENLE		2014/07/31

PROJECT MANAGER:

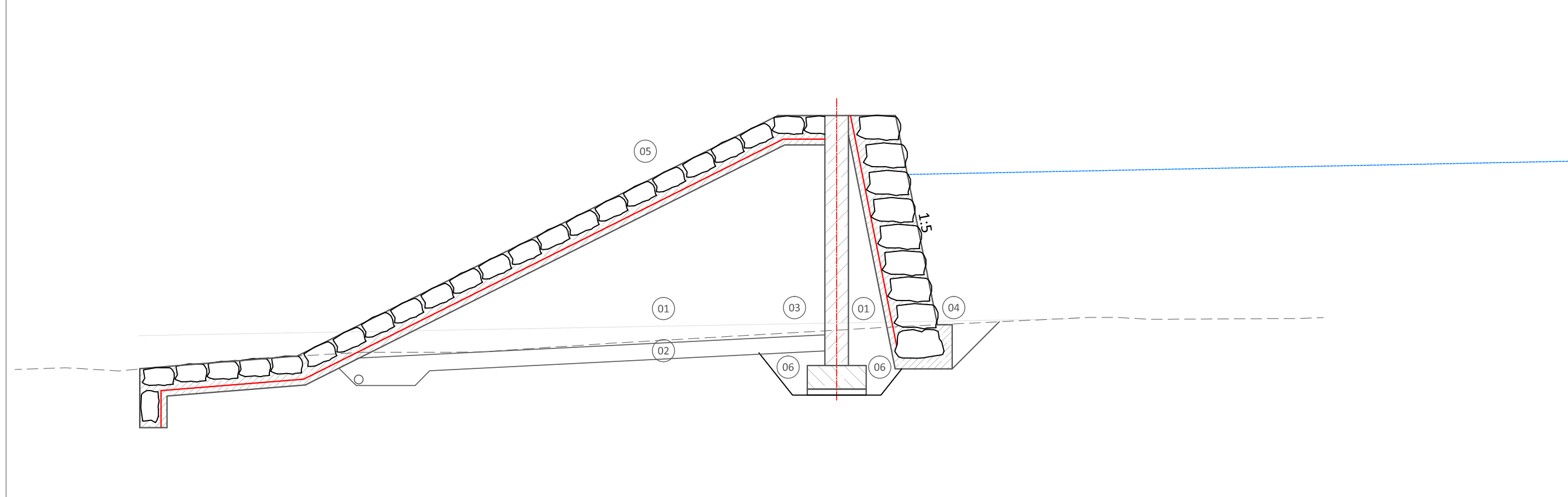
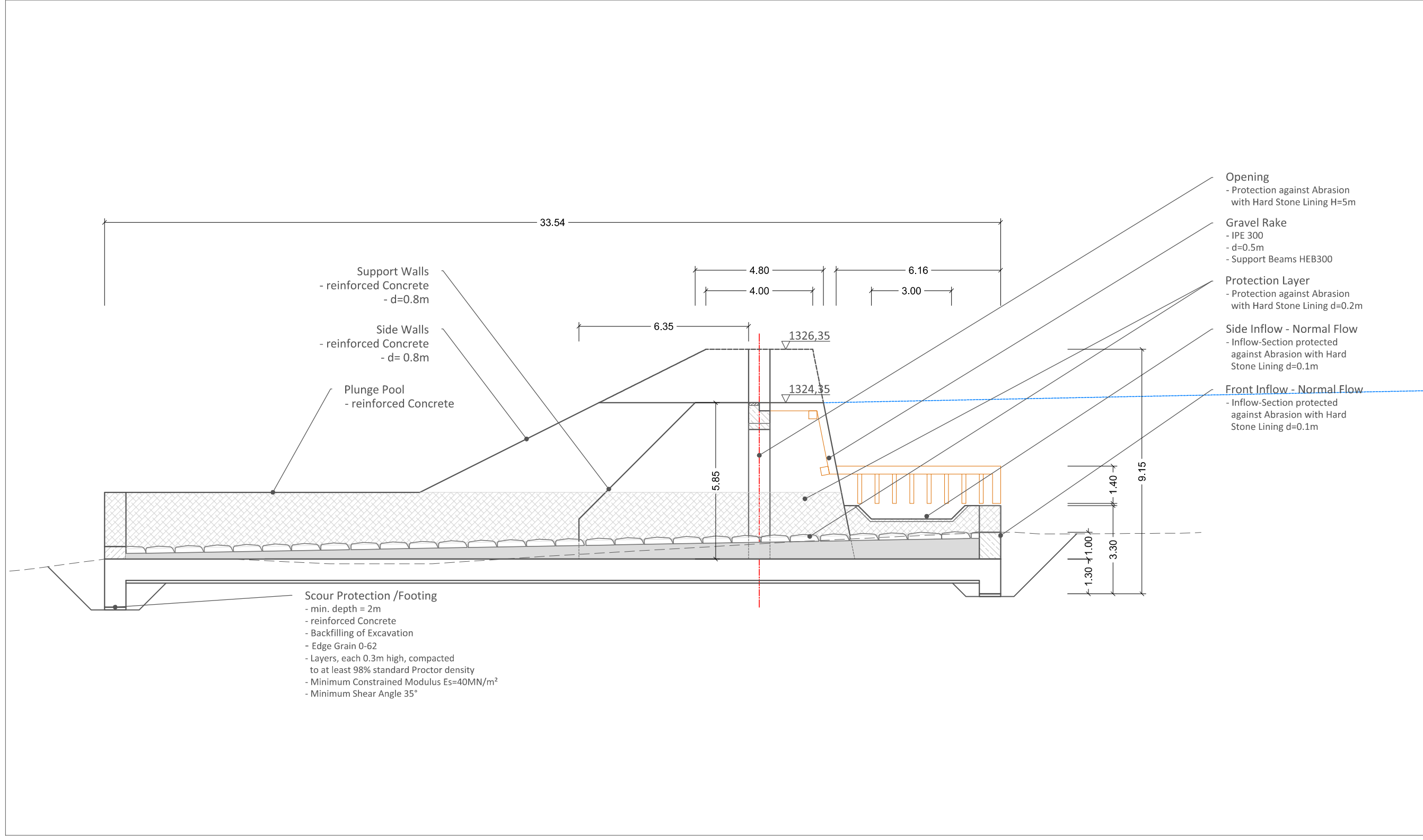
DATE/SIGNATURE

ATTACH. NR.:
DW-OPT.C-031

LENGTH-SECTION EMBANKMENT-DAM Stat. 0+720 / OPTION C



VE 1300.00 0.0+00.000 0.1+00.000 0.2+00.000 0.3+60.000



Dam Zones

- 01: Rock Fill Core**
 - Edge Grain 0-300
 - Layers, each 0.6m high, compacted to at least 98% standard Proctor density
 - Minimum Constrained Modulus $E_s=40MN/m^2$
 - Minimum Shear Angle 35°
 - Minimum Permeability $k_s=1EE-4m/s$
- 02: Filter**
 - Edge Grain 32-64
 - Layers, each 0.6m high, compacted to at least 98% standard Proctor density
 - Minimum Constrained Modulus $E_s=40MN/m^2$
 - Minimum Shear Angle 35°
 - Minimum Permeability $k_s=5EE-2m/s$
- 03: Seal Wall with Footing**
 - cube compressive strength 3750psi
 - reinforced
- 04: Lining - Upstream Embankment**
 - Stone Pitching
 - placed in Concrete
 - 2 Layers of Reinforcement - Steel Mats AQ100
 - Stone masses 1 to 3 tonnes
 - Joints filled with Concrete
- 05: Lining - Downstream Embankment**
 - Stone Pitching
 - placed in reinforced Concrete
 - Stone masses 0,3 to 1 tonnes
 - 1 Layer of Reinforcement - Steel Mats AQ100
 - Joints filled with Concrete
 - covered with organic substrate and grass
- 06: Backfilling of Excavations**
 - Edge Grain 0-62
 - Layers, each 0.3m high, compacted to at least 98% standard Proctor density
 - Minimum Constrained Modulus $E_s=40MN/m^2$
 - Minimum Shear Angle 35°



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Town: Town of Canmore		Province: Alberta		
CONTENT: Cross Section Gravel Retention Structure 0+720		ENGINEERING:		
16494-OPT.C-032		1:150		
DRAWING/MAP NR.:	SCALE:	 SALZBURG - INNSBRUCK - WIEN		
WORKED OUT BY	SIGN.			ISSUE/REVISION
DRAWING: Powell				2014/07/29
DESIGN: Scheickl				2014/07
CHECKED: Henle		2014/07/31	PROJECT MANAGER:	
			ATTACH. NR.:	
			DW-OPT.C-032	