ADDENDUM TO COAL CREEK STABILIZATION PROJECT

CONCEPTUAL PLANNING PHASE

Wyoming Game and Fish Department Project

Lincoln County, Wyoming

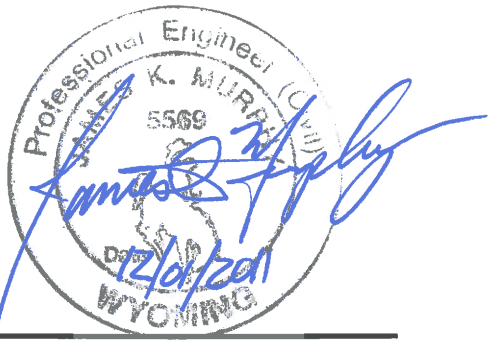
(DECEMBER 2011)

PREPARED BY:

A.V.I. Professional Corporation
1103 Old Town Lane, Suite 101. Cheyenne, Wyoming 82009
307.637.6017

⚒ ENGINEER'S CERTIFICATE ⚒

WE HEREBY CERTIFY, THAT WE HAVE PREPARED OR DIRECTLY SUPERVISED THE PREPARATION OF THIS REPORT, AND THAT WE ARE DULY REGISTERED PROFESSIONAL ENGINEERS IN THE STATE OF WYOMING.



JAMES K. MURPHY, P.E.
WYOMING P.E. NO. 5569

JEFFREY J. GRIGGS, P.E.
WYOMING P.E. NO. 12928

ADDENDUM TO COAL CREEK STABILIZATION PROJECT – CONCEPTUAL PLANNING PHASE
Wyoming Game and Fish Department Project
Lincoln County, WY
(DECEMBER 2011)

1.0 PROJECT DESCRIPTIONS

1.1 Individual Site Descriptions

This report is an addendum to the original Coal Creek Stabilization Project Conceptual Planning Phase report submitted in March 2011. The March 2011 report should be referenced for general information such as the overall Coal Creek site description, individual site descriptions, site priorities, site remediation alternatives and cost estimates, and a few other considerations for the project. Two (2) sites are covered in this report including Site 9 – Option 2, and Site 11B. These sites will be analyzed in the same manner which the other sites were analyzed in the original Coal Creek Stabilization Project Conceptual Planning Phase report submitted in March 2011.

No topographic survey data was completed for Site 11B or the Coal Creek section of Site 9 – Option 2. Topographic ground data was obtained from Google Earth. Also, survey data was obtained for the roadway section of Site 9. At the advanced planning stage, or the design stage of development, a topographic survey should be completed at these two (2) locations to gain more precise quantities and a more accurate cost estimate.

Site 9 – Option 2, found in the northeast quarter of Section 26, looks at a different option and costs for re-routing Coal Creek, including channel grading and roadway toe slope grading, stabilization, and revegetation.

Site 11B is located approximately 700 linear feet southwesterly of the original Site 11. Site 11B outlines quantities and costs for re-routing Coal Creek and improving the roadway toe slope, also including channel grading and roadway toe slope grading, stabilization, and revegetation.

Section 2.0 – Summary Of Sites includes detailed individual site summaries, cost estimates, and a more in depth description of each site. For simplicity purposes, a table is shown below, which outlines Sites 9 – Option 2, and Site 11B (and sites options) Total Improvement Costs.

INDIVIDUAL SITE TOTAL COSTS (BY OPTION)	
SITE #9	
*SITE 9 – OPTION 1	$ 50,737.25
SITE 9 – OPTION 2	$ 81,342.50
SITE #11B	
SITE 11B – OPTION 1	$ 47,639.25

*Site 9 – Option 1 was completed with the original Coal Creek Planning Report.

For Site 9 Option 1, Site 9 Option 2, and Site 11B extra engineering will be required for channel relocation work. A lump sum of $20,000 should be added to overall project cost to account for this extra engineering if channel realignment is chosen for any site.

2.0 SITE REMEDIATION ALTERNATIVES AND COST ESTIMATES

2.1 SITE #9 – OPTION #2: (See Appendix A for a Topographic Survey Map of Site #9)

At this site, there is a long barren slope (approximately 220 lineal feet along the creek) with the creek running immediately adjacent to the toe of the slope. The slope is highly erodeable and it is likely that additional material is added periodically, as a maintenance measure, to keep the roadway in place. The creek bottom at this location has a surprisingly hard bottom, consisting of clay and gravel.

Options for stabilizing Site 9 – Option 2 are as follows:

1.) Re-route the creek to the south at the oxbox cutoff location outlined on the drawing in Appendix A, and then construct a rock grade control structure along the bank of the channel to prevent the water from entering back into its original flow path. Also, construct a rock lined channel section for a portion of the realigned channel (as shown on the map in Appendix A). Revegetate the remaining of graded and disturbed areas.

Re-routing the creek to the south will allow stabilization of the roadway toe slope. Place fill material at a 4:1 slope off of the edge of the existing road to catch down to the original ground. Revegation of the reconstructed slope would be performed also.

Create a crown in the road to direct roadway runoff to a new borrow ditch along the north side of the roadway, and install a new culvert to direct runoff from the borrow ditch into the creek.

Options for stabilizing Site 9 – Option 1 are discussed in the original Coal Creek Stabilization Project Conceptual Planning Phase report submitted in March 2011.

The table on the following page is a cost estimate summarizing the conceptual costs to improve and stabilize Site #9 – Option #2, as well as the original Site #9 – Option #1 estimate. The cost estimate breaks out the cost for each of the aforementioned improvements.

SITE 9: (PRIORITY LEVEL #1)

**Option 1 - Creek Realignment Location 'A'*

**Option 2 – Creek Realignment Location 'B' with Roadway Toe Slope Grading, Stabilization, and Revegetation*

ITEM NO.	ITEM	UNIT	QUANTITY	AVG. UNIT PRICE	TOTAL AMOUNT
I.	**Project Overhead**				
	Mobilization	LS	1	$4,042.25	$4,042.25
	Force Account	FA	1	$1,000.00	$1,000.00
	Sub Total Project Overhead				**$5,042.25**
II.	**Project Improvements - Option #1**				
OPTION 1	18" ADS N-12 HDPE Pipe	LF	50	$30.00	$1,500.00
OPTION 1	18" HDPE FES	EA	2	$300.00	$600.00
OPTION 1	Nyloplast Inlet	EA	2	$900.00	$1,800.00
OPTION 1	Import Fill Material	CY	2500	$5.00	$12,500.00
OPTION 1	Revegetation	SY	2200	$5.00	$11,000.00
OPTION 1	Roadway Grading/Shaping	LF	200	$20.00	$4,000.00
OPTION 1	Riprap (Class 12)	CY	50	$75.00	$3,750.00
Sub Total OPTION 1 Project Improvements					**$35,150.00**
	Project Improvements - Option #2				
OPTION 2	* Import Fill Material (Toe Slope Grading & Existing Channel Fill	CY	1390	$5.00	$6,950.00
OPTION 2	Unclassified Excavation (Channel Grading)	CY	105	$3.50	$367.50
OPTION 2	Revegetation	SY	1690	$5.00	$8,450.00
OPTION 2	Riprap (Class 12)	CY	465	$75.00	$34,875.00
OPTION 2	18" ADS N-12 HDPE Pipe	LF	55	$30.00	$1,650.00
OPTION 2	18" HDPE FES	EA	2	$300.00	$600.00
OPTION 2	Nyloplast Inlet	EA	2	$900.00	$1,800.00
OPTION 2	Roadway Grading/Shaping	LF	200	$20.00	$4,000.00
Sub Total OPTION 2 Project Improvements					**$58,692.50**
OPTION 1 - 15% CONTINGENCY					$5,272.50
OPTION 2 - 15% CONTINGENCY					$8,803.88
OPTION 1 - 15% DESIGN / CONSTRUCTION MANAGEMENT FEES					$5,272.50
OPTION 2 - 15% DESIGN / CONSTRUCTION MANAGEMENT FEES					$8,803.88
OPTION 1 PROJECT IMPROVEMENTS COSTS					**$50,737.25**
OPTION 2 PROJECT IMPROVEMENTS COSTS					**$81,342.50**

*Fill Material Quantity is based on a Roadway Toe Slope of 4:1 to catch original ground, and a 5' wide x 2.5' deep existing channel section.

(Site 9 – East View)

(Site 9 – West View)

(Site 9 – West View)

(Site 9)

2.2 SITE #11B: (See Appendix A for a Topographic Survey Map of Site #11B)

At this site, there is bank erosion that is not associated with the roadway; it is just the natural cut bank. Site 11B erosion is similar to the original Site 11.

The option for stabilizing Site 11B is as follows:

1.) Re-routing the creek to the south at the location outlined on the Togographic Survey Map included in Appendix A will provide room to effectively re-grade (at 4:1 slopes) and stabilize the roadway toe slope at this location with use of fill material. A rock grade control structure would be needed at this site also. The rock would be placed in sections of the bank as well as in the main realigned channel section. Revegetation of all remaining disturbed areas is also included with the improvements mentioned.

The following table is a cost estimate summarizing the conceptual costs to improve and stabilize Site #11B. The cost estimate breaks out the cost for each of the aforementioned improvements.

SITE 11B: (PRIORITY LEVEL #11)

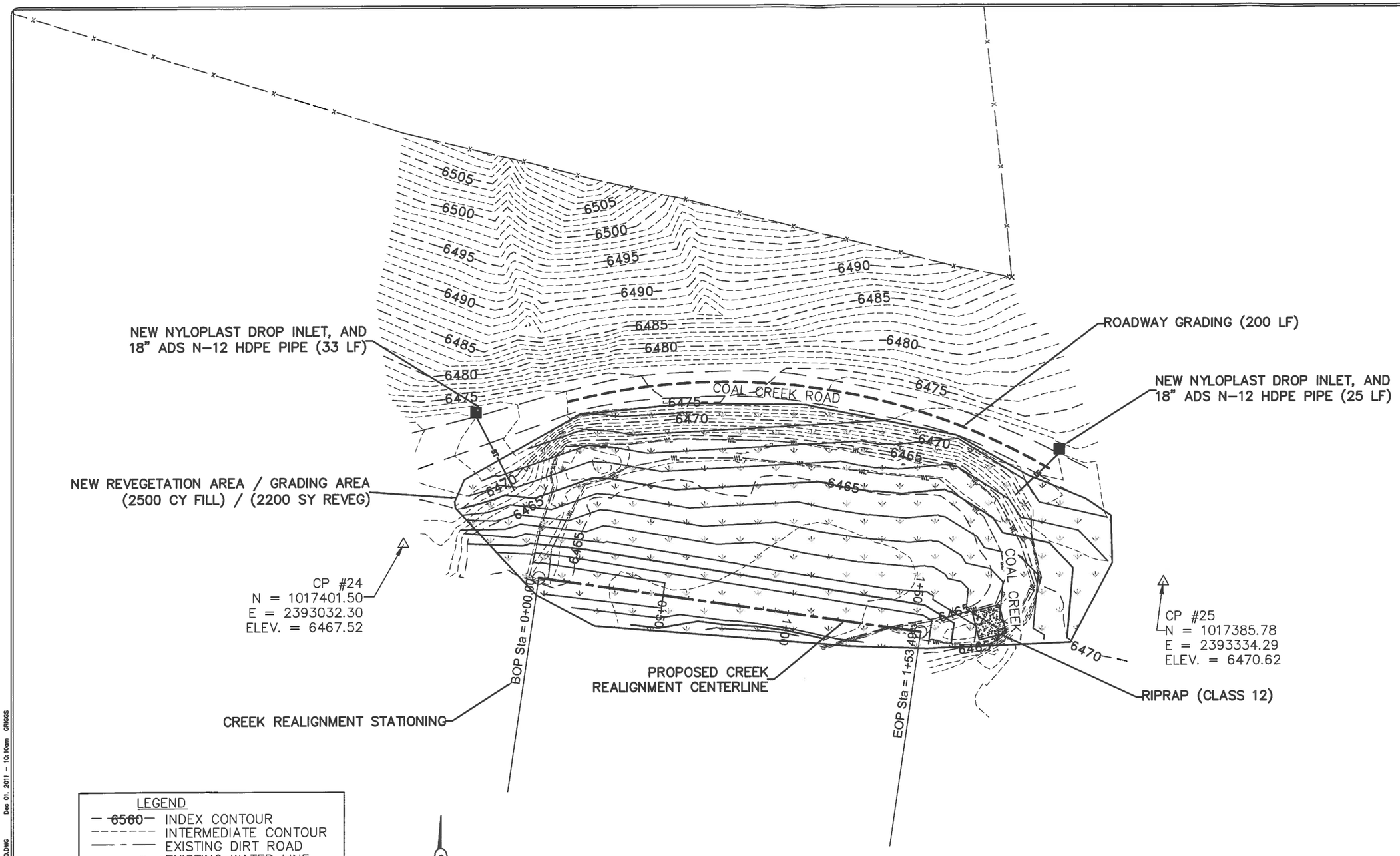
**Option 1 – Creek Realignment with Toe Slope Grading, Stabilization, and Revegetation*

ITEM NO.	ITEM	UNIT	QUANTITY	AVG. UNIT PRICE	TOTAL AMOUNT
I.	**Project Overhead**				
	Mobilization	LS	1	$4,824.75	$4,824.75
	Force Account	FA	1	$1,000.00	$1,000.00
Sub Total Project Overhead					**$5,824.75**
II.	**Project Improvements**				
OPTION 1	* Unclassified Excavation (Creek Realignment Grading)	CY	90	$3.50	$315.00
OPTION 1	** Import Fill Material (Toe Slope Grading)	CY	650	$5.00	$3,250.00
OPTION 1	Revegetation (Toe Slope and Creek Channel)	SY	545	$5.00	$2,725.00
OPTION 1	Riprap (Class 12)	CY	345	$75.00	$25,875.00
Sub Total OPTION 1 Project Improvements					**$32,165.00**
OPTION 1 - 15% CONTINGENCY					$4,824.75
OPTION 1 - 15% DESIGN / CONSTRUCTION MANAGEMENT FEES					$4,824.75
OPTION 1 PROJECT IMPROVEMENTS COSTS					**$47,639.25**

* Unclassified Excavation Quantity is based on a Pro-Rated value from Site 9 - Option 2.
** Fill Material Quantity is based on a Pro-Rated fill value from Site 9 - Option 2.

APPENDIX A

TOPOGRAPHIC SURVEY MAPS OF SITES 9 – OPTION 2, & SITE 11B (OVERLAID ON GOOGLE EARTH IMAGE)



NOTE:
THIS DRAWING IS TAKEN FROM THE ORIGINAL PLANNING REPORT DATED MARCH 2011.

NO.	REVISION	DATE

PREPARED FOR:
WYOMING GAME AND FISH DEPARTMENT
5400 BISHOP BLVD
CHEYENNE, WY 82006

PROJECT:
COAL CREEK
EROSION IMPROVEMENTS PLANNING

DRAWING TITLE:
SITE 9
OPTION 1

PRELIMINARY PLAN
NOT FOR CONSTRUCTION
these plans are for review only and not to be used for the construction of any improvements either public or private.
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engineering planning surveying AVI p.c.
PHONE (307) 637-6007
309 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009

DESIGNED BY:	DRAWN BY:
JKM	CMC/JJG
CHECKED BY:	DATE:
JKM	DEC 2010

JOB NO.: 2-3090.09

DRAWING NO. OF

H:\3090\Coal Creek\survey\Drawings\3090 COAL CREEK TOPO.DWG Dec 01, 2011 - 10:10am GROSS

SCALE: 1"=40'

NEW NYLOPLAST DROP INLET, AND 18" ADS N-12 HDPE PIPE (30 LF)

ROADWAY GRADING (200 LF)

NEW NYLOPLAST DROP INLET, AND 18" ADS N-12 HDPE PIPE (25 LF)

COAL CREEK ROAD

6475

6470

6466

4:1

DESIGN GROUND CONTOURS

CP #24
N = 1017401.50
E = 2393032.30
ELEV. = 6467.52

NEW REVEGETATION AREA / GRADING AREA
(FOR ROADWAY TOE SLOPE GRADING);
(1090 CY FILL / (950 SY REVEG)

COAL CREEK

CP #25
N = 1017385.78
E = 2393334.29
ELEV. = 6470.62

FILL IN EXISTING CHANNEL (300 CY FILL),
AND REVEGETATE (360 SY)

LEGEND

- 6560 — INDEX CONTOUR
- INTERMEDIATE CONTOUR
- EXISTING DIRT ROAD
- EXISTING WATER LINE
- EXISTING FENCE LINE
- △ EXISTING CONTROL POINT

RIPRAP (CLASS 12)

6478

6478.5

6477

6477.5

1+00

2+00

3+00

4+00

DIRECTION OF WATER FLOW

BOP Sta = -1+00.00

0+00

CREEK REALIGNMENT STATIONING

NEW REVEGETATION AREA / GRADING AREA
(FOR CHANNEL CONSTRUCTION);
(105 CY EXCAVATION / (380 SY REVEG)

PROPOSED CREEK
REALIGNMENT CENTERLINE

EOP Sta = 4+48.52

H:\3090\Coal Creek\survey\Drawings\3090 COAL CREEK TOPO.DWG Nov 30, 2011 - 11:57am GRIGGS

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5400 BISHOP BLVD
CHEYENNE, WY 82006

PROJECT:
COAL CREEK
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DRAWING TITLE:
SITE 9
OPTION 2

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engineering planning surveying
AVI p.c.
FTCHE (307) 637-6337
2235 OLD TOWN LANE, SUITE 201
CHEYENNE, WY 82009

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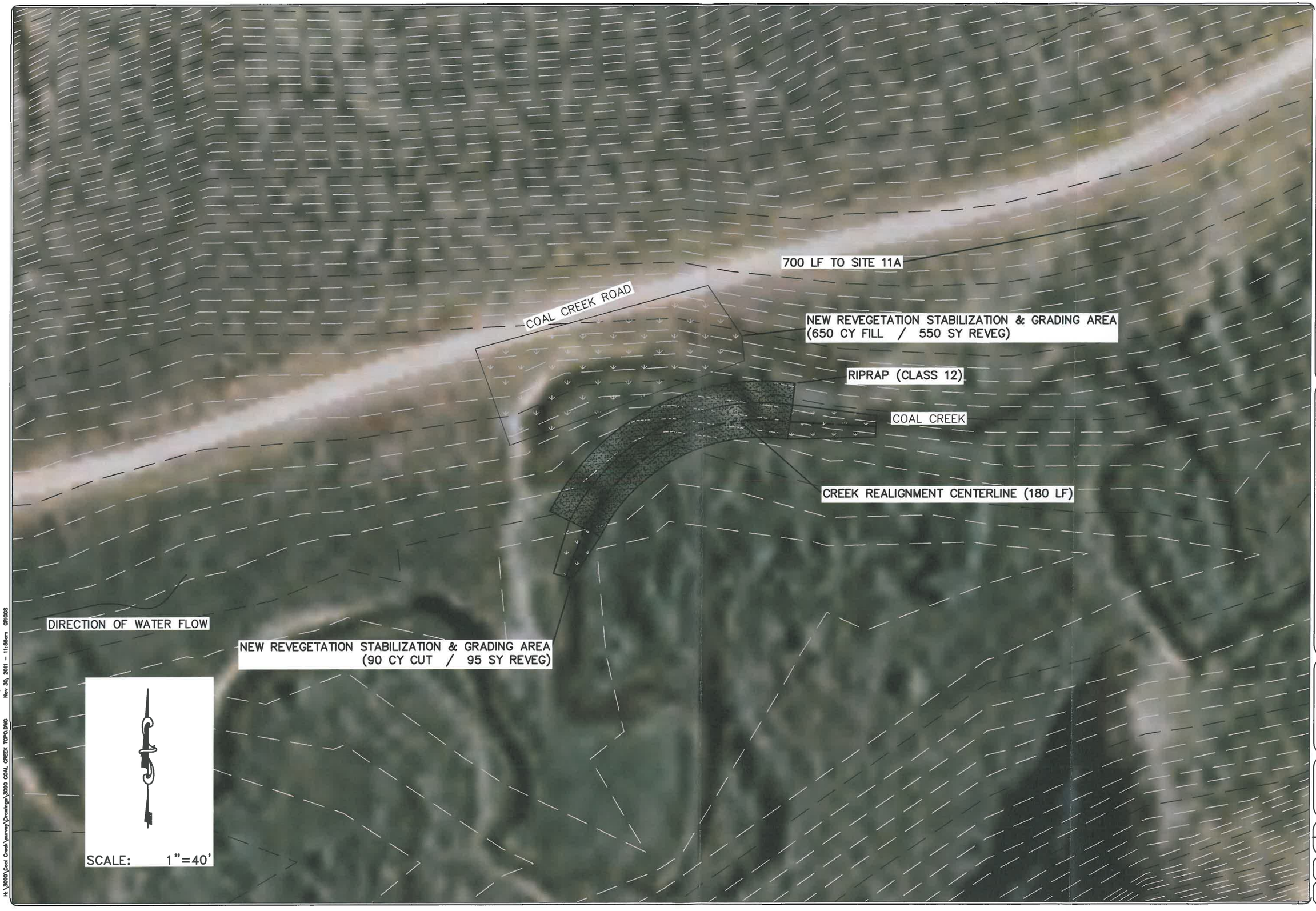
JKM	CMC/JJG
CHECKED BY:	DATE:
JKM	NOV 2011

JOB NO.: 2-3090.09

DRAWING NO. OF



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5400 BISHOP BLVD
CHEYENNE, WY 82006

PROJECT:
COAL CREEK
EROSION IMPROVEMENTS PLANNING

DRAWING TITLE:
SITE 11-B
OPTION 1

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engineering planning surveying avi p.c.
PHONE (307) 637-9057
205 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009

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JKM	CMC/JJG
CHECKED BY:	DATE:
JKM	NOV 2011

JOB NO.: 2-3090.09

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