STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
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COLORADO DIVISION OF RECLAMATION MINING & SAFETY

April 20, 2012

Gayle Lyman
Elam Construction, Inc.
556 Struthers Avenue
Grand Junction, CO
81501

RE: Bunn Ranch Pit, Permit No. M-1980-131, Reclamation Costs Update and Notice of Surety Increase SI-2

Dear Mr. Lyman:

In an effort to ensure the Financial Warranty for the above referenced site adequately reflects the actual current costs of fulfilling the requirements of the approved reclamation plan, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed). ***Therefore, pursuant to Section 34–32.5–117(4) of the Colorado Land Reclamation Act, adequate Financial Warranty must be submitted to the Division within 60 days of the mailing date of this letter.*** The additional amount needs to be accepted prior to **Wednesday, June 20, 2012**. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted.

Staff calculations estimate the cost to reclaim the above referenced site to be *$182,486.00*. This is an increase of ***$134,166.00*** over the *$48,320.00* currently held by the Division. This estimate is based on conditions observed during the March 28, 2012 inspection.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Barbara Coria.

If you require additional information, have questions or concerns, please contact me at the DRMS Grand Junction Field Office.

Sincerely,

Dustin Czapla
Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501
Phone: (970) 243-6299
Fax: (970) 241-1516

Cc:

Enc: Financial Warranty Cost Estimate

COST SUMMARY WORK

Task description: **Reclamation cost review**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-000
User: DMC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Remove office building	DEMOLISH	1	8.00	$13,886.73
02a	Lower water level by 10 feet in pit 1	PUMPING	1	114.68	$5,543.00
02b	DewaterPit 2	PUMPING	1	42.42	$2,050.00
02c	DewaterPit 3	PUMPING	1	70.88	$3,426.00
02d	Lower water level by 10 feet in pit 4	PUMPING	1	25.17	$1,217.00
02e	Lower water level by 10 feet in pit 5	PUMPING	1	25.17	$1,217.00
02f	Dewater Pit 6	PUMPING	1	256.31	$12,387.00
03a	Reduce all slopes to 3H:1V or flatter	DOZER	2	60.80	$24,304.81
04a	Rip compacted stockpile and operation areas	RIPPER	2	13.70	$5,840.00
05a	Transport topsoil from stockpiles	LOADER	2	46.65	$13,131.00
05b	Distribute topsoil	DOZER	2	16.79	$6,714.10
06a	Revegetate affected areas	REVEGE	1	20.00	$19,897.00
07a	Mobilize reclamation crew and equipment	MOBILIZE	1	2.11	$4,920.72
		SUBTOTALS:		**702.68**	**$114,534.36**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$2,313.59
Performance bond:	1.05	Total =	$1,202.61
Job superintendent:	738.89	Total =	$43,816.18
Profit:	10.00	Total =	$11,453.44
		TOTAL O & P =	$58,785.82
		CONTRACT AMOUNT (direct + O & P) =	$173,320.18

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	0.00	Total =	$0.00
Reclamation management and/or administration:	5.00		$8,666.01
CONTINGENCY:	0.00	Total =	$0.00
		TOTAL INDIRECT COST =	$67,951.83

TOTAL BOND AMOUNT (direct + indirect) = $182,486

DEMOLITION WORK

Task description: **Remove office building**

Site: **Bunn Ranch Pit**

Permit Action: 2012 Mar 28 Inspection

Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 01A
Date: 4/19/2012
User: DMC

State: Colorado
County: Moffat

Abbreviation: None
Filename: M131-01a

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Office building	50'L x 30'H x 10'H	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	15,000.00	CF	$1.01	$15,210.00

Job Hours: **8.00**

Subtotal (unadjusted): **$15,210.00**

Total Cost (adjusted for location): **$13,886.73**

PUMPING WORK

Task description: **Lower water level by 10 feet in pit 1**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #:	02A	State:	Colorado	Abbreviation:	None
Date:	4/19/2012	County:	Moffat	Filename:	M131-02a
User:	DMC				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 200M, 10 in.	1
Attachment 1:	Suction pipe - 10 in. diam., 25 ft.	1
Attachment 2:	Discharge pipe - 10 in. D., 25 ft.	2
Labor Unit 1:	Pump operator	1

Horsepower: 70
Shift Basis: 1 per day
Weight: 1.95 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.47	NA
Operating Cost/Hour:	$17.44	100
Operator Cost/Hour:	$19.42	NA
Total Unit Cost/Hour:	$48.33	

Total Fleet Cost/Hour: $48.33

PUMPING QUANTITIES

Initial Pond Volume:	80.00		Conversion factor:	325850.5800
Final Pond Volume:	**26,068,046.40**	gallons		
Total Pond Inflow Surface Area:	30,000	Sq. ft.	Unit inflow rate in gph/sq. ft.:	0.1758
Total Pond Inflow Volume per Hour:	5,274.00	gallons		

Source of estimated volume: Site maps

PUMPING TIME

Maximum Pump Capacity:	200,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	201,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	201,000	gph
Initial Unadjusted Pumping Time:	129.69	hours
Inflow during Initial Pumping:	683,994	gallons
Net Unadjusted Pumping Time:	133.09	Hours
Altitude Adjustment Factor:	0.9400	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	114.69	hours

JOB TIME AND COST

Total job time: **114.69** Hours

Unit cost: $0.000207 /Gallon Total job cost: **$5,543.00**

PUMPING WORK

Task description: **DewaterPit 2**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 02B State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-02b
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 200M, 10 in.	1
Attachment 1:	Suction pipe - 10 in. diam., 25 ft.	1
Attachment 2:	Discharge pipe - 10 in. D., 25 ft.	2
Labor Unit 1:	Pump operator	1

Horsepower: 70
Shift Basis: 1 per day
Weight: 1.95 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.47	NA
Operating Cost/Hour:	$17.44	100
Operator Cost/Hour:	$19.42	NA
Total Unit Cost/Hour:	$48.33	

Total Fleet Cost/Hour: $48.33

PUMPING QUANTITIES

Initial Pond Volume: 30.00
Final Pond Volume: **9,775,517.40** gallons
Total Pond Inflow Surface Area: 14,000 Sq. ft.
Total Pond Inflow Volume per Hour: 2,461.20 gallons

Conversion factor: 325850.5800
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: Site maps

PUMPING TIME

Maximum Pump Capacity:	200,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	201,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	201,000	gph
Initial Unadjusted Pumping Time:	48.63	hours
Inflow during Initial Pumping:	119,699	gallons
Net Unadjusted Pumping Time:	49.23	Hours
Altitude Adjustment Factor:	0.9400	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	42.42	hours

JOB TIME AND COST

Total job time: **42.42** Hours

Unit cost: $0.000207 /Gallon Total job cost: **$2,050.00**

PUMPING WORK

Task description: **DewaterPit 3**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 02C State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-02c
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 200M, 10 in.	1
Attachment 1:	Suction pipe - 10 in. diam., 25 ft.	1
Attachment 2:	Discharge pipe - 10 in. D., 25 ft.	2
Labor Unit 1:	Pump operator	1

Horsepower: 70
Shift Basis: 1 per day
Weight: 1.95 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.47	NA
Operating Cost/Hour:	$17.44	100
Operator Cost/Hour:	$19.42	NA
Total Unit Cost/Hour:	$48.33	

Total Fleet Cost/Hour: $48.33

PUMPING QUANTITIES

Initial Pond Volume: 50.00
Final Pond Volume: **16,292,529.00** gallons
Total Pond Inflow Surface Area: 17,000 Sq. ft.
Total Pond Inflow Volume per Hour: 2,988.60 gallons

Conversion factor: 325850.5800
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: Site maps

PUMPING TIME

Maximum Pump Capacity:	200,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	201,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	201,000	gph
Initial Unadjusted Pumping Time:	81.06	hours
Inflow during Initial Pumping:	242,248	gallons
Net Unadjusted Pumping Time:	82.26	Hours
Altitude Adjustment Factor:	0.9400	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	70.89	hours

JOB TIME AND COST

Total job time: **70.89** Hours

Unit cost: $0.000207 /Gallon Total job cost: **$3,426.00**

PUMPING WORK

Task description: **Lower water level by 10 feet in pit 4**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 02D State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-02d
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 200M, 10 in.	1
Attachment 1:	Suction pipe - 10 in. diam., 25 ft.	1
Attachment 2:	Discharge pipe - 10 in. D., 25 ft.	2
Labor Unit 1:	Pump operator	1

Horsepower: 70
Shift Basis: 1 per day
Weight: 1.95 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.47	NA
Operating Cost/Hour:	$17.44	100
Operator Cost/Hour:	$19.42	NA
Total Unit Cost/Hour:	$48.33	

Total Fleet Cost/Hour: $48.33

PUMPING QUANTITIES

Initial Pond Volume: 18.00
Final Pond Volume: **5,865,310.44** gallons
Total Pond Inflow Surface Area: 1,200 Sq. ft.
Total Pond Inflow Volume per Hour: 210.96 gallons

Conversion factor: 325850.5800
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: Site maps

PUMPING TIME

Maximum Pump Capacity:	200,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	201,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	201,000	gph
Initial Unadjusted Pumping Time:	29.18	hours
Inflow during Initial Pumping:	6,156	gallons
Net Unadjusted Pumping Time:	29.21	Hours
Altitude Adjustment Factor:	0.9400	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	25.17	hours

JOB TIME AND COST

Total job time: **25.17** Hours

Unit cost: $0.000207 /Gallon Total job cost: **$1,217.00**

PUMPING WORK

Task description: **Lower water level by 10 feet in pit 5**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 02E State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-02e
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 200M, 10 in.	1
Attachment 1:	Suction pipe - 10 in. diam., 25 ft.	1
Attachment 2:	Discharge pipe - 10 in. D., 25 ft.	2
Labor Unit 1:	Pump operator	1

Horsepower: 70
Shift Basis: 1 per day
Weight: 1.95 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.47	NA
Operating Cost/Hour:	$17.44	100
Operator Cost/Hour:	$19.42	NA
Total Unit Cost/Hour:	$48.33	

Total Fleet Cost/Hour: $48.33

PUMPING QUANTITIES

Initial Pond Volume: 18.00
Final Pond Volume: **5,865,310.44** gallons
Total Pond Inflow Surface Area: 1,200 Sq. ft.
Total Pond Inflow Volume per Hour: 210.96 gallons

Conversion factor: 325850.5800
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: Site maps

PUMPING TIME

Maximum Pump Capacity:	200,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	201,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	201,000	gph
Initial Unadjusted Pumping Time:	29.18	hours
Inflow during Initial Pumping:	6,156	gallons
Net Unadjusted Pumping Time:	29.21	Hours
Altitude Adjustment Factor:	0.9400	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	25.17	hours

JOB TIME AND COST

Total job time: **25.17** Hours

Unit cost: $0.000207 /Gallon Total job cost: **$1,217.00**

PUMPING WORK

Task description: **Dewater Pit 6**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #:	02F	State:	Colorado	Abbreviation:	None
Date:	4/19/2012	County:	Moffat	Filename:	M131-02f
User:	DMC				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 200M, 10 in.	1
Attachment 1:	Suction pipe - 10 in. diam., 25 ft.	1
Attachment 2:	Discharge pipe - 10 in. D., 25 ft.	2
Labor Unit 1:	Pump operator	1

Horsepower: 70
Shift Basis: 1 per day
Weight: 1.95 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.47	NA
Operating Cost/Hour:	$17.44	100
Operator Cost/Hour:	$19.42	NA
Total Unit Cost/Hour:	$48.33	

Total Fleet Cost/Hour: $48.33

PUMPING QUANTITIES

Initial Pond Volume:	183.00		Conversion factor:	325850.5800
Final Pond Volume:	**59,630,656.14**	gallons		
Total Pond Inflow Surface Area:	3,000	Sq. ft.	Unit inflow rate in gph/sq. ft.:	0.1758
Total Pond Inflow Volume per Hour:	527.40	gallons		

Source of estimated volume: Site maps

PUMPING TIME

Maximum Pump Capacity:	200,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	201,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	201,000	gph
Initial Unadjusted Pumping Time:	296.67	hours
Inflow during Initial Pumping:	156,464	gallons
Net Unadjusted Pumping Time:	297.45	Hours
Altitude Adjustment Factor:	0.9400	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	256.31	hours

JOB TIME AND COST

Total job time: **256.31** Hours

Unit cost: $0.000207 /Gallon Total job cost: **$12,387.00**

BULLDOZER WORK

Task description: **Reduce all slopes to 3H:1V or flatter**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 03A State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-03a
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8U
Horsepower: 310
Blade Type: Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$58.56	NA
Operating Cost/Hour:	$102.84	100
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$38.49	NA

Total unit Cost/Hour: $199.89
Total Fleet Cost/Hour: **$399.77**

MATERIAL QUANTITIES

Initial Volume: 59,219
Swell factor: 1.060
Loose volume: **62,772** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 1,627.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 6,200 feet

Material weight: 3,250 lbs/LCY

Weight description: Gravel - Pitrun

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.708	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3173

Adjusted unit production: 516.25 LCY/hr
Adjusted fleet production: **1032.5** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.387/LCY

Total job time: **60.80** Hours
Total job cost: **$24,304.81**

BULLDOZER RIPPING WORK

Task description: **Rip compacted stockpile and operation areas**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-04a
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8U Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$65.28	NA
Operating Cost/Hour:	$102.84	100
Ripper Operating Cost/Hour:	$6.49	100
Operator Cost/Hour:	$38.49	NA
Total Unit Cost/Hour:	$213.10	
Total Fleet Cost/Hour:	**$426.20**	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 16.00 acres Rip Depth (ft): 2.00 Volume: 51,627 BCY or CCY

Source of estimated quantity: Site maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	2.56	mph
Average Ripping Width:	7.08	degrees
Average Ripping Length:	100.00	feet
Average Dozer Speed:	88.00	feet
Average Maneuver Time:	0.25	feet
Production per unit area:	0.703	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.703	Acres/hr
Site Altitude:	6,200	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.58 Acres/hr
Adjusted Hourly Fleet Production: **1.17** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **13.70** Hours

Unit cost: $364.994 Per acre Total job cost: **$5,840.00**

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **Transport topsoil from stockpiles**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 05A State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-05a
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 972H Horsepower: 287
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$36.70	NA
Operating Cost/Hour:	$65.54	100
Operator Cost/Hour:	$38.49	NA
Total Unit Cost/Hour:	$140.73	
Total Fleet Cost/Hour:	$281.46	

MATERIAL QUANTITIES

Initial volume: 26,888 CCY Swell factor: 1.000
Loose volume: **26,888** LCY

Source of estimated volume: Pond banks and operations area covered with 10" TS
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.020	minutes
	Adjusted Basic Cycle Time:	0.505	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0
Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	250	0.00	5.00	5.00	0.2305	(Cat HB)
Return Route:	250	0.00	5.00	5.00	0.2080	(Cat HB)

Total Travel Time:	0.4385	minutes
Total Cycle Time:	**0.9435**	minutes

Load Bucket Capacity

Rated Capacity:	5.60	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - uniform aggregates to 1/8" (95-100%) 0.975
Adjusted Capacity:	**5.46**	LCY

Job Condition Correction Factors
Site Altitude: 6200 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	347.20	LCY/Hour
Adjusted Hourly Unit Production:	288.18	LCY/Hour
Adjusted Hourly Fleet Production:	**576.36**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	**46.65**	Hours
Unit cost:	$0.488	/LCY	Total job cost:	**$13,131.00**	

BULLDOZER WORK

Task description: **Distribute topsoil**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #:	05B	State:	Colorado	Abbreviation:	None
Date:	4/19/2012	County:	Moffat	Filename:	M131-05b
User:	DMC				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D8T - 8U
Horsepower:	310
Blade Type:	Universal
Attachment:	NA
Shift Basis:	1 per day
Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$58.56	NA
Operating Cost/Hour:	$102.84	100
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$38.49	NA

Total unit Cost/Hour: $199.89
Total Fleet Cost/Hour: **$399.77**

MATERIAL QUANTITIES

Initial Volume:	26,889
Swell factor:	1.000
Loose volume:	**26,889** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 931.6 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,200 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor

		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 800.52 LCY/hr
Adjusted fleet production: **1601.04** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.250/LCY

Total job time: **16.79** Hours
Total job cost: **$6,714.10**

REVEGETATION WORK

Task description: **Revegetate affected areas**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 06A State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-06a
User: DMC

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$86.71
Weed control spraying (MEANS 31 31 16.13 3100)	$145.20
Total Tilling Cost/Acre	**$231.91**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	0.80	3.86	$2.00
Orchardgrass - Paiute	0.60	7.44	$1.27
Smooth Brome - Lincoln	7.80	25.96	$10.14
Timothy, Alpine - Native	0.15	4.48	$3.98
Totals Seed Mix	9.35	41.74	**$17.38**

Application

Description	Cost /Acre
Drill seeding {DMG}	$90.11

Total Seed Application Cost/Acre	**$90.11**

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 2.0 pt/ac	1.00	ACRE	$2.40	$2.40
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	$164.00	$328.00
			Total Mulch Materials Cost/Acre	**$330.40**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$65.89
Weed spray, truck, aquatic area, nox. [DMG]	$60.19
Total Mulch Application Cost/Acre	**$126.08**

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					$
				Totals Nursery Stock Cost / Acre	**$0.00**

JOB TIME AND COST

No. of Acres: 20 Cost /Acre: $795.88
Estimated Failure Rate: 25% Cost /Acre*: $795.88
*Selected Replanting Work Items: TILLING, SEEDING, MULCHING

Initial Job Cost: **$15,917.60**
Reseeding Job Cost: **$3,979.40**
Total Job Cost: **$19,897.00**
Job Hours: **20.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilize reclamation crew and equipment**

Site: **Bunn Ranch Pit** Permit Action: 2012 Mar 28 Inspection Permit/Job#: M1980131

PROJECT IDENTIFICATION

Task #: 07A State: Colorado Abbreviation: None
Date: 4/19/2012 County: Moffat Filename: M131-07a
User: DMC

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	$16.63	$18.37	$22.33
Operating Cost/Hour:	$44.38	$46.13	$50.07
Operator Cost/Hour:	$27.66	$27.66	$27.66
Helper Cost/Hour:	$0.00	$25.39	$25.39
Total Unit Cost/Hour:	$88.67	$117.55	$125.45

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8U	53.70	$65.28	$125.45	2	$381.46	$250.90	$500.00
CAT 972H	28.00	$36.70	$117.55	2	$308.50	$235.10	$500.00
Centrifugal pump - 200M, 10 in.	1.95	$7.66	$88.67	1	$96.33	$88.67	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$39.59	$88.67	1	$128.26	$88.67	$250.00
Subtotals:					**$914.55**	**$663.34**	**$1,500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	$25.30	1	$25.30	$25.30
Subtotals:			**$25.30**	**$25.30**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	CRAIG	
Total one-way travel distance:	1.00	miles
Average Travel Speed:	35.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$4,919.27	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$1.45	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.03	0.03
Return Time (Hours):	0.03	0.03
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.06	0.06

JOB TIME AND COST

Total job time:	**2.11**	Hours
Total job cost:	**$4,920.72**	

Notes

Pit 1
Though vegetation is established on much of the slopes, the slopes have not yet been graded to the required 3H:1V. The average slope grade around this pit appeared to be approximately 2H:1V. The pit perimeter is approximately 3,000 lft. Topsoil was stockpiled along the west side of this pit.

Pit 2
Average grade of the slopes around this pit appeared to be approximately 1H:1V. The pit perimeter is approximately 1,400 lft. The west and south slopes, approximately 600 lft., will need to be backfilled because of their close proximity to the Ana Branch. The north and east slopes could be cut and filled. A topsoil stockpile was located on the west side of this pit.

Pit 3
Average grade of the slopes around this pit appeared to be approximately 1H:1V. The north slope will need to be backfilled because of the close proximity to the permit boundary. The east and south slope will also need to be backfilled because of their close proximity to the Ana Branch. The west slope could be cut and filled. The pit perimeter is approximately 1,700 lft. The north, east and south slopes requiring backfilling are approximately 1,100 lft. Some topsoil was located along the west side of this pit. Any additional topsoil needed could come from the stockpile located near Pit 2.

Pit 4
All but the east bank were graded to 3H:1V or less and well vegetated. The east bank, approximately 350 lft., will require some minor grading from approximately 2H:1V to 3H:1V.

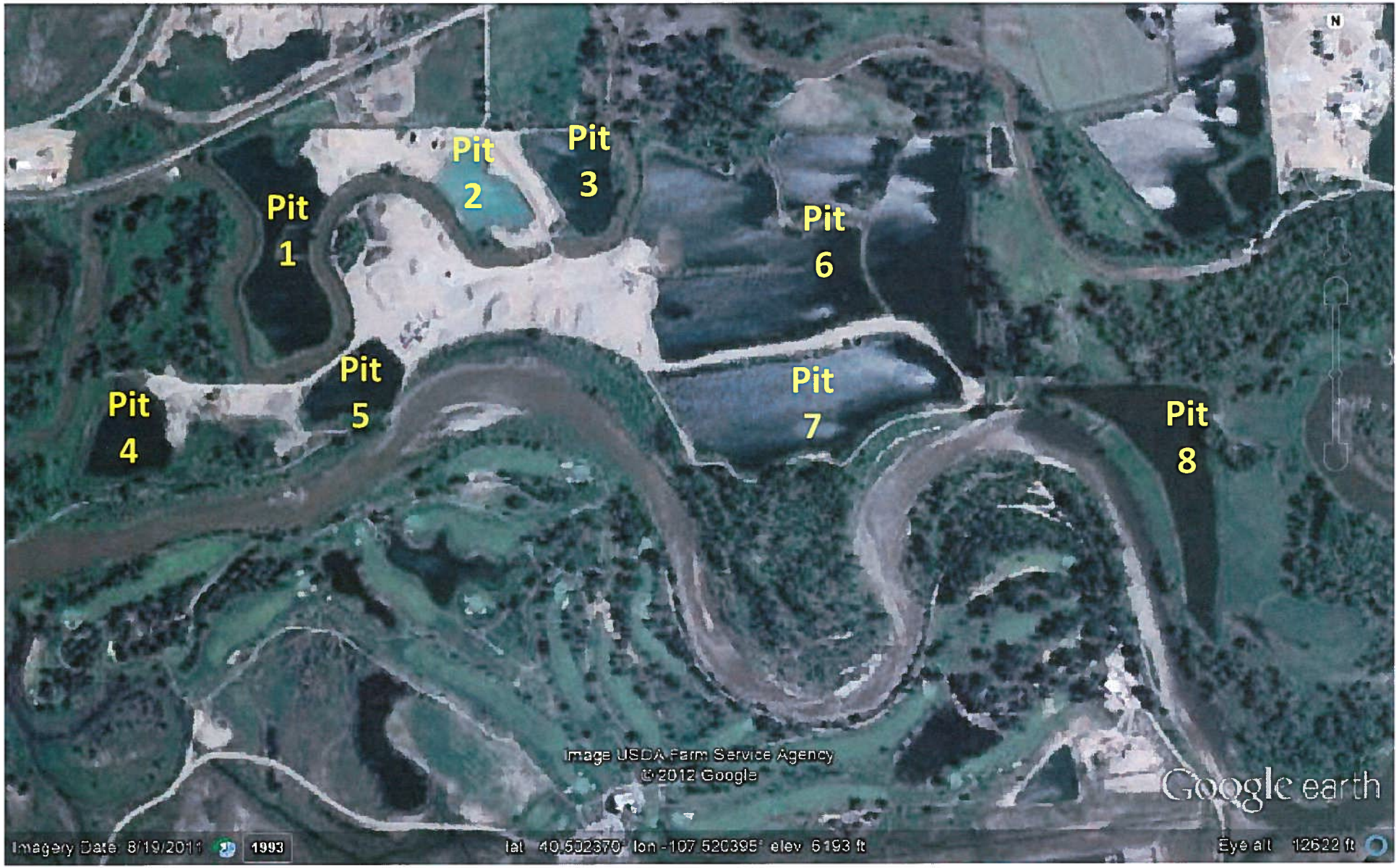
Pit 5
The west and south pit banks were graded to 3H:1V or less and well vegetated. The north and east banks will require some minor grading from approximately 2H:1V to 3H:1V. The north slope, approximately 450 lft., will need to be backfilled in order to maintain the buffer between the Ana Branch. The east slope, approximately 200 lft., could be cut and filled.

Pit 6
The west and northwest pit banks appeared to be graded to 3H:1V or less and well vegetated. A portion of the northeast bank and much of the east bank were near vertical, approximately 1,600 lft. These banks are close to the permit boundary, so they will require backfilling instead of cut and fill. The south bank along the road, roughly 1,700 lft., was approximately 2H:1V. This slope will require backfilling as well so as not to remove the road area between pits 6 and 7. All slopes will need to be reduced to 3H:1V or flatter.

Pits 7-8 appeared adequately reclaimed.

Operations and stockpile areas
An office building will need to be removed. Approximate dimensions = (30'W x 50'L x 10'H).

Approximately 16 acres will need to be ripped and topsoiled.


Pit 1
Pit 2
Pit 3
Pit 4
Pit 5
Pit 6
Pit 7
Pit 8
N
Image USDA Farm Service Agency
© 2012 Google
Google earth
Imagery Date: 8/19/2011
1993
lat 40.502370° lon -107.520395° elev 6193 ft
Eye alt 12622 ft

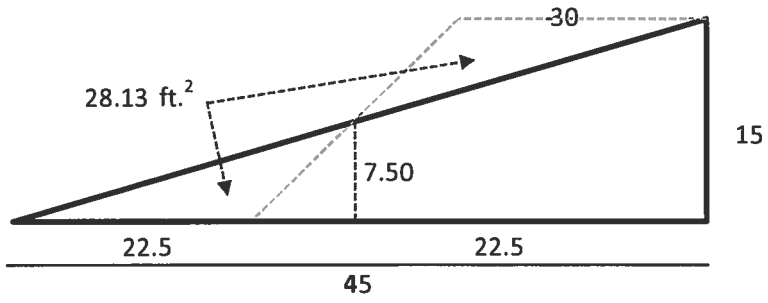
Highwall reduction - cut and fill

Pit 1

Highwall Height (ft.)		15.0	
Length of Highwall (lft.)		3000	
-------	Initial Slope	2.0	H:1V
———	Desired Slope	3	H:1V
Volume of material to be moved ($ft.^3$)		**84,375**	
Volume of material to be moved ($yd.^3$)		**3,125**	

All dimensions measured in feet

Drawing not to scale

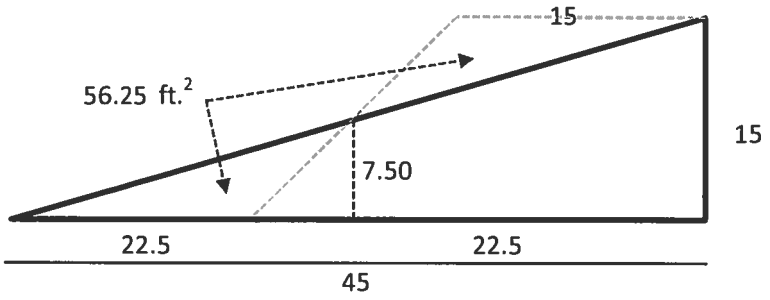


Highwall reduction - cut and fill

Pit 2 N + E SLOPES

	Highwall Height (ft.)	15.0	
	Length of Highwall (lft.)	800	
-------	Initial Slope	1.0	H:1V
———	Desired Slope	3	H:1V
	Volume of material to be moved ($ft.^3$)	**45,000**	
	Volume of material to be moved ($yd.^3$)	**1,667**	

All dimensions measured in feet
Drawing not to scale



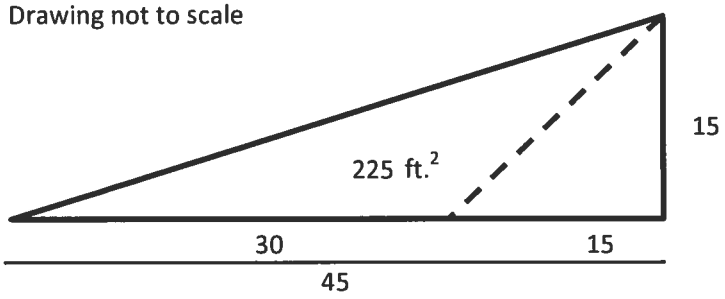
Highwall reduction - backfill

Pit 2 S+W Slopes

Highwall Height (ft.)	15.00	
Length of Highwall (lft.)	600.00	
- - - - Initial Slope	1.00	H:1V
——— Desired Slope	3.00	H:1V
Volume of material to be moved ($ft.^3$)	**135,000**	
Volume of material to be moved ($yd.^3$)	**5,000**	

All dimensions measured in feet

Drawing not to scale

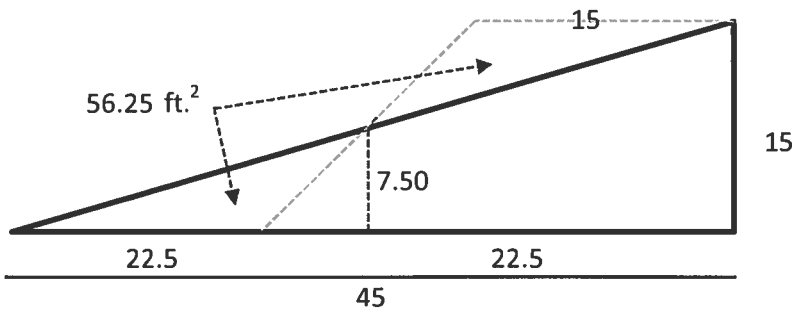


Highwall reduction - cut and fill

Pit 3 WEST SLOPE

Highwall Height (ft.)	15.0	
Length of Highwall (lft.)	600	
------- Initial Slope	1.0	H:1V
——— Desired Slope	3	H:1V
Volume of material to be moved ($ft.^3$)	**33,750**	
Volume of material to be moved ($yd.^3$)	**1,250**	

All dimensions measured in feet
Drawing not to scale

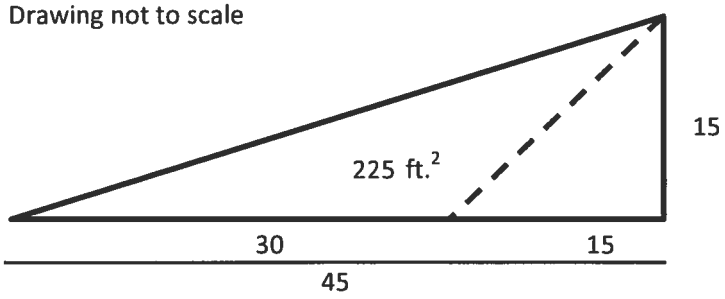


Highwall reduction - backfill

PIT 3 N, E, S SLOPES

Highwall Height (ft.)	15.00	
Length of Highwall (lft.)	1100.00	
- - - - Initial Slope	1.00	H:1V
——— Desired Slope	3.00	H:1V
Volume of material to be moved ($ft.^3$)	**247,500**	
Volume of material to be moved ($yd.^3$)	**9,167**	

All dimensions measured in feet
Drawing not to scale



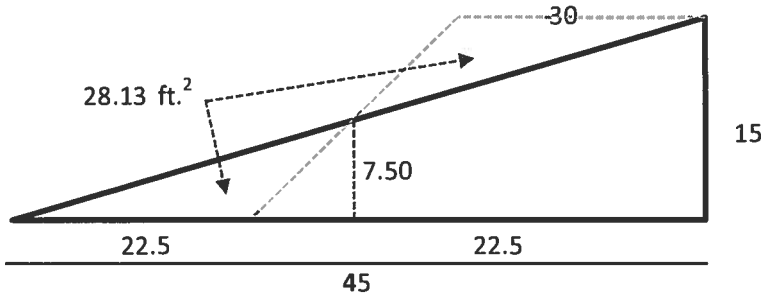
Highwall reduction - cut and fill

Pit 4

Highwall Height (ft.)	15.0	
Length of Highwall (lft.)	350	
------- Initial Slope	2.0	H:1V
——— Desired Slope	3	H:1V
Volume of material to be moved ($ft.^3$)	**9,844**	
Volume of material to be moved ($yd.^3$)	**365**	

All dimensions measured in feet

Drawing not to scale

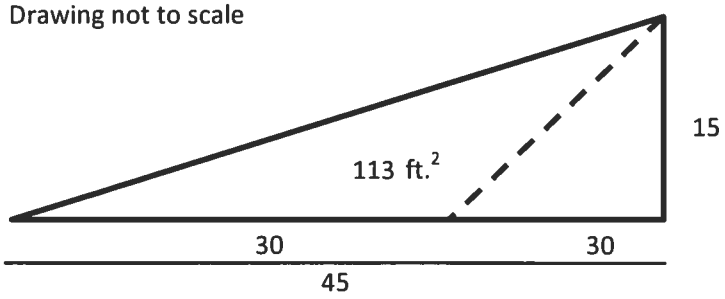


Highwall reduction - backfill

PIT 5 NORTH SLOPE ADJACENT TO ROAD

Highwall Height (ft.)	15.00	
Length of Highwall (lft.)	450.00	
- - - - Initial Slope	2.00	H:1V
——— Desired Slope	3.00	H:1V
Volume of material to be moved ($ft.^3$)	**50,625**	
Volume of material to be moved ($yd.^3$)	**1,875**	

All dimensions measured in feet
Drawing not to scale

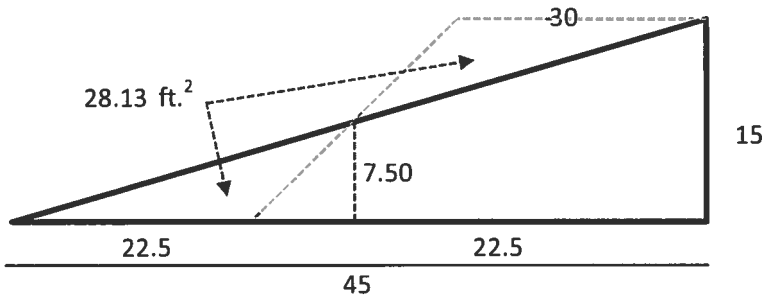


Highwall reduction - cut and fill

Pit 5 EAST SLOPE

	Highwall Height (ft.)	15.0	
	Length of Highwall (lft.)	200	
-------	Initial Slope	2.0	H:1V
———	Desired Slope	3	H:1V
	Volume of material to be moved ($ft.^3$)	**5,625**	
	Volume of material to be moved ($yd.^3$)	**208**	

All dimensions measured in feet
Drawing not to scale



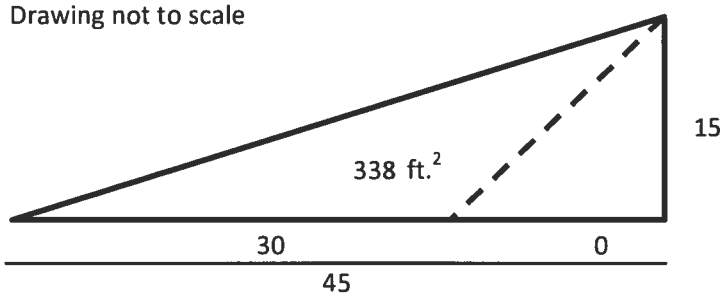
Highwall reduction - backfill

PIT 6 N + E VERTICAL SLOPES

Highwall Height (ft.)	15.00	
Length of Highwall (lft.)	1600.00	
- - - - Initial Slope	0.00	H:1V
——— Desired Slope	3.00	H:1V
Volume of material to be moved ($ft.^3$)	**540,000**	
Volume of material to be moved ($yd.^3$)	**20,000**	

All dimensions measured in feet

Drawing not to scale



Highwall reduction - backfill

PIT 6 ADJACENT TO ROAD

Highwall Height (ft.)	15.00	
Length of Highwall (lft.)	1700.00	
- - - - Initial Slope	2.00	H:1V
——— Desired Slope	3.00	H:1V
Volume of material to be moved ($ft.^3$)	**191,250**	
Volume of material to be moved ($yd.^3$)	**7,083**	

All dimensions measured in feet

Drawing not to scale