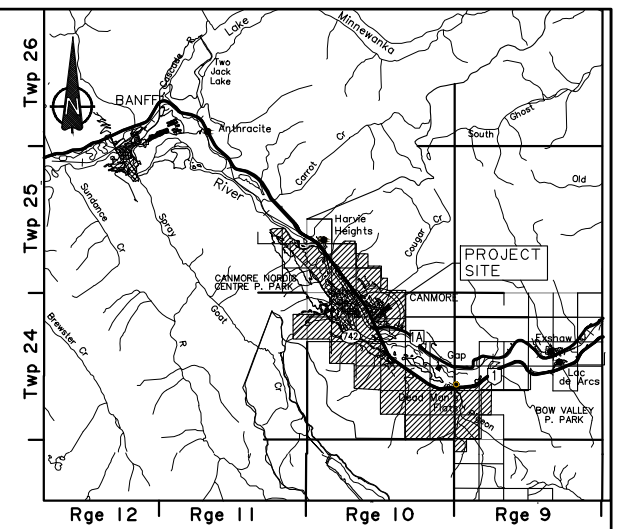


**SITE PLAN**  
1:3000



**SITE MAP** 1:250 000

- PRIMARY HIGHWAY - 1 TO 216
- PRIMARY HIGHWAY - 500 TO 986
- LOCAL ROAD
- RAILWAY

**SURVEY INFORMATION**

- SITE SURVEY BY McELHANNEY CONSULTING GEOMATICS SERVICES LTD., SURVEYED AUGUST 2013
- PRE-FLOOD LIDAR FROM AECOM 2008
- POST-FLOOD LIDAR FROM BGC 2013

**BENCH MARKS**

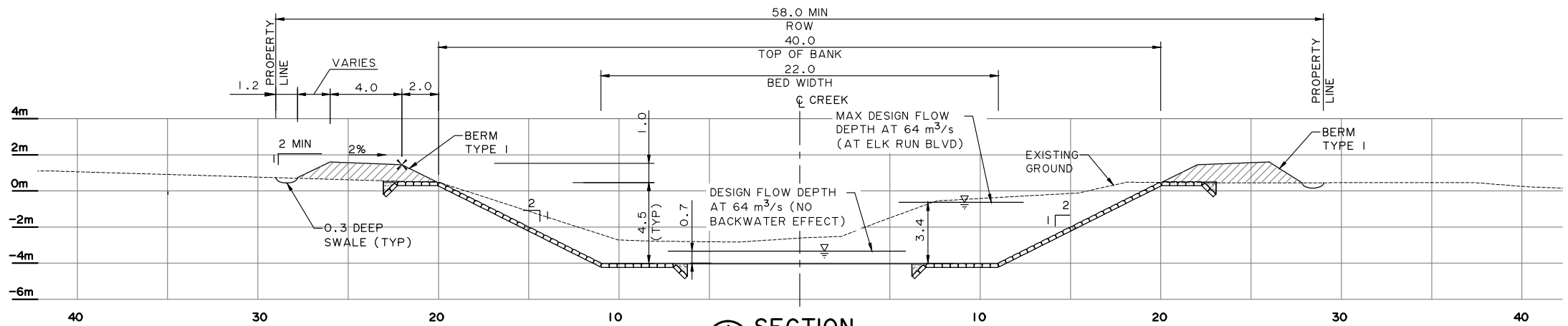
- ASCN 246363, N 5660853.280, E -93709.439, EL 1312.747
- THE TOPOGRAPHIC SURVEY IS REFERENCED TO GROUND. THE COMBINED SCALE FACTOR (CSF) IS INDICATED BELOW. DIMENSIONS SHOWN ON THESE DRAWINGS ARE TO GROUND
- DATUM CODE NAD83
- MAPPING PLAN 3TM
- REFERENCE MERIDIAN 114°
- CSF 0.999804 APPLIED ABOUT THE ORIGIN (0, 0)

**GENERAL NOTES**

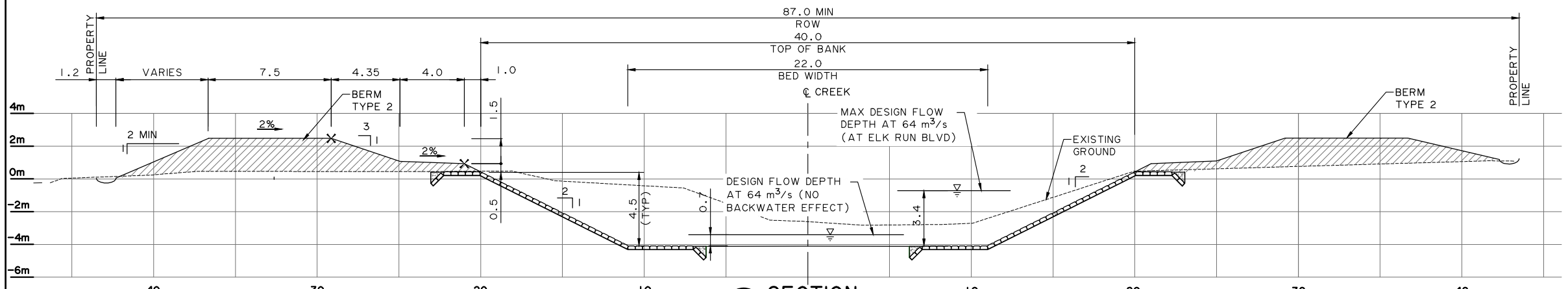
- ELEVATIONS ARE GIVEN TO TOP OF FINISHED GRADE AT THE CONTROL LINE
- ALL DIMENSIONS ARE GIVEN IN METRES.

**DESIGN**

- THE CHANNEL PROTECTION DESIGN ON THIS SET OF DRAWINGS IS THE STAGE I EMERGENCY REPAIR FOR THE 2014 SPRING RUNOFF. THE DESIGN WORKS IN CONJUNCTION WITH A DEBRIS CONTROL STRUCTURE INSTALLED UPSTREAM (BY OTHERS). THE ULTIMATE STAGE CHANNEL PROTECTION (NOT SHOWN) WILL FOLLOW IN THE PRECEDING YEARS. THE HYDROTECHNICAL ANALYSIS AND DESIGN OF THE CHANNEL PROTECTION SYSTEM WAS PERFORMED BY BGC ENGINEERING AND THE GEOMETRIC LAYOUT WAS PRODUCED BY ISL ENGINEERING AND LAND SERVICES.
- DESIGN FLOW 64.0 m<sup>3</sup>/s
- DESIGN VELOCITY 4.1 m/s



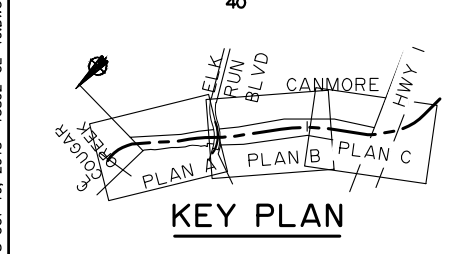
**SECTION A**  
1:150



**SECTION B**  
1:150

SHEET	DESCRIPTION	DRAWING
12	CROSS-SECTIONS - SHEET 5	1344-S12
11	CROSS-SECTIONS - SHEET 4	1344-S11
10	CROSS-SECTIONS - SHEET 3	1344-S10
9	CROSS-SECTIONS - SHEET 2	1344-S09
8	CROSS-SECTIONS - SHEET 1	1344-S08
7	TYPICAL DETAILS - SHEET 2	1344-S07
6	TYPICAL DETAILS - SHEET 1	1344-S06
5	PLAN DETAIL C	1344-S05
4	PLAN DETAIL B	1344-S04
3	PLAN DETAIL A	1344-S03
2	MOSAIC PROFILE	1344-S02
1	GENERAL LAYOUT	1344-S01

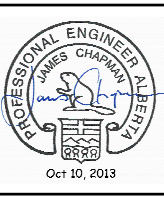
**DRAWING INDEX**



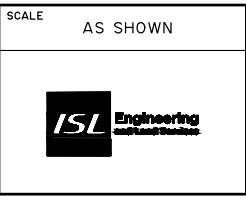
**KEY PLAN**



No.	DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	JRC	2013-10-09



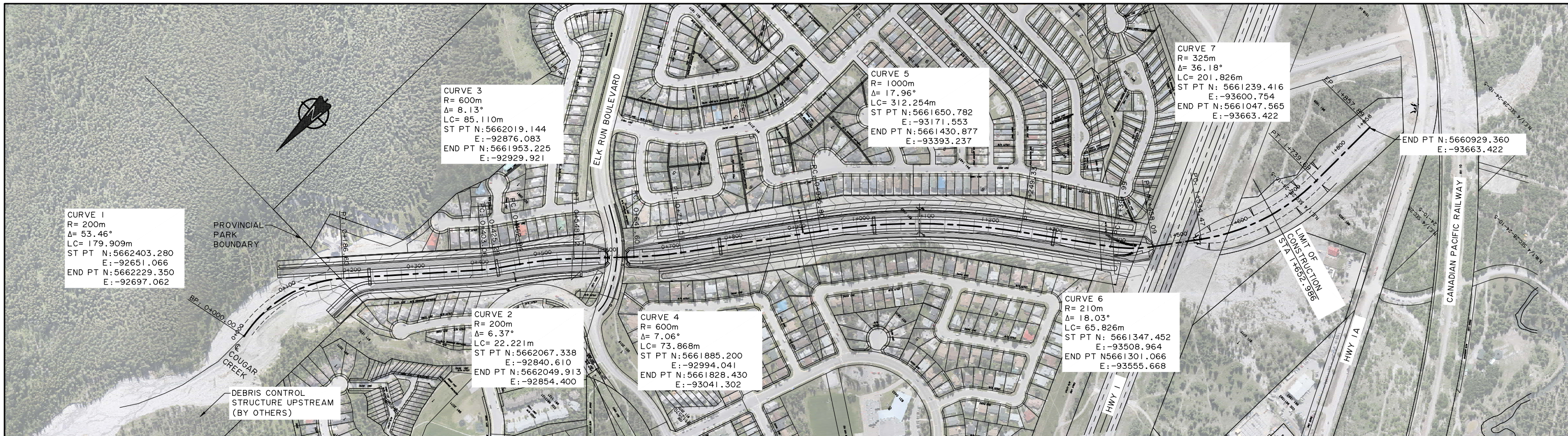
**PERMIT TO PRACTICE**  
ISL Engineering and Land Services Ltd.  
Signature: *Seamoral*  
Date: 2013-10-10  
PERMIT NUMBER: P 4741  
The Association of Professional Engineers, Geologists and Geophysicists of Alberta



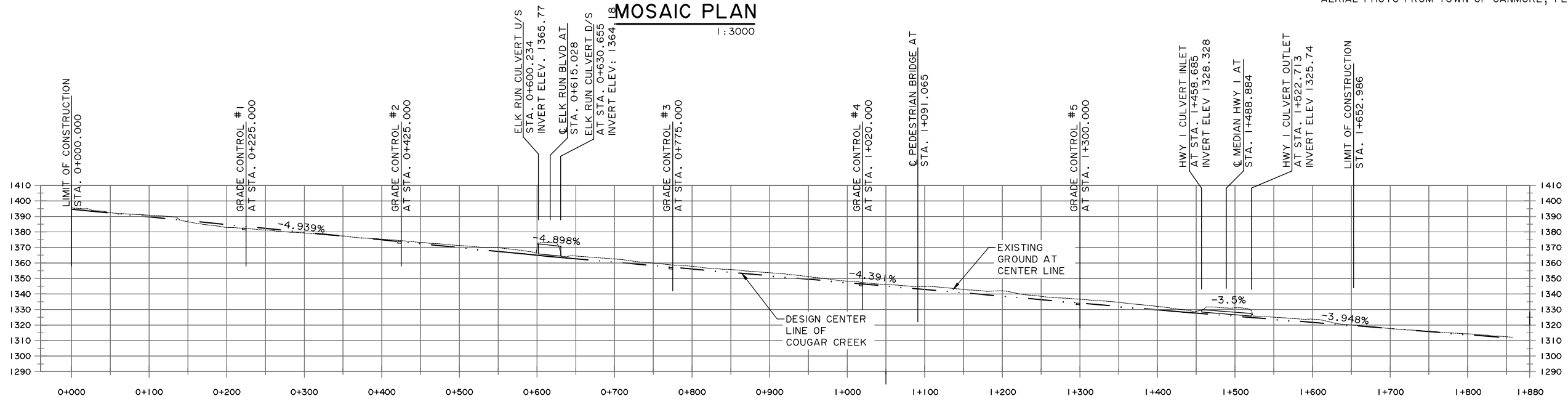
SCALE: AS SHOWN  
**TOWN OF CANMORE**  
**COUGAR CREEK AT TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**  
DRAWN: WTS    DESIGN CHECKED:    DATE:     
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:   

**GENERAL LAYOUT**  
DRAWING No. 1344 S 01  
SHEET No. 1  
REVISION No.

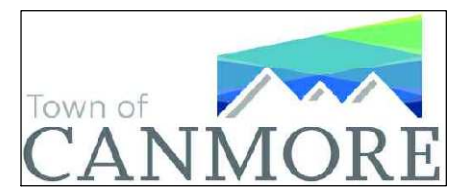
WTS OCT 10, 2013 13892-GL-40.DWG



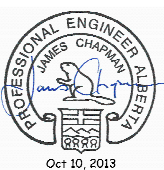
AERIAL PHOTO FROM TOWN OF CANMORE, FLOWN JUNE 28, 2013



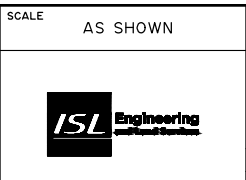
**CHANNEL BED PROFILE**  
DEVELOPED VIEW H 1:3000 V 1:1500



No.	DESCRIPTION	BY	DATE



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ISL Engineering  
and Land Services Ltd.  
Signature: *Seamoral*  
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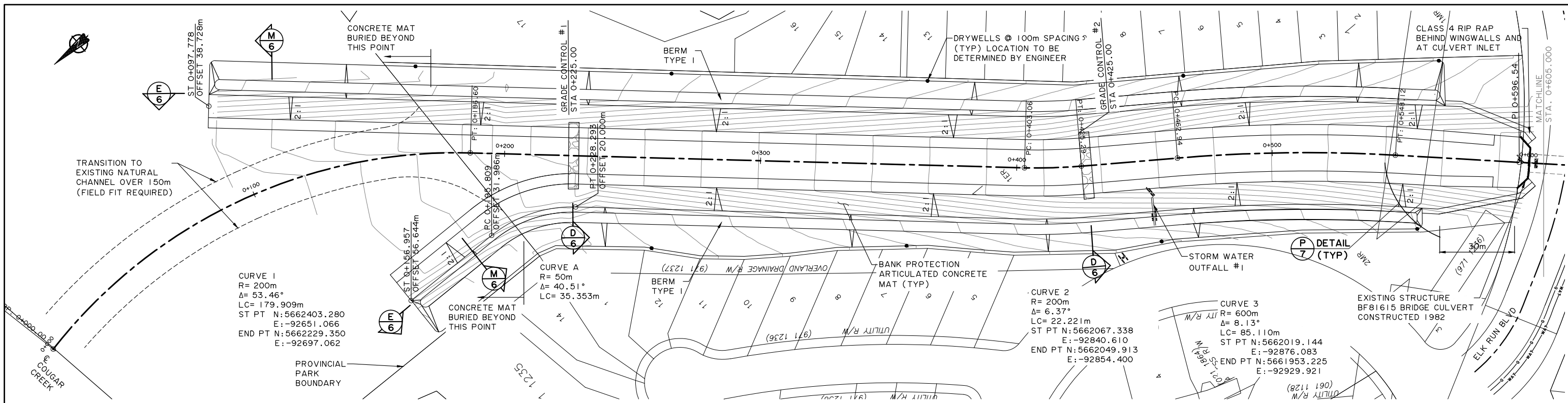
SCALE: AS SHOWN

**TOWN OF CANMORE**  
**COUGAR CREEK AT TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:     
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:   

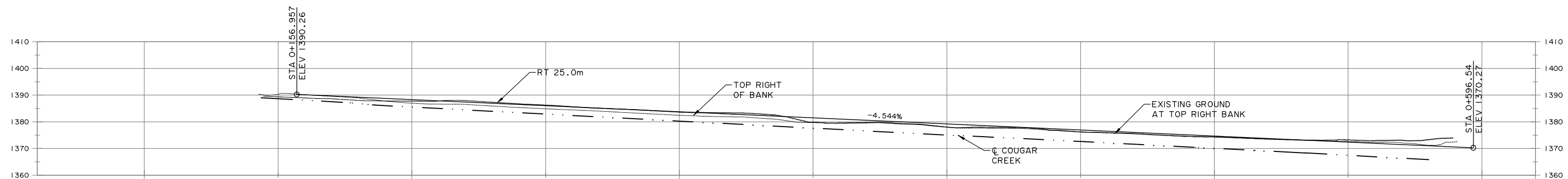
**MOSAIC PROFILE**

DRAWING No. 1344 S 02  
SHEET No. 2 1  
REVISION No.

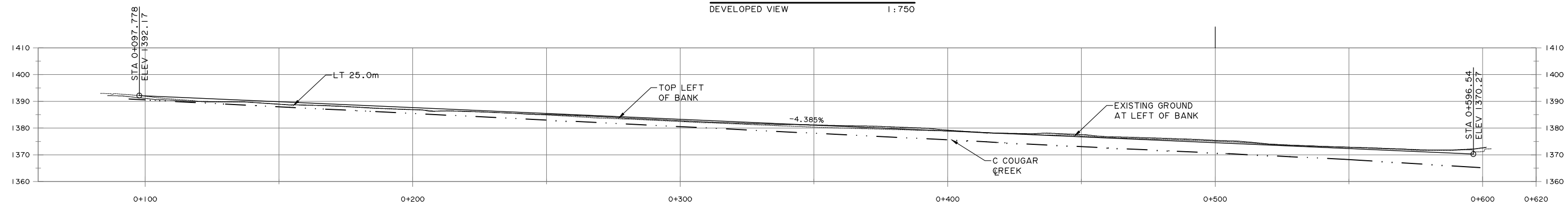


NOTE:  
HORIZONTAL ALIGNMENT CHANGE  
BETWEEN STA 0+000.000 TO  
STA 0+425.290

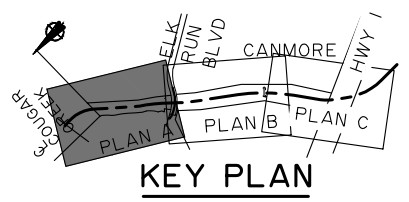
**PLAN**  
1:750



**PROFILE - RIGHT BANK**  
DEVELOPED VIEW 1:750



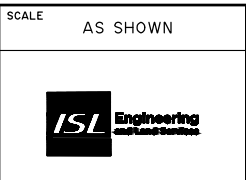
**PROFILE - LEFT BANK**  
DEVELOPED VIEW 1:750



No.	DESCRIPTION	BY	DATE



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ISL Engineering  
and Land Services Ltd.  
Signature: *Seamoral*  
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SCALE: AS SHOWN

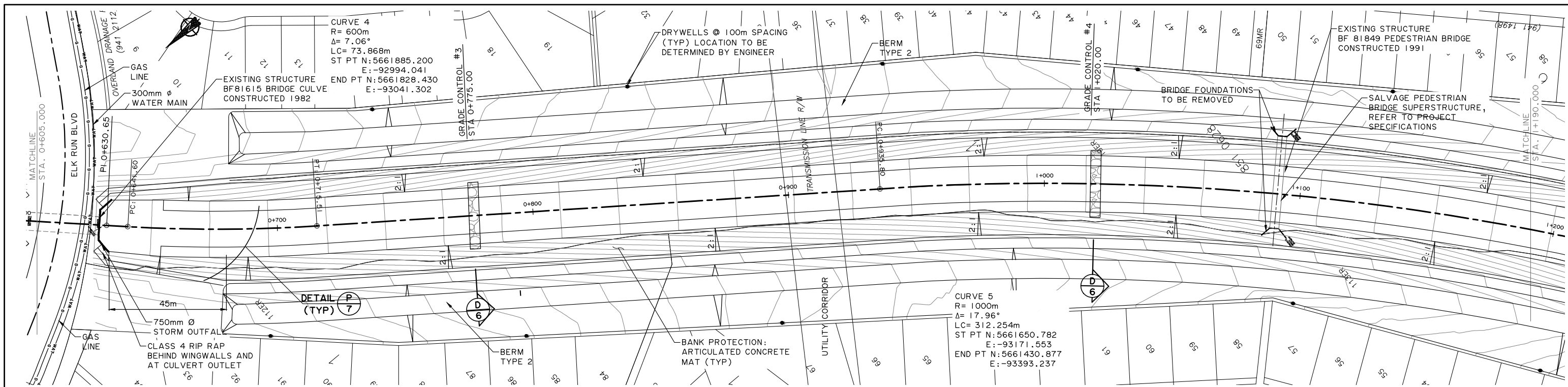
**TOWN OF CANMORE**  
**COUGAR CREEK AT TOWN OF CANMORE CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:     
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:   

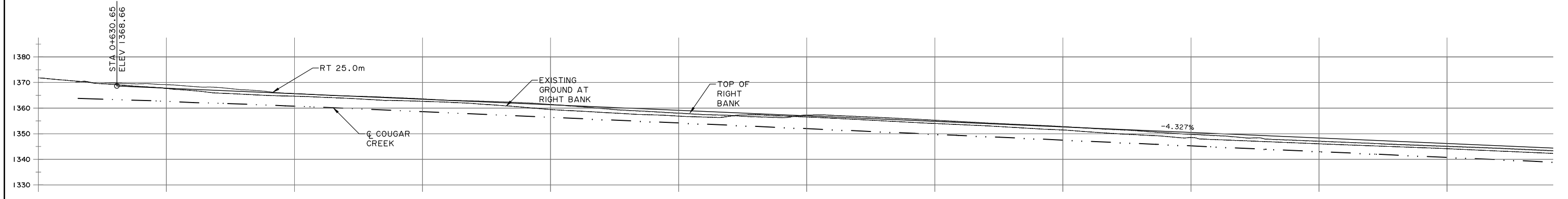
**PLAN DETAIL A**

DRAWING No. 1344 S 03  
SHEET No. 3  
REVISION No. 1

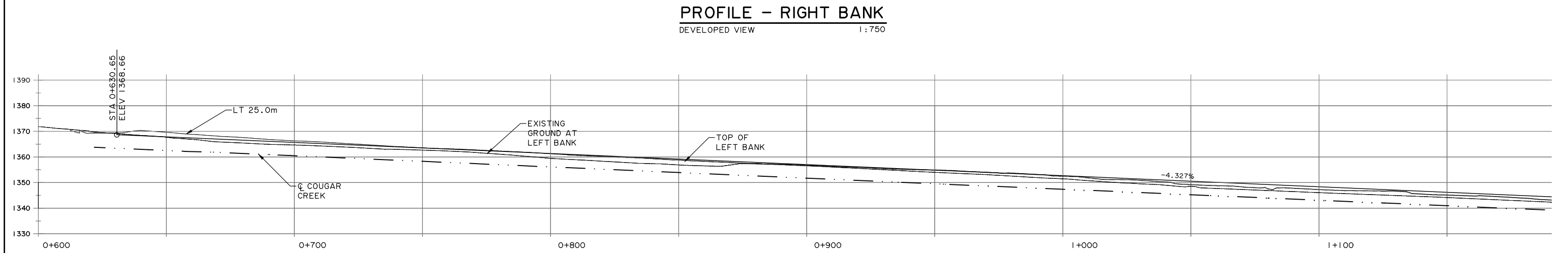
WTS OCT 10, 2013 13892-GL-40.DWG



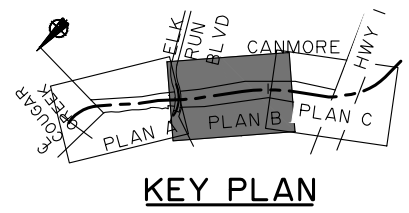
**PLAN**  
1:750



**PROFILE - RIGHT BANK**  
DEVELOPED VIEW 1:750



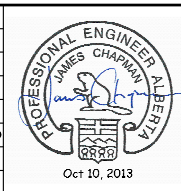
**PROFILE - LEFT BANK**  
DEVELOPED VIEW 1:750



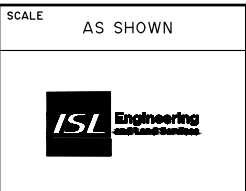
**KEY PLAN**



No.	DESCRIPTION	BY	DATE



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and Land Services Ltd.  
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SCALE: AS SHOWN

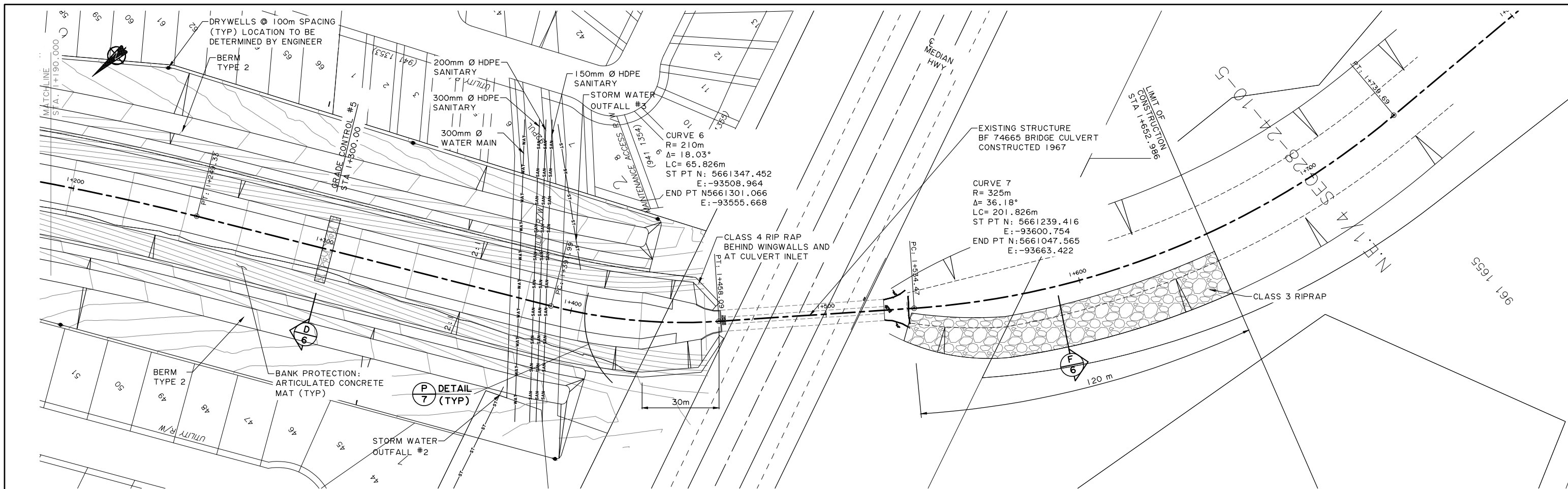
**TOWN OF CANMORE**  
**COUGAR CREEK AT TOWN OF CANMORE CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:     
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:   

**PLAN DETAIL B**

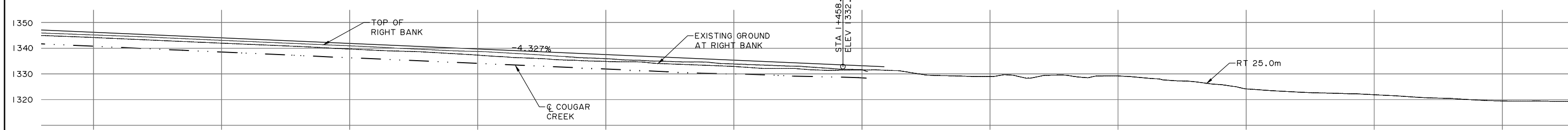
DRAWING No. 1344 S 04  
SHEET No. 4  
REVISION No. 1

WTS OCT 10, 2013 13892-GL-40.DWG



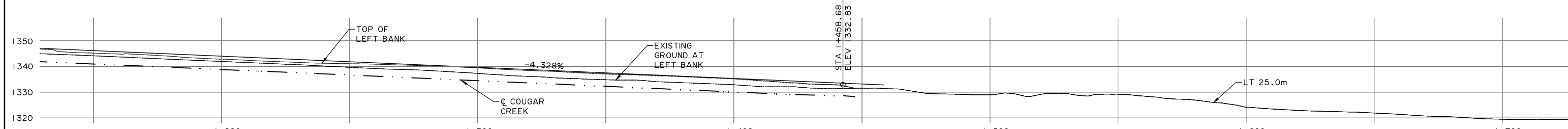
**PLAN**

1:750



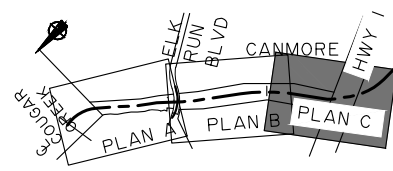
**PROFILE - RIGHT BANK**

1:750



**PROFILE - LEFT BANK**

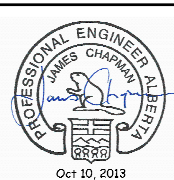
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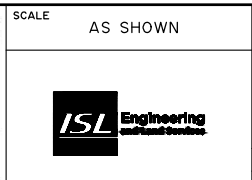
**KEY PLAN**



No.	DESCRIPTION	BY	DATE



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 ISL Engineering  
 and Land Services Ltd.  
 Signature: *Seamoral*  
 Date: 2013-10-10  
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SCALE: AS SHOWN  
**TOWN OF CANMORE**  
**COUGAR CREEK AT TOWN OF CANMORE CHANNEL BANK PROTECTION**  
 DRAWN: WTS    DESIGN CHECKED:    DATE:     
 DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:   

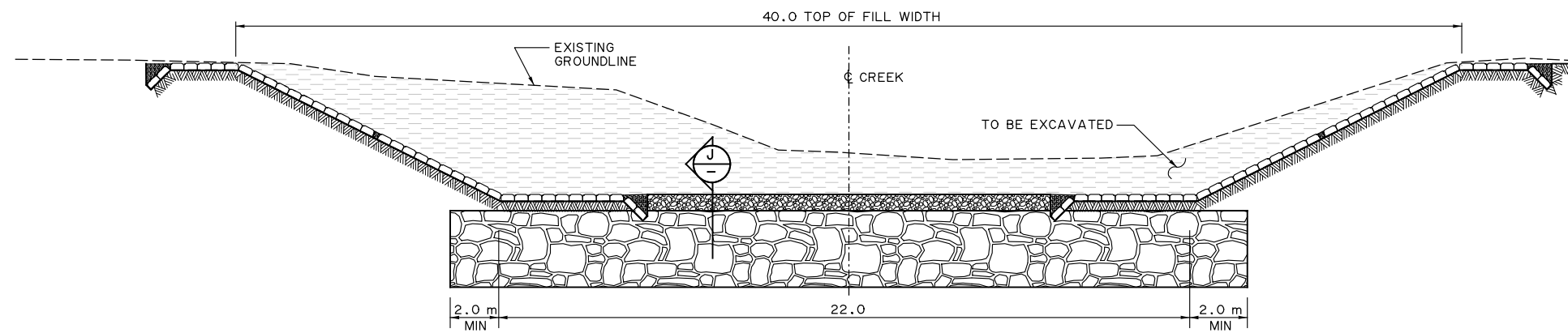
**DETAIL PLAN C**

DRAWING No.	1344
	S
	05
SHEET No.	5
REVISION No.	1

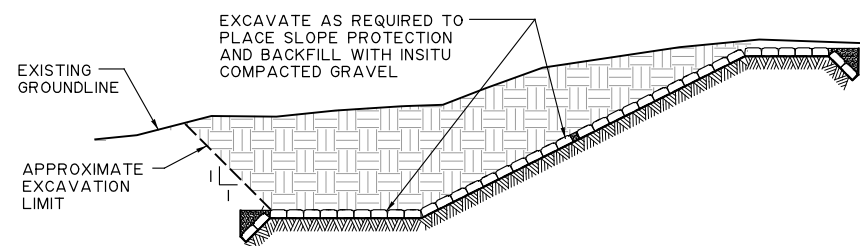
SECTION NOT USED

SECTION NOT USED

**C** TYPICAL OPTION 1 - GABION BANK PROTECTION 1:50

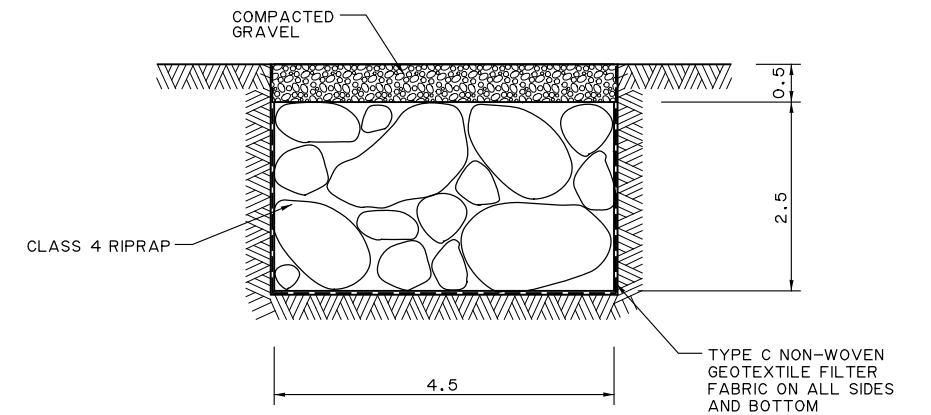


**D** GRADE CONTROL STRUCTURE 1:100  
NOTE: BERMS NOT SHOWN

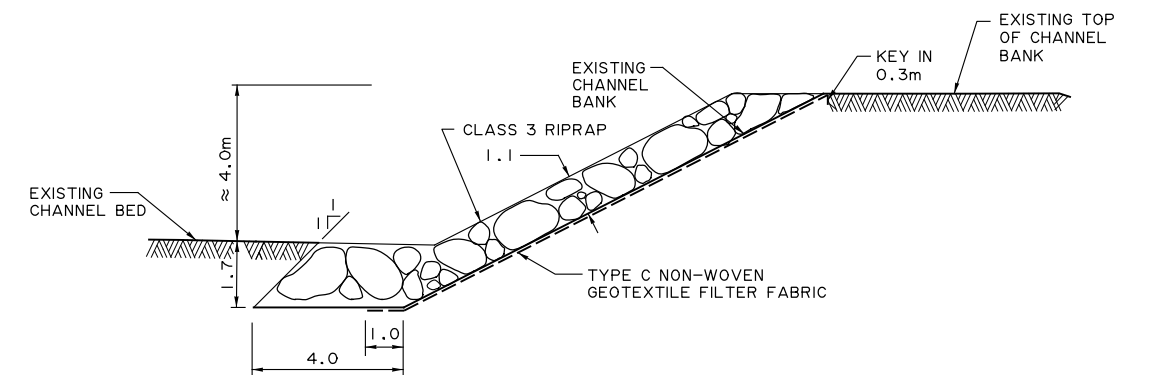


**M** TRANSITION TO NATURAL CHANNEL 1:100  
NOTE: BERMS NOT SHOWN  
OPTION 1 SHOWN  
OPTION 2 SIMILAR REFER TO SECTION 6 ON DWG 7 FOR DETAILS

**E** GABION MAT UPSTREAM EDGE 1:50



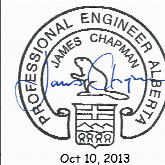
**J** SECTION 1:50



**F** RIPRAP BANK PROTECTION 1:100



No.	DESCRIPTION	BY	DATE
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SCALE  
AS SHOWN



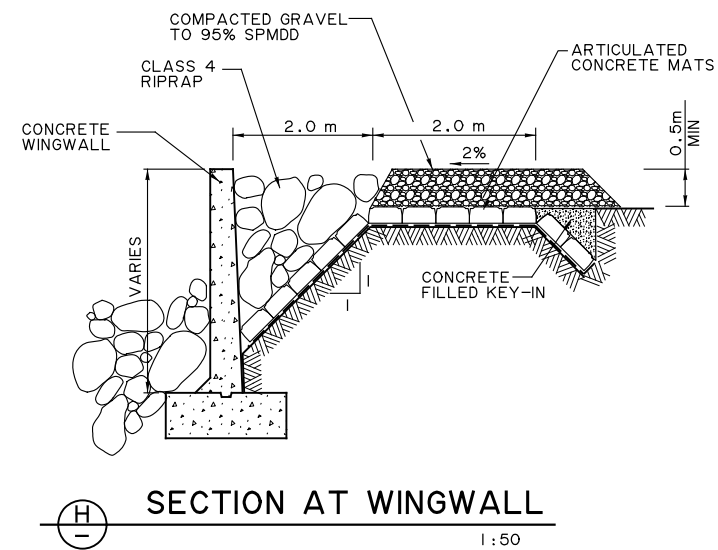
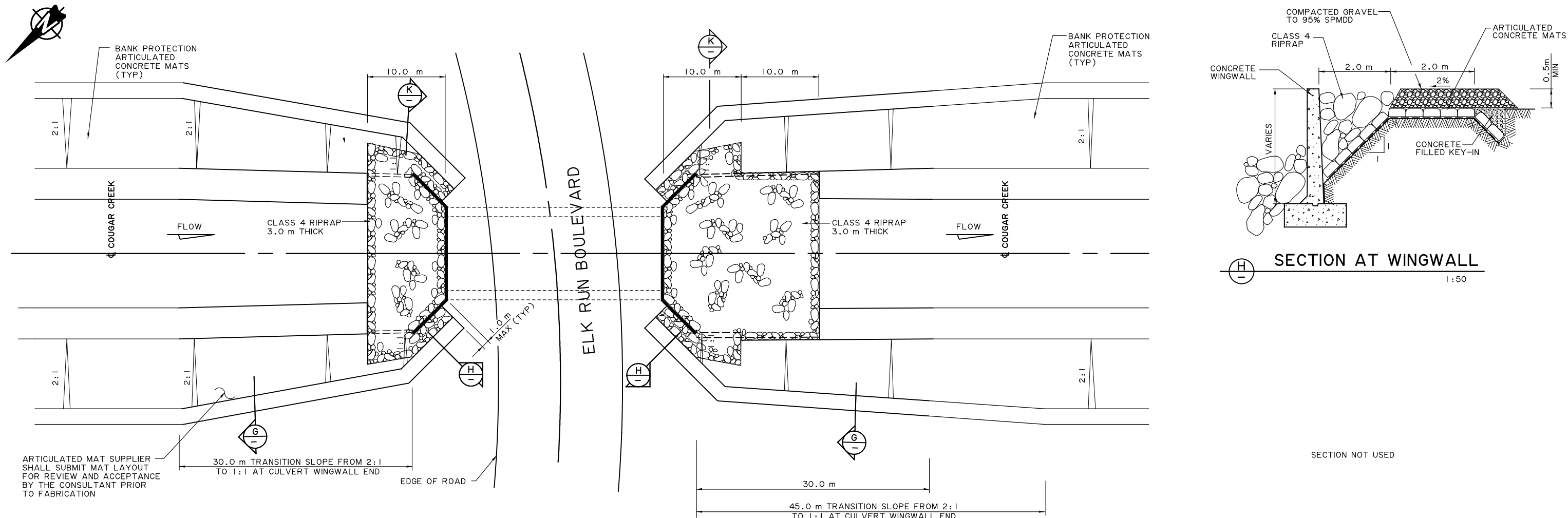
TOWN OF CANMORE  
COUGAR CREEK AT  
TOWN OF CANMORE  
CHANNEL BANK PROTECTION

DRAWN: NH DESIGN CHECKED: DATE:  
DESIGNED: JRC DISCIPLINE REVIEW: DATE:

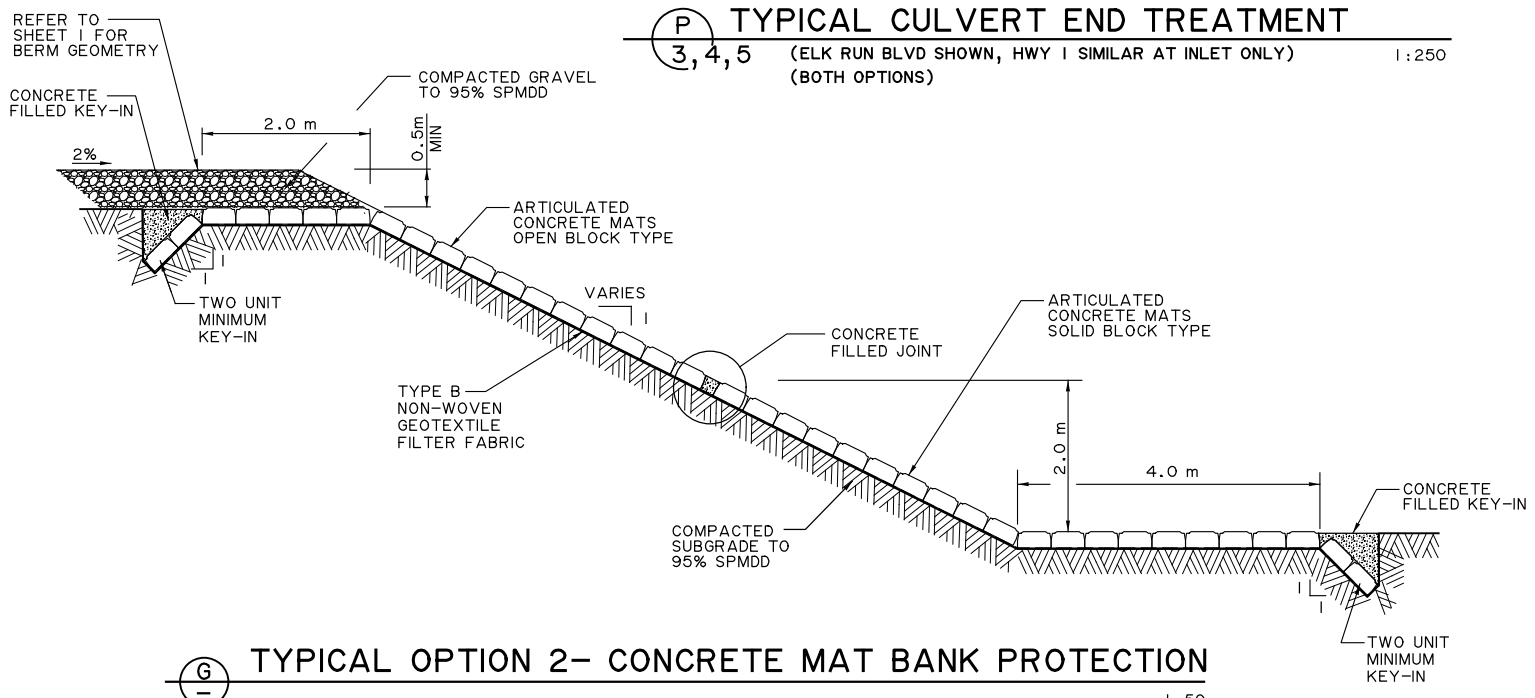
TYPICAL DETAILS - SHEET 1

DRAWING No.  
1344  
S  
06  
SHEET No.  
6  
REVISION No.  
1

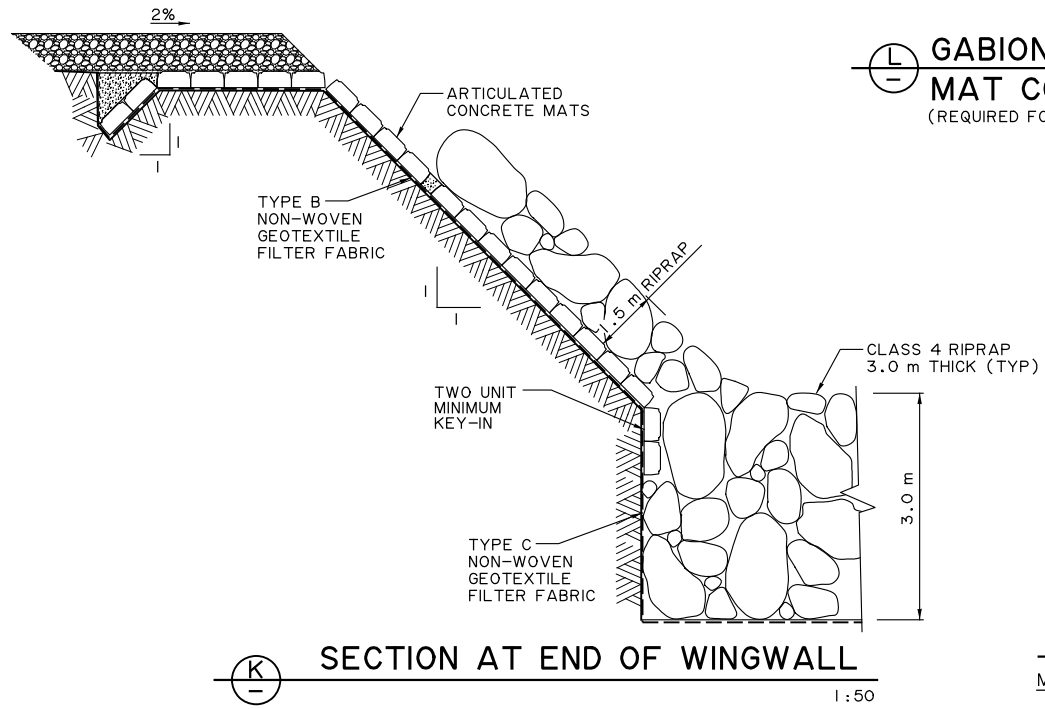
1389256-VR1.dgn 10/10/2013 5:18:46 PM



**P** TYPICAL CULVERT END TREATMENT  
 3, 4, 5 (ELK RUN BLVD SHOWN, HWY 1 SIMILAR AT INLET ONLY)  
 1:250



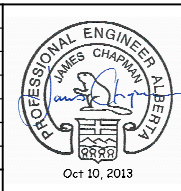
**L** GABION TO CONCRETE MAT CONNECTION 1:25  
 (REQUIRED FOR OPTION 1 ONLY)



**GENERAL NOTES:**  
 MATERIALS  
 • CONCRETE FILLED JOINTS AND CONCRETE MATS TO CSA A23.1 EXPOSURE CLASS - C2



No.	DESCRIPTION	BY	DATE
ISSUED FOR CONSTRUCTION	JRC	2013-10-09	
REVISIONS			



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SCALE: AS SHOWN  
 ISL Engineering and Land Services

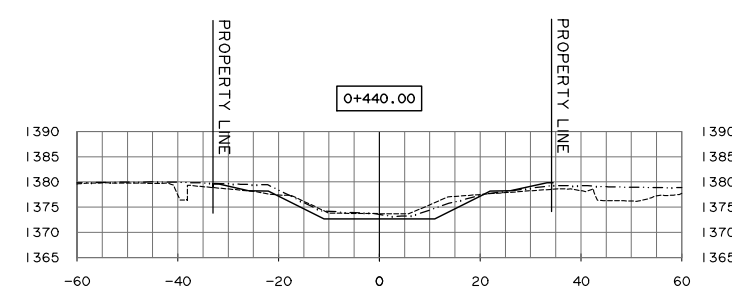
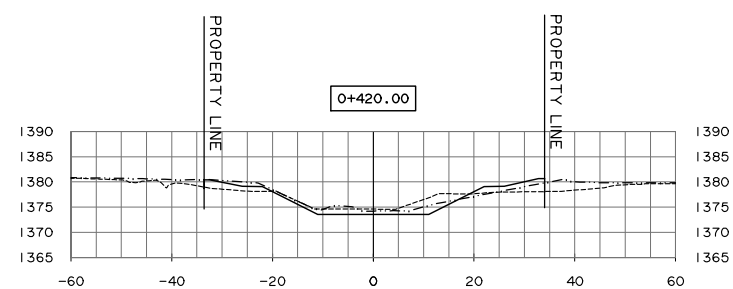
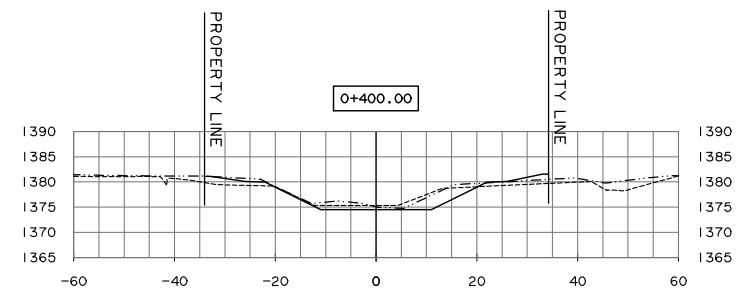
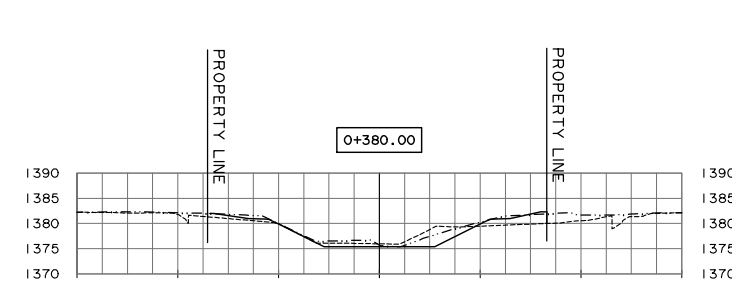
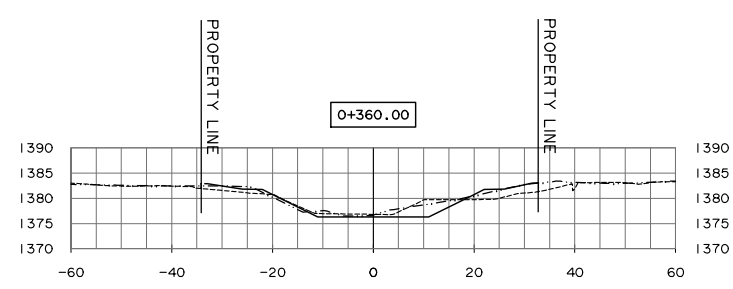
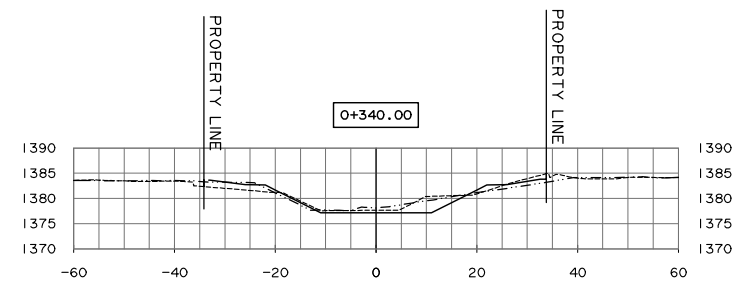
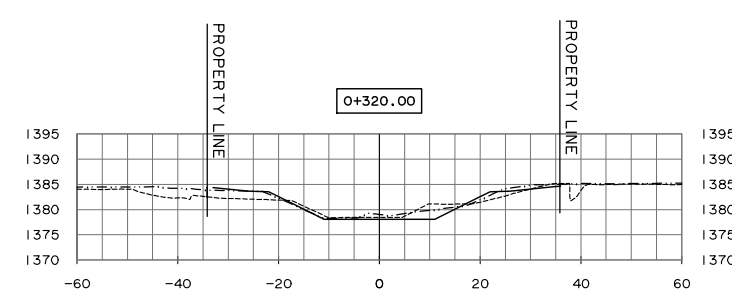
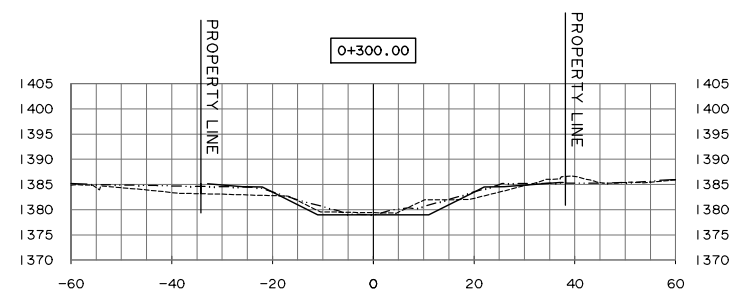
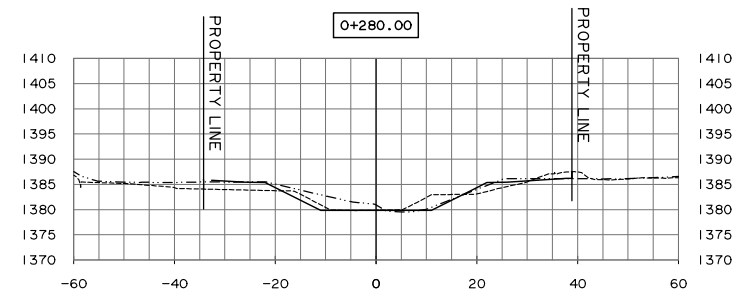
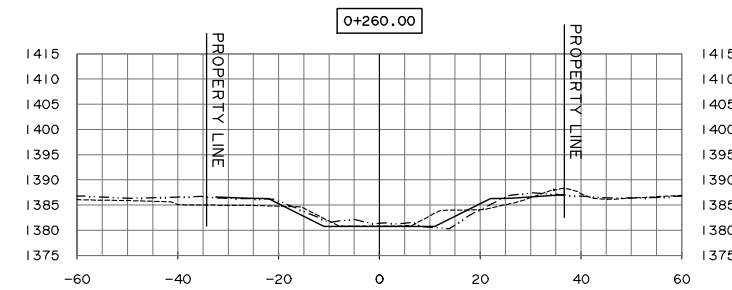
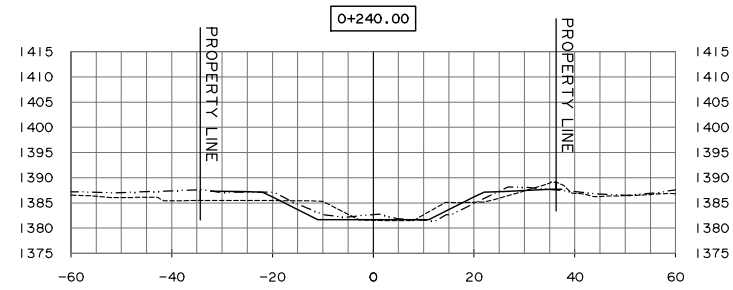
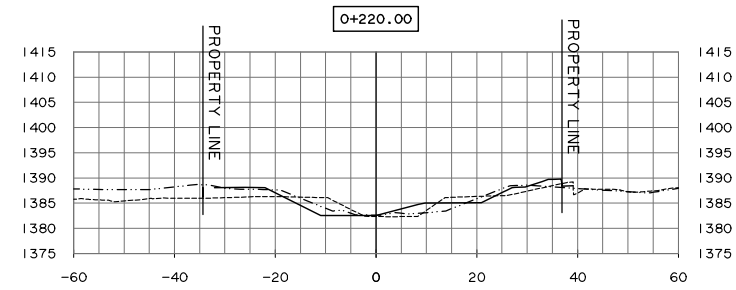
TOWN OF CANMORE  
 COUGAR CREEK AT  
 TOWN OF CANMORE  
 CHANNEL BANK PROTECTION

DRAWN: NH DESIGN CHECKED: DATE:  
 DESIGNED: JRC DISCIPLINE REVIEW: DATE:

TYPICAL DETAILS - SHEET 2

DRAWING No. 1344 S 07  
 SHEET No. 7 1  
 REVISION No.

WTS OCT 02, 2013 13892-PROFILE SHEET.DWG

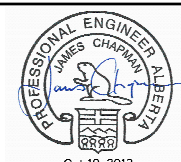


NOTE:  
ALL SECTIONS LOOKING  
DOWNSTREAM

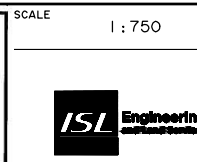
LEGEND	
	PROPOSED CHANNEL
	GROUND LEVEL
	PRE-FLOOD GROUND LEVEL



No.	DESCRIPTION	BY	DATE



**PERMIT TO PRACTICE**  
ISL Engineering  
and Land Services Ltd.  
Signature: *Seamoral*  
Date: 2013-10-10  
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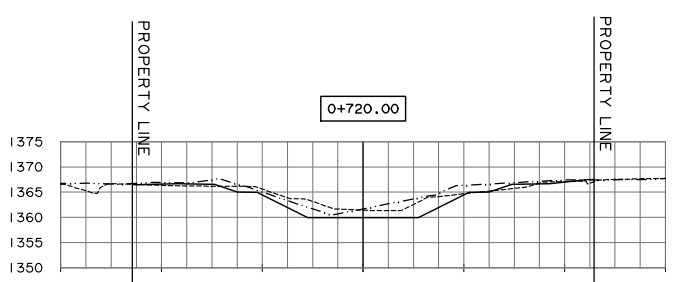
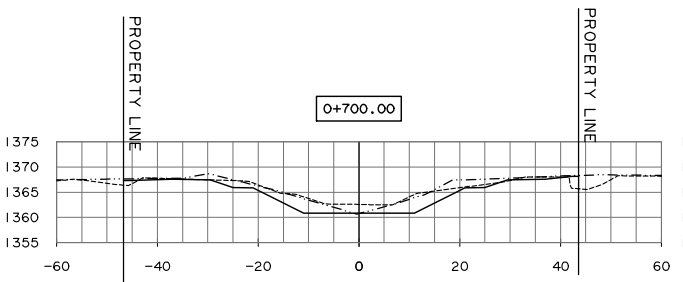
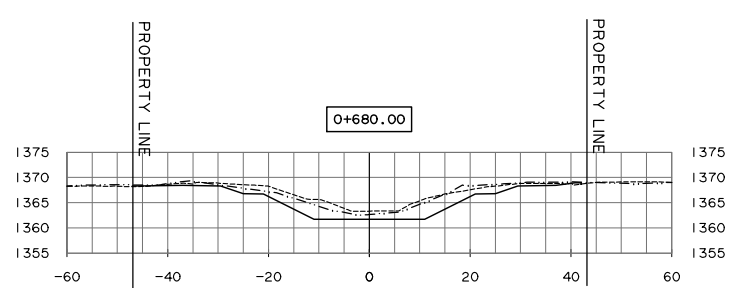
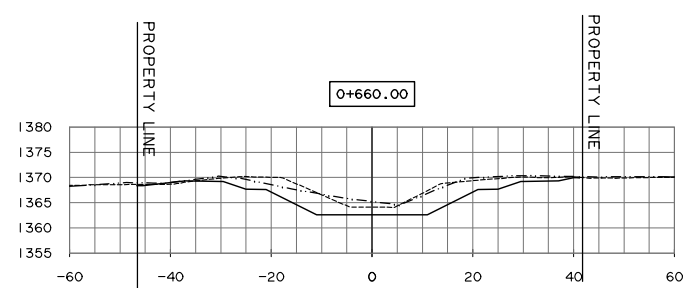
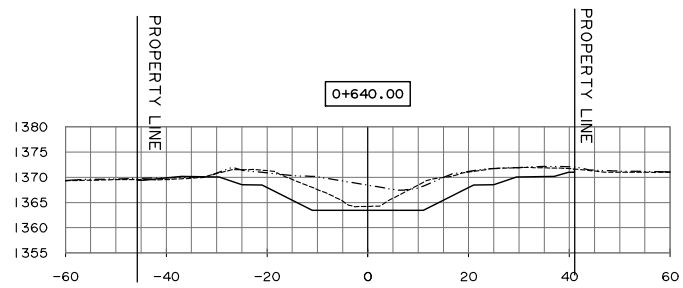
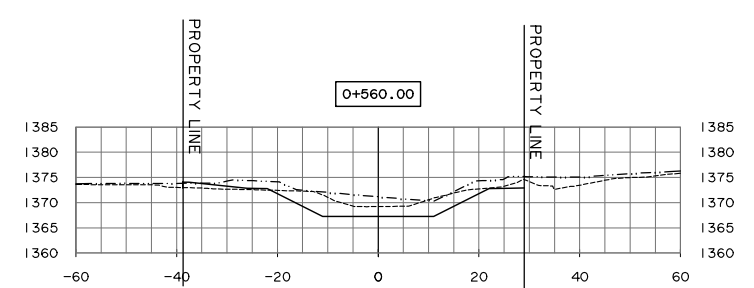
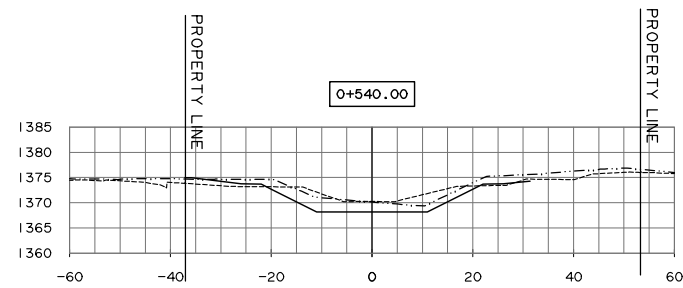
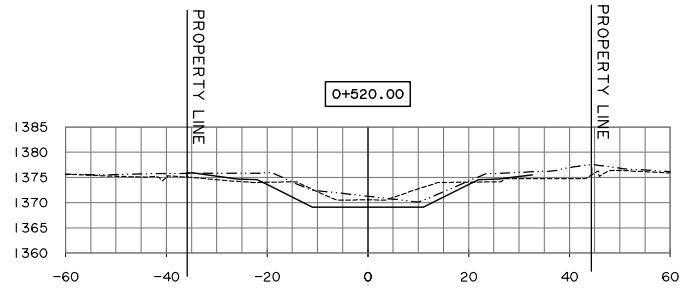
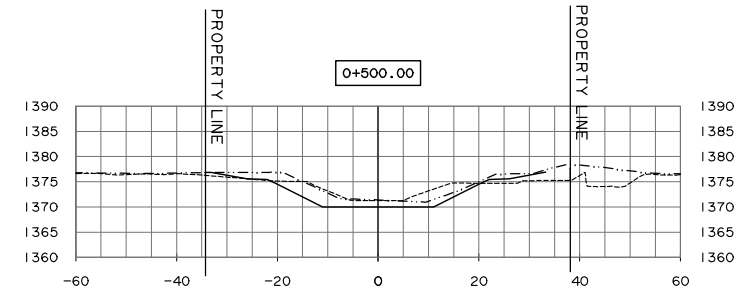
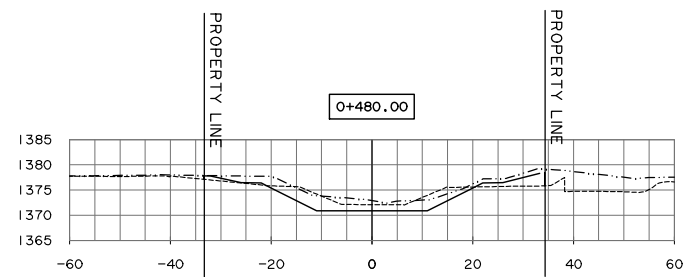
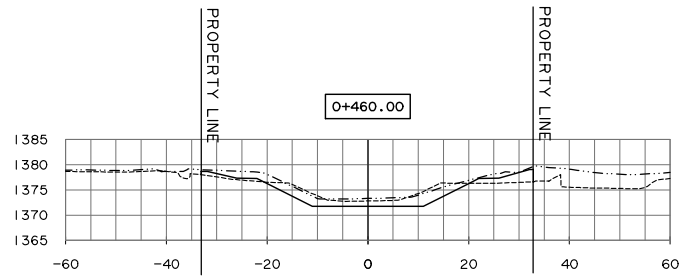
**TOWN OF CANMORE**  
**COUGAR CREEK AT TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**  
DRAWN: WTS    DESIGN CHECKED:    DATE:     
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:   

**CROSS-SECTIONS - SHEET 1**  
**STA 0+220.000 TO**  
**STA 0+440.000**

DRAWING No. 1344  
S 08  
SHEET No. 8  
REVISION No.



WTS OCT 02, 2013 13892-PROFILE SHEET.DWG

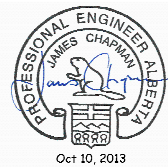


NOTE:  
ALL SECTIONS LOOKING  
DOWNSTREAM

LEGEND	
	PROPOSED CHANNEL
	GROUND LEVEL
	PRE-FLOOD GROUND LEVEL



No.	DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	JRC	2013-10-09
REVISIONS			



**PERMIT TO PRACTICE**  
ISL Engineering  
and Land Services Ltd.  
Signature: *Seamoral*  
Date: 2013-10-10  
PERMIT NUMBER: P-4741  
The Association of Professional Engineers,  
Geologists and Geophysicists of Alberta

SCALE: 1:750



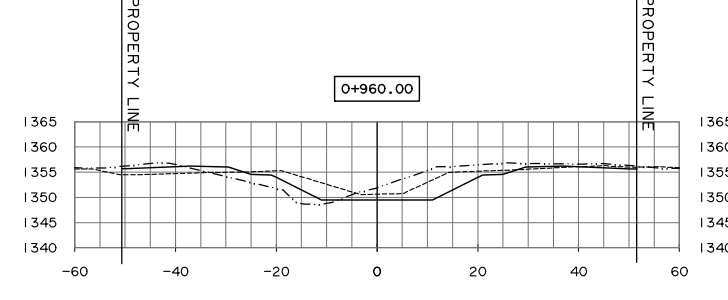
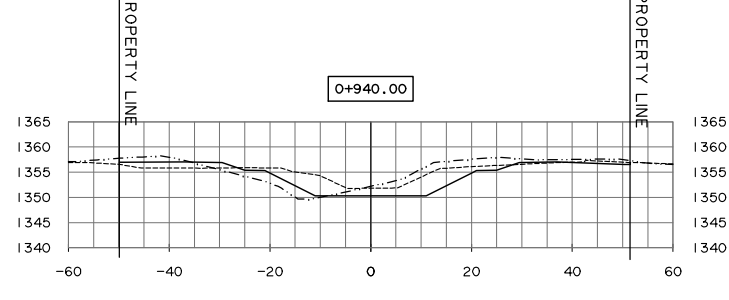
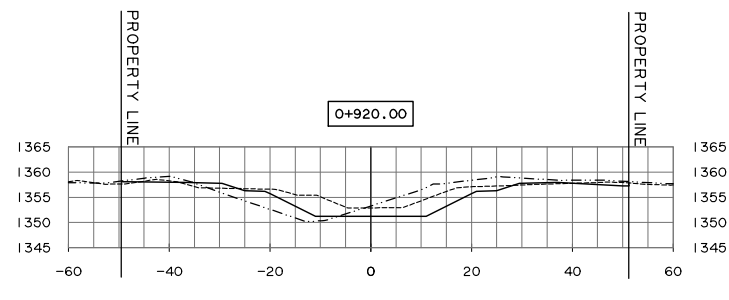
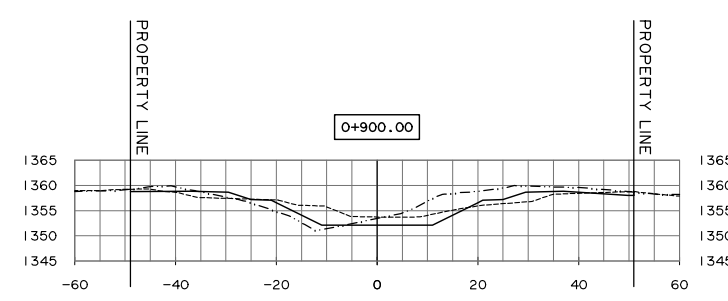
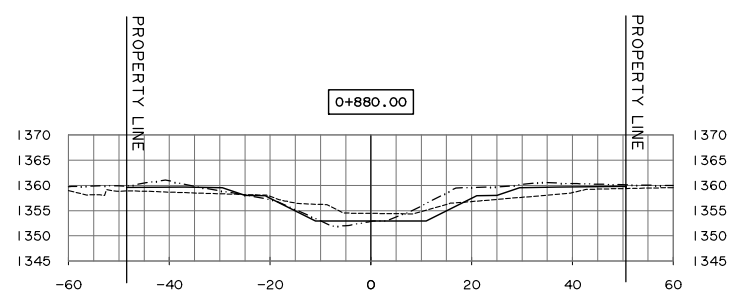
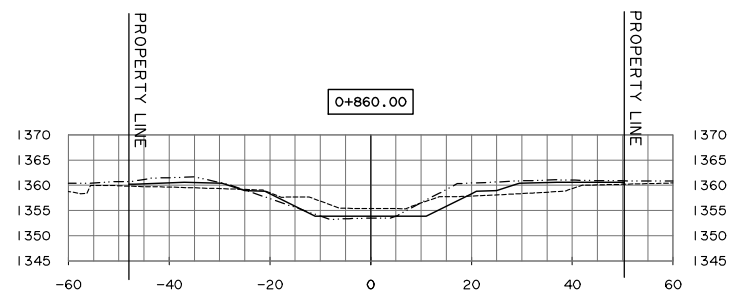
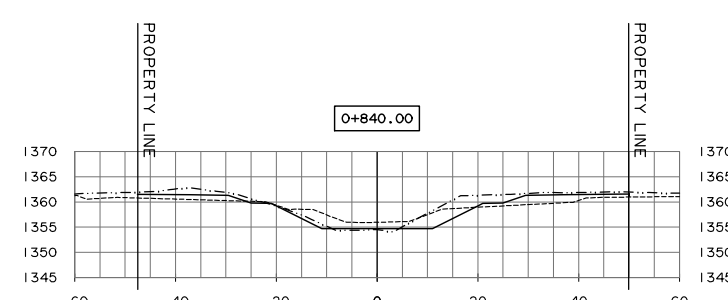
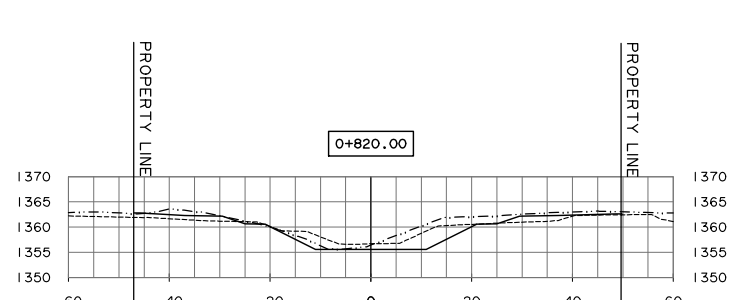
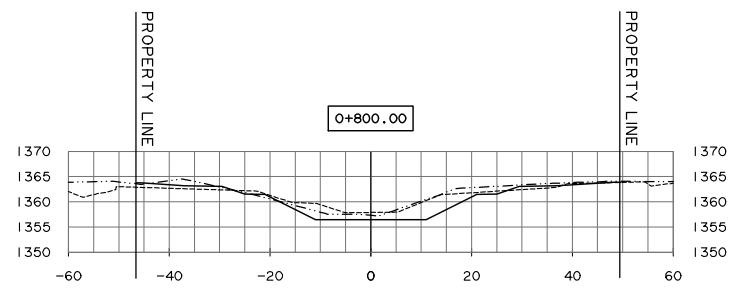
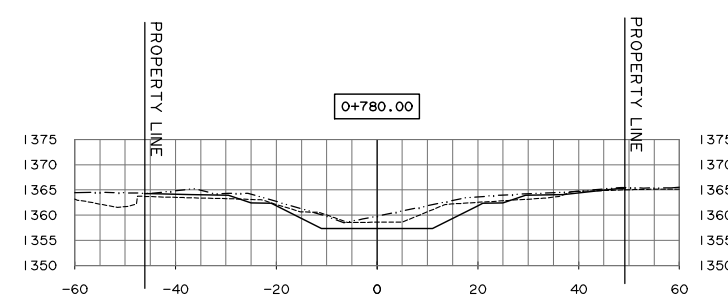
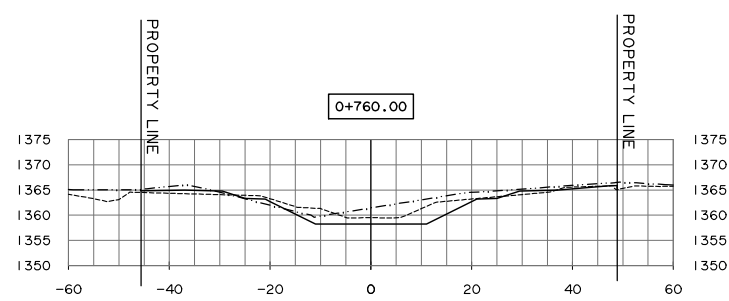
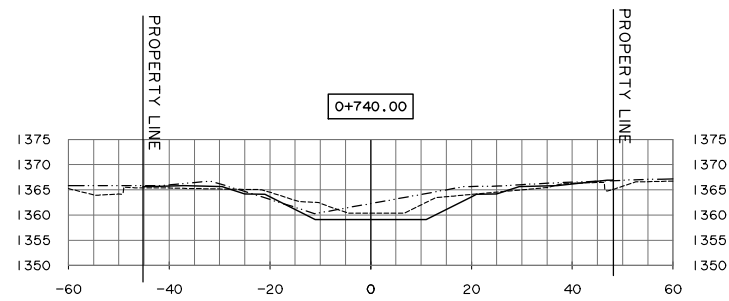
**TOWN OF CANMORE**  
**COUGAR CREEK AT**  
**TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:  
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:

**CROSS-SECTIONS - SHEET 2**  
**STA 0+460.00 TO**  
**STA 0+720.000**

DRAWING No.  
**1344**  
**S**  
**09**  
SHEET No.  
**9**  
REVISION No.

WTS OCT 02, 2013 13892-PROFILE SHEET.DWG

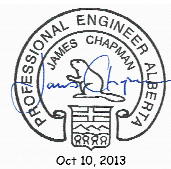


NOTE:  
ALL SECTIONS LOOKING  
DOWNSTREAM

LEGEND	
	PROPOSED CHANNEL
	GROUND LEVEL
	PRE-FLOOD GROUND LEVEL



No.	DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	JRC	2013-10-09
REVISIONS			



**PERMIT TO PRACTICE**  
ISL Engineering  
and Land Services Ltd.  
Signature: *Seamoral*  
Date: 2013-10-10  
PERMIT NUMBER: P-4741  
The Association of Professional Engineers,  
Geologists and Geophysicists of Alberta

SCALE: 1 : 750

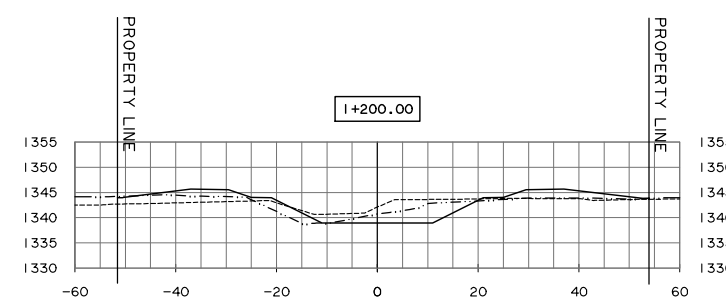
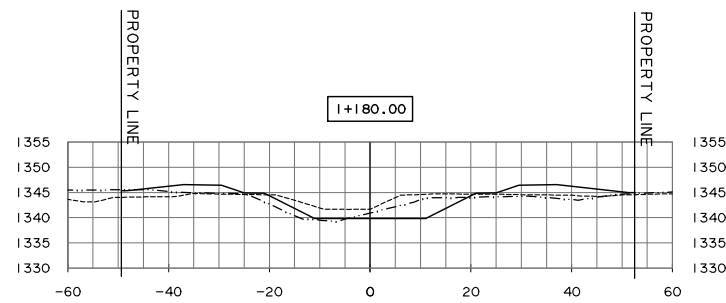
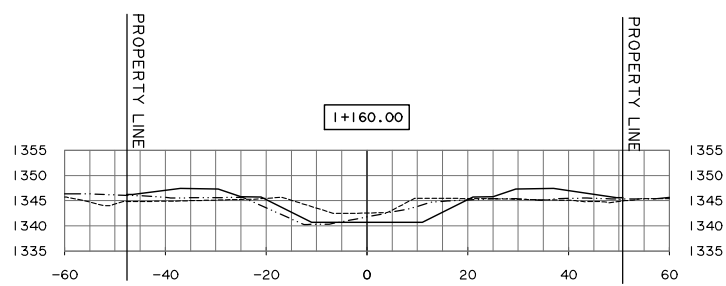
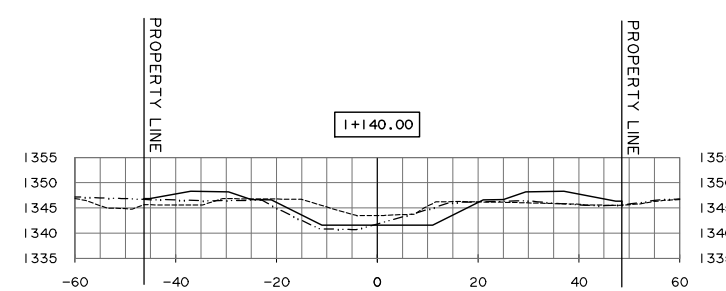
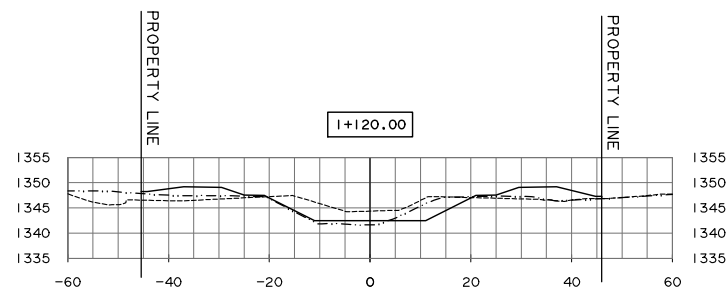
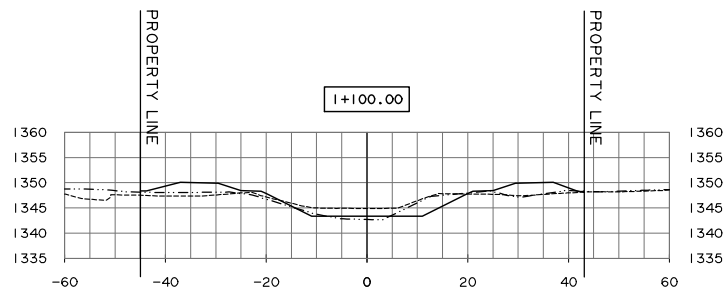
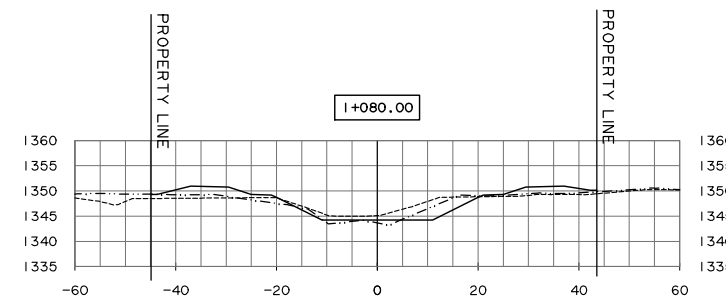
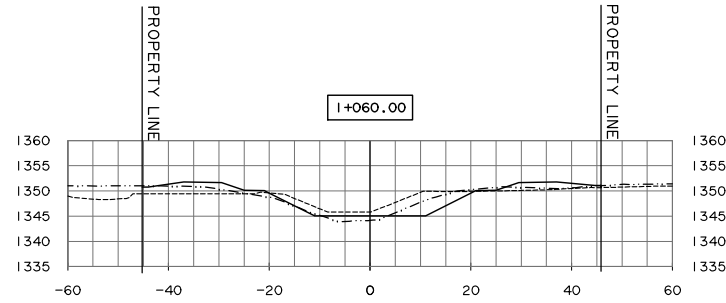
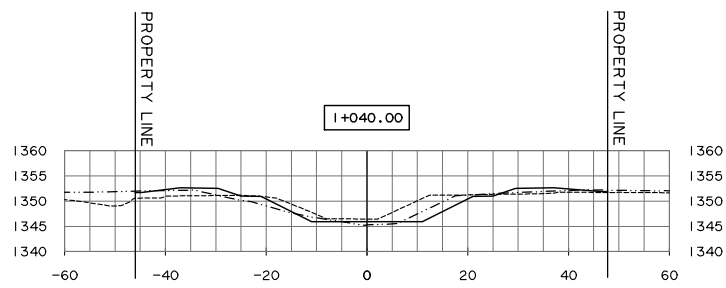
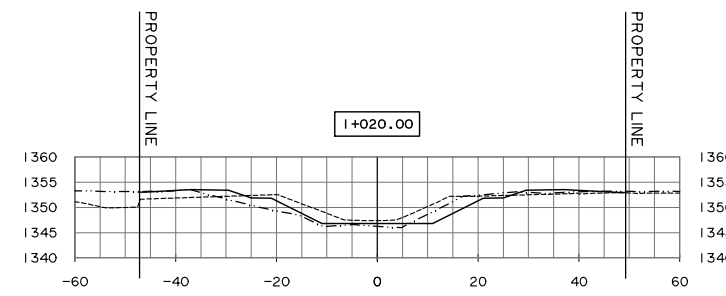
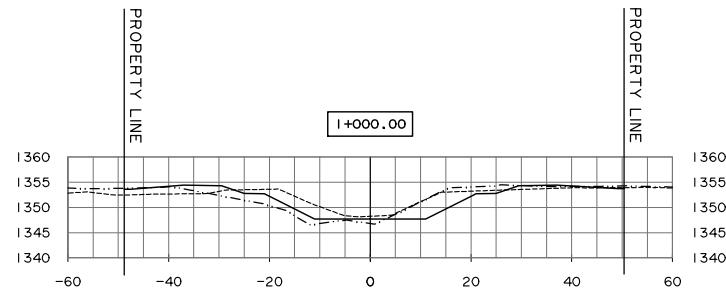
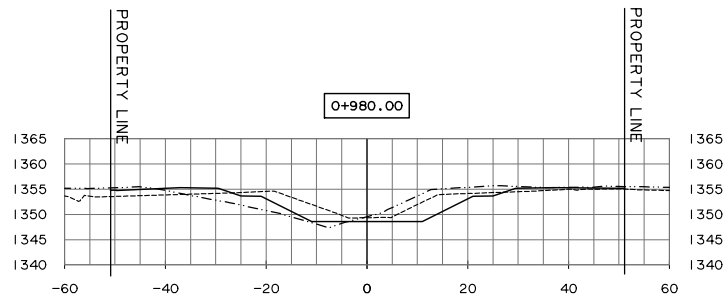


**TOWN OF CANMORE**  
**COUGAR CREEK AT**  
**TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:  
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:

**CROSS-SECTIONS - SHEET 3**  
**STA 0+740.00 TO**  
**STA 0+960.000**

DRAWING No.  
**1344**  
S  
**10**  
SHEET No.  
**10**  
REVISION No.

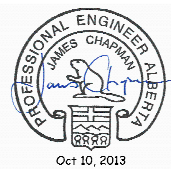


NOTE:  
ALL SECTIONS LOOKING  
DOWNSTREAM

LEGEND	
	PROPOSED CHANNEL
	GROUND LEVEL
	PRE-FLOOD GROUND LEVEL



No.	DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	JRC	2013-10-09
REVISIONS			



**PERMIT TO PRACTICE**  
ISL Engineering  
and Land Services Ltd.  
Signature: *Seamoral*  
Date: 2013-10-10  
PERMIT NUMBER: P-4741  
The Association of Professional Engineers,  
Geologists and Geophysicists of Alberta

SCALE: 1 : 750

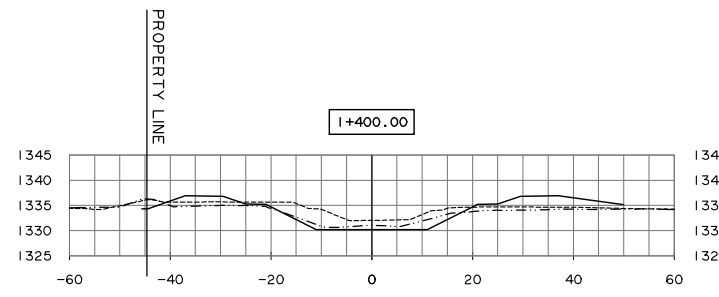
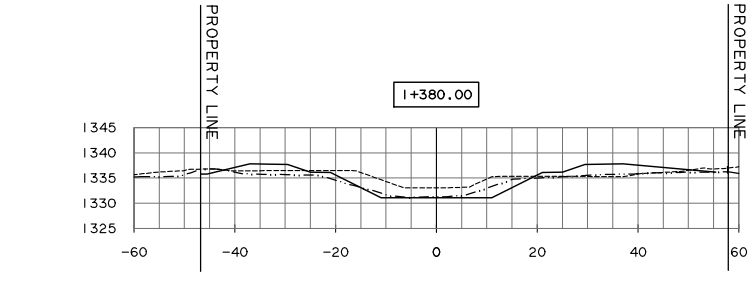
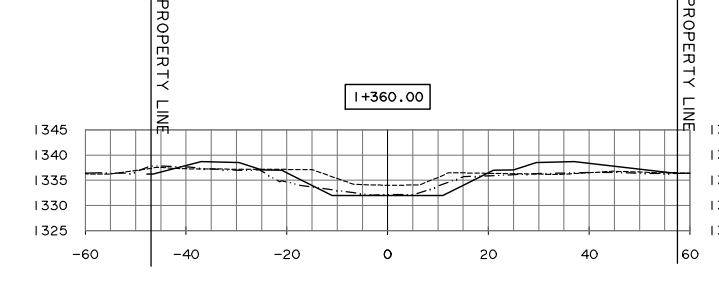
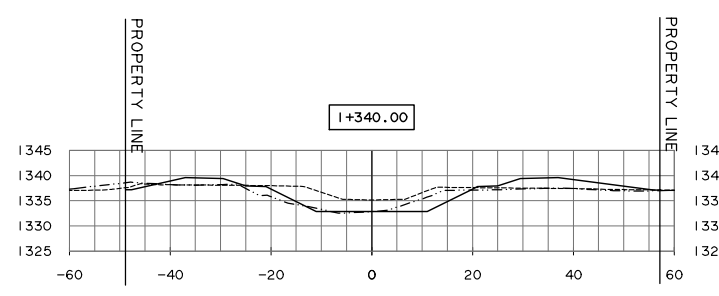
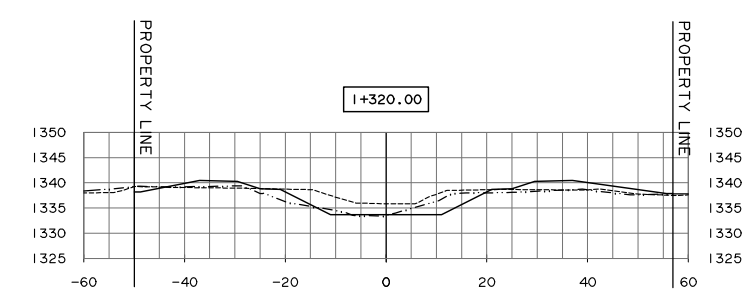
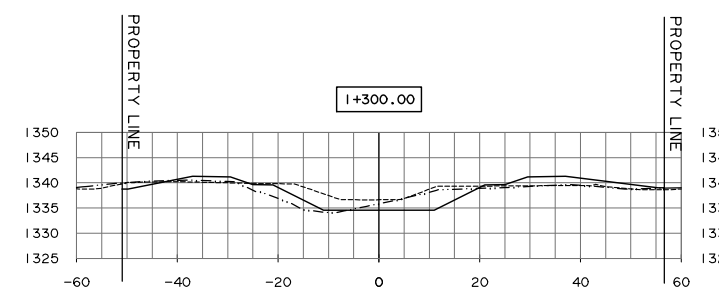
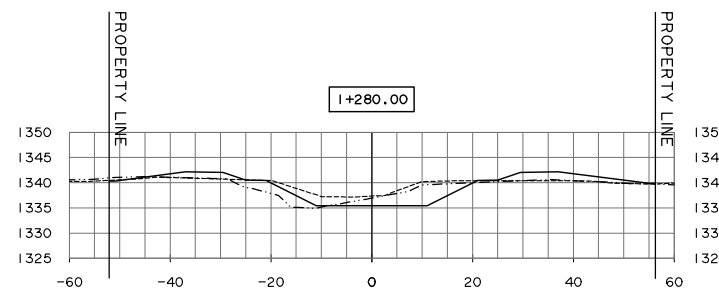
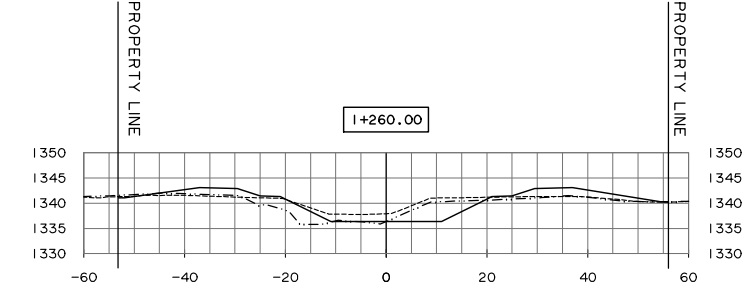
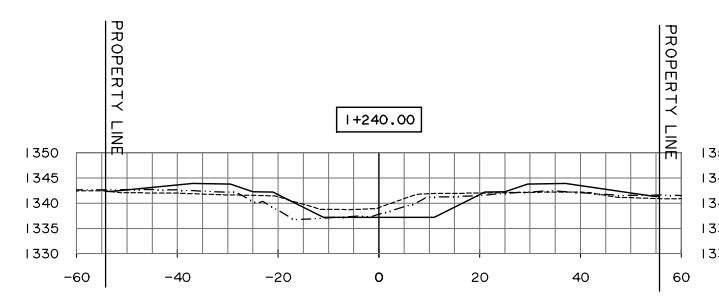
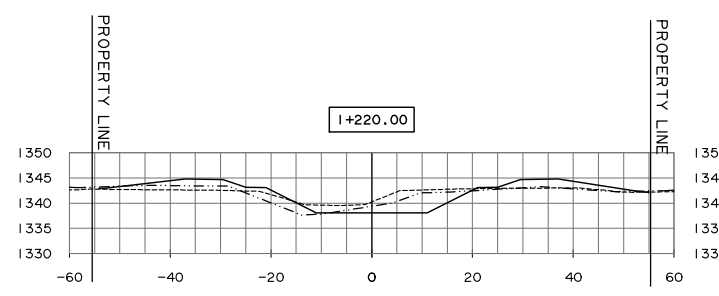


**TOWN OF CANMORE**  
**COUGAR CREEK AT**  
**TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:  
DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:

**CROSS-SECTIONS - SHEET 4**  
**STA 0+980.00 TO**  
**STA 1+200.00**

DRAWING No.  
**1344**  
S  
11  
SHEET No.  
11  
REVISION No.

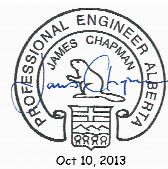


NOTE:  
ALL SECTIONS LOOKING  
DOWNSTREAM

LEGEND	
	PROPOSED CHANNEL
	GROUND LEVEL
	PRE-FLOOD GROUND LEVEL



No.	DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	JRC	2013-10-09



**PERMIT TO PRACTICE**  
**ISL Engineering**  
 and Land Services Ltd.  
 Signature: *Seamora*  
 Date: 2013-10-10  
 PERMIT NUMBER: P-4741  
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SCALE: 1:750



**TOWN OF CANMORE**  
**COUGAR CREEK AT**  
**TOWN OF CANMORE**  
**CHANNEL BANK PROTECTION**

DRAWN: WTS    DESIGN CHECKED:    DATE:  
 DESIGNED: JRC    DISCIPLINE REVIEW:    DATE:

**CROSS-SECTIONS - SHEET 5**  
**STA I+220.00 TO**  
**STA I+400.00**

DRAWING No.  
1344  
S  
12  
SHEET No.  
12  
REVISION No.