

COST SUMMARY WORK

Task description: Inspection Update

Site: Schoen Farm

Permit Action: 2023-04

Permit/Job#: M2020062

PROJECT IDENTIFICATION

Task #: THJ

State: Colorado

Abbreviation: None

Date: 4/25/2023

County: Rio Grande

Filename: M062-thj

User: TJ1

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001a	Slope reduction and general grading	DOZER	1	5.96	\$1,672
002	Rip Compacted Areas	RIPPER	1	6.06	\$1,724
003	Distribute topsoil to affected areas for rec	LOADER	1	27.42	\$2,307
004	Spread topsoil 4 inches across affected lands	DOZER	1	2.97	\$782
005	Mobilization	MOBILIZE	1	4.18	\$2,408
<u>SUBTOTALS:</u>				46.59	\$8,893

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$180

Performance bond: 1.05

Total = \$93

Job superintendent: 16.00

Total = \$1,202

Profit: 10.00

Total = \$889

TOTAL O & P = \$2,364

CONTRACT AMOUNT (direct + O & P) = \$11,257

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

\$563

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$2,927

TOTAL BOND AMOUNT (direct + indirect) = \$11,820

BULLDOZER WORKTask description: Slope reduction and general gradingSite: Schoen FarmPermit Action: 2023-04Permit/Job#: M2020062**PROJECT IDENTIFICATION**Task #: 001AState: ColoradoAbbreviation: NoneDate: 4/25/2023County: Rio GrandeFilename: M062-001aUser: TJ1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$13.10	NA
Ripper op. Cost/Hour:	\$3.65	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$280.53Total Fleet Cost/Hour: \$280.53**MATERIAL QUANTITIES**Initial Volume: 1,500Swell factor: 1.215Loose volume: 1,823 LCYSource of estimated volume: 300 ft mining face, 2:1 reduced to 5:1= 600CY *2.5 for misc.Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly production: 1,017.1 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 8,300 feetMaterial weight: 3,300 lbs/LCYWeight description: Decomposed rock - 75% Rock, 25% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3007

Adjusted unit production: 305.84 LCY/hr

Adjusted fleet production: **305.84** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.917/LCY

Total job time: **5.96** Hours

Total job cost: **\$1,672**

BULLDOZER RIPPING WORK

Task description: Rip Compacted Areas

Site: Schoen Farm Permit Action: 2023-04 Permit/Job#: M2020062

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 4/25/2023 County: Rio Grande Filename: M062-002
User: TJ1

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

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

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper Ownership Cost/Hour:	\$13.10	NA
Ripper Operating Cost/Hour:	\$7.30	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$284.18	
Total Fleet Cost/Hour:	\$284.18	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 3.00 acres Rip Depth (ft): 12.00 Volume: 58,080 BCY or CCY

Source of estimated quantity: Based on 2 acres disturbed at a time

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.56 feet/pass
Average Ripping Width: 7.08 feet/pass
Average Ripping Length: 50.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.596 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.596 Acres/hr
Site Altitude: 8,300 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.49 Acres/hr
Adjusted Hourly Fleet Production: **0.49** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **6.06** Hours

Unit cost: \$574.511 Per acre Total job cost: **\$1,724**

WHEEL LOADER – LOAD AND CARRY WORKTask description: Distribute topsoil to affected areas for recSite: Schoen FarmPermit Action: 2023-04Permit/Job#: M2020062**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 4/25/2023County: Rio GrandeFilename: M062-003User: TJ1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 908HAttachment 1: ROPS CabHorsepower: 79Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$25.38	NA
Operating Cost/Hour:	\$18.02	100
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$84.11	
Total Fleet Cost/Hour:	\$84.11	

MATERIAL QUANTITIESInitial volume: 1,600

CCY

Swell factor: 1.215Loose volume: 1,944

LCY

Source of estimated volume: 400 CY of TS to be replaced/ acre, 3 ac disturbedSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.450 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:	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:		-0.060	minutes
Adjusted Basic Cycle Time:		0.390	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Return: 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	0.00	4.00	4.00	0.2539	(Cat HB)
Return Route:	400	0.00	4.00	4.00	0.2539	(Cat HB)

Total Travel Time: 0.5078 minutes
 Total Cycle Time: **0.8978** minutes

Load Bucket Capacity

Rated Capacity: 1.44 LCY (heaped)
 Bucket Fill Factor: 0.975 Loose material - mixed moist aggregates (95-100%) 0.975
 Adjusted Capacity: **1.40** LCY

Job Condition Correction Factors

Site Altitude: 8300 feet

		Source
Altitude Adj:	<u>0.91</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.76</u>	multiplier

Unadjusted Hourly Unit Production: 93.83 LCY/Hour
 Adjusted Hourly Unit Production: 70.87 LCY/Hour
 Adjusted Hourly Fleet Production: **70.87** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: **27.43** Hours
 Unit cost: \$1.187 /LCY Total job cost: **\$2,307**

BULLDOZER WORKTask description: Spread topsoil 4 inches across affected landsSite: Schoen FarmPermit Action: 2023-04Permit/Job#: M2020062**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 4/25/2023County: Rio GrandeFilename: M062-004User: TJ1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$263.78Total Fleet Cost/Hour: **\$263.78****MATERIAL QUANTITIES**Initial Volume: 1,944Swell factor: 1.000Loose volume: **1,944** LCYSource of estimated volume: Topsoil delivered across 3 acresSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly production: 1,017.1 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 8,300 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
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:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6445

Adjusted unit production: 655.52 LCY/hr

Adjusted fleet production: **655.52** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.402/LCY

Total job time: **2.97** Hours

Total job cost: **\$782**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization**Site: **Schoen Farm**Permit Action: **2023-04**Permit/Job#: **M2020062****PROJECT IDENTIFICATION**Task #: **005**State: **Colorado**Abbreviation: **None**Date: **4/25/2023**County: **Rio Grande**Filename: **M062-005**User: **TJ1**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:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

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 - 8SU	53.08	\$137.95	\$136.92	1	\$274.87	\$136.92	\$250.00
CAT 908H	7.12	\$25.38	\$68.22	1	\$93.60	\$68.22	\$250.00
Subtotals:					\$368.47	\$205.14	\$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, 3/4 T.	\$41.91	1	\$41.91	\$41.91
Subtotals:			\$41.91	\$41.91

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>MONTE VISTA</u>	
Total one-way travel distance:	<u>30.00</u>	miles
Average Travel Speed:	<u>55.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,362.70</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$45.72</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.55</u>	<u>0.55</u>
Return Time (Hours):	<u>0.55</u>	<u>0.55</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>2.09</u>	<u>1.09</u>

JOB TIME AND COST

Total job time: 4.18 Hours

Total job cost: \$2,408