

COST SUMMARY WORK

Task description: Cost Summary – Amendment 4

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4000

State: Colorado

Abbreviation: None

Date: 3/5/2020

County: El Paso

Filename: M211-4000

User: TC1

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
4010	Demo Maintenance Shop, Office & Outbuilding	DEMOLISH	1	40.00	\$33,989
4B10	Drill/blast granite for backfill (\$0.66/ton or \$1.40/CY)	NA	1	49.00	\$345,733
4B20	Rip weathered granite for backfill	RIPPER	2	241.20	\$141,304
4B30	Load/Haul/Dump Ripped & Blasted Material	TRUCK1	1	1,339.12	\$982,390
4B31	Push ripped/blasted material transported w/ Loader & Trucks	DOZER	2	511.70	\$273,564
4CH0	Construct Riprap Ditches	POSTMINING	1	4,048.67	\$1,657,488
4CH1	Grade 11,750 ft of Terrace Channel	GRADER	1	4.35	\$493
4E20	Load/Haul/Dump Lower Borrow Area Material	TRUCK1	1	5,839.11	\$4,283,630
4EP0	Install erosion control blankets on steep slopes	REVEGE	1	100.00	\$542,264
4EP1	Apply Mulch on flatter slopes	REVEGE	1	90.00	\$65,394
4GF0	Revegetate 32.18 USFS acres (excl. trees & mulch)	REVEGE	1	90.00	\$106,705
4GP0	Revegetate 106.92 private acres (excl. trees & mulch)	REVEGE	1	300.00	\$270,257
4M00	MOB / DEMOB	MOBILIZE	1	13.00	\$33,821
4RD2	Load/Haul/Dump 2500 tons of gravel	TRUCK1	1	3.55	\$39,465
4SP0	Private area to be planted w/ shrubs	REVEGE	1	40.00	\$52,710
4TF0	USFS area to be planted w/ trees & watered sep.	REVEGE	1	20.00	\$4,635
4TP0	Private area to be planted w/ trees & watered sep.	REVEGE	1	25.00	\$7,540
4TS0	Import 54,763 CY Topsoil @ \$20/CY	NA	1	40.00	\$1,095,260
4TS1	Place topsoil in USFS area from North Stockpile	TRUCK1	1	27.51	\$23,331
4TS2	Place topsoil in private area from various stockpiles	TRUCK1	1	134.76	\$155,483
4TW0	Purchase water for trees (5 gal/tree @ \$2.50/gal x 2 season)	NA	1	20.00	\$82,900
4TW1	Water trees on USFS land	SITEMAINTENANCE	1	100.00	\$1,779
4TW2	Water trees on private land	SITEMAINTENANCE	1	100.00	\$2,176
<u>SUBTOTALS:</u>				13176.97	\$10,202,311

INDIRECT COSTS**OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	<u>\$206,087</u>
Performance bond:	1.05	Total =	<u>\$107,124</u>
Job superintendent:	6,343.67	Total =	<u>\$440,187</u>
Profit:	10.00	Total =	<u>\$1,020,231</u>
		TOTAL O & P =	<u>\$1,773,629</u>
		CONTRACT AMOUNT (direct + O & P) =	<u>\$11,975,940</u>

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>\$0</u>	Total =	<u>\$0</u>
Engineering work and/or contract/bid preparation:	<u>4.25</u>	Total =	<u>\$508,977</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$598,797</u>
CONTINGENCY: 3.00		Total =	<u>\$306,069</u>

TOTAL INDIRECT COST = \$3,187,473

TOTAL BOND AMOUNT (direct + indirect) = \$13,389,784

DEMOLITION WORK

Task description: Demo Maintenance Shop, Office & Outbuilding

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4010

State: Colorado

Abbreviation: None

Date: 3/5/2020 1:05:51 PM

County: El Paso

Filename: M211-4010

User: TC1

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 93.10 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Maintenance Shop	18' x 80' x 80'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	115,200.00	CF	\$0.18	\$20,966.40
Maintenance Shop Floor	0.5' x 80' x 80'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 200 ft. push	6,400.00	SF	\$0.89	\$5,712.64
Office	9' x 42' x 72'	Bldg. (SC) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	27,216.00	CF	\$0.25	\$6,790.39
Office Floor	0.33' x 42' x 72'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 200 ft. push	3,024.00	SF	\$0.60	\$1,799.28
Office Outbuilding	9' x 15' x 37'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	4,995.00	CF	\$0.18	\$909.09
Office Outbuilding Floor	0.33' x 15' x 37'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 200 ft. push	555.00	SF	\$0.60	\$330.23

Job Hours: 40.00

Subtotal
(unadjusted): \$36,508.03

Total Cost
(adjusted for location): \$33,988.98

BULLDOZER RIPPING WORK

Task description: Rip weathered granite for backfill

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4B20

State: Colorado

Abbreviation: None

Date: 2/21/2020

County: El Paso

Filename: M211-4B20

User: TC1

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Ripper Attachment: 1-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper Ownership Cost/Hour:	\$15.98	NA
Ripper Operating Cost/Hour:	\$9.64	100
Operator Cost/Hour:	\$39.98	NA
Total Unit Cost/Hour:	\$292.92	
Total Fleet Cost/Hour:	\$585.83	

MATERIAL QUANTITIES

Selected estimating method: Seismic

Alternate Methods:

Seismic: 363,000 BCY Bank Volume: 363,000 BCY Midrange
Area: NA acres Rip Depth (ft): NA Volume: NA BCY or CCY

Source of estimated quantity: See 12/11/2019 PAR Resp. Exh L, p. L-2

HOURLY PRODUCTION

Seismic:

Seismic Velocity: 5,000 feet/second

Area:

Average Ripping Depth: NA feet/pass
Average Ripping Width: NA feet/pass
Average Ripping Length: NA feet/pass
Average Dozer Speed: NA feet/minute
Average Maneuver Time: NA minutes/pass
Production per unit area: NA acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 906.60 Cu. yds./hr

Site Altitude: 7,200 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 752.48 Cu. yds./hr

Adjusted Hourly Fleet Production: **1,504.96** Cu. yds./hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **241.20** Hours

Unit cost: \$0.389 Per cu. yd. Total job cost: **\$141,304**

TRUCK/LOADER TEAM WORKTask description: **Load/Haul/Dump Ripped & Blasted Material**Site: **Pikeview Quarry**Permit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4B30State: ColoradoAbbreviation: NoneDate: 2/21/2020County: El PasoFilename: M211-4B30User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$61.51	NA	NA	\$8.55	\$10.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	NA	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	NA	\$87.56	\$37.39
Number of Units:	3	1	0	0	1	1
Group Subtotals:	Work: \$608.66		Support: \$0.00		Maint: \$124.95	

Total work team cost/hour: **\$733.61****MATERIAL QUANTITIES**Initial volume: 731,942

CCY

Swell factor: 1.000Loose volume: **731,942**

LCY

Source of estimated volume: 2/7/20 3AR Resp. Tbl D-2 p. L-2; Haul distance Wksht#3Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 3,250

Pounds/LCY

Description: Gravel - PitrunRated Payload: 87,000

Pounds

Payload Capacity: 26.77

LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	26.77	LCY

Final Truck Volume Based on Number of Loader Passes: 24.75 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	6.188	LCY

Job Condition Corrections:

Site Altitude (ft.): 7200 feet

	Truck	Loader	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.797	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 4 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:	-0.040	minutes
	Adjusted Loader Cycle Time:	0.510	minutes
	Net Load Time per Truck:	1.630	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.625	Minutes
Truck Load Time:	1.630	Minutes	Adjusted for site altitude:	1.630	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.042	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-12.00	3.00	-9.00	1507	1.458

Haul Time: **1.458** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	12.00	3.00	15.00	1139	1.796

Return Time: **1.796** minutesTotal Truck Cycle Time: **6.551** minutes

Loading Tool unit

Production 658.54 LCY/HourAdjusted for job efficiency: 546.59 LCY/Hour

Truck Unit Production

226.69 LCY/HourAdjusted for job efficiency: 188.16 LCY/HourOptimal No. of Trucks: 3 Truck(s)Selected Number of Trucks: 3 Truck(s)Adjusted hourly truck team production: 564.47 LCY/HourAdjusted single truck/loader team production: 546.59 LCY/HourAdjusted multiple truck/loader team production: **546.59** LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: **1,339.12** HoursUnit cost: \$1.342 /LCYTotal job cost: **\$982,390**

BULLDOZER WORKTask description: **Push ripped/blasted material transported w/ Loader & Trucks**Site: **Pikeview Quarry**Permit Action: **AM-04**Permit/Job#: **M1977211****PROJECT IDENTIFICATION**Task #: **4B31**State: **Colorado**Abbreviation: **None**Date: **3/5/2020**County: **El Paso**Filename: **M211-4B31**

12:25:30 PM

User: **TC1**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$39.98	NA
Total unit Cost/Hour:	\$267.31	
Total Fleet Cost/Hour:	\$534.61	

MATERIAL QUANTITIESInitial Volume: **731,942**Swell factor: **1.000**Loose volume: **731,942 LCY**Source of estimated volume: **Table D-2 w/ post-rip 20% Swell, 2/7/2020**Source of estimated swell
factor: **Table D-2****HOURLY PRODUCTION**Average push distance: **150 feet**Unadjusted hourly
production: **910.5 LCY/hr**Materials consistency description: **Rock, well ripped or blasted 0.8**Average push
gradient: **-30 %**Average site altitude: **7,200 feet**Material weight: **2,800 lbs/LCY**Weight description: **Granite - Broken****Job Condition Correction Factor****Source**

Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.821	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7855

Adjusted unit
production: 715.20 LCY/hr
Adjusted fleet
production: **1430.4 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: \$0.374/LCY

Total job time: **511.70 Hours**
Total job cost: **\$273,564**

Post-Mining Drainage Channel Construction (Ditches)

Task description: Construct Riprap Ditches

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4CH0

State: Colorado

Abbreviation: None

Date: 2/28/2020

County: El Paso

Filename: M211-4CH0

User: TC1

Agency or organization name: DRMS

Channel	Length (ft)	Depth (ft)	Width (bottom) (ft)	Side Slopes (XH:1V)	Width (top) (ft)	Excavated Vol./LF (CY)	Excavated Vol. (total) (CY)
WS-5; 30%	350	2.00	20.00	3.00	32.00	1.9259	674
WS-5; 17%	500	2.00	20.00	3.00	32.00	1.9259	963
WS-3	1,650	2.00	10.00	2.60	20.40	1.1259	1,858
WS-7	1,550	2.00	10.00	3.00	22.00	1.1852	1,837
WS-9	1,435	2.50	20.00	3.00	35.00	2.5463	3,654
WS-10	750	2.50	20.00	3.00	35.00	2.5463	1,910
WS-11	1,050	2.50	20.00	3.00	35.00	2.5463	2,674
Totals:	7,285						13,569

Riprap	Riprap Thickness (2xD50) (ft)	Perimeter, P (ft)	Area for Geotextile (excl. anchor trenches) (sf)	Riprap Vol. (CY)
	4.00	32.65	11,427	1,693
	3.00	32.65	16,325	1,814
	3.50	21.14	34,885	4,522
	4.00	22.65	35,106	5,201
	1.50	35.81	51,389	2,855
	4.00	35.81	26,859	3,979
	4.50	35.81	37,602	6,267
Totals:			213,593	26,331

Materials Needed:

Geotextile (SY incl. 15%
wastage): 27,292

Riprap (CY): 26,331

Excavation (CY): 13,569

Costs:

Material Costs:	Geotextile (SY):	\$1.77	Riprap (CY):	\$31.50	Excavation (CY):	\$0.00
Labor Cost:		<u>\$0.27</u>		<u>\$12.70</u>		<u>\$2.46</u>
Equipment Cost:		<u>\$0.00</u>		<u>\$14.65</u>		<u>\$1.39</u>
Means Reference	31 32 1916 1510		31 37 1310 0100		31 23 1642 0310	

Totals:

Geotextile (SY):	<u>\$55,676.62</u>
Riprap (CY):	<u>\$1,549,570.74</u>
Excavation (CY):	<u>\$52,241.11</u>

Hours:

Geotextile (SY):	311.91
87.50 SY/HR	
Riprap (CY):	3,397.53
7.75 CY/HR	
Excavation (CY):	339.23
40.00 CY/HR	

Total Post-Mining Channel Reconstruction hours:	<u>4,048.67</u>	Hours
Total Post-Mining Channel Reconstruction Cost:	<u>\$1,657,488</u>	

MOTOR GRADER WORK

Task description: Grade 11,750 ft of Terrace Channel

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4CH1

State: Colorado

Abbreviation: None

Date: 2/28/2020

County: El Paso

Filename: M211-4CH1

User: TC1

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M

Horsepower: 158

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$33.62	NA
Operating Cost/Hour:	\$34.22	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$45.39	NA
Total Unit Cost/Hour:	\$113.22	
Total Fleet Cost/Hour:	\$113.22	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 6.60 acres

Source of estimated acreage: Exhibit G-1 (2/7/20) ~11,750 ft of 24.5-ft wide channels

HOURLY PRODUCTION

Average Grader Speed:	<u>1.75</u>	mph
Selected Application:	<u>Ditch building/cleaning (0-3 mph) - 1.75</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>10.40</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>8.40</u>	feet
Unadjusted Hourly Unit Production:	<u>1.7818</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 7200 feet

Altitude Adj:	<u>1.00</u>	Source (CAT HB)
Job Efficiency:	<u>0.85</u>	(1sh/d, mod.)
Net Correction:	<u>0.8500</u>	multiplier

Adjusted Hourly Unit Production: 1.5145 acres/Hour

Adjusted Hourly Fleet Production: **1.5145** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **4.36** Hours

Unit cost: \$74.76 per acre Total job cost: **\$493**

TRUCK/LOADER TEAM WORKTask description: **Load/Haul/Dump Lower Borrow Area Material**Site: **Pikeview Quarry**Permit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4E20State: ColoradoAbbreviation: NoneDate: 3/5/2020County: El PasoFilename: M211-4E20User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$61.51	NA	NA	\$8.55	\$10.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	NA	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	NA	\$87.56	\$37.39
Number of Units:	3	1	0	0	1	1
Group Subtotals:	Work: \$608.66		Support: \$0.00		Maint: \$124.95	

Total work team cost/hour: **\$733.61****MATERIAL QUANTITIES**Initial volume: 2,602,892

CCY

Swell factor: 1.250Loose volume: **3,253,615**

LCY

Source of estimated volume: 2/7/20 3AR Resp Tbl D-2w/25%swell; Haul dist google earthSource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,650

Pounds/LCY

Description: Decomposed rock - 25% Rock, 75% Earth (to achieve 25% swell)Rated Payload: 87,000

Pounds

Payload Capacity: 32.83

LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.94** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	6.188	LCY

Job Condition Corrections:

Site Altitude (ft.): 7200 feet

	Truck	Loader	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.797	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 5 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:	-0.040	minutes
	Adjusted Loader Cycle Time:	0.510	minutes
	Net Load Time per Truck:	2.140	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.625	Minutes
Truck Load Time:	2.140	Minutes	Adjusted for site altitude:	2.140	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.042	Minutes

Truck Travel (Haul & Return) Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	12.00	3.00	15.00	634	3.226

Haul Time: **3.226** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-12.00	3.00	-9.00	3706	0.580

Return Time: **0.580** minutesTotal Truck Cycle Time: **7.613** minutes

Loading Tool unit

Production	<u>671.34</u>	LCY/Hour	Adjusted for job efficiency:	<u>557.21</u>	LCY/Hour
Truck Unit Production	<u>243.84</u>	LCY/Hour	Adjusted for job efficiency:	<u>202.38</u>	LCY/Hour

Optimal No. of Trucks:	<u>3</u>	Truck(s)	Selected Number of Trucks:	<u>3</u>	Truck(s)
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Adjusted hourly truck team production:	<u>607.15</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>557.21</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>557.21</u>	LCY/Hour

JOB TIME AND COST

Fleet size:	<u>1</u>	Team(s)	Total job time:	<u>5,839.11</u>	Hours
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Unit cost:	<u>\$1.317</u>	/LCY	Total job cost:	<u>\$4,283,630</u>
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REVEGETATION WORKTask description: Install erosion control blankets on steep slopesSite: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4EP0State: ColoradoAbbreviation: NoneDate: 3/5/2020County: El PasoFilename: M211-4EP0User: TC1Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Polyprop. mesh, staples Material (MEANS 31 25 14.16 0200)	1.00	ACRE	\$8,373.20	\$8,373.20
Total Mulch Materials Cost/Acre				\$8,373.20

Application

Description	Cost /Acre
Polypropylene Mesh, 100 SY per Roll, 4' wide, Stapled (no material) (MEANS)	\$1,936.00
Total Mulch Application Cost/Acre	\$1,936.00

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:	52.6	Cost /Acre:	\$10,309.20
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	\$542,263.92
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$542,264
Job Hours:	100.00

REVEGETATION WORKTask description: Apply Mulch on flatter slopesSite: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4EP1State: ColoradoAbbreviation: NoneDate: 3/4/2020County: El PasoFilename: M211-4EP1User: TC1Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

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: 86.5 Cost /Acre: \$756.00
 Estimated Failure Rate: 0% Cost /Acre*: \$0.00
 *Selected Replanting Work Items: NONE

Initial Job Cost: **\$65,394.00**
 Reseeding Job Cost: **\$0.00**
 Total Job Cost: **\$65,394**
 Job Hours: **90.00**

REVEGETATION WORKTask description: Revegetate 32.18 USFS acres (excl. trees & mulch)Site: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4GF0State: ColoradoAbbreviation: NoneDate: 2/28/2020County: El PasoFilename: M211-4GF0User: TC1Agency 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}	\$94.63
Total Tilling Cost/Acre	\$94.63

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arizona Fescue - Redondo	1.60	18.37	\$14.80
Blue Grama - Native	0.20	3.26	\$2.75
Indian Ricegrass - Native	3.00	9.71	\$19.50
Canada Wildrye	6.80	17.95	\$73.71
Little Bluestem - Native	1.60	9.55	\$21.71
Nodding Brome	1.00	2.49	\$8.50
Sideoats Grama - Vaughn	1.40	4.60	\$11.73
Bottlebrush Squirreltail	4.60	20.28	\$74.64
Rocky Mountain Fescue	0.40	6.43	\$2.90
Slender Wheatgrass - San Luis	5.40	19.71	\$22.95

Thickspike Wheatgrass - Critana	4.60	16.26	\$31.63
Needle and Thread	3.80	10.03	\$159.03
Needlegrass, Green - Lodorm	1.40	5.82	\$16.49
Parry's Oatgrass	4.80	9.92	\$105.60
Sunflower (or daisy), Oxe-eye	15.80	44.04	\$537.20
Totals Seed Mix	56.40	198.41	\$1,103.11

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Tackifier, >=10 acres {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	32.18	Cost /Acre:	\$2,598.19
Estimated Failure Rate:	35%	Cost /Acre*:	\$2,050.54
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$83,609.75
Reseeding Job Cost:	\$23,095.23
Total Job Cost:	\$106,705
Job Hours:	90.00

REVEGETATION WORKTask description: Revegetate 106.92 private acres (excl. trees & mulch)Site: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4GP0State: ColoradoAbbreviation: NoneDate: 2/28/2020County: El PasoFilename: M211-4GP0User: TC1Agency 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}	\$94.63
Total Tilling Cost/Acre	\$94.63

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	1.00	16.32	\$15.98
Crested Wheatgrass - Ephraim	2.00	9.18	\$8.65
Little Bluestem - Native	2.00	11.94	\$27.13
Sideoats Grama - El Reno	4.00	13.13	\$33.50
Russian Wildrye - Bozoiaky	4.00	16.07	\$25.92
Intermediate Wheatgrass - Oahe	8.00	17.08	\$22.40
Alfalfa - Ranger (inoculated)	2.00	9.64	\$5.10
Pubescent Wheatgrass - Greenleaf	8.00	16.53	\$29.20
Mahogany, Mountain	4.00	5.42	\$147.22
Western Wheatgrass - Arriba	8.00	20.20	\$52.00

Rabbitbrush, Rubber	2.00	29.80	\$128.59
Needlegrass, Green - Lodorm	2.00	8.31	\$23.55
Totals Seed Mix	47.00	173.62	\$519.24

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Tackifier, >=10 acres {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	106.92	Cost /Acre:	\$2,014.32
Estimated Failure Rate:	35%	Cost /Acre*:	\$1,466.67
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$215,371.09		
Reseeding Job Cost:	\$54,885.72		
Total Job Cost:	\$270,257		
Job Hours:	300.00		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **MOB / DEMOB**Site: **Pikeview Quarry**Permit Action: **AM-04**Permit/Job#: **M1977211****PROJECT IDENTIFICATION**Task #: **4M00**State: **Colorado**Abbreviation: **None**Date: **3/5/2020**County: **El Paso**Filename: **M211-4M00**User: **TC1**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:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

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	60.01	\$121.49	\$141.54	2	\$526.06	\$283.08	\$250.00
Cat 365C L 13'-7" Stick	77.56	\$121.37	\$141.54	1	\$262.91	\$141.54	\$250.00
CAT 980H	33.12	\$52.71	\$123.81	1	\$176.52	\$123.81	\$250.00
Cat 740	36.49	\$68.27	\$123.81	4	\$768.32	\$495.24	\$1,000.00
ATLAS COPCO ROC D7-11,4.0 in.	0.00	\$70.87	\$67.39	1	\$138.26	\$67.39	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$9.74	\$67.39	1	\$77.13	\$67.39	\$250.00
CAT 12M	16.01	\$33.62	\$67.39	1	\$101.01	\$67.39	\$250.00
Hydroseeder with Tractor	28.00	\$23.59	\$123.81	1	\$147.40	\$123.81	\$250.00

Subtotals: **\$2,197.61** **\$1,369.65** **\$2,750.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
ANFO Bulk Delivery Truck	\$211.13	1	\$211.13	\$211.13
Cap Delivery Truck	\$28.12	1	\$28.12	\$28.12
Light Duty Pickup, 4x4, 3/4 T.	\$12.96	2	\$25.92	\$25.92
Water Tanker, 5,000 Gal.	\$67.39	1	\$67.39	\$67.39

Subtotals: **\$332.56** **\$332.56**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>COLORADO SPRINGS</u>	
Total one-way travel distance:	<u>10.00</u>	miles
Average Travel Speed:	<u>40.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$33,654.95</u>
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 ** two round trips with haul rig:

Total Roadable Mob/Demob Cost **	<u>\$166.28</u>
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 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.25</u>	<u>0.25</u>
Return Time (Hours):	<u>0.25</u>	<u>0.25</u>
Loading Time (Hours):	<u>3.00</u>	<u>NA</u>
Unloading Time (Hours):	<u>3.00</u>	<u>NA</u>
Subtotals:	<u>6.50</u>	<u>0.50</u>

JOB TIME AND COST

Total job time:	<u>13.00</u>	Hours
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Total job cost:	<u>\$33,821</u>
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TRUCK/LOADER TEAM WORKTask description: Load/Haul/Dump 2500 tons of gravelSite: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4RD2State: ColoradoAbbreviation: NoneDate: 3/5/2020County: El PasoFilename: M211-4RD2User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	100	25
Ownership cost/hour:	\$68.27	\$52.71	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$61.51	NA	NA	\$34.22	\$10.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	NA	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	NA	\$113.22	\$37.39
Number of Units:	3	1	0	0	1	1
Group Subtotals:	Work: \$608.66		Support: \$0.00		Maint: \$150.61	

Total work team cost/hour: \$759.27**MATERIAL QUANTITIES**Initial volume: 1,961

CCY

Swell factor: 1.000Loose volume: 1,961

LCY

Source of estimated volume: 2500T @ \$15- p L-2; Haul distance Wksht#3Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$18.75Total Cost: \$36,768.75**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 2,550

Pounds/LCY

Description: Gravel - DryRated Payload: 87,000

Pounds

Payload Capacity: 34.12

LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: 26.25 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1/2" to 3/4" (85 - 90%) 0.875
Adjusted Capacity:	6.563	LCY

Job Condition Corrections:

Site Altitude (ft.): 7200 feet

	Truck	Loader	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.797	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 4 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:	-0.040	minutes
	Adjusted Loader Cycle Time:	0.510	minutes
	Net Load Time per Truck:	1.630	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.625	Minutes
Truck Load Time:	1.630	Minutes	Adjusted for site altitude:	1.630	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.042	Minutes

Truck Travel (Haul & Return) Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	12.00	3.00	15.00	634	3.226

Haul Time: **3.226** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-12.00	3.00	-9.00	3706	0.580

Return Time: **0.580** minutesTotal Truck Cycle Time: **7.103** minutes

Loading Tool unit

Production 698.45 LCY/HourAdjusted for job efficiency: 579.71 LCY/Hour

Truck Unit Production

221.75 LCY/HourAdjusted for job efficiency: 184.05 LCY/HourOptimal No. of Trucks: 3 Truck(s)Selected Number of Trucks: 3 Truck(s)Adjusted hourly truck team production: 552.15 LCY/HourAdjusted single truck/loader team production: 552.15 LCY/HourAdjusted multiple truck/loader team production: **552.15** LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: **3.55** HoursUnit cost: \$1.375 /LCYTotal job cost: **\$39,465**

REVEGETATION WORKTask description: Private area to be planted w/ shrubsSite: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4SP0State: ColoradoAbbreviation: NoneDate: 2/28/2020County: El PasoFilename: M211-4SP0User: TC1Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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MULCHING and MISCELLANEOUS**Materials**

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

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Mahogany, Mountain	168	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$183.12
Oak, Gambel's	168	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$183.12
Rose, Wood's	200	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$218.00
Totals Nursery Stock Cost / Acre					\$584.24

JOB TIME AND COST

No. of Acres:	69.4	Cost /Acre:	\$584.24
Estimated Failure Rate:	30%	Cost /Acre*:	\$584.24
*Selected Replanting Work Items:	NURSERY		

Initial Job Cost:	\$40,546.26
Reseeding Job Cost:	\$12,163.88
Total Job Cost:	\$52,710
Job Hours:	40.00

REVEGETATION WORKTask description: USFS area to be planted w/ trees & watered sep.Site: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4TF0State: ColoradoAbbreviation: NoneDate: 3/4/2020County: El PasoFilename: M211-4TF012:31:24 PMUser: TC1Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre

	\$
Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS**Materials**

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

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Fir, Douglas	22	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.31	\$0.00	\$50.82
Pine, Lodgepole	21	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.31	\$0.00	\$48.51
Totals Nursery Stock Cost / Acre					\$99.33

JOB TIME AND COST

No. of Acres: 32.18 Cost /Acre: \$99.33
 Estimated Failure Rate: 45% Cost /Acre*: \$99.33
 *Selected Replanting Work Items: NURSERY

Initial Job Cost: **\$3,196.44**
 Reseeding Job Cost: **\$1,438.40**
 Total Job Cost: **\$4,635**
 Job Hours: **20.00**

REVEGETATION WORKTask description: Private area to be planted w/ trees & watered sep.Site: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4TP0State: ColoradoAbbreviation: NoneDate: 2/28/2020County: El PasoFilename: M211-4TP0User: TC1Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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MULCHING and MISCELLANEOUS**Materials**

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

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Juniper, Rocky Mountain	30	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.31	\$0.00	\$69.30
Pine, Pinyon	30	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.31	\$0.00	\$69.30
Totals Nursery Stock Cost / Acre					\$138.60

JOB TIME AND COST

No. of Acres:	37.52	Cost /Acre:	\$138.60
Estimated Failure Rate:	45%	Cost /Acre*:	\$138.60
*Selected Replanting Work Items:	NURSERY		
Initial Job Cost:	\$5,200.27		
Reseeding Job Cost:	\$2,340.12		
Total Job Cost:	\$7,540		
Job Hours:	25.00		

TRUCK/LOADER TEAM WORKTask description: Place topsoil in USFS area from North StockpileSite: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4TS1State: ColoradoAbbreviation: NoneDate: 2/28/2020County: El PasoFilename: M211-4TS1User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	\$121.49	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$61.51	NA	\$105.84	\$8.55	\$10.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	\$39.98	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	\$267.31	\$87.56	\$37.39
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work: \$455.82		Support: \$267.31		Maint: \$124.95	

Total work team cost/hour: \$848.08**MATERIAL QUANTITIES**Initial volume: 15,577

CCY

Swell factor: 1.000Loose volume: 15,577

LCY

Source of estimated volume: 6 in over 19.31 Ac; Haul distance from Google EarthSource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 87,000

Pounds

Payload Capacity: 54.38

LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: 24.75 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.250	LCY

Job Condition Corrections:

Site Altitude (ft.): 7200 feet

	Truck	Loader	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.797	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:		-0.040	minutes
Adjusted Loader Cycle Time:		0.510	minutes
Net Load Time per Truck:		1.120	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.625	Minutes
Truck Load Time:	1.120	Minutes	Adjusted for site altitude:	1.120	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.042	Minutes

Truck Travel (Haul & Return) Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	5.00	3.00	8.00	1123	1.190

Haul Time: **1.190** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	-5.00	3.00	-2.00	3706	0.377

Return Time: **0.377** minutesTotal Truck Cycle Time: **4.354** minutes

Loading Tool unit

Production 851.00 LCY/HourAdjusted for job efficiency: 706.33 LCY/Hour

Truck Unit Production

341.09 LCY/HourAdjusted for job efficiency: 283.11 LCY/HourOptimal No. of Trucks: 2 Truck(s)Selected Number of Trucks: 2 Truck(s)Adjusted hourly truck team production: 566.21 LCY/HourAdjusted single truck/loader team production: 566.21 LCY/HourAdjusted multiple truck/loader team production: **566.21** LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: **27.51** HoursUnit cost: \$1.498 /LCYTotal job cost: **\$23,331**

TRUCK/LOADER TEAM WORKTask description: Place topsoil in private area from various stockpilesSite: Pikeview QuarryPermit Action: AM-04Permit/Job#: M1977211**PROJECT IDENTIFICATION**Task #: 4TS2State: ColoradoAbbreviation: NoneDate: 2/28/2020County: El PasoFilename: M211-4TS2User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	\$121.49	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$61.51	NA	\$105.84	\$8.55	\$10.00
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	\$39.98	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	\$267.31	\$87.56	\$37.39
Number of Units:	4	1	0	1	1	1
Group Subtotals:	Work: \$761.50		Support: \$267.31		Maint: \$124.95	

Total work team cost/hour: **\$1,153.76****MATERIAL QUANTITIES**Initial volume: 95,187

CCY

Swell factor: 1.000Loose volume: **95,187**

LCY

Source of estimated volume: 6 in over 118 Ac; Haul distance from Google EarthSource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 87,000

Pounds

Payload Capacity: 54.38

LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: 24.75 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.250	LCY

Job Condition Corrections:

Site Altitude (ft.): 7200 feet

	Truck	Loader	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.797	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:		-0.040	minutes
Adjusted Loader Cycle Time:		0.510	minutes
Net Load Time per Truck:		1.120	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.625	Minutes
Truck Load Time:	1.120	Minutes	Adjusted for site altitude:	1.120	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.042	Minutes

Truck Travel (Haul & Return) Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	10.00	3.00	13.00	708	2.888

Haul Time: **2.888** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-10.00	3.00	-7.00	3706	0.580

Return Time: **0.580** minutesTotal Truck Cycle Time: **6.255** minutes

Loading Tool unit
 Production 851.00 LCY/Hour Adjusted for job efficiency: 706.33 LCY/Hour
 Truck Unit Production
 237.42 LCY/Hour Adjusted for job efficiency: 197.06 LCY/Hour
 Optimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 4 Truck(s)
 Adjusted hourly truck team production: 788.24 LCY/Hour
 Adjusted single truck/loader team production: 706.33 LCY/Hour
 Adjusted multiple truck/loader team production: **706.33** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **134.76** HoursUnit cost: \$1.633 /LCY Total job cost: **\$155,483**

SITE MAINTENANCE

Task description: Water trees on USFS land

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4TW1

State: Colorado

Abbreviation: None

Date: 3/5/2020 1:54:30 PM

County: El Paso

Filename: M211-4TW1

User: TC1

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Transport water to site	20.00	Water Tanker, 5,000 Gal.	10.00	EA	\$95.59	\$955.90
Small rig to transport water to seedlings	80.00	Light Duty Pickup, 4x4, 3/4 T.	20.00	EA	\$41.16	\$823.20

Job Hours: 100.00

Total Cost: \$1,779.10

SITE MAINTENANCE

Task description: Water trees on private land

Site: Pikeview Quarry

Permit Action: AM-04

Permit/Job#: M1977211

PROJECT IDENTIFICATION

Task #: 4TW2

State: Colorado

Abbreviation: None

Date: 3/5/2020 1:56:14 PM

County: El Paso

Filename: M211-4TW2

User: TC1

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Transport water to site	20.00	Water Tanker, 5,000 Gal.	12.00	EA	\$95.59	\$1,147.08
Small rig to transport water to seedlings	80.00	Light Duty Pickup, 4x4, 3/4 T.	25.00	EA	\$41.16	\$1,029.00

Job Hours: 100.00

Total Cost: \$2,176.08