

COST SUMMARY WORK

Task description: Update based on TR-2 Maps

Site: Surface Rock Pit

Permit Action: TR-1

Permit/Job#: M1984001

PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 4/12/2019

County: Mesa

Filename: M001-ACY

User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Regrade stockpiles in Phase 1 & 2	DOZER	1	65.37	\$11,579
02a	Rip compacted pit floor phase 1 & 2	RIPPER	1	5.59	\$1,010
03a	Place overburden in Phase 1 & 2	DOZER	1	17.04	\$3,019
04a	Place topsoil in Phase 1 & 2	DOZER	1	10.02	\$1,775
05a	Reveg pit floor Phase 1 & 2	REVEGE	1	16.00	\$6,244
05b	Secondary Reveg Phase 2 (50% of 2.2 ac) unreleased areas	REVEGE	1	8.00	\$1,387
06a	Initial Mobilization	MOBILIZE	1	3.95	\$3,027
06b	Secondary Mobilization	MOBILIZE	1	3.95	\$1,847
<u>SUBTOTALS:</u>				129.92	\$29,888

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$604

Performance bond: 1.05

Total = \$314

Job superintendent: 0.00

Total = \$0

Profit: 10.00

Total = \$2,989

TOTAL O & P = \$3,906

CONTRACT AMOUNT (direct + O & P) = \$33,794

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$1,436

Reclamation management and/or administration: 5.00

\$1,690

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$7,532

TOTAL BOND AMOUNT (direct + indirect) = \$37,420

BULLDOZER WORKTask description: **Regrade stockpiles in Phase 1 & 2**Site: **Surface Rock Pit**Permit Action: **TR-1**Permit/Job#: **M1984001****PROJECT IDENTIFICATION**Task #: **01A**State: **Colorado**Abbreviation: **None**Date: **4/12/2019**County: **Mesa**Filename: **M001-01a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D7R DS Series II LGP**Horsepower: **240**Blade Type: **Straight**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$66.14	NA
Operating Cost/Hour:	\$63.91	100
Ripper own. Cost/Hour:	\$6.02	NA
Ripper op. Cost/Hour:	\$0.82	20
Operator Cost/Hour:	\$40.23	NA

Total unit Cost/Hour: **\$177.12**Total Fleet Cost/Hour: **\$177.12****MATERIAL QUANTITIES**Initial Volume: **11,000**Swell factor: **1.165**Loose volume: **12,815 LCY**Source of estimated volume: **Est vol of stockpiles, Mine map**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly production: **496.4 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **0 %**Average site altitude: **6,600 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3949

Adjusted unit production: 196.03 LCY/hr

Adjusted fleet production: **196.03** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.904/LCY

Total job time: **65.37** Hours

Total job cost: **\$11,579**

BULLDOZER RIPPING WORK

Task description: Rip compacted pit floor phase 1 & 2

Site: Surface Rock Pit Permit Action: TR-1 Permit/Job#: M1984001

PROJECT IDENTIFICATION

Task #: 02A State: Colorado Abbreviation: None
Date: 4/12/2019 County: Mesa Filename: M001-02a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D7R DS Series II LGP Horsepower: 240
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$66.14	NA
Operating Cost/Hour:	\$63.91	100
Ripper Ownership Cost/Hour:	\$6.02	NA
Ripper Operating Cost/Hour:	\$4.12	100
Operator Cost/Hour:	\$40.23	NA
Total Unit Cost/Hour:	\$180.41	
Total Fleet Cost/Hour:	\$180.41	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 3.00 acres Rip Depth (ft): 2.00 Volume: 9,680 BCY or CCY

Source of estimated quantity: Staff estimate current pit floor

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.45 feet/pass
Average Ripping Width: 6.50 feet/pass
Average Ripping Length: 100.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.646 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.646 Acres/hr
Site Altitude: 6,600 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.54 Acres/hr
Adjusted Hourly Fleet Production: **0.54** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **5.60** Hours

Unit cost: \$336.576 Per acre Total job cost: **\$1,010**

BULLDOZER WORKTask description: **Place overburden in Phase 1 & 2**Site: **Surface Rock Pit**Permit Action: **TR-1**Permit/Job#: **M1984001****PROJECT IDENTIFICATION**Task #: **03A**State: **Colorado**Abbreviation: **None**Date: **4/12/2019**County: **Mesa**Filename: **M001-03a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D7R DS Series II LGP**Horsepower: **240**Blade Type: **Straight**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$66.14	NA
Operating Cost/Hour:	\$63.91	100
Ripper own. Cost/Hour:	\$6.02	NA
Ripper op. Cost/Hour:	\$0.82	20
Operator Cost/Hour:	\$40.23	NA

Total unit Cost/Hour: **\$177.12**Total Fleet Cost/Hour: **\$177.12****MATERIAL QUANTITIES**Initial Volume: **1,331**Swell factor: **1.165**Loose volume: **1,551 LCY**Source of estimated volume: **3.3 ac @ 3" depth, Rec Map**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **250 feet**Unadjusted hourly production: **230.4 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **0 %**Average site altitude: **6,600 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3949

Adjusted unit production: 90.98 LCY/hr

Adjusted fleet production: **90.98** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.947/LCY

Total job time: **17.04** Hours

Total job cost: **\$3,019**

BULLDOZER WORKTask description: **Place topsoil in Phase 1 & 2**Site: **Surface Rock Pit**Permit Action: **TR-1**Permit/Job#: **M1984001****PROJECT IDENTIFICATION**Task #: **04A**State: **Colorado**Abbreviation: **None**Date: **4/12/2019**County: **Mesa**Filename: **M001-04a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D7R DS Series II LGP**Horsepower: **240**Blade Type: **Straight**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$66.14	NA
Operating Cost/Hour:	\$63.91	100
Ripper own. Cost/Hour:	\$6.02	NA
Ripper op. Cost/Hour:	\$0.82	20
Operator Cost/Hour:	\$40.23	NA

Total unit Cost/Hour: **\$177.12**Total Fleet Cost/Hour: **\$177.12****MATERIAL QUANTITIES**Initial Volume: **887**Swell factor: **1.125**Loose volume: **998 LCY**Source of estimated volume: **3.3 @ 2" depth, Rec map**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **250 feet**Unadjusted hourly production: **230.4 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **0 %**Average site altitude: **6,600 feet**Material weight: **2,650 lbs/LCY**Weight description: **Decomposed rock - 25% Rock, 75% Earth****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4323

Adjusted unit production: 99.60 LCY/hr

Adjusted fleet production: **99.6** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.778/LCY

Total job time: **10.02** Hours

Total job cost: **\$1,775**

REVEGETATION WORKTask description: Reveg pit floor Phase 1 & 2Site: Surface Rock PitPermit Action: TR-1Permit/Job#: M1984001**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 4/12/2019County: MesaFilename: M001-05aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	1.50	4.86	\$14.63
Blue Grama - Native	0.50	8.16	\$7.43
Sand Dropseed	0.80	95.50	\$8.88
Intermediate Wheatgrass - Oahe	4.50	9.61	\$17.69
Sainfoin - Remont	5.00	2.18	\$16.20
Saltbush, Four Wing	0.80	1.10	\$10.24
Winter Fat	0.50	1.27	\$10.50
Totals Seed Mix	13.60	122.68	\$85.55

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
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$578.81

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Pine, Pinyon	5	Tubling, 10 cu. in. container {(MEANS)}	\$4.78	\$2.40	\$23.90
Totals Nursery Stock Cost / Acre					\$23.90

JOB TIME AND COST

No. of Acres:	3.3	Cost /Acre:	\$1,261.33
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,261.33
*Selected Replanting Work Items:	TILLING,SEEDING,NURSERY,MULC HING		
Initial Job Cost:	\$4,162.39		
Reseeding Job Cost:	\$2,081.19		
Total Job Cost:	\$6,244		
Job Hours:	16.00		

REVEGETATION WORKTask description: Secondary Reveg Phase 2 (50% of 2.2 ac) unreleased areasSite: Surface Rock PitPermit Action: TR-1Permit/Job#: M1984001**PROJECT IDENTIFICATION**Task #: 05BState: ColoradoAbbreviation: NoneDate: 4/12/2019County: MesaFilename: M001-05bUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	1.50	4.86	\$14.63
Blue Grama - Native	0.50	8.16	\$7.43
Sand Dropseed	0.80	95.50	\$8.88
Intermediate Wheatgrass - Oahe	4.50	9.61	\$17.69
Sainfoin - Remont	5.00	2.18	\$16.20
Saltbush, Four Wing	0.80	1.10	\$10.24
Winter Fat	0.50	1.27	\$10.50
Totals Seed Mix	13.60	122.68	\$85.55

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
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$578.81

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Pine, Pinyon	5	Tubling, 10 cu. in. container {(MEANS)}	\$4.78	\$2.40	\$23.90
Totals Nursery Stock Cost / Acre					\$23.90

JOB TIME AND COST

No. of Acres: 1.1 Cost /Acre: \$1,261.33
 Estimated Failure Rate: 0% Cost /Acre*: \$0.00
 *Selected Replanting Work Items: NONE

Initial Job Cost: \$1,387.46
 Reseeding Job Cost: \$0.00
 Total Job Cost: \$1,387
 Job Hours: 8.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial Mobilization**Site: **Surface Rock Pit**Permit Action: **TR-1**Permit/Job#: **M1984001****PROJECT IDENTIFICATION**Task #: **06A**State: **Colorado**Abbreviation: **None**Date: **4/12/2019**County: **Mesa**Filename: **M001-06a**User: **ACY**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D7R DS Series II LGP	38.49	\$72.16	\$117.55	1	\$189.71	\$117.55	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00

Subtotals: **\$390.92** **\$294.89** **\$750.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$76.10	1	\$76.10	\$76.10

Subtotals: **\$76.10** **\$76.10**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>GRAND JUNCTION</u>	
Total one-way travel distance:	<u>22.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,952.41</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$74.41</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.49</u>	<u>0.49</u>
Return Time (Hours):	<u>0.49</u>	<u>0.49</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.98</u>	<u>0.98</u>

JOB TIME AND COST

Total job time:	<u>3.96</u>	Hours
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Total job cost:	<u>\$3,027</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Secondary Mobilization**Site: **Surface Rock Pit**Permit Action: **TR-1**Permit/Job#: **M1984001****PROJECT IDENTIFICATION**Task #: **06B**State: **Colorado**Abbreviation: **None**Date: **4/12/2019**County: **Mesa**Filename: **M001-06b**User: **ACY**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Subtotals:					\$201.21	\$177.34	\$500.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$76.10	1	\$76.10	\$76.10
Subtotals:			\$76.10	\$76.10

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>GRAND JUNCTION</u>	
Total one-way travel distance:	<u>22.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$1,772.56</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$74.41</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.49</u>	<u>0.49</u>
Return Time (Hours):	<u>0.49</u>	<u>0.49</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.98</u>	<u>0.98</u>

JOB TIME AND COST

Total job time:	<u>3.96</u>	Hours
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Total job cost:	<u>\$1,847</u>
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