

COST SUMMARY WORK

Task description: _____

Site: J & P Trucking Pit # 1

Permit Action: 2020 Bond Calc

Permit/Job#: M2011021

PROJECT IDENTIFICATION

Task #: 000
Date: 4/9/2020
User: DC1

State: Colorado
County: Baca

Abbreviation: None
Filename: M021-000

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
002	Spreading Topsoil	SCRAPER1	1	8.55	\$7,272
003	Revegetation of Affected Land	REVEGE	1	15.00	\$7,187
004	Mobilization of Equipment	MOBILIZE	1	5.90	\$7,159
<u>SUBTOTALS:</u>				29.45	\$21,618

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$437
Performance bond:	1.05	Total =	\$227
Job superintendent:	8.39	Total =	\$582
Profit:	10.00	Total =	\$2,162
		TOTAL O & P =	\$3,408
		CONTRACT AMOUNT (direct + O & P) =	\$25,026

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.25	Total =	\$1,064
Reclamation management and/or administration:	5.00		\$1,251

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$6,223

TOTAL BOND AMOUNT (direct + indirect) = \$27,841

SCRAPER TEAM WORK

Task description: Spreading Topsoil

Site: J & P Trucking Pit # 1

Permit Action: 2020 Bond Calc

Permit/Job#: M2011021

PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 4/9/2020

County: Baca

Filename: M11-021

User: DC1

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D7R DS XR Series II
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	50	NA	NA	25	25
Ownership cost/hour:	\$126.52	\$71.52	NA	NA	\$33.62	\$13.51
Operating cost/hour:	\$149.69	\$32.17	NA	NA	\$8.55	\$7.24
%Utilization-ripper:	NA	NA	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:	\$30.86	\$41.24	NA	NA	\$28.52	\$0.00
Unit Subtotals:	\$307.07	\$144.93	NA	NA	\$70.69	\$20.75
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$759.07	Support:	\$0.00	Maint:	\$91.44

Total work team cost/hour: **\$850.51**

MATERIAL QUANTITIES

Initial volume: 8,067

CCY

Swell factor: 1.000

Loose volume: **8,067**

LCY

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

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time: 0.90 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 3915 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel 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	275.00	0.00	3.00	3.00	2824	0.27

Haul Time: 0.27 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	275.00	0.00	3.00	3.00	2874	0.22

Return Time: 0.22 minutes

Total Scraper team cycle time: 1.99 minutes
Adjusted for job conditions: 943.45 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 943.45 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: 943.45 LCY/Hour

Unadjusted unit production/hour: 1,136.68 LCY/Hour
Optimal Number of Scrapers per push
dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 8.55 Hours

Unit cost: \$0.901 /LCY Total job cost: \$7,272

REVEGETATION WORK

Task description: Revegetation of Affected Land

Site: J & P Trucking Pit # 1

Permit Action: 2020 Bond Calc

Permit/Job#: M2011021

PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 4/9/2020

County: Baca

Filename: M11-021

User: DC1

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}	\$94.63
Total Tilling Cost/Acre	\$94.63

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	0.20	0.96	\$0.51
Sand Lovegrass - Bend	0.05	1.72	\$0.71
Blue Grama - Native	0.53	8.57	\$7.21
Buffalograss - Native/Plains	2.80	2.70	\$33.79
Sand Dropseed	0.05	5.37	\$0.44
Totals Seed Mix	3.62	19.33	\$42.65

Application

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

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
					\$
Totals Nursery Stock Cost / Acre					\$0.00

JOB TIME AND COST

No. of Acres:	15	Cost /Acre:	\$369.28
Estimated Failure Rate:	40%	Cost /Acre*:	\$274.65
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$5,539.20
Reseeding Job Cost:	\$1,647.90
Total Job Cost:	\$7,187
Job Hours:	15.00

EQUIPMENT MOBILIZATION/DEMobilIZATION

Task description: Mobilization of Equipment

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PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 4/9/2020

County: Baca

Filename: M11-021

User: DC1

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 D7R DS XR Series II	35.93	\$78.32	\$123.81	1	\$202.13	\$123.81	\$250.00
Cat 627G w/push- pull	43.48	\$126.52	\$123.81	2	\$500.66	\$247.62	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	2	\$171.08	\$134.78	\$500.00

Subtotals:

\$873.87	\$506.21	\$1,250.00
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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	\$20.93	1	\$20.93	\$20.93

Subtotals:	\$20.93	\$20.93
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EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: SPRINGFIELD
 Total one-way travel distance: 40.00 miles
 Average Travel Speed: 55.00 mph

Total Non-Roadable Mob/Demob Cost *
 ** two round trips with haul rig: \$7,129.00
 Total Roadable Mob/Demob Cost **
 ** one round trip, no haul rig: \$30.44

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.73</u>	<u>0.73</u>
Return Time (Hours):	<u>0.73</u>	<u>0.73</u>
Loading Time (Hours):	<u>1.00</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>2.95</u>	<u>1.45</u>

JOB TIME AND COST

Total job time: 5.91 Hours

Total job cost: \$7,159