COST SUMMARY WORK

Task description: **Cost Summary of Reclamation Tasks**

Site: **London Mill Cobble** Permit Action: 2021 New Application Permit/Job#: M2020054

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 1/14/2021 County: Park Filename: M054-000
User: ERR

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001a	Load and Carry Topsoil for Replacement	LOADER	1	17.81	$1,547
001b	Grade Out Topsoil (rough)	GRADER	1	3.35	$349
002	Revegetate the Site	REVEGE	1	6.00	$2,914
003	Mob/Demob	MOBILIZE	1	3.35	$2,306
		SUBTOTALS:		**30.51**	**$7,116**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$144
Performance bond:	1.05	Total =	$75
Job superintendent:	8.00	Total =	$556
Profit:	10.00	Total =	$712
		TOTAL O & P =	$1,486
		CONTRACT AMOUNT (direct + O & P) =	$8,602

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	0.00	Total =	$0
Reclamation management and/or administration:	5.00		$430
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$1,917
		TOTAL (direct + indirect) =	$9,033
		TOTAL BOND AMOUNT (rounded) =	**$9,000**

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **Load and Carry Topsoil for Replacement**

Site: **London Mill Cobble** Permit Action: 2021 New Application Permit/Job#: M2020054

PROJECT IDENTIFICATION

Task #: 001A State: Colorado Abbreviation: None
Date: 1/14/2021 County: Park Filename: M054-001a
User: ERR

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 924H Horsepower: 128
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$20.95	NA
Operating Cost/Hour:	$25.17	100
Operator Cost/Hour:	$40.71	NA
Total Unit Cost/Hour:	$86.82	

Total Fleet Cost/Hour: $86.82

MATERIAL QUANTITIES

Initial volume: 1,721 CCY Swell factor: 1.429
Loose volume: **2,459** LCY

Source of estimated volume: Application: 4" on 3.2 acres
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.475 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(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:	-0.040	minutes
	Adjusted Basic Cycle Time:	0.435	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0
Return: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	400	-5.00	4.00	-1.00	0.1690	(Cat HB)
Return Route:	400	5.00	4.00	9.00	0.4359	(Cat HB)

Total Travel Time:	0.6048	minutes
Total Cycle Time:	**1.0398**	minutes

Load Bucket Capacity

Rated Capacity:	2.70	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**2.97**	LCY

Job Condition Correction Factors
Site Altitude: 10270 feet

		Source
Altitude Adj:	0.97	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.81	multiplier

Unadjusted Hourly Unit Production:	171.37	LCY/Hour
Adjusted Hourly Unit Production:	137.97	LCY/Hour
Adjusted Hourly Fleet Production:	**137.97**	LCY/Hour

JOB TIME AND COST

Fleet size:	1	Loader(s)	Total job time:	**17.82**	Hours
Unit cost:	$0.629	/LCY	Total job cost:	**$1,547**	

MOTOR GRADER WORK

Task description: **Grade Out Topsoil (rough)**

Site: **London Mill Cobble** Permit Action: 2021 New Application Permit/Job#: M2020054

PROJECT IDENTIFICATION

Task #: 001B State: Colorado Abbreviation: None
Date: 1/14/2021 County: Park Filename: M054-001b
User: ERR

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M Horsepower: 158
Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$34.52	NA
Operating Cost/Hour:	$35.50	100
Ripper Ownership Cost/Hour:	$2.57	NA
Ripper Operating Cost/Hour:	$3.07	100
Operator Cost/Hour:	$28.56	NA
Total Unit Cost/Hour:	$104.20	
Total Fleet Cost/Hour:	**$104.20**	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 3.20 acres

Source of estimated acreage: Application

HOURLY PRODUCTION

Average Grader Speed: 1.50 mph
Selected Application: Finish grading (0-2.5 mph) - 1.5
Selected Blade Angle: 45 degrees
Effective Blade Length: 8.50 feet
Width of blade overlap per pass: 2.00 feet
Net grading or ripping width per pass: 6.50 feet
Unadjusted Hourly Unit Production: 1.1818 acres/hour

Job Condition Correction Factors Site Altitude: 10270 feet

		Source
Altitude Adj:	0.95	(CAT HB)
Job Efficiency:	0.85	(1sh/d, mod.)
Net Correction:	0.8075	multiplier

Adjusted Hourly Unit Production: 0.9543 acres/Hour
Adjusted Hourly Fleet Production: **0.9543** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **3.35** Hours

Unit cost: $109.19 per acre Total job cost: **$349**

REVEGETATION WORK

Task description: **Revegetate the Site**

Site: **London Mill Cobble** Permit Action: 2021 New Application Permit/Job#: M2020054

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 1/14/2021 County: Park Filename: M054-002
User: ERR

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
Alpine Fescue	0.50	14.92	$9.05
Aster, Azure	0.10	2.88	$8.04
Blue Wildrye - Arlington or Elkton	1.75	6.03	$11.66
Nodding Brome	2.50	6.23	$21.25
Hard Fescue - Discovery	0.50	6.49	$1.46
Lupine, Annual	1.00	0.73	$35.98
Sheep Fescue - Bighorn	0.50	7.81	$2.20
Slender Wheatgrass - Native	1.40	5.11	$6.48
Muttongrass	0.50	10.33	$17.20
Red Top	0.10	11.46	$0.79

Tufted Hairgrass	0.50	28.70	$5.51
Yarrow, Western	0.10	6.08	$4.18
Totals Seed Mix	9.45	106.75	**$123.79**

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**
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$301.00	$301.00
Total Mulch Materials Cost/Acre				**$301.00**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$70.17
Total Mulch Application Cost/Acre	**$70.17**

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: 3.2
Estimated Failure Rate: 25%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $821.59
Cost /Acre*: $355.79

Initial Job Cost: **$2,629.09**
Reseeding Job Cost: **$284.63**
Total Job Cost: **$2,914**
Job Hours: **6.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mob/Demob**

Site: **London Mill Cobble** Permit Action: 2021 New Application Permit/Job#: M2020054

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 1/14/2021 County: Park Filename: M054-003
User: ERR

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 12M	16.01	$37.09	$67.39	1	$104.48	$67.39	$250.00
CAT 924H	12.69	$20.95	$67.39	1	$88.34	$67.39	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$6.72	$67.39	1	$74.11	$67.39	$250.00
Subtotals:					**$266.93**	**$202.17**	**$750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Subtotals:			**$0.00**	**$0.00**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	SILVERTHORNE	
Total one-way travel distance:	31.00	miles
Average Travel Speed:	45.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$2,306.47
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$0.00

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.69	0.69
Return Time (Hours):	0.69	0.69
Loading Time (Hours):	0.15	NA
Unloading Time (Hours):	0.15	NA
Subtotals:	1.68	1.38

JOB TIME AND COST

Total job time:	**3.36**	Hours
Total job cost:	**$2,306**	