



Appendix E Liard River Barge Crossing Preliminary Design



PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845

DRAWING LIST		
DRAWING NO	DRAWING TITLE	REVISION
15GP0016-100-1920-001	NORTH SHORE OVERVIEW	0
15GP0016-100-1920-002	PLAN AND PROFILE DRAWING km 158+700 to km 159+845	0
15GP0016-100-1920-003	NORTH SHORE BARGE LANDING & DETAILS km 159+790 to km 159+845	0
15GP0016-100-1920-004	NORTH SHORE STAGING AREA SITE PLAN AND SECTION	0
15GP0016-100-1920-005	CROSS SECTION DRAWINGS PAGE 1 of 4	0
15GP0016-100-1920-006	CROSS SECTION DRAWINGS PAGE 2 of 4	0
15GP0016-100-1920-007	CROSS SECTION DRAWINGS PAGE 3 of 4	0
15GP0016-100-1920-008	CROSS SECTION DRAWINGS PAGE 4 of 4	

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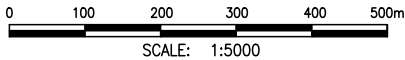
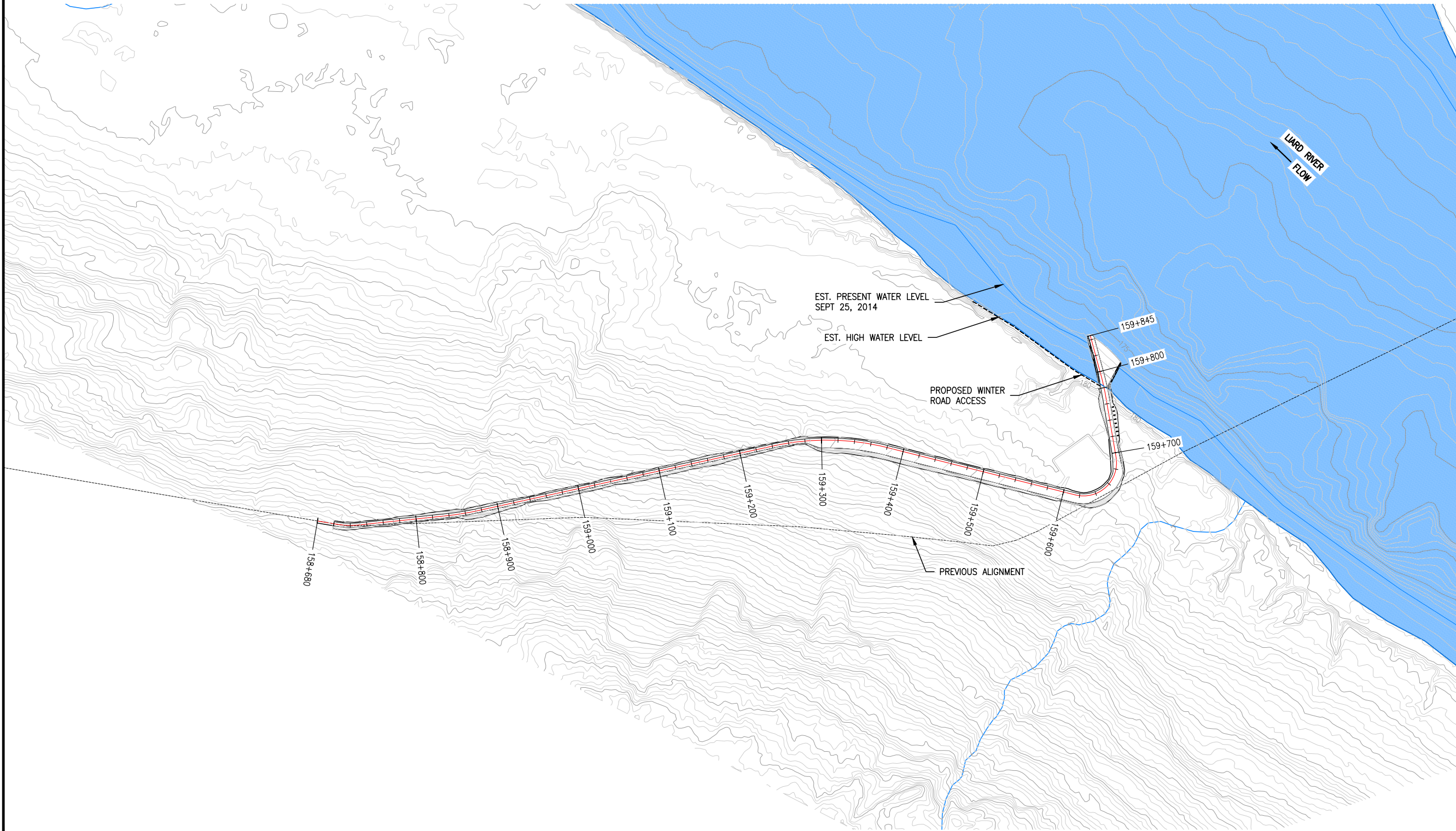
0	15/02/23	ISSUED FOR INFORMATION	TMM	WBM
REV	YY/MM/DD	DESCRIPTION	DRWN	APVD



DESCRIPTION: ISSUED FOR INFORMATION
ISSUE DATE: 15/02/23

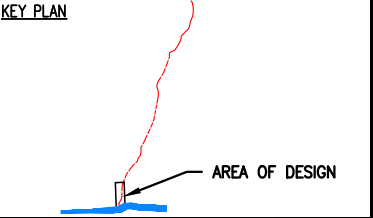
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DWG NO:	15GP0016-100-1920			REV: 0

Date: 2015/02/27 | User: Tiena Major | File: P:\GP\2015\015-GP-0016_Liard Barge X-ing\1000-Drawings\1011-Cull\01-Production\15GP0016-100-1920-North-R2 | Paper Size: 598.8mm x 431.8mm | Layout: 15GP0016-100-1920-001



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DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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LEGEND

	PROPOSED DESIGN CL
	PROPOSED ROAD EDGES
	PROPOSED DITCH BOTTOM
	PROPOSED CUT/FILL LINES
	PREVIOUS ROAD ALIGNMENT
	WATERCOURSES

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0	2015/02/04	ISSUED FOR INFORMATION	TMM	WBM
REV	YY/MM/DD	DESCRIPTION	DRWN	APVD

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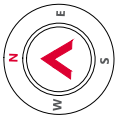
PROJECT:

**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

TITLE:

**NORTH SHORE
OVERVIEW**

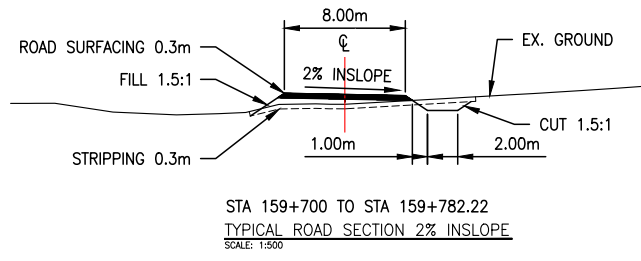
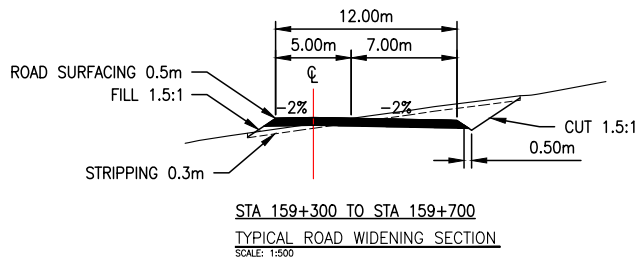
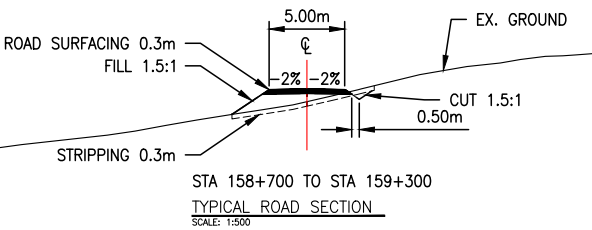
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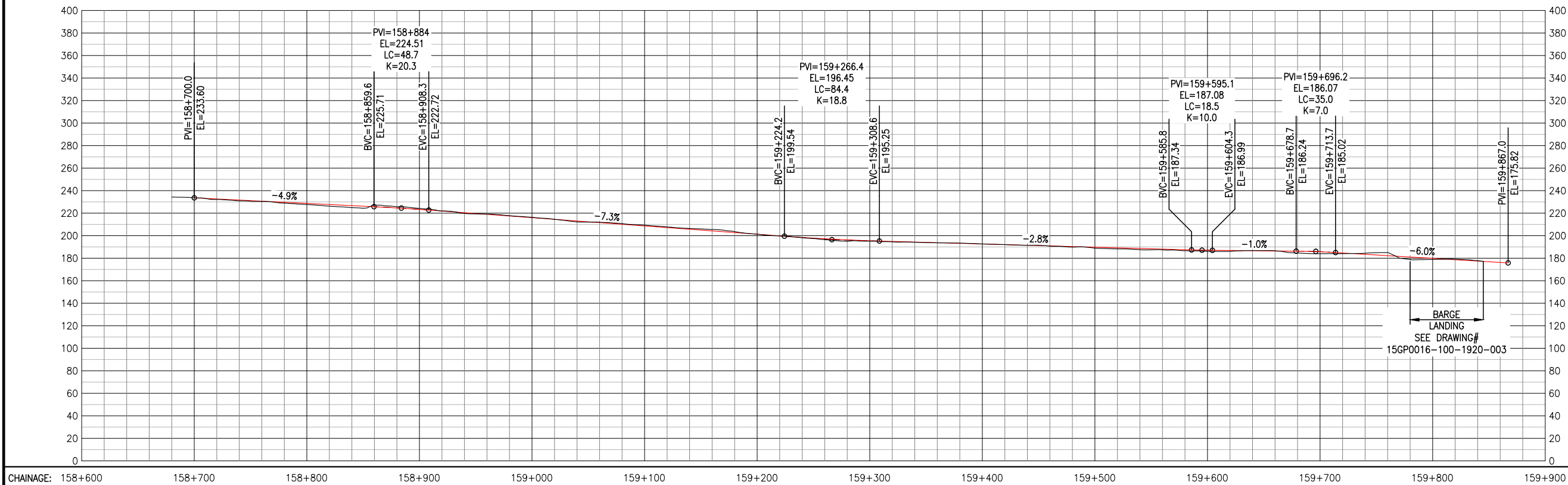
VOLUME SUMMARY m³

ROAD		
TOTAL	Stripping	4390.25
158+700.00	Road Surfacing	3711.27
TO	Cut	6146.29
159+782.22	Fill (factored 1.15)	4881.84
	Borrow	380.00
	Waste	1700.09
GRADING		
Staging Area /	Road Surfacing	2334.50
Barge Landing	Cut	2213.00
	Fill (factored 1.15)	7861.00

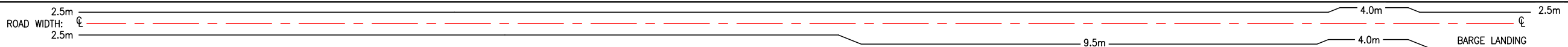


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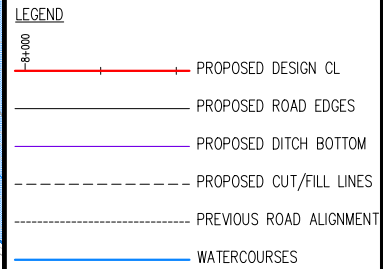
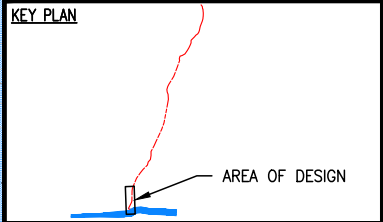
FIELD STATIONS:



MASS MOVEMENT:		1	2	3	4	5	6	7	8	9	10
EARTHWORKS:											
Stripping			610.4			606.9	640.9	1128.5		1035.0	368.5
Road Surfacing			327.8			327.8	349.0	1248.6		1238.6	219.4
Cut			692.4			703.7	950.1	2225.0		836.5	738.5
Fill			1078.2			262.0	425.0	236.9		1612.0	631.0
Borrow			380.0			0.0	0.0	0.0		0.0	0.0
Waste			0.0			0.0	943.1	757.0		0.0	0.0



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DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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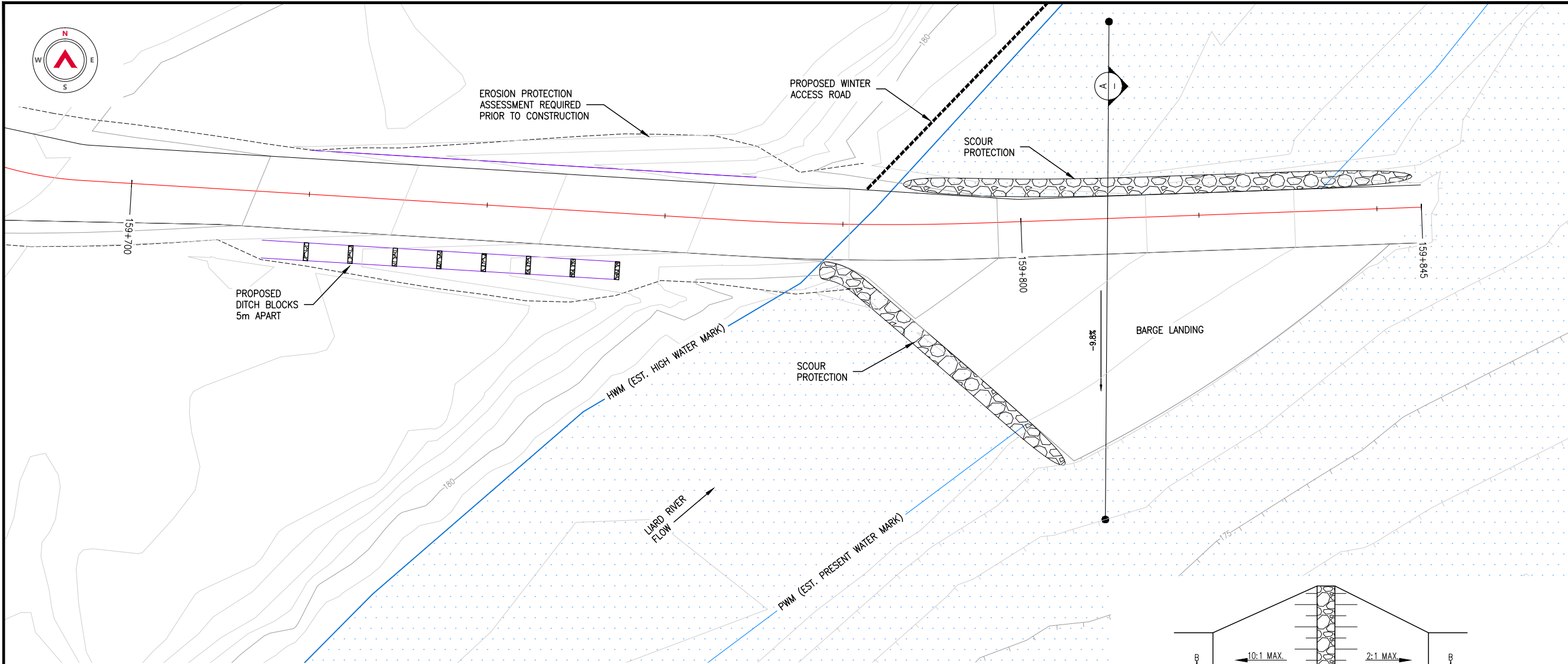
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**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

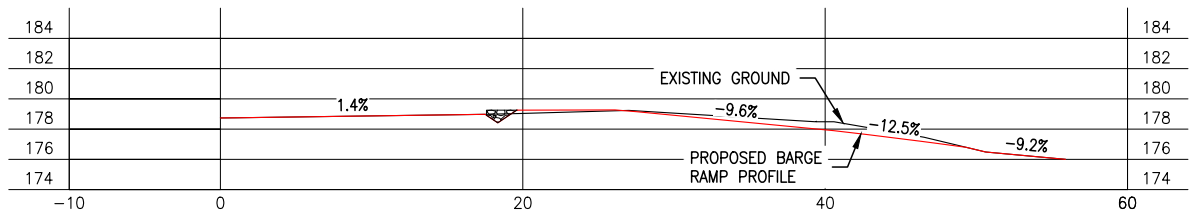
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**PLAN AND PROFILE
DRAWING
km 158+700 to km 159+782.22**

DWG NO:	REV:
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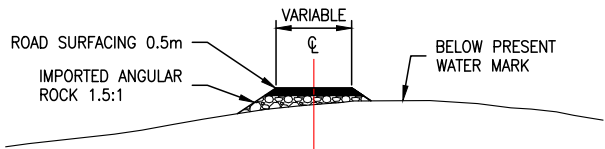
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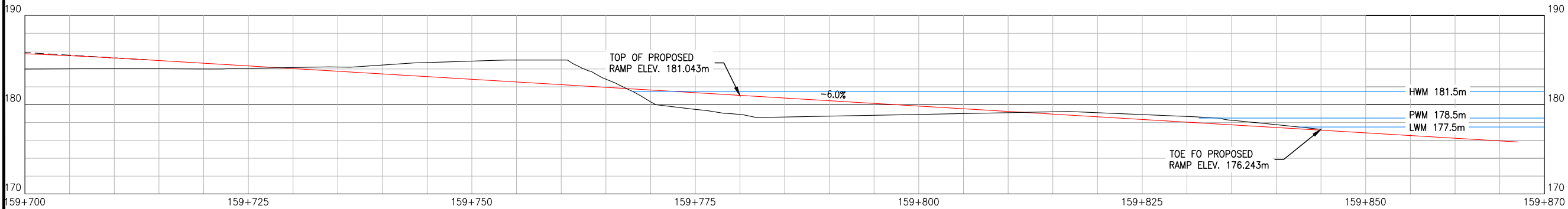
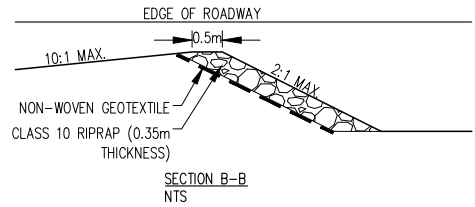
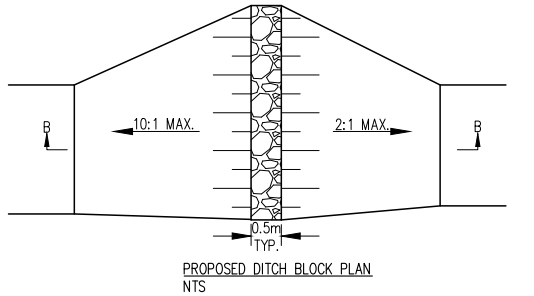
SITE PLAN BARGE LANDING
SCALE: 1:500



SECTION A-A
SCALE: 1:500

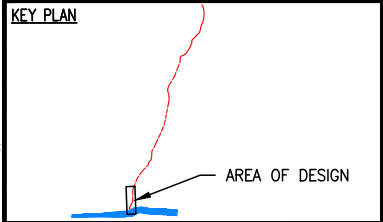


STA 159+782.22 TO STA 159+845
TYPICAL BARGE LANDING SECTION
SCALE: 1:500



PROPOSED PROFILE ALONG CENTERLINE
SCALE: 1:500

REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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LEGEND	
	PROPOSED DESIGN CL
	PROPOSED ROAD EDGES
	PROPOSED DITCH BOTTOM
	PROPOSED CUT/FILL LINES
	PREVIOUS ROAD ALIGNMENT
	WATERCOURSES

NOTES:
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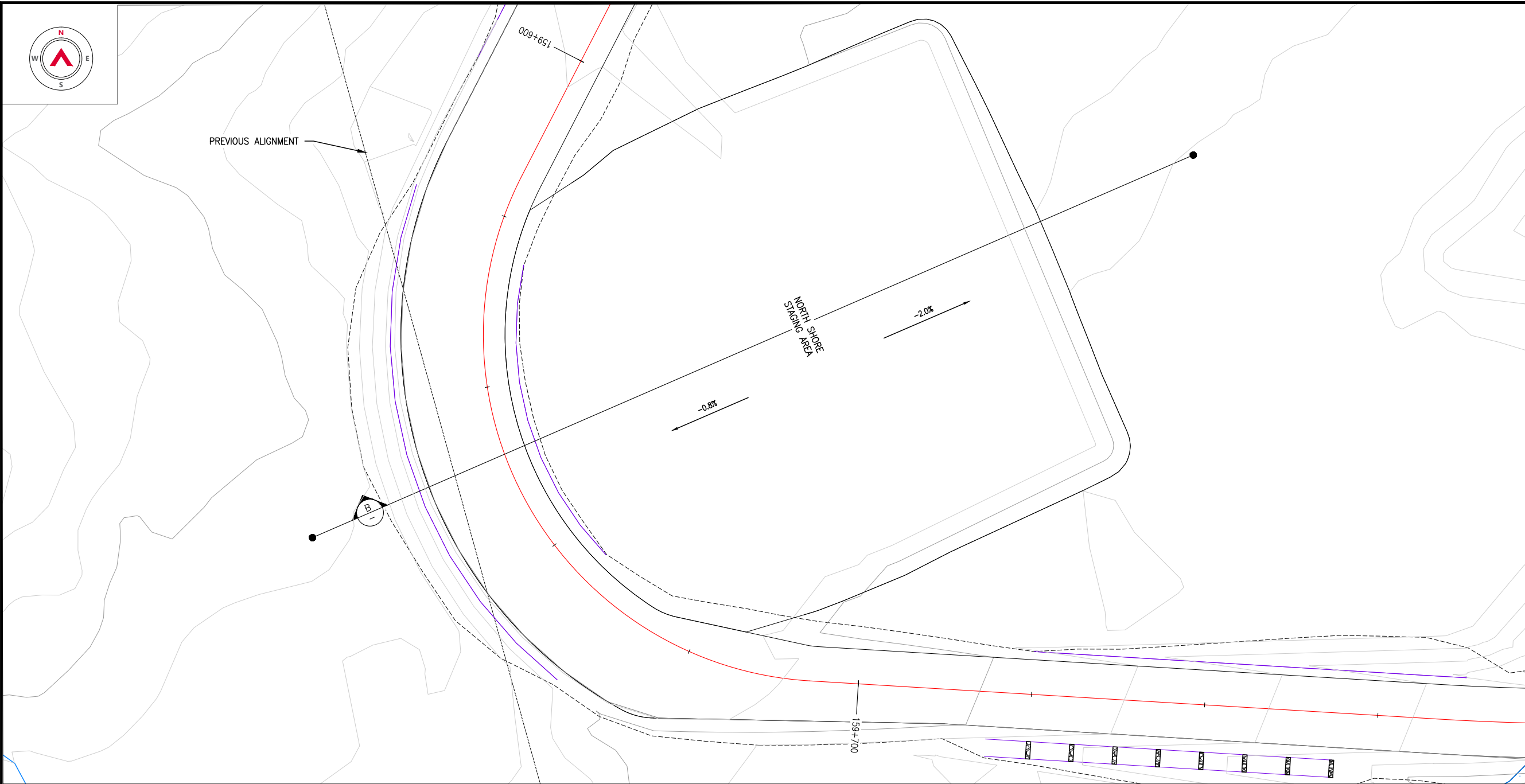
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SCALE:	AS NOTED	APVD: WBM	DATE: -
PROJECT:			

PROJECT:
**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

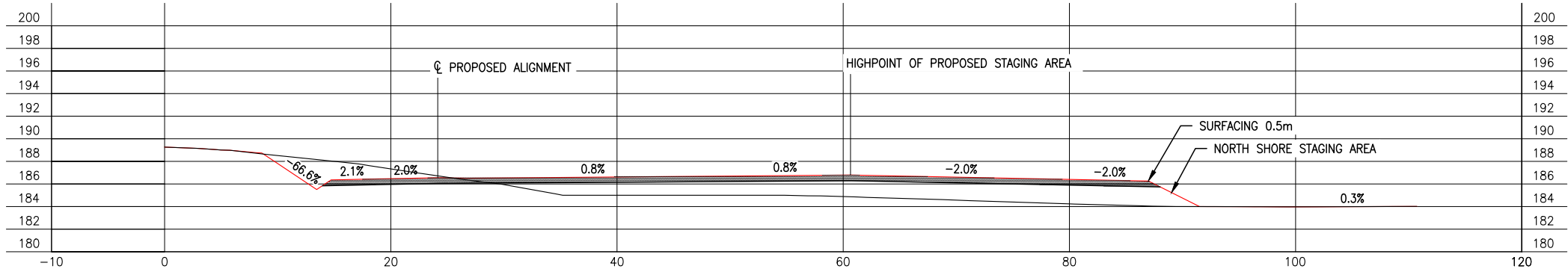
TITLE:
**NORTH SHORE BARGE
LANDING & DETAILS
km 159+790 to km 159+845**

DWG NO:	REV:
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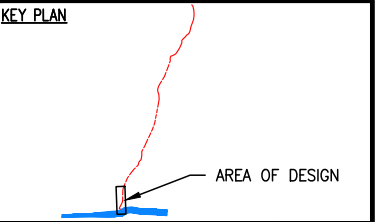
SITE PLAN NORTH SHORE STAGING AREA
SCALE: 1:500



NORTH SHORE STAGING AREA
SCALE: 1:500

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LEGEND	
	PROPOSED DESIGN CL
	PROPOSED ROAD EDGES
	PROPOSED DITCH BOTTOM
	PROPOSED CUT/FILL LINES
	PREVIOUS ROAD ALIGNMENT
	WATERCOURSES

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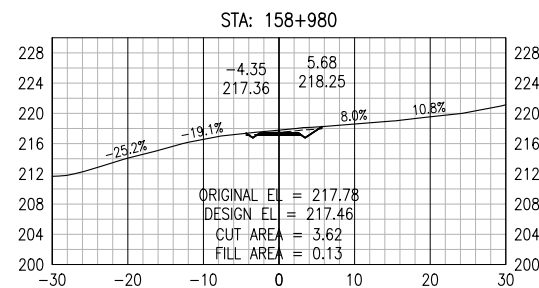
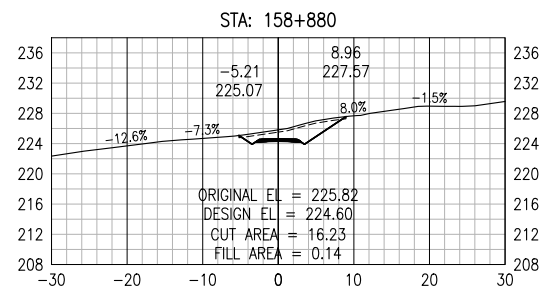
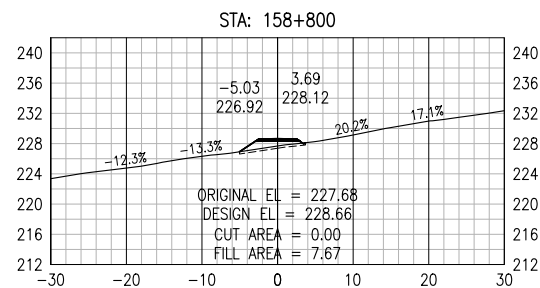
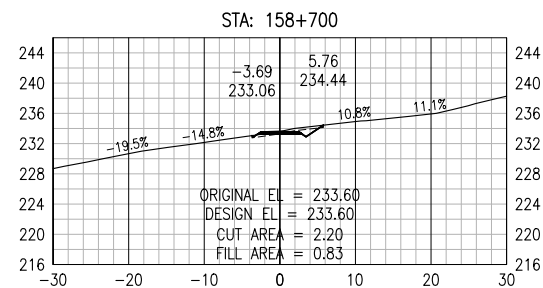
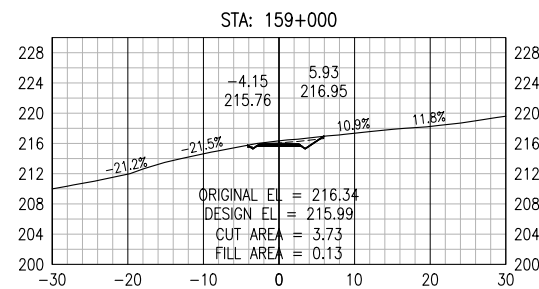
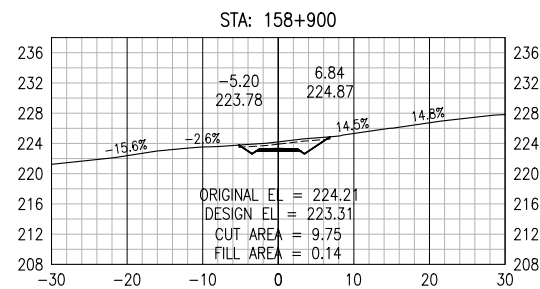
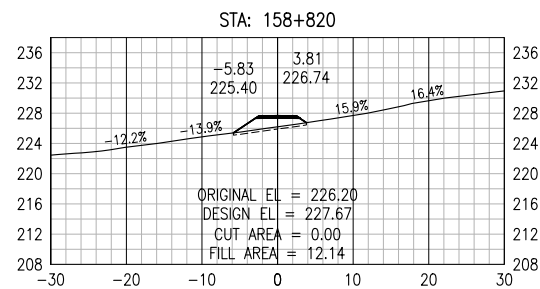
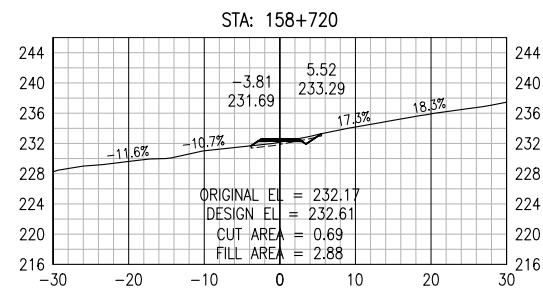
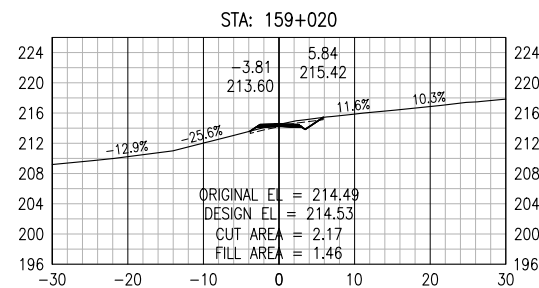
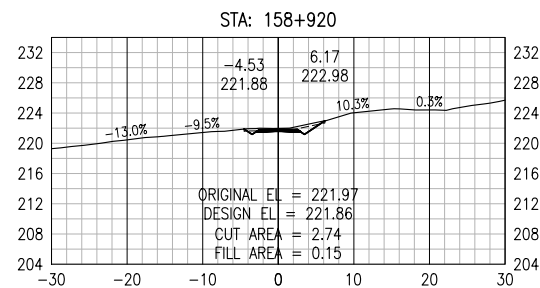
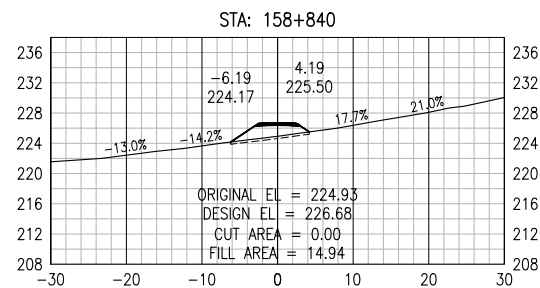
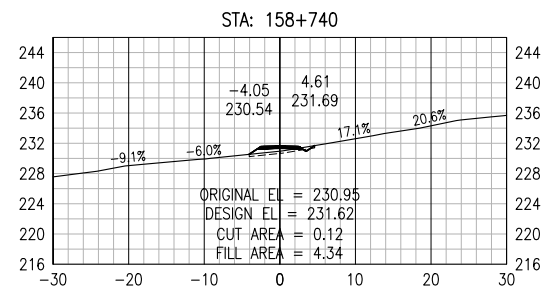
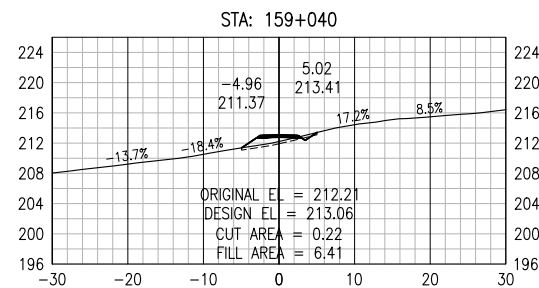
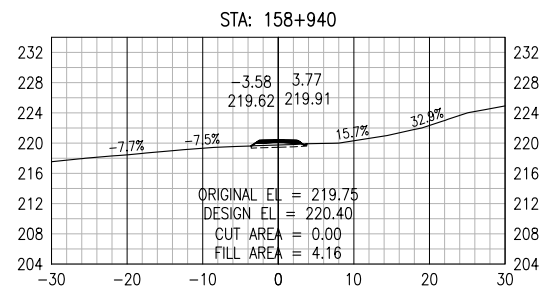
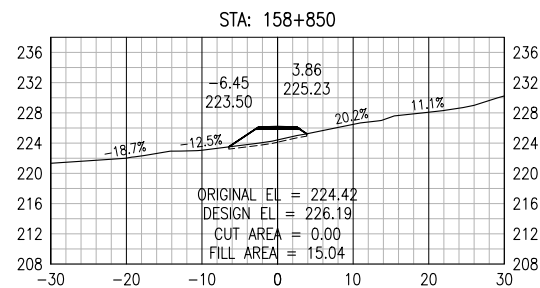
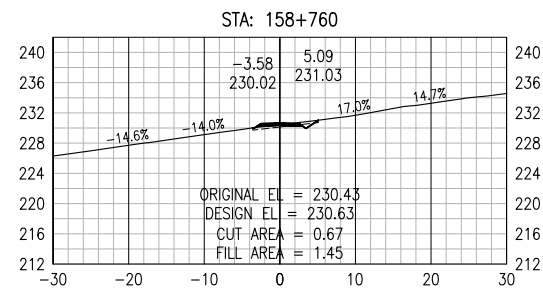
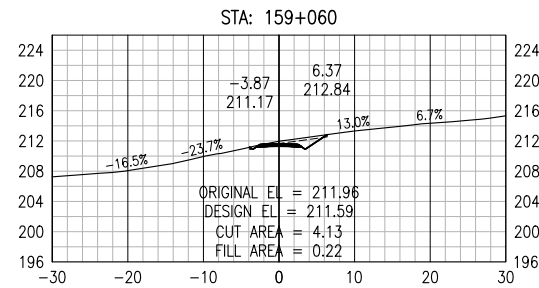
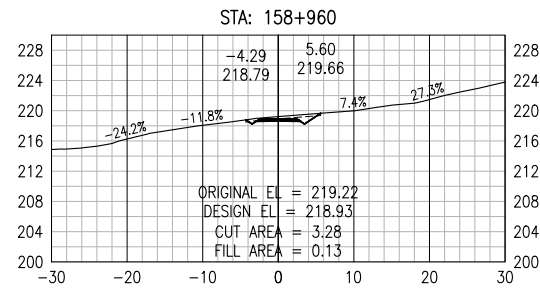
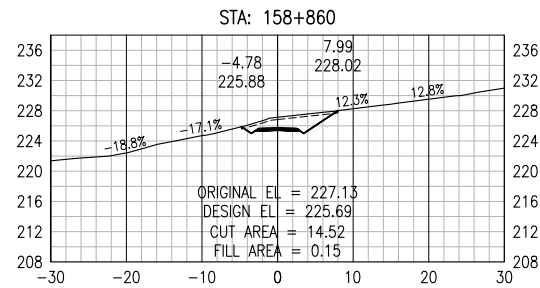
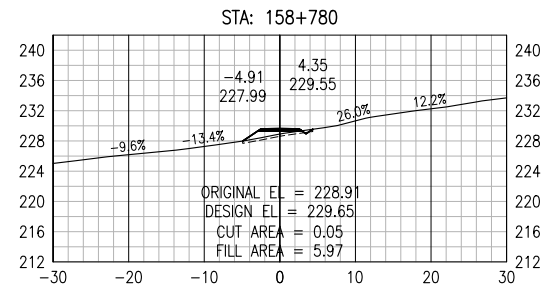


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SCALE:		AS NOTED	APVD:	WBM	DATE:	-
PROJECT:						

PROJECT:
**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

TITLE:
**NORTH SHORE
STAGING AREA
SITE PLAN AND SECTION**

DWG NO:	REV:
15GP0016-100-1920-004	0



REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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		2
		3
		4
		5
		6
		7
		8

LEGEND

_____ EXISTING GROUND

----- STRIPPED GROUND

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REV	YY/MM/DD	DESCRIPTION	DRWN	APVD

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PROJECT:

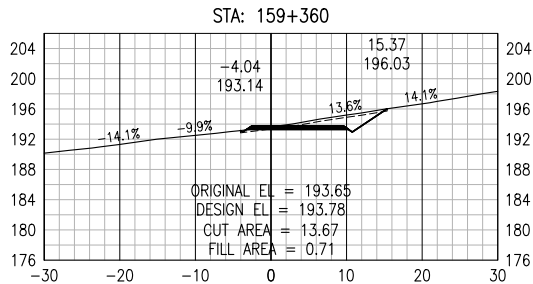
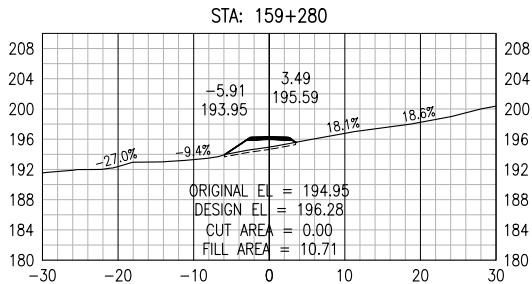
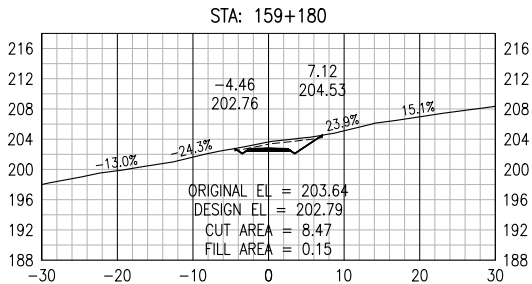
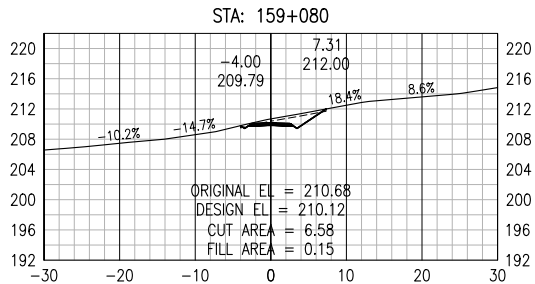
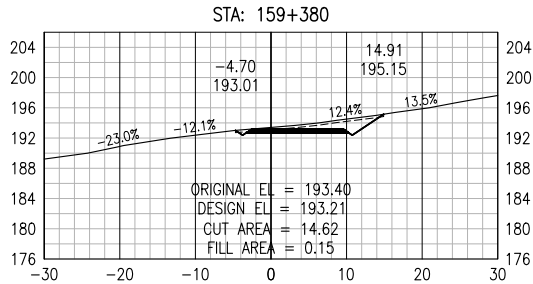
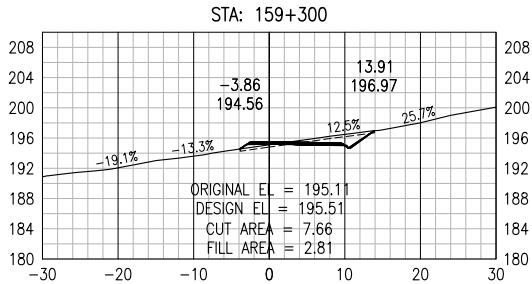
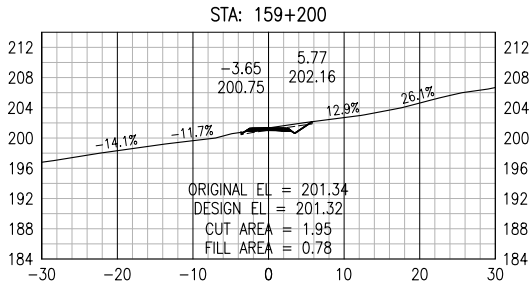
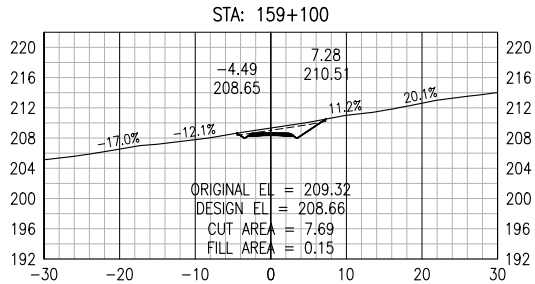
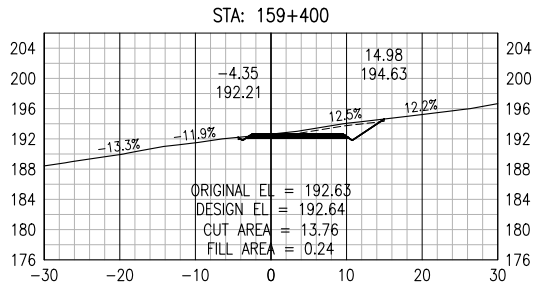
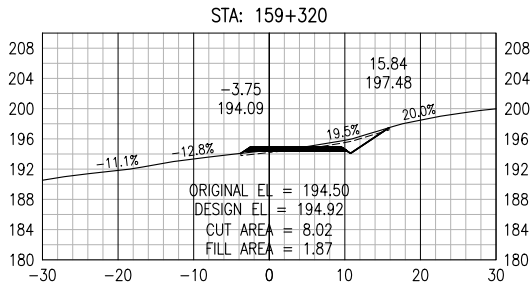
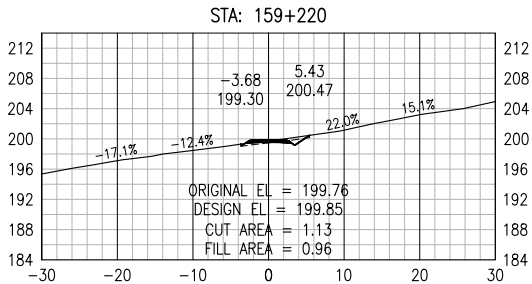
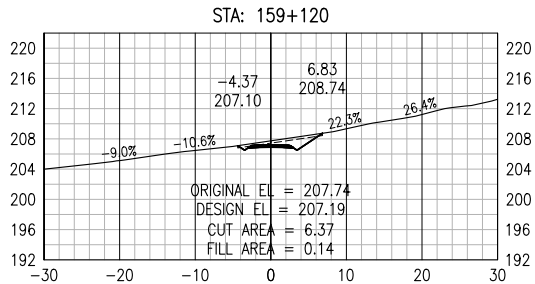
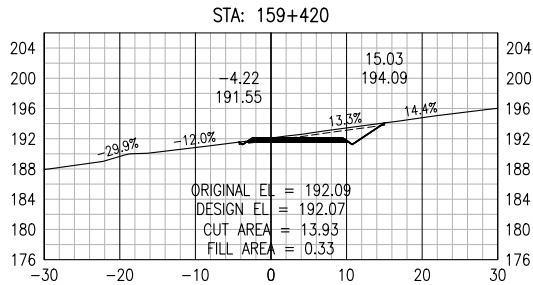
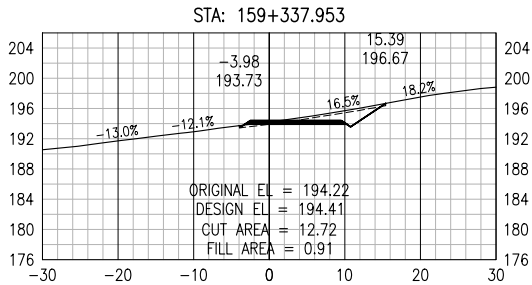
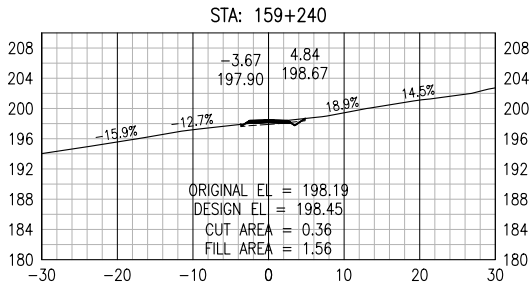
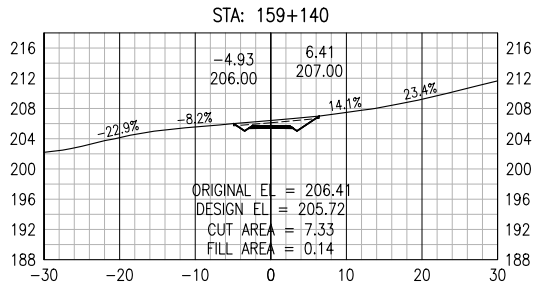
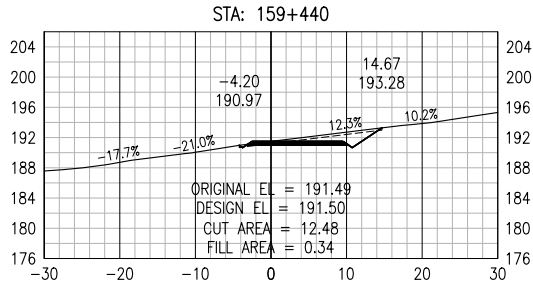
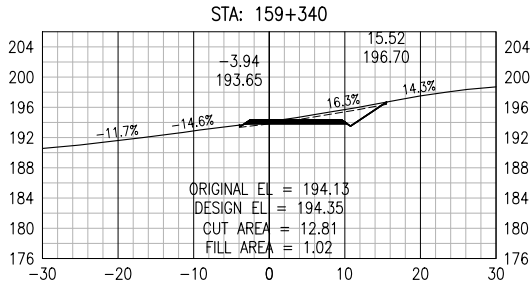
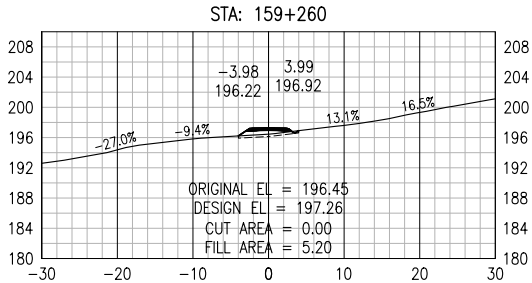
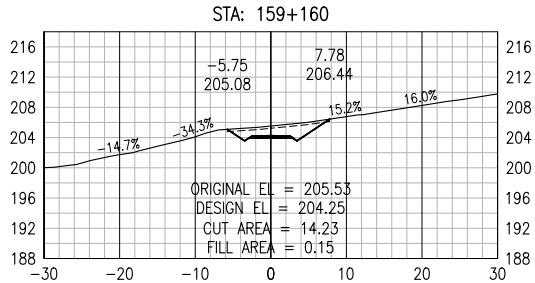
**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

TITLE:

**CROSS SECTION
DRAWINGS
PAGE 1 of 4**

DWG NO:	REV:
15GP0016-100-1920-005	0

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DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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LEGEND

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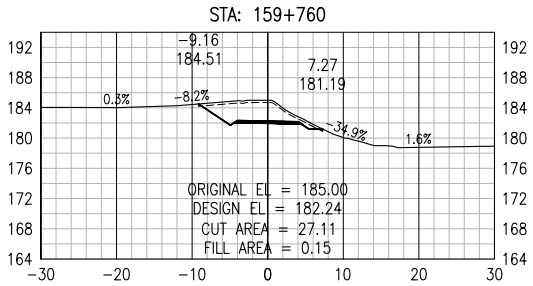
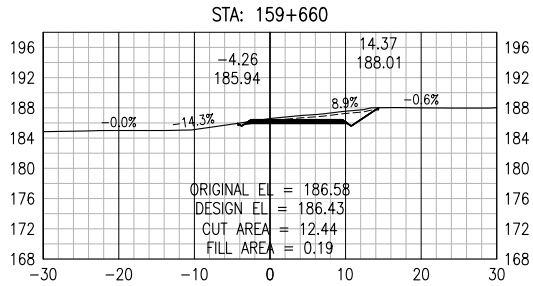
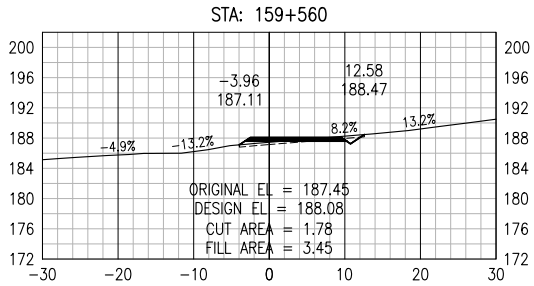
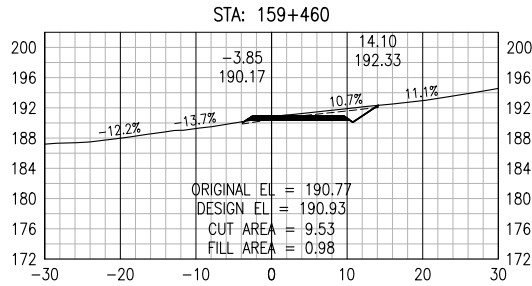
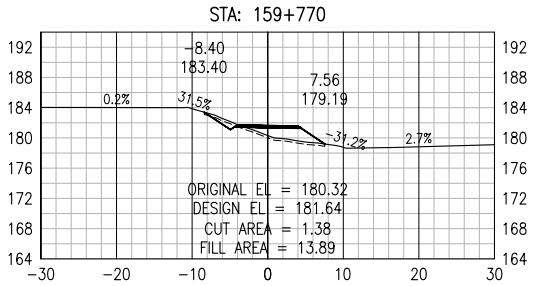
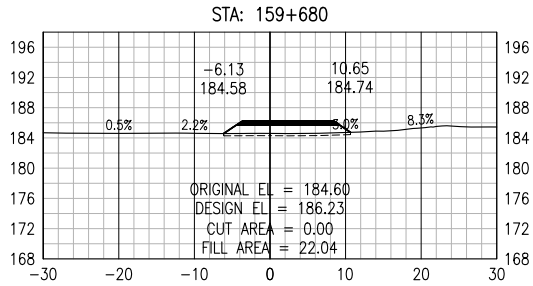
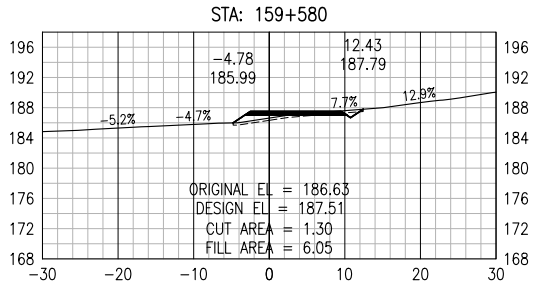
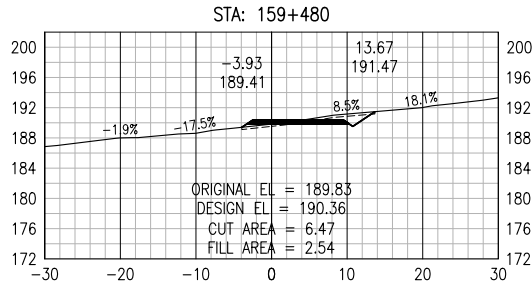
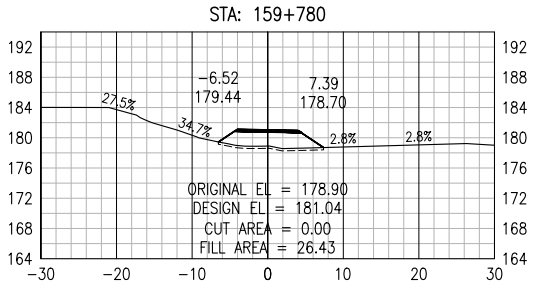
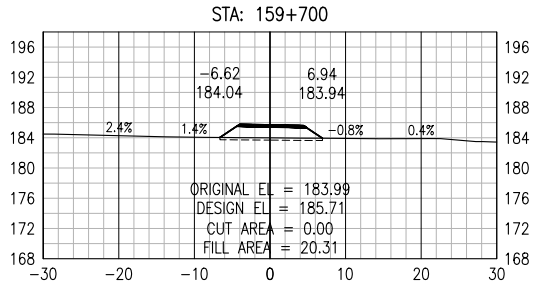
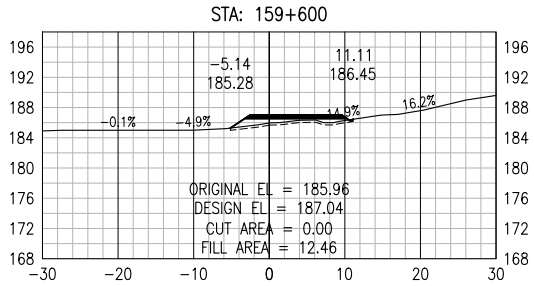
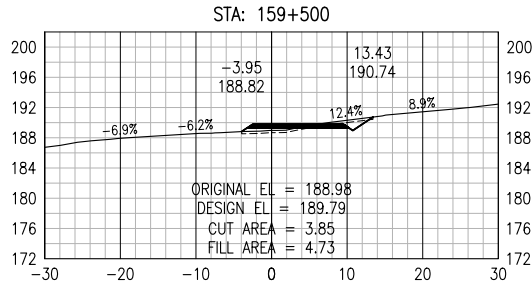
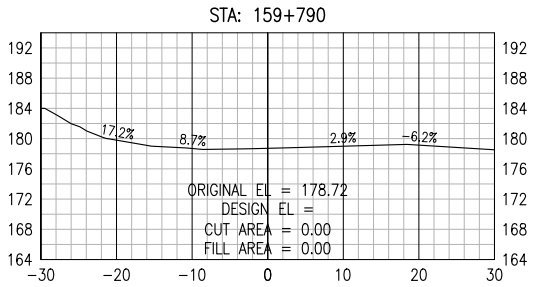
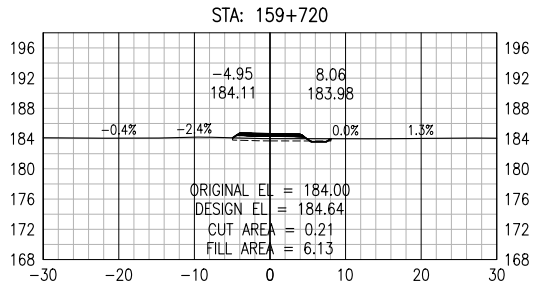
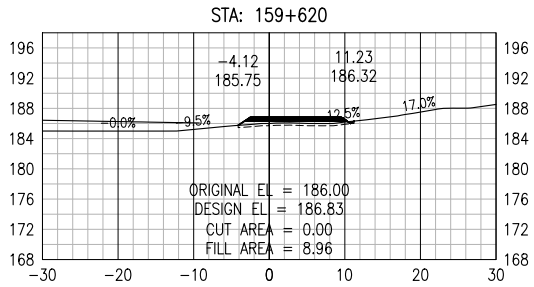
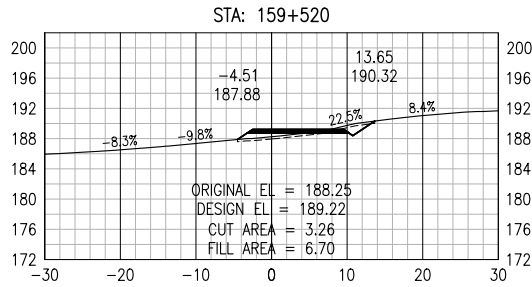
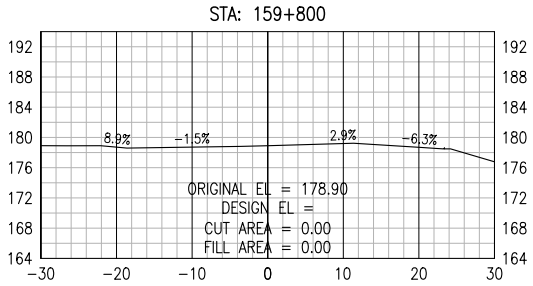
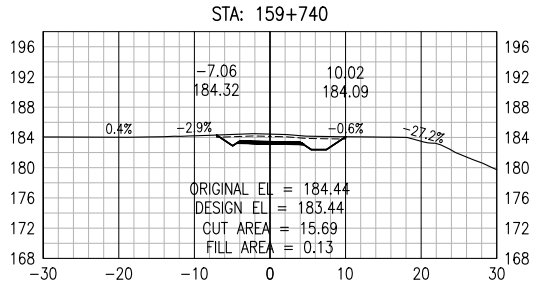
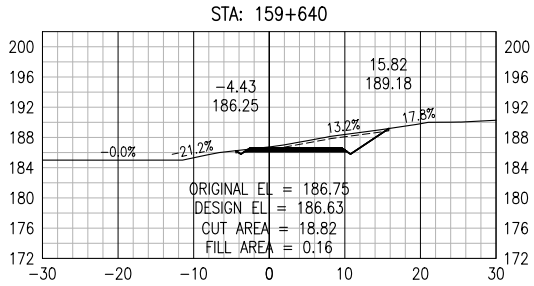
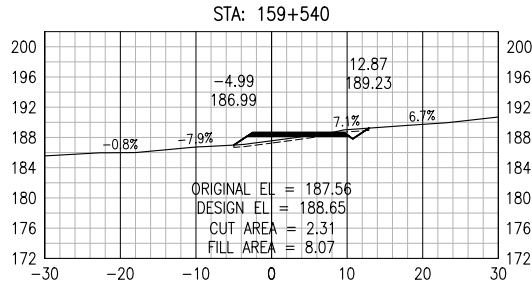
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**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

TITLE:

**CROSS SECTION
DRAWINGS
PAGE 2 of 4**

DWG NO:	REV:
15GP0016-100-1920-006	0



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LEGEND

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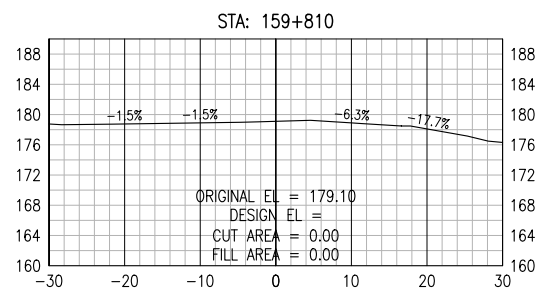
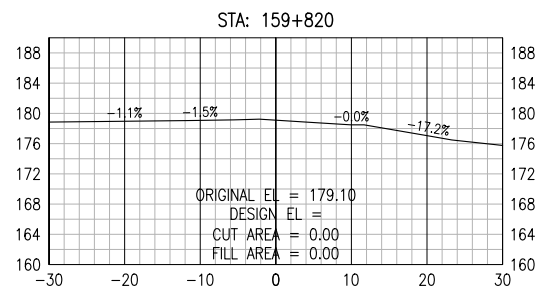
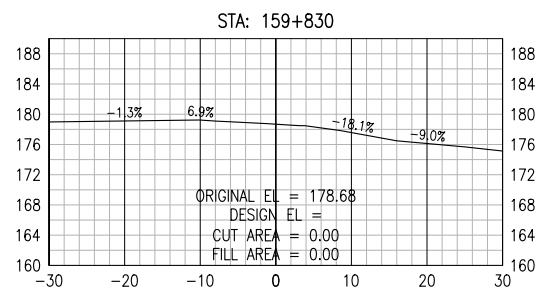
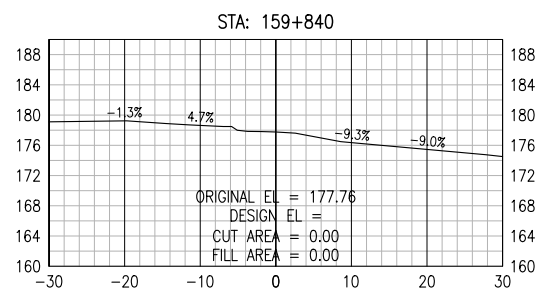
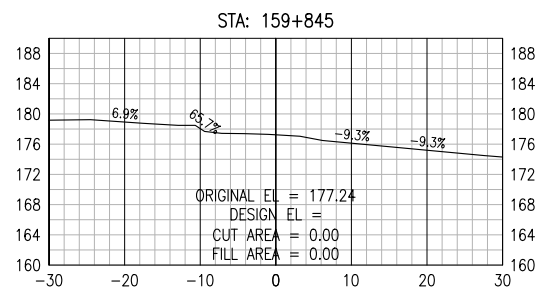
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**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

TITLE:

**CROSS SECTION
DRAWINGS
PAGE 3 of 4**

DWG NO:	15GP0016-100-1920-007	REV:	0
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PROJECT:

**PRAIRIE CREEK MINE
LIARD RIVER BARGE
NORTH SHORE ACCESS ROAD
km 158+700 to km 159+845**

TITLE:

**CROSS SECTION
DRAWINGS
PAGE 4 of 4**

DWG NO:	REV:
15GP0016-100-1920-008	0



PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+000

DRAWING LIST		
DRAWING NO	DRAWING TITLE	REVISION
15GP0016-100-1920-009	SOUTH SHORE OVERVIEW	0
15GP0016-100-1920-010	PLAN AND PROFILE DRAWING km 160+250 to km 161+000	0
15GP0016-100-1920-011	SOUTH SHORE BARGE LANDING & DETAILS km 160+190 to km 160+340	0
15GP0016-100-1920-012	SOUTH SHORE STAGING AREA SITE PLAN AND SECTION	0
15GP0016-100-1920-013	CROSS SECTION DRAWINGS PAGE 1 of 3	0
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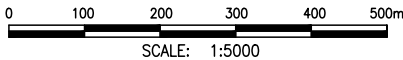
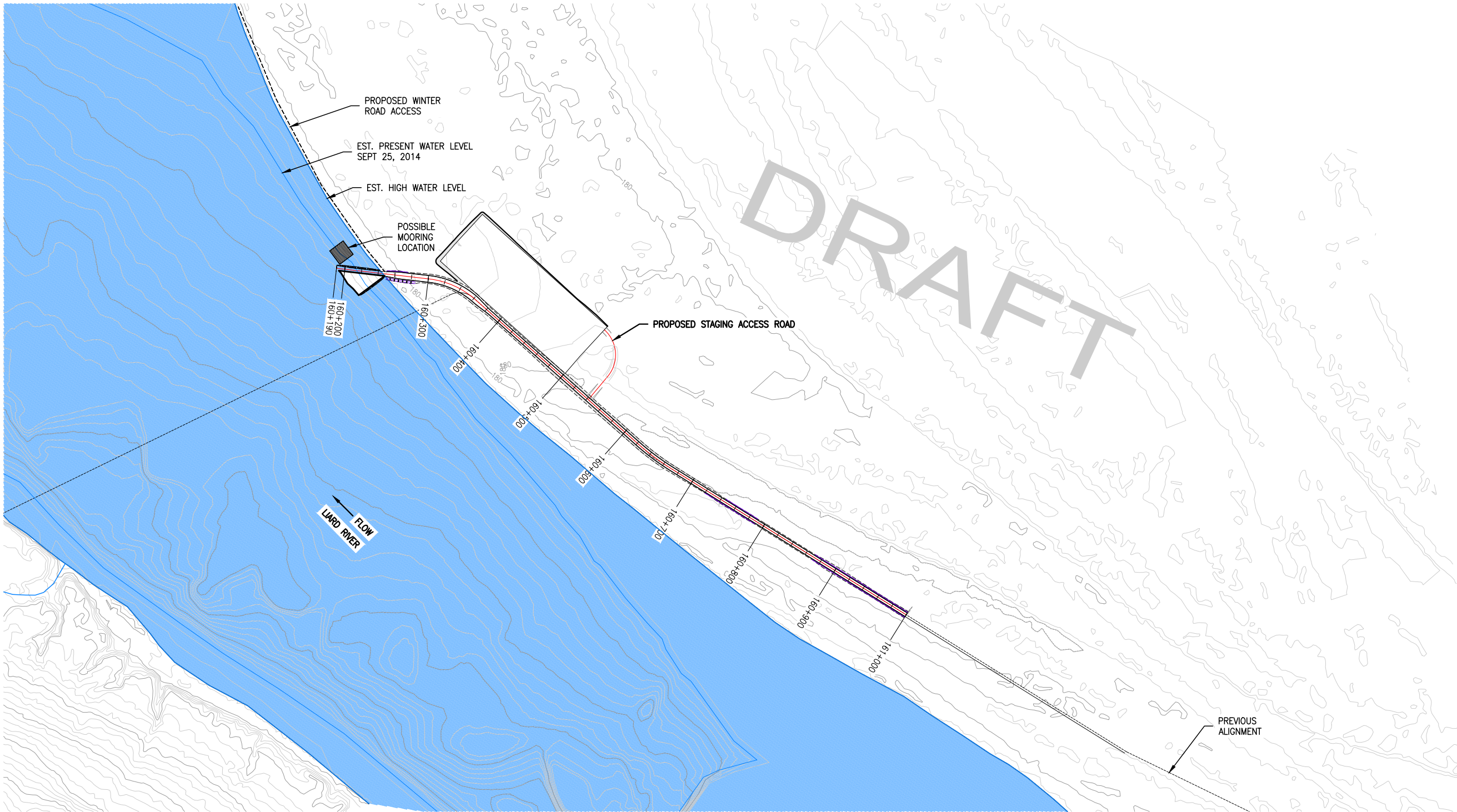
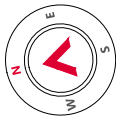
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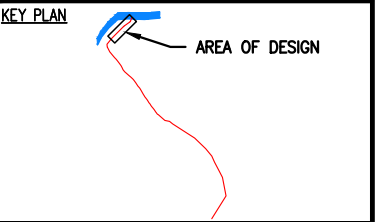
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Date: 2015/02/25 | User: Terna Major | File: P:\GP\2015\015-GP-0016_Liard Barge X-ing\1000-Drawings\1011-Cull\01-Production\15GP0016-100-1920-South-R2 | Layout: 15GP0016-100-1920-009 | Paper Size: 598.8mm x 431.8mm



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LEGEND

	PROPOSED DESIGN CL
	PROPOSED ROAD EDGES
	PROPOSED DITCH BOTTOM
	PROPOSED CUT/FILL LINES
	PREVIOUS ROAD ALIGNMENT
	WATERCOURSES

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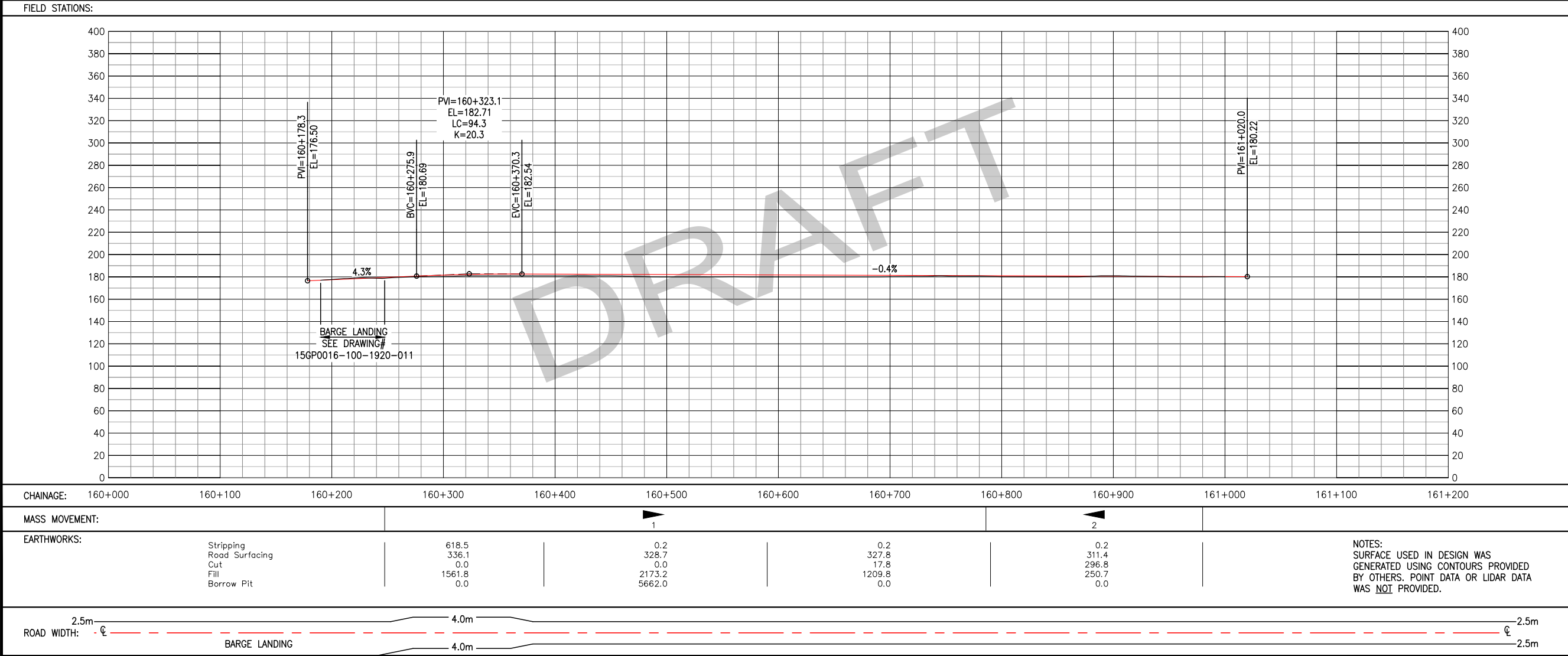
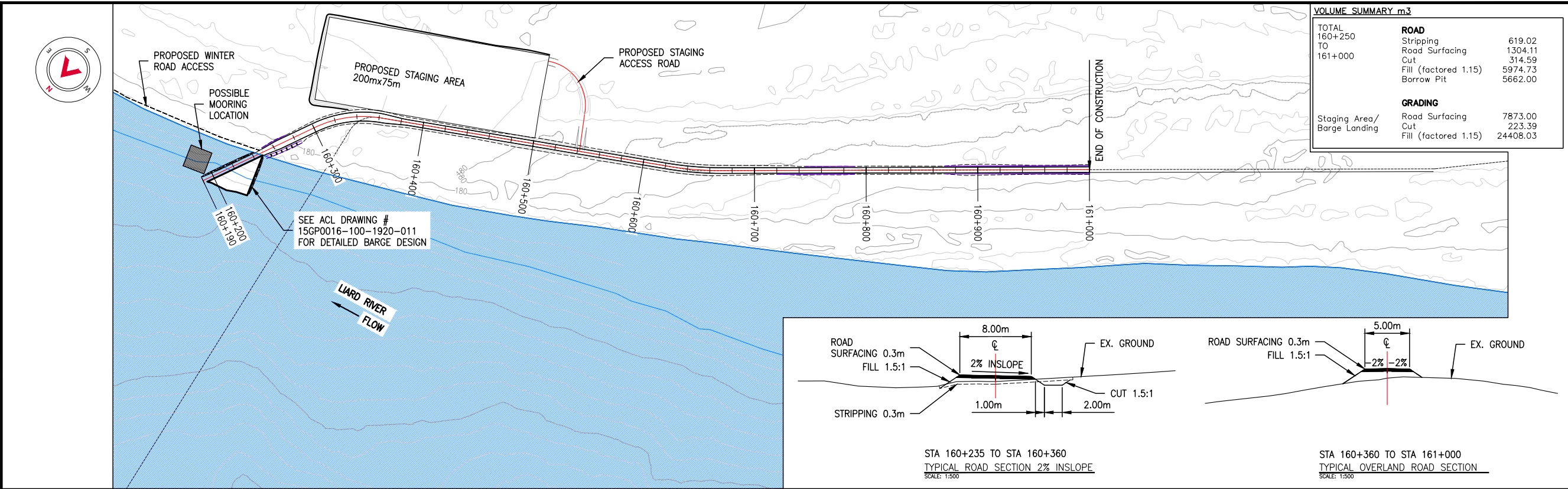
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PROJECT:

**PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+000**

TITLE:
**SOUTH SHORE
OVERVIEW**

DWG NO:	REV:
15GP0016-100-1920-009	0



REFERENCE DRAWINGS

DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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KEY PLAN

LEGEND

- PROPOSED DESIGN CL
- PROPOSED ROAD EDGES
- PROPOSED DITCH BOTTOM
- PROPOSED CUT/FILL LINES
- PREVIOUS ROAD ALIGNMENT
- WATERCOURSES

CLIENT:

CANADIAN ZINC CORPORATION

Allnorth

CLIENT NO: DRWN: TMM DATE: 15/02/04
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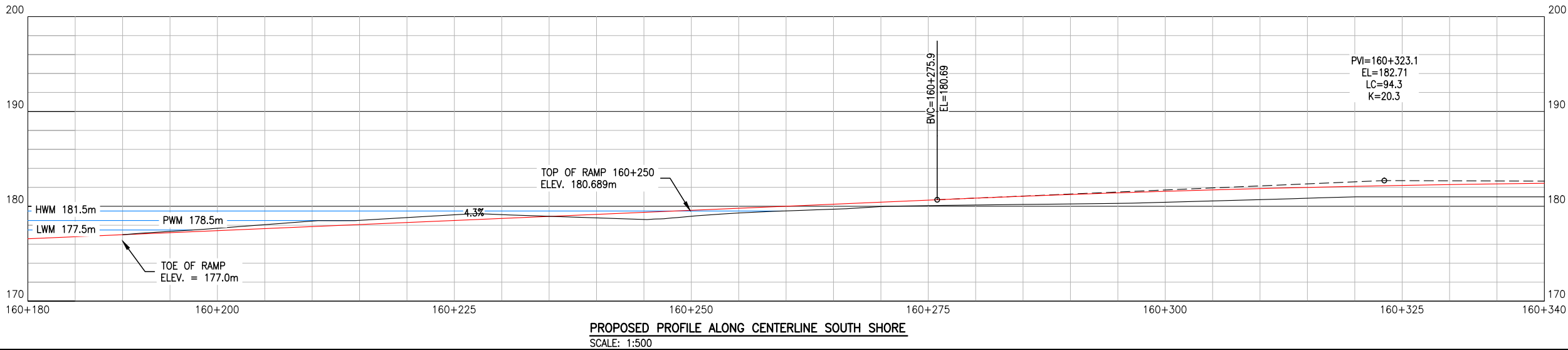
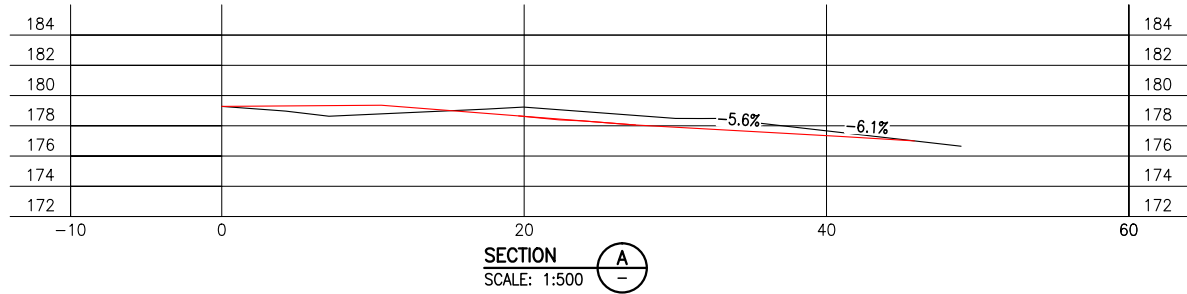
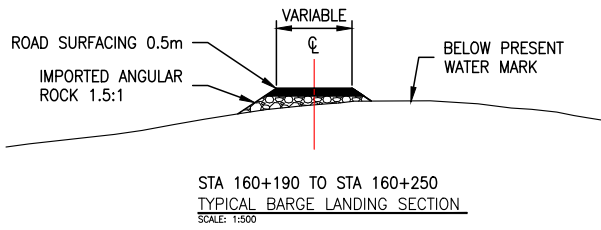
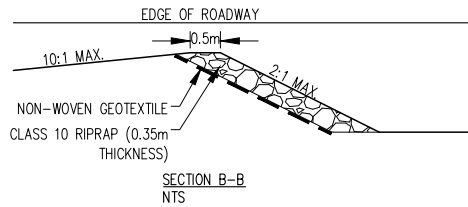
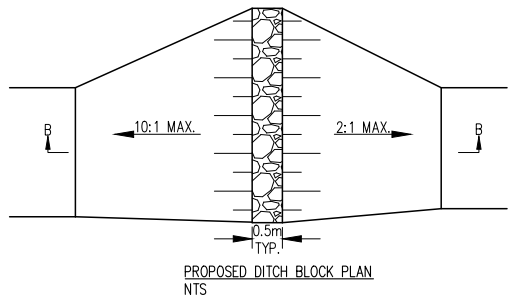
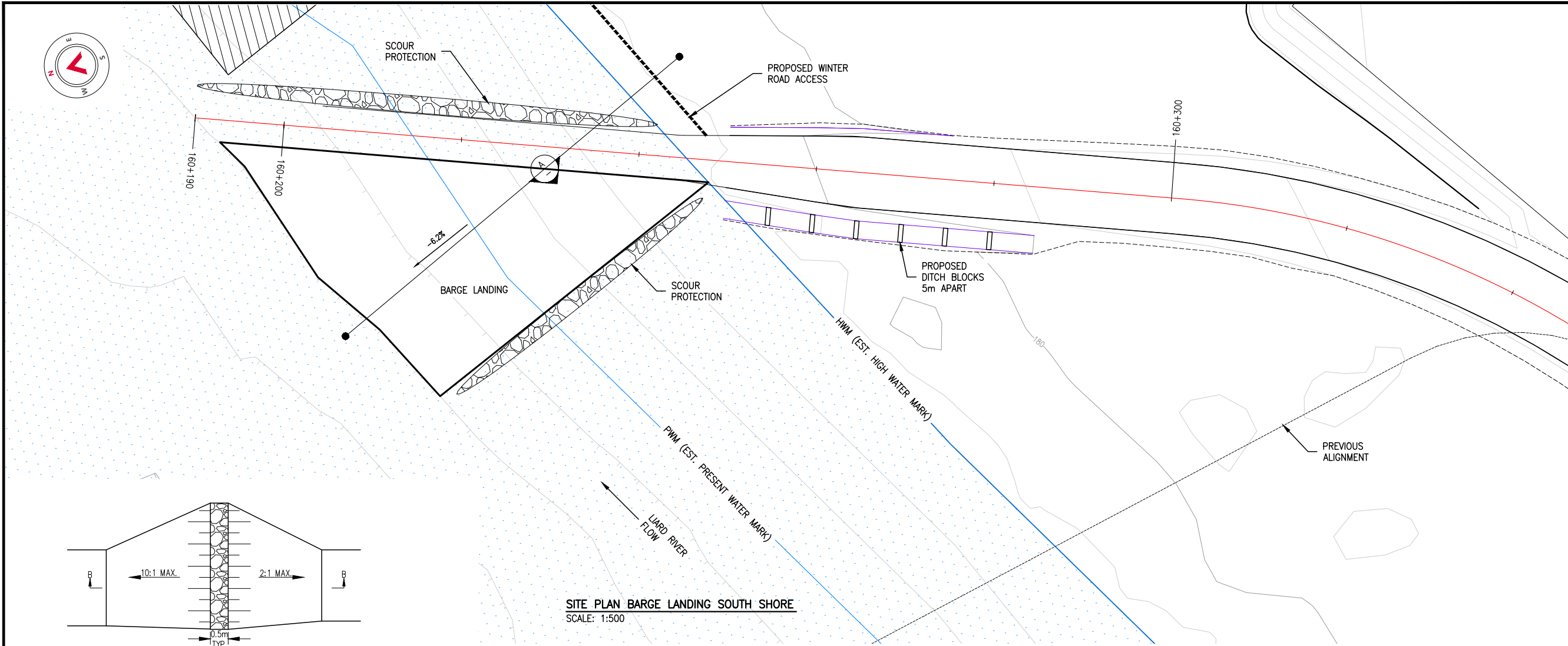
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LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+000**

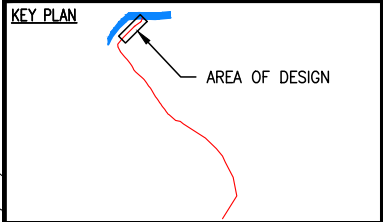
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**PLAN AND PROFILE
DRAWING
km 160+250 to km 161+000**

DWG NO: 15GP0016-100-1920-010 **REV:** 0



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	PROPOSED DITCH BOTTOM
	PROPOSED CUT/FILL LINES
	PREVIOUS ROAD ALIGNMENT
	WATERCOURSES

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REV	YY/MM/DD	DESCRIPTION	DRWN	APVD



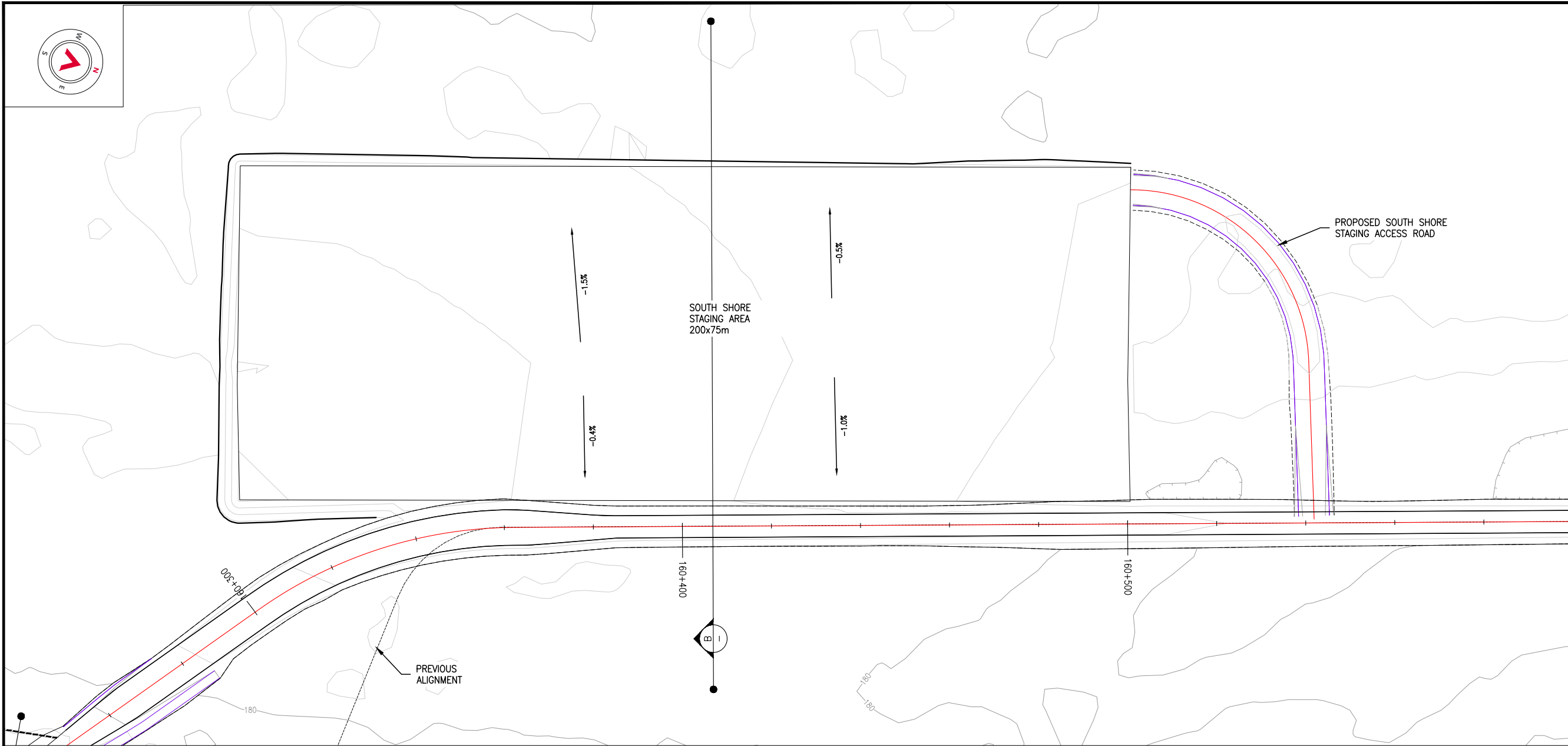
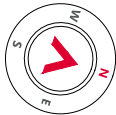
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PROJECT:
**PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+000**

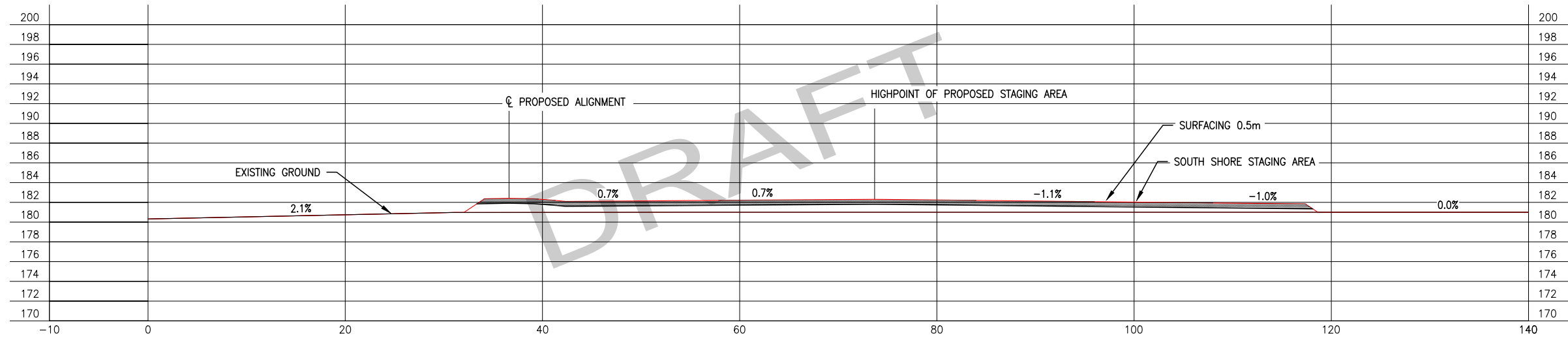
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LANDING & DETAILS
km 160+190 to km 160+340**

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Date: 2015/02/25 | User: Teena Major | File: P:\GP\2015\015-GP-0016_Liard Barge X-ing\1000-Drawings\1011-Civil\01-Production\15GP0016-100-1920-South-R2 | Layout: 15GP0016-100-1920-012 | Paper Size: 598.8mm x 431.8mm



SITE PLAN SOUTH SHORE STAGING AREA
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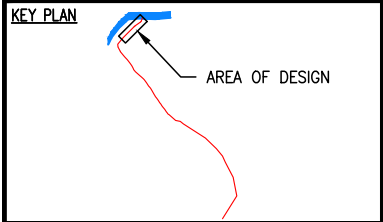


SOUTH SHORE STAGING AREA
SCALE: 1:500



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	PROPOSED ROAD EDGES
	PROPOSED DITCH BOTTOM
	PROPOSED CUT/FILL LINES
	PREVIOUS ROAD ALIGNMENT
	WATERCOURSES

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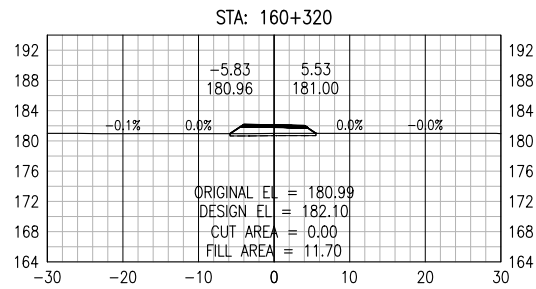
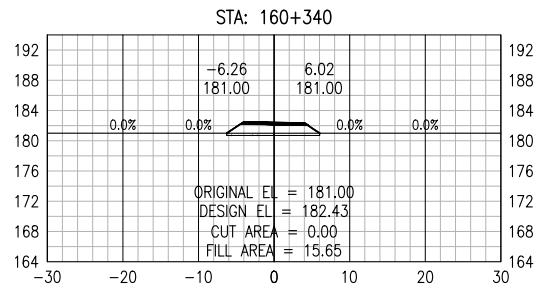
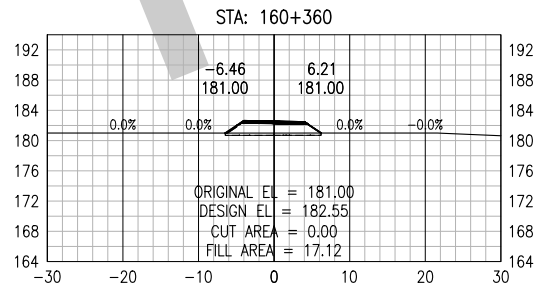
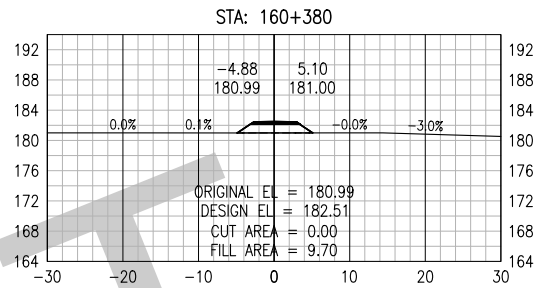
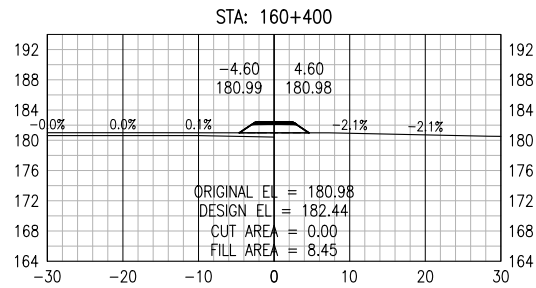
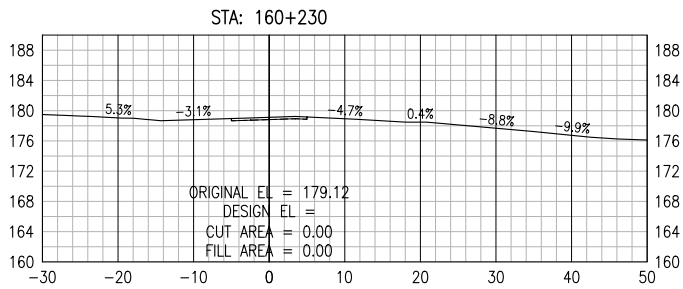
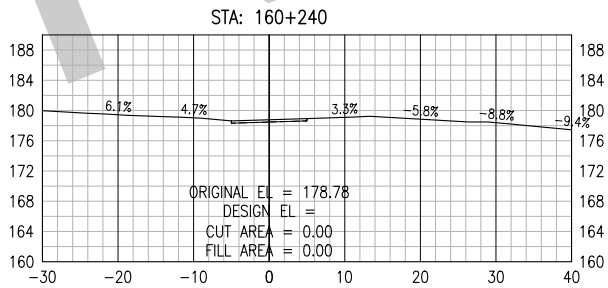
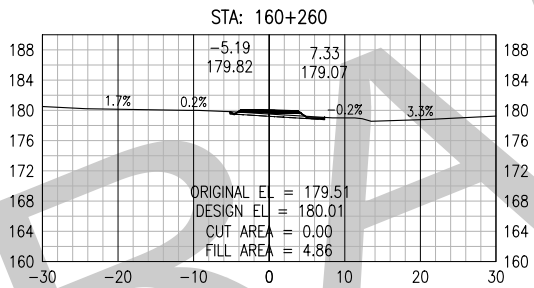
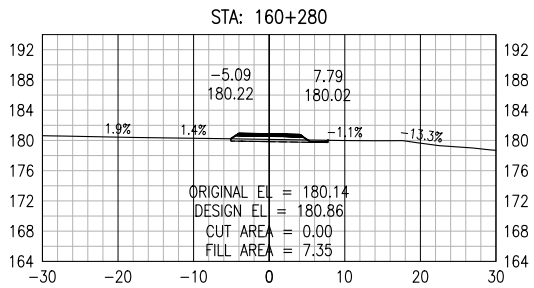
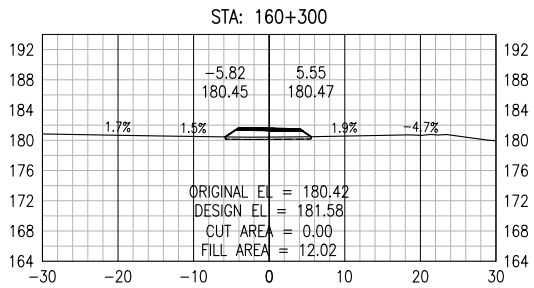
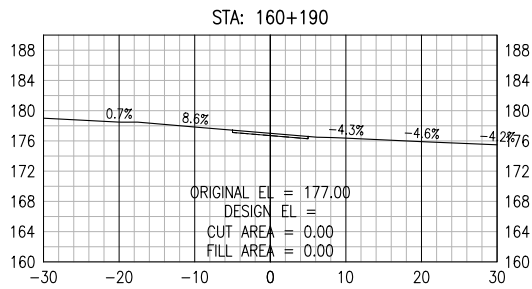
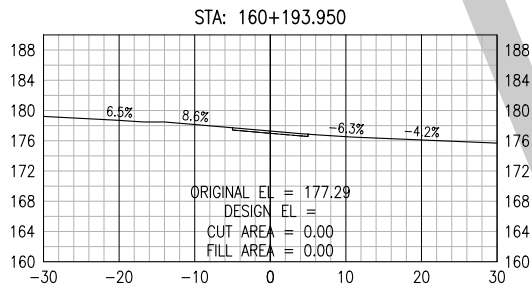
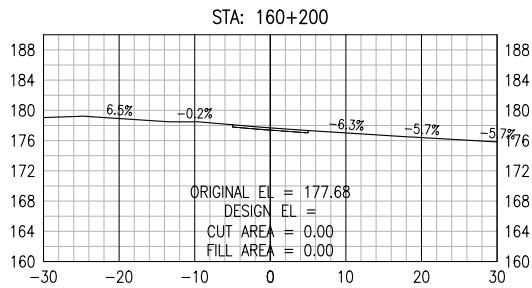
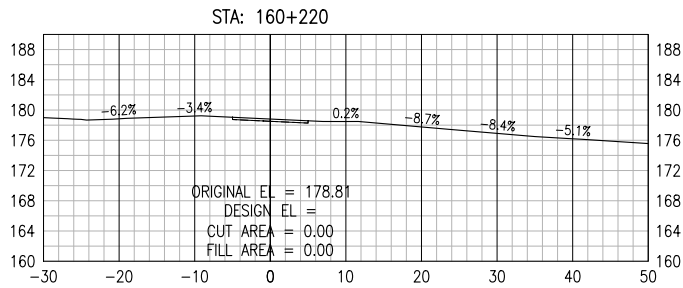


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PROJECT NO: 15GP0016	DSGN: TMM	DATE: 15/02/04
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SCALE: AS NOTED	APVD: WBM	DATE: -

PROJECT:
**PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+000**

TITLE:
**SOUTH SHORE
STAGING AREA
SITE PLAN AND SECTION**

DWG NO:	REV:
15GP0016-100-1920-012	0



REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
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LEGEND	
	EXISTING GROUND
	STRIPPED GROUND

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REV	YY/MM/DD	DESCRIPTION	DRWN	APVD



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PROJECT NO: 15GP0016	DSGN: TMM	DATE: 15/02/04
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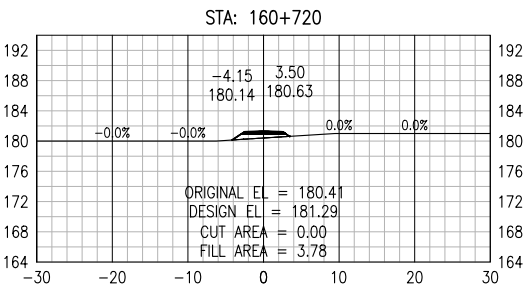
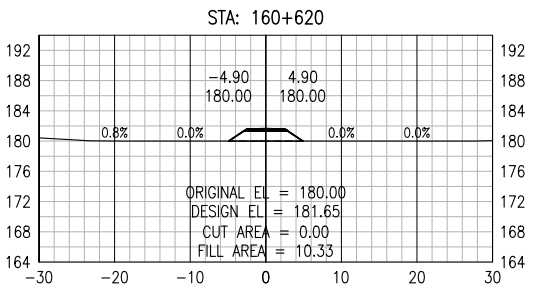
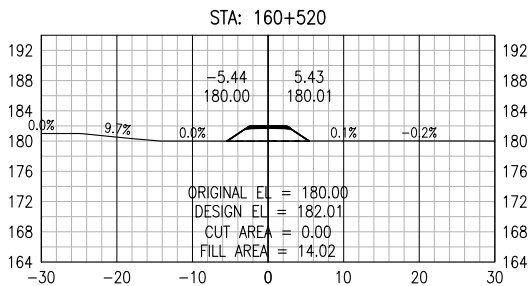
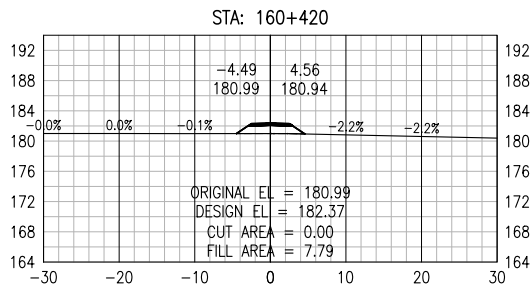
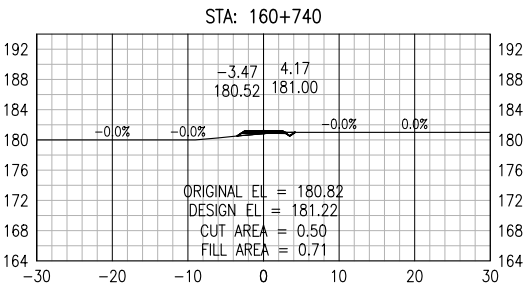
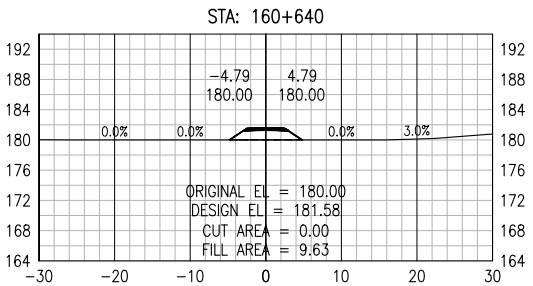
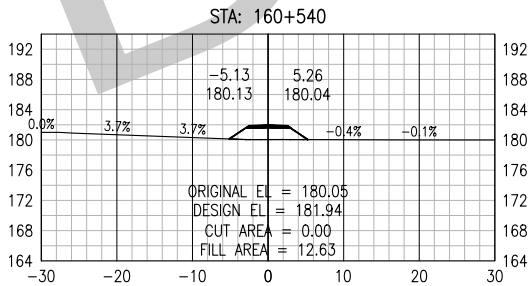
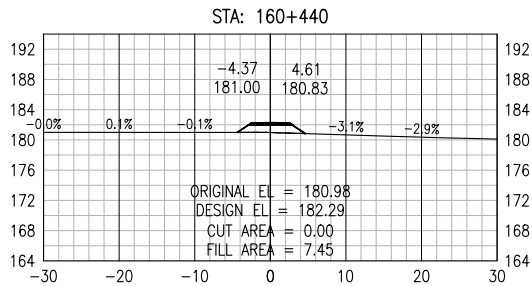
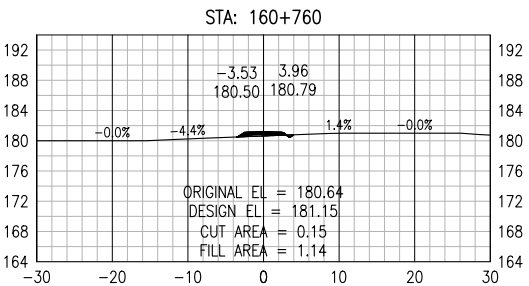
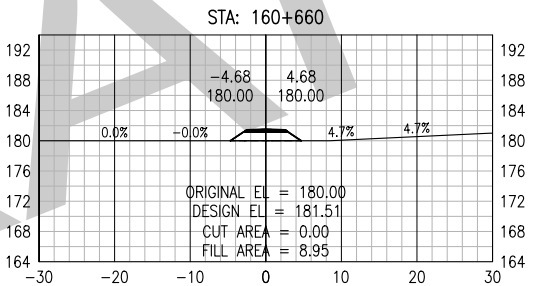
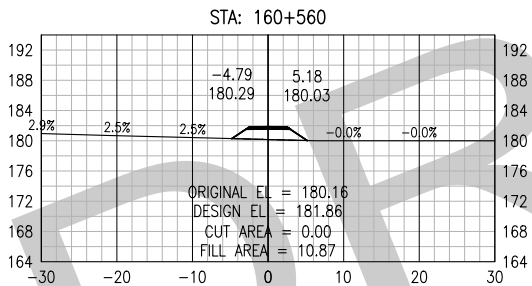
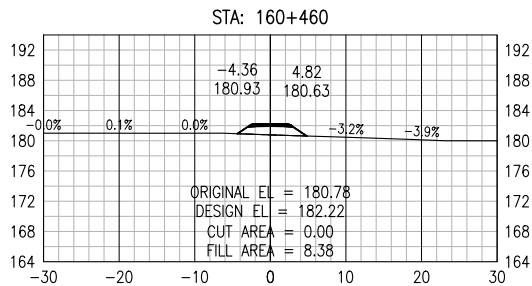
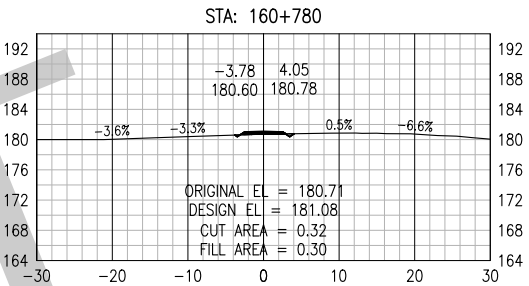
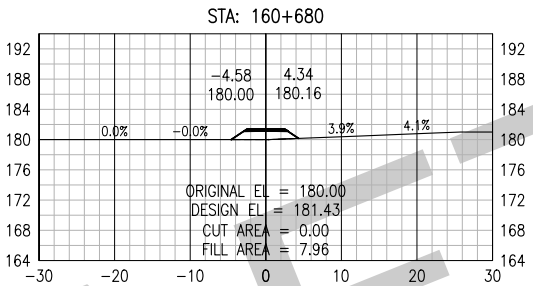
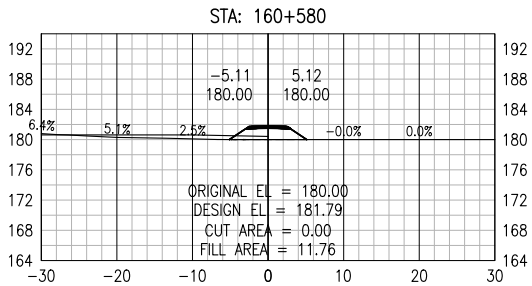
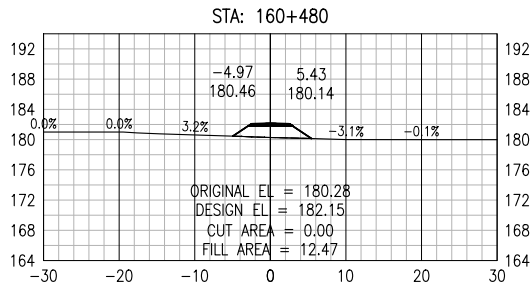
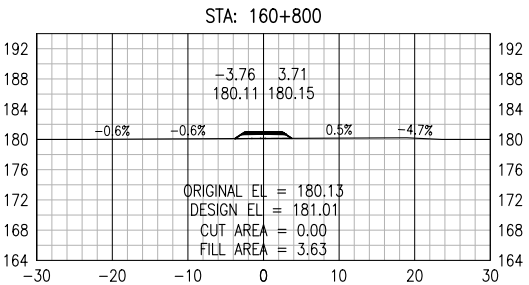
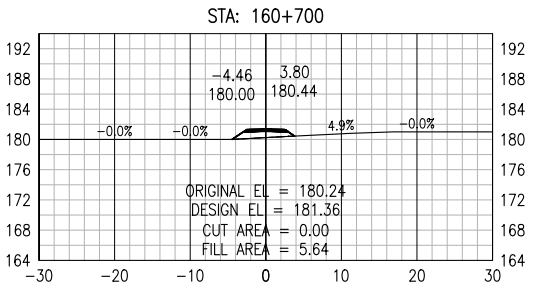
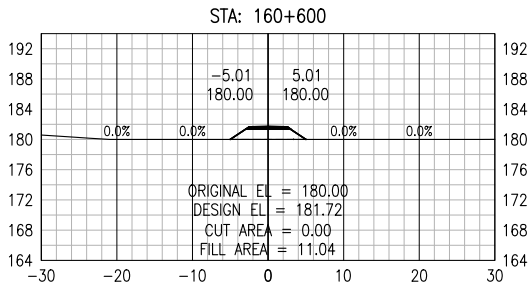
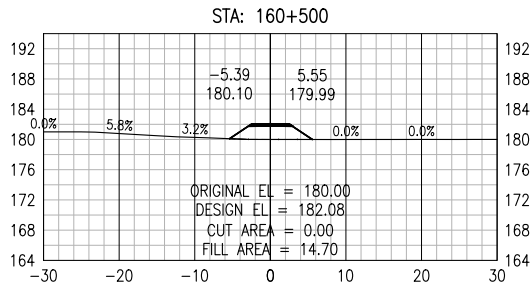
**PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+020**

TITLE:

**CROSS SECTION
DRAWINGS
PAGE 1 of 3**

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PROJECT NO:	15GP0016	DSGN:	TMM	DATE:	15/02/04
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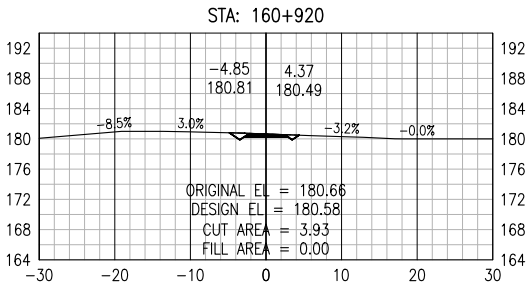
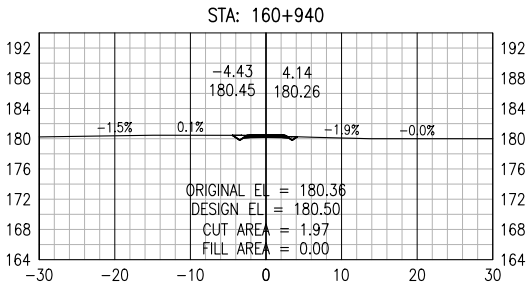
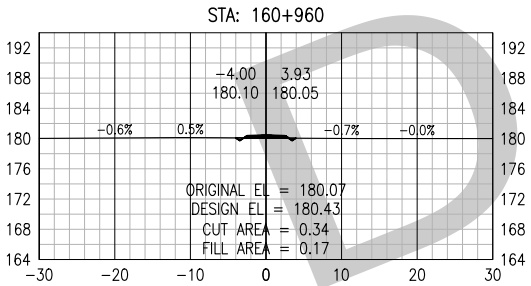
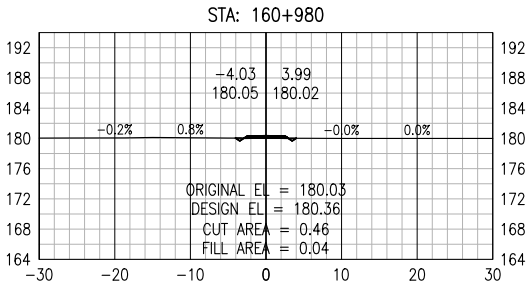
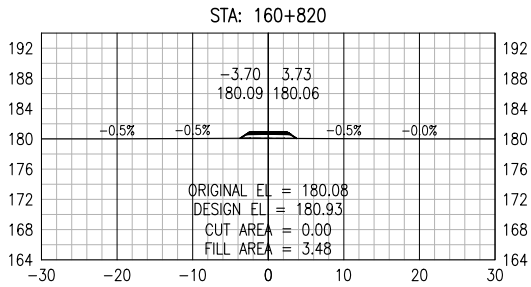
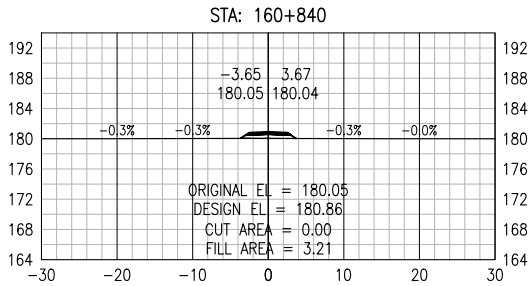
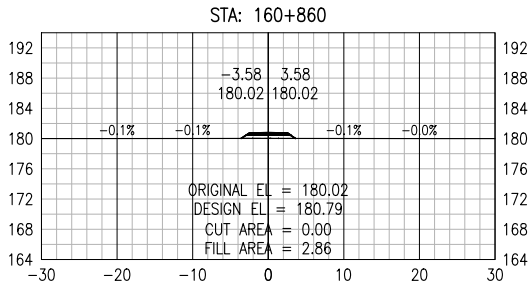
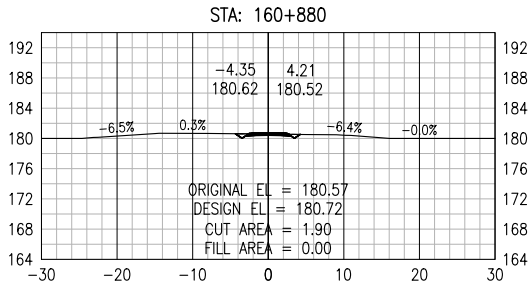
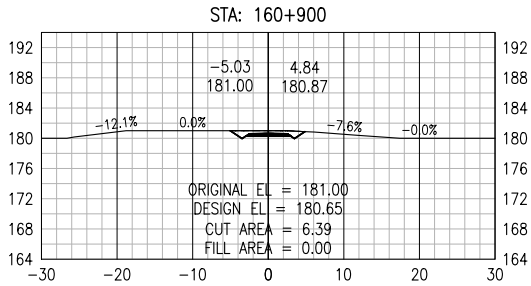
PROJECT:

**PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+020**

TITLE:

**CROSS SECTION
DRAWINGS
PAGE 2 of 3**

DWG NO:	15GP0016-100-1920-012	REV:	0
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PROJECT:

**PRAIRIE CREEK MINE
LIARD RIVER BARGE
SOUTH SHORE ACCESS ROAD
km 160+190 to km 161+020**

**CROSS SECTION
DRAWINGS
PAGE 3 of 3**

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