

**COLORADO** Division of Reclamation, Mining and Safety Department of Natural Resources

1313 Sherman Street, Room 215 Denver, CO 80203

August 9, 2016

Mr. Mike Langston Langston Concrete, Inc. 902 South Union Street Florence, CO 81226

#### Re: Project, Permit No. M-1992-051; Technical Revision (TR-01) Approval

Dear Mr. Langston:

On August 9, 2016 the Division of Reclamation, Mining and Safety approved the Technical Revision application submitted to the Division on October 26, 2015, addressing the following:

Clarify Maximum Allowed Disturbed Area and Provide Permit Boundary Map

The terms of the Technical Revision No. 1 approved by the Division are hereby incorporated into Permit No. M-1992-051 such that no more than 50 acres may be affected at one time (including the currently "plated" 19.7 acres identified as "Stockpile Area" on the submitted TR-01 map). All other conditions and requirements of Permit No. M-1992-051 remain in full force and effect.

The Division has reviewed the submitted clarifications for impacts to the financial warranty. The Division's \$39,860 reclamation cost estimate (see enclosed summary) resulting from the submitted clarifications was based on a maximum allowed disturbed area of 50 acres (which is approximately 6.5 acres greater than the current disturbance). As such, the Division considers the \$38,100.00 performance bond currently held to be adequate for 43.5 acres of disturbance.

If you have any questions or need further information, please contact me at (303)866-3567 x8169.

Sincerely,

Timothy A. Cazier, P.E. Environmental Protection Specialist

Enclosure

ec: Wally Erickson, DRMS DRMS file

## COST SUMMARY WORK

Florence	Sand & Gravel	Pet Pet	rmit Action:	TR-01	Permit/Job	o#: <u>M1992051</u>
ROJECT	IDENTIFICA	TION				
Task #:	T10	State:	Colorado		Abbreviation:	None
Date:	8/9/2016	County:	Fremont		Filename:	M051-T10
User:	TC1					

#### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
T11	Backfill/Push Down Highwalls	DOZER	1	21.84	\$3,497.00
T12	Rough Grading/Plating	DOZER	1	59.16	\$10,052.00
T13	Overlot "Finish" Grading	GRADER	1	23.34	\$3,892.00
T14	Concrete Structure Demolition	DEMOLISH	1	16.00	\$9,449.75
T15	Mob/Demob Equipment	MOBILIZE	1	2.60	\$2,635.00
		<u>SUBTO</u>	TALS:	122.94	\$29,526

#### **INDIRECT COSTS**

#### **OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$596.43
Performance bond:	1.05	Total =	\$310.02
Job superintendent:	61.47	Total =	\$4,578.29
Profit:	10.00	Total =	\$2,952.60
		TOTAL O & P =	\$8,437.34
		CONTRACT AMOUNT (direct + O & P) = $($	\$37,963.34

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): Engineering work and/or contract/bid preparation: Reclamation management and/or administration:	0.00 0.00 5.00	Total = Total =	0.00 \$0.00 \$1,898.17
CONTINGENCY:	0.00	Total =	\$0.00
	TOTAL	INDIRECT COST =	\$10,335.51
TOTAL BO	OND AMOUNT	(direct + indirect) =	\$39,861.51

## Task # T11 500-Ft Highwall Backfill Volume Estimate



## BULLDOZER WORK

Florence Sand & Gra		ish Down Highwa	115		
	avel Pit	Permit Action:	TR-01	Permit/Job#:	M1992051
PROJECT IDENTIF	TICATION				
Task #: T11		State: Colorado		Abbreviation:	None
Date: $\frac{111}{8/9/2016}$		unty: Fremont		Filename:	M051-T11
User: TC1					
Agency or orga	nization name:	DRMS			
HOURLY EQUIPME	ENT COST				
Basic Machine: Ca	t D8T - 8U				
Horsepower: 30.					
	niversal				
Attachment: NA					
	ber day				
Data Source: (Cl	RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$52.86	NA		
Operating Cost/Hour:		\$68.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$38.89	NA		
MATERIAL QUANT	<u> FITIES</u>				
Initial Volume: 14,8					
Swell factor: 1.12	25				
Swell factor: 1.12					
Swell factor: 1.12	25 567 LCY me:Div	vision of Reclamati t Handbook	on, Mining & Safety		
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel	25 567 LCY Ime: Div Il factor: Ca		on, Mining & Safety		
Swell factor: 1.12 Loose volume: 16,6 Source of estimated volu Source of estimated swel HOURLY PRODUCT	25 567 LCY 1me: <u>Div</u> 11 factor: <u>Ca</u> TION	t Handbook	ion, Mining & Safety		
Swell factor: 1.12 Loose volume: 16,6 Source of estimated volu Source of estimated swel HOURLY PRODUCT Average push distance:	25 567 LCY Ime: <u>Div</u> Il factor: <u>Ca</u> TION _ 100 f	t Handbook	on, Mining & Safety		
Swell factor: 1.12 Loose volume: 16,6 Source of estimated volu Source of estimated swel HOURLY PRODUCT	25 567 LCY Ill factor: <u>Ca</u> TION action: <u>931.6</u>	t Handbook			
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel         HOURLY PRODUC'       Average push distance:         Unadjusted hourly produ       Materials consistency destance:	25 567 LCY Ime: <u>Div</u> Il factor: <u>Ca</u> TION TION action: <u>931.6</u> scription: <u>(</u>	t Handbook eet 5 LCY/hr			
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel         HOURLY PRODUCT       Average push distance:         Unadjusted hourly produ       Materials consistency dest         Average push gradient:       State	25 567 LCY Ime: <u>Division</u> Il factor: <u>Ca</u> TION action: <u>931.6</u> scription: <u>(</u> 25 %	t Handbook eet 5 LCY/hr			
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel         HOURLY PRODUCT       Average push distance:         Unadjusted hourly produ       Materials consistency des         Average push gradient:       Average site altitude:	$\frac{25}{567 \text{ LCY}}$ $\frac{567 \text{ LCY}}{11 \text{ factor: } Ca}$ $\frac{100 \text{ f}}{25 \text{ m}}$ $\frac{100 \text{ f}}{931.6}$ $\frac{-25 \text{ m}}{5,250 \text{ feet}}$	t Handbook eet b LCY/hr Consolidated stock			
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel         HOURLY PRODUCT       Average push distance:         Unadjusted hourly produ       Materials consistency des         Average push gradient:       Average site altitude:	25 567 LCY Ime: <u>Division</u> Il factor: <u>Ca</u> TION action: <u>931.6</u> scription: <u>(</u> 25 %	t Handbook eet b LCY/hr Consolidated stock			
Swell factor:1.12Loose volume:16,6Source of estimated voluSource of estimated swelHOURLY PRODUCTAverage push distance:Unadjusted hourly produMaterials consistency desAverage push gradient:Average site altitude:Material weight:Weight description:	$\frac{25}{567 \text{ LCY}}$ $\frac{567 \text{ LCY}}{100 \text{ fm}}$ $\frac{100 \text{ fm}}{100 \text{ fm}}$ $\frac{100 \text{ fm}}{100 \text{ fm}}$ $\frac{100 \text{ fm}}{100 \text{ fm}}$ $\frac{-25 \%}{5,250 \text{ feet}}$ $\frac{-25 \%}{2,650 \text{ lbs/L0}}$ $\frac{-25 \text{ fm}}{100 \text{ fm}}$	t Handbook eet b LCY/hr Consolidated stock			
Swell factor:1.12Loose volume:16,6Source of estimated voluSource of estimated swelHOURLY PRODUCTAverage push distance:Unadjusted hourly produMaterials consistency desAverage push gradient:Average site altitude:Material weight:Weight description:Job Condition Correction	$\frac{25}{567 \text{ LCY}}$ $\frac{567 \text{ LCY}}{1000}$ $\frac{100 \text{ f}}{1000 \text{ f}}$ $\frac{100 \text{ f}}{1000 \text{ f}}$ $\frac{100 \text{ f}}{1000 \text{ f}}$ $\frac{-25 \%}{5,250 \text{ feet}}$ $\frac{-25 \%}{5,250 \text{ feet}}$ $\frac{2,650 \text{ lbs/L0}}{1000 \text{ bccompose}}$ $\frac{100 \text{ f}}{1000 \text{ f}}$	t Handbook eet b LCY/hr Consolidated stockj CY d rock - 25% Rock			
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel         HOURLY PRODUC'       Average push distance:         Unadjusted hourly produ       Materials consistency des         Average push gradient:       Average site altitude:         Material weight:       Weight description:         Job Condition Correction       Operator	$\frac{25}{567 \text{ LCY}}$ $\frac{567 \text{ LCY}}{11 \text{ factor: } Ca}$ $\frac{100 \text{ f}}{200 \text{ factor: } 931.6}$ $\frac{-25 \%}{5,250 \text{ feet}}$ $\frac{2,650 \text{ lbs/L0}}{2,650 \text{ lbs/L0}}$ $\frac{100 \text{ factor}}{500 \text{ factor}}$	t Handbook eet b LCY/hr Consolidated stock CY d rock - 25% Rock 0.750			
Swell factor:1.12Loose volume:16,6Source of estimated voluSource of estimated swelHOURLY PRODUCTAverage push distance:Unadjusted hourly produMaterials consistency desAverage push gradient:Average site altitude:Material weight:Weight description:Job Condition Correction	25 567 LCY Ime: Div Il factor: Ca TION action: 931.6 scription: 0 -25 % 5,250 feet 2,650 lbs/L0 Decompose n Factor Skill:	t Handbook eet b LCY/hr Consolidated stockj CY d rock - 25% Rock			
Swell factor:       1.12         Loose volume:       16,6         Source of estimated volu       Source of estimated swel         HOURLY PRODUCT       Average push distance:         Unadjusted hourly produ       Materials consistency des         Average push gradient:       Average site altitude:         Material weight:       Weight description:         Job Condition Correction       Operator	$\frac{25}{567 \text{ LCY}}$ $\frac{567 \text{ LCY}}{11 \text{ factor: } Ca}$ $\frac{100 \text{ f}}{200 \text{ factor: } 931.6}$ $\frac{-25 \%}{5,250 \text{ feet}}$ $\frac{2,650 \text{ lbs/L0}}{2,650 \text{ lbs/L0}}$ $\frac{100 \text{ factor}}{500 \text{ factor}}$	t Handbook eet b LCY/hr Consolidated stock CY d rock - 25% Rock 0.750			

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.516	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.8191	
Adjusted unit production: 7	63.07 LCY/hr	
Adjusted fleet production: <b>7</b>	63.07 LCY/hr	

## JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.210/LCY

Total job time:	<b>21.84</b> Hours
Total job cost:	\$3,497

## BULLDOZER WORK

Task description:	Rough	n Grading/Plating			
Florence Sand &	Gravel Pit	Permit Action:	TR-01	Permit/Job#:	M1992051
PROJECT IDEN	<u> FIFICATIO</u>	<u>N</u>			
Task #: T12		State: Colorado		Abbreviation:	None
Date: 8/9/201	16	County: Fremont		Filename:	M051-T12
User: TC1		·			
Agency or o	organization n	ame: DRMS			
HOURLY EQUIP	MENT CO	<u>ST</u>			
Basic Machine:	Cat D8T - 8I	J			
Horsepower:	305				
Blade Type:	Universal				
Attachment:	3-shank ripp	er			
Shift Basis:	1 per day				
Data Source:	(CRG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Ho		\$52.86	NA		
Operating Cost/Ho		\$68.35	100		
	our:	\$8.40	NA		
Ripper own. Cost/Ho			25		
Ripper op. Cost/Ho	our:	\$1.41	25		
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou	our: our: : \$169.9 r: <b>\$169.9</b>	\$38.89	NA		
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA	our: our: : \$169.9 r: <b>\$169.9</b>	\$38.89			
Ripper op. Cost/Hc Operator Cost/Hc Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor:	our: . \$169.9 r: <b>\$169.9</b> <b>ANTITIES</b> 24,442 1.125	\$38.89			
Ripper op. Cost/Hc Operator Cost/Hc Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor:	our: . \$169.9 r: <b>\$169.9</b> <b>ANTITIES</b> 24,442	\$38.89			
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v	your:	\$38.89 1 1 (30.3ac)(43560sf/ac)		 	
Ripper op. Cost/Ho Operator Cost/Hou Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume:	your:	\$38.89 1 <b>1</b>	NA	  	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated s	our:       \$169.9         r:       \$169.9         xnTITIES       \$24,442         1.125       \$27,497 LCY         volume:       \$well factor:	\$38.89 1 1 (30.3ac)(43560sf/ac)	NA	  <u>/</u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s	our:       \$169.9         :       \$169.9         r:       \$169.9         ANTITIES       \$169.9         24,442       \$1.125         27,497 LCY       volume:         swell factor:       \$         UCTION       \$	\$38.89 1 1 1 (30.3ac)(43560sf/ac) Cat Handbook	NA	  <u>7</u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s <u>HOURLY PROD</u> Average push distance	our:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook	NA	<u> </u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s	our:	\$38.89 1 1 1 (30.3ac)(43560sf/ac) Cat Handbook	NA	  <u>/</u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s <u>HOURLY PROD</u> Average push distance	our:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook	<u>NA</u> (0.5'D) / 27 = 24,442 CY	7	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s <u>HOURLY PROD</u> Average push distanc Unadjusted hourly pr	our:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr	<u>NA</u> (0.5'D) / 27 = 24,442 CY	<u></u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated s <u>HOURLY PROD</u> Average push distanc Unadjusted hourly pr Materials consistency	our:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr Dry, non-cohesive	<u>NA</u> (0.5'D) / 27 = 24,442 CY	7	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated v Average push distanc Unadjusted hourly pr Materials consistency	pur:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr Dry, non-cohesive	<u>NA</u> (0.5'D) / 27 = 24,442 CY	<u></u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s <u>HOURLY PROD</u> Average push distance Unadjusted hourly pr Materials consistency Average push gradier Average site altitude:	pur:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr Dry, non-cohesive Feet	<u>NA</u> (0.5'D) / 27 = 24,442 CY 	<u></u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated v Source of estimated s <u>HOURLY PROD</u> Average push distance Unadjusted hourly pr Materials consistency Average push gradier Average site altitude: Material weight:	pur:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr Dry, non-cohesive eet bs/LCY	<u>NA</u> (0.5'D) / 27 = 24,442 CY 	<u></u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated v Source of estimated s HOURLY PROD Average push distance Unadjusted hourly pr Materials consistency Average push gradier Average site altitude: Material weight: Weight description: Job Condition Correct Opera	our:	\$38.89 1 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr Dry, non-cohesive eet bs/LCY posed rock - 25% Roch 0.750	<u>(0.5'D) / 27 = 24,442 CY</u> (0.5'D) / 27 = 24,442 CY (0.8) 0.8 k, 75% Earth <u>Source</u> (AVG.)	<u></u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated	pur:	\$38.89 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) (30.3ac)	NA (0.5'D) / 27 = 24,442 CY (0.5'D) / 27 = 24,442 CY 0.8 0.8 k, 75% Earth K, 75% Earth (AVG.) (CAT HB)	<u></u>	
Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated s HOURLY PROD Average push distanc Unadjusted hourly pr Materials consistency Average push gradien Average site altitude: Material weight: Weight description: Job Condition Correct Opera Material con Dozing	our:	\$38.89 1 1 1 (30.3ac)(43560sf/ac) (30.3ac)(43560sf/ac) Cat Handbook 65 feet 1,344.1 LCY/hr Dry, non-cohesive eet bs/LCY posed rock - 25% Roch 0.750	<u>(0.5'D) / 27 = 24,442 CY</u> (0.5'D) / 27 = 24,442 CY (0.8) 0.8 k, 75% Earth <u>Source</u> (AVG.)	<u></u>	

Job efficienc	ey:	0.830	(1 SHIFT/DAY)
Spoil pi	le:	0.800	(FND-RF)
Push gradier	nt:	1.000	(CAT HB)
Altitud	le:	1.000	(CAT HB)
Material Weigl	nt:	0.868	(CAT HB)
Blade typ	be:	1.000	(PAT)
Net correctio	on: 0.34	58	
Adjusted unit production:	464.79 I	LCY/hr	
Adjusted fleet production:	<b>464.79</b> I	.CY/hr	

## JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.366/LCY

Total job time:	<b>59.16</b> Hours
Total job cost:	\$10,052

## MOTOR GRADER WORK

Task description:						
Florence Sand & G	ravel Pit Perr	mit Action:	TR-01		Permit/Job#:	M1992051
PROJECT IDENTI	FICATION					
Task #: T13	State:	Colorado		Ab	breviation:	None
Date: 8/9/2016		Fremont			Filename:	M051-T13
User: TC1						
Agency or org	ganization name: DR	MS				
HOURLY EQUIPM	IENT COST					
Basic Machin	ne: CAT 16M			Horsepower:		297
Ripper Attachme				Shift Basis:		er day
Rupper / Rutenine	ent:			Data Source:		CRG)
				Duiu Source.	(	(10)
Cost Breakdown:			1			
-			<b>AF</b>	Utilization %		
	nership Cost/Hour:		\$79.03	NA	_	
	erating Cost/Hour:		\$51.88	75		
	nership Cost/Hour:		\$0.00	NA		
	erating Cost/Hour:		\$0.00	<b>N</b> T 4		
	perator Cost/Hour:		\$35.83	NA		
Tot	tal Unit Cost/Hour:		\$166.73			
Tot	al Fleet Cost/Hour:	\$16	6.73			
MATERIAL QUAN		d: 30.30				acres
MATERIAL QUAN Total Are	ea to be graded or ripped		)16 Survey Mar	& TR-01		acres
MATERIAL QUAN Total Are Sour	ea to be graded or ripped rce of estimated acreage		)16 Survey Map	& TR-01		acres
MATERIAL QUAN Total Are	ea to be graded or ripped rce of estimated acreage		)16 Survey Map	e & TR-01		acres
MATERIAL QUAN Total Are Sour	ea to be graded or ripped rce of estimated acreag <u>CTION</u> Average Grader Sp	e: July 20	1.50	mph		acres
MATERIAL QUAN Total Are Sour	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat	e: <u>July 20</u> eed: tion:	1.50 Finish	mph grading (0-2.5 p		acres
MATERIAL QUAN Total Are Sour	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An	e: July 20 eed: tion: ngle:	1.50 Finish 30	mph grading (0-2.5 degree		acres
MATERIAL QUAN Total Are Sour	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len	e: July 20 eed: tion: ngle: ngth:	1.50 Finish 30 13.90	mph grading (0-2.5 degree degree feet		acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p	e: July 20 eed: tion: ngle: oass:	1.50 Finish 30 13.90 2.00	mph grading (0-2.5 m degree feet feet		acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Widtl Net grading	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p	e: July 20 eed: ition: ngle: oass: pass:	1.50 Finish 30 13.90 2.00 11.90	mph grading (0-2.5 m degree feet feet feet feet	es	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Widtl Net grading Unadjuste	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product	e: July 20 eed: ition: ngle: oass: pass:	1.50 Finish 30 13.90 2.00 11.90 2.1636	mph grading (0-2.5 m degree feet feet feet acres/	es hour	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Widtl Net grading	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product	e: July 20 eed: ngle: ngth: pass: tion:	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si	mph grading (0-2.5 m degree feet feet feet feet	es hour	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors	e: July 20 eed: ngle: ngth: pass: bass: Source	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si	mph grading (0-2.5 m degree feet feet feet acres/	es hour	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste Ob Condition Correction Altitude Adj:	ea to be graded or ripped rce of estimated acreag CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors	e: July 20 eed: tion: oass: tion: Source (CAT HI	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3)	mph grading (0-2.5 m degree feet feet feet acres/	es hour	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste ob Condition Correctio Altitude Adj: Job Efficiency:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80	e: July 20 eed: ition: oass: oass: tion: Source (CAT HI (1sh/d, ad	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.)	mph grading (0-2.5 m degree feet feet feet acres/	es hour	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste Ob Condition Correction Altitude Adj: Job Efficiency: Net Correction:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80 0.8000	e: July 20 eed: ition: oass: oass: tion: Source (CAT HI (1sh/d, ad multiplier	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.)	mph grading (0-2.5 m degree feet feet feet acres/ te Altitude: <u>520</u>	hour 1 <u>0</u> feet	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste Ob Condition Correctio Altitude Adj: Job Efficiency: Net Correction:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade Am Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80 0.8000 Adjusted Hourly Unit I	e: July 20 eed: ition: oass: oass: oass: tion: CAT HI (1sh/d, ad multiplier Production:	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.) 1.7309	mph grading (0-2.5 m degree feet feet feet acres/ te Altitude: <u>520</u>	hour 1 <u>0</u> feet 1r	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste Ob Condition Correctio Altitude Adj: Job Efficiency: Net Correction:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80 0.8000	e: July 20 eed: ition: oass: oass: oass: tion: CAT HI (1sh/d, ad multiplier Production:	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.)	mph grading (0-2.5 m degree feet feet feet acres/ te Altitude: <u>520</u>	hour 1 <u>0</u> feet 1r	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste ob Condition Correction Altitude Adj: Job Efficiency: Net Correction:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80 0.8000 Adjusted Hourly Unit I Adjusted Hourly Fleet 1	e: July 20 eed: ition: oass: oass: oass: tion: CAT HI (1sh/d, ad multiplier Production:	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.) 1.7309	mph grading (0-2.5 m degree feet feet feet acres/ te Altitude: <u>520</u>	hour 1 <u>0</u> feet 1r	acres
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste ob Condition Correction Altitude Adj: Job Efficiency: Net Correction:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80 0.8000 Adjusted Hourly Unit 1 Adjusted Hourly Fleet 1 OST	e: July 20 eed: ition: oass: oass: oass: tion: CAT HI (1sh/d, ad multiplier Production:	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.) 1.7309 1.7309	mph grading (0-2.5 m degree feet feet feet acres/ te Altitude: <u>520</u> acres/Hou	hour 10 feet 11	
MATERIAL QUAN Total Are Sour HOURLY PRODUC Width Net grading Unadjuste ob Condition Correction Altitude Adj: Job Efficiency: Net Correction:	ea to be graded or ripped rce of estimated acreage CTION Average Grader Sp Selected Applicat Selected Blade An Effective Blade Len h of blade overlap per p g or ripping width per p ed Hourly Unit Product on Factors <u>1.00</u> 0.80 0.8000 Adjusted Hourly Unit I Adjusted Hourly Fleet I OST	e: July 20 eed: ition: oass: oass: oass: tion: CAT HI (1sh/d, ad multiplier Production:	1.50 Finish 30 13.90 2.00 11.90 2.1636 Si 3) v.) 1.7309	mph grading (0-2.5 m degree feet feet feet acres/ te Altitude: <u>520</u> acres/Hou	hour 1 <u>0</u> feet 1r	acres

## **DEMOLITION WORK**

	Task description:	Concrete St	ructure Demoli	tion		
Site:	Florence Sand & Grave	Pit	Permit Action:	TR-01	Permit/J	lob#: <u>M1992051</u>
<u>PROJE</u>	CT IDENTIFICATION	N				
Task #	: T14	State:	Colorado		Abbreviation:	None
Date	: 8/9/2016	County:	Fremont		Filename:	M051-T14
User	: TC1					
	Agency or organizat	ion name:	DRMS			

## UNIT COSTS

## Location adjustment: 91.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
4"-8" & Oversize Bin Walls	75x55x13	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 50 ft. push	2,320.00	SF	\$2.34	\$5,421.84
4"-8" & Oversize Bin Floors (no rebar)	30.67x32 & 19.17x18.75	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 50 ft. push	1,338.00	SF	\$1.06	\$1,423.63
Ramp Walls	36x34x17	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 50 ft. push	1,490.00	SF	\$2.34	\$3,482.13

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	16.00	(unadjusted):	\$10,327.60	location):	\$9,449.75

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Та	ask description	: Mo	b/Demob Equipm	nent				
te: Florence Sand & Gravel Pit		t Permit	Permit Action: TR-01		I	Permit/Job#: <u>M1992051</u>		
<u>PR</u>	OJECT IDE	NTIFICATI	<u>ON</u>					
	Task #: T1	5	State: Co	lorado		Abbre	viation: N	None
		9/2016		emont				M051-T15
	User: TC			<u> </u>				
	Agency	or organization	n name: DRMS					
EQ	UIPMENT '	TRANSPOR'	<u>T RIG COST</u>					
						Shift ba	sis: 1 p	er day
					C	Cost Data Sour		G Data
	Truc	k Tractor Desci	ription: GENE	RIC ON-HIGH	WAY TRU	JCK TRACTC	)R. 6X4. DI	ESEL POWERED,
	1100					(2ND HALF,		
							2000)	
	Truc	k Trailer Desci	ription: Gl	ENERIC FOLD				EOUIPMENT
	Truc	ck Trailer Desci	ription: Gl	ENERIC FOLD	ING GOO	SENECK, DR	OP DECK I	EQUIPMENT
G		k Trailer Desci	ription: Gl		ING GOO		OP DECK I	EQUIPMENT
<u>Cos</u>	Truc st Breakdown:	ek Trailer Desci	ription: Gl		ING GOO	SENECK, DR	OP DECK I	EQUIPMENT
			0-25 Tons		ING GOO TRAILER	SENECK, DR	OP DECK I	EQUIPMENT
	t Breakdown: vailable Rig (			1	ING GOO TRAILER 51+	SENECK, DR (25T, 50T, AN	OP DECK I	EQUIPMENT
	<u>st Breakdown:</u> vailable Rig ( Ownershi	Capacities	0-25 Tons	26-50 Tons	ING GOO TRAILER 51+ \$2	SENECK, DR (25T, 50T, AN	OP DECK I	EQUIPMENT
	st Breakdown: vailable Rig ( Ownershi Operatin	C <b>apacities</b> p Cost/Hour:	0-25 Tons \$16.63	7 26-50 Tons \$18.37	ING GOO TRAILER 51+ \$2 \$5	SENECK, DR (25T, 50T, AN - Tons 22.33	OP DECK I	EQUIPMENT
	<u>st Breakdown:</u> vailable Rig ( Ownershi Operatin Operato	C <b>apacities</b> p Cost/Hour: g Cost/Hour:	<b>0-25 Tons</b> \$16.63 \$44.38	<b>26-50 Tons</b> \$18.37 \$46.13	ING GOO TRAILER 51+ \$2 \$5 \$2	SENECK, DR (25T, 50T, AN • Tons • 22.33 50.07	OP DECK I	EQUIPMENT
	<u>st Breakdown:</u> vailable Rig ( Ownershi Operatin Operato Helpe	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour:	0-25 Tons \$16.63 \$44.38 \$27.66	<b>26-50 Tons</b> \$18.37 \$46.13 \$27.66	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$2	SENECK, DR (25T, 50T, AN - Tons 22.33 50.07 27.66	OP DECK I	EQUIPMENT
	t Breakdown: vailable Rig ( Ownershi Operatin Operato Helpe Total Uni	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: er Cost/Hour: it Cost/Hour:	0-25 Tons           \$16.63           \$44.38           \$27.66           \$0.00           \$88.67	<b>26-50 Tons</b> \$18.37 \$46.13 \$27.66 \$25.39	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$2	SENECK, DR (25T, 50T, AN - Tons 22.33 50.07 27.66 25.39	OP DECK I	EQUIPMENT
	t Breakdown: vailable Rig ( Ownershi Operatin Operato Helpe Total Uni	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: er Cost/Hour:	0-25 Tons           \$16.63           \$44.38           \$27.66           \$0.00           \$88.67	<b>26-50 Tons</b> \$18.37 \$46.13 \$27.66 \$25.39	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$2	SENECK, DR (25T, 50T, AN - Tons 22.33 50.07 27.66 25.39	OP DECK I	EQUIPMENT
	at Breakdown: vailable Rig O Ownershi Operatin Operato Helpe Total Uni	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: it Cost/Hour: it Cost/Hour: BLE EQUIPM	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67 MENT:	<b>26-50 Tons</b> \$18.37 \$46.13 \$27.66 \$25.39 \$117.55	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$1	SENECK, DR (25T, 50T, AN 22.33 50.07 27.66 25.39 25.45	OP DECK I	
  <u>NO</u>	t Breakdown: vailable Rig ( Ownership Operation Operato Helpe Total Uni ON ROADAE	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: it Cost/Hour: it Cost/Hour: BLE EQUIPN Weight/	0-25 Tons           \$16.63           \$44.38           \$27.66           \$0.00           \$88.67           MENT:           Owner ship	<b>26-50 Tons</b> \$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$1 Fleet	SENECK, DR (25T, 50T, AN 22.33 50.07 27.66 25.39 25.45 Haul Trip	OP DECK I	ip DOT Permit
	at Breakdown: vailable Rig O Ownershi Operatin Operato Helpe Total Uni	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: it Cost/Hour: it Cost/Hour: BLE EQUIPN Weight/ Unit	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67 MENT:	<b>26-50 Tons</b> \$18.37 \$46.13 \$27.66 \$25.39 \$117.55	ING GOO 'RAILER 51+ \$2 \$5 \$2 \$2 \$1	SENECK, DR (25T, 50T, AN 22.33 50.07 27.66 25.39 25.45	OP DECK I ID 100T) Return Tri	ip DOT Permit
	t Breakdown: vailable Rig ( Ownership Operation Operato Helpe Total Uni ON ROADAE	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: it Cost/Hour: it Cost/Hour: BLE EQUIPN Weight/	0-25 Tons           \$16.63           \$44.38           \$27.66           \$0.00           \$88.67           MENT:           Owner ship	26-50 Tons           \$18.37           \$46.13           \$27.66           \$25.39           \$1117.55	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$1 Fleet	SENECK, DR (25T, 50T, AN 22.33 50.07 27.66 25.39 25.45 Haul Trip Cost/hr/	OP DECK I ID 100T) Return Tri	ip DOT Permit
A M M D Ca	t Breakdown: vailable Rig ( Ownership Operation Operato Helpe Total Uni <b>DN ROADAF</b> lachine escription	Capacities p Cost/Hour: g Cost/Hour: or Cost/Hour: r Cost/Hour: it Cost/Hour: BLE EQUIPN Weight/ Unit (TONS)	0-25 Tons           \$16.63           \$44.38           \$27.66           \$0.00           \$88.67           MENT:           Owner ship           Cost/hr/ unit	Z6-50 Tons           \$18.37           \$46.13           \$27.66           \$25.39           \$1117.55	ING GOO TRAILER 51+ \$2 \$5 \$2 \$2 \$2 \$1 \$1 Fleet Size	SENECK, DR (25T, 50T, AN 22.33 50.07 27.66 25.39 25.45 Haul Trip Cost/hr/ fleet	Return Tri Cost/hr/ fl	ip DOT Permit eet Cost/ fleet

Subtotals: \$486.80 \$323.77 \$750.00

# **ROADABLE EQUIPMENT:**

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

## **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	CAÑON CITY	
Total one-way travel distance:	10.00	miles
Average Travel Speed:	25.00	mph
Total Non-Roadable Mob/Demob Cost *		
** two round trips with haul rig:	\$2,635.26	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$0.00	

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.40	0.40
Return Time (Hours):	0.40	0.40
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	1.30	0.80

#### JOB TIME AND COST

Total job time: **2.60** Hours

Total job cost: **\$2,635**