

## COST SUMMARY WORK

Task description: Cost Summary

Site: Rex Quarry - Sec 36 Permit Action: 2017 Estimate Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None  
Date: 04/26/2018 County: Larimer Filename: M304-000  
User: JLE

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill and Grading	DOZER	3	250.34	\$180,986.00
002	Rip AM02 Access Road	RIPPER	3	0.47	\$353.00
003	Grade AM02 Road	DOZER	2	21.84	\$10,529.00
004	Revegetation of Affected Land	REVEGE	1	73.06	\$37,750.00
006	Mobilization of Equipment	MOBILIZE	1	3.45	\$5,557.00
007	Structure Demolition	DEMOLISH	1	1,809.72	\$225,915.50
<b><u>SUBTOTALS:</u></b>				<b>2158.88</b>	<b>\$461,091</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$9,314.04
Performance bond:	1.05	Total =	\$4,841.46
Job superintendent:	1,079.44	Total =	\$78,853.09
Profit:	10.00	Total =	\$46,109.10

TOTAL O & P = \$139,117.69

CONTRACT AMOUNT (direct + O & P) = \$600,208.69

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>0.00</u>	Total =	<u>0.00</u>
Engineering work and/or contract/bid preparation:	<u>4.25</u>	Total =	<u>\$25,508.87</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$30,010.43</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$194,636.99

**TOTAL BOND AMOUNT (direct + indirect) = \$655,727.99**

## BULLDOZER WORK

Task description: Backfill and Grading

Site: Rex Quarry - Sec 36

Permit Action: 2017 Estimate

Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 11/15/2017

County: Larimer

Filename: M304-001

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: 3-shank ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper own. Cost/Hour:	\$10.94	NA
Ripper op. Cost/Hour:	\$1.71	25
Operator Cost/Hour:	\$40.52	NA
Total unit Cost/Hour:	\$240.99	
Total Fleet Cost/Hour:	<b>\$722.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 319,813

Swell factor: 1.000

Loose volume: **319,813** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 150 feet

Unadjusted hourly  
production: 910.5 LCY/hr

Materials consistency  
description: Rock, avg. ripped or blasted 0.7

Average push  
gradient: -20 %

Average site altitude: 6,100 feet

Material weight: 3,300 lbs/LCY

Weight description: Decomposed rock - 75% Rock, 25% Earth

#### Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.700	(CAT HB)

Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4677

Adjusted unit  
production: 425.84 LCY/hr

Adjusted fleet  
production: **1277.52** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$0.566/LCY

Total job time: **250.34** Hours

Total job cost: **\$180,986**

## BULLDOZER RIPPING WORK

Task description: Rip AM02 Access Road

Site: Rex Quarry - Sec 36

Permit Action: 2017 Estimate

Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 11/15/2017

County: Larimer

Filename: M304-002

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper Ownership Cost/Hour:	\$10.94	NA
Ripper Operating Cost/Hour:	\$6.82	100
Operator Cost/Hour:	\$40.52	NA
Total Unit Cost/Hour:	\$246.10	
Total Fleet Cost/Hour:	<b>\$738.31</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 1.06 acres

Rip Depth (ft): 1.00

Volume: 1,710

BCY or CCY

Source of estimated quantity: DRMS Estimate

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth:	<u>2.63</u>	mph
Average Ripping Width:	<u>7.67</u>	degrees
Average Ripping Length:	<u>500.00</u>	feet
Average Dozer Speed:	<u>88.00</u>	feet
Average Maneuver Time:	<u>0.25</u>	feet
Production per unit area:	<u>0.891</u>	acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.891 Acres/hr

Site Altitude: 6,100 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.74 Acres/hr

Adjusted Hourly Fleet Production: 2.22 Acres/hr

### JOB TIME AND COST

Fleet size: 3

Grader(s)

Total job time: 0.48

Hours

Unit cost: \$332.960

Per acre

Total job cost: \$353

## BULLDOZER WORK

Task description: Grade AM02 Road

Site: Rex Quarry - Sec 36

Permit Action: 2017 Estimate

Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 11/15/2017

County: Larimer

Filename: M304-003

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: 3-shank ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper own. Cost/Hour:	\$10.94	NA
Ripper op. Cost/Hour:	\$1.71	25
Operator Cost/Hour:	\$40.52	NA

Total unit Cost/Hour: \$240.99

Total Fleet Cost/Hour: **\$481.97**

### MATERIAL QUANTITIES

Initial Volume: 50,908

Swell factor: 1.000

Loose volume: **50,908** 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: 2,110.5 LCY/hr

Materials consistency  
description: Compacted fill or embankment 0.9

Average push  
gradient: 0 %

Average site altitude: 6,100 feet

Material weight: 2,100 lbs/LCY

Weight description: Earth - Loam

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:	0.900	(SSD-FC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5521

Adjusted unit  
production: 1,165.21 LCY/hr

Adjusted fleet  
production: **2330.42** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.207/LCY

Total job time: **21.84** Hours

Total job cost: **\$10,529**

## REVEGETATION WORK

Task description: Revegetation of Affected Land

Site: Rex Quarry - Sec 36

Permit Action: 2017 Estimate

Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 11/15/2017

County: Larimer

Filename: M304-004

User: JLE

Agency or organization name: DRMS

### FERTILIZING

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$0.00</b>

#### Application

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

### TILLING

Description	Cost /Acre
	\$
<b>Total Tilling Cost/Acre</b>	<b>\$0.00</b>

### SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Big Bluestem - Kaw	0.50	1.49	\$5.71
Switchgrass - Blackwell	0.20	1.79	\$1.92
Bluebunch Wheatgrass - Secar	0.90	2.89	\$6.90
Blue Grama - Native	1.00	16.32	\$14.50
Indian Ricegrass - Native	0.20	0.65	\$1.40
Little Bluestem - Pastura	1.40	8.36	\$23.56
Sideoats Grama - Vaughn	1.20	3.94	\$12.00
White Sweet Clover	1.50	8.95	\$6.20
Sorghum, Hybr. Frg. - Bundle King IV	10.00	5.74	\$7.30
Mahogany, Mountain	0.50	0.68	\$18.41
Needlegrass, Green - Lodorm	0.50	2.08	\$2.44

Western Wheatgrass - Rosanna	4.80	12.12	\$38.78
Flax, Lewis Blue	0.50	3.32	\$8.25
Sunflower (or daisy), Oxe-eye	1.00	2.79	\$34.00
<b>Totals Seed Mix</b>	24.20	71.11	<b>\$181.36</b>

#### **Application**

<b>Description</b>	<b>Cost /Acre</b>
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

### **MULCHING and MISCELLANEOUS**

#### **Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
			\$	\$
<b>Total Mulch Materials Cost/Acre</b>				<b>\$0.00</b>

#### **Application**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</b>

### **NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

### **JOB TIME AND COST**

No. of Acres:	73.06	Cost /Acre:	\$413.36
Estimated Failure Rate:	25%	Cost /Acre*:	\$413.36
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	<b>\$30,200.08</b>
Reseeding Job Cost:	<b>\$7,550.02</b>
Total Job Cost:	<b>\$37,750</b>
Job Hours:	<b>73.06</b>



## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilization of Equipment

Site: Rex Quarry - Sec 36

Permit Action: 2017 Estimate

Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 006

State: Colorado

Abbreviation: None

Date: 11/15/2017

County: Larimer

Filename: M304-006

User: JLE

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 D9T - 9SU	66.13	\$111.53	\$125.45	3	\$710.94	\$376.35	\$750.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	2	\$201.78	\$177.34	\$500.00

Subtotals: **\$912.72** **\$553.69** **\$1,250.00**

### ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$77.71	1	\$77.71	\$77.71
Fuel Tanker, 6x4, 210 HP	\$74.87	2	\$149.74	\$149.74

Subtotals: **\$227.45** **\$227.45**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	FORT COLLINS	
Total one-way travel distance:	20.00	miles
Average Travel Speed:	55.00	mph
Total Non-Roadable Mob/Demob Cost *		
'* two round trips with haul rig:	\$5,391.92	
Total Roadable Mob/Demob Cost **		
** one round trip, no haul rig:	\$165.42	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.36	0.36
Return Time (Hours):	0.36	0.36
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.73	0.73

**JOB TIME AND COST**

Total job time:	3.45	Hours
Total job cost:	\$5,557	

## DEMOLITION WORK

Task description: Structure Demolition

Site: Rex Quarry - Sec 36

Permit Action: 2017 Estimate

Permit/Job#: M1977304

### PROJECT IDENTIFICATION

Task #: 007

State: Colorado

Abbreviation: None

Date: 4/26/2018

County: Larimer

Filename: M304-007

User: JLE

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 94.70 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
FG Plant (Section 1)	60'x26'x48'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	74,880.00	CF	\$0.21	\$15,799.68
FG Plant (Section 2)	80'x36'x70'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	201,600.00	CF	\$0.21	\$42,537.60
FG Plant (Section 3)	90'x28'x48'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	120,960.00	CF	\$0.21	\$25,522.56
FG Plant Building	196'x42'x25'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	205,800.00	CF	\$0.21	\$43,423.80
Compressor Room	35'x11'x10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,850.00	CF	\$0.19	\$712.25
Shop Bldg 1	70'x25'x15'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	26,250.00	CF	\$0.19	\$4,856.25
Shop Bldg 2	60'x35'x10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	21,000.00	CF	\$0.19	\$3,885.00
Shop Bldg 3	60'x15'x10'	Bldg. (SN) demo./on-site	9,000.00	CF	\$0.19	\$1,665.00

		disposal in existing pit or cut - Max. 10,000 ft. haul				
Office	60'x50'x10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	30,000.00	CF	\$0.19	\$5,550.00
Crushing Plant	43'x25'x10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	10,750.00	CF	\$0.19	\$1,988.75
FG Plant Floor	120'x95' - 8"	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	11,400.00	SF	\$0.84	\$9,519.00
FG Plant Bldg Floor	196'x42' - 6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	8,232.00	SF	\$0.63	\$5,153.23
Crushing Plant Floor	43'x25' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,075.00	SF	\$0.42	\$448.28
Compressor Room Floor	35'x11' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	385.00	SF	\$0.42	\$160.55
Office Floor	60'x50' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	3,000.00	SF	\$0.42	\$1,251.00
Shop Building 1 Floor	70'x25' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,750.00	SF	\$0.42	\$729.75
Shop Building 2 Floor	60'x35' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	2,100.00	SF	\$0.42	\$875.70
Shop Building 3 Floor	60'x15' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	900.00	SF	\$0.42	\$375.30
FG Plant Footing/Foundations	120'x95'x6	Slab on grade, concrete, demolition only	286.70	CY	\$151.00	\$43,291.70

		- Rod reinforcing				
FG Plant Bldg Footing/Foundations	196'x42'x2'	Slab on grade, concrete, demolition only - Rod reinforcing	35.26	CY	\$151.00	\$5,324.26
Compressor Room Footing/Foundations	35'x11x2'	Slab on grade, concrete, demolition only - Rod reinforcing	6.82	CY	\$151.00	\$1,029.07
Shop Bldg 1 Footing/Foundation	70'x25'x2	Slab on grade, concrete, demolition only - Rod reinforcing	14.07	CY	\$151.00	\$2,125.17
Shop Bldg 2 Footing/Foundation	60'x35'x2	Slab on grade, concrete, demolition only - Rod reinforcing	14.07	CY	\$151.00	\$2,124.57
Shop Bldg 3 Footing/Foundation	60'x15'x2'	Slab on grade, concrete, demolition only - Rod reinforcing	11.11	CY	\$151.00	\$1,677.76
Office Footing/Foundation	60'x50'x2'	Slab on grade, concrete, demolition only - Rod reinforcing	16.30	CY	\$151.00	\$2,460.70
Crushing Plant Footing/Foundation	43'x25'x2'	Slab on grade, concrete, demolition only - Rod reinforcing	10.07	CY	\$151.00	\$1,521.17
Office Walls	60'x50'x8" - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	880.00	SF	\$1.92	\$1,689.60
Shop Bldg 1 Wall	70'x25'x15' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,425.00	SF	\$1.92	\$2,736.00
Shop Bldg 2 Walls	60'x35'x15' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,425.00	SF	\$1.92	\$2,736.00
Shop Bldg 3 Walls	60'x15'x8' - 4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	600.00	SF	\$1.92	\$1,152.00
Compressor Room Walls	35'x11'x8' - 4"	Demo. and on-site disposal in existing pit, 4	368.00	SF	\$1.92	\$706.56

		in. thick - Max. 10,000 ft. haul				
FG Plant Building Walls	196'x42'x20' - 6"	Demo. and on- site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	4,760.00	SF	\$0.63	\$2,979.76
Crushing Plant Walls	43'x25'x10' - 4"	Demo. and on- site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	680.00	SF	\$1.92	\$1,305.60
Crushing Plant Conveyor	478'x3x.5'	Conveyor, demolition, on- site disposal, existing pit, 10,000 ft. haul	717.00	CF	\$0.21	\$150.57
Crushing Plant Conveyor	171'x2.5x.5	Conveyor, demolition, on- site disposal, existing pit, 10,000 ft. haul	214.00	CF	\$0.21	\$44.94
AST Tank	16200 Gal	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.00	\$1,050.00

<b>Job Hours:</b>	<u>1809.72</u>	<b>Subtotal</b>	<b>(unadjusted):</b>	<u>\$238,559.13</u>	<b>Total Cost</b>	<b>(adjusted for</b>	<b>location):</b>	<u>\$225,915.50</u>
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