

## COST SUMMARY WORK

Task description: SO3 Bond Estimate

Site: 83rd Joint Venture

Permit Action: SO3 Bond Estimate

Permit/Job#: M1992069

### PROJECT IDENTIFICATION

Task #: 301

State: Colorado

Abbreviation: None

Date: 2/17/2023

County: Weld

Filename: M069-301

User: PSH

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
302	Import Backfill Material	SITEMAINT ENANCE	1	0.00	\$7,066,312
303	Site Revegetation	REVEGE	1	80.00	\$214,418
304	Mob/Demob	MOBILIZE	1	3.33	\$2,744
305	Compact and place imported fill	COMPACT	1	3,557.95	\$1,383,726
306	Backfill Stockpile Rough Grading	DOZER	1	2,941.06	\$772,074
<b><u>SUBTOTALS:</u></b>				<b>6582.34</b>	<b>\$9,439,274</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$190,673

Performance bond: 1.05

Total = \$99,112

Job superintendent: 3,291.17

Total = \$247,266

Profit: 10.00

Total = \$943,927

TOTAL O & P = \$1,480,979

CONTRACT AMOUNT (direct + O & P) = \$10,920,253

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 0.00

Total = \$0

Reclamation management and/or administration: 0.00

\$0

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$1,481,479

**TOTAL BOND AMOUNT (direct + indirect) = \$10,920,753**

## SITE MAINTENANCE

Task description: **Import Backfill Material**

Site: **83rd Joint Venture**

Permit Action: SO3 Bond Estimate

Permit/Job#: M1992069

### PROJECT IDENTIFICATION

Task #: 302

State: Colorado

Abbreviation: None

Date: 2/17/2023

County: Weld

Filename: M069-302

User: PSH

Agency or organization name: DRMS

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Import Backfill Material	2890.00	USER PROVIDED ITEM	1,766,578.00	1	\$4.00	\$7,066,312.00

Job Hours: **0.00**

Total Cost: **\$7,066,312.00**

REVEGETATION WORKTask description: Site RevegetationSite: 83rd Joint VenturePermit Action: SO3 Bond EstimatePermit/Job#: M1992069PROJECT IDENTIFICATIONTask #: 303State: ColoradoAbbreviation: NoneDate: 2/17/2023County: WeldFilename: M069-303User: PSHAgency or organization name: DRMSFERTILIZING**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
Chisel plowing {DMG}	\$98.43
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
<b>Total Tilling Cost/Acre</b>	<b>\$388.83</b>

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.20	7.81	\$5.70
Switchgrass - Blackwell	0.70	6.25	\$8.05
Sideoats Grama - Butte	0.90	2.95	\$8.10
Western Wheatgrass - Arriba	7.20	18.18	\$46.80
Needlegrass, Green - Lodorm	1.50	6.23	\$17.66
<b>Totals Seed Mix</b>	<b>10.50</b>	<b>41.43</b>	<b>\$86.31</b>

**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
<b>Total Mulch Materials Cost/Acre</b>				<b>\$842.72</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
<b>Total Mulch Application Cost/Acre</b>	<b>\$73.00</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Cottonwood, Narrowleaf	1	Tubling, 3 cu. in. container (MEANS)	\$1.14	\$0.00	\$1.14
Snowberry, Mountain	1	Container, 1 gallon (MEANS)	\$15.66	\$0.00	\$15.66
Winter Fat	1	Container, 1 gallon (MEANS)	\$9.94	\$0.00	\$9.94
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$26.74</b>

**JOB TIME AND COST**

No. of Acres: 124                      Cost /Acre: \$1,649.60  
 Estimated Failure Rate: 25%                      Cost /Acre\*: \$318.31  
 \*Selected Replanting Work Items: FERTILIZING,SEEDING

Initial Job Cost: **\$204,550.40**  
 Reseeding Job Cost: **\$9,867.61**  
 Total Job Cost: **\$214,418**  
 Job Hours: **80.00**

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mob/Demob**Site: **83rd Joint Venture**Permit Action: **SO3 Bond Estimate**Permit/Job#: **M1992069****PROJECT IDENTIFICATION**Task #: **304**State: **Colorado**Abbreviation: **None**Date: **2/17/2023**County: **Weld**Filename: **M069-304**User: **PSH**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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 825H	36.08	\$217.61	\$101.82	1	\$319.43	\$101.82	\$250.00
Cat D8T - 8SU	53.08	\$137.95	\$136.92	1	\$274.87	\$136.92	\$250.00
Subtotals:					<b>\$594.30</b>	<b>\$238.74</b>	<b>\$500.00</b>

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Subtotals:			<b>\$0.00</b>	<b>\$0.00</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>GREELEY</u>	
Total one-way travel distance:	<u>10.00</u>	miles
Average Travel Speed:	<u>30.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,743.96</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$0.00</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.33</u>	<u>0.33</u>
Return Time (Hours):	<u>0.33</u>	<u>0.33</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.67</u>	<u>0.67</u>

**JOB TIME AND COST**

Total job time:	<u>3.33</u>	Hours
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Total job cost:	<u>\$2,744</u>
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## COMPACTION WORK

Task description: Compact and place imported fill

Site: 83rd Joint Venture

Permit Action: SO3 Bond Estimate

Permit/Job#: M1992069

### PROJECT IDENTIFICATION

Task #: 305

State: Colorado

Abbreviation: None

Date: 2/17/2023

County: Weld

Filename: M069-305

User: PSH

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 825H

Horsepower: 354

Compactor Type: Soil - tamping foot

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

Ownership Cost/Hour:	\$217.61	Utilization %	NA
Operating Cost/Hour:	\$139.80		100
Operator Cost/Hour:	\$31.50		NA
Total Unit Cost/Hour:	\$388.91		
Total Fleet Cost/Hour:	<b>\$388.91</b>		

### MATERIAL QUANTITIES

Loose volume: 1,766,578

LCY

Shrinkage factor: 0.900

Compacted volume: **1,589,920**

CCY

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

Source of estimated shrinkage factor: Cat Handbook

### HOURLY PRODUCTION

Unadjusted hourly production =  $(W \times S \times L \times C) / P$

Compacted width per pass (W):	<u>7.34</u>	feet
Average Compactor Speed (S):	<u>3.00</u>	mph
Compacted thickness of each lift (L):	<u>6.00</u>	inches
Conversion Constant (C):	<u>16.3</u>	(5,280ft./12in./27cu.ft.)
Required number of machine passes (P):	<u>4</u>	passes
Unadjusted Hourly Unit Production:	<u>538.39</u>	CCY/hour

#### Job Condition Correction Factors

Site Altitude: 4,800 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.83</u>	(CAT HB)
Net Correction:	<u>0.8300</u>	(1 shift/day)
		multiplier

Adjusted Hourly Unit Production: 446.86 CCY/Hour

Adjusted Hourly Fleet Production: **446.86** CCY/Hour

### JOB TIME AND COST

Fleet size: 1 Compactor(s)

Total job time: **3,557.96** Hours

Unit cost: \$0.870 per CCY

Total job cost: **\$1,383,726**

**BULLDOZER WORK**Task description: **Backfill Stockpile Rough Grading**Site: **83rd Joint Venture**Permit Action: **SO3 Bond Estimate**Permit/Job#: **M1992069****PROJECT IDENTIFICATION**Task #: **306**State: **Colorado**Abbreviation: **None**Date: **2/17/2023**County: **Weld**Filename: **M069-306**User: **PSH**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8SU**Horsepower: **310**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data 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:	\$40.04	NA
Total unit Cost/Hour:	\$262.52	
Total Fleet Cost/Hour:	<b>\$262.52</b>	

**MATERIAL QUANTITIES**Initial Volume: **1,766,578**Swell factor: **1.000**Loose volume: **1,766,578 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly production: **852.6 LCY/hr**Materials consistency description: **Loose stockpile 1.2**Average push gradient: **-5 %**Average site altitude: **4,800 feet**Material weight: **2,900 lbs/LCY**Weight description: **Sand and gravel - Dry****Job Condition Correction Factor**Operator Skill: **1.000**Source  
(EXCL.)



Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7045

Adjusted unit  
production: 600.66 LCY/hr  
Adjusted fleet  
production: **600.66 LCY/hr**

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$0.437/LCY

Total job time: **2,941.06 Hours**  
Total job cost: **\$772,074**