

COLORADO Division of Reclamation, Mining and Safety

Department of Natural Resources 1313 Sherman Street, Room 215 Denver, Colorado 80203

December 10, 2018

Daniel Robinson Robinson Sons Inc. 1228 East 7th Street Trinidad, CO 81082

Re: Robinson Sons Gravel Pit No. 1, Permit No. M-2008-076 Amendment Application (Revision No. AM-01), Adequacy Review No. 2

Mr. Robinson:

The Division of Reclamation, Mining and Safety (Division) has completed its second adequacy review of the materials submitted for the above referenced amendment application. All comment and review periods for the application began on September 24, 2018, when the application was called complete for filing purposes. The decision date for the application is set for **December 24, 2018**.

After reviewing the adequacy response submitted on November 30, 2018, the Division has identified adequacy items requiring clarification or additional information. These items are identified below under their respective exhibit heading, and are numbered sequentially. The item numbers referenced in this letter correlate with the Division's adequacy items identified in the letter dated October 4, 2018.

Exhibit G – Water Information (Rule 6.4.7):

 The operator's response to item no. 16 commits to not conducting activities in the creek disturbance areas until appropriate permits from the Division of Water Resources (DWR) and/or the U.S. Army Corps of Engineers (USACE) are acquired. Please commit to providing the Division with a copy of any determination(s) made by DWR or USACE for this site.

Exhibit L – Reclamation Costs (Rule 6.4.12):

2) The operator's response to item no. 25 states that all equipment needed for demolition of the scale and scale house is located on site. The operator submitted a similar response to item no. 26 stating that mobilization and demobilization costs are estimated at zero, as the applicant has all of the necessary equipment present on site. Please be advised, Rule 6.4.12(1) requires the information provided by the operator (for calculating the costs of reclamation) to be sufficient to calculate the costs that would be incurred by the state. The bond estimate provided by the operator does not fully satisfy this Rule.

The Division has calculated a bond amount for the proposed operation (see enclosed estimate), which includes costs the state would incur if it had to complete reclamation of the site. Please



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note, while the operator intends to first consult with DWR and USACE prior to conducting any mitigation or reclamation activities in the creek disturbance areas, the bond estimate must include costs for these tasks at this time. If the mitigation or reclamation plan for these areas needs to be revised in the future after consultation with other agencies, the operator can submit a Technical Revision to revise the reclamation plan accordingly. Please review the Division's bond estimate and provide any comments you might have by the deadline given at the end of this letter.

Exhibit S – Permanent Man-Made Structures (Rule 6.4.19):

- 3) The operator's response to item no. 29 provides a list of permanent, man-made structures located on and within 200 feet of the affected area, and their respective owners. Under section (e) of this list, the operator includes fences with <u>various owners</u> depending on the neighboring property owner. However, on the revised Exhibit C-1 map submitted, only one owner (Robinson) is identified for fences located within 200 feet of the affected area. Pursuant to Rule 6.4.3(g), the Exhibit C map must show the owner's name for all permanent, man-made structures located on and within 200 feet of the affected land. Therefore, please revise the Exhibit C-1 map to include all structure owners, including for any fences located within 200 feet of the proposed affected area.
- 4) The operator's response to item no. 30 states that structure agreements have been sent out to all structure owners via Certified Mail in accordance with Rule 6.4.19(a) and (c). Please provide the return receipts for Certified Mailing and copies of the structure agreements that were mailed to all structure owners. Please be advised, the Division cannot accept an engineering evaluation to demonstrate structures will not be damaged by activities occurring at the mining operation until the operator has demonstrated agreements were attempted for all structure owners.

Geotechnical Stability Exhibit:

- 5) The operator's response to item no. 33 states that mining will be kept at least 30 feet from gas lines and 10 feet from power poles. However, the Exhibit C-2 map shows a minimum 25 foot setback from gas lines and a minimum 20 foot setback from power poles. Please explain and/or correct these discrepancies. Please be sure the Exhibit C-2 map shows the correct minimum setback distances.
- 6) The operator's response to item no. 34 states that vertical highwalls in sand and gravel mining are temporary in nature and therefore are not evaluated for slope stability. Please be advised, pursuant to Rule 6.5(2), the Division may require an operator to provide engineering stability analyses for certain slope configurations as they will occur <u>during</u> operations (not just for proposed final reclaimed slopes). Please provide an engineering stability analysis demonstrating that keeping the proposed 1,000 foot section of vertical highwall a minimum of 25 feet from power poles, 90 feet from gas lines, and 50 feet from all other structures not owned by the operator will be sufficient to not damage these structures. Alternatively, the operator may provide executed structured agreements for these structures pursuant to Rule 6.4.19(a) or (c).



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Additional Item(s):

7) Pursuant to Rule 1.6.2(1)(c), any changes or additions to the application on file in our office must also be reflected in the public review copy which was placed with the County Clerk and Recorder. Pursuant to Rule 6.4.18, you must provide our office with an affidavit or receipt indicating the date this was done. Please provide an affidavit or receipt demonstrating a copy of the last adequacy response (submitted to the Division on November 30, 2018) was placed with the County Clerk and Recorder.

This concludes the Division's second adequacy review of your amendment application. Please ensure the Division sufficient time to complete its review process by responding to these adequacy issues by December 17, 2018.

If you have any questions, you may call me at (303) 866-3567, ext. 8129, or email me at <u>amy.eschberger@state.co.us</u>.

Sincerely,

any Eschberger

Amy Eschberger Environmental Protection Specialist

Encl: Division's bond estimate
 Comment from Office of Archaeology and Historic Preservation, received on 10/22/2018
 Comment from Colorado Parks and Wildlife, received on 11/8/2018

Ec: Ben Langenfeld, Greg Lewicki and Associates at: benl@lewicki.biz



COST SUMMARY WORK

| : Robi | nson Sons Gravel | l Pit No. 1 Pe | ermit Action: | AM-01 Bond Estimate | Permit/Job# | #: <u>M2008076</u> |
|--------|---------------------|-----------------------|---------------|---------------------|---------------|--------------------|
| PROJE | <u>CT IDENTIFIC</u> | CATION | | | | |
| Task | #: 000 | State: | Colorado | | Abbreviation: | None |
| 1 455 | | | | | T 11 | 1076000 |
| | te: 12/10/2018 | County: | Las Animas | S | Filename: | M076-000 |

TASK LIST (DIRECT COSTS)

| Task | | Form | Fleet | Task | |
|-------|--|--------------|-------|--------|-------------|
| 1 45K | Description | Used | Size | Hours | Cost |
| 001 | Backfill 1,000 ft vertical highwall to 3H:1V in Area 1 | LOADER | 1 | 102.14 | \$9,999.00 |
| 002 | Rip stockpiling/processing areas in Area 1 | RIPPER | 1 | 16.27 | \$3,665.00 |
| 003 | Retopsoil 17.14 ac at 8 in depth in Area 1 | SCRAPER1 |] 1 | 35.36 | \$27,421.00 |
| 004 | Revegetate 17.14 ac in Area 1 | REVEGE |] 1 | 34.00 | \$28,377.00 |
| 005 | Grade 2.12 ac in Area 2 | DOZER |] 1 | 9.48 | \$2,099.00 |
| 006 | Retopsoil 2.12 ac at 8 in depth in Area 2 | SCRAPER1 |] 1 | 6.89 | \$5,340.00 |
| 007 | Revegetate 2.12 ac in Area 2 | REVEGE | 1 | 4.00 | \$3,510.00 |
| 008 | Demolition of scale and scale house | DEMOLISH | 1 | 10.00 | \$3,192.98 |
| 009 | Haul overburden to backfill creek pits 2 ft above GW | TRUCK1 |] 1 | 57.72 | \$36,134.00 |
| 010 | Grade disturbed slopes in creek area to 3H:1V | DOZER | 1 | 3.68 | \$813.00 |
| 011 | Haul topsoil to creek areas, spread at 8 in depth | TRUCK1 | 1 | 37.03 | \$23,183.00 |
| 012 | Revegetate 6.74 ac creek areas | REVEGE |] 1 | 14.00 | \$11,159.00 |
| 013 | Mobilization/Demobilization of Equipment | MOBILIZE | 1 | 14.04 | \$27,046.00 |
| | | <u>SUBTO</u> | TALS: | 344.61 | \$181,939 |

INDIRECT COSTS

OVERHEAD AND PROFIT:

| Liability insurance: | 2.02 | Total = | \$3,675.17 |
|----------------------|-------|--|--------------|
| Performance bond: | 1.05 | Total = | \$1,910.36 |
| Job superintendent: | 0.00 | Total = | \$0.00 |
| Profit: | 10.00 | Total = | \$18,193.90 |
| | | TOTAL O & P = | \$23,779.43 |
| | | CONTRACT AMOUNT (direct + O & P) = $($ | \$205,718.43 |

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

| Financial warranty processing (legal/related costs): | 500.00 | Total = | 500.00 |
|--|---------------|--------------------|--------------|
| Engineering work and/or contract/bid preparation: | 0.00 | Total = | \$0.00 |
| Reclamation management and/or administration: | 5.00 | | \$10,285.92 |
| - | | | |
| CONTINGENCY: | 0.00 | Total = | \$0.00 |
| | | | |
| | TOTAL IN | DIRECT COST = | \$34,565.35 |
| | | | |
| TOTAL BO | ND AMOUNT (di | rect + indirect) = | \$216,504.35 |

Page 1 of 2

WHEEL LOADER - LOAD AND CARRY WORK

| Robinson Sons Gravel Pit No | .1 Permit Action: | AM-01 Bond Estimate | Permit/Job#: | M2008076 |
|---|---|---|---|---|
| PROJECT IDENTIFICATIO | N | | | |
| | | | | NT |
| Task #: 001 Date: 12/10/2018 | State: Colorado County: Las Anima | 25 | Abbreviation: Filename: | None M076-001 |
| User: AME | County. Las Annia | as | Thename. | 1070-001 |
| Agency or organization | name: DRMS | | | |
| | | | | |
| HOURLY EQUIPMENT CO | <u>DST</u> | | | |
| Basic Machine: CAT 95 | 50H | Horsep | ower: | 197 |
| Attachment 1: ROPS (| Cab | Shift I | 1 | er day |
| | | Data Sc | ource: (C | CRG) |
| Cost Breakdown: | | | | |
| | | Utilization % | | |
| Ownership Cost/Hour: | \$26.14 | NA | | |
| Operating Cost/Hour: | \$30.84 | 100 | | |
| Operator Cost/Hour: | \$40.90 | NA | | |
| Total Unit Cost/Hour: | \$97.89 | | | |
| Total Fleet Cost/Hour: | \$97.89 | | | |
| TOTAL THEEL COST HOUL. | \$71.07 | | | |
| | ψ97.09 | | | |
| MATERIAL QUANTITIES | φ91.09 | | | |
| MATERIAL QUANTITIES | | Swell factor: 1 | 125 | |
| MATERIAL QUANTITIES Initial volume: <u>18,000</u> | CCY | Swell factor: <u>1.</u> | 125 | |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 | ССҮ ,250 ССҮ LСҮ | | | |
| MATERIAL QUANTITIES Initial volume: <u>18,000</u> Loose volume: <u>20</u> Source of estima | 0,250 CCY LCY tted volume: 1,000' L | x 18 ft H from vertical to | | |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 | 0,250 CCY LCY tted volume: 1,000' L | x 18 ft H from vertical to | | |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estimated sou | 0,250 CCY LCY tted volume: 1,000' L | x 18 ft H from vertical to | | |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION | 0,250 CCY LCY tted volume: 1,000' L swell factor: Cat Hand | x 18 ft H from vertical to | 3H:1V | |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION | 0,250 CCY LCY tted volume: 1,000' L swell factor: Cat Hand | x 18 ft H from vertical to | | minutes |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION | 0,250 CCY LCY tted volume: 1,000' L swell factor: Cat Hand | x 18 ft H from vertical to | 3H:1V | minutes Source |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma | CCY 0,250 LCY tted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 | 3H:1V 0.500 | |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co | CCY 0,250 LCY tted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame onveyor or dozer piled 10 | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 | 3H:1V 0.500 Factor (min.) -0.020 0.000 | Source (Cat HB) (Cat HB) |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Truck Ownership: Co | CCY 0,250 LCY tted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame nveyor or dozer piled 10 ommon ownership of truc | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 | 3H:1V 0.500 Factor (min.) -0.020 0.000 -0.040 | Source (Cat HB) (Cat HB) (Cat HB) |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Truck Ownership: Co Operation: Co | cCY 0,250 LCY uted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame onveyor or dozer piled 10 ommon ownership of true onstant operation -0.04 | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 | 3H:1V 0.500 Factor (min.) -0.020 0.000 -0.040 -0.040 | Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Truck Ownership: Co Operation: Co | CCY 2,250 CCY LCY ated volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame proveyor or dozer piled 10 promon ownership of truc nstant operation -0.04 prinal target 0.00 | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 ks and loaders -0.04 | 0.500 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 | Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Truck Ownership: Co Operation: Co | CCY 2,250 CCY LCY atted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time atterial 1/8" to 3/4" diame inveyor or dozer piled 10 pommon ownership of truc onstant operation -0.04 pominal target 0.00 Net Cyc | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 ks and loaders -0.04 cle Time Adjustment: | 0.500 Factor (min.) -0.020 0.000 -0.040 -0.040 -0.040 -0.0100 | Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estimated s Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Operation: Co Dump Target: No | CCY LCY LCY tted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame onveyor or dozer piled 10 ommon ownership of truc onstant operation -0.04 ominal target 0.00 Net Cyc Adjuste | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 ks and loaders -0.04 | 0.500 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 | Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Truck Ownership: Co Operation: Co | CCY LCY LCY tted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame onveyor or dozer piled 10 ommon ownership of truc onstant operation -0.04 ominal target 0.00 Net Cyc Adjuste | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 ks and loaders -0.04 cle Time Adjustment: | 0.500 Factor (min.) -0.020 0.000 -0.040 -0.040 -0.040 -0.0100 | Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes |
| MATERIAL QUANTITIES Initial volume: 18,000 Loose volume: 20 Source of estima Source of estimated s HOURLY PRODUCTION Loader Cycle Time: Unadj Cycle Time Factors Material: Ma Stockpile: Co Operation: Co Dump Target: No | cCY 0,250 LCY tted volume: 1,000' L swell factor: Cat Hand justed Basic Cycle Time aterial 1/8" to 3/4" diame onveyor or dozer piled 10 ommon ownership of truc onstant operation -0.04 ominal target 0.00 Net Cyc Adjust tions | x 18 ft H from vertical to lbook (load, dump, maneuver): ter -0.02 ft. high and up 0.00 ks and loaders -0.04 cle Time Adjustment: | 3H:1V 0.500 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 | Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes |

Haul and Return Time

| | Length | Grade Res. | Rolling | Total Res. | Travel Time | Source |
|---------------|--------|------------|----------|------------|-------------|----------|
| | (feet) | (%) | Res. (%) | (%) | (minutes) | Source |
| Haul Route: | 350 | 2.00 | 8.00 | 10.00 | 0.4723 | (Cat HB) |
| Return Route: | 350 | -2.00 | 8.00 | 6.00 | 0.3158 | (Cat HB) |

| | | Total Travel T Total Cycle T | | minutes minutes |
|---|---|---|----------------------|--------------------|
| Load Bucket Capacity | | | | |
| Rated Capac Bucket Fill Fac Adjusted Capac | tor: 1.100 | LCY (heaped) Other - rock/dirt mixtures LCY | (100-120%) 1.100 | |
| Job Condition Correcti Site Altitude: <u>6990</u> feet | | | | |
| | | Source | | |
| Altitude Adj: | 1.00 | (CAT HB) | | |
| Job Efficiency: | 0.83 | (1 shift/day) | | |
| Net Correction: | 0.83 | multiplier | | |
| U | nadjusted Hourly Unit I Adjusted Hourly Unit I | | LCY/Hour LCY/Hour | |
| | Adjusted Hourly Fleet | | LCY/Hour | |
| JOB TIME AND C | <u>OST</u> | | | |
| Fleet size: | 1 Loader(s) | Total job time: | 102.14 | Hours |

Total job cost: **\$9,999**

Unit cost: _____\$0.494 /LCY

BULLDOZER RIPPING WORK

| <i>a</i> . | Task description: | | | | | |
|----------------|--|---|-----------------------|-----------------------------|----------------------|----------|
| Site | | | n: AM-01 Bond Es | stimate Permit | /Job#: <u>M20080</u> | 76 |
| | | ENTIFICATION | | | | |
| | Task #: 002 Date: 12/ User: AN | County: Las An | | Abbreviat | | 2 |
| | Agency | or organization name: DRMS | | | | |
| | 0 1 | UIPMENT COST | | | | |
| | | Machine: Cat D8T - 8SU | | Horsepower: | 310 | |
| | Ripper Att | | | Shift Basis: | 1 per day | |
| | | | | Data Source: | (CRG) | |
| | Cost Breakdown: | <u>.</u> | 1 | Utilization % | | |
| | | Ownership Cost/Hour: | \$93.62 | NA | | |
| | D. | Operating Cost/Hour: | \$73.35 | 100 | | |
| | | er Ownership Cost/Hour: | \$8.93 \$7.78 | NA 100 | | |
| | Kipj | Operator Cost/Hour: | \$41.52 | NA | | |
| | | Total Unit Cost/Hour: | \$225.20 | | | |
| | | Total Fleet Cost/Hour: \$ | 225.20 | | | |
| | MATERIAL (| DUANTITIES | Selected estimating n | nethod: Area | | |
| | Alternate Method | | Selected estimating h | Area | | |
| mia | | Bank Volume | • NIA | BCY | NA | |
| smic: Area: | NA 10.80 | acres Rip Depth (ft) | | Volume: 34,84 | | BCY or 0 |
| | | Source of estimated quantity: DR | | | | |
| | | · · <u> </u> | | | | |
| | HOURLY PRO | <u>JUCTION</u> | | | | |
| | Seismic: | Seismic Velocity: | NA | feet/second | | |
| | A | Seisine Verserty. | 1121 | | | |
| | <u>Area:</u> | Average Ripping Depth: | 2.56 | mph | | |
| | | Average Ripping Width: | 7.08 | degrees | | |
| | | Average Ripping Length: | 300.00 | feet | | |
| | | Average Dozer Speed: | 88.00 | feet | | |
| | | Average Maneuver Time: Production per unit area: | 0.25 | feet acres/hour | | |
| | | · | 0.800 | | | |
| | Job Condition Co | | | | | |
| | Un | adjusted Hourly Unit Production: | 0.800 | Acres/hr | | |
| | | Site Altitude: | 6,990 | feet | | |
| | | Altitude Adj: | 1.00 | (CAT HB) | | |
| | | Job Efficiency: Net Correction: | 0.83 | (1 shift/day) multiplier | | |
| | | | | | | |
| | | Adjusted Hourly Unit Production Adjusted Hourly Fleet Production | | Acres/hr Acres/hr | | |
| | JOB TIME AN | | | | | |
| | Fleet size: | 1 Grader(s) | Total job time: | 16.27 | Ho | irs |
| | | | | 10.2/ | H0 | u1 5 |
| | Unit cost: | \$339.348 Per acre | Total job cost: | \$3,665 | , | |

SCRAPER TEAM WORK

| Site: Robinson Sons Gr | avel Pit No. 1 | Permit A | ction: | AM-01 Bond E | stimate Perr | mit/Job#: <u>M200</u> | 8076 |
|---|-------------------------------|----------|---------------|--------------------------------|----------------------------|--------------------------------|--------------|
| PROJECT IDENT | TIFICATION | | | | | | |
| Task #: 003 Date: 12/10/2 | Sta 018 Coun | | orado Anim | 25 | | viation: None ename: M076-0 | 003 |
| User: AME | | <u> </u> | | | | | |
| Agency or o | rganization name: | DRMS | | | | | |
| HOURLY EQUIP | MENT | | | COSTS | hift basis: <u>1 per d</u> | ay | |
| | | 1 | <u> </u> | ent Description | | | |
| | | 1 | Cat 637 NA | 'G | | | |
| Suppor | t Equipment -Load | Area: C | Cat D8' | T - 8SU | | | |
| Road Mai | -Dump - ntenance –Motor Gr | | VA CAT 16 | 5M | | | |
| | -Water T | | | Fanker, 3,500 Gal | | | |
| | | T | | a | | | |
| <u>Cost Breakdown</u> : | Scraper Work Scraper | Dozer | | Support Equi Load Area | Dump Area | Maintenance Motor Grader | Water Truc |
| %Utilization-machine: | 100 | | NA | 100 | NA | 100 | 1 |
| Ownership cost/hour: | \$155.61 | | NA | \$93.62 | NA | \$77.19 | \$12. |
| Operating cost/hour: | \$166.86 | | NA | \$73.35 | NA | \$63.34 | \$26. |
| %Utilization-ripper: | NA | | NA | NA ¢0.00 | NA | 50 | 1 |
| Ripper own. cost/hour: | NA NA | | NA NA | \$0.00 \$0.00 | NA NA | \$4.07 | \$0. \$0. |
| Ripper op. cost/hour: Operator cost/hour: | \$31.05 | | NA | \$0.00 | NA | \$1.77 \$28.69 | \$0. |
| Unit Subtotals: | \$353.51 | | NA | \$208.49 | NA | \$175.05 | \$38 |
| Number of Units: | 1 | | 0 | 4200.19 | 0 | 1 | φ50. |
| Group Subtotals: | Work: | \$353.5 | 1 | Support: | \$208.49 | Maint: | \$213.46 |
| Total work team cost/ MATERIAL QUA Initial volume: Loose volume: | | | CY CY | Swell fac x 8 in depth, avg | tor: <u>1.215</u> | | |
| | f estimated swell fac | | at Hand | | | | |
| <u></u> | | | | Scraper B | owl (volume) Basi | s. | |
| Material weight: | 1,600 lbs/LCY | | | Struck | Volume: 24.00 | | CY CY |
| Material description: Rated Payload: | Top Soil 81,600 pounds | | | Heaped Average | | | CY |

<u>0.80</u> Minutes

<u>0.60</u> Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6990 feet

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

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 | 800.00 | 1.00 | 3.00 | 4.00 | 2394 | 0.49 |

Haul Time: **0.49** minutes

Return Route:

| Seg # | Haul Distance (Ft) | Grade (%) | Roll. Res | Total Res (%) | Velocity (fpm) | Travel Time (min) |
|--------|---|----------------|-------------------|---------------------|----------------|----------------------|
| 1 | 800.00 | -1.00 | 3.00 | 2.00 | 2960 | 0.39 |
| | | | | Return Time: | 0.39 | minutes |
| | | | Total Scrape | r team cycle time: | 2.28 | minutes |
| | | | Adjusted f | for job conditions: | 633.42 | LCY/Hour |
| | | | Selected Nu | mber of Scrapers: | 1 | Scraper(s) |
| | Adjuste | d single scrap | per team (unit) h | nourly production: | 633.42 | LCY/Hour |
| | Adjusted n | nultiple scrap | er team (fleet) h | nourly production: | 633.42 | LCY/Hour |
| Optima | Unadjusted unit pro al Number of Scrapers pe | | | LCY/Hour | | |
| JOB T | IME AND COST | | | | | |
| Flee | t size: 1 | Team(s) | Т | otal job time: | 35.36 | Hours |

| Fleet size: | 1 | Team(s) | Total job time: | 35.36 | Hours |
|-------------|---------|---------|-----------------|----------|-------|
| Unit cost: | \$1.224 | /LCY | Total job cost: | \$27,421 | |

REVEGETATION WORK

| Site: Robinson S | | | | | | |
|-----------------------|----------------|---------------------|------------------------|---------------------|------------------------------|------------------|
| ne. Robinson S | Sons Gravel | Pit No. 1 Pe | rmit Action: | AM-01 Bond Estimate | Permit/Job | #: M2008076 |
| PROJECT II | DENTIFIC | ATION | | | | |
| | 004 12/10/2018 | State: County: | Colorado Las Animas | S | Abbreviation: _ Filename: | None M076-004 |
| User: | AME | | | | _ | |

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} | | \$92.77 |
| Weed control spraying (MEANS 31 31 16.13 3100) | | \$193.60 |
| | Total Tilling Cost/Acre | \$286.37 |

SEEDING

| Seed Mix | Rate – PLS LBS / Acre | Seeds per SQ. FT | Cost /Acre |
|-----------------------------|--------------------------------|------------------------|------------|
| Big Bluestem - Native | 5.50 | 16.41 | \$57.75 |
| Blue Grama - Native | 1.50 | 24.48 | \$22.28 |
| Sideoats Grama - Vaughn | 4.50 | 14.77 | \$46.08 |
| Western Wheatgrass - Native | 8.00 | 20.20 | \$57.36 |
| Totals Seed Mix | 19.50 | 75.87 | \$183.47 |

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} | 2.00 | TON | \$288.00 | \$576.00 |
| Total Mulch Materials Cost/Acre | | | | \$576.00 |

Application

| Description | | Cost /Acre |
|--|-----------------------------------|------------|
| Crimping, with tractor {DMG survey data} | | \$68.78 |
| Weed spray, hand, non-aquatic area, nox. [DMG] | | \$184.32 |
| | | |
| | Total Mulch Application Cost/Acre | \$253.10 |

NURSERY STOCK PLANTING

| Common Name | No / Acre | Type and Size | Planting Cost | Fertilizer Pellet Cost | Cost /Acre |
|-------------|--------------|---------------|------------------|---------------------------|------------|
| | | | | | \$ |
| | | | | | |
| | | Totals | Nursery Stoc | ck Cost / Acre | \$0.00 |

JOB TIME AND COST

| Estimate *Selected Replanti | No. of Acres: ed Failure Rate: ng Work Items: | 30% | Cost /Acre: Cost /Acre*: | |
|--------------------------------|---|-----|-----------------------------|--|
| Initial Job Cost: | \$26,240.31 | | | |
| Reseeding Job Cost: | \$2,136.35 | | | |
| Total Job Cost: | \$28,377 | | | |
| Job Hours: | 34.00 | | - | |

BULLDOZER WORK

| Task description: | Grade 2. | .12 ac in | Area 2 | | | |
|--|--|--|--|--|---------------|----------|
| Robinson Sons Grave | el Pit No. 1 | Per | mit Action: | AM-01 Bond Estimate | Permit/Job#: | M2008076 |
| PROJECT IDENTIF | ICATION | | | | | |
| Task #: 005 | | State: | Colorado | | Abbreviation: | None |
| Date: $12/10/2018$ | | County: | Las Anima | 26 | Filename: | M076-005 |
| User: AME | <u> </u> | Jounty. | Las Allilla | 18 | rnename. | 1070-003 |
| Agency or orga | nization nam | ne: DR | RMS | | | |
| | | | | | | |
| HOURLY EQUIPME | | - | | | | |
| Basic Machine: Cat Horsepower: 310 | <u>t D8T - 8SU</u> | | | | | |
| | ni-Universal | 1 | | | | |
| | | L | | | | |
| | hank ripper | | | | | |
| | er day | | | | | |
| Data Source: (Cl | RG) | | | | | |
| Cost Breakdown: | | | | | | |
| | | | | Utilization % | | |
| Ownership Cost/Hour: | | | \$93.62 | NA | | |
| Operating Cost/Hour: | | | \$73.35 | 100 | | |
| Ripper own. Cost/Hour: | | | \$8.93 | NA | | |
| Ripper op. Cost/Hour: | | | \$3.89 | 50 | | |
| $\mathbf{K}_{\mathbf{D}}$ | | | \$41.52 | NA | | |
| Operator Cost/Hour: Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUANT | | | ¢ (1102 | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: | \$221.31 <u>SITIES</u> -0 | | | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 | \$221.31 <u>SITIES</u> -0 | | | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu | \$221.31 FITIES 0 0 0 0 LCY me: _2 | 2.12 ac x | 2 ft | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 | \$221.31 FITIES 0 0 0 0 LCY me: _2 | 2.12 ac x Cat Hand | 2 ft | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated swel | \$221.31 CITIES 0 0 0 0 LCY me: _2 1 factor: _C | | 2 ft | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated swel HOURLY PRODUCC | \$221.31 <u>SITIES</u> 0 0 0 0 0 0 0 0 0 0 0 0 0 | Cat Hand | 2 ft | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated swel | \$221.31 <u>SITIES</u> 0 0 0 LCY me: <u>2</u> 1 factor: <u>C</u> <u>FION</u> 50 | | 2 ft book | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance: | \$221.31 CITIES .0 | Cat Hand feet 00.0 LC | 2 ft book | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance: Jnadjusted hourly produ Materials consistency destinated set | \$221.31 CITIES .0 | Cat Hand feet 00.0 LC | 2 ft book | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANI Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCY Average push distance: Inadjusted hourly produ | \$221.31 CITIES .0 | Cat Hand feet 00.0 LC Loose s | 2 ft book | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance: Jnadjusted hourly produ Materials consistency destance: Average push gradient: | \$221.31 TITIES 0 0 0 LCY me:2 1 factor:0 FION ction:1,4 scription: 5 % | Cat Hand feet 00.0 LC Loose s | 2 ft book | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUC' Average push distance: Jnadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: | \$221.31 STTIES .0 .1 | Cat Hand feet 00.0 LC Loose s | 2 ft book | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCY Average push distance: Jnadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: ob Condition Correction | \$221.31 CITIES .0 .1 | Cat Hand feet 00.0 LC Loose s LOOSE s LCY sed rock | 2 ft book Y/hr stockpile 1.2 | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCY Average push distance: Jnadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Operator | \$221.31 CITIES .0 | Cat Hand feet 00.0 LC Loose s LOOSE s LCY sed rock 0. | 2 ft book Y/hr stockpile 1.2 | | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance: Jnadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Operator Material consist | \$221.31 CITIES .0 | Cat Hand feet 00.0 LC Loose s LOOSE s LCY sed rock 0. 1. | 2 ft book Y/hr stockpile 1.2 - 25% Rock, 750 200 | , 75% Earth | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance: Jnadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Operator Material consist Dozing me | \$221.31 CITIES .0 | feet 00.0 LC Loose s LCY sed rock 0. 1. | 2 ft book Y/hr stockpile 1.2 | , 75% Earth , 75% Earth (AVG.) (CAT HB) (50% SL) | | |
| Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 6,84 Swell factor: 1.00 Loose volume: 6,84 Source of estimated volu Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance: Jnadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Operator Material consist Dozing me | \$221.31 CITIES .0 | Cat Hand feet 00.0 LC Loose s Loose s LCY sed rock 0. 1. 1. 1. | 2 ft book Y/hr stockpile 1.2 - 25% Rock, 750 200 | , 75% Earth | | |

| Spoil pi | le: | 0.800 | (FND-RF) | |
|----------------------------|----------------|-------------|----------|--|
| Push gradier | Push gradient: | | (CAT HB) | |
| Altitud | le: | 1.000 | (CAT HB) | |
| Material Weigl | nt: | 0.868 | (CAT HB) | |
| Blade typ | e: | 1.000 | (PAT) | |
| Net correction | on: | 0.5152 | | |
| Adjusted unit production: | 72 | 1.28 LCY/hr | | |
| Adjusted fleet production: | 72 | 1.28 LCY/hr | | |

JOB TIME AND COST

| Fleet size: | 1 Dozer(s) |
|-------------|-------------|
| Unit cost: | \$0.307/LCY |

| Total job time: | 9.48 Hours |
|-----------------|-------------------|
| Total job cost: | \$2,099 |

Page 1 of 2

SCRAPER TEAM WORK

| Site: Robinson Sons G | avel Pit No. 1 | Permit Action: | AM-01 Bond E | stimate Peri | mit/Job#: <u>M2008</u> | 8076 |
|---|------------------------------|-----------------------------------|-------------------------------|--------------------------------|--------------------------------|------------------|
| PROJECT IDENT | TIFICATION | | | | | |
| Task #: 006 Date: 12/10/2 User: AME | | State: Colorado unty: Las Anir | | | viation: None ename: M076-0 |)06 |
| Agency or c | organization name: | DRMS | | | | |
| HOURLY EQUIP | <u>MENT</u> | | COSTS | hift basis: <u>1 per d</u> | ay | |
| | | Equipm | ent Description | | | |
| | | Cat 63 | | | | |
| Suppor | - rt Equipment -Load | -Dozer: NA d Area: Cat Da | 8T - 8SU | | | |
| | -Dumj | p Area: NA | | | | |
| Road Man | intenance –Motor (-Water | | 16M Tanker, 3,500 Gal | | | |
| | | | <u>1411101, 0,000 Cu</u> | | | |
| Cost Breakdown: | Scraper Wo | | Support Equi | | Maintenance | Equipme Water |
| | Scraper | Dozer | Load Area | Dump Area | Motor Grader | water |
| %Utilization-machine: | 100 | NA | 100 | NA | 100 | |
| Ownership cost/hour: | \$155.61 | NA | \$93.62 | NA | \$77.19 | |
| Operating cost/hour: | \$166.86 | NA | \$73.35 | NA | \$63.34 | |
| %Utilization-ripper: | NA | NA | NA to oo | NA | 50 | |
| Ripper own. cost/hour: Ripper op. cost/hour: | NA NA | NA NA | \$0.00 \$0.00 | NA NA | \$4.07 \$1.77 | |
| Operator cost/hour: | \$31.05 | NA | \$41.52 | NA | \$1.77 | |
| Unit Subtotals: | \$353.51 | NA | \$208.49 | NA | \$175.05 | |
| Number of Units: | ¢555.51 1 | 0 | ¢200.49 | 0 | 1 | |
| Group Subtotals: | Work: | \$353.51 | Support: | \$208.49 | Maint: | \$213 |
| Total work team cost | NTITIES | | | | | |
| Initial volume: Loose volume: | 2,280 2,770 | CCY LCY | Swell fact | tor: <u>1.215</u> | | |
| | rce of estimated vo | | x 8 in depth, avg 2 ndbook | ,000 ft distance | | |
| | of estimated swell f | | RUDOOK | | | |
| | | | | | | |
| Source of | | | | owl (volume) Bas | <u>is:</u> | |
| Source of | | | Scraper Bo | Volume: 24.00 Volume: 34.00 | L0 | CY CY CY |

<u>0.80</u> Minutes

<u>0.60</u> Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6990 feet

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

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 | 2000.00 | 3.00 | 3.00 | 6.00 | 1477 | 1.41 |

Haul Time: **1.41** minutes

Return Route:

| Seg # | Haul Distance (Ft) | Grade (%) | Roll. Res | Total Res (%) | Velocity (fpm) | Travel Time (min) |
|---------------|---|----------------|-------------------|---------------------|----------------|----------------------|
| 1 | 2000.00 | -3.00 | 3.00 | 0.00 | 2965 | 0.78 |
| | | | | Return Time: | 0.78 | minutes |
| | | | Total Scrape | er team cycle time: | 3.59 | minutes |
| | | | Adjusted | for job conditions: | 402.28 | LCY/Hour |
| | | | Selected Nu | umber of Scrapers: | 1 | Scraper(s) |
| | Adjuste | d single scrap | per team (unit) l | hourly production: | 402.28 | LCY/Hour |
| | Adjusted m | ultiple scrap | er team (fleet) l | hourly production: | 402.28 | LCY/Hour |
| Optima | Unadjusted unit pro al Number of Scrapers pe | | | LCY/Hour | | |
| <u>JOB TI</u> | IME AND COST | | | | | |
| Fleet | t size: 1 | Team(s) | Т | otal job time: | 6.89 | Hours |

Unit cost: \$1.928 /LCY

Total job cost: \$5,340

REVEGETATION WORK

| Task descrip | otion: | Revegetate 2.1 | 2 ac in Area 2 | | | |
|---------------------------|--------------------------|-------------------|----------------|---------------------|-------------|------------------|
| Site: Robinson | Sons Gravel | Pit No. 1 P | ermit Action: | AM-01 Bond Estimate | Permit/Job# | : M2008076 |
| PROJECT | IDENTIFIC | ATION | | | | |
| Task #: Date: User: | 007 12/10/2018 AME | State: County: | | | | None M076-007 |
| User: | AME ency or organiz | zation name: | PRMS | | | |

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} | | \$92.77 |
| Weed control spraying (MEANS 31 31 16.13 3100) | | \$193.60 |
| | Total Tilling Cost/Acre | \$286.37 |

SEEDING

| Seed Mix | Rate – PLS LBS / Acre | Seeds per SQ. FT | Cost /Acre |
|-----------------------------|--------------------------------|------------------------|------------|
| Big Bluestem - Native | 5.50 | 16.41 | \$57.75 |
| Blue Grama - Native | 1.50 | 24.48 | \$22.28 |
| Sideoats Grama - Vaughn | 4.50 | 14.77 | \$46.08 |
| Western Wheatgrass - Native | 8.00 | 20.20 | \$57.36 |
| Totals Seed Mix | 19.50 | 75.87 | \$183.47 |

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} | 2.00 | TON | \$288.00 | \$576.00 |
| Total Mulch Materials Cost/Acre | | | | \$576.00 |

Application

| Description | | Cost /Acre |
|--|--|------------|
| Crimping, with tractor {DMG survey data} | | \$68.78 |
| Weed spray, hand, non-aquatic area, nox. [DMG] | | \$184.32 |
| | | |
| | Total Mulch Application Cost/Acre | \$253.10 |

NURSERY STOCK PLANTING

| Common Name | No / Acre | Type and Size | Planting Cost | Fertilizer Pellet Cost | Cost /Acre |
|-------------|--------------|---------------|------------------|---------------------------|------------|
| | | | | | \$ |
| | | | | | |
| | | Totals | Nursery Stoc | ck Cost / Acre | \$0.00 |

JOB TIME AND COST

| | No. of Acres: Failure Rate: Work Items: | 30% | Cost /Acre: Cost /Acre*: | |
|--|---|-----|-----------------------------|--|
| Initial Job Cost: \$3 Reseeding Job Cost: \$2 Total Job Cost: \$3 Job Hours: 4, | 264.24 3,510 | | | |

DEMOLITION WORK

| | Task description: | Demolition | of scale and sca | le house | | |
|--------------|------------------------|------------|------------------|---------------------|-------------|---------------|
| Site: | Robinson Sons Gravel I | Pit No. 1 | Permit Action: | AM-01 Bond Estimate | Permit/J | ob#: M2008076 |
| <u>PROJE</u> | CT IDENTIFICATIO | N | | | | |
| Task # | : 008 | State: | Colorado | Ab | breviation: | None |
| Date | : 12/10/2018 | County: | Las Animas | | Filename: | M076-008 |
| User | :: AME | | | | | |
| | Agency or organiza | tion name: | DRMS | | | |

UNIT COSTS

Location adjustment: 91.50 %

| Structure or Item Description | Dimensions | Demolition Menu Selection | Quantity | Unit | Unit Cost | Total Cost |
|-----------------------------------|----------------------|---|----------|------|--------------|------------|
| Truck Scale Demo | 1,100 SF | Floor, concrete, demolition only, average reinforcing - 12 in. thick | 1,100.00 | SF | \$1.59 | \$1,749.00 |
| Scale House Demo | 160 SF x 8 F | Demo. only, small or single buildings (single story) - Wood structures | 1,280.00 | CF | \$0.18 | \$225.28 |
| Loading and Off- site Disposal | 40.7 CY + 47.4 CY | Loading and 2 mile haul, no salvage - Machine loading | 88.10 | CY | \$17.2 0 | \$1,515.32 |

| | | | | Total Cost | |
|------------|-------|---------------|------------|-------------------|------------|
| | | Subtotal | | (adjusted for | |
| Job Hours: | 10.00 | (unadjusted): | \$3,489.60 | location): | \$3,192.98 |

TRUCK/LOADER TEAM WORK

| Task description: | Haul ov | erburden to bacl | kfill creek pits 2 | ft above GW | | |
|---|------------------------------------|--------------------------------|----------------------|---------------------|---------------------------------|--------------|
| Site: Robinson Sons G | ravel Pit No. 1 | Permit Actio | on: <u>AM-01 Bon</u> | d Estimate | Permit/Job#: <u>M</u> | 2008076 |
| PROJECT IDEN | TIFICATION | | | | | |
| Task #: 009 Date: 12/10/2 User: AME | 2018 | State: Colora County: Las A | | Ab | breviation: Nor Filename: M0 | ne 76-009 |
| | | ne: DRMS | | | | |
| Agency or o | organization nar | ne. DKMS | | | | |
| HOURLY EQUIE | PMENT COST | <u>r</u> | | Shift bas | is: <u>1 per day</u> | |
| | | | Equipment Descri | | | |
| T | ruck Loader Tea | | eric 8-10 cy, 6x4 | | | |
| Suppo | ort Equipment -L | | Г 950Н | | | |
| | -Du | Imp Area: Cat | D8T - 8SU | | | |
| Road Ma | intenance – Mot | | Т 16М | ~ . | | |
| | -Wa | ter Truck: Wat | ter Tanker, 3,500 | Gal. | | |
| Cost Breakdown: | Truck/Loa | der Team | Support] | Equipment | Maintenan | ce Equipment |
| | Truck | Loader | Load Area | Dump Area | Motor Grader | Water Truck |
| %Utilization-machine: | 100 | 100 | NA | 100 | 100 | 100 |
| Ownership cost/hour: | \$15.87 | \$26.14 | NA | \$93.62 | \$77.19 | \$12.39 |
| Operating cost/hour: | \$40.15 | \$30.84 | NA | \$73.35 | \$63.34 | \$26.02 |
| %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: | \$0.00 | \$40.90 | NA | \$41.52 | \$28.69 | \$0.00 |
| Unit Subtotals: | \$56.02 | \$97.89 | NA | \$208.49 | \$169.22 | \$38.41 |
| Number of Units: | 2 | 1 | 0 | 1 | 1 | 1 |
| Group Subtotals: | Work: | \$209.93 | Support: | \$208.49 | Maint: | \$207.63 |
| Total work team cost | t/hour: <u>\$626.05</u> | | | | | |
| MATERIAL OIL | | | | | | |
| MATERIAL QUA | ANTITES | | | | | |
| Initial volume: | 10,164 | CCY | | factor: 1.125 | | |
| Loose volume: | 11,43 | | | | | |
| | rce of estimated | | | (S side), 3 ft dept | h (bf GW in pits) | |
| Source | of estimated swe Material Purch | | Handbook | | | |
| | | otal Cost: \$0.00 | | | | |
| | | | | | | |
| HOURLY PRO | DUCTION | | | | | |
| Truck Capacity: | | | | | | |
| Truck Payload (weig | | | Pounds/LCY | | | |
| Material w Descri | | posed rock - 25% | Rock, 75% Earth | | | |
| Rated Pay | vload: 27,280 | | Pounds | | | |
| Payload Cap | acity: 10.29 | | LCY | | | |
| | | | | | | |

| Heaned Volume | | | | | | |
|---|---|--|--|---|---|----------------------------|
| Heaped Volume: | | | | | | |
| Average Volume: | | | | | | |
| Adjusted Volume: | 10.00 | LUY | | | | |
| Final | Truck Volume | Based on Number of | of Loader Passes: | 9.46 | LCY | |
| Loading Tool Capacity | | | | | | |
| <u> </u> | | | Buc | ket Size Class N | Α | |
| Rated Capacity: | 4 300 | I CV (heaped) | | | | _ |
| Bucket Fill Factor: | | | |)-120%) 1 100 | | - |
| Adjusted Capacity: | 4.730 | LCY | int mixtures (100 | 120/0) 1.100 | | - |
| | | c. | N ¹ . A 1. ¹ . 1 . (C 1). | | | |
| Job Condition Corrections: | | Bucket Size Class:NA 4.300 LCY (heaped) 1.100 Other - rock/dirt mixtures (100-120%) 1.100 4.730 LCY Site Altitude (ft.): 6990 feet Truck Loader Source 1.000 1.000 LCY Site Altitude (ft.): 6990 feet Truck Loader Source 1.000 1.000 0.830 0.830 0.830 0.830 Number of Loading Tool Passes Required to Fill Truck: 2 Job Condition Rating: NA Laterial Description: | | | | |
| Altituda Adia | | | | | | |
| Altitude Adj: Job Efficiency: | | | · · · · · · · · · · · · · · · · · · · | / | | |
| JOU LINCIENCY. | 0.830 | 0.850 | (CAT III | 3) | | |
| Net Correction: | 0.830 | 0.830 | | | | |
| Loading Tool Cycle Time: | Number | of Loading Tool P | asses Required to | Fill Truck | 2 г | asses |
| Excavators and Front Shovel | | of Loading 10011 | asses Required to | 1 III 110cK. | <u> </u> | 43505 |
| Excavators and From Shover | .5. | | | | | |
| | | | | | | |
| Machine Cycle Time vs | | | | | | |
| Machine Cycle Time vs Selected Value v | vithin this Basic | e Rating: NA | | | | |
| Machine Cycle Time vs Selected Value v | vithin this Basic | e Rating: NA | | | | |
| Machine Cycle Time vs Selected Value v Track Loaders – | vithin this Basic Material Descri | c Rating: NA | | Dump: 0.100 |) | |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u> | vithin this Basic Material Descri M | c Rating: NA ption: aneuver: NA | | I | | |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Loaders - | vithin this Basic Material Descri M | c Rating: NA ption: aneuver: NA | ime (load, dump, 1 | maneuver): 0 | .500 minu | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Loaders - Cycle Time Factors | vithin this Basic Material Descri M – Unadjusted Bas | c Rating: NA ption: aneuver: NA sic Loader Cycle T | | maneuver): 0 Factor (min.) | .500 minu Source | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" | c Rating: NA ption: aneuver: NA sic Loader Cycle T to 3/4" diameter -0 | 0.02 | maneuver):0 Factor (min.) -0.020 | .500 minu Source (Cat HB) | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" Conveyor or c | c Rating: NA ption: | 0.02 gh and up 0.00 | maneuver): 0 Factor (min.) -0.020 0.000 | .500 minu Source (Cat HB) (Cat HB) | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: | vithin this Basic Material Descri – M Unadjusted Bas <u>Material 1/8" Conveyor or c</u> Common own | c Rating: NA ption: aneuver: NA sic Loader Cycle T to 3/4" diameter -0 lozer piled 10 ft. hi tership of trucks and | 0.02 gh and up 0.00 | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) | Ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper | c Rating: NA ption: | 0.02 gh and up 0.00 | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: | vithin this Basic Material Descri – M Unadjusted Bas <u>Material 1/8" Conveyor or c</u> Common own | c Rating: NA ption: | 0.02 gh and up 0.00 d loaders -0.04 | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper | c Rating: NA ption: aneuver: NA sic Loader Cycle T to 3/4" diameter -0 lozer piled 10 ft. hi hership of trucks and ration -0.04 et 0.00 Net Cycle Ti | 0.02 gh and up 0.00 d loaders -0.04 ime Adjustment: | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) | ites |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper | c Rating: NA ption: aneuver: NA sic Loader Cycle T to 3/4" diameter -0 dozer piled 10 ft. hi tership of trucks and ation -0.04 et 0.00 Net Cycle Ti Adjusted Load | 0.02 gh and up 0.00 d loaders -0.04 | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes | ites |
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| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper Nominal targe | c Rating: NA ption: aneuver: NA sic Loader Cycle T to 3/4" diameter -0 dozer piled 10 ft. hi tership of trucks and ation -0.04 et 0.00 Net Cycle Ti Adjusted Load | 0.02 gh and up 0.00 d loaders -0.04 ime Adjustment: der Cycle Time: Time per Truck: | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 0.500 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes | - |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: | vithin this Basic Material Descri M Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper Nominal targe | c Rating: NA ption: aneuver: NA sic Loader Cycle T to 3/4" diameter -0 dozer piled 10 ft. hi nership of trucks and ation -0.04 et 0.00 Net Cycle Ti Adjusted Load Net Load 7 | 0.02 gh and up 0.00 d loaders -0.04 ime Adjustment: der Cycle Time: Time per Truck: Adjusted | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes | |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time: | vithin this Basic Material Descri Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper Nominal targe | c Rating: NA ption: | 0.02 gh and up 0.00 d loaders -0.04 ime Adjustment: der Cycle Time: Time per Truck: Adjusted Adjusted | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 0.500 for site altitude: | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes 0.500 | Minute: Minute: |
| Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time: Truck Load Time: | vithin this Basic Material Descri Unadjusted Bas Material 1/8" Conveyor or c Common own Constant oper Nominal targe 0.50 0.500 | c Rating: NA ption: aneuver: NA sic Loader Cycle Ta to 3/4" diameter -0 lozer piled 10 ft. hi nership of trucks and ation -0.04 et 0.00 Net Cycle Ti Adjusted Load Net Load 7 Minutes Minutes Minutes | 0.02 gh and up 0.00 d loaders -0.04 ime Adjustment: der Cycle Time: Time per Truck: Adjusted Adjusted Adjusted | maneuver): 0 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 0.500 for site altitude: for site altitude: | .500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) 0.500 0.500 0.500 0.800 | - - - - Minute |

| Haul Rout | | | | | | 1 | | |
|--------------------|--------|----------|-----------------|----------------|--------------------|----------------|----------------|----------|
| Seg # | | Distance | Grade (%) | Roll. Res | Total Res | Velocity | Travel Time | |
| | (Ft) | | | (%) | (%) | (fpm) | (min) | |
| 1 | 3600. | 00 | 2.00 | 3.00 | 5.00 | 2218 | 1.692 | |
| | | | | | Haul Time: | 1.692 | minutes | |
| Return Ro | | | | | | | | |
| Seg # | | Distance | Grade (%) | Roll. Res | Total Res | Velocity | Travel | |
| | (Ft) | | | (%) | (%) | (fpm) | Time (min) | |
| 1 | 3600. | 00 | -2.00 | 3.00 | 1.00 | 2913 | 1.264 | |
| | | | | | Return Time: | 1.264 | minutes | 5 |
| | | | | Total Tru | ck Cycle Time: | 4.756 | minutes | 5 |
| Loading Tool | l unit | | | | | | | |
| Produ | | 567.60 | LCY/Hour | | Adjusted for j | ob efficiency: | 471.11 | LCY/Hour |
| Truck Unit Produ | ction | | | | | | | |
| | - | 119.34 | LCY/Hour | | Adjusted for j | ob efficiency: | 99.06 | LCY/Hour |
| Optimal No. of Tru | ucks: | 5 | Truck(s) | | Selected Num | ber of Trucks: | 2 | Truck(s) |
| | | | Adjuste | d hourly truc | k team production | on: 198 | .11 LCY | /Hour |
| | | | | | er team production | | .11 LCY | /Hour |
| | | | Adjusted multip | le truck/loade | er team production | on: 198 | .11 LCY | /Hour |
| ίορ τι | AF AN | D COST | | | | | | |
| | | | | | | | | |
| Fleet s | size: | 1 | Team(s) | r | Total job time: | 57.72 | 2 Ho | urs |
| Unit c | cost: | \$3.160 | /LCY | | Total job cost: | \$36,1 | 34 | |
| | | | | | | | | |

BULLDOZER WORK

| PROJECT IDENTIFICATION Task #: 010 State: Colorado Abbreviation: None | | M2008 | | | slopes in creek | Grade disturbed | ask description: |
|--|-------|--------|---------------|---|--------------------------|--|--|
| Task #: 010 State: Colorado Abbreviation: None Date: 12/10/2018 County: Las Animas Filename: M076 Use:: _AME Ocunty: Las Animas Filename: M076 Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: Cat D8T - 8SU Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Utilization % Ownership Cost/Hour: \$93.62 NA Ripper op. Cost/Hour: \$93.89 NA Ripper op. Cost/Hour: \$3.89 50 Operator Cost/Hour: \$221.31 Total Init Cost/Hour: Total unit Cost/Hour: \$221.31 | | | Permit/Job#: | -01 Bond Estimate | nit Action: Al | Pit No. 1 Per | Robinson Sons Grave |
| Date: 12/10/2018 County: Las Animas Filename: M076 User: AME Filename: DRMS Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: Cat D8T - 8SU Horsepower: 310 Basic Machine: Cat D8T - 8SU Horsepower: 310 Basic Machine: Cat D8T - 8SU Horsepower: Semi-Universal Attachment: 3-shank ripper Attachment: 3-shank ripper Counterstand Counterstand Shift Basis: 1 per day Counterstand Counterstand Operating Cost/Hour: \$93.62 NA Ripper op. Cost/Hour: \$8.93 Operator Cost/Hour: \$3.89 50 Operator Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total Fleet Cost/Hour: \$221.31 Matterial Volume: 1.875 Swell factor: 1.250 Loose volume: 2.344 LCY Source of estimated swell factor: Cat Handbook BOURLY PRODUCTION Average push distance: 50 feet 1.400.0 LCY/hr Materials | | | | | | <u>CATION</u> | ROJECT IDENTIF |
| Date: 12/10/2018 County: Las Animas Filename: M076 User: AME AME Filename: M076 Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: Cat D8T - 8SU Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Utilization % Ownership Cost/Hour: \$93.62 NA Ripper op. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$3.89 50 Operator Cost/Hour: \$221.31 Total unit Cost/Hour: Total Init Cost/Hour: \$221.31 Total Fleet Cost/Hour: MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 | | None | Abbreviation. | | Colorado | State: | Task #· 010 |
| User: ME Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: Cat D8T - 8SU Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Ownership Cost/Hour: \$93.62 MA Operating Cost/Hour: \$93.62 NA Operating Cost/Hour: \$93.62 NA Operator Cost/Hour: \$93.62 NA Operator Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total Fleet Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 Loose volume: 2,344 LCY Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1.400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | 0 010 | M076-0 | | | | | |
| HOURLY EQUIPMENT COST Basic Machine: Cat D8T - 8SU Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Ownership Cost/Hour: \$93.62 NA \$73.35 Ripper own. Cost/Hour: \$8.93 NA \$8.93 Na \$8.93 Operating Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 MATERIAL QUANTITIES Source of estimated volume: Source of estimated volume: _Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | 110700 | | | | County. | |
| Basic Machine: Cat D8T - 8SU Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: 93.62 Ownership Cost/Hour: \$93.62 Operating Cost/Hour: \$93.62 Machine: \$8.93 NA Ripper own. Cost/Hour: Stats \$100 Ripper ovn. Cost/Hour: \$8.93 NA \$8.93 NA \$221.31 Total unit Cost/Hour: \$221.31 Total Fleet Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1,875 Swell factor: 1.250 Loose volume: 2,344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION 1.400.0 LCY/hr Materials consistency description: 1.400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Avera | | | | | MS | ization name: | Agency or organ |
| Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: (CRG) Ownership Cost/Hour: \$93.62 NA Operating Cost/Hour: \$93.62 NA Operating Cost/Hour: \$93.62 NA Ripper own. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$3.89 50 Operator Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 NA Total Fleet Cost/Hour: \$221.31 Surce of estimated volume: \$41.52 MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 Loose volume: 2,344 LCY | | | | | | NT COST | IOURLY EQUIPME |
| Horsepower: 310 Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: (CRG) (CRG) Ownership Cost/Hour: \$93.62 NA Operating Cost/Hour: \$73.35 100 Ripper own. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$221.31 NA Total unit Cost/Hour: \$221.31 NA Total Pleet Cost/Hour: \$221.31 NA MATERIAL QUANTITIES Swell factor: 1.250 Loose volume: 2,344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook E HOURLY PRODUCTION Average push distance: 50 feet 1.400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: 5 % | | | | | | D8T - 8SU | Basic Machine: Cat |
| Blade Type: Semi-Universal Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Ownership Cost/Hour: \$93.62 NA Operating Cost/Hour: @sper own. Cost/Hour: \$93.62 Ripper own. Cost/Hour: \$73.35 Operating Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$\$221.31 NA Total unit Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total Unit Cost/Hour: \$221.31 Total Unit Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 Loose volume: 2.344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION | | | | | | 000 | |
| Attachment: 3-shank ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Qwnership Cost/Hour: \$93.62 NA Operating Cost/Hour: \$93.62 NA Ripper own. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total Pleet Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 Loose volume: 2.344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet unadjusted hourly production: 1.400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | i-Universal | L |
| Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: | | | | | | ank ripper | •• |
| Cost Breakdown: Utilization % Ownership Cost/Hour: \$93.62 NA Operating Cost/Hour: \$73.35 100 Ripper own. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$8.93 NA Ripper op. Cost/Hour: \$3.89 50 Operator Cost/Hour: \$221.31 Total unit Cost/Hour: \$221.31 Total Fleet Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 Loose volume: 2,344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | | |
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| Ownership Cost/Hour: $\$93.62$ NAOperating Cost/Hour: $\$73.35$ 100Ripper own. Cost/Hour: $\$8.93$ NARipper op. Cost/Hour: $\$3.89$ 50Operator Cost/Hour: $\$21.31$ Total unit Cost/Hour: $\$221.31$ Total Fleet Cost/Hour: $\$221.31$ Total Volume: 1.875 Swell factor: 1.250 Loose volume: $2.344 LCY$ Source of estimated volume:Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft HSource of estimated swell factor: $Cat Handbook$ HOURLY PRODUCTIONAverage push distance: 50 feetUnadjusted hourly production: $1.400.0 LCY/hr$ Materials consistency description:Compacted fill or embankment 0.9Average push gradient: -5% | | | | Litilization % | | | USI DICAKUOWII. |
| Operating Cost/Hour: $\$73.35$ 100Ripper own. Cost/Hour: $\$8.93$ NARipper op. Cost/Hour: $\$3.89$ 50Operator Cost/Hour: $\$221.31$ Total unit Cost/Hour: $\$221.31$ Total Fleet Cost/Hour: $\$221.31$ MATERIAL QUANTITIESInitial Volume: 1.875 Swell factor: 1.250 Loose volume: 2.344 LCYSource of estimated volume:Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft HSource of estimated swell factor:Cat HandbookHOURLY PRODUCTIONAverage push distance: 50 feetUnadjusted hourly production: $1.400.0$ LCY/hrMaterials consistency description:Compacted fill or embankment 0.9Average push gradient: -5% | | | | | \$93.62 | | Ownershin Cost/Hour |
| Ripper own. Cost/Hour: $$8.93$ NA Ripper op. Cost/Hour: $$3.89$ 50 Operator Cost/Hour: $$41.52$ NA Total unit Cost/Hour: $$221.31$ Total Fleet Cost/Hour: $$221.31$ MATERIAL QUANTITIES Initial Volume: 1.875 Swell factor: 1.250 Loose volume: 2.344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: $1.400.0$ LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5% | | | | | | | |
| Ripper op. Cost/Hour: \$3.89 50 Operator Cost/Hour: \$41.52 NA Total unit Cost/Hour: \$221.31 Total Fleet Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1,875 Swell factor: 1.250 Loose volume: 2,344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | | |
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| Total Fleet Cost/Hour: \$221.31 MATERIAL QUANTITIES Initial Volume: 1,875 Swell factor: 1.250 Loose volume: 2,344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Cat Handbook Cat Handbook HOURLY PRODUCTION 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | | - |
| Loose volume: 2,344 LCY Source of estimated volume: Approx 800 ft L (N side) + 550 ft L (S side), avg 10 ft H Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | | Initial Volume: |
| Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | | |
| Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | በተዘ | 550 ft I (S side) ava 1 |)() ft L (N side) | he: Approx 8 | ource of estimated volu |
| HOURLY PRODUCTION Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | 51(11 | 550 It L (5 side), avg 1 | | | |
| Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | - | | | |
| Average push distance: 50 feet Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | ION | IOURLY PRODUCT |
| Unadjusted hourly production: 1,400.0 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | | | | |
| Materials consistency description: Compacted fill or embankment 0.9 Average push gradient: -5 % | | | | - | | | |
| Average push gradient: | | | | - | í/hr | tion: $1,400.0 \text{ LC}$ | nadjusted hourly produc |
| | | | | kment 0.9 | cted fill or emba | cription: <u>Compa</u> | Iaterials consistency des |
| | | | | | | -5 % | vergae nuch gradiant |
| | | | | | | | |
| Material weight: 2,650 lbs/LCY | | | | | | 2,650 lbs/LCY | Iaterial weight: |
| Weight description: Decomposed rock - 25% Rock, 75% Earth | | | | | | | |
| Job Condition Correction Factor Source | | | | Earth | - 25% Rock, 75 | Decomposed rock | Veight description: |
| Operator Skill: 0.750 (AVG.) | | | | Source | | Factor | ob Condition Correction |
| Material consistency: 0.900 (CAT HB)) | | | | Source (AVG.) | 750 | Factor_ kill:0. | ob Condition Correction Operator S |
| Dozing method: 1.200 (SLOT) | | | | Source (AVG.) (CAT HB)) | 750 900 | Factor kill: 0. ncy: 0. | ob Condition Correction Operator S Material consiste |
| Visibility: 1.000 (AVG.) | | | | Source (AVG.) (CAT HB)) (SLOT) | 750 900 200 | Factor kill: 0. ncy: 0. hod: 1. | ob Condition Correction Operator S Material consiste Dozing me |
| Job efficiency: 0.830 (1 SHIFT/DAY) | | | | Source (AVG.) (CAT HB)) (SLOT) (AVG.) | 750 900 200 000 | Factor kill: 0. ncy: 0. hod: 1. lity: 1. | ob Condition Correction Operator S Material consiste Dozing me Visib |

| Adjusted unit production: | 637.70 LCY/hr |
|----------------------------|---------------------|
| Adjusted fleet production: | 637.7 LCY/hr |

JOB TIME AND COST

| Fleet size: | 1 Dozer(s) |
|-------------|-------------|
| Unit cost: | \$0.347/LCY |

| Total job time: | 3.68 Hours |
|-----------------|-------------------|
| Total job cost: | \$813 |

TRUCK/LOADER TEAM WORK

| Task description: | Haul to | psoil to creek are | eas, spread at 8 in | n depth | | |
|---|--------------------------|--|----------------------|----------------------|-----------------------|--------------|
| Site: Robinson Sons (| Gravel Pit No. 1 | Permit Action | on: <u>AM-01 Bon</u> | d Estimate | Permit/Job#: <u>M</u> | 2008076 |
| PROJECT IDEN | TIFICATION | | | | | |
| Task #: 011 | | State: Colora | ado | Ab | breviation: No | ne |
| Date: $\frac{011}{12/10}$ | /2018 | County: Las A | | | | 76-011 |
| User: AME | | | | | | |
| Agency or | organization nar | ne: DRMS | | | | |
| HOURLY EQUI | PMENT COST | <u>r</u> | | Shift bas | sis: <u>1 per day</u> | |
| | | | Equipment Descri | ption | | |
|] | Truck Loader Tea | | eric 8-10 cy, 6x4 | | | |
| Supp | ort Equipment -L | | Г 950Н | | | |
| Supp | | | D8T - 8SU | | | |
| Road M | aintenance - Mot | or Grader: CA | Т 16М | | | |
| | -Wa | ter Truck: Wat | ter Tanker, 3,500 | Gal. | | |
| Cost Breakdown: | Truck/Log | ader Team | Support | Equipment | Maintanan | ce Equipment |
| <u>Cost Dreakuowii</u> : | Truck | Loader | Load Area | Dump Area | Motor Grader | Water Truck |
| %Utilization-machine: | 100 | 100 | NA | 100 | 100 | 100 |
| Ownership cost/hour: | \$15.87 | \$26.14 | NA | \$93.62 | \$77.19 | \$12.39 |
| Operating cost/hour: | \$40.15 | \$30.84 | NA | \$73.35 | \$63.34 | \$26.02 |
| %Utilization-riper: | NA | 0 | NA | NA | NA | φ20.02 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: | \$0.00 | \$40.90 | NA | \$41.52 | \$28.69 | \$0.00 |
| Unit Subtotals: | \$56.02 | \$97.89 | NA | \$208.49 | \$169.22 | \$38.41 |
| Number of Units: | 2 | 1 | 0 | 1 | 1 | 1 |
| Group Subtotals: | Work: | \$209.93 | Support: | \$208.49 | Maint: | \$207.63 |
| Total work team co | st/hour: <u>\$626.05</u> | <u>; </u> | | | | |
| <u>MATERIAL QU</u> | ANTITIES | | | | | |
| Initial volume Loose volume | | CCY LCY | | factor: <u>1.215</u> | | |
| So | urce of estimated | volume: 6.74 | ac x 8 in depth, to | psoil from Area 1 | l | |
| Source | of estimated swe | | Handbook | - | | |
| | Material Purch | | | | | |
| | 10 | otal Cost: \$0.00 |) | | | |
| HOURLY PRO | DUCTION | | | | | |
| Truck Capacity: | | | | | | |
| <u>Truck Payload (wei</u> Material v | | | Pounds/LCY | | | |
| | iption: Top Sc | oil | | | | |
| Rated Pa | yload: 27,280 | | Pounds | | | |
| Payload Ca | pacity: 17.05 | | LCY | | | |

| Truck Bed (volume) Basis: | | ~~~ | | | | |
|---|------------------|-----------------------------------|--------------------------|--------------------------|-------------|--------|
| Struck Volume: | | CY | | | | |
| Heaped Volume: | | CY | | | | |
| Average Volume: | | CY | | | | |
| Adjusted Volume: | 10.00 L | CY | | | | |
| Final | Truck Volume B | ased on Number of | Loader Passes: | 9.46 | LCY | |
| Loading Tool Capacity | | | | | r A | |
| Data d Canaaitan | 4 200 | LCV (heared) | Buck | tet Size Class: <u>N</u> | A | _ |
| Rated Capacity: | 4.300 | LCY (heaped) Other - rock/dirt | | 1200() 1 100 | | - |
| Bucket Fill Factor: Adjusted Capacity: | 4.730 | LCY | mixtures (100 | -120%) 1.100 | | - |
| Job Condition Corrections: | | Site | Altitude (ft) | 5000 faat | | |
| Job Condition Corrections: | | | Altitude (ft.): <u>6</u> | <u>1990</u> leet | | |
| A 14:4 J - A - J:- | Truck | Loader | Source | | | |
| Altitude Adj: | 1.000 | 1.000 | (CAT HB | , | | |
| Job Efficiency: | 0.830 | 0.830 | (CAT HB | 5) | | |
| Net Correction: | 0.830 | 0.830 | | | | |
| Loading Tool Cycle Time: | Number o | of Loading Tool Pass | es Required to l | Fill Truck: | 2 p | asses |
| Excavators and Front Shovels | <u>s:</u> | - | - | | | |
| Machine Cycle Time vs | Job Condition | Rating: NA | | | | |
| Selected Value w | | | | | | |
| Track Loaders – I | Material Descrip | tion: | | | | |
| Cycle Time Elements (min.): | | | | | | |
| Load: NA | Ma | neuver: NA | | Dump: 0.100 |) | |
| Wheel and Track Loaders - | Unadjusted Basi | c Loader Cycle Tim | e (load, dump, r | naneuver): 0 | .500 minu | ites |
| Cycle Time Factors | · | | | Factor (min.) | Source | |
| Material: | Material 1/8" to | o 3/4" diameter -0.02 |) | -0.020 | (Cat HB) | |
| Stockpile: | | ozer piled 10 ft. high | | 0.000 | (Cat HB) | _ |
| Truck Ownership: | | rship of trucks and l | | -0.040 | (Cat HB) | _ |
| Operation: | Constant operat | A | | -0.040 | (Cat HB) | _ |
| Dump Target: | Nominal target | | | 0.000 | (Cat HB) | _ |
| 1 6 | 6 | Net Cycle Time | Adjustment: | -0.100 | minutes | |
| | | Adjusted Loader | | 0.400 | minutes | |
| | | | ne per Truck: | 0.500 | minutes | |
| Truck Cycle Time: | | | | | | |
| Truck Exchange Time: | 0.50 | Minutes | Adjusted | for site altitude: | 0.500 | Minute |
| Truck Load Time: | 0.500 | Minutes | Adjusted | for site altitude: | 0.500 | Minute |
| ck Maneuver and Dump Time: | 0.80 | Minutes | Adjusted | for site altitude: | 0.800 | Minute |
| <u>Truck Travel (Haul & Return)</u> maintained 3.0 |) Time: | Road Condition: Fi | <u>rm, smooth, rol</u> | ling, dirt/lt. surface | d, watered, | |

| | Haul Rou | ite: | | | | | | | |
|--------|-------------|---------|-----------|-----------------|----------------|-------------------|----------------|----------------|----------|
| | Seg # | | Distance | Grade (%) | Roll. Res | Total Res | Velocity | Travel Time | |
| | | (Ft) | | | (%) | (%) | (fpm) | (min) | |
| - | 1 | 2600 | .00 | 2.00 | 3.00 | 5.00 | 2218 | 1.241 | |
| | | | | | | Haul Time: | 1.241 | minutes | |
| r | Return Re | 1 | | | | _ | | | |
| | Seg # | | Distance | Grade (%) | Roll. Res | Total Res | Velocity | Travel | |
| | | (Ft) | | | (%) | (%) | (fpm) | Time (min) | |
| | 1 | 2600 | .00 | -2.00 | 3.00 | 1.00 | 2913 | 0.920 | |
| | | | | | | Return Time: | 0.920 | minute | S |
| | | | | | Total True | ck Cycle Time: | 3.961 | minute | S |
| L | oading Too | ol unit | | | | | | | |
| | - | uction | 567.60 | LCY/Hour | | Adjusted for j | ob efficiency: | 471.11 | LCY/Hour |
| Truck | Unit Produ | uction | 1 1 2 2 2 | | | | 1 000 1 | 110.01 | |
| | | | 143.30 | LCY/Hour | | Adjusted for j | ob efficiency: | 118.94 | LCY/Hour |
| Optima | al No. of T | rucks: | 4 | Truck(s) | | Selected Num | ber of Trucks: | 2 | Truck(s) |
| | | | | Adjuste | d hourly true | k team production | on: 237 | .87 LCY | /Hour |
| | | | | | | r team production | | | /Hour |
| | | | | Adjusted multip | le truck/loade | r team production | on: 237 | .87 LCY | //Hour |
| | JOB TI | ME AI | ND COST | | | | | | |
| | Fleet | size: | 1 | Team(s) | 1 | Total job time: | 37.0 | 3 Ho | ours |
| | Unit | cost: | \$2.632 | /LCY | r | Total job cost: | \$23,1 | 83 | |
| | | | | | | | | | |

REVEGETATION WORK

| Task descrip | otion: | Revegetate 6.74 | ac creek are | as | | |
|---------------------------|--------------------------|-------------------|-----------------------|---------------------|--------------|------------------|
| Site: Robinson | n Sons Gravel | Pit No. 1 Pe | ermit Action: | AM-01 Bond Estimate | Permit/Job#: | M2008076 |
| PROJECT | <u>IDENTIFIC</u> | ATION | | | | |
| Task #: Date: User: | 012 12/10/2018 AME | State: County: | Colorado Las Anima | S | | None M076-012 |
| Age | ency or organiz | zation name: D | RMS | | | |

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} | | \$92.77 |
| Weed control spraying (MEANS 31 31 16.13 3100) | | \$193.60 |
| | Total Tilling Cost/Acre | \$286.37 |

SEEDING

| Seed Mix | Rate – PLS LBS / Acre | Seeds per SQ. FT | Cost /Acre |
|-----------------------------|--------------------------------|------------------------|------------|
| Big Bluestem - Native | 5.50 | 16.41 | \$57.75 |
| Blue Grama - Native | 1.50 | 24.48 | \$22.28 |
| Sideoats Grama - Vaughn | 4.50 | 14.77 | \$46.08 |
| Western Wheatgrass - Native | 8.00 | 20.20 | \$57.36 |
| Totals Seed Mix | 19.50 | 75.87 | \$183.47 |

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} | 2.00 | TON | \$288.00 | \$576.00 |
| Total Mulch Materials Cost/Acre | | | | \$576.00 |

Application

| Description | | Cost /Acre |
|--|-----------------------------------|------------|
| Crimping, with tractor {DMG survey data} | | \$68.78 |
| Weed spray, hand, non-aquatic area, nox. [DMG] | | \$184.32 |
| | | |
| | Total Mulch Application Cost/Acre | \$253.10 |

NURSERY STOCK PLANTING

| Common Name | No / Acre | Type and Size | Planting Cost | Fertilizer Pellet Cost | Cost /Acre |
|-------------|--------------|---------------|------------------|---------------------------|------------|
| | | | | | \$ |
| | | | | | |
| | | Totals | Nursery Stoc | ek Cost / Acre | \$0.00 |

JOB TIME AND COST

| Estimate *Selected Replanti | No. of Acres: ed Failure Rate: | 30% | Cost /Acre: Cost /Acre*: | |
|--|-----------------------------------|-----|-----------------------------|--|
| Initial Job Cost: Reseeding Job Cost: | \$10,318.54 \$840.08 | | | |
| Total Job Cost: Job Hours: | | | | |

EQUIPMENT MOBILIZATION/DEMOBILIZATION

| Task description | n: <u>Mo</u> | bilization/Demob | ilization of Equ | uipment | | | |
|------------------|-----------------|------------------|---------------------|------------|----------------|----------------------|-------------|
| e: Robinson So | ns Gravel Pit N | No. 1 Permit | Action: <u>AM-(</u> | 01 Bond Es | timate P | ermit/Job#: <u>N</u> | M2008076 |
| PROJECT IDE | ENTIFICATI | <u>ION</u> | | | | | |
| Task #: 01 | 3 | State: Co | olorado | | Abbre | viation: Non | e |
| | 2/10/2018 | County: La | s Animas | | | | /6-013 |
| User: A | ME | | | | | | |
| Agency | or organization | n name: DRMS | | | | | |
| EQUIPMENT | TRANSPOR | T RIG COST | | | | | |
| | | | | | Shift bas | is: 1 per d | 0.1/ |
| | | | | C | Cost Data Sour | F * * | |
| | | | | | | | |
| Truc | ck Tractor Desc | cription: GENE | RIC ON-HIGH | | | | EL POWERED, |
| | | | | | (2ND HALF, 2 | , | |
| Tru | ck Trailer Desc | cription: G | ENERIC FOLD | | | | JIPMENT |
| | | | | FRAILER (| (25T, 50T, AN | D 100T) | |
| Cost Breakdown: | | | | | | | |
| Available Rig | Capacities | 0-25 Tons | 26-50 Tons | 51+ | Tons | | |
| | ip Cost/Hour: | \$16.63 | \$18.37 | | 2.33 | | |
| | ng Cost/Hour: | \$44.38 | \$46.13 | \$5 | 0.07 | | |
| | or Cost/Hour: | \$27.66 | \$27.66 | \$2 | 7.66 | | |
| Helpe | er Cost/Hour: | \$0.00 | \$25.39 | \$2 | 5.39 | | |
| Total Un | it Cost/Hour: | \$88.67 | \$117.55 | \$12 | 25.45 | | |
| | | | | | | | |
| NON ROADAL | BLE EQUIP | MENT: | | | | | |
| Machine | Weight/ | Owner ship | Haul Rig | Fleet | Haul Trip | Return Trip | DOT Permit |
| Description | Unit | Cost/hr/ unit | Cost/hr/uni | Size | Cost/hr/ | Cost/hr/ fleet | Cost/ fleet |
| 2 comption | (TONS) | | t | SILC | fleet | | |
| CAT 950H | 20.13 | \$26.14 | \$88.67 | 2 | \$229.62 | \$177.34 | \$500.00 |
| Cat D8T - 8SU | 53.08 | \$102.55 | \$125.45 | 2 | \$456.00 | \$250.90 | \$750.00 |
| Cat 637G | 57.28 | \$155.61 | \$125.45 | 2 | \$562.12 | \$250.90 | \$500.00 |
| CAT 16M | 28.73 | \$77.19 | \$117.55 | 2 | \$389.48 | \$235.10 | \$500.00 |
| | | · · | • | C 1.(| - | ¢014.24 | ¢2 250 00 |
| | | | | Subtotals: | \$1,637.22 | \$914.24 | \$2,250.00 |

ROADABLE EQUIPMENT:

| Machine Description | Total Cost/hr/ unit | Fleet Size | Haul Trip Cost/hr/ fleet | Return Trip Cost/hr/ fleet |
|-----------------------------|------------------------|------------|-----------------------------|-------------------------------|
| Generic 8-10 cy, 6x4 | \$85.75 | 2 | \$171.50 | \$171.50 |
| Water Tanker, 3,500 Gal. | \$38.41 | 2 | \$76.82 | \$76.82 |
| Drill/Broadcast Seeder with | \$36.08 | 1 | \$36.08 | \$36.08 |
| Tractor | | | | |
| | | Subtotals: | \$284.40 | \$284.40 |

EQUIPMENT HAUL DISTANCE and Time

| Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed: | TRINIDAD 23.00 45.00 | miles mph |
|---|----------------------------|--------------|
| Total Non-Roadable Mob/Demob Cost * | \$26,754.80 | |
| Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig: | \$290.72 | |

Transportation Cycle Time:

| | Non- Roadable Equipment | Roadable Equipment |
|-------------------------|-------------------------------|-----------------------|
| Haul Time (Hours): | 0.51 | 0.51 |
| Return Time (Hours): | 0.51 | 0.51 |
| Loading Time (Hours): | 3.00 | NA |
| Unloading Time (Hours): | 3.00 | NA |
| Subtotals: | 7.02 | 1.02 |

JOB TIME AND COST

Total job time: _____ Hours

Total job cost: **\$27,046**

' Se OFFICE of ARCHAEOLOGY and HISTORIC PRESERVATION

RECEIVED

OCT 222018 DIVISION OF RECLAMATION MINING AND SAFETY OCT 172018

Scottie Tate Environmental Protection Specialist Division of Reclamation, Mining and Safety 1313 Sherman Street, Room 215 Denver, Colorado 80203

Re: Notice of 112 Construction Materials Reclamation Permit Amendment Application Consideration Robinson Sons Gravel Pit No. 1, Permit No. M-2008-076 –AM01 (HC #53676)

Dear Scottie Tate:

We received your correspondence dated October 4, 2018 and received by our office on October 11, 2018 initiating consultation with our office. Our comments are provided in accordance with the Colorado State Register Act (Colorado Revised Statute (CRS) 24-80.1).

A search of the Colorado Cultural Resource Inventory database indicated that no cultural resource inventories have been conducted in the proposed permit area, and no historic properties have been recorded therein. Please keep in mind that our files contain incomplete information for this area, as most of Colorado has not yet been inventoried for cultural resources. As a result, there is the possibility that as yet unidentified cultural resources exist within the proposed permit area. Should human remains be discovered during mining activities, the requirements under State law CRS 24-80 part 13 apply and must be followed.

Thank you for the opportunity to comment. If we may be of further assistance, please contact Todd McMahon, Staff Archaeologist at (303) 866-4607/ todd.mcmahon@state.co.us

Sincerely,

Kina Steve Turner

State I listoric Preservation Officer ST/TCM

303-866-3392 * Fax 303-866-2711 * E-mail: oahp@state.co.us * Internet: www.historycolorado.org



COLORADO Parks and Wildlife

Department of Natural Resources

Pueblo Service Center 600 Pueblo Reservoir Road Pueblo, CO 81005 P 719-561-5300 | F 719-561-5321

November 8, 2019

Amy Eschberger Environmental Protection Specialist Division of Reclamation, Mining and Safety 1313 Sherman Street, Room 215 Denver, CO 80203

Amy Eschberger,

Thank you for the opportunity to comment on the proposal from Robinson Sons Gravel Pit No. 1, Permit No. M-2008-076-AM01. This permit is an amendment to expand the permit boundary significantly from 78 permitted acres to 180.6 acres which is an acceptable revision pending appropriate reclamation procedure. Robinson Sons propose to have up to 25 acres disturbed at any one time which include haul roads acreage.

Reclamation will start when mining is complete in an area as they move to a new area of disturbance. This strategy reflects Colorado Parks and Wildlife recommendations of segmented or phased mining strategies and CPW appreciates that consideration. If reclamation is properly allocated and successfully completed this will be a valid and conscientious approach to reclamation. However, we must stress that reclamation be completed prior to moving to new sites to avoid inadequate efforts to salvage habitat loss. Smaller acreages impacted would be our preference to avoid large scale, long term habitat degradation.

Review of Exhibit H WILDLIFE INFORMATION (page 27) Although mule deer are a definite species of concern on the property, others listed are scaled quail and pronghorn antelope which are species of concern. Elk, black bear, mountain lion and Merriam turkey occur on the property in various numbers dictated by human and habitat disturbance, food source, weather (winter range) etc. This noted, employees and contractors should be cognizant of wildlife on the property and familiarize themselves with conflict avoidance. CPW website provides a myriad of educational materials on avoiding wildlife conflict and can be found at Colorado Parks and Wildlife (CPW) at www.cpw.state.co.us/.

Additionally, Exhibit H WILDLIFE INFORMATION describes no fishery on site which is indeed correct. However, the impact zone is immediately adjacent to the Purgatoire River which is a viable brown trout fishery. Extreme caution needs to be exercised in regard to potential spills, equipment/vehicle accidents or siltation which might develop at the site and negatively



impact the Purgatoire River or Wet Canyon. Wet Canyon discharges in to the Purgatoire River and is the source of vehicular access to the mining area.

As to Seasonal Use listed on Page 27 in Exhibit H WILDLIFE INFORMATION, please review maps and information which can be found on our web page at cpw.state.co.us. Please feel free to contact our local District Wildlife Manager, BOB HOLDER #754 @ 719-680-1410 or bob.holder@state.co.us should you experience on site wildlife issues, conflicts or questions.

Again, Thank You, for your request and if CPW staff can be of any assistance do not hesitate to contact us.

Sincerely,

Michael Trujillo Area Wildlife Manager – Area 11 600 Reservoir Road Pueblo, CO 81005 (719) 561-5303