CONSTRUCTION COMPLETION REPORT

PARK MINE MAINTENANCE PROJECT
MT DEQ AML CONTRACT NO. 416011

Prepared for
Montana Department of Environmental Quality
Abandoned Mine Lands Program

Prepared by
Herrera Environmental Consultants, Inc.

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February 15, 2017

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LIST OF ACRONYMS

AC Acre

AML Abandoned Mine Lands

CY Cubic Yard

DEQ Department of Environmental Quality

EA Each

LF Lineal Feet

LKD Lime Kiln Dust

LS Lump Sum

LWD Large Woody Debris

RPR Resident Project Representative

SSA Sediment Storage Area

TN Ton

USFS United States Forest Service

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1.0 INTRODUCTION

Park Mine is located in Broadwater County, approximately 12 miles west of Townsend, Montana off Highway 12 within Section 15 of Township 7 North and Range 1 West, Montana Principle Meridian. From Townsend, the Site can be accessed by heading approximately 1.5 miles north on US-12; turn left on Indian Creek Road and travel west approximately 12 miles; the site is located on the south side of U.S. Forest Service (USFS) Road 360.

The Project included excavation of a sediment storage area (SSA), excavation of the sediment and dam material in and adjacent to Indian Creek, placement of the excavated material in the SSA, amending the saturated material, removing the earthen dam and placing in the SSA, regrading, covering waste material with cover soil, reconstruction of Indian Creek, and planting, seeding, fertilizing, and mulching the disturbed areas.

Herrera Environmental Consultants (Herrera) received two task orders pursuant to the Contract No. 414036-TO#12 from the Department of Environmental Quality (DEQ) Abandoned Mine Lands (AML)Program for the Park Mine. Task order #5 was received on August 12, 2009 to provide sediment sampling in the pond and report on the findings. Task order #6 was received on January 11, 2009 to provide engineering services, prepare bid documents, and permit support. Due to funding issues the project was shelved. Task order #12 was received on June 20, 2015 to provide engineering services and to perform construction evaluation, management and oversight at the Park Mine.

1.1 PROJECT OBJECTIVES

The purpose of the Park Mine Maintenance Project (Project) was to limit human and environmental exposure to the contaminants of concern; reduce the mobility of these contaminants; eliminate the eroding roadway and dam; and mitigate impacts to the local surface water.

1.2 PROJECT DESCRIPTION

The Park Mine was an abandoned lode deposit that was reclaimed by the AML in 1998. The reclamation involved consolidation of waste rock and tailings into a capped repository, reconstruction of the Indian Creek channel, and backfilling of four discharging adits.

In the 1980's, an earthen roadway prism was constructed across Indian Creek downstream of the reclaimed mine. The roadway fill prism created an earthen dam, which is used as an in-channel sediment pond. Two corrugated metal pipe culverts were installed as outlets from the sediment pond. The roadway was eroding and became unstable, unsafe for vehicle traffic, and failure of the dam would result in release of impacted sediment downstream into previously reclaimed areas. The decision was made to remove the earthen dam and reconnect Indian Creek through the river reach.

The Project (IFB 416011) was awarded to George Rabel Excavation (Rabel) and work commenced on June 28, 2016 and was substantially complete on September 19, 2016, with final inspection completed on October 28, 2016.

Specific construction activities are listed below:

- Diversion of Indian Creek and Mason Tunnel Ditch flow using two cofferdams and 18-inch corrugated ADS N-12 piping
- Clearing and grubbing SSA
- Excavation of 1260 cubic yards (CY) of native soils for development of the SSA and stockpiling of material for embankment and cover soil
- Dewatering of pond with sump, 3-inch trash pump, and natural level spreader for dispersing pumped water over vegetated area
- Excavation of 2256 CY of earthen dam material and impacted sediments for placement in the SSA
- Mixing 69 tons of Lime Kiln Dust (LKD) with sediment and dam material as a bulking and drying agent
- Reconstruction of 361 linear feet (LF) of Indian Creek channel including placement of 198 tons of stream cobble and 85 weir boulders in 16 grade control structures
- Placement of 1260 CY of embankment and cover soil over SSA
- Placement of woody debris generated from clearing and grubbing over the SSA and along Indian Creek
- Installation of three Large Woody Debris (LWD) structures in the banks of Indian Creek
- Installation of 750 LF straw wattle
- Seeding, fertilizing, and mulching in 1.5 acres of disturbed area
- 650 willow stakes (150) and floodplain plantings (500) along Indian Creek
- Installation of 375 tree protectors
- Installation of 860 LF of wildlife/farm fencing around reconstructed Indian Creek disturbed area

2.0 Responsible Parties

The following sections provide an outline of responsible parties for the Project, including state coordinators and private contractors.

2.1 AML Coordination

The AML project manager for the Project was Mr. Scott Graham. AML's address and phone number are:

DEQ AML
P.O. Box 200901
Helena, Montana 59604-0901
Phone: (406) 444-6473

2.2 Maintenance and Engineering Plan

Herrera was responsible for the engineering design and for preparing the maintenance design, specifications, and bid documents. The project manager and engineer was Kevin Houck, P.E. Herrera's address and phone number are:

Herrera Environmental Consultants
101 E. Broadway, Suite 610
Missoula, Montana 59802
Phone: (406) 721-4204

2.3 Construction Monitoring

Herrera provided full-time construction monitoring throughout the Project. Mr. Kevin Houck, P.E. of Herrera was the construction project engineer. Mr. Kyle Johnson of Herrera was the resident project representative (RPR). Mr. Len Ballek of Herrera provided construction monitoring during revegetation.

2.4 Contractor

The successful low bidder for Project was George Rabel Excavation, of Gallatin Gateway, Montana. The onsite superintendent was George Rabel. The site foreman was Brad Potter. The Contractor's address and phone numbers are:

George Rabel Excavation
P. O. Box 212
Gallatin Gateway, Montana 59730
Phone: (406) 763-4620

2.5 Subcontractors

2.5.1 Rabel Subcontractors

Rabel hired one subcontractor to help complete hydro mulch application for the Project.

Native Roots was subcontracted by Rabel to provide and apply Hydro Mulch over 1.5 acres of disturbed area. Native Roots' address and phone number are:

Native Roots
Jeff Hoyle
2042 Amsterdam Rd.
Belgrade, MT 59714
Phone: (406) 580-8733

2.5.2 AML Subcontractors

AML hired two subcontractors to verify work done by Rabel.

DJ&A, P.C. was hired by the AML to provide pre and post surveys of the waste removal area around Indian Creek and the SSA. DJ&A, P.C. address and phone number are:

DJ&A, P.C.
3203 S. Russell Street
Missoula, Montana 59801
Phone: (406) 721-4320

Pioneer Technical Services was subcontracted by the AML to conduct compaction testing on material placed in the SSA and perform moisture content tests on material from the waste removal area. Pioneer Technical Services address and phone number are:

Pioneer Technical Services
201 E. Broadway St. Ste C
Helena, MT 59601
Phone: (406) 457-8252

3.0 Construction Events

The following sections present the notable events and contract dates for the Project.

3.1 Pre-bid Conference

The pre-bid conference for the Project was to be held at the site on November 19, 2015. Due to inclement weather and drifted snow, the pre-bid conference had to be cancelled. Contractor's bidding the project were encouraged to visit the site on their own if they were able to gain access.

3.2 Bid Opening

Bids were opened by AML at its office at 1225 Cedar Street in Helena, Montana, on January 13, 2016. Eleven qualified bids were received. The bids ranged from $162,730.00 to $481,751.10, with the apparent low bid submitted by Rabel in the amount of $162,730.00. The engineer's estimate was $246,324.00. The bid tabulations are included in Appendix A.

3.3 Contract Award

A pre-award meeting between AML, Herrera, and Rabel was held on January 25, 2016, on a conference call. The purpose of the pre-award meeting was to discuss unbalanced portions of the Bid as determined by the Engineer and to assure the Bidder's understanding and interpretation of Contract Documents and Specifications. A Notice of Award was issued to the low bidder, Rabel, on February 3, 2016. The Notice of Award is included in Appendix B.

3.4 Contract Agreement

An Agreement for Contract No. 416011 was issued on February 5, 2016, between Rabel and AML, and became effective on March 10, 2016. The agreement required that all work be completed within 45 calendar days from the Notice to Proceed. AML issued the Notice to Proceed to George Rabel Excavation on June 27, 2016. The Agreement and Notice to Proceed is included in Appendix C.

3.5 Construction Start-up

A pre-construction meeting between AML, Herrera, and Rabel was held on June 28, 2016, at the project site. The purpose of the pre-construction meeting was to establish a mutual understanding of construction activities and review the schedule.

Meeting attendees were:

- Scott Graham, AML
- Kyle Johnson, Herrera
- George Rabel, Rabel, Owner

- Brad Potter, Rabel, Foreman

The Contractor began mobilizing to the site on June 28, 2016.

3.6 Work Directives and Change Orders

Six work directives and one change order were written for the Project. Copies of all work directives, change orders, and related documentation are in Appendix D.

Work Directive No. 1 was issued on July 13, 2016. It directed the Contractor to proceed with construction of stream channel beyond the estimated quantity at the original unit price of $50 per LF.

Work Directive No. 2 was issued on July 18, 2016. It directed the Contractor to proceed with the application of LKD beyond the estimated quantity at the original unit price of $30 per ton.

Work Directive No. 3 was issued on August 30, 2016. It directed the Contractor to eliminate the wildlife/farm fencing around the SSA. The quantity would still be paid at the original bid price of $7.00 per LF for the fence installed.

Work Directive No. 4 was issued on August 30, 2016. It directed the Contractor to substitute the hydro mulch for the straw mulch specified in the original contract documents. It also directed the Contractor to install a "Livestock Walk-Path" through the SSA to provide access to Indian Creek for the grazing lessee.

Work Directive No. 5 was issued on September 9, 2016. It reduced the estimated quantity of excavate, haul, place and compact sediment and dam material in the SSA. This quantity reduction was based on the record survey by DJ&A, P. C. The actual excavated quantity would still be paid at the original bid price of $13.00 per CY.

Work Directive No. 6 was issued on September 16, 2016. It reduced the estimated quantity of tree protectors to be installed on the site. This quantity reduction was due to the large size of the snowberry plantings provided by the Contractor which were too large for the specified protectors. The quantity would still be paid at the original bid price of $5.00 per each.

Change Order No. 1, executed on December 6, 2016, compensated the Contractor for the additional stream channel construction as directed in Work Directive #1. It also compensated the Contractor for the substitution of hydro mulch for the straw mulch and installation of the Livestock Walk-Path as directed in Work Directive #4. Last, it adjusted pay quantities for excavate, haul, place and compact waste in the sediment storage area, lime products, tree protectors, and wildlife/farm fence as directed in Work Directive #5, #2, #6, and #3, respectively. This change order increased the contract cost by $824.20 and did not change the contract time.

3.7 Weather Days and Work Suspensions

There was one weather day allowed on the Project on July 11, 2016 due to precipitation. One work suspension was granted after construction was completed to allow for seeding,

fertilizing, and mulching and wildlife/farm fence to commence during the seeding window in September.

- Work was halted on August 4, 2016 and restarted on September 12, 2016.

3.8 Closeout Documentation

Rabel completed the work items on September 19, 2016. A final site inspection was conducted on October 28, 2016 by Tom Henderson of the AML and Kyle Johnson of Herrera to ensure all items had been completed.

The following construction closeout forms were executed on the dates outlined below:

- Certificate of Substantial Completion, October 28, 2016
- Certificate of Acceptance, October 28, 2016
- Contractor's Certificate of Completion, October 28, 2016

Work was completed in the allotted 45 calendar days exactly. Copies of these executed forms are in Appendix E.

3.9 Final Payment

Final Payment has not yet occurred.

4.0 CONSTRUCTION

The following section summarizes construction and describes the major equipment used at the site, construction activities, and bid quantities completed.

4.1 MAJOR EQUIPMENT LIST

An abbreviated list of equipment used on the Project is presented in Table 4.1.

Table 4.1. Major Equipment List.

Description	Number
CAT 304E Mini Excavator	1
Water Truck	1
Dyno Pac 150 Roller	1
Kobelco 180 Excavator	1
Dump Truck	2
Fiat Allis F/B Track Loader	1
Volvo MCT Skid Steer	1

4.2 COMPACTION AND MOISTURE CONTENT TESTING

Compaction testing was performed on three occasions: July 19, July 26, and August 01, 2016. Three samples of material in the sediment and dam material removal area were tested for moisture content. Compaction testing and lab densities on material in the SSA were done by Pioneer Technical Solutions Helena, Montana. Compaction results and RPR observations verified that the Contractor was meeting the compaction requirements set in the Special Provisions.

Copies of compaction and moisture content are in Appendix F.

4.3 QUANTITIES COMPLETED

Work items were bid on a lump sum, actual quantity, and unit price basis. The materials submitted were approved by the Engineer before they were used at the site. Material submittals are included in Appendix G. Table 4.2 lists each bid item, the estimated bid quantity, the actual bid quantity, the actual bid quantity as a percentage of the estimated bid quantity, and illustrates the differences between the estimated quantity and the actual quantity for the Project. Actual quantities were verified by Herrera's onsite project representative, surveys conducted by DJ&A, and by weigh tickets.

Table 4.3 shows a cost comparison between the estimated bid item price and the actual bid item price for the Project. Bid items that varied significantly from the estimated bid quantity are:

4.3.1 MAINTENANCE PROJECT

- **Bid Item17, Tree Protectors** – Several of the floodplain plantings provided by the Contractor were too large for the tree protectors to be installed. Therefore, the quantity decreased by 275 from the estimated 650 tree protectors to the installed quantity of 375 tree protectors.

- **Bid Item 20, Wildlife/Farm Fence** – The original design called for fencing around both the waste removal area and the SSA. After conversations with the grazing lessee, it was decided to eliminate the fence around the SSA to allow for livestock access to Indian Creek through the SSA. Therefore, the quantity decreased by 590 LF from the estimated 1,450 LF of fencing to the installed quantity of 860 LF of fencing.

Table 4.2. Park Mine Maintenance Project Estimated and Actual Bid Quantity Comparison.							
Bid Item	**Description**	**Estimated Bid Quantity**		**Actual Bid Quantity**		**Actual Bid Quantity as Percentage of Estimated Bid Quantity**	**Difference Between Estimated Bid Quantity and Actual Bid Quantity**
1	Mobilization/Demobilization, Bonds, and Insurance	1	LS	1	LS	100%	0
2	Clearing and Grubbing	1.5	AC	1.5	AC	100%	0
3	Install Straw Wattles	750	LF	750	LF	100%	0
4	Water Management	1	LS	1	LS	100%	0
5	Excavation and Embankment	-	-	-	-	-	-
5a	Excavation	1260	CY	1260	CY	100%	0
5b	Embankment	1070	CY	1070	CY	100%	0
6	Excavate, Haul, Place and Compact Waste in Sediment Storage Area	2380	CY	2256	CY	95%	- 124
7	Lime Products	65	TN	68.8	TN	106%	+ 3.8
8	Cover Soil	190	CY	190	CY	100%	0
9	Surface Water Diversion Ditch	210	LF	210	LF	100%	0
10	Mason Tunnel Ditch	150	LF	150	LF	100%	0
11	Stream Channel Construction	-					
11a	Stream Channel Construction	343	LF	361	LF	105%	+ 18
11b	Stream Channel Cobble	198	TN	198	TN	100%	0
11c	Weir Boulders	85	EA	85	EA	100%	0
12	Surface Water Energy Dissipater	1	LS	1	LS	100%	0
13	Rock Check Dams	3	EA	3	EA	100%	0
14	Fertilize, Seed and Mulch	1.5	AC	1.5	AC	100%	0
15	Floodplain Plantings	500	EA	500	EA	100%	0
16	Indian Creek Bank Plantings – Willow Stakes	150	EA	150	EA	100%	0

Table 4.2 (continued). Park Mine Maintenance Project Estimated and Actual Bid Quantity Comparison									
Bid Item	**Description**	**Estimated Bid Quantity**		**Actual Bid Quantity**		**Actual Bid Quantity as Percentage of Estimated Bid Quantity**	**Difference Between Estimated Bid Quantity and Actual Bid Quantity**		
17	Tree Protectors	650	EA	375	EA	58%	-	275	
18	LWD Salvage and Placement	9	EA	9	EA	100%		0	
19	Obliterate and Reclaim Roadway	1	LS	1	LS	100%		0	
20	Wildlife/Farm Fence	1450	LF	860	LF	59%	-	590	

Notes:

LS Lump Sum
LF Linear Foot
CY Cubic Yard
TN Ton
AC Acre
EA Each

Table 4.3. Park Mine Maintenance Project Estimated and Actual Bid Price Comparison.				
Bid Item	**Description**	**Estimated Bid Price**	**Actual Bid Price**	**Difference Between Estimated Bid Price and Actual Bid Price**
1	Mobilization/Demobilization, Bonds, and Insurance	$5,000	$5,000	$0.00
2	Clearing and Grubbing	$3,000	$3,000	$0.00
3	Install Straw Wattles	$3,750	$3,750	$0.00
4	Water Management	$25,000	$25,000	$0.00
5	Excavation and Embankment	-	-	-
5a	Excavation	$8,820	$8,820	$0.00
5b	Embankment	$7,490	$7,490	$0.00
6	Excavate, Haul, Place, and Compact Waste in Waste Disposal Area	$30,940	$29,328	- $1,612
7	Lime Products	$1,950	$2,064	+ $114
8	Cover Soil	$2,850	$2,850	$0.00
9	Surface Water Diversion Ditch	$4,200	$4,200	$0.00
10	Mason Tunnel Ditch	$6,750	$6,750	$0.00
11	Stream Channel Construction	-	-	-
11a	Stream Channel Construction	$17,150	$18,050	+ $900.00
11b	Stream Channel Cobble	$16,830	$16,830	$0.00
11c	Weir Boulders	$4,250	$4,250	$0.00
12	Surface Water Energy Dissipater	$1,800	$1,800	$0.00
13	Rock Check Dams	$900	$900	$0.00
14	Fertilize, Seed, and Mulch	$3,000	$3,000	$0.00
15	Floodplain Plantings	$2,500	$2,500	$0.00
16	Indian Creek Bank Plantings – Willow Stakes	$750	$750	$0.00
17	Tree Protectors	$3,250	$1,875	- $1,375
18	LWD Salvage and Placement	$900	$900	$0.00
19	Obliterate and Reclaim Roadway	$1,500	$1,500	$0.00
20	Wildlife/Farm Fence	$10,150	$6,020	- $4,130

4.4 Design and Record Drawings

The Project design and record drawings are included in Appendix H.

4.5 Construction Activities

Copies of the onsite project representative's Daily Construction Reports are in Appendix I. These daily logs detail site conditions and construction activities from June 28, 2016, through August 4, 2016, and revegetation activities from September 12, 2016 through September 19, 2016, Weekly summaries of construction and oversight activities are provided below.

4.5.1 June 28-July 2, 2016

Rabel mobilized equipment at the site and began installing the bypass piping for Indian Creek and Mason Tunnel Flow. Cofferdams were installed and both Indian Creek and Mason Tunnel Ditch Flows were directed into the bypass piping. Clearing and Grubbing of the SSA began.

4.5.2 July 3-9, 2016

Clearing and Grubbing of SSA complete. Excavation on the SSA begins and pond dewatering commences. Diversion ditch at the top of the SSA complete. Access roads for the removal of waste material developed and most the streambed cobble was gathered from the site.

4.5.3 July10-16, 2016

The LKD storage area was developed and the first loads were delivered. Wood and metal debris was gathered and stockpiled on site. Excavation of the SSA completed and haul roads developed. Excavation of sediment begins while pond dewatering continues. LKD mixed with the wet sediment before being loaded into trucks and placed/compacted in the SSA. Excavation begins on the stream channel construction.

4.5.4 July 17-July 23, 2016

Mixing of sediment with LKD, loading trucks, placing and compacting of sediment in SSA, and dewatering continued. First compaction tests in the SSA completed. Stream channel construction continues with Boulder Weirs #1- #7 completed with stream cobble placed between #1 and #2. Excavation of the dam material begins. Slopes adjacent to dam and pond beginning to be shaped.

4.5.5 July 24-30, 2016

Excavation of dam material and slope grading continues along with placement of dam material in the SSA. For the Mason Tunnel ditch, excavation, installation of coir mat, placement of rock check dams, and stream cobble completed. Excavation of stream channel, boulder weirs, and stream cobble for Indian Creek continued. Rabel worked from the bottom of the Indian Creek alignment up to Boulder Weir #7 to allow for dewatering and dam excavation to continue. Additional stream cobble was gathered from the site and placed between Weirs #3 through #7 and #12 through #16. All boulder weirs complete. LWD Structures #1 and #2 at the bottom of Indian Creek alignment installed.

4.5.6 July 31-August 6, 2016

The remaining stream cobble was placed and LWD #3 installed. Indian Creek and Mason Tunnel ditch flows released into their respective channels. Water flowed subsurface at Boulder Weir #5. Rabel compacts stream cobble and flow returns to surface flow. Seep at the sediment pond location adding to flow and cobble placed along path to mitigate erosion. The final sediment and dam material and has been placed in the SSA and shaped. Cover soil is placed over the waste material in the SSA. Salvaged woody debris has been placed over the slopes along the Indian Creek alignment and over the SSA. Haul roads, LKD storage area, and staging area were decommissioned. Contract time is stopped and will recommence in September for seeding, fertilizing, and mulching along with flood plain plantings and wildlife/farm fencing.

4.5.7 September 11 – 19, 2016

Wildlife/farm fencing around the Indian Creek alignment and Mason Tunnel ditch completed. Seeding, fertilizing, and mulching completed. Floodplain plantings, willow stakes and tree protectors installed. Project completed and demobilization of the remaining equipment competed.

4.5.8 October 28, 2016

A final site inspection was conducted on October 28, 2016 by Tom Henderson of the AML and Kyle Johnson of Herrera to ensure all items had been completed. All items were completed and accepted and construction closeout forms were executed.

4.6 Construction Photos

Daily photos documenting construction progress are included in Appendix J.

4.7 Construction Site Visitation

Two visitors came to Park Mine during construction. The first was James Nave, who is a member of the land ownership group, on July 28, 2016. The second was a meeting with the grazing lessee Tom Williams, Autumn Coleman, and Scott Graham to go over progress and access to Indian Creek for his livestock on August 30, 2016.

5.0 PROJECT COSTS

The following sections outline and summarize all engineering and construction costs for the Project.

5.1 TOTAL PROJECT COSTS

Engineering services provided during the Project included site investigation activities, engineering design and evaluation, construction oversight, and report preparation and totaled $153,688.07. The total cost for engineering services is summarized in Table 5.1.

Table 5.1. Engineering Services Cost Summary.

Engineering Service	Year	Cost
Site Maintenance and Monitoring Report	2009	$8,306.69
Engineering Services and Bid Document Preparation and Permitting Support	2009	$32,926.53
Engineering Services, Technical Support, Update of Bid Documents, Oversight and Report Preparation	2015/2016	$112,454.85
Total Engineering Services		**$153,688.07**

Rabel's original bid to complete the work was $162,730.00 with one change order that increased the cost to $163,554.20. The total construction costs are summarized in Table 5.2. An analysis of engineering and construction costs for the Project is summarized in Table 5.3.

Table 5.2. Construction Cost Summary.

Rabel's Original Contract	$162,730.00
Change Orders	
Change Order No. 1	$824.20
Total Change Order	$824.20
Total Construction Cost	**$163,554.20**

Table 5.3. Analysis of Engineering and Construction Costs Incurred.			
	Amount	**Percentage of Total Construction Costs**	**Percentage of Total Eng. & Const. Project Costs**
Engineering Services			
Site Maintenance and Monitoring Report	$8,306.69	5.07%	2.62%
Engineering Services and Bid Document Preparation and Permitting Support	$32,926.53	20.13%	10.38%
Engineering Services, Technical Support, Update of Bid Documents, Permitting, Oversight and Report Preparation	$112,454.85	68.76%	35.45%
Total Engineering Costs	**$153,688.07**	**93.97%**	**48.45%**
Construction Services			
Rabel, Contract No. 416011	$162,730.00	99.50%	51.30%
Rabel Change Order	$824.20	0.50%	0.26%
Total Construction Costs	**$163,554.20**	**100.00%**	**51.55%**
Total Engineering & Construction Costs	**$317,242.27**	**–**	**100.00%**

6.0 PROJECT SUMMARY

Maintenance activities at Park Mine included development of an SSA, removal of an earthen dam, placement of approximately 2256 CY of sediment and dam material in the SSA, capping of the SSA with native soil, reconstruction of 361 LF of Indian Creek channel, and revegetation of the site. Construction commenced on June 28, 2016 and was completed on August 4, 2016. Revegetation commenced on September 12, 2016 and was completed on September 19, 2016. The project was completed in 45 calendar days.

The successful bidder for the Project was Rabel of Gallatin Gateway, Montana. The original contract bid was $162,730.00 with one change order resulting in an increase of $824.20 and a total construction cost of $163,554.20.

Total engineering costs were $153,688.07. The total cost of the Project including construction and engineering costs was $317,242.27.

A map with post construction photos is included in Appendix K.

APPENDIX A

Bid Tabulations

Park Mine Maintenance Project, Broadwater County, Montana

DEQ-IFB2016-416011 - Bid Tab

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Response Notes														
Total Bid	246,324.00	162,730.00	-83,594.00	-34%	194,562.55	207,960.00	244,592.88	250,559.00	271,628.50	280,221.00	298,656.00	309,695.00	368,384.00	481,751.10
Subtotal: Required Items	246,324.00	162,730.00			194,562.55	207,960.00	244,592.88	250,559.00	271,628.50	280,221.00	298,656.00	309,695.00	368,384.00	481,751.10
Subtotal: Optional Items	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Service Line Items		162,730.00			194,562.55	207,960.00	244,592.88	250,559.00	271,628.50	280,221.00	298,656.00	309,695.00	368,384.00	481,751.10
Group S1	22,900.00	5,000.00			22,560.00	36,000.00	22,076.43	25,000.00	27,000.00	14,011.00	29,800.00	30,000.00	36,000.00	48,000.00
S1.1 Mobilization, Demobilization, Bonds, and Insurance														
Unit Price	22,900.00	5,000.00			22,560.00	36,000.00	22,076.43	25,000.00	27,000.00	14,011.00	29,800.00	30,000.00	36,000.00	48,000.00
Item Total Price	22,900.00	5,000.00	-17,900.00	-78%	22,560.00	36,000.00	22,076.43	25,000.00	27,000.00	14,011.00	29,800.00	30,000.00	36,000.00	48,000.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1	1			1	1	1	1	1	1	1	1	1	1
Estimated Delivery		Days after award			10 Days after award	2 Days after award	Days after award	0 Days after award	Days after award	1 Days after award	Days after award	Days after award	14 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S2	10,500.00	3,000.00	-7,500.00	-71%	10,437.00	7,200.00	5,176.61	24,000.00	5,625.00	1,650.00	6,000.00	15,000.00	27,180.00	67,440.00
S2.1 Clearing and Grubbing														
Unit Price	7,000.00	2,000.00			6,958.00	4,800.00	3,451.07	16,000.00	3,750.00	1,100.00	4,000.00	10,000.00	18,120.00	44,960.00
Item Total Price	10,500.00	3,000.00			10,437.00	7,200.00	5,176.61	24,000.00	5,625.00	1,650.00	6,000.00	15,000.00	27,180.00	67,440.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1.5	1.5			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Estimated Delivery		Days after award			9 Days after award	10 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	15 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S3	3,825.00	3,750.00	-75.00	-2%	3,315.00	3,000.00	5,400.90	3,000.00	3,165.00	6,450.00	3,750.00	5,250.00	9,000.00	4,500.00
S3.1 Install Straw Waddles														
Unit Price	5.00	5.00			4.42	4.00	7.20	4.00	4.22	8.60	5.00	7.00	12.00	6.00
Item Total Price	3,825.00	3,750.00			3,315.00	3,000.00	5,400.90	3,000.00	3,165.00	6,450.00	3,750.00	5,250.00	9,000.00	4,500.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity PLEASE NOTE: **DEQ is accepting the bids at 750 feet versus the Engineer's estimate of 765 feet as noted in the Bid Packet.**	**765**	750			750	750	750	750	750	750	750	750	750	750
Estimated Delivery		Days after award			10 Days after award	12 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	18 Days after award	135 Days after award
Comment (Optional)							Bid sheet in contract reads 765 feet NOT 750 this price is for 765 Feet							Assume award by Feb 15th, Start July 1, 2016
Group S4	50,000.00	25,000.00	-25,000.00	-50%	25,071.00	29,000.00	50,521.70	50,000.00	55,000.00	45,106.00	16,000.00	73,790.00	102,660.00	96,400.00
S4.1 Water Management														
Unit Price	50,000.00	25,000.00			25,071.00	29,000.00	50,521.70	50,000.00	55,000.00	45,106.00	16,000.00	73,790.00	102,660.00	96,400.00
Item Total Price	50,000.00	25,000.00			25,071.00	29,000.00	50,521.70	50,000.00	55,000.00	45,106.00	16,000.00	73,790.00	102,660.00	96,400.00

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1	1			1	1	1	1	1	1	1	1	1	1
Estimated Delivery		Days after award			10 Days after award	13 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	20 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S5	19,900.00	16,310.00	-3,590.00	-18%	22,252.20	24,750.00	11,652.10	25,940.00	14,041.00	43,890.00	51,950.00	25,440.00	22,730.00	33,694.00
S5.1 Excavation														
Unit Price	9.00	7.00			7.47	12.00	4.11	7.00	4.35	17.00	20.00	10.00	7.00	17.40
Item Total Price	11,340.00	8,820.00	-2,520.00	-22%	9,412.20	15,120.00	5,178.60	8,820.00	5,481.00	21,420.00	25,200.00	12,600.00	8,820.00	21,924.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1,260	1260			1260	1260	1260	1260	1260	1260	1260	1260	1260	1260
Estimated Delivery		Days after award			10 Days after award	14 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	27 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
S5.2 Embankment														
Unit Price	8.00	7.00			12.00	9.00	6.05	16.00	8.00	21.00	25.00	12.00	13.00	11.00
Item Total Price	8,560.00	7,490.00	-1,070.00	-13%	12,840.00	9,630.00	6,473.50	17,120.00	8,560.00	22,470.00	26,750.00	12,840.00	13,910.00	11,770.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1,070	1070			1070	1070	1070	1070	1070	1070	1070	1070	1070	1070
Estimated Delivery		Days after award			10 Days after award	15 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	28 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S6	42,840.00	30,940.00	-11,900.00	-28%	35,866.60	21,420.00	45,148.60	23,800.00	19,040.00	40,936.00	71,400.00	35,700.00	45,220.00	22,086.40
S6.1 Excavate, Haul, Place, and Compact Waste in Waste Desposal Area														
Unit Price	18.00	13.00			15.07	9.00	18.97	10.00	8.00	17.20	30.00	15.00	19.00	9.28
Item Total Price	42,840.00	30,940.00			35,866.60	21,420.00	45,148.60	23,800.00	19,040.00	40,936.00	71,400.00	35,700.00	45,220.00	22,086.40
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	2,380	2380			2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Estimated Delivery		Days after award			10 Days after award	16 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	18 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S7	4,875.00	1,950.00	-2,925.00	-60%	3,684.85	6,500.00	11,945.05	22,750.00	26,845.00	1,495.00	6,500.00	6,175.00	4,095.00	45,825.00
S7.1 Lime Products														
Unit Price	75.00	30.00			56.69	100.00	183.77	350.00	413.00	23.00	100.00	95.00	63.00	705.00
Item Total Price	4,875.00	1,950.00			3,684.85	6,500.00	11,945.05	22,750.00	26,845.00	1,495.00	6,500.00	6,175.00	4,095.00	45,825.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	65	65			65	65	65	65	65	65	65	65	65	65
Estimated Delivery		Days after award			10 Days after award	17 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	22 Days after award	134 Days after award

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Comment (Optional)												Lime product is proposed coming directly from Graymont's Indian Creek Mine. On-site stockpiling is not anticipated.		Assume award by Feb 15th, Start July 1, 2016
Group S8	883.50	2,850.00	1,966.50	223%	7,529.70	3,800.00	2,587.80	2,280.00	1,140.00	14,820.00	19,000.00	5,130.00	4,370.00	1,763.20
S8.1 Cover Soil														
Unit Price	4.65	15.00			39.63	20.00	13.62	12.00	6.00	78.00	100.00	27.00	23.00	9.28
Item Total Price	883.50	2,850.00			7,529.70	3,800.00	2,587.80	2,280.00	1,140.00	14,820.00	19,000.00	5,130.00	4,370.00	1,763.20
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	190	190			190	190	190	190	190	190	190	190	190	190
Estimated Delivery		Days after award			10 Days after award	20 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	42 Days after award	135 Days after award
Comment (Optional)												Cover soil is excavated from sediment storage area. Does not include import topsoil.		Assume award by Feb 15th, Start July 1, 2016
Group S9	1,050.00	4,200.00	3,150.00	300%	1,165.50	630.00	2,589.30	1,890.00	661.50	3,360.00	4,200.00	1,470.00	5,460.00	4,410.00
S9.1 Surface Water Diversion Ditch														
Unit Price	5.00	20.00			5.55	3.00	12.33	9.00	3.15	16.00	20.00	7.00	26.00	21.00
Item Total Price	1,050.00	4,200.00			1,165.50	630.00	2,589.30	1,890.00	661.50	3,360.00	4,200.00	1,470.00	5,460.00	4,410.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	210	210			210	210	210	210	210	210	210	210	210	210
Estimated Delivery		Days after award			10 Days after award	13 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	16 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S10	5,250.00	6,750.00	1,500.00	29%	2,565.00	6,000.00	2,863.50	6,900.00	8,700.00	15,750.00	4,500.00	9,000.00	4,350.00	3,150.00
S10.1 Mason Tunnel Discharge Ditch														
Unit Price	35.00	45.00			17.10	40.00	19.09	46.00	58.00	105.00	30.00	60.00	29.00	21.00
Item Total Price	5,250.00	6,750.00			2,565.00	6,000.00	2,863.50	6,900.00	8,700.00	15,750.00	4,500.00	9,000.00	4,350.00	3,150.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	150	150			150	150	150	150	150	150	150	150	150	150
Estimated Delivery		Days after award			10 Days after award	16 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	25 Days after award	135 Days after award
Comment (Optional)												Cobbles will come from either Graymont's Indian Creek Mine or Rehbein's Pit near Totson. Gradations may not meet specifications.		Assume award by Feb 15th, Start July 1, 2016
Group S11	53,520.00	38,230.00	-15,290.00	-29%	30,828.20	26,585.00	50,120.31	27,424.00	65,584.00	45,277.00	42,706.00	35,015.00	50,039.00	44,785.00
S11.1 Stream Channel Construction														
Unit Price	90.00	50.00			63.40	35.00	96.39	25.00	88.00	120.00	42.00	15.00	55.00	21.00
Item Total Price	30,870.00	17,150.00	-13,720.00	-44%	21,746.20	12,005.00	33,061.77	8,575.00	30,184.00	41,160.00	14,406.00	5,145.00	18,865.00	7,203.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Description														
Quantity	343	343			343	343	343	343	343	343	343	343	343	343
Estimated Delivery		Days after award			10 Days after award	18 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	28 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
S11.2 Stream Channel Cobble														
Unit Price	50.00	85.00			34.75	35.00	68.33	63.00	50.00	16.50	100.00	65.00	63.00	134.00
Item Total Price	9,900.00	16,830.00	6,930.00	70%	6,880.50	6,930.00	13,529.34	12,474.00	9,900.00	3,267.00	19,800.00	12,870.00	12,474.00	26,532.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	198	198			198	198	198	198	198	198	198	198	198	198
Estimated Delivery		Days after award			10 Days after award	22 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	31 Days after award	135 Days after award
Comment (Optional)												Cobbles will come from either Graymont's Indian Creek Mine or Rehbein's Pit near Totson. Gradations may not meet specifications.		Assume award by Feb 15th, Start July 1, 2016
S11.3 Weir Boulders														
Unit Price	150.00	50.00			25.90	90.00	41.52	75.00	300.00	10.00	100.00	200.00	220.00	130.00
Item Total Price	12,750.00	4,250.00	-8,500.00	-67%	2,201.50	7,650.00	3,529.20	6,375.00	25,500.00	850.00	8,500.00	17,000.00	18,700.00	11,050.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	85	85			85	85	85	85	85	85	85	85	85	85
Estimated Delivery		Days after award			10 Days after award	25 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	35 Days after award	135 Days after award
Comment (Optional)												Boulders will come from either Graymont's Indian Creek Mine or Rehbein's Pit near Totson.		Assume award by Feb 15th, Start July 1, 2016
Group S12	2,000.00	1,800.00	-200.00	-10%	840.00	1,500.00	5,176.61	1,500.00	5,500.00	1,100.00	4,000.00	2,500.00	3,780.00	8,700.00
S12.1 Surface Water Energy Dissipator														
Unit Price	2,000.00	1,800.00			840.00	1,500.00	5,176.61	1,500.00	5,500.00	1,100.00	4,000.00	2,500.00	3,780.00	8,700.00
Item Total Price	2,000.00	1,800.00			840.00	1,500.00	5,176.61	1,500.00	5,500.00	1,100.00	4,000.00	2,500.00	3,780.00	8,700.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1	1			1	1	1	1	1	1	1	1	1	1
Estimated Delivery		Days after award			10 Days after award	23 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	33 Days after award	135 Days after award
Comment (Optional)												Cobbles will come from either Graymont's Indian Creek Mine or Rehbein's Pit near Totson. Gradations may not meet specifications.		Assume award by Feb 15th, Start July 1, 2016
Group S13	300.00	900.00	600.00	200%	345.00	2,400.00	2,588.31	750.00	1,500.00	3,033.00	3,000.00	4,500.00	4,740.00	3,252.00
S13.1 Rock Check Dams														
Unit Price	100.00	300.00			115.00	800.00	862.77	250.00	500.00	1,011.00	1,000.00	1,500.00	1,580.00	1,084.00
Item Total Price	300.00	900.00	600.00	200%	345.00	2,400.00	2,588.31	750.00	1,500.00	3,033.00	3,000.00	4,500.00	4,740.00	3,252.00

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	3	3			3	3	3	3	3	3	3	3	3	3
Estimated Delivery		Days after award			10 Days after award	24 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	26 Days after award	135 Days after award
Comment (Optional)												Cobbles will come from either Graymont's Indian Creek Mine or Rehbein's Pit near Totson. Gradations may not meet specifications.		Assume award by Feb 15th, Start July 1, 2016
Group S14	7,875.00	3,000.00	-4,875.00	-62%	14,107.50	6,750.00	9,964.91	8,850.00	6,880.50	10,890.00	6,000.00	22,500.00	11,430.00	10,440.00
S14.1 Fertilize, Seed, and Mulch														
Unit Price	5,250.00	2,000.00			9,405.00	4,500.00	6,643.27	5,900.00	4,587.00	7,260.00	4,000.00	15,000.00	7,620.00	6,960.00
Item Total Price	7,875.00	3,000.00			14,107.50	6,750.00	9,964.91	8,850.00	6,880.50	10,890.00	6,000.00	22,500.00	11,430.00	10,440.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1.5	1.5			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Estimated Delivery		Days after award			10 Days after award	27 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	50 Days after award	135 Days after award
Comment (Optional)												Includes seeding using the drill seed and broadcast method. The fertilizing mix in the specs does not work so fertilizer is based off recommendations from the seed supplier. Mulch will be installed using the hydraulic method using straw or paper mulch. All three items will be done in separate applications.		Assume award by Feb 15th, Start July 1, 2016
Group S15	2,500.00	2,500.00	0.00	0%	3,650.00	3,500.00	3,555.00	6,000.00	4,710.00	12,500.00	5,000.00	10,000.00	2,500.00	9,190.00
S15.1 Floodplain Plantings - Shrub														
Unit Price	5.00	5.00			7.30	7.00	7.11	12.00	9.42	25.00	10.00	20.00	5.00	18.38
Item Total Price	2,500.00	2,500.00			3,650.00	3,500.00	3,555.00	6,000.00	4,710.00	12,500.00	5,000.00	10,000.00	2,500.00	9,190.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	500	500			500	500	500	500	500	500	500	500	500	500
Estimated Delivery		Days after award			10 Days after award	29 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	51 Days after award	135 Days after award
Comment (Optional)												This price includes 125 Sandbar Willow, 125 Alder, 125 Woods Rose, 125 Snowberry. All Shrubs are 1 Gal.		Assume award by Feb 15th, Start July 1, 2016
Group S16	525.00	750.00	225.00	43%	600.00	1,200.00	1,707.00	1,500.00	1,047.00	2,250.00	1,500.00	2,400.00	600.00	3,550.50
S16.1 Indian Creek Bank Plantings - Willow Stakes														

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Unit Price	3.50	5.00			4.00	8.00	11.38	10.00	6.98	15.00	10.00	16.00	4.00	23.67
Item Total Price	525.00	750.00			600.00	1,200.00	1,707.00	1,500.00	1,047.00	2,250.00	1,500.00	2,400.00	600.00	3,550.50
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	150	150			150	150	150	150	150	150	150	150	150	150
Estimated Delivery		Days after award			10 Days after award	30 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	52 Days after award	135 Days after award
Comment (Optional)												Willow stakes will be cut from a mature willows by Great Bear Restoration in Hamilton, MT. So they are not grown in a nursery.		Assume award by Feb 15th, Start July 1, 2016
Group S17	1,950.00	3,250.00	1,300.00	67%	1,820.00	5,200.00	2,008.50	3,900.00	2,489.50	2,860.00	3,250.00	6,500.00	1,950.00	5,928.00
S17.1 Tree Protectors														
Unit Price	3.00	5.00			2.80	8.00	3.09	6.00	3.83	4.40	5.00	10.00	3.00	9.12
Item Total Price	1,950.00	3,250.00			1,820.00	5,200.00	2,008.50	3,900.00	2,489.50	2,860.00	3,250.00	6,500.00	1,950.00	5,928.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	650	650			650	650	650	650	650	650	650	650	650	650
Estimated Delivery		Days after award			10 Days after award	31 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	53 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S18	3,240.00	900.00	-2,340.00	-72%	900.00	7,200.00	647.10	765.00	13,950.00	693.00	4,500.00	4,500.00	5,220.00	5,247.00
S18.1 LWD Salvage and Placement														
Unit Price	360.00	100.00			100.00	800.00	71.90	85.00	1,550.00	77.00	500.00	500.00	580.00	583.00
Item Total Price	3,240.00	900.00			900.00	7,200.00	647.10	765.00	13,950.00	693.00	4,500.00	4,500.00	5,220.00	5,247.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	9	9			9	9	9	9	9	9	9	9	9	9
Estimated Delivery		Days after award			9 Days after award	33 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	46 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S19	2,240.00	1,500.00	-740.00	-33%	500.00	3,000.00	1,294.15	970.00	1,500.00	1,100.00	4,000.00	2,500.00	16,910.00	50,340.00
S19.1 Obilterate Reclaim Roadway														
Unit Price	2,240.00	1,500.00			500.00	3,000.00	1,294.15	970.00	1,500.00	1,100.00	4,000.00	2,500.00	16,910.00	50,340.00
Item Total Price	2,240.00	1,500.00			500.00	3,000.00	1,294.15	970.00	1,500.00	1,100.00	4,000.00	2,500.00	16,910.00	50,340.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1	1			1	1	1	1	1	1	1	1	1	1
Estimated Delivery		Days after award			10 Days after award	34 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	49 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016
Group S20	10,150.00	10,150.00	0.00	0%	6,525.00	12,325.00	7,569.00	13,340.00	7,250.00	13,050.00	11,600.00	12,325.00	10,150.00	13,050.00
S20.1 Wildlife/Livestock Fence														
Unit Price	7.00	7.00			4.50	8.50	5.22	9.20	5.00	9.00	8.00	8.50	7.00	9.00
Item Total Price	10,150.00	10,150.00			6,525.00	12,325.00	7,569.00	13,340.00	7,250.00	13,050.00	11,600.00	12,325.00	10,150.00	13,050.00
Commodity Code		-			-	-	-	-	-	-	-	-	-	-
Description														
Quantity	1,450	1450			1450	1450	1450	1450	1450	1450	1450	1450	1450	1450

	Engineer's Estimate	George Rabel Excavation	Delta	%Delta	Aqua Terra Restoration LLC	Thompson Contracting Inc	Weave Consulting	Montana Civil Contractors, Inc.	Bullock Contracting LLC	Bjorn Johnson Construction	D&D Excavation LLC	Dick Anderson Construction, Inc.	Williams Civil Division	Shumaker Trucking and Excavating
Estimated Delivery		Days after award			10 Days after award	36 Days after award	Days after award	0 Days after award	Days after award	Days after award	Days after award	Days after award	55 Days after award	135 Days after award
Comment (Optional)														Assume award by Feb 15th, Start July 1, 2016

APPENDIX B

Notice of Award

DEQ ORIGINAL

NOTICE OF AWARD

TO: George Rabel Excavation
PO Box 212
Gallatin Gateway, MT
59730

PROJECT: Park Mine Maintenance Project

DEQ Contract No.: 416011

PROJECT DESCRIPTION: PROJECT DESCRIPTION: The maintenance project involves excavation of a road crossing Indian Creek and associated waste, placing the excavated material in a waste disposal area, regrading and stabilizing Indian Creek, and covering the waste disposal area with cover soil. A discharging adit from the Mason Tunnel is also located on site. The discharging adit channel will be lined, cobbled, and routed into the new Indian Creek channel. Disturbance areas will be fertilized, seeded, and mulched.

The Owner has considered the Bid submitted by you for the above-described Work in response to its Invitation for Bid and Instructions to Bidders for DEQ Contract No. 416011.

You are hereby notified that your bid has been accepted in the amount of $162,730.

Within five (5) working days after receipt of this Notice of Award (Saturdays, Sundays and legal holidays excluded) or as Owner and Contractor otherwise mutually agree in writing, you are required (Article 13, Instructions to Bidders) to execute and deliver to Owner a copy of the Acceptance of Notice of Award and all copies of the executed Agreement. Upon delivery of an Owner-executed Agreement, Contractor will promptly obtain and submit to Owner properly issued and effective Performance and Payment Bonds, certificates of insurance and copies of applicable insurance policies, as required in the Supplementary Conditions of the Contract, which must be delivered no later than five (5) working days (weekends and holidays excluded) after delivery of the fully executed Agreement.

If you fail to execute the Agreement within five (5) working days from the date of this Notice, Owner will be entitled to consider all your rights (arising out of the Owner's acceptance of your Bid) as abandoned and to forfeit your Bid Bond. The Owner will be entitled to exercise such other and further rights as permitted by law.

Please return signed copy of this Notice of Award to the Owner.

2/3/2016
DATE

OWNER: DEPARTMENT OF ENVIRONMENTAL QUALITY

By: [signature]

Title: Project Manager

ACCEPTANCE OF NOTICE OF AWARD

Receipt of the above Notice of Award is hereby acknowledged as of March 7, 2016
DATE

CONTRACTOR: George Rabel Excavation

By: George Rabel

Title: Owner

APPENDIX C

Notice to Proceed

NOTICE TO PROCEED

TO: George Rabel Excavation
Box 212
Gallatin Gateway, MT 59730

DATE:

PROJECT: Park Mine Maintenance Project

In accordance with the Agreement dated 10 March 2016, you are hereby notified to commence Work no later than 6/28/16, and you are to complete the work within 45 contract days to include days to complete revegetation, which cannot begin until 15 September 2016. Owner anticipates granting a suspension of the Contract Time upon completion of all work not including revegetation.

OWNER: DEPARTMENT OF ENVIRONMENTAL QUALITY

By: _____

Title: Project Manager

ACCEPTANCE OF NOTICE TO PROCEED

Receipt of the above Notice to Proceed is hereby acknowledged this 27 day of June, 2016.

CONTRACTOR: George Rabel Excavation

By: George Rabel

Title: OWNER

APPENDIX D

Work Directives and Change Orders

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side) No.

PROJECT: Park Mine Maintenance Project

DATE OF ISSUANCE: July 13, 2016

CONTRACTOR:
George Rabel Excavation
P. O. Box 212
Gallatin Gateway, MT 59730

OWNER: Montana Department of Environmental Quality

DEQ Contract No.: 416011

CONTRACT FOR: $162,730.00

ENGINEER: Herrera Environmental Consultants

You are directed to proceed promptly with the following change(s): Increase of Stream Channel Construction length

Description: Additional stream channel construction is needed to match existing grades in the field with the design grades.

Purpose of Work Directive Change: To match existing grades with design grades at the top of the reconstructed channel alignment.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

An estimated increase in the Contract Price must be approved by Owner.

- [x] Estimated increase of$ 900.00_____.
- [ ] Estimated decrease of$ _____.
- [ ] No Change in estimated Contract Price.

Method of determining change in Contract Price:

- [x] Unit Prices
- [ ] Lump Sum
- [ ] Other _____

(Attach additional documentation if necessary)

If the change involves an increase, the estimated time must not to be exceeded without Owner authorization.

- [ ] Estimated increase of _____days.
- [ ] Estimated decrease of _____days.
- [x] No Change in estimated time.

Method of determining change in Contract Time:

- [ ] Contractor's Records
- [ ] Engineer's Records
- [ ] Other _____

(Attach additional documentation if necessary)

RECOMMENDED:

By: _____ 12/8/16
Engineer Date

AUTHORIZED:

By _____ 12/12/16
Owner Date

ACCEPTED:

By: George Rabel 12/12/16
Contractor Date

Rev. 6/04

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side) No.

PROJECT: Park Mine Maintenance Project

DATE OF ISSUANCE: July 18, 2016

CONTRACTOR:
George Rabel Excavation
P. O. Box 212
Gallatin Gateway, MT 59730

OWNER: Montana Department of Environmental Quality

DEQ Contract No.: 416011

CONTRACT FOR: $162,730.00

ENGINEER: Herrera Environmental Consultants

You are directed to proceed promptly with the following change(s): Additional Lime Products

Description: Additional Lime Kiln Dust needed for placement of waste in Sediment Storage Area

Purpose of Work Directive Change: Additional Lime Kiln Dust needed as bulking agent for wet waste placement in the Sediment Storage Area.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

An estimated increase in the Contract Price must be approved by Owner.

- [x] Estimated increase of$ 114.00_____.
- [ ] Estimated decrease of$ _____.
- [ ] No Change in estimated Contract Price.

Method of determining change in Contract Price:

- [x] Unit Prices
- [ ] Lump Sum
- [ ] Other _____

(Attach additional documentation if necessary)

If the change involves an increase, the estimated time must not to be exceeded without Owner authorization.

- [ ] Estimated increase of _____days.
- [ ] Estimated decrease of _____days.
- [x] No Change in estimated time.

Method of determining change in Contract Time:

- [ ] Contractor's Records
- [ ] Engineer's Records
- [ ] Other _____

(Attach additional documentation if necessary)

RECOMMENDED:

By: [signature] 12/8/16
Engineer Date

AUTHORIZED:

By [signature] 12/12/16
Owner Date

ACCEPTED:

By: George Rabel 12/12/16
Contractor Date

Rev. 6/04

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side) No.

PROJECT: Park Mine Maintenance Project

DATE OF ISSUANCE: August 30, 2016

CONTRACTOR:
George Rabel Excavation
P. O. Box 212
Gallatin Gateway, MT 59730

OWNER: Montana Department of Environmental Quality

DEQ Contract No.: 416011

CONTRACT FOR: $162,730.00

ENGINEER: Herrera Environmental Consultants

You are directed to proceed promptly with the following change(s): Substitution of hydro mulch in lieu of straw mulch and addition of livestock path through the Sediment Storage Area

Description: Substitution of hydro mulch and addition of livestock path through the Sediment Storage Area

Purpose of Work Directive Change: The substitution of hydro mulch was decided to be worthwhile due to the grade of the constructed slopes and use of woody debris over disturbed areas. The livestock path through the Sediment Storage Area was to enable the grazing Lessee better access to Indian Creek.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

An estimated increase in the Contract Price must be approved by Owner.

- [x] Estimated increase of$ 6927.20_____.
- [ ] Estimated decrease of$ _____.
- [ ] No Change in estimated Contract Price.

Method of determining change in Contract Price:

- [ ] Unit Prices
- [ ] Lump Sum
- [x] Other _Based on Contractor request and justification of costs_____
(Attach additional documentation if necessary)

If the change involves an increase, the estimated time must not to be exceeded without Owner authorization.

- [ ] Estimated increase of _____days.
- [ ] Estimated decrease of _____days.
- [x] No Change in estimated time.

Method of determining change in Contract Time:

- [ ] Contractor's Records
- [ ] Engineer's Records
- [ ] Other _____
(Attach additional documentation if necessary)

RECOMMENDED:

By: _____ 12/8/16
Engineer Date

AUTHORIZED:

By _____ 12/12/16
Owner Date

ACCEPTED:

By: George Rabel 12/12/16
Contractor Date

Rev. 6/04

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side) No.

PROJECT: Park Mine Maintenance Project

DATE OF ISSUANCE: August 30, 2016

CONTRACTOR:
George Rabel Excavation
P. O. Box 212
Gallatin Gateway, MT 59730

OWNER: Montana Department of Environmental Quality

DEQ Contract No.: 416011

CONTRACT FOR: $162,730.00

ENGINEER: Herrera Environmental Consultants

You are directed to proceed promptly with the following change(s): Elimination of Wildlife/Farm Fencing around the Sediment Storage Area

Description: Eliminate Wildlife/Farm Fencing from around the Sediment Storage Area

Purpose of Work Directive Change: Grazing Lessee feels his access to Indian Creek would be cut off if fence around Sediment Storage Area were installed.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

An estimated increase in the Contract Price must be approved by Owner.

- ☐ Estimated increase of$ _____.
- ☒ Estimated decrease of$ 4130.00_____.
- ☐ No Change in estimated Contract Price.

Method of determining change in Contract Price:

- ☒ Unit Prices
- ☐ Lump Sum
- ☐ Other _____

(Attach additional documentation if necessary)

If the change involves an increase, the estimated time must not to be exceeded without Owner authorization.

- ☐ Estimated increase of _____days.
- ☐ Estimated decrease of _____days.
- ☒ No Change in estimated time.

Method of determining change in Contract Time:

- ☐ Contractor's Records
- ☐ Engineer's Records
- ☐ Other _____

(Attach additional documentation if necessary)

RECOMMENDED:

By: [signature] 12/8/16
Engineer Date

AUTHORIZED:

By [signature] 12/12/16
Owner Date

ACCEPTED:

By: George Rabel 12/12/16
Contractor Date

Rev. 6/04

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side) No.

PROJECT: Park Mine Maintenance Project

DATE OF ISSUANCE: September 9, 2016

CONTRACTOR:
George Rabel Excavation
P. O. Box 212
Gallatin Gateway, MT 59730

OWNER: Montana Department of Environmental Quality

DEQ Contract No.: 416011

CONTRACT FOR: $162,730.00

ENGINEER: Herrera Environmental Consultants

You are directed to proceed promptly with the following change(s): Reduction in the quantity of Excavation of Waste for placement in the Sediment Storage Area.

Description: Reduction in excavated quantity

Purpose of Work Directive Change: The estimated quantity was based on pre and post construction design grades. As the project progressed, less material needed to be removed to achieve the intent of the design.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

An estimated increase in the Contract Price must be approved by Owner.

- ☐ Estimated increase of$ _____.
- ☒ Estimated decrease of$1612.00_____.
- ☐ No Change in estimated Contract Price.

Method of determining change in Contract Price:

- ☒ Unit Prices
- ☐ Lump Sum
- ☐ Other _____

(Attach additional documentation if necessary)

If the change involves an increase, the estimated time must not to be exceeded without Owner authorization.

- ☐ Estimated increase of _____days.
- ☐ Estimated decrease of _____days.
- ☒ No Change in estimated time.

Method of determining change in Contract Time:

- ☐ Contractor's Records
- ☐ Engineer's Records
- ☐ Other _____

(Attach additional documentation if necessary)

RECOMMENDED:

By: [signature] 12/8/16
Engineer Date

AUTHORIZED:

By [signature] 12/12/16
Owner Date

ACCEPTED:

By: George Rabel 12/12/16
Contractor Date

Rev. 6/04

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side) No.

PROJECT: Park Mine Maintenance Project

DATE OF ISSUANCE: September 16, 2016

CONTRACTOR:
George Rabel Excavation
P. O. Box 212
Gallatin Gateway, MT 59730

OWNER: Montana Department of Environmental Quality

DEQ Contract No.: 416011

CONTRACT FOR: $162,730.00

ENGINEER: Herrera Environmental Consultants

You are directed to proceed promptly with the following change(s): Decrease the number of tree protectors used for Floodplain Plantings.

Description: Reduction of Tree Protectors placed with Snow Berry plantings

Purpose of Work Directive Change: Snow Berry plants are too large to place tree protectors during planting.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

An estimated increase in the Contract Price must be approved by Owner.

- ☐ Estimated increase of$ _____.
- ☒ Estimated decrease of$ 1375.00_____.
- ☐ No Change in estimated Contract Price.

Method of determining change in Contract Price:

- ☒ Unit Prices
- ☐ Lump Sum
- ☐ Other _____

(Attach additional documentation if necessary)

If the change involves an increase, the estimated time must not to be exceeded without Owner authorization.

- ☐ Estimated increase of _____days.
- ☐ Estimated decrease of _____days.
- ☒ No Change in estimated time.

Method of determining change in Contract Time:

- ☐ Contractor's Records
- ☐ Engineer's Records
- ☐ Other _____

(Attach additional documentation if necessary)

RECOMMENDED:

By: [signature] 12/8/16
Engineer Date

ACCEPTED:

By: George Rabel 12/12/16
Contractor Date

AUTHORIZED:

By [signature] 12/12/16
Owner Date

Rev. 6/04

CHANGE ORDER

ORDER NO. _1__

PROJECT TITLE: Park Mine Maintenance Project

DEQ Contract No. 416011

CONTRACT DATE: _____

OWNER: _____

CONTRACTOR: _____

Change Orders must include an itemized cost breakdown. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT' LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
6	Excavate, Haul, Place and Compact Waste in Waste Disposal Area – Estimated Quantity 2380 CY reduced to 2256 CY					$13.00	($1612.00)
7	Lime Products – Estimated Quantity 65 Ton increased to 68.8 Ton					$30.00	$114.00
11a	Stream Channel Construction – Estimated Quantity 343 LF increased to 361 LF					$50.00	$900.00
17	Tree Protectors – Estimated Quantity 650 EA reduced to 375 EA					$5.00	($1375.00)
20	Wildlife/Farm Fence – Estimated Quantity 1450 LF reduced to 860 LF					$7.00	($4130.00)
CO#1	Hydro Mulch Substitution and Livestock Trail – 1 LS		$100.0	$200.0	$6627.20	$6927.2	$6927.20
						TOTAL COST	$824.20
						GRAND TOTAL - THIS CHANGE ORDER	$824.20

Original Contract Price: $162,730.00

Current Contract Price Adjusted by Previous Change Order: $162,730.00

Cost this Change Order (+ or -_): $824.20

New Contract Price including this Change Order: $163,554.20

The completion date as set forth in the Contract Documents will be (unchanged, increased, decreased) by _____0_____ calendar days. Attach Work Directive Change and all other applicable documentation.

The date for completion of all work will be _____.

Description and Justification for Change:

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
George Rabel Excavation
P.O. Box 212
Gallatin Gateway MT 59730

Ship To: 218758
George Rabel Excavation
Park Mine
Townsend MT 59644

BILL OF LADING - Not Negotiable

Page: 1

Customer#:	218757	B/L Number:	4302665
Customer PO#:		Ship Date:	18-Jul-2016
Our Order No:	192053 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	18-Jul-2016	Zone:	Blank
Terms:	Net 30	Delivery:	21-Jul-2016
Shipment#:	62427341	CTQ/NIR:	

Gross:	52000 lb 14:38	Scale ID:	20502
Tare:	24540 lb 14:26	Car/Truck #:	red
Net:	27460 lb	Carrier:	

Item	Quantity	Description	Net Weight
3054	13.730 TN	Rip Rap High Calcium Limestone	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

LKD
ak

Delivery Instructions:

Shipper/Deputy: per ak

Carrier: per Lee

Consignee: per _____

B/L Number 4302665

ORIGINAL BILL OF LADING

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
Graymont Western US Inc.
Indian Creek Plant
P.O Box 550
Townsend MT 59644

Ship To: 167559
George Rabel Excavation
PO Box 212
Gallatin Gateway MT 59730

BILL OF LADING - Not Negotiable

Page: 1

Customer#:	167559	B/L Number:	4300049
Customer PO#:	406-581-2653	Ship Date:	15-Jul-2016
Our Order No:	191274 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	15-Jul-2016	Zone:	Blank
Terms:	Cash	Delivery:	06-Jul-2016
Shipment#:	62184360	CTQ/NIR:	

Gross:	43340 lb 7:36	Scale ID:	20502
Tare:	24460 lb 7:19	Car/Truck #:	red
Net:	18880 lb	Carrier:	

Item	Quantity	Description	Price	Amount	Net Weight
3505	9.440 TN	Lime Kiln Dust Co-products	5.00 / TN	47.20	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

Delivery Instructions:
georgerabel@yahoo.com

Shipping and Handling:
Sales Tax: 0.000
Total Shipment: USD $ 47.20

Shipper/Deputy: per mm

Carrier: per Gje Rabel

Consignee: per _____

B/L Number 4300049

ORIGINAL BILL OF LADING

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
Graymont Western US Inc.
Indian Creek Plant
P.O Box 550
Townsend MT 59644

Ship To: 167559
George Rabel Excavation
PO Box 212
Gallatin Gateway MT 59730

BILL OF LADING - Not Negotiable

Page: 1

Customer#:	167559	B/L Number:	4299312
Customer PO#:	406-581-2653	Ship Date:	14-Jul-2016
Our Order No:	191274 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	14-Jul-2016	Zone:	Blank
Terms:	Cash	Delivery:	06-Jul-2016
Shipment#:	62184351	CTQ/NIR:	

Gross:	42120 lb 13:09	Scale ID:	20502
Tare:	24340 lb 12:54	Car/Truck #:	red
Net:	17780 lb	Carrier:	

Item	Quantity	Description	Price	Amount	Net Weight
3505	8.890 TN	Lime Kiln Dust Co-products	5.00 / TN	44.45	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

Delivery Instructions:
georgerabel@yahoo.com

Shipping and Handling:
Sales Tax: 0.000
Total Shipment: USD $ 44.45

Shipper/Deputy: per MM

Carrier: per George Rabel

Consignee: per

B/L Number 4299312

ORIGINAL BILL OF LADING

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
Graymont Western US Inc.
Indian Creek Plant
P.O Box 550
Townsend MT 59644

Ship To: 167559
George Rabel Excavation
PO Box 212
Gallatin Gateway MT 59730

BILL OF LADING - Not Negotiable

Page: 1

Customer#:	167559	B/L Number:	4298960
Customer PO#:	406-581-2653	Ship Date:	14-Jul-2016
Our Order No:	191274 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	14-Jul-2016	Zone:	Blank
Terms:	Cash	Delivery:	06-Jul-2016
Shipment#:	62184335	CTQ/NIR:	

Gross:	50380 lb 10:30	Scale ID:	20502
Tare:	24620 lb 9:59	Car/Truck #:	red
Net:	25760 lb	Carrier:	

Item	Quantity	Description	Price	Amount	Net Weight
3505	12.880 TN	Lime Kiln Dust Co-products	5.00 / TN	64.40	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

Delivery Instructions:
georgerabel@yahoo.com

Shipping and Handling:
Sales Tax: 0.000
Total Shipment: USD $ 64.40

Shipper/Deputy: per MM

Carrier: per Rx Rabel

Consignee: per _____

B/L Number 4298960

ORIGINAL BILL OF LADING

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
Graymont Western US Inc.
Indian Creek Plant
P.O Box 550
Townsend MT 59644

Ship To: 167559
George Rabel Excavation
PO Box 212
Gallatin Gateway MT 59730

BILL OF LADING - Not Negotiable

Page: 1

Customer#:	167559	B/L Number:	4298915
Customer PO#:	406-581-2653	Ship Date:	14-Jul-2016
Our Order No:	191274 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	14-Jul-2016	Zone:	Blank
Terms:	Cash	Delivery:	06-Jul-2016
Shipment#:	62184327	CTQ/NIR:	

Gross:	53960	lb	9:58	Scale ID:	
Tare:	24600	lb	9:58	Car/Truck #:	red
Net:	29360	lb	MAN. WT.	Carrier:	

Item	Quantity	Description	Price	Amount	Net Weight
3505	14.680 TN	Lime Kiln Dust Co-products	5.00 / TN	73.40	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

Delivery Instructions:
georgerabel@yahoo.com

Shipping and Handling:
Sales Tax: 0.000
Total Shipment: USD $ 73.40

Shipper/Deputy: per

Carrier: per

Consignee: per

B/L Number 4298915

ORIGINAL BILL OF LADING

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
Graymont Western US Inc.
Indian Creek Plant
P.O Box 550
Townsend MT 59644

Ship To: 167559
George Rabel Excavation
PO Box 212
Gallatin Gateway MT 59730

BILL OF LADING - Not Negotiable

Page: 1

Customer#:	167559	B/L Number:	4295789
Customer PO#:	406-581-2653	Ship Date:	12-Jul-2016
Our Order No:	191274 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	12-Jul-2016	Zone:	Blank
Terms:	Cash	Delivery:	06-Jul-2016
Shipment#:	62184301	CTQ/NIR:	

Gross:	42660 lb 7:36	Scale ID:	20502
Tare:	24220 lb 7:22	Car/Truck #:	red
Net:	18440 lb	Carrier:	

Item	Quantity	Description	Price	Amount	Net Weight
3505	9.220 TN	Lime Kiln Dust Co-products	5.00 / TN	46.10	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

Delivery Instructions:
georgerabel@yahoo.com

Shipping and Handling:
Sales Tax: 0.000
Total Shipment: USD $ 46.10

Shipper/Deputy: per Mm

Carrier: per Geo Rabel

Consignee: per

B/L Number 4295789

ORIGINAL BILL OF LADING

Graymont Western US Inc.
Indian Creek Plant
4 1/2 miles west Indian Creek Road
P.O Box 550
Townsend MT 59644

Sold To:
George Rabel Excavation
P.O. Box 212
Gallatin Gateway MT 59730

Ship To: 218758
George Rabel Excavation
Park Mine
Townsend MT 59644

BILL OF LADING - Not Negotiable

Customer#:	218757	B/L Number:	4294700 Page: 1
Customer PO#:		Ship Date:	11-Jul-2016
Our Order No:	191748 SO	Broker #:	172957 FCA-COLLECT
Related Ord No:		Broker Name:	Customer's Truck
Order Date:	11-Jul-2016	Zone:	Blank
Terms:	Net 30	Delivery:	11-Jul-2016
Shipment#:	62317759	CTQ/NIR:	

Gross:	52680 lb 11:11	Scale ID:	20502
Tare:	24480 lb 11:11	Car/Truck #:	red
Net:	28200 lb	Carrier:	

Item	Quantity	Description	Net Weight
3054	14.100 TN	Rip Rap High Calcium Limestone	

EMERGENCY TEL. NO. WHMIS: (800) 424-9300 CHEMTREC (US)
(613) 996-6666 CANUTEC (CANADA)

Delivery Instructions:

Shipper/Deputy: per MM

Carrier: per Gye Rabel

Consignee: per _____

B/L Number 4294700

ORIGINAL BILL OF LADING

APPENDIX E

Project Completion Documents

CERTIFICATE OF SUBSTANTIAL COMPLETION

TO: Montana Department of Environmental Quality (Owner)
PROJECT TITLE: Park Mine Maintenance Project

DEQ Contract No. 416011 **SUBSTANTIAL COMPLETION**

DATE: October 28, 2016

CONTRACT DATE:

LOCATION: Broadwater County

PROJECT OR PART WILL INCLUDE:

CONTRACTOR: George Rabel Excavation
ADDRESS: P.O. Box 212
Gallatin Gateway MT
TELEPHONE NO: (406) 763-4620
Zip = 59730

DEQ INSPECTION DATE: October 28, 2016
ENGINEER: Herrera Environmental Consultants
PERFORMANCE BOND NO: 3160034
DATE OF BOND: February 29, 2016
SURETY: First Security Bank
MONTANA AGENT: Jay Williamson, Branch President
ADDRESS: 511 W. Main Street
Belgrade, MT 59714

The Work performed under this Contract has been inspected by authorized representatives of the Owner, Contractor, and Engineer, and the Project (or specified part of the Project, as indicated above) is hereby declared to be substantially completed on the above date.

DEFINITION OF SUBSTANTIAL COMPLETION

The date of substantial completion of a project or specified area of a project is the date when the construction is sufficiently completed, in accordance with the contract documents, as modified by any change orders agreed to by the parties, so the Owner can occupy or use it for the purpose for which it is intended.

A tentative list of items to be completed is appended hereto. This list is not exhaustive, and the failure to include an item on it does not alter the responsibility of the Contractor to complete all the Work in accordance with the Contract Documents.

ENGINEER: Herrera Environmental Consultants

By [signature]
Authorized Representative **Date**

The Contractor accepts the above Certificate of Substantial Completion and agrees to complete and correct the items on the tentative list within the time indicated.

CONTRACTOR: George Rabel Excavation

By [signature]
Authorized Representative **Date**

The Owner accepts the Project or specified area of the Project as substantially complete and will assume full possession of the project or specified area at _____ (time), on _____ (date). The responsibility for heat, utilities, security, and insurance under the Contract Documents will be as set forth under "Remarks" below.

OWNER: SCOTT GRAHAM

By [signature] 12/1/16
Authorized Representative **Date**

Remarks: (Attach additional sheet, if necessary)

CONTRACTOR'S CERTIFICATE OF COMPLETION

TO: Montana Department of Environmental Quality (Owner)

PROJECT TITLE: Park Mine Maintenance Project

DEQ Contract No. 416011

ATTN: Engineer Herrera Environmental **CONTRACT DATE:** _____

FROM: George Rabel Excavation
(Firm or Corporation)

This is to certify that I, George Rabel, **am an authorized official of** George Rabel Excavation, **working in the capacity of** Owner **and have been properly authorized by said firm or corporation to sign the following statements pertaining to the subject contract:**

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been performed, and materials used and installed in every particular, in accordance with, and in conformity to, the Contract Plans and Specifications.

The contract work is now complete in all parts and requirements and ready for your substantial completion inspection.

I understand that neither the determination of the Engineer that the work is complete nor the acceptance thereof by the Owner will operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the Contract Documents.

Dated this _____ day of _____, 20____.

CONTRACTOR: George Rabel excavation

Printed Name: George Rabel George Rabel

Title: Owner

Distribution:
1. **Project Manager**
2. **Field Office**
3. **File**

CERTIFICATE OF ACCEPTANCE

TO: Montana Department of Environmental Quality (Owner)

PROJECT TITLE: Park Mine Maintenance Project

DEQ Contract No. 416011
CONTRACT DATE:
LOCATION: Broadwater County

PROJECT OR PART WILL INCLUDE:

CONTRACTOR: George Rabel Excavation
ADDRESS: P.O. Box 212
Gallatin Gateway, MT 59730
TELEPHONE NO: (406) 763-4620

FINAL ACCEPTANCE DATE:
DEQ INSPECTION DATE: October 28, 2016
ENGINEER: Herrera Environmental Consultants
PERFORMANCE BOND NO: 3160034
DATE OF BOND: February 29, 2016
SURETY: First Security Bank
MONTANA AGENT: Jay Williamson, Branch President
ADDRESS: 511 W. Main Street
Belgrade, MT 59714

The Work performed under this Contract has been inspected by authorized representatives of the Owner, Contractor, and Engineer, and the Project (or specified part of the Project, as indicated above) is hereby declared to be totally completed and accepted on the above date.

ENGINEER: Herrera Environmental Consultants

By [signature]
Authorized Representative Date

The Contractor accepts the above Certificate of Acceptance and agrees to abide by the conditions of the one-year warranty period which began on the substantial completion date.

CONTRACTOR: George Rabel Excavation

By Meyer Rabel
Authorized Representative Date

The Owner accepts the Project as totally complete, and final payment is due to the Contractor as provided in the contract documents.

OWNER: Scott Graham

By [signature] 12/11/16
Authorized Representative Date

APPENDIX F

Compaction Testing and Moisture Content

Field Inspection

7/20/2016

1309 Cole Ave
Helena, MT 59601
Phone: (406) 443-6053
Fax: (406) 442-1158

Client:

George Rabel Excavating
76605 Gallatin Rd
Gallatin Gateway, MT 59730

Project:

1601040
Park Mine Maintenance Project
Townsend
Townsend, MT 59644

Activity Date: 07/19/2016

Technician: Thompson, Sara

Summary of Inspection:

Pioneer Technical Services arrived on site for field density quality control testing of repository material. Three areas were tested. Materials for repository were too varying and did not match proctors collected. Engineer and contractor decided that no additional proctor samples were to be taken. There was visual rutting and pumping of in place material. Herrera Field Engineer approved compaction efforts of current conditions.

Notified of Field Inspection Results: Contractor / Engineer

Photo Description: Test #1

Kevin Mock

Materials Testing Superivsor

July 22, 2016

George Rabel
George Rabel Excavation
76605 Gallatin Rd.
Gallatin Gateway, MT 597304

RE: Park Mine Maintenance Project
Pioneer Technical Services, Inc. Project No. 1601040

Dear Mr. Rabel,

On July 13, three samples from the Park Mine Maintenance project were collected and delivered to our AASHTO/ASTM accredited materials testing laboratory. The samples were referenced as “Sediment Pond”, “Waste Rock” and "Composite with Lime" and given Lab Nos. 18986 through 18988 respectively. The testing was performed in general accordance with the following Standard:

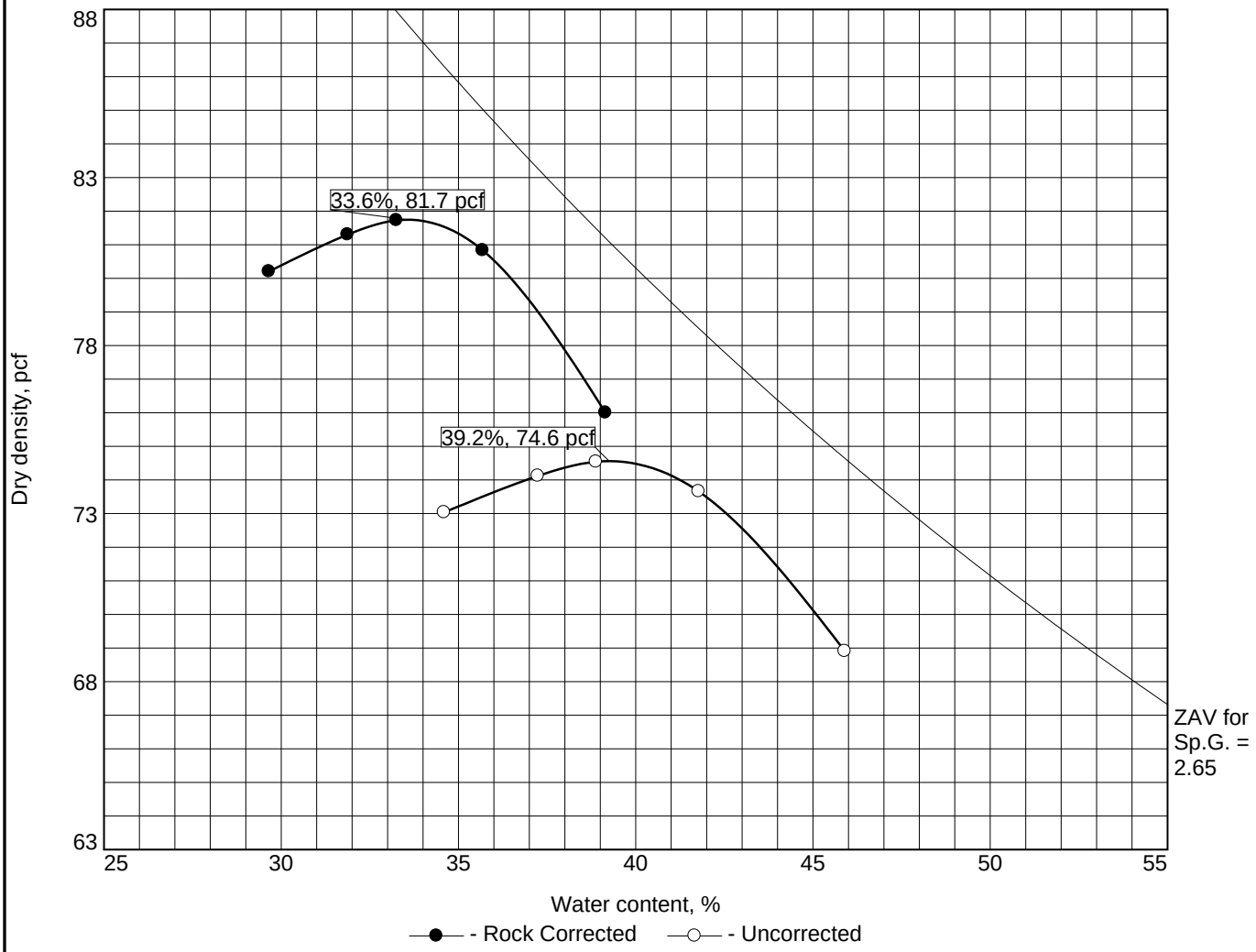
- Standard Proctor Moisture/Density Relationships (ASTM D698 Methods A and C).

The Proctor curves are included with this report. We thank you for using Pioneer Technical Services, Inc. for your geotechnical and materials testing requirements. If you have any questions regarding these results, please contact Kevin Mock at (406) 443-6053.

Sincerely,
PIONEER TECHNICAL SERVICES, INC.

Kevin Mock
Materials Testing Supervisor

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method A Standard
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
				2.65			16	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 81.7 pcf	74.6 pcf	Silty Sand with Gravel
Optimum moisture = 33.6 %	39.2 %	

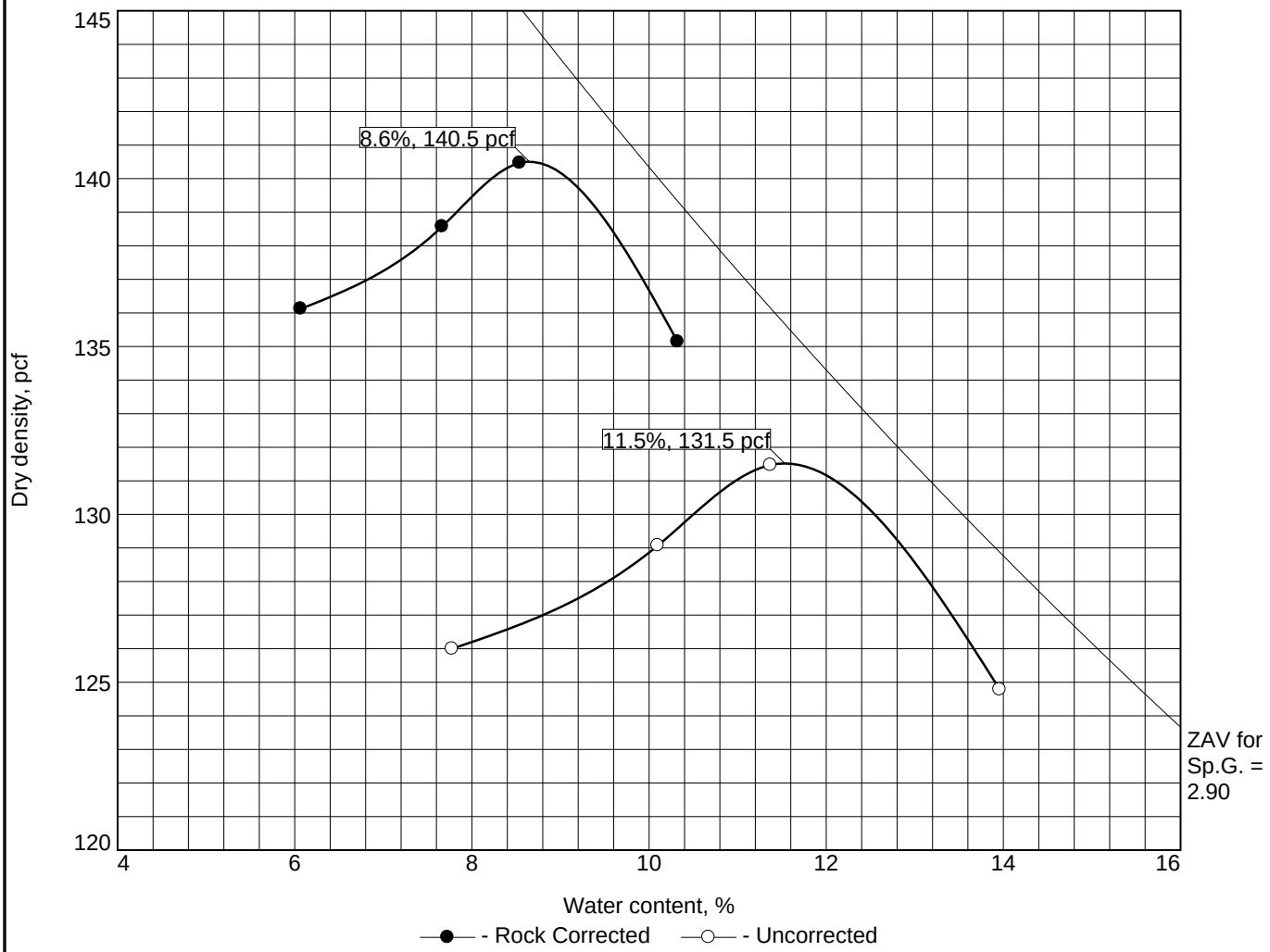
Project No. 1601040 **Client:** George Rabel Excavtion
Project: Park Mine Maintenance
○**Location:** Sediment Pond **Sample Number:** 18986

Remarks:
7-13-16

PIONEER TECHNICAL SERVICES, INC.

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method C Standard
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.65			31.2	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 140.5 pcf	131.5 pcf	Poorly Graded Gravel with Sand
Optimum moisture = 8.6 %	11.5 %	

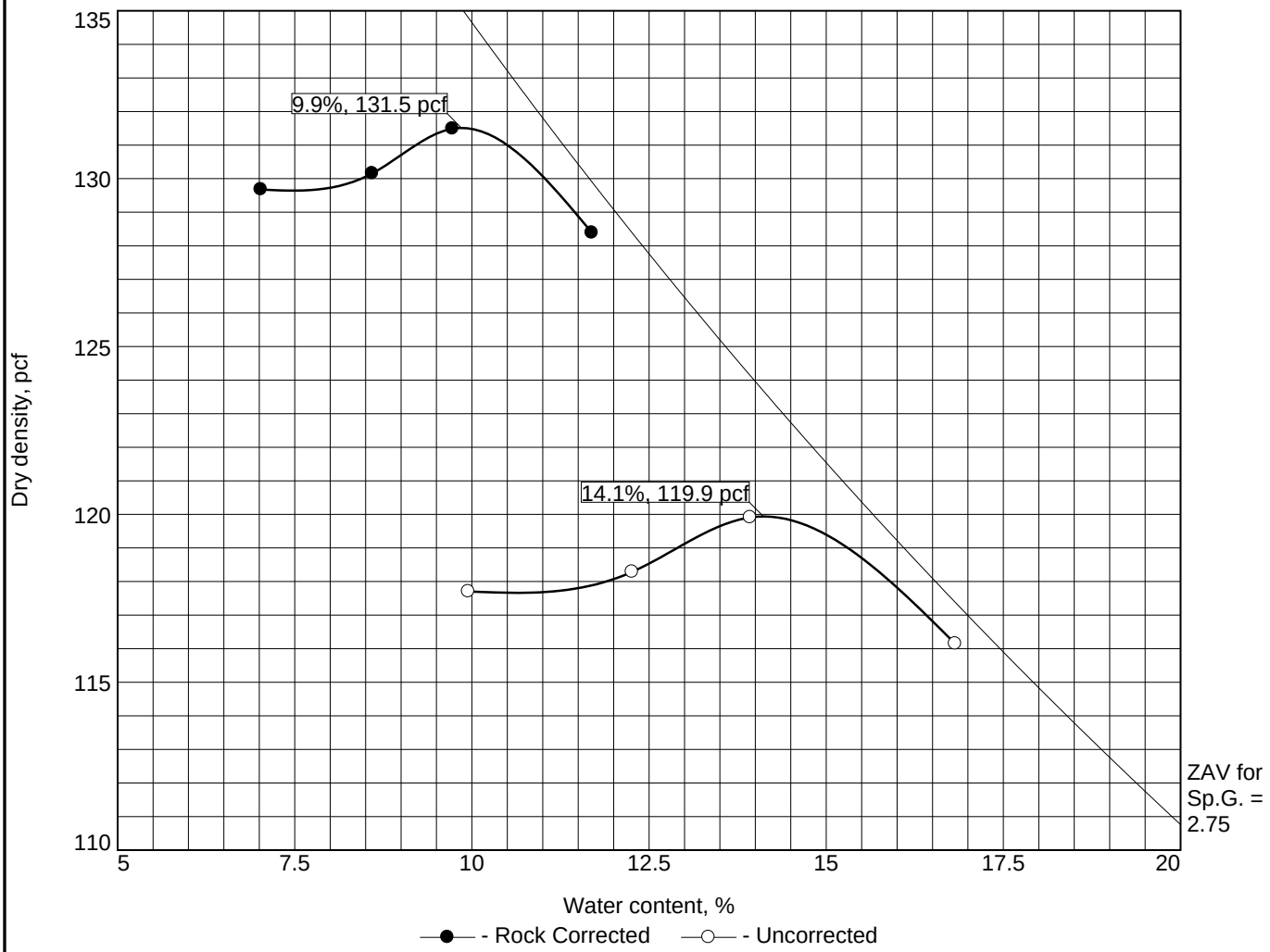
Project No. 1601040 **Client:** George Rabel Excavtion
Project: Park Mine Maintenance
○**Location:** Waste Rock **Sample Number:** 18987

Remarks:
7-13-16

PIONEER TECHNICAL SERVICES, INC.

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method C Standard
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.658			32	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 131.5 pcf	119.9 pcf	Poorly Graded Gravel with Silt
Optimum moisture = 9.9 %	14.1 %	

Project No. 1601040 **Client:** George Rabel Excavtion
Project: Park Mine Maintenance
○**Location:** Composite Mix with Lime **Sample Number:** 18988

Remarks:
7-13-16

PIONEER TECHNICAL SERVICES, INC.

Figure

PIONEER TECHNICAL SERVICES, INC.
1309 Cole Ave
Helena, MT 59601
Phone: (406) 443-6053 | Fax: (406) 442-1158

Soil Nuclear Gauge

Report Date: 7/19/2016
Test Method: ASTM D 6938

Client:
George Rabel Excavating
76605 Gallatin Rd
Gallatin Gateway, MT 59730

Project:
1601040
Park Mine Maintenance Project
Townsend
Townsend, MT 59644

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
1		7/19/16						30.7	93.9	8		95	
2		7/19/16						28.5	94.5	8		95	
3		7/19/16						22.3	110.5	8		95	

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN	Field Technician
1	Mass Grading: Sta 1+25; 3ft left of centerline		8ft below finished grade	Toxler 3411 15442	Thompson, Sara
2	Mass Grading: Sta 1+75; 4ft right of centerline		4ft below finished grade	Toxler 3411 15442	Thompson, Sara
3	Mass Grading: Sta 1+00; 3ft right of centerline		2ft below finished grade	Toxler 3411 15442	Thompson, Sara

Remarks	Comments	Related Tests		
	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.	Test #	Related Test #	Test Type

Kevin Mock
Materials Testing Superivsor

PIONEER TECHNICAL SERVICES, INC.
1309 Cole Ave
Helena, MT 59601
Phone: (406) 443-6053 | Fax: (406) 442-1158

Soil Nuclear Gauge

Report Date: 7/27/2016
Test Method: ASTM D 6938

Client:
George Rabel Excavation
76605 Gallatin Rd
Gallatin Gateway, MT 59730

Project:
1601040
Park Mine Maintenance
4279 Breckshire
East Helena, MT 59635

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
4		7/26/16	18987	ASTM D698 C	GP w/S	8.6	140.5	10.9	140.3	6	100	95	DP
5		7/26/16	18987	ASTM D698 C	GP w/S	8.6	140.5	10.7	135.5	6	96	95	DP
6		7/26/16	18987	ASTM D698 C	GP w/S	8.6	140.5	10.2	137.7	6	98	95	DP

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN	Field Technician
4	Tailings: Sta 1+75; 3ft right of centerline		5ft below finished grade	Toxler 3411 15442	Thompson, Sara
5	Tailings: Sta 1+00; 1ft left of centerline		5ft below finished grade	Toxler 3411 15442	Thompson, Sara
6	Tailings: Sta 0+50; on centerline		4ft below finished grade	Toxler 3411 15442	Thompson, Sara

Remarks

DP: Density Pass

Comments

Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter".
Gauge calibration data on file with the testing agency.

Related Tests

Test #	Related Test #	Test Type

PIONEER TECHNICAL SERVICES, INC.
1309 Cole Ave
Helena, MT 59601
Phone: (406) 443-6053 | Fax: (406) 442-1158

Soil Nuclear Gauge

Report Date: 8/2/2016
Test Method: ASTM D 6938

Client:
George Rabel Excavation
76605 Gallatin Rd
Gallatin Gateway, MT 59730

Project:
1601040
Park Mine Maintenance
4279 Breckshire
East Helena, MT 59635

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
7		8/1/16	18988	ASTM D698 C	GP-GM	9.9	131.5	8.4	127.5	6	97	95	DP
8		8/1/16	18988	ASTM D698 C	GP-GM	9.9	131.5	6.4	133.7	6	102	95	DP
9		8/1/16	18988	ASTM D698 C	GP-GM	9.9	131.5	9.2	129.7	6	99	95	DP

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN	Field Technician
7	Tailings: Sta 0+75; 2ft right of centerline		2ft below finished grade	InstroTek Xplorer 3500 1893	Thompson, Sara
8	Tailings: Sta 1+50; on centerline		2ft below finished grade	InstroTek Xplorer 3500 1893	Thompson, Sara
9	Tailings: Sta 2+00; 3ft left of centerline		2ft below finished grade	InstroTek Xplorer 3500 1893	Thompson, Sara

Remarks	Comments	Related Tests		
DP: Density Pass	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.	Test #	Related Test #	Test Type

Kevin Mock
Materials Testing Superivsor

This report applies to conditions existing on test date. Subsequent changes in conditions (e.g., effects of rainfall, frost, etc.) may invalidate this report.

APPENDIX G

Material Submittals

Park Mine Maintenance Project

Emergency Information
Post on all Vehicles
Emergency Contacts and Route to Hospital

Emergency Contact		**Telephone No.**
Fire Department		911
Sheriff Department		911
Herrera Environmental Consultants, Inc.		
Kyle	Office: 406- 721- 4204 Cell: 721 6869	
Park Mine Maintenance Project		
Department of Environmental Quality		

Medical Emergency

Hospital	Broadwater Health Center
Hospital Address	110 North Oak Street Townsend Montana 59644
Hospital Telephone No.	General: 406-266-3186 Emergency: 911
Ambulance Telephone No:	911

Route to Hospital:
From job site head West on Lumbar Road, turn right onto Highway 287, travel 11.5 miles, turn right onto Broadway Street, turn left onto North Oak Street, the hospital is on the right.

Job Site Safety:
A. All equipment will be equipped with back up alarms.
B. All equipment will be operated with the safety of all employees in mind.
C. PPE: ---(Personal Protective Equipment)
    1. Hard hats, reflective vests, ear protection, safety glasses
D. Containers and absorbent mats will be present at the job site in case of oil or fuel spills.
E. Safety meetings will be held each morning before work commences.
F. Lime: As we work with the lime we will wear long sleeve shirts, eye protection, dust masks, gloves.

Park Mine Maintenance Project

Dust Control Plan:

I have a 4000 gallon water truck that will be used to control dust. We will water the work site at the direction of the engineer on site when it is deemed necessary. Water will be obtained from Indian Creek.

Traffic Control Plan:

We will put truck entering signs where we enter the main road. As the main road is narrow and winding, we will drive defensively and at a low rate of speed.

Weed Control Plan:

All equipment will be washed, weed free, and any vehicles coming out will also be washed, if they have been exposed to weeds.

Lime Stock Pile Plan:

We will make a flat area to stock pile the lime, and place a tarp over the lime, in case of rain, to control any run off of the lime.

Lime Mixing Plan:

I will use a grader with rippers, and a Skidster to spread the lime, a smooth drum roller to meet compaction.

Quality Control Plan:

George Rabel is owner and will be on site, to oversee the job. Brad Potter is a former foreman for Knife River, and will oversee the job if I am not present.

All testing procedures will be done by Pioneer Technical, from Helena Montana.

Diversion Plan:

We will install two cofferdams, one at Indian Creek and one at Mason Tunnel. We will use pond liner and sand bags to divert all the water into the 18" culvert. We will install 420 'of 18" culvert to divert the creek around the pond so the pond can be drained. To drain the pond, I will install an upright culvert with holes, to allow the water to enter the culvert, where I will place a pump, to pump the water from the pond, into sprinkler pipe, to spread the water, at a slow rate to use evaporation and allow the ground to absorb the water. I do not know if I will need a outflow dissipater since I am using a sprinkler system.

ADS N-12® WT IB PIPE (per ASTM F2648) SPECIFICATION

Scope

This specification describes 4- through 60-inch (100 to 1500 mm) ADS N-12 WT IB pipe (per ASTM F2648) for use in gravity-flow land drainage applications.

Pipe Requirements

ADS N-12 WT IB pipe (per ASTM F2648) shall have a smooth interior and annular exterior corrugations.

- 4- through 60-inch (100 to 1500 mm) shall meet ASTM F2648.
- Manning's "n" value for use in design shall be 0.012.

Joint Performance

4- through 60-inch (100 to 1500 mm) shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band. The bell tolerance device shall be installed by the manufacturer.

Fittings

Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the watertight joint performance requirements of ASTM F 2306.

Field Pipe and Joint Performance

To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties

Material for pipe production shall be an engineered compound of virgin and recycled high-density polyethylene conforming with the minimum requirements of cell classification 424420C (ESCR Test Condition B) for 4- through 10-inch (100 to 250 mm) diameters, and 435420C (ESCR Test Condition B) for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The design engineer shall verify compatibility with overall system including structural, hydraulic, material and installation requirements for a given application.

Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch (100 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted), or Class 2 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.02. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

	Nominal Diameter												
Pipe I.D. in (mm)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D.** in (mm)	4.8 (122)	6.9 (175)	9.1 (231)	11.4 (290)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)	42 (1067)	48 (1219)	54 (1372)	67 (1702)

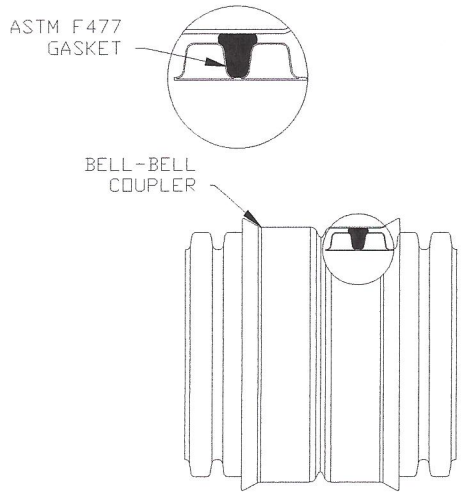
*Check with sales representative for availability by region.

**Pipe O.D. values are provided for reference purposes only, values stated for 12- through 60-inch are ± 1 inch. Contact a sales representative for exact values.

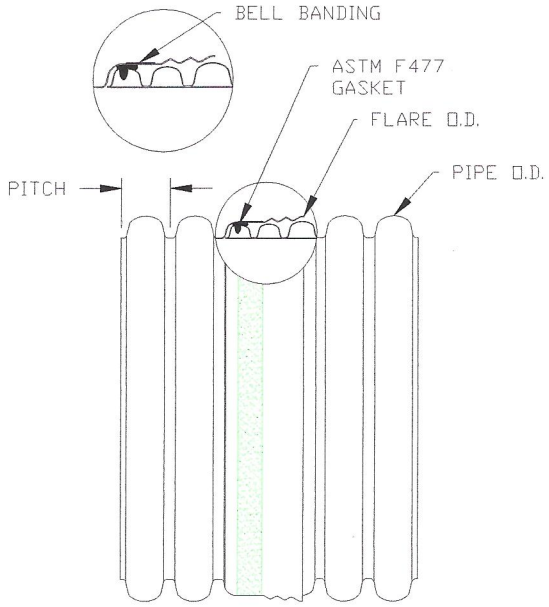
© ADS, Inc., October 2009

N-12® WT IB (PER ASTM F2648) JOINT SYSTEM

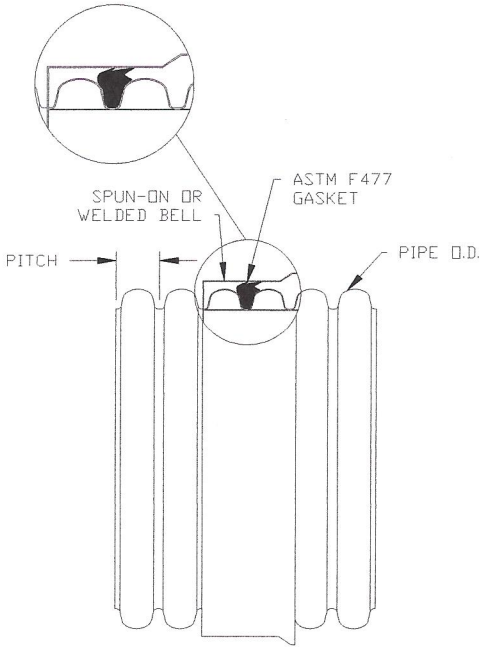
(Joint configuration & availability subject to change without notice. Product detail may differ slightly from actual product appearance.)



4″ – 10″
(100–250 MM)



12″ – 60″
(300–1500 MM)



12″ – 60″
(300–1500 MM)

© ADS, Inc., October 2009

GEOTEX®
BY PROPEX

Product Data

GEOTEX® 1101

GEOTEX® 1101 is a polypropylene, staple fiber, needle-punched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX® 1101 conforms to the property values listed below[1]. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP). This product is NTPEP approved for AASHTO standards.

		MARV[2]	
PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured Inputs		100%	100%
% U.S. Manufactured		100%	100%
MECHANICAL			
Grab Tensile Strength	ASTM D-4632	275 lbs	1223 N
Grab Elongation	ASTM D-4632	50%	50%
CBR Puncture	ASTM D-6241	725 lbs	3225 N
Trapezoidal Tear	ASTM D-4533	105 lbs	467 N
ENDURANCE			
UV Resistance at 500 hrs	ASTM D-4355	70%	70%
HYDRAULIC			
Apparent Opening Size (AOS)[3]	ASTM D-4751	100 US Std. Sieve	0.150 mm
Permittivity	ASTM D-4491	1.2 sec^{-1}	1.2 sec^{-1}
Water Flow Rate	ASTM D-4491	85 gpm/ft^2	3463 $l/min/m^2$

ROLL SIZES	15 ft x 300 ft	4.57 m x 91.5 m

NOTES:

1. The property values listed above are effective 07/13/2015 and are subject to change without notice.

2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.

3. Maximum average roll value.

Propex™ Geotextile Systems

TESTED. PROVEN. TRUSTED

www.propexglobal.com

Propex Operating Company, LLC · 1110 Market Street, Suite 300 · Chattanooga, TN 37402
ph 800 621 1273 · ph 423 855 1466

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US EROSION CONTROL PRODUCTS

A DIVISION OF L & M SUPPLY

Straw Wattle Product Data and Specification

Manufacturer: US Erosion Control Products, Inc.; an L & M Supply Company – Phone: 800-948-7870

Product Description

US Erosion manufactures Straw Wattles in addition to a full line of Erosion Control and Landscape Products. Straw Wattles consist of a superior synthetic netting engineered for high water flow that is filled with a 100% weed free straw matrix. Straw Wattles are made to filter sediment flow in channels and slopes. The Wattles are made to conform to the surface of the soil and are secured by staking. Straw Wattles can be custom made to meet specific job conditions. The in stock sizes are listed below in Table 1.

Specifications

Each Straw Log is manufactured to the specifications listed below conforming to US Erosion's quality control guidelines. Table 1 provides log dimensions and table 2 provides product characteristics and dimensions. For any other questions relating to log performance data or installation recommendations, contact US Erosion at 800-948-7870.

TABLE 1

LENGTH X DIAMETER	UINT WEIGHT* LBS	LBS/LIN. FT*
9" X 10'	16	1.7
9" X15'	25.5	1.7
9" X 25'	42.5	1.7
12" X 10'	25	2.5
12" X 20'	50	2.5
20" X 10'	35	3.5
20" X 20'	70	3.5

*BASED ON MEASURMENTS AT TIME OF MANUFACTURE

TABLE 2

CHARACTERISITCS	DIMENSION
FIBER COMPOSITION	WEED FREE STRAW
NETTING	0.50" X 0.50" HD SYNTHETIC
CONFIGURATION	CYLINDRICAL WITH CLOSED ENDS

US Erosion Control Products:
1034 Albany Ave W. Pearson, GA 31642Phone:
(800)-948-7870 · Fax: (912)-534-6254
Website: www.landmsupplyco.com

LAYFIELD
CONSTRUCTION PRODUCTS

US 800-277-8298
CAN 866-567-7112

Silt Fence

1. Product Description

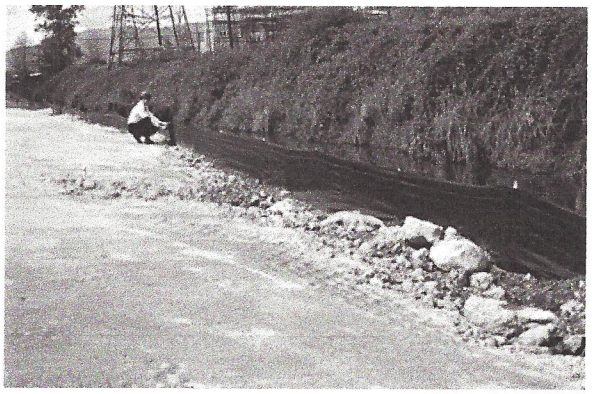
Silt Fences are temporary sediment control devices that are designed to prevent the release of silt from a construction site. Silt fence is typically supplied as rolls of permeable fabric stapled to wooden posts. These are installed along landscape contours to collect and/or filter sediment from sheet flow runoff. Silt Fences prevent silt contamination of sensitive areas such as neighboring properties, streams, and catch basins. A properly installed and maintained Silt Fence will collect silts before they can cause contamination requiring expensive clean up. Silt Fences create a small puddle behind the fence that acts as a "stilling basin" allowing silts to settle. Silt Fences are most often used on sites where the soil has been stripped of natural vegetation. The bare soil is easily eroded and can lead to the loss of large quantities of silt during a rainstorm or other run-off event.

2. Technical Data

Materials information is on page 2.

3. Installation

Silt fences must be installed properly to work. A small trench must be dug in the soil to anchor the bottom end of the fabric. The anchor trench should be minimum 150 mm deep by 150 mm wide (6 inches by 6 inches). Silt fence is typically supplied with wooden posts attached and the posts should be installed on the downstream side of the fence. The bottom of the fabric is placed in the anchor trench on the upstream side of the fence and then carefully backfilled. If the fabric is not anchored then sediment carrying water will travel under the fence. Adjacent lengths of silt fence are rolled together around the end posts. Refer to and follow local guidelines, owners best management practices (BMP's) and site specific project requirements in the plans, specifications and tender documents.



4. Availability and Cost

Available from Layfield or distributors. Call
425-254-1075 Pacific time
780-453-6731 Mountain time, or
905-761-9123 Eastern time

5.

inspected by

6. Warranty

Products sold will meet Layfield's published specifications at time of sale. Full warranty details are available from Layfield.

7. Maintenance

Silt and Sediment Control Devices should be inspected on a regular schedule and after every significant precipitation event. Any accumulated silt and sediment should be removed once they reach 1/3 the height of the device.

8. Filing Systems

https://www.layfieldgroup.com/Geosynthetics/Silt-Fence-and-Fencing-Products/Silt-Fence.aspx

9.

22 Dec 2011	Silt Fence Properties (typical)[1,3]		
Fabric Style	**ASTM**	→ **SF 100**	**SF 124**
Grab Tensile (MD/CD)	D4632	116/120 lbs 516/534 N	125/125 lbs 556/556 N
Grab Elongation (MD/CD)	D4632	23.7%/24.1%	21%/21%
Trapezoidal Tear	D4533	58 lbs 258 N	65 lbs 289 N
Puncture Strength	D4833	53 lbs 236 N	65 lbs 289 N
AOS - maximum	D4751	N/A	30 US Sieve 600 microns
Permittivity - minimum	D4491	N/A	0.05 s^{-1}
UV Resistance - minimum	D4355	N/A	70% after 500 hours of exposure
Roll Sizes		3 x 100 ft 0.91 x 30 m	3 x 100 ft 0.91 x 30 m
Roll Weight		27 lbs (3.05 m stakes) 45 lbs (2 m stakes)	27 lbs (3.05 m stakes) 45 lbs (2 m stakes)
Stake Spacing[1, 2]		3.05 m or 2 m typical (10 or 6.5 feet typical) Custom spacing available	3.05 m or 2 m typical (10 or 6.5 feet typical) Custom spacing available
Stake Properties		1.5" x 1.5" Nominal 4 feet long	1.5" x 1.5" Nominal 4 feet long

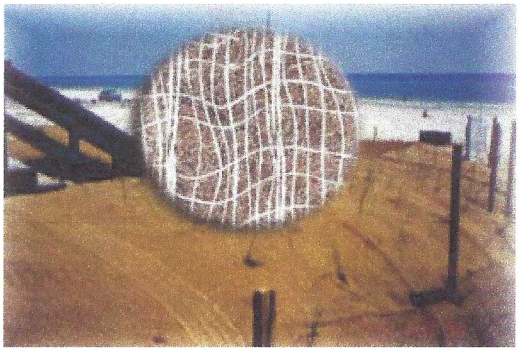
Note 1: For Alberta Transportation projects, geotextile properties above for SF 124 are MARV and SF124 post spacing is maximum 2 metres

Note 2: Other arrangements include; Alternate stake spacing, Sewn pockets, Wire mesh backing, Different styles of posts, Various fabric widths and reinforcements.

Note 3: Layfield has additional silt fence products to suit regional requirements. Contact your Layfield representative for more information.

WE PROTECT

www.LayfieldConstructionProducts.com
customerservice@layfieldgroup.com



BioD-OCF™

Biodegradable 100% Coir Stitched Blanket
Completely Wildlife Safe!

Description

BioD-OCF™ erosion control mat is composed of a layer of 0.25 in (6 mm) thick 100% mattress coir fiber stitched between two organic jute/scrim leno woven nets. The components are sewn together with biodegradable cotton thread. This completely biodegradable blanket is the solution to environmentally sensitive general erosion control applications, and applications in sandy soil types, requiring up to 24 months of functional life.

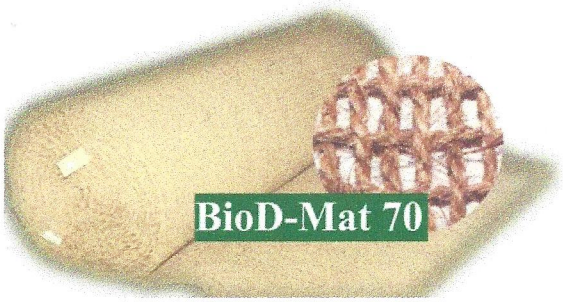
Specifications

Property	Test Method	BioD-OCF™
Unit weight	ASTM D6566	8.5 oz/SY (283 g/m^2)
Thickness	ASTM D1777	0.25 inch (6 mm)
Tensile strength Machine Direction Cross direction	ASTM D6818	 12.5 lbs/in 12.5 lbs/in
Elongation Machine direction Cross direction	ASTM D6818	 5% 5%
Roll size Roll area		8 ft x 112.5 ft (2.4 m x 34 m) 100 SY (83.6 sq.m.)
Light penetration	ECTCTASC 00197	15% open
Water absorption	ASTM D1117	250%
Materials composition Top and bottom nets Stitching thread		 Jute / Scrim (Leno Weave) 9.3 lbs/1000 sq. ft. Biodegradable cotton

RoLanka™ International, Inc.
The True Green Solution
155 Andrew Drive, Stockbridge, GA 30281

1 800 760 3215
Tel: 770 506 8211 Fax: 770 506 0391
E-mail: rolanka@rolanka.com
Web: www.rolanka.com

SBA's 8(a) & SDB and DOT DBE Certified



BioD-Mat® 70

Semi-Permanent Woven
Brown Bristle Coir Mat
Sri Lanka patent # 11159
Completely Wildlife Safe!

The Highest Quality Woven Coir Mat on the Market!

Description

The BioD-Mat® 70 blanket is woven from machine twisted bristle coir twines, the best quality coir fiber. This 100% biodegradable, strong and durable blanket provide higher erosion resistance while supporting growth and development of vegetation. These semi-permanent mats have functional field longevity of 4-6 years. If the vegetation fails to establish, the open weave in the mat allows seeding over the mat. BioD-Mat®70 blankets are manufactured to conform to the following physical properties.

Specifications

Property	Test Method	BioD-Mat® 70
Weight	ASTM D 3776	23 oz/SY (780 g/m^2)
Wide width tensile strength **Wet** Machine direction Cross direction	ASTM D 4595	 1488 lbs/ft (21.7 kN/m) 1032 lbs/ft (15.1 kN/m)
Wide width tensile strength **Dry** Machine direction Cross direction	ASTM D 4595	 1740 lbs/ft (25.4 kN/m) 1176 lbs/ft (17.2 kN/m)
Elongation at failure **Wet** Machine direction Cross direction	ASTM D 4595	 38% 25%
Open area	Calculated	48%
Thickness	ASTM D 1777	0.35 inch (9 mm)
Recommended shear stress		4 .5lbs./sq. ft. (215N/sq.m.)
Recommended flow		12 fps (3.7m/s)
Recommend slope		1:1
Minimum twine count per foot MD x CD		 27 x 18

BioD-Mat® 70 is available in following roll sizes:
3.28ft x 83ft (30SY) = 1m x 25m (25 sq. m)
6.5ft x 166ft (120SY) = 2m x 50m (100 sq. m)
9.8ft x 166ft (180SY) = 3m x 50m (150 sq. m)
13.1ft x 83ft (120SY) = 4m x 25m (100 sq. m)

RoLanka™ International, Inc.
The True Green Solution
155 Andrew Drive, Stockbridge, GA 30281

1 800 760 3215
Tel: 770 506 8211 Fax: 770 506 0391
E-mail: rolanka@rolanka.com
Web: www.rolanka.com

SBA's 8(a) & SDB and DOT DBE Certified

Submittal Reply Form

HERRERA

Submittal Number: 1-1

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Health and Safety Plan

Specification Section: Special Provisions Paragraph 6.0

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Health and Safety Plan	4

Reviewed Submittal Copies To: George Rabel and DEQ

Number of Copies: 1

Remarks:

Under Paragraph 6.0 in the Special Provisions, the contents of the submitted Safety and Health plan is missing the following details:

- Staff Organization – I see in the QC plan that Brad Potter will be in charge in your absence. Please provide his title, contact info, description of responsibilities as it relates to the HSP
- Site Specific identification of hazards and analysis for each
- Workers training – list the individuals working on the site and provide verification of 40 hr HAZWOPR if they have it, first aid certification, etc.
- Personal exposure and decontamination procedure for hazards – for lime specifically: eye wash? Hoses on water truck? etc.
- Standard operating procedures – i.e. no one to work alone, engineering controls, etc.
- Communications – Cell phone onsite? Sat phone? Flag areas where cell phone service is available onsite
- Equipment decontamination – will be washed before mobilizing to the site, note Weed Control Plan
- Emergency Equipment - first aid kit description and location, record keeping, fire extinguisher locations, etc.
- Kyle Johnson's Cell Phone number is (406) 370-6706, please amend
- Amend the Hospital Directions. Include Map
- MSDS Sheets for chemicals/substances present on the site

By: K Johnson

Date: 6/7/16

Park Mine Maintenance Project

Emergency Information
Post on all Vehicles
Emergency Contacts and Route to Hospital

1-1

Emergency Contact		**Telephone No.**
Fire Department		911
Sheriff Department		911
Herrera Environmental Consultants, Inc.		
Kyle	Office: 406- 721- 4204 Cell: 721 6869	
Park Mine Maintenance Project		
Department of Environmental Quality		

Medical Emergency

Hospital	Broadwater Health Center
Hospital Address	110 North Oak Street Townsend Montana 59644
Hospital Telephone No.	General: 406-266-3186 Emergency: 911
Ambulance Telephone No:	911

Route to Hospital:
From job site head West on Lumbar Road, turn right onto Highway 287, travel 11.5 miles, turn right onto Broadway Street, turn left onto North Oak Street, the hospital is on the right.

Job Site Safety:
A. All equipment will be equipped with back up alarms.
B. All equipment will be operated with the safety of all employees in mind.
C. PPE: ---(Personal Protective Equipment)
    1. Hard hats, reflective vests, ear protection, safety glasses
D. Containers and absorbent mats will be present at the job site in case of oil or fuel spills.
E. Safety meetings will be held each morning before work commences.
F. Lime: As we work with the lime we will wear long sleeve shirts, eye protection, dust masks, gloves.

Submittal Reply Form

HERRERA

Submittal Number: 1-2

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Quality Control Plan

Specification Section: Tech Spec 140.00

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Contractor Quality Control Plan	4

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

In the Contractor Quality Control Plan, we need:

- Brad Potter's phone number and resume stating qualifications (if he is to be the grade control/surveyor, CQC manager on the site). Signed letter stating he is the CQC Manager.
- A short description of the tests and their methods/frequencies required on the site (you can reference the specifications) and how those tests will be conveyed to the engineer (you could add us as a CC for Pioneer Technical).

By: [signature]

Date: 6/7/16

Submittal Reply Form

HERRERA

Submittal Number: 1-3

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Dust Control Plan

Specification Section: Special Provisions Paragraph 22

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Dust Control Plan	2

Reviewed Submittal Copies To: George Rabel and DEQ Number of Copies: 1

Remarks:

For the Dust Control Plan to be complete, we need:

- Documentation of temporary water right for use of water out of Indian Creek
- A short narrative describing dust generating activity, nature of abatement (just water?), water truck description (Spray bar? Nozzle?), filling location, truck storage location (availability), etc.

By: KL Johnson Date: 6/7/16

Submittal Reply Form

HERRERA

Submittal Number: 1-4

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Traffic Control Plan

Specification Section: Special Provisions Paragraph 23

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Traffic Control Plan	4

Reviewed Submittal Copies To: George Rabel and DEQ

Number of Copies: 1

Remarks:

For the Traffic Control Plan to be complete, we need:

- Description and MUTCD Standard used for each sign in the plan
- Map showing signage locations and types
- Short narrative of detours used (or if none will be needed) and flagger usage (or if none will be needed)
- Approval of the TC Plan by the Forest Service

By: KL Johnson

Date: 6/7/16

Submittal Reply Form

HERRERA

Submittal Number: 1-5

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Weed Control Plan

Specification Section: Special Provision Paragraph 21.0

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Weed Control Plan	2

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

Please provide a location for Engineer inspection of equipment prior to mobilizing to the site.

By: K Johnson

Date: 6/7/16

Submittal Reply Form

HERRERA

Submittal Number: 1-6

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Diversion Plan

Specification Section: Special Provisions Paragraph 11, Bid Item 4

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Diversion Plan	2

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

Please provide:

- Sketch of the coffer dams labeling the described materials
- Specs on the dewatering pump and sprinkler setup

By: K Johnson

Date: 6/7/16

Submittal Reply Form

HERRERA

Submittal Number: 1-7

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Lime Stockpiling Plan

Specification Section: Special Provisions Paragraph 11, Bid Item 7

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Lime Stockpiling Plan	2

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

Please provide:

- Location of the stockpile on a site map
- Short narrative of how the lime will be trucked to the site (tarping the load, etc.)
- Cleanup of lime stockpile location (scraping up soil in contact after completion?).

By: KL Johnson

Date: 6/7/16

Submittal Reply Form

HERRERA

Submittal Number: 1-8

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Lime Mixing Plan

Specification Section: Special Provisions Paragraph 11, Bid Item 7

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Lime Mixing Plan	2

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

Please provide:

- Length of the rippers that are going to be used.
- Short narrative describing lift thickness, ripping process, lime placement process, and your method of achieving the proper application rate (load counts, lift volume, other?)

By: K Dohn

Date: 6/7/16

Park Mine Maintenance Project

Dust Control Plan: 1-3

I have a 4000 gallon water truck that will be used to control dust. We will water the work site at the direction of the engineer on site when it is deemed necessary. Water will be obtained from Indian Creek.

Traffic Control Plan: 1-4

We will put truck entering signs where we enter the main road. As the main road is narrow and winding, we will drive defensively and at a low rate of speed.

Weed Control Plan: 1-5

All equipment will be washed, weed free, and any vehicles coming out will also be washed, if they have been exposed to weeds.

Lime Stock Pile Plan: 1-7

We will make a flat area to stock pile the lime, and place a tarp over the lime, in case of rain, to control any run off of the lime.

Lime Mixing Plan: 1-8

I will use a grader with rippers, and a Skidster to spread the lime, a smooth drum roller to meet compaction.

Quality Control Plan: 1-2

George Rabel is owner and will be on site, to oversee the job. Brad Potter is a former foreman for Knife River, and will oversee the job if I am not present.

All testing procedures will be done by Pioneer Technical, from Helena Montana.

Diversion Plan: 1-6

We will install two cofferdams, one at Indian Creek and one at Mason Tunnel. We will use pond liner and sand bags to divert all the water into the 18" culvert. We will install 420 'of 18" culvert to divert the creek around the pond so the pond can be drained. To drain the pond, I will install an upright culvert with holes, to allow the water to enter the culvert, where I will place a pump, to pump the water from the pond, into sprinkler pipe, to spread the water, at a slow rate to use evaporation and allow the ground to absorb the water. I do not know if I will need a outflow dissipater since I am using a sprinkler system.

Submittal Reply Form

HERRERA

Submittal Number: 1-9

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: 18" ADS N-12 Pipe

Specification Section: Special Provisions Paragraph 11, Bid Item 4

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
18" ADS N-12 Pipe	1

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

By: KRJohn

Date: 6/7/16

1-9

ADS N-12® WT IB PIPE (per ASTM F2648) SPECIFICATION

Scope

This specification describes 4- through 60-inch (100 to 1500 mm) ADS N-12 WT IB pipe (per ASTM F2648) for use in gravity-flow land drainage applications.

Pipe Requirements

ADS N-12 WT IB pipe (per ASTM F2648) shall have a smooth interior and annular exterior corrugations.

- 4- through 60-inch (100 to 1500 mm) shall meet ASTM F2648.
- Manning's "n" value for use in design shall be 0.012.

Joint Performance

4- through 60-inch (100 to 1500 mm) shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band. The bell tolerance device shall be installed by the manufacturer.

Fittings

Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the watertight joint performance requirements of ASTM F 2306.

Field Pipe and Joint Performance

To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties

Material for pipe production shall be an engineered compound of virgin and recycled high-density polyethylene conforming with the minimum requirements of cell classification 424420C (ESCR Test Condition B) for 4- through 10-inch (100 to 250 mm) diameters, and 435420C (ESCR Test Condition B) for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The design engineer shall verify compatibility with overall system including structural, hydraulic, material and installation requirements for a given application.

Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch (100 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted), or Class 2 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.02. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

	Nominal Diameter												
Pipe I.D. in (mm)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D.** in (mm)	4.8 (122)	6.9 (175)	9.1 (231)	11.4 (290)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)	42 (1067)	48 (1219)	54 (1372)	67 (1702)

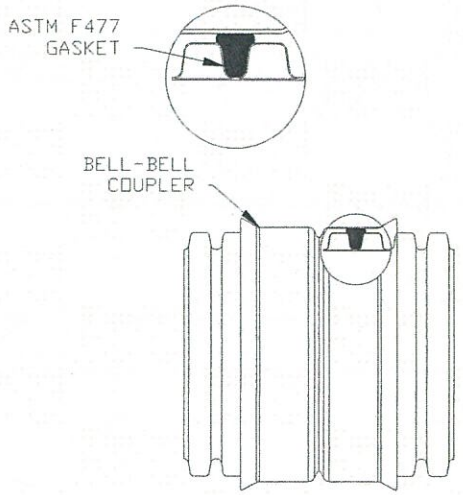
*Check with sales representative for availability by region.

**Pipe O.D. values are provided for reference purposes only, values stated for 12- through 60-inch are ± 1 inch. Contact a sales representative for exact values.

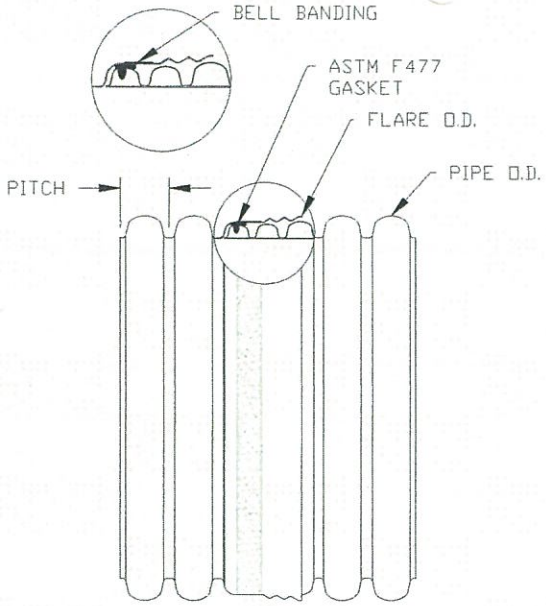
© ADS, Inc., October 2009

N-12® WT IB (PER ASTM F2648) JOINT SYSTEM

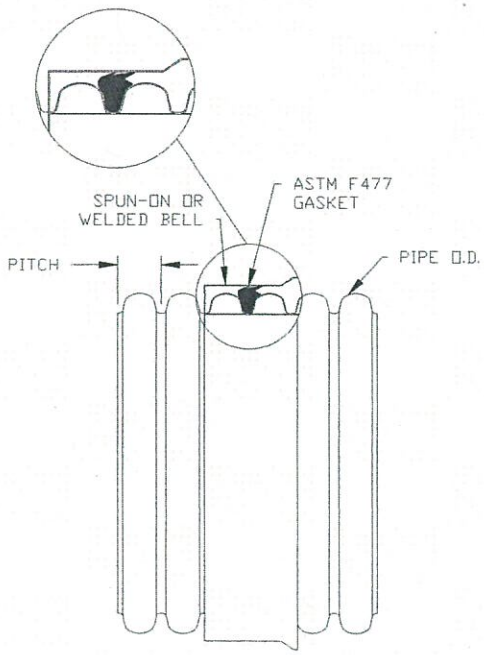
(Joint configuration & availability subject to change without notice. Product detail may differ slightly from actual product appearance.)



4" - 10"
(100-250 MM)



12" - 60"
(300-1500 MM)



12" - 60"
(300-1500 MM)

© ADS, Inc., October 2009

Submittal Reply Form

HERRERA

Submittal Number: 1-10

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Non-Woven Geotextile

Specification Section: Tech Spec 651.00

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Non-Woven Geotextile	1

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

By: K R Johnson

Date: 6/7/16

1-10

GEOTEX® BY PROPEX

Product Data

GEOTEX® 1101

GEOTEX® 1101 is a polypropylene, staple fiber, needle-punched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX® 1101 conforms to the property values listed below[1]. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP). This product is NTPEP approved for AASHTO standards.

		MARV[2]	
PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured Inputs		100%	100%
% U.S. Manufactured		100%	100%
MECHANICAL			
Grab Tensile Strength	ASTM D-4632	275 lbs	1223 N
Grab Elongation	ASTM D-4632	50%	50%
CBR Puncture	ASTM D-6241	725 lbs	3225 N
Trapezoidal Tear	ASTM D-4533	105 lbs	467 N
ENDURANCE			
UV Resistance at 500 hrs	ASTM D-4355	70%	70%
HYDRAULIC			
Apparent Opening Size (AOS)[3]	ASTM D-4751	100 US Std. Sieve	0.150 mm
Permittivity	ASTM D-4491	1.2 sec^{-1}	1.2 sec^{-1}
Water Flow Rate	ASTM D-4491	85 gpm/ft^2	3463 $l/min/m^2$

ROLL SIZES	15 ft x 300 ft	4.57 m x 91.5 m

NOTES:

1. The property values listed above are effective 07/13/2015 and are subject to change without notice.

2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.

3. Maximum average roll value.

Propex™ Geotextile Systems

TESTED. PROVEN. TRUSTED

www.propexglobal.com

Propex Operating Company, LLC · 1110 Market Street, Suite 300 · Chattanooga, TN 37402
ph 800 621 1273 · ph 423 855 1466

ARMORMAX®, PYRAMAT®, LANDLOK®, X3®, GEOTEX®, PETROMAT®, PETROTAC®, REFLECTEX®, and GRIDPRO® are registered trademarks of Propex Operating Company, LLC.

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Submittal Reply Form

HERRERA

Submittal Number: 1-11

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Straw Wattles

Specification Section: Special Provisions Paragraph 11.0, Bid Item 2

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Straw Wattles	1

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

By: KRJohnson

Date: 6/7/16

US EROSION CONTROL PRODUCTS

A DIVISION OF L & M SUPPLY

1-11

Straw Wattle Product Data and Specification

Manufacturer: US Erosion Control Products, Inc.; an L & M Supply Company – Phone: 800-948-7870

Product Description

US Erosion manufactures Straw Wattles in addition to a full line of Erosion Control and Landscape Products. Straw Wattles consist of a superior synthetic netting engineered for high water flow that is filled with a 100% weed free straw matrix. Straw Wattles are made to filter sediment flow in channels and slopes. The Wattles are made to conform to the surface of the soil and are secured by staking. Straw Wattles can be custom made to meet specific job conditions. The in stock sizes are listed below in Table 1.

Specifications

Each Straw Log is manufactured to the specifications listed below conforming to US Erosion's quality control guidelines. Table 1 provides log dimensions and table 2 provides product characteristics and dimensions. For any other questions relating to log performance data or installation recommendations, contact US Erosion at 800-948-7870.

TABLE 1

LENGTH X DIAMETER	UINT WEIGHT* LBS	LBS/LIN. FT*
9" X 10'	16	1.7
9" X15'	25.5	1.7
9" X 25'	42.5	1.7
12" X 10'	25	2.5
12" X 20'	50	2.5
20" X 10'	35	3.5
20" X 20'	70	3.5

*BASED ON MEASURMENTS AT TIME OF MANUFACTURE

TABLE 2

CHARACTERISITCS	DIMENSION
FIBER COMPOSITION	WEED FREE STRAW
NETTING	0.50" X 0.50" HD SYNTHETIC
CONFIGURATION	CYLINDRICAL WITH CLOSED ENDS

US Erosion Control Products:
1034 Albany Ave W. Pearson, GA 31642Phone:
(800)-948-7870 · Fax: (912)-534-6254
Website: www.landmsupplyco.com

Submittal Reply Form

HERRERA

Submittal Number: 1-12

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Silt Fence

Specification Section: N/A

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Silt Fence	N/A

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

There will be no silt fence installed at the site.

By: K Jackson

Date: 6/7/16

9.

1-12

22 Dec 2011	Silt Fence Properties (typical)[1,3]		
Fabric Style	**ASTM**	→ **SF 100**	**SF 124**
Grab Tensile (MD/CD)	D4632	116/120 lbs 516/534 N	125/125 lbs 556/556 N
Grab Elongation (MD/CD)	D4632	23.7%/24.1%	21%/21%
Trapezoidal Tear	D4533	58 lbs 258 N	65 lbs 289 N
Puncture Strength	D4833	53 lbs 236 N	65 lbs 289 N
AOS - maximum	D4751	N/A	30 US Sieve 600 microns
Permittivity - minimum	D4491	N/A	0.05 s^{-1}
UV Resistance - minimum	D4355	N/A	70% after 500 hours of exposure
Roll Sizes		3 x 100 ft 0.91 x 30 m	3 x 100 ft 0.91 x 30 m
Roll Weight		27 lbs (3.05 m stakes) 45 lbs (2 m stakes)	27 lbs (3.05 m stakes) 45 lbs (2 m stakes)
Stake Spacing[1, 2]		3.05 m or 2 m typical (10 or 6.5 feet typical) Custom spacing available	3.05 m or 2 m typical (10 or 6.5 feet typical) Custom spacing available
Stake Properties		1.5" x 1.5" Nominal 4 feet long	1.5" x 1.5" Nominal 4 feet long

Note 1: For Alberta Transportation projects, geotextile properties above for SF 124 are MARV and SF124 post spacing is maximum 2 metres

Note 2: Other arrangements include; Alternate stake spacing, Sewn pockets, Wire mesh backing, Different styles of posts, Various fabric widths and reinforcements.

Note 3: Layfield has additional silt fence products to suit regional requirements. Contact your Layfield representative for more information.

WE PROTECT

www.LayfieldConstructionProducts.com
customerservice@layfieldgroup.com

1-12

US 800-277-8298
CAN 866-567-7112

Silt Fence

1. Product Description

Silt Fences are temporary sediment control devices that are designed to prevent the release of silt from a construction site. Silt fence is typically supplied as rolls of permeable fabric stapled to wooden posts. These are installed along landscape contours to collect and/or filter sediment from sheet flow runoff. Silt Fences prevent silt contamination of sensitive areas such as neighboring properties, streams, and catch basins. A properly installed and maintained Silt Fence will collect silts before they can cause contamination requiring expensive clean up. Silt Fences create a small puddle behind the fence that acts as a "stilling basin" allowing silts to settle. Silt Fences are most often used on sites where the soil has been stripped of natural vegetation. The bare soil is easily eroded and can lead to the loss of large quantities of silt during a rainstorm or other run-off event.

2. Technical Data

Materials information is on page 2.

3. Installation

Silt fences must be installed properly to work. A small trench must be dug in the soil to anchor the bottom end of the fabric. The anchor trench should be minimum 150 mm deep by 150 mm wide (6 inches by 6 inches). Silt fence is typically supplied with wooden posts attached and the posts should be installed on the downstream side of the fence. The bottom of the fabric is placed in the anchor trench on the upstream side of the fence and then carefully backfilled. If the fabric is not anchored then sediment carrying water will travel under the fence. Adjacent lengths of silt fence are rolled together around the end posts. Refer to and follow local guidelines, owners best management practices (BMP's) and site specific project requirements in the plans, specifications and tender documents.

4. Availability and Cost

Available from Layfield or distributors. Call
425-254-1075 Pacific time
780-453-6731 Mountain time, or
905-761-9123 Eastern time

5.

inspected by

6. Warranty

Products sold will meet Layfield's published specifications at time of sale. Full warranty details are available from Layfield.

7. Maintenance

Silt and Sediment Control Devices should be inspected on a regular schedule and after every significant precipitation event. Any accumulated silt and sediment should be removed once they reach 1/3 the height of the device.

8. Filing Systems

https://www.layfieldgroup.com/Geosynthetics/Silt-Fence-and-Fencing-Products/Silt-Fence.aspx

Submittal Reply Form

HERRERA

Submittal Number: 1-13

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Non-Woven Coir Fabric

Specification Section: Tech Spec 345.00

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Non-Woven Coir Fabric	2

Reviewed Submittal Copies To: Rabel Construction and DEQ

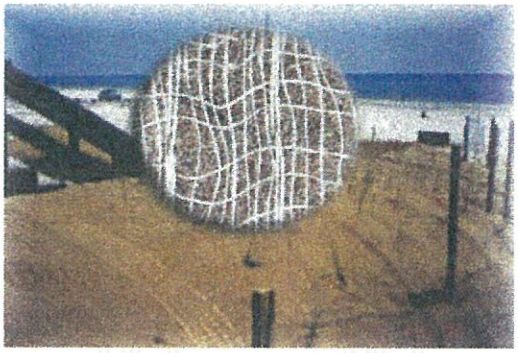
Number of Copies: 1

Remarks:

Please provide a material that is in 4m wide if available.

By: KL Johnson

Date: 6/7/16



BioD-OCF™

Biodegradable 100% Coir
Stitched Blanket
Completely Wildlife Safe!

Description

BioD-OCF™ erosion control mat is composed of a layer of 0.25 in (6 mm) thick 100% mattress coir fiber stitched between two organic jute/scrim leno woven nets. The components are sewn together with biodegradable cotton thread. This completely biodegradable blanket is the solution to environmentally sensitive general erosion control applications, and applications in sandy soil types, requiring up to 24 months of functional life.

Specifications

Property	Test Method	BioD-OCF™
Unit weight	ASTM D6566	8.5 oz/SY (283 g/m^2)
Thickness	ASTM D1777	0.25 inch (6 mm)
Tensile strength Machine Direction Cross direction	ASTM D6818	 12.5 lbs/in 12.5 lbs/in
Elongation Machine direction Cross direction	ASTM D6818	 5% 5%
Roll size Roll area		8 ft x 112.5 ft (2.4 m x 34 m) 100 SY (83.6 sq.m.)
Light penetration	ECTCTASC 00197	15% open
Water absorption	ASTM D1117	250%
Materials composition Top and bottom nets Stitching thread		 Jute / Scrim (Leno Weave) 9.3 lbs/1000 sq. ft. Biodegradable cotton

RoLanka™ International, Inc.
The True Green Solution
155 Andrew Drive, Stockbridge, GA 30281

1 800 760 3215
Tel: 770 506 8211 Fax: 770 506 0391
E-mail: rolanka@rolanka.com
Web: www.rolanka.com

SBA's 8(a) & SDB and DOT DBE Certified

Submittal Reply Form

HERRERA

Submittal Number: 1-14

Project Name: Park Mine

Project Number: 13-05554-012

Contract Number: 416011

Client/Owner: MT DEQ

Contractor: Rabel Construction

Submitted Item: Woven Coir Fabric

Specification Section: Tech Spec 345.00

Contractor's Submittal Date: 6/6/2016

Contractor's Submittal to: HEC

Date Received by HEC: 6/6/2016

HEC Transmittal Date: 6/7/2016

HEC Transmittal to: Rabel Construction and DEQ (Scott Graham)

Review Status Legend

APPROVED (For Incorporation in the Work)

1 - No Exceptions Taken

2 - As Noted

DISAPPROVED (Resubmittal Required)

3 - Comments Attached - Confirm

4 - Comments Attached - Resubmit

5 - Rejected

We are taking the following action(s):

Description	Review Status
Woven Coir Fabric	2

Reviewed Submittal Copies To: Rabel Construction and DEQ

Number of Copies: 1

Remarks:

Please provide a material that is in 4m wide

By: K Johnson

Date: 6/7/16

1-14

BioD-Mat® 70

Semi-Permanent Woven
Brown Bristle Coir Mat
Sri Lanka patent # 11159
Completely Wildlife Safe!

The Highest Quality Woven Coir Mat on the Market!

Description

The BioD-Mat® 70 blanket is woven from machine twisted bristle coir twines, the best quality coir fiber. This 100% biodegradable, strong and durable blanket provide higher erosion resistance while supporting growth and development of vegetation. These semi-permanent mats have functional field longevity of 4-6 years. If the vegetation fails to establish, the open weave in the mat allows seeding over the mat. BioD-Mat®70 blankets are manufactured to conform to the following physical properties.

Specifications

Property	Test Method	BioD-Mat® 70
Weight	ASTM D 3776	23 oz/SY (780 g/m^2)
Wide width tensile strength **Wet** Machine direction Cross direction	ASTM D 4595	 1488 lbs/ft (21.7 kN/m) 1032 lbs/ft (15.1 kN/m)
Wide width tensile strength **Dry** Machine direction Cross direction	ASTM D 4595	 1740 lbs/ft (25.4 kN/m) 1176 lbs/ft (17.2 kN/m)
Elongation at failure **Wet** Machine direction Cross direction	ASTM D 4595	 38% 25%
Open area	Calculated	48%
Thickness	ASTM D 1777	0.35 inch (9 mm)
Recommended shear stress		4 .5lbs./sq. ft. (215N/sq.m.)
Recommended flow		12 fps (3.7m/s)
Recommend slope		1:1
Minimum twine count per foot MD x CD		 27 x 18

BioD-Mat® 70 is available in following roll sizes:
3.28ft x 83ft (30SY) = 1m x 25m (25 sq. m)
6.5ft x 166ft (120SY) = 2m x 50m (100 sq. m)
9.8ft x 166ft (180SY) = 3m x 50m (150 sq. m)
13.1ft x 83ft (120SY) = 4m x 25m (100 sq. m)

RoLanka™ International, Inc.
The True Green Solution
155 Andrew Drive, Stockbridge, GA 30281

1 800 760 3215
Tel: 770 506 8211 Fax: 770 506 0391
E-mail: rolanka@rolanka.com
Web: www.rolanka.com

SBA's 8(a) & SDB and DOT DBE Certified

Submittal Tracking Log

Project Name:` Park Mine
Project Number: 13-05554-012
Contractor: Rabel Construction
Printed: December 16, 2016 11:13 AM
Last Updated:
Last Updated By:

SUBMITTAL STATUS LEGEND

DISPOSITION

APPROVED (For Incorporation in the Work)
1 – No Exceptions Taken
2 – As Noted

DISAPPROVED (Resubmittal Required)
3 – Comments Attached – Confirm
4 – Comments Attached – Resubmit
5 - Rejected

SCHEDULE URGENCY*

NEED INFO
CRITICAL
COMPLETED

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Submittal Number	Resubmittal - Previous Submittal No.	Spec Section Reference	Disposition	Keyword Description	Date Received from Contractor	Date Received by HEC	Responsible HEC Reviewer	Date Sent to HEC Reviewer	HEC Reviewer Target Date	Date Received from HEC Reviewer	Date Transmitted to Owner	Date Transmitted to Contractor	Internal Days Elapsed**	External Days Elapsed***	Comments
1-1		SP 6.0	4	Health and Safety Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Resubmit
1-2		SP 10.0	4	Quality Control Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Resubmit
1-3		SP 22.0	2	Dust Control Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Submit Temp Water Right on Indian Creek
1-4		SP 23.0	4	Traffic Control Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Submit TC Plan Approval from Forest Service
1-5		SP 21.0	2	Weed Control Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Submit Location for Inspection by Engineer prior to mobilization to site.
1-6		SP 11.0, Bl 4	2	Diversion Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Submit Dewatering Pump and Sprinkler cut sheets
1-7		SP 11.0, Bl 7	2	Lime Stockpiling Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Location, floor cleanup?
1-8		SP 11.0, Bl 7	2	Lime Mixing Plan	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Indicate load count or other means of meeting application rate.
1-9		SP 11.0, Bl 4	1	18" ADS N-12 Pipe	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				No exceptions
1-10		TS 651.00	1	Non-Woven Geotextile	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				No exceptions
1-11			1	Straw Wattles	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				No exceptions
1-12		NA	NA	Silt Fence	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				No silt fence will be installed
1-13		TS 345.00	2	Non-Woven Coir Fabric	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Roll needs to be 13.1 feet wide
1-14		TS 345.00	2	Woven Coir Fabric	6/6/2016	6/6/2016	KJ	6/6/2016	6/10/2016	6/7/2016	6/7/2016				Select 13.1-foot-wide roll

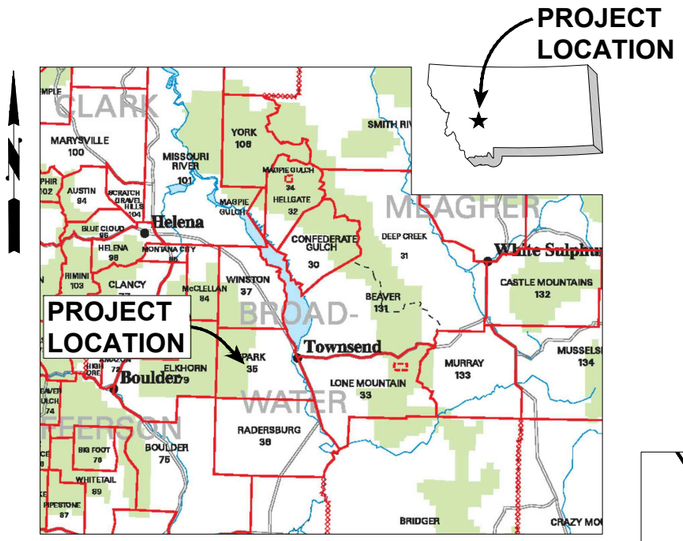
* Schedule Urgency: User to highlight rows with color matching the level of schedule urgency
** Internal Days Elapsed = Date Transmitted to Owner minus Date Received by HEC (Column L minus Column G)
*** External Days Elapsed = Date Transmitted to Contractor minus Date Received from Contractor (Column M minus Column F)

APPENDIX H

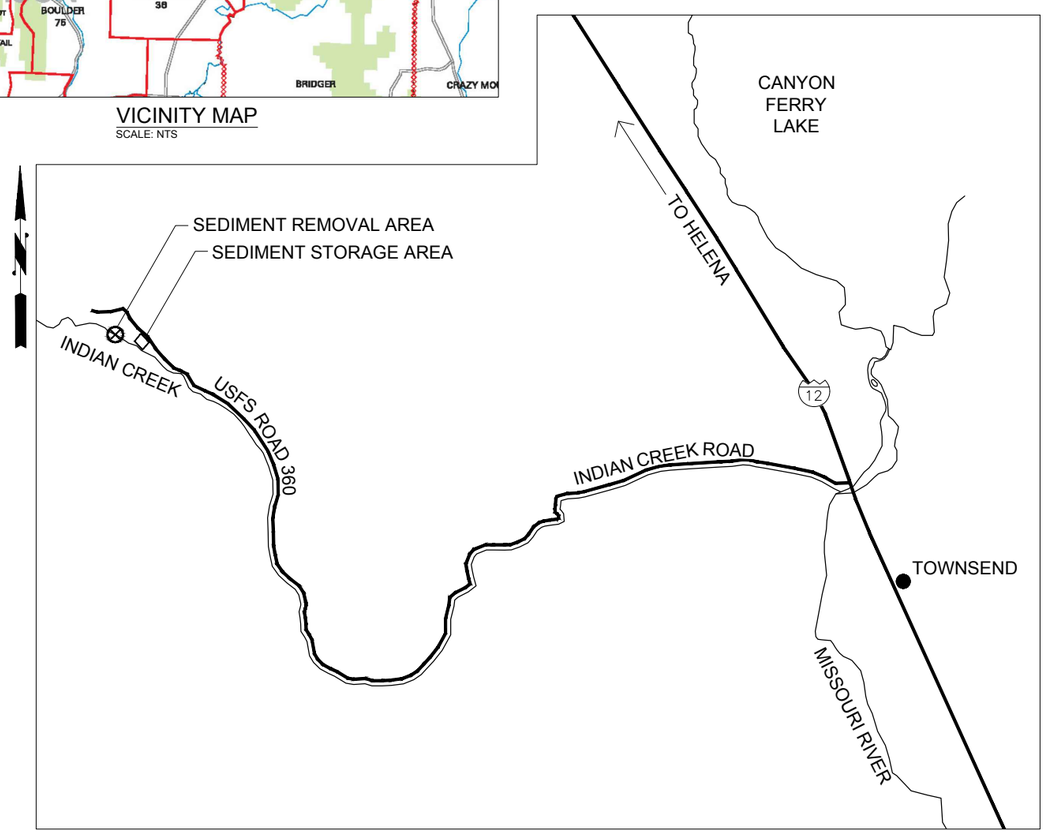
Record Drawings

PARK MINE
MAINTENANCE PROJECT

PARK MINE, BROADWATER COUNTY, MT



VICINITY MAP
SCALE: NTS



SITE MAP
SCALE: NTS

SHEET INDEX

SHEET NO.	DRAWING NO.	SHEET DESCRIPTION
1	G-1	VICINITY MAP AND SHEET INDEX
2	G-2	GENERAL NOTES AND CONTROL TABLES
3	G-3	SITE MAP
4	G-4	EXISTING CONDITIONS SEDIMENT REMOVAL AREA
5	C-1	SITE ACCESS PLAN
6	C-2	SEDIMENT REMOVAL AREA FINAL GRADING PLAN
7	C-3	SEDIMENT REMOVAL AREA CROSS-SECTIONS
8	C-4	MISCELLANEOUS DETAILS
9	C-5	SEDIMENT STORAGE AREA FINAL GRADING PLAN
10	C-6	SEDIMENT STORAGE AND COVER CROSS-SECTIONS
11	C-7	SEDIMENT STORAGE AND COVER CROSS-SECTIONS
12	C-8	PROPOSED CHANNEL DETAILS
13	C-9	DITCH DETAILS
14	ESC-1	TESC AND WATER MANAGEMENT PLAN SEDIMENT POND AREA
15	ESC-2	BYPASS PROFILE
16	ESC-3	TESC AND WATER MANAGEMENT DETAILS
17	RV-1	SEDIMENT REMOVAL AREA REVEGETATION PLAN
18	RV-2	SEDIMENT STORAGE AREA REVEGETATION PLAN
19	RV-3	REVEGETATION DETAILS - SHEET 1 OF 2
20	RV-4	REVEGETATION DETAILS - SHEET 2 OF 2

1 / C-3 — DETAIL REFERENCE NUMBER; DRAWING ON WHICH DETAIL IS SHOWN

DETAIL
SCALE: NTS
1 / C-1 — DETAIL REFERENCE NUMBER; DRAWING FROM WHICH DETAIL WAS TAKEN

A / C-4 — SECTION REFERENCE LETTER; DRAWING ON WHICH SECTION IS SHOWN

SECTION
SCALE: NTS
A / C-2 — SECTION REFERENCE LETTER; DRAWING FROM WHICH SECTION WAS TAKEN

"-" INDICATES THAT THE DETAIL/SECTION IS SHOWN ON THE SAME SHEET

"TYP" INDICATES THAT THE DETAIL/SECTION IS UNIFORMLY TYPICAL THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED

"VAR" SPECIFIES THAT DETAIL/SECTION WAS TAKEN FROM VARIOUS DRAWINGS

NOTE AND DETAIL/SECTION REFERENCING

RECORD DRAWINGS:
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RECORD DRAWINGS

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No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

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HERRERA

DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE
MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

VICINITY MAP AND SHEET INDEX

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: G-1
SHEET NO: 1 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\G-1.dwg
Plot Date: 12/15/2016 2:35 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3

GENERAL NOTES:

1. ALL EQUIPMENT OPERATING WITHIN 100 FEET OF INDIAN CREEK, IMPOUNDED WATER, OR DRAINAGES TO INDIAN CREEK, SHALL USE ONLY BIODEGRADABLE HYDRAULIC FLUIDS.
2. CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO PROJECT LIMITS DEFINED ON SITE PLAN OR IDENTIFIED AS ACCEPTABLE BY ENGINEER.
3. CLEARING LIMITS FOR TEMPORARY ACCESS ROAD AND PROPOSED STRUCTURES SHALL BE LIMITED TO THE AREA REQUIRED FOR SAFE EQUIPMENT OPERATION. CLEARING LIMITS SHALL BE STAKED BY CONTRACTOR AND APPROVED BY ENGINEER AT LEAST 3 DAYS PRIOR TO CLEARING ACTIVITIES. CLEARING LIMITS SHALL BE STAKED TO MINIMIZE THE AREA OF DISTURBANCE.
4. EQUIPMENT USED FOR THIS PROJECT SHALL BE FREE OF EXTERNAL PETROLEUM-BASED PRODUCTS WHILE WORKING AROUND THE STREAM. ACCUMULATION OF SOILS OR DEBRIS SHALL BE REMOVED FROM THE DRIVE MECHANISMS (WHEELS, TRACKS, TIRES, ETC.) AND UNDERCARRIAGE OF EQUIPMENT PRIOR TO ITS WORKING WITHIN THE CHANNEL.
5. EQUIPMENT SHALL BE CHECKED DAILY FOR LEAKS, AND ANY NECESSARY REPAIRS SHALL BE COMPLETED PRIOR TO COMMENCING WORK ACTIVITIES.
6. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO PETROLEUM PRODUCTS, HYDRAULIC FLUID, SEDIMENTS, SEDIMENT-LADEN WATER, CHEMICALS, OR ANY OTHER TOXIC OR DELETERIOUS MATERIALS ARE ALLOWED TO ENTER OR LEACH INTO THE STREAM.
7. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS AND STREAMFLOW DIVERSION SYSTEM SHALL BE INSTALLED, MONITORED, AND MAINTAINED IN ACCORDANCE WITH THE PROJECT SPECIFIC STORM WATER EROSION CONTROL PLAN THAT HAS BEEN DEVLOPED BY THE ENGINEER, AND SUBMITTED PRIOR TO THE START OF WORK.

ABBREVIATIONS:

APPROX	APPROXIMATE(LY)
CP	CONTROL POINT
CMP	CORRUGATED METAL PIPE
DBH	DIAMETER AT BREAST HEIGHT
DI	DUCTILE IRON
DIA, Ø	DIAMETER
DWG	DRAWING
ESC	EROSION AND SEDIMENT CONTROL
EX	EXISTING
FT	FEET
IN	INCHES
LWD	LARGE WOODY DEBRIS
MIN	MINIMUM
OHWL	ORDINARY HIGH WATER LINE
SP	STANDARD PLAN
SS	STAINLESS STEEL
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
TYP	TYPICAL

SURVEY NOTES:

1. ALL ELEVATIONS ARE RELATIVE, SEE SURVEY CONTROL POINT TABLE FOR NORTHING, EASTING, AND ELEVATION

SURVEY CONTROL TABLE:

CONTROL POINT NO.	EASTING	NORTHING	ELEVATION
CP200	1412421.61	777156.62	2919.30
CP201	1412352.96	777050.64	2911.11
CP202	1412460.62	776995.48	2899.48
CP207	1412421.56	777229.74	2960.33
CP208	1412681.43	776902.43	2904.23
CP211	1412935.77	776412.85	2831.03
CP212	1413054.29	776477.61	2873.31
CP213	1412920.39	776607.34	2885.01

BOULDER CONTROL TABLE:

WEIR NO.	EASTING	NORTHING	ELEVATION
1	1412296.48	777166.39	2909.50
2	1412310.86	777148.70	2907.20
3	1412324.21	777134.40	2904.00
4	1412342.55	777120.85	2902.00
5	1412353.85	777104.11	2899.90
6	1412370.83	777093.83	2897.60
7	1412372.07	777088.24	2896.10
8	1412408.46	777075.28	2893.90
9	1412418.76	777058.72	2891.70
10	1412422.19	777036.49	2890.10
11	1412430.53	777017.58	2888.40
12	1412444.83	777003.88	2887.20
13	1412431.98	776992.22	2884.40
14	1412476.58	776981.50	2882.80
15	1412486.72	776958.24	2878.9
16	1412490.00	776935.45	2875.2

RECORD DRAWINGS:
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RECORD DRAWINGS

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No.	REVISION	BY	APP'D	DATE
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HERRERA

DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

GENERAL NOTES AND CONTROL TABLES

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: G-2
SHEET NO: 2 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\G-2.dwg
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No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

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12/16/2016

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SITE MAP

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: G-3
SHEET NO: 3 OF 20

20 0 20 40
1"=20'

LEGEND:

- EXISTING CONTOURS
- CREEK
- EDGE OF WATER
- EDGE OF ROAD
- EXISTING CULVERT
- SURVEY CONTROL POINT (CP)

RECORD DRAWINGS:
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RECORD DRAWINGS

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No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

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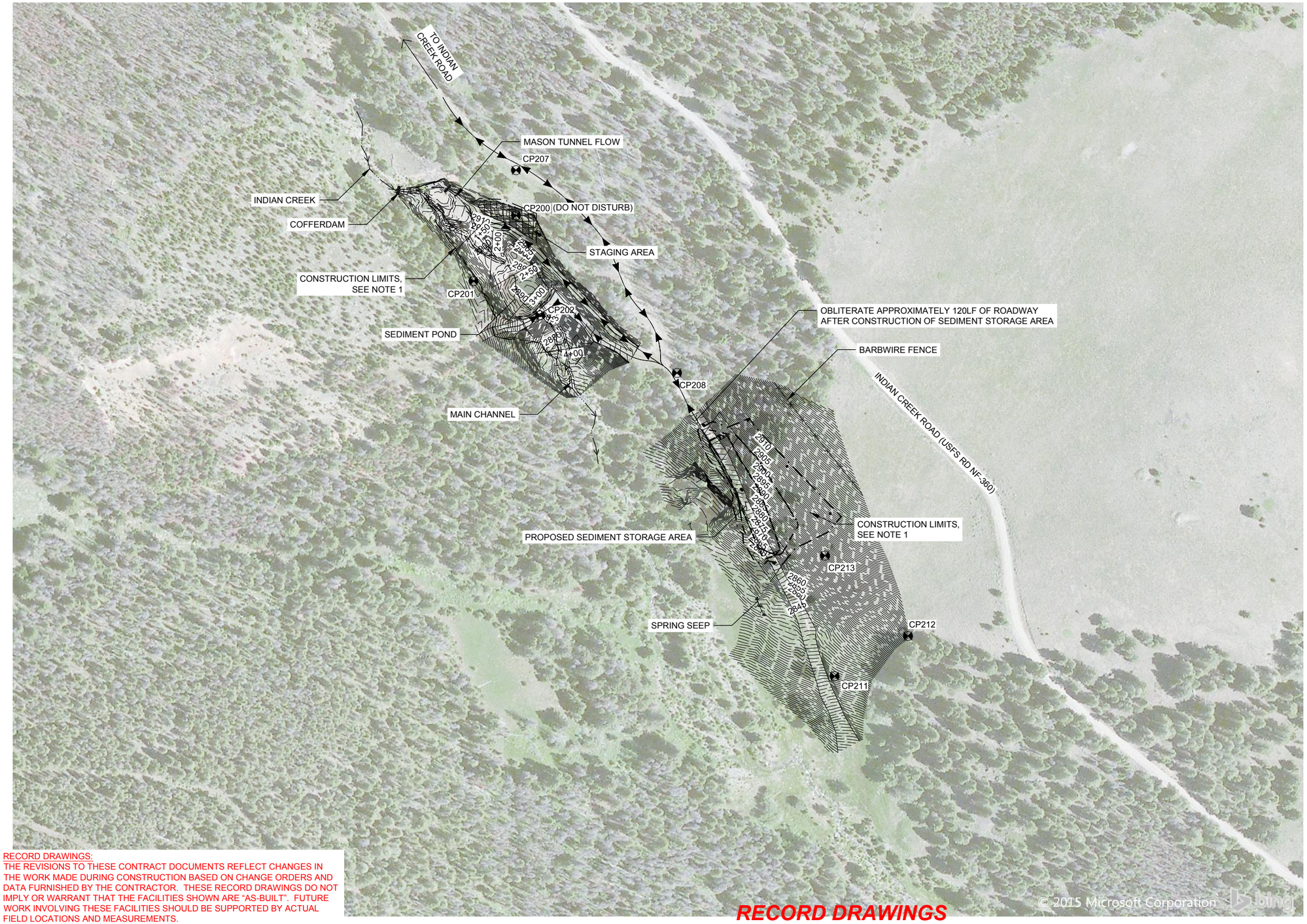
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

EXISTING CONDITIONS
SEDIMENT REMOVAL AREA

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: G-4
SHEET NO: 4 OF 20



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RECORD DRAWINGS

80 0 80 160
1"=80'

LEGEND:

- EXISTING CONTOURS
- CREEK
- EDGE OF WATER
- EDGE OF ROAD
- EXISTING CULVERT
- VEHICLE ACCESS
- CONSTRUCTION LIMITS
- STAGING AREA
- SURVEY CONTROL POINT (CP)

NOTES:

1. CLEAR AND GRUB WITHIN THE CONSTRUCTION LIMITS.
2. CONTRACTOR TO DEVELOP STAGING AREA USING CUT/FILL BENCHING TECHNIQUES.
3. CONTRACTOR SHALL RETURN STAGING AREA TO EXISTING SLOPES AND GRADES FOLLOWING COMPLETION OF WORK.
4. TOPSOIL TO BE STRIPPED AND CONSERVED IN PROPOSED SEDIMENT STORAGE AREA.

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Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3

No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

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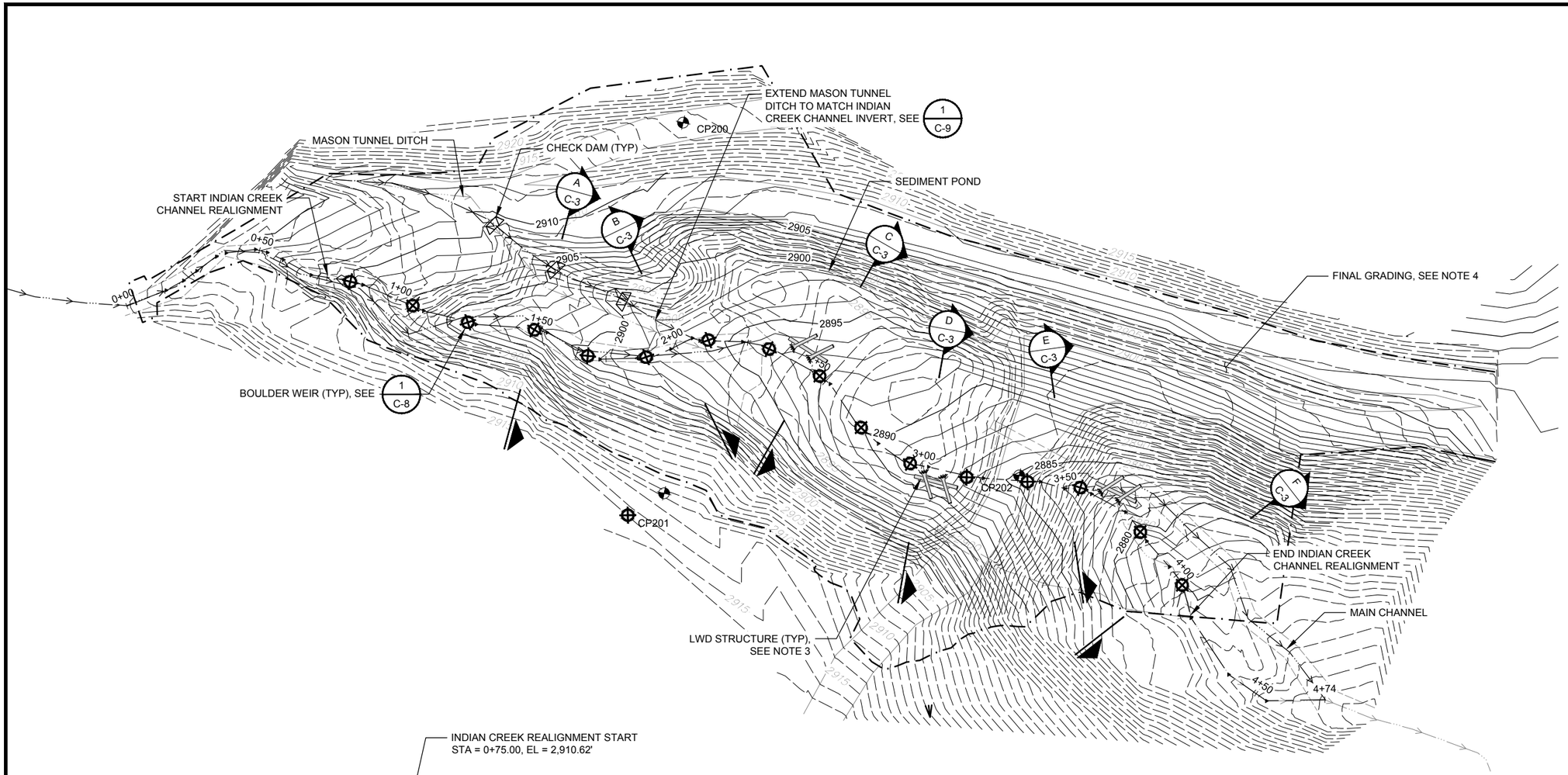
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SITE ACCESS PLAN

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-1
SHEET NO: 5 OF 20

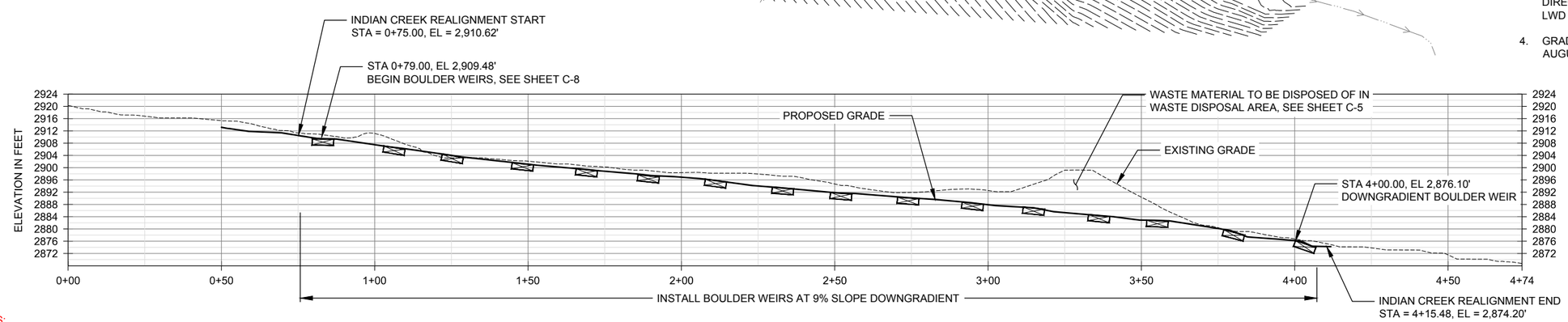


LEGEND:

- PROJECT LIMITS
- EXISTING CONTOURS (2915)
- PROPOSED CONTOURS (2900)
- CREEK
- EDGE OF WATER
- EXISTING CULVERT
- LWD STRUCTURE
- CHECK DAM
- BOULDER WEIR (PROFILE VIEW)
- BOULDER WEIR (PLAN VIEW)
- SURVEY CONTROL POINT

NOTES:

1. MATERIAL REMOVAL FROM SEDIMENT POND AREA IS CONSIDERED STORAGE MATERIAL AND WILL BE DISPOSED OF IN SEDIMENT STORAGE AREA. SEE SPECIFICATIONS.
2. INDIAN CREEK ALIGNMENT BEGINNING AND END CAN BE DETERMINED BY THE LOCAL SURVEY CONTROL TABLE, SEE SHEET G-2.
3. LWD STRUCTURES SHALL BE INSTALLED AT THE DIRECTION OF THE ENGINEER. SEE SHEET C-4 FOR LWD STRUCTURE DETAILS.
4. GRADING UPDATED PER DJ&A FINAL SURVEY ON AUGUST 9, 2016.



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1	RECORD DRAWINGS	KJ	KH	12-16-16

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SEDIMENT REMOVAL AREA
FINAL GRADING PLAN

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-2
SHEET NO: 6 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-2.dwg
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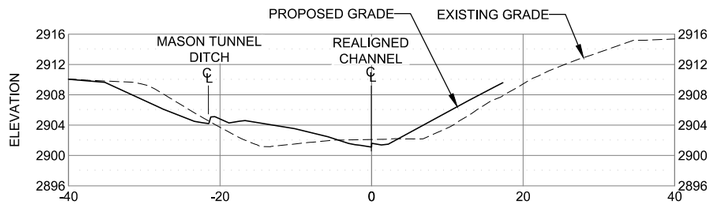

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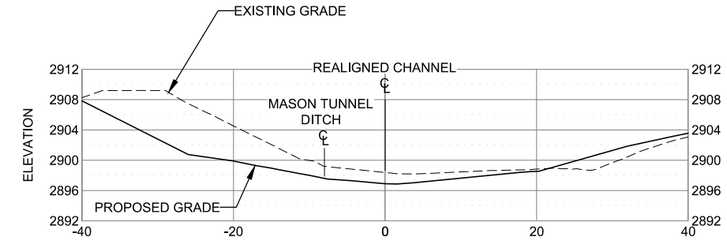
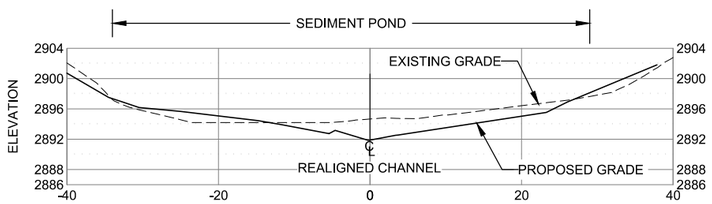
SCALE: 1"=10'



SECTION - SEDIMENT REMOVAL AREA @ STA 2+00 (B / C-2)
SCALE: 1"=10'



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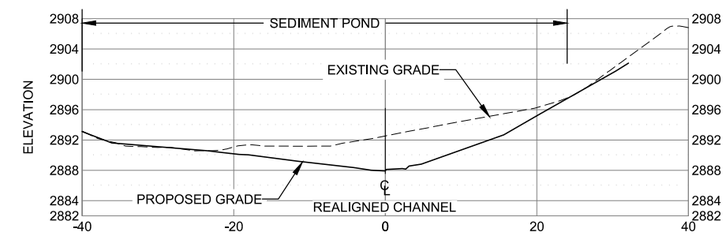
SCALE: 1"=10'



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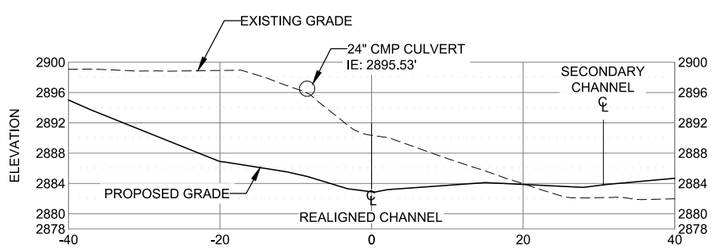
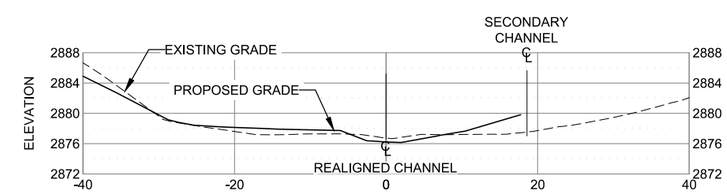


SECTION - SEDIMENT REMOVAL AREA @ STA 3+50 (E / C-2)
SCALE: 1"=10'



SECTION - SEDIMENT REMOVAL AREA @ STA 4+00 (F / C-2)
SCALE: 1"=10'

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10 0 10 20
1"=10'

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RECORD DRAWINGS

No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

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DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

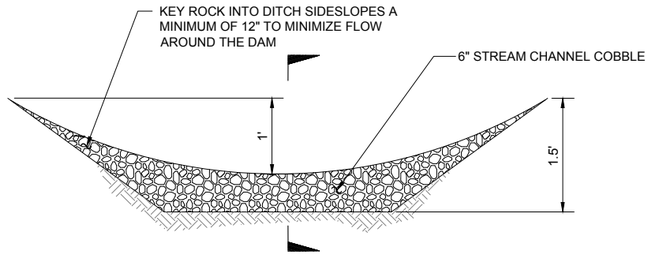
DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

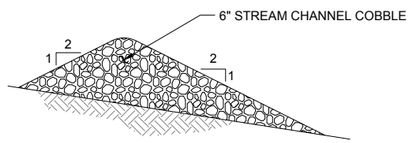
SEDIMENT REMOVAL AREA CROSS-SECTIONS

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-3
SHEET NO: 7 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-3.dwg
Plot Date: 12/15/2016 2:36 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3

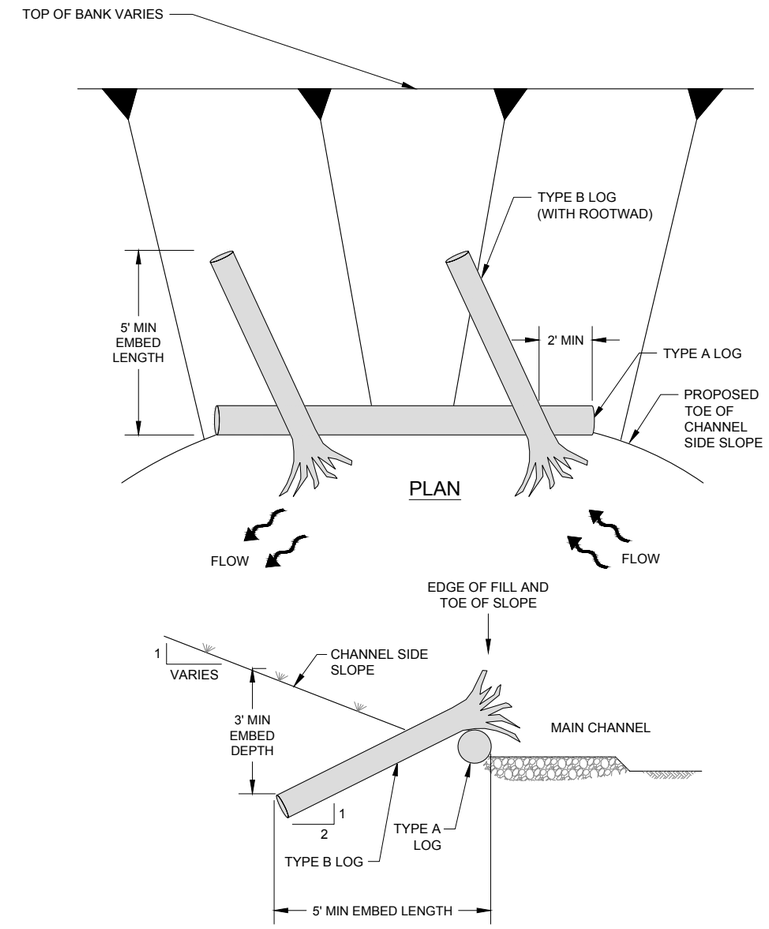


SECTION



ELEVATION

TYPICAL ROCK CHECK DAM (1 / -)
SCALE: N.T.S.



SECTION

NOTES:

1. ANY FELLED TREES DURING CLEARING AND GRUBBING MAY BE USED AT THE DIRECTION OF THE ENGINEER FOR BANK STABILIZATION OR FLOOD PLAIN ROUGHENING.
2. PLACE TYPE B LOG AT APPROXIMATELY 45° ANGLE TO PIN DOWN TYPE A LOG. PLACE TYPE B LOGS APPROXIMATELY 2 FT FROM EACH END OF TYPE A LOG.
3. SCREENING OF BURIED LOGS NOT SHOWN FOR CLARITY.

LOG SCHEDULE FOR LWD LOG STRUCTURE

TYPE	DIA.	LENGTH	COMMENTS	QUANTITY*
A	12"-18"	15'	W/OUT ROOTWAD	1
B	10"-12"	10'	W/ROOTWAD	2

LWD STRUCTURE DETAIL (2 / C-2)
SCALE: NTS

RECORD DRAWINGS:
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RECORD DRAWINGS

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No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

ONE INCH — AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

HERRERA

DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

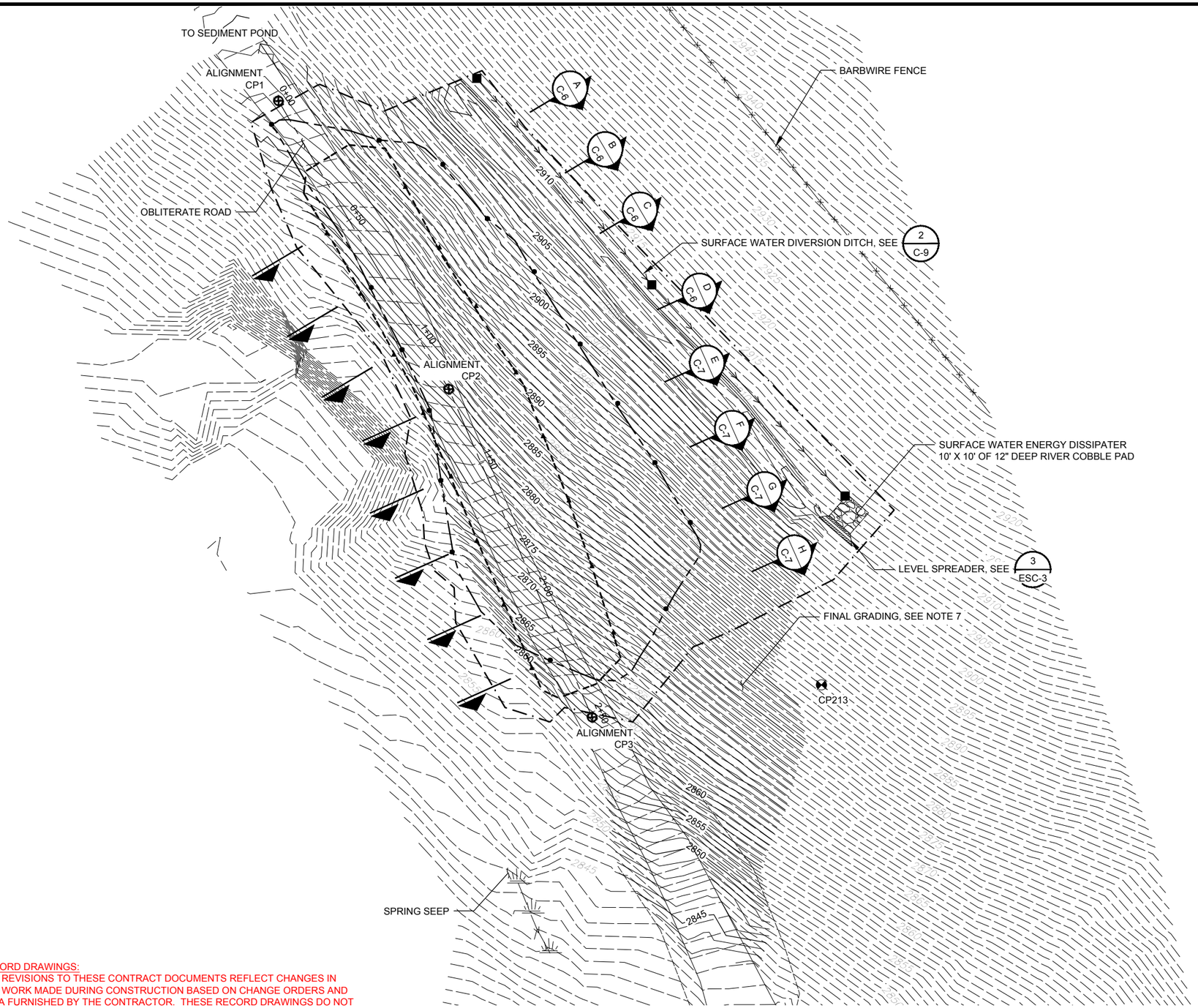
DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

MISCELLANEOUS DETAILS

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-4
SHEET NO: 8 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-4.dwg
Plot Date: 12/15/2016 2:36 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3



20 0 20 40
1"=20'

LEGEND:

- PROJECT LIMITS
- EXISTING CONTOURS (2915)
- PROPOSED CONTOURS (2900)
- PROPOSED DITCH
- EXCAVATION EXTENTS
- ABOVE GROUND SEDIMENT PLACEMENT EXTENTS
- SURVEY CONTROL POINT
- ALIGNMENT CONTROL POINT
- EXCAVATION CONTROL POINT
- ABOVE GROUND SEDIMENT STORAGE CONTROL POINT
- DIVERSION DITCH CONTROL POINT
- SURFACE WATER ENERGY DISSIPATOR
- LEVEL SPREADER

NOTES:

1. SEE DRAWING G-2 FOR SURVEY CONTROL.
2. SEE DRAWINGS C-6 AND C-7 FOR SEDIMENT STORAGE AREA EXCAVATION, WASTE FILL, AND COVER EXTENTS.
3. FOR ALIGNMENT STATION, EXCAVATION, AND ABOVE GROUND STORAGE CONTROL, SEE SHEET G-2.
4. SLOPE ROUGHENING TECHNIQUES MUST BE EMPLOYED DURING SEDIMENT STORAGE AREA DEVELOPMENT.
5. SURFACE WATER DIVERSION DITCH TO BE CONSTRUCTED PRIOR TO SEDIMENT STORAGE AREA DEVELOPMENT.
6. MAINTAIN VEGETATIVE BUFFER BELOW SEDIMENT STORAGE AREA.
7. GRADING UPDATED PER DJ&A FINAL SURVEY ON AUGUST 9, 2016.

RECORD DRAWINGS:
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RECORD DRAWINGS

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DEQ Montana Department of Environmental Quality Abandoned Mine Lands

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SEDIMENT STORAGE AREA
FINAL GRADING PLAN

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-5
SHEET NO: 9 OF 20

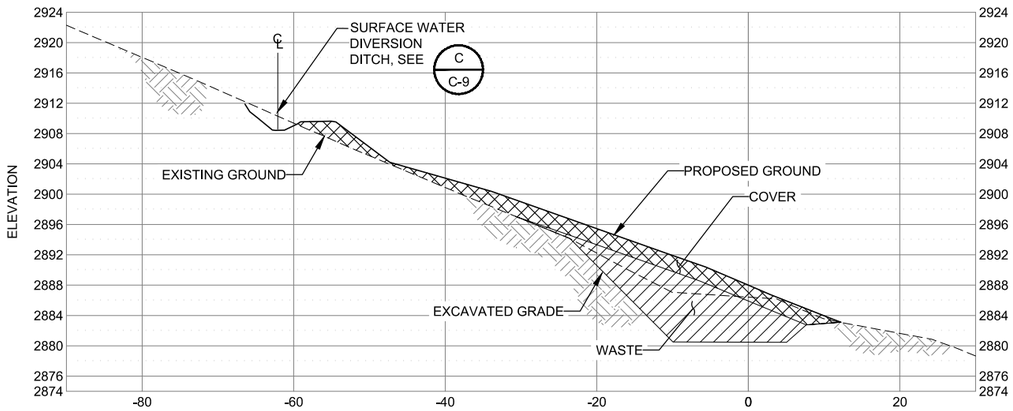
Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-5.dwg
Plot Date: 12/15/2016 2:37 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3

GENERAL SEDIMENT PLACEMENT NOTES:

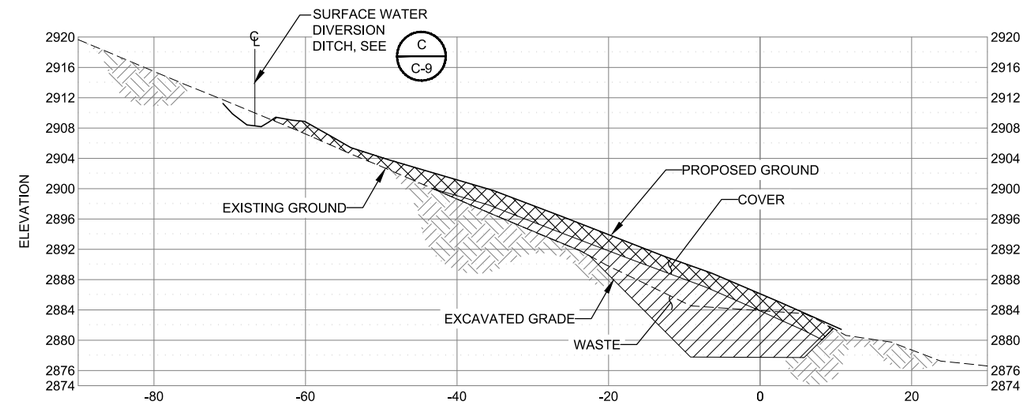
1. START EXCAVATION FOR SEDIMENT REPOSITORY AT STATION 0+28 LIMIT EXCAVATION CUT SLOPE TO 1H:1V.
2. PLACE SEDIMENT AND LIME TREATMENT (SEE SPECIFICATIONS). MAX SLOPE ON SEDIMENT IS 1.5H:1V.
3. PLACE COVER OVER SEDIMENT. MAX SLOPE OF COVER MATERIAL IS 1.5H:1V. MINIMUM THICKNESS IS 2 FEET.
4. END CAP AND EXCAVATIONS AT STATION 2+40.
5. STRIP AND CONSERVE TOPSOIL.

LEGEND:

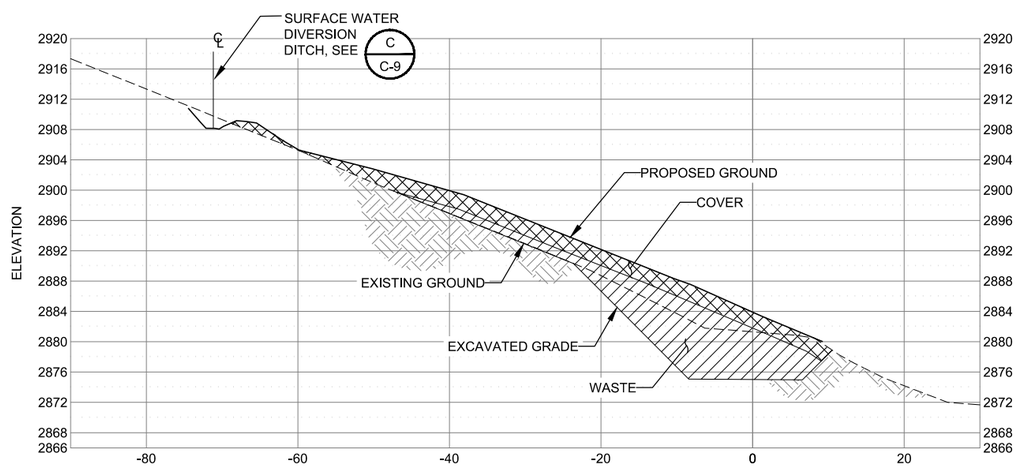
– — – — –	EXISTING GRADE		COVER
———	PROPOSED GRADE		WASTE



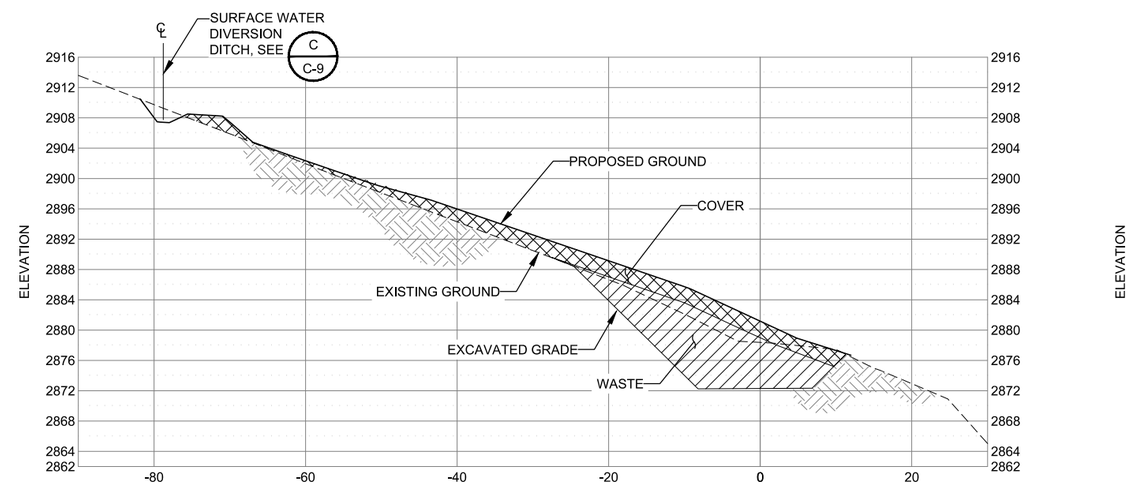
SECTION - SEDIMENT STORAGE COVER (STA 0+50) A/C-5
SCALE: 1"=10'



SECTION - SEDIMENT STORAGE COVER (STA 0+75) B/C-5
SCALE: 1"=10'



SECTION - SEDIMENT STORAGE COVER (STA 1+00) C/C-5
SCALE: 1"=10'



SECTION - SEDIMENT STORAGE COVER (STA 1+25) D/C-5
SCALE: 1"=10'

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DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

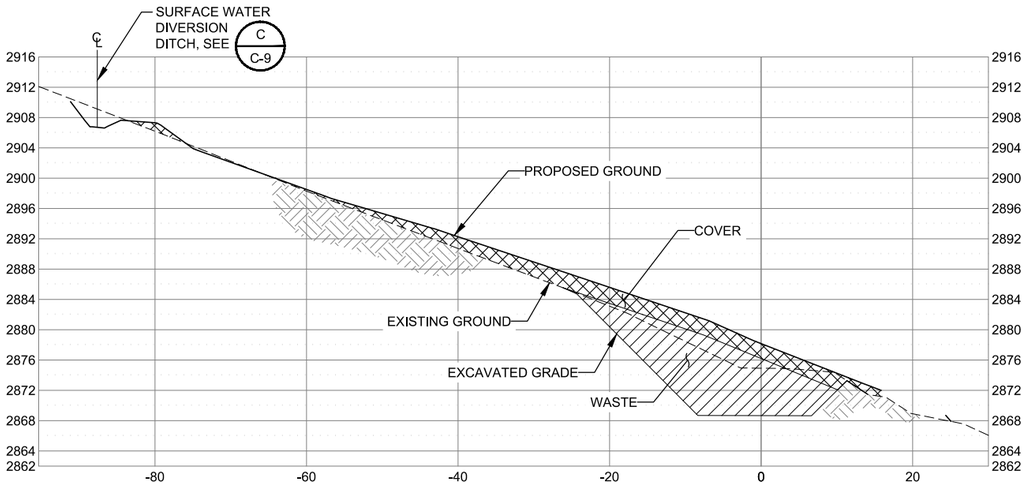
SEDIMENT STORAGE AND COVER CROSS-SECTIONS

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-6
SHEET NO: 10 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-6.dwg
Plot Date: 12/15/2016 2:37 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3

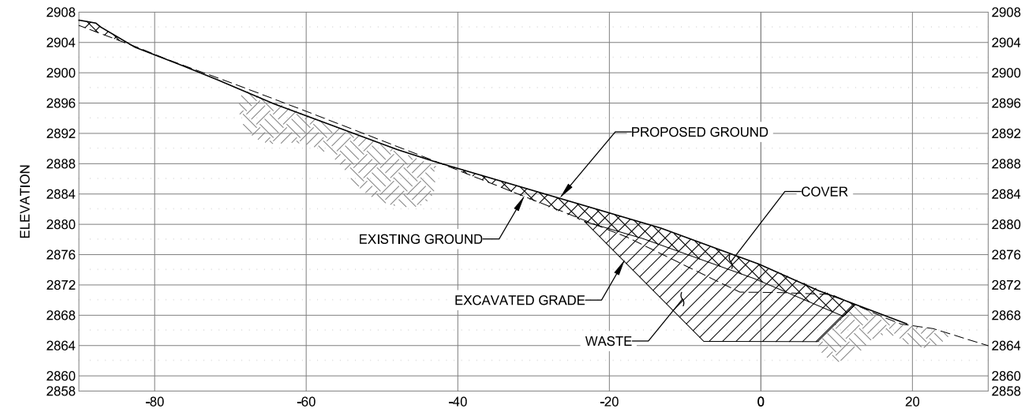
LEGEND:

– – – – –	EXISTING GRADE		COVER
———	PROPOSED GRADE		WASTE



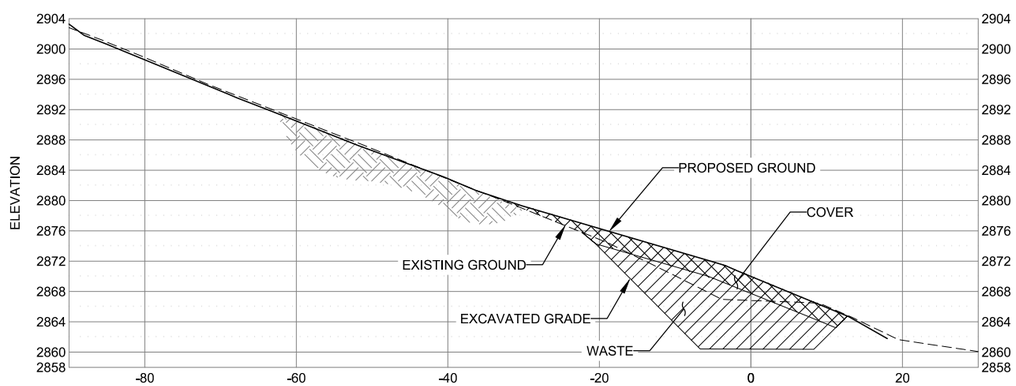
SECTION - SEDIMENT STORAGE COVER (STA 1+50) E C-5

SCALE: 1"=10'



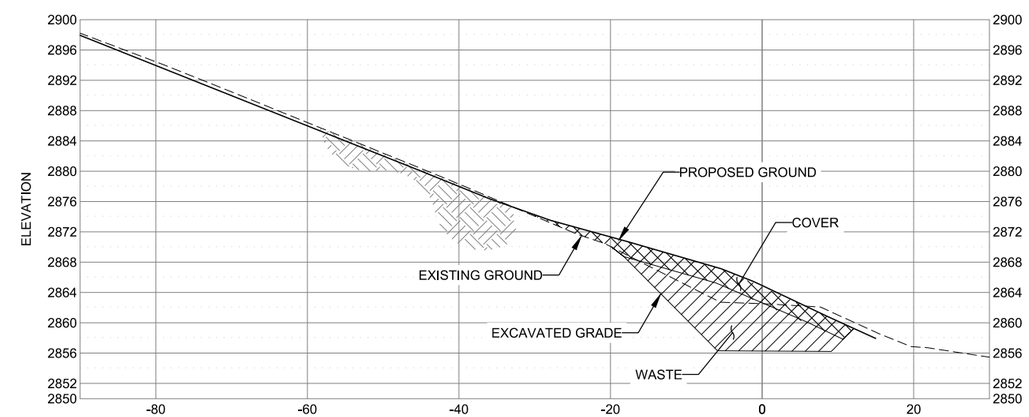
SECTION - SEDIMENT STORAGE COVER (STA 1+75) F C-5

SCALE: 1"=10'



SECTION - SEDIMENT STORAGE COVER (STA 2+00) G C-5

SCALE: 1"=10'



SECTION - SEDIMENT STORAGE COVER (STA 2+25) H C-5

SCALE: 1"=10'

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SEDIMENT STORAGE AND COVER CROSS-SECTIONS

DATE: DECEMBER 2016

PROJECT NO: 13-05554-012

DRAWING NO: C-7

SHEET NO: 11 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-7.dwg
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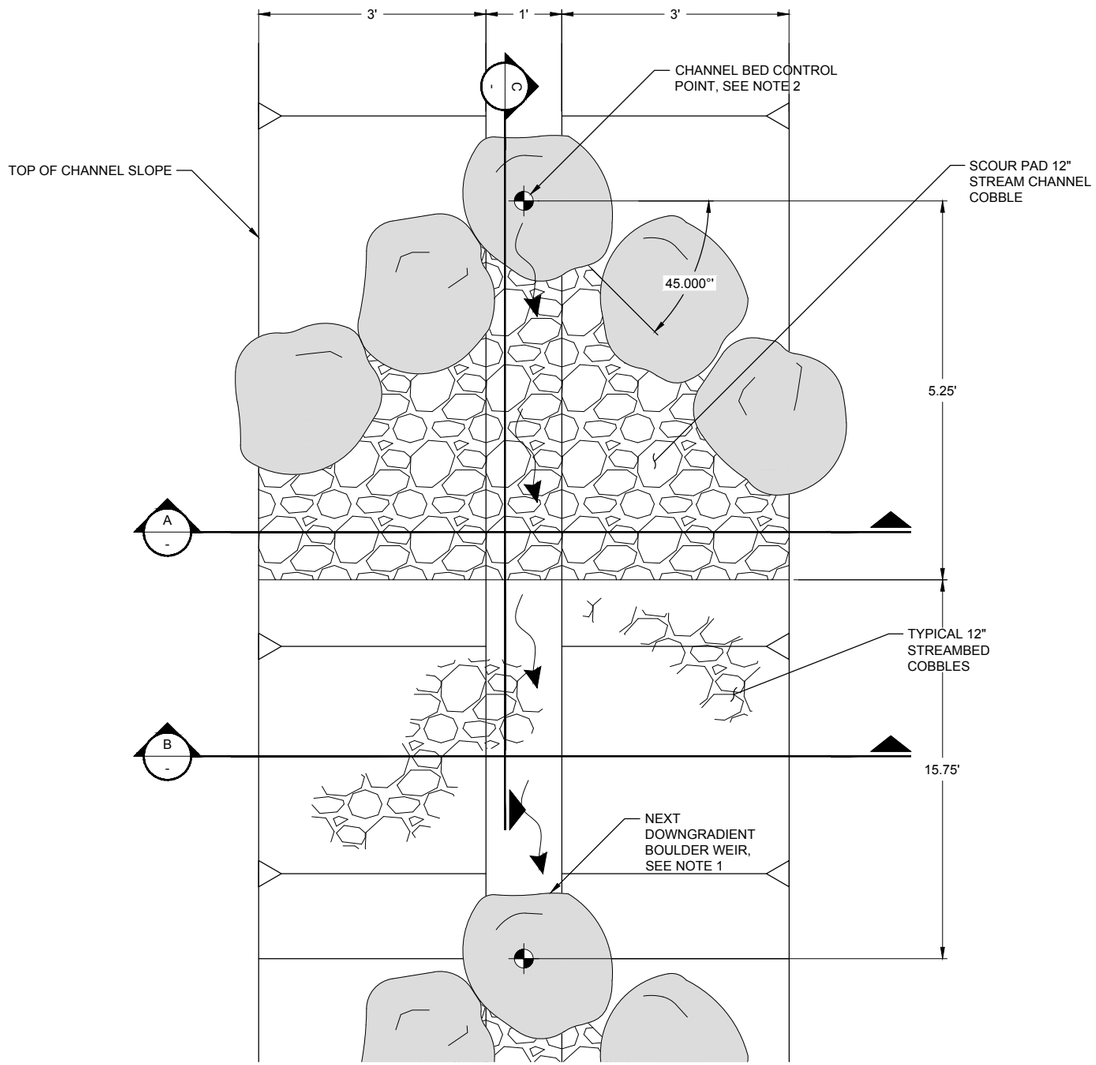
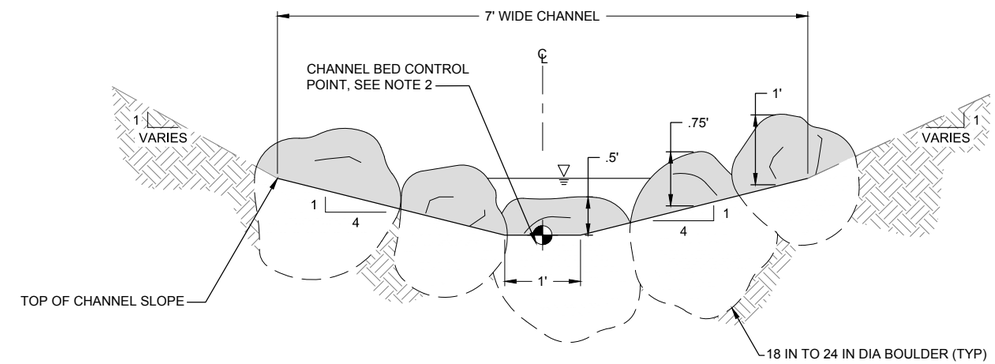
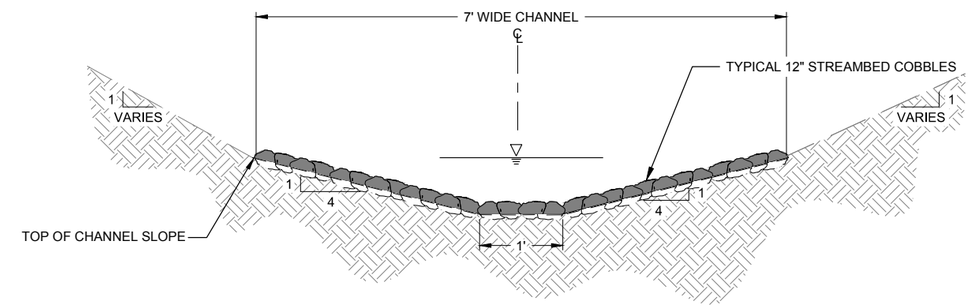
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3



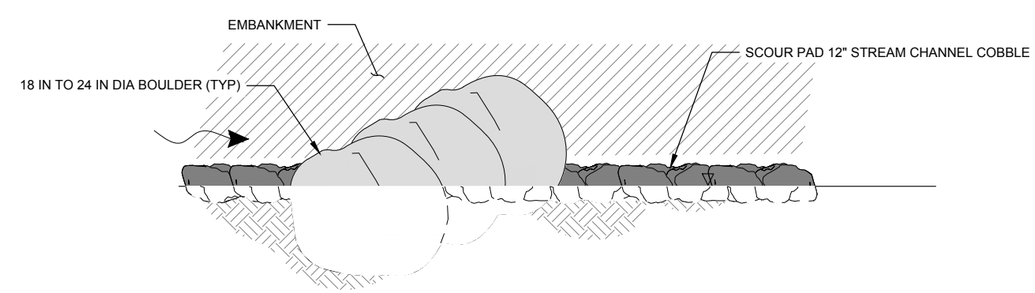
PLAN - BOULDER WEIR (1 / C-2)
SCALE: NTS



SECTION - BOULDER WEIR (A)
SCALE: NTS



SECTION - TYPICAL STREAMBED (B)
SCALE: NTS



ELEVATION - BOULDER WEIR (C)
SCALE: NTS

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NOTES:

1. BOULDER WEIRS SPACED EVERY 21 FEET WITH 2.0 FOOT DROP BETWEEN EACH BOULDER CONTROL POINT.
2. SEE THE ALIGNMENT CONTROL TABLE ON SHEET G-2 FOR WEIR LOCATIONS.

RECORD DRAWINGS

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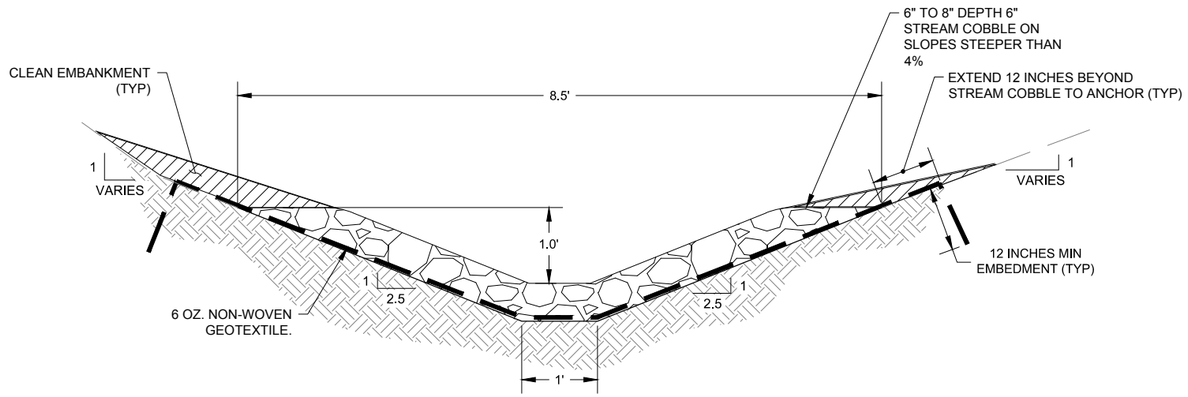
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

PROPOSED CHANNEL DETAILS

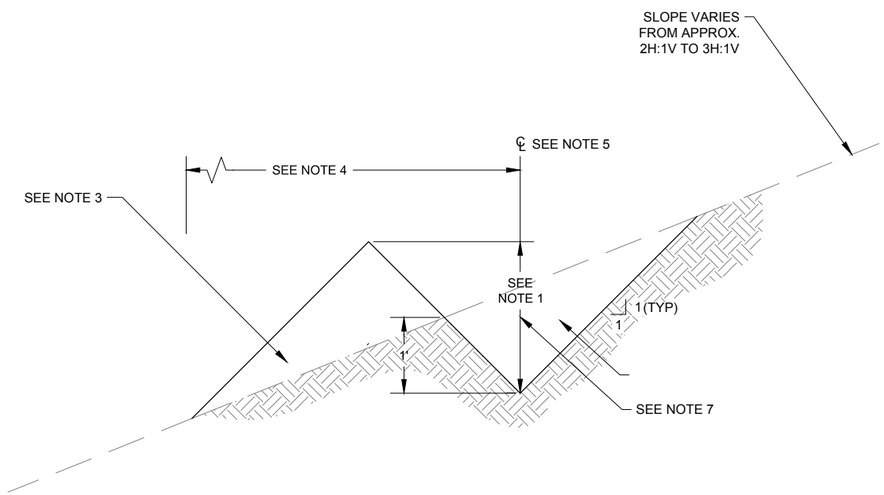
DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-8
SHEET NO: 12 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-8.dwg
Plot Date: 12/15/2016 2:37 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3



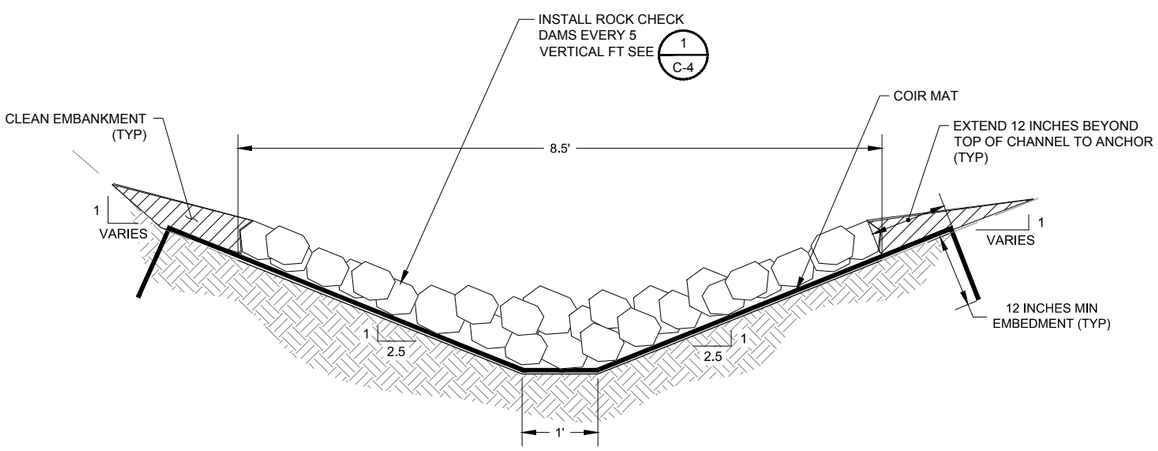
DETAIL - MASON TUNNEL DRAINAGE DITCH ≥ 5% GRADE (1 / C-2)

SCALE: NTS



DETAIL - SURFACE WATER DIVERSION DITCH (2 / C-3, C-4)

SCALE: NTS



DETAIL - MASON TUNNEL DRAINAGE DITCH < 5% GRADE (1 / C-2)

SCALE: NTS

NOTES:

1. MINIMUM DITCH DEPTH 18 INCHES.
2. CUT DITCH 1 FOOT DEEP INTO EXISTING SLOPES WITH 1H:1V SIDE SLOPES.
3. CONSTRUCT COMPACTED BERM WITH SPOILS FROM DITCH EXCAVATION.
4. LOCATE DITCH CENTERLINE A MINIMUM OF 10 FEET FROM EDGE OF SEDIMENT STORAGE AREA COVER EXTENTS.
5. FOR CENTERLINE CONTROL, SEE DRAWING G-2.
6. MINIMUM DITCH SLOPE SHALL BE NO LESS THAN 2%.
7. DITCH TO BE FERTILIZED, SEEDED, AND MULCHED.

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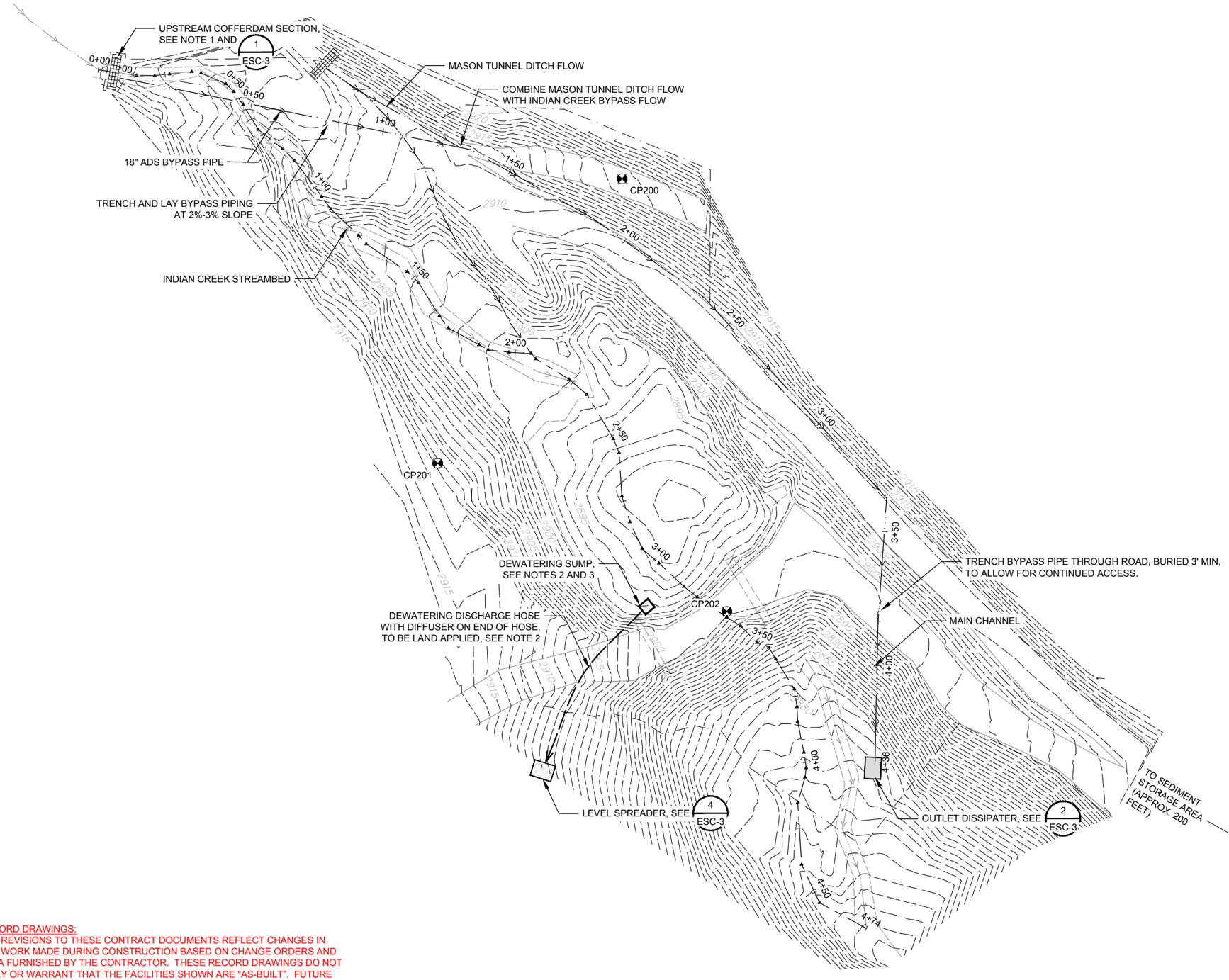
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

DITCH DETAILS

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: C-9
SHEET NO: 13 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\C-9.dwg
Plot Date: 12/15/2016 2:37 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3



20 0 20 40
1"=20'

N

LEGEND:

- PROJECT LIMITS
- EXISTING CONTOURS (2915)
- CREEK
- EDGE OF WATER
- EDGE OF ROAD
- EXISTING CULVERT
- SURVEY CONTROL POINT
- SECONDARY DITCH DIVERSION
- CPE BYPASS PIPE
- DEWATERING SUMP
- OUTLET DISSIPATOR
- COFFER DAM

NOTES:

1. INSTALLATION OF DIVERSION COFFERDAM MAY REQUIRE PUMPING.
2. ONCE THE FLOW DIVERSION BYPASS HAS BEEN INSTALLED, THE WATER FROM THE SEDIMENT POND SHALL BE PUMPED AND DISCHARGED UPLAND.
3. WORK SHALL PROGRESS UPSTREAM TO DOWNSTREAM. PRIOR TO THE REMOVAL OF THE SEDIMENT POND DAM, A DEWATERING WELL SHALL BE INSTALLED IN THE POND WITH A PUMP. WATER PRODUCED BY DEWATERING ACTIVITIES SHALL BE LAND APPLIED.

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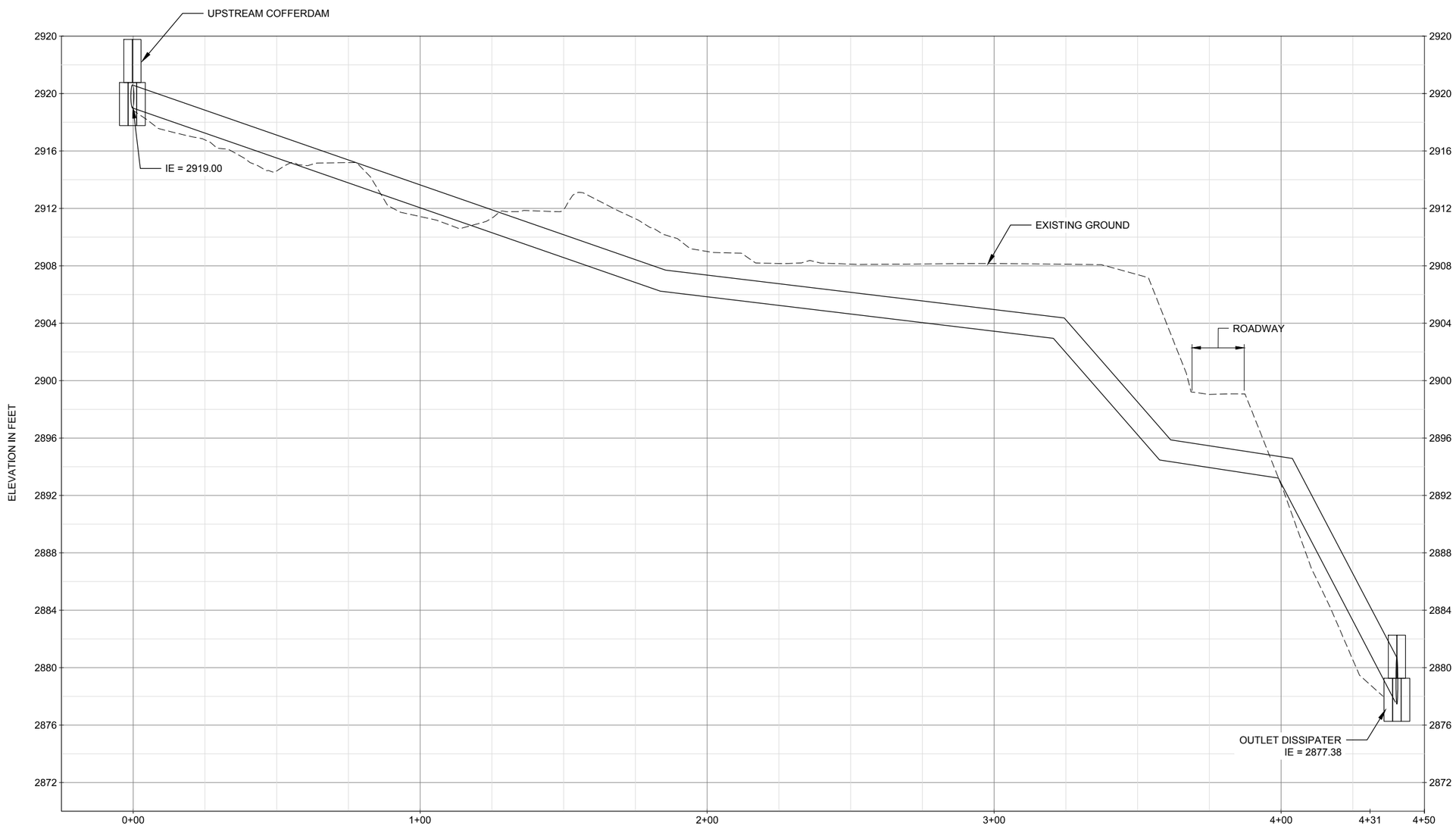
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

TESC AND WATER MANAGEMENT PLAN SEDIMENT POND AREA

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: ESC-1
SHEET NO: 14 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\ESC-1.dwg
Plot Date: 12/15/2016 2:37 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3



HORIZONTAL SCALE IN FEET
20 0 20 40
4 0 4 8
VERTICAL SCALE IN FEET
VERTICAL EXAGGERATION X 5

NOTES:

1. INDIAN CREEK BYPASS PIPING TO BE 18" ADS N-12 DUAL WALL HDPE.
2. WHERE POSSIBLE, CONTRACTOR TO INSTALL PIPE ALONG GROUND SURFACE TO MINIMIZE DISTURBANCE.
3. MINIMUM 3 FT OF COVER OVER PIPE AT ROAD CROSSINGS.

RECORD DRAWINGS:
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No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

HERRERA

DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

BYPASS PROFILE

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: ESC-2
SHEET NO: 15 OF 20

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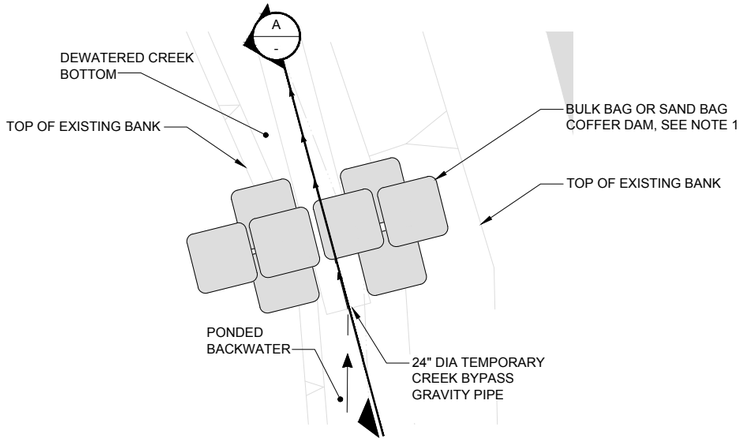
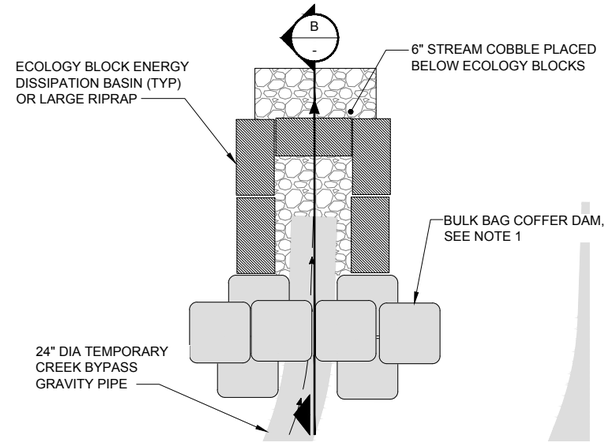


UPSTREAM COFFER DAM DETAIL

SCALE: N.T.S.

2 / ESC-1



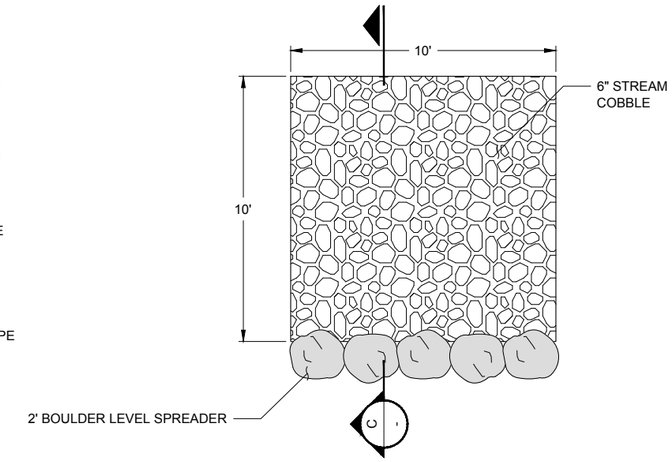
OUTLET DISSIPATER

SCALE: N.T.S.

2 / ESC-1

GENERAL NOTES:

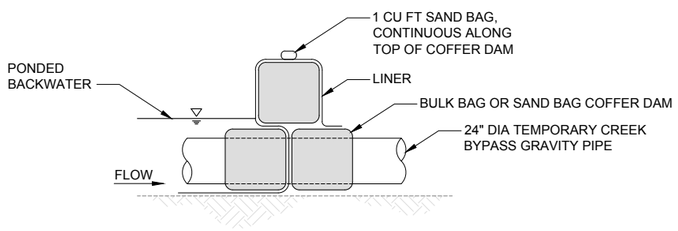
1. BULK BAGS OR SAND BAGS SHALL BE FILLED WITH CLEAN WASHED GRAVEL.
2. TEMPORARY PUMPING OF CREEK DURING BYPASS PIPE, UPSTREAM COFFERDAM, AND OUTFALL DISSIPATER INSTALLATION AND REMOVAL WILL BE REQUIRED.
3. CONTRACTOR SHALL REMOVE ALL TEMPORARY BYPASS MATERIALS FOLLOWING CONSTRUCTION.
4. TRANSITION BYPASS PIPE TO BANK TOP SUFFICIENTLY DOWNSTREAM TO ENSURE PIPE DOES NOT BACKWATER INTO HEADWORKS.



LEVEL SPREADER DETAIL

SCALE: NTS

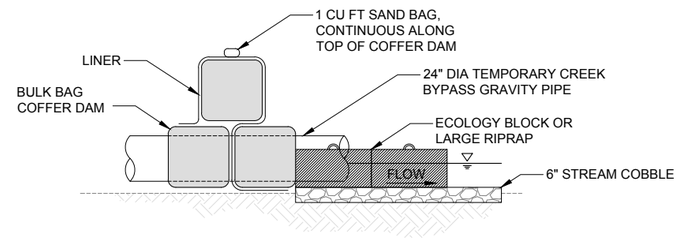
3 / C-5



UPSTREAM COFFER DAM SECTION

SCALE: N.T.S.

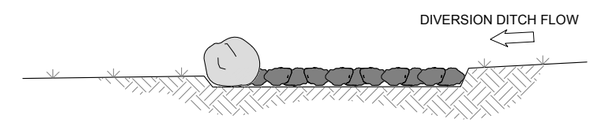
A / -



OUTLET DISSIPATER SECTION

SCALE: N.T.S.

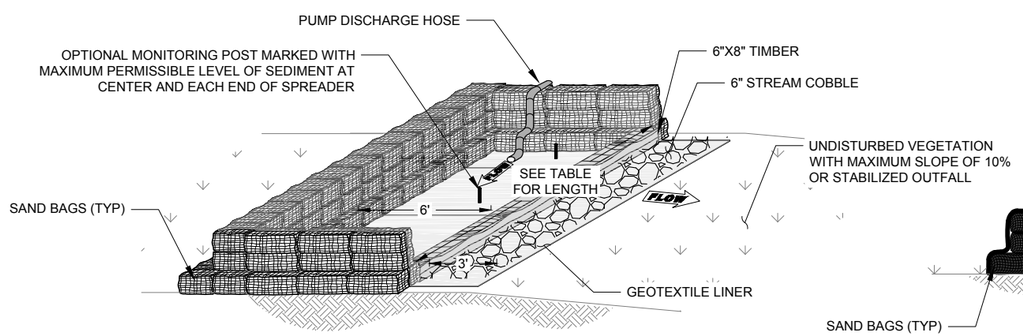
B / -



LEVEL SPREADER SECTION

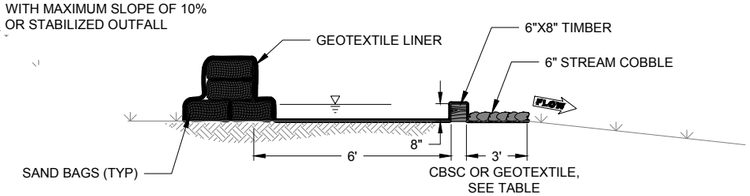
SCALE: NTS

C / -



ISOMETRIC

	SPREADER	
FLOW	TYPE	LENGTH
LESS THAN 5 CFS	GEOTEXTILE LIP	20'
5 CFS TO LESS THAN 15 CFS	CBSC LIP	20'
15 CFS UP TO 20 CFS	CBSC LIP	30'
LENGTH AND WIDTH DETERMINED FOR EACH APPLICATION. LENGTH MAY REQUIRE EXTENSION.		



SECTION

LEVEL SPREADER AT PUMP OUTLET

SCALE: NTS

4 / ESC-1

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HERRERA

DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT

BROADWATER COUNTY, MONTANA

TESC AND WATER MANAGEMENT DETAILS

DATE: DECEMBER 2016

PROJECT NO: 13-05554-012

DRAWING NO: ESC-3

SHEET NO: 16 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\ESC-3.dwg
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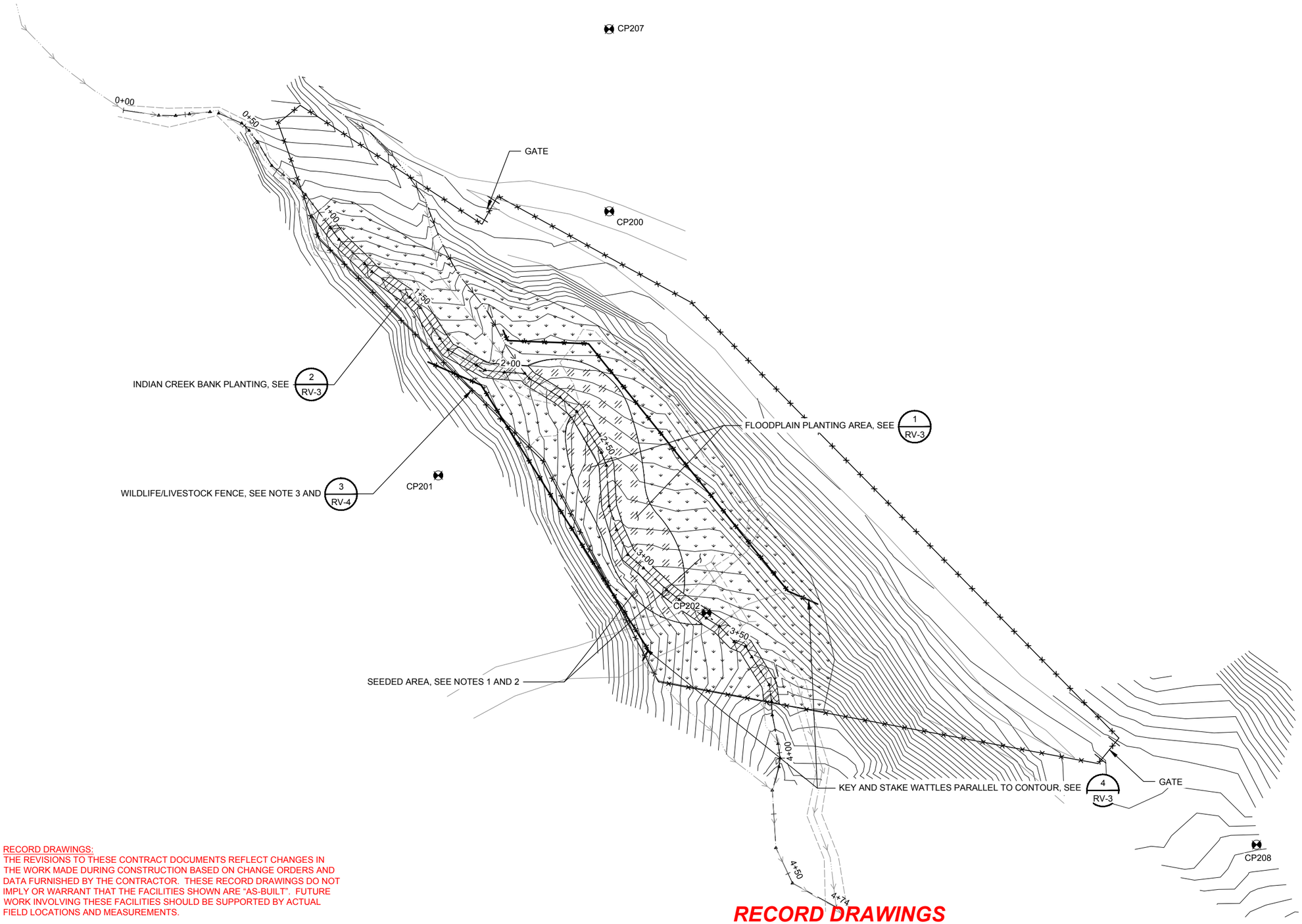

20 0 20 40
1"=20'

N

LEGEND:

- FLOODPLAIN PLANTING AREA
- SEEDING AREA ONLY
- INDIAN CREEK BANK PLANTING AREA
- STRAW WATTLES
- WILDLIFE/LIVESTOCK FENCE
- GATE

NOTES:

1. SEED MIX WILL BE DESIGNED BASED ON EXISTING NATIVE PLANTS IN THE PROJECT VICINITY.
2. SEED WILL BE HAND BROADCAST AND RAKED INTO SOIL.
3. WILDLIFE/LIVESTOCK FENCE DETAILS FOUND IN TECHNICAL SPECIFICATIONS S20 - FARM FENCE AND S21 - GATES.

RECORD DRAWINGS:
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Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\RV-1.dwg
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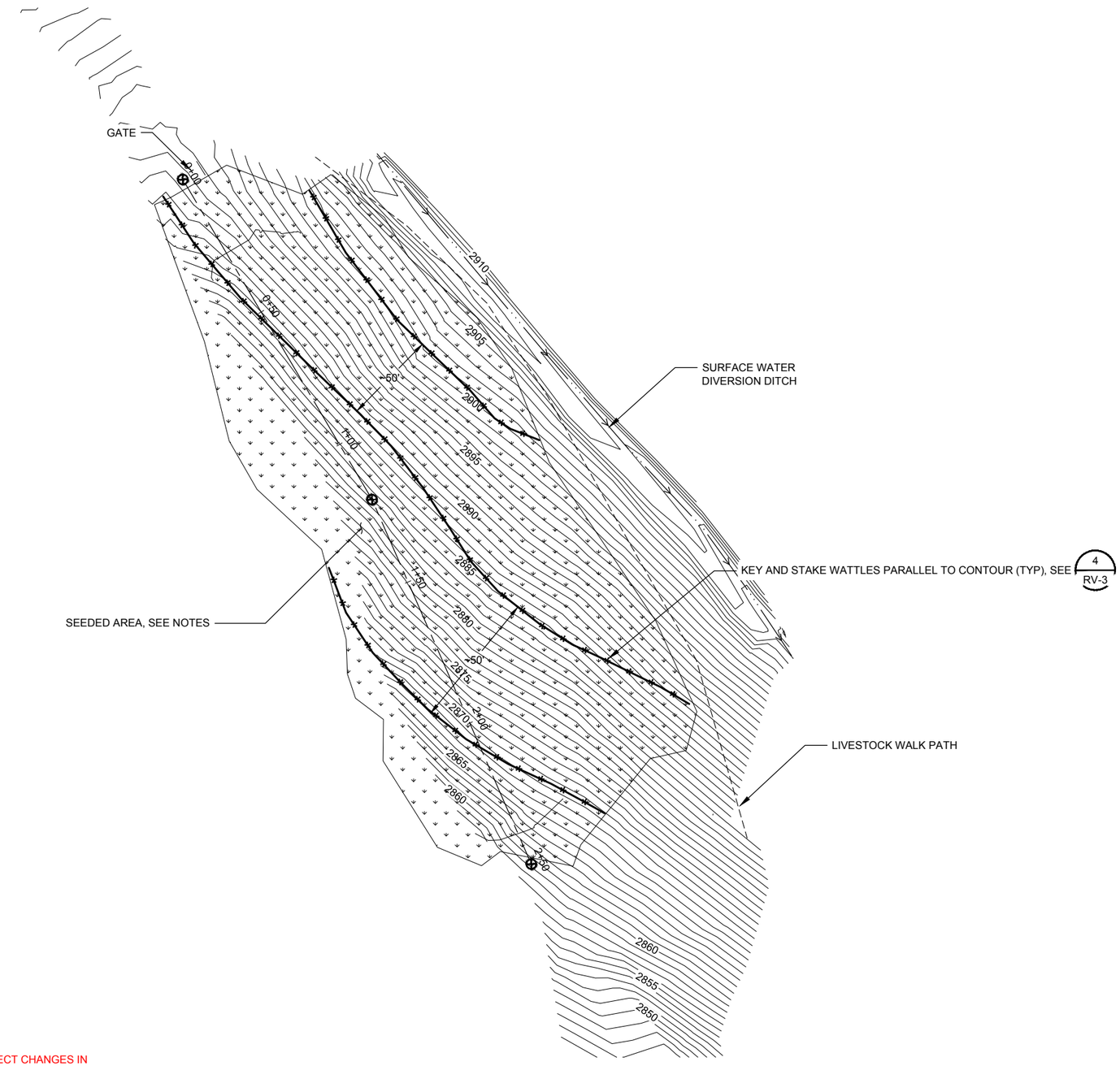
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SEDIMENT REMOVAL AREA REVEGETATION PLAN

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: RV-1
SHEET NO: 17 OF 20



20 0 20 40
1"=20'

LEGEND:

- SEEDING AREA ONLY
- STRAW WATTLES
- LIVESTOCK WALK PATH

NOTES:

1. SEED MIX WILL BE DESIGNED BASED ON EXISTING NATIVE PLANTS IN THE PROJECT VICINITY. SEE SPECIFICATIONS.
2. SEED MIX WILL BE HAND BROADCAST AND RAKED IN.
3. SOURCES OF PLANTS WILL BE FROM SIMILAR ELEVATIONS IN WESTERN MT.
4. SPACING BETWEEN WATTLES TO BE 50' IN SLOPE DISTANCE.
5. WILDLIFE/LIVESTOCK FENCE DETAILS FOUND IN TECHNICAL SPECIFICATIONS S20 - FARM FENCING AND S-21 - GATES.

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

SEDIMENT STORAGE AREA REVEGETATION PLAN

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: RV-2
SHEET NO: 18 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\RV-2.dwg
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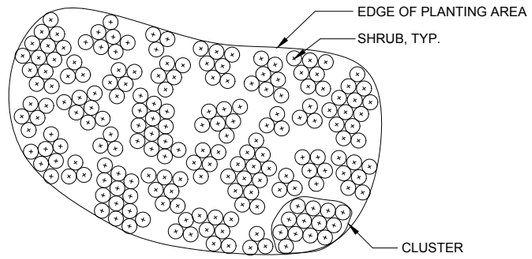
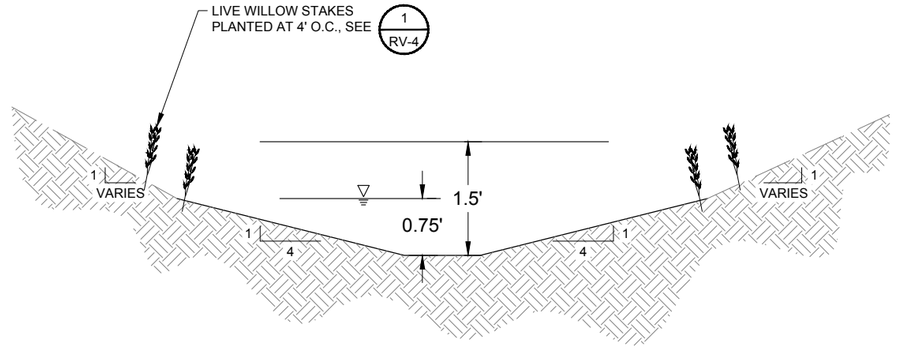


NOTES:

1. PLANT FLOODPLAIN PLANTS IN CLUSTERS TO ENCOURAGE NATURAL IRREGULAR PATCH FORMATION.
2. PLACE SHRUBS 10FT, ON CENTER WITHIN EACH CLUSTER.
3. EVENLY SPACE CLUSTERS THROUGHOUT THE FLOODPLAIN PLANTING AREA.

DETAIL - FLOODPLAIN PLANTING AREA (1 / RV-1)

SCALE: NTS

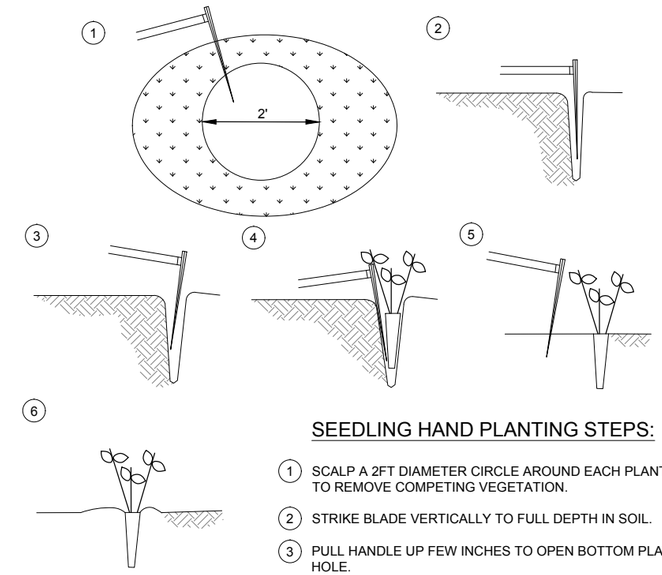


NOTES:

1. PLANT LIVE WILLOW STAKES AT EACH GRADE CONTROL STRUCTURE.
2. INSTALL IN PILOT HOLES, TAMP TO REMOVE AIR POCKETS, AND PLANT AT LEAST 2/3 LENGTH OF CUTTING BELOW GROUND.

DETAIL - INDIAN CREEK BANK PLANTING (2 / RV-1)

SCALE: NTS

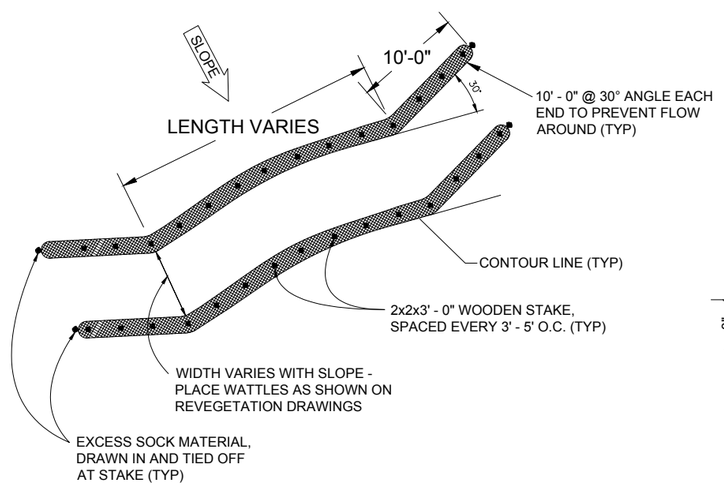


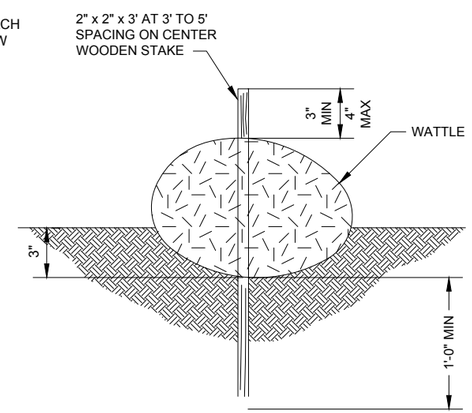
SEEDLING HAND PLANTING STEPS:

1. SCALP A 2FT DIAMETER CIRCLE AROUND EACH PLANTING HOLE TO REMOVE COMPETING VEGETATION.
2. STRIKE BLADE VERTICALLY TO FULL DEPTH IN SOIL.
3. PULL HANDLE UP FEW INCHES TO OPEN BOTTOM PLANTING HOLE.
4. INSERT SEEDLING ROOTS TO THE BOTTOM OF THE PLANTING HOLE FOR PINE SEEDLINGS, RAISE ROOT COLLAR TO EXISTING SOIL LEVEL. FOR WILLOW, ASPEN AND ADLER, ROOT COLLAR SHOULD BE AT SOIL LEVEL OR DEEPER.
5. HOLD SEEDLING IN PLACE REMOVE BLADE PACK SOIL BACK AROUND BLADE WITH BLADE, HAND OR FOOT.
6. FORM WATER RING, SMOOTH SOIL OUT.

DETAIL - SEEDLING HAND PLANTING (3 / RV-1)

SCALE: NTS





WATTLE DETAIL (4 / RV-1, RV-2)

SCALE: NTS

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

REVEGETATION DETAILS - SHEET 1 OF 2

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: RV-3
SHEET NO: 19 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\RV-3.dwg
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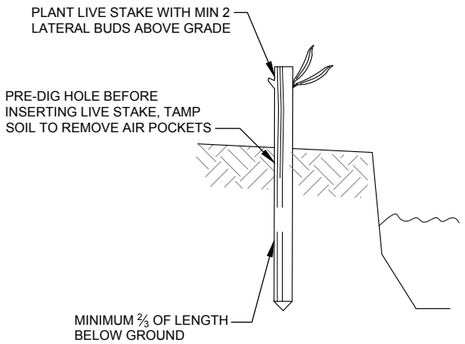


NOTES:

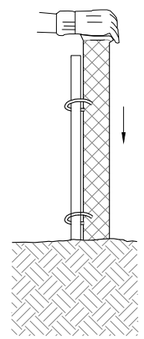
1. PLANT STAKE MUST COME INTO CONTACT WITH GROUNDWATER.

LIVE STAKE PLANTING DETAIL (1 / RV-3)

SCALE: NTS

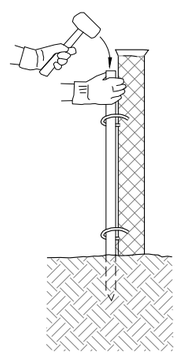
STEP 1

SLIDE THE NETTING DOWN OVER THE SEEDLING. IF NECESSARY, HOLD SIDE BRANCHES TO PREVENT THEM FROM CATCHING ON BOTTOM LIP OF THE SHELTER. MAKE SURE THE TIP OF THE SEEDLING OR SIDE BRANCHES DO NOT CATCH ON A TIES AS YOU SLIDE THE NETTING DOWN.



STEP 2

PUSH THE NETTING FIRM TO THE GROUND.

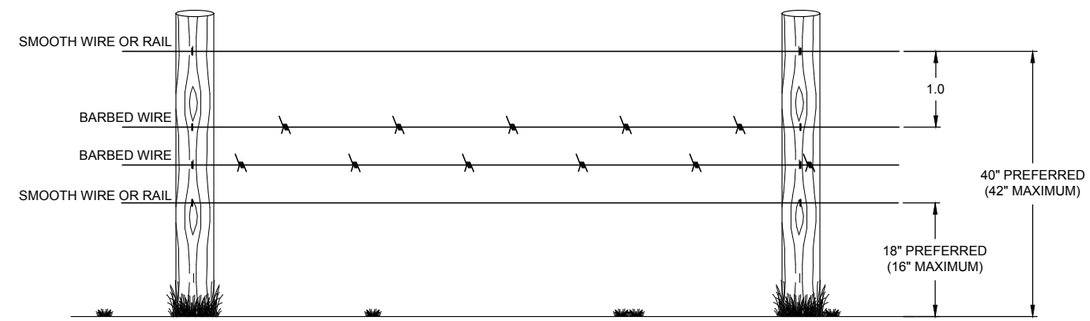


STEP 3

ANCHOR THE NETTING IN PLACE WITH A STAKE. THE STAKE GOES THROUGH THE TIE(S) AND SHOULD BE HAMMERED INTO THE GROUND SO THAT ONE TO THREE INCHES OF THE STAKE IS LEFT ABOVE THE TOP TIE. ONCE THE STAKE IS INSTALLED, TIGHTEN THE TIE(S) TO SECURE THE NETTING TO THE STAKE.

SOLID WALL SEEDLING PROTECTOR INSTALLATION (2 / RV-1)

SCALE: NTS



WILDLIFE/LIVESTOCK FENCE DETAIL (3 / RV-1, RV-2)

SCALE: NTS

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MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER 12/16/2016

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DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

REVEGETATION DETAILS - SHEET 2 OF 2

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO: RV-4
SHEET NO: 20 OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Dwgs\Record drawings\RV-4.dwg
Plot Date: 12/15/2016 2:38 PM Cad User: Eric Marshall
Plot Style Table: HEC.ctb Plotter: _AutoCAD PDF (General Documentation).pc3

APPENDIX I

Daily Construction Reports

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 1	Day: 1	Date: 06/28/2016

Weather (See Instructions)
AM: Sunny 56 degrees PM: Sunny 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	9:30
Wyatt Rabel	9:30
Brad Potter	2:00

Work Activity Summary

9:00 - Arrive at the Indian Creek Turnoff. Wyatt and Brad waiting for the HD Supply truck in order to lead them onto the site. Delivery of ADS arrives.

9:30 - Scott arrives at turnoff. Says George will be coming soon so I head up to site.

10:00 - I blow a tire on the road. Spare is not accessible due to lock mechanism over the access port. Scott arrives at my disabled truck and gives me a ride with my tire to a local tire shop where I end up buying a used tire.

2:00 - Tire fixed, we meet George at the Indian Creek Road turnoff. George has the Kobelco Excavator on his tilt bed. Perform weed inspection - Pass.

2:50 - Tire on my truck, arrive onsite. George unloads the excavator.

3:30 - Meet with George, Brad, and Wyatt. Decide to put dewatering sump in pond on the Southwest corner of the pond and pump up the west slope. Discuss removal of debris - clean woody debris can go over the Sediment Disposal Area, metal must be properly disposed of. Bypass piping - field fit so long as we stay out of the excavation and don't go below the minimum grade on the plans. Compaction testing - at least one Proctor will be taken after mixing with Lime Kiln Dust (LKD).

4:00 - Leave Site. No production work today.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle

Rental Equipment

Superintendent On-Site Tracking

George Rabel

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115066 ODO End: 115255

Project Representative's On-Site Hours

Arrival Time: 9:00 AM

Departure Time: 4:00 AM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 9:00 AM

Departure Time: 4:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 2	Day: 2	Date: 06/29/2016

Weather (See Instructions)
AM: Sunny 54 degrees PM: Sunny 91 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	8:30
Wyatt Rabel	8:30
Brad Potter	8:30

Work Activity Summary

9:00 - Kobelco excavator moved down to the pond.

9:20 - Safety meeting. Discuss slips/trips/falls, flying debris from tree removal, taking care while cleaning up partially buried metal and debris.

9:30 - Begin excavation for installation of bypass at outflow end. Using mini excavator to begin gathering metal debris above the pond.

10:30 - Using 22.5 degree bend at outflow to help disipate and direct flow. Large coble in place for energy disipator. The bypass flow will hit the large cobble and travel down a dry, alternatee streambed before returning to main channel. Vegetation and rock streambed will help remove any sediment.

12:45 - Bypass pipe installed through haul road at approximately 2' below grade to top of pipe.

2:45 - Installing bypass pipe up the slope above the haul road. Using bends to follow contours but not loose too much elelvation.

2:50 - Mini excavator down, track thrown.

3:00 - Mini back up and running. Pipe getting close to surface on bench above the pond. Bench may have to be filled in local areas to support pipe and allow for possitive drainage.
4:00 - Leave Site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
4	Water Management	Bypass outflow to bench above haul road

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180	8			
		CAT 304 E	8			

Rental Equipment

Superintendent On-Site Tracking
George Rabel onsite 8:30-4:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115255 ODO End: 115287

Project Representative's On-Site Hours
Arrival Time: 8:15 AM
Departure Time: 4:00 PM

(Signed) Project Representative

Contractor's On-Site Hours
Arrival Time: 8:15 AM
Departure Time: 4:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 3	Day: 3	Date: 06/30/2016

Weather (See Instructions)
AM: Sunny 62 degrees PM: Sunny 92 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	9:10
Wyatt Rabel	9:10
Brad Potter	9:10
Tanner Allsop	9:10

Work Activity Summary

9:20 - Safety Meeting
10:00 - Stake sediment storage area alignment with GPS unit. The points are not matching up with the surrounding topography and the topo in the design.
10:30 - Decide to stake the excavation limits as well in order to see how they match up. They work in relation to the staked alignment points as far as distance and bearing, they just don't match the surrounding topography. All points seem to be translated approximately 16 feet.
11:20 - After discussion with Scott, we decide to bring the alignment stakes back up onto the road as shown on the plans, and pull tapes to manually stake the excavation and clearing limits. George helps while Wyatt, Brad and Tanner work on bypass piping.
12:00 - Complete staking. Points for excavation limits and clearing limits seem to match the intent of the plans. Scott and I are in agreement that we have what was intended, staked in the field.
2:15 - Mason Tunnel Ditch water flowing into the bypass pipe. Coffer dam not exactly right but they are catching 90% of the flow. They will come back to see if they can get the rest.
4:30 - Indian Creek coffer dam complete and flow entering bypass piping. Some small seeps are coming in from below the waste rock pile below the Mason Tunnel ditch but it appears that the vast majority of the flow is no longer making it to the pond. Pond level dropping.
5:00 - Try and seal up Mason Tunnel coffer dam. Unfortunately, flow is working its way by the dam. More sandbags needed, George will bring in the morning.
5:30 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
4	Water Management	Bypass outflow to bench above haul road
2	Clearing and Grubbing	Sediment Storage Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180	7			
		CAT 304 E	7			

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 9:10-5:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115287 ODO End: 115320

Project Representative's On-Site Hours

Arrival Time: 8:30 AM

Departure Time: 5:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 9:10 AM

Departure Time: 5:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 4	Day: 4	Date: 07/01/16

Weather (See Instructions)
AM: Sunny 62 degrees PM: Sunny 85 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	10:45
Brad Potter	10:45
Tanner Allsop	10:45

Work Activity Summary

9:00 - Arrive on site. Pond water level has dropped approximately 1.5 feet since the Mason Tunnel Ditch and Indian Creek Flow has been bypassed. Bypass outflow looks good and is following side channel back into main channel.

10:00 - Decide to navigate to control points to check for accuracy of GPS. Find control points #1, #5, and #7. Take shots on actual points.

10:45 - Contractor arrives. Discuss not installing sump in pond since it seems to be dropping fast enough to be dry by Tuesday. George agrees.

12:45 - Mason Tunnel Ditch cofferdam adjusted and leaks less now. George beginning excavation on Sediment Storage area.

2:00 - Leave e site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
4	Water Management	Mason Tunnel Ditch flow
5a	Excavation	Sediment Storage Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180	3			
		CAT 304 E	3			

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 10:45 - 2:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115320 ODO End: 115506

Project Representative's On-Site Hours

Arrival Time: 9:00 AM

Departure Time: 2:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 10:45 AM

Departure Time: 2:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 8	Day: 8	Date: 07/05/16

Weather (See Instructions)
AM: Sunny 60 degrees PM: Sunny 75 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	1:30:00 PM
Tanner Allsop	1:30:00 PM

Work Activity Summary

10:30 - Arrive on site. Pond water level has dropped more but is not completely dry. Discuss possible scenarios for draining the last of the water (pumps, sediment excavation, etc.)

12:30 - Decide to try and meet George at Indian Creek turnoff. Mobilized Fiat tracked dozer. Complete weed inspection - Pass.

1:30 - Arrive on site with George. Discuss possibilities on draining pond.

2:30 - Leave site. George returning to Gallatin to bring roller to site tomorrow.

No production work completed today.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 1:30 - 2:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115514 ODO End: 115696

Project Representative's On-Site Hours

Arrival Time: 10:30 AM

Departure Time: 2:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 1:30 PM

Departure Time: 2:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 9	Day: 9	Date: 07/06/16

Weather (See Instructions)
AM: Sunny 63 degrees PM: Cloudy 65 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	8:00:00 AM
Wyatt Rabel	9:30:00 AM
Tanner Allsop	8:00:00 AM

Work Activity Summary

7:00 - Meet George at Indian Creek Turnoff. Mobilized Dynopac single drum vibratory roller and Volvo track skid steer. Weed inspection - Pass.

8:00 - Arrive on site. Discuss dewatering the pond and decide to dig a sump, place the pump and set discharge hose upland on the west side of the dam.

9:00 - Begin work on excavation in the Sediment Storage area. Setting grade with laser level and rod.

10:00 - Move excavator to pond to dig sump and set pump. Excavator dug a large hole in the sediment to help drain the water and set the suction hose.

11:00 - Pump started. Outflow set in woods using existing rocks as level spreader. Water infiltrating and flowing through the undergrowth and grasses. Not returning to Indian Creek.

1:30 - Pond pumped as dry as possible. Seeps still evident and will gradually fill the pond again. Discuss the need to cycle the pump to drain the pond periodically and keep the sediment as dry as possible.

2:45 - Cycle pump on again. Water drained in only 30 minutes this time.

6:30 - Leave site..

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5a	Excavation	Sediment Storage Area
4	Water Management	Sediment Pond

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11			
		Fiat Allison Track Loader	11			
		CAT 304E Mini Excavator	8	3		
		Dynopac Single Drum Vibratory Roller		11		
		Volvo MCT 135C Track Skid Steer	2	9		

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 8:00 - 7:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115764 ODO End: 115799

Project Representative's On-Site Hours

Arrival Time: 8:00 AM

Departure Time: 6:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 8:00 AM

Departure Time: 7:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 10	Day: 10	Date: 07/07/16

Weather (See Instructions)
AM: Sunny 43 degrees PM: Sunny 75 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	8:00:00 AM
Wyatt Rabel	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

6:30 - Arrive on site. Contractors not working yet.

7:00 - Tanner and Wyatt get the equipment started. They plan on working on the excavation in the Sediment Storage area most of the day.

8:45 - George begins digging diversion ditch.

9:00 - Autumn and Scott arrive. Discuss plan for water management, excavation of sediment pond, placement of sediment in Sediment Storage Area, and revegetation. It is determined that a water truck should be onsite to aid in fire suppression. George agrees to bring water truck Monday.

12:00 - Autumn and Scott leave site.

2:30 - I leave site to get tires fixed in Townsend.

5:45 - Return to site. Excavation of Sediment Storage area nearly complete. Discuss what needs to be done for final completion. Diversion Ditch and Energy Dissipater nearly complete as well. George has also salvaged a couple of dump truck loads of rock for use in the stream channel. Stockpiled near staging area.

6:30 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5a	Excavation	Sediment Storage Area
9	Surface Water Diversion Ditch	Sediment Storage Area
12	Surface Water Energy Dissipater	Sediment Storage Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11.5			
		Fiat Allison Track Loader	11.5			
		CAT 304E Mini Excavator	8	3.5		
		Dynopac Single Drum Vibratory Roller		11.5		
		Volvo MCT 135C Track Skid Steer	0	11.5		

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 8:00 - 6:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115799 ODO End: 115835

Project Representative's On-Site Hours

Arrival Time: 6:30 AM

Departure Time: 6:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 11	Day: 11	Date: 07/08/16

Weather (See Instructions)
AM: Sunny 46 degrees PM: Sunny 80 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	7:00:00 AM
Wyatt Rabel	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site.
8:00 - George running Kobelco gathering up rock from the Sediment Storage Area (SSA) and pulling down the slopes to match the disign (1:1). Last 30 feet of SSA will also need to be excavated to grade before the excavated surface survey can take place. He is hoping for today but it may need to happen Monday morning.

10:00 - George complete gathering rocks and pulling slopes. Additional excavation at the end of the SSA will take place later in the day. Wyatt using tracked loader to gather excess material from the slopes and stockpiling. George moving to the Sediment Removal Area (SRA) to develope a haul road. Tanner running mini excavator and gathering rocks from around the site and loading the haul truck. Stockpiling rock in staging area.

12:00 - George still working on developing a haul road in the SRA. He has removed some sediment from the northeastern corner of the pond and placed clean fill in the process. Sediment not draining as quickly as hoped. Discussed the need to mix a small portion of the wet sediment with each load of dry excavation from the SRA, prior to placement in the SSA.
*Georged confirmed Pioneer Geotechnical scheduled to be onsite Monday afternoon to take a sample from the SSA after some of the excavation and sediment have been placed, mixed with Lime Kiln Dust (LKD), and compacted. They will run a Proctor on the mixture and compaction tests on the material in place to compare results.

12:00 - Leave site in order to make appointment at Helena Motors for the Mazda truck
2:00 - Contractor finishes for the week.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5a	Excavation	Sediment Storage Area
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	7			
		Fiat Allison Track Loader	7			
		CAT 304E Mini Excavator	7			
		Dynopac Single Drum Vibratory Roller		7		
		Volvo MCT 135C Track Skid Steer		7		

Rental Equipment

Superintendent On-Site Tracking
George Rabel onsite 7:00-2:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 115874 ODO End: 116057

Project Representative's On-Site Hours
Arrival Time: 7:00 AM
Departure Time: 12:00 PM

(Signed) Project Representative

Contractor's On-Site Hours
Arrival Time: 7:00 AM
Departure Time: 2:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 14	Day: 15	Date: 07/12/16

Weather (See Instructions)
AM: Cloudy 40 degrees PM: Clear 72 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	7:00:00 AM
Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Met George on the road headed to pick up a load of Lime Kiln Dust (LKD).
*Tanner running Kobelco to extend excavation in the Sediment Storage Area (SSA).
*Wyatt gathering wood and metal from the Sediment Removal Area (SRA).
*Brad and I set benchmarks from CP 200 for stream channel construction.

10:00 - Stake boulder weirs 1-8. Brad extending haul road in SRA with Kobelco.

1:00 - Excavation complete in SSA. Wyatt rolled the bottom of the excavation with the Dynopac.
*Survey of final excavation taken.
*Brad excavating and shaping the top of the SRA.

2:15 - First load taken from the SRA to the SSA. Material fairly dry and won't require LKD for bulking.

4:00 - Tanner running Dynopac, compacting fill in SSA.

5:00 - Leave Site

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5a	Excavation	Sediment Storage Area
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Storage Area and Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	2	9		
		CAT 304E Mini Excavator	6	5		
		Dynopac Single Drum Vibratory Roller	3	8		
		Volvo MCT 135C Track Skid Steer	0	11		

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116241 ODO End: 116277

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 15	Day: 16	Date: 07/13/16

Weather (See Instructions)
AM: Cloudy 46 degrees PM: Clear 79 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	7:00:00 AM
Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site.
*Brad working on setting additional benchmarks for stream channel construction.
*Stream channel excavation to take place before we stake the weirs again.

10:00 - Stake boulder weirs 1-3 again. Noticed that there is a difference in elevation between the existing stream channel elevations and the elevations shown in the plans. Boulder weirs number 1 and 2 show fills. We decide to fit to existing and split the difference between the fills and existing grades to match the drop between 1 and 2 in the plans. This will allow construction to proceed without producing a large flat section at the top of the reach. Matching design grade on weir number 3.

10:30 - Loading Ford dump truck with sediment mixed with waste rock and placing in Sediment Storage Area (SSA). Mixing Lime Kiln Dust (LKD) with the mini excavator.
11:30 - Material being placed in SSA is wet and pumping. Decide to increase concentration of LKD in order to help stabilize fill.
12:00 - Installed sump to help draw ground water down in the sediment pond.
3:30 - Contractor excavating and placing wet sediment above the pond and mixing LKD with it there. Hoping to bulk up the sediment before it is mixed with waste rock to help stabilize fill. Using Fiat tracked loader to compact fill in SSA. It seems to be working better than the roller.
4:00 - Contractor begins pushing dam material into the voids produced by excavating sediment . Excavating in a way that mixes the sediment with the dam material. Material being placed in SSA seems to be more stable.

5:00 - Leave Site

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5a	Excavation	Sediment Storage Area
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Storage Area and Sediment Removal Area
11a	Stream Channel Construction	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	4	7		
		CAT 304E Mini Excavator	11	0		
		Dynopac Single Drum Vibratory Roller	3	8		
		Volvo MCT 135C Track Skid Steer	8	3		
		Freightliner Dump Truck	0	11		
		Ford Dump Truck	11	0		

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116341 ODO End: 116375

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 16	Day: 17	Date: 07/14/16

Weather (See Instructions)
AM: Cloudy 48 degrees PM: Clear 84 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	7:00:00 AM
Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. George heading to get a load of Lime Kiln Dust (LKD) and fix tires on the Freightliner truck.

10:00 - Excavating LKD treated sediment from yesterday. Tanner hauling material in the Ford truck to the Sediment Storage Area (SSA), placement by Wyatt in the track loader.

11:30 - Track loader getting stuck. Move Kobelco to SSA to place lift and compact with the tracks.

12:30 - Track loader down. Tried jumping it but still not starting.

1:30 - Mixing material with LKD using mini excavator. Slowing progress as the Kobelco must leave Sediment Removal Area (SRA) to spread and compact material in SSA.

3:30 - Ford truck tailgate malfunctioning. The actuator that locks the tailgate shut has failed and the material is leaking out of the back. Crew considering changing to the Freightliner, however after working on it they get it working again. Proceed loading Ford with Kobelco in SRA and placing in SSA with mini and Kobelco.

*Progress today has been slow. Equipment issues and sediment placement have proven to be detrimental to production. LKD use has been high. The project is currently under the plan quantity of LKD (approximately 46 ton) but that item may see overrun as it is taking a significant amount to stabilize saturated Sediment.

5:00 - Leave Site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
7	Lime Products	Sediment Storage Area
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Storage Area and Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	5	0	6	
		CAT 304E Mini Excavator	5	6		
		Dynopac Single Drum Vibratory Roller	0	11		
		Volvo MCT 135C Track Skid Steer	8	3		
		Freightliner Dump Truck	7	4		
		Ford Dump Truck	10	0	1	

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116375 ODO End: 116420

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 17	Day: 18	Date: 07/15/16

Weather (See Instructions)
AM: Sunny 52 degrees PM: Clear 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	7:00:00 AM
Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. George heading to get a load of Lime Kiln Dust (LKD) with Tanner to show him the route within the pit and get certified to haul.

9:00 - Pump running after problems initially. Pushing material from above the pond with the blade on the excavator to build a platform for the excavator to load from. Sediment loaded into Ford truck and then backed up grade adjacent to the stream channel alignment where it is dumped, mixed with Lime Kiln Dust (LKD), and stockpiled. Progress going well.

11:30 - Contractor continuing operation removing and placing sediment above pond and mixing with LKD. They do not plan on moving any material to the Sediment Storage Area (SSA) today. The grade being built up on the access has become very soft and is impassible to placement equipment and trucks. The plan is to let it stabilize over the weekend in hopes of easing placement of subsequent lifts.

*As the Contractor does not intend on performing any "production" work that relates to placement of material in the SSA, it is decided that I should head home for the weekend. The Contractor plans on being complete removing and mixing the sediment by 2pm this afternoon.

12:00 - Leave Site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
7	Lime Products	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	7	0		
		Fiat Allison Track Loader	0	7		
		CAT 304E Mini Excavator	7	0		
		Dynopac Single Drum Vibratory Roller	0	7		
		Volvo MCT 135C Track Skid Steer	7	0		
		Freightliner Dump Truck	0	7		
		Ford Dump Truck	7	0		

Rental Equipment

Superintendent On-Site Tracking

George Rabel onsite 7:00 - 2:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116420 ODO End: 116607

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 12:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 2:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 20	Day: 21	Date: 07/18/16

Weather (See Instructions)
AM: Sunny 52 degrees PM: Clear 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	10:30:00 AM
Brad Potter	10:00:00 AM
Tanner Allsop	12:30:00 PM

Work Activity Summary

10:00 - Arrive on site. Brad only one here now, pumping the pond down.

*Plan is to remove remaining sediment in pond and place above water level and place in Sediment Storage Area (SSA).
*SSA needs some work leveling grade to accept trucks. Brad will start the day by working on this grade.

12:30 - Pond dewatered. 1 load of sediment has been trucked to SSA. Tanner heading to pickup another load of Lime Kiln Dust (LKD).

2:00 - Third load in SSA. Truck stuck.

3:00 - Truck out. Kobelco mixing LKD and pushing to low point (sta 2+50) of SSA.

5:00 - Leave Site. Contractor cleaning up.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
7	Lime Products	Sediment Removal Area
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Storage Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	7	0		
		Fiat Allison Track Loader	0	7		
		CAT 304E Mini Excavator	2	5		
		Dynopac Single Drum Vibratory Roller	0	7		
		Volvo MCT 135C Track Skid Steer	7	0		
		Freightliner Dump Truck	0	7		
		Ford Dump Truck	7	0		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 10:00 - 5:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116607 ODO End: 116794

Project Representative's On-Site Hours

Arrival Time: 10:00 AM

Departure Time: 5:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 10:00 AM

Departure Time: 5:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 21	Day: 22	Date: 07/19/16

Weather (See Instructions)
AM: Sunny 52 degrees PM: Clear 94 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew greasing equipment.

*Sediment removed from pond. The plan is to take dam material and treated sediment stockpiled above the pond to Sediment Storage Area (SSA).
*Pioneer Technical scheduled to arrive mid morning for compaction testing.

10:00 - Sara Thompson from Pioneer Technical arrives. She took 3 probe and 1 backscatter test.

*Results varied due to inconsistent mixture of rock and sediment.
*Contractor directed to continue placing material in SSA.

2:30 - 2 tires on the Ford dump truck have blown. Tanner going to try and limp it to Townsend to be fixed. Contractor using tracked loader to bucket the last of the sediment to the SSA.

4:00 - Last of the sediment has been moved to the SSA. Sediment has been treated once with Lime Kiln Dust (LKD) but it is still fairly wet and pumping. Brad mixing another dose of LKD with last lift of sediment. He plans to leave the surface rough to promote evaporation overnight.

*Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
7	Lime Products	Sediment Removal Area
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Storage Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	9	0		
		Fiat Allison Track Loader	9	0		
		CAT 304E Mini Excavator	2	7		
		Dynopac Single Drum Vibratory Roller	0	9		
		Volvo MCT 135C Track Skid Steer	2	7		
		Freightliner Dump Truck	0	7		
		Ford Dump Truck	7	0	2	

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 -4:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116863 ODO End: 116898

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 4:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 4:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 22	Day: 23	Date: 07/20/16

Weather (See Instructions)
AM: Sunny 60 degrees PM: Clear 89 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew greasing and fueling equipment.

*Sediment in Sediment Storage Area (SSA) stable after curing overnight. Mini leveling and tracking grade.
*Kobelco low on oil. Wyatt leaves to get oil and other supplies in Townsend.

8:00 - Boulder Weir staking complete. Locations staked for weirs #1 through #8.

10:30 - Wyatt back with oil for Kobelco. Begin excavation of subgrade starting at Boulder Weir #7 working back up gradient. Wyatt running skid steer moving excavated material up gradient to build slopes and fill low areas.

12:00 - Skid Steer loses track and is down.

1:30 - Track of skid steer repaired. Continue working subgrade and slopes moving up gradient.

3:30 - Subgrade complete from Boulder Weir #7 to #1. Contractor working slopes as they go.

4:30 - Cobble placed between Boulder Weirs #1 and #2. Placement close to design but weirs will require some reworking.
*Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
11a	Stream Channel Construction	Sediment Removal Area
11b	Stream Channel Cobble	Sediment Removal Area
11c	Weir Boulders	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	10	0		
		Fiat Allison Track Loader	0	9		
		CAT 304E Mini Excavator	2	8		
		Dynopac Single Drum Vibratory Roller	0	10		
		Volvo MCT 135C Track Skid Steer	8	2		
		Freightliner Dump Truck	0	10		
		Ford Dump Truck	0	10		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 -5:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116898 ODO End: 116932

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 4:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 23	Day: 24	Date: 07/21/16

Weather (See Instructions)
AM: Sunny 63 degrees PM: Clear 94 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew greasing and fueling equipment.
*Staked the upper boundary of the fence around the Sediment Storage Area (SSA). Field conditions may dictate a change to the alignment, moving the upper boundary above the Diversion Ditch and thee bottom along the edge of the fill. The original alignment would require several trees to be felled and difficult grade changes.
*Reviewed design elements of the Stream Channel with Brad. Configuration of the Weir Boulders (lower center boulder with wing rocks down grade and up the slope, tops higher than the center), and Stream Cobble (0.5 feet below the center Weir boulder, 7 feet wide, and pounded into the grade to stabilize).

9:30 - Discussion with Scott.
*Recap of design elements discussion with Brad.
*Potential alignment changes to the fence around the SSA.
*Scott good with both.

10:30 - Contractor working their way down the Stream Channel Construction toward Weir #7.
2:30 - Stream Channel Construction roughed in to Weir #6. Brad and Tanner adding bench marks down the alignment for elevation control down gradient. Wyatt gathering more 12" cobble from around the site for Stream Cob ble.
3:00 - Contractor finalizing slopes around and above the Mason Tunnel Ditch (MTD).
4:00 - MTD subgrade excavation. Tying in near Weir and first Large Woody Debris location.
5:00 - Leave Site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
11a	Stream Channel Construction	Sediment Removal Area
11b	Stream Channel Cobble	Sediment Removal Area
11c	Weir Boulders	Sediment Removal Area
10	Mason Tunnel Discharge Ditch	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	10	0		
		Fiat Allison Track Loader	0	10		
		CAT 304E Mini Excavator	2	8		
		Dynopac Single Drum Vibratory Roller	0	10		
		Volvo MCT 135C Track Skid Steer	8	2		
		Freightliner Dump Truck	0	10		
		Ford Dump Truck	0	10		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 -5:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116932 ODO End: 116965

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 24	Day: 25	Date: 07/22/16

Weather (See Instructions)
AM: Sunny 63 degrees PM: Clear 94 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew greasing and fueling equipment.
*Crew dewater pond.
*Discuss plan for removing dam material.

8:00 - Brad moves Kobelco to the Sediment Storage Area (SSA) to level and track material in preparation of dam material. The lime cured sediment has solidified over the last two days and has produced a stable surface for the next lift placement.

9:00 - Begin removing dam material with the Kobelco, loading the Ford truck and placing in the SSA.

11:30 - Site visit with Scott and Kevin.
*Review design attributes in the Sediment Removal Area (SRA) including Stream Channel Construction, Stream Cobble, Mason Tunnel Ditch Construction, and Boulder Weirs.
*Review design attributes in the SSA including sloping, Wildlife Fencing, Surface Water Diversion Ditch and Energy Dissipater.

3:00 - Contractor has removed about half of the dam. Seep producing water so they decide to dig a sump and overflow ditch around the remaining dam material to ensure the dam doesn't saturate and slough into the stream.

3:15 - Leave Site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	8	0		
		Fiat Allison Track Loader	2	6		
		CAT 304E Mini Excavator	2	6		
		Dynopac Single Drum Vibratory Roller	0	8		
		Volvo MCT 135C Track Skid Steer	0	8		
		Freightliner Dump Truck	0	10		
		Ford Dump Truck	8	0		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 -3:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 116695 ODO End: 117216

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 3:15 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 3:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 27	Day: 28	Date: 07/25/16

Weather (See Instructions)
AM: Sunny 60 degrees PM: Clear 88 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	10:00:00 AM
Brad Potter	10:00:00 AM
Tanner Allsop	10:00:00 AM

Work Activity Summary

12:30 - Arrive on site.
*Met with George, Brad, Tanner, and Wyatt. George delivered the water truck.
*Discussed schedule. Hoping to be complete by the end of next week with this phase of the work.

1:30 - Hauling material from dam to Sediment Storage Area (SSA).

3:00 - Begin Mason Tunnel Ditch key way for erosion control fabric.
*Fabric (coir and jute) is different than originally submitted material. Discuss the change with Scott (approved).
*We decided to use this fabric for the full length of the newly constructed channel rather than changing materials at lower grades.

4:30 - Moving cobble over to the Mason Tunnel Ditch to construct Check Dams.

5:00 - The new fabric rolls are only 8' wide so we decide two rolls down the alignment keyed in on both sides, and stapled at the seam.

5:30 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area
10	Mason Tunnel Discharge Ditch	Sediment Removal Area
13	Rock Check Dams	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	7	0		
		Fiat Allison Track Loader	1	6		
		CAT 304E Mini Excavator	5	2		
		Dynopac Single Drum Vibratory Roller	2	5		
		Volvo MCT 135C Track Skid Steer	0	7		
		Freightliner Dump Truck	0	7		
		Ford Dump Truck	7	0		

Rental Equipment

Superintendent On-Site Tracking
Brad Potter onsite 10:00 - 5:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117216 ODO End: 117403

Project Representative's On-Site Hours
Arrival Time: 12:30 PM
Departure Time: 5:30 PM

(Signed) Project Representative

Contractor's On-Site Hours
Arrival Time: 10:00 AM
Departure Time: 5:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 28	Day: 29	Date: 07/26/16

Weather (See Instructions)
AM: Sunny 60 degrees PM: Short Rain 80 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew fueling/greasing equipment.
*Crew continuing on the removal of the dam material and construction of the Mason Tunnel Ditch.
9:15 - Scott and James (DEQ) arrive for a drone flight of the site.
9:45 - Scott and James leave after flight and Sara from Pioneer Technical arrives for compaction testing in the Sediment Storage Area (SSA).
10:15 - Sara leaves. Brad building a new haul road into the bottom of the excavation in order to continue down to stream channel subgrade.
*Compaction tests pass (100%, 96%, and 98% of maximum density).
10:30 - Stake the remaining weirs for Brad. This staking is only temporary in order to get his bearings while working on the excavation.
2:00 - Stake weirs with wood stakes for alignment. Brad using laser to set cuts on stakes for stream channel subgrade.
3:00 - Tanner leaves with Ford Haul Truck to get one of the tires fixed in Townsend. It was flattened during haul operations.
4:30 - Mason Tunnel Ditch almost complete. Check dams in and placing cobble in-between.
*Cuts were set on weirs #15 and #16. These weirs are located in the existing steam channel below the dam. We decide not to set #17 as it would require more disturbance than they are worth. The extra weir will be made up in rock placement elsewhere.

5:30 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area
10	Mason Tunnel Discharge Ditch	Sediment Removal Area
13	Rock Check Dams	Sediment Removal Area
11c	Weir Boulders	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	10	0		
		Fiat Allison Track Loader	2	8		
		CAT 304E Mini Excavator	8	2		
		Dynopac Single Drum Vibratory Roller	2	8		
		Volvo MCT 135C Track Skid Steer	2	8		
		Freightliner Dump Truck	0	10		
		Ford Dump Truck	8	0		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 5:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117403 ODO End: 117435

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 29	Day: 30	Date: 07/27/16

Weather (See Instructions)
AM: Sunny 60 degrees PM: Sunny 88 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew fueling/greasing equipment.
*Discuss placement of weirs #15 and #16. He is in agreement to eliminate #17 and minimize disturbance.
9:30 - Crew working their way up gradient from #15, excavating stream channel subgrade and installing Boulder Weirs as they go. Up to #14.
10:30 - Install first Large Woody Debris near weir #14.
11:30 - Scott arrives. Discussion.
*Bottom of stream alignment and the elimination of #17 to minimize disturbance.
*Mason Tunnel Ditch and tie in point.
*Large Woody Debris structure placement and configuration.
*Scott is happy with all the decisions made.
2:00 - Crew working on weir #12. Continue excavating subgrade and placing weirs. Stream Cobble will be placed later.
*Large rocks installed in seep on east side of creek alignment in order to create preferential path that will daylight near stream channel and keep the flood plane wet.
4:00 - Installing weir #10.
5:00 - Finish subgrade excavation of the stream channel.

5:30 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area
10	Mason Tunnel Discharge Ditch	Sediment Removal Area
18	LWD Salvage and Placement	Sediment Removal Area
11c	Weir Boulders	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	10	0		
		Fiat Allison Track Loader	2	8		
		CAT 304E Mini Excavator	8	2		
		Dynopac Single Drum Vibratory Roller	0	10		
		Volvo MCT 135C Track Skid Steer	0	10		
		Freightliner Dump Truck	0	10		
		Ford Dump Truck	0	10		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 5:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117435 ODO End: 117470

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:30 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 5:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 30	Day: 31	Date: 07/28/16

Weather (See Instructions)
AM: Sunny 58 degrees PM: Sunny 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew fueling/greasing equipment.
*Kobelco has a failing "O" ring in the hydraulic hose on the thumb. Tanner runs to Townsend to try and replace it.
8:30 - Napa in Townsend does not have the right hose or fittings so Wyatt heads to Helena to try and get the right parts. Remaining crew works on gathering Stream Cobble.
11:30 - Wyatt back w/ correct hose and fittings.
12:00 - Brad spreading truck loads and shaping slops in the Sediment Storage Area (SSA). Wyatt gathering more cobble.
1:30 - Brad finishes the last of the excavation in the SSA where the slopes were too steep. This additional excavation will bring them to the plan quantity for Item #5a.
2:30 - James Nave (Property Owner) arrives on site to inspect progress. Site tour goes well and he is happy with the way the project is turning out. I gave him my card and offered to give him future updates and photo's if he is interested.
4:45 - Installing LWD.
6:00 - LWD install complete. Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area
5a	Excavation	Sediment Storage Area
18	LWD Salvage and Placement	Sediment Removal Area
11b	Stream Channel Cobble	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	6	4		
		Fiat Allison Track Loader	2	8		
		CAT 304E Mini Excavator	8	2		
		Dynopac Single Drum Vibratory Roller	0	10		
		Volvo MCT 135C Track Skid Steer	0	10		
		Freightliner Dump Truck	0	10		
		Ford Dump Truck	5	5		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117470 ODO End: 117500

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 31	Day: 32	Date: 07/29/16

Weather (See Instructions)
AM: Sunny 63 degrees PM: Sunny 84 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Wyatt Rabel	7:00:00 AM
Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive on site. Crew fueling/greasing equipment.
*Discuss progress and schedule
*Crew leaving at 11am today
*Continue hauling to the Sediment Storage Area (SSA) and hopefully finish last of the Boulder Weirs and Stream Cobble today

7:45 - Hauling to SSA. Wyatt knocking down the dump truck piles with the tracked loader.

10:45 - Last load of material from the Sediment Removal Area placed in SSA. Finishing Boulder Weirs #8 and #9 which are the last 2 weirs in Indian Creek. They are not going to get the last of the Stream Cobble placed today.

11:30 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Removal Area
11c	Weir Boulders	Sediment Removal Area
11b	Stream Channel Cobble	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	4	0		
		Fiat Allison Track Loader	3	1		
		CAT 304E Mini Excavator	2	2		
		Dynopac Single Drum Vibratory Roller	1	3		
		Volvo MCT 135C Track Skid Steer	0	4		
		Freightliner Dump Truck	0	4		
		Ford Dump Truck	4	0		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 11:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117500 ODO End: 117686

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 11:30 AM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 11:30 AM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 34	Day: 35	Date: 08/01/16

Weather (See Instructions)
AM: Sunny 75 degrees PM: Sunny 89 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Brad Potter	12:00:00 PM
Tanner Allsop	12:30:00 PM

Work Activity Summary

12:00 - Arrive onsite.
*Contractor to place last of Stream Cobble and then open the Indian Creek cofferdam for first pulse of water.
*Need to finish and roll grade in Sediment Storage Area (SSA) for testing coming this afternoon.

1:00 - Installing last LWD. Placing last of Stream Cobble.

1:30 - Sara from Pioneer arrives. SSA not ready for her. They begin leveling and rolling while she waits.
*Tests all pass based on mixed Sediment and Waste Rock Proctor.

3:00 - Indian Creek Cofferdam released.

4:00 - Indian Creek flow following channel to approximately Weir #5. There, it goes below grade and seems to be charging the seeps below (seep flows increasing). We decide to leave the cofferdam open overnight as the flow is quite low.

5:00 - Spreading woody debris. Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
6	Excavate, Haul, Place and Compact Waste in SSA	Sediment Storage Area
4	Water Management	Sediment Removal Area
18	LWD Salvage and Placement	Sediment Removal Area
11b	Stream Channel Cobble	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	5	0		
		Fiat Allison Track Loader	3	2		
		CAT 304E Mini Excavator	1	4		
		Dynopac Single Drum Vibratory Roller	1	4		
		Volvo MCT 135C Track Skid Steer	1	4		
		Freightliner Dump Truck	0	5		
		Ford Dump Truck	2	3		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 12:00 - 5:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117686 ODO End: 117877

Project Representative's On-Site Hours

Arrival Time: 12:00 PM

Departure Time: 5:00 PM

(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 12:00 PM

Departure Time: 5:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 35	Day: 36	Date: 08/02/16

Weather (See Instructions)
AM: Sunny 48 degrees PM: Sunny 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive onsite.
*Tour stream channel with Contractor.
*Water still going underground at Weir #5
*Seep flow in wet area has increased. It seems like there is a preferential pathway from the upper portion of the new stream channel to the seeps.
7:45 - Sent pictures to Kevin and discuss situation. He feels this is natural and will repair itself over time. Moving forward on Mason Tunnel Ditch (MTD).
9:00 - MTD released. Looking good. Some minor bank reinforcement required to make sure water stays in channel.
10:30 - Jostle cobble in main channel to release some silt in hopes of sealing it up. Helps a little but just needs more time.
11:30 - Scott arrives.
*Tour and discuss main channel. He is in agreement that time will help bring the water up to the surface.
12:30 - Working on Sediment Storage Area (SSA). Tanner on track loader placing cover material while Brad finishes it with the excavator.
4:00 - Brad moving trees up slope to stage for placement after cover material and topsoil has been placed.

6:00 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5b	Embankment	Sediment Storage Area
4	Water Management	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	10	1		
		CAT 304E Mini Excavator	1	10		
		Dynopac Single Drum Vibratory Roller	0	11		
		Volvo MCT 135C Track Skid Steer	0	11		
		Freightliner Dump Truck	0	11		
		Ford Dump Truck	0	11		

Rental Equipment

Superintendent On-Site Tracking
Brad Potter onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117877 ODO End: 117916

Project Representative's On-Site Hours
Arrival Time: 7:00 AM
Departure Time: 6:00 PM

Kyle Johnson
(Signed) Project Representative

Contractor's On-Site Hours
Arrival Time: 7:00 AM
Departure Time: 6:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 36	Day: 37	Date: 08/03/16

Weather (See Instructions)
AM: Cloudy 56 degrees PM: Sunny 85 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

7:00 - Arrive onsite.
*Crew fueling/greasing equipment
7:30 - Brad removing Lime Kiln Dust impoundment from staging area. Tanner staging cover material in Sediment Storage Area (SSA) and placing leftover Lime Kiln Dust at the same time.
9:00 - Brad using mini to clean up Mason Tunnel Ditch (MTD) banks and upper section to soften slopes and finish.
10:30 - Brad using Kobelco to begin access road removal into Sediment Removal Area (SRA).
12:00 - Scott and Autumn arrive. Review progress.
*Autumn suggests placing a few "chunks" of grass from wetland area just below the new stream channel into wet areas in our project. Ask Brad to do that and he agrees.
4:00 - Brad finished decommissioning the access road, building slopes and placing woody debris in area leading to new stream channel.
4:30 - Moved Kobelco to Sediment Storage Area (SSA) to help place cover material that Tanner has staged.
6:00 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5b	Embankment	Sediment Storage Area
4	Water Management	Sediment Removal Area
19	Obliterate and Reclaim Roadway	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	10	1		
		CAT 304E Mini Excavator	1	10		
		Dynopac Single Drum Vibratory Roller	0	11		
		Volvo MCT 135C Track Skid Steer	0	11		
		Freightliner Dump Truck	0	11		
		Ford Dump Truck	0	11		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 117916 ODO End: 117954

Project Representative's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Kyle Johnson
(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 37	Day: 38	Date: 08/04/16

Weather (See Instructions)
AM: Cloudy 56 degrees PM: Sunny 85 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

1:30 - Arrive onsite. Crew started around 7:00 am this morning but I had a meeting in Helena to attend. Scott has been on site since operations started.
*Contractor working on cover material placement in Sediment Storage Area (SSA).
*They plan on finishing up tomorrow. I will not be on site due to family obligations.
2:00 - Inspect sloping and cover material placement.
*Looking good. Excavator teeth being used to break up surface to help receive topsoil.
*Encourage them to contour slopes to look as natural as possible.
2:30 - Discuss Road Decommissioning with Scott in the SSA.
*Rip road.
*Place fill if there is extra that needs to be wasted.
*Make impassible.
3:00 - Leave site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5b	Embankment	Sediment Storage Area
19	Obliterate and Reclaim Roadway	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	11	0		
		CAT 304E Mini Excavator	0	11		
		Dynopac Single Drum Vibratory Roller	0	11		
		Volvo MCT 135C Track Skid Steer	0	11		
		Freightliner Dump Truck	0	11		
		Ford Dump Truck	0	11		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 118020 ODO End: 118206

Project Representative's On-Site Hours

Arrival Time: 1:30 PM

Departure Time: 3:00 PM

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Kyle Johnson
(Signed) Project Representative

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 38	Day: 39	Date: 08/05/16

Weather (See Instructions)
AM: Cloudy 48 degrees PM: Sunny 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Brad Potter	7:00:00 AM
Tanner Allsop	7:00:00 AM

Work Activity Summary

**Project representative not on site today. Scott Graham on site watching progress.

Today, work was completed on the excavation, embankement, and stream construction scope. Time will be turned off until startup around September 15th for planting and fencing operations.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
5b	Embankment	Sediment Storage Area
8	Cover Soil	Sediment Storage Area
19	Obliterate and Reclaim Roadway	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	11	0		
		Fiat Allison Track Loader	11	0		
		CAT 304E Mini Excavator	0	11		
		Dynopac Single Drum Vibratory Roller	0	11		
		Volvo MCT 135C Track Skid Steer	0	11		
		Freightliner Dump Truck	0	11		
		Ford Dump Truck	0	11		

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: ODO End:

Project Representative's On-Site Hours

Arrival Time: N/A

Departure Time: N/A

Contractor's On-Site Hours

Arrival Time: 7:00 AM

Departure Time: 6:00 PM

Kyle Johnson
(Signed) Project Representative

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 39	Day: 40	Date: 09/12/16

Weather (See Instructions)
AM: Cloudy 48 degrees PM: Sunny 90 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	10:00:00 AM
Wyatt Rabel	10:00:00 AM
Brad Potter	10:00:00 AM
Tanner Allsop	10:00:00 AM
Katie Kieler	10:00:00 AM

Work Activity Summary

10:00 - Arrive on site.
*Today will be dedicated to seeding (broadcast) and fencing in the Sediment Removal Area (SRA).
*Discuss and walk fence route with Brad and Tanner.
*Inspect and collect seed tags. They match the species and concentrations specified in the contract documents.
*Discuss and walk additional "access" over Sediment Storage Area (SSA).
10:30 - Brad, Tanner, Wyatt and George begin fencing operations by placing gate and brace posts at the entry to the SRA.
11:30 - Katie finished seeding SRA.
12:30 - Katie finished seeding SSA.
1:30 - Brace posts and gate posts set on east side of SRA. Working around to west side.
*Contractor leaving the northern corner and brace posts for Wednesday.
*Added brace posts at the bottom of the gully by the stream channel (south end of SRA) to hold wire down.
4:00 - All corners and braces set except for northern end.
*Wire will be strung on Thursday or Friday.
*Gates will be hung at a later date as well.
4:30 - Leave site. No work will be completed tomorrow. Contract day will not be charged.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
14	Fertilize, Seed and Mulch	Sediment Storage Area and Sediment Removal Area
20	Wildlife/Farm Fence	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	0	0		
		Fiat Allison Track Loader	0	0		
		CAT 304E Mini Excavator	6			
		Dynopac Single Drum Vibratory Roller	0			
		Volvo MCT 135C Track Skid Steer	0			
		Freightliner Dump Truck	0			
		Ford Dump Truck	0			

Rental Equipment

Superintendent On-Site Tracking

Brad Potter onsite 7:00 - 6:00

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 182,475 ODO End: 182,801 (Suburban)

Project Representative's On-Site Hours

Arrival Time: 10:00 AM

Departure Time: 4:30 PM

Kyle Johnson
(Signed) Project Representative

Contractor's On-Site Hours

Arrival Time: 10:00 AM

Departure Time: 4:30 PM

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 40	Day: 41	Date: 09/14/16

Weather (See Instructions)
AM: Partly Cloudy 45 degrees PM: Sunny 55 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

Debbie Rabel	10:00:00 AM
Wyatt Rabel	10:00:00 AM
Katie Kieler	10:00:00 AM

Work Activity Summary

10:45 - Arrive on site with Scott Graham, Erica Wartonsen and Mike ?
*Discuss cutting collection and planting and related safety issues
11:30 Finished cutting collection (150 cuttings collected on old reclamation upstream of project site)
*Placed bundles of cuttings in stream on project site
*Distributed snowberry plants in floodplain planting area
*Discussed with Scott Graham and made change of floodplain planting area by moving the downstream area on plans to the seep upstream
12:00 - Started planting Snowberry plants
*The snowberry were in larger containers(4"X4"X14")because the smaller plants were unavailable. This made planting in the rocky conditions difficult
*Planted 47 snowberry plants then decided to wait and use the mini excavator with small bucket for digging holes at a later date
1:00- Started planting willows and alders in flood plain areas
4:00 Completed willow and alder planting - Leave site

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
15	Floodplain plantings shrub	Sediment Removal Area
16	Willow stakes	Sediment Removal Area
20	Wildlife/Farm Fence	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	0	0		
		Fiat Allison Track Loader	0	0		
		CAT 304E Mini Excavator	0			
		Dynopac Single Drum Vibratory Roller	0			
		Volvo MCT 135C Track Skid Steer	0			
		Freightliner Dump Truck	0			
		Ford Dump Truck	0			

Rental Equipment

Superintendent On-Site Tracking
Debbie Rabel 10:00- 4:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 183,002 ODO End: 183,333 (Suburban)

Project Representative's On-Site Hours
Arrival Time: 10:45 AM
Departure Time: 4:30 PM

Contractor's On-Site Hours
Arrival Time: 10:00 AM
Departure Time: 4:30 PM

Leonard Ballek
(Signed) Project Representative

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 41	Day: 42	Date: 09/16/16

Weather (See Instructions)
AM: Partly Cloudy 45 degrees PM: Sunny 55 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	10:00:00 AM
Wyatt Rabel	10:00:00 AM
Travis Sturgis	10:00:00 AM
Tanner Alsop	10:00:00 AM
Hydro-seeder crew	

Work Activity Summary

Note: Scott Graham was the DEQ representative on September 15. On that day: Hydroseeding was started, The remainder of plants and willow stakes were installed, fence work occured, and equipment was moved off site)
10:00 - Arrive on site with Scott Graham
10:30- Install tree protectors on rose, willow and alder plants only 375 total. (The willow cuttings were on sites too rocky to stake protectors and snowberry plants were too large for the tree protectors.)
*Some areas were too rocky to plant vertically so Len had crew remove cuttings not appropriately installed and place them at angles in the rocky stream bank where they will reach moisture and root.
*About 1/3 of fence completed and gates installed. Total length of fence was measured at 860 linear feet.
* Hydroseeding on the entire site was finished
*Biosol was spread over the entire site
*George completed construction of trail across sediment storage area for local rancher
4:30 Crew left the site

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
14	Fertilize, Seed and Mulch	Sediment Storage Area and Sediment Removal Area
15	Floodplain plantings shrub	Sediment Removal Area
16	Willow Stakes	Sediment Removal Area
17	Tree Protectors	Sediment Removal Area
20	Wildlife/Farm Fence	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle
		Kobelco 180 Excavator	0	0		
		Fiat Allison Track Loader	0	0		
		CAT 304E Mini Excavator	0			
		Dynopac Single Drum Vibratory Roller	0			
		Volvo MCT 135C Track Skid Steer	0			
		Freightliner Dump Truck	0			
		Ford Dump Truck	0			

Rental Equipment

Superintendent On-Site Tracking
George Rabel onsite10:00-4:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 183,333 ODO End: 183,657 (Suburban)

Project Representative's On-Site Hours
Arrival Time: 10:00 AM
Departure Time: 4:30 PM

Contractor's On-Site Hours
Arrival Time: 10:45 AM
Departure Time: 2:30 PM

(Signed) Leonard Ballek
Project Representative

Daily Inspection Report

DIR Sheet 1 of 1 Sheets

Contract: 416011	Contract Day: 42	Day: 43	Date: 09/19/16

Weather (See Instructions)
AM: Clear 50 degrees PM: Sunny 70 degrees

Prime Contractor: Rabel Construction	Representative / Title George Rabel/Owner

Employees On-Site

George Rabel	11:30:00 AM
Wyatt Rabel	11:30:00 AM

Work Activity Summary

9:30 - Len Ballek (Herrera) Arrive on site
*Flagged out locations of straw wattles on sediment removal area and sediment storage area and checked on biosol coverage
*George and Wyatt arrived at 11:30 (had a flat tire and picked up straw wattles)
11:30- Started on straw wattle installation and fence building
1:00- Local rancher came on site with ATV to ensure that he could access the area below the sediment storage area.
*Straw wattles were installed according to plans. Because of rocky conditions and a lot of woody debris it was difficult to get a smooth appearance to the installed wattles but they were staked down firmly and keyed in on the ends according to plans. Total linear feet installed was 750 feet.
*Fence was completed as planned with a total of 860 linear feet
6:30 The project was complete and crew left site.

Item, Description, and Location of Work

Item No.	Contract Item Description	Location
3	Install straw wattles	Sediment Storage Area and Sediment Removal Area
20	Wildlife/Farm Fence	Sediment Removal Area

Contractor's Equipment

	No.	Description	Opr	Stdby	Down	Idle

Rental Equipment

Superintendent On-Site Tracking

George Rabel 11:30- 6:30

Photos Attached ☐ Yes ☐ No

Mileage: ODO Start: 183,657 ODO End: (Suburban) 183,986

Project Representative's On-Site Hours

Arrival Time: 9:30 AM

Departure Time: 6:30 PM

Contractor's On-Site Hours

Arrival Time: 11:30 AM

Departure Time: 6:30 PM

Leonard Ballek
(Signed) Project Representative

APPENDIX J

Construction Photos

PM Maintenance Project

Daily Photo Log 6/29/2016

DEQ Contract No: 416011

Outfall of bypass installation

Bypass installation across haul road

PM Maintenance Project

Daily Photo Log 6/28/2016

DEQ Contract No: 416011

Bypass installation up slope north of haul road

Complete crossing road and up slope

PM Maintenance Project

Daily Photo Log 6/30/2016

DEQ Contract No: 416011

Bypass installation above ground through Sediment Removal Area

Installation of Wye on Bypass at Mason Tunnel Ditch

PM Maintenance Project

Daily Photo Log 6/30/2016

DEQ Contract No: 416011

Beginning Clearing and Grubbing for Sediment Storage Area

Staking in Sediment Storage Area looking south

PM Maintenance Project

Daily Photo Log 6/30/2016

DEQ Contract No: 416011

Cofferdam on Indian Creek

Outflow of Bypass after cofferdam installation

PM Maintenance Project

Daily Photo Log 7/1/2016

DEQ Contract No: 416011

Bypass outflow down side channel

Bypass outflow into Indian Creek

PM Maintenance Project

Daily Photo Log 7/1/2016

DEQ Contract No: 416011

Reconfigured cofferdam at Mason Tunnel Ditch

Reconfigured cofferdam at Mason Tunnel Ditch

PM Maintenance Project

Daily Photo Log 7/5/2016

DEQ Contract No: 416011

View of the pond after long weekend, level dropped. No work completed today.

Duplicate picture as placeholder

PM Maintenance Project

Daily Photo Log 7/6/2016

DEQ Contract No: 416011

Excavation of low point for installation of pump

View of pump outflow, using rock as natural level spreader

PM Maintenance Project

Daily Photo Log 7/6/2016

DEQ Contract No: 416011

View of sediment after pond dewatering

View of Sediment Storage area looking South during excavation

PM Maintenance Project

Daily Photo Log 7/7/2016

DEQ Contract No: 416011

Pond level after no pumping overnight

View truck loading in Sediment Storage Area

PM Maintenance Project

Daily Photo Log 7/8/2016

DEQ Contract No: 416011

Diversion Ditch looking North

Coversoil stockpile in Sediment Storage Area

PM Maintenance Project

Daily Photo Log 7/8/2016

DEQ Contract No: 416011

Access road to Sediment Removal Area

Access road to Sediment Removal Area

PM Maintenance Project

Daily Photo Log 7/11/2016

DEQ Contract No: 416011

Bypass outflow after weekend of rain Region saw 1.23” in last 24 hours

Pond level after rain, no work performed today

PM Maintenance Project

Daily Photo Log 7/11/2016

DEQ Contract No: 416011

Sediment Storage Area after rain

Little to no erosion observed

Diversion Ditch after rain

Little to no erosion observed

PM Maintenance Project

Daily Photo Log 7/12/2016

DEQ Contract No: 416011

Sediment Storage Area after drying overnight

Access along creek alignment after access road developed

PM Maintenance Project

Daily Photo Log 7/12/2016

DEQ Contract No: 416011

First excavation in Sediment Removal Area

Sediment Pond after no pumping for 4 days

PM Maintenance Project

Daily Photo Log 7/13/2016

DEQ Contract No: 416011

Sediment being mixed with Lime Kiln Dust in Sediment Storage Area

Excavation of sediment in pond

PM Maintenance Project

Daily Photo Log 7/13/2016

DEQ Contract No: 416011

Sediment excavated from North end of pond

Excavator pushing dam material into sediment to help mixing

PM Maintenance Project

Daily Photo Log 7/14/2016

DEQ Contract No: 416011

Sediment being mixed with Lime Kiln Dust in Sediment Removal Area

View of the progress of sediment removal in the pond

PM Maintenance Project

Daily Photo Log 7/14/2016

DEQ Contract No: 416011

View of sediment excavation with dam material pushed out for a platform

View of sediment pond and dam from Sediment Removal Area

PM Maintenance Project

Daily Photo Log 7/15/2016

DEQ Contract No: 416011

Progress on sediment removal from pond

Material from above pond being used as platform and mixing with sediment

PM Maintenance Project

Daily Photo Log 7/18/2016

DEQ Contract No: 416011

View of the pond after the weekend infiltration

Energy Dissipater at Diversion Ditch outflow

PM Maintenance Project

Daily Photo Log 7/18/2016

DEQ Contract No: 416011

Progress on sediment removal from pond

Last of the sediment being excavated from pond

PM Maintenance Project

Daily Photo Log 7/19/2016

DEQ Contract No: 416011

View of the pond after the last of the sediment has been removed

Removal of the Lime Kiln Dust treated sediment from above the pond

PM Maintenance Project

Daily Photo Log 7/19/2016

DEQ Contract No: 416011

Sediment Removal Area after last of sediment has been removed

Last of sediment placed in Sediment Storage Area being treated for second time to improve stability

PM Maintenance Project

Daily Photo Log 7/20/2016

DEQ Contract No: 416011

Start of the excavation for the stream channel subgrade near Boulder Weir #7

Excavation for subgrade in stream channel

PM Maintenance Project

Daily Photo Log 7/20/2016

DEQ Contract No: 416011

Progress on subgrade excavation for stream channel and adjacent sloping

Steam Cobble and Boulder Weirs #1 and #2

PM Maintenance Project

Daily Photo Log 7/21/2016

DEQ Contract No: 416011

View of Stream Channel Construction from the dam

Stream Channel showing Boulder Weirs and Stream Cobble

PM Maintenance Project

Daily Photo Log 7/21/2016

DEQ Contract No: 416011

Excavation for subgrade at the Mason Tunnel Ditch

Completed subgrade for Mason Tunnel Ditch

PM Maintenance Project

Daily Photo Log 7/22/2016

DEQ Contract No: 416011

Beginning excavation of the dam, hauling to the Sediment Storage Area

Progress on dam excavation

PM Maintenance Project

Daily Photo Log 7/22/2016

DEQ Contract No: 416011

View of sump and overflow ditch around dam to handle groundwater seep flow

View of the current Sediment Storage Area fill

PM Maintenance Project

Daily Photo Log 7/25/2016

DEQ Contract No: 416011

Continued progress on dam excavation

Dam material placement in the Sediment Storage Area

PM Maintenance Project

Daily Photo Log 7/25/2016

DEQ Contract No: 416011

Beginning of coir/jute mat and check dam placement

Due to the insufficient width of the matting, two rolls will be required

PM Maintenance Project

Daily Photo Log 7/26/2016

DEQ Contract No: 416011

Mason Tunnel Ditch with Check Dams and two coir/jute mats keyed and stapled in the channel

Cobble placement between Check Dams on the Mason Tunnel Ditch

PM Maintenance Project

Daily Photo Log 7/26/2016

DEQ Contract No: 416011

Overview of site working subgrade construction above weir #15

View of weirs #15 and #16 as they tie into the existing stream channel

PM Maintenance Project

Daily Photo Log 7/27/2016

DEQ Contract No: 416011

Installation of LWD structure above weir #15

View of completed LWD structure and weir #14

PM Maintenance Project

Daily Photo Log 7/27/2016

DEQ Contract No: 416011

Completed tie in for Mason Tunnel Ditch into Stream Channel

View up gradient at completed stream channel subgrade excavation and weirs #13, #12, and #11

PM Maintenance Project

Daily Photo Log 7/28/2016

DEQ Contract No: 416011

Finished sloping for Sediment Storage Area excavation

View of completed weirs #13 and #12 with Stream Cobble placement

PM Maintenance Project

Daily Photo Log 7/28/2016

DEQ Contract No: 416011

Installation of LWD above weir #12

Completed LWD

PM Maintenance Project

Daily Photo Log 7/29/2016

DEQ Contract No: 416011

Removal of the last of the sediment material and grading for floodplain area

View of completed floodplain area west of the Stream Channel alignment

PM Maintenance Project

Daily Photo Log 7/29/2016

DEQ Contract No: 416011

Another view of the completed floodplain area west of the Stream Channel alignment

View of the completed Stream Channel alignment

PM Maintenance Project

Daily Photo Log 8/01/2016

DEQ Contract No: 416011

Completed LWD above weir #

Removal of the Indian Creek Cofferdam

PM Maintenance Project

Daily Photo Log 8/01/2016

DEQ Contract No: 416011

Indian Creek flowing in the Stream Channel

Pooling above Weir Boulders

PM Maintenance Project

Daily Photo Log 8/02/2016

DEQ Contract No: 416011

View of wetland areas and seeps after Indian Creek flow has been released overnight

Up close view of seeps on east side of the Stream Channel alignment

PM Maintenance Project

Daily Photo Log 8/02/2016

DEQ Contract No: 416011

View of flow going sub-surface above weir #5

Mason Tunnel Ditch flow

PM Maintenance Project

Daily Photo Log 8/03/2016

DEQ Contract No: 416011

Placement of Embankment material over Sediment

View of the access road decommissioning and slope prep

PM Maintenance Project

Daily Photo Log 8/03/2016

DEQ Contract No: 416011

Finished slope into the Sediment Removal Area

Excavator working the Embankment pile in the Sediment Storage Area

PM Maintenance Project

Daily Photo Log 9/12/2016

DEQ Contract No: 416011

Gate posts at southern end of Sediment Removal Area

Corner post and braces

PM Maintenance Project

Daily Photo Log 9/12/2016

DEQ Contract No: 416011

Gate and brace posts at the north end of the Sediment Removal Area

Setting corner and brace posts on west side of Sediment Removal Area

PM Maintenance Project

Daily Photo Log 9/14/2016

DEQ Contract No: 416011

Ten cubic inch shrub seedlings for planting in floodplain on Sediment Removal Area

Planting ten cubic inch seedling

PM Maintenance Project

Daily Photo Log 9/14/2016

DEQ Contract No: 416011

Distributing large container snowberry plants on the flood plain of the Sediment Removal Area

Planting snowberry plant on floodplain of Sediment Removal Area

PM Maintenance Project

Daily Photo Log 9/16/2016

DEQ Contract No: 416011

Hydroseeding Sediment Removal Area

Cutting installed on bank of Indian Creek

PM Maintenance Project

Daily Photo Log 9/16/2016

DEQ Contract No: 416011

Installing tree protectors on ten cubic inch plants on the flood plain of the Sediment Removal Area

Tree protectors completed on ten cubic inch plants in floodplain of Sediment Removal Area

PM Maintenance Project

Daily Photo Log 9/19/2016

DEQ Contract No: 416011

Straw Wattle Delivery

Installing straw wattles on Sediment Removal Area

PM Maintenance Project

Daily Photo Log 9/19/2016

DEQ Contract No: 416011

Straw wattle installed on the Sediment Removal Area

Fencing Complete on Sediment Removal Area

APPENDIX K

Map with Post-Construction Photos

80 0 80 160
1"=80'

LEGEND:

- EXISTING CONTOURS
- CREEK
- EDGE OF WATER
- EDGE OF ROAD
- EXISTING CULVERT
- CONSTRUCTION LIMITS

RECORD DRAWINGS:
THE REVISIONS TO THESE CONTRACT DOCUMENTS REFLECT CHANGES IN THE WORK MADE DURING CONSTRUCTION BASED ON CHANGE ORDERS AND DATA FURNISHED BY THE CONTRACTOR. THESE RECORD DRAWINGS DO NOT IMPLY OR WARRANT THAT THE FACILITIES SHOWN ARE "AS-BUILT". FUTURE WORK INVOLVING THESE FACILITIES SHOULD BE SUPPORTED BY ACTUAL FIELD LOCATIONS AND MEASUREMENTS.

RECORD DRAWINGS

Know what's below. Call before you dig.

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No.	REVISION	BY	APP'D	DATE
1	RECORD DRAWINGS	KJ	KH	12-16-16

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

HERRERA

DEQ Montana Department of Environmental Quality Abandoned Mine Lands

MONTANA KEVIN HOUCK 18637 PE LICENSED PROFESSIONAL ENGINEER
12/16/2016

DESIGNED: K. HOUCK	DRAWN: E. MARSHALL
DESIGNED: K. JOHNSON	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

PARK MINE MAINTENANCE PROJECT
BROADWATER COUNTY, MONTANA

POST CONSTRUCTION PHOTOS

DATE: DECEMBER 2016
PROJECT NO: 13-05554-012
DRAWING NO:
SHEET NO: OF 20

Path: O:\proj\Y2000\00-00099-000\Cad\06-03425-060 Park Mine\Miscellaneous\Post_construction_photos.dwg G:\Graphics\Y2013\13-05554-012\Report\Park_Mine_post-construction_photos.ai (02/01/2017)
Plot Date: 12/20/2016 9:15 AM Cad User: Eric Marshall