# **Appendix D**

Supporting Data for Cost Estimation

# **Appendix D.1 2021 Labor** Rates (NMDOL)

#### Labor Rates

NMDOL Type A Operator Group	Base rate	Fringe rate	Apprenticeship	tal 2021 Rate (\$/hr)
Equipment Operator IV	21.51	6.54	0.6	\$ 28.65
Equipment Operator V	21.63	6.54	0.6	\$ 28.77
Equipment Operator VI	21.81	6.54	0.6	\$ 28.95
Laborer I	17.06	6.22	0.6	\$ 23.88
Laborer II	17.81	6.22	0.6	\$ 24.63
Truck Driver III	17.72	6.25	0.60	\$ 24.57

Labor rates based on NM Department of Labor Type H (Heavy Engineering) 2021 labor rates. Rates include <u>https://www.dws.state.nm.us/Portals/0/DM/LaborRelations/Prevailing\_Wage\_Poster\_H\_2021.pdf</u>

# Appendix D.2

# Equipment Watch Data



Total:

Date Last Updated: Sep 01, 2020

All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

USD \$1,381.68

USD \$4,101.99

NEB CICCII BOOK				-
Caterpillar 14M (disc. 2 Articulated Frame Graders	2015)			
Size Class: 250 HP & Over Weight: 46796 Ibs				
Configuration for 14N	1 (disc. 2015)			
Moldboard Size Power Mode	14.0 ft Diesel	Operator P	rotection EROP	PS
	0 1 1	of this type and size. Rates sho brands or models will vary depe		s are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$15,082.00	USD \$5,050.00	USD \$1,701.00
Adjustments				
Region (New Mexico: 81%)		(USD \$2,831.26)	(USD \$948.01)	(USD \$319.32)
User Defined				
Rental Rates (100%)		-		-

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

MMN.equilPr

USD \$12,250.74



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

-0.2%

-9.6%

Caterpillar 14M (disc. 2015) Articulated Frame Graders				
Size Class: 250 HP & Over Weight: 46796 Ibs				
Configuration for 14M (dis	sc. 2015)			
Moldboard Size Power Mode	14.0 ft Diesel		Operator Protection	EROPS
Hourly Ownership Costs				
		Standard Value	User Adjusted Value	Variance
Depreciation		USD \$35.39/hr	USD \$33.12/hr	-6.4%
Cost of Facilities Capital (CFC)		USD \$3.44/hr	USD \$3.43/hr	-0.2%
Overhead		USD \$11.91/hr	USD \$11.88/hr	-0.2%
Overhaul Labor		USD \$8.13/hr	USD \$3.07/hr	-62.2%

Total Hourly Ownership Cost: USD \$76.99/hr USD \$69.58/hr User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,397hrs -> 1,400hrs)

USD \$18.12/hr

#### **Hourly Operating Costs**

**Overhaul Parts** 

	Standard Value	User Adjusted Value	Variance	
Field Labor	USD \$6.78/hr	USD \$2.56/hr	-62.2%	
Field Parts	USD \$17.57/hr	USD \$4.38/hr	-75.1%	
Ground Engaging Component (GEC)	USD \$1.46/hr	USD \$0.44/hr	-70.1%	
Tire	USD \$7.98/hr	-	-	
Electrical/Fuel	USD \$20.94/hr	USD \$8.29/hr	-60.4%	
Lube	USD \$5.80/hr	-	_	
Total Operating Ownership Cost		USD \$20 46/br	E1 204	

USD \$18.08/hr

Total Operating Ownership Cost: USD \$60.53/hr USD \$29.46/hr -51.3% User Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$4,091.30 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$20,456.52 -> USD \$6,136.95)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$76.99/hr	USD \$69.58/hr	-9.6%
Hourly Operating Costs	USD \$60.53/hr	USD \$29.46/hr	-51.3%
Total Hourly Cost	USD \$137.52	USD \$99.04/hr	-28%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$50.74/hr	USD \$48.43/hr	-4.5%
Idle	USD \$97.92/hr	USD \$77.87/hr	-20.5%

Revised Date: 1st half 2021



Total:

Date Last Updated: Sep 01, 2020

All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

USD \$1,381.68

USD \$4,101.99

NED OFCOM DOOR				
Caterpillar 16M (disc. 2 Articulated Frame Graders	2015)			
Size Class: 250 HP & Over Weight: 59435 Ibs				
Configuration for 16M	/ (disc. 2015)			
Moldboard Size Power Mode	16.0 ft Diesel	Operator P	rotection ERC	PS
	<b>a</b> 11	of this type and size. Rates sho brands or models will vary depe		els are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$15,082.00	USD \$5,050.00	USD \$1,701.00
Adjustments				
Region (New Mexico: 81%)		(USD \$2,831.26)	(USD \$948.01)	(USD \$319.32)
User Defined				
Rental Rates (100%)		-		-

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

MM. equil

USD \$12,250.74



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar 16M (disc. 2015) Articulated Frame Graders			
Size Class: <b>250 HP &amp; Over</b> Weight: <b>59435 Ibs</b>			
Configuration for 16M (dis	sc. 2015)		
Moldboard Size Power Mode	16.0 ft Diesel	Operator Protection	EROPS
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$26.74/hr	USD \$25.02/hr	-6.4%
Cost of Facilities Capital (CFC)	USD \$2.60/hr	USD \$2.59/hr	-0.2%
Overhead	USD \$12.38/hr	USD \$12.36/hr	-0.2%
Overhaul Labor	USD \$8.13/hr	USD \$3.07/hr	-62.2%
Overhaul Parts	USD \$13.69/hr	USD \$13.66/hr	-0.2%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$63.54/hr</b> ales Tax (5.1% -> 0%) Annual Use F	USD \$56.70/hr łours (1,397hrs -> 1,400hrs)	-10.8%
•	. ,		

#### **Hourly Operating Costs**

Standard Value	User Adjusted Value	Variance
USD \$6.78/hr	USD \$2.56/hr	-62.2%
USD \$13.28/hr	USD \$3.31/hr	-75.1%
USD \$1.11/hr	USD \$0.00/hr	-100%
USD \$6.03/hr	-	-
USD \$24.01/hr	USD \$9.50/hr	-60.4%
USD \$5.20/hr	-	-
USD \$56.40/hr	USD \$26.61/hr	-52.8%
-	USD \$6.78/hr USD \$13.28/hr USD \$1.11/hr USD \$6.03/hr USD \$24.01/hr USD \$5.20/hr	USD \$6.78/hr USD \$1.3.28/hr USD \$1.11/hr USD \$1.11/hr USD \$6.03/hr USD \$24.01/hr USD \$5.20/hr -

 Total Operating Ownership Cost:
 USD \$56.40/hr
 USD \$26.61/hr
 -52.8%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$1,545.51 -> USD \$0.00) Mechanics

 Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$3,091.03 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$15,455.14 -> USD \$4,636.53)

Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$63.54/hr	USD \$56.70/hr	-10.8%
Hourly Operating Costs	USD \$56.40/hr	USD \$26.61/hr	-52.8%
Total Hourly Cost	USD \$119.94	USD \$83.31/hr	-30.5%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$41.72/hr	USD \$39.97/hr	-4.2%
Idle	USD \$87.55/hr	USD \$66.20/hr	-24.4%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

ALD GIEEII DOOK	•			,
Caterpillar 319D L (disc Crawler Mounted Hydraulic Ex				
Size Class: 19.1 - 21.0 MTons				
Weight: 43872 Ibs				
Configuration for 319	D L (disc. 2012)			
Operating Weight	19.9 mt	Power Mod	e Die	esel
AED Rental Rates				
		of this type and size. Rates show brands or models will vary depe		dels are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$6,937.00	USD \$2,749.00	USD \$1,000.00
Adjustments				
Region (New Mexico: 101%)		USD \$81.87	USD \$32.44	USD \$11.80
User Defined				
Rental Rates (100%)		-	· · ·	-
Total:		USD \$7,018.87	USD \$2,781.44	USD \$1,011.80
Date Last Updated: Sep 0	1, 2020			



All prices shown in US dollars (\$)

#### Custom Cost Evaluator

January 8, 2021

Variance

Custom Cost Evaluat	tor		January 8, 2021
Caterpillar 319D L (disc. 201 Crawler Mounted Hydraulic Excava	-		
Size Class: 19.1 - 21.0 MTons Weight: 43872 lbs Configuration for 319D L (	(disc. 2012)		
Operating Weight	19.9 mt	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$19.19/hr	USD \$17.96/hr	-6.4%
Cost of Facilities Capital (CFC)	USD \$1.53/hr	USD \$1.39/hr	-8.9%
Overhead	USD \$3.77/hr	USD \$3.40/hr	-9.7%
Overhaul Labor	USD \$14.04/hr	USD \$4.79/hr	-65.8%
Overhaul Parts	USD \$8.66/hr	USD \$7.81/hr	-9.7%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$47.19/hr</b> ales Tax (5.1% -> 0%) Annual Use H	USD \$35.36/hr lours (1,169hrs -> 1,295hrs)	-25.1%
Hourly Operating Costs		14	
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$17.01/hr	USD \$5.81/hr	-65.8%

	Standard Value	User Aujusted value	variance
Field Labor	USD \$17.01/hr	USD \$5.81/hr	-65.8%
Field Parts	USD \$8.84/hr	USD \$2.87/hr	-67.5%
Ground Engaging Component (GEC)	USD \$1.42/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	<u>-</u>	-
Electrical/Fuel	USD \$13.26/hr	USD \$5.25/hr	-60.4%
Lube	USD \$3.01/hr	-	-
			00.00/

Total Operating Ownership Cost: USD \$43.54/hr USD \$16.94/hr -61.1% User Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$1,654.20 -> USD \$0.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$2,067.75 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$8,271.01 -> USD \$3,721.95)

Fotal			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$47.19/hr	USD \$35.36/hr	-25.1%
Hourly Operating Costs	USD \$43.54/hr	USD \$16.94/hr	-61.1%
Total Hourly Cost	USD \$90.72	USD \$52.31/hr	-42.3%

#### Standard Value User Adjusted Value

Standby	USD \$24.49/hr	USD \$22.76/hr	-7.1%
Idle	USD \$60.45/hr	USD \$40.61/hr	-32.8%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

ALD GIEEH DOOK	y			3	
Caterpillar 637G (disc. 2 Dual Engine Conventional Scra	,				
Size Class: 18CY & Over Weight: 114744 Ibs					
Configuration for 6370	6 (disc. 2010)				
Operator Protection	EROPS	Power Mode		Diesel	
Scraper Capacity	24.0 - 34.0 cu yd	Scraper Hor	sepower	283.0	
AED Rental Rates				$\mathbf{O}$	
	n average for equipment of this tal companies for specific brand			nodels are provided for convenience	
		Monthly	Weekly	Daily	
Published Rates		USD \$27,250.00	USD \$6,812.00	USD \$1,362.00	
Adjustments					
Region (New Mexico: 102%)		USD \$524.42	USD \$131.09	USD \$26.21	
User Defined					
Rental Rates (100%)		-		-	
Total:		USD \$27,774.42	USD \$6,943.09	USD \$1,388.21	

Date Last Updated: Sep 01, 2020



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar 637G (disc. 2010) Dual Engine Conventional Scrapers	•		
Size Class: 18CY & Over Weight: 114744 Ibs			
Configuration for 637G (di	sc. 2010)		
Operator Protection	EROPS	Power Mode	Diesel
Scraper Capacity	24.0 - 34.0 cu yd	Scraper Horsepower	283.0
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$85.25/hr	USD \$80.24/hr	-5.9%
Cost of Facilities Capital (CFC)	USD \$7.64/hr	USD \$8.36/hr	+9.5%
Overhead	USD \$15.78/hr	USD \$17.40/hr	+10.3%
Overhaul Labor	USD \$24.98/hr	USD \$10.42/hr	-58.3%
Overhaul Parts	USD \$62.76/hr	USD \$69.20/hr	+10.3%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$196.41/hr</b> Iles Tax (5.1% -> 0%) Annual Use H	USD \$185.62/hr łours (1,516hrs -> 1,375hrs)	-5.5%

#### **Hourly Operating Costs**

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$37.47/hr	USD \$15.63/hr	-58.3%
Field Parts	USD \$63.25/hr	USD \$13.35/hr	-78.9%
Ground Engaging Component (GEC)	USD \$2.69/hr	USD \$0.00/hr	-100%
Tire	USD \$10.63/hr	-	-
Electrical/Fuel	USD \$75.16/hr	USD \$29.75/hr	-60.4%
Lube	USD \$19.52/hr	-	-
Total Operating Ownership Cost:	USD \$208.72/hr	USD \$88.89/hr	-57.4%

 Total Operating Ownership Cost:
 USD \$208.72/hr
 USD \$88.89/hr
 -57.4%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$4,080.49 -> USD \$0.00) Mechanics

 Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$14,281.71 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$81,609.76

 -> USD \$18,362.20)

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$196.41/hr	USD \$185.62/hr	-5.5%
Hourly Operating Costs	USD \$208.72/hr	USD \$88.89/hr	-57.4%
Total Hourly Cost	USD \$405.12	USD \$274.50/hr	-32.2%

#### Non-active use rates

Total

	Standard Value	User Adjusted Value	Variance
Standby	USD \$108.67/hr	USD \$106.00/hr	-2.5%
Idle	USD \$271.57/hr	USD \$215.37/hr	-20.7%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

ALD OICEII DOOK	y			<b>3</b>
Caterpillar 657G				
Dual Engine Conventional Scra	ipers			
Size Class:				
18CY & Over				
Weight: 149417 lbs				
Configuration for 657G	1			
configuration for 037G				
Operator Protection	EROPS	Power Mode	D	iesel
Scraper Capacity	32.0 - 44.0 cu yd	Scraper Horse	epower 4	10.0
AED Rental Rates				$\mathbf{n}$
	n average for equipment of this al companies for specific bran			odels are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$27,250.00	USD \$6,812.00	USD \$1,362.00
Adjustments				
Region (New Mexico: 102%)		USD \$524.42	USD \$131.09	USD \$26.21
User Defined				
Rental Rates (100%)		-	<u>.</u>	-
Total:		USD \$27,774.42	USD \$6,943.09	USD \$1,388.21

Date Last Updated: Sep 01, 2020



All prices shown in US dollars (\$)

8 2021 12

Caterpillar 657G Dual Engine Conventional Scrapers			
Size Class: <b>I8CY &amp; Over</b> Weight: L <b>49417 Ibs</b>			
Configuration for 657G			
Operator Protection Scraper Capacity	EROPS 32.0 - 44.0 cu yd	Power Mode Scraper Horsepower	Diesel 410.0
lourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
epreciation	USD \$133.27/hr	USD \$125.48/hr	-5.8%
cost of Facilities Capital (CFC)	USD \$11.86/hr	USD \$12.98/hr	+9.5%
overhead	USD \$35.87/hr	USD \$39.55/hr	+10.3%
Overhaul Labor	USD \$24.98/hr	USD \$10.42/hr	-58.3%
Overhaul Parts	USD \$76.69/hr	USD \$84.56/hr	+10.3%
-	es Tax (5.1% -> 0%) Annual Use F 	lours (1,516hrs -> 1,375hrs)	
-			
lourly Operating Costs	Standard Value	User Adjusted Value	Variance
Iourly Operating Costs	<b>Standard Value</b> USD \$37.47/hr	User Adjusted Value USD \$15.63/hr	-58.3%
ield Labor	Standard Value USD \$37.47/hr USD \$77.29/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr	-58.3% -75.2%
ield Labor ield Parts Ground Engaging Component (GEC)	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr	User Adjusted Value USD \$15.63/hr	-58.3%
ield Labor ield Parts Ground Engaging Component (GEC) ire	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr	-58.3% -75.2% -75.2%
ield Labor ield Parts Ground Engaging Component (GEC) ire Electrical/Fuel	<b>Standard Value</b> USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr	-58.3% -75.2% -75.2%
Tourly Operating Costs Field Labor Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel	<b>Standard Value</b> USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr USD \$27.99/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr - USD \$37.01/hr	-58.3% -75.2% -75.2% - - -60.4% -
-	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr USD \$27.99/hr USD \$27.99/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr	-58.3% -75.2% -75.2% - - -60.4% - - <b>-55%</b>
Total Operating Costs Total Operating Component (GEC) Total Operating Ownership Cost: Iser Defined Adjustments: Fuel JSD \$99,724.00 -> USD \$22,437	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr USD \$27.99/hr USD \$27.99/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr - USD \$37.01/hr - USD \$113.61/hr	-58.3% -75.2% -75.2% - - -60.4% - - <b>-55%</b>
Iourly Operating Costs ield Labor ield Parts Ground Engaging Component (GEC) ire Electrical/Fuel ube Total Operating Ownership Cost: Iser Defined Adjustments: Fuel JSD \$99,724.00 -> USD \$22,437	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr USD \$27.99/hr USD \$27.99/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr - USD \$37.01/hr - USD \$113.61/hr	-58.3% -75.2% -75.2% - - -60.4% - - <b>-55%</b>
Total Operating Costs Total Operating Component (GEC) Total Operating Ownership Cost: Iser Defined Adjustments: Fuel JSD \$99,724.00 -> USD \$22,437	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr USD \$27.99/hr USD \$27.99/hr	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr - USD \$37.01/hr - USD \$113.61/hr	-58.3% -75.2% -75.2% - - -60.4% - - <b>-55%</b>
ield Labor ield Parts Ground Engaging Component (GEC) ire Electrical/Fuel ube fotal Operating Ownership Cost: Iser Defined Adjustments: Fuel JSD \$99,724.00 -> USD \$22,437	Standard Value USD \$37.47/hr USD \$77.29/hr USD \$3.29/hr USD \$12.99/hr USD \$93.49/hr USD \$27.99/hr USD \$252.52/hr I (USD \$2.53 -> USD \$1.00) Mech 7.90)	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr - USD \$37.01/hr - USD \$113.61/hr anics Wage (USD \$63.11 -> USD \$23	-58.3% -75.2% -75.2% - - -60.4% - - - 55% .88) Annual Field Repair Parts Cost
Total Operating Costs Field Labor Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Iser Defined Adjustments: Fuel	Standard Value           USD \$37.47/hr           USD \$77.29/hr           USD \$3.29/hr           USD \$12.99/hr           USD \$93.49/hr           USD \$27.99/hr           USD \$252.52/hr           I (USD \$2.53 -> USD \$1.00) Mech.           7.90)           Standard Value	User Adjusted Value USD \$15.63/hr USD \$19.17/hr USD \$0.82/hr - USD \$37.01/hr - USD \$113.61/hr anics Wage (USD \$63.11 -> USD \$23	-58.3% -75.2% -75.2% - -60.4% - - <b>-55%</b> .88) Annual Field Repair Parts Cost Variance

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$181.00/hr	USD \$178.02/hr	-1.6%
Idle	USD \$376.16/hr	USD \$310.01/hr	-17.6%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

	•			
Caterpillar 725 (disc. 20 Articulated Rear Dumps	14)			
Size Class: 20 - 25 MTons Weight: 49075 Ibs				
Configuration for 725	(disc. 2014)			
Axle Configuration Rated Payload	6 X 6 23.6 mt	Power Mode	e Diese	
	0 1 1	f this type and size. Rates show orands or models will vary deper		s are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$9,023.00	USD \$3,197.00	USD \$1,122.00
Adjustments				
Region (New Mexico: 110%)		USD \$906.51	USD \$321.19	USD \$112.72
User Defined				
Rental Rates (100%)		-		-
Total:		USD \$9.929.51	USD \$3.518.19	USD \$1.234.72

Date Last Updated: Sep 01, 2020



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

**-21%** 

Caterpillar 725 (disc. 2014)			
Articulated Rear Dumps			
Size Class: 20 - 25 MTons Weight: 49075 Ibs Configuration for 725 (di	sc. 2014)		
Axle Configuration Rated Payload	6 X 6 23.6 mt	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$30.28/hr	USD \$28.44/hr	-6.1%
Cost of Facilities Capital (CFC)	USD \$2.10/hr	USD \$1.92/hr	-8.7%
Overhead	USD \$5.70/hr	USD \$5.14/hr	-9.7%
Overhaul Labor	USD \$15.12/hr	USD \$5.16/hr	-65.8%
Overhaul Parts	USD \$11.76/hr	USD \$10.61/hr	-9.7%

USD \$64.95/hr

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,670hrs -> 1,850hrs)

Hourly	Operating	Costs
nouny	operading	00010

Total Hourly Ownership Cost:

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$11.72/hr	USD \$4.00/hr	-65.8%
Field Parts	USD \$7.37/hr	USD \$1.11/hr	-85%
Ground Engaging Component (GEC)	USD \$0.00/hr		-
Tire	USD \$10.02/hr	-	-
Electrical/Fuel	USD \$15.21/hr	USD \$6.02/hr	-60.4%
Lube	USD \$5.08/hr	-	-
Total Operating Ownership Cost:	USD \$49.39/hr	USD \$26.23/hr	-46.9%

USD \$51.29/hr

 Total Operating Ownership Cost:
 USD \$49.39/hr
 USD \$26.23/hr
 -46.9%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$2,051.81 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$10,259.07 -> USD \$2,051.81)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$64.95/hr	USD \$51.29/hr	-21%
Hourly Operating Costs	USD \$49.39/hr	USD \$26.23/hr	-46.9%
Total Hourly Cost	USD \$114.34	USD \$77.51/hr	-32.2%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$38.08/hr	USD \$35.51/hr	-6.8%
Idle	USD \$80.16/hr	USD \$57.31/hr	-28.5%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 10, 2021

Caterpillar 740 (disc. 20	14)			
Articulated Rear Dumps				
Size Class:				
35 MTons & Over				
Weight: <b>72973 lbs</b>				
Configuration for 740	(disc. 2014)			
Axle Configuration	6 X 6	Power Mode	Diesel	
Rated Payload	39.5 mt			
These rental rates reflect a		f this type and size. Rates show		are provided for convenier
		prands or models will vary depen	ding on many factors	
These rental rates reflect a only. Rates charged by ren		orands or models will vary depen Monthly	ding on many factors Weekly	Daily
These rental rates reflect a only. Rates charged by ren		prands or models will vary depen	ding on many factors	
Published Rates		orands or models will vary depen Monthly	ding on many factors Weekly	Daily
hese rental rates reflect a nly. Rates charged by ren Published Rates Adjustments		orands or models will vary depen Monthly	ding on many factors Weekly	Daily
These rental rates reflect a only. Rates charged by ren Published Rates <b>Adjustments</b> Region (New Mexico: 110%)		orands or models will vary depen <b>Monthly</b> USD \$16,203.00	ding on many factors Weekly USD \$5,543.00	<b>Daily</b> USD \$1,870.00
These rental rates reflect a		orands or models will vary depen <b>Monthly</b> USD \$16,203.00	ding on many factors Weekly USD \$5,543.00	<b>Daily</b> USD \$1,870.00
These rental rates reflect a only. Rates charged by ren Published Rates Adjustments Region (New Mexico: 110%) User Defined		orands or models will vary depen <b>Monthly</b> USD \$16,203.00	ding on many factors Weekly USD \$5,543.00	<b>Daily</b> USD \$1,870.00

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 10, 2021

Caterpillar 740 (disc. 2014) Articulated Rear Dumps			
Size Class: <b>35 MTons &amp; Over</b> Weight: <b>72973 Ibs</b>			
Configuration for 740 (disc	c. 2014)		
Axle Configuration Rated Payload	6 X 6 39.5 mt	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$34.29/hr	USD \$32.24/hr	-6%
Cost of Facilities Capital (CFC)	USD \$2.84/hr	USD \$2.59/hr	-8.8%
Dverhead	USD \$7.86/hr	USD \$7.09/hr	-9.7%
Overhaul Labor	USD \$20.78/hr	USD \$7.10/hr	-65.8%
Overhaul Parts	USD \$13.49/hr	USD \$12.18/hr	-9.7%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$79.27/hr</b> Iles Tax (5.1% -> 0%) Annual Use H	<b>USD \$61.20/hr</b> Hours (1,670hrs -> 1,850hrs)	-22.8%

#### Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance	
Field Labor	USD \$14.93/hr	USD \$5.10/hr	-65.8%	
Field Parts	USD \$8.33/hr	USD \$1.25/hr	-85%	
Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-	
Tire	USD \$12.40/hr	-	-	
Electrical/Fuel	USD \$22.89/hr	USD \$9.06/hr	-60.4%	
Lube	USD \$7.20/hr	-	_	
Total Operating Ownership Cost:	USD \$65 74/br	LISD \$25.01/br	-46 706	

 Total Operating Ownership Cost:
 USD \$65.74/hr
 USD \$35.01/hr
 -46.7%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$2,317.66 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$11,588.30 -> USD \$2,317.66)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$79.27/hr	USD \$61.20/hr	-22.8%
Hourly Operating Costs	USD \$65.74/hr	USD \$35.01/hr	-46.7%
Total Hourly Cost	USD \$145.01	USD \$96.21/hr	-33.7%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$45.00/hr	USD \$41.92/hr	-6.8%
Idle	USD \$102.16/hr	USD \$70.26/hr	-31.2%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Caterpillar 769D (disc. 2007) Mechanical Drive Rear Dumps Size Class: 30 - 39 MTons Weight: 66800 lbs Configuration for 769D (disc. 2007)	
<b>30 - 39 MTons</b> Weight: 66800 Ibs	
66800 lbs	
Configuration for 769D (disc. 2007)	
Power Mode Diesel Rated Payload	36.4 mt
AED Rental Rates	
These rental rates reflect an average for equipment of this type and size. Rates shown for specific only. Rates charged by rental companies for specific brands or models will vary depending on many	
Monthly W	/eekly Daily
Published Rates USD \$13,700.00 USD \$	\$4,600.00 USD \$1,150.00
Adjustments	
Region (New Mexico: 98%) (USD \$241.84) (USD	O \$81.20) (USD \$20.30)
User Defined	
Rental Rates (100%) -	
Total: USD \$13,458.16 USD \$	\$4,518.80 USD \$1,129.70

Date Last Updated: Sep 01, 2020



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar 769D (disc. 2007) Mechanical Drive Rear Dumps			
Size Class: <b>30 - 39 MTons</b> Weight: <b>66800 Ibs</b>			
Configuration for 769D (disc	. 2007)		
Power Mode	Diesel	Rated Payload	36.4 mt
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$40.23/hr	USD \$37.82/hr	-6%
Cost of Facilities Capital (CFC)	USD \$2.71/hr	USD \$2.96/hr	+9.1%
Overhead	USD \$2.62/hr	USD \$2.89/hr	+10.3%
Overhaul Labor	USD \$15.47/hr	USD \$6.45/hr	-58.3%
Overhaul Parts	USD \$16.39/hr	USD \$18.07/hr	+10.3%
Total Hourly Ownership Cost:	USD \$77.42/hr	USD \$68.19/hr	-11.9%
User Defined Adjustments: Sales	s Tax (5.1% -> 0%) Annual Use Hour	s (2,040hrs -> 1,850hrs)	
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$12.22/hr	USD \$5.10/hr	-58.3%
Field Parts	USD \$9.99/hr	USD \$1.84/hr	-81.6%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Tire	USD \$14.90/hr	<u> </u>	-
Electrical/Fuel	USD \$24.60/hr	USD \$9.74/hr	-60.4%
Lube	USD \$8.04/hr	-	-
Total Operating Ownership Cost:	USD \$69.76/hr	USD \$39.62/hr	-43.2%

Total				
	Standard Value	User Adjusted Value	Variance	
Hourly Ownership Costs	USD \$77.42/hr	USD \$68.19/hr	-11.9%	
Hourly Operating Costs	USD \$69.76/hr	USD \$39.62/hr	-43.2%	
Total Hourly Cost	USD \$147.18	USD \$107.81/hr	-26.7%	

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$45.57/hr	USD \$43.67/hr	-4.2%
Idle	USD \$102.03/hr	USD \$77.93/hr	-23.6%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Caterpillar 777F (disc Mechanical Drive Rear Dur	,			
Size Class:				
90 - 104 MTons Weight:				
154753 lbs				
Configuration for 77	'7F (disc. 2012)			
Power Mode	Diesel	Rated Pay	load 9	0.7 mt
AED Rental Rates				
		of this type and size. Rates sho brands or models will vary depe		odels are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$54,000.00	USD \$18,000.00	USD \$6,000.00
Adjustments				
Region (New Mexico: 100%	6)	-		-
User Defined				
Rental Rates (100%)		-	-	-
Total:		USD \$54,000.00	USD \$18,000.00	USD \$6,000.00
Date Last Updated: Mar	01, 2018			



All prices shown in US dollars (\$)

#### Custom Cost Evaluator

January 8, 2021

Custom Cost Evaluato			-
Caterpillar 777F (disc. 2012) Mechanical Drive Rear Dumps			
Size Class: <b>90 - 104 MTons</b>			
Weight:			
154753 lbs			
Configuration for 777F (disc	. 2012)		
Power Mode	Diesel	Rated Payload	90.7 mt
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$65.70/hr	USD \$61.81/hr	-5.9%
Cost of Facilities Capital (CFC)	USD \$7.16/hr	USD \$7.22/hr	+0.9%
Overhead	USD \$16.23/hr	USD \$16.37/hr	+0.9%
Overhaul Labor	USD \$31.10/hr	USD \$11.88/hr	-61.8%
Overhaul Parts	USD \$37.63/hr	USD \$37.97/hr	+0.9%
Total Hourly Ownership Cost:	USD \$157.80/hr	USD \$135.25/hr	-14.3%
User Defined Adjustments: Sale	s Tax (5.1% -> 0%) Annual Use H	ours (1,867hrs -> 1,850hrs)	
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$19.10/hr	USD \$7.29/hr	-61.8%
Field Parts	USD \$23.22/hr	USD \$3.91/hr	-83.2%
Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-
Tire	USD \$31.30/hr		-
Electrical/Fuel	USD \$47.39/hr	USD \$18.76/hr	-60.4%
Lube	USD \$18.90/hr	-	
Total Operating Ownership Cost:	USD \$139.91/hr	USD \$80.16/hr	-42.7%
		anics Wage (USD \$63.11 -> USD \$23	.88) Annual Misc Supply Parts (USD
\$7,225.79 -> USD \$0.00) Annual	Field Repair Parts Cost (USD \$36	128.95 -> USD \$7,225.80)	
Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$157.80/hr	USD \$135.25/hr	-14.3%
Hourly Operating Costs	USD \$139.91/hr	USD \$80.16/hr	-42.7%
Total Hourly Cost	USD \$297.71	USD \$215.41/hr	-27.6%
	· · · · · ·		
Non-active use rates			
	Standard Value	User Adjusted Value	Variance
		USD \$85.40/hr	-4.1%
Standby			
Standby Idle	USD \$89.08/hr USD \$205.19/hr	USD \$154.01/hr	-24.9%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

<b>MED OTCOM DOOK</b>				
Caterpillar 966H (disc. 20 4-Wd Articulated Wheel Loader	-			
Size Class:				
250 - 274 HP				
Weight: 52254 lbs				
Configuration for 966H	(disc. 2015)			
Operator Protection	EROPS	Power Mode	e Di	esel
AED Rental Rates				
	<b>a</b> 11	f this type and size. Rates shov prands or models will vary deper	•	dels are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$9,372.00	USD \$3,243.00	USD \$1,100.00
Adjustments				
Region (New Mexico: 105%)		USD \$449.09	USD \$155.40	USD \$52.71
User Defined				
Rental Rates (100%)		-	· · ·	-
<b>Total:</b> Date Last Updated: Sep 01	, 2020	USD \$9,821.09	USD \$3,398.40	USD \$1,152.71

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar 966H (disc. 2015) 4-Wd Articulated Wheel Loaders			
Size Class: 250 - 274 HP Weight: 52254 Ibs			
Configuration for 966H (di	sc. 2015)		
Operator Protection	EROPS	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$24.37/hr	USD \$22.70/hr	-6.9%
Cost of Facilities Capital (CFC)	USD \$2.53/hr	USD \$2.30/hr	-9%
Overhead	USD \$7.92/hr	USD \$7.15/hr	-9.8%
Overhaul Labor	USD \$12.10/hr	USD \$4.13/hr	-65.9%
Overhaul Parts	USD \$7.18/hr	USD \$6.48/hr	-9.8%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$54.10/hr</b> ales Tax (5.1% -> 0%) Annual Use H	USD \$42.76/hr Hours (1,304hrs -> 1,445hrs)	-21%
•			-2170

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$14.76/hr	USD \$5.04/hr	-65.9%
Field Parts	USD \$7.92/hr	USD \$2.04/hr	-74.3%
Ground Engaging Component (GEC)	USD \$1.08/hr	USD \$0.00/hr	-100%
Tire	USD \$5.77/hr	-	-
Electrical/Fuel	USD \$21.18/hr	USD \$8.38/hr	-60.4%
Lube	USD \$4.60/hr	-	-
			50.00/

 Total Operating Ownership Cost:
 USD \$55.31/hr
 USD \$25.84/hr
 -53.3%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$1,406.65 -> USD \$0.00) Mechanics

 Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$1,538.53 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$8,791.58 -> USD \$2,945.18)

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$54.10/hr	USD \$42.76/hr	-21%
Hourly Operating Costs	USD \$55.31/hr	USD \$25.84/hr	-53.3%
Total Hourly Cost	USD \$109.42	USD \$68.60/hr	-37.3%

## Standard Value User Adjusted Value Variance Standby USD \$34.82/hr USD \$32.15/hr -7.7% Idle USD \$75.28/hr USD \$51.14/hr -32.1%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

<b>NEB BIGGIT BOOK</b>				
Caterpillar 980H (disc. 20 4-Wd Articulated Wheel Loader				
Size Class: <b>275 - 349 HP</b>				
Weight: 67294 lbs				
Configuration for 980H	(disc. 2013)			
Operator Protection	EROPS	Power Mode	Dies	el
AED Rental Rates				
	• • • •	f this type and size. Rates show orands or models will vary depen		els are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$11,934.00	USD \$4,255.00	USD \$1,518.00
Adjustments				
Region (New Mexico: 105%)		USD \$571.85	USD \$203.89	USD \$72.74
User Defined				
Rental Rates (100%)		-		-
<b>Total:</b> Date Last Updated: Sep 01,	, 2020	USD \$12,505.85	USD \$4,458.89	USD \$1,590.74

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar 980H (disc. 2013) 4-Wd Articulated Wheel Loaders			
Size Class: 275 - 349 HP Weight: 67294 Ibs			
Configuration for 980H (dis	sc. 2013)		
Operator Protection	EROPS	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$33.11/hr	USD \$30.77/hr	-7.1%
Cost of Facilities Capital (CFC)	USD \$3.15/hr	USD \$3.16/hr	+0.1%
Overhead	USD \$4.84/hr	USD \$4.85/hr	+0.1%
Overhaul Labor	USD \$10.90/hr	USD \$4.13/hr	-62.1%
Overhaul Parts	USD \$9.33/hr	USD \$9.35/hr	+0.1%
Total Hourly Ownership Cost: User Defined Adjustments: Sal	<b>USD \$61.34/hr</b> es Tax (5.1% -> 0%) Annual Use F	USD \$52.25/hr lours (1,447hrs -> 1,445hrs)	-14.8%
Hourly Operating Costs			

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$13.30/hr	USD \$5.04/hr	-62.1%
Field Parts	USD \$10.30/hr	USD \$2.94/hr	-71.4%
Ground Engaging Component (GEC)	USD \$1.40/hr	USD \$0.00/hr	-100%
Tire	USD \$11.41/hr	-	-
Electrical/Fuel	USD \$25.46/hr	USD \$10.08/hr	-60.4%
Lube	USD \$5.95/hr	-	-
Total Operating Opportunin Cost	LICD CCT 02/br		47 00/

 Total Operating Ownership Cost:
 USD \$67.83/hr
 USD \$35.43/hr
 -47.8%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$2,029.11 -> USD \$0.00) Mechanics

 Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$2,219.34 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$12,681.95 -> USD \$4,248.45)

Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$61.34/hr	USD \$52.25/hr	-14.8%
Hourly Operating Costs	USD \$67.83/hr	USD \$35.43/hr	-47.8%
Total Hourly Cost	USD \$129.17	USD \$87.68/hr	-32.1%

## Standard Value User Adjusted Value Variance Standby USD \$41.10/hr USD \$38.78/hr -5.7% Idle USD \$86.80/hr USD \$62.33/hr -28.2%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

ALD CITCH DOOKS				
Caterpillar 988H (disc. 20 4-Wd Articulated Wheel Loader	•			
Size Class:				
350 - 499 HP				
Weight: 109230 lbs				
Configuration for 988H	(disc. 2014)			
Operator Protection	EROPS	Power Mode	D	viesel
AED Rental Rates				
	<b>S</b> 1 1	of this type and size. Rates show brands or models will vary depen		odels are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$15,457.00	USD \$5,361.00	USD \$1,864.00
Adjustments				
Region (New Mexico: 105%)		USD \$740.67	USD \$256.89	USD \$89.32
User Defined				
Rental Rates (100%)		-	-	-
<b>Total:</b> Date Last Updated: Sep 01	, 2020	USD \$16,197.67	USD \$5,617.89	USD \$1,953.32

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar 988H (disc. 2014) 4-Wd Articulated Wheel Loaders			
Size Class:			
350 - 499 HP			
Weight: 109230 lbs			
Configuration for 988H (dis	sc. 2014)		
Operator Protection	EROPS	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$57.12/hr	USD \$53.23/hr	-6.8%
Cost of Facilities Capital (CFC)	USD \$5.40/hr	USD \$5.59/hr	+3.6%
Overhead	USD \$8.31/hr	USD \$8.63/hr	+3.9%
Overhaul Labor	USD \$10.51/hr	USD \$4.13/hr	-60.7%
Overhaul Parts	USD \$15.36/hr	USD \$15.96/hr	+3.9%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$96.70/hr</b> les Tax (5.1% -> 0%) Annual Use I	USD \$87.54/hr Hours (1.501hrs -> 1.445hrs)	-9.5%

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$12.82/hr	USD \$5.04/hr	-60.7%
Field Parts	USD \$16.95/hr	USD \$5.02/hr	-70.4%
Ground Engaging Component (GEC)	USD \$2.31/hr	USD \$0.00/hr	-100%
Tire	USD \$15.51/hr	-	-
Electrical/Fuel	USD \$38.40/hr	USD \$15.20/hr	-60.4%
Lube	USD \$9.90/hr	-	-
Total Onenation Ourseabin Cost			47.00/

 Total Operating Ownership Cost:
 USD \$95.89/hr
 USD \$50.68/hr
 -47.2%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$3,463.74 -> USD \$0.00) Mechanics

 Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$3,788.46 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$21,648.35 -> USD \$7,252.20)

Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$96.70/hr	USD \$87.54/hr	-9.5%
Hourly Operating Costs	USD \$95.89/hr	USD \$50.68/hr	-47.2%
Total Hourly Cost	USD \$192.59	USD \$138.21/hr	-28.2%

# Standard Value User Adjusted Value Variance Standby USD \$70.83/hr USD \$67.45/hr -4.8% Idle USD \$135.10/hr USD \$102.74/hr -24%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Caterpillar 992K				
4-Wd Articulated Wheel Loader	rs			
Size Class:				
500 - 999 HP				
Weight: 214948 lbs				
Configuration for 992K	ζ			
Operator Protection	EROPS	Power Mode	Die	sel
AED Rental Rates				
These rental rates reflect ar	n average for equipment o	f this type and size. Rates show	n for specific brands or mod	lels are provided for convenience
only. Rates charged by rent	tal companies for specific l	brands or models will vary depen	nding on many factors	
		Monthly	Weekly	Daily
Published Rates		USD \$24,283.00	USD \$8,110.00	USD \$2,554.00
Adjustments				
Region (New Mexico: 105%)		USD \$1,163.59	USD \$388.61	USD \$122.38
User Defined				
Rental Rates (100%)		-	· · ·	-
Total:	2020	USD \$25,446.59	USD \$8,498.61	USD \$2,676.38
Date Last Updated: Sep 01	., 2020			

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All prices shown in US dollars (\$)

#### istom Cost Evali

January 8, 2021

	or		January 8, 20
Caterpillar 992K -Wd Articulated Wheel Loaders			
ize Class: 00 - 999 HP /eight:			
14948 lbs onfiguration for 992K			
-			
perator Protection	EROPS	Power Mode	Diesel
ourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
epreciation	USD \$139.97/hr	USD \$130.24/hr	-7%
ost of Facilities Capital (CFC)	USD \$12.02/hr	USD \$13.15/hr	+9.4%
verhead	USD \$71.53/hr	USD \$78.85/hr	+10.2%
verhaul Labor	USD \$9.90/hr	USD \$4.13/hr	-58.3%
verhaul Parts	USD \$30.22/hr	USD \$33.31/hr	+10.2%
otal Hourly Ownership Cost: ser Defined Adjustments: Sal	<b>USD \$263.64/hr</b> les Tax (5.1% -> 0%) Annual Use H	USD \$259.69/hr Hours (1,593hrs -> 1,445hrs)	-1.5%
ourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
eld Labor	USD \$12.08/hr	USD \$5.04/hr	-58.3%
eld Parts	USD \$33.34/hr	USD \$12.31/hr	-63.1%
ound Engaging Component (GEC)		USD \$1.68/hr	-63.1%
'e	USD \$54.99/hr	-	-
ectrical/Fuel	USD \$64.75/hr	USD \$25.63/hr	-60.4%
ibe	USD \$20.71/hr	-	-
otal Operating Ownership Cost:	USD \$190.42/hr	USD \$120.37/hr	-36.8%
	el (USD \$2.53 -> USD \$1.00) Mech	anics Wage (USD \$63.11 -> USD \$23	
otal	0		
	Standard Value	User Adjusted Value	Variance
ourly Ownership Costs	USD \$263.64/hr	USD \$259.69/hr	-1.5%
ourly Operating Costs	USD \$190.42/hr	USD \$120.37/hr	-36.8%
tal Hourly Cost	USD \$454.06	USD \$380.06/hr	-16.3%
on-active use rates	*		
	otania inte	11	11
	Standard Value	User Adjusted Value	Variance
tandby	USD \$223.52/hr	USD \$222.24/hr	-0.6%
le	USD \$328.39/hr	USD \$285.32/hr	-13.1%
evised Date: 1st half 2021			
he equinment represe	nted in this report has be	en exclusively prepared for	
nlilla@fmi.com)			



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Caterpillar 993K				
4-Wd Articulated Wheel Loader	rs			
Size Class:				
500 - 999 HP				
Weight: 294800 lbs				
Configuration for 993K				
Operator Protection	EROPS	Power Mode	Dies	el
AED Rental Rates				
		f this type and size. Rates show		els are provided for convenience
only. Rates charged by rent	al companies for specific b	orands or models will vary depen	iding on many factors	
		Monthly	Weekly	Daily
Published Rates		USD \$24,283.00	USD \$8,110.00	USD \$2,554.00
Adjustments				
Region (New Mexico: 105%)		USD \$1,163.59	USD \$388.61	USD \$122.38
User Defined				
Rental Rates (100%)		-	· · ·	-
Total: Date Last Updated: Sep 01	2020	USD \$25,446.59	USD \$8,498.61	USD \$2,676.38

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

equilph equilph



All prices shown in US dollars (\$)

Custom Cost Evaluate	or		January 8,
Caterpillar 993K I-Wd Articulated Wheel Loaders			
Size Class: 500 - 999 HP			
Weight:			
294800 lbs			
Configuration for 993K			
Operator Protection	EROPS	Power Mode	Diesel
lourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$167.84/hr	USD \$156.18/hr	-7%
Cost of Facilities Capital (CFC)	USD \$14.42/hr	USD \$15.77/hr	+9.4%
Dverhead	USD \$35.93/hr	USD \$39.61/hr	+10.2%
Overhaul Labor	USD \$9.90/hr	USD \$4.13/hr	-58.3%
Overhaul Parts	USD \$36.24/hr	USD \$39.95/hr	+10.2%
Total Hourly Ownership Cost:	USD \$264.33/hr	USD \$255.63/hr	-3.3%
	es Tax (5.1% -> 0%) Annual Use H		-3.370
Iourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$12.08/hr	USD \$5.04/hr	-58.3%
Field Parts	USD \$39.98/hr	USD \$14.76/hr	-63.1%
Ground Engaging Component (GEC)	USD \$5.44/hr	USD \$2.01/hr	-63.1%
	USD \$65.94/hr		-
Electrical/Fuel	USD \$76.79/hr	USD \$30.40/hr	-60.4%
	USD \$24.75/hr		-00.470
Total Operating Ownership Cost:	USD \$224.99/hr	USD \$142.91/hr	-36.5%
		anics Wage (USD \$63.11 -> USD \$23	
USD \$54,200.00 -> USD \$18,15			,
Total	0		
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$264.33/hr	USD \$255.63/hr	-3.3%
Hourly Operating Costs	USD \$224.99/hr	USD \$142.91/hr	-36.5%
Total Hourly Cost	USD \$489.32	USD \$398.54/hr	-18.6%
Non-active use rates			
	Standard Value	User Adjusted Value	Variance
		USD \$211.56/hr	-3%
Standby	USD \$218.19/hr		
			-16.1%
Standby Idle	USD \$218.19/hr USD \$341.12/hr	USD \$286.03/hr	-16.1%
			-16.1%
Idle Revised Date: 1st half 2021	USD \$341.12/hr	USD \$286.03/hr	
Idle Revised Date: 1st half 2021	USD \$341.12/hr		



All prices shown in US dollars (\$)

#### **AED Green Book®**

January 8, 2021

Caterpillar D6T				
Standard Crawler Dozers				
Size Class:				
160 - 189 HP				
Weight:				
40550 lbs				
Configuration for D61	Г			
Dozer Type	Semi-U	Operator Prote	ection EROPS	
Power Mode	Diesel			
AED Rental Rates			C	
These rental rates reflect a	an average for equipment of	this type and size. Rates shown	for specific brands or models	are provided for convenience
only. Rates charged by re	ntal companies for specific b	rands or models will vary dependi	ng on many factors	
		Monthly	Weekly	Daily
Published Rates		USD \$7,982.00	USD \$2,711.00	USD \$879.00
Adjustments				
Region (New Mexico: 110%)		USD \$811.77	USD \$275.71	USD \$89.39
User Defined				
Rental Rates (100%)		-	<u> </u>	-
Total:		USD \$8,793.77	USD \$2,986.71	USD \$968.39
Date Last Updated: Sep 0	01, 2020			

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar D6T Standard Crawler Dozers			
Size Class: <b>160 - 189 HP</b> Weight: <b>40550 lbs</b>			
Configuration for D6T			
Dozer Type Power Mode	Semi-U Diesel	Operator Protection	EROPS
Hourly Ownership Costs			-01
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$32.73/hr	USD \$30.46/hr	-6.9%
Cost of Facilities Capital (CFC)	USD \$3.52/hr	USD \$3.20/hr	-9.1%
Overhead	USD \$16.22/hr	USD \$14.64/hr	-9.7%
Overhaul Labor	USD \$11.70/hr	USD \$4.00/hr	-65.8%
Overhaul Parts	USD \$21.59/hr	USD \$19.49/hr	-9.7%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$85.75/hr</b> Iles Tax (5.1% -> 0%) Annual Use H	USD \$71.78/hr lours (1,160hrs -> 1,285hrs)	-16.3%
Hourly Operating Costs			

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$14.42/hr	USD \$4.92/hr	-65.8%
Field Parts	USD \$20.92/hr	USD \$6.29/hr	-69.9%
Ground Engaging Component (GEC)	USD \$3.49/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$18.23/hr	USD \$7.22/hr	-60.4%
Lube	USD \$4.80/hr	-	-
Total Operating Ownership Cost:	USD \$61.85/hr	USD \$23.23/hr	-62.4%

User Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$4,044.32 -> USD \$0.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$4,044.32 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$20,221.59 -> USD \$8,088.64)

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$85.75/hr	USD \$71.78/hr	-16.3%
Hourly Operating Costs	USD \$61.85/hr	USD \$23.23/hr	-62.4%
Total Hourly Cost	USD \$147.59	USD \$95.02/hr	-35.6%

#### Non-active use rates

Total

	Standard Value	User Adjusted Value	Variance
Standby	USD \$52.46/hr	USD \$48.30/hr	-7.9%
Idle	USD \$103.97/hr	USD \$79.00/hr	-24%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### **AED Green Book®**

January 8, 2021

Caterpillar D6T XL Standard Crawler Dozers				
Size Class: <b>190 - 259 HP</b> Weight: <b>44420 Ibs</b>				
Configuration for D6	T XL			
Dozer Type Power Mode	Semi-U Diesel	Operator Pro	otection ERC	DPS
	<b>a</b> 11	of this type and size. Rates show brands or models will vary depen Monthly		els are provided for convenience Daily
Published Rates		USD \$11,423.00	USD \$3,990.00	USD \$1,403.00
Adjustments		002 411, 12000		
Region (New Mexico: 110%)	)	USD \$1,161.72	USD \$405.78	USD \$142.69
User Defined				
Rental Rates (100%)		-		-
Total: Date Last Updated: Sep	01 2020	USD \$12,584.72	USD \$4,395.78	USD \$1,545.69

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar D6T XL Standard Crawler Dozers			
Size Class: <b>190 - 259 HP</b> Weight:			
44420 lbs			
Configuration for D6T XL			
Dozer Type	Semi-U	Operator Protection	EROPS
Power Mode	Diesel		
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$35.74/hr	USD \$33.44/hr	-6.4%
Cost of Facilities Capital (CFC)	USD \$3.47/hr	USD \$3.15/hr	-9.1%
Overhead	USD \$16.51/hr	USD \$14.90/hr	-9.7%
Overhaul Labor	USD \$11.70/hr	USD \$4.00/hr	-65.8%
Overhaul Parts	USD \$21.96/hr	USD \$19.82/hr	-9.7%
Total Hourly Ownership Cost:	USD \$89.37/hr	USD \$75.31/hr	-15.7%
<b>User Defined Adjustments:</b> Sale	s Tax (5.1% -> 0%) Annual Use Ho	urs (1,160hrs -> 1,285hrs)	
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$14.42/hr	USD \$4.92/hr	-65.8%
Field Parts	USD \$21.28/hr	USD \$7.68/hr	-63.9%
Ground Engaging Component (GEC)	USD \$3.55/hr	USD \$1.28/hr	-63.9%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$19.70/hr	USD \$7.80/hr	-60.4%
Lube	USD \$5.00/hr	-	-
Total Operating Ownership Cost:	USD \$63.95/hr	USD \$26.69/hr	-58.3%

(USD \$20,570.71 -> USD \$8,228.28)

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$89.37/hr	USD \$75.31/hr	-15.7%
Hourly Operating Costs	USD \$63.95/hr	USD \$26.69/hr	-58.3%
Total Hourly Cost	USD \$153.32	USD \$102.00/hr	-33.5%

#### Non-active use rates

Total

	Standard Value	User Adjusted Value	Variance
Standby	USD \$55.72/hr	USD \$51.49/hr	-7.6%
Idle	USD \$109.08/hr	USD \$83.11/hr	-23.8%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### **AED Green Book®**

January 8, 2021

Caterpillar D9T Standard Crawler Dozers				
Size Class: 360 - 519 HP Weight: 105600 Ibs Configuration for D9T	r			
Dozer Type Power Mode	Semi-U Diesel	Operator Pre	otection	ROPS/FOPS
		of this type and size. Rates show brands or models will vary deper Monthly		models are provided for convenience Daily
Published Rates		USD \$26,926.00	USD \$9,306.00	USD \$3,273.00
Adjustments				
Region (New Mexico: 110%)		USD \$2,738.37	USD \$946.42	USD \$332.86
User Defined				
Rental Rates (100%) Total: Date Last Updated: Sep 0	01, 2020	USD \$29,664.37	USD \$10,252.42	- USD \$3,605.86

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Caterpillar D9T Standard Crawler Dozers			
Size Class: 360 - 519 HP Weight: 105600 Ibs			
Configuration for D9T			
Dozer Type Power Mode	Semi-U Diesel	Operator Protection	ROPS/FOPS
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$76.16/hr	USD \$71.65/hr	-5.9%
Cost of Facilities Capital (CFC)	USD \$6.19/hr	USD \$6.77/hr	+9.5%
Overhead	USD \$31.98/hr	USD \$35.27/hr	+10.3%
Overhaul Labor	USD \$16.76/hr	USD \$6.99/hr	-58.3%
Overhaul Parts	USD \$49.91/hr	USD \$55.04/hr	+10.3%
Total Hourly Ownership Cost: User Defined Adjustments: Sa	USD \$180.99/hr ales Tax (5.1% -> 0%) Annual Use ⊢	USD \$175.73/hr lours (1,544hrs -> 1,400hrs)	-2.9%
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$19.62/hr	USD \$8.19/hr	-58.3%
Field Parts	USD \$48.61/hr	USD \$17.87/hr	-63.2%
Ground Engaging Component (GEC)	USD \$8.10/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$36.25/hr	USD \$14.35/hr	-60.4%
Lube	USD \$12.47/hr	-	-
Total Operating Ownership Cost:	USD \$125.05/hr	USD \$52.88/hr	-57.7%

User Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$12,508.00 -> USD \$0.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$12,508.00 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$62,540.00 -> USD \$25,016.00)

Total Hourly Cost	USD \$306.04	USD \$228.61/hr	-25.3%
Hourly Operating Costs	USD \$125.05/hr	USD \$52.88/hr	-57.7%
Hourly Ownership Costs	USD \$180.99/hr	USD \$175.73/hr	-2.9%
	Standard Value	User Adjusted Value	Variance

#### Non-active use rates

Total

	Standard Value	User Adjusted Value	Variance
Standby	USD \$114.33/hr	USD \$113.69/hr	-0.6%
Idle	USD \$217.24/hr	USD \$190.08/hr	-12.5%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### **AED Green Book®**

January 8, 2021

Caterpillar D11T				
Standard Crawler Dozers				
Size Class:				
520 HP & Over				
Weight: 208885 lbs				
Configuration for D11T				
Dozer Type	U Blade	Operator Pi	otection EF	ROPS
Power Mode	Diesel			
AED Rental Rates				$\mathbf{n}$
		of this type and size. Rates show brands or models will vary depe		dels are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$30,648.00	USD \$10,566.00	USD \$3,597.00
Adjustments				
Region (New Mexico: 110%)		USD \$3,116.90	USD \$1,074.56	USD \$365.81
User Defined				
Rental Rates (100%)		-		-
Total:		USD \$33,764.90	USD \$11,640.56	USD \$3,962.81
Date Last Updated: Sep 01, 2	.020			

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **AED Green Book®**

January 10, 2021

Caterpillar D11T CD Standard Crawler Dozers				
Size Class: 520 HP & Over Weight: M/A				
<b>Configuration for D11</b>	TCD			
Dozer Type Power Mode	U Blade Diesel	Operator Pr	rotection E	ROPS
	<b>e</b> 11	of this type and size. Rates show brands or models will vary depe Monthly		odels are provided for convenience Daily
Published Rates		USD \$30,648.00	USD \$10,566.00	USD \$3,597.00
Adjustments Region (New Mexico: 110%) User Defined		USD \$3,116.90	USD \$1,074.56	USD \$365.81
Rental Rates (100%) <b>Total:</b> Date Last Updated: Sep 0	1, 2020	USD \$33,764.90	USD \$11,640.56	- USD \$3,962.81

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 10, 2021

Caterpillar D11T CD Standard Crawler Dozers			
Size Class: <b>520 HP &amp; Over</b> Weight: N/A			
Configuration for D11T CD			
Dozer Type	U Blade	Operator Protection	EROPS
Power Mode	Diesel		
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$83.70/hr	USD \$78.75/hr	-5.9%
Cost of Facilities Capital (CFC)	USD \$8.08/hr	USD \$7.35/hr	-9.1%
Overhead	USD \$45.28/hr	USD \$40.89/hr	-9.7%
Overhaul Labor	USD \$20.47/hr	USD \$6.99/hr	-65.8%
Overhaul Parts	USD \$66.13/hr	USD \$59.70/hr	-9.7%
Total Hourly Ownership Cost: Jser Defined Adjustments: Sal	<b>USD \$223.66/hr</b> les Tax (5.1% -> 0%) Annual Use H	USD \$193.68/hr lours (1,264hrs -> 1,400hrs)	-13.4%

#### **Hourly Operating Costs**

Field Labor USD \$23.97/hr USD \$8.19/hr -(	
	ariance
	65.8%
Field Pails 03D \$04.41/11 03D \$19.30/11 -0	69.9%
Ground Engaging Component (GEC) USD \$10.73/hr USD \$0.00/hr -	100%
Tire USD \$0.00/hr -	-
Electrical/Fuel USD \$75.15/hr USD \$29.75/hr -6	60.4%
Lube USD \$17.11/hr -	-
Total Operating Ownership Cost: USD \$191.37/hr USD \$74.44/hr -6	61.1%

User Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Annual Ground Engaging Component (USD \$13,568.00 -> USD \$0.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$13,568.00 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$67,840.00 -> USD \$27,136.00)

User Adjusted Value	Variance
USD \$193.68/hr	-13.4%
USD \$74.44/hr	-61.1%
USD \$268.12/hr	-35.4%
	USD \$74.44/hr

#### Non-active use rates

Total

	Standard Value	User Adjusted Value	Variance
Standby	USD \$137.06/hr	USD \$126.98/hr	-7.4%
Idle	USD \$298.81/hr	USD \$223.43/hr	-25.2%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

Custom Cost Evaluato	pr		January 8, 2
aterpillar D11T			
andard Crawler Dozers			
ze Class:			
20 HP & Over			
/eight:			
08885 lbs onfiguration for D11T			
oninguration for DIIT			
ozer Type	U Blade	Operator Protection E	ROPS
ower Mode	Diesel		
ourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
epreciation	USD \$162.82/hr	USD \$153.20/hr	-5.9%
ost of Facilities Capital (CFC)	USD \$15.72/hr	USD \$14.29/hr	-9.1%
verhead	USD \$45.28/hr	USD \$40.89/hr	-9.7%
Overhaul Labor	USD \$20.47/hr	USD \$6.99/hr	-65.8%
Overhaul Parts	USD \$128.64/hr	USD \$116.14/hr	-9.7%
otal Hourly Ownership Cost:	USD \$372.93/hr	USD \$331.51/hr	-11.1%
	es Tax (5.1% -> 0%) Annual Use Hou	urs (1,264hrs -> 1,400hrs)	
ourly Operating Costs			
ourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
eld Labor	USD \$23.97/hr	USD \$8.19/hr	-65.8%
eld Parts	USD \$125.29/hr	USD \$45.25/hr	-63.9%
round Engaging Component (GEC)	USD \$20.88/hr	USD \$7.54/hr	-63.9%
ire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$75.15/hr	USD \$29.75/hr	-60.4%
ube	USD \$26.19/hr	-	-
otal Operating Ownership Cost:	USD \$271.47/hr	USD \$116.92/hr	-56.9%
	l (USD \$2.53 -> USD \$1.00) Mechar	nics Wage (USD \$63.11 -> USD \$23.88) A	nnual Field Repair Parts Cost
JSD \$131,970.00 -> USD \$52,7	88.00)		
otal			
	Standard Value	User Adjusted Value	Variance
ourly Ownership Costs	USD \$372.93/hr	USD \$331.51/hr	-11.1%
ourly Operating Costs	USD \$271.47/hr	USD \$116.92/hr	-56.9%
otal Hourly Cost	USD \$644.40	USD \$448.42/hr	-30.4%
on-active use rates			
	Standard Value	User Adjusted Value	Variance
	Standard Value	···· ,	
		USD \$208.37/hr	-6.9%
tandby	USD \$223.82/hr	USD \$208.37/hr USD \$361.26/hr	-6.9% -19.4%
		USD \$208.37/hr USD \$361.26/hr	-6.9% -19.4%
tandby	USD \$223.82/hr		



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

	10			
Deere 7430 (disc. 2011 Wheel Tractors	)			
Size Class: <b>125 to 174 hp</b> Weight: NIA				
Configuration for 743	30 (disc. 2011)			
Horsepower	166.0 hp	Power Mode	e Diesel	
		this type and size. Rates show rands or models will vary depe	wn for specific brands or models nding on many factors	are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$3,891.00	USD \$1,303.00	USD \$462.00
Adjustments				
Region (New Mexico: 92%)		(USD \$292.20)	(USD \$97.85)	(USD \$34.69)
User Defined				
Rental Rates (100%)		-	· · ·	-
Total:		USD \$3,598.80	USD \$1,205.15	USD \$427.31

Date Last Updated: Sep 01, 2020



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

Deere 7430 (disc. 2011) Wheel Tractors

<sup>N/A</sup> Configuration for 7430 (	disc. 2011)		
Horsepower	166.0 hp	Power Mode	Diesel
Hourly Ownership Costs	6		
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$12.78/hr	USD \$11.98/hr	-6.3%
Cost of Facilities Capital (CFC)	USD \$1.13/hr	USD \$1.03/hr	-8.9%
Overhead	USD \$3.64/hr	USD \$3.28/hr	-9.7%
Overhaul Labor	USD \$7.67/hr	USD \$2.60/hr	-66.1%
Overhaul Parts	USD \$6.08/hr	USD \$5.49/hr	-9.7%
Total Hourly Ownership Cost: User Defined Adjustments:	USD \$31.30/hr Sales Tax (5.1% -> 0%) Annual Use F	USD \$24.37/hr Hours (930hrs -> 1.030hrs)	-22.1%

Field Labor         USD \$10.11/hr         USD \$3.42/hr         -66.1%           Field Parts         USD \$5.32/br         USD \$0.80/br         -85%		Standard Value	User Adjusted Value	Variance
Field Parts LISD \$5.32/br LISD \$0.80/br	Field Labor	USD \$10.11/hr	USD \$3.42/hr	-66.1%
	Field Parts	USD \$5.33/hr	USD \$0.80/hr	-85%
Ground Engaging Component (GEC) USD \$0.00/hr	Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-
Tire USD \$1.00/hr	Tire	USD \$1.00/hr	-	-
Electrical/FuelUSD \$15.10/hrUSD \$5.98/hr-60.4%	Electrical/Fuel	USD \$15.10/hr	USD \$5.98/hr	-60.4%
Lube USD \$2.32/hr	Lube	USD \$2.32/hr	-	-

 Total Operating Ownership Cost:
 USD \$33.87/hr
 USD \$13.53/hr
 -60.1%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply Parts (USD \$826.36 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$4,131.81 -> USD \$826.36)

Total	0		
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$31.30/hr	USD \$24.37/hr	-22.1%
Hourly Operating Costs	USD \$33.87/hr	USD \$13.53/hr	-60.1%
Total Hourly Cost	USD \$65.16	USD \$37.90/hr	-41.8%
Non-active use rates	Standard Value	User Adjusted Value	Variance
o		-	
Standby	USD \$17.55/hr	USD \$16.29/hr	-7.2%
Idle	USD \$46.39/hr	USD \$30.35/hr	-34.6%

Revised Date: 1st half 2021

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

January 8, 2021



All prices shown in US dollars (\$)

#### **Rental Rate Blue Book®**

January 10, 2021

Rental Rate Blu	e Book®					5anuary 10, 202
Finn B260						
railer Mounted Mulchers						
Size Class: 51 HP & Over						
Weight:						
4880 lbs						
Configuration for B2	260					
Horsepower	115.0		Power Mode		Diesel	
Blue Book Rates						
Non-current (i.e. archiv						
* FHWA Rate is equal t	o the monthly owners	hip cost divided by 1	76 plus the hourly e	stimated operating		
		Ownership	o Costs		Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$2,380.00	USD \$665.00	USD \$165.00	USD \$25.00	USD \$20.15	USD \$33.6
Adjustments	· · · · ·					
Region ( Las Cruces, New Mexico: 89.4%)	(USD \$252.28)	(USD \$70.49)	(USD \$17.49)	(USD \$2.65)		
Model Year (2021: 100%)	-	-	-			
Adjusted Hourly Ownership Cost (100%)	-	-	· ×	-		
Hourly Operating Cost (100	0%)				-	
Total:	USD \$2,127.72	USD \$594.51	USD \$147.51	USD \$22.35	USD \$20.15	USD \$32.24
Non-Active Use Rate	S					Hourly
Standby Rate						USD \$5.9
Idling Rate						USD \$24.5
Rate Element Alloca	ation					
Element			Percentage		Value	
Depreciation (ownership)			37%		USD \$880.6	60/mo
Overhaul (ownership)			51%		USD \$1,213.	80/mo
CFC (ownership)			4%		USD \$95.2	
Indirect (ownership)	$\boldsymbol{\rho}$		8%		USD \$190.4	
Fuel (operating) @ USD 3.	01		62%		USD \$12.4	.3/hr
Revised Date: 2nd half 2	2018					

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Custom Cost Evaluato	Dr		January 6, 2
Finn B260			
Frailer Mounted Mulchers			
Size Class:			
51 HP & Over			
Weight: 4880 lbs			
Configuration for B260			
Horsepower	115.0	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$5.80/hr	USD \$5.45/hr	-6.2%
Cost of Facilities Capital (CFC)	USD \$0.31/hr		
Overhead	USD \$1.18/hr		•
Overhaul Labor	USD \$3.61/hr	USD \$1.36/hr	-62.2%
Overhaul Parts	USD \$2.54/hr		-
Total Hourly Ownership Cost:	USD \$13.45/hr	USD \$10.85/hr	-19.3%
User Defined Adjustments: Sal			
Hourly Operating Costs			
, , , , , , , , , , , , , , , , , , ,			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$4.51/hr	USD \$1.71/hr	-62.2%
Field Parts	USD \$1.47/hr	USD \$0.19/hr	-87%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Tire	USD \$0.60/hr	-	-
Electrical/Fuel	USD \$10.43/hr	USD \$4.13/hr	-60.4%
Lube	USD \$1.29/hr	-	-
\$201.40 -> USD \$0.00) Annual F	USD \$18.30/hr I (USD \$2.53 -> USD \$1.00) Mechae ield Repair Parts Cost (USD \$1,342	USD \$7.92/hr nics Wage (USD \$63.11 -> USD \$23. 66 -> USD \$201.40)	<b>-56.7%</b> 88) Annual Misc Supply Parts (USD
Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$13.45/hr	USD \$10.85/hr	-19.3%
Hourly Operating Costs	USD \$18.30/hr	USD \$7.92/hr	-56.7%
Total Hourly Cost	USD \$31.75	USD \$18.77/hr	-40.9%
Non-active use rates			
	Standard Value	User Adjusted Value	Variance
Standby	USD \$7.30/hr	USD \$6.95/hr	-4.9%
Standby	000 ¢r.30/11	000 40.30/11	-4.370

Revised Date: 1st half 2021

Idle

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

USD \$23.88/hr

USD \$14.98/hr

-37.3%



All prices shown in US dollars (\$)

### **Rental Rate Blue Book®**

January 8, 2021

Rental Rate Blu						January 8, 202
Hitachi EX3600-5 (di	isc. 2009)					
Hydraulic Shovels						
Size Class: <b>150.1 MTons &amp; Over</b> Weight: 772000 Jbc						
772000 Ibs Configuration for E	X3600-5 (disc. 200	09)				
Operating Weight	350.0 m		Power Mode		Diesel	
	550.0 11	L	Fower Mode		Diesei	>
Blue Book Rates						
Non-current (i.e. archi	· · · · · · · · · · · · · · · · · · ·		76 plus the hours of	atimated an arating	aaat	
* FHWA Rate is equal	to the monthly owners			sumated operating		
		Ownership	CUSIS		Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$74,405.00	USD \$20,835.00	USD \$5,210.00	USD \$780.00	USD \$505.60	USD \$928.3
Adjustments						
Region ( Las Cruces, New Mexico: 90.4%)	(USD \$7,142.88)	(USD \$2,000.16)	(USD \$500.16)	(USD \$74.88)		
Model Year (2009: 100%)	-	-	-	<u>.</u>		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (10	00%)				-	
Total:	USD \$67,262.12	USD \$18,834.84	USD \$4,709.84	USD \$705.12	USD \$505.60	USD \$887.7
Non-Active Use Rate	es					Hourly
Standby Rate			× •			USD \$187.2
Idling Rate						USD \$631.1
Rate Element Alloc	cation					
Element			Percentage		Value	
Depreciation (ownership)			33%		USD \$24,553	.65/mo
Overhaul (ownership)			51%		USD \$37,946	.55/mo
CFC (ownership)			7%		USD \$5,208.	
Indirect (ownership)			9%		USD \$6,696.	
Fuel (operating) @ USD 3	3.01		49%		USD \$248.9	99/hr
Revised Date: 2nd half	2018					
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All prices shown in US dollars (\$)

All prices shown in US dollars (\$)			
<b>Custom Cost Evaluato</b>	r		January 8, 2022
Hitachi EX3600-5 (disc. 2009) Hydraulic Shovels			
Size Class: 150.1 MTons & Over Weight: 772000 Ibs			
Configuration for EX3600-5	(disc. 2009)		
Operating Weight	350.0 mt	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$157.43/hr	USD \$148.57/hr	-5.6%
Cost of Facilities Capital (CFC)	USD \$16.64/hr	-	-
Overhead	USD \$72.91/hr	-	<u> </u>
Overhaul Labor	USD \$32.75/hr	USD \$12.39/hr	-62.2%
Overhaul Parts	USD \$137.58/hr	-x U	-
Total Hourly Ownership Cost: User Defined Adjustments: Sale	<b>USD \$417.32/hr</b> es Tax (5.1% -> 0%)	USD \$388.10/hr	-7%
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$43.49/hr	USD \$16.46/hr	-62.2%
Field Parts	USD \$150.64/hr	USD \$54.23/hr	-64%
Ground Engaging Component (GEC)	USD \$24.10/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	<u> </u>	-
Electrical/Fuel	USD \$208.95/hr	USD \$82.72/hr	-60.4%
Lube	USD \$52.98/hr	-	-
Wage (USD \$63.11 -> USD \$23.8 \$222,954.34 -> USD \$100,329.46	8) Annual Misc Supply Parts (USD \$		<b>-57%</b> D \$44,590.87 -> USD \$0.00) Mechanics Field Repair Parts Cost (USD
Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$417.32/hr	USD \$388.10/hr	-7%
Hourly Operating Costs	USD \$480.17/hr	USD \$206.39/hr	-57%

### Non-active use rates

Total Hourly Cost

	Standard Value	User Adjusted Value	Variance
Standby	USD \$246.99/hr	USD \$238.12/hr	-3.6%
Idle	USD \$626.27/hr	USD \$470.82/hr	-24.8%

USD \$594.48/hr

-33.8%

Revised Date: 1st half 2021

#### The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

USD \$897.49



All prices shown in US dollars (\$)

#### ontal Pato Blue Book®

January 10, 2021

<b>Rental Rate Blue</b>	Book®					January 10, 2023
Komatsu 730E Electric Drive Rear Dumps						
Size Class: <b>170 - 199 MTons</b> Weight: <b>309950 Ibs</b>						
Configuration for 730	DE					
Power Mode Wheel Motor Model	Diesel GE788		Rated Payloa	ad	183.7 mt	
Blue Book Rates						
Non-current (i.e. archive ** FHWA Rate is equal to			76 plus the hourly e	stimated operating	cost.	
		Ownership	Costs		Estimated Operating Costs	FHWA Rate**
	<b>Monthly</b>	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$31,315.00	USD \$8,770.00	USD \$2,195.00	USD \$330.00	USD \$183.95	USD \$361.88
Adjustments						
Region ( Las Cruces, New Mexico: 91.1%)	(USD \$2,787.03)	(USD \$780.53)	(USD \$195.35)	(USD \$29.37)		
Model Year (2021: 100%)	-	-	-	-		
Adjusted Hourly Ownership Cost (100%)	-	-		• <u>-</u>		
Hourly Operating Cost (1009	%)				-	
Total:	USD \$28,527.96	USD \$7,989.47	USD \$1,999.65	USD \$300.63	USD \$183.95	USD \$346.04
Non-Active Use Rates	i					Hourly
Standby Rate Idling Rate						USD \$84.29 USD \$262.86
Rate Element Alloca	tion					
Element			Percentage		Value	
Depreciation (ownership)			31%		USD \$9,707.	65/mo
Overhaul (ownership)			48%		USD \$15,031	
CFC (ownership)			7%		USD \$2,192.	
Indirect (ownership)			14%		USD \$4,384.	
Fuel (operating) @ USD 3.03	1		55%		USD \$100.7	(//nr
Revised Date: 2nd half 2	018					

Revised Date: 2nd half 2018

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All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

<b>Komatsu 730E</b> Electric Drive Rear Dumps			
Size Class: 170 - 199 MTons Weight: 309950 Ibs			
Configuration for 730E			
Power Mode Wheel Motor Model	Diesel GE788	Rated Payload	183.7 mt
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$57.74/hr	USD \$54.37/hr	-5.8%
Cost of Facilities Capital (CFC)	USD \$6.47/hr	-	· ·
Overhead	USD \$29.40/hr	- ()	-
Overhaul Labor	USD \$57.99/hr	USD \$21.94/hr	-62.2%
Overhaul Parts	USD \$23.64/hr		-
Total Hourly Ownership Cost: User Defined Adjustments: Sale	<b>USD \$175.23/hr</b> s Tax (5.1% -> 0%)	USD \$135.82/hr	-22.5%
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$33.77/hr	USD \$12.78/hr	-62.2%
Field Parts	USD \$11.14/hr	USD \$1.86/hr	-83.3%
Ground Engaging Component (GEC)	USD \$0.00/hr		-
Tire	USD \$21.20/hr	-	-
Electrical/Fuel	USD \$84.57/hr	USD \$33.48/hr	-60.4%
Lube	USD \$18.00/hr		-
Total Operating Ownership Cost:	USD \$168.68/hr	USD \$87.31/hr	-48.2%

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$175.23/hr	USD \$135.82/hr	-22.5%
Hourly Operating Costs	USD \$168.68/hr	USD \$87.31/hr	-48.2%
Total Hourly Cost	USD \$343.91	USD \$223.13/hr	-35.1%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$93.61/hr	USD \$90.24/hr	-3.6%
Idle	USD \$259.80/hr	USD \$169.30/hr	-34.8%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

### **Rental Rate Blue Book®**

January 10, 2021

Rental Rate Blue	e Book®					January 10, 2021
Komatsu HD1500-5 (d Mechanical Drive Rear Dum						
Size Class: <b>105 - 139 MTons</b> Weight: <b>221481 Ibs</b>						
Configuration for HE	01500-5 (disc. 200	08)				
Power Mode	Diesel		Rated Payloa	ad	136.0 mt	
Blue Book Rates						
Non-current (i.e. archiv						
** FHWA Rate is equal to	o the monthly owners	hip cost divided by 1	76 plus the hourly e	stimated operating		
		Ownership	o Costs		Estimated Operating Costs	FHWA Rate**
	Monthl y	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$26,800.00	USD \$7,505.00	USD \$1,875.00	USD \$280.00	USD \$160.20	USD \$312.47
Adjustments						
Region ( Las Cruces, New Mexico: 91.1%)	(USD \$2,385.20)	(USD \$667.95)	(USD \$166.88)	(USD \$24.92)		
Model Year (2008: 100%)	-	-	-			
Adjusted Hourly Ownership Cost (100%)	-	-	- /	-		
Hourly Operating Cost (100	9%)				-	
Total:	USD \$24,414.80	USD \$6,837.06	USD \$1,708.13	USD \$255.08	USD \$160.20	USD \$298.92
Non-Active Use Rates	S					Hourly
Standby Rate						USD \$67.97
Idling Rate						USD \$223.36
Rate Element Alloca	ation					
Element			Percentage		Value	
Depreciation (ownership)			34%		USD \$9,112.	00/mo
Overhaul (ownership)			51%		USD \$13,668	.00/mo
CFC (ownership)			6%		USD \$1,608.	
Indirect (ownership)			9%		USD \$2,412.	
Fuel (operating) @ USD 3.0	01		53%		USD \$84.6	i4/hr
Revised Date: 2nd half 2	2018					

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All prices shown in US dollars (\$)

### **Custom Cost Evaluator**

January 8, 2021

b5 - 139 MTons Might: 21481 lbs onfiguration for HD1500-5 (disc. 2008) ower Mode Diesel Rated Payload 136.0 mt ourly Ownership Costs server Mode Diesel Rated Value User Adjusted Value Variance ost of Facilities Capital (CFC) USD \$5.54/hr USD \$5.58/hr - 6.96 ost of Facilities Capital (CFC) USD \$24.59/hr USD \$24.81/hr - 6.98/h werhead USD \$24.59/hr USD \$24.81/hr - 6.92/h werhaul Labor USD \$23.03/hr USD \$24.81/hr - 6.98/h werhaul Labor USD \$25.91/hr USD \$24.81/hr - 6.98/h werhaul Labor USD \$25.95/hr USD \$23.80/hr - 6.92/h otal Hourly Ownership Cost: USD \$152.67/hr USD \$23.80/hr - 6.98/h ser Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,867/hrs -> 1,850/hrs) Fourly Operating Costs Feld Labor USD \$21.97/hr USD \$31.69/hr - 6.2.2% tre USD \$21.97/hr USD \$31.71/hr - 6.2.2% tre USD \$21.97/hr USD \$3.11/hr - 6.2.2% tre USD \$1.78/hr - 6.4% tre USD \$1.9.00/hr - 1.0.6% tre USD \$1.0.00/hr - 1.0	lechanical Drive Rear Dumps					
Standard Value         Variance           Standard Value         Variance           Standard Value         Variance           Variance         Variance           Standard Value         Variance           Variance	ize Class: <b>05 - 139 MTons</b>					
Standard Value         Variance           Variance         Variance           Standard Value         Variance           Variance         Variance           Standard Value         Variance           Variance         Variance           Standard Value         Variance           Variance         Variance         Variance           Variance         Variance         Variance         Variance           Variance         Variance         Variance           Variance         Variance         Variance           Variance         Variance         Variance           Variance         Variance         Variance           Variance         Variance           Variance         Variance           Variance         Variance           Variance         Variance           Variance         Variance <th colspan="2" th="" th<="" variance<=""><th>Veight:</th><th></th><th></th><th></th></th>	<th>Veight:</th> <th></th> <th></th> <th></th>		Veight:			
over Mode Diesel Ratel Payload 136.0 mt Nourly Ownership Costs  Standard Value User Adjusted Value Variance Appreciation USD \$64.94/hr USD \$5.54/hr 0.90 by Sot of Pacilities Capital (CFC) USD \$5.54/hr USD \$5.54/hr 0.90 by Verhaul Labor USD \$24.59/hr USD \$24.81/hr 0.90 by Verhaul Labor USD \$24.59/hr 0.90 by 328.03/hr 0.90 by Total Hourly Ownership Cost: USD \$132.67/hr USD \$23.89/hr 0.90 by Total Hourly Ownership Cost: USD \$162.67/hr USD \$23.69/hr 0.90 by Total Hourly Ownership Cost: USD \$162.67/hr USD \$23.59/hr 0.60 by Total Hourly Ownership Cost: USD \$12.57/hr USD \$23.69/hr 0.60 by Total Hourly Ownership Cost: USD \$12.57/hr USD \$23.69/hr 0.60 by Total Hourly Ownership Cost: USD \$21.97/hr USD \$23.17/hr 0.52 by Total USD \$20.00/hr 0.60 by Tree USD \$21.97/hr USD \$2.11/hr 0.52 by Total USD \$20.00/hr 0.60 by Tree USD \$21.97/hr USD \$2.12/hr 0.60 by Tree USD \$21.92/hr 0.60 by Tree USD \$21.95/hr 0.90 by Tree USD \$23.66/hr 0.90 by Tree USD \$2		c. 2008)				
Aburly Ownership Costs           Standard Value         User Adjusted Value         Variance           pepreciation         USD \$64.94/hr         USD \$51.05/hr         -6%           Ost of Facilities Capital (CFC)         USD \$5.54/hr         USD \$5.54/hr         0.50 \$52.58/hr         -0.8%           Overhead         USD \$24.59/hr         USD \$24.81/hr         0.95 \$24.81/hr         -0.8%           Overhaul Parts         USD \$29.59/hr         USD \$23.60/hr         -0.9%           Total Hourly Ownership Cost:         USD \$152.67/hr         USD \$135.69/hr         -16.6%           Standard Value         Variance	-		Rated Pavload	136.0 mt		
Standard Value         User Adjusted Value         Variance           Depreciation         USD \$64, 94/hr         USD \$51,05/hr         -6%           Cost of Facilities Capital (CFC)         USD \$5,54/hr         USD \$5,59/hr         +0.8%           Overhead         USD \$24,59/hr         USD \$25,89/hr         +0.9%           Overhaul Labor         USD \$29,59/hr         USD \$29,80/hr         +0.9%           Overhaul Parts         USD \$29,59/hr         USD \$29,80/hr         +0.9%           Total Hourly Ownership Cost:         USD \$162,67/hr         USD \$135,69/hr         +0.9%           Northal Hourly Ownership Cost:         USD \$162,67/hr         USD \$135,69/hr         +0.9%           Idel Labor         USD \$21,97/hr         USD \$23,50/hr         -0.6%           Adapter Defined Adjustments:         Standard Value         Variance         Variance           Field Labor         USD \$21,97/hr         USD \$2,11/hr         +83,2%           Ground Engaging Component (GEC)         USD \$21,97/hr         USD \$2,11/hr         +83,2%           Ground Engaging Component (GEC)         USD \$17,82/hr         -0         -0           Cotal Operating Ownership Cost:         USD \$10,01/hr         USD \$23,78/hr         -0           Standard Value         USD \$13,7.82/hr						
Depreciation         USD \$64.94/hr         USD \$61.05/hr         -6%           Cost of Facilities Capital (CFC)         USD \$5.4/hr         USD \$5.58/hr         +0.8%           Overhead         USD \$24.59/hr         USD \$24.81/hr         +0.9%           Overhead         USD \$20.59/hr         USD \$24.81/hr         +0.9%           Overhead         USD \$20.59/hr         USD \$24.81/hr         +0.9%           Overhead         USD \$20.59/hr         USD \$29.86/hr         +0.9%           Overhead         USD \$20.59/hr         USD \$29.86/hr         +0.9%           Standard Value         USD \$35.69/hr         +0.9%         +0.9%           For Jeffned Adjustments:         Sales Tax (5.1% > 0%) Annual Use Hours (1.867hrs > 1.850hrs)         +0.9%           Hourly Operating Costs         USD \$21.97/hr         USD \$8.31/hr         -62.2%           Sound Engaging Component (GEC)         USD \$0.00/hr         USD \$2.11/hr         -83.2%           Sound Engaging Component (GEC)         USD \$17.82/hr         -         -           Liectrical/Fuel         USD \$17.82/hr         -         -           Liectrical/Fuel         USD \$17.82/hr         -         -           Cotal Operating Ownership Cost:         USD \$162.67/hr         USD \$3.10.9         USD \$3.69/hr	tourly Ownership Costs					
Start         USD \$5.54/hr         USD \$5.58/hr         +0.8%           Overhead         USD \$24.59/hr         USD \$24.81/hr         +0.9%           Overhead         USD \$38.03/hr         USD \$24.81/hr         +0.9%           Overhead         USD \$38.03/hr         USD \$29.59/hr         +0.9%           Overhaul Parts         USD \$29.59/hr         USD \$29.86/hr         +0.9%           Overhaul Parts         USD \$162.67/hr         USD \$135.69/hr         +16.6%           Iser Defined Adjustments:         Sales Tax (5.1% >> 0%) Annual Use Hours (1,867hrs >> 1,850hrs)         +16.6%           Hourly Operating Costs         USD \$21.97/hr         USD \$8.31/hr         -62.2%           Field Labor         USD \$21.97/hr         USD \$8.31/hr         -62.2%           Ground Engaging Component (GEC)         USD \$21.97/hr         USD \$2.11/hr         -83.2%           Ground Engaging Component (GEC)         USD \$21.07/hr         USD \$2.11/hr         -83.2%           Ground Engaging Component (GEC)         USD \$17.03/hr         -         -           USD \$21.97/hr         USD \$28.12/hr         -         -           Otal Operating Ownership Cost:         USD \$10.00/hr         -         -           Ifre         USD \$13.03/hr         USD \$2.11/hr         -		Standard Value	User Adjusted Value	Variance		
Diverhead         USD \$24.59/hr         USD \$24.81/hr         +0.9%           Overhaul Labor         USD \$38.03/hr         USD \$14.39/hr         -62.2%           Overhaul Parts         USD \$29.59/hr         USD \$29.86/hr         -0.9%           ordal Hourly Ownership Cost:         USD \$162.67/hr         USD \$29.86/hr         -0.9%           iodal Hourly Operating Costs         Standard Value         User Adjusted Value         Variance           ield Labor         USD \$21.97/hr         USD \$8.31/hr         -62.2%           ield Labor         USD \$21.97/hr         USD \$8.31/hr         -62.2%           ield Labor         USD \$21.97/hr         USD \$2.11/hr         -83.2%           Strundard Value         User Adjusted Value         Variance           ield Labor         USD \$21.97/hr         USD \$2.11/hr         -83.2%           Strundard Value         USD \$2.11/hr         -83.2%         -           Ground Engaging Component (GEC)         USD \$10.00/hr         -         -         -           ide Parts         USD \$17.82/hr         -         -         -         -           Ground Engaging Component (GEC)         USD \$10.00/hr         USD \$23.6/hr         -         -         -         -         -         -         -	Depreciation	USD \$64.94/hr	USD \$61.05/hr	-6%		
Overhaul Labor         USD \$38.03/hr         USD \$14.39/hr         -62.2%           Overhaul Parts         USD \$29.59/hr         USD \$29.86/hr         -0.9%           Ordal Hourly Ownership Cost:         USD \$162.67/hr         USD \$29.86/hr         -0.9%           Iser Defined Adjustments:         Sales Tax (5.1% -> 0%) Annual Use Hours (1,867hrs -> 1,850hrs)         -16.6%           Iser Defined Adjustments:         Sales Tax (5.1% -> 0%) Annual Use Hours (1,867hrs -> 1,850hrs)         -16.6%           Ide Labor         USD \$21.97/hr         USD \$8.31/hr         -62.2%           ield Labor         USD \$21.97/hr         USD \$8.31/hr         -62.2%           ield Parts         USD \$21.97/hr         USD \$2.11/hr         -83.2%           Strough Engaging Component (GEC)         USD \$27.39/hr         -         -           ield Coperating Ownership Cost:         USD \$10.00/hr         -         -           ielectrical/Fuel         USD \$17.82/hr         -         -           iser Defined Adjustments:         Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P         3.903.61 -> USD \$2.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3.903.61)         -         -           iotal Deprating Costs         USD \$150.76/hr         USD \$83.76/hr         -44.4%         -	Cost of Facilities Capital (CFC)	USD \$5.54/hr	USD \$5.58/hr	+0.8%		
werehaul Parts         USD \$29.59/hr         USD \$29.66/hr         4.0%           otal Hourly Ownership Cost:         USD \$162.67/hr         USD \$135.69/hr         -16.6%           ser Defined Adjustments:         Sales Tax (5.1% -> 0%) Annual Use Hours (1,867hrs -> 1,850hrs)         -16.6%           Interview of the text of the text of te	Overhead	USD \$24.59/hr	USD \$24.81/hr	+0.9%		
Standard Value     USD \$162.67/hr     USD \$135.69/hr     -16.6%       Identify Operating Costs     Standard Value     User Adjusted Value     Variance       ield Labor     USD \$21.97/hr     USD \$8.31/hr     -62.2%       ield Labor     USD \$21.97/hr     USD \$8.31/hr     -62.2%       Ground Engaging Component (GEC)     USD \$12.55/hr     USD \$2.11/hr     -83.2%       Ground Engaging Component (GEC)     USD \$27.39/hr     -     -       Ide trice     USD \$17.03/hr     USD \$28.12/hr     -       Ide dation     USD \$17.82/hr     -     -       ide dation     USD \$17.82/hr     -     -       ide construction     USD \$10.76/hr     USD \$28.76/hr     -       ide construction     USD \$110.76/hr     USD \$3.76/hr     -       ide construction     USD \$10.76/hr     USD \$3.76/hr     -       ide construction     USD \$10.76/hr     USD \$3.76/hr     -       ide construction     USD \$10.76/hr     USD \$3.76/hr     -       ide construction     USD \$150.76/hr     USD \$3.76/hr     -       ide construction     USD \$150.76/hr     USD \$3.903.61     -       ide construction     USD \$150.76/hr     USD \$3.903.61     -       identify Ownership Costs     USD \$162.67/hr     USD \$135.69/hr	Overhaul Labor	USD \$38.03/hr	USD \$14.39/hr	-62.2%		
USD \$162.67/hr       USD \$135.69/hr       -16.6%         iser Defined Adjustments:       Sales Tax (5.1% -> 0%) Annual Use Hours (1,867hrs -> 1,850hrs)       -16.6%         Iourly Operating Costs       Standard Value       User Adjusted Value       Variance         ield Labor       USD \$21.97/hr       USD \$8.31/hr       -62.2%         ield Parts       USD \$12.55/hr       USD \$8.31/hr       -62.2%         Ground Engaging Component (GEC)       USD \$10.00/hr       -       -         ife Cricial/Fuel       USD \$27.39/hr       -       -         Ube       USD \$17.03/hr       USD \$28.12/hr       -60.4%         ube       USD \$17.82/hr       -       -         idatorined Adjustments:       Fuel (USD \$2.53 ->       USD \$17.60/hr       USD \$28.76/hr       -44.4%         idatorined Adjustments:       Fuel (USD \$2.53 ->       USD \$19.782/hr       -       -         idatorined Adjustments:       Fuel (USD \$2.53 ->       USD \$19.518.04 ->       USD \$3.903.61)       -         iotal Operating Costs       USD \$162.67/hr       USD \$3.569/hr       -16.6%       -         iourly Ownership Costs       USD \$150.76/hr       USD \$3.569/hr       -16.6%         iourly Ownership Costs       USD \$150.76/hr       USD \$3.569/hr       -16.6% <td>Overhaul Parts</td> <td></td> <td>USD \$29.86/hr</td> <td>+0.9%</td>	Overhaul Parts		USD \$29.86/hr	+0.9%		
Standard Value       User Adjusted Value       Variance         Field Labor       USD \$21.97/hr       USD \$8.31/hr       -62.2%         Field Labor       USD \$21.97/hr       USD \$8.31/hr       -62.2%         Field Parts       USD \$12.55/hr       USD \$2.11/hr       -83.2%         Ground Engaging Component (GEC)       USD \$20.00/hr       -       -         Tire       USD \$27.39/hr       -       -         Electrical/Fuel       USD \$17.82/hr       -       -         Total Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -       -         Total Operating Costs       USD \$150.76/hr       USD \$83.76/hr       -       -         Total Operating Costs       USD \$12.62/hr       -       -       -         Total Operating Costs       USD \$12.50/hr       USD \$3.90.61.1 >> USD \$23.66) Annual Misc Supply P       -       -         Total Operating Costs       USD \$162.67/hr       USD \$3.30.61.1 >> USD \$3.06.01 Annual Field Repair Parts Cost (USD \$13.5.69/hr       -       -       -         Hourly Ownership Costs       USD \$131.44       USD \$3.76/hr       -       -       -       -       -       -       -       -       -       -       -       -       -       -						
Standard Value     User Adjusted Value     Variance       ield Labor     USD \$21.97/hr     USD \$8.31/hr     -62.2%       ield Parts     USD \$12.55/hr     USD \$2.11/hr     -83.2%       öround Engaging Component (GEC)     USD \$27.39/hr     -     -       ire     USD \$27.39/hr     -     -       istertical/Fuel     USD \$17.82/hr     USD \$28.12/hr     -60.4%       ube     USD \$17.82/hr     -     -       otal Operating Ownership Cost:     USD \$17.82/hr     USD \$3.76/hr     -       ser Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P     3,903.61 -> USD \$10.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)     -       otal       Standard Value     User Adjusted Value     Variance       lourly Ownership Costs     USD \$150.76/hr     USD \$13.569/hr     -16.6%       lourly Ownership Costs     USD \$162.67/hr     USD \$135.69/hr     -16.6%       lourly Ownership Costs     USD \$131.44     USD \$129.45/hr     -30%       lourly Cost     USD \$313.44     USD \$219.45/hr     -30%       lon-active use rates     Standard Value     User Adjusted Value     Variance       standary     USD \$95.06/hr     USD \$91.45/hr     -3.8%				2010/0		
Held Labor       USD \$21.97/hr       USD \$8.31/hr       -62.2%         Field Parts       USD \$12.55/hr       USD \$2.11/hr       -83.2%         Ground Engaging Component (GEC)       USD \$0.00/hr       -       -         Tire       USD \$27.39/hr       -       -         Electrical/Fuel       USD \$71.03/hr       USD \$28.12/hr       -         Total Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -         Total Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -         3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3.3903.61)       -       -         Total       Standard Value       User Adjusted Value       Variance         Adourly Ownership Costs       USD \$150.76/hr       USD \$83.76/hr       -         Adourly Ownership Costs       USD \$150.76/hr       USD \$135.69/hr       -         Adourly Ownership Costs       USD \$131.44       USD \$135.69/hr       -         Adourly Cost       USD \$313.44       USD \$219.45/hr       -         Adourly Cost       USD \$135.66/hr       USD \$21.45/hr       -         Adourly Cost       USD \$31.44       USD \$21.45/hr       -         Adourly Cost       USD \$95.06/hr       USD \$91.45/hr	Iourly Operating Costs					
Heid Labor       USD \$21.97/hr       USD \$8.31/hr       -62.2%         Field Parts       USD \$12.55/hr       USD \$2.11/hr       -83.2%         Ground Engaging Component (GEC)       USD \$0.00/hr       -       -         Tre       USD \$27.39/hr       -       -         Electrical/Fuel       USD \$71.03/hr       USD \$28.12/hr       -         Otal Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -         Total Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -         Jago 3.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3.903.61)       -       -         Total       Standard Value       User Adjusted Value       Variance         Adourly Ownership Costs       USD \$150.76/hr       USD \$83.76/hr       -         Adourly Ownership Costs       USD \$162.67/hr       USD \$135.69/hr       -         Adourly Ownership Costs       USD \$131.44       USD \$83.76/hr       -         Adourly Cost       USD \$31.44       USD \$219.45/hr       -         Adourly Cost       USD \$313.44       USD \$219.45/hr       -         Alon-active use rates       Standard Value       User Adjusted Value       Variance         Standard Value       USD \$91.45/hr <t< td=""><td></td><td></td><td></td><td></td></t<>						
Heid Parts       USD \$12.55/hr       USD \$2.11/hr       -83.2%         Ground Engaging Component (GEC)       USD \$0.00/hr       -       -         Tire       USD \$27.39/hr       -       -         Electrical/Fuel       USD \$71.03/hr       USD \$28.12/hr       -         Electrical/Fuel       USD \$17.82/hr       -       -         Total Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -         Iser Defined Adjustments:       Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P       -         3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)       -       -         Total       Standard Value       User Adjusted Value       Variance         40urly Ownership Costs       USD \$150.76/hr       USD \$135.69/hr       -         40urly Operating Costs       USD \$150.76/hr       USD \$135.69/hr       -         40urly Operating Costs       USD \$150.76/hr       USD \$83.76/hr       -       -         40urly Cost       USD \$150.76/hr       USD \$83.76/hr       -       -         Adoutly Cost       USD \$150.76/hr       USD \$135.69/hr       -       -         Non-active use rates       USD \$313.44       USD \$219.45/hr       -<30%				Variance		
stround Engaging Component (GEC)       USD \$0.00/hr       -       -         ire       USD \$27.39/hr       -       -         lectrical/Fuel       USD \$71.03/hr       USD \$28.12/hr       -60.4%         ube       USD \$17.82/hr       -       -         otal Operating Ownership Cost:       USD \$150.76/hr       USD \$83.76/hr       -44.4%         ser Defined Adjustments:       Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P       3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)       -         otal       Standard Value       User Adjusted Value       Variance         lourly Ownership Costs       USD \$150.76/hr       USD \$83.76/hr       -16.6%         lourly Operating Costs       USD \$150.76/hr       USD \$83.76/hr       -30%         lourly Operating Costs       USD \$150.76/hr       USD \$83.76/hr       -30%         lourly Cost       USD \$313.44       USD \$219.45/hr       -30%         lon-active use rates       Standard Value       User Adjusted Value       Variance         standard Value       USD \$91.45/hr       -3.8%       -3.8%	ield Labor	USD \$21.97/hr	USD \$8.31/hr	-62.2%		
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Electrical/Fuel     USD \$71.03/hr     USD \$28.12/hr     -60.4%       ube     USD \$17.82/hr     -     -       otal Operating Ownership Cost:     USD \$150.76/hr     USD \$83.76/hr     -44.4%       ser Defined Adjustments:     Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P     -       3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)     -     -       Total     Standard Value     User Adjusted Value     Variance       kourly Ownership Costs     USD \$162.67/hr     USD \$135.69/hr     -16.6%       kourly Operating Costs     USD \$150.76/hr     USD \$83.76/hr     -44.4%       total Hourly Cost     USD \$13.44     USD \$219.45/hr     -30%       Ion-active use rates     Standard Value     User Adjusted Value     Variance       standard Value     USD \$219.45/hr     -30%	Ground Engaging Component (GEC)	USD \$0.00/hr	-	-		
ube     USD \$17.82/hr     -       otal Operating Ownership Cost:     USD \$150.76/hr     USD \$83.76/hr     -44.4%       ser Defined Adjustments:     Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P     3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)     -       rotal     Standard Value     User Adjusted Value     Variance       lourly Ownership Costs     USD \$162.67/hr     USD \$135.69/hr     -16.6%       lourly Operating Costs     USD \$150.76/hr     USD \$135.69/hr     -44.4%       otal Hourly Cost     USD \$131.44     USD \$219.45/hr     -30%       Ion-active use rates     Standard Value     User Adjusted Value     Variance       standard Value     USD \$219.45/hr     -30%	īre	USD \$27.39/hr		-		
Total Operating Ownership Cost:USD \$150.76/hrUSD \$83.76/hr-44.4%Iser Defined Adjustments:Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)TotalTotalStandard ValueUser Adjusted ValueVarianceHourly Ownership CostsUSD \$162.67/hrUSD \$135.69/hr-16.6%Hourly Operating CostsUSD \$150.76/hrUSD \$135.69/hr-44.4%Total Hourly CostUSD \$150.76/hrUSD \$135.69/hr-30%Ion-active use ratesStandard ValueUser Adjusted ValueVarianceStandard ValueUser Adjusted ValueVarianceStandard ValueUSD \$219.45/hr-30%Ion-active use ratesUSD \$95.06/hrUSD \$91.45/hr-3.8%	Electrical/Fuel	USD \$71.03/hr	USD \$28.12/hr	-60.4%		
Isser Defined Adjustments:       Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.66) Annual Misc Supply P         3,903.61 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,518.04 -> USD \$3,903.61)       Variance         Fotal       Standard Value       User Adjusted Value       Variance         Hourly Ownership Costs       USD \$162.67/hr       USD \$135.69/hr       -16.6%         Hourly Operating Costs       USD \$150.76/hr       USD \$83.76/hr       -44.4%         Total Hourly Cost       USD \$313.44       USD \$219.45/hr       -30%         Jon-active use rates       Standard Value       User Adjusted Value       Variance         Standard Value       USD \$219.45/hr       -3.8%	ube	USD \$17.82/hr	-	-		
Hourly Ownership CostsUSD \$162.67/hrUSD \$135.69/hr-16.6%Hourly Operating CostsUSD \$150.76/hrUSD \$33.76/hr-44.4%Total Hourly CostUSD \$313.44USD \$219.45/hr-30%Jon-active use ratesStandard ValueUser Adjusted ValueVarianceStandbyUSD \$95.06/hrUSD \$91.45/hr-3.8%	3,903.61 -> USD \$0.00) Annual Field			.66) Annual Misc Supply Parts (USI		
Hourly Ownership CostsUSD \$162.67/hrUSD \$135.69/hr-16.6%Hourly Operating CostsUSD \$150.76/hrUSD \$33.76/hr-44.4%Total Hourly CostUSD \$313.44USD \$219.45/hr-30%Jon-active use ratesStandard ValueUser Adjusted ValueVarianceStandbyUSD \$95.06/hrUSD \$91.45/hr-3.8%						
Hourly Operating Costs     USD \$150.76/hr     USD \$83.76/hr     -44.4%       Total Hourly Cost     USD \$313.44     USD \$219.45/hr     -30%       Jon-active use rates     Standard Value     User Adjusted Value     Variance       Standby     USD \$95.06/hr     USD \$91.45/hr     -3.8%			-			
Standard Value     USD \$313.44     USD \$219.45/hr     -30%       Ion-active use rates       Standard Value     User Adjusted Value     Variance       Standard Value     User Adjusted Value     Variance       USD \$95.06/hr     USD \$91.45/hr     -3.8%						
Ion-active use rates Standard Value User Adjusted Value Variance tandby USD \$95.06/hr USD \$91.45/hr -3.8%						
Standard ValueUser Adjusted ValueVarianceStandbyUSD \$95.06/hrUSD \$91.45/hr-3.8%	otal Hourly Cost	USD \$313.44	USD \$219.45/hr	-30%		
Standby         USD \$95.06/hr         USD \$91.45/hr         -3.8%						
Standby         USD \$95.06/hr         USD \$91.45/hr         -3.8%	Ion-active use rates	Ctandard Value	User Adjusted Value	Variance		
-	lon-active use rates	Stanuaru varue	-			
			USD \$91.45/hr	0.070		
	Standby	USD \$95.06/hr		-29 9%		
Revised Date: 1st half 2021	Standby	USD \$95.06/hr		-29.9%		
	Non-active use rates Standby Idle Revised Date: 1st half 2021	USD \$95.06/hr		-29.9%		
The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)	Standby Idle Revised Date: 1st half 2021	USD \$95.06/hr USD \$233.70/hr	USD \$163.81/hr			



All prices shown in US dollars (\$)

Custom Cost Evaluator Miscellaneous 42 X 60' - 516			
ingle Deck Portable Screening Plants			
Size Class:			
7 & Over			
Veight: 23800 Ibs			
Configuration for 42 X 60' - 516			
Conveyor Size 42	' X 60'	Horsepower	110.0
Power Mode Di	esel	Screen Size	5' X 16'
Iourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$9.59/hr	USD \$9.06/hr	-5.5%
Cost of Facilities Capital (CFC)	USD \$0.70/hr	- <b>·</b> · · · · · · · · · · · · · · · · · ·	
Overhead	USD \$3.24/hr		-
Overhaul Labor	USD \$13.38/hr	USD \$5.06/hr	-62.2%
Overhaul Parts	USD \$7.07/hr		-
Fotal Hourly Ownership Cost:	USD \$33.99/hr	USD \$25.14/hr	-26%
Jser Defined Adjustments: Sales Ta	x (5.1% -> 0%)		
Iourly Operating Costs		X	
	Standard Value	User Adjusted Value	Variance
Field Labor	Standard Value USD \$15.15/hr	User Adjusted Value USD \$5.73/hr	<b>Variance</b> -62.2%
Field Parts	USD \$15.15/hr	USD \$5.73/hr	-62.2%
Field Parts Ground Engaging Component (GEC)	USD \$15.15/hr USD \$6.57/hr	USD \$5.73/hr	-62.2%
Field Parts Ground Engaging Component (GEC) Fire	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr	USD \$5.73/hr	-62.2%
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr	USD \$5.73/hr USD \$1.64/hr	-62.2% -75% -
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost:	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b>	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b>
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b>	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b>
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b>	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>59.9%</b>
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI JSD \$6,567.79 -> USD \$1,641.95)	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b>	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b>
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95)	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b>	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b>
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95) Fotal	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr USD \$36.28/hr D \$2.53 -> USD \$1.00) Mechanic	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - - - - - - - - - - - - - - - - -
Field Parts Ground Engaging Component (GEC) Tire Electrical/Fuel Lube Total Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95) Fotal	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr USD \$36.28/hr D \$2.53 -> USD \$1.00) Mechanic	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - -59.9% .88) Annual Field Repair Parts Cost Variance
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95) Fotal Hourly Ownership Costs Hourly Operating Costs	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr USD \$36.28/hr D \$2.53 -> USD \$1.00) Mechanic Standard Value USD \$33.99/hr	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b> .88) Annual Field Repair Parts Cost Variance -26%
Field Parts Ground Engaging Component (GEC) Fire Electrical/Fuel Lube Fotal Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95) Fotal Hourly Ownership Costs Hourly Operating Costs Fotal Hourly Cost	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b> D \$2.53 -> USD \$1.00) Mechanic Standard Value USD \$33.99/hr USD \$36.28/hr	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b> .88) Annual Field Repair Parts Cost Variance -26% -59.9%
Field Labor Field Parts Ground Engaging Component (GEC) Tire Electrical/Fuel Lube Total Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95) Total Hourly Ownership Costs Hourly Operating Costs Total Hourly Cost Non-active use rates	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr <b>USD \$36.28/hr</b> D \$2.53 -> USD \$1.00) Mechanic Standard Value USD \$33.99/hr USD \$36.28/hr	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - -60.4% - - <b>-59.9%</b> .88) Annual Field Repair Parts Cost Variance -26% -59.9%
Field Parts Ground Engaging Component (GEC) Tire Electrical/Fuel Lube Total Operating Ownership Cost: Jser Defined Adjustments: Fuel (USI USD \$6,567.79 -> USD \$1,641.95) Fotal Hourly Ownership Costs Hourly Operating Costs Total Hourly Cost	USD \$15.15/hr USD \$6.57/hr USD \$0.00/hr USD \$0.36/hr USD \$12.25/hr USD \$1.96/hr D \$2.53 -> USD \$1.00) Mechanic Standard Value USD \$33.99/hr USD \$36.28/hr USD \$36.28/hr	USD \$5.73/hr USD \$1.64/hr - - - - - - - - - - - - - - - - - - -	-62.2% -75% - - - - -60.4% - - -59.9% .88) Annual Field Repair Parts Cost Variance -26% -59.9% -43.5%



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Miscellaneous 42 X 60' - 516 Triple Deck Portable Screening Pla			
Size Class: 37 & Over Weight: 27900 Ibs Configuration for 42 X 60'	516		
Configuration for 42 × 60	- 516		
Conveyor Size	42' X 60'	Horsepower	110.0
Power Mode	Diesel	Screen Size	5' X 16'
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$10.18/hr	USD \$9.62/hr	-5.5%
Cost of Facilities Capital (CFC)	USD \$0.76/hr	-	<u> </u>
Overhead	USD \$3.52/hr		-
Overhaul Labor	USD \$13.99/hr	USD \$5.29/hr	-62.2%
Overhaul Parts	USD \$7.56/hr		-
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$36.00/hr</b> ales Tax (5.1% -> 0%)	USD \$26.75/hr	-25.7%

#### **Hourly Operating Costs**

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$15.65/hr	USD \$5.92/hr	-62.2%
Field Parts	USD \$7.23/hr	USD \$1.45/hr	-80%
Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-
Tire	USD \$0.37/hr	-	-
Electrical/Fuel	USD \$12.25/hr	USD \$4.85/hr	-60.4%
Lube	USD \$2.02/hr	-	-

 Total Operating Ownership Cost:
 USD \$37.51/hr
 USD \$14.60/hr
 -61.1%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$1,806.29 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$7,225.16 -> USD \$1,806.29)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$36.00/hr	USD \$26.75/hr	-25.7%
Hourly Operating Costs	USD \$37.51/hr	USD \$14.60/hr	-61.1%
Total Hourly Cost	USD \$73.52	USD \$41.35/hr	-43.7%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$14.46/hr	USD \$13.90/hr	-3.9%
Idle	USD \$48.26/hr	USD \$31.60/hr	-34.5%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

### AED Green Book®

January 8, 2021

ALD OTEET DOO	n U			<b>3</b>
Miscellaneous 42 X 60	)' - 516			
Single Deck Portable Scree	ning Plants			
Size Class:				
37 & Over				
Weight:				
22200 lbs				
Configuration for 42	X 60' - 516			
Conveyor Size	42' X 60'	Horsepower	<b>75.0</b>	
Power Mode	Electric	Screen Size	e 5' X 1	.6'
AED Rental Rates			(	
	<b>°</b> 11	f this type and size. Rates show		ls are provided for convenience
only. Rates charged by re	ental companies for specific t	orands or models will vary depe	nding on many factors	
		Monthly	Weekly	Daily
Published Rates		USD \$11,400.00	USD \$3,800.00	USD \$1,200.00
Adjustments				
Region (New Mexico: 102%)	)	USD \$225.00	USD \$75.00	USD \$23.68

 User Defined

 Rental Rates (100%)

 Total:
 USD \$11,625.00
 USD \$3,875.00
 USD \$1,223.68

 Date Last Updated: Sep 01, 2020

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Miscellaneous 42 X 6	0' - 516			
Triple Deck Portable Scree	ning Plants			
Size Class:				
37 & Over				
Weight:				
26300 lbs				
Configuration for 42	X 60' - 516			
Conveyor Size	42' X 60'	Horsepower	75.0	
Power Mode	Electric	Screen Size	5' X 16'	
AED Rental Rates				
	<b>o</b> 11	type and size. Rates shown for specif Is or models will vary depending on ma		r convenience

	Monthly	Weekly	Daily
Published Rates	USD \$16,532.00	USD \$5,512.00	USD \$1,808.00
Adjustments			
Region (New Mexico: 108%)	USD \$1,340.04	USD \$446.79	USD \$146.55
User Defined			
Rental Rates (100%)	-	<u> </u>	-
Total:	USD \$17,872.04	USD \$5,958.79	USD \$1,954.55
Date Last Updated: Sep 01, 2020			



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Miscellaneous 48 X 60' - 516 Double Deck Portable Screening Pl			
Size Class: 37 & Over Weight: 26400 lbs Configuration for 48 X 60'	- 516		
Conveyor Size	48' X 60'	Horsepower	110.0
Power Mode	Diesel	Screen Size	5' X 16'
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$10.28/hr	USD \$9.72/hr	-5.5%
Cost of Facilities Capital (CFC)	USD \$0.77/hr	-	
Overhead	USD \$3.56/hr		-
Overhaul Labor	USD \$13.63/hr	USD \$5.16/hr	-62.2%
Overhaul Parts	USD \$7.71/hr		-
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$35.95/hr</b> Iles Tax (5.1% -> 0%)	USD \$26.91/hr	-25.1%

#### **Hourly Operating Costs**

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$15.15/hr	USD \$5.73/hr	-62.2%
Field Parts	USD \$7.12/hr	USD \$1.42/hr	-80%
Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-
Tire	USD \$0.40/hr	-	-
Electrical/Fuel	USD \$12.25/hr	USD \$4.85/hr	-60.4%
Lube	USD \$2.03/hr	-	-

 Total Operating Ownership Cost:
 USD \$36.94/hr
 USD \$14.43/hr
 -60.9%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$1,780.71 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$7,122.85 -> USD \$1,780.71)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$35.95/hr	USD \$26.91/hr	-25.1%
Hourly Operating Costs	USD \$36.94/hr	USD \$14.43/hr	-60.9%
Total Hourly Cost	USD \$72.89	USD \$41.34/hr	-43.3%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$14.60/hr	USD \$14.04/hr	-3.9%
Idle	USD \$48.20/hr	USD \$31.76/hr	-34.1%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Miscellaneous 48 X 60' - 516 Single Deck Portable Screening Pla			
Size Class: 37 & Over Weight: 24900 Ibs Configuration for 48 X 60' -	- 516		
Conveyor Size	48' X 60'	Horsepower	110.0
Power Mode	Diesel	Screen Size	5' X 16'
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$10.30/hr	USD \$9.74/hr	-5.5%
Cost of Facilities Capital (CFC)	USD \$0.75/hr	-	-
Overhead	USD \$3.48/hr		-
Overhaul Labor	USD \$13.38/hr	USD \$5.06/hr	-62.2%
Overhaul Parts	USD \$7.59/hr		-
Total Hourly Ownership Cost: User Defined Adjustments: Sa	USD \$35.51/hr les Tax (5.1% -> 0%)	USD \$26.63/hr	-25%

#### **Hourly Operating Costs**

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$15.15/hr	USD \$5.73/hr	-62.2%
Field Parts	USD \$7.05/hr	USD \$1.41/hr	-80%
Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-
Tire	USD \$0.39/hr	-	-
Electrical/Fuel	USD \$12.25/hr	USD \$4.85/hr	-60.4%
Lube	USD \$2.01/hr	-	-

 Total Operating Ownership Cost:
 USD \$36.85/hr
 USD \$14.39/hr
 -60.9%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$1,763.65 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$7,054.61 -> USD \$1,763.65)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$35.51/hr	USD \$26.63/hr	-25%
Hourly Operating Costs	USD \$36.85/hr	USD \$14.39/hr	-60.9%
Total Hourly Cost	USD \$72.37	USD \$41.02/hr	-43.3%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$14.54/hr	USD \$13.97/hr	-3.9%
Idle	USD \$47.77/hr	USD \$31.48/hr	-34.1%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Miscellaneous 48 X 60' - 516 Triple Deck Portable Screening Plan			
Size Class: 37 & Over Weight: 29000 Ibs Configuration for 48 X 60'	- 516		
Conveyor Size	48' X 60'	Horsepower	110.0
Power Mode	Diesel	Screen Size	5' X 16'
Hourly Ownership Costs			-01
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$10.88/hr	USD \$10.28/hr	-5.5%
Cost of Facilities Capital (CFC)	USD \$0.81/hr	-	<u>-</u>
Overhead	USD \$3.76/hr		-
Overhaul Labor	USD \$13.99/hr	USD \$5.29/hr	-62.2%
Overhaul Parts	USD \$8.08/hr		-
Total Hourly Ownership Cost: User Defined Adjustments: Sa	<b>USD \$37.51/hr</b> lles Tax (5.1% -> 0%)	USD \$28.22/hr	-24.8%

#### **Hourly Operating Costs**

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$15.65/hr	USD \$5.92/hr	-62.2%
Field Parts	USD \$7.72/hr	USD \$1.54/hr	-80%
Ground Engaging Component (GEC)	USD \$0.00/hr	<u> </u>	-
Tire	USD \$0.39/hr	-	-
Electrical/Fuel	USD \$12.25/hr	USD \$4.85/hr	-60.4%
Lube	USD \$2.07/hr	-	-

 Total Operating Ownership Cost:
 USD \$38.09/hr
 USD \$14.78/hr
 -61.2%

 User Defined Adjustments:
 Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$1,929.86 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$7,719.43 -> USD \$1,929.86)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$37.51/hr	USD \$28.22/hr	-24.8%
Hourly Operating Costs	USD \$38.09/hr	USD \$14.78/hr	-61.2%
Total Hourly Cost	USD \$75.60	USD \$43.00/hr	-43.1%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$15.45/hr	USD \$14.85/hr	-3.9%
Idle	USD \$49.76/hr	USD \$33.07/hr	-33.5%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Miscellaneous 48 X 6	0' - 516			
Double Deck Portable Scre				
Size Class:				
37 & Over				
Weight:				
24800 lbs				
Configuration for 48	X 60' - 516			
Conveyor Size	48' X 60'	Horsepower	100.0	
Power Mode	Electric	Screen Size	5' X 16'	
AED Rental Rates				
	• • •	s type and size. Rates shown for spe ds or models will vary depending on r		d for convenience
		Monthly	Weekly	Dailv

	Monthly	Weekly	Daily
Published Rates	USD \$11,834.00	USD \$3,946.00	USD \$1,279.00
Adjustments			
Region (New Mexico: 109%)	USD \$1,017.82	USD \$339.39	USD \$110.00
User Defined			
Rental Rates (100%)	-	<u>.</u>	-
Total:	USD \$12,851.82	USD \$4,285.39	USD \$1,389.00
Date Last Updated: Sep 01, 2020			



All prices shown in US dollars (\$)

#### AED Green Book®

Region (New Mexico: 102%)

January 8, 2021

USD \$23.68

ALD OTEET DOOL				3
Miscellaneous 48 X 60 Single Deck Portable Scree				
Size Class: <b>37 &amp; Over</b> Weight: <b>23300 lbs</b> <b>Configuration for 48</b>	X 60' - 516			
Conveyor Size Power Mode	48' X 60' Electric	Horsepower Screen Size	100. 5' X	
		f this type and size. Rates show prands or models will vary depen		els are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$11,400.00	USD \$3,800.00	USD \$1,200.00
Adjustments				

 User Defined
 Just Participation
 Just Particip

USD \$225.00

USD \$75.00

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Miscellaneous 48 X 60 Triple Deck Portable Screen				
Thpie Deck Fortable Screen	ing Flants			
Size Class:				
37 & Over				
Weight:				
27400 lbs				
Configuration for 48	X 60' - 516			
Conveyor Size	48' X 60'	Horsepower	100.0	
Power Mode	Electric	Screen Size	5' X 16'	
AED Rental Rates			$\sim$	
These rental rates reflect	an average for equipment of this	type and size. Rates shown for specifi	ic brands or models are provided for	convenience
	<b>°</b> 11	ls or models will vary depending on ma		

	Monthly	Weekly	Daily
Published Rates	USD \$16,532.00	USD \$5,512.00	USD \$1,808.00
Adjustments			
Region (New Mexico: 108%)	USD \$1,340.04	USD \$446.79	USD \$146.55
User Defined			
Rental Rates (100%)	-	<u> </u>	-
Total:	USD \$17,872.04	USD \$5,958.79	USD \$1,954.55
Date Last Updated: Sep 01, 2020			



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Miscellaneous 6000 330 Off-Highway Water Tanker Tru				
Size Class: 300 - 399 HP Weight: 54400 Ibs				
Configuration for 6000	330			
Horsepower Tank Capacity	330.0 6000.0 gal	Power Mode	e Dies	el
	<b>°</b> 11	his type and size. Rates show Inds or models will vary deper Monthly		els are provided for convenience Daily
Published Rates		USD \$9,220.00	USD \$3,256.00	USD \$1,233.00
Adjustments Region (New Mexico: 102%) User Defined		USD \$177.44	USD \$62.66	USD \$23.73
Rental Rates (100%) <b>Total:</b> Date Last Updated: Sep 01	1, 2020	USD \$9,397.44	USD \$3,318.66	- USD \$1,256.73

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

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All prices shown in US dollars (\$)

Custom Cost Evaluato	-		
Miscellaneous 6000 330 Off-Highway Water Tanker Trucks			
Size Class:			
300 - 399 HP			
Weight:			
54400 lbs Configuration for 6000 330			
lorsepower	330.0	Power Mode	Diesel
ank Capacity	6000.0 gal		
Hourly Ownership Costs	·		
tourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$22.91/hr	USD \$21.43/hr	-6.5%
Cost of Facilities Capital (CFC)	USD \$2.10/hr	<u> </u>	-
Overhead	USD \$7.31/hr		-
Overhaul Labor	USD \$9.68/hr	USD \$3.66/hr	-62.2%
Overhaul Parts	USD \$5.85/hr		-
Total Hourly Ownership Cost:	USD \$47.85/hr	USD \$40.35/hr	-15.7%
Jser Defined Adjustments: Sale	s Tax (5.1% -> 0%)		
Hourly Operating Costs			
fourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$23.77/hr	USD \$8.99/hr	-62.2%
Field Parts	USD \$10.69/hr	USD \$2.14/hr	-80%
Ground Engaging Component (GEC)	USD \$0.00/hr		-
Tire	USD \$6.42/hr		_
Electrical/Fuel	USD \$28.43/hr	USD \$11.25/hr	-60.4%
Lube	USD \$5.31/hr	030 \$11.25/11	-00.4%
Total Operating Ownership Cost:	USD \$74.62/hr	- USD \$34.12/hr	-54.3%
		anics Wage (USD \$63.11 -> USD \$23.8	
USD \$13,358.67 -> USD \$2,671.	•		-,
Fotal			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$47.85/hr	USD \$40.35/hr	-15.7%
Hourly Operating Costs	USD \$74.62/hr	USD \$34.12/hr	-54.3%
Total Hourly Cost	USD \$122.47	USD \$74.47/hr	-39.2%
Non-active use rates			
	<b>.</b>		
	Standard Value	User Adjusted Value	Variance
Standby	USD \$32.32/hr	USD \$30.84/hr	-4.6%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### AED Green Book®

January 8, 2021

Miscellaneous 10000 45	0			
Off-Highway Water Tanker Tru	icks			
Size Class: 400 - 499 HP Weight: 82200 Ibs				
Configuration for 1000	0 450			
Horsepower	450.0	Power Mode	Diese	
Tank Capacity	10000.0 gal			
AED Rental Rates			(	
	• • •	his type and size. Rates show ands or models will vary depen		s are provided for convenience
		Monthly	Weekly	Daily
Published Rates		USD \$13,290.00	USD \$4,830.00	USD \$1,450.00
Adjustments				
Region (New Mexico: 102%)		USD \$255.76	USD \$92.95	USD \$27.90
User Defined				
Rental Rates (100%)		-		-
Total:				
		USD \$13,545.76	USD \$4,922.95	USD \$1,477.90



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

<b>Miscellaneous 10000 450</b> Off-Highway Water Tanker Trucks			
Size Class: 400 - 499 HP Weight: 82200 Ibs Configuration for 10000 45	50		
Horsepower Tank Capacity	450.0 10000.0 gal	Power Mode	Diesel
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$37.32/hr	USD \$34.91/hr	-6.5%
Cost of Facilities Capital (CFC)	USD \$3.42/hr	-	
Overhead	USD \$11.91/hr		-
Overhaul Labor	USD \$13.88/hr	USD \$5.25/hr	-62.2%
Overhaul Parts	USD \$9.02/hr		-
Total Hourly Ownership Cost: User Defined Adjustments: Sa	USD \$75.55/hr les Tax (5.1% -> 0%)	USD \$64.51/hr	-14.6%

#### **Hourly Operating Costs**

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$33.66/hr	USD \$12.74/hr	-62.2%
Field Parts	USD \$17.41/hr	USD \$2.90/hr	-83.3%
Ground Engaging Component (GEC)	USD \$0.00/hr		-
Tire	USD \$10.47/hr	-	-
Electrical/Fuel	USD \$38.76/hr	USD \$15.35/hr	-60.4%
Lube	USD \$7.90/hr	-	-

Total Operating Ownership Cost: USD \$108.19/hr USD \$49.35/hr -54.4% User Defined Adjustments: Fuel (USD \$2.53 -> USD \$1.00) Mechanics Wage (USD \$63.11 -> USD \$23.88) Annual Misc Supply Parts (USD \$4,352.35 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$21,761.77 -> USD \$4,352.35)

#### Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$75.55/hr	USD \$64.51/hr	-14.6%
Hourly Operating Costs	USD \$108.19/hr	USD \$49.35/hr	-54.4%
Total Hourly Cost	USD \$183.75	USD \$113.86/hr	-38%

#### Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$52.65/hr	USD \$50.24/hr	-4.6%
Idle	USD \$114.32/hr	USD \$79.86/hr	-30.1%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

### **Rental Rate Blue Book®**

January 8, 2021

Miscellaneous MSR-18	39H					
Crawler Tractor Multi-Shank	Rippers					
Size Class: <b>To 260 HP</b> Weight: <b>3557 Ibs</b>						
Configuration for MS	R-189H					
Number Of Shanks	3.0		Ripper Type		Parallelogram	
Blue Book Rates						
Non-current (i.e. archive						
** FHWA Rate is equal to	the monthly ownersh			stimated operating	- I I I I I I I I I I I I I I I I I I I	
		Ownership	Costs		Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$990.00	USD \$275.00	USD \$69.00	USD \$10.00	USD \$4.15	USD \$9.7
Adjustments						
Region ( Las Cruces, New Mexico: 89%)	(USD \$108.90)	(USD \$30.25)	(USD \$7.59)	(USD \$1.10)		
Model Year (2021: 100%)	-	-	-			
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (1009	%)				-	
Total:	USD \$881.10	USD \$244.75	USD \$61.41	USD \$8.90	USD \$4.15	USD \$9.1
Non-Active Use Rates						Hourly
						-
Standby Rate Idling Rate						USD \$3.4 USD \$5.0
						032 \$3.0
Rate Element Alloca	4i.a					
Rate Element Alloca	lion					
Element			Percentage		Value	
<b>D</b>			51%		USD \$504.9	0/mo
Depreciation (ownership)			32%		USD \$316.8	0/mo
Depreciation (ownership) Overhaul (ownership)			5270			
			5% 12%		USD \$49.50	)/mo

Revised Date: 2nd half 2018

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book Print. Visit the Cost Recovery Product Guide on our Help page for more information.



All prices shown in US dollars (\$)

### **Custom Cost Evaluator**

January 8, 2021

Custom Cost Evaluato	or		January 8, 2021
Miscellaneous MSR-189H			
Crawler Tractor Multi-Shank Rippers			
Size Class:			
To 260 HP			
Weight: 3557 Ibs			
Configuration for MSR-189	H		
Number Of Shanks	3.0	Ripper Type	Parallelogram
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$2.64/hr	USD \$2.50/hr	-5.1%
Cost of Facilities Capital (CFC)	USD \$0.14/hr	-	-
Overhead	USD \$0.66/hr	-	-
Overhaul Labor	USD \$1.18/hr	USD \$0.45/hr	-62.2%
Overhaul Parts	USD \$0.95/hr	<u>-x</u> U	-
Total Hourly Ownership Cost:	USD \$5.56/hr	USD \$4.70/hr	-15.6%
User Defined Adjustments: Sale	es Tax (5.1% -> 0%)		
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$1.96/hr	USD \$0.74/hr	-62.2%
Field Parts	USD \$1.18/hr	USD \$1.18/hr	+0%
Ground Engaging Component (GEC)	USD \$0.99/hr	USD \$1.18/hr	+20%
Tire	USD \$0.00/hr	<u>.</u>	-
Electrical/Fuel	USD \$0.00/hr		-
Lube	USD \$0.15/hr	-	-
Total Operating Ownership Cost:	USD \$4.28/hr	USD \$3.26/hr	-23.9%
		\$23.88) Annual Misc Supply Parts (U	SD \$253.63 -> USD \$0.00) Annual Field
Repair Parts Cost (USD \$1,268.1)	6 -> USD \$1,521.80)		
Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$5.56/hr	USD \$4.70/hr	-15.6%
Hourly Operating Costs	USD \$4.28/hr	USD \$3.26/hr	-23.9%
Total Hourly Cost	USD \$9.85	USD \$7.96/hr	-19.2%
Non-active use rates			
	Chandend Males		Varianaa
Chandler	Standard Value	User Adjusted Value	Variance
Standby	USD \$3.44/hr	USD \$3.30/hr	-3.9%

Revised Date: 1st half 2021

Idle

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USD \$5.56/hr

USD \$4.70/hr

-15.6%



All prices shown in US dollars (\$)

#### **Rental Rate Blue Book®**

January 8, 2021

Miscellaneous MSR-3 Crawler Tractor Multi-Shank						
Size Class: <b>260 HP &amp; Over</b> Weight: <b>N/A</b>						
Configuration for MS	SR-359H					
Number Of Shanks	3.0		Ripper Type		Parallelogram	
Blue Book Rates						
Non-current (i.e. archive						
** FHWA Rate is equal to	the monthly owners			stimated operating		
		Ownership	Costs		Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$2,585.00	USD \$725.00	USD \$180.00	USD \$27.00	USD \$9.70	USD \$24.39
Adjustments						
Region ( Las Cruces, New Mexico: 89%)	(USD \$284.35)	(USD \$79.75)	(USD \$19.80)	(USD \$2.97)		
Model Year (2021: 100%)	-	-	-			
Adjusted Hourly Ownership Cost (100%)	-	-	- X	-		
Hourly Operating Cost (100	%)				-	
Total:	USD \$2,300.65	USD \$645.25	USD \$160.20	USD \$24.03	USD \$9.70	USD \$22.7
Non-Active Use Rates	6					Hourly
Standby Rate						USD \$8.8
Idling Rate						USD \$13.0
Rate Element Alloca	tion	9				
Element			Percentage		Value	
Depreciation (ownership)			51%		USD \$1,318.	35/mo
			32%		USD \$827.2	0/mo
Overhaul (ownership)			5% USD \$129.25/mo			
Overhaul (ownership) CFC (ownership) Indirect (ownership)			5% 12%		USD \$129.2 USD \$310.2	

Revised Date: 2nd half 2018

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book Print. Visit the Cost Recovery Product Guide on our Help page for more information.



All prices shown in US dollars (\$)

#### **Custom Cost Evaluator**

January 8, 2021

Miscellaneous MSR-359H Crawler Tractor Multi-Shank Rippers	S		
Size Class: 260 HP & Over Weight: N/A			
Configuration for MSR-359	9H		
Number Of Shanks	3.0	Ripper Type	Parallelogram
Hourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$7.23/hr	USD \$6.86/hr	-5.1%
Cost of Facilities Capital (CFC)	USD \$0.35/hr	-	-
Overhead	USD \$1.68/hr	-	<u> </u>
Overhaul Labor	USD \$2.95/hr	USD \$1.12/hr	-62.2%
Overhaul Parts	USD \$2.35/hr	<u>x</u> O	-
Total Hourly Ownership Cost:	USD \$14.55/hr	USD \$12.35/hr	-15.1%
User Defined Adjustments: Sa	ales Tax (5.1% -> 0%)		
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$5.40/hr	USD \$2.04/hr	-62.2%
Field Parts	USD \$2.37/hr	USD \$2.37/hr	+0%
Ground Engaging Component (GEC	C) USD \$1.97/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	<u>-</u>	-
Electrical/Fuel	USD \$0.00/hr	-	-
Lube	USD \$0.37/hr	-	
Total Operating Ownership Cost:	USD \$10.12/hr	USD \$4.78/hr	-52.7%
User Defined Adjustments: An \$23.88) Annual Misc Supply Par	USD \$10.12/hr nnual Ground Engaging Component (US nts (USD \$506.97 -> USD \$0.00) Annua	SD \$2,534.87 -> USD \$0.00) Mech	anics Wage (USD \$63.11 -> USD
User Defined Adjustments: An	nnual Ground Engaging Component (US	SD \$2,534.87 -> USD \$0.00) Mech	anics Wage (USD \$63.11 -> USD
User Defined Adjustments: An \$23.88) Annual Misc Supply Par	nnual Ground Engaging Component (US	SD \$2,534.87 -> USD \$0.00) Mech	anics Wage (USD \$63.11 -> USD
User Defined Adjustments: An \$23.88) Annual Misc Supply Par	nnual Ground Engaging Component (US Irts (USD \$506.97 -> USD \$0.00) Annua	SD \$2,534.87 -> USD \$0.00) Mech I Field Repair Parts Cost (USD \$2,	anics Wage (USD \$63.11 -> USD 534.87 -> USD \$3,041.85)
User Defined Adjustments: An \$23.88) Annual Misc Supply Par Total	nnual Ground Engaging Component (US Irts (USD \$506.97 -> USD \$0.00) Annua Standard Value	SD \$2,534.87 -> USD \$0.00) Mech I Field Repair Parts Cost (USD \$2, User Adjusted Value	anics Wage (USD \$63.11 -> USD 534.87 -> USD \$3,041.85) Variance
User Defined Adjustments: An \$23.88) Annual Misc Supply Par Total Hourly Ownership Costs	nnual Ground Engaging Component (US arts (USD \$506.97 -> USD \$0.00) Annua Standard Value USD \$14.55/hr	SD \$2,534.87 -> USD \$0.00) Mech I Field Repair Parts Cost (USD \$2, User Adjusted Value USD \$12.35/hr	anics Wage (USD \$63.11 -> USD 534.87 -> USD \$3,041.85) Variance -15.1%
User Defined Adjustments: An \$23.88) Annual Misc Supply Par Total Hourly Ownership Costs Hourly Operating Costs	nnual Ground Engaging Component (US arts (USD \$506.97 -> USD \$0.00) Annua Standard Value USD \$14.55/hr USD \$10.12/hr	SD \$2,534.87 -> USD \$0.00) Mech I Field Repair Parts Cost (USD \$2, User Adjusted Value USD \$12.35/hr USD \$4.78/hr	anics Wage (USD \$63.11 -> USD 534.87 -> USD \$3,041.85) Variance -15.1% -52.7%
User Defined Adjustments: An \$23.88) Annual Misc Supply Par Total Hourly Ownership Costs Hourly Operating Costs Total Hourly Cost	nnual Ground Engaging Component (US arts (USD \$506.97 -> USD \$0.00) Annua Standard Value USD \$14.55/hr USD \$10.12/hr	SD \$2,534.87 -> USD \$0.00) Mech I Field Repair Parts Cost (USD \$2, User Adjusted Value USD \$12.35/hr USD \$4.78/hr	anics Wage (USD \$63.11 -> USD 534.87 -> USD \$3,041.85) Variance -15.1% -52.7%
User Defined Adjustments: An \$23.88) Annual Misc Supply Par Total Hourly Ownership Costs Hourly Operating Costs Total Hourly Cost	nnual Ground Engaging Component (US arts (USD \$506.97 -> USD \$0.00) Annua Standard Value USD \$14.55/hr USD \$10.12/hr USD \$24.67	SD \$2,534.87 -> USD \$0.00) Mech I Field Repair Parts Cost (USD \$2, User Adjusted Value USD \$12.35/hr USD \$4.78/hr USD \$17.13/hr	anics Wage (USD \$63.11 -> USD 534.87 -> USD \$3,041.85) Variance -15.1% -52.7% -30.5%

Revised Date: 1st half 2021



All prices shown in US dollars (\$)

#### **Rental Rate Blue Book®**

May 24, 2020

<b>Hitachi EX3600-5 (disc</b> Hydraulic Shovels	. 2009)				A BAN	
Size Class: 150.1 MTons & Over Weight: 772000 Ibs					BC	
Configuration for EX3	3600-5 (disc. 200	9)				
Bucket Capacity - Heaped Operating Weight	27.4 cu y 350.0 mt		Net Horsepov Power Mode	ver	1880.0 hp Diesel	
Blue Book Rates						
** FHWA Rate is equal to	the monthly owners	nip cost divided by 17	6 plus the hourly e	stimated operating	cost.	
		Ownership	Costs		Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$77,000.00	USD \$21,560.00	USD \$5,390.00	USD \$810.00	USD \$511.75	USD \$949.25
Adjustments						
Region ( Las Cruces, New Mexico: 90.4%)	(USD \$7,392.00)	(USD \$2,069.76)	(USD \$517.44)	(USD \$77.76)		
Model Year (2009: 100%)	-	-		-		
Adjusted Hourly Ownership Cost (100%)	-	-	<u> </u>	-		
Hourly Operating Cost (1009	%)				-	
Total:	USD \$69,608.00	USD \$19,490.24	USD \$4,872.56	USD \$732.24	USD \$511.75	USD \$907.25
New Astine Use Dates						Hourly
Non-Active Use Rates						•
Standby Rate						USD \$217.52
Idling Rate	0					USD \$648.62
Rate Element Allocat	tion					
Element			Percentage		Value	)
Depreciation (ownership)			33%		USD \$25,410	0.00/mo
Overhaul (ownership)			45%		USD \$34,650	0.00/mo
CFC (ownership)			10%		USD \$7,700	.00/mo
Indirect (ownership)			12%		USD \$9,240	.00/mo
Fuel (operating) @ USD 3.0	7		49%		USD \$253	.12/hr

Revised Date: 1st half 2020

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All prices shown in US dollars (\$)

#### Adjustments for EX3600-5\_2020 in All Saved Models

May 9, 2020

Hitachi EX3600-5 (disc. 2009) Hydraulic Shovels Size Class: 150.1 MTons & Over Weight: 772000 lbc	)		
772000 lbs			
Configuration for EX3600-	5 (disc. 2009)		~
Bucket Capacity - Heaped Operating Weight	27.4 cu yd 350.0 mt	Net Horsepower Power Mode	1880.0 hp Diesel
Hourly Ownership Costs			<u> </u>
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$157.54/hr	USD \$148.69/hr	-5.6%
Cost of Facilities Capital (CFC)	USD \$48.31/hr	USD \$44.14/hr	-8.6%
Overhead	USD \$72.89/hr	USD \$66.17/hr	-9.2%
Overhaul Labor	USD \$32.02/hr	USD \$11.25/hr	-64.9%
Overhaul Parts	USD \$126.74/hr	USD \$115.05/hr	-9.2%
Total Hourly Ownership Cost: User Defined Adjustments: Sal	<b>USD \$437.50/hr</b> les Tax (5.1% -> 0%) Annual Use H	USD \$385.29/hr lours (1,850hrs -> 2,038hrs)	-11.9%
Hourly Operating Costs			
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$42.52/hr	USD \$14.94/hr	-64.9%
Field Parts	USD \$138.78/hr	USD \$45.35/hr	-67.3%
Ground Engaging Component (GEC	) USD \$22.20/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$253.95/hr	USD \$82.72/hr	-67.4%
Lube	USD \$57.50/hr	-	-
Wage (USD \$61.70 -> USD \$23. \$205,391.61 -> USD \$92,426.22	el (USD \$3.07 -> USD \$1.00) Annu 88) Annual Misc Supply Parts (USE	USD \$200.51/hr al Ground Engaging Component (USD \$ 0 \$51,347.90 -> USD \$0.00) Annual Fie	
Total			
	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$437.50/hr	USD \$385.29/hr	-11.9%
Hourly Operating Costs	USD \$514.96/hr	USD \$200.51/hr	-61.1%
Total Hourly Cost	USD \$952.46	USD \$585.81/hr	-38.5%
Non-active use rates			
	Standard Value	User Adjusted Value	Variance
Standby	USD \$278.74/hr	USD \$258.99/hr	-7.1%
Idle	USD \$691.45/hr	USD \$468.01/hr	-32.3%
Revised Date: 1st half 2020			



All prices shown in US dollars (\$)

## **Rental Rate Blue Book®**

May 24, 2020

Komatsu HD1500-5 (c	disc. 2008)						
Mechanical Drive Rear Dur	mps						
Size Class: 105 - 139 MTons Weight: 221481 Ibs							
Configuration for HD	01500-5 (d	disc. 200	)8)				
Body Capacity (StruckH	leaned)	710-10	2.0 cu yd	Net Horsepov	ver	1406.0 hp	
Power Mode	ioupou)	Diesel	210 00 90	Rated Payloa		136.0 mt	
Blue Book Rates							
** FHWA Rate is equal to	the month	lv owners	hip cost divided by 1	76 plus the hourly e	stimated operating	ı cost.	
		,	Ownership		хO	Estimated Operating Costs	FHWA Rate**
	Month	nly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$28,	205.00	USD \$7,900.00	USD \$1,975.00	USD \$295.00	USD \$164.82	USD \$325.08
Adjustments							
Region ( Las Cruces, New Mexico: 91.1%)	(USD \$2,5	510.25)	(USD \$703.10)	(USD \$175.77)	(USD \$26.25)		
Model Year (2008: 100%)	-		-	0	-		
Adjusted Hourly Ownership Cost (100%)	-		-		-		
Hourly Operating Cost (100	0%)					-	
Total:	USD \$25,	694.76	USD \$7,196.90	USD \$1,799.22	USD \$268.74	USD \$164.82	USD \$310.81
Non-Active Use Rates	5						Hourly
Standby Rate	-						USD \$83.22
Idling Rate			)				USD \$232.04
Rate Element Alloca	tion						
Element				Percentage		Value	
Depreciation (ownership)				36%		USD \$10,153	.80/mo
Overhaul (ownership)				43%		USD \$12,128	.15/mo
CFC (ownership)				10%		USD \$2,820.	.50/mo
Indirect (ownership)				11%		USD \$3,102.	.55/mo
Fuel (operating) @ USD 3.	07			52%		USD \$86.0	)5/hr

Revised Date: 1st half 2020

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All prices shown in US dollars (\$)

# Adjustments for HD1500-5\_2020 in All Saved Models

May 9, 2020

Komatsu HD1500-5 (disc. 200 Mechanical Drive Rear Dumps	8)		
Size Class: 105 - 139 MTons Weight: 204404 Ibs			
221481 lbs			
Configuration for HD1500-5	(disc. 2008)		<u> </u>
Body Capacity (Struck–Heaped) Power Mode	71.0 - 102.0 cu yd Diesel	Net Horsepower Rated Payload	1406.0 hp 136.0 mt
Iourly Ownership Costs			
	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$52.76/hr	USD \$49.62/hr	-5.9%
Cost of Facilities Capital (CFC)	USD \$15.90/hr	USD \$14.72/hr	-7.4%
Dverhead	USD \$24.81/hr	USD \$22.84/hr	-8%
Overhaul Labor	USD \$37.52/hr	USD \$13.37/hr	-64.4%
Overhaul Parts	USD \$28.17/hr	USD \$25.93/hr	-8%
Total Hourly Ownership Cost: Jser Defined Adjustments: Sale	<b>USD \$159.16/hr</b> s Tax (5.1% -> 0%) Annual Use H	USD \$126.47/hr Hours (1,850hrs -> 2,010hrs)	-20.5%
Hourly Operating Costs		0	
	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$21.68/hr	USD \$7.72/hr	-64.4%
Field Parts	USD \$11.94/hr	USD \$1.83/hr	-84.7%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Гіге	USD \$25.84/hr	-	-
Electrical/Fuel	USD \$86.33/hr	USD \$28.12/hr	-67.4%
Lube	USD \$19.34/hr	-	-
	USD \$165.13/hr (USD \$3.07 -> USD \$1.00) Mech Field Repair Parts Cost (USD \$18	USD \$82.86/hr anics Wage (USD \$61.70 -> USD \$23. ,414.32 -> USD \$3,682.86)	<b>-49.8%</b> 88) Annual Misc Supply Parts (USD
Total			
			Marianaa
	Standard Value	Liser Adjusted Value	
Hourly Ownership Costs	Standard Value	User Adjusted Value	-20 5%
	USD \$159.16/hr	USD \$126.47/hr	-20.5%
Hourly Operating Costs	USD \$159.16/hr USD \$165.13/hr	USD \$126.47/hr USD \$82.86/hr	-20.5% -49.8%
Hourly Operating Costs Total Hourly Cost	USD \$159.16/hr	USD \$126.47/hr	-20.5%
Hourly Operating Costs Total Hourly Cost	USD \$159.16/hr USD \$165.13/hr USD \$324.29	USD \$126.47/hr USD \$82.86/hr USD \$209.33/hr	-20.5% -49.8% <b>-35.4%</b>
Hourly Ownership Costs Hourly Operating Costs Total Hourly Cost Non-active use rates	USD \$159.16/hr USD \$165.13/hr USD \$324.29 Standard Value	USD \$126.47/hr USD \$82.86/hr USD \$209.33/hr User Adjusted Value	-20.5% -49.8% -35.4% Variance
Hourly Operating Costs Total Hourly Cost	USD \$159.16/hr USD \$165.13/hr USD \$324.29	USD \$126.47/hr USD \$82.86/hr USD \$209.33/hr	-20.5% -49.8% - <b>35.4%</b>

Revised Date: 1st half 2020

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All prices shown in US dollars (\$)

# Spec Finder

Caterpillar 319D L (disc. 2012) Crawler Mounted Hydraulic Excavators

Size Class: 19.1 - 21.0 MTons Weight: 19.9 Ibs

#### Specifications

Boom, Bucket, Loader, Platform, and Stick	
Boom Length	209.0 ft
Boom Type	1-Piece
Bucket Capacity	1.0 cu yd
Bucket Capacity Range	0.59 cu yd
Bucket Digging Force-Standard	18142.0 lbf
Bucket Type	Heavy Duty
Bucket Width	36.0 in
Stick Length	126.0 in
Engine	
Displacement	259.0 cid
Engine	C4.2
Engine Manufacturer	Caterpillar
Gross Horsepower	131.0 hp
Horsepower	125.0 hp
Power Mode	Diesel
Fluid Capacities	
Fuel Tank Capacity	79.3 gal
Hydraulic Tank Capacity	28.0 gal
Hydraulics	
Main Pump - Maximum Flow	100.1 gal/min
Standard Relief Pressure	5076.0 psi
Performance	
Front Lift Capy @ 20' G.L.	13000.0 lbs
Maximum Drawbar Pull	46466.0 lbs
Maximum Swing Speed	11.1 rpm
Side Lift Capy @ 20' G.L.	6700.0 lbs
Stick Digging Force - Standard	18142.0 lbs
Travel Speed - High	3.0 mph
Undercarriage	
Ground Pressure	5.1 psi
No. of Lower/Track Rollers	7.0
No. of Upper/Carrier Rollers	2.0
Track Gauge	87.0 in
Track Length	175.0 in
Track Shoe Width	28.0 in
Weights & Dimensions	
Digging Depth (8' Flat Bottom)	265.0 in
Maximum Digging Depth	271.0 in
Maximum Dumping Height	269.0 in
Maximum Reach at Ground Level	380.0 in
Operating Weight	19.9 lbs
Overall Height	139.0 in
Overall Length	345.0 in
Overall Track WidthRetracted	114.0 in
Overall Width	114.0 in
Tail Swing Radius	98.0 in
Undercarriage Ground Clearance	17.0 in
-	
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January 8, 2021

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www.equipmentwatch.com



All prices shown in US dollars (\$)

# **Spec Finder**

Caterpillar 725 (disc. 2014) Articulated Rear Dumps

Size Class: 20 - 25 MTons Weight: N/A

#### Specifications

Specifications	
Axles & Tires	
Axle Configuration	6 X 6
Front Tire Size	23.5 R25
Rear Tire Size	23.5 R25
Dump Body	20.0120
Body Capacity	14.3 cu yd
Body Floor-Plate Thickness	0.55 in
Body Front-Plate Thickness	0.31 in
Body Sidewall Thickness	0.47 in
Dump Angle	70.0 degrees
Dump Cycle (Hoist/Raise)	10.0 sec
Dump Cycle (Power Down)	8.0 sec
Engine	
Displacement	680.0 cid
Emissions Tier	Tier 3
Engine	C11 ACERT
Engine Manufacturer	Caterpillar
Horsepower	301.0 hp
Number of Cylinders	6.0
Power Mode	Diesel
Fluid Capacities	
Fuel Tank Capacity	94.0 gal
Hydraulic System Capacity	49.0 gal
Steering	
Steering Angle	45.0 degrees
Transmission	
Maximum Speed	35.0 mph
Number of Speeds	6F/1R
Transmission	Autoshift
Transmission Manufacturer	Caterpillar
Weights & Dimensions	
Center Axle Weight (GVW)	34440.0 lbs
Front Axle Weight (GVW)	33135.0 lbs
Gross Weight	101085.0 lbs
Ground Clearance	18.0 in
Inside Turning Radius	146.0 in
Load Over Height	108.0 in
Net Weight	49075.0 lbs
Outside Turning Radius	286.0 in
Overall Machine Height	135.0 in
Overall Machine Length	389.0 in
Overall Machine Width	109.0 in
Rated Payload	23.6 mt
Rear Axle Weight (GVW)	33510.0 lbs
Wheelbase	215.0 in

January 8, 2021

The equipment represented in this report has been exclusively prepared for MANDY LILLA



All prices shown in US dollars (\$)

# **Spec Finder**

January 8, 2021

Spec Finder	January 8, 2021
Caterpillar 777F (disc. 2012) Mechanical Drive Rear Dumps	
Size Class: 90 - 104 MTons Weight: N/A	
Specifications	
Axles & Tires	
Front Tire Size	27.00 R49
Rear Tire Size	27.00 R49
Brakes	
Parking Brake	SAHR
Dump Body	Ed Doursed
Body Capacity Dump Angle	54.8 cu yd 49.4 degrees
Dump Cycle (Hoist/Raise)	15.0 sec
Dump Cycle (Power Down)	13.0 sec
Engine	
Displacement	1959.0 cid
Engine	CAT C32 ACERT
Engine Manufacturer	Caterpillar
Engine Torque @ RPM	4716Nm@ ft-lb
Gross Horsepower	1016.0 hp
Horsepower	938.0 hp
Number of Cylinders	12.0
Power Mode Rated RPM	Diesel 1750.0 rpm
Fluid Capacities	1750.0 tpm
Fuel Tank Capacity	300.0 gal
Hydraulic System Capacity	50.0 gal
Transmission	
Maximum Speed	40.1 mph
Number of Speeds	7F/1R
Transmission	Powershift
Transmission Manufacturer	Caterpillar
Weights & Dimensions	000000 0 15 -
Gross Weight Ground Clearance	360000.0 lbs 35.0 in
Inside Turning Diameter	996.0 in
Load Over Height	172.0 in
Maximum Payload	90.7 mt
Overall Machine Height	204.0 in
Overall Machine Length	415.0 in
Overall Machine Width	238.0 in
Rated Payload	90.7 mt
Wheelbase	180.0 in

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)



All prices shown in US dollars (\$)

# **Spec Finder**

Hitachi EX3600-5 (disc. 2009) Hydraulic Shovels

Size Class: 150.1 MTons & Over Weight: 350.0 Ibs

#### Specifications

Boom, Bucket, Loader, Platform, and Stick	
Boom Length	311.0 ft
Bucket Capacity	27.4 cu yd
Bucket Digging Force-Standard	254000.0 lbf
Bucket Type	Bottom Dump
Bucket Width	155.0 in
Engine	
Displacement	3990.0 cid
Engine	S16R-TAA
Engine Manufacturer	Hitachi
Gross Horsepower	1880.0 hp
Horsepower	1880.0 hp
Number of Cylinders	16.0
Power Mode	Diesel
Rated RPM	1600.0 rpm
Fluid Capacities	
Fuel Tank Capacity	1900.0 gal
Hydraulics	
Hydraulic Pumps - Type	Piston
Main Pump - Maximum Flow	1056.0 gal/min
Standard Relief Pressure	4270.0 psi
Performance	
Maximum Drawbar Pull	395700.0 lbs
Maximum Swing Speed	3.2 rpm
Stick Digging Force - Standard	269000.0 lbs
Travel Speed - High	1.4 mph
Undercarriage	
Ground Pressure	26.3 psi
Track Gauge	217.0 in
Track Shoe Width	50.0 in
Weights & Dimensions	
Component Weight-Counterweight	88600.0 lbs
Height to Top of Cab	305.0 in
Length of Track on Ground	262.0 in
Maximum Digging Depth	154.0 in
Maximum Dumping Height	433.0 in
Maximum Reach at Ground Level	599.0 in
Operating Weight	350.0 lbs
Overall Track WidthRetracted	267.0 in
Tail Swing Radius	262.0 in
Track Length	342.0 in
Undercarriage Ground Clearance	36.0 in
Upperstructure Width	355.0 in

January 8, 2021

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)



All prices shown in US dollars (\$)

# **Spec Finder**

Komatsu 730E Electric Drive Rear Dumps

Size Class: 170 - 199 MTons Weight: N/A

#### Specifications

Specifications	
Axles & Tires	
Front Tire Size	37.00R57
Rear Tire Size	37.00R57
Brakes	
Elec. Dynamic Retarding (Max.)	3700.0 hp
Parking Brake	SAHR
Service Brakes - Front	Wheel Spd Disc
Service Brakes - Rear	Dual Disc
Dump Body	
Body Capacity	101.0 cu yd
Body Floor-Plate Thickness	0.75 in
Body Front-Plate Thickness	0.47 in
Body Sidewall Thickness	0.35 in
Dump Angle	45.0 degrees
Dump Cycle (Hoist/Raise)	21.0 sec
Dump Cycle (Power Down) Electric Drive	15.0 sec
Alternator/Generator Mfr	General Electric
Alternator/Generator Model	GTA-22
Maximum Travel Speed	34.6 mph
System Current	AC/DC
Wheel Motor Manufacturer	General Electric
Wheel Motor Model	GE788
Wheel Motor Planetary Ratio	26.825:1
Engine	20.020.1
Engine	SSA16V159
Engine Manufacturer	Komatsu
Gross Horsepower	2000.0 hp
Horsepower	1860.0 hp
Number of Cylinders	16.0
Power Mode	Diesel
Rated RPM	1900.0 rpm
Fluid Capacities	1900.0 ipin
Fuel Tank Capacity	850.0 gal
Hydraulic System Capacity Neights & Dimensions	193.0 gal
-	4104.0 :
Clearance Circle	1104.0 in
Gross Weight	715000.0 lbs
Ground Clearance	45.0 in
Height of Rear Body (Empty)	221.0 in
Height to Cab Guard - Loading	246.0 in
Maximum Payload	186.0 mt
Net Weight	309950.0 lbs
Overall Machine Length	505.0 in
Overall Machine Width	297.0 in
Rated Payload	183.7 mt
Wheelbase	232.0 in

January 8, 2021

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

www.equipmentwatch.com



All prices shown in US dollars (\$)

# **Spec Finder**

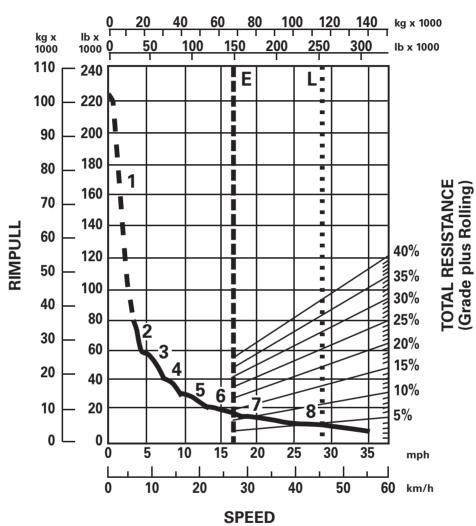
January 8, 2021

Spec Finder	January 8, 2021
Komatsu HD1500-5 (disc. 2008) Mechanical Drive Rear Dumps	
Size Class: <b>105 - 139 MTons</b> Weight: N/A	
Specifications	
Axles & Tires	
Front Tire Size	33.00 R51
Rear Tire Size	33.00 R51 Dual
Dump Body	
Body Capacity	71.0 cu yd
Dump Cycle (Hoist/Raise)	15.0 sec
Dump Cycle (Power Down)	15.0 sec
Engine	
Displacement	2746.0 cid
Engine	SDA12V160
Engine Manufacturer	Komatsu
Engine Torque @ RPM	4285.0 ft-lb
Gross Horsepower	1486.0 hp
Horsepower	1406.0 hp
Number of Cylinders	12.0
Power Mode	Diesel
Rated RPM	1900.0 rpm
Fluid Capacities	
Fuel Tank Capacity	560.0 gal
Hydraulic System Capacity	238.0 gal
Transmission	
Maximum Speed	36.0 mph
Number of Speeds	7F/1R
Transmission Transmission Manufacturer	Powershift
Weights & Dimensions	Komatsu
Clearance Circle	960.0 in
Gross Weight	550000.0 lbs
Ground Clearance	35.0 in
Load Over Height	195.0 in
Maximum Payload	149.0 mt
Net Weight	221481.0 lbs
Overall Machine Height	230.0 in
Overall Machine Length	448.0 in
Overall Machine Width	261.0 in
Rated Payload	136.0 mt
Wheelbase	213.0 in

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

# **Appendix D.3**

Equipment Productivity Curve Fits



#### **GROSS WEIGHT\***

\*at sea level

#### KEY

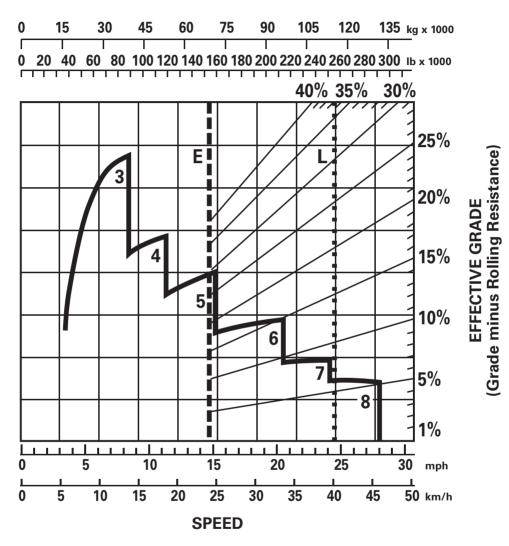
- 1 1st GearTorque Converter Drive
- 2 2nd GearTorque Converter Drive
- 3 3rd Gear Direct Drive
- 4 4th Gear Direct Drive
- 5 5th Gear Direct Drive
- 6 6th Gear Direct Drive
- 7 7th Gear Direct Drive
- 8 8th Gear Direct Drive

- KEY
- E Empty 72 804 kg (160,505 lb)
- L Loaded 119 978 kg (264,505 lb)

24

657G Retarding ● 37.25/R35 Tires

**GROSS WEIGHT\*** 



\*at sea level

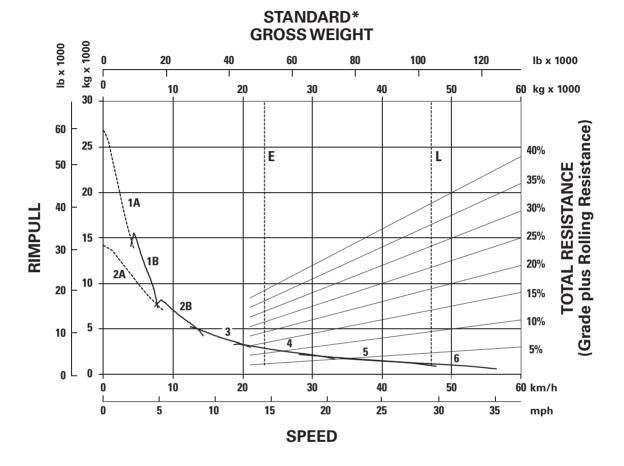
#### KEY

3 — 3rd Gear Direct Drive
4 — 4th Gear Direct Drive
5 — 5th Gear Direct Drive
6 — 6th Gear Direct Drive
7 — 7th Gear Direct Drive
8 — 8th Gear Direct Drive

KEY

E – Empty 72 804 kg (160,505 lb)

L - Loaded 119 978 kg (264,505 lb)



# KEY

- 1A 1st Gear (Converter Drive)
- 1B 1st Gear (Direct Drive)
- 2A 2nd Gear (Converter Drive
- 2B 2nd Gear (Direct Drive)
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear

#### KEY

- E Empty 23 040 kg (50,795 lb)
- L Loaded 47 040 kg (103,707 lb)

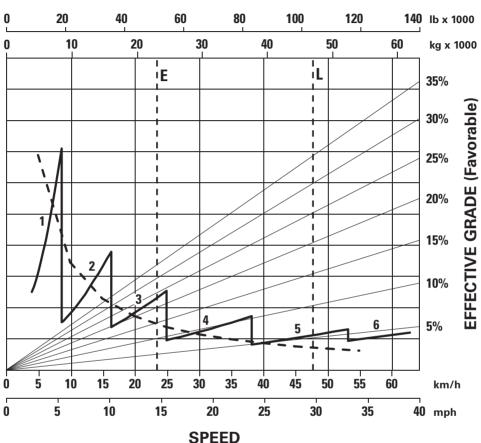
\*At sea level.

**Articulated Trucks** 

725C2 Brake/Retarder Performance Curve

• 23.5R25Tires

• Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final)



**GROSS WEIGHT** 

KEY

- 1 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear

KEY

E – Empty 23 040 kg (50,795 lb)

L – Loaded 47 040 kg (103,707 lb)

769D Rimpull-Speed-Gradeability • 18.00R33 Tires

20 30 40 50 60 100 150 200 kg x 1000 80 Г Т 50 100 200 250 300 400 500 lb x 1000 150 kg x lb x 🛛 1000 1000 **50** | 120 В A 100 30% 40 i 20% I 30 70 15% i 1A I 12% 50 20 10% 8% 30 TOTAL RESISTANCE (Grade plus Rolling) 6% 10 20 4% 3 RIMPULL 5 Δ 10 2% 5 3 6 5 2 7 3 Ē 1 2 0.50 1 0.30 0.5 0 5 10 15 20 25 30 35 40 45 50 mph 15 20 25 30 35 40 45 50 55 60 0 5 10 65 70 75 80 km/h SPEED

#### **GROSS WEIGHT**

KEY

- 1A 1st Gear (Torque Converter)
- 1B 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

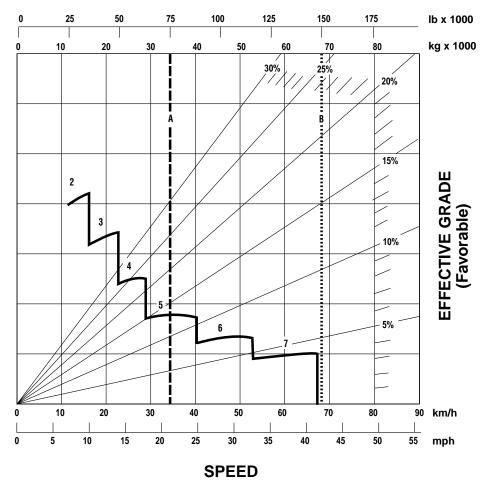
KEY

A — Empty 31 250 kg (68,900 lb)

B — Max GMW 68 182 kg (150,000 lb)

769D Brake PerformanceContinuous grade retarding

**GROSS WEIGHT** 





KEY

- 2 2nd Gear 3 3rd Gear 4 4th Gear 5 5th Gear 6 6th Gear 7 7th Gear
- 7 7th Gear

KEY

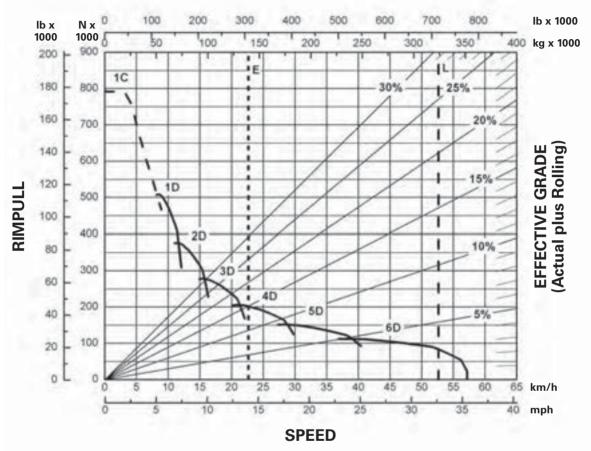
A — Empty 31 250 kg (68,900 lb)

B — Max GMW 68 182 kg (150,000 lb)

### Mining & Off-Highway Trucks

789D 2100 HP Rimpull-Speed-Gradeability

- 37.00R57 Tires\*\*
- 1593 mm (5'2.7") Tire Radius



**GROSS WEIGHT** 

#### KEY

- 1C 1st Gear (Torque Converter)
- 1D– 1st Gear
- 2D 2nd Gear
- 3D 3rd Gear
- 4D 4th Gear
- 5D 5th Gear
- 6D 6th Gear

- KEY
- E Empty Operating Weight 141 214 kg (311,324 lb)\*
- L Target GMW 324 319 kg (715,000 lb)
- \*Truck equipped with sideboards and liners.
- \*\*At Sea Level.

789D Brake PerformanceContinuous Grade Retarding

**GROSS WEIGHT** 100 500 700 0 200 300 400 600 800 lb x 1000 50 100 150 300 350 200 250 400 kg x 1000 E 30% 25% 20% 15% EFFECTIVE GRADE (Actual minus Rolling) 10% 2 5% 6 15 20 25 30 35 40 45 55 0 5 10 50 60 km/h 0 5 10 15 20 25 30 35 mph **SPEED** 



KEY

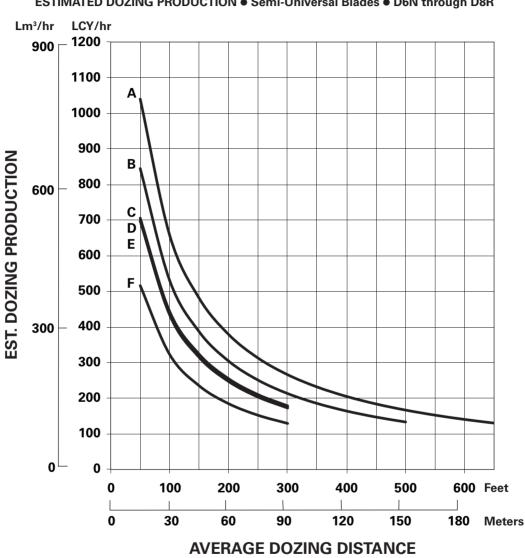
- 1 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear

- KEY
- E Empty Operating Weight 141 214 kg (311,324 lb)\*
- L Target GMW 324 319 kg (715,000 lb)

\*Truck equipped with sideboards and liners.

\*\*At Sea Level.

19

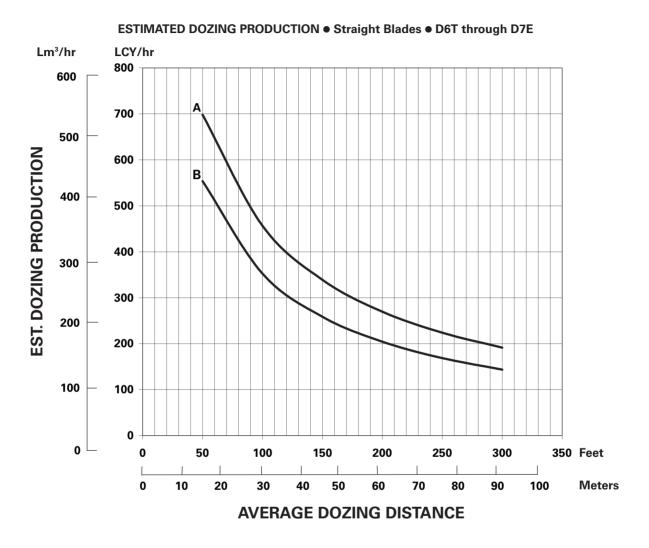


ESTIMATED DOZING PRODUCTION • Semi-Universal Blades • D6N through D8R

KEY

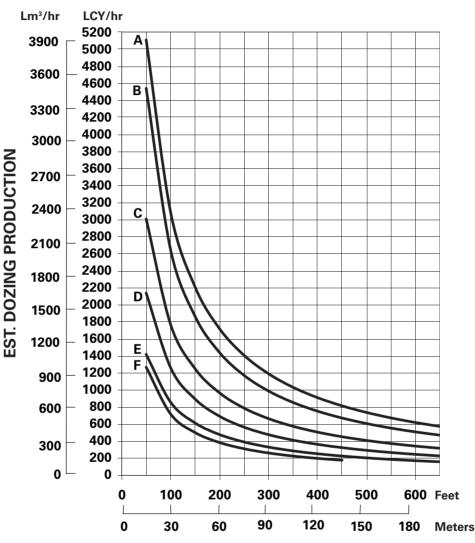
- A D8R
- B D7R
- C D6T Tier 4 Interim/Stage IIIB/Japan 2011 (Tier 4 Interim)
- D D6T
- E D6R
- F D6N

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.



KEY A — D7E B — D6T

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.



ESTIMATED DOZING PRODUCTION 

Universal Blades

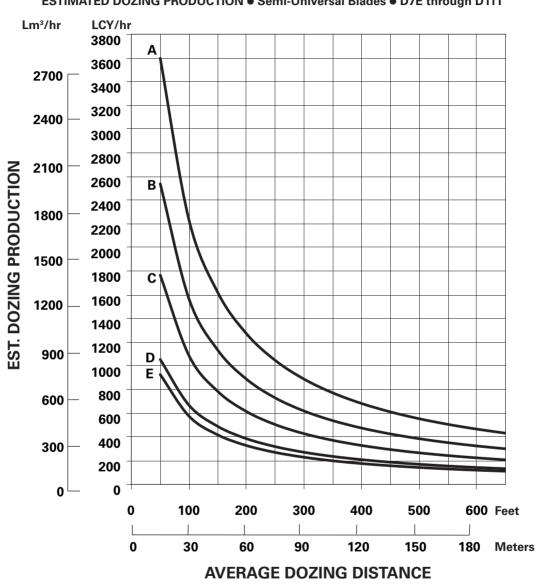
D7E through D11T CD

**AVERAGE DOZING DISTANCE** 

KEY

- A D11T CD B – D11T
- C D10T2
- D D9T
- E D8T
- F D7E

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts. 19

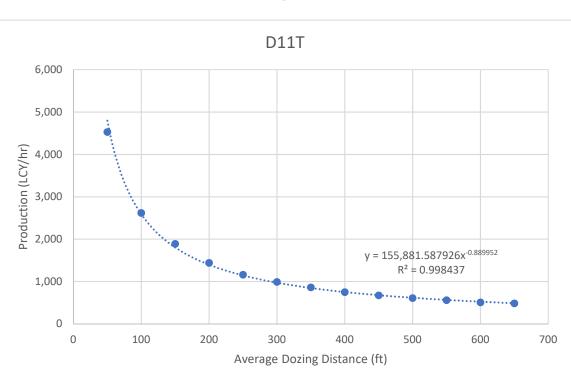


ESTIMATED DOZING PRODUCTION • Semi-Universal Blades • D7E through D11T

KEY

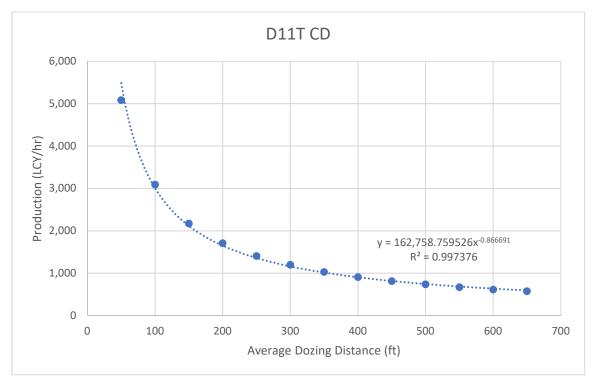
- A D11T B - D10T2
- C D9T
- D D8T
- E D7E

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

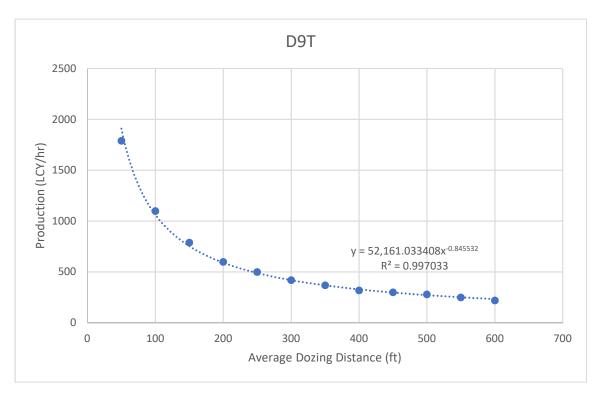


**Dozing Production** 

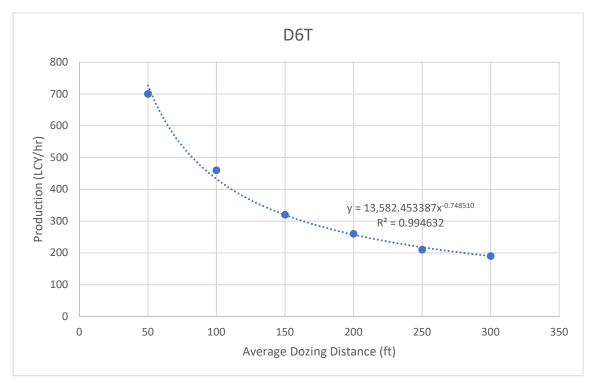
Caterpillar Performance Handbook Edition 47, 19-51



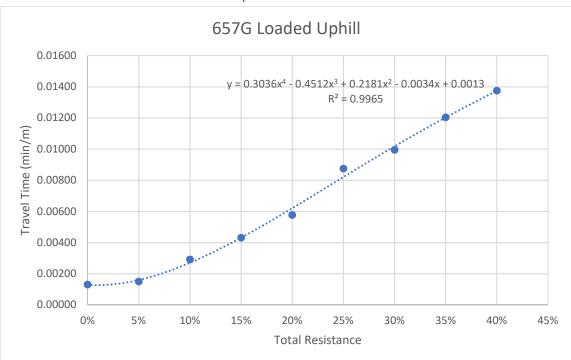
Caterpillar Performance Handbook Edition 47, 19-51



Caterpillar Performance Handbook Edition 47, 19-52

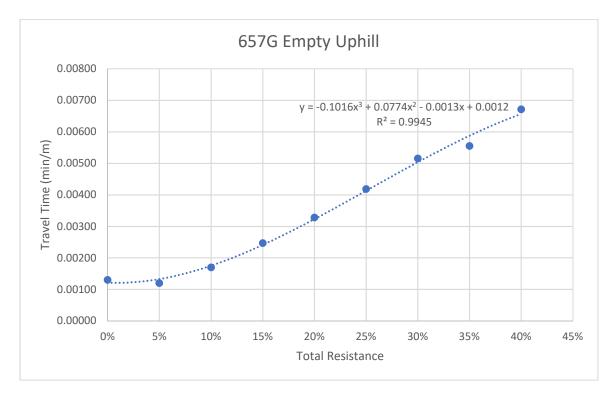


Caterpillar Performance Handbook Edition 47, 19-53

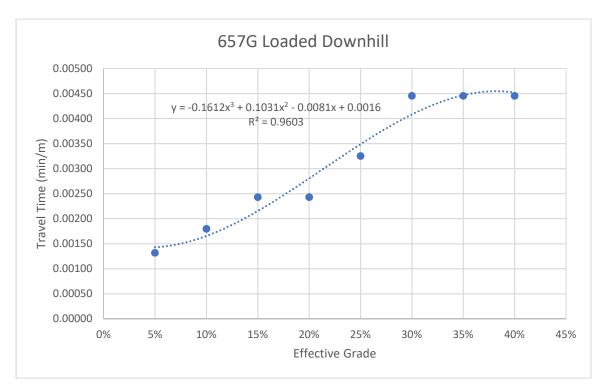


Scraper Haul Travel Time

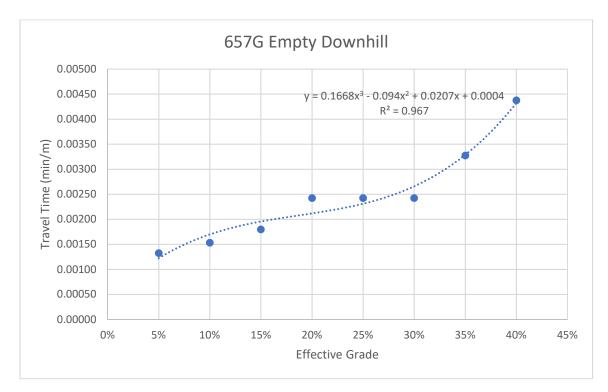
Caterpillar Performance Handbook Edition 47, 24-29



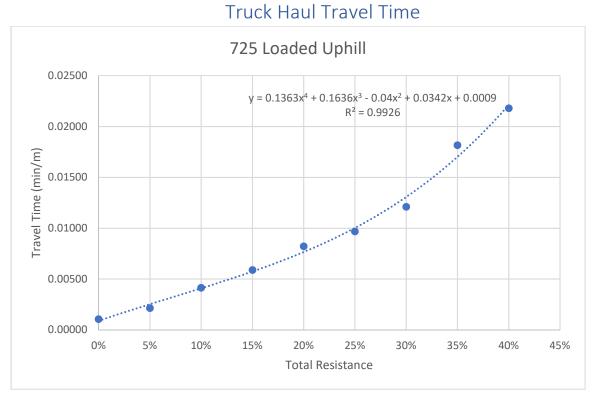
Caterpillar Performance Handbook Edition 47, 24-29



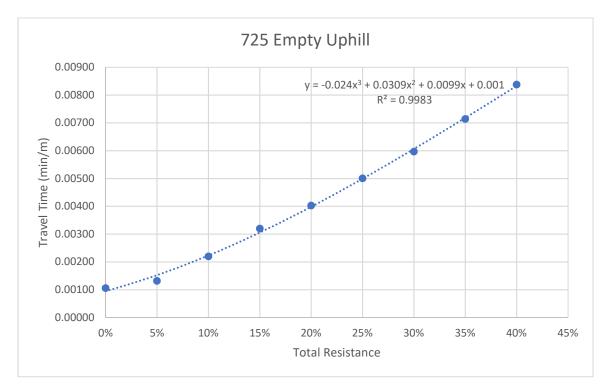
Caterpillar Performance Handbook Edition 47, 24-30



Caterpillar Performance Handbook Edition 47, 24-30



Caterpillar Performance Handbook Edition 47, 1-9



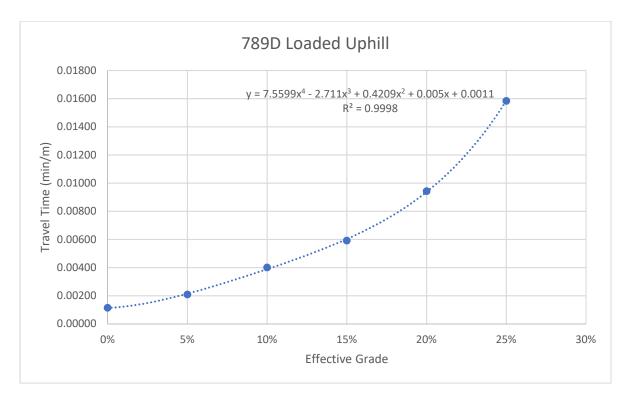
Caterpillar Performance Handbook Edition 47, 1-9



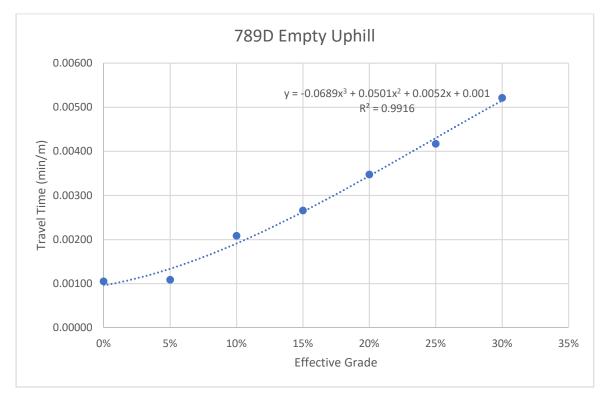
Caterpillar Performance Handbook Edition 47, 1-10



Caterpillar Performance Handbook Edition 47, 1-10



Caterpillar Performance Handbook Edition 47, 10-64



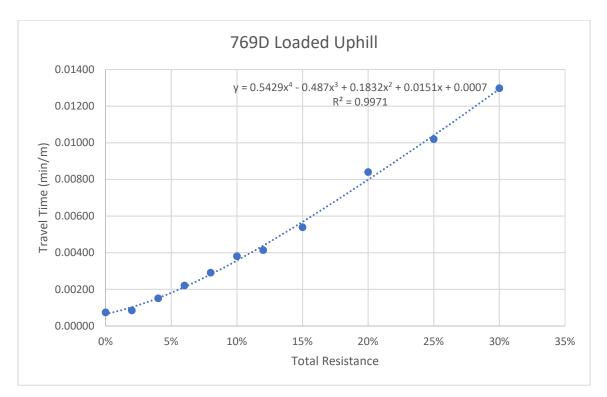
Caterpillar Performance Handbook Edition 47, 10-64



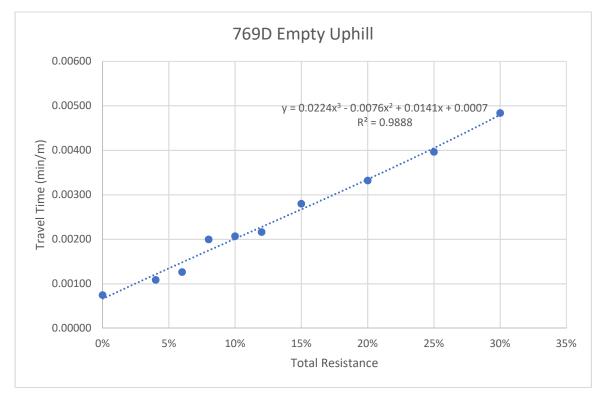
Caterpillar Performance Handbook Edition 47, 10-65



Caterpillar Performance Handbook Edition 47, 10-65



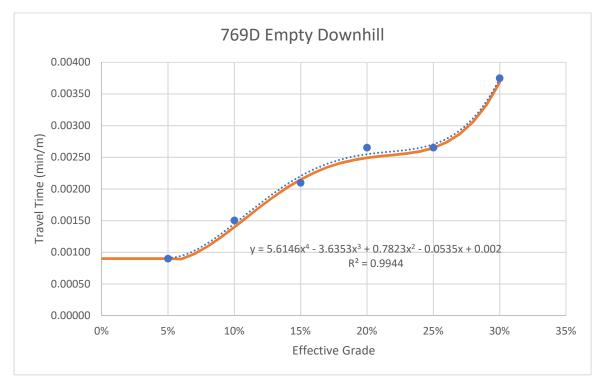
Caterpillar Performance Handbook Edition 29, 9-10



Caterpillar Performance Handbook Edition 29, 9-10

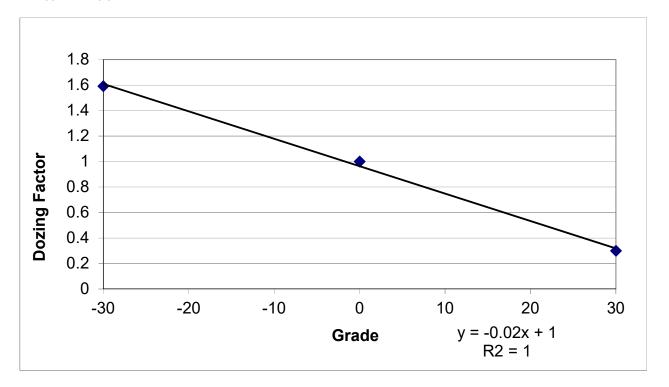


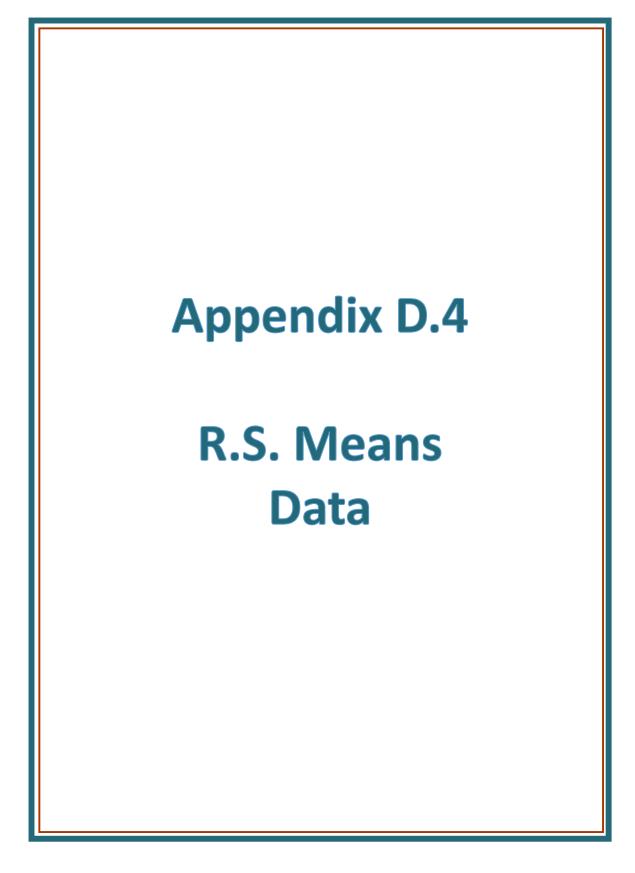
Caterpillar Performance Handbook Edition 29, 9-11



Caterpillar Performance Handbook Edition 29, 9-11

Grade vs.	Dozing Factor
Grade %	Dozing Factor
0	1
-30	1.59
30	0.3





#### **RS Means Online Data**

#### Demolition - accessed January 6, 2021

Line Number	Description	Unit	Material	Labo	or	Equipment	Total	Data Release	CCI Location
024116130100	Building demolition, large urban projects, mixture of types, excludes foundation demolition, dump fees	C.F.	\$ -	\$	0.12	\$ 0.11	\$ 0.23	IYear 2021	NEW MEXICO / LAS CRUCES (880)
024116170400	Buillding footings and foundations demolition, floors, concrete slab on grade, plain concrete, 6" thick, excludes disposal costs and dump fees	S.F.	\$ -	\$	0.19	\$ 0.43	\$ 0.62	IVoor 2021	NEW MEXICO / LAS CRUCES (880)
260505100370	Non metallic sheathed cable, (Romex), #14, 3 wire, electrical demolition, remove	L.F.	\$ -	\$	0.63	\$ -	\$ 0.63	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
024113800200	Selective demolition, utility poles & cross arms, utility poles, wood, 35'-45' high	Ea.	\$ -	\$	189.74	\$ 30.82	\$ 220.56	IYear 2021	NEW MEXICO / LAS CRUCES (880)
130505750530	Steel tank, single wall, above ground, 5,000 thru 10,000 gallon, selective demolition, excluding foundation, pumps or piping	Ea.	\$ -	\$	601.32	\$ 458.22	\$ 1,059.54	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
130505750540	Steel tank, single wall, above ground, 15,000 thru 30,000 gallon, selective demolition, excluding foundation, pumps or piping	Ea.	\$ -	\$	841.00	\$ 1,257.05	\$ 2,098.05	IVoor 2021	NEW MEXICO / LAS CRUCES (880)
024113230900	Utility removal, hydrants, fire, remove only, excludes hauling	Ea.	\$ -	\$ :	328.68	\$ 70.15	\$ 398.83	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
024113400190	Selective demolition, metal drainage piping, CMP, steel, 48"-60", diameter, excludes excavation	L.F.	\$ -	\$	10.08	\$ 2.38	\$ 12.46	1Voor 2021	NEW MEXICO / LAS CRUCES (880)

#### Sludge/water removal from pipelines - accessed January 6, 2021

Line Number	Description	Unit	Material	Labor	Equipment	Total		Data Release	CCI Location
026510300320	Removal of underground storage tanks, petroleum storage tanks, non-leaking, remove sludge, water and remaining product from tank bottom of tank with vacuum truck, 9,000 - 12,000 gallon tank	Ea.	\$ -	\$ 103.60	\$ 201.94	\$	305.54	IYear 2021	NEW MEXICO / LAS CRUCES (880)

#### Revegetation - accessed January 6, 2021

Line Number	Description	Unit	Materia	I	Labo	r	Equi	ipment	Total		Data Release	CCI Location
015433201500	Rent disc harrow attchment for tractor, Excl. Hourly Oper. Cost.	Month	\$-		\$	-	\$	670.65	\$	670.65	Year 2021	NEW MEXICO / LAS CRUCES (880)
329343100560	Planting, trees, shrubs, and ground cover, medium soil, bare root seedlings, 3" to 5", includes planting only	Clab	\$ -		\$	0.37	\$	-	\$	0.37	Year 2021	NEW MEXICO / LAS CRUCES (880)

#### Concrete cutoff wall (dissipater [dissipation basin]) & Grade Control Wall - accessed January 6, 2021

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
033053406200	Structural concrete, in place, gravity retaining wall (3000 psi), 4' high, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing		\$ 155.23	\$ 101.84	\$ 5.51	\$ 262.58	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
033053403945	Structural concrete, in place, continuous strip footing (3000 psi), 36" wide x 12" deep, unreinforced, includes forms(4 uses), concrete (Portland cement Type I), placing and finishing, excludes reinforcing		\$ 127.01	\$ 43.47	\$ 0.31	\$ 170.79	1Voor 2021	NEW MEXICO / LAS CRUCES (880)

#### Wastes requiring special handling (cleanup, transportation, and disposal) - accessed January 6, 2021

Line Number	Description	Unit	Material	Labor	Equipment	Total		Data Release	CCI Location
028120101120	Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material,	Ton	¢	¢	¢	¢	161 00	Year 2021	NEW MEXICO / LAS
020120101120	minimum	1011	φ -	φ -	φ -	φ	101.00		CRUCES (880)
028120101130	Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material,	Ton	¢	¢	¢	¢	506.04	Year 2021	NEW MEXICO / LAS
020120101130	maximum	1011	φ -	φ -	φ -	φ	500.94		CRUCES (880)
028120101260	Hazardous waste cleanup/pickup/disposal, transportation to disposal site,	Mile	¢	¢	¢	¢	3 37	Year 2021	NEW MEXICO / LAS
020120101200	truckload = 80 drums or 25 C.Y. or 18 tons, minimum	IVIIIE	φ -	φ -	φ -	Ψ	3.37		CRUCES (880)

028120101270	Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80 drums or 25 C.Y. or 18 tons, maximum	Mile	\$ -	\$-	\$ -	\$ 6.18	Year 2021	NEW MEXICO / LAS CRUCES (880)
026510300320	Removal of underground storage tanks, petroleum storage tanks, non-leaking, remove sludge, water and remaining product from tank bottom of tank with vacuum truck, 9,000 - 12,000 gallon tank	Ea.	\$ -	\$ 103.60	\$ 201.94	\$ 305.54	Year 2021	NEW MEXICO / LAS CRUCES (880)

#### Perimeter Items - accessed January 6, 2021

Line Number	Description	Unit	Material	Labor	Equipment	Tota	I	Data Release	CCI Location
323113200800	Fence, chain link industrial, galvanized steel, 6 ga. wire, 2" posts @ 10' OC, 6' high, includes excavation, & concrete, excludes barbed wire	L.F.	\$ 20.63	\$ 3.20	\$ 0.8	2 \$	24.65	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
	Fence, chain link industrial, double swing gates, 6' high, 20' opening, includes excavation, posts & hardware in concrete	Opng.	\$ 568.54	\$ 309.40	\$ 79.0	7 \$	957.01	IVoor 2021	NEW MEXICO / LAS CRUCES (880)
101453200600	Signs, guide and directional signs, reflectorized, 12" x 18", excludes posts	Ea.	\$ 42.50	\$ 18.92	\$ 12.2	1 \$	73.63	IYear 2021	NEW MEXICO / LAS CRUCES (880)

#### Excavation- accessed January 6, 2021

Line Number	Description	Unit	Material	Labo	r	Equipment	Total	Data Release	CCI Location
312316466070	Excavating, bulk, dozer, open site, bank measure, common earth, 700 HP dozer, 300' haul	B.C.Y.	\$ -	\$	0.54	\$ 4.66	\$ 5.20	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
312316466010	Excavating, bulk, dozer, open site, bank measure, common earth, 700 HP dozer, 50' haul	B.C.Y.	\$ -	\$	0.16	\$ 1.39	\$ 1.55	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
312323205040	Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 22 C.Y. truck, cycle 1 mile, 5 MPH, excludes loading equipment	L.C.Y.	\$ -	\$	0.82	\$ 2.05	\$ 2.87	1Voor 2021	NEW MEXICO / LAS CRUCES (880)

#### Clay Fill - accessed January 11, 2021

Line Number	Description	Unit	Material	Labor	Equipment	Total		Data Release	CCI Location
312323156075	Borrow, clay, till, or blasted rock, 5 C.Y. bucket, loading and/or spreading, front end loader, track mounted (material cost only)	L.C.Y.	\$ 12.61	\$ -	\$ -	\$	12.61	1Voor 2021	NEW MEXICO / LAS CRUCES (880)

#### Substation Demo - accessed January 20, 2021

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
260505101570	Transformer, dry type, primary, 3 phase, to 600 V, 750 kVA, electrical demolition, remove, including removal of supports, wire & conduit terminations	Ea.	\$ -	\$ 928.05	\$ 141.11	\$ 1,069.16	1Voor 2021	NEW MEXICO / LAS CRUCES (880)
015433406300	Rent steam cleaner 100 gph, Incl. Hourly Oper. Cost.	Week	\$ -	\$ -	\$ 313.04	\$ 313.04	1Voor 2021	NEW MEXICO / LAS CRUCES (880)

Crew No.	Bar	e Costs		Incl. s O&P		ost bor-Hour	Crew No.	Bare	Costs		ncl. s O&P		Cost abor-Hour
Crew A-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew A-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Building Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$45.87	\$68.50
1 Concrete Saw, Gas Manual		113.70		125.07	14.21	15.63	1 Truck Driver (light)	48.80	390.40	73.00	584.00		
8 L.H., Daily Totals		\$468.90		\$655.07	\$58.61	\$81.88	1 Flatbed Truck, Gas, 1.5 Ton		198.50		218.35	8.27	9.10
					Bare	Incl.	24 L.H., Daily Totals		\$1299.30		\$1862.35	\$54.14	\$77.60
Crew A-1A	Hr.	Daily	Hr.	Daily	Costs	0&P						Bare	Incl.
1 Skilled Worker	\$57.10	\$456.80	\$85.90	\$687.20	\$57.10	\$85.90	Crew A-2A	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Shot Blaster, 20"		208.70		229.57	26.09	28.70	2 Laborers 1 Truck Driver (light)	\$44.40 48.80	\$710.40 390.40	\$66.25 73.00	\$1060.00 584.00	\$45.87	\$68.50
8 L.H., Daily Totals		\$665.50		\$916.77	\$83.19	\$114.60	1 Flatbed Truck, Gas, 1.5 Ton	40.00	390.40 198.50	75.00	218.35		
Crew A-1B	Hr.	Daily	Hr.	Dailv	Bare Costs	Incl. 0&P	1 Concrete Saw		112.85		124.14	12.97	14.27
1 Building Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	24 L.H., Daily Totals		\$1412.15		\$1986.48	\$58.84	\$82.77
1 Concrete Saw	Ş44.40	112.85	Ş00.2J	124.14	14.11	15.52						Bare	Incl.
8 L.H., Daily Totals		\$468.05		\$654.13	\$58.51	\$81.77	Crew A-2B	Hr.	Daily	Hr.	Daily	Costs	0&P
					Bare	Incl.	1 Truck Driver (light)	\$48.80	\$390.40	\$73.00	\$584.00	\$48.80	\$73.00
Crew A-1C	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Flatbed Truck, Gas, 1.5 Ton		198.50		218.35	24.81	27.29
1 Building Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	8 L.H., Daily Totals		\$588.90		\$802.35	\$73.61	\$100.29
1 Chain Saw, Gas, 18"		52.20		57.42	6.53	7.18						Bare	Incl.
8 L.H., Daily Totals		\$407.40		\$587.42	\$50.92	\$73.43	Crew A-3A	Hr.	Daily	Hr.	Daily	Costs	0&P
					Bare	Incl.	1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$55.50	\$82.70
Crew A-1D	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Pickup Truck, 4x4, 3/4 Ton		176.75 \$620.75		194.43 \$856.02	22.09 \$77.59	24.30 \$107.00
1 Building Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	8 L.H., Daily Totals		\$020.75		\$800.UZ		
1 Vibrating Plate, Gas, 18"		31.90		35.09	3.99	4.39	Crew A-3B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
8 L.H., Daily Totals		\$387.10		\$565.09	\$48.39	\$70.64	1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$55.15	\$82.30
A 115			l		Bare	Incl.	1 Truck Driver (heavy)	51.30	\$472.00 410.40	367.90 76.70	\$703.20 613.60	\$00.10	JOZ.JU
Crew A-1E	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Dump Truck, 12 C.Y., 400 H.P.	01.00	579.35	70.70	637.28		
1 Building Laborer 1 Vibrating Plate, Gas, 21"	\$44.40	\$355.20 165.60	\$66.25	\$530.00 182.16	\$44.40 20.70	\$66.25 22.77	1 F.E. Loader, W.M., 2.5 C.Y.		638.30		702.13	76.10	83.71
8 L.H., Daily Totals		\$520.80		\$712.16	\$65.10	\$89.02	16 L.H., Daily Totals		\$2100.05		\$2656.22	\$131.25	\$166.01
o L.H., Dally Totals		ŞJZU.00		\$712.10								Bare	Incl.
Crew A-1F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew A-3C	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Building Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$55.50	\$82.70
1 Rammer/Tamper, Gas, 8"	<b>Vv</b>	47.00	¢00.20	51.70	5.88	6.46	1 Loader, Skid Steer, 78 H.P.		446.30		490.93	55.79	61.37
8 L.H., Daily Totals		\$402.20		\$581.70	\$50.27	\$72.71	8 L.H., Daily Totals		\$890.30		\$1152.53	\$111.29	\$144.07
					Bare	Incl.	Crew A-3D	п.	D. I.		Dulla	Bare	Incl.
Crew A-1G	Hr.	Daily	Hr.	Daily	Costs	0&P		Hr.	Daily	Hr.	Daily	Costs	0&P
1 Building Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	1 Truck Driver (light) 1 Pickup Truck, 4x4, 3/4 Ton	\$48.80	\$390.40 176.75	\$73.00	\$584.00 194.43	\$48.80	\$73.00
1 Rammer/Tamper, Gas, 15"		54.65		60.12	6.83	7.51			1/0./0		194.4.5		
8 L.H., Daily Totals					0.00	-	I Flathed Irailer 25 Ion					39.24	4317
, sanj rotalo		\$409.85		\$590.12	\$51.23	\$73.76	1 Flatbed Trailer, 25 Ton 8 L.H., Daily Totals		137.20		150.92	39.24 \$88.04	43.17 \$116.17
-		\$409.85			\$51.23 Bare	\$73.76 <b>Incl.</b>	1 Flatbed Trailer, 25 Ion 8 L.H., Daily Totals					\$88.04	\$116.17
Crew A-1H	Hr.	\$409.85 <b>Daily</b>	Hr.	Daily	\$51.23 Bare Costs	\$73.76 Incl. O&P		Hr.	137.20	Hr.	150.92		
Crew A-1H 1 Building Laborer	<b>Hr.</b> \$44.40	\$409.85 <b>Daily</b> \$355.20	<b>Hr.</b> \$66.25	<b>Daily</b> \$530.00	\$51.23 Bare Costs \$44.40	\$73.76 Incl. 0&P \$66.25	8 L.H., Daily Totals	<b>Hr.</b> \$61.45	137.20 \$704.35	<b>Hr.</b> \$91.55	150.92 \$929.35	\$88.04 Bare	\$116.17 Incl.
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner		\$409.85 <b>Daily</b> \$355.20 77.20		<b>Daily</b> \$530.00 84.92	\$51.23 Bare Costs \$44.40 9.65	\$73.76 Incl. 0&P \$66.25 10.62	8 L.H., Daily Totals Crew A-3E		137.20 \$704.35 Daily		150.92 \$929.35 <b>Daily</b>	\$88.04 Bare Costs	\$116.17 Incl. O&P
Crew A-1H 1 Building Laborer		\$409.85 <b>Daily</b> \$355.20		<b>Daily</b> \$530.00	\$51.23 Bare Costs \$44.40 9.65 \$54.05	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton	\$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75	\$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43	\$88.04 Bare Costs \$56.38 11.05	\$116.17 Incl. O&P
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals	\$44.40	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40	\$66.25	<b>Daily</b> \$530.00 84.92 \$614.92	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl.	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy)	\$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40	\$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60	\$88.04 Bare Costs \$56.38	\$116.17 Incl. 0&P \$84.13
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals Crew A-1J	\$44.40 <b>Hr.</b>	\$409.85 Daily \$355.20 77.20 \$432.40 Daily	\$66.25 <b>Hr.</b>	Daily \$530.00 84.92 \$614.92 Daily	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals	\$61.45 51.30	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75	\$91.55 76.70	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl.
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals Crew A-1J 1 Building Laborer	\$44.40	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40	\$66.25	<b>Daily</b> \$530.00 84.92 \$614.92	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F	\$61.45 51.30 <b>Hr</b> .	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b>	\$91.55 76.70 <b>Hr.</b>	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b>	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals Crew A-1J 1 Building Laborer 1 Cuttivator, Walk-Behind, 5 H.P.	\$44.40 <b>Hr.</b>	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20	\$66.25 <b>Hr.</b>	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane)	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl.
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals Crew A-1J 1 Building Laborer 1 Cuttivator, Walk-Behind, 5 H.P.	\$44.40 <b>Hr.</b>	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25	\$66.25 <b>Hr.</b>	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           5530.00           5530.80           \$538	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy)	\$61.45 51.30 <b>Hr</b> .	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40	\$91.55 76.70 <b>Hr.</b>	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals Crew A-1J 1 Building Laborer 1 Cuttivator, Walk-Behind, 5 H.P.	\$44.40 <b>Hr.</b>	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25	\$66.25 <b>Hr.</b>	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           5530.00           5530.80           \$538	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40 176.75	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60 194.43	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P
Crew A-1H 1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals Crew A-1J 1 Building Laborer 1 Cuttivator, Walk-Behind, 5 H.P. 8 L.H., Daily Totals	\$44.40 Hr. \$44.40	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25 \$408.45	\$66.25 Hr. \$66.25	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           5530.00           58.58           \$588.58	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06 Bare	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57 Incl.	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy)	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P
Crew A-1H  1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals  Crew A-1J  1 Building Laborer 1 Cultivator, Walk-Behind, 5 H.P. 8 L.H., Daily Totals  Crew A-1K	\$44.40 Hr. \$44.40 Hr.	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25 \$408.45 <b>Daily</b>	\$66.25 Hr. \$66.25 Hr.	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           58.58           \$588.58           Daily	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06 Bare Costs	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57 Incl. 0&P	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 1 Truck Tractor, 6x4, 380 H.P.	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40 176.75 499.15	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60 194.43 549.07	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs \$56.38	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P \$84.13
Crew A-1H  1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals  Crew A-1J 1 Building Laborer 1 Cuttivator, Walk-Behind, 5 H.P. 8 L.H., Daily Totals  Crew A-1K 1 Building Laborer	\$44.40 Hr. \$44.40 Hr.	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25 \$408.45 <b>Daily</b> \$355.20	\$66.25 Hr. \$66.25 Hr.	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           58.58           \$588.58           Daily           \$530.00	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06 Bare Costs \$44.40	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57 Incl. 0&P \$66.25 \$73.57	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 1 Truck Tractor, 6x4, 380 H.P. 1 Lowbed Trailer, 75 Ton	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40 176.75 499.15 258.10	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60 194.43 549.07 283.91	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs \$56.38 \$56.38	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P \$84.13 64.21
Crew A-1H  1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals  Crew A-1J  1 Building Laborer 1 Cultivator, Walk-Behind, 5 H.P. 8 L.H., Daily Totals  Crew A-1K  1 Building Laborer 1 Cultivator, Walk-Behind, 8 H.P.	\$44.40 Hr. \$44.40 Hr.	\$409.85 Daily \$355.20 77.20 \$432.40 Daily \$355.20 53.25 \$408.45 Daily \$355.20 92.20	\$66.25 Hr. \$66.25 Hr.	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           58.58           \$588.58           Daily           \$530.00           101.42	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06 Bare Costs \$44.40 11.53	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57 Incl. 0&P \$66.25 12.68	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 1 Truck Tractor, 6x4, 380 H.P. 1 Lowbed Trailer, 75 Ton	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40 176.75 499.15 258.10	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60 194.43 549.07 283.91	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs \$56.38 \$56.38	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P \$84.13 64.21
Crew A-1H  1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals  Crew A-1J  1 Building Laborer 1 Cultivator, Walk-Behind, 5 H.P. 8 L.H., Daily Totals  Crew A-1K  1 Building Laborer 1 Cultivator, Walk-Behind, 8 H.P. 8 L.H., Daily Totals	\$44.40           Hr.           \$44.40           Hr.           \$44.40           Hr.           \$44.40	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25 \$408.45 <b>Daily</b> \$355.20 92.20 \$447.40	\$66.25 Hr. \$66.25 Hr. \$66.25	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           58.58           \$588.58           Daily           \$530.00           101.42           \$631.42           Daily	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06 Bare Costs \$44.40 11.53 \$55.92 Bare	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57 Incl. 0&P \$66.25 12.68 \$78.93 Incl.	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 1 Truck Tractor, 6x4, 380 H.P. 1 Lowbed Trailer, 75 Ton	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40 176.75 499.15 258.10	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60 194.43 549.07 283.91	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs \$56.38 \$56.38	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P \$84.13 64.21
Crew A-1H  1 Building Laborer 1 Exterior Steam Cleaner 8 L.H., Daily Totals  Crew A-1J  1 Building Laborer 1 Cultivator, Walk-Behind, 5 H.P. 8 L.H., Daily Totals  Crew A-1K  1 Building Laborer 1 Cultivator, Walk-Behind, 8 H.P. 8 L.H., Daily Totals  Crew A-1M	\$44.40 Hr. \$44.40 Hr. \$44.40 Hr.	\$409.85 <b>Daily</b> \$355.20 77.20 \$432.40 <b>Daily</b> \$355.20 53.25 \$408.45 <b>Daily</b> \$355.20 92.20 \$2.20 \$447.40 <b>Daily</b>	\$66.25 Hr. \$66.25 Hr. \$66.25 Hr.	Daily           \$530.00           84.92           \$614.92           Daily           \$530.00           58.58           \$588.58           Daily           \$530.00           101.42           \$631.42	\$51.23 Bare Costs \$44.40 9.65 \$54.05 Bare Costs \$44.40 6.66 \$51.06 Bare Costs \$44.40 11.53 \$55.92 Bare Costs	\$73.76 Incl. 0&P \$66.25 10.62 \$76.86 Incl. 0&P \$66.25 7.32 \$73.57 Incl. 0&P \$66.25 12.68 \$78.93 Incl. 0&P	8 L.H., Daily Totals Crew A-3E 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 16 L.H., Daily Totals Crew A-3F 1 Equip. Oper. (crane) 1 Truck Driver (heavy) 1 Pickup Truck, 4x4, 3/4 Ton 1 Truck Tractor, 6x4, 380 H.P. 1 Lowbed Trailer, 75 Ton	\$61.45 51.30 <b>Hr.</b> \$61.45	137.20 \$704.35 <b>Daily</b> \$491.60 410.40 176.75 \$1078.75 <b>Daily</b> \$491.60 410.40 176.75 499.15 258.10	\$91.55 76.70 <b>Hr.</b> \$91.55	150.92 \$929.35 <b>Daily</b> \$732.40 613.60 194.43 \$1540.43 <b>Daily</b> \$732.40 613.60 194.43 549.07 283.91	\$88.04 Bare Costs \$56.38 11.05 \$67.42 Bare Costs \$56.38 \$56.38	\$116.17 Incl. 0&P \$84.13 12.15 \$96.28 Incl. 0&P \$84.13 64.21

Crew No.	Ba	re Costs	Sut	Incl. os O&P		ost Ibor-Hour	Crew No.	Bare	: Costs		ncl. os O&P		Cost Labor-Ho
Crew A-3G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew A-3R	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P
1 Equip. Oper. (crane) 1 Truck Driver (heavy)	\$61.45 51.30	\$491.60 410.40	\$91.55 76.70	\$732.40 613.60	\$56.38	\$84.13	1 Equip. Oper. (light) 1 Forklift, Smooth Floor, 8,000 Lb.	\$55.50	\$444.00 283.25	\$82.70	\$661.60 311.57	\$55.50 35.41	\$82.70 38.95
1 Pickup Truck, 4x4, 3/4 Ton	51.50	176.75	/0./0	194.43			8 L.H., Daily Totals		\$727.25		\$973.17	\$90.91	\$121.65
1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton		608.95 258.10		669.85 283.91	65.24	71.76	Crew A-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
16 L.H., Daily Totals		\$1945.80		\$2494.18	\$121.61	\$155.89	2 Carpenters	\$54.70	\$875.20	\$81.65	\$1306.40	\$51.95	\$77.40
Crew A-3H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Painter, Ordinary 24 L.H., Daily Totals	46.45	371.60 \$1246.80	68.90	551.20 \$1857.60	\$51.95	\$77.40
1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton (Daily)	\$61.45	\$491.60 733.15	\$91.55	\$732.40 806.47	\$61.45 91.64	\$91.55 100.81						Bare	Incl.
3 L.H., Daily Totals		\$1224.75		\$1538.87	\$153.09	\$192.36	Crew A-5 2 Laborers	Hr. \$44.40	Daily \$710.40	Hr. \$66.25	Daily \$1060.00	Costs \$44.89	0&P \$67.00
Crew A-3I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	.25 Truck Driver (light) .25 Flatbed Truck, Gas, 1.5 Ton	48.80	97.60 49.63	73.00	146.00		
L Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$61.45	\$91.55	18 L.H., Daily Totals		\$857.63		54.59 \$1260.59	2.76 \$47.65	3.03 \$70.03
1 Hyd. Crane, 25 Ton (Daily)		810.50		891.55	101.31	111.44						Bare	Incl.
8 L.H., Daily Totals		\$1302.10		\$1623.95	\$162.76 Bare	\$202.99 Incl.	Crew A-6 1 Instrument Man	<b>Hr.</b> \$57.10	Daily \$456.80	Hr. \$85.90	Daily \$687.20	Costs \$54.88	0&P \$82.15
Crew A-3J	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Rodman/Chainman	52.65	\$456.80 421.20	585.90 78.40	627.20	ŞU4.00	Ş02.10
1 Equip. Oper. (crane) 1 Hyd. Crane, 40 Ton (Daily)	\$61.45	\$491.60 1287.00	\$91.55	\$732.40 1415.70	\$61.45 160.88	\$91.55 176.96	1 Level, Electronic		34.40		37.84	2.15	2.37
8 L.H., Daily Totals		\$1778.60		\$2148.10	\$222.32	\$268.51	16 L.H., Daily Totals		\$912.40		\$1352.24	\$57.02 Bare	\$84.52 Incl.
· · · · ·					Bare	Incl.	Crew A-7	Hr.	Daily	Hr.	Daily	Costs	0&P
Crew A-3K 1 Equip. Oper. (crane)	Hr. \$61.45	Daily \$491.60	Hr. \$91.55	5732.40	Costs \$56.98	0&P \$84.90	1 Chief of Party 1 Instrument Man	\$68.50 57.10	\$548.00 456.80	\$102.35 85.90	\$818.80 687.20	\$59.42	\$88.88
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00	\$50.50	Q04.30	1 Rodman/Chainman	52.65	421.20	78.40	627.20		
1 Hyd. Crane, 55 Ton (Daily) 1 P/U Truck, 3/4 Ton (Daily)		1377.00 143.85		1514.70 158.24	95.05	104.56	1 Level, Electronic 24 L.H., Daily Totals		34.40 \$1460.40		37.84 \$2171.04	1.43 \$60.85	1.58 \$90.46
16 L.H., Daily Totals		\$2432.45		\$3031.34	\$152.03	\$189.46	24 L.H., Daily lotais		ŞI400.40		ŞZ171.04	Bare	590.40
Crew A-3L	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew A-8	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$56.98	\$84.90	1 Chief of Party 1 Instrument Man	\$68.50 57.10	\$548.00 456.80	\$102.35 85.90	\$818.80 687.20	\$57.73	\$86.26
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00			2 Rodmen/Chainmen	52.65	842.40	78.40	1254.40	1.00	
1 Hyd. Crane, 80 Ton (Daily) 1 P/U Truck, 3/4 Ton (Daily)		2058.00 143.85		2263.80 158.24	137.62	151.38	1 Level, Electronic 32 L.H., Daily Totals		34.40 \$1881.60		37.84 \$2798.24	1.08 \$58.80	1.18
16 L.H., Daily Totals		\$3113.45		\$3780.43	\$194.59	\$236.28	SZ EITI, Duly lotais		Q1001.00		ŞE1 JU.E4	Bare	Incl.
Crew A-3M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew A-9	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	<b>Daily</b> \$732.40	\$56.98	\$84.90	1 Asbestos Foreman 7 Asbestos Workers	\$61.45 60.95	\$491.60 3413.20	\$94.00 93.25	\$752.00 5222.00	\$61.01	\$93.34
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00			64 L.H., Daily Totals		\$3904.80		\$5974.00	\$61.01	\$93.34
1 Hyd. Crane, 100 Ton (Daily) 1 P/U Truck, 3/4 Ton (Daily)		2253.00 143.85		2478.30 158.24	149.80	164.78	Crew A-10A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
16 L.H., Daily Totals		\$3308.45		\$3994.93	\$206.78	\$249.68	1 Asbestos Foreman	\$61.45	\$491.60	\$94.00	\$752.00	\$61.12	\$93.50
Crew A-3N	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	2 Asbestos Workers	60.95	975.20	93.25	1492.00	Ć(1 10	¢02 E0
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$61.45	\$91.55	24 L.H., Daily Totals		\$1466.80		\$2244.00	\$61.12 Bare	\$93.50 Incl.
1 Tower Crane (monthly)		1737.00 \$2228.60		1910.70	217.13	238.84	Crew A-10B	Hr.	Daily	Hr.	Daily	Costs	0&P
8 L.H., Daily Totals		\$2228.60		\$2643.10	\$278.57 Bare	\$330.39 Incl.	1 Asbestos Foreman 3 Asbestos Workers	\$61.45 60.95	\$491.60 1462.80	\$94.00 93.25	\$752.00 2238.00	\$61.08	\$93.44
Crew A-3P	Hr.	Daily	Hr.	Daily	Costs	0&P	32 L.H., Daily Totals	00.95	\$1954.40	95.25	\$2990.00	\$61.08	\$93.44
	\$55.50	\$444.00 346.45	\$82.70	\$661.60 381.10	\$55.50 43.31	\$82.70 47.64						Bare	Incl.
		JHU.4J	L		43.31 \$98.81	\$130.34	Crew A-10C 3 Asbestos Workers	Hr. \$60.95	Daily \$1462.80	Hr. \$93.25	Daily \$2238.00	<b>Costs</b> \$60.95	0&P \$93.25
1 A.T. Forklift, 31' reach, 45' lift		\$790.45		\$1042.69	QJ0.01			JUU.JJ					JJJ.20
1 A.T. Forklift, 31' reach, 45' lift 8 L.H., Daily Totals	Hr.		Hr.		Bare	Incl.	1 Flatbed Truck, Gas, 1.5 Ton		198.50	\$30.20	218.35	8.27	9.10
1 A.T. Forklift, 31' reach, 45' lift 8 L.H., Daily Totals Crew A-3Q	<b>Hr.</b> \$55.50	\$790.45 <b>Daily</b> \$444.00	<b>Hr.</b> \$82.70	\$1042.69 <b>Daily</b> \$661.60						\$50.20			9.10
1 Equip. Oper. (light) 1 A.T. Forklift, 31' reach, 45' lift 8 L.H., Daily Totals Crew A-3Q 1 Equip. Oper. (light) 1 Pickup Truck, 4x4, 3/4 Ton 1 Flatbed Trailer, 3 Ton		Daily		Daily	Bare Costs	inci. O&P	1 Flatbed Truck, Gas, 1.5 Ton		198.50	00.20	218.35	8.27	9.10 \$102.35

Crew No.	Ba	re Costs	Sut	Incl. os O&P		ost abor-Hour	Crew No.	Bare	: Costs
Crew A-10D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-1E	Hr.	Daily
2 Asbestos Workers	\$60.95	\$975.20	\$93.25	\$1492.00	\$58.96	\$89.08	1 Labor Foreman (outside)	\$46.40	\$371.2
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40	Q00.50	Ç03.00	3 Laborers	44.40	1065.6
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00			1 Work Boat, Diesel, 200 H.P.	01.11	1436.0
1 Hydraulic Crane, 33 Ton	02.00	983.15	70.20	1081.46	30.72	33.80	2 Pressure Washers, 7 GPM		187.9
32 L.H., Daily Totals		\$2869.95		\$3931.86	\$89.69	\$122.87	32 L.H., Daily Totals		\$3060.7
Crew A-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-1F	Hr.	Daily
1 Asbestos Foreman	\$61.45	\$491.60	\$94.00	\$752.00	\$61.01	\$93.34	2 Skilled Workers	\$57.10	\$913.6
7 Asbestos Vorkers	60.95	3413.20	93.25	5222.00	Q01.01	Ş95.54	1 Laborer	44.40	355.2
2 Chip. Hammers, 12 Lb., Elec.	00.55	65.70	55.25	72.27	1.03	1.13	1 Small Work Boat, Gas, 50 H.P.	44.40	120.8
64 L.H., Daily Totals		\$3970.50		\$6046.27	\$62.04	\$94.47	1 Pressure Washer, 7 GPM		93.9
		,			Bare	Incl.	24 L.H., Daily Totals		\$1483.6
Crew A-12	Hr.	Daily	Hr.	Daily	Costs	0&P	Crow P 1C	U.,	Dailu
1 Asbestos Foreman	\$61.45	\$491.60	\$94.00	\$752.00	\$61.01	\$93.34	Crew B-1G	Hr.	Daily
7 Asbestos Workers	60.95	3413.20	93.25	5222.00			2 Laborers	\$44.40	\$710.40
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		542.60 204.05		596.86	11.67	12.83	1 Small Work Boat, Gas, 50 H.P.		120.85
1 Flatbed Truck, 20,000 GVW 64 L.H., Daily Totals		\$4651.45		224.46 \$6795.31	\$72.68	\$106.18	16 L.H., Daily Totals		\$831.25
04 L.H., Dally Totals		Ş40J1.4J		20735.51	Bare	Incl.	Crew B-1H	Hr.	Daily
Crew A-13	Hr.	Daily	Hr.	Daily	Costs	0&P	2 Skilled Workers	\$57.10	\$913.6
1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$55.50	\$82.70	1 Laborer	44.40	355.2
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		542.60		596.86			1 Small Work Boat, Gas, 50 H.P.		120.8
1 Flatbed Truck, 20,000 GVW		204.05		224.46	93.33	102.66	24 L.H., Daily Totals		\$1389.6
8 L.H., Daily Totals		\$1190.65		\$1482.92	\$148.83	\$185.36			
					Bare	Incl.	Crew B-1J	Hr.	Daily
Crew B-1	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Labor Foreman (inside)	\$44.90	\$359.20
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.07	\$67.25	1 Laborer	44.40	355.20
2 Laborers 24 L.H., Daily Totals	44.40	710.40 \$1081.60	66.25	1060.00 \$1614.00	\$45.07	\$67.25	16 L.H., Daily Totals		\$714.40
24 L.H., Dally Tolais		\$1001.00		\$1014.00	\$45.07 Bare	507.25	Crew B-1K	Hr.	Daily
Crew B-1A	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Carpenter Foreman (inside)	\$55.20	\$441.60
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.07	\$67.25	1 Carpenter	54.70	437.60
2 Laborers	44.40	710.40	66.25	1060.00			16 L.H., Daily Totals		\$879.20
2 Cutting Torches		25.90		28.49					
2 Sets of Gases		347.20		381.92	15.55	17.10	Crew B-2	Hr.	Daily
24 L.H., Daily Totals		\$1454.70		\$2024.41	\$60.61	\$84.35	1 Labor Foreman (outside)	\$46.40	\$371.2
Crew B-1B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	4 Laborers	44.40	1420.8
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.16	\$73.33	40 L.H., Daily Totals		\$1792.0
2 Laborers	44.40	710.40	66.25	1060.00	Q15.10	¢70.00	Crew B-2A	Hr.	Daily
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			1 Labor Foreman (outside)	\$46.40	\$371.2
2 Cutting Torches		25.90		28.49			2 Laborers	\$40.40 44.40	710.4
2 Sets of Gases		347.20		381.92			1 Telescoping Boom Lift, to 60'	44.40	292.4
1 Hyd. Crane, 12 Ton		475.80		523.38	26.53	29.18	24 L.H., Daily Totals		\$1374.0
32 L.H., Daily Totals		\$2422.10		\$3280.19	\$75.69	\$102.51	24 Ent. Duly lotais		Q1074.0
Crew B-1C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-3	Hr.	Daily
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.07	\$67.25	1 Labor Foreman (outside)	\$46.40	\$371.2
2 Laborers	44.40	710.40	66.25	1060.00			2 Laborers	44.40	710.4
1 Telescoping Boom Lift, to 60'		292.45		321.69	12.19	13.40	1 Equip. Oper. (medium)	59.00	472.0
24 L.H., Daily Totals		\$1374.05		\$1935.69	\$57.25	\$80.65	2 Truck Drivers (heavy)	51.30	820.8
							1 Crawler Loader, 3 C.Y.		1146.0
Crew B-1D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	2 Dump Trucks, 12 C.Y., 400 H.P. 48 L.H., Daily Totals		\$4679.10
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$44.40	\$66.25	יס בווו, טמווי וטנמוס		<i>1.1 (</i> ).10
1 Small Work Boat, Gas, 50 H.P.		120.85		132.94			Crew B-3A	Hr.	Daily
1 Pressure Washer, 7 GPM		93.95		103.35	13.43	14.77	4 Laborers	\$44.40	\$1420.8
16 L.H., Daily Totals		\$925.20		\$1296.28	\$57.83	\$81.02	1 Equip. Oper. (medium)	59.00	472.0
							1 Hvd Excavator 1.5 C.Y		695.8

Incl. Cost Subs O&P Per Labor-Hour Bare Incl. Daily 0&P Hr. Costs ily .20 \$69.25 \$554.00 \$44.90 \$67.00 i.60 66.25 1590.00 6.00 1579.60 .90 206.69 50.75 55.82 .70 \$3930.29 \$95.65 \$122.82 Bare Incl. Hr. Daily Costs 0&P ily 8.60 \$85.90 \$1374.40 \$52.87 \$79.35 i.20 66.25 530.00 ).85 132.94 .95 103.35 8.95 9.85 3.60 \$2140.68 \$61.82 \$89.19 Bare Incl. Daily 0&P Hr. Costs ily .40 \$66.25 \$1060.00 \$44.40 \$66.25 .85 132.94 7.55 8.31 .25 \$1192.93 \$51.95 \$74.56 Bare Incl. Daily 0&P Hr. Costs ily 8.60 \$85.90 \$1374.40 \$52.87 \$79.35 i.20 66.25 530.00 ).85 132.94 5.04 5.54 9.65 \$2037.34 \$57.90 \$84.89 Bare Incl. ily Hr. Daily Costs 0&P .20 \$67.00 \$536.00 \$44.65 \$66.63 .20 66.25 530.00 .40 \$1066.00 \$44.65 \$66.63 Bare Incl. 0&P ily Hr. Daily Costs .60 \$82.40 \$659.20 \$54.95 \$82.03 .60 81.65 653.20 .20 \$1312.40 \$54.95 \$82.03 Bare Incl. ily Hr. Daily Costs 0&P .20 \$44.80 \$69.25 \$554.00 \$66.85 08.( 66.25 2120.00 2.00 \$2674.00 \$44.80 \$66.85 Bare Incl. ily Hr. Daily Costs 0&P .20 \$69.25 \$554.00 \$45.07 \$67.25 ).40 66.25 1060.00 .45 321.69 12.19 13.40 .05 \$1935.69 \$57.25 \$80.65 Bare Incl. Hr. Daily Costs 0&P ily .20 \$69.25 \$554.00 \$49.47 \$73.84 .40 66.25 1060.00 2.00 87.90 703.20 08.( 1227.20 76.70 6.00 1260.60 .70 1274.57 48.01 52.82 .10 \$97.48 \$6079.57 \$126.66 Bare Incl. Daily 0&P Hr. Costs ily 08.( \$66.25 \$2120.00 \$47.32 \$70.58 2.00 87.90 703.20 695.80 765.38 17.40 19.13 1 Hyd. Excavator, 1.5 C.Y. 40 L.H., Daily Totals \$2588.60 \$3588.58 \$64.72 \$89.71

Crew No.	Bar	e Costs	Sut	ost Ibor-Hour		
Crew B-3B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$49.77	\$74.28
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Backhoe Loader, 80 H.P.		235.05		258.56		
L Dump Truck, 12 C.Y., 400 H.P.		579.35		637.28	25.45	28.00
32 L.H., Daily Totals		\$2407.20		\$3272.64	\$75.22	\$102.27
Crew B-3C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$48.05	\$71.66
L Equip. Oper. (medium)	59.00	472.00	87.90	703.20	Ş40.0J	\$71.00
Crawler Loader, 4 C.Y.	59.00	1456.00	07.90	1601.60	45.50	50.05
32 L.H., Daily Totals		\$2993.60		\$3894.80	\$93.55	\$121.71
E Entry Dully Totalo		Q2550.00		Q005 1.00	Bare	Incl.
Crew B-4	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.88	\$68.49
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Truck Tractor, 220 H.P.		310.80		341.88		
1 Flatbed Trailer, 40 Ton		188.45		207.29	10.40	11.44
48 L.H., Daily Totals		\$2701.65		\$3836.78	\$56.28	\$79.93
					Bare	Incl.
Crew B-5	Hr.	Daily	Hr.	Daily	Costs	0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.86	\$72.86
Laborers	44.40	1420.80	66.25	2120.00		
equip. Oper. (medium)	59.00	944.00	87.90	1406.40		
Air Compressor, 250 cfm		202.85		223.13		
2 Breakers, Pavement, 60 lb.		107.20		117.92		
2 -50' Air Hoses, 1.5"		45.60		50.16		
Crawler Loader, 3 C.Y.		1146.00		1260.60	26.82	29.50
i6 L.H., Daily Totals		\$4237.65		\$5732.22	\$75.67	\$102.36
Crew B-5A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.08	\$73.22
5 Laborers	44.40	2131.20	66.25	3180.00		
					1	
	59.00	944.00	87.90	1406.40		
2 Equip. Oper. (medium)	59.00 55.50	944.00 444.00	87.90 82.70	1406.40 661.60		
2 Equip. Oper. (medium) 1 Equip. Oper. (light)						
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy)	55.50	444.00	82.70	661.60		
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm	55.50	444.00 820.80	82.70	661.60 1227.20		
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb.	55.50	444.00 820.80 343.55	82.70	661.60 1227.20 377.90		
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 3 -50' Air Hoses, 1"	55.50	444.00 820.80 343.55 107.20	82.70	661.60 1227.20 377.90 117.92	13.86	15.24
2 Equip. Oper. (medium) L Equip. Oper. (light) 2 Truck Drivers (heavy) L Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 3 -50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P.	55.50	444.00 820.80 343.55 107.20 64.40	82.70	661.60 1227.20 377.90 117.92 70.84	13.86 \$62.93	15.24 \$88.46
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8-50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P.	55.50	444.00 820.80 343.55 107.20 64.40 815.20	82.70	661.60 1227.20 377.90 117.92 70.84 896.72		
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8 -50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P. 96 L.H., Daily Totals Crew B-5B	55.50 51.30 <b>Hr.</b>	444.00 820.80 343.55 107.20 64.40 815.20 \$6041.55	82.70 76.70	661.60 1227.20 377.90 117.92 70.84 896.72 \$8492.58	\$62.93 Bare	\$88.46 Incl. O&P
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8 -50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P. 96 L.H., Daily Totals Crew B-5B 1 Powderman	55.50 51.30	444.00 820.80 343.55 107.20 64.40 815.20 \$6041.55 <b>Daily</b> \$456.80	82.70 76.70 <b>Hr.</b>	661.60 1227.20 377.90 117.92 70.84 896.72 \$8492.58 <b>Daily</b> \$687.20	\$62.93 Bare Costs	\$88.46 Incl.
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8 -50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P. 96 L.H., Daily Totals Crew B-5B 1 Powderman 2 Equip. Oper. (medium)	55.50 51.30 <b>Hr.</b> \$57.10	444.00 820.80 343.55 107.20 64.40 815.20 \$6041.55 <b>Daily</b> \$456.80 944.00	82.70 76.70 <b>Hr.</b> \$85.90 87.90	661.60 1227.20 377.90 117.92 70.84 896.72 \$8492.58 <b>Daily</b> \$687.20 1406.40	\$62.93 Bare Costs	\$88.46 Incl. O&P
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8-50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P. 96 L.H., Daily Totals	55.50 51.30 <b>Hr.</b> \$57.10 59.00	444.00 820.80 343.55 107.20 64.40 815.20 \$6041.55 <b>Daily</b> \$456.80 944.00 1231.20	82.70 76.70 <b>Hr.</b> \$85.90	661.60 1227.20 377.90 117.92 70.84 896.72 \$8492.58 <b>Daily</b> \$687.20 1406.40 1840.80	\$62.93 Bare Costs	\$88.46 Incl. O&P
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8 -50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P. 96 L.H., Daily Totals Crew B-5B 1 Powderman 2 Equip. Oper. (medium) 3 Truck Drivers (heavy) 1 F.E. Loader, W.M., 2.5 C.Y.	55.50 51.30 <b>Hr.</b> \$57.10 59.00 51.30	444.00 820.80 343.55 107.20 64.40 815.20 \$6041.55 <b>Daily</b> \$456.80 944.00 1231.20 638.30	82.70 76.70 <b>Hr.</b> \$85.90 87.90	661.60 1227.20 377.90 117.92 70.84 896.72 \$8492.58 <b>Daily</b> \$687.20 1406.40 1840.80 702.13	\$62.93 Bare Costs	\$88.46 Incl. O&P
2 Equip. Oper. (medium) 1 Equip. Oper. (light) 2 Truck Drivers (heavy) 1 Air Compressor, 365 cfm 2 Breakers, Pavement, 60 lb. 8 -50' Air Hoses, 1" 2 Dump Trucks, 8 C.Y., 220 H.P. 96 L.H., Daily Totals Crew B-5B 1 Powderman 2 Equip. Oper. (medium) 3 Truck Drivers (heavy)	55.50 51.30 <b>Hr.</b> \$57.10 59.00 51.30	444.00 820.80 343.55 107.20 64.40 815.20 \$6041.55 <b>Daily</b> \$456.80 944.00 1231.20	82.70 76.70 <b>Hr.</b> \$85.90 87.90	661.60 1227.20 377.90 117.92 70.84 896.72 \$8492.58 <b>Daily</b> \$687.20 1406.40 1840.80	\$62.93 Bare Costs	\$88.46 Incl. O&P

	Dawa	Casta		nci.		Cost Per Labor-Hour			
Crew No.	Bare	Costs	Sub	s O&P	Per L	abor-Hour			
Crew B-5C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P			
3 Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$51.09	\$76.23			
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20					
2 Truck Drivers (heavy)	51.30	820.80	76.70	1227.20					
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40					
1 Equip. Oper. (oiler) 2 Dump Trucks, 12 C.Y., 400 H.P.	52.50	420.00 1158.70	78.25	626.00 1274.57					
1 Crawler Loader, 4 C.Y.		1456.00		1274.57					
1 S.P. Crane, 4x4, 25 Ton		1155.00		1270.50	58.90	64.79			
64 L.H., Daily Totals		\$7039.70		\$9025.47	\$110.00	\$141.02			
0	п.	Dalla		Della	Bare	Incl.			
Crew B-5D	Hr.	Daily	Hr.	Daily	Costs	0&P			
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.16	\$73.34			
4 Laborers 2 Equip. Oper. (medium)	44.40 59.00	1420.80 944.00	66.25 87.90	2120.00 1406.40					
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60					
1 Air Compressor, 250 cfm	51.50	202.85	70.70	223.13					
2 Breakers, Pavement, 60 lb.		107.20		117.92					
2 -50' Air Hoses, 1.5"		45.60		50.16					
1 Crawler Loader, 3 C.Y.		1146.00		1260.60					
1 Dump Truck, 12 C.Y., 400 H.P.		579.35		637.28	32.52	35.77			
64 L.H., Daily Totals		\$5227.40		\$6983.10	\$81.68	\$109.11			
Crew B-5E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P			
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.16	\$73.34			
4 Laborers	44.40	1420.80	66.25	2120.00					
2 Equip. Oper. (medium)	59.00	944.00	87.90	1406.40					
1 Truck Driver (heavy) 1 Water Tank Trailer, 5000 Gal.	51.30	410.40 154.10	76.70	613.60 169.51					
1 High Pressure Water Jet 40 KSI		820.75		902.83					
2 -50' Air Hoses, 1.5"		45.60		50.16					
1 Crawler Loader, 3 C.Y.		1146.00		1260.60					
1 Dump Truck, 12 C.Y., 400 H.P.		579.35		637.28	42.90	47.19			
64 L.H., Daily Totals		\$5892.20		\$7714.38	\$92.07	\$120.54			
					Bare	Incl.			
Crew B-6	Hr.	Daily	Hr.	Daily	Costs	0&P			
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$48.10	\$71.73			
1 Equip. Oper. (light) 1 Backhoe Loader, 48 H.P.	55.50	444.00 216.20	82.70	661.60 237.82	9.01	9.91			
24 L.H., Daily Totals		\$1370.60		\$1959.42	\$57.11	\$81.64			
LT LIT, Daily IULAIS		ÅT310'00		91 <i>333</i> .42	Bare	501.04			
Crew B-6A	Hr.	Daily	Hr.	Daily	Costs	0&P			
.5 Labor Foreman (outside)	\$46.40	\$185.60	\$69.25	\$277.00	\$50.64	\$75.51			
1 Laborer	44.40	355.20	66.25	530.00					
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20					
1 Vacuum Truck, 5000 Gal.		371.95		409.14	18.60	20.46			
20 L.H., Daily Totals		\$1384.75		\$1919.35	\$69.24	\$95.97			
Crew B-6B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P			
2 Labor Foremen (outside)	\$46.40	\$742.40	\$69.25	\$1108.00	\$45.07	\$67.25			
4 Laborers	44.40	1420.80	66.25	2120.00					
1 S.P. Crane, 4x4, 5 Ton		381.95		420.14					
1 Flatbed Truck, Gas, 1.5 Ton 1 Butt Eusion Mach. A" 12" diam.		198.50		218.35	20.96	22.94			
1 Butt Fusion Mach., 4"-12" diam. 48 L.H., Daily Totals		420.75 \$3164.40		462.82 \$4329.32	20.86 \$65.92	\$90.19			
TO LITI, Dally IUlais		YJ104.40		YTJLJ.JL	ΨUJ.92	\$JU.13			

Crew No.	Bai	e Costs	Sut	Incl. os O&P		ost Ibor-Hour
Crew B-6C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Labor Foremen (outside)	\$46.40	\$742.40	\$69.25	\$1108.00	\$45.07	\$67.25
4 Laborers	44.40	1420.80	66.25	2120.00		
1 S.P. Crane, 4x4, 12 Ton		432.65		475.92		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05		
1 Butt Fusion Mach., 8"-24" diam.		1086.00		1194.60	49.35	54.28
48 L.H., Daily Totals		\$4531.90		\$5833.57	\$94.41	\$121.53
Crew B-6D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
.5 Labor Foreman (outside)	\$46.40	\$185.60	\$69.25	\$277.00	\$50.64	\$75.51
1 Laborer	44.40	355.20	66.25	530.00		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Hydro Excavator, 12 C.Y.		1277.00		1404.70	63.85	70.23
20 L.H., Daily Totals		\$2289.80		\$2914.90	\$114.49	\$145.75
Crew B-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.17	\$70.36
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Brush Chipper, 12", 130 H.P.		366.05		402.65		
1 Crawler Loader, 3 C.Y.		1146.00		1260.60		
2 Chain Saws, Gas, 36" Long		83.30		91.63	33.24	36.56
48 L.H., Daily Totals		\$3859.35		\$5132.09	\$80.40	\$106.92
					Bare	Incl.
Crew B-7A	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$48.10	\$71.73
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Rake w/Tractor		343.50		377.85	10.00	00.50
2 Chain Saws, Gas, 18"		104.40		114.84	18.66	20.53
24 L.H., Daily Totals		\$1602.30		\$2214.29	\$66.76	\$92.26
Crew B-7B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.76	\$71.26
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Brush Chipper, 12", 130 H.P.		366.05		402.65		
1 Crawler Loader, 3 C.Y.		1146.00		1260.60		
2 Chain Saws, Gas, 36" Long		83.30		91.63		
1 Dump Truck, 8 C.Y., 220 H.P.		407.60		448.36	35.77	39.34
56 L.H., Daily Totals		\$4677.35		\$6194.05	\$83.52	\$110.61
Crew B-7C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.76	\$71.26
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Brush Chipper, 12", 130 H.P.		366.05		402.65		
1 Crawler Loader, 3 C.Y.		1146.00		1260.60		
2 Chain Saws, Gas, 36" Long		83.30		91.63		
1 Dump Truck, 12 C.Y., 400 H.P.		579.35		637.28	38.83	42.72
56 L.H., Daily Totals		\$4849.10		\$6382.97	\$86.59	\$113.98

Crew No.	Bare	Costs		ncl. os O&P		Cost abor-Hour
	Daie	0313	500		1	
Crew B-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$51.04	\$76.15
2 Laborers	44.40	710.40	66.25	1060.00		
2 Equip. Oper. (medium)	59.00	944.00	87.90	1406.40		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
2 Truck Drivers (heavy)	51.30	820.80	76.70	1227.20		
1 Hyd. Crane, 25 Ton 1 Crawler Loader, 3 C.Y.		586.70 1146.00		645.37 1260.60		
2 Dump Trucks, 12 C.Y., 400 H.P.		1140.00		1200.00	45.18	49.70
64 L.H., Daily Totals		\$6157.80		\$8054.14	\$96.22	\$125.85
					Bare	Incl.
Crew B-9	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$44.80	\$66.85
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Air Compressor, 250 cfm 2 Breakers, Pavement, 60 lb.		202.85 107.20		223.13 117.92		
2 -50' Air Hoses, 1.5"		45.60		50.16	8.89	9.78
40 L.H., Daily Totals		\$2147.65		\$3065.22	\$53.69	\$76.63
					Bare	Incl.
Crew B-9A	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$46.70	\$69.73
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Water Tank Trailer, 5000 Gal.		154.10		169.51		
1 Truck Tractor, 220 H.P. 2 -50' Discharge Hoses, 3"		310.80 9.00		341.88 9.90	19.75	21.72
24 L.H., Daily Totals		\$1594.70		\$2194.89	\$66.45	\$91.45
		¢205 m 0		Q210 1100	Bare	Incl.
Crew B-9B	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$46.70	\$69.73
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
2 -50' Discharge Hoses, 3" 1 Water Tank Trailer, 5000 Gal.		9.00 154.10		9.90 169.51		
1 Truck Tractor, 220 H.P.		310.80		341.88		
1 Pressure Washer		97.35		107.08	23.80	26.18
24 L.H., Daily Totals		\$1692.05		\$2301.97	\$70.50	\$95.92
Crew B-9D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	Daily \$371.20	\$69.25	Daily \$554.00	\$44.80	\$66.85
4 Common Laborers	\$40.40 44.40	\$371.20 1420.80	\$09.25 66.25	\$354.00 2120.00	Ş44.0U	\$00.00
1 Air Compressor, 250 cfm		202.85	00.25	223.13		
2 -50' Air Hoses, 1.5"		45.60		50.16		
2 Air Powered Tampers		79.50		87.45	8.20	9.02
40 L.H., Daily Totals		\$2119.95		\$3034.74	\$53.00	\$75.87
Crew B-9E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Cement Finisher	\$51.80	\$414.40	\$75.90	\$607.20	\$48.10	\$71.08
1 Laborer	44.40	355.20	66.25	530.00		
1 Chip. Hammers, 12 Lb., Elec.		32.85		36.13	2.05	2.26
16 L.H., Daily Totals		\$802.45		\$1173.34	\$50.15	\$73.33
Crew B-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
.5 Laborer	44.40	177.60	66.25	265.00		
12 L.H., Daily Totals		\$649.60		\$968.20	\$54.13	\$80.68
Crew B-10A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
.5 Laborer	44.40	177.60	66.25	265.00		
1 Roller, 2-Drum, W.B., 7.5 H.P.		166.75		183.43	13.90	15.29
12 L.H., Daily Totals		\$816.35		\$1151.63	\$68.03	\$95.97

	Para Casta			Incl.	C	ost		
Crew No.	Bar	re Costs	Sut	os O&P	Per La	bor-Hour	Crew No.	
Crew B-10B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-10K	
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68	1 Equip. Oper. (medium)	ç
.5 Laborer	44.40	177.60	66.25	265.00			.5 Laborer	
1 Dozer, 200 H.P.		1520.00		1672.00	126.67	139.33	1 Centr. Water Pump, 6" 1 -20' Suction Hose, 6"	
12 L.H., Daily Totals		\$2169.60		\$2640.20	\$180.80	\$220.02	2 -50' Discharge Hoses, 6"	
Crew B-10C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	12 L.H., Daily Totals	
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68	Crew B-10L	
.5 Laborer 1 Dozer, 200 H.P.	44.40	177.60 1520.00	66.25	265.00 1672.00			1 Equip. Oper. (medium)	
1 Vibratory Roller, Towed, 23 Ton		520.35		572.38	170.03	187.03	.5 Laborer	`
12 L.H., Daily Totals		\$2689.95		\$3212.59	\$224.16	\$267.72	1 Dozer, 80 H.P.	
					Bare	Incl.	12 L.H., Daily Totals	
Crew B-10D 1 Equip. Oper. (medium)	<b>Hr.</b> \$59.00	Daily \$472.00	<b>Hr.</b> \$87.90	Daily \$703.20	<b>Costs</b> \$54.13	0&P \$80.68	Crew B-10M	
.5 Laborer	44.40	3472.00 177.60	66.25	265.00	ŞJ4.15	\$00.00	1 Equip. Oper. (medium)	ç
1 Dozer, 200 H.P.		1520.00		1672.00			.5 Laborer	
1 Sheepsft. Roller, Towed		426.95		469.64	162.25	178.47	1 Dozer, 300 H.P.	
12 L.H., Daily Totals		\$2596.55		\$3109.84	\$216.38	\$259.15	12 L.H., Daily Totals	
Crew B-10E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-10N	
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68	1 Equip. Oper. (medium)	
.5 Laborer	44.40	177.60	66.25	265.00	01.50	00.70	.5 Laborer	
1 Tandem Roller, 5 Ton		258.75		284.63	21.56	23.72 \$104.40	1 F.E. Loader, T.M., 1.5 C.Y.	
12 L.H., Daily Totals		\$908.35		\$1252.83	\$75.70 Bare	\$104.40	12 L.H., Daily Totals	
Crew B-10F	Hr.	Daily	Hr.	Daily	Costs	0&P	Crew B-100	
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68	1 Equip. Oper. (medium)	
.5 Laborer 1 Tandem Roller, 10 Ton	44.40	177.60 246.80	66.25	265.00 271.48	20.57	22.62	.5 Laborer 1 F.E. Loader, T.M., 2.25 C.Y.	
12 L.H., Daily Totals		\$896.40		\$1239.68	\$74.70	\$103.31	12 L.H., Daily Totals	
					Bare	Incl.		
Crew B-10G 1 Equip. Oper. (medium)	<b>Hr.</b> \$59.00	Daily	<b>Hr.</b> \$87.90	Daily	<b>Costs</b> \$54.13	<b>0&amp;P</b> \$80.68	Crew B-10P 1 Equip. Oper. (medium)	_
.5 Laborer	\$59.00 44.40	\$472.00 177.60	\$67.90 66.25	\$703.20 265.00	Ş04.15	\$00.00	.5 Laborer	
1 Sheepsfoot Roller, 240 H.P.		1363.00	00.20	1499.30	113.58	124.94	1 Crawler Loader, 3 C.Y.	
12 L.H., Daily Totals		\$2012.60		\$2467.50	\$167.72	\$205.63	12 L.H., Daily Totals	-
Crew B-10H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-10Q	
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68	1 Equip. Oper. (medium)	-
.5 Laborer	44.40	177.60	66.25	265.00			.5 Laborer	
1 Diaphragm Water Pump, 2"		87.70		96.47			1 Crawler Loader, 4 C.Y.	
1 -20' Suction Hose, 2" 2 -50' Discharge Hoses, 2"		3.55 8.00		3.90 8.80	8.27	9.10	12 L.H., Daily Totals	
12 L.H., Daily Totals		\$748.85		\$1077.38	\$62.40	\$89.78	Crew B-10R	
0	П.,	D. ilu	11-	Dailte	Bare	Incl.	1 Equip. Oper. (medium)	
Crew B-10I 1 Equip. Oper. (medium)	<b>Hr.</b> \$59.00	Daily \$472.00	<b>Hr.</b> \$87.90	Daily \$703.20	<b>Costs</b> \$54.13	<b>0&amp;P</b> \$80.68	.5 Laborer 1 F.E. Loader, W.M., 1 C.Y.	
.5 Laborer	44.40	177.60	66.25	265.00	ŞJ <del>1</del> .15	Q00.00	12 L.H., Daily Totals	
1 Diaphragm Water Pump, 4"		106.35		116.99				-
1 -20' Suction Hose, 4"		17.25		18.98			Crew B-10S	_
2 -50' Discharge Hoses, 4" 12 L.H., Daily Totals		25.60 \$798.80		28.16 \$1132.32	12.43 \$66.57	13.68 \$94.36	1 Equip. Oper. (medium)	
12 L.H., Dally Totals		<i>913</i> 0.00		<i>γ</i> 1132.32	\$00.57 Bare	\$94.50	.5 Laborer	
Crew B-10J	Hr.	Daily	Hr.	Daily	Costs	0&P	1 F.E. Loader, W.M., 1.5 C.Y. 12 L.H., Daily Totals	
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer 1 Centrifugal Water Pump, 3"	44.40	177.60 74.40	66.25	265.00 81.84			Crew B-10T	_
1 -20' Suction Hose, 3"		8.75		9.63			1 Equip. Oper. (medium)	ç
2 -50' Discharge Hoses, 3"		9.00		9.90	7.68	8.45	.5 Laborer 1 F.E. Loader, W.M., 2.5 C.Y.	
12 L.H., Daily Totals		\$741.75		\$1069.57	\$61.81	\$89.13	12 L.H., Daily Totals	

	_			nci.	Cost Per Labor-Hour			
Crew No.	Bare	Costs	Sub	s O&P	Per L	abor-Hour		
Crew B-10K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer	44.40	177.60	66.25	265.00				
1 Centr. Water Pump, 6"		235.25		258.77				
1 -20' Suction Hose, 6" 2 -50' Discharge Hoses, 6"		25.50 36.20		28.05 39.82	24.75	27.22		
12 L.H., Daily Totals		\$946.55		\$1294.85	\$78.88	\$107.90		
					Bare	Incl.		
Crew B-10L	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer	44.40	177.60	66.25	265.00	22.02	27.20		
1 Dozer, 80 H.P. 12 L.H., Daily Totals		405.85 \$1055.45		446.44 \$1414.64	33.82 \$87.95	37.20 \$117.89		
12 L.H., Daily Totals		Ş1055. <del>4</del> 5		ŞI414.04	Bare	Incl.		
Crew B-10M	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer	44.40	177.60	66.25	265.00	140 75	102.02		
1 Dozer, 300 H.P. 12 L.H., Daily Totals		1785.00 \$2434.60		1963.50 \$2931.70	148.75 \$202.88	163.63 \$244.31		
IL LITI, Dally IUlais		J74J4.00		<i>پدع</i> اي./U	\$202.00 Bare	\$244.31		
Crew B-10N	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer 1 F.E. Loader, T.M., 1.5 C.Y.	44.40	177.60 572.00	66.25	265.00 629.20	47.67	52.43		
12 L.H., Daily Totals		\$1221.60		\$1597.40	\$101.80	\$133.12		
					Bare	Incl.		
Crew B-100	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer 1 F.E. Loader, T.M., 2.25 C.Y.	44.40	177.60 925.50	66.25	265.00 1018.05	77.13	84.84		
1 F.E. Loader, T.M., 2.25 C.T. 12 L.H., Daily Totals		\$1575.10		\$1986.25	\$131.26	\$165.52		
,, i como				,LU	Bare	Incl.		
Crew B-10P	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer	44.40	177.60	66.25	265.00	05 50	105.05		
1 Crawler Loader, 3 C.Y. 12 L.H., Daily Totals		1146.00 \$1795.60		1260.60 \$2228.80	95.50 \$149.63	105.05 \$185.73		
IL LIT, Daily IULAIS		Ŷ11JJ.00		YLLL0.00	5149.03 Bare	\$165.75		
Crew B-10Q	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer	44.40	177.60	66.25	265.00	101.00	122.47		
1 Crawler Loader, 4 C.Y. 12 L.H., Daily Totals		1456.00 \$2105.60		1601.60 \$2569.80	121.33 \$175.47	133.47 \$214.15		
LETT, Dully IULUIS		YL103.00		√2JUJ.00	Bare	5214.15		
Crew B-10R	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer	44.40	177.60	66.25	265.00	0E 47	00.01		
1 F.E. Loader, W.M., 1 C.Y. 12 L.H., Daily Totals		305.60 \$955.20		336.16 \$1304.36	25.47 \$79.60	28.01 \$108.70		
IL LITI, Dally IUCOS		<i>↓</i> JJJ.2U		\$1304.30				
Crew B-10S	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		
.5 Laborer 1 F.E. Loader, W.M., 1.5 C.Y.	44.40	177.60 441.40	66.25	265.00 485.54	36.78	40.46		
12 L.H., Daily Totals		\$1091.00		\$1453.74	\$90.92	\$121.15		
					Bare	Incl.		
A		Daily	Hr.	Daily	Costs	0&P		
Crew B-10T	Hr.		607.00	6700.00				
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90 66.25	\$703.20 265.00	\$54.13	\$80.68		
			\$87.90 66.25	\$703.20 265.00 702.13				

Crew No.	Ba	re Costs	Sut	Incl. os O&P		ost Ibor-Hour	Crew No.	Bare	Costs		ncl. os O&P		
Crew B-10U	Hr.	Daily	Hr.	Daily	Bare Costs	inci. 0&P	Crew B-11K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Equip. Oper. (medium) .5 Laborer	\$59.00 44.40	\$472.00 177.60	\$87.90 66.25	\$703.20 265.00	\$54.13	\$80.68	1 Equipment Oper. (med.) 1 Laborer	\$59.00 44.40	\$472.00 355.20	\$87.90 66.25	\$703.20 530.00	\$51.70	\$77.08
1 F.E. Loader, W.M., 5.5 C.Y.	44.40	967.95	00.20	265.00 1064.74	80.66	88.73	1 Laborer 1 Trencher, Chain Type, 8' D	44.40	355.20 1894.00	00.20	2083.40	118.38	130.21
12 L.H., Daily Totals		\$1617.55		\$2032.94	\$134.80	\$169.41	16 L.H., Daily Totals		\$2721.20		\$3316.60	\$170.07	\$207.29
					Bare	Incl.						Bare	Incl.
Crew B-10V	Hr.	Daily	Hr.	Daily	Costs	0&P	Crew B-11L	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Equip. Oper. (medium) .5 Laborer	\$59.00 44.40	\$472.00 177.60	\$87.90 66.25	\$703.20 265.00	\$54.13	\$80.68	1 Equipment Oper. (med.) 1 Laborer	\$59.00 44.40	\$472.00 355.20	\$87.90 66.25	\$703.20 530.00	\$51.70	\$77.08
1 Dozer, 700 H.P.	44.40	5175.00	00.25	5692.50	431.25	474.38	1 Grader, 30,000 Lbs.	44.40	1073.00	00.25	1180.30	67.06	73.77
12 L.H., Daily Totals		\$5824.60		\$6660.70	\$485.38	\$555.06	16 L.H., Daily Totals		\$1900.20		\$2413.50	\$118.76	\$150.84
Crew B-10W	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-11M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68	1 Equipment Oper. (med.)	\$59.00	\$472.00	\$87.90	\$703.20	\$51.70	\$77.08
.5 Laborer	44.40	177.60	66.25	265.00	52.40	50.74	1 Laborer	44.40	355.20	66.25	530.00	14.00	10.10
1 Dozer, 105 H.P. 12 L.H., Daily Totals		640.80 \$1290.40		704.88 \$1673.08	53.40 \$107.53	58.74 \$139.42	1 Backhoe Loader, 80 H.P. 16 L.H., Daily Totals		235.05 \$1062.25		258.56 \$1491.76	14.69 \$66.39	16.16 \$93.23
Crew B-10X	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-11N	Hr.	Daily	Hr.		Bare Costs	Incl.
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68		\$46.40	\$371.20	\$69.25	<b>Daily</b> \$554.00	\$52.47	\$78.36
.5 Laborer	44.40	177.60	66.25	265.00	Ş54.15	Q00.00	2 Equipment Operators (med.)	59.00	944.00	87.90	1406.40	<b>\$52.</b> 47	\$70.50
1 Dozer, 410 H.P.		2807.00		3087.70	233.92	257.31	6 Truck Drivers (heavy)	51.30	2462.40	76.70	3681.60		
12 L.H., Daily Totals		\$3456.60		\$4055.90	\$288.05	\$337.99	1 F.E. Loader, W.M., 5.5 C.Y.		967.95		1064.74		
0 D 10V		D. il.	п.	Daiha	Bare	Incl.	1 Dozer, 410 H.P. 6 Dump Trucks, Off Hwy., 50 Ton		2807.00 11874.00		3087.70 13061.40	217.35	239.08
Crew B-10Y 1 Equip. Oper. (medium)	<b>Hr.</b> \$59.00	Daily \$472.00	<b>Hr.</b> \$87.90	Daily \$703.20	<b>Costs</b> \$54.13	0&P \$80.68	72 L.H., Daily Totals		\$19426.55		\$22855.85	\$269.81	\$317.44
.5 Laborer	\$59.00 44.40	\$472.00 177.60	\$67.90 66.25	\$703.20 265.00	Ş04.15	ŞOU.00						Bare	Incl.
1 Vibr. Roller, Towed, 12 Ton		584.80		643.28	48.73	53.61	Crew B-11Q	Hr.	Daily	Hr.	Daily	Costs	0&P
12 L.H., Daily Totals		\$1234.40		\$1611.48	\$102.87	\$134.29		\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
0 0114		<b>.</b> .		<b>.</b>	Bare	Incl.	.5 Laborer 1 Dozer, 140 H.P.	44.40	177.60 729.15	66.25	265.00 802.07	60.76	66.84
Crew B-11A	Hr.	Daily	<b>Hr.</b> \$87.90	Daily \$703.20	Costs	0&P	12 L.H., Daily Totals		\$1378.75		\$1770.27	\$114.90	\$147.52
1 Equipment Oper. (med.) 1 Laborer	\$59.00 44.40	\$472.00 355.20	\$87.90 66.25	\$703.20 530.00	\$51.70	\$77.08						Bare	Incl.
1 Dozer, 200 H.P.		1520.00		1672.00	95.00	104.50	Crew B-11R	Hr.	Daily	Hr.	Daily	Costs	0&P
16 L.H., Daily Totals		\$2347.20		\$2905.20	\$146.70	\$181.57	1 Equipment Operator (med.)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
					Bare	Incl.	.5 Laborer 1 Dozer, 200 H.P.	44.40	177.60 1520.00	66.25	265.00 1672.00	126.67	139.33
Crew B-11B	Hr.	Daily	Hr.	Daily	Costs	0&P	12 L.H., Daily Totals		\$2169.60		\$2640.20	\$180.80	\$220.02
1 Equipment Oper. (light) 1 Laborer	\$55.50 44.40	\$444.00 355.20	\$82.70 66.25	\$661.60 530.00	\$49.95	Ş74.47						Bare	Incl.
1 Air Powered Tamper		39.75	00.20	43.73			Crew B-11S	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Air Compressor, 365 cfm		343.55		377.90				\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
2 -50' Air Hoses, 1.5"		45.60 \$1228.10		50.16 \$1663.39	26.81	29.49 \$103.96	.5 Laborer 1 Dozer, 300 H.P.	44.40	177.60 1785.00	66.25	265.00 1963.50		
16 L.H., Daily Totals		\$1228.10		\$1003.39	\$76.76		1 Ripper, Beam & 1 Shank		91.60		1903.30	156.38	172.02
Crew B-11C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	12 L.H., Daily Totals		\$2526.20		\$3032.46	\$210.52	\$252.71
1 Equipment Oper. (med.)	\$59.00	\$472.00	\$87.90	\$703.20	\$51.70	\$77.08						Bare	Incl.
1 Laborer	44.40	355.20	66.25	530.00			Crew B-11T	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Backhoe Loader, 48 H.P.		216.20		237.82	13.51	14.86	1 Equipment Operator (med.) .5 Laborer	\$59.00	\$472.00 177.60	\$87.90 66.25	\$703.20 265.00	\$54.13	\$80.68
16 L.H., Daily Totals		\$1043.40		\$1471.02	\$65.21	\$91.94	1 Dozer, 410 H.P.	44.40	2807.00	00.20	265.00 3087.70		
Crew B-11J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Ripper, Beam & 2 Shanks		140.40		154.44	245.62	270.18
1 Equipment Oper. (med.)	\$59.00	\$472.00	\$87.90	\$703.20	\$51.70	\$77.08	12 L.H., Daily Totals		\$3597.00		\$4210.34	\$299.75	\$350.86
1 Laborer 1 Grader, 30,000 Lbs.	44.40	355.20 1073.00	66.25	530.00 1180.30			Crew B-11U	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Ripper, Beam & 1 Shank		91.60		100.76	72.79	80.07		\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
16 L.H., Daily Totals		\$1991.80		\$2514.26	\$124.49	\$157.14	.5 Laborer	44.40	177.60	66.25	265.00	20/ 17	21 / 70
							1 Dozer, 520 H.P.		3434.00 \$4083.60		3777.40 \$4745.60	286.17	314.78

12 L.H., Daily Totals

\$4083.60

\$4745.60 \$340.30

\$395.47

					-					Incl.			
Crew No.	Bai	re Costs	Sut	Incl. os O&P		ost abor-Hour	Crew	No.	Bare	Costs		nci. s O&P	Per L
Crew B-11V	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Cre	ew B-12G	Hr.	Daily	Hr.	Daily	Bare Costs
3 Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$44.40	\$66.25	1 Equip. Ope	er. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
1 Roller, 2-Drum, W.B., 7.5 H.P.		166.75		183.43	6.95	7.64	1 Laborer		44.40	355.20	66.25	530.00	
24 L.H., Daily Totals	(	\$1232.35		\$1773.43	\$51.35	\$73.89	1 Crawler Cra			810.30		891.33	
					Bare	Incl.		Bucket, .5 C.Y.		67.80		74.58	54.88
Crew B-11W	Hr.	Daily	Hr.	Daily	Costs	0&P	16 L.H., Daily	y Totals		\$1724.90		\$2228.31	\$107.81
1 Equipment Operator (med.)	\$59.00	\$472.00	\$87.90	\$703.20	\$51.37	\$76.76		<b>B</b> 4 6 1					Bare
1 Common Laborer	44.40	355.20	66.25	530.00				ew B-12H	Hr.	Daily	Hr.	Daily	Costs
10 Truck Drivers (heavy)	51.30	4104.00	76.70	6136.00			1 Equip. Ope	er. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
1 Dozer, 200 H.P. 1 Vibratory Roller, Towed, 23 Ton	ĺ	1520.00 520.35		1672.00 572.38			1 Laborer 1 Crawler Cra	one OF Ten	44.40	355.20 1152.00	66.25	530.00 1267.20	
10 Dump Trucks, 8 C.Y., 220 H.P.		4076.00		4483.60	63.71	70.08		ane, 25 ion Bucket, 1 C.Y.		69.25		76.17	76.33
96 L.H., Daily Totals		\$11047.55		\$14097.18	\$115.08	\$146.85	16 L.H., Daily			\$2068.05		\$2605.78	\$129.25
So Eini, Bully Totalo		Q11017.00		Q11057.10	Bare	Incl.	To Eini, Duij	100010		Q2000.00		<i>\$2000.70</i>	Bare
Crew B-11Y	Hr.	Daily	Hr.	Daily	Costs	0&P		rew B-12I	Hr.	Daily	Hr.	Daily	Costs
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.49	\$73.80	1 Equip. Ope	er. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
5 Common Laborers	44.40	1776.00	66.25	2650.00			1 Laborer	20 Ten	44.40	355.20	66.25	530.00	
3 Equipment Operators (med.) 1 Dozer, 80 H.P.	59.00	1416.00 405.85	87.90	2109.60 446.44			1 Crawler Cra 1 Dragling Bu	ucket, .75 C.Y.		1013.00 61.85		1114.30 68.03	67.18
2 Rollers, 2-Drum, W.B., 7.5 H.P.	ĺ	405.85 333.50		440.44 366.85			16 L.H., Dail			\$1921.65		\$2444.74	\$120.10
4 Vibrating Plates, Gas, 21"	ĺ	662.40		728.64	19.47	21.42	10 L.H., Dalij	y iolais		ŞI921.0J		ŞZ444.74	
72 L.H., Daily Totals		\$4964.95		\$6855.52	\$68.96	\$95.22	Cre	ew B-12J	Hr.	Daily	Hr.	Daily	Bare Costs
	l				Bare	Incl.	1 Equip. Ope	er. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
Crew B-12A	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Laborer		44.40	355.20	66.25	530.00	
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	1 Gradall, 5/			850.65		935.72	53.17
1 Laborer 1 Hyd. Excavator, 1 C.Y.	44.40	355.20 832.65	66.25	530.00 915.91	52.04	57.24	16 L.H., Daily	y Totals		\$1697.45		\$2198.11	\$106.09
16 L.H., Daily Totals	<b> </b>	\$1679.45		\$2178.32	\$104.97	\$136.14		B 4 6 4					Bare
TO L.H., Dally Totals	<b> </b>	Ş1079.4J		J2170.J2				ew B-12K	Hr.	Daily	Hr.	Daily	Costs
Crew B-12B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Equip. Ope 1 Laborer	er. (crane)	\$61.45 44.40	\$491.60	\$91.55	\$732.40	\$52.92
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	1 Laborer 1 Gradall, 3	Ton 1 C V	44.40	355.20 984.55	66.25	530.00 1083.01	61.53
1 Laborer	44.40	355.20	66.25	530.00	ŞJZ.3Z	\$70.50	16 L.H., Daily			\$1831.35		\$2345.41	\$114.46
1 Hyd. Excavator, 1.5 C.Y.		695.80	00.20	765.38	43.49	47.84	TO EAR, Duij	y lotais		Q1001.00		Q2040.41	Bare
16 L.H., Daily Totals		\$1542.60		\$2027.78	\$96.41	\$126.74	Cre	ew B-12L	Hr.	Daily	Hr.	Daily	Costs
					Bare	Incl.	1 Equip. Ope	er. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
Crew B-12C	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Laborer		44.40	355.20	66.25	530.00	
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	1 Crawler Cra	ane, 15 Ton		810.30		891.33	
1 Laborer	44.40	355.20	66.25	530.00			1 F.E. Attach	-		66.05		72.66	54.77
1 Hyd. Excavator, 2 C.Y.	<b> </b>	942.70		1036.97	58.92	64.81	16 L.H., Daily	y Totals		\$1723.15		\$2226.39	\$107.70
16 L.H., Daily Totals	<b> </b>	\$1789.50		\$2299.37	\$111.84	\$143.71							Bare
Crew B-12D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P		ew B-12M	Hr.	Daily	Hr.	Daily	Costs
	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	1 Equip. Ope 1 Laborer	er. (crane)	\$61.45 44.40	\$491.60 355.20	\$91.55	\$732.40 530.00	\$52.92
1 Equip. Oper. (crane) 1 Laborer	\$01.45 44.40	355.20	\$91.55 66.25	\$732.40 530.00	ŞUZ.92	\$70.90	1 Laborer 1 Crawler Cra	ane 20 Ton	44.40	1013.00	66.25	1114.30	
1 Hyd. Excavator, 3.5 C.Y.		2184.00	00.25	2402.40	136.50	150.15		ment, .75 C.Y.		71.25		78.38	67.77
16 L.H., Daily Totals		\$3030.80		\$3664.80	\$189.43	\$229.05	16 L.H., Daily			\$1931.05		\$2455.07	\$120.69
					Bare	Incl.		,					Bare
Crew B-12E	Hr.	Daily	Hr.	Daily	Costs	0&P		ew B-12N	Hr.	Daily	Hr.	Daily	Costs
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	1 Equip. Ope	er. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
1 Laborer 1 Hyd. Excavator, .5 C.Y.	44.40	355.20	66.25	530.00	20 50	21 40	1 Laborer 1 Crawler Cra	one OF Ten	44.40	355.20	66.25	530.00	
16 L.H., Daily Totals	<b> </b>	457.00 \$1303.80		502.70 \$1765.10	28.56 \$81.49	31.42 \$110.32	1 F.E. Attach			1152.00 77.35		1267.20 85.08	76.83
IV L.I., Dally IUlais		ÅT303'00		\$170J.IU			16 L.H., Daily			\$2076.15		\$2614.68	\$129.76
Crew B-12F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	To Entry Duly	,				,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Bare
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	Cre	ew B-120	Hr.	Daily	Hr.	Daily	Costs
1 Laborer	44.40	355.20	66.25	530.00	<i>952.52</i>	Ŷ10.JU	1 Equip. Ope		\$61.45	\$491.60	\$91.55	\$732.40	\$52.92
1 Hyd. Excavator, .75 C.Y.		701.80		771.98	43.86	48.25	1 Laborer		44.40	355.20	66.25	530.00	
16 L.H., Daily Totals		\$1548.60		\$2034.38	\$96.79	\$127.15	1 Crawler Cra	ane, 40 Ton		1231.00		1354.10	
								ment, 1.5 C.Y.		88.65		97.52	82.48
							16 L H Doile	Tabala		C0166 /6		C0714 01	¢125.40

16 L.H., Daily Totals

\$2166.45

\$2714.01

\$135.40

Cost Per Labor-Hour

Incl.

0&P

\$78.90

60.37

\$139.27

Incl. 0&P

\$78.90

83.96

\$162.86

Incl.

0&P

\$78.90

73.90

\$152.80

Inci. 0&P

\$78.90

58.48

\$137.38

Incl.

0&P

\$78.90

67.69

\$146.59

Incl. 0&P

\$78.90

60.25

\$139.15

Incl. 0&P

\$78.90

74.54

\$153.44

Incl. 0&P

\$78.90

84.52

\$163.42

Incl. 0&P

\$78.90

90.73

\$169.63

Crew No.	Bai	e Costs	Sut	Incl. os O&P	Cost Per Labor-Hour		
Crew B-12P	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	
1 Laborer	44.40	355.20	66.25	530.00			
1 Crawler Crane, 40 Ton		1231.00		1354.10			
1 Dragline Bucket, 1.5 C.Y.		65.70		72.27	81.04	89.15	
16 L.H., Daily Totals		\$2143.50		\$2688.77	\$133.97	\$168.05	
Crew B-12Q	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
•							
Equip. Oper. (crane) Laborer	\$61.45 44.40	\$491.60 355.20	\$91.55 66.25	\$732.40 530.00	\$52.92	\$78.90	
Hyd. Excavator, 5/8 C.Y.	44.40	604.75	00.25	665.23	37.80	41.58	
6 L.H., Daily Totals		\$1451.55		\$1927.63	\$90.72	\$120.48	
E.H., Daily Totals		Ş1 <del>4</del> 51.55		ŞIJZ7.03			
Crew B-12S	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	
Laborer	44.40	355.20	66.25	530.00			
Hyd. Excavator, 2.5 C.Y.		1567.00		1723.70	97.94	107.73	
6 L.H., Daily Totals		\$2413.80		\$2986.10	\$150.86	\$186.63	
Crew B-12T	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	
Laborer	44.40	355.20	66.25	530.00			
Crawler Crane, 75 Ton		1967.00		2163.70			
F.E. Attachment, 3 C.Y.		115.55		127.11	130.16	143.18	
L.H., Daily Totals		\$2929.35		\$3553.20	\$183.08	\$222.08	
Crew B-12V	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$52.92	\$78.90	
	44.40	355.20	66.25	530.00			
	77.70						
Laborer		1967.00		2163.70			
aborer Crawler Crane, 75 Ton		1967.00 72.30			127.46	140.20	
aborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y.				2163.70	127.46 \$180.38	140.20 \$219.10	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 5 L.H., Daily Totals		72.30 \$2886.10	Hr.	2163.70 79.53 \$3505.63	\$180.38 Bare	\$219.10 Incl.	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 5 L.H., Daily Totals Crew B-12Y	Hr.	72.30 \$2886.10 Daily	<b>Hr.</b> \$91.55	2163.70 79.53 \$3505.63 <b>Daily</b>	\$180.38 Bare Costs	\$219.10 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 5 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane)		72.30 \$2886.10 <b>Daily</b> \$491.60	<b>Hr.</b> \$91.55 66.25	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40	\$180.38 Bare	\$219.10 Incl.	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 5 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers	<b>Hr.</b> \$61.45	72.30 \$2886.10 Daily	\$91.55	2163.70 79.53 \$3505.63 <b>Daily</b>	\$180.38 Bare Costs	\$219.10 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 5 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y.	<b>Hr.</b> \$61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40	\$91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00	\$180.38 Bare Costs \$50.08	\$219.10 Incl. 0&P \$74.68	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) 2 Laborers Hyd. Excavator, 3.5 C.Y. 24 L.H., Daily Totals	<b>Hr.</b> \$61.45 44.40	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00	\$91.55 66.25	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl.	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z	Hr. \$61.45 44.40 Hr.	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b>	\$91.55 66.25 <b>Hr.</b>	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b>	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane)	Hr. \$61.45 44.40 Hr. \$61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60	\$91.55 66.25 <b>Hr.</b> \$91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl.	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 5 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. I. L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers	Hr. \$61.45 44.40 Hr.	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 \$184.00 \$3386.00 <b>Daily</b> \$491.60 710.40	\$91.55 66.25 <b>Hr.</b>	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. i L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. I.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y.	Hr. \$61.45 44.40 Hr. \$61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00	\$91.55 66.25 <b>Hr.</b> \$91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 \$50.08 65.29	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y.	Hr. \$61.45 44.40 Hr. \$61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 \$184.00 \$3386.00 <b>Daily</b> \$491.60 710.40	\$91.55 66.25 <b>Hr.</b> \$91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y. 4 L.H., Daily Totals Crew B-13	Hr. \$61.45 44.40 Hr. \$61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00	\$91.55 66.25 <b>Hr.</b> \$91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70 \$3516.10	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38 Bare Costs	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y. 4 L.H., Daily Totals Crew B-13 Labor Foreman (outside)	Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$61.45           \$61.45           \$44.40	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00 \$2769.00 <b>Daily</b> \$371.20	\$91.55 66.25 <b>Hr.</b> \$91.55 66.25 <b>Hr.</b> \$69.25	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70 \$3516.10 <b>Daily</b> \$554.00	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38 Bare	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50 Incl.	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y. 4 L.H., Daily Totals Crew B-13 Labor Foreman (outside) Laborers	Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$64.40           Hr.           \$46.40           44.40	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00 \$2769.00 <b>Daily</b> \$371.20 1420.80	\$91.55 66.25 <b>Hr.</b> \$91.55 66.25 <b>Hr.</b> \$69.25 66.25	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70 \$3516.10 <b>Daily</b> \$554.00 2120.00	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38 Bare Costs	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y. 4 L.H., Daily Totals Crew B-13 Labor Foreman (outside) Laborers Equip. Oper. (crane)	Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$46.40           44.40           61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00 \$2769.00 <b>Daily</b> \$371.20 1420.80 491.60	\$91.55 66.25 <b>Hr.</b> \$91.55 66.25 <b>Hr.</b> \$69.25 66.25 91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70 \$3516.10 <b>Daily</b> \$554.00 2120.00 732.40	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38 Bare Costs	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50 Incl. 0&P	
Laborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. 6 L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Laborers Hyd. Excavator, 3.5 C.Y. 4 L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Laborers Hyd. Excavator, 2.5 C.Y. 4 L.H., Daily Totals Crew B-13 Labor Foreman (outside) Laborers Equip. Oper. (crane) Equip. Oper. (crane) Equip. Oper. (crane)	Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$64.40           Hr.           \$46.40           44.40	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00 \$2769.00 <b>Daily</b> \$371.20 1420.80 491.60 420.00	\$91.55 66.25 <b>Hr.</b> \$91.55 66.25 <b>Hr.</b> \$69.25 66.25	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70 \$3516.10 <b>Daily</b> \$554.00 2120.00 732.40 626.00	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38 Bare Costs \$48.28	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50 Incl. 0&P \$72.01	
Aborer Crawler Crane, 75 Ton Dragline Bucket, 3 C.Y. L.H., Daily Totals Crew B-12Y Equip. Oper. (crane) Aborers Hyd. Excavator, 3.5 C.Y. L.H., Daily Totals Crew B-12Z Equip. Oper. (crane) Aborers Hyd. Excavator, 2.5 C.Y. L.H., Daily Totals Crew B-13 Aborers Equip. Oper. (crane) Crew B-13 Crew B-	Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$61.45           44.40           Hr.           \$46.40           44.40           61.45	72.30 \$2886.10 <b>Daily</b> \$491.60 710.40 2184.00 \$3386.00 <b>Daily</b> \$491.60 710.40 1567.00 \$2769.00 <b>Daily</b> \$371.20 1420.80 491.60	\$91.55 66.25 <b>Hr.</b> \$91.55 66.25 <b>Hr.</b> \$69.25 66.25 91.55	2163.70 79.53 \$3505.63 <b>Daily</b> \$732.40 1060.00 2402.40 \$4194.80 <b>Daily</b> \$732.40 1060.00 1723.70 \$3516.10 <b>Daily</b> \$554.00 2120.00 732.40	\$180.38 Bare Costs \$50.08 91.00 \$141.08 Bare Costs \$50.08 65.29 \$115.38 Bare Costs	\$219.10 Incl. 0&P \$74.68 100.10 \$174.78 Incl. 0&P \$74.68 71.82 \$146.50 Incl. 0&P	

				nci.		Cost Per Labor-Hour			
Crew No.	Bare	Costs	Sub	s O&P	Per L	abor-Hour			
Crew B-13A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P			
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.83	\$75.85			
2 Laborers	44.40	710.40	66.25	1060.00					
2 Equipment Operators (med.)	59.00	944.00	87.90	1406.40					
2 Truck Drivers (heavy)	51.30	820.80 1967.00	76.70	1227.20 2163.70					
1 Crawler Crane, 75 Ton 1 Crawler Loader, 4 C.Y.		1967.00		1601.60					
2 Dump Trucks, 8 C.Y., 220 H.P.		815.20		896.72	75.68	83.25			
56 L.H., Daily Totals		\$7084.60		\$8909.62	\$126.51	\$159.10			
					Bare	Incl.			
Crew B-13B	Hr.	Daily	Hr.	Daily	Costs	0&P			
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.28	\$72.01			
4 Laborers 1 Equip. Oper. (crane)	44.40 61.45	1420.80 491.60	66.25 91.55	2120.00 732.40					
1 Equip. Oper. (ciler)	52.50	491.00	78.25	626.00					
1 Hyd. Crane, 55 Ton	02100	990.15	70120	1089.17	17.68	19.45			
56 L.H., Daily Totals		\$3693.75		\$5121.56	\$65.96	\$91.46			
					Bare	Incl.			
Crew B-13C	Hr.	Daily	Hr.	Daily	Costs	0&P			
1 Labor Foreman (outside) 4 Laborers	\$46.40 44.40	\$371.20 1420.80	\$69.25 66.25	\$554.00 2120.00	\$48.28	\$72.01			
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40					
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00					
1 Crawler Crane, 100 Ton		2310.00		2541.00	41.25	45.38			
56 L.H., Daily Totals		\$5013.60		\$6573.40	\$89.53	\$117.38			
Crew B-13D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P			
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$52.92	\$78.90			
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40	<b>VOLIDE</b>	¢1000			
1 Hyd. Excavator, 1 C.Y.		832.65		915.91					
1 Trench Box		119.15		131.07	59.49	65.44			
16 L.H., Daily Totals		\$1798.60		\$2309.38	\$112.41	\$144.34			
Crew B-13E	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P			
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$52.92	\$78.90			
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40					
1 Hyd. Excavator, 1.5 C.Y. 1 Trench Box		695.80 119.15		765.38 131.07	50.93	56.03			
16 L.H., Daily Totals		\$1661.75		\$2158.84	\$103.86	\$134.93			
To E.m., Dully Totals		\$1001.75		Q2130.04	Bare	Incl.			
Crew B-13F	Hr.	Daily	Hr.	Daily	Costs	0&P			
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$52.92	\$78.90			
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40					
1 Hyd. Excavator, 3.5 C.Y. 1 Trench Box		2184.00 119.15		2402.40 131.07	143.95	158.34			
16 L.H., Daily Totals		\$3149.95		\$3795.86	\$196.87	\$237.24			
		<b>VOI 15150</b>		<i><b>Q</b>(<b>1</b>) <b>D</b>(<b>1</b>) <b>D</b></i>	Bare	Incl.			
Crew B-13G	Hr.	Daily	Hr.	Daily	Costs	0&P			
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$52.92	\$78.90			
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40					
1 Hyd. Excavator, .75 C.Y. 1 Trench Box		701.80 119.15		771.98 131.07	51.31	56.44			
16 L.H., Daily Totals		\$1667.75		\$2165.45	\$104.23	\$135.34			
	U.,		U.,		Bare	Incl.			
Crew B-13H	Hr.	Daily	Hr.	<b>Daily</b> \$530.00	Costs	0&P			
	\$11.10	53255 20	Shh h						
1 Laborer 1 Equip. Oper. (crane)	\$44.40 61.45	\$355.20 491.60	\$66.25 91.55		\$52.92	\$78.90			
1 Laborer 1 Equip. Oper. (crane) 1 Gradall, 5/8 C.Y.	\$44.40 61.45	\$355.20 491.60 850.65	\$66.25 91.55	732.40 935.72	\$52.92	\$70.90			
1 Equip. Oper. (crane)		491.60		732.40	\$52.92 60.61 \$113.54	\$78.90 66.67 \$145.57			

Crew No.	Ba	re Costs	Sut	Incl. os O&P		ost Ibor-Hour	Crew No.	Bare	Costs		ncl. s O&P		Cost .abor-Hour
Crew B-13I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-14C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$52.92	\$78.90	1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$55.77	\$83.12
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			.5 Laborer	44.40	177.60	66.25	265.00		
1 Gradall, 3 Ton, 1 C.Y.		984.55		1083.01	co. oo	75.00	1 Hyd. Excavator, 7 C.Y.		3475.00		3822.50	289.58	318.54
1 Trench Box		119.15		131.07	68.98	75.88	12 L.H., Daily Totals		\$4144.20		\$4819.90	\$345.35	\$401.66
16 L.H., Daily Totals		\$1950.50		\$2476.47	\$121.91	\$154.78	Crew D 145	11.	Deller	11.	Dailu	Bare	Incl.
Crew B-13J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-14F	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$52.92	\$78.90	1 Equip. Oper. (crane) .5 Laborer	\$61.45 44.40	\$491.60 177.60	\$91.55 66.25	\$732.40 265.00	\$55.77	\$83.12
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40	JJZ.JZ	\$70.90	1 Hyd. Shovel, 7 C.Y.	44.40	4148.00	00.25	4562.80	345.67	380.23
1 Hyd. Excavator, 2.5 C.Y.		1567.00		1723.70			12 L.H., Daily Totals		\$4817.20		\$5560.20	\$401.43	\$463.35
1 Trench Box		119.15		131.07	105.38	115.92						Bare	Incl.
16 L.H., Daily Totals		\$2532.95		\$3117.17	\$158.31	\$194.82	Crew B-14G	Hr.	Daily	Hr.	Daily	Costs	0&P
0. 0.10%					Bare	Incl.		\$61.45	\$491.60	\$91.55	\$732.40	\$55.77	\$83.12
Crew B-13K	Hr.	Daily	Hr.	Daily	Costs	0&P	.5 Laborer	44.40	177.60	66.25	265.00		
2 Equip. Opers. (crane)	\$61.45	\$983.20	\$91.55	\$1464.80 771.98	\$61.45	\$91.55	1 Hyd. Shovel, 12 C.Y.		6022.00		6624.20	501.83	552.02
1 Hyd. Excavator, .75 C.Y. 1 Hyd. Hammer, 4000 ft-Ib		701.80 649.20		771.98			12 L.H., Daily Totals		\$6691.20		\$7621.60	\$557.60	\$635.13
1 Hyd. Excavator, .75 C.Y.		701.80		771.98	128.30	141.13	Crew B-14J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
16 L.H., Daily Totals		\$3036.00		\$3722.88	\$189.75	\$232.68		\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
					Bare	Incl.	.5 Laborer	44.40	3472.00 177.60	66.25	265.00	ŞJ4.15	200.00
Crew B-13L	Hr.	Daily	Hr.	Daily	Costs	0&P	1 F.E. Loader, 8 C.Y.	11.10	2285.00	00.20	2513.50	190.42	209.46
2 Equip. Opers. (crane)	\$61.45	\$983.20	\$91.55	\$1464.80	\$61.45	\$91.55	12 L.H., Daily Totals		\$2934.60		\$3481.70	\$244.55	\$290.14
1 Hyd. Excavator, 1.5 C.Y.		695.80		765.38								Bare	Incl.
1 Hyd. Hammer, 5000 ft-lb		705.60		776.16	101.45	144.00	Crew B-14K	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Hyd. Excavator, .75 C.Y.		701.80		771.98	131.45	144.60	1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.13	\$80.68
16 L.H., Daily Totals		\$3086.40		\$3778.32	\$192.90	\$236.15	.5 Laborer	44.40	177.60	66.25	265.00		
Crew B-13M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 F.E. Loader, 10 C.Y.		2706.00		2976.60	225.50	248.05
2 Equip. Opers. (crane)	\$61.45	\$983.20	\$91.55	\$1464.80	\$61.45	\$91.55	12 L.H., Daily Totals		\$3355.60		\$3944.80	\$279.63	\$328.73
1 Hyd. Excavator, 2.5 C.Y.	Q01.43	1567.00	\$51.55	1723.70	Ş01. <del>4</del> 5	QJ1.33	Crew B-15	Hr.	Deily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Hyd. Hammer, 8000 ft-lb		918.65		1010.52				\$59.00	Daily		\$703.20		
1 Hyd. Excavator, 1.5 C.Y.		695.80		765.38	198.84	218.72	1 Equipment Oper. (med.) .5 Laborer	\$59.00 44.40	\$472.00 177.60	\$87.90 66.25	265.00	\$52.51	\$78.41
16 L.H., Daily Totals		\$4164.65		\$4964.40	\$260.29	\$310.27	2 Truck Drivers (heavy)	51.30	820.80	76.70	1227.20		
					Bare	Incl.	2 Dump Trucks, 12 C.Y., 400 H.P.		1158.70		1274.57		
Crew B-13N	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Dozer, 200 H.P.		1520.00		1672.00	95.67	105.23
2 Equip. Opers. (crane)	\$61.45	\$983.20	\$91.55	\$1464.80	\$61.45	\$91.55	28 L.H., Daily Totals		\$4149.10		\$5141.97	\$148.18	\$183.64
1 Hyd. Excavator, 3.5 C.Y. 1 Hyd. Hammer, 12,000 ft-Ib		2184.00 882.20		2402.40 970.42								Bare	Incl.
1 Hyd. Excavator, 1.5 C.Y.		695.80		765.38	235.13	258.64	Crew B-16	Hr.	Daily	Hr.	Daily	Costs	0&P
16 L.H., Daily Totals		\$4745.20		\$5603.00	\$296.57	\$350.19		\$46.40	\$371.20	\$69.25	\$554.00	\$46.63	\$69.61
					Bare	Incl.	2 Laborers 1 Truck Driver (heavy)	44.40 51.30	710.40 410.40	66.25 76.70	1060.00 613.60		
Crew B-14	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Dump Truck, 12 C.Y., 400 H.P.	01.00	579.35	70.70	637.28	18.10	19.92
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$46.58	\$69.49	32 L.H., Daily Totals		\$2071.35		\$2864.89	\$64.73	\$89.53
4 Laborers	44.40	1420.80	66.25	2120.00								Bare	Incl.
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60	4.50	4.05	Crew B-17	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Backhoe Loader, 48 H.P.		216.20		237.82	4.50	4.95	2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$48.90	\$72.97
48 L.H., Daily Totals		\$2452.20		\$3573.42	\$51.09	\$74.45	1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
Crew B-14A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$55.77	\$83.12	1 Backhoe Loader, 48 H.P. 1 Dump Truck, 8 C.Y., 220 H.P.		216.20 407.60		237.82 448.36	19.49	21.44
.5 Laborer	44.40	177.60	66.25	265.00	\$55.77	QOJ.12	32 L.H., Daily Totals		\$2188.60		\$3021.38	\$68.39	\$94.42
1 Hyd. Excavator, 4.5 C.Y.	11.10	3450.00	00.20	3795.00	287.50	316.25	JE LITI, Daily Totals		v2100.00		93021.JU		
12 L.H., Daily Totals		\$4119.20		\$4792.40	\$343.27	\$399.37	Crew B-17A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
					Bare	Incl.		\$46.40	\$742.40	\$69.25	\$1108.00	\$47.54	\$71.08
Crew B-14B	Hr.	Daily	Hr.	Daily	Costs	0&P	6 Laborers	44.40	2131.20	66.25	3180.00		
1 Equip. Oper. (crane)	\$61.45	\$491.60	\$91.55	\$732.40	\$55.77	\$83.12	1 Skilled Worker Foreman (out)	59.10	472.80	88.90	711.20		
.5 Laborer	44.40	177.60	66.25	265.00	000.17	201.20	1 Skilled Worker	57.10	456.80	85.90	687.20	A -=	A=+ < -
1 Hyd. Excavator, 6 C.Y.		3506.00		3856.60	292.17	321.38	80 L.H., Daily Totals		\$3803.20		\$5686.40	\$47.54	\$71.08
12 L.H., Daily Totals		\$4175.20		\$4854.00	\$347.93	\$404.50							

Domes 178         Hr.         Day         Control         S44.0         S57.0         S67.0         S57.0           1 Facio Carrelongo         55.0         44.00         87.0         66.0         57.25         57.25         57.25         57.25         57.25         57.25         57.25         12.00         57.25	Crew No.	Bai	re Costs	Sut	inci. os O&P		ost Ibor-Hour	Crew No.	Bare	Costs		ncl. s O&P		Cost abor-Hour
Juture ser         14.4.0         97.4.4         96.2         50.0.1         96.2         97.4.0         95.3.3         97.0.2           Links, Der Indy, Links,	Crew B-17B	Hr.	Dailv	Hr.	Daily		-	Crew B-20A	Hr.	Daily	Hr.	Dailv		Incl. 0&P
Dimber beinger         Staber Lotes, 2014         Particle         Particle<	2 Laborers					\$48.90		1 Labor Foreman (outside)					\$53.16	\$79.34
1 absket sine, kip R         215.00         227.2         221.4         221.6	1 Equip. Oper. (light)	55.50	444.00	82.70	661.60			1 Laborer	44.40	355.20	66.25	530.00		
1 Amer Took 2 C L 400 + P.         578.35         637.26         2.48         2.33.6           2 LL, Day Took         527.05 <td>1 Truck Driver (heavy)</td> <td>51.30</td> <td>410.40</td> <td>76.70</td> <td></td> <td></td> <td></td> <td>1 Plumber</td> <td>67.70</td> <td>541.60</td> <td>101.05</td> <td>808.40</td> <td></td> <td></td>	1 Truck Driver (heavy)	51.30	410.40	76.70				1 Plumber	67.70	541.60	101.05	808.40		
22: LH, Dufy Safa         S220.28         S200.28         S200.28         S200.28									54.15		80.80			
Orw 9.13         Hr.         Daly         Hr.         Daly         Ord         Oct           11 dar Fremm Jundel         545.0         537.20         559.25         555.00         557.25           11 dar Fremm Jundel         546.0         537.20         559.25         555.00         557.25           21 LS, Dary Stat.         557.25         557.56         557.57         578.44         557.03         567.25         557.57         557.84         557.03         557.25         557.57         557.84         557.05         557.17         557.84         557.05         557.17         557.84         557.05         557.17         557.84         557.05         557.17         557.84         557.05         557.17         557.84         557.05         557.17         557.84         557.05         557.17         557.84         557.05         557.11         557.05         557.11         557.05         557.07         11 dark Freeman Jundel         546.40         557.05         557.01         12 dark Freeman Jundel         546.40         577.26         557.26         12 dark Freeman Jundel         546.40         577.26         557.26         557.27           10 Load Strate         577.00         578.00         578.00         578.00         578.00 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>32 L.H., Daily Totals</td><td></td><td>\$1701.20</td><td></td><td>\$2538.80</td><td>\$53.16</td><td>\$79.34</td></t<>								32 L.H., Daily Totals		\$1701.20		\$2538.80	\$53.16	\$79.34
Orea 9.18         Hr.         Day         Cas         D24           Lubbrers back         44.40         75.40         55.07 <td< td=""><td>32 L.H., Daily Totals</td><td></td><td>\$2360.35</td><td></td><td>\$3210.30</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Incl.</td></td<>	32 L.H., Daily Totals		\$2360.35		\$3210.30									Incl.
2 Lubores         44.40         70.40         6.52         90.00           24 LH, Dury Itaks         \$1247.20         \$1796.16         \$51.97         \$74.80         \$10.97         \$20.007         6.25         \$50.00           24 LH, Dury Itaks         \$1247.20         \$1796.16         \$51.97         \$74.80         \$10.97         \$20.007         6.82         \$52.90         \$20.007         6.82         \$52.90         \$20.007         6.82         \$52.90         \$20.007         6.82         \$52.90         \$20.97         \$20.97         \$52.97         \$20.97         \$52.97         \$52.97         \$20.97         \$52.97	Crew B-18	Hr.	Daily	Hr.	Daily									0&P \$76.34
1 Vetang Pag, Ga, 21*         355.00         126.16         6.50         7.59           2 LH, Day Trats         S1247.20         S1796.16         S11.97         S74.84           Cree 8-19         Hr.         Daty         Bar         Opt         S25.90         A.1.1         S25.90         A.9.1         S25.90         A.9.1         S25.90         A.9.1         S25.90         A.9.1         Daty         S25.90         A.9.1         Daty         S25.90         A.9.1         Daty         S25.90         A.9.2         S55.40         S55.40         S55.40         S55.40         S54.82         S58.40         S54.82         S57.40         S54.80         S54.82         S57.40         S54.80         S54.80         S54.80         S54.80         S54.80         S54.80	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.07	\$67.25	1 Skilled Worker	57.10	456.80	85.90	687.20		
Set Line, Darly finds         S124/20         S179/51/6         S19/97         S76.84           Orw B-19         Hr.         Daily         Hr.         Daily         Construction         S19/97         S28/47/41         S19/97         S28/97/41         S19/97/41         S1	2 Laborers	44.40	710.40	66.25	1060.00				44.40	355.20	66.25	530.00		
Crew B-19         Hr.         Daily         Eare         Ind.           Crew B-19         Hr.         Daily         Crew B-19         Crew B-19         S77.00         S77.11         S77.66         S77.00	1 Vibrating Plate, Gas, 21"								61.45		91.55			
Crew B-19         Hr.         Daily         Hr.         Daily         Earls         Output           1 Per Univers         55.00         178.00         85.00         571.01         587.01         587.00         58.22         58.00         58.22         58.00         58.22         58.00         58.22         58.00         58.22         58.00         58.22         58.10         11.abor freemin cloaded         54.64.0         557.7.00         58.22         58.10         11.abor freemin cloaded         54.64.0         557.7.00         58.22         58.00         58.22         58.11         12.abor freemin cloaded         54.64.0         557.7.00         58.22         10.82         11.abor freemin cloaded         54.64.0         557.7.00         557.20         10.82         11.abor freemin cloaded         54.64.0         557.7.00         557.00         557.11         557.10         557.11         557.10         557.11         557.10         557.11         557.00         557.11         557.10         557.11         557.10         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11         557.11	24 L.H., Daily Totals		\$1247.20		\$1796.16	\$51.97	\$74.84							7.50
I Pile Diver Forema (outside 4 Pile Divers         S57.30 (5.53)         S68.20 (7.82.0)         S57.10 (7.82.0)         S57.10 (7.82.0)         S57.11 (7.82.0)         S57.11 (7.82.0) <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>28 L.H., Daily Totals</td> <td></td> <td>\$1619.97</td> <td></td> <td>\$2347.47</td> <td>\$57.86</td> <td>\$83.84</td>								28 L.H., Daily Totals		\$1619.97		\$2347.47	\$57.86	\$83.84
4 <sup>+</sup> /He Driver former, former,														Incl.
2 Expl. Oper (Internet)         61.45         983.20         91.55         164.80         11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1					-	\$57.11	\$87.06							0&P
1 Euro, Org. Cohen, 40 for Londer Cone, 40 for Land, 90 fig.         52.50         4.20.00         78.25         6.50.00         1         1         Phanche, 40 for Land, 90 fig.         1.35.10         1         1         Phanche, 40 for Land, 90 fig.         1.35.10         1         1         Phanche, 40 for Land, 90 fig.         1.35.10         31.95         53.11         1         1         Phanche, 20 fig.         31.95         <								,					\$54.82	\$81.78
1 Coder Cone, 40 func         121.00         134.10         14.14         Phalmer. Desd, 28 tb         441.70         14.15         441.70         14.15         441.70         14.15         441.70         14.15         441.70         14.15         14.15         14.15         441.70         14.15         14.15         14.15         14.15         441.70         14.15         14.1														
1 Lack group had         371.80         400.40         455.87         35.85         450.87         61.45         471.60         91.55         72.20         10.82         11           1 Hammer, Desal, 220 Hb         441.90         557.00         557.00         557.00         557.00         557.00         557.00         557.00         557.10         557.11         557.00         566.20         557.00         566.20         557.00         566.20         557.00         567.00         566.20         557.00         566.20         557.00         566.20         557.00         566.20         557.00         566.20         557.00         566.20         577.00         12.60.0 (per. (norme)         61.45         90.10         566.25         13.000         76.25         566.0         11.000         76.25         567.00         57.20         567.00         567.00         10.00         76.25         569.0         77.20         568.00         1.000         10.000         66.25         12.000         76.25         558.00         77.20         1.000         76.25         569.00         76.25         559.00         76.25         559.00         76.25         57.00         76.25         559.00         76.25         57.200         77.20         76.25         56.		JZ.50		/0.20										
1 branner, Diesel, 22a hb         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····         ·····	,													
G4 LH, Daly Tutais         S5809.75         S7820.60         S880.6         S122.20           Crew B-19A         Hr.         Daly         Hr.         Daly         Bare         Incl.           1 Pie Diner forema (utside)         557.00         547.00         547.00         547.00         557.00         547.00         567.00         567.00         567.00         567.00         577.00         567.00         577.00         567.00	•					31.95	35.14		01110		51100		10.82	11.90
Crew B-19A         Hr.         Daily         Hr.         Daily         Costs         OAP           1 Pile Driver Freeman (ustaide)         55790         S463.20         S89.50         S71.60         S57.11         S87.06         S71.00         S72.01         S463.20         S68.10         276.40         Determinant (ustaide)         S46.40         Utaborrs         Laborrs														\$93.68
I Pile Driver Foreman (autside)         S57.90         S463.20         S88.50         S71.10         S87.06           4 Nie Drivers         55.90         178.80         86.40         2774.80         1         1         1         1         1         1         1         1         1         1         1         1         1         55.90         178.80         86.40         2774.80         1 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>Bare</td><td>Incl.</td><td></td><td></td><td></td><td></td><td></td><td>Bare</td><td>Incl.</td></t<>						Bare	Incl.						Bare	Incl.
4 Pile Drivers         55.90         17.88.00         86.40         27.64.80         1         3         1         0         1         0         0         66.25         159.00         1           L gau, Due, torane)         61.45         983.20         91.55         1444.80         1         5.23.38         11.90         11         0         11         0         10         252.03         81.190         11         0         11 </td <td></td> <td>-</td> <td>0&amp;P</td>													-	0&P
2 Equip. Oper. (rane)         61.45         983.20         91.55         1464.80         91.55         732.40         11.90         11.10           1 Equip. Oper. (rane)         52.50         4200.00         78.25         626.00         78.25         626.00         78.25         626.00         78.25         626.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         621.00         78.25         626.00 <t< td=""><td></td><td></td><td></td><td></td><td>-</td><td>\$57.11</td><td>\$87.06</td><td></td><td></td><td></td><td></td><td></td><td>\$48.21</td><td>\$71.91</td></t<>					-	\$57.11	\$87.06						\$48.21	\$71.91
1 Eugi, Oge: (nier)       52.0       400.00       78.25       626.00       1 + + +       40.9       -       40.9       -       40.9       -       40.9       -       40.9       -       40.9       -       40.9       -       40.9       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       -       40.0       -       40.0       -       -       40.0       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       40.0       -       -       40.0       -       -       40.0       -       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0       -       40.0<														
1 Crawler Coree, 75 Ton       1967.00       2163.70       409.04         1 Lead, 97 High       371.85       409.04       400.07       640.25       500.0       567.70       510.26       517.11       57.70       567.70       510.26       517.11       57.70       568.70       511.11       567.71       510.70       57.11       57.70       568.70       511.11       567.70       510.264       5137.14       568.70       511.11       567.70       510.264       5137.14       568.70       510.70       57.71       568.70       511.11       567.70       510.264 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>61.45</td> <td></td> <td>91.55</td> <td></td> <td>11.00</td> <td>13.08</td>									61.45		91.55		11.00	13.08
1 Lead, 90' High 1 Hammer, Desel, 41k ftbl         371.85 563.75         409.04 64 L.H, Dally Totals         45.66         50.23 501.278         Crew B-21C         Hr.         Dally         Hr.         Dally         Costs         0.0           64 L.H, Dally Totals         567.760         587.86.24         \$102.78         \$137.20         \$69.25         \$55.00         \$48.28         \$7           1 Pile Driver Foreman (loutside)         \$57.90         \$46.30         \$59.71.00         \$57.11         \$87.05         \$44.aborers         44.00         142.00         91.55         732.40         14.aborers         15.90         0.06.25         22.00         64.25         22.00         78.25         66.60.0         12.00         12.31.00         12.31.01         12.31.00         12.31.01         12.31.01         12.32.01         12.32.01         12.32.01         12.33.31.25         44           1 Conter Canary         10.13         13.41.01         13.45.37         13.45.37         12.40.00         12.35.07         510.264         513.71.45         510.264         513.71.45         543.00         37.25         44           1 Land, 90' High         371.85         409.04         14.20.00         12.31.00         12.33.01         555.07         555.00         555.00         557.00		52.50		/0.20										\$84.99
1 Hammer, Desiel, 41k ftab       S83.55       S67.760       S47.862.4       S102.78       S137.29         64 L.H, Daily Totals       S657.760       S87.862.4       S102.78       S137.29         Crew B-198       Hr.       Daily       Hr.       Daily       Cost S02.78       S67.70       S64.20       S89.50       S71.60       S57.11       S87.06       S67.00       S64.20       S89.50       S71.60       S57.11       S87.06       Lador foreman (outside)       S46.40       S37.120       S69.25       S25.60       S47.40       Lador foreman (outside)       S46.40       S37.120       S69.25       S25.00       S47.40       Lador foreman (outside)       S46.40       S37.10       S69.25       S25.00       S47.45       S47.25								40 L.H., Dally Totals		ŞZ404.ZU		ŞƏƏƏƏ./O		
64 L.H., Daly Totals         56577.60         S8786.24         S102.78         S137.29           Crew B-198         Hr.         Daily         Hr.         Daily         Costs         O&P           1 Pla Driver Foreman (outside)         557.90         546.32         S89.50         S71.60         S57.11         S87.06         4.4.00         1420.00         66.25         2120.00         78.25         662.00         732.40         150.00         755.71         S87.06         2.5.0         420.00         78.25         662.00         732.40         72.44.00         78.25         662.00         78.25         662.00         78.25         662.00         78.25         662.00         78.25         662.00         78.25         662.00         78.25         662.00         78.25         662.00         77.10         1884.30         37.25         4           1 Cawler Crane, 40 Ton         1231.00         1354.10         5102.64         5137.14         5102.64         5137.14         5102.64         5137.14         561.14         5101.04         57.11         587.05         510.1         55.71         587.05         5101.04         57.11         587.05         510.1         55.71         587.05         510.1         55.71         587.05         57.10<						45.66	50.23	Crew B-21C	Hr	Daily	Hr	Daily		Incl. 0&P
Crew B-198         Hr.         Daily         Hr.         Daily         Bare         Incl. Costs         OAP           1 Pile Driver Foreman (outside)         557.90         5843.20         589.50         571.60         577.11         S87.06         52.50         42.000         78.25         62.00         24.400         52.50         42.000         78.25         62.00         28.49         24.400         52.50         42.000         78.25         62.00         28.49         24.000         78.25         62.00         28.49         25.50         42.00         78.25         62.00         28.49         25.50         42.00         78.25         62.00         25.01         18.08         37.25         4           1 Conder Cone, A010         1         77.55         62.00         1         57.66         51.02         50.87         50.97         50.264         50.37.11         587.	64 L.H., Daily Totals		\$6577.60		\$8786.24	\$102.78	\$137.29							\$72.01
I Pile Driver Foreman (autside)         \$57.90         \$463.20         \$89.50         \$57.11         \$87.60         \$1.93	Crew B-19B	Hr.	Daily	Hr.	Daily			4 Laborers	44.40	1420.80	66.25	2120.00	\$10.20	0/2.01
4 Pile Drivers       55.90       1788.80       86.40       2764.80       2         2 Equip. Oper. (rane)       61.45       983.20       91.55       1464.80       331.25       347.20       381.92         1 Cawler Crane, 40 Ton       1231.00       1354.10       1354.10       1354.10       1884.30       37.25       4         1 Lead, 90 High       371.85       409.04       441.70       485.87       55.90       566.90       57.10       45.53       50.08         64 LH, Daily Totals       56568.90       5877.67       S102.64       S137.14       56.LH, Daily Totals       56.40       S371.20       569.25       5554.00       551.73       577         1 Pile Driver Foreman (outside)       55.90       178.80       86.40       2764.80       577.11       S87.66       S102.64       S137.14         1 Labor Foreman (outside)       55.90       178.80       86.40       2764.80       577.11       S87.06         1 Pile Driver foreman (outside)       52.50       420.00       757.16       S97.01       577.11       S87.06         1 Equip. Oper. (crane)       61.45       983.20       91.55       164.80       11.4borer       57.10       456.80       85.90       687.20         1														
2 Equip. Oper. (rane)         61.45         983.20         91.55         1464.80         ×					-	Ş57.11	Q07.00		52.50		70.25			
1 Equip. Oper. (niler)       52.50       420.00       78.25       626.00       1354.10       11 Latice Boom Crane, 90 Ton       1713.00       1884.30       37.25       4         1 Leady 90' High       371.85       409.04       485.87       50.08       561.14       57.10       464.04       357.20       564.25       550.00       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28       561.28								÷						
1 Crawler Crane, 40 Ton       1231.00       1354.10       1354.10       14354.10       1354.10       14371.85       4409.04       14371.85       4409.04       14371.85       50.08       561.41. Daily       561.42. S51.73       571.0       456.80       851.00       651.73       571.1       581.73       571.1       581.63       511.1       511.73       571.74       571.74 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1 Lattice Boom Crane, 90 Ton</td> <td></td> <td></td> <td></td> <td></td> <td>37.25</td> <td>40.98</td>								1 Lattice Boom Crane, 90 Ton					37.25	40.98
I Harmer, Diesel, 22k ft-lb         441.70         485.87         45.53         50.08           64 L.H., Daily Totals         56568.90         58776.67         \$102.64         \$137.14           I Barge, 400 Ton         Kr.         Daily         Hr.         Daily         S56.07         \$102.64         \$137.14           I Labor Foreman (outside)         \$57.90         \$463.20         \$89.50         \$71.60         \$64.20         \$130.14         S55.00         64.25         \$50.00         \$57.71         \$50.00         \$57.10         \$44.60         \$53.00         \$67.20         \$54.30         \$59.00         \$57.10         \$46.40         \$35.20         \$66.25         \$53.00.00         \$57.10         \$50.00         \$67.20         \$57.90         \$66.25         \$50.00         \$57.11         \$57.00         \$26.00         \$57.90         \$46.30         \$57.90         \$57.90         \$46.30         \$57.90         \$57.90         \$46.80         \$57.90         \$57.90         \$61.45         \$368.70         91.55         \$49.30         \$75.80         \$76.67         \$75.80         \$76.67         \$26.00         \$75.90         \$286.46         \$371.20         \$69.25         \$55.400         \$61.28         \$263.56         \$61.28         \$263.56         \$61.28         <	1 Crawler Crane, 40 Ton							56 L.H., Daily Totals						\$112.98
I Harmer, Diesel, 22k ft-lb         441.70         485.87         45.53         50.08           164 L.H., Daily Totals         56568.90         58776.67         \$102.64         \$137.14           Crew B-19C         Hr.         Daily         Hr.         Daily         Costs         OB           1 Harmer, Diesel, 22k ft-lb         Hr.         Daily         Kassa         \$557.00         \$567.00         \$517.3         \$77.00           64 L.H., Daily Totals         \$57.90         \$646.30         \$89.00         \$71.00         \$68.70         \$15.3         \$50.00           1 Pile Driver Foreman (outside)         \$57.90         \$463.20         \$89.50         \$71.600         \$57.11         \$87.06         \$75.5P. Crane, 4x4, 5 Ton         \$286.46         \$315.11         9.55         \$10           4 Pile Drivers         55.90         178.80         86.40         2764.80         \$57.11         \$87.06         \$1838.36         \$2635.61         \$61.28         \$81.28         \$87.14           1 Caquie Crane, 75 Ton         1967.00         2163.70         \$163.70         \$163.70         \$102.44         \$11.400 Foreman (outside)         \$46.40         \$371.20         \$69.25         \$55.00.00         \$50.75         \$77.10           1 Lador foreman (outside) <td></td> <td>Bare</td> <td>Incl.</td>													Bare	Incl.
G4 L.H., Daily Totals         \$6568.90         \$877.6.67         \$102.64         \$137.14           Crew B-19C         Hr.         Daily         Hr.         Daily         Rare         Incl.           1 Pile Driver Foreman (outside)         \$57.90         \$463.20         \$89.90         687.20         \$85.7.3         \$7.4           4 Pile Driver Foreman (outside)         \$57.90         \$463.20         \$89.50         \$716.00         \$57.11         \$87.667         \$87.667         \$87.667         \$87.667         \$87.667         \$87.76.67         \$12.607         \$88.76         \$12.607         \$68.20         \$50.90         \$57.10         \$57.10         \$57.10         \$56.20         \$12.6007         \$67.66.20         \$50.00         \$75.87. Crane, 4x4, 5 Ton         \$286.46         315.11         9.55         \$10.           1 Equip. Oper. (crane)         \$61.45         983.20         91.55         \$62.00         \$75.87. Crane, 4x4, 5 Ton         \$1838.36         \$2635.61         \$61.28         \$82.90           1 Labor Foreman (outside)         \$16.46         \$371.20         \$69.25         \$554.00         \$50.75         \$75.10           1 Labor Foreman (outside)         \$16.46         \$371.20         \$69.25         \$554.00         \$50.75         \$75.9 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Crew B-22</td><td>Hr.</td><td>Daily</td><td>Hr.</td><td>Daily</td><td></td><td>0&amp;P</td></t<>								Crew B-22	Hr.	Daily	Hr.	Daily		0&P
64 L.H., Daily Iotals       S8568.90       S87/6.67       S102.64       S137.14         Crew B-19C       Hr.       Daily       Hr.       Daily       Costs       O&P         1 Pile Driver Foreman (outside)       \$57.90       \$463.20       \$89.50       \$716.00       \$57.11       \$87.06         4 Pile Drivers       55.90       1788.80       86.40       2764.80	6							1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$51.73	\$77.35
Crew B-19C         Hr.         Daily         Hr.         Daily         Costs         O&P           1 Pile Driver Foreman (outside)         \$57.90         \$463.20         \$89.50         \$716.00         \$57.11         \$87.06         1.75 Equip. Oper. (crane)         61.45         368.70         91.55         549.30         9.55         10         30.1.1         9.55         11         9.55         10         30.1.1         9.55         10         30.1.2         30.1.4         56.46         315.11         9.55         10         30.1.4         10.1.5         366.46         315.11         9.55         10         30.1.4         10.1.4         30.1.4         51.00         10.1.8         30.1.4         51.00         10.1.8         30.1.4         51.00         10.1.8         30.1.4         50.1.5         549.30         \$61.28         \$83           1 Equip. Oper. (crane)         61.45         368.70         91.55         540.00         \$61.28 <td>64 L.H., Daily Iotals</td> <td></td> <td>\$6568.90</td> <td></td> <td>\$8//6.6/</td> <td>\$102.64</td> <td>\$137.14</td> <td>1 Skilled Worker</td> <td>57.10</td> <td></td> <td></td> <td>687.20</td> <td></td> <td></td>	64 L.H., Daily Iotals		\$6568.90		\$8//6.6/	\$102.64	\$137.14	1 Skilled Worker	57.10			687.20		
1 Pile Driver Foreman (outside)       \$57.90       \$463.0       \$89.50       \$71.60       \$87.01       \$87.06         4 Pile Drivers       55.90       1788.80       86.40       2764.80       \$57.11       \$87.06       286.46       315.11       9.55       10         2 Equip. Oper. (crane)       61.45       983.20       91.55       1464.80       -									44.40					
4 Pile Drivers       55.90       1788.80       86.40       2764.80       y									61.45		91.55			
2 Equip. Oper. (orane)         61.45         983.20         91.55         1464.80         r         Daily         Hr.         Daily         Hr.         Daily         Bare         Indix           1 Equip. Oper. (olier)         52.50         420.00         78.25         626.00         2163.70         1         1         Lador Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$50.75         \$73.25           1 Lead, 90' High         371.85         409.04         1         Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$50.75         \$75.00           1 Barge, 400 Ton         869.15         956.07         59.24         65.17         64.1H., Daily Totals         \$4746.75         \$7942.31         \$116.36         \$152.22           The barge, 400 Ton         869.15         956.07         59.24         65.17         64.1H., Daily Totals         \$44.40         710.40         66.25         1060.00         \$732.40           1 Labor Foreman (outside)         \$46.40         \$31.95         420.14         1         100.00         \$15.9.275         \$73.20           1 Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$555.00         \$49.30						\$57.11	\$87.06							10.50
I Equip. Oper. (olier)       52.50       420.00       78.25       626.00       2163.70       Image: All state       Image: All s								30 L.H., Daily Totals		\$1838.36		\$2635.61	Ş61.28	\$87.85
1 Crawler Crane, 75 Ton       1967.00       2163.70       1000000000000000000000000000000000000														Incl.
1 Lead, 90' High       371.85       409.04       546.40       5371.20       589.25       559.00       597.45       575.10         1 Hammer, Diesel, 41k ftHb       583.55       641.90       595.07       592.4       651.77         1 Barge, 400 Ton       869.15       956.07       592.4       651.77         64 L.H., Daily Totals       \$7446.75       \$9742.31       \$116.36       \$152.22         I Labor Foreman (outside)       \$44.40       710.40       66.25       1060.00         1 Equipment Operator, Crane       61.45       491.60       91.55       732.40       732.40         1 Labor Foreman (outside)       \$46.40       \$371.20       \$69.25       \$555.00       \$49.30       \$73.80         1 Labor Foreman (outside)       \$46.40       \$371.20       \$69.25       \$555.00       \$49.30       \$73.80	11 1 1	JZ.JU		10.20										0&P
1 Hammer, Diesel, 41k ftlb       583.55       641.90       59.24       65.17         1 Barge, 400 Ton       869.15       956.07       59.24       65.17         64 L.H., Daily Totals       \$7446.75       \$9742.31       \$116.36       \$152.22         1 Labor Foreman (outside)       \$46.40       \$371.20       \$69.25       \$5554.00       \$49.30       \$73.80													\$50.75	\$75.84
I Barge, 400 1on       809.15       809.15       950.07       59.24       65.17         64 L.H., Daily Totals       \$7446.75       \$9742.31       \$116.36       \$152.22         Crew B-20       Hr.       Daily       Hr.       Daily       Bare Costs       Incl.         1 Labor Foreman (outside)       \$46.40       \$371.20       \$69.25       \$554.00       \$49.30       \$73.80														
64 L.H., Daily Totals         \$7446.75         \$9742.31         \$116.36         \$152.22           Crew B-20         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. 0&P           1 Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$49.30         \$73.80	1 Barge, 400 Ton		869.15		956.07	59.24	65.17					I		
Crew B-20         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. O&P           1 Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$49.30         \$73.80	64 L.H., Daily Totals		\$7446.75		\$9742.31	\$116.36	\$152.22		01.40		51.00			
1 Labor Foreman (outside) \$46.40 \$371.20 \$69.25 \$554.00 \$49.30 \$73.80	0		D."					1 Butt Fusion Mach., 4"-12" diam.		420.75		462.82		22.07
								40 L.H., Daily Totals		\$2832.70		\$3916.57	\$70.82	\$97.91
						ə49.30	\$/3.ðU							
1 Laborer 44.40 355.20 66.25 530.00														
24 L.H., Daily Totals \$1183.20 \$1771.20 \$49.30 \$73.80				00.20		\$49.30	\$73.80							

Crew No.	Bar	re Costs	Sut	Incl. os O&P		ost Ibor-Hour
Crew B-22B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)		Contraction Contraction	нг. \$69.25		\$50.75	
1 Skilled Worker	\$46.40 57.10	\$371.20 456.80	\$09.25 85.90	\$554.00 687.20	\$00.75	\$75.84
2 Laborers	44.40	710.40	66.25	1060.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 S.P. Crane, 4x4, 5 Ton	01110	381.95	51100	420.14		
1 Butt Fusion Mach., 8"-24" diam.		1086.00		1194.60	36.70	40.37
40 L.H., Daily Totals		\$3497.95		\$4648.35	\$87.45	\$116.21
Crew B-22C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Skilled Worker	\$57.10	\$456.80	\$85.90	\$687.20	\$50.75	\$76.08
1 Laborer	44.40	355.20	66.25	530.00	<i></i>	<i>Q1 0.00</i>
1 Butt Fusion Mach., 2"-8" diam.		134.95		148.44	8.43	9.28
16 L.H., Daily Totals		\$946.95		\$1365.65	\$59.18	\$85.35
					Bare	Incl.
Crew B-23	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$44.80	\$66.85
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Drill Rig, Truck-Mounted		768.40		845.24		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05	40.46	44.51
40 L.H., Daily Totals		\$3410.45		\$4454.30	\$85.26	\$111.36
Crew B-23A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.93	\$74.47
1 Laborer	44.40	355.20	66.25	530.00	<b>V</b> 10100	•
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Drill Rig, Truck-Mounted		768.40		845.24		
1 Pickup Truck, 3/4 Ton		112.20		123.42	36.69	40.36
24 L.H., Daily Totals		\$2079.00		\$2755.86	\$86.63	\$114.83
Crew B-23B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.93	\$74.47
1 Laborer	44.40	355.20	66.25	530.00		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Drill Rig, Truck-Mounted		768.40		845.24		
1 Pickup Truck, 3/4 Ton		112.20		123.42		
1 Centr. Water Pump, 6"		235.25		258.77	46.49	51.14
24 L.H., Daily Totals		\$2314.25		\$3014.64	\$96.43	\$125.61
Crew B-24			Hr.		Bare Costs	Incl. 0&P
	Hr.	Daily		Daily	00363	
1 Cement Finisher	<b>Hr.</b> \$51.80	<b>Daily</b> \$414.40	\$75.90	Daily \$607.20	\$50.30	\$74.60
1 Cement Finisher 1 Laborer						
	\$51.80	\$414.40	\$75.90	\$607.20		
1 Laborer	\$51.80 44.40	\$414.40 355.20	\$75.90 66.25	\$607.20 530.00		
1 Laborer 1 Carpenter	\$51.80 44.40	\$414.40 355.20 437.60	\$75.90 66.25	\$607.20 530.00 653.20	\$50.30	\$74.60
1 Laborer 1 Carpenter 24 L.H., Daily Totals	\$51.80 44.40 54.70	\$414.40 355.20 437.60 \$1207.20	\$75.90 66.25 81.65	\$607.20 530.00 653.20 \$1790.40	\$50.30 \$50.30 <b>Bare</b>	\$74.60 \$74.60 Incl.
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers	\$51.80 44.40 54.70 <b>Hr.</b>	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b>	\$75.90 66.25 81.65 <b>Hr.</b>	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b>	\$50.30 \$50.30 Bare Costs	\$74.60 \$74.60 Incl. O&P
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside)	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00	\$50.30 \$50.30 Bare Costs	\$74.60 \$74.60 Incl. O&P
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P.	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00	\$50.30 \$50.30 Bare Costs	\$74.60 \$74.60 Incl. O&P
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48	\$50.30 \$50.30 Bare Costs \$48.56	\$74.60 \$74.60 Incl. O&P \$72.43
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89	\$50.30 \$50.30 <b>Bare</b> Costs \$48.56 31.13	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48	\$50.30 \$50.30 Bare Costs \$48.56	\$74.60 \$74.60 Incl. O&P \$72.43
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89	\$50.30 \$50.30 <b>Bare</b> Costs \$48.56 31.13	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton 88 L.H., Daily Totals	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40 59.00	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90 \$7013.30	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25 87.90	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89 \$9387.27	\$50.30 \$50.30 <b>Bare</b> <b>Costs</b> \$48.56 31.13 \$79.70 <b>Bare</b>	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25 \$106.67 Incl.
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton 88 L.H., Daily Totals Crew B-25B	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b>	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90 \$7013.30 <b>Daily</b>	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25 87.90 <b>Hr.</b>	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89 \$9387.27 <b>Daily</b>	\$50.30 \$50.30 <b>Bare</b> <b>Costs</b> \$48.56 31.13 \$79.70 <b>Bare</b> <b>Costs</b>	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25 \$106.67 Incl. 0&P
1 Laborer 2 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton 88 L.H., Daily Totals Crew B-25B 1 Labor Foreman (outside)	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90 \$7013.30 <b>Daily</b> \$371.20	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25 87.90 <b>Hr.</b> \$69.25	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89 \$9387.27 <b>Daily</b> \$554.00	\$50.30 \$50.30 <b>Bare</b> <b>Costs</b> \$48.56 31.13 \$79.70 <b>Bare</b> <b>Costs</b>	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25 \$106.67 Incl. 0&P
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. WhI., 12 Ton 88 L.H., Daily Totals Crew B-25B 1 Labor Foreman (outside) 7 Laborers	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90 \$7013.30 <b>Daily</b> \$371.20 2486.40	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25 87.90 <b>Hr.</b> \$69.25 66.25 87.90	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89 \$9387.27 <b>Daily</b> \$554.00 3710.00	\$50.30 \$50.30 <b>Bare</b> <b>Costs</b> \$48.56 31.13 \$79.70 <b>Bare</b> <b>Costs</b>	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25 \$106.67 Incl. 0&P
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton 88 L.H., Daily Totals Crew B-25B 1 Labor Foreman (outside) 7 Laborers 4 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 2 Tandem Rollers, 10 Ton	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90 \$7013.30 <b>Daily</b> \$371.20 2486.40 1888.00	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25 87.90 <b>Hr.</b> \$69.25 66.25 87.90	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89 \$9387.27 <b>Daily</b> \$554.00 3710.00 2812.80	\$50.30 \$50.30 <b>Bare</b> <b>Costs</b> \$48.56 31.13 \$79.70 <b>Bare</b> <b>Costs</b>	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25 \$106.67 Incl. 0&P
1 Laborer 1 Carpenter 24 L.H., Daily Totals Crew B-25 1 Labor Foreman (outside) 7 Laborers 3 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton 1 Roller, Pneum. Whl., 12 Ton 88 L.H., Daily Totals Crew B-25B 1 Labor Foreman (outside) 7 Laborers 4 Equip. Oper. (medium) 1 Asphalt Paver, 130 H.P.	\$51.80 44.40 54.70 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$414.40 355.20 437.60 \$1207.20 <b>Daily</b> \$371.20 2486.40 1416.00 2143.00 246.80 349.90 \$7013.30 <b>Daily</b> \$371.20 2486.40 1888.00 2143.00	\$75.90 66.25 81.65 <b>Hr.</b> \$69.25 66.25 87.90 <b>Hr.</b> \$69.25 66.25 87.90	\$607.20 530.00 653.20 \$1790.40 <b>Daily</b> \$554.00 3710.00 2109.60 2357.30 271.48 384.89 \$9387.27 <b>Daily</b> \$554.00 3710.00 2812.80 2357.30	\$50.30 \$50.30 <b>Bare</b> <b>Costs</b> \$48.56 31.13 \$79.70 <b>Bare</b> <b>Costs</b>	\$74.60 \$74.60 Incl. 0&P \$72.43 34.25 \$106.67 Incl. 0&P

Crew No.	Bare	Costs		ncl. os O&P		Cost abor-Hour
Crew B-25C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.60	\$73.97
3 Laborers	44.40	1065.60	66.25	1590.00		
2 Equip. Oper. (medium)	59.00	944.00	87.90	1406.40		
1 Asphalt Paver, 130 H.P. 1 Tandem Roller, 10 Ton		2143.00 246.80		2357.30 271.48	49.79	54.77
48 L.H., Daily Totals		\$4770.60		\$6179.18	\$99.39	\$128.73
					Bare	Incl.
Crew B-25D	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40 44.40	\$371.20 1065.60	\$69.25 66.25	\$554.00	\$49.82	\$74.30
3 Laborers 2.125 Equip. Oper. (medium)	44.40 59.00	1065.60	87.90	1590.00 1494.30		
.125 Truck Driver (heavy)	51.30	51.30	76.70	76.70		
.125 Truck Tractor, 6x4, 380 H.P.		62.39		68.63		
.125 Dist. Tanker, 3000 Gallon		41.76		45.94		
1 Asphalt Paver, 130 H.P.		2143.00		2357.30	40.00	54.07
1 Tandem Roller, 10 Ton 50 L.H., Daily Totals		246.80 \$4985.06		271.48 \$6458.35	49.88 \$99.70	54.87 \$129.17
JU L.H., Dally Iulais		34300.00		ŞU408.50	Bare	\$129.17
Crew B-25E	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.03	\$74.61
3 Laborers 2.250 Equip. Oper. (medium)	44.40 59.00	1065.60 1062.00	66.25 87.90	1590.00 1582.20		
.25 Truck Driver (heavy)	59.00 51.30	1082.00	87.90 76.70	1582.20		
.25 Truck Tractor, 6x4, 380 H.P.	51.50	124.79	70.70	137.27		
.25 Dist. Tanker, 3000 Gallon		83.53		91.88		
1 Asphalt Paver, 130 H.P.		2143.00		2357.30		
1 Tandem Roller, 10 Ton		246.80		271.48	49.96	54.96
52 L.H., Daily Totals		\$5199.51		\$6737.52	\$99.99	\$129.57
Crew B-26	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.23	\$73.32
6 Laborers	44.40	2131.20	66.25	3180.00		
	59.00	9// 00	87 90	1/06/0		
2 Equip. Oper. (medium) 1 Rodman (reinf.)	59.00 58.90	944.00 471.20	87.90 88.05	1406.40 704.40		
2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher	59.00 58.90 51.80	944.00 471.20 414.40	87.90 88.05 75.90	1406.40 704.40 607.20		
1 Rodman (reinf.)	58.90	471.20	88.05	704.40		
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip.	58.90	471.20 414.40 1073.00 2503.00	88.05	704.40 607.20 1180.30 2753.30	40.64	44.70
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs.	58.90	471.20 414.40 1073.00	88.05	704.40 607.20 1180.30	\$89.86	\$118.02
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals	58.90 51.80	471.20 414.40 1073.00 2503.00 \$7908.00	88.05 75.90	704.40 607.20 1180.30 2753.30 \$10385.60	\$89.86 Bare	\$118.02 Incl.
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip.	58.90	471.20 414.40 1073.00 2503.00	88.05	704.40 607.20 1180.30 2753.30	\$89.86 Bare Costs	\$118.02 Incl. 0&P
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A	58.90 51.80 <b>Hr.</b>	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b>	88.05 75.90 <b>Hr.</b>	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b>	\$89.86 Bare	\$118.02 Incl.
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium)	58.90 51.80 Hr. \$46.40 44.40 59.00	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00	88.05 75.90 Hr. \$69.25 66.25 87.90	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40	\$89.86 Bare Costs	\$118.02 Incl. 0&P
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.)	58.90 51.80 <b>Hr.</b> \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40	\$89.86 Bare Costs	\$118.02 Incl. 0&P
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher	58.90 51.80 Hr. \$46.40 44.40 59.00	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40	88.05 75.90 Hr. \$69.25 66.25 87.90	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40 607.20	\$89.86 Bare Costs	\$118.02 Incl. 0&P
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs.	58.90 51.80 <b>Hr.</b> \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40 607.20 1180.30	\$89.86 Bare Costs	\$118.02 Incl. 0&P
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher	58.90 51.80 <b>Hr.</b> \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40 607.20	\$89.86 Bare Costs	\$118.02 Incl. 0&P
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip.	58.90 51.80 <b>Hr.</b> \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00 2503.00	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40 607.20 1180.30 2753.30	\$89.86 Bare Costs \$49.23	\$118.02 Incl. 0&P \$73.32
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals	58.90 51.80 <b>Hr.</b> \$46.40 44.40 59.00 58.90 51.80	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00 2503.00 112.85 \$8020.85	88.05 75.90 <b>Hr.</b> \$69.25 66.25 87.90 88.05 75.90	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40 607.20 1180.30 2753.30 124.14 \$10509.74	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl.
1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw	58.90 51.80 <b>Hr.</b> \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00 2503.00 112.85	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05 75.90 Hr.	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$554.00 3180.00 1406.40 704.40 607.20 1180.30 2753.30 124.14	\$89.86 Bare Costs \$49.23 41.92 \$91.15	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl. 0&P
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals Crew B-26B	58.90 51.80 Hr. \$46.40 44.40 59.00 58.90 51.80 Hr.	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00 2503.00 112.85 \$8020.85	88.05 75.90 <b>Hr.</b> \$69.25 66.25 87.90 88.05 75.90	704.40 607.20 1180.30 2753.30 \$10385.60 <b>Daily</b> \$5554.00 3180.00 1406.40 704.40 607.20 1180.30 2753.30 124.14 \$10509.74	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare Costs	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl.
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals Crew B-26B 1 Labor Foreman (outside) 6 Laborers 3 Equip. Oper. (medium)	58.90 51.80 Hr. \$46.40 44.40 59.00 58.90 51.80 Hr. \$46.40 44.40 59.00	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 2131.20 944.00 471.20 414.40 1073.00 2503.00 112.85 \$8020.85 <b>Daily</b> \$371.20	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05 75.90 Hr. \$69.25 66.25 87.90	704.40         607.20         1180.30         2753.30         \$10385.60         Daily         \$5554.00         3180.00         1406.40         704.40         607.20         1180.30         2753.30         124.14         \$10509.74         \$10509.74         \$2554.00         3180.00         2109.60	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare Costs	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl. 0&P
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals Crew B-26B 1 Labor Foreman (outside) 6 Laborers 3 Equip. Oper. (medium) 1 Rodman (reinf.)	58.90 51.80 Hr. \$46.40 44.40 59.00 58.90 51.80 Hr. \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00 112.85 \$8020.85 <b>Daily</b> \$371.20 2131.20 1416.00 471.20	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40         607.20         1180.30         2753.30         \$10385.60         Daily         \$5554.00         3180.00         1406.40         704.40         607.20         1180.30         2753.30         124.14         \$10509.74         \$554.00         3180.00         2109.60         704.40	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare Costs	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl. 0&P
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals Crew B-26B 1 Labor Foreman (outside) 6 Laborers 3 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher	58.90 51.80 Hr. \$46.40 44.40 59.00 58.90 51.80 Hr. \$46.40 44.40 59.00	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 414.40 1073.00 112.85 \$8020.85 <b>Daily</b> \$371.20 2131.20 1416.00 471.20 414.40	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05 75.90 Hr. \$69.25 66.25 87.90	704.40         607.20         1180.30         2753.30         \$10385.60         Daily         \$554.00         3180.00         1406.40         704.40         607.20         1180.30         2753.30         124.14         \$10509.74         \$554.00         3180.00         2109.60         704.40         607.20	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare Costs	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl. 0&P
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals Crew B-26B 1 Labor Foreman (outside) 6 Laborers 3 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher 3 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cement Finisher 1 Grader, 30,000 Lbs.	58.90 51.80 Hr. \$46.40 44.40 59.00 58.90 51.80 Hr. \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 944.00 471.20 414.40 1073.00 112.85 \$8020.85 <b>Daily</b> \$371.20 2131.20 1416.00 471.20 414.40 1073.00	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40         607.20         1180.30         2753.30         \$10385.60         Daily         \$5554.00         3180.00         1406.40         704.40         607.20         1180.30         2753.30         124.14         \$10509.74         \$554.00         3180.00         2109.60         704.40         607.20         1180.30         2109.60         704.40         607.20         1180.30	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare Costs	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl. 0&P
1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 88 L.H., Daily Totals Crew B-26A 1 Labor Foreman (outside) 6 Laborers 2 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher 1 Grader, 30,000 Lbs. 1 Paving Mach. & Equip. 1 Concrete Saw 88 L.H., Daily Totals Crew B-26B 1 Labor Foreman (outside) 6 Laborers 3 Equip. Oper. (medium) 1 Rodman (reinf.) 1 Cernent Finisher	58.90 51.80 Hr. \$46.40 44.40 59.00 58.90 51.80 Hr. \$46.40 44.40 59.00 58.90	471.20 414.40 1073.00 2503.00 \$7908.00 <b>Daily</b> \$371.20 2131.20 414.40 1073.00 112.85 \$8020.85 <b>Daily</b> \$371.20 2131.20 1416.00 471.20 414.40	88.05 75.90 Hr. \$69.25 66.25 87.90 88.05 75.90 Hr. \$69.25 66.25 87.90 88.05	704.40         607.20         1180.30         2753.30         \$10385.60         Daily         \$554.00         3180.00         1406.40         704.40         607.20         1180.30         2753.30         124.14         \$10509.74         \$554.00         3180.00         2109.60         704.40         607.20	\$89.86 Bare Costs \$49.23 41.92 \$91.15 Bare Costs	\$118.02 Incl. 0&P \$73.32 46.11 \$119.43 Incl. 0&P

Crew No.	Bar	e Costs	Sut	Incl. os O&P		ost Ibor-Hou
	54		540		Bare	Incl.
Crew B-26C	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.25	\$71.86
5 Laborers	44.40	2131.20	66.25	3180.00		
Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
Rodman (reinf.) Cement Finisher	58.90 51.80	471.20 414.40	88.05 75.90	704.40 607.20		
Paving Mach. & Equip.	51.60	2503.00	75.90	2753.30		
Concrete Saw		112.85		124.14	32.70	35.97
0 L.H., Daily Totals		\$6475.85		\$8626.24	\$80.95	\$107.83
0 0 07					Bare	Incl.
Crew B-27	Hr.	Daily	Hr.	Daily	Costs	0&P
Labor Foreman (outside) Laborers	\$46.40 44.40	\$371.20 1065.60	\$69.25 66.25	\$554.00	\$44.90	\$67.00
Laborers Berm Machine	44.40	253.55	00.20	1590.00 278.90	7.92	8.72
L.H., Daily Totals		\$1690.35		\$2422.91	\$52.82	\$75.72
Lin, Duly IUluis		ÅT030.33		γ <i>∟</i> + <i>LL</i> .J1	Bare	srs.rz
Crew B-28	Hr.	Daily	Hr.	Daily	Costs	0&P
Carpenters	\$54.70	\$875.20	\$81.65	\$1306.40	\$51.27	\$76.52
Laborer	44.40	355.20	66.25	530.00	4.5.1	1-
L.H., Daily Totals		\$1230.40		\$1836.40	\$51.27	\$76.52
Crew B-29	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.28	\$72.01
Laborers	44.40	1420.80	66.25	2120.00	Q40.20	J/2.01
Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
quip. Oper. (oiler)	52.50	420.00	78.25	626.00		
Gradall, 5/8 C.Y.		850.65		935.72	15.19	16.71
L.H., Daily Totals		\$3554.25		\$4968.11	\$63.47	\$88.72
					Bare	Incl.
Crew B-30	Hr.	Daily	Hr.	Daily	Costs	0&P
Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$53.87	\$80.43
ruck Drivers (heavy)	51.30	820.80	76.70	1227.20		
yd. Excavator, 1.5 C.Y.		695.80		765.38	77.27	85.00
ump Trucko 12 C V 400 H D		1158.70		1274.57 \$3970.35	\$131.14	\$165.43
		\$21/17 20		JJJ10.JJ	\$151.1 <del>4</del>	Ş10J.4J
		\$3147.30			Bare	Incl
.H., Daily Totals Crew B-31	Hr.	\$3147.30 Daily	Hr.	Daily	Bare Costs	Incl. 0&P
L.H., Daily Totals Crew B-31 .abor Foreman (outside)	\$46.40	<b>Daily</b> \$371.20	\$69.25	\$554.00		
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers	\$46.40 44.40	<b>Daily</b> \$371.20 1065.60	\$69.25 66.25	\$554.00 1590.00	Costs	0&P
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers arpenter	\$46.40	<b>Daily</b> \$371.20 1065.60 437.60	\$69.25	\$554.00 1590.00 653.20	Costs	0&P
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers arpenter ir Compressor, 250 cfm	\$46.40 44.40	<b>Daily</b> \$371.20 1065.60 437.60 202.85	\$69.25 66.25	\$554.00 1590.00 653.20 223.13	Costs	0&P
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers arpenter ir Compressor, 250 cfm iheeting Driver	\$46.40 44.40	<b>Daily</b> \$371.20 1065.60 437.60 202.85 7.45	\$69.25 66.25	\$554.00 1590.00 653.20 223.13 8.20	Costs \$46.86	<b>0&amp;P</b> \$69.93
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers Carpenter Air Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5"	\$46.40 44.40	<b>Daily</b> \$371.20 1065.60 437.60 202.85 7.45 45.60	\$69.25 66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16	Costs \$46.86 6.40	<b>0&amp;P</b> \$69.93 7.04
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers Carpenter Air Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5"	\$46.40 44.40	<b>Daily</b> \$371.20 1065.60 437.60 202.85 7.45	\$69.25 66.25	\$554.00 1590.00 653.20 223.13 8.20	Costs \$46.86 6.40 \$53.26	0&P \$69.93 7.04 \$76.97
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers Carpenter Air Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5"	\$46.40 44.40	<b>Daily</b> \$371.20 1065.60 437.60 202.85 7.45 45.60	\$69.25 66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16	Costs \$46.86 6.40	<b>0&amp;P</b> \$69.93 7.04
Labor Foreman (outside) Laborers Carpenter Air Compressor, 250 cfm Sheeting Driver -50' Air Hoses, 1.5" D L.H., Daily Totals Crew B-32 Laborer	\$46.40 44.40 54.70	<b>Daily</b> \$371.20 1065.60 437.60 202.85 7.45 45.60 \$2130.30	\$69.25 66.25 81.65	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69	Costs \$46.86 6.40 \$53.26 Bare	0&P \$69.93 7.04 \$76.97 Incl.
L.H., Daily Totals Crew B-31 Labor Foreman (outside) Laborers Carpenter Sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals Crew B-32 Laborer Equip. Oper. (medium)	\$46.40 44.40 54.70 <b>Hr.</b>	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00	\$69.25 66.25 81.65 <b>Hr.</b>	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60	Costs \$46.86 6.40 \$53.26 Bare Costs	0&P \$69.93 7.04 \$76.97 Incl. 0&P
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers Carpenter ir Compressor, 250 cfm sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals Crew B-32 aborer rquip. Oper. (medium) arader, 30,000 Lbs.	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00	\$69.25 66.25 81.65 <b>Hr.</b> \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30	Costs \$46.86 6.40 \$53.26 Bare Costs	0&P \$69.93 7.04 \$76.97 Incl. 0&P
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers arpenter ir Compressor, 250 cfm heeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals Crew B-32 aborer quip. Oper. (medium) irader, 30,000 Lbs. andem Roller, 10 Ton	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80	\$69.25 66.25 81.65 <b>Hr.</b> \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers arpenter ir Compressor, 250 cfm heeting Driver i0' Air Hoses, 1.5" L.H., Daily Totals Crew B-32 aborer quip. Oper. (medium) rader, 30,000 Lbs. andem Roller, 10 Ton ozer, 200 H.P.	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80           1520.00	\$69.25 66.25 81.65 <b>Hr.</b> \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48 1672.00	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers Carpenter ir Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals Crew B-32 aborer roup. Oper. (medium) arader, 30,000 Lbs. andem Roller, 10 Ton Jozer, 200 H.P.	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80	\$69.25 66.25 81.65 <b>Hr.</b> \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74           \$144.09	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62 \$180.11
L.H., Daily Totals Crew B-31 abor Foreman (outside) aborers Carpenter ir Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals Crew B-32 aborer roup. Oper. (medium) arader, 30,000 Lbs. andem Roller, 10 Ton Jozer, 200 H.P.	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40 59.00 <b>Hr.</b>	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80           1520.00           \$4611.00	\$69.25 66.25 81.65 <b>Hr.</b> \$66.25 87.90 <b>Hr.</b>	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48 1672.00 \$5763.38 <b>Daily</b>	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62 \$180.11 Incl. 0&P
L.H., Daily Totals  Crew B-31  abor Foreman (outside) aborers Carpenter iir Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals  Crew B-32  aborer  Guip. Oper. (medium) Grader, 30,000 Lbs. Gradem Roller, 10 Ton Dozer, 200 H.P. L.H., Daily Totals  Crew B-32A aborer	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40 59.00 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80           1520.00           \$4611.00           Daily           \$355.20	\$69.25 66.25 81.65 Hr. \$66.25 87.90 Hr. \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48 1672.00 \$5763.38 <b>Daily</b> \$530.00	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74           \$144.09           Bare	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62 \$180.11 Incl.
L.H., Daily Totals  Crew B-31  abor Foreman (outside) aborers Carpenter iir Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals  Crew B-32  aborer Guip. Oper. (medium) Srader, 30,000 Lbs. Tandem Roller, 10 Ton Dozer, 200 H.P. L.H., Daily Totals  Crew B-32A  aborer Guip. Oper. (medium)	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40 59.00 <b>Hr.</b>	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80           1520.00           \$4611.00           Daily           \$355.20	\$69.25 66.25 81.65 <b>Hr.</b> \$66.25 87.90 <b>Hr.</b>	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48 1672.00 \$5763.38 <b>Daily</b> \$530.00 1406.40	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74           \$144.09           Bare           Costs	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62 \$180.11 Incl. 0&P
L.H., Daily Totals  Crew B-31  abor Foreman (outside) aborers Carpenter Vir Compressor, 250 cfm Sheeting Driver 50' Air Hoses, 1.5" L.H., Daily Totals  Crew B-32  aborer Equip. Oper. (medium) Grader, 30,000 Lbs. Fandem Roller, 10 Ton Dozer, 200 H.P. L.H., Daily Totals  Crew B-32A  aborer Equip. Oper. (medium) Grader, 30,000 Lbs.	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40 59.00 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80           1520.00           \$4611.00           Daily           \$355.20           144.00           1073.00	\$69.25 66.25 81.65 Hr. \$66.25 87.90 Hr. \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 \$5763.38 <b>Daily</b> \$530.00 1406.40 1180.30	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74           \$144.09           Bare           Costs           \$54.13	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62 \$180.11 Incl. 0&P \$80.68
L.H., Daily Totals Crew B-31 Labor Foreman (outside) Laborers Carpenter Air Compressor, 250 cfm Sheeting Driver -50' Air Hoses, 1.5" 0 L.H., Daily Totals Crew B-32 Laborer Equip. Oper. (medium) Grader, 30,000 Lbs. Tandem Roller, 10 Ton Dozer, 200 H.P. 2 L.H., Daily Totals	\$46.40 44.40 54.70 <b>Hr.</b> \$44.40 59.00 <b>Hr.</b> \$44.40	Daily           \$371.20           1065.60           437.60           202.85           7.45           45.60           \$2130.30           Daily           \$355.20           1416.00           1073.00           246.80           1520.00           \$4611.00           Daily           \$355.20	\$69.25 66.25 81.65 Hr. \$66.25 87.90 Hr. \$66.25	\$554.00 1590.00 653.20 223.13 8.20 50.16 \$3078.69 <b>Daily</b> \$530.00 2109.60 1180.30 271.48 1672.00 \$5763.38 <b>Daily</b> \$530.00 1406.40	Costs           \$46.86           6.40           \$53.26           Bare           Costs           \$55.35           88.74           \$144.09           Bare           Costs	0&P \$69.93 7.04 \$76.97 Incl. 0&P \$82.49 97.62 \$180.11 Incl. 0&P

	_			ncl.	Cost Per Labor-Hour			
Crew No.	Bare	Costs	Sub	s O&P	Per L	abor-Hour		
Crew B-32B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P		
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$54.13	\$80.68		
2 Equip. Oper. (medium)	59.00	944.00	87.90	1406.40				
1 Dozer, 200 H.P.		1520.00		1672.00				
1 Roller, Vibratory, 25 Ton		672.35		739.59	91.35	100.48		
24 L.H., Daily Totals		\$3491.55		\$4347.98	\$145.48	\$181.17		
Crew B-32C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$52.03	\$77.58		
2 Laborers	44.40	710.40	66.25	1060.00				
3 Equip. Oper. (medium)	59.00	1416.00	87.90	2109.60				
1 Grader, 30,000 Lbs. 1 Tandem Roller, 10 Ton		1073.00 246.80		1180.30 271.48				
1 Dozer, 200 H.P.		1520.00		1672.00	59.16	65.08		
48 L.H., Daily Totals		\$5337.40		\$6847.38	\$111.20	\$142.65		
To Eini, Buily Totalo		ç0007.10		Q00 17.00	Bare	Incl.		
Crew B-33A	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71		
.5 Laborer	44.40	177.60	66.25	265.00				
.25 Equip. Oper. (medium)	59.00	118.00	87.90	175.80				
1 Scraper, Towed, 7 C.Y.		129.30		142.23	1.00.01	105 47		
1.25 Dozers, 300 H.P.		2231.25		2454.38	168.61	185.47		
14 L.H., Daily Totals		\$3128.15		\$3740.61	\$223.44	\$267.19		
Crew B-33B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71		
.5 Laborer	44.40	177.60	66.25	265.00				
.25 Equip. Oper. (medium)	59.00	118.00	87.90	175.80 177.82				
1 Scraper, Towed, 10 C.Y. 1.25 Dozers, 300 H.P.		161.65 2231.25		2454.38	170.92	188.01		
14 L.H., Daily Totals		\$3160.50		\$3776.19	\$225.75	\$269.73		
TT Early Duly Totals		Q0100.00		<i><b>Q</b></i> (7,7,0,15)	Bare	Incl.		
Crew B-33C	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71		
.5 Laborer .25 Equip. Oper. (medium)	44.40 59.00	177.60 118.00	66.25 87.90	265.00 175.80				
1 Scraper, Towed, 15 C.Y.	59.00	178.85	07.90	175.80				
1.25 Dozers, 300 H.P.		2231.25		2454.38	172.15	189.37		
14 L.H., Daily Totals		\$3177.70		\$3795.11	\$226.98	\$271.08		
					Bare	Incl.		
Crew B-33D	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71		
.5 Laborer	44.40	177.60	66.25	265.00				
.25 Equip. Oper. (medium)	59.00	118.00	87.90	175.80				
1 S.P. Scraper, 14 C.Y. .25 Dozer, 300 H.P.		2424.00 446.25		2666.40 490.88	205.02	225.52		
14 L.H., Daily Totals		\$3637.85		\$4301.27	\$259.85	\$307.23		
,, rotaro			I		Bare	Incl.		
Crew B-33E	Hr.	Daily	Hr.	Daily	Costs	0&P		
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71		
.5 Laborer 25 Equip Oper (medium)	44.40	177.60	66.25 87.00	265.00				
.25 Equip. Oper. (medium) 1 S.P. Scraper, 21 C.Y.	59.00	118.00 2656.00	87.90	175.80 2921.60				
.25 Dozer, 300 H.P.		446.25		490.88	221.59	243.75		
14 L.H., Daily Totals		\$3869.85		\$4556.48	\$276.42	\$325.46		
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Crew No.	Bar	re Costs		Incl. os O&P		ost bor-Hour	Crew No.	Bare	Costs		ncl. os O&P		Cost .abor-Hour
·					Bare	Incl.	1			1	-	Bare	Incl.
Crew B-33F	Hr.	Daily	Hr.	Daily	Costs	inci. 0&P	Crew B-34E	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71	1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$51.30	\$76.70
.5 Laborer	44.40	177.60	66.25	265.00			1 Dump Truck, Off Hwy., 25 Ton		1427.00		1569.70	178.38	196.21
.25 Equip. Oper. (medium)	59.00	118.00	87.90	175.80			8 L.H., Daily Totals		\$1837.40		\$2183.30	\$229.68	\$272.91
1 Elev. Scraper, 11 C.Y. .25 Dozer, 300 H.P.		1059.00 446.25		1164.90 490.88	107.52	118.27	0 mm D 245		Dailu		Deihi	Bare	Incl.
14 L.H., Daily Totals		\$2272.85		\$2799.78	\$162.35	\$199.98	Crew B-34F	Hr.	Daily	Hr.	Daily	Costs	0&P
· · · · · · · · · · · · · · · ·		+			Bare	Incl.	1 Truck Driver (heavy) 1 Dump Truck, Off Hwy., 35 Ton	\$51.30	\$410.40 945.65	\$76.70	\$613.60 1040.21	\$51.30 118.21	\$76.70 130.03
Crew B-33G	Hr.	Daily	Hr.	Daily	Costs	0&P	8 L.H., Daily Totals		\$1356.05		\$1653.82	\$169.51	\$206.73
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$54.83	\$81.71	C Ling Dury Totals		Ŷ1000.00		V1000.02	Bare	J200.75
.5 Laborer	44.40	177.60	66.25	265.00			Crew B-34G	Hr.	Daily	Hr.	Daily	Costs	0&P
.25 Equip. Oper. (medium)	59.00	118.00	87.90	175.80			1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$51.30	\$76.70
1 Elev. Scraper, 22 C.Y.	ĺ	1895.00 446.25		2084.50 490.88	167.00	102.06	1 Dump Truck, Off Hwy., 50 Ton		1979.00		2176.90	247.38	272.11
.25 Dozer, 300 H.P. 14 L.H., Daily Totals	<b> </b>	446.25 \$3108.85	<u> </u>	490.88 \$3719.38	167.23 \$222.06	183.96 \$265.67	8 L.H., Daily Totals		\$2389.40		\$2790.50	\$298.68	\$348.81
14 L.H., Daily Iotais		\$3100.05		\$3713.JU	\$222.00 Bare							Bare	Incl.
Crew B-33H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-34H	Hr.	Daily	Hr.	Daily	Costs	0&P
.5 Laborer	\$44.40	\$177.60	\$66.25	\$265.00	\$54.83	\$81.71	1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$51.30	\$76.70
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20	<b>VO</b>	y011	1 Dump Truck, Off Hwy., 65 Ton		1938.00		2131.80	242.25	266.48
.25 Equipment Operator (med.)	59.00	118.00	87.90	175.80			8 L.H., Daily Totals		\$2348.40		\$2745.40	\$293.55	\$343.18
1 S.P. Scraper, 44 C.Y.	ĺ	4695.00		5164.50			0 0 04		<b>N</b> 14.		P. 11.	Bare	Incl.
.25 Dozer, 410 H.P.	<u> </u>	701.75		771.92	385.48	424.03	Crew B-34I	Hr.	Daily	Hr.	Daily	Costs	0&P
14 L.H., Daily Totals	<u> </u>	\$6164.35		\$7080.43	\$440.31	\$505.74	1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$51.30	\$76.70
			<b>—</b>		Bare	Incl.	1 Dump Truck, 18 C.Y., 450 H.P.		753.60 \$1164.00		828.96	94.20 \$145.50	103.62 \$180.32
Crew B-33J	Hr.	Daily	Hr.	Daily	Costs	0&P	8 L.H., Daily Totals		\$1164.00		\$1442.56		
1 Equipment Operator (med.) 1 S.P. Scraper, 14 C.Y.	\$59.00	\$472.00 2424.00	\$87.90	\$703.20 2666.40	\$59.00 303.00	\$87.90 333.30	Crew B-34J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
8 L.H., Daily Totals	<u> </u>	\$2896.00		\$3369.60	\$362.00	\$421.20	1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$51.30	\$76.70
			1										
1	ļ				Bare	Incl.	1 Dump Truck, Off Hwy., 100 Ton		2769.00		3045.90	346.13	380.74
Crew B-33K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Dump Truck, Off Hwy., 100 Ton 8 L.H., Daily Totals		2769.00 \$3179.40		3045.90 \$3659.50	\$397.43	\$457.44
1 Equipment Operator (med.)	\$59.00	\$472.00	\$87.90	\$703.20			8 L.H., Daily Totals		\$3179.40		\$3659.50	\$397.43 Bare	\$457.44 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.)	\$59.00 59.00	\$472.00 118.00	\$87.90 87.90	\$703.20 175.80	Costs	0&P	8 L.H., Daily Totals Crew B-34K	Hr.	\$3179.40 <b>Daily</b>	Hr.	\$3659.50 Daily	\$397.43 Bare Costs	\$457.44 Incl. 0&P
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer	\$59.00	\$472.00 118.00 177.60	\$87.90	\$703.20 175.80 265.00	Costs	0&P	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy)		\$3179.40 <b>Daily</b> \$410.40	<b>Hr.</b> \$76.70	\$3659.50 <b>Daily</b> \$613.60	\$397.43 Bare	\$457.44 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y.	\$59.00 59.00	\$472.00 118.00 177.60 3707.00	\$87.90 87.90	\$703.20 175.80 265.00 4077.70	<b>Costs</b> \$54.83	0&P \$81.71	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P.	Hr.	\$3179.40 <b>Daily</b> \$410.40 608.95		\$3659.50 <b>Daily</b> \$613.60 669.85	\$397.43 Bare Costs \$51.30	\$457.44 Incl. 0&P \$76.70
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P.	\$59.00 59.00	\$472.00 118.00 177.60 3707.00 701.75	\$87.90 87.90	\$703.20 175.80 265.00 4077.70 771.92	Costs \$54.83 314.91	0&P \$81.71 346.40	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton	Hr.	\$3179.40 Daily \$410.40 608.95 258.10		\$3659.50 <b>Daily</b> \$613.60 669.85 283.91	\$397.43 Bare Costs \$51.30 108.38	\$457.44 Incl. 0&P \$76.70 119.22
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y.	\$59.00 59.00	\$472.00 118.00 177.60 3707.00	\$87.90 87.90	\$703.20 175.80 265.00 4077.70	Costs \$54.83 314.91 \$369.74	0&P \$81.71 346.40 \$428.12	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P.	Hr.	\$3179.40 <b>Daily</b> \$410.40 608.95		\$3659.50 <b>Daily</b> \$613.60 669.85	\$397.43 Bare Costs \$51.30 108.38 \$159.68	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P.	\$59.00 59.00	\$472.00 118.00 177.60 3707.00 701.75	\$87.90 87.90	\$703.20 175.80 265.00 4077.70 771.92	Costs \$54.83 314.91	0&P \$81.71 346.40	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton	Hr.	\$3179.40 Daily \$410.40 608.95 258.10		\$3659.50 <b>Daily</b> \$613.60 669.85 283.91	\$397.43 Bare Costs \$51.30 108.38	\$457.44 Incl. 0&P \$76.70 119.22
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals	\$59.00 59.00 44.40	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35	\$87.90 87.90 66.25	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63	Costs \$54.83 314.91 \$369.74 Bare	0&P \$81.71 346.40 \$428.12 Incl.	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals	<b>Hr.</b> \$51.30	\$3179.40 <b>Daily</b> \$410.40 608.95 258.10 \$1277.45	\$76.70	\$3659.50 <b>Daily</b> \$613.60 669.85 283.91 \$1567.36	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A	\$59.00 59.00 44.40 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b>	\$87.90 87.90 66.25 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b>	Costs \$54.83 314.91 \$369.74 Bare Costs	0&P \$81.71 346.40 \$428.12 Incl. 0&P	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L	Hr. \$51.30 Hr.	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily	\$76.70 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy)	\$59.00 59.00 44.40 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40	\$87.90 87.90 66.25 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L 1 Equip. Oper. (light)	Hr. \$51.30 Hr.	\$3179.40 <b>Daily</b> \$410.40 608.95 258.10 \$1277.45 <b>Daily</b> \$444.00	\$76.70 Hr.	\$3659.50 <b>Daily</b> \$613.60 669.85 283.91 \$1567.36 <b>Daily</b> \$661.60	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl.	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals	Hr. \$51.30 Hr. \$55.50	\$3179.40 <b>Daily</b> \$410.40 608.95 258.10 \$1277.45 <b>Daily</b> \$444.00 198.50 \$642.50	\$76.70 Hr. \$82.70	\$3659.50 <b>Daily</b> \$613.60 669.85 283.91 \$1567.36 <b>Daily</b> \$661.60 218.35 \$879.95	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b>	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70 <b>Hr.</b>	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b>	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals Crew B-34M	Hr. \$51.30 Hr. \$55.50 Hr.	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily	\$76.70 Hr. \$82.70 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy)	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M 1 Equip. Oper. (light)	Hr. \$51.30 Hr. \$55.50	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00	\$76.70 Hr. \$82.70	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P.	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 \$818.00 <b>Daily</b> \$410.40 579.35	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70 <b>Hr.</b>	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           5102.25           Bare           Costs           \$51.30           72.42	0&P \$81.71 346.40 \$428.12 <b>Incl.</b> 0&P \$76.70 56.05 \$132.75 <b>Incl.</b> 0&P \$76.70 79.66	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals Crew B-34M 1 Equip. Oper. (light) 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton	Hr. \$51.30 Hr. \$55.50 Hr.	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05	\$76.70 Hr. \$82.70 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy)	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70 <b>Hr.</b>	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72	0&P \$81.71 \$428.12 Incl. 0&P \$76.70 \$56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M 1 Equip. Oper. (light)	Hr. \$51.30 Hr. \$55.50 Hr.	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00	\$76.70 Hr. \$82.70 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P.	\$59.00 59.00 44.40 Hr. \$51.30 Hr. \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b>	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b>	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals Crew B-34M 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals Crew B-34N	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 Daily	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 \$879.95 Daily \$661.60 935.05 \$1596.66	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy)	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b> \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70 <b>Hr.</b> \$76.70	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl.	8 L.H., Daily Totals Crew B-34K 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals Crew B-34L 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals Crew B-34M 1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals Crew B-34N 1 Truck Driver (heavy)	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$55.30	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 Daily \$410.40	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$661.60	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy) 1 Truck Triver (heavy) 1 Truck Driver (heavy) 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P.	\$59.00 59.00 44.40 Hr. \$51.30 Hr. \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium)	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 \$1294.05 Daily \$410.40 472.00	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$661.360 703.20	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P. 1 Dump Trailer, 16.5 C.Y.	\$59.00 59.00 44.40 Hr. \$51.30 Hr. \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15 138.35	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07 152.19	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 79.66 \$156.36	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P.	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$55.30	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 \$1294.05 Daily \$410.40 472.00 499.15	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 <b>Daily</b> \$661.60 935.05 \$1596.66 Daily \$661.60 935.05	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy) 1 Truck Triver (heavy) 1 Truck Driver (heavy) 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P.	\$59.00 59.00 44.40 Hr. \$51.30 Hr. \$51.30	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           79.69           \$130.99	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 87.670 87.66 \$154.36	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P. 1 Flatbed Trailer, 40 Ton	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$55.30	\$3179.40 <b>Daily</b> \$410.40 608.95 258.10 \$1277.45 <b>Daily</b> \$444.00 198.50 \$642.50 <b>Daily</b> \$444.00 850.05 \$1294.05 <b>Daily</b> \$410.40 472.00 499.15 188.45	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$661.60 935.05 \$1596.66	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15 \$55.15 \$25.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30 47.27
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P. 1 Dump Trailer, 16.5 C.Y. 8 L.H., Daily Totals	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15 138.35 \$1047.90	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70 <b>Hr.</b> \$76.70 <b>Hr.</b> \$76.70	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07 152.19 \$1314.85	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           79.69           \$130.99           Bare	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P.	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$55.30	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 \$1294.05 Daily \$410.40 472.00 499.15	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 <b>Daily</b> \$661.60 935.05 \$1596.66 Daily \$661.60 935.05	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15 \$55.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30 47.27 \$129.57
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Tractor, 6x4, 380 H.P. 1 Dump Trailer, 16.5 C.Y. 8 L.H., Daily Totals Crew B-34D	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15 138.35 \$1047.90 <b>Daily</b>	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07 152.19 \$1314.85 <b>Daily</b>	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           79.69           \$130.99           Bare           Costs	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 87.66 \$164.36 Incl. 0&P	8 L.H., Daily Totals  Crew B-34K  1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P. 1 Flatbed Trailer, 40 Ton 16 L.H., Daily Totals	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$51.30 59.00	\$3179.40 <b>Daily</b> \$410.40 608.95 258.10 \$1277.45 <b>Daily</b> \$444.00 198.50 \$642.50 <b>Daily</b> \$444.00 850.05 \$1294.05 <b>Daily</b> \$410.40 472.00 499.15 188.45 \$1570.00	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70 87.90	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$661.60 935.05 \$1596.66 Daily \$613.60 703.20 \$49.07 207.29 \$2073.16	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15 \$55.15 \$55.15 \$25.15 \$25.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30 47.27 \$129.57 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P. 1 Dump Trailer, 16.5 C.Y. 8 L.H., Daily Totals Crew B-34D 1 Truck Driver (heavy)	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15 138.35 \$1047.90 <b>Daily</b> \$410.40	\$87.90 87.90 66.25 <b>Hr.</b> \$76.70 <b>Hr.</b> \$76.70 <b>Hr.</b> \$76.70	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07 152.19 \$1314.85 <b>Daily</b> \$613.60	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           79.69           \$130.99           Bare	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P. 1 Flatbed Trailer, 40 Ton 16 L.H., Daily Totals  Crew B-34P	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$51.30 59.00 Hr.	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 \$1294.05 Daily \$410.40 472.00 499.15 188.45 \$1570.00 Daily	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70 87.90 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$661.60 935.05 \$1596.66 Daily \$613.60 703.20 549.07 207.29 \$2073.16	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15 \$161.76 Bare Costs \$55.15 \$161.76 Bare Costs \$55.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30 47.27 \$129.57 Incl. 0&P
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Tractor, 6x4, 380 H.P. 1 Dump Trailer, 16.5 C.Y. 8 L.H., Daily Totals Crew B-34D 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P. 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P. 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P.	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15 138.35 \$1047.90 <b>Daily</b>	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07 152.19 \$1314.85 <b>Daily</b> \$613.60 549.07	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           79.69           \$130.99           Bare           Costs           \$51.30	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 87.66 \$164.36 Incl. 0&P \$76.70	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P. 1 Flatbed Trailer, 40 Ton 16 L.H., Daily Totals  Crew B-34P 1 Pipe Fitter	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$51.30 59.00 Hr. \$68.35	\$3179.40 <b>Daily</b> \$410.40 608.95 258.10 \$1277.45 <b>Daily</b> \$444.00 198.50 \$642.50 <b>Daily</b> \$444.00 850.05 \$1294.05 <b>Daily</b> \$410.40 472.00 499.15 188.45 \$1570.00 <b>Daily</b>	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70 87.90 Hr. \$102.00	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$613.60 703.20 549.07 207.29 \$2073.16 Daily \$816.00	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15 \$55.15 \$55.15 \$25.15 \$25.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30 47.27 \$129.57 Incl.
1 Equipment Operator (med.) .25 Equipment Operator (med.) .5 Laborer 1 S.P. Scraper, 31 C.Y. .25 Dozer, 410 H.P. 14 L.H., Daily Totals Crew B-34A 1 Truck Driver (heavy) 1 Dump Truck, 8 C.Y., 220 H.P. 8 L.H., Daily Totals Crew B-34B 1 Truck Driver (heavy) 1 Dump Truck, 12 C.Y., 400 H.P. 8 L.H., Daily Totals Crew B-34C 1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 380 H.P. 1 Dump Trailer, 16.5 C.Y. 8 L.H., Daily Totals Crew B-34D 1 Truck Driver (heavy)	\$59.00 59.00 44.40 <b>Hr.</b> \$51.30 <b>Hr.</b> \$51.30 <b>Hr.</b>	\$472.00 118.00 177.60 3707.00 701.75 \$5176.35 <b>Daily</b> \$410.40 407.60 \$818.00 <b>Daily</b> \$410.40 579.35 \$989.75 <b>Daily</b> \$410.40 499.15 138.35 \$1047.90 <b>Daily</b> \$410.40	\$87.90 87.90 66.25 Hr. \$76.70 Hr. \$76.70 Hr. \$76.70 Hr.	\$703.20 175.80 265.00 4077.70 771.92 \$5993.63 <b>Daily</b> \$613.60 448.36 \$1061.96 <b>Daily</b> \$613.60 637.28 \$1250.89 <b>Daily</b> \$613.60 549.07 152.19 \$1314.85 <b>Daily</b> \$613.60	Costs           \$54.83           314.91           \$369.74           Bare           Costs           \$51.30           50.95           \$102.25           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           72.42           \$123.72           Bare           Costs           \$51.30           79.69           \$130.99           Bare           Costs	0&P \$81.71 346.40 \$428.12 Incl. 0&P \$76.70 56.05 \$132.75 Incl. 0&P \$76.70 79.66 \$156.36 Incl. 0&P \$76.70 87.66 \$164.36 Incl. 0&P	8 L.H., Daily Totals  Crew B-34K  1 Truck Driver (heavy) 1 Truck Tractor, 6x4, 450 H.P. 1 Lowbed Trailer, 75 Ton 8 L.H., Daily Totals  Crew B-34L  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 1.5 Ton 8 L.H., Daily Totals  Crew B-34M  1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton 8 L.H., Daily Totals  Crew B-34N  1 Truck Driver (heavy) 1 Equip. Oper. (medium) 1 Truck Tractor, 6x4, 380 H.P. 1 Flatbed Trailer, 40 Ton 16 L.H., Daily Totals  Crew B-34P	Hr. \$51.30 Hr. \$55.50 Hr. \$55.50 Hr. \$51.30 59.00 Hr.	\$3179.40 Daily \$410.40 608.95 258.10 \$1277.45 Daily \$444.00 198.50 \$642.50 Daily \$444.00 850.05 \$1294.05 \$1294.05 Daily \$410.40 472.00 499.15 188.45 \$1570.00 Daily	\$76.70 Hr. \$82.70 Hr. \$82.70 Hr. \$76.70 87.90 Hr.	\$3659.50 Daily \$613.60 669.85 283.91 \$1567.36 Daily \$661.60 218.35 \$879.95 Daily \$661.60 935.05 \$1596.66 Daily \$661.60 935.05 \$1596.66 Daily \$613.60 703.20 549.07 207.29 \$2073.16	\$397.43 Bare Costs \$51.30 108.38 \$159.68 Bare Costs \$55.50 24.81 \$80.31 Bare Costs \$55.50 106.26 \$161.76 Bare Costs \$55.15 \$161.76 Bare Costs \$55.15 \$161.76 Bare Costs \$55.15	\$457.44 Incl. 0&P \$76.70 119.22 \$195.92 Incl. 0&P \$82.70 27.29 \$109.99 Incl. 0&P \$82.70 116.88 \$199.58 Incl. 0&P \$82.30 47.27 \$129.57 Incl. 0&P

1 Backhoe Loader, 48 H.P.

24 L.H., Daily Totals

216.20

\$2475.45

237.82

\$3276.07

44.43

\$103.14

48.87

\$136.50

Crew No.	Bai	re Costs	Sub	Incl. os O&P		ost abor-Hour
Crew B-34Q	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Pipe Fitter	\$68.35	\$546.80	\$102.00	\$816.00	\$59.53	\$88.85
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Flatbed Trailer, 25 Ton		137.20		150.92		
1 Dump Truck, 8 C.Y., 220 H.P.		407.60		448.36		
1 Hyd. Crane, 25 Ton		586.70		645.37	47.15	51.86
24 L.H., Daily Totals		\$2560.30		\$3377.05	\$106.68	\$140.71
Crew B-34R	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
L Pipe Fitter	\$68.35	\$546.80	\$102.00	\$816.00	\$59.53	\$88.85
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Flatbed Trailer, 25 Ton		137.20		150.92		
1 Dump Truck, 8 C.Y., 220 H.P.		407.60		448.36		
1 Hyd. Crane, 25 Ton		586.70		645.37		
1 Hyd. Excavator, 1 C.Y.		832.65		915.91	81.84	90.02
24 L.H., Daily Totals		\$3392.95		\$4292.97	\$141.37	\$178.87
Crew B-34S	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Pipe Fitters	\$68.35	\$1093.60	\$102.00	\$1632.00	\$62.36	\$93.06
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Flatbed Trailer, 40 Ton		188.45		207.29		
1 Truck Tractor, 6x4, 380 H.P.		499.15		549.07		
1 Hyd. Crane, 80 Ton		1458.00		1603.80		
l Hyd. Excavator, 2 C.Y.		942.70		1036.97	96.51	106.16
32 L.H., Daily Totals		\$5083.90		\$6375.13	\$158.87	\$199.22
Crew B-34T	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Pipe Fitters	\$68.35	\$1093.60	\$102.00	\$1632.00	\$62.36	\$93.06
l Truck Driver (heavy)	51.30	410.40	76.70	613.60		
Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
Flatbed Trailer, 40 Ton		188.45		207.29		
I Truck Tractor, 6x4, 380 H.P.		499.15		549.07	67.05	70.75
1 Hyd. Crane, 80 Ton		1458.00		1603.80	67.05	73.75
32 L.H., Daily Totals		\$4141.20		\$5338.16	\$129.41	\$166.82
Crew B-34U	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$53.40	\$79.70
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Truck Tractor, 220 H.P.		310.80		341.88		
1 Flatbed Trailer, 25 Ton		137.20		150.92	28.00	30.80
16 L.H., Daily Totals		\$1302.40		\$1768.00	\$81.40	\$110.50
Crew B-34V	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$56.08	\$83.65
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
	55.50	444.00	82.70	661.60		
1 Equip. Oper. (light)	33.30					
	55.50	608.95		669.85		
1 Truck Tractor, 6x4, 450 H.P. 1 Equipment Trailer, 50 Ton	55.50	608.95 207.25		227.97		
1 Truck Tractor, 6x4, 450 H.P.	55.50	608.95			41.37 \$97.46	45.51 \$129.16

Crew No.	Bare	: Costs		incl. os O&P		Cost abor-Hour
Crew B-34W	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
5 Truck Drivers (heavy)	\$51.30	\$2052.00	\$76.70	\$3068.00	\$53.92	\$80.50
2 Equip. Opers. (crane)	61.45	983.20	91.55	1464.80		
1 Equip. Oper. (mechanic)	61.50	492.00	91.65	733.20		
1 Laborer	44.40	355.20	66.25	530.00		
4 Truck Tractors, 6x4, 380 H.P.		1996.60		2196.26		
2 Equipment Trailers, 50 Ton		414.50		455.95		
2 Flatbed Trailers, 40 Ton		376.90		414.59		
1 Pickup Truck, 4x4, 3/4 Ton		176.75		194.43	40.15	54.07
1 S.P. Crane, 4x4, 20 Ton 72 L.H., Daily Totals		574.35 \$7421.50		631.78 \$9689.01	49.15 \$103.08	54.07 \$134.57
TZ L.H., Daily lotais		Ş7421.30		ŞJ00J.01	Bare	Incl.
Crew B-35	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside) 1 Skilled Worker	\$46.40	\$371.20	\$69.25	\$554.00	\$56.75	\$84.76
2 Welders	57.10 67.70	456.80 1083.20	85.90 101.05	687.20 1616.80		
1 Laborer	44.40	355.20	66.25	530.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
2 Welder, Electric, 300 amp	52.50	215.10	70.23	236.61		
1 Hyd. Excavator, .75 C.Y.		701.80		771.98	16.37	18.01
56 L.H., Daily Totals		\$4094.90		\$5754.99	\$73.12	\$102.77
					Bare	Incl.
Crew B-35A	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$53.42	\$79.79
2 Laborers	44.40	710.40	66.25	1060.00		
1 Skilled Worker	57.10	456.80	85.90	687.20		
1 Welder (plumber)	67.70 61.45	541.60	101.05 91.55	808.40 732.40		
1 Equip. Oper. (crane) 1 Equip. Oper. (oiler)	52.50	491.60 420.00	78.25	626.00		
1 Welder, Gas Engine, 300 amp	52.50	420.00	70.25	163.63		
1 Crawler Crane, 75 Ton		1967.00		2163.70	37.78	41.56
56 L.H., Daily Totals		\$5107.35		\$6795.32	\$91.20	\$121.35
					Bare	Incl.
Crew B-36	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.64	\$75.51
2 Laborers	44.40	710.40	66.25	1060.00		
2 Equip. Oper. (medium)	59.00	944.00	87.90	1406.40		
1 Dozer, 200 H.P.		1520.00		1672.00		
1 Aggregate Spreader		59.95		65.94	45.67	50.04
1 Tandem Roller, 10 Ton 40 L.H., Daily Totals		246.80 \$3852.35		271.48	45.67 \$96.31	50.24 \$125.75
40 L.H., Dally Totals		Ş3802.30		\$5029.82		
Crew B-36A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$53.03	\$79.05
2 Laborers	44.40	710.40	66.25	1060.00		
4 Equip. Oper. (medium)	59.00	1888.00	87.90	2812.80		
1 Dozer, 200 H.P.		1520.00		1672.00	l l	
1 Aggregate Spreader		59.95		65.94		
1 Tandem Roller, 10 Ton		246.80		271.48	ac	
1 Roller, Pneum. Whl., 12 Ton		349.90 \$5146.25		384.89 \$6821.11	38.87 \$91.90	42.76 \$121.81
56 L.H., Daily Totals						

Crew No.	Bar	e Costs	Sut	Incl. os O&P	Cost Per Labor-Ho		
Crew B-36B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$52.81	\$78.76	
2 Laborers	44.40	710.40	66.25	1060.00			
4 Equip. Oper. (medium)	59.00	1888.00	87.90	2812.80			
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60			
1 Grader, 30,000 Lbs.		1073.00		1180.30			
1 F.E. Loader, Crl, 1.5 C.Y.		668.35		735.18			
1 Dozer, 300 H.P.		1785.00		1963.50			
1 Roller, Vibratory, 25 Ton		672.35		739.59			
1 Truck Tractor, 6x4, 450 H.P.		608.95		669.85			
1 Water Tank Trailer, 5000 Gal.		154.10		169.51	77.53	85.28	
64 L.H., Daily Totals		\$8341.75		\$10498.33	\$130.34	\$164.04	
Crew B-36C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$54.94	\$81.93	
3 Equip. Oper. (medium)	59.00	1416.00	87.90	2109.60			
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60			
1 Grader, 30,000 Lbs.		1073.00		1180.30			
1 Dozer, 300 H.P.		1785.00		1963.50			
1 Roller, Vibratory, 25 Ton		672.35		739.59			
1 Truck Tractor, 6x4, 450 H.P.		608.95		669.85			
1 Water Tank Trailer, 5000 Gal.		154.10		169.51	107.33	118.07	
40 L.H., Daily Totals		\$6491.00		\$7999.94	\$162.28	\$200.00	
Crew B-36D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$55.85	\$83.24	
3 Equip. Oper. (medium)	59.00	1416.00	87.90	2109.60	<b><i>v</i></b> <i>vvvvvvvvvvvvv</i>	\$0012 I	
1 Grader, 30,000 Lbs.		1073.00		1180.30			
1 Dozer, 300 H.P.		1785.00		1963.50			
1 Roller, Vibratory, 25 Ton		672.35		739.59	110.32	121.36	
32 L.H., Daily Totals				\$6546.98	\$166.17	\$204.59	
JE LITI, Dally TU(dIS		\$5317.55		Ĵ0Ĵ <del>1</del> 0.J0	\$100.17	Ş20∓.33	
· •	Hr.		Hr.		Bare	Incl.	
Crew B-37	<b>Hr.</b>	Daily	<b>Hr.</b>	Daily	Bare Costs	Incl. 0&P	
Crew B-37 1 Labor Foreman (outside)	\$46.40	<b>Daily</b> \$371.20	\$69.25	<b>Daily</b> \$554.00	Bare	Incl.	
Crew B-37 1 Labor Foreman (outside) 4 Laborers	\$46.40 44.40	<b>Daily</b> \$371.20 1420.80	\$69.25 66.25	<b>Daily</b> \$554.00 2120.00	Bare Costs	Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light)	\$46.40	<b>Daily</b> \$371.20 1420.80 444.00	\$69.25	<b>Daily</b> \$554.00 2120.00 661.60	Bare Costs \$46.58	Incl. 0&P \$69.49	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton	\$46.40 44.40	<b>Daily</b> \$371.20 1420.80 444.00 258.75	\$69.25 66.25	<b>Daily</b> \$554.00 2120.00 661.60 284.63	Bare Costs \$46.58 5.39	Incl. 0&P \$69.49 5.93	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton	\$46.40 44.40	<b>Daily</b> \$371.20 1420.80 444.00	\$69.25 66.25	<b>Daily</b> \$554.00 2120.00 661.60	Bare Costs \$46.58	Incl. 0&P \$69.49	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton	\$46.40 44.40 55.50 <b>Hr.</b>	Daily \$371.20 1420.80 444.00 258.75 \$2494.75 Daily	\$69.25 66.25 82.70 <b>Hr.</b>	Daily \$554.00 2120.00 661.60 284.63 \$3620.22 Daily	Bare Costs \$46.58 5.39 \$51.97	Incl. 0&P \$69.49 5.93 \$75.42	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A	\$46.40 44.40 55.50	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25	<b>Daily</b> \$554.00 2120.00 661.60 284.63 \$3620.22	Bare Costs \$46.58 5.39 \$51.97 Bare	Incl. 0&P \$69.49 5.93 \$75.42 Incl.	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light)	\$46.40 44.40 55.50 <b>Hr.</b>	Daily \$371.20 1420.80 444.00 258.75 \$2494.75 Daily	\$69.25 66.25 82.70 <b>Hr.</b>	Daily \$554.00 2120.00 661.60 284.63 \$3620.22 Daily	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light)	\$46.40 44.40 55.50 <b>Hr.</b> \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M.	\$46.40 44.40 55.50 <b>Hr.</b> \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M.	\$46.40 44.40 55.50 <b>Hr.</b> \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M.	\$46.40 44.40 55.50 <b>Hr.</b> \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           \$45.87           14.80	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals Crew B-37B	\$46.40 44.40 55.50 <b>Hr.</b> \$44.40 48.80	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl.	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals Crew B-37B 3 Laborers	\$46.40 44.40 55.50 <b>Hr.</b> \$44.40 48.80 <b>Hr.</b>	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b>	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           21.35           172.37           \$2034.72           Daily	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00           Daily           \$1065.60	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals Crew B-37B 3 Laborers 1 Truck Driver (light)	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00           Daily           \$1065.60           390.40	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals Crew B-37B 3 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00           Daily           \$1065.60           390.40           198.50	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs           \$45.50	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P \$67.94	
Crew B-37  1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals  Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals  Crew B-37B 3 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M.	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00           Daily           \$1065.60           390.40           198.50           156.70	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b> \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35           172.37	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs           \$45.50           11.10	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P \$67.94 12.21	
Crew B-37  1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals  Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals  Crew B-37B 3 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 32 L.H., Daily Totals  Crew B-37C	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40 48.80 Hr.	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1065.60           390.40           198.50           156.70           \$1065.60           390.40           198.50           156.70           \$1811.20           Daily	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b>	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35           172.37           \$2564.72           Daily	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs           \$45.50           11.10           \$56.60           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P \$67.94 12.21 \$80.15 Incl. 0&P	
Crew B-37  1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals  Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals  Crew B-37B 3 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 32 L.H., Daily Totals  Crew B-37C 2 Laborers	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40 48.80 Hr. \$44.40 \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1065.60           390.40           198.50           156.70           \$1811.20           Daily           \$710.40	\$69.25 66.25 82.70 Hr. \$66.25 73.00 Hr. \$66.25 73.00 Hr. \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35           172.37           \$2564.72           Daily           \$1060.00	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs           \$45.50           11.10           \$56.60           Bare	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P \$67.94 12.21 \$80.15 Incl.	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals Crew B-37B 3 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 32 L.H., Daily Totals Crew B-37C 2 Laborers 2 Truck Drivers (light)	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40 48.80 Hr.	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1456.00           390.40           198.50           156.70           \$1065.60           390.40           198.50           156.70           \$1811.20           Daily           \$710.40           780.80	\$69.25 66.25 82.70 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b> \$66.25 73.00 <b>Hr.</b>	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35           172.37           \$2564.72           Daily           \$1060.00           \$160.00           1168.00	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs           \$45.50           11.10           \$56.60           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P \$67.94 12.21 \$80.15 Incl. 0&P	
Crew B-37 1 Labor Foreman (outside) 4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 5 Ton 48 L.H., Daily Totals Crew B-37A 2 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 24 L.H., Daily Totals Crew B-37B 3 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M. 32 L.H., Daily Totals Crew B-37C 2 Laborers	\$46.40 44.40 55.50 Hr. \$44.40 48.80 Hr. \$44.40 48.80 Hr. \$44.40 \$44.40	Daily           \$371.20           1420.80           444.00           258.75           \$2494.75           Daily           \$710.40           390.40           198.50           156.70           \$1065.60           390.40           198.50           156.70           \$1811.20           Daily           \$710.40	\$69.25 66.25 82.70 Hr. \$66.25 73.00 Hr. \$66.25 73.00 Hr. \$66.25	Daily           \$554.00           2120.00           661.60           284.63           \$3620.22           Daily           \$1060.00           584.00           218.35           172.37           \$2034.72           Daily           \$1590.00           584.00           218.35           172.37           \$2564.72           Daily           \$1060.00	Bare Costs           \$46.58           5.39           \$51.97           Bare Costs           \$45.87           14.80           \$60.67           Bare Costs           \$45.50           11.10           \$56.60           Bare Costs	Incl. 0&P \$69.49 5.93 \$75.42 Incl. 0&P \$68.50 16.28 \$84.78 Incl. 0&P \$67.94 12.21 \$80.15 Incl. 0&P	

Crew No.	Bare	Costs		nci. os O&P		Cost abor-Hour
Crew B-37D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$46.60	\$69.63
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Pickup Truck, 3/4 Ton		112.20		123.42	7.01	7.71
16 L.H., Daily Totals		\$857.80		\$1237.42	\$53.61	\$77.34
Crew B-37E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
3 Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$49.33	\$73.62
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
2 Truck Drivers (light)	48.80	780.80	73.00	1168.00		
4 Barrels w/ Flasher		16.60		18.26		
1 Concrete Saw		112.85		124.14		
1 Rotary Hammer Drill 1 Hammer Drill Bit		52.25 25.25		57.48 27.77		
1 Hammer Dhill Bit 1 Loader, Skid Steer, 30 H.P.		25.25 179.50		197.45		
1 Conc. Hammer Attach.		119.50		137.45		
1 Vibrating Plate, Gas, 18"		31.90		35.09		
2 Flatbed Trucks, Gas, 1.5 Ton		397.00		436.70	16.68	18.34
56 L.H., Daily Totals		\$3696.25		\$5150.03	\$66.00	\$91.96
					Bare	Incl.
Crew B-37F	Hr.	Daily	Hr.	Daily	Costs	0&P
3 Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$45.50	\$67.94
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
4 Barrels w/ Flasher		16.60		18.26		
1 Concrete Mixer, 10 C.F.		147.15		161.87		
1 Air Compressor, 60 cfm		153.85		169.24		
1 -50' Air Hose, 3/4"		7.15		7.87		
1 Spade (Chipper)		8.55		9.40	10.00	10.00
1 Flatbed Truck, Gas, 1.5 Ton 32 L.H., Daily Totals		198.50 \$1987.80		218.35 \$2758.98	16.62 \$62.12	18.28 \$86.22
52 L.H., Dally IOldis		\$1907.00		ŞZ700.90		
Crew B-37G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$46.58	\$69.49
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Berm Machine		253.55		278.90	10.07	
1 Tandem Roller, 5 Ton		258.75		284.63	10.67	11.74
48 L.H., Daily Totals		\$2748.30		\$3899.13	\$57.26	\$81.23
Crew B-37H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$46.58	\$69.49
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Tandem Roller, 5 Ton 1 Elathed Truck Cas, 1 5 Ton		258.75		284.63		
1 Flatbed Truck, Gas, 1.5 Ton 1 Tar Kettle, T.M.		198.50 156.70		218.35 172.37	12.79	14.07
	L					
48 L.H., Daily Totals		\$2849.95		\$4010.95	\$59.37	\$83.56

Bai	re Costs	Sut	Incl. os O&P			Crew No.	Bare	: Cost
Hr	Daily	Hr	Daily	Bare Costs	Incl. 0&P	Crew B-40	Hr	Da
								\$46
			-	Ş43.55	J1J.0∠			178
								98
								42
40.00		73.00					52.50	123
								229
						64 L.H., Dally Totals		\$718
						Crew B-40B		Da
			-			1 Labor Foreman (outside)	\$46.40	\$37
						3 Laborers	44.40	106
						1 Equip. Oper. (crane)	61.45	49
						1 Equip. Oper. (oiler)	52.50	42
						1 Lattice Boom Crane, 40 Ton		212
				22.22	24.56	48 L.H., Daily Totals		\$447
	\$4012.95		\$5498.40			Crew B-41	Hr.	Da
Hr.	Dailv	Hr.	Dailv	Bare Costs	Inci. 0&P	1 Labor Foreman (outside)	\$46.40	\$37
\$46.40				\$46.58	\$69.49	4 Laborers	44.40	142
				Q40.00	Ş05. <del>1</del> 5		61.45	12
							52.50	10
55.50		02.70				.25 Crawler Crane, 40 Ton		30
						44 L.H., Daily Totals		\$232
						Crew B-42	Hr.	Da
				22.10	24.21			\$37
								\$57 142
	\$3297.00		\$4502.70	\$68.69	\$93.81			49
				Bare	Incl.			49
Hr.	Daily	Hr.	Daily	Costs	0&P			48
\$46.40	\$371.20	\$69.25	\$554.00	\$46.58	\$69.49		00.50	58
44.40	1420.80	66.25	2120.00					14
55.50	444.00	82.70	661.60					32
	153.85		169.24					\$425
	7.15		7.87			64 L.n., Dally Totals		Ş4Z0
	397.00		436.70					_
	208.70		229.57	15.97	17.57			Da
	\$3002.70		\$4178.97					\$37 106
Hr.	Daily	Hr	Daily			1 Equip. Oper. (crane)	61.45	49
						1 Equip. Oper. (oiler)	52.50	42
				\$49.94	\$/4.4/			76
						-		\$311
								<b>V</b> 011
59.00		87.90				Crow B-44	Li.	Da
								\$46
								178
								98
	\$3213.85		\$4316.68	\$80.35	\$107.92		44.40	35
				Bare	Incl.			123 21
						1 Hammer, Diesel, 15K ftlbs.		62
				Ş40.3ŏ	Ş03.43	64 L.H., Daily Totals		\$565
55.50	444.00	82.70	661.60					
30.00	202.85	32.70	223.13			Crew B-45	Hr.	Da
		1	220.10					
			117 92			I FOUD, UDER IMEAUM	539.00	547
	107.20		117.92 50.16	7.41	8.15	1 Equip. Oper. (medium) 1 Truck Driver (heavy)	\$59.00 51.30	\$47 41
			117.92 50.16 \$3726.82	7.41	8.15 \$77.64	1 Equip. Oper. (medium) 1 Truck Driver (heavy) 1 Dist. Tanker, 3000 Gallon	\$59.00 51.30	\$47 41 33
	Hr.           \$44.40           55.50           59.00           48.80           Hr.           \$46.40           44.40           55.50           Hr.           \$46.40           44.40           55.50           Hr.           \$46.40           44.40           55.50           Hr.           \$46.40           44.40           55.50           Hr.           \$46.40           44.40	\$44.40         \$1065.60           55.50         444.00           59.00         472.00           48.80         780.80           16.60         112.85           52.25         25.25           153.85         7.15           8.55         179.50           118.50         147.15           31.90         397.00           \$4012.95         444.00           155.50         444.00           153.85         7.15           8.55         179.50           118.50         147.15           31.90         397.00           \$4012.95         444.00           153.85         7.15           294.30         397.00           208.70         \$3297.00           Hr.         Daily           \$46.40         \$371.20           44.40         1420.80           55.50         444.00           153.85         7.15           397.00         208.70           \$3002.70         \$3002.70           Hr.         Daily           \$46.40         \$371.20           44.40         710.40           55.50         444.00	Hr.         Daily         Hr.           \$44.40         \$1065.60         \$66.25           55.50         444.00         82.70           59.00         472.00         87.90           48.80         780.80         73.00           16.60         112.85         52.25           52.25         25.25         153.85           7.15         8.55         179.90           179.50         118.50         144.15           185.00         397.00         9397.00           31.90         397.00         569.25           55.50         444.00         82.70           54012.95         56.92.5         56.92.5           44.40         1420.80         66.25           55.50         444.00         82.70           153.85         7.15         294.30           397.00         208.70         40.0      204.30         397.00         208.70           55.50         444.00         82.70           153.85         7.15         397.00           204.30         397.00         208.70           55.50         444.00         82.70           153.85         7.15         397.00 </td <td>Bare CostsSubs O&amp;PHr.DailyHr.Daily\$44.40\$1065.60\$66.25\$1590.0055.50444.0082.70661.6059.00472.0087.90703.2048.80780.8073.001168.0016.6018.26112.85124.1452.2527.77153.85169.247.157.879.40179.50197.45118.50118.50130.35147.15161.8731.9035.0935.0935.09397.00436.7035.09397.0055.504402.8066.252120.0055.50444.0082.70661.60153.85169.247.157.87294.30229.572554.0144.401420.8066.252120.0055.50444.0082.70661.60153.85169.247.157.87294.30229.5725450.7044.401420.8066.252120.0055.50444.0082.70661.60153.85169.247.87397.00229.57229.57444.001420.8066.252120.0055.50444.0082.70661.60153.85169.247.87397.00229.57229.57444.001420.8066.252120.0055.50444.0082.70661.60153.85169.247.87397.00229.5755</td> <td>Bare Costs         Sub: D&amp;P         Per La           Hr.         Daily         Hr.         Daily         Social Costs           \$44.40         \$1065.60         \$66.25         \$1590.00         \$49.33           \$5.50         444.00         82.70         661.60         \$49.33           \$5.50         444.00         87.90         703.20         \$49.33           \$48.80         780.80         73.00         1168.00         \$49.33           \$16.60         18.26         18.26         \$49.33           \$124.14         \$22.55         57.48         \$49.33           \$22.55         27.77         \$7.87         \$49.43           \$15.385         169.24         \$7.16         7.87           \$179.50         197.45         \$61.60         \$7.66           \$4012.95         \$549.80         \$71.66         \$7.66           \$4012.95         \$554.90         \$46.60         \$371.20         \$69.25         \$254.00           \$44.40         1420.80         66.25         2120.00         \$66.60           \$397.00         436.70         22.10         \$66.53           \$44.40         1420.80         66.25         212.00           \$397.00&lt;</td> <td>BarSubSubParIncl. CasMr.DailyRosSob\$44.40\$1065.60\$66.25\$1590.00\$49.33\$73.62\$55.50444.0082.70661.60\$44.33\$73.62\$55.50444.0082.70661.60\$44.33\$73.62\$55.50447.0087.90703.20\$168.00\$44.01\$12.60112.85124.14\$52.2527.77\$44.10\$52.5525.77.88160.24\$44.01\$73.50\$43.07\$25.5577.8778.77\$44.10\$113.035\$44.01\$17.5578.789.40\$35.09\$2.33\$24.56\$147.15161.8731.9035.09\$2.33\$24.56\$31.9035.0935.09\$2.33\$24.56\$31.9035.09\$35.90\$2.33\$24.56\$444.00\$371.20\$69.25\$554.00\$48.70\$44.00\$371.20\$69.25\$2120.00\$6.59\$45.40\$371.20\$69.25\$2120.00\$39.81\$44.401420.8066.252120.00\$39.81\$55.50444.0082.70661.60\$93.81\$55.50444.0082.70\$661.60\$93.81\$55.50444.0082.70\$661.60\$93.81\$55.50444.0082.70661.60\$94.9\$55.50\$45.70\$55.40.00\$49.9\$62.5\$55.50444.0082.70661.60\$94.9<tr< td=""><td>Bare Costs         Subs Costs         Per Lobort         Crew Path           Int:         Daily         Hr.         Daily         Same         Incl.           S4440         SIGE         S1590         S19900         <t< td=""><td>Image: Current curren</td></t<></td></tr<></td>	Bare CostsSubs O&PHr.DailyHr.Daily\$44.40\$1065.60\$66.25\$1590.0055.50444.0082.70661.6059.00472.0087.90703.2048.80780.8073.001168.0016.6018.26112.85124.1452.2527.77153.85169.247.157.879.40179.50197.45118.50118.50130.35147.15161.8731.9035.0935.0935.09397.00436.7035.09397.0055.504402.8066.252120.0055.50444.0082.70661.60153.85169.247.157.87294.30229.572554.0144.401420.8066.252120.0055.50444.0082.70661.60153.85169.247.157.87294.30229.5725450.7044.401420.8066.252120.0055.50444.0082.70661.60153.85169.247.87397.00229.57229.57444.001420.8066.252120.0055.50444.0082.70661.60153.85169.247.87397.00229.57229.57444.001420.8066.252120.0055.50444.0082.70661.60153.85169.247.87397.00229.5755	Bare Costs         Sub: D&P         Per La           Hr.         Daily         Hr.         Daily         Social Costs           \$44.40         \$1065.60         \$66.25         \$1590.00         \$49.33           \$5.50         444.00         82.70         661.60         \$49.33           \$5.50         444.00         87.90         703.20         \$49.33           \$48.80         780.80         73.00         1168.00         \$49.33           \$16.60         18.26         18.26         \$49.33           \$124.14         \$22.55         57.48         \$49.33           \$22.55         27.77         \$7.87         \$49.43           \$15.385         169.24         \$7.16         7.87           \$179.50         197.45         \$61.60         \$7.66           \$4012.95         \$549.80         \$71.66         \$7.66           \$4012.95         \$554.90         \$46.60         \$371.20         \$69.25         \$254.00           \$44.40         1420.80         66.25         2120.00         \$66.60           \$397.00         436.70         22.10         \$66.53           \$44.40         1420.80         66.25         212.00           \$397.00<	BarSubSubParIncl. CasMr.DailyRosSob\$44.40\$1065.60\$66.25\$1590.00\$49.33\$73.62\$55.50444.0082.70661.60\$44.33\$73.62\$55.50444.0082.70661.60\$44.33\$73.62\$55.50447.0087.90703.20\$168.00\$44.01\$12.60112.85124.14\$52.2527.77\$44.10\$52.5525.77.88160.24\$44.01\$73.50\$43.07\$25.5577.8778.77\$44.10\$113.035\$44.01\$17.5578.789.40\$35.09\$2.33\$24.56\$147.15161.8731.9035.09\$2.33\$24.56\$31.9035.0935.09\$2.33\$24.56\$31.9035.09\$35.90\$2.33\$24.56\$444.00\$371.20\$69.25\$554.00\$48.70\$44.00\$371.20\$69.25\$2120.00\$6.59\$45.40\$371.20\$69.25\$2120.00\$39.81\$44.401420.8066.252120.00\$39.81\$55.50444.0082.70661.60\$93.81\$55.50444.0082.70\$661.60\$93.81\$55.50444.0082.70\$661.60\$93.81\$55.50444.0082.70661.60\$94.9\$55.50\$45.70\$55.40.00\$49.9\$62.5\$55.50444.0082.70661.60\$94.9 <tr< td=""><td>Bare Costs         Subs Costs         Per Lobort         Crew Path           Int:         Daily         Hr.         Daily         Same         Incl.           S4440         SIGE         S1590         S19900         <t< td=""><td>Image: Current curren</td></t<></td></tr<>	Bare Costs         Subs Costs         Per Lobort         Crew Path           Int:         Daily         Hr.         Daily         Same         Incl.           S4440         SIGE         S1590         S19900         S19900 <t< td=""><td>Image: Current curren</td></t<>	Image: Current curren

					1	
Crew B-40	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Pile Driver Foreman (outside)	\$57.90	\$463.20	\$89.50	\$716.00	\$57.11	\$87.06
Pile Drivers	55.90	1788.80	86.40	2764.80		
2 Equip. Oper. (crane)	61.45	983.20	91.55	1464.80		
L Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
L Crawler Crane, 40 Ton L Vibratory Hammer & Gen.		1231.00 2298.00		1354.10 2527.80	55.14	60.65
54 L.H., Daily Totals		2298.00 \$7184.20		2527.80 \$9453.50	\$112.25	60.65 \$147.71
- Lin, Daily lotais		Ş710 <del>4</del> .20		ŞJ <del>1</del> 33.30	Bare	
Crew B-40B	Hr.	Daily	Hr.	Daily	Costs	0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.92	\$72.97
B Laborers	44.40	1065.60	66.25	1590.00		
L Equip. Oper. (crane)	61.45 52.50	491.60	91.55 78.25	732.40 626.00		
L Equip. Oper. (oiler) L Lattice Boom Crane, 40 Ton	52.50	420.00 2127.00	/0.20	626.00 2339.70	44.31	48.74
18 L.H., Daily Totals		\$4475.40		\$5842.10	\$93.24	\$121.71
					Bare	Incl.
Crew B-41	Hr.	Daily	Hr.	Daily	Costs	0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.91	\$68.49
Laborers	44.40	1420.80	66.25	2120.00		
25 Equip. Oper. (crane) 25 Equip. Oper. (oiler)	61.45 52.50	122.90 105.00	91.55 78.25	183.10 156.50		
25 Equip. Oper. (olier) 25 Crawler Crane, 40 Ton	52.50	307.75	70.20	156.50 338.52	6.99	7.69
14 L.H., Daily Totals		\$2327.65		\$3352.13	\$52.90	\$76.18
					Bare	Incl.
Crew B-42	Hr.	Daily	Hr.	Daily	Costs	0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.78	\$74.67
Laborers	44.40	1420.80	66.25	2120.00		
L Equip. Oper. (crane) L Equip. Oper. (oiler)	61.45 52.50	491.60 420.00	91.55 78.25	732.40 626.00		
Welder	60.30	420.00	93.30	746.40		
Hyd. Crane, 25 Ton	00.00	586.70	50.00	645.37		
Welder, Gas Engine, 300 amp		148.75		163.63		
Horz. Boring Csg. Mch.		329.75		362.73	16.64	18.31
54 L.H., Daily Totals		\$4251.20		\$5950.52	\$66.43	\$92.98
Crew B-43	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.92	\$72.97
3 Laborers	44.40	1065.60	66.25	1590.00		
Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
L Drill Rig, Truck-Mounted		768.40		845.24	16.01	17.61
18 L.H., Daily Totals		\$3116.80		\$4347.64	\$64.93 Bare	\$90.58 Incl.
Crew B-44	Hr.	Daily	Hr.	Daily	Costs	0&P
Pile Driver Foreman (outside)	\$57.90	\$463.20	\$89.50	\$716.00	\$56.10	\$85.56
Pile Drivers	55.90	1788.80	86.40	2764.80		
2 Equip. Oper. (crane)	61.45	983.20	91.55	1464.80		
Laborer	44.40	355.20	66.25	530.00		
L Crawler Crane, 40 Ton L Lead, 60' High		1231.00		1354.10 232.98		
L Lead, 60 Fligh L Hammer, Diesel, 15K ftIbs.		211.80 624.45		232.98 686.89	32.30	35.53
54 L.H., Daily Totals		\$5657.65		\$7749.57	\$88.40	\$121.09
	μ.		μ.		Bare	Incl.
Crew B-45	<b>Hr.</b> \$59.00	<b>Daily</b> \$472.00	<b>Hr.</b> \$87.90	Daily \$703.20	<b>Costs</b> \$55.15	0&P \$82.30
L Truck Driver (heavy)	51.30	\$472.00 410.40	76.70	613.60		Ψ02.JU
Dist. Tanker, 3000 Gallon	51.00	334.10		367.51		
Truck Tractor, 6x4, 380 H.P.		499.15		549.07	52.08	57.29
16 L.H., Daily Totals		\$1715.65		\$2233.38	\$107.23	\$139.59

Incl. Subs O&P

Cost Per Labor-Hour

Crew No.	Bar	re Costs	Sut	Incl. os O&P		ost bor-Hour	Crew No.	Bare	Costs	Sut	lno bs
Crew B-46	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-48	Hr.	Daily	Hr.	
1 Pile Driver Foreman (outside)	\$57.90	\$463.20	\$89.50	\$716.00	\$50.48	\$76.84	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	
2 Pile Drivers	55.90	894.40	86.40	1382.40			3 Laborers	44.40	1065.60	66.25	
3 Laborers	44.40	1065.60	66.25	1590.00			1 Equip. Oper. (crane)	61.45	491.60	91.55	
1 Chain Saw, Gas, 36" Long		41.65		45.81	.87	.95	1 Equip. Oper. (oiler)	52.50	420.00	78.25	
48 L.H., Daily Totals		\$2464.85		\$3734.22	\$51.35	\$77.80	1 Equip. Oper. (light)	55.50	444.00	82.70	
Crew B-47	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Centr. Water Pump, 6" 1 -20' Suction Hose, 6"		235.25 25.50		
1 Blast Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.77	\$72.73	1 -50' Discharge Hose, 6"		18.10 768.40		
1 Driller	44.40	355.20	66.25	530.00			1 Drill Rig, Truck-Mounted				
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60			56 L.H., Daily Totals		\$3839.65		
1 Air Track Drill, 4"		1127.00		1239.70							
1 Air Compressor, 600 cfm		426.55		469.20			Crew B-49	Hr.	Daily	Hr.	
2 -50' Air Hoses, 3"		76.70		84.37	67.93	74.72	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	
24 L.H., Daily Totals		\$2800.65		\$3538.88	\$116.69	\$147.45	3 Laborers	44.40	1065.60	66.25	
					Bare	Incl.	2 Equip. Oper. (crane)	61.45	983.20	91.55	
Crew B-47A	Hr.	Daily	Hr.	Daily	Costs	0&P	2 Equip. Oper. (oilers)	52.50	840.00	78.25	
1 Drilling Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$53.45	\$79.68	1 Equip. Oper. (light)	55.50	444.00	82.70	
1 Equip. Oper. (heavy)	61.45	491.60	91.55	732.40		\$79.00	2 Pile Drivers	55.90	894.40	86.40	
1 Equip. Oper. (oiler)	52.50	491.00	78.25	626.00			1 Hyd. Crane, 25 Ton		586.70		
1 Air Track Drill, 5"	52.50	420.00	/0.20	1239.70	46.96	51.65	1 Centr. Water Pump, 6"		235.25		
		\$2409.80		\$3152.10	\$100.41	\$131.34	1 -20' Suction Hose, 6"		25.50		
24 L.H., Daily Totals		\$2409.80		\$3152.10	\$100.41	\$131.34	1 -50' Discharge Hose, 6"		18.10		
					Bare	Incl.	1 Drill Rig, Truck-Mounted		768.40		
Crew B-47C	Hr.	Daily	Hr.	Daily	Costs	0&P	88 L.H., Daily Totals		\$6232.35		
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$49.95	\$74.47					
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60			Crew B-50	Hr.	Daily	Hr.	
1 Air Compressor, 750 cfm		596.30		655.93			2 Pile Driver Foremen (outside)	\$57.90	\$926.40	\$89.50	
2 -50' Air Hoses, 3"		76.70		84.37	110.50	100.75	6 Pile Drivers	55.90	2683.20	86.40	
1 Air Track Drill, 4"	<u> </u>	1127.00		1239.70	112.50	123.75	2 Equip. Oper. (crane)	61.45	983.20	91.55	
16 L.H., Daily Totals		\$2599.20		\$3171.60	\$162.45	\$198.22	1 Equip. Oper. (oiler)	52.50	420.00	78.25	
Crew B-47E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	3 Laborers	44.40	1065.60	66.25	
	\$46.40			\$554.00	\$44.90	\$67.00	1 Crawler Crane, 40 Ton		1231.00		
1 Labor Foreman (outside)	\$46.40 44.40	\$371.20 1065.60	\$69.25		\$44.90	\$67.00	1 Lead, 60' High		211.80		
3 Laborers							1 Hammer, Diesel, 15K ftlbs. 1 Air Compressor, 600 cfm		624.45		
	01.11		66.25	1590.00	20.50	20.22	1 Air Compressor, buu cim		100 55		
1 Flatbed Truck, Gas, 3 Ton		850.05	00.20	935.05	26.56	29.22			426.55		
			00.20		26.56 \$71.46	29.22 \$96.22	2 -50' Air Hoses, 3"		76.70		
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G	Hr.	850.05 \$2286.85 Daily	66.25 Hr.	935.05 \$3079.05 Daily	\$71.46 Bare Costs	\$96.22 Incl. O&P					\$
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside)	<b>Hr.</b> \$46.40	850.05 \$2286.85 <b>Daily</b> \$371.20	<b>Hr.</b> \$69.25	935.05 \$3079.05 <b>Daily</b> \$554.00	\$71.46 <b>Bare</b>	\$96.22 Incl.	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals		76.70 41.65 \$8690.55		\$
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers	<b>Hr.</b> \$46.40 44.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40	<b>Hr.</b> \$69.25 66.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00	\$71.46 Bare Costs	\$96.22 Incl. O&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51	Hr.	76.70 41.65 \$8690.55 <b>Daily</b>	Hr.	\$
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light)	<b>Hr.</b> \$46.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00	<b>Hr.</b> \$69.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60	\$71.46 Bare Costs	\$96.22 Incl. O&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside)	\$46.40	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20	\$69.25	\$
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4"	<b>Hr.</b> \$46.40 44.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00	<b>Hr.</b> \$69.25 66.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60 1239.70	\$71.46 Bare Costs	\$96.22 Incl. O&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers		76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80	\$69.25 66.25	\$
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm	<b>Hr.</b> \$46.40 44.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55	<b>Hr.</b> \$69.25 66.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60 1239.70 469.20	\$71.46 Bare Costs	\$96.22 Incl. O&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light)	\$46.40	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40	\$69.25	\$
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4"	<b>Hr.</b> \$46.40 44.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70	<b>Hr.</b> \$69.25 66.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60 1239.70 469.20 84.37	\$71.46 Bare Costs	\$96.22 Incl. O&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers	\$46.40 44.40	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80	\$69.25 66.25	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm	<b>Hr.</b> \$46.40 44.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70 321.75	<b>Hr.</b> \$69.25 66.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60 1239.70 469.20 84.37 353.93	\$71.46 Bare Costs	\$96.22 Incl. 0&P \$71.11 67.10	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light)	\$46.40 44.40	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40	\$69.25 66.25	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm 2 -50' Air Hoses, 3"	<b>Hr.</b> \$46.40 44.40	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70	<b>Hr.</b> \$69.25 66.25	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60 1239.70 469.20 84.37	\$71.46 Bare Costs \$47.67	\$96.22 Incl. 0&P \$71.11	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton	\$46.40 44.40	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40 198.50	\$69.25 66.25	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm 2 -50' Air Hoses, 3" 1 Gunite Pump Rig 32 L.H., Daily Totals	Hr. \$46.40 44.40 55.50	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70 321.75 \$3477.60	<b>Hr.</b> \$69.25 66.25 82.70	935.05 \$3079.05 <b>Daily</b> \$554.00 1060.00 661.60 1239.70 469.20 84.37 353.93 \$4422.80	\$71.46 Bare Costs \$47.67 61.00 \$108.68 Bare	\$96.22 Incl. 0&P \$71.11 67.10 \$138.21 Incl.	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 48 L.H., Daily Totals Crew B-52	\$46.40 44.40 48.80 <b>Hr.</b>	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40 198.50 \$2380.90 <b>Daily</b>	\$69.25 66.25 73.00 <b>Hr.</b>	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm 2 -50' Air Hoses, 3" 1 Gunite Pump Rig 32 L.H., Daily Totals Crew B-47H	Hr. \$46.40 44.40 55.50 Hr.	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70 321.75 \$3477.60 <b>Daily</b>	Hr. \$69.25 66.25 82.70 Hr.	935.05 \$3079.05 <b>Daily</b> \$5554.00 1060.00 661.60 1239.70 469.20 84.37 353.93 \$4422.80 <b>Daily</b>	\$71.46 Bare Costs \$47.67 61.00 \$108.68 Bare Costs	\$96.22 Incl. 0&P \$71.11 67.10 \$138.21 Incl. 0&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 48 L.H., Daily Totals Crew B-52 1 Carpenter Foreman (outside)	\$46.40 44.40 48.80 <b>Hr.</b> \$56.70	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40 198.50 \$2380.90 <b>Daily</b> \$453.60	\$69.25 66.25 73.00 <b>Hr.</b> \$84.60	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm 2 -50' Air Hoses, 3" 1 Gunite Pump Rig 32 L.H., Daily Totals Crew B-47H 1 Skilled Worker Foreman (out)	Hr. \$46.40 44.40 55.50 Hr. \$59.10	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70 321.75 \$3477.60 <b>Daily</b> \$472.80	Hr. \$69.25 66.25 82.70 Hr. \$88.90	935.05 \$3079.05 <b>Daily</b> \$5554.00 1060.00 661.60 1239.70 469.20 84.37 353.93 \$4422.80 <b>Daily</b> \$711.20	\$71.46 Bare Costs \$47.67 61.00 \$108.68 Bare	\$96.22 Incl. 0&P \$71.11 67.10 \$138.21 Incl.	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 48 L.H., Daily Totals Crew B-52 1 Carpenter Foreman (outside) 1 Carpenter	\$46.40 44.40 48.80 <b>Hr.</b> \$56.70 54.70	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40 198.50 \$2380.90 <b>Daily</b> \$453.60 437.60	\$69.25 66.25 73.00 <b>Hr.</b> \$84.60 81.65	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm 2 -50' Air Hoses, 3" 1 Gunite Pump Rig 32 L.H., Daily Totals Crew B-47H 1 Skilled Worker Foreman (out) 3 Skilled Workers	Hr. \$46.40 44.40 55.50 Hr.	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70 321.75 \$3477.60 <b>Daily</b> \$472.80 1370.40	Hr. \$69.25 66.25 82.70 Hr.	935.05 \$3079.05 <b>Daily</b> \$5554.00 1060.00 661.60 1239.70 469.20 84.37 353.93 \$4422.80 <b>Daily</b> \$711.20 2061.60	\$71.46 Bare Costs \$47.67 61.00 \$108.68 Bare Costs \$57.60	\$96.22 Incl. 0&P \$71.11 67.10 \$138.21 Incl. 0&P \$86.65	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 48 L.H., Daily Totals Crew B-52 1 Carpenter Foreman (outside) 1 Carpenter 3 Laborers	\$46.40 44.40 48.80 <b>Hr.</b> \$56.70 54.70 44.40	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40 198.50 \$2380.90 <b>Daily</b> \$453.60 437.60 1065.60	\$69.25 66.25 73.00 <b>Hr.</b> \$84.60 81.65 66.25	
1 Flatbed Truck, Gas, 3 Ton 32 L.H., Daily Totals Crew B-47G 1 Labor Foreman (outside) 2 Laborers 1 Equip. Oper. (light) 1 Air Track Drill, 4" 1 Air Compressor, 600 cfm 2 -50' Air Hoses, 3" 1 Gunite Pump Rig 32 L.H., Daily Totals Crew B-47H 1 Skilled Worker Foreman (out)	Hr. \$46.40 44.40 55.50 Hr. \$59.10	850.05 \$2286.85 <b>Daily</b> \$371.20 710.40 444.00 1127.00 426.55 76.70 321.75 \$3477.60 <b>Daily</b> \$472.80	Hr. \$69.25 66.25 82.70 Hr. \$88.90	935.05 \$3079.05 <b>Daily</b> \$5554.00 1060.00 661.60 1239.70 469.20 84.37 353.93 \$4422.80 <b>Daily</b> \$711.20	\$71.46 Bare Costs \$47.67 61.00 \$108.68 Bare Costs	\$96.22 Incl. 0&P \$71.11 67.10 \$138.21 Incl. 0&P	2 -50' Air Hoses, 3" 1 Chain Saw, Gas, 36" Long 112 L.H., Daily Totals Crew B-51 1 Labor Foreman (outside) 4 Laborers 1 Truck Driver (light) 1 Flatbed Truck, Gas, 1.5 Ton 48 L.H., Daily Totals Crew B-52 1 Carpenter Foreman (outside) 1 Carpenter	\$46.40 44.40 48.80 <b>Hr.</b> \$56.70 54.70	76.70 41.65 \$8690.55 <b>Daily</b> \$371.20 1420.80 390.40 198.50 \$2380.90 <b>Daily</b> \$453.60 437.60	\$69.25 66.25 73.00 <b>Hr.</b> \$84.60 81.65	\$

0&P Costs \$50.76 \$75.55 87.90 .5 Equip. Oper. (medium) 59.00 236.00 351.60 .5 Crawler Loader, 3 C.Y. 573.00 630.30 10.23 11.26 56 L.H., Daily Totals \$3415.80 \$4861.30 \$61.00 \$86.81 Bare Incl. Crew B-53 Hr. Daily Hr. Daily Costs 0&P \$55.50 \$82.70 1 Equip. Oper. (light) \$55.50 \$444.00 \$82.70 \$661.60 1 Trencher, Chain, 12 H.P. 158.60 174.46 19.82 21.81 \$602.60 \$836.06 \$104.51 8 L.H., Daily Totals \$75.33

Cost Per Labor-Hour

> Incl. 0&P

\$74.36

20.57

\$94.93

Incl.

0&P

\$78.46

20.42

\$98.89

Incl. 0&P

\$82.68

25.66

\$108.33

Incl. 0&P

\$67.88

4.55

\$72.42

Incl.

Bare

**Costs** \$49.86

18.70

\$68.57

Bare

Costs

\$52.25

18.57

\$70.82

Bare

**Costs** \$54.27

23.32

\$77.59

Bare

**Costs** \$45.47

4.14

\$49.60

Bare

Crew No.	Bar	re Costs	Sut	inci. os O&P		ost Ibor-Hour
Crew B-54	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$55.50	\$82.70
1 Trencher, Chain, 40 H.P.		450.70		495.77	56.34	61.97
8 L.H., Daily Totals		\$894.70		\$1157.37	\$111.84	\$144.67
Crew B-54A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.17 Labor Foreman (outside)	\$46.40	\$63.10	\$69.25	\$94.18	\$57.17	\$85.19
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20	\$07.17	Q00.15
1 Wheel Trencher, 67 H.P.		1140.00		1254.00	121.79	133.97
9.36 L.H., Daily Totals		\$1675.10		\$2051.38	\$178.96	\$219.16
Crew B-54B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
.25 Labor Foreman (outside)	\$46.40	\$92.80	\$69.25	\$138.50	\$56.48	\$84.17
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20		
1 Wheel Trencher, 150 H.P.		1238.00		1361.80	123.80	136.18
10 L.H., Daily Totals		\$1802.80		\$2203.50	\$180.28	\$220.35
Crew B-54C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$51.70	\$77.08
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20		
1 Wheel Trencher, 67 H.P.		1140.00		1254.00	71.25	78.38
16 L.H., Daily Totals		\$1967.20		\$2487.20	\$122.95	\$155.45
Crew B-54D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$51.70	\$77.08
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20		
1 Rock Trencher, 6" Width		434.20		477.62	27.14	29.85
16 L.H., Daily Totals		\$1261.40		\$1710.82	\$78.84	\$106.93
Crew B-54E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$51.70	\$77.08
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20	62.44	CO 70
1 Rock Trencher, 18" Width 16 L.H., Daily Totals		1015.00 \$1842.20		1116.50 \$2349.70	63.44 \$115.14	69.78
10 L.H., Dally Tolais		Ş1042.2U		\$2349.70		\$146.86
Crew B-55	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$45.87	\$68.50
2 Laborers 1 Truck Driver (light)	\$44.40 48.80	\$710.40 390.40	\$66.25 73.00	\$1060.00 584.00	\$45.87	Ş68.50
1 Truck Driver (light) 1 Truck-Mounted Earth Auger		390.40 394.15		584.00 433.57		
1 Truck Driver (light) 1 Truck-Mounted Earth Auger 1 Flatbed Truck, Gas, 3 Ton		390.40 394.15 850.05		584.00 433.57 935.05	51.84	57.03
1 Truck Driver (light) 1 Truck-Mounted Earth Auger		390.40 394.15		584.00 433.57	51.84 \$97.71	57.03 \$125.53
1 Truck Driver (light) 1 Truck-Mounted Earth Auger 1 Flatbed Truck, Gas, 3 Ton	48.80 Hr.	390.40 394.15 850.05 \$2345.00 Daily	73.00 Hr.	584.00 433.57 935.05	51.84 \$97.71 Bare Costs	57.03 \$125.53 Incl. 0&P
1 Truck Driver (light) 1 Truck-Mounted Earth Auger 1 Flatbed Truck, Gas, 3 Ton 24 L.H., Daily Totals Crew B-56 1 Laborer	48.80 Hr. \$44.40	390.40 394.15 850.05 \$2345.00 <b>Daily</b> \$355.20	73.00 Hr. \$66.25	584.00 433.57 935.05 \$3012.62 <b>Daily</b> \$530.00	51.84 \$97.71 Bare	57.03 \$125.53 <b>Incl.</b>
1 Truck Driver (light) 1 Truck-Mounted Earth Auger 1 Flatbed Truck, Gas, 3 Ton 24 L.H., Daily Totals Crew B-56 1 Laborer 1 Equip. Oper. (light)	48.80 Hr.	390.40 394.15 850.05 \$2345.00 <b>Daily</b> \$355.20 444.00	73.00 Hr.	584.00 433.57 935.05 \$3012.62 <b>Daily</b> \$530.00 661.60	51.84 \$97.71 Bare Costs	57.03 \$125.53 Incl. 0&P
1 Truck Driver (light) 1 Truck-Mounted Earth Auger 1 Flatbed Truck, Gas, 3 Ton 24 L.H., Daily Totals Crew B-56 1 Laborer 1 Equip. Oper. (light) 1 Air Track Drill, 4"	48.80 Hr. \$44.40	390.40 394.15 850.05 \$2345.00 <b>Daily</b> \$355.20 444.00 1127.00	73.00 Hr. \$66.25	584.00 433.57 935.05 \$3012.62 <b>Daily</b> \$530.00 661.60 1239.70	51.84 \$97.71 Bare Costs	57.03 \$125.53 Incl. 0&P
1 Truck Driver (light) 1 Truck-Mounted Earth Auger 1 Flatbed Truck, Gas, 3 Ton 24 L.H., Daily Totals Crew B-56 1 Laborer 1 Equip. Oper. (light)	48.80 Hr. \$44.40	390.40 394.15 850.05 \$2345.00 <b>Daily</b> \$355.20 444.00	73.00 Hr. \$66.25	584.00 433.57 935.05 \$3012.62 <b>Daily</b> \$530.00 661.60	51.84 \$97.71 Bare Costs	57.03 \$125.53 Incl. 0&P

Crew No.	Bare	: Costs	ncl. os O&P		Cost abor-Hour	
Crew B-57	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.77	\$75.71
2 Laborers	44.40	710.40	66.25	1060.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
1 Crawler Crane, 25 Ton		1152.00		1267.20		
1 Clamshell Bucket, 1 C.Y. 1 Centr. Water Pump, 6"		69.25 235.25		76.17 258.77		
1 -20' Suction Hose, 6"		25.50		28.05		
20 -50' Discharge Hoses, 6"		362.00		398.20	38.42	42.26
48 L.H., Daily Totals		\$4281.20		\$5662.40	\$89.19	\$117.97
Crew B-58	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$48.10	\$71.73
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Backhoe Loader, 48 H.P.		216.20		237.82		
1 Small Helicopter, w/ Pilot		2101.00		2311.10	96.55	106.21
24 L.H., Daily Totals		\$3471.60		\$4270.52	\$144.65	\$177.94
Crew B-59	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Truck Driver (heavy)	\$51.30	\$410.40	\$76.70	\$613.60	\$51.30	\$76.70
1 Truck Tractor, 220 H.P.		310.80		341.88		co. oo
1 Water Tank Trailer, 5000 Gal.		154.10		169.51	58.11	63.92
8 L.H., Daily Totals		\$875.30		\$1124.99	\$109.41	\$140.62
Crew B-59A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$46.70	\$69.73
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Water Tank Trailer, 5000 Gal. 1 Truck Tractor, 220 H.P.		154.10 310.80		169.51 341.88	19.37	21.31
24 L.H., Daily Totals		\$1585.70		\$2184.99	\$66.07	\$91.04
		ţ1000m0		QLIC HOS	Bare	Incl.
Crew B-60	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$51.45	\$76.71
2 Laborers	44.40	710.40	66.25	1060.00		
1 Equip. Oper. (crane) 2 Equip. Oper. (light)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (ilgni)	55.50 52.50	888.00 420.00	82.70 78.25	1323.20 626.00		
1 Crawler Crane, 40 Ton	52.50	1231.00	70.25	1354.10		
1 Lead, 60' High		211.80		232.98		
1 Hammer, Diesel, 15K ftlbs.		624.45		686.89		
1 Backhoe Loader, 48 H.P.		216.20		237.82	40.78	44.85
56 L.H., Daily Totals	<u> </u>	\$5164.65		\$6807.40	\$92.23	\$121.56
Crew B-61	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.02	\$70.14
3 Laborers	44.40	1065.60	66.25	1590.00		
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Cement Mixer, 2 C.Y.		112.35		123.58	0.10	0.00
1 Air Compressor, 160 cfm 40 L.H., Daily Totals		212.30 \$2205.45		233.53 \$3162.72	8.12 \$55.14	8.93 \$79.07
		+=====			Bare	Incl.
Crew B-62	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$48.10	\$71.73
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60	7 40	0.00
1 Loader, Skid Steer, 30 H.P. 24 L.H., Daily Totals		179.50 \$1333.90		197.45 \$1919.05	7.48 \$55.58	8.23 \$79.96
24 L.H., Daily IOldIS		\$1999'AN		\$1212.00	ý00.00	\$12.20

Crow Ma	n	va Cast-	e	Incl. os O&P		ost bor Hour	Crow No.	P	Costa		ncl. s O&P
Crew No.	ва	re Costs	Suc	os O&P	Per La	abor-Hour	Crew No.	Bare	: Costs	Suo	s O&P
Crew B-62A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-68B	Hr.	Daily	Hr.	Dail
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$48.10	\$71.73	1 Millwright Foreman (inside)	\$59.25	\$474.00	\$85.60	\$684.8
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60			2 Millwrights	58.75	940.00	84.90	1358.40
1 Loader, Skid Steer, 30 H.P.		179.50		197.45			2 Electricians	63.70	1019.20	94.65	1514.40
1 Trencher Attachment		66.25		72.88	10.24	11.26	2 Plumbers	67.70	1083.20	101.05	1616.8
24 L.H., Daily Totals		\$1400.15		\$1991.93	\$58.34	\$83.00	1 R.T. Forklift, 5,000 Lb., gas		283.30		311.6
0.000		<b>.</b> .			Bare	Incl.	56 L.H., Daily Totals		\$3799.70		\$5486.03
Crew B-63 4 Laborers	<b>Hr.</b> \$44.40	Daily	Hr.	Daily	Costs	0&P \$69.54	Crew B-68C	Hr.	Daily	Hr.	Dail
1 Equip. Oper. (light)	\$44.40 55.50	\$1420.80 444.00	\$66.25 82.70	\$2120.00 661.60	\$46.62	Ş09.04	1 Millwright Foreman (inside)	\$59.25	\$474.00	\$85.60	\$684.8
1 Loader, Skid Steer, 30 H.P.	00.00	179.50	02.70	197.45	4.49	4.94	1 Millwright	58.75	470.00	84.90	679.20
40 L.H., Daily Totals		\$2044.30		\$2979.05	\$51.11	\$74.48	1 Electrician	63.70	509.60	94.65	757.20
					Bare	Incl.	1 Plumber	67.70	541.60	101.05	808.40
Crew B-63B	Hr.	Daily	Hr.	Daily	Costs	0&P	1 R.T. Forklift, 5,000 Lb., gas		283.30		311.6
1 Labor Foreman (inside)	\$44.90	\$359.20	\$67.00	\$536.00	\$47.30	\$70.55	32 L.H., Daily Totals		\$2278.50		\$3241.23
2 Laborers	44.40	710.40	66.25	1060.00			Onen D 69D	11.	Deilu	11.	Dell
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60	12.05	15.04	Crew B-68D	Hr.	Daily	Hr.	Dail
1 Loader, Skid Steer, 78 H.P.		446.30		490.93	13.95	15.34	1 Labor Foreman (inside) 1 Laborer	\$44.90 44.40	\$359.20 355.20	\$67.00 66.25	\$536.00 530.00
32 L.H., Daily Totals		\$1959.90		\$2748.53	\$61.25	\$85.89	1 Equip. Oper. (light)	44.40 55.50	355.20 444.00	66.25 82.70	530.00 661.60
Crew B-64	ц.,	Daily	U.,	Deilu	Bare Costs	Incl. 0&P	1 R.T. Forklift, 5,000 Lb., gas	55.50	283.30	02.70	311.6
	<b>Hr.</b> \$44.40	Daily	Hr.	Daily	\$46.60		24 L.H., Daily Totals		\$1441.70		\$2039.2
1 Laborer 1 Truck Driver (light)	\$44.40 48.80	\$355.20 390.40	\$66.25 73.00	\$530.00 584.00	\$40.00	\$69.63					
1 Power Mulcher (small)	40.00	201.00	75.00	221.10			Crew B-68E	Hr.	Daily	Hr.	Dail
1 Flatbed Truck, Gas, 1.5 Ton		198.50		218.35	24.97	27.47	1 Struc. Steel Foreman (inside)	\$60.80	\$486.40	\$94.10	\$752.80
16 L.H., Daily Totals		\$1145.10		\$1553.45	\$71.57	\$97.09	3 Struc. Steel Workers	60.30	1447.20	93.30	2239.20
					Bare	Incl.	1 Welder	60.30	482.40	93.30	746.40
Crew B-65	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Forklift, Smooth Floor, 8,000 Lb.		283.25		311.5
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$46.60	\$69.63	40 L.H., Daily Totals		\$2699.25		\$4049.9
1 Truck Driver (light)	48.80	390.40	73.00	584.00							
1 Power Mulcher (Large)		345.35		379.88			Crew B-68F	Hr.	Daily	Hr.	Dail
1 Flatbed Truck, Gas, 1.5 Ton		198.50		218.35	33.99	37.39	1 Skilled Worker Foreman (out) 2 Skilled Workers	\$59.10 57.10	\$472.80 913.60	\$88.90 85.90	\$711.20 1374.40
16 L.H., Daily Totals		\$1289.45		\$1712.23	\$80.59	\$107.01	1 R.T. Forklift, 5,000 Lb., gas	57.10	283.30	65.90	311.6
Crew B-66	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	24 L.H., Daily Totals		\$1669.70		\$2397.2
1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$55.50	\$82.70					
1 Loader-Backhoe, 40 H.P.	-	267.55		294.31	33.44	36.79	Crew B-68G	Hr.	Daily	Hr.	Dail
8 L.H., Daily Totals		\$711.55		\$955.90	\$88.94	\$119.49	2 Structural Steel Workers	\$60.30	\$964.80	\$93.30	\$1492.80
					Bare	Incl.	1 R.T. Forklift, 5,000 Lb., gas		283.30		311.6
Crew B-67	Hr.	Daily	Hr.	Daily	Costs	0&P	16 L.H., Daily Totals		\$1248.10		\$1804.43
1 Millwright	\$58.75	\$470.00	\$84.90	\$679.20	\$57.13	\$83.80	0	11	Dailu	11.	Dell
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60	17.05	10.70	Crew B-69	Hr.	Daily	Hr.	Dail
1 R.T. Forklift, 5,000 Lb., diesel		272.85 \$1186.85		300.13	17.05	18.76	1 Labor Foreman (outside) 3 Laborers	\$46.40 44.40	\$371.20 1065.60	\$69.25 66.25	\$554.00 1590.00
16 L.H., Daily Totals		\$1180.83		\$1640.93	\$74.18	\$102.56	1 Equip. Oper. (crane)	61.45	491.60	91.55	732.4
Crew B-67B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00
1 Millwright Foreman (inside)	\$59.25	\$474.00	\$85.60	\$684.80	\$59.00	\$85.25	1 Hyd. Crane, 80 Ton		1458.00		1603.80
1 Millwright	58.75	470.00	\$83.00 84.90	679.20	\$33.00	QUJ.2J	48 L.H., Daily Totals		\$3806.40		\$5106.20
16 L.H., Daily Totals		\$944.00		\$1364.00	\$59.00	\$85.25					
					Bare	Incl.	Crew B-69A	Hr.	Daily	Hr.	Dail
Crew B-68	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00
2 Millwrights	\$58.75	\$940.00	\$84.90	\$1358.40	\$57.67	\$84.17	3 Laborers 1 Equip. Oper. (medium)	44.40 59.00	1065.60 472.00	66.25 87.90	1590.00 703.20
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60			1 Concrete Finisher	59.00 51.80	472.00	87.90 75.90	607.20
1 R.T. Forklift, 5,000 Lb., diesel		272.85		300.13	11.37	12.51	1 Curb/Gutter Paver, 2-Track	51.50	1231.00	. 0.50	1354.10
24 L.H., Daily Totals		\$1656.85		\$2320.14	\$69.04	\$96.67	48 L.H., Daily Totals		\$3554.20		\$4808.50
Crew B-68A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P					
	650 05	C474.00	\$85.60	\$684.80	\$58.92	\$85.13					
1 Millwright Foreman (inside)	\$59.25	\$474.00									
1 Millwright Foreman (inside) 2 Millwrights	58.75	940.00	84.90	1358.40							
1 Millwright Foreman (inside)	58.75				11.80 \$70.72	12.98 \$98.12					

Daily

\$684.80

1358.40

1514.40

1616.80 311.63

\$5486.03

Daily

\$684.80

679.20

757.20

808.40 311.63

\$3241.23

Daily

\$536.00

530.00

661.60 311.63

\$2039.23

Daily

\$752.80

2239.20

746.40

311.57

Daily

\$711.20

1374.40

311.63

\$2397.23

\$1492.80

311.63

Daily

\$554.00

1590.00

732.40

626.00 1603.80

\$5106.20

Daily

\$554.00

1590.00

703.20

607.20 1354.10

\$4808.50

\$1804.43

Daily

\$4049.97

Cost

Per Labor-Hour

Incl.

0&P

\$92.40

5.56

\$97.96

Incl.

0&P

\$91.55

9.74

\$101.29

Incl.

0&P

\$71.98

12.98

\$84.97

Incl.

0&P

\$93.46

7.79

\$101.25

Incl. 0&P

\$86.90

12.98

\$99.88

Incl.

0&P

\$93.30

19.48

\$112.78

Incl.

0&P

\$72.97

33.41

\$106.38

Incl.

0&P

\$71.97

28.21

\$100.18

Bare

Costs

\$62.79

5.06

\$67.85

Bare

Costs

\$62.35

8.85

\$71.20

Bare

Costs

\$48.27

11.80

\$60.07

Bare

Costs

\$60.40

7.08

\$67.48

Bare

Costs

\$57.77

11.80

\$69.57

Bare

Costs

\$60.30

17.71

\$78.01

Bare

Costs

\$48.92

30.38

\$79.30

Bare

Costs

\$48.40

25.65

\$74.05

Crew No.	Ba	re Costs	Su	Incl. bs O&P		ost abor-Hour	Crew N
Crew B-69B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crev
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.40	\$71.97	1 Labor Forem
3 Laborers	44.40	1065.60	66.25	1590.00			1 Laborer
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20			4 Equip. Oper.
1 Cement Finisher	51.80	414.40	75.90	607.20			2 Truck Drivers
1 Curb/Gutter Paver, 4-Track		801.05		881.15	16.69	18.36	1 Grader, 30,0
48 L.H., Daily Totals		\$3124.25		\$4335.56	\$65.09	\$90.32	1 Ripper, Beam
					Bare	Incl.	2 Stabilizers, 3
Crew B-70	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Flatbed Truck
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.94	\$75.96	1 Chem. Sprea 1 Roller, Vibrat
3 Laborers	44.40	1065.60	66.25	1590.00			1 Water Tank T
3 Equip. Oper. (medium)	59.00	1416.00	87.90	2109.60			1 Truck Tractor
1 Grader, 30,000 Lbs.		1073.00		1180.30			64 L.H., Daily
1 Ripper, Beam & 1 Shank		91.60		100.76			04 L.H., Dally
1 Road Sweeper, S.P., 8' wide		723.65		796.01			0
1 F.E. Loader, W.M., 1.5 C.Y.		441.40		485.54	41.60	45.76	Crev
56 L.H., Daily Totals		\$5182.45		\$6816.22	\$92.54	\$121.72	1 Labor Forem
Crew D 704		Dailu		Deihi	Bare	Incl.	1 Laborer 4 Equip. Oper.
Crew B-70A	<b>Hr.</b> \$44.40	Daily \$355.20	<b>Hr.</b> \$66.25	<b>Daily</b> \$530.00	<b>Costs</b> \$56.08	0&P \$83.57	1 Truck Driver
4 Equip. Oper. (medium)	59.00	3355.20 1888.00	87.90	2812.80	\$00.00	203.37	1 Grader, 30,0
1 Grader, 40,000 Lbs.	55.00	1219.00	07.50	1340.90			1 Ripper, Beam
1 F.E. Loader, W.M., 2.5 C.Y.		638.30		702.13			2 Stabilizers, 3
1 Dozer, 80 H.P.		405.85		446.44			1 Dist. Tanker,
1 Roller, Pneum. Whl., 12 Ton		349.90		384.89	65.33	71.86	1 Truck Tractor
40 L.H., Daily Totals		\$4856.25		\$6217.15	\$121.41	\$155.43	1 Roller, Vibrat
· · · · · · · · · · · · · · · · · · ·					Bare	Incl.	56 L.H., Daily 1
Crew B-71	Hr.	Daily	Hr.	Daily	Costs	0&P	Crev
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.94	\$75.96	1 Dock Builder
3 Laborers	44.40	1065.60	66.25	1590.00			5 Dock Builder
3 Equip. Oper. (medium)	59.00	1416.00	87.90	2109.60			2 Equip. Oper.
1 Pvmt. Profiler, 750 H.P.		3483.00		3831.30			1 Equip. Oper.
1 Road Sweeper, S.P., 8' wide		723.65		796.01			1 Crawler Cran
1 F.E. Loader, W.M., 1.5 C.Y.		441.40		485.54	83.00	91.30	1 Barge, 400 1
56 L.H., Daily Totals		\$7500.85		\$9366.45	\$133.94	\$167.26	1 Hammer, Die
Crow P 72	ц.	Daily	U.,	Deily	Bare	Incl.	1 Lead, 60' Hig
Crew B-72 1 Labor Foreman (outside)	<b>Hr.</b> \$46.40	Daily \$371.20	Hr. \$69.25	<b>Daily</b> \$554.00	<b>Costs</b> \$51.95	0&P \$77.45	1 Air Compress 2 -50' Air Hose
3 Laborers	44.40	1065.60	66.25	1590.00	ŞJ1.5J	Ş77.4J	72 L.H., Daily 1
4 Equip. Oper. (medium)	59.00	1888.00	87.90	2812.80			72 L.H., Dally
1 Pvmt. Profiler, 750 H.P.	00.000	3483.00	0,150	3831.30			0
1 Hammermill, 250 H.P.		857.40		943.14			Crew
1 Windrow Loader		1461.00		1607.10			1 Labor Forem
1 Mix Paver, 165 H.P.		2172.00		2389.20			5 Laborers
1 Roller, Pneum. Whl., 12 Ton		349.90		384.89	130.05	143.06	1 Equip. Oper.
64 L.H., Daily Totals		\$11648.10		\$14112.43	\$182.00	\$220.51	1 Equip. Oper. 1 Crawler Cran
					Bare	Incl.	1 Barge, 400 1
Crew B-73	Hr.	Daily	Hr.	Daily	Costs	0&P	64 L.H., Daily
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$53.77	\$80.16	
2 Laborers	44.40	710.40	66.25	1060.00			Crev
5 Equip. Oper. (medium)	59.00	2360.00	87.90	3516.00			1 Labor Forem
1 Road Mixer, 310 H.P.		1919.00		2110.90			3 Laborers
1 Tandem Roller, 10 Ton		246.80		271.48			1 Truck Driver
1 Hammermill, 250 H.P.		857.40		943.14			1 Crack Cleane
1 Grader, 30,000 Lbs. .5 F.E. Loader, W.M., 1.5 C.Y.		1073.00 220.70		1180.30 242.77			1 Crack Filler,
.5 F.E. Loader, w.w., 1.5 C.Y. .5 Truck Tractor, 220 H.P.		220.70 155.40					1 Flatbed Truck
.5 Water Tank Trailer, 5000 Gal.		77.05		170.94 84.75	71.08	78.19	40 L.H., Daily
64 L.H., Daily Totals		\$7990.95		\$10134.29	\$124.86	\$158.35	
U4 L.I.I., Daily IU(dis		\$1320.30		ŞIUI34.29	\$124.00	\$100.2D	J

Crew No.	Bare	Costs		inci. os O&P		Cost abor-Hour
Crew B-74	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$53.67	\$80.06
1 Laborer	44.40	355.20	66.25	530.00		
4 Equip. Oper. (medium)	59.00	1888.00	87.90	2812.80		
2 Truck Drivers (heavy)	51.30	820.80	76.70	1227.20		
1 Grader, 30,000 Lbs.		1073.00		1180.30 100.76		
1 Ripper, Beam & 1 Shank 2 Stabilizers, 310 H.P.		91.60 2808.00		3088.80		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05		
1 Chem. Spreader, Towed		85.40		93.94		
1 Roller, Vibratory, 25 Ton		672.35		739.59		
1 Water Tank Trailer, 5000 Gal.		154.10		169.51		
1 Truck Tractor, 220 H.P.		310.80		341.88	94.46	103.90
64 L.H., Daily Totals		\$9480.50		\$11773.83	\$148.13	\$183.97
Crew B-75	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$54.01	\$80.54
1 Laborer	44.40	355.20	66.25	530.00		
4 Equip. Oper. (medium)	59.00	1888.00	87.90	2812.80		
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Grader, 30,000 Lbs. 1 Ripper, Beam & 1 Shank		1073.00 91.60		1180.30 100.76		
2 Stabilizers, 310 H.P.		2808.00		3088.80		
1 Dist. Tanker, 3000 Gallon		334.10		367.51		
1 Truck Tractor, 6x4, 380 H.P.		499.15		549.07		
1 Roller, Vibratory, 25 Ton		672.35		739.59	97.83	107.61
56 L.H., Daily Totals		\$8503.00		\$10536.42	\$151.84	\$188.15
					Bare	Incl.
Crew B-76	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Dock Builder Foreman (outside)	\$57.90	\$463.20	\$89.50	\$716.00	\$56.98	\$86.98
5 Dock Builders	55.90	2236.00	86.40	3456.00		
2 Equip. Oper. (crane) 1 Equip. Oper. (oiler)	61.45 52.50	983.20 420.00	91.55 78.25	1464.80 626.00		
1 Crawler Crane, 50 Ton	J2.J0	1541.00	70.25	1695.10		
1 Barge, 400 Ton		869.15		956.07		
1 Hammer, Diesel, 15K ftlbs.		624.45		686.89		
1 Lead, 60' High		211.80		232.98		
1 Air Compressor, 600 cfm		426.55		469.20		
2 -50' Air Hoses, 3"		76.70		84.37	52.08	57.29
72 L.H., Daily Totals		\$7852.05		\$10387.42	\$109.06 Bare	\$144.27 Incl.
Crew B-76A	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.79	\$71.29
5 Laborers	44.40	1776.00	66.25	2650.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
1 Crawler Crane, 50 Ton 1 Barge, 400 Ton		1541.00 869.15		1695.10 956.07	37.66	41.42
64 L.H., Daily Totals		\$5468.95		\$7213.56	\$85.45	\$112.71
					Bare	Incl.
Crew B-77	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.68	\$68.20
3 Laborers	44.40	1065.60	66.25	1590.00		
1 Truck Driver (light) 1 Crack Cleaner, 25 H.P.	48.80	390.40 53.00	73.00	584.00 58.30		
1 Crack Cleaner, 25 H.P. 1 Crack Filler, Trailer Mtd.		53.00 170.95		58.30 188.04		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05	26.85	29.54
40 L.H., Daily Totals		\$2901.20		\$3909.40	\$72.53	\$97.73
					-	

Laborers         44.40         1420.80         66.25         2120.00           Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, S.P., 40 Gallon         128.35         141.19         9           Platbed Truck, Gas, 3 Ton         850.05         935.05         935.05           Pickup Truck, 3/4 Ton         112.20         123.34         22.72         24.99           S L.H., Daily Totals         S3273.00         S4457.66         S68.19         S92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Costs         082P           Equip. Oper. (light)         \$55.50         S444.00         S82.70         \$661.60         \$55.50         S82.70           Laborers         \$1440.25         S1757.47         \$180.03         \$219.68         082P           Laborers         \$44.40         \$710.40         \$66.25         \$1060.00         \$45.63         \$68.08           5 Equip. Oper. (light)         55.50         111.00         82.70         165.40         Precess         082P           Laborers         \$44.40         142.08         66.25         210.00         \$45.63         \$68.08           Tock Driver (light) <th>Crew No.</th> <th>Bar</th> <th>e Costs</th> <th>Sut</th> <th>inci. os O&amp;P</th> <th></th> <th>ost Ibor-Hour</th>	Crew No.	Bar	e Costs	Sut	inci. os O&P		ost Ibor-Hour
Laborers         44.40         1420.80         66.25         2120.00         73.00         884.00           Paint Striver, S.P., 40 calon         128.35         141.19         141.19           Plokop Truck, 3/4 Ton         112.20         123.42         22.72         24.99           St.H., Daily Totals         S3273.00         S4457.66         S68.19         S92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Costs         0.82           L.H., Daily Totals         S55.50         S4440.05         S82.70         S661.60         S55.50         S82.70           Laborers         S44.00         S82.70         S661.60         S55.50         S82.70         I24.53         136.98           L.H., Daily Totals         S55.50         S10.00         S45.63         S660.00         S45.63         S68.08           Crew B-78B         Hr.         Daily         Hr.         Daily         Costs         0&P           Laborers         S44.40         S710.40         S66.25         S1060.00         S45.63         S68.08           S1 Cupto Truck, 3/4 Ton         112.20         128.42         S67.83         S68.29         S93.00           Truck Driver (light)         48.8	Crew B-78	Hr.	Daily	Hr.	Daily		
Truck Driver (light)         48.80         390.40         73.00         584.00         141.19           Platbed Truck, Gas, 310n         128.35         935.05         935.05         935.05           Platbed Truck, Gas, 310n         112.20         123.42         22.72         24.99           SLH, Daily Totals         S3273.00         S4457.66         S68.19         S92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Bare         Incl.           Rept., Dept. (light)         S55.50         S444.00         S82.70         1995.88         124.53         136.98           L.H. Daily Totals         S1440.25         S1757.47         S180.03         S219.68           Laborers         S44.40         S71.040         S66.25         S1060.00         S45.63         S68.08           5 Faugh. Oper. (light)         T11.20         112.20         123.42         102.52         555.00         0&P           Laborers         S44.40         S112.00         66.25         S107.00         S68.29         S93.00           Truck Driver (light)         T14.75         125.22         S56.00         0&P         0&P           Stadd Sweeper, S.P.8 wide         T10.20         S107.05 <t< td=""><td>1 Labor Foreman (outside)</td><td>\$46.40</td><td>\$371.20</td><td>\$69.25</td><td>\$554.00</td><td>\$45.47</td><td>\$67.88</td></t<>	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.47	\$67.88
Paint Striper, S.P., 40 Galon         128.35         141.19           Flatbel Truck, Gas, 3 Ton         850.05         935.05           Pickup Truck, 3,4 Ton         112.20         123.42         22.72         24.99           BLH, Daily Totals         S55.50         S444.00         S82.70         S661.60         S55.50         S82.70           Crew B-78A         Hr.         Daily         Hr.         Daily         Hr.         Daily         East         Incl.           Crew B-78A         Hr.         Daily         S55.50         S444.025         S17.77         S180.03         S219.60           Lh, Daily Totals         S1440.25         S177.040         S66.25         S1060.00         S45.63         S68.08           Laborers         S44.40         S710.40         S66.25         S1060.00         S45.63         S68.29         S930.01           Laborers         S44.40         I10.20         I23.42         I23.42         I24.53         S68.29         S930.01           Labor Foreman (uside)         S44.40         S122.92.65         S554.00         S45.47         S67.88         O&P           Labor Foreman (uside)         S44.40         S40.00         G62.5         S122.00         S67.88         O&P	4 Laborers	44.40	1420.80	66.25	2120.00		
Platbed Truck, 3,4 Ton         850.05 112.20         935.05 123.42         22.72         24.99           SLH, Daily Totals         \$3273.00         \$4457.66         \$68.19         \$92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Bare 0.02ts         0.02ts         0.0ts         0.0ts <t< td=""><td>1 Truck Driver (light)</td><td>48.80</td><td>390.40</td><td>73.00</td><td>584.00</td><td></td><td></td></t<>	1 Truck Driver (light)	48.80	390.40	73.00	584.00		
Platbed Truck, 3,4 Ton         850.05 112.20         935.05 123.42         22.72         24.99           SLH, Daily Totals         \$3273.00         \$4457.66         \$68.19         \$92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Bare 0.02ts         0.02ts         0.0ts         0.0ts <t< td=""><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	•						
Pickup Truck, 3/4 Ton         112.20         123.42         22.72         24.99           B L.H., Daily Totals         S3273.00         S4457.66         568.19         S92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Bare         Incl.           Guip, Oper, (light)         555.50         S444.00         S82.70         S661.60         S55.50         S82.70           LH, Daily Totals         S1440.25         S1757.47         S180.03         S219.68           Crew B-78B         Hr.         Daily         Hr.         Daily         Bare         Incl.           Laborers         S44.40         S710.40         S62.50         S1060.00         \$45.63         S68.08           S foup. Oper, (light)         55.50         111.20         123.42         123.42         124.53         3568.08           Laborers         S44.40         S122.926         S1674.05         S68.29         S93.00           S LH, Daily Totals         S122.926         S1674.05         S68.29         S93.00           Labor Foreman (outside)         S46.40         S371.20         S69.25         S554.00         S45.47         S67.88           Labor Foreman (outside)         S46.40         S371.20<	Flatbed Truck, Gas, 3 Ton						
Bit H., Daily Totals         S3273.00         S4457.66         S68.19         S92.87           Crew B-78A         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. 082P           Equip. Oper. (light)         S55.50         S55.50         S68.10         S55.50         S68.10         S55.50         S68.10         S55.50         S68.10         S52.50         S68.10         S27.50         S68.10         S27.50         S68.10         S27.50         S68.10         S55.50         S68.10         S27.50         S68.10         S27.50         S68.10         S27.50         S68.03         S27.50         S68.03         S27.50         S68.03         S27.50         S68.08         S27.00         IConvers         S44.40         S710.40         S66.25         S1060.00         S45.63         S68.08         S68.08         S68.08         S68.08         S68.08         S22.66         24.92         S167.405         S68.25         S1067.00         S68.25         S107.40         S66.25         S107.405         S68.29         S93.00         S45.47         S67.88         Incl.         Costs         O&P         Labores         A4.40         S22.92.5         S554.00         S45.47         S67.88         S103.75         S49.47         S67.88	Pickup Truck. 3/4 Ton				123.42	22.72	24.99
Crew B-78A         Hr.         Daily         Hr.         Daily         Costs         O&P           Equip. Oper. (light)         \$55.50         \$444.00         \$82.70         \$661.60         \$55.50         \$82.70           Line Rem. (Metal Balls) 115 H.P.         996.25         \$1757.47         \$180.03         \$219.68           Crew B-78B         Hr.         Daily         Hr.         Daily         Bare         Incl.           Crew B-78B         Hr.         Daily         Hr.         Daily         \$45.63         \$68.08           5 Equip. Oper. (light)         55.50         111.00         82.70         165.40         \$45.63         \$68.08           5 Road Sweeper, S.P., 8' wide         180.91         12.24         123.42         123.42         123.42           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$167.405         \$68.29         \$93.00           Tock Diver (light)         54.64         \$371.20         \$69.25         \$125.00         \$45.47         \$67.88           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$120.00         \$45.47         \$67.88           Labor Foreman (outside)         \$46.40         \$371.20         \$68.25	8 L.H., Daily Totals						
Equip. Oper. (light) Line Rem. (Metal Balls) 115 H.P.         \$55.50         \$444.00         \$82.70         \$661.60         \$55.50         \$82.70           Crew B-78B         Hr.         Daily         Hr.         Daily         Hr.         Daily         Bare         Incl.           Crew B-78B         Hr.         Daily         Hr.         Daily         Rev.         S45.63         \$68.08           5 Equip. Oper. (light)         55.50         111.00         82.70         165.40         S45.63         \$68.08           5 Equip. Oper. (light)         112.20         123.42         123.42         Incl.         S62.25         \$1674.05         \$68.29         \$93.00           Line Rem., 11 H.P., Walk Behind         114.75         126.22         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Bare         Incl.           Laborers         44.40         1420.80         66.25         \$1674.05         \$68.29         \$93.00           Truck Driver (light)         48.80         390.40         73.00         584.00         643.41           Patter Struer, T.M., 120 Gal.         630.10         663.21         Incl.         Costs         08P	Crew B-78A	Hr.	Daily	Hr.	Daily	11	
Line Rem. (Metal Balls) 115 H.P.         996.25         1095.88         124.53         136.98           LH, Daly Totals         \$1440.25         \$1757.47         \$180.03         \$219.68           Crew B-78B         Hr.         Daily         Hr.         Daily         Costs         00&P           Laborers         \$44.40         \$710.40         \$66.25         \$1060.00         \$45.63         \$66.80         \$66.25         \$106.00         \$45.63         \$66.26         \$109.00         \$22.66         24.92           Line Rem., 11 H.P., Walk Behind         114.75         126.22         \$60.25         \$1674.05         \$68.29         \$93.00           S LH, Daily Totals         \$1229.26         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         \$66.25         \$2120.00           Laborers         44.40         1420.80         66.25         \$210.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         \$110.80         \$45.47         \$67.88           Laborers         44.40         \$240.40         \$69.25         \$110.80         \$45.47         \$67.53           Prekup Truck, 3/4 Ton         1	Fauip, Oper, (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$55.50	\$82.70
L.H., Daily Totals         S1440.25         S1757.47         S180.03         S219.68           Crew B-78B         Hr.         Daily         Hr.         Daily         Bare Costs         Incl.           Laborers         S44.40         S710.40         \$66.25         \$1060.00         \$45.63         \$68.08           15 Equip. Oper. (light)         55.50         111.00         82.70         165.40         \$45.63         \$68.08           112.20         123.42         123.42         123.42         \$58.09         \$93.00           ine Rem., L1 HP., Walk Behind         114.75         126.22         \$93.00         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$120.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Laborers         44.40         1420.80         566.25         \$78.08         \$103.75           Laborers         Hr.         Daily         Hr.         Daily         Costs         0&P           Pickup Truck, 3/4 To	11 1 0	Q00.00		Q02.70			
Crew B-78B         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. O&P           Laborers         \$44.40         \$710.40         \$66.25         \$1060.00         \$45.63         \$68.08           5 Equip, Oper, (light)         55.50         111.00         82.70         165.40         \$123.42           Line Rem, 11 H.P., Walk Behind         114.75         126.22         2         2         2         2         2         4         9           5 Road Sweeper, S.P., 8' wide         180.91         199.00         22.66         24.92         3         10.1.         Costs         08.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Bare         Incl.         0.56.25         \$256.40         \$45.47         \$67.88           Laborers         44.40         1402.080         66.25         2120.00         45.47         \$67.88           Pickup Truck, Gas, 3 Ton         850.05         935.05         935.05         935.05         935.05         102.00         122.42         32.61         35.87           BL-R, Daily Totals         \$74.40         \$69.25         \$110.80         \$45.24         \$67.53         0&2							
Crew B-78B         Hr.         Daily         Hr.         Daily         Costs         0&P           Laborers         \$44.40         \$710.40         \$66.25         \$1060.00         \$45.63         \$68.08           5 Equip. Oper. (light)         \$5.50         111.00         82.70         165.40         \$710.40         \$66.25         \$1060.00         \$45.63         \$68.08           Pickup Truck, 3/4 Ton         1114.75         123.42         126.22         \$65.29         \$93.00           S bad Sweeper, SP, 8' wide         \$1229.26         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Pickup Truck, 3/4 Ton         112.20         123.42         32.61         35.87           BL-H, Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Darer Foreme (outside)         \$46.40         \$742.40         \$69.25         \$100.00         \$45.24	L.H., Dally Totals		Ş1440.2J		Ş17J7.47		
55 Equip. Oper. (light)       55.50       111.00       82.70       165.40         Pickup Truck, 3/4 Ton       112.20       123.42       124.22         Line Rem.,11 H.P.,Walk Behind       114.75       126.22       22.66       24.92         S Road Sweeper, S.P., 8' wide       180.91       199.00       \$68.29       \$93.00         Crew B-78C       Hr.       Daily       Hr.       Daily       Eare       Incl.         Labor Foreman (outside)       \$46.40       \$371.20       \$69.25       \$554.00       \$45.47       \$67.88         Laborers       44.40       1420.80       66.25       2120.00       \$45.47       \$67.88         Pickup Truck, 3/4 Ion       111.2.0       123.42       32.61       35.87         B L.H., Daily Totals       \$3747.75       \$4979.89       \$78.08       \$103.75         Crew B-78D       Hr.       Daily       Hr.       Daily       Costs       0&P         Labor Foremen (outside)       \$46.40       \$742.40       \$69.25       \$1108.00       \$45.24       \$67.53         Labor Foremen (outside)       \$46.40       \$73.00       \$84.00       390.40       73.00       \$84.00         Parker, Pavement, 60 lb.       53.60       59.	Crew B-78B	Hr.	Daily	Hr.	Daily		
55 Equip. Oper. (light)       55.50       111.00       82.70       165.40         Pickup Truck, 3/4 Ton       112.20       123.42       124.22         Line Rem.,11 H.P.,Walk Behind       114.75       126.22       22.66       24.92         S Road Sweeper, S.P., 8' wide       180.91       199.00       \$68.29       \$93.00         Crew B-78C       Hr.       Daily       Hr.       Daily       Eare       Incl.         Labor Foreman (outside)       \$46.40       \$371.20       \$69.25       \$554.00       \$45.47       \$67.88         Laborers       44.40       1420.80       66.25       2120.00       \$45.47       \$67.88         Pickup Truck, 3/4 Ion       111.2.0       123.42       32.61       35.87         B L.H., Daily Totals       \$3747.75       \$4979.89       \$78.08       \$103.75         Crew B-78D       Hr.       Daily       Hr.       Daily       Costs       0&P         Labor Foremen (outside)       \$46.40       \$742.40       \$69.25       \$1108.00       \$45.24       \$67.53         Labor Foremen (outside)       \$46.40       \$73.00       \$84.00       390.40       73.00       \$84.00         Parker, Pavement, 60 lb.       53.60       59.	Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$45.63	\$68.08
Pickup Truck, 3/4 Ton         112.20         123.42           Line Rem.,11 H.P., Walk Behind         114.75         126.22           5 Road Sweeper, S.P., 8' wide         180.91         199.00         22.66         24.92           8 L.H., Daily Totals         \$1229.26         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foreman (outside)         \$44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Pickup Truck, Gas, 3 Ton         850.05         935.05         935.05         935.05         \$103.75           Steper Tuck, Gas, 3 Ton         850.05         935.05         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         S49.79.89         \$78.08         \$103.75           Labor Foremen (outside)         \$44.40         248.60         66.25         3710.00         \$45.24         \$67.53           Labor Foremen (outside)         \$44.40         248.60         66.25         3710.00         \$45.24         <							
Line Rem., 11 H.P., Walk Behind         114.75         126.22         22.66         24.92           5 Road Sweeper, S.P., 8' wide         \$180.91         199.00         22.66         24.92           8 L.H., Daily Totals         \$1229.26         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         S69.25         \$554.00         \$45.47         \$67.88           Labor Foreman (outside)         \$44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Prickup Truck, 3,3 Ton         850.05         935.05         \$935.05         \$78.08         \$103.75           Pickup Truck, 3,44 Ton         1112.20         123.42         32.61         35.87           B L.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         S45.24         \$67.53           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40 <td></td> <td>00.00</td> <td></td> <td>02.70</td> <td></td> <td></td> <td></td>		00.00		02.70			
15 Road Sweeper, S.P., 8' wide         180.91         199.00         22.66         24.92           B L.H., Daily Totals         \$1229.26         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Bare         Incl.           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$78.08         \$103.75           Pickup Truck, 3/4 Ton         112.20         123.42         32.61         35.87           B L.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Costs         O&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Laborers         44.40         390.40         73.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
B.L.H., Daily Totals         \$1229.26         \$1674.05         \$68.29         \$93.00           Crew B-78C         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. O&P           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$32.61         35.87           Pickup Truck, Gas, 3 Ton         \$3747.75         \$4979.89         \$78.08         \$103.75           B L.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Bare         Incl.           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Laborers         44.40 <td></td> <td></td> <td></td> <td></td> <td></td> <td>22.66</td> <td>2/ 92</td>						22.66	2/ 92
Crew B-78C         Hr.         Daily         Hr.         Daily         Bare Costs         Incl.           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         \$45.47         \$67.88           Truck Driver (light)         48.80         390.40         73.00         584.00         \$63.41           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$50.05         935.05         \$78.08         \$103.75           Pickup Truck, 3/4 Ton         112.20         123.42         32.61         35.87           B L.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Bare         Incl.           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Labor Foremen (outside)         \$46.40         \$73.00         584.00         \$70.26         \$71.5							
Crew B-78C         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foreman (outside)         \$46.40         \$371.20         \$69.25         \$554.00         \$45.47         \$67.88           Laborers         44.40         1420.80         66.25         2120.00         584.00         \$67.88           Paint Striper, T.M., 120 Gal.         603.10         663.41         935.05 <td>o L.H., Dally Tolais</td> <td></td> <td>\$1229.20</td> <td></td> <td>Ş1074.0J</td> <td></td> <td></td>	o L.H., Dally Tolais		\$1229.20		Ş1074.0J		
Laborers         44.40         1420.80         66.25         2120.00           Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         123.42         32.61         35.87           Pickup Truck, 3/4 Ton         112.20         123.42         32.61         35.87           SL.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         \$44.40         2486.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$44.40         2486.40         \$66.25         3710.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Truck Driver (light)         48.80         390.40         73.00         584.00         \$62.51         \$710.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$72.92         \$95.08           Truck Driver (light)         48.80         390.40         73.00         584.00 <td>Crew B-78C</td> <td>Hr.</td> <td>Daily</td> <td>Hr.</td> <td>Daily</td> <td>11</td> <td></td>	Crew B-78C	Hr.	Daily	Hr.	Daily	11	
Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         123.42         32.61         35.87           Pickup Truck, Gas, 3 Ton         112.20         123.42         32.61         35.87           SL.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Labor Foremen (outside)         \$48.80         390.40         73.00         584.00         \$62.5         3710.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$67.53         \$67.53         \$67.53           Flatbed Truck, Gas, 3 Ton         \$50.05         935.05         \$78.78         \$67.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         \$69.25         \$1108.00         \$45.10         \$67.31	Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.47	\$67.88
Paint Striper, T.M., 120 Gal.         603.10         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Truck, 3/4 Ton         112.20         123.42         32.61         35.87           B LH., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Laborers         48.80         390.40         73.00         584.00         \$64.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$67.53         \$67.53           Jaber Foremen (outside)         \$46.40         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Stoper soreme (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Labor Foremen (outsi	Laborers	44.40	1420.80	66.25	2120.00		
Flatbed Truck, Gas, 3 Ton         850.05         935.05         32.61         35.87           BLH, Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. O&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$110.80.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Prickup Trucks, 3/4 Ton         48.80         390.40         73.00         584.00         \$45.24         \$67.53           Pickup Trucks, 3/4 Ton         336.60         370.26         370.26         \$45.24         \$67.53           Air Compressor, 60 cfm         153.85         169.24         50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D LH, Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         \$45.10         \$67.31           Laborers         Hr.         Daily	Truck Driver (light)	48.80	390.40	73.00	584.00		
Pickup Truck, 3/4 Ton         112.20         123.42         32.61         35.87           3 L.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. 0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$45.24         \$67.53           Pickup Trucks, 3/4 Ton         336.60         370.26         \$70.26         \$77.26           Air Compressor, 60 cfm         153.85         169.24         \$70.29         \$95.08           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Laborers         Hr.         Daily         Hr.         Daily         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31     <	Paint Striper, T.M., 120 Gal.		603.10		663.41		
B L.H., Daily Totals         \$3747.75         \$4979.89         \$78.08         \$103.75           Crew B-78D         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. O&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Paint Striper, T.M., 120 Gal.         603.10         663.41         663.41         Fasted Truck, Gas, 3 Ton         850.05         935.05         935.05           Pickup Trucks, 3/4 Ton         336.60         370.26         370.26         45.24         \$67.53           Air Compressor, 60 cfm         153.85         169.24         -         -         -           -50' Air Hose, 3/4"         7.15         7.87         -         -         -           Breaker, Pavement, 60 lb.         55623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Laborers         44.40         3196.80         66.25         4770.00         545.10         \$67.31 <t< td=""><td>Flatbed Truck, Gas, 3 Ton</td><td></td><td>850.05</td><td></td><td>935.05</td><td></td><td></td></t<>	Flatbed Truck, Gas, 3 Ton		850.05		935.05		
Crew B-78D         Hr.         Daily         Hr.         Daily         Bare Costs         Incl.           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Truck Driver (light)         48.80         390.40         73.00         584.00         \$45.24         \$67.53           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$45.24         \$67.53         \$67.53           Pickup Trucks, 3,4 Ton         336.60         370.26         \$370.26         \$77.26         \$77.5         \$7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Bare Costs         0&P           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Laborers         Hr.         Daily         Hr.         Daily         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4	Pickup Truck, 3/4 Ton		112.20		123.42	32.61	35.87
Crew B-78D         Hr.         Daily         Hr.         Daily         Bare Costs         Incl.           Labor Formen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Druck Driver (light)         48.80         390.40         73.00         584.00         663.41           Plant Striper, T.M., 120 Gal.         603.10         663.41         663.41         F14bed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         336.60         370.26         Air Compressor, 60 cfm         153.85         169.24           -50' Air Hose, 3/4"         7.15         7.87         Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25	3 L.H., Daily Totals		\$3747.75		\$4979.89	\$78.08	\$103.75
Crew B-78D         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.24         \$67.53           Laborers         44.40         2486.40         66.25         3710.00         \$45.24         \$67.53           Truck Driver (light)         48.80         390.40         73.00         584.00         663.41         \$45.24         \$67.53           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$67.53         \$67.53         \$67.53           Pickup Trucks, 3,4 Ton         336.60         370.00         584.00         \$67.24         \$67.31           Air Compressor, 60 cfm         153.85         169.24         \$7.87         \$7.87         \$7.55         \$7.606.78         \$70.29         \$95.08           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08         \$6.25         4770.00         \$4.40         3196.80         \$6.25         4770.00         \$67.31           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         Hr.         Daily         Hr. <td></td> <td></td> <td></td> <td></td> <td></td> <td>Bare</td> <td></td>						Bare	
Laborers         44.40         2486.40         66.25         3710.00           Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05         935.05           Pickup Trucks, 3/4 Ton         336.60         370.26         Air Compressor, 60 cfm         153.85         169.24           -50' Air Hose, 3/4"         7.15         7.87         Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08 <b>Crew B-78E Hr. Daily Hr. Daily</b> S67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$47.40         \$48.80	Crew B-78D	Hr.	Daily	Hr.	Daily		
Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05         935.05           Pickup Trucks, 3/4 Ton         336.60         370.26         4           .50' Air Hose, 3/4"         7.15         7.87         5           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         S45.10         \$67.31           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Truck Driver (light)         48.80         390.40         73.00         584.00         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$67.31         \$67.31           Flatbed Truck, Gas, 3 Ton         850.05         935.05         \$935.05         \$935.05	Labor Foremen (outside)	\$46.40	\$742.40	\$69.25	\$1108.00	\$45.24	\$67.53
Paint Striper, T.M., 120 Gal.         603.10         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         336.60         370.26           Air Compressor, 60 cfm         153.85         169.24           -50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         S69.25         \$1108.00           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$48.80         390.40         73.00         \$84.00           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$47.40         \$48.80         493.68           Air Compressors, 60 cfm         307.70         338.47         .50' Air Hoses, 3/4"         14.30         15.73           Breake	Laborers	44.40	2486.40	66.25	3710.00		
Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         336.60         370.26           Air Compressor, 60 cfm         153.85         169.24           -50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         Flatbed Truck, Gas, 3 Ton         \$50.05         935.05         \$91.05           Pickup Trucks, 3/4 Ton         448.80         493.68         447.40         \$15.73         \$45.10         \$67.31           Breakers, Ayement, 60 lb.         107.20         117.92         24.28         26.71	Truck Driver (light)	48.80	390.40	73.00	584.00		
Pickup Trucks, 3/4 Ton         336.60         370.26           Air Compressor, 60 cfm         153.85         169.24           -50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$48.80         390.40         73.00         \$84.00           Pickup Trucks, 3/4 Ton         44.880         493.68         Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73         Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	Paint Striper, T.M., 120 Gal.		603.10		663.41		
Air Compressor, 60 cfm         153.85         169.24           -50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$63.40         \$742.40         \$69.35         \$95.05           Pickup Truck, Gas, 3 Ton         850.05         935.05         \$935.05         \$935.05         \$935.05           Pickup Trucks, 3/4 Ton         448.80         493.68         \$47.40         \$15.73         \$47.40           Air Compressors, 60 cfm         307.70         338.47         \$57.31         \$48.80         \$493.68           Air Compress, 3/4"         14.30         15.73         \$24.28         26.71	Flatbed Truck, Gas, 3 Ton		850.05		935.05		
-50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Eare         Incl.           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$63.40         \$73.00         \$84.00           Pickup Trucks, 3/4 Ton         448.80         493.68         493.68         Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73         Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	Pickup Trucks, 3/4 Ton		336.60		370.26		
-50' Air Hose, 3/4"         7.15         7.87           Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Eare         Incl.           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$63.40         \$73.00         \$84.00           Pickup Trucks, 3/4 Ton         448.80         493.68         493.68         Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73         Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	Air Compressor, 60 cfm		153.85		169.24		
Breaker, Pavement, 60 lb.         53.60         58.96         25.05         27.56           D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Eare         Incl.           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Labor Foremen (outside)         \$44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         603.10         663.41         \$43.68         443.80         493.68         Air Compressors, 60 cfm         307.70         338.47         50' Air Hoses, 3/4"         14.30         15.73         Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	-50' Air Hose, 3/4"						
D L.H., Daily Totals         \$5623.55         \$7606.78         \$70.29         \$95.08           Crew B-78E         Hr.         Daily         Hr.         Daily         Bare Costs         Incl. 0 &P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Labor Foremen (outside)         \$44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$63.41         \$69.25         \$108.00         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$66.341         \$67.31         \$67.31           Flatbed Truck, Gas, 3 Ton         \$850.05         935.05         \$935.05         \$67.31           Air Compressors, 60 cfm         307.70         338.47         \$67.31           -50' Air Hoses, 3/4"         14.30         15.73         \$67.31           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	Breaker, Pavement, 60 lb.		53.60		58.96	25.05	27.56
Crew B-78E         Hr.         Daily         Hr.         Daily         Costs         0&P           Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$45.10         \$67.31           Truck Driver (light)         48.80         390.40         73.00         584.00         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$67.31         \$67.31           Flatbed Truck, Gas, 3 Ton         850.05         935.05         \$935.05         \$935.05         \$67.31           Pickup Trucks, 3/4 Ton         448.80         493.68         \$493.68         \$493.68         \$67.31           Air Compressors, 60 cfm         307.70         338.47         \$50' Air Hoses, 3/4"         \$15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	0 L.H., Daily Totals					\$70.29	
Labor Foremen (outside)         \$46.40         \$742.40         \$69.25         \$1108.00         \$45.10         \$67.31           Laborers         44.40         3196.80         66.25         4770.00         \$48.80         390.40         73.00         584.00         \$67.31           Paint Striper, T.M., 120 Gal.         603.10         663.41         \$67.31         \$67.31         \$67.31           Flatbed Truck, Gas, 3 Ton         850.05         935.05         \$935.05         \$935.05         \$67.31           Pickup Trucks, 3/4 Ton         448.80         493.68         \$493.68         \$67.31           Air Compressors, 60 cfm         307.70         338.47         \$57.33           For Air Hoses, 3/4"         14.30         15.73         \$67.31           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	Crew B-78E	Hr.	Daily	Hr.	Daily	11	
Laborers         44.40         3196.80         66.25         4770.00           Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, T.M., 120 Gal.         603.10         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         448.80         493.68           Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	2 Labor Foremen (outside)	\$46.40	\$742.40	\$69.25	\$1108.00	\$45.10	\$67.31
Truck Driver (light)         48.80         390.40         73.00         584.00           Paint Striper, T.M., 120 Gal.         603.10         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         448.80         493.68           Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71							
Paint Striper, T.M., 120 Gal.         603.10         663.41           Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         448.80         493.68           Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71							
Flatbed Truck, Gas, 3 Ton         850.05         935.05           Pickup Trucks, 3/4 Ton         448.80         493.68           Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71	•	10.00		, 0.00			
Pickup Trucks, 3/4 Ton         448.80         493.68           Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71							
Air Compressors, 60 cfm         307.70         338.47           -50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71							
-50' Air Hoses, 3/4"         14.30         15.73           Breakers, Pavement, 60 lb.         107.20         117.92         24.28         26.71							
Breakers, Pavement, 60 lb. 107.20 117.92 24.28 26.71							
						04.00	00 71
b L.H., Daily lotais \$6660.75 \$9026.26 \$69.38 \$94.02							
	ю L.H., Daily Totals		Ş6660./5		\$9026.26	\$69.38	\$94.02

Crew No.	Inci. Bare Costs Subs O&P					Cost abor-Hour
					Bare	Incl.
Crew B-78F	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Labor Foremen (outside)	\$46.40	\$742.40	\$69.25	\$1108.00	\$45.00	\$67.16
11 Laborers	44.40	3907.20	66.25	5830.00		
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Paint Striper, T.M., 120 Gal.		603.10		663.41		
1 Flatbed Truck, Gas, 3 Ton 7 Pickup Trucks, 3/4 Ton		850.05 785.40		935.05 863.94		
3 Air Compressors, 60 cfm		785.40 461.55		603.94 507.70		
3 -50' Air Hoses, 3/4"		21.45		23.59		
3 Breakers, Pavement, 60 lb.		160.80		176.88	25.74	28.31
112 L.H., Daily Totals		\$7922.35		\$10692.58	\$70.74	\$95.47
					Bare	Incl.
Crew B-79	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.68	\$68.20
3 Laborers	44.40	1065.60	66.25	1590.00		
1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal.	48.80	390.40 603.10	73.00	584.00 663.41		
1 Heating Kettle, 115 Gallon		107.25		117.97		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05		
2 Pickup Trucks, 3/4 Ton		224.40		246.84	44.62	49.08
40 L.H., Daily Totals		\$3612.00		\$4691.28	\$90.30	\$117.28
					Bare	Incl.
Crew B-79A	Hr.	Daily	Hr.	Daily	Costs	0&P
1.5 Equip. Oper. (light)	\$55.50	\$666.00	\$82.70	\$992.40	\$55.50	\$82.70
.5 Line Remov. (Grinder) 115 H.P.		515.50		567.05		
1 Line Rem. (Metal Balls) 115 H.P.		996.25		1095.88	125.98	138.58
12 L.H., Daily Totals		\$2177.75		\$2655.32	\$181.48	\$221.28
Crew B-79B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25
1 Set of Gases		173.60		190.96	21.70	23.87
8 L.H., Daily Totals		\$528.80		\$720.96	\$66.10	\$90.12
Crew B-79C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.31	\$67.64
5 Laborers	44.40	1776.00	66.25	2650.00		
1 Truck Driver (light)	48.80	390.40	73.00	E01 00		
1 Paint Striper, T.M., 120 Gal.			75.00	584.00		
		603.10	75.00	663.41		
1 Heating Kettle, 115 Gallon		603.10 107.25	75.00	663.41 117.97		
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton		603.10 107.25 850.05	73.00	663.41 117.97 935.05		
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton		603.10 107.25 850.05 336.60	73.00	663.41 117.97 935.05 370.26		
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm		603.10 107.25 850.05 336.60 153.85	, 5.00	663.41 117.97 935.05 370.26 169.24		
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton		603.10 107.25 850.05 336.60 153.85 7.15	73.00	663.41 117.97 935.05 370.26	37.71	41.48
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4"		603.10 107.25 850.05 336.60 153.85		663.41 117.97 935.05 370.26 169.24 7.87	37.71 \$83.02	41.48 \$109.12
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb.		603.10 107.25 850.05 336.60 153.85 7.15 53.60		663.41 117.97 935.05 370.26 169.24 7.87 58.96		\$109.12 Incl.
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D	Hr.	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b>	Hr.	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b>	\$83.02 Bare Costs	\$109.12
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside)	\$46.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40	<b>Hr.</b> \$69.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00	\$83.02 Bare	\$109.12 Incl.
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light)	\$46.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40	<b>Hr.</b> \$69.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal.	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40 603.10	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00 663.41	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal. 1 Heating Kettle, 115 Gallon	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40 603.10 107.25	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00 663.41 117.97	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal. 1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40 603.10 107.25 850.05	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00 663.41 117.97 935.05	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal. 1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 4 Pickup Trucks, 3/4 Ton	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40 603.10 107.25 850.05 448.80	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00 663.41 117.97 935.05 493.68	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal. 1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40 603.10 107.25 850.05	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00 663.41 117.97 935.05	\$83.02 Bare Costs	\$109.12 Incl. 0&P
1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 3 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm 1 -50' Air Hose, 3/4" 1 Breaker, Pavement, 60 lb. 56 L.H., Daily Totals Crew B-79D 2 Labor Foremen (outside) 5 Laborers 1 Truck Driver (light) 1 Paint Striper, T.M., 120 Gal. 1 Heating Kettle, 115 Gallon 1 Flatbed Truck, Gas, 3 Ton 4 Pickup Trucks, 3/4 Ton 1 Air Compressor, 60 cfm	\$46.40 44.40	603.10 107.25 850.05 336.60 153.85 7.15 53.60 \$4649.20 <b>Daily</b> \$742.40 1776.00 390.40 603.10 107.25 850.05 448.80 153.85	Hr. \$69.25 66.25	663.41 117.97 935.05 370.26 169.24 7.87 58.96 \$6110.76 <b>Daily</b> \$1108.00 2650.00 584.00 663.41 117.97 935.05 493.68 169.24	\$83.02 Bare Costs	\$109.12 Incl. 0&P

Crew No.	Bai	re Costs	Sut	inci. os O&P		ost Ibor-Hour
Crew B-79E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Labor Foremen (outside)	\$46.40	\$742.40	\$69.25	\$1108.00	\$45.24	\$67.53
7 Laborers	44.40	2486.40	66.25	3710.00		,
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Paint Striper, T.M., 120 Gal.		603.10		663.41		
1 Heating Kettle, 115 Gallon		107.25		117.97		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05		
5 Pickup Trucks, 3/4 Ton		561.00		617.10		
2 Air Compressors, 60 cfm 2 -50' Air Hoses, 3/4"		307.70 14.30		338.47 15.73		
2 Breakers, Pavement, 60 lb.		14.30		117.92	31.88	35.07
80 L.H., Daily Totals		\$6169.80		\$8207.66	\$77.12	\$102.60
··· / · / ···					Bare	Inci.
Crew B-80	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.77	\$72.80
1 Laborer	44.40	355.20	66.25	530.00		
1 Truck Driver (light) 1 Equip. Oper. (light)	48.80 55.50	390.40 444.00	73.00 82.70	584.00 661.60		
1 Equip. Oper. (light) 1 Flatbed Truck, Gas, 3 Ton	55.50	444.00 850.05	02.70	935.05		
1 Earth Auger, Truck-Mtd.		202.55		222.81	32.89	36.18
32 L.H., Daily Totals		\$2613.40		\$3487.46	\$81.67	\$108.98
					Bare	Incl.
Crew B-80A	Hr.	Daily	Hr.	Daily	Costs	0&P
3 Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$44.40	\$66.25
1 Flatbed Truck, Gas, 3 Ton 24 L.H., Daily Totals		850.05 \$1915.65		935.05 \$2525.05	35.42 \$79.82	38.96 \$105.21
24 L.H., Dally Tolais		\$1910.00		\$2020.00	\$79.82 Bare	\$105.21
Crew B-80B	Hr.	Daily	Hr.	Daily	Costs	0&P
3 Laborers	\$44.40	\$1065.60	\$66.25	\$1590.00	\$47.17	\$70.36
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Crane, Flatbed Mounted, 3 Ton		238.75		262.63	7.46	8.21
32 L.H., Daily Totals		\$1748.35		\$2514.22	\$54.64	\$78.57
Crew B-80C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$45.87	\$68.50
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Flatbed Truck, Gas, 1.5 Ton		198.50		218.35		
1 Manual Fence Post Auger, Gas		54.40		59.84	10.54	11.59
24 L.H., Daily Totals		\$1353.70		\$1922.19	\$56.40	\$80.09
Crew B-81	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$51.57	\$76.95
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Hydromulcher, T.M., 3000 Gal.		256.85		282.54		
1 Truck Tractor, 220 H.P.		310.80		341.88	23.65	26.02
24 L.H., Daily Totals		\$1805.25		\$2471.22	\$75.22	\$102.97
Crew B-81A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$46.60	\$69.63
1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Hydromulcher, T.M., 600 Gal.		118.15		129.97	CO 51	
1 Flatbed Truck, Gas, 3 Ton 16 L.H., Daily Totals		850.05 \$1713.80		935.05 \$2179.02	60.51 \$107.11	66.56 \$136.19
IV L.I., Dally IUlais		91119'0N		γ <i>L</i> 113.UZ	\$107.11 Bare	\$130.19
Crew B-82	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$49.95	\$74.47
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60 202.57	11 51	12.66
1 Horiz. Borer, 6 H.P. 16 L.H., Daily Totals		184.15 \$983.35		202.57 \$1394.17	11.51 \$61.46	12.66 \$87.14
IO L.II., Dally IOLAIS		ຈາລດວາວວ		ŞIJ74.17	QU1.40	¢07.14

Crew No.	Bare	Costs		ncl. os O&P		Cost abor-Hour
Crew B-82A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$49.95	\$74.47
2 Equip. Opers. (light)	55.50	888.00	82.70	1323.20		
2 Dump Truck, 8 C.Y., 220 H.P.		815.20		896.72		
1 Flatbed Trailer, 25 Ton		137.20		150.92		
1 Horiz. Dir. Drill, 20k lb. Thrust		544.10		598.51		
1 Mud Trailer for HDD, 1500 Gal. 1 Pickup Truck, 4x4, 3/4 Ton		312.15 176.75		343.37 194.43		
1 Flatbed Trailer, 3 Ton		71.15		78.27		
1 Loader, Skid Steer, 78 H.P.		446.30		490.93	78.21	86.04
32 L.H., Daily Totals		\$4101.25		\$5136.34	\$128.16	\$160.51
Crew B-82B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$49.95	\$74.47
2 Equip. Opers. (light)	55.50	888.00	82.70	1323.20		
2 Dump Truck, 8 C.Y., 220 H.P.		815.20		896.72		
1 Flatbed Trailer, 25 Ton		137.20		150.92		
1 Horiz. Dir. Drill, 30k lb. Thrust 1 Mud Trailer for HDD, 1500 Gal.		647.65 312.15		712.41 343.37		
1 Mud Trailer for HDD, 1500 Gal. 1 Pickup Truck, 4x4, 3/4 Ton		312.15 176.75		343.37 194.43		
1 Flatbed Trailer, 3 Ton		71.15		78.27		
1 Loader, Skid Steer, 78 H.P.		446.30		490.93	81.45	89.59
32 L.H., Daily Totals		\$4204.80		\$5250.24	\$131.40	\$164.07
Crew B-82C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	\$44.40	\$710.40	\$66.25	\$1060.00	\$49.95	\$74.47
2 Equip. Opers. (light)	55.50	888.00	82.70	1323.20		
2 Dump Truck, 8 C.Y., 220 H.P.		815.20		896.72		
1 Flatbed Trailer, 25 Ton 1 Horiz. Dir. Drill, 50k lb. Thrust		137.20 824.05		150.92 906.46		
1 Mud Trailer for HDD, 1500 Gal.		312.15		343.37		
1 Pickup Truck, 4x4, 3/4 Ton		176.75		194.43		
1 Flatbed Trailer, 3 Ton		71.15		78.27		
1 Loader, Skid Steer, 78 H.P.		446.30		490.93	86.96	95.66
32 L.H., Daily Totals		\$4381.20		\$5444.28	\$136.91	\$170.13
Crew B-82D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Equip. Oper. (light) 1 Mud Trailer for HDD, 1500 Gal.	\$55.50	\$444.00 312.15	\$82.70	\$661.60 343.37	\$55.50 39.02	\$82.70 42.92
8 L.H., Daily Totals		\$756.15		\$1004.97	\$94.52	\$125.62
Crew B-83	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Tugboat Captain	\$59.00	\$472.00	\$87.90	\$703.20	\$51.70	\$77.08
1 Tugboat Hand	44.40	355.20	66.25	530.00		
1 Tugboat, 250 H.P.		726.10		798.71	45.38	49.92
16 L.H., Daily Totals		\$1553.30		\$2031.91	\$97.08	\$126.99
Crew B-84	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$59.00	\$87.90
1 Rotary Mower/Tractor		371.15		408.26	46.39 \$105.20	\$1.03
8 L.H., Daily Totals		\$843.15		\$1111.46	\$105.39 Bare	\$138.93 Incl.
Crew B-85	Hr.	Daily	Hr.	Daily	Costs	0&P
3 Laborers 1 Equip. Oper. (medium)	\$44.40	\$1065.60	\$66.25 87.90	\$1590.00	\$48.70	\$72.67
1 Equip. Oper. (medium) 1 Truck Driver (heavy)	59.00 51.30	472.00 410.40	87.90	703.20 613.60		
1 Telescoping Boom Lift, to 80'	J1.JU	387.75	10.10	426.52		
1 Brush Chipper, 12", 130 H.P.		366.05		402.65		
1 Pruning Saw, Rotary		26.40		29.04	19.50	21.46
40 L.H., Daily Totals		\$2728.20		\$3765.02	\$68.20	\$94.13

crews - Sta				Incl.	C	ost				I	ncl.		Cost
Crew No.	Bai	re Costs	Sut	os O&P	Per La	bor-Hour	Crew No.	Bare	: Costs	Sub	s O&P	Per L	abor-Hour
Crew B-86	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-90	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$59.00	\$87.90	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.15	\$73.35
1 Stump Chipper, S.P.		189.20		208.12	23.65	26.02	3 Laborers	44.40	1065.60	66.25	1590.00		
8 L.H., Daily Totals		\$661.20		\$911.32	\$82.65	\$113.92	2 Equip. Oper. (light)	55.50	888.00	82.70	1323.20		
					Bare	Incl.	2 Truck Drivers (heavy)	51.30	820.80	76.70	1227.20		
Crew B-86A	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Road Mixer, 310 H.P. 1 Dist. Truck, 2000 Gal.		1919.00 303.25		2110.90 333.57	34.72	38.19
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$59.00	\$87.90	64 L.H., Daily Totals		\$5367.85		\$7138.88	\$83.87	\$111.54
1 Grader, 30,000 Lbs. 8 L.H., Daily Totals		1073.00 \$1545.00		1180.30 \$1883.50	134.13 \$193.13	147.54 \$235.44						Bare	Incl.
o L.H., Dally Toldis		\$1040.00		\$1005.00			Crew B-90A	Hr.	Daily	Hr.	Daily	Costs	0&P
Crew B-86B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Labor Foreman (outside) 2 Laborers	\$46.40 44.40	\$371.20 710.40	\$69.25 66.25	\$554.00 1060.00	\$53.03	\$79.05
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$59.00	\$87.90	4 Equip. Oper. (medium)	44.40 59.00	1888.00	87.90	2812.80		
1 Dozer, 200 H.P.		1520.00		1672.00	190.00	209.00	2 Graders, 30,000 Lbs.	55.00	2146.00	07.50	2360.60		
8 L.H., Daily Totals		\$1992.00		\$2375.20	\$249.00	\$296.90	1 Tandem Roller, 10 Ton		246.80		271.48		
				<b>.</b>	Bare	Incl.	1 Roller, Pneum. Whl., 12 Ton		349.90		384.89	48.98	53.87
Crew B-87	Hr.	Daily	Hr.	Daily	Costs	0&P	56 L.H., Daily Totals		\$5712.30		\$7443.77	\$102.01	\$132.92
1 Laborer 4 Equip. Oper. (medium)	\$44.40 59.00	\$355.20 1888.00	\$66.25 87.90	\$530.00 2812.80	\$56.08	\$83.57						Bare	Incl.
2 Feller Bunchers, 100 H.P.	55.00	1257.60	07.30	1383.36			Crew B-90B	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Log Chipper, 22" Tree		555.00		610.50			1 Labor Foreman (outside) 2 Laborers	\$46.40 44.40	\$371.20 710.40	\$69.25 66.25	\$554.00 1060.00	\$52.03	\$77.58
1 Dozer, 105 H.P.		640.80		704.88			2 Laborers 3 Equip. Oper. (medium)	44.40 59.00	710.40 1416.00	66.25 87.90	2109.60		
1 Chain Saw, Gas, 36" Long		41.65		45.81	62.38	68.61	1 Roller, Pneum. Whl., 12 Ton	55.00	349.90	07.50	384.89		
40 L.H., Daily Totals		\$4738.25		\$6087.35	\$118.46	\$152.18	1 Road Mixer, 310 H.P.		1919.00		2110.90	47.27	52.00
0 D 00		Delle		Daila	Bare	Incl.	48 L.H., Daily Totals		\$4766.50		\$6219.39	\$99.30	\$129.57
Crew B-88	Hr.	Daily \$355.20	Hr. \$66.25	<b>Daily</b> \$530.00	<b>Costs</b> \$56.91	0&P						Bare	Incl.
1 Laborer 6 Equip. Oper. (medium)	\$44.40 59.00	\$355.20 2832.00	\$66.25 87.90	\$530.00 4219.20	\$30.91	\$84.81	Crew B-90C	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Feller Bunchers, 100 H.P.	55.00	1257.60	07.50	1383.36			1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.45	\$75.28
1 Log Chipper, 22" Tree		555.00		610.50			4 Laborers	44.40	1420.80	66.25	2120.00		
2 Log Skidders, 50 H.P.		1826.70		2009.37			3 Equip. Oper. (medium) 3 Truck Drivers (heavy)	59.00 51.30	1416.00 1231.20	87.90 76.70	2109.60 1840.80		
1 Dozer, 105 H.P.		640.80		704.88			3 Road Mixers, 310 H.P.	51.50	5757.00	70.70	6332.70	65.42	71.96
1 Chain Saw, Gas, 36" Long		41.65		45.81	77.17	84.89	88 L.H., Daily Totals		\$10196.20		\$12957.10	\$115.87	\$147.24
56 L.H., Daily Totals		\$7508.95		\$9503.13	\$134.09	\$169.70						Bare	Incl.
Crew B-89	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew B-90D	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$52.15	\$77.85	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.52	\$73.89
1 Truck Driver (light)	48.80	390.40	73.00	584.00			6 Laborers 3 Equip. Oper. (medium)	44.40 59.00	2131.20 1416.00	66.25 87.90	3180.00 2109.60		
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05			3 Truck Drivers (heavy)	51.30	1231.20	76.70	1840.80		
1 Concrete Saw 1 Water Tank, 65 Gal.		112.85 102.90		124.14 113.19	66 61	70 07	3 Road Mixers, 310 H.P.		5757.00		6332.70	55.36	60.89
16 L.H., Daily Totals		\$1900.20		\$2417.98	66.61 \$118.76	73.27 \$151.12	104 L.H., Daily Totals		\$10906.60		\$14017.10	\$104.87	\$134.78
10 Lin, Duny Iotais		Ŷ1300.20		γL⊤17.JU	Bare	Incl.						Bare	Incl.
Crew B-89A	Hr.	Daily	Hr.	Daily	Costs	0&P	Crew B-90E	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Skilled Worker	\$57.10	\$456.80	\$85.90	\$687.20	\$50.75	\$76.08	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$50.26	\$74.96
1 Laborer	44.40	355.20	66.25	530.00			4 Laborers 3 Equip. Oper. (medium)	44.40 59.00	1420.80 1416.00	66.25 87.90	2120.00 2109.60		
1 Core Drill (Large)		121.60		133.76	7.60	8.36	1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
16 L.H., Daily Totals		\$933.60		\$1350.96	\$58.35	\$84.44	1 Road Mixer, 310 H.P.		1919.00		2110.90	26.65	29.32
Crew B-89B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	72 L.H., Daily Totals		\$5537.40		\$7508.10	\$76.91	\$104.28
1 Equip. Oper. (light)	\$55.50	\$444.00	\$82.70	\$661.60	\$52.15	\$77.85	Ourous D 01	Ц.	Daile	U.	Della	Bare	Incl.
1 Truck Driver (light)	48.80	390.40	73.00	584.00			Crew B-91	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Wall Saw, Hydraulic, 10 H.P.		86.40		95.04			1 Labor Foreman (outside) 2 Laborers	\$46.40 44.40	\$371.20 710.40	\$69.25 66.25	\$554.00 1060.00	\$52.81	\$78.76
1 Generator, Diesel, 100 kW		521.85		574.03			4 Equip. Oper. (medium)	44.40 59.00	1888.00	87.90	2812.80		
1 Water Tank, 65 Gal.		102.90		113.19	07 50	107 22	1 Truck Driver (heavy)	51.30	410.40	76.70	613.60		
1 Flatbed Truck, Gas, 3 Ton		\$2205.60		935.05	97.58 \$140.72	107.33 ¢195.19	1 Dist. Tanker, 3000 Gallon		334.10		367.51		
16 L.H., Daily Totals		\$2395.60		\$2962.92	\$149.72	\$185.18	1 Truck Tractor, 6x4, 380 H.P.		499.15		549.07		
Crew B-89C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Aggreg. Spreader, S.P.		859.10		945.01		
1 Cement Finisher	\$51.80	\$414.40	\$75.90	\$607.20	\$51.80	\$75.90	1 Roller, Pneum. Whl., 12 Ton 1 Tandem Roller, 10 Ton		349.90 246.80		384.89 271.48	35.77	39.34
1 Masonry cut-off saw, gas	\$31.00	58.15	J.J.JU	5007.20 63.97	7.27	\$75.90 8.00	64 L.H., Daily Totals		\$5669.05		\$7558.35	\$88.58	\$118.10
8 L.H., Daily Totals		\$472.55		\$671.16	\$59.07	\$83.90		1				, 50.00	
			!		Ч								

Crew No.	Bai	re Costs	Sut	Incl. os O&P		ost bor-Hour	Crew No.	
Crew B-91B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-94D	
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$51.70	\$77.08	1 Laborer	
1 Equipment Oper. (med.)	59.00	472.00	87.90	703.20			1 Centr. Water Pump, 6"	
1 Road Sweeper, Vac. Assist.		879.45		967.39	54.97	60.46	1 -20' Suction Hose, 6"	
16 L.H., Daily Totals		\$1706.65		\$2200.59	\$106.67	\$137.54	2 -50' Discharge Hoses, 6"	
0	П.,	D. il.	11.	D. il.	Bare	Incl.	8 L.H., Daily Totals	L
Crew B-91C 1 Laborer	<b>Hr.</b> \$44.40	Daily \$355.20	Hr. \$66.25	<b>Daily</b> \$530.00	Costs \$46.60	0&P \$69.63	Crew C-1	
1 Truck Driver (light)	48.80	390.40	73.00	584.00	<b>V</b> 10100	çosioo	3 Carpenters	3
1 Catch Basin Cleaning Truck		542.60		596.86	33.91	37.30	1 Laborer	
16 L.H., Daily Totals		\$1288.20		\$1710.86	\$80.51	\$106.93	32 L.H., Daily Totals	
Crew B-91D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew C-2	
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$51.23	\$76.42	1 Carpenter Foreman (outside)	1
5 Laborers	44.40	1776.00	66.25	2650.00	Q01.20	Q70.12	4 Carpenters	
5 Equip. Oper. (medium)	59.00	2360.00	87.90	3516.00			1 Laborer	
2 Truck Drivers (heavy)	51.30	820.80	76.70	1227.20			48 L.H., Daily Totals	+
1 Aggreg. Spreader, S.P.		859.10		945.01				╈
2 Truck Tractors, 6x4, 380 H.P.		998.30		1098.13			Crew C-2A	
2 Dist. Tankers, 3000 Gallon		668.20		735.02			1 Carpenter Foreman (outside)	6
2 Pavement Brushes, Towed		176.70		194.37			3 Carpenters	)
2 Rollers Pneum. Whl., 12 Ton		699.80		769.78	32.71	35.98	1 Cement Finisher	
104 L.H., Daily Totals		\$8730.10		\$11689.51	\$83.94	\$112.40	1 Laborer	
Crew B-92	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	48 L.H., Daily Totals	-
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$44.90	\$67.00	Crew C-3	
3 Laborers	44.40	1065.60	66.25	1590.00			1 Rodman Foreman (outside)	-
1 Crack Cleaner, 25 H.P.		53.00		58.30			4 Rodmen (reinf.)	)
1 Air Compressor, 60 cfm		153.85		169.24			1 Equip. Oper. (light)	
1 Tar Kettle, T.M.		156.70		172.37			2 Laborers	
1 Flatbed Truck, Gas, 3 Ton		850.05		935.05	37.92	41.72	3 Stressing Equipment	
32 L.H., Daily Totals		\$2650.40		\$3478.96	\$82.83 Bare	\$108.72	.5 Grouting Equipment	
Crew B-93	Hr.	Daily	Hr.	Daily	Costs	0&P	64 L.H., Daily Totals	-
1 Equip. Oper. (medium)	\$59.00	\$472.00	\$87.90	\$703.20	\$59.00	\$87.90	Crew C-4	
1 Feller Buncher, 100 H.P. 8 L.H., Daily Totals		628.80 \$1100.80		691.68 \$1394.88	78.60 \$137.60	86.46 \$174.36	1 Rodman Foreman (outside)	\$
					Bare	Incl.	3 Rodmen (reinf.) 3 Stressing Equipment	
Crew B-94A	Hr.	Daily	Hr.	Daily	Costs	0&P	32 L.H., Daily Totals	
1 Laborer 1 Diaphragm Water Pump, 2"	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25		
1 -20' Suction Hose, 2"		87.70 3.55		96.47 3.90			Crew C-4A	
2 -50' Discharge Hoses, 2"		8.00		8.80	12.41	13.65	2 Rodmen (reinf.)	
8 L.H., Daily Totals		\$454.45		\$639.17	\$56.81	\$79.90	4 Stressing Equipment	
					Bare	Incl.	16 L.H., Daily Totals	┝
Crew B-94B 1 Laborer	<b>Hr.</b> \$44.40	<b>Daily</b> \$355.20	Hr. \$66.25	<b>Daily</b> \$530.00	<b>Costs</b> \$44.40	<b>0&amp;P</b> \$66.25	Crew C-5	
1 Diaphragm Water Pump, 4"	Ş44.40	\$355.20 106.35	Ş00.25	\$550.00 116.99	Ş44.4U	Q00.20	1 Rodman Foreman (outside)	3
1 -20' Suction Hose, 4"		17.25		18.98			4 Rodmen (reinf.)	
2 -50' Discharge Hoses, 4"		25.60		28.16	18.65	20.52	1 Equip. Oper. (crane)	
8 L.H., Daily Totals		\$504.40		\$694.12	\$63.05	\$86.77	1 Equip. Oper. (oiler)	
		çoonno		VOU HIL	Bare	Incl.	1 Hyd. Crane, 25 Ton 56 L.H., Daily Totals	╞
Crew B-94C	Hr.	Daily	Hr.	Daily	Costs	0&P		╈
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	Crew C-6	
1 Centrifugal Water Pump, 3"		74.40		81.84			1 Labor Foreman (outside)	1
1 -20' Suction Hose, 3" 2 50' Discharge Hoses 3"		8.75 9.00		9.63 9.00	11 50	12.67	4 Laborers	
2 -50' Discharge Hoses, 3"				9.90	11.52	12.67	1 Cement Finisher	
8 L.H., Daily Totals		\$447.35		\$631.37	\$55.92	\$78.92		

Crew No.	Bare	Costs		ncl. os O&P		Cost abor-Hour
Crew B-94D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25
1 Centr. Water Pump, 6"		235.25		258.77		
1 -20' Suction Hose, 6"		25.50		28.05		
2 -50' Discharge Hoses, 6"		36.20		39.82	37.12	40.83
8 L.H., Daily Totals		\$652.15		\$856.64	\$81.52	\$107.08
Crew C-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
3 Carpenters 1 Laborer	\$54.70 44.40	\$1312.80 355.20	\$81.65 66.25	\$1959.60 530.00	\$52.13	\$77.80
32 L.H., Daily Totals	11.10	\$1668.00	00.20	\$2489.60	\$52.13	\$77.80
					Bare	Incl.
Crew C-2	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$53.32	\$79.58
4 Carpenters 1 Laborer	54.70 44.40	1750.40 355.20	81.65 66.25	2612.80 530.00		
48 L.H., Daily Totals	44.40	\$2559.20	00.20	\$3819.60	\$53.32	\$79.58
is cara, buny istuis		<i><b>YLJJJ.LU</b></i>		4001 <i>3</i> .00	Bare	Incl.
Crew C-2A	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$52.83	\$78.62
3 Carpenters	54.70	1312.80	81.65	1959.60		
1 Cement Finisher	51.80	414.40	75.90	607.20		
1 Laborer	44.40	355.20	66.25	530.00	¢50.00	670 60
48 L.H., Daily Totals		\$2536.00		\$3773.60	\$52.83	\$78.62
Crew C-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Rodman Foreman (outside)	\$60.90	\$487.20	\$91.05	\$728.40	\$55.10	\$82.31
4 Rodmen (reinf.)	58.90	1884.80	88.05	2817.60		
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
2 Laborers	44.40	710.40	66.25	1060.00		
3 Stressing Equipment		56.85		62.53		
.5 Grouting Equipment		123.33		135.66	2.82	3.10
64 L.H., Daily Totals		\$3706.57		\$5465.79	\$57.92 Bare	\$85.40
Crew C-4	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Rodman Foreman (outside)	\$60.90	\$487.20	\$91.05	\$728.40	\$59.40	\$88.80
3 Rodmen (reinf.)	58.90	1413.60	88.05	2113.20		
3 Stressing Equipment		56.85		62.53	1.78	1.95
32 L.H., Daily Totals		\$1957.65		\$2904.14	\$61.18	\$90.75
Crew C-4A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Rodmen (reinf.)	\$58.90	\$942.40	\$88.05	\$1408.80	\$58.90	\$88.05
4 Stressing Equipment		75.80		83.38	4.74	5.21
16 L.H., Daily Totals		\$1018.20		\$1492.18	\$63.64	\$93.26
Crew C-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Rodman Foreman (outside)	\$60.90	\$487.20	\$91.05	\$728.40	\$58.64	\$87.58
4 Rodmen (reinf.)	58.90	1884.80	88.05	2817.60	,	-0.00
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
1 Hyd. Crane, 25 Ton		586.70		645.37	10.48	11.52
56 L.H., Daily Totals		\$3870.30		\$5549.77	\$69.11	\$99.10
Crew C-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.97	\$68.36
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Cement Finisher	51.80	414.40	75.90	607.20		
2 Gas Engine Vibrators		54.30		59.73	1.13	1.24
48 L.H., Daily Totals	1	\$2260.70		\$3340.93	\$47.10	\$69.60

Crew No.				Incl.	c	ost			
CIEW NO.	Bai	re Costs	Sut	os O&P	Per La	bor-Hour	Crew No.	Bare	Costs
Crew C-6A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew C-8B	Hr.	Daily
Cement Finishers	\$51.80	\$828.80	\$75.90	\$1214.40	\$51.80	\$75.90	1 Labor Foreman (outside)	\$46.40	\$371.20
ncrete Vibrator, Elec, 2 HP		45.80		50.38	2.86	3.15	3 Laborers	44.40	1065.60
.H., Daily Totals		\$874.60		\$1264.78	\$54.66	\$79.05	1 Equip. Oper. (medium)	59.00	472.00
,					Bare	Incl.	1 Vibrating Power Screed		87.65
Crew C-7	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Roller, Vibratory, 25 Ton		672.35
abor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.97	\$71.39	1 Dozer, 200 H.P.		1520.00
borers	44.40	1776.00	66.25	2650.00	Ş47.37	Ş/1.J5	40 L.H., Daily Totals		\$4188.80
ement Finisher	51.80	414.40	75.90	607.20					
quip. Oper. (medium)	59.00	472.00	87.90	703.20			Crew C-8C	Hr.	Daily
quip. Oper. (oiler)	52.50	420.00	78.25	626.00			1 Labor Foreman (outside)	\$46.40	\$371.20
as Engine Vibrators	02.00	54.30	70120	59.73			3 Laborers	44.40	1065.60
oncrete Bucket, 1 C.Y.		45.90		50.49			1 Cement Finisher	51.80	414.40
d. Crane, 55 Ton		990.15		1089.17	15.14	16.66	1 Equip. Oper. (medium)	59.00	472.00
.H., Daily Totals		\$4543.95		\$6339.78	\$63.11	\$88.05	1 Shotcrete Rig, 12 C.Y./hr		269.20
,,					Bare	Incl.	1 Air Compressor, 160 cfm		212.30
Crew C-7A	Hr.	Daily	Hr.	Daily	Costs	0&P	4 -50' Air Hoses, 1"		32.20
oor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$46.38	\$69.24	4 -50' Air Hoses, 2"		115.80
oor Foreinali (outside)	\$40.40 44.40	\$371.20 1776.00	\$09.25 66.25	\$554.00 2650.00	940.00	QU9.24	48 L.H., Daily Totals		\$2952.70
uck Drivers (heavy)	44.40 51.30	820.80	76.70	1227.20					
onc. Transit Mixers	51.50	1176.30	70.70	1293.93	18.38	20.22	Crew C-8D	Hr.	Daily
H., Daily Totals		\$4144.30		\$5725.13	\$64.75	\$89.46	1 Labor Foreman (outside)	\$46.40	\$371.20
L.H., Dally Totals		Ş4144.JU		JJ72J.1J			1 Laborer	44.40	355.20
Onen 0 7D	11	Dailu	11.	Dailu	Bare	Incl.	1 Cement Finisher	51.80	414.40
Crew C-7B	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Equipment Oper. (light)	55.50	444.00
or Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.79	\$71.29	1 Air Compressor, 250 cfm		202.85
prers	44.40	1776.00	66.25	2650.00			2 -50' Air Hoses, 1"		16.10
ipment Operator, Crane	61.45	491.60	91.55	732.40			32 L.H., Daily Totals		\$1803.75
ipment Oiler	52.50	420.00	78.25	626.00					
nc. Bucket, 2 C.Y.		55.65		61.22	20.40	40.00	Crew C-8E	Hr.	Daily
attice Boom Crane, 165 Ton		2403.00		2643.30	38.42	42.26	1 Labor Foreman (outside)	\$46.40	\$371.20
H., Daily Totals		\$5517.45		\$7266.92	\$86.21	\$113.55	3 Laborers	\$40.40 44.40	\$371.20 1065.60
					Bare	Incl.	1 Cement Finisher	51.80	414.40
		Daily	Hr.	Daily	Costs	0&P	1 Equipment Oper. (light)		
Crew C-7C	Hr.							55 50	444 ()()
oor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.30	\$72.04		55.50	444.00 301.05
bor Foreman (outside) borers	\$46.40 44.40	\$371.20 1776.00	66.25	2650.00	\$48.30	\$72.04	1 Shotcrete Rig, 35 C.Y./hr.	55.50	301.05
bor Foreman (outside) borers uipment Operators (med.)	\$46.40	\$371.20 1776.00 944.00		2650.00 1406.40			1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm	55.50	301.05 202.85
or Foreman (outside) orers ipment Operators (med.) Loaders, W.M., 4 C.Y.	\$46.40 44.40	\$371.20 1776.00 944.00 1518.00	66.25	2650.00 1406.40 1669.80	23.72	26.09	1 Shotcrete Rig, 35 C.Y./hr.	55.50	301.05 202.85 32.20
or Foreman (outside) orers iipment Operators (med.) . Loaders, W.M., 4 C.Y.	\$46.40 44.40	\$371.20 1776.00 944.00	66.25	2650.00 1406.40			1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1"	55.50	301.05 202.85 32.20 115.80
or Foreman (outside) orers pment Operators (med.) Loaders, W.M., 4 C.Y. I., Daily Totals	\$46.40 44.40 59.00	\$371.20 1776.00 944.00 1518.00 \$4609.20	66.25 87.90	2650.00 1406.40 1669.80 \$6280.20	23.72 \$72.02 Bare	26.09 \$98.13 Incl.	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2"	55.50	301.05 202.85 32.20
or Foreman (outside) orers ipment Operators (med.) Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D	\$46.40 44.40 59.00 <b>Hr.</b>	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b>	66.25 87.90 <b>Hr.</b>	2650.00 1406.40 1669.80 \$6280.20 Daily	23.72 \$72.02 Bare Costs	26.09 \$98.13 Incl. O&P	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2"	55.50	301.05 202.85 32.20 115.80
or Foreman (outside) orers ipment Operators (med.) Loaders, W.M., 4 C.Y. I., Daily Totals Crew C-7D or Foreman (outside)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20	66.25 87.90 <b>Hr.</b> \$69.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00	23.72 \$72.02 Bare	26.09 \$98.13 Incl.	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals		301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b>
or Foreman (outside) orers ipment Operators (med.) Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D or Foreman (outside) orers	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00	66.25 87.90 <b>Hr.</b> \$69.25 66.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00	23.72 \$72.02 Bare Costs	26.09 \$98.13 Incl. O&P	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9	Hr.	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40
bor Foreman (outside) borers uipment Operators (med.) . Loaders, W.M., 4 C.Y. .H., Daily Totals Crew C-7D bor Foreman (outside) borers uip. Oper. (medium)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00	66.25 87.90 <b>Hr.</b> \$69.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20	23.72 \$72.02 Bare Costs \$46.77	26.09 \$98.13 Incl. 0&P \$69.77	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher	<b>Hr.</b> \$51.80	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40
bor Foreman (outside) borers uipment Operators (med.) E. Loaders, W.M., 4 C.Y. .H., Daily Totals Crew C-7D bor Foreman (outside) borers uip. Oper. (medium) uncrete Conveyer	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25	66.25 87.90 Hr. \$69.25 66.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88	23.72 \$72.02 Bare Costs \$46.77 3.68	26.09 \$98.13 Incl. 0&P \$69.77 4.05	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr.	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35
abor Foreman (outside) aborers quipment Operators (med.) .E. Loaders, W.M., 4 C.Y. L.H., Daily Totals	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00	66.25 87.90 Hr. \$69.25 66.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45	26.09 \$98.13 <b>Incl.</b> <b>0&amp;P</b> \$69.77 4.05 \$73.82	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35
bor Foreman (outside) borers luipment Operators (med.) . Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D bor Foreman (outside) borers luip. Oper. (medium) ncrete Conveyer H., Daily Totals	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45	66.25 87.90 <b>Hr.</b> \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl.	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1"	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10
bor Foreman (outside) borers uuipment Operators (med.) E. Loaders, W.M., 4 C.Y. .H., Daily Totals Crew C-7D bor Foreman (outside) borers uuip. Oper. (medium) oncrete Conveyer .H., Daily Totals Crew C-8	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b>	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr.	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b>	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10
bor Foreman (outside) borers uipment Operators (med.) . Loaders, W.M., 4 C.Y. 	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl.	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1"	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10 57.90
or Foreman (outside) orers ipment Operators (med.) Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D or Foreman (outside) orers ip. Oper. (medium) icrete Conveyer H., Daily Totals Crew C-8 or Foreman (outside) orers	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b>	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b>	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2"	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10 57.90
or Foreman (outside) orers ipment Operators (med.) Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D or Foreman (outside) orers ip. Oper. (medium) crete Conveyer H., Daily Totals Crew C-8 or Foreman (outside) orers nent Finishers	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 51.80	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2"	Hr. \$51.80 44.40	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10 57.90
or Foreman (outside) prers prent Operators (med.) Loaders, W.M., 4 C.Y. A., Daily Totals Crew C-7D pr Foreman (outside) prers p. Oper. (medium) crete Conveyer A., Daily Totals Crew C-8 pr Foreman (outside) prers p. Foreman (outside) prers p. Foreman (outside) prers p. Oper. (medium)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2" 32 L.H., Daily Totals Crew C-10	Hr. \$51.80 44.40 55.50 Hr.	301.05 202.85 32.20 115.80 \$2947.10 \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b>
Foreman (outside) ers ment Operators (med.) paders, W.M., 4 C.Y. Daily Totals Crew C-7D Foreman (outside) ers Oper. (medium) ete Conveyer Daily Totals Crew C-8 Foreman (outside) ers nt Finishers Oper. (medium) ete Pump (Small)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 51.80	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00 423.65	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20 466.01	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89 7.57	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53 8.32	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2" 32 L.H., Daily Totals Crew C-10 1 Laborer	Hr. \$51.80 44.40 55.50 Hr. \$44.40	301.05 202.85 32.20 115.80 \$2947.10 \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b> \$355.20
rr Foreman (outside) rrers poment Operators (med.) Loaders, W.M., 4 C.Y. I., Daily Totals Crew C-7D pr Foreman (outside) rrers p. Oper. (medium) crete Conveyer I., Daily Totals Crew C-8 rr Foreman (outside) rrers ent Finishers p. Oper. (medium) rrers ent Finishers p. Oper. (medium) rrete Pump (Small)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 51.80	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2" 32 L.H., Daily Totals Crew C-10	Hr. \$51.80 44.40 55.50 Hr.	301.05 202.85 32.20 115.80 \$2947.10 \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45
or Foreman (outside) orers prent Operators (med.) Loaders, W.M., 4 C.Y. I., Daily Totals Crew C-7D or Foreman (outside) orers p. Oper. (medium) crete Conveyer I., Daily Totals Crew C-8 or Foreman (outside) orers nent Finishers p. Oper. (medium) crete Pump (Small)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 51.80	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00 423.65	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20 466.01	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89 7.57	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53 8.32	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2" 32 L.H., Daily Totals Crew C-10 1 Laborer 2 Cement Finishers 24 L.H., Daily Totals	Hr. \$51.80 44.40 55.50 Hr. \$44.40 51.80	301.05 202.85 32.20 115.80 \$2947.10 \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b> \$355.20 828.80 \$1184.00
bor Foreman (outside) borers uipment Operators (med.) i. Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D bor Foreman (outside) borers uip. Oper. (medium) increte Conveyer .H., Daily Totals Crew C-8 bor Foreman (outside) borers ment Finishers uip. Oper. (medium) increte Pump (Small) .H., Daily Totals	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 51.80 59.00 <b>Hr.</b>	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00 423.65 \$3161.25 <b>Daily</b>	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 75.90 87.90 87.90	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20 466.01 \$4527.61	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89 7.57 \$56.45 Bare Costs	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53 8.32 \$80.85 Incl. 0&P	1 Shotcrete Rig, 35 C.Y./hr. 1 Air Compressor, 250 cfm 4 -50' Air Hoses, 1" 4 -50' Air Hoses, 2" 48 L.H., Daily Totals Crew C-9 1 Cement Finisher 2 Laborers 1 Equipment Oper. (light) 1 Grout Pump, 50 C.F./hr. 1 Air Compressor, 160 cfm 2 -50' Air Hoses, 1" 2 -50' Air Hoses, 2" 32 L.H., Daily Totals Crew C-10 1 Laborer 2 Cement Finishers 24 L.H., Daily Totals Crew C-10B	Hr. \$51.80 44.40 55.50 Hr. \$44.40 51.80 Hr.	301.05 202.85 32.20 115.80 \$2947.10 \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b> \$355.20 828.80 \$1184.00 <b>Daily</b>
or Foreman (outside) ipment Operators (med.) Loaders, W.M., 4 C.Y. H., Daily Totals Crew C-7D or Foreman (outside) ip. Oper. (medium) ncrete Conveyer H., Daily Totals Crew C-8 or Foreman (outside) orers ment Finishers ip. Oper. (medium) ncrete Pump (Small) H., Daily Totals Crew C-8A	\$46.40 44.40 59.00 Hr. \$46.40 44.40 59.00 Hr. \$46.40 44.40 51.80 59.00 Hr. \$46.40 44.40 \$1.80 \$9.00	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00 423.65 \$3161.25 <b>Daily</b> \$371.20	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 75.90 87.90 87.90 Hr. \$69.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20 466.01 \$4527.61 <b>Daily</b> \$554.00	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89 7.57 \$56.45 Bare	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53 8.32 \$80.85 Incl.	Shotcrete Rig, 35 C.Y./hr.     Air Compressor, 250 cfm     4-50' Air Hoses, 1"     4-50' Air Hoses, 2"     48 L.H., Daily Totals     Crew C-9     1 Cement Finisher     2 Laborers     1 Equipment Oper. (light)     1 Grout Pump, 50 C.F./hr.     Air Compressor, 160 cfm     2-50' Air Hoses, 1"     2-50' Air Hoses, 2"     32 L.H., Daily Totals     Crew C-10     1 Laborer     2 Cement Finishers     24 L.H., Daily Totals     Crew C-10B     3 Laborers	Hr.           \$51.80           44.40           55.50           Hr.           \$44.40           51.80           Hr.           \$44.40           51.80           Hr.           \$44.40           \$1.80           Hr.           \$44.40           \$1.80	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b> \$355.20 828.80 \$1184.00 <b>Daily</b>
r Foreman (outside) rers ment Operators (med.) .oaders, W.M., 4 C.Y. ., Daily Totals Crew C-7D r Foreman (outside) rers 0. Oper. (medium) rete Conveyer ., Daily Totals Crew C-8 r Foreman (outside) rers ent Finishers 0. Oper. (medium) rete Pump (Small) ., Daily Totals Crew C-8A r Foreman (outside)	\$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 59.00 <b>Hr.</b> \$46.40 44.40 51.80 59.00 <b>Hr.</b>	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00 423.65 \$3161.25 <b>Daily</b> \$371.20 1065.60	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 75.90 87.90 87.90 Hr. \$69.25 66.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20 466.01 \$4527.61 <b>Daily</b> \$554.00 1590.00	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89 7.57 \$56.45 Bare Costs	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53 8.32 \$80.85 Incl. 0&P	Shotcrete Rig, 35 C.Y./hr.     Air Compressor, 250 cfm     4-50' Air Hoses, 1"     4-50' Air Hoses, 2"     48 L.H., Daily Totals     Crew C-9     1 Cement Finisher     2 Laborers     1 Equipment Oper. (light)     1 Grout Pump, 50 C.F./hr.     Air Compressor, 160 cfm     2-50' Air Hoses, 1"     2-50' Air Hoses, 2"     32 L.H., Daily Totals     Crew C-10     1 Laborer     2 Cement Finishers     24 L.H., Daily Totals     Crew C-10B     3 Laborers     2 Cement Finishers	Hr. \$51.80 44.40 55.50 Hr. \$44.40 51.80 Hr.	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b> \$355.20 828.80 \$1184.00 <b>Daily</b>
oreman (outside) s ant Operators (med.) idders, W.M., 4 C.Y. Jaily Totals Crew C-7D oreman (outside) s Diper. (medium) e Conveyer Jaily Totals Crew C-8 oreman (outside) s Finishers Diper. (medium) e Pump (Small) Jaily Totals Crew C-8A oreman (outside) s	\$46.40 44.40 59.00 Hr. \$46.40 44.40 59.00 Hr. \$46.40 44.40 51.80 59.00 Hr. \$46.40 44.40	\$371.20 1776.00 944.00 1518.00 \$4609.20 <b>Daily</b> \$371.20 1776.00 472.00 206.25 \$2825.45 <b>Daily</b> \$371.20 1065.60 828.80 472.00 423.65 \$3161.25 <b>Daily</b> \$371.20	66.25 87.90 Hr. \$69.25 66.25 87.90 Hr. \$69.25 66.25 75.90 87.90 87.90 Hr. \$69.25	2650.00 1406.40 1669.80 \$6280.20 <b>Daily</b> \$554.00 2650.00 703.20 226.88 \$4134.07 <b>Daily</b> \$554.00 1590.00 1214.40 703.20 466.01 \$4527.61 <b>Daily</b> \$554.00	23.72 \$72.02 Bare Costs \$46.77 3.68 \$50.45 Bare Costs \$48.89 7.57 \$56.45 Bare Costs	26.09 \$98.13 Incl. 0&P \$69.77 4.05 \$73.82 Incl. 0&P \$72.53 8.32 \$80.85 Incl. 0&P	Shotcrete Rig, 35 C.Y./hr.     Air Compressor, 250 cfm     4-50' Air Hoses, 1"     4-50' Air Hoses, 2"     48 L.H., Daily Totals     Crew C-9     1 Cement Finisher     2 Laborers     1 Equipment Oper. (light)     1 Grout Pump, 50 C.F./hr.     Air Compressor, 160 cfm     2-50' Air Hoses, 1"     2-50' Air Hoses, 2"     32 L.H., Daily Totals     Crew C-10     1 Laborer     2 Cement Finishers     24 L.H., Daily Totals     Crew C-10B     3 Laborers	Hr.           \$51.80           44.40           55.50           Hr.           \$44.40           51.80           Hr.           \$44.40           51.80           Hr.           \$44.40           \$1.80           Hr.           \$44.40           \$1.80	301.05 202.85 32.20 115.80 \$2947.10 <b>Daily</b> \$414.40 710.40 444.00 190.35 212.30 16.10 57.90 \$2045.45 <b>Daily</b> \$355.20 828.80 \$1184.00 <b>Daily</b> \$1065.60

Cost

Per Labor-Hour

Incl.

0&P

\$71.18

62.70

\$133.88

Incl.

0&P

\$71.97

14.43 \$86.39

Incl.

0&P

\$73.53

7.53

\$81.05

Incl.

0&P

\$71.10

14.94

\$86.04

Incl.

0&P

\$72.78

16.38

\$89.16

Incl.

0&P

\$72.68

\$72.68

Incl.

0&P

\$70.11

9.23

\$79.34

Bare

Costs

\$47.72

57.00

\$104.72

Bare

Costs

\$48.40

13.11

\$61.51 Bare

Costs

\$49.52

6.84

\$56.37

Bare

Costs

\$47.82

13.58

\$61.40 Bare

Costs

\$49.02

14.90

\$63.92

Bare

Costs

\$49.33

\$49.33

Bare

Costs

\$47.36

8.39

\$55.75

\$3173.72

\$2230.15

40 L.H., Daily Totals

Crew No.	Bar	re Costs	Sut	Incl. os O&P		ost Ibor-Hou
Crew C-10C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
aborer	\$44.40	\$355.20	\$66.25	\$530.00	\$49.33	\$72.68
Cement Finishers	51.80	828.80	75.90	1214.40	¢ isioo	¢, 2.00
Frowel, 48" Walk-Behind		94.30		103.73	3.93	4.32
L.H., Daily Totals		\$1278.30		\$1848.13	\$53.26	\$77.01
					Bare	Incl.
Crew C-10D	Hr.	Daily	Hr.	Daily	Costs	0&P
aborer	\$44.40	\$355.20	\$66.25	\$530.00	\$49.33	\$72.68
Cement Finishers	51.80	828.80	75.90	1214.40		
ibrating Power Screed		87.65		96.42		
rowel, 48" Walk-Behind		94.30		103.73	7.58	8.34
L.H., Daily Totals		\$1365.95		\$1944.55	\$56.91	\$81.02
Crew C-10E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
aborer	\$44.40	\$355.20	\$66.25	\$530.00	\$49.33	\$72.68
Cement Finishers	51.80	828.80	75.90	1214.40	÷13.00	φ, <b>2.00</b>
Vibrating Power Screed		87.65		96.42		
Cement Trowel, 96" Ride-On		171.05		188.16	10.78	11.86
L.H., Daily Totals		\$1442.70		\$2028.97	\$60.11	\$84.54
0.000	Un	Deilu	II.	Deihi	Bare	Incl.
Crew C-10F	Hr.	Daily	Hr.	Daily	Costs	0&P
Laborer Cement Finishers	\$44.40 51.80	\$355.20	\$66.25 75.90	\$530.00	\$49.33	\$72.68
elescoping Boom Lift, to 60'	01.00	828.80 292.45	75.90	1214.40 321.69	12.19	13.40
L.H., Daily Totals		\$1476.45		\$2066.09	\$61.52	\$86.09
E.H., Daily Totals		ŞI470.45		Ş2000.03		Incl.
Crew C-11	Hr.	Daily	Hr.	Daily	Bare Costs	0&P
truc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$59.78	\$91.78
Struc. Steel Workers	60.30	2894.40	93.30	4478.40		
quip. Oper. (crane)	61.45	491.60	91.55	732.40		
Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
attice Boom Crane, 150 Ton		2324.00		2556.40	32.28	35.51
		\$6628.40		\$9164.40	\$92.06	\$127.28
Crew C-12	Hr.		Hr.		S92.00 Bare Costs	\$127.28 Incl. 0&P
Crew C-12		\$6628.40 Daily \$453.60		Daily	Bare Costs	Incl. 0&P
Crew C-12 Carpenter Foreman (outside)	<b>Hr.</b> \$56.70 54.70	Daily	<b>Hr.</b> \$84.60 81.65		Bare	Incl.
Crew C-12 Carpenter Foreman (outside) Carpenters .aborer	\$56.70	<b>Daily</b> \$453.60	\$84.60 81.65 66.25	<b>Daily</b> \$676.80	Bare Costs	Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Equip. Oper. (crane)	\$56.70 54.70	<b>Daily</b> \$453.60 1312.80 355.20 491.60	\$84.60 81.65	<b>Daily</b> \$676.80 1959.60 530.00 732.40	Bare Costs	Incl. 0&P
Crew C-12 arpenter Foreman (outside) arpenters aborer quip. Oper. (crane) yd. Crane, 12 Ton	\$56.70 54.70 44.40	<b>Daily</b> \$453.60 1312.80 355.20 491.60 475.80	\$84.60 81.65 66.25	<b>Daily</b> \$676.80 1959.60 530.00 732.40 523.38	Bare Costs \$54.44 9.91	Incl. 0&P \$81.22 10.90
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Guip. Oper. (crane) Hyd. Crane, 12 Ton	\$56.70 54.70 44.40	<b>Daily</b> \$453.60 1312.80 355.20 491.60	\$84.60 81.65 66.25	<b>Daily</b> \$676.80 1959.60 530.00 732.40	Bare Costs \$54.44	Incl. 0&P \$81.22
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Guip. Oper. (crane) Hyd. Crane, 12 Ton	\$56.70 54.70 44.40	<b>Daily</b> \$453.60 1312.80 355.20 491.60 475.80	\$84.60 81.65 66.25	<b>Daily</b> \$676.80 1959.60 530.00 732.40 523.38	Bare Costs \$54.44 9.91	Incl. 0&P \$81.22 10.90
Carpenter Foreman (outside) Carpenters .aborer Equip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals	\$56.70 54.70 44.40 61.45 <b>Hr.</b>	Daily \$453.60 1312.80 355.20 491.60 475.80 \$3089.00 Daily	\$84.60 81.65 66.25 91.55 <b>Hr.</b>	Daily \$676.80 1959.60 530.00 732.40 523.38 \$4422.18 Daily	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters .aborer Equip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13	\$56.70 54.70 44.40 61.45	<b>Daily</b> \$453.60 1312.80 355.20 491.60 475.80 \$3089.00	\$84.60 81.65 66.25 91.55	<b>Daily</b> \$676.80 1959.60 530.00 732.40 523.38 \$4422.18	Bare Costs \$54.44 9.91 \$64.35 Bare	Incl. 0&P \$81.22 10.90 \$92.13 Incl.
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Gquip. Oper. (crane) hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Struc. Steel Worker Velder	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters aborer quip. Oper. (crane) lyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 truc. Steel Worker Velder Carpenter	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters aborer ciquip. Oper. (crane) tyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Crew C-13 Struc. Steel Worker Velder Carpenter Velder, Gas Engine, 300 amp	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20	Bare           Costs           \$54.44           9.91           \$64.35           Bare           Costs           \$58.43	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Guip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Crew C-13 Crew C-13 Crew C-14 Carpenter Velder Carpenter Velder, Gas Engine, 300 amp L.H., Daily Totals	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 6.82 \$96.23 Incl.
Crew C-12 Carpenter Foreman (outside) Carpenters Jaborer Ciquip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Crew C-13 Carpenter Velder Carpenter Velder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b>	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b>	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P
Crew C-12 arpenter Foreman (outside) arpenters aborer quip. Oper. (crane) lyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 truc. Steel Worker Velder arpenter Velder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 arpenter Foreman (outside)	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63           Daily           \$676.80	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 6.82 \$96.23 Incl.
Crew C-12 arpenter Foreman (outside) arpenters aborer quip. Oper. (crane) yd. Crane, 12 Ton L.H., Daily Totals Crew C-13 truc. Steel Worker /elder arpenter /elder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 arpenter Foreman (outside) arpenters	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70 54.70	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60           2188.00	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60 81.65	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63           Daily           \$676.80           3266.00	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Guip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Crew C-13 Crew C-13 Crew C-14 Carpenter Velder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 Carpenter Foreman (outside) Carpenters aborers	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70 54.70 44.40	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60           2188.00           1420.80	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60 81.65 66.25	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63           Daily           \$676.80           3266.00           2120.00	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters Jaborer Giquip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Gtruc. Steel Worker Velder Carpenter Velder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 Carpenter Foreman (outside) Carpenters Jaborers Rodmen (reinf.)	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70 54.70 44.40 58.90	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60           2188.00           1420.80           1884.80	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60 81.65 66.25 88.05	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63           Daily           \$676.80           3266.00           2120.00           2817.60	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Guip. Oper. (crane) Hyd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Crew C-13 Crew C-13 Crew C-14 Carpenter Velder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 Carpenter Foreman (outside) Carpenters aborers	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70 54.70 44.40	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60           2188.00           1420.80           1884.80           828.80	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60 81.65 66.25	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63           Daily           \$676.80           3266.00           2120.00	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P
Crew C-12 Carpenter Foreman (outside) Carpenters aborer Guip. Oper. (crane) Myd. Crane, 12 Ton L.H., Daily Totals Crew C-13 Crew C-13 Crew C-13 Crew C-13 Crew C-14 Carpenter Velder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 Carpenter Foreman (outside) Carpenters aborers todmen (reinf.) Cement Finishers	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70 54.70 44.40 58.90 51.80	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60           2188.00           1420.80           1884.80	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60 81.65 66.25 88.05 75.90 91.55	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           746.33           \$2309.63           Daily           \$676.80           3266.00           2120.00           2817.60           1214.40           732.40	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P
Crew C-12 arpenter Foreman (outside) arpenters aborer quip. Oper. (crane) yd. Crane, 12 Ton L.H., Daily Totals Crew C-13 truc. Steel Worker lelder arpenter lelder, Gas Engine, 300 amp L.H., Daily Totals Crew C-14 arpenter Foreman (outside) arpenters aborers podmen (reinf.) ement Finishers quip. Oper. (crane)	\$56.70 54.70 44.40 61.45 <b>Hr.</b> \$60.30 60.30 54.70 <b>Hr.</b> \$56.70 54.70 44.40 58.90 51.80 61.45	Daily           \$453.60           1312.80           355.20           491.60           475.80           \$3089.00           Daily           \$482.40           482.40           437.60           148.75           \$1551.15           Daily           \$453.60           2188.00           1420.80           1884.80           828.80           491.60	\$84.60 81.65 66.25 91.55 <b>Hr.</b> \$93.30 93.30 81.65 <b>Hr.</b> \$84.60 81.65 66.25 88.05 75.90	Daily           \$676.80           1959.60           530.00           732.40           523.38           \$4422.18           Daily           \$746.40           746.40           653.20           163.63           \$2309.63           Daily           \$676.80           3266.00           2120.00           2817.60           1214.40	Bare Costs           \$54.44           9.91           \$64.35           Bare Costs           \$58.43           6.20           \$64.63           Bare Costs	Incl. 0&P \$81.22 10.90 \$92.13 Incl. 0&P \$89.42 6.82 \$96.23 Incl. 0&P

Crew No.	Bare	: Costs		inci. os O&P		Cost abor-Hour
Crew C-14A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$54.68	\$81.58
16 Carpenters	54.70	7001.60	81.65	10451.20		
4 Rodmen (reinf.)	58.90	1884.80	88.05	2817.60		
2 Laborers	44.40	710.40	66.25	1060.00		
1 Cement Finisher	51.80	414.40	75.90	607.20		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Gas Engine Vibrator	l	27.15 423.65		29.86 466.01	2.25	2.48
1 Concrete Pump (Small) 200 L.H., Daily Totals		423.65 \$11387.60		400.01 \$16811.88	\$56.94	\$84.06
200 Lin, Dally Totals		Ş11307.00		Ĵ10011.00	S00.94 Bare	584.00
Crew C-14B	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$54.57	\$81.36
16 Carpenters	54.70	7001.60	81.65	10451.20		
4 Rodmen (reinf.) 2 Laborers	58.90 44.40	1884.80 710.40	88.05 66.25	2817.60 1060.00		
2 Cement Finishers	44.40 51.80	828.80	75.90	1214.40		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
1 Gas Engine Vibrator		27.15	01.22	29.86		
1 Concrete Pump (Small)		423.65		466.01	2.17	2.38
208 L.H., Daily Totals		\$11802.00		\$17419.08	\$56.74	\$83.75
Crew C-14C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$52.29	\$77.96
6 Carpenters	54.70	2625.60	81.65	3919.20		
2 Rodmen (reinf.)	58.90	942.40	88.05	1408.80		
4 Laborers	44.40	1420.80	66.25	2120.00		
1 Cement Finisher	51.80	414.40	75.90	607.20		
1 Gas Engine Vibrator		27.15		29.86	.24	.27
112 L.H., Daily Totals		\$5883.95		\$8761.86	\$52.54	\$78.23
Crew C-14D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$54.35	\$81.07
18 Carpenters	54.70	7876.80	81.65	11757.60		
2 Rodmen (reinf.)	58.90	942.40	88.05	1408.80		
2 Laborers 1 Cement Finisher	44.40 51.80	710.40	66.25 75.90	1060.00		
1 Equip. Oper. (medium)	51.80 59.00	414.40 472.00	75.90 87.90	607.20 703.20		
1 Gas Engine Vibrator	33.00	27.15	01.50	29.86		
1 Concrete Pump (Small)	l	423.65		466.01	2.25	2.48
200 L.H., Daily Totals		\$11320.40		\$16709.48	\$56.60	\$83.55
Crew C-14E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$53.34	\$79.52
2 Carpenters	54.70	875.20	81.65	1306.40		·
4 Rodmen (reinf.)	58.90	1884.80	88.05	2817.60		
3 Laborers	44.40	1065.60	66.25	1590.00		
1 Cement Finisher	51.80	414.40	75.90	607.20		
1 Gas Engine Vibrator		27.15		29.86	.31	.34
88 L.H., Daily Totals		\$4720.75		\$7027.86	\$53.64	\$79.86
Crew C-14F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.56	\$73.02
2 Laborers	44.40	710.40	66.25	1060.00		
6 Cement Finishers	51.80	2486.40	75.90	3643.20	20	41
1 Gas Engine Vibrator 72 L.H., Daily Totals		27.15 \$3595.15		29.86 \$5287.06	.38 \$49.93	.41 \$73.43
/2 L.H., Dally Iolais		ĴĴĴĴĴĴ112		\$J207.00	J43.50	Ş/J.4J

Crew No.		re Costs	Sub	inci. os O&P		ost Ibor-Hour	Crew No.	Bare	Costs		ncl. s O&P		Cost .abor-Hour
Crew C-14G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew C-17	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$48.91	\$72.19	2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.50	\$86.50
2 Laborers	44.40	710.40	66.25	1060.00	¢.002	¢, 2125	8 Skilled Workers	57.10	3654.40	85.90	5497.60		çooloo
4 Cement Finishers	51.80	1657.60	75.90	2428.80			80 L.H., Daily Totals		\$4600.00		\$6920.00	\$57.50	\$86.50
1 Gas Engine Vibrator		27.15		29.86	.48	.53						Bare	Incl.
56 L.H., Daily Totals		\$2766.35		\$4072.67	\$49.40	\$72.73 Incl.	Crew C-17A	Hr.	Daily	Hr.	Daily	Costs	0&P
Crew C-14H	Hr.	Daily	Hr.	Daily	Bare Costs	O&P	2 Skilled Worker Foremen (out) 8 Skilled Workers	\$59.10 57.10	\$945.60 3654.40	\$88.90 85.90	\$1422.40 5497.60	\$57.55	\$86.56
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$53.53	\$79.68	.125 Equip. Oper. (crane)	61.45	61.45	91.55	91.55		
2 Carpenters	54.70	875.20	81.65	1306.40	\$00.00	<i>Q1 3.00</i>	.125 Hyd. Crane, 80 Ton	01.10	182.25	51.00	200.47	2.25	2.48
1 Rodman (reinf.)	58.90	471.20	88.05	704.40			81 L.H., Daily Totals		\$4843.70		\$7212.02	\$59.80	\$89.04
1 Laborer	44.40	355.20	66.25	530.00								Bare	Incl.
1 Cement Finisher	51.80	414.40	75.90	607.20			Crew C-17B	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Gas Engine Vibrator		27.15		29.86	.57	.62	2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.60	\$86.62
48 L.H., Daily Totals		\$2596.75		\$3854.67	\$54.10	\$80.31	8 Skilled Workers	57.10	3654.40	85.90	5497.60		
0		Delle		Dulla	Bare	Incl.	.25 Equip. Oper. (crane)	61.45	122.90	91.55	183.10		
Crew C-14L	Hr.	Daily	Hr.	Daily	Costs	0&P	.25 Hyd. Crane, 80 Ton		364.50		400.95		
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$51.19	\$76.28	.25 Trowel, 48" Walk-Behind		23.57		25.93	4.73	5.21
6 Carpenters 4 Laborers	54.70 44.40	2625.60 1420.80	81.65 66.25	3919.20 2120.00			82 L.H., Daily Totals		\$5110.98		\$7529.98	\$62.33	\$91.83
4 Laborers 1 Cement Finisher	44.40 51.80	414.40	00.25 75.90	607.20								Bare	Incl.
1 Gas Engine Vibrator	51.00	27.15	75.50	29.86	.28	.31	Crew C-17C	Hr.	Daily	Hr.	Daily	Costs	0&P
96 L.H., Daily Totals		\$4941.55		\$7353.06	\$51.47	\$76.59	2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.64	\$86.68
So Eini, Dully Totalo		Q1511.00		\$7000.00	Bare	Incl.	8 Skilled Workers	57.10	3654.40	85.90	5497.60		
Crew C-14M	Hr.	Daily	Hr.	Daily	Costs	0&P	.375 Equip. Oper. (crane) .375 Hyd. Crane, 80 Ton	61.45	184.35 546.75	91.55	274.65 601.42	6.59	7.25
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$53.08	\$79.03	83 L.H., Daily Totals		\$5331.10		\$7796.07	\$64.23	\$93.93
2 Carpenters	54.70	875.20	81.65	1306.40	ŞJJ.00	<i>Ş1 5</i> .05	63 L.H., Dally Totals		ŞJJJJ1.10		\$1190.01		
1 Rodman (reinf.)	58.90	471.20	88.05	704.40			Crew C-17D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Laborers	44.40	710.40	66.25	1060.00			2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.69	\$86.74
1 Cement Finisher	51.80	414.40	75.90	607.20			2 Skilled Workers	\$59.10 57.10	3654.40	300.90 85.90	\$1422.40 5497.60	\$37.09	Ş00.74
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20			.5 Equip. Oper. (crane)	61.45	245.80	91.55	366.20		
1 Gas Engine Vibrator		27.15		29.86			.5 Hyd. Crane, 80 Ton	01110	729.00	51100	801.90	8.68	9.55
1 Concrete Pump (Small)		423.65		466.01	7.04	7.75	84 L.H., Daily Totals		\$5574.80		\$8088.10	\$66.37	\$96.29
64 L.H., Daily Totals		\$3847.60		\$5553.88	\$60.12	\$86.78						Bare	Incl.
Crew C-15	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew C-17E	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$51.31	\$76.28	2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.50	\$86.50
2 Carpenters	54.70	875.20	81.65	1306.40			8 Skilled Workers	57.10	3654.40 36.70	85.90	5497.60 40.37	.46	.50
3 Laborers	44.40	1065.60	66.25	1590.00			1 Hyd. Jack with Rods 80 L.H., Daily Totals		\$4636.70		\$6960.37	\$57.96	.50 \$87.00
2 Cement Finishers	51.80	828.80	75.90	1214.40			OU L.H., Dally Totals		Ş4030.7U		\$0900.57		
1 Rodman (reinf.)	58.90	471.20	88.05	704.40	451.01	470.00	Crew C-18	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
72 L.H., Daily Totals		\$3694.40		\$5492.00	\$51.31	\$76.28	.125 Labor Foreman (outside)	\$46.40	\$46.40	\$69.25	\$69.25	\$44.62	\$66.58
Crew C-16	п.	Dalle	п.	D. il.	Bare	Incl. 0&P	1 Laborer	\$40.40 44.40	340.40 355.20	66.25	530.00	J.02	÷00.00
	Hr.	Daily	Hr.	Daily	Costs		1 Concrete Cart, 10 C.F.		116.95	00120	128.65	12.99	14.29
1 Labor Foreman (outside) 3 Laborers	\$46.40 44.40	\$371.20 1065.60	\$69.25 66.25	\$554.00 1590.00	\$48.89	\$72.53	9 L.H., Daily Totals		\$518.55		\$727.89	\$57.62	\$80.88
3 Laborers 2 Cement Finishers	44.40 51.80	1065.60 828.80	66.25 75.90	1590.00 1214.40								Bare	Incl.
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20			Crew C-19	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Gunite Pump Rig		321.75		353.93			.125 Labor Foreman (outside)	\$46.40	\$46.40	\$69.25	\$69.25	\$44.62	\$66.58
2 -50' Air Hoses, 3/4"		14.30		15.73			1 Laborer	44.40	355.20	66.25	530.00		
2 -50' Air Hoses, 2"		57.90		63.69	7.03	7.74	1 Concrete Cart, 18 C.F.		138.95		152.85	15.44	16.98
56 L.H., Daily Totals		\$3131.55		\$4494.94	\$55.92	\$80.27	9 L.H., Daily Totals		\$540.55		\$752.10	\$60.06	\$83.57
					Bare	Incl.						Bare	Incl.
Crew C-16A	Hr.	Daily	Hr.	Daily	Costs	0&P	Crew C-20	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$51.75	\$76.49	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.40	\$70.54
2 Cement Finishers	51.80	828.80	75.90	1214.40			5 Laborers	44.40	1776.00	66.25	2650.00		
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20			1 Cement Finisher	51.80	414.40	75.90	607.20		
1 Gunite Pump Rig		321.75		353.93			1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20		
2 -50' Air Hoses, 3/4" 2 -50' Air Hoses, 2"		14.30 57.90		15.73 63.69			2 Gas Engine Vibrators 1 Concrete Pump (Small)		54.30 423.65		59.73 466.01	7.47	8.21
1 Telescoping Boom Lift, to 60'		292.45		321.69	21.45	23.59	64 L.H., Daily Totals		\$3511.55		\$5040.15	\$54.87	\$78.75
32 L.H., Daily Totals		\$2342.40		\$3202.64	\$73.20	\$100.08	or Lin, Dully Iolais		90011.00		900 <del>-</del> 0.10	90 <b>-</b> 1.07	φι0.13
. ,			I										

Crew No.	Bai	re Costs	Sut	Incl. os O&P		ost abor-Hour	Crew No.	Bare	Costs		ncl. os O&P		Cost abor-Hour
Crew C-21	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew C-30	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$47.40	\$70.54	1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25
5 Laborers	44.40	1776.00	66.25	2650.00			1 Concrete Mixer, 10 C.F.		147.15		161.87	18.39	20.23
1 Cement Finisher	51.80	414.40	75.90	607.20			8 L.H., Daily Totals		\$502.35		\$691.87	\$62.79	\$86.48
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20								Bare	Incl.
2 Gas Engine Vibrators		54.30		59.73			Crew C-31	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Concrete Conveyer		206.25		226.88	4.07	4.48	1 Cement Finisher	\$51.80	\$414.40	\$75.90	\$607.20	\$51.80	\$75.90
64 L.H., Daily Totals		\$3294.15		\$4801.01	\$51.47	\$75.02	1 Grout Pump		321.75		353.93	40.22	44.24
Crew C-22	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	8 L.H., Daily Totals		\$736.15		\$961.13	\$92.02 Bare	\$120.14 Incl.
1 Rodman Foreman (outside)	\$60.90	\$487.20	\$91.05	\$728.40	\$59.19	\$88.47	Crew C-32	Hr.	Daily	Hr.	Daily	Costs	0&P
4 Rodmen (reinf.)	58.90	1884.80	88.05	2817.60			1 Cement Finisher	\$51.80	\$414.40	\$75.90	\$607.20	\$48.10	\$71.08
.125 Equip. Oper. (crane)	61.45	61.45	91.55	91.55			1 Laborer	44.40	355.20	66.25	530.00		
.125 Equip. Oper. (oiler) .125 Hyd. Crane, 25 Ton	52.50	52.50 73.34	78.25	78.25 80.67	1.75	1.92	1 Crack Chaser Saw, Gas, 6 H.P.		73.25		80.58		
42 L.H., Daily Totals		\$2559.29		\$3796.47	\$60.94	\$90.39	1 Vacuum Pick-Up System		74.95		82.44	9.26	10.19
42 L.H., Daliy Tolais		ŞZJJ9.29		Ş3790.47			16 L.H., Daily Totals		\$917.80		\$1300.22	\$57.36	\$81.26
Crew C-23	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew D-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.48	\$86.30	1 Bricklayer	\$53.70	\$429.60	\$80.90	\$647.20	\$48.70	\$73.38
6 Skilled Workers	57.10	2740.80	85.90	4123.20			1 Bricklayer Helper	43.70	349.60	65.85	526.80		
1 Equip. Oper. (crane) 1 Equip. Oper. (oiler)	61.45 52.50	491.60 420.00	91.55 78.25	732.40 626.00			16 L.H., Daily Totals		\$779.20		\$1174.00	\$48.70	\$73.38
1 Equip. Oper. (olier) 1 Lattice Boom Crane, 90 Ton	52.50	420.00	/0.20	1884.30	21.41	23.55						Bare	Incl.
80 L.H., Daily Totals		\$6311.00		\$8788.30	\$78.89	\$109.85	Crew D-2	Hr.	Daily	Hr.	Daily	Costs	0&P
ou cini, buily lotais		Q0011.00		Q0700.30	Bare	Incl.	3 Bricklayers	\$53.70	\$1288.80	\$80.90	\$1941.60	\$50.15	\$75.50
Crew C-23A	Hr.	Daily	Hr.	Daily	Costs	0&P	2 Bricklayer Helpers	43.70	699.20	65.85	1053.60		
1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$49.83	\$74.31	.5 Carpenter	54.70	218.80	81.65	326.60		
2 Laborers	44.40	710.40	66.25	1060.00	Q40.00	Ş/ <del>4</del> .51	44 L.H., Daily Totals		\$2206.80		\$3321.80	\$50.15	\$75.50
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40								Bare	Incl.
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00			Crew D-3	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Crawler Crane, 100 Ton		2310.00		2541.00			3 Bricklayers	\$53.70	\$1288.80	\$80.90	\$1941.60	\$49.94	\$75.20
3 Conc. Buckets, 8 C.Y.		337.95		371.75	66.20	72.82	2 Bricklayer Helpers	43.70	699.20	65.85	1053.60		
40 L.H., Daily Totals		\$4641.15		\$5885.15	\$116.03	\$147.13	.25 Carpenter	54.70	109.40	81.65	163.30		477.00
Crew C-24	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	42 L.H., Daily Totals		\$2097.40		\$3158.50	\$49.94 Bare	\$75.20 Incl.
2 Skilled Worker Foremen (out)	\$59.10	\$945.60	\$88.90	\$1422.40	\$57.48	\$86.30	Crew D-4	Hr.	Daily	Hr.	Daily	Costs	0&P
6 Skilled Workers	57.10	2740.80	85.90	4123.20		,	1 Bricklayer	\$53.70	\$429.60	\$80.90	\$647.20	\$49.15	\$73.83
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			2 Bricklayer Helpers	43.70	699.20	65.85	1053.60		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00			1 Equip. Oper. (light)	55.50	444.00	82.70	661.60		
1 Lattice Boom Crane, 150 Ton		2324.00		2556.40	29.05	31.95	1 Grout Pump, 50 C.F./hr.		190.35		209.38	5.95	6.54
80 L.H., Daily Totals		\$6922.00		\$9460.40	\$86.53	\$118.26	32 L.H., Daily Totals		\$1763.15		\$2571.78	\$55.10	\$80.37
Crew C-25	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew D-5	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P
2 Rodmen (reinf.) 2 Rodmen Helpers	\$58.90 35.95	\$942.40 575.20	\$88.05 58.25	\$1408.80 932.00	\$47.42	\$73.15	1 Bricklayer 8 L.H., Daily Totals	53.70	429.60 \$429.60	80.90	647.20 \$647.20	53.70 \$53.70	80.90 \$80.90
32 L.H., Daily Totals	30.90	\$1517.60	J0.2J	\$2340.80	\$47.42	\$73.15	8 L.H., Dally Totals		\$429.00		\$047.2U	\$53.70 Bare	\$80.90
					Bare	Incl.	Crew D-6	Hr.	Daily	Hr.	Daily	Costs	0&P
Crew C-27	Hr.	Daily	Hr.	Daily	Costs	0&P	3 Bricklayers	\$53.70	\$1288.80	\$80.90	\$1941.60	\$48.94	\$73.71
2 Cement Finishers	\$51.80	\$828.80	\$75.90	\$1214.40	\$51.80	\$75.90	3 Bricklayer Helpers	43.70	1048.80	65.85	1580.40		
1 Concrete Saw		112.85		124.14	7.05	7.76	.25 Carpenter	54.70	109.40	81.65	163.30		
16 L.H., Daily Totals		\$941.65		\$1338.54	\$58.85	\$83.66	50 L.H., Daily Totals		\$2447.00		\$3685.30	\$48.94	\$73.71
Crew C-28	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew D-7	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P
1 Cement Finisher	\$51.80	\$414.40	\$75.90	\$607.20	\$51.80	\$75.90	1 Tile Layer	\$51.70	\$413.60	\$75.55	\$604.40	\$46.65	\$68.17
1 Portable Air Compressor, Gas		38.80		42.68	4.85	5.34	1 Tile Layer Helper	41.60	332.80	60.80	486.40		
8 L.H., Daily Totals		\$453.20		\$649.88	\$56.65	\$81.23	16 L.H., Daily Totals		\$746.40		\$1090.80	\$46.65	\$68.17
Crew C-29	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew D-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	3 Bricklayers	\$53.70	\$1288.80	\$80.90	\$1941.60	\$49.70	\$74.88
1 Pressure Washer	Ψ <b>Τ</b> .40	97.35	.200.2J	\$330.00 107.08	12.17	300.25 13.39	2 Bricklayer Helpers	43.70	51288.80 699.20	65.85	1053.60	QTJ./U	γ, τ.00
8 L.H., Daily Totals		\$452.55		\$637.09	\$56.57	\$79.64	40 L.H., Daily Totals		\$1988.00		\$2995.20	\$49.70	\$74.88

Crew No.	Bar	re Costs	Sut	Incl. os O&P		ost abor-Hour	Crew No.	Bare	: Costs	lı Sub
Crew D-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew E-3A	Hr.	Daily	Hr.
3 Bricklayers	\$53.70	\$1288.80	\$80.90	\$1941.60	\$48.70	\$73.38	1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40
3 Bricklayer Helpers	43.70	1048.80	65.85	1580.40			1 Struc. Steel Worker	60.30	482.40	93.30
48 L.H., Daily Totals		\$2337.60		\$3522.00	\$48.70	\$73.38	1 Welder	60.30	482.40	93.30
Crew D-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Welder, Gas Engine, 300 amp 1 Telescoping Boom Lift, to 40'		148.75 281.90	
1 Bricklayer Foreman (outside)	\$55.70	\$445.60	\$83.90	\$671.20	\$53.64	\$80.55	24 L.H., Daily Totals		\$1893.85	
1 Bricklayer	53.70	429.60	80.90	647.20	, vooro	çoonoo				
1 Bricklayer Helper	43.70	349.60	65.85	526.80			Crew E-4	Hr.	Daily	Hr.
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40
1 S.P. Crane, 4x4, 12 Ton	ĺ	432.65		475.92	13.52	14.87	3 Struc. Steel Workers	60.30	1447.20	93.30
32 L.H., Daily Totals		\$2149.05		\$3053.51	\$67.16	\$95.42	1 Welder, Gas Engine, 300 amp		148.75	
Crew D-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	32 L.H., Daily Totals		\$2094.35	
1 Bricklayer Foreman (outside)	\$55.70	\$445.60	\$83.90	\$671.20	\$51.03	\$76.88	Crew E-5	Hr.	Daily	Hr.
1 Bricklayer	53.70	429.60	80.90	647.20		<i><b></b><i></i></i>	2 Struc. Steel Foremen (outside)	\$62.30	\$996.80	\$96.40
1 Bricklayer Helper	43.70	349.60	65.85	526.80			5 Struc. Steel Workers	60.30	2412.00	93.30
24 L.H., Daily Totals		\$1224.80		\$1845.20	\$51.03	\$76.88	1 Equip. Oper. (crane)	61.45	491.60	91.55
		VILL 1.00		Q1010.20			1 Welder	60.30	482.40	93.30
Crew D-12	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Equip. Oper. (oiler)	52.50	420.00	78.25
	\$55.70		\$83.90				1 Lattice Boom Crane, 90 Ton	1	1713.00	
1 Bricklayer Foreman (outside) 1 Bricklayer	\$00.70 53.70	\$445.60 429.60	\$83.90 80.90	\$671.20 647.20	\$49.20	\$74.13	1 Welder, Gas Engine, 300 amp	1	148.75	
2 Bricklayer Helpers	43.70	429.00 699.20	65.85	1053.60			80 L.H., Daily Totals		\$6664.55	
32 L.H., Daily Totals	43.70	\$1574.40	05.05	\$2372.00	\$49.20	\$74.13				
SZ E.M., Dully lotals		Ş107-1.40		ŞE372.00			Crew E-6	Hr.	Daily	Hr.
Crew D-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	3 Struc. Steel Foremen (outside)	\$62.30	\$1495.20	\$96.40
1 Bricklayer Foreman (outside)	\$55.70	\$445.60	\$83.90	\$671.20	\$52.16	\$78.28	9 Struc. Steel Workers	60.30	4341.60	93.30
1 Bricklayer	\$55.70 53.70	\$445.60 429.60	\$65.90 80.90	\$671.20 647.20	\$52.10	\$/0.20	1 Equip. Oper. (crane)	61.45	491.60	91.55
2 Bricklayer Helpers	43.70	699.20	65.85	1053.60			1 Welder	60.30	482.40	93.30
1 Carpenter	54.70	437.60	81.65	653.20			1 Equip. Oper. (oiler)	52.50	420.00	78.25
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			1 Equip. Oper. (light)	55.50	444.00	82.70
1 S.P. Crane, 4x4, 12 Ton	01.10	432.65	51.00	475.92	9.01	9.91	1 Lattice Boom Crane, 90 Ton	1	1713.00	
48 L.H., Daily Totals		\$2936.25		\$4233.52	\$61.17	\$88.20	1 Welder, Gas Engine, 300 amp	1	148.75	
······································					Bare	Incl.	1 Air Compressor, 160 cfm 2 Impact Wrenches		212.30 90.30	
Crew D-14	Hr.	Daily	Hr.	Daily	Costs	0&P	128 L.H., Daily Totals		\$9839.15	
3 Bricklayers	\$53.70	\$1288.80	\$80.90	\$1941.60	\$51.20	\$77.14				
1 Bricklayer Helper	43.70	349.60	65.85	526.80			Crew E-7	Hr.	Daily	Hr.
32 L.H., Daily Totals		\$1638.40		\$2468.40	\$51.20	\$77.14	1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40
Crew E-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	4 Struc. Steel Workers	60.30	1929.60	93.30
							1 Equip. Oper. (crane)	61.45	491.60	91.55
1 Welder Foreman (outside) 1 Welder	\$62.30	\$498.40 482.40	\$96.40 93.30	\$771.20	\$59.37	\$90.80	1 Equip. Oper. (oiler)	52.50	420.00	78.25 96.40
1 Equip. Oper. (light)	60.30 55.50	482.40	95.50 82.70	746.40 661.60			1 Welder Foreman (outside) 2 Welders	62.30 60.30	498.40 964.80	90.40 93.30
1 Welder, Gas Engine, 300 amp	55.50	148.75	02.70	163.63	6.20	6.82	1 Lattice Boom Crane, 90 Ton	00.30	1713.00	93.30
24 L.H., Daily Totals		\$1573.55		\$2342.82	\$65.56	\$97.62	2 Welder, Gas Engine, 300 amp		297.50	
24 L.H., Dally Totals		ŞI J7 J. JJ		JZJ42.02			80 L.H., Daily Totals		\$6813.30	
Crew E-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P				
1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$59.64	\$91.34	Crew E-8	Hr.	Daily	Hr.
4 Struc. Steel Workers	60.30	1929.60	93.30	2985.60			1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			4 Struc. Steel Workers	60.30	1929.60	93.30
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00	20.50	22.65	1 Welder Foreman (outside)	62.30	498.40	96.40
1 Lattice Boom Crane, 90 Ton	<u> </u>	1713.00		1884.30	30.59	33.65	4 Welders 1 Equip. Oper. (crane)	60.30	1929.60	93.30 91.55
56 L.H., Daily Totals	<b></b>	\$5052.60		\$6999.50	\$90.22	\$124.99	1 Equip. Oper. (crane) 1 Equip. Oper. (oiler)	61.45 52.50	491.60 420.00	91.55 78.25
				<b>N</b> "	Bare	Incl.	1 Equip. Oper. (light)	55.50	420.00 444.00	82.70
Crew E-3	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Lattice Boom Crane, 90 Ton	00.00	1713.00	02.70
1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$60.97	\$94.33	4 Welder, Gas Engine, 300 amp	1	595.00	
1 Struc. Steel Worker	60.30	482.40	93.30	746.40			104 L.H., Daily Totals		\$8519.60	1
1 Welder 1 Welder Cas Engine 200 amp	60.30	482.40	93.30	746.40	6.00	6 00	. , ,			<u> </u>
1 Welder, Gas Engine, 300 amp		148.75		163.63	6.20	6.82				
24 L.H., Daily Totals		\$1611.95		\$2427.63	\$67.16	\$101.15				

Incl.

Subs O&P

Daily

\$771.20

746.40

746.40 163.63 310.09

\$2737.72

Daily

\$771.20

2239.20 163.63

\$3174.03

\$1542.40

3732.00

732.40

746.40

626.00 1884.30 163.63

\$9427.13

\$2313.60

6717.60

732.40

746.40

626.00 661.60

1884.30 163.63 233.53 99.33

\$14178.39

Daily

\$771.20

2985.60

732.40

626.00

771.20

1492.80 1884.30 327.25

\$9590.75

Daily

\$771.20

2985.60

771.20

2985.60

732.40

626.00

661.60 1884.30 654.50

\$12072.40

Daily

Daily

Cost

Per Labor-Hour

Incl.

0&P

\$94.33

19.74

\$114.07

Incl.

0&P

\$94.08

5.11

\$99.19

Incl.

0&P

\$92.24

25.60

\$117.84

Incl. 0&P

\$92.17

18.60

\$110.77

Incl. 0&P

\$92.24

27.64

\$119.88

Incl.

0&P

\$91.67

24.41

\$116.08

Bare

Costs

\$60.97

17.94

\$78.91

Bare

Costs

\$60.80

4.65

\$65.45

Bare

Costs

\$60.03

23.27

\$83.31

Bare

Costs

\$59.96

16.91

\$76.87

Bare

Costs

\$60.03

25.13

\$85.17

Bare

Costs

\$59.73

22.19

\$81.92

truc. Steel Workers 60.30 241 (elder Foreman (outside) 62.30 49 (elders 60.30 241	1	iubs O&P	Per	Cost Labor-Hou
truc. Steel Foremen (outside)         \$62.30         \$99           truc. Steel Workers         60.30         241           (elder Foreman (outside)         62.30         49           (elders         60.30         241	ily Hr.	Daily	Bare Costs	Incl. 0&P
truc. Steel Workers         60.30         241           (elder Foreman (outside)         62.30         49           (elders         60.30         241	6.80 \$96.4		\$59.96	\$92.17
Velder Foreman (outside)         62.30         49           Velders         60.30         241	2.00 93.3			<i>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</i>
	8.40 96.4			
	2.00 93.3	0 3732.00		
quip. Oper. (crane) 61.45 49	1.60 91.5	5 732.40		
quip. Oper. (oiler) 52.50 42	0.00 78.2	5 626.00		
	4.00 82.7			
-	3.00	1884.30		
	3.75	818.13	19.19	21.11
B L.H., Daily Totals \$1013	1.55	\$14500.03	\$79.15 Bare	\$113.28 Incl.
Crew E-10 Hr. Da	ily Hr.	Daily	Costs	0&P
elder Foreman (outside) \$62.30 \$498	3.40 \$96.4	0 \$771.20	\$61.30	\$94.85
/elder 60.30 482	2.40 93.3	0 746.40		
	3.75	163.63		
	0.05	935.05	62.42	
L.H., Daily Totals \$197	9.60	\$2616.28	\$123.72	\$163.52
Crew E-11 Hr. Da	ily Hr.	Daily	Bare Costs	Incl. 0&P
ainters, Struc. Steel \$47.20 \$755	•		\$48.58	
	5.20 66.2			
Ŭ	1.00 82.7			
ir Compressor, 250 cfm 202	2.85	223.13		
andblaster, Portable, 3 C.F. 8	3.85	92.23		
et Sand Blasting Accessories 15	5.55	17.11	9.45	10.39
L.H., Daily Totals \$1850	5.65	\$2736.88	\$58.02	\$85.53
Crew E-11A Hr. Da	ily Hr.	Daily	Bare Costs	Incl. 0&P
ainters, Struc. Steel \$47.20 \$755			\$48.58	\$75.14
	5.20 575.8		940.00	Ş/J.14
Ŭ	1.00 82.7			
	2.85	223.13		
	3.85	92.23		
et Sand Blasting Accessories	5.55	17.11		
elescoping Boom Lift, to 60' 292	2.45	321.69	18.58	20.44
.H., Daily Totals \$214	9.10	\$3058.57	\$67.16	\$95.58
Crew E-11B Hr. Da	ily Hr.	Daily	Bare Costs	Incl. 0&P
ainters, Struc. Steel \$47.20 \$75			\$46.27	\$72.62
	5.20 66.2			
aint Sprayer, 8 C.F.M. 88	3.40	97.24		
elescoping Boom Lift, to 60' 292	2.45	321.69	15.87	
L.H., Daily Totals \$149	1.25	\$2161.74	\$62.14	\$90.07
0 mm E 10	ily Hr.	Daily	Bare Costs	Incl. 0&P
Crew E-12 Hr. Da	-		\$58.90	\$89.55
	1.00 82.7		000.00	÷03.00
/elder Foreman (outside) \$62.30 \$498		163.63	9.30	10.23
/elder Foreman (outside) \$62.30 \$498	5./5	\$1596.43	\$68.20	\$99.78
relder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444		\$1JJ0.4J	Q00.20	222.10
leider Foreman (outside)         \$62.30         \$490           quip. Oper. (light)         55.50         444           leider, Gas Engine, 300 amp         148         149           L.H., Daily Totals         \$109         109	1.15		Bare	Incl.
felder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           felder, Gas Engine, 300 amp         148         148           L.H., Daily Totals         \$109         \$109           Crew E-13         Hr.         Date	1.15 ily Hr.	Daily	Bare Costs	Incl. 0&P
lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           lelder, Gas Engine, 300 amp         144           L.H., Daily Totals         \$109           Crew E-13         Hr.         Da           lelder Foreman (outside)         \$62.30         \$498	1.15 ily Hr. .40 \$96.4	<b>Daily</b> 0 \$771.20	Bare	Incl.
leider Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           leider, Gas Engine, 300 amp         144           L.H., Daily Totals         \$109           Crew E-13           Hr.         Da           leider Foreman (outside)         \$62.30         \$498           squip. Oper. (light)         55.50         222	I.15           ily         Hr.           .40         \$96.4           .00         82.7	<b>Daily</b> 0 \$771.20 0 330.80	Bare Costs \$60.03	Incl. 0&P \$91.83
lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           lelder, Gas Engine, 300 amp         144           L.H., Daily Totals         \$1093           Crew E-13           Hr.         Da           lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         222           lelder, Gas Engine, 300 amp         148         \$1093	I.15         Hr.           .40         \$96.4           .00         82.7           .75         \$2000000000000000000000000000000000000	<b>Daily</b> 0 \$771.20 0 330.80 163.63	Bare Costs \$60.03 12.40	Incl. 0&P \$91.83 13.64
leider Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           leider, Gas Engine, 300 amp         144           L.H., Daily Totals         \$109           Crew E-13           Hr.         Da           leider Foreman (outside)         \$62.30         \$498           squip. Oper. (light)         55.50         222	I.15         Hr.           .40         \$96.4           .00         82.7           .75         \$2000000000000000000000000000000000000	<b>Daily</b> 0 \$771.20 0 330.80	Bare Costs           \$60.03           12.40           \$72.43	Incl. 0&P \$91.83 13.64 \$105.47
lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           lelder, Gas Engine, 300 amp         144           L.H., Daily Totals         \$1093           Crew E-13           Hr.         Da           lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         222           lelder, Gas Engine, 300 amp         148         \$1093	I.15         Hr.           ily         Hr.           .40         \$96.4           .00         82.7           .75	Daily           0         \$771.20           0         330.80           163.63         \$1265.63	Bare Costs \$60.03 12.40	Incl. 0&P \$91.83 13.64
lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           lelder, Gas Engine, 300 amp         148         148           L.H., Daily Totals         \$109         \$109           Crew E-13         Hr.         Da           lelder Foreman (outside)         \$62.30         \$498           i:quip. Oper. (light)         55.50         222           lelder Foreman (outside)         \$62.30         \$498           i:quip. Oper. (light)         55.50         222           lelder, Gas Engine, 300 amp         148         L.H., Daily Totals	I.15         Hr.           ily         Hr.           .40         \$96.4           .00         82.7           .75	Daily           0         \$771.20           0         330.80           163.63         \$1265.63           Daily	Bare Costs           \$60.03           12.40           \$72.43           Bare	Incl. 0&P \$91.83 13.64 \$105.47 Incl.
lelder Foreman (outside)         \$62.30         \$498           quip. Oper. (light)         55.50         444           lelder, Gas Engine, 300 amp         148         148           L.H., Daily Totals         \$1093         \$1093           Crew E-13         Hr.         Da           lelder Foreman (outside)         \$62.30         \$498           i:quip. Oper. (light)         55.50         222           lelder, Gas Engine, 300 amp         148         L.H., Daily Totals           Crew E-14         Hr.         Da	I.15         Hr.           ily         Hr.           .40         \$96.4           .00         82.7           .15	Daily           0         \$771.20           0         330.80           163.63         \$1265.63           Daily	Bare Costs           \$60.03           12.40           \$72.43           Bare Costs	Incl. 0&P \$91.83 13.64 \$105.47 Incl. 0&P

Crew No.	Bare	: Costs		ncl. os O&P		Cost abor-Hour
Crew E-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Welder Foreman (outside) 1 Welder	\$62.30 60.30	\$498.40 482.40	\$96.40 93.30	\$771.20 746.40	\$61.30	\$94.85
1 Welder, Gas Engine, 300 amp	00.50	148.75	93.30	163.63	9.30	10.23
16 L.H., Daily Totals		\$1129.55		\$1681.22	\$70.60	\$105.08
Crew E-17	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker	\$62.30 60.30	\$498.40 482.40	\$96.40 93.30	\$771.20 746.40	\$61.30	\$94.85
16 L.H., Daily Totals		\$980.80		\$1517.60	\$61.30	\$94.85
Crew E-18	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$60.44	\$92.84
3 Structural Steel Workers 1 Equipment Operator (med.)	60.30 59.00	1447.20 472.00	93.30 87.90	2239.20 703.20		
1 Lattice Boom Crane, 20 Ton	55.00	1526.00	07.50	1678.60	38.15	41.97
40 L.H., Daily Totals		\$3943.60		\$5392.20	\$98.59	\$134.81
Crew E-19	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P
1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$59.37	\$90.80
1 Structural Steel Worker	60.30	482.40	93.30	746.40		
1 Equip. Oper. (light) 1 Lattice Boom Crane, 20 Ton	55.50	444.00 1526.00	82.70	661.60 1678.60	63.58	69.94
24 L.H., Daily Totals		\$2950.80		\$3857.80	\$122.95	\$160.74
					Bare	Incl.
Crew E-20	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Struc. Steel Foreman (outside) 5 Structural Steel Workers	\$62.30 60.30	\$498.40 2412.00	\$96.40 93.30	\$771.20 3732.00	\$59.72	\$91.59
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
1 Lattice Boom Crane, 40 Ton		2127.00 \$5949.00		2339.70	33.23 \$92.95	36.56 \$128.15
64 L.H., Daily Totals		ŞU949.00		\$8201.30	392.90 Bare	\$126.15
Crew E-22	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Skilled Worker Foreman (out) 2 Skilled Workers	\$59.10 57.10	\$472.80 913.60	\$88.90 85.90	\$711.20 1374.40	\$57.77	\$86.90
24 L.H., Daily Totals		\$1386.40		\$2085.60	\$57.77	\$86.90
Crew E-24	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
3 Structural Steel Workers	\$60.30	\$1447.20	\$93.30	\$2239.20	\$59.98	\$91.95
1 Equipment Operator (med.)	59.00	472.00	87.90	703.20	10.00	00.17
1 Hyd. Crane, 25 Ton 32 L.H., Daily Totals		586.70 \$2505.90		645.37 \$3587.77	18.33 \$78.31	20.17 \$112.12
SE Lini, Dully Totals		Ş2000.90		<i>\$3301.11</i>	Bare	Incl.
Crew E-25	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Welder Foreman (outside) 1 Cutting Torch	\$62.30	\$498.40 12.95	\$96.40	\$771.20 14.24	\$62.30 1.62	\$96.40 1.78
8 L.H., Daily Totals		\$511.35		\$785.45	\$63.92	\$98.18
0 5 00		<b>.</b>			Bare	Incl.
Crew E-26	Hr.	Daily	Hr.	Daily \$771.20	<b>Costs</b> \$61.64	0&P \$94.84
1 Struc Staal Foromon (outcide)	¢62.20	¢100 10				
1 Struc. Steel Foreman (outside) 1 Struc. Steel Worker	\$62.30 60.30	\$498.40 482.40	\$96.40 93.30		Ş01.04	J94.04
	\$62.30 60.30 60.30	\$498.40 482.40 482.40	\$96.40 93.30 93.30	746.40 746.40 746.40	Ş01.04	JJ4.04
1 Struc. Steel Worker 1 Welder .25 Electrician	60.30 60.30 63.70	482.40 482.40 127.40	93.30 93.30 94.65	746.40 746.40 189.30	Ş01.04	J34.04
1 Struc. Steel Worker 1 Welder	60.30 60.30	482.40 482.40	93.30 93.30	746.40 746.40	5.31	5.84

		u		Inci.	0	ost				li	ncl.		Cost
Crew No.	Ba	re Costs	Sut	inci. os O&P		ibor-Hour	Crew No.	Bare	Costs		is O&P		.abor-Hour
Crew E-27	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew G-2A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$59.72	\$91.59	1 Roofer Composition	\$48.20	\$385.60	\$78.15	\$625.20	\$42.85	\$67.55
5 Struc. Steel Workers	60.30	2412.00	93.30	3732.00			1 Roofer Helper	35.95	287.60	58.25	466.00	1	
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			1 Building Laborer	44.40	355.20	66.25	530.00		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00			1 Foam Spray Rig, Trailer-Mtd.		530.15		583.16	26.76	20.44
1 Hyd. Crane, 12 Ton 1 Hyd. Crane, 80 Ton		475.80 1458.00		523.38 1603.80	30.22	33.24	1 Pickup Truck, 3/4 Ton		112.20		123.42	26.76	29.44
64 L.H., Daily Totals		\$5755.80		\$7988.78	\$89.93	\$124.82	24 L.H., Daily Totals		\$1670.75		\$2327.78	\$69.61 Bare	\$96.99 Incl.
Crew F-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew G-3 2 Sheet Metal Workers	<b>Hr.</b> \$65.45	<b>Daily</b> \$1047.20	<b>Hr.</b> \$98.70	<b>Daily</b> \$1579.20	Costs \$54.92	0&P \$82.47
4 Carpenters	\$54.70	\$1750.40	\$81.65	\$2612.80	\$56.05	\$83.63	2 Building Laborers	\$05.45 44.40	51047.20 710.40	66.25	1060.00		Ş02.47
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40	\$50.05	QUU.UU	32 L.H., Daily Totals		\$1757.60	00.23	\$2639.20	\$54.92	\$82.47
1 Hyd. Crane, 12 Ton		475.80		523.38	11.90	13.08	SE Lin, Duly lotais		Ş1757.00		Q2000.20		
40 L.H., Daily Totals		\$2717.80		\$3868.58	\$67.94	\$96.71	Crew G-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
0	п.	D. il.		Dalla	Bare	Incl.	1 Labor Foreman (outside)	\$46.40	\$371.20	\$69.25	\$554.00	\$45.07	\$67.25
Crew F-4	Hr.	Daily	Hr.	Daily	Costs	0&P	2 Building Laborers	44.40	710.40	66.25	1060.00		
4 Carpenters	\$54.70	\$1750.40	\$81.65	\$2612.80	\$55.46	\$82.73	1 Flatbed Truck, Gas, 1.5 Ton		198.50		218.35	17.10	10.02
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40			1 Air Compressor, 160 cfm		212.30		233.53	17.12	18.83
1 Equip. Oper. (oiler) 1 Hyd. Crane, 55 Ton	52.50	420.00 990.15	78.25	626.00 1089.17	20.63	22.69	24 L.H., Daily Totals		\$1492.40		\$2065.88	\$62.18	\$86.08
48 L.H., Daily Totals		\$3652.15		\$5060.36	\$76.09	\$105.42	Crew G-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
					Bare	Incl.	1 Roofer Foreman (outside)	\$50.20	\$401.60	\$81.35	\$650.80	\$43.70	\$70.83
Crew F-5	Hr.	Daily	Hr.	Daily	Costs	0&P	2 Roofers Composition	48.20	771.20	78.15	1250.40	Ş <del>4</del> 5.70	Ş70.0J
1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$55.20	\$82.39	2 Roofer Helpers	35.95	575.20	58.25	932.00		
3 Carpenters	54.70	1312.80	81.65	1959.60			1 Application Equipment		194.80		214.28	4.87	5.36
32 L.H., Daily Totals		\$1766.40		\$2636.40	\$55.20	\$82.39	40 L.H., Daily Totals		\$1942.80		\$3047.48	\$48.57	\$76.19
					Bare	inci.						Bare	Incl.
Crew F-6	Hr.	Daily	Hr.	Daily	Costs	0&P	Crew G-6A	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Carpenters	\$54.70	\$875.20	\$81.65	\$1306.40	\$51.93	\$77.47	2 Roofers Composition	\$48.20	\$771.20	\$78.15	\$1250.40	\$48.20	\$78.15
2 Building Laborers	44.40	710.40	66.25	1060.00			1 Small Compressor, Electric		39.30		43.23	F 00	6.51
		491.60	91.55	732.40 523.38	11.90	10.00	2 Pneumatic Nailers 16 L.H., Daily Totals		55.40 \$865.90		60.94 \$1354.57	5.92 \$54.12	6.51 \$84.66
1 Equip. Oper. (crane)	61.45			020.00					2003.90		\$1304.07	1 224 17	Ş84.00
1 Hyd. Crane, 12 Ton	01.40	475.80 \$2553.00		\$3622.18		13.08 \$90.55	TO E.H., Dally Totals						
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals		\$2553.00		\$3622.18	\$63.83 Bare	\$90.55 Incl.	Crew G-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7	Hr.	\$2553.00 <b>Daily</b>	Hr.	Daily	\$63.83 Bare Costs	\$90.55 Incl. O&P	Crew G-7	<b>Hr.</b> \$54.70	\$437.60	<b>Hr.</b> \$81.65	\$653.20	Bare	
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters	<b>Hr.</b> \$54.70	\$2553.00 <b>Daily</b> \$875.20	\$81.65	<b>Daily</b> \$1306.40	\$63.83 Bare	\$90.55 Incl.	Crew G-7 1 Carpenter 1 Small Compressor, Electric		\$437.60 39.30		\$653.20 43.23	Bare Costs \$54.70	<b>0&amp;P</b> \$81.65
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers	Hr.	\$2553.00 Daily \$875.20 710.40		<b>Daily</b> \$1306.40 1060.00	\$63.83 Bare Costs \$49.55	\$90.55 Incl. 0&P \$73.95	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer		\$437.60 39.30 27.70		\$653.20 43.23 30.47	Bare           Costs           \$54.70           8.38	<b>0&amp;P</b> \$81.65 9.21
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters	<b>Hr.</b> \$54.70	\$2553.00 <b>Daily</b> \$875.20	\$81.65	<b>Daily</b> \$1306.40	\$63.83 Bare Costs \$49.55 \$49.55	\$90.55 Incl. 0&P \$73.95 \$73.95	Crew G-7 1 Carpenter 1 Small Compressor, Electric		\$437.60 39.30		\$653.20 43.23	Bare Costs \$54.70 8.38 \$63.08	0&P \$81.65 9.21 \$90.86
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1	Hr. \$54.70 44.40 Hr.	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily	\$81.65 66.25 <b>Hr.</b>	Daily \$1306.40 1060.00 \$2366.40 Daily	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs	\$90.55 Incl. 0&P \$73.95 \$73.95 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1	\$54.70 Hr.	\$437.60 39.30 27.70 \$504.60 <b>Daily</b>	\$81.65 <b>Hr.</b>	\$653.20 43.23 30.47 \$726.90 Daily	Bare           Costs           \$54.70           8.38           \$63.08           Bare           Costs	0&P \$81.65 9.21 \$90.86 Incl. 0&P
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside)	Hr. \$54.70 44.40 Hr. \$50.20	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60	\$81.65 66.25 <b>Hr.</b> \$81.35	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80	\$63.83 Bare Costs \$49.55 \$49.55 Bare	\$90.55 Incl. O&P \$73.95 \$73.95 Incl.	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers	\$54.70 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40	\$81.65 <b>Hr.</b> \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40	Bare Costs \$54.70 8.38 \$63.08 Bare	0&P \$81.65 9.21 \$90.86 Incl.
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition	Hr. \$54.70 44.40 Hr. \$50.20 48.20	\$2553.00 <b>Daily</b> \$875.20 710.40 \$1585.60 <b>Daily</b> \$401.60 1542.40	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs	\$90.55 Incl. 0&P \$73.95 \$73.95 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers	\$54.70 Hr.	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80	\$81.65 <b>Hr.</b>	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48	0&P \$81.65 9.21 \$90.86 Incl. 0&P \$85.85
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers	Hr. \$54.70 44.40 Hr. \$50.20	\$2553.00 <b>Daily</b> \$875.20 710.40 \$1585.60 <b>Daily</b> \$401.60 1542.40 575.20	\$81.65 66.25 <b>Hr.</b> \$81.35	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs	\$90.55 Incl. 0&P \$73.95 \$73.95 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers	\$54.70 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40	\$81.65 <b>Hr.</b> \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40	Bare           Costs           \$54.70           8.38           \$63.08           Bare           Costs           \$56.48           \$56.48	0&P \$81.65 9.21 \$90.86 Incl. 0&P \$85.85 \$85.85
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment	Hr. \$54.70 44.40 Hr. \$50.20 48.20	\$2553.00 <b>Daily</b> \$875.20 710.40 \$1585.60 <b>Daily</b> \$401.60 1542.40 575.20 194.80	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs	\$90.55 Incl. 0&P \$73.95 \$73.95 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals	\$54.70 Hr. \$52.65 60.30	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20	\$81.65 <b>Hr.</b> \$78.40 93.30	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare	0&P \$81.65 9.21 \$90.86 Incl. \$85.85 \$85.85 Incl.
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers	Hr. \$54.70 44.40 Hr. \$50.20 48.20	\$2553.00 <b>Daily</b> \$875.20 710.40 \$1585.60 <b>Daily</b> \$401.60 1542.40 575.20	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs	\$90.55 Incl. 0&P \$73.95 \$73.95 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2	\$54.70 Hr. \$52.65 60.30 Hr.	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b>	\$81.65 Hr. \$78.40 93.30 Hr.	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b>	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare Costs	0&P \$81.65 9.21 \$90.86 Incl. 0&P \$85.85 \$85.85 \$85.85 Incl. 0&P
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck	Hr. \$54.70 44.40 Hr. \$50.20 48.20	\$2553.00 <b>Daily</b> \$875.20 710.40 \$1585.60 <b>Daily</b> \$401.60 1542.40 575.20 194.80 209.95	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 \$44.99	\$90.55 Incl. 0&P \$73.95 \$73.95 Incl. 0&P \$72.92	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2 2 Glaziers	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare	0&P \$81.65 9.21 \$90.86 Incl. \$85.85 \$85.85 Incl.
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot	Hr. \$54.70 44.40 Hr. \$50.20 48.20	\$2553.00 <b>Daily</b> \$875.20 710.40 \$1585.60 <b>Daily</b> \$401.60 1542.40 575.20 194.80 209.95 168.15	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 \$44.99 10.23 \$55.22	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2 2 Glaziers 1 Building Laborer	\$54.70 Hr. \$52.65 60.30 Hr.	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20	\$81.65 Hr. \$78.40 93.30 Hr.	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare Costs           \$56.48           \$256.48           \$256.48           \$38           \$26,48           \$26,48           \$36,48           \$36,48           \$36,48           \$36,49,90	O&P           \$81.65           9.21           \$90.86           Incl.           O&P           \$85.85           \$85.85           Incl.           Q&P           \$85.85           \$85.85           \$87.85           \$87.85
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr.	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b>	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 10.23 \$55.22 Bare Costs	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2 2 Glaziers	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare Costs	0&P \$81.65 9.21 \$90.86 Incl. 0&P \$85.85 \$85.85 \$85.85 Incl. 0&P
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2 1 Plasterer	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr. \$49.85	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily \$398.80	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b> \$74.25	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily           \$594.00	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 \$44.99 10.23 \$55.22 Bare	\$90.55 Incl. 0&P \$73.95 S73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl.	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2 2 Glaziers 1 Building Laborer	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00	Bare           Costs           \$54.70           8.38           \$63.08           Bare           Costs           \$56.48           \$56.48           Bare           Costs           \$56.48           Bare           Costs           \$56.48           Bare           Costs           \$49.90           \$49.90	O&P           \$81.65           9.21           \$90.86           Incl.           O&P           \$85.85           \$85.85           S85.85           \$87.435           \$74.35
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2 1 Plasterer 1 Plasterer Helper	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr. \$49.85 44.55	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily \$398.80 356.40	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b> \$74.25 66.35	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily           \$594.00           530.80	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 10.23 \$55.22 Bare Costs	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl. 0&P	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2 2 Glaziers 1 Building Laborer 24 L.H., Daily Totals	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65 44.40	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20 \$1197.60	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40 66.25	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00 \$1784.40	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           S56.48           \$49.90           \$49.90           \$49.90           Bare	0&P \$81.65 9.21 \$90.86 Incl. 0&P \$85.85 \$85.85 Incl. \$74.35 \$74.35 Incl.
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2 1 Plasterer 1 Plasterer 1 Plasterer Helper 1 Building Laborer	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr. \$49.85	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily \$398.80 356.40 355.20	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b> \$74.25	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily           \$594.00           530.80           530.00	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 10.23 \$55.22 Bare Costs \$46.27	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl. 0&P \$68.95	Crew G-7 1 Carpenter 1 Small Compressor, Electric 1 Pneumatic Nailer 8 L.H., Daily Totals Crew H-1 2 Glaziers 2 Struc. Steel Workers 32 L.H., Daily Totals Crew H-2 2 Glaziers 1 Building Laborer 24 L.H., Daily Totals Crew H-3	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65 44.40 Hr.	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20 \$1197.60 <b>Daily</b>	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40 66.25 Hr.	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00 \$1784.40 <b>Daily</b>	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare Costs           \$49.90           \$49.90           Bare Costs	O&P           \$81.65           9.21           \$90.86           Incl.           O&P           \$85.85           Incl.           O&P           \$74.35           \$74.35           Incl.           O&P
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2 1 Plasterer 1 Plasterer 1 Plasterer 1 Plasterer 1 Building Laborer 1 Grout Pump, 50 C.F./hr.	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr. \$49.85 44.55	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily \$398.80 356.40 355.20 190.35	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b> \$74.25 66.35	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily           \$594.00           530.80           530.00           209.38	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 10.23 \$55.22 Bare Costs \$46.27 7.93	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl. 0&P \$68.95 8.72	Crew G-7         1 Carpenter         1 Small Compressor, Electric         1 Pneumatic Nailer         8 L.H., Daily Totals         Crew H-1         2 Glaziers         2 Struc. Steel Workers         32 L.H., Daily Totals         Crew H-2         2 Glaziers         1 Building Laborer         24 L.H., Daily Totals         Crew H-3         1 Glazier	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65 44.40 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20 \$1197.60 <b>Daily</b> \$421.20	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40 66.25 Hr. \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00 \$1784.40 <b>Daily</b> \$627.20	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           Bare Costs           \$49.90           \$49.90           Bare Costs	O&P           \$81.65           9.21           \$90.86           Incl.           O&P           \$85.85           Incl.           O&P           \$74.35           \$74.35           Incl.           O&P
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2 1 Plasterer 1 Plasterer 1 Plasterer Helper 1 Building Laborer	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr. \$49.85 44.55	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily \$398.80 356.40 355.20	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b> \$74.25 66.35	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily           \$594.00           530.80           530.00	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 10.23 \$55.22 Bare Costs \$46.27	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl. 0&P \$68.95	Crew G-7         1 Carpenter         1 Small Compressor, Electric         1 Pneumatic Nailer         8 L.H., Daily Totals         Crew H-1         2 Glaziers         2 Struc. Steel Workers         32 L.H., Daily Totals         Crew H-2         2 Glaziers         1 Building Laborer         24 L.H., Daily Totals         Crew H-3         1 Glazier         1 Helper	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65 44.40 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20 \$1197.60 <b>Daily</b> \$421.20 336.40	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40 66.25 Hr. \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00 \$1784.40 <b>Daily</b> \$627.20 509.20	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           \$56.48           \$49.90           \$49.90           Bare Costs           \$49.30           \$47.35	O&P           \$81.65           9.21           \$90.86           Incl.           O&P           \$85.85           Incl.           O&P           \$74.35           \$74.35           \$71.03
1 Hyd. Crane, 12 Ton 40 L.H., Daily Totals Crew F-7 2 Carpenters 2 Building Laborers 32 L.H., Daily Totals Crew G-1 1 Roofer Foreman (outside) 4 Roofers Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot 1 Crew Truck 56 L.H., Daily Totals Crew G-2 1 Plasterer 1 Plasterer 1 Plasterer 1 Building Laborer 1 Grout Pump, 50 C.F./hr.	Hr. \$54.70 44.40 Hr. \$50.20 48.20 35.95 Hr. \$49.85 44.55	\$2553.00 Daily \$875.20 710.40 \$1585.60 Daily \$401.60 1542.40 575.20 194.80 209.95 168.15 \$3092.10 Daily \$398.80 356.40 355.20 190.35	\$81.65 66.25 <b>Hr.</b> \$81.35 78.15 58.25 <b>Hr.</b> \$74.25 66.35	Daily           \$1306.40           1060.00           \$2366.40           Daily           \$650.80           2500.80           932.00           214.28           230.94           184.97           \$4713.79           Daily           \$594.00           530.80           530.00           209.38	\$63.83 Bare Costs \$49.55 \$49.55 Bare Costs \$44.99 10.23 \$55.22 Bare Costs \$46.27 7.93	\$90.55 Incl. 0&P \$73.95 Incl. 0&P \$72.92 11.25 \$84.17 Incl. 0&P \$68.95 8.72	Crew G-7         1 Carpenter         1 Small Compressor, Electric         1 Pneumatic Nailer         8 L.H., Daily Totals         Crew H-1         2 Glaziers         2 Struc. Steel Workers         32 L.H., Daily Totals         Crew H-2         2 Glaziers         1 Building Laborer         24 L.H., Daily Totals         Crew H-3         1 Glazier         1 Helper	\$54.70 Hr. \$52.65 60.30 Hr. \$52.65 44.40 Hr. \$52.65	\$437.60 39.30 27.70 \$504.60 <b>Daily</b> \$842.40 964.80 \$1807.20 <b>Daily</b> \$842.40 355.20 \$1197.60 <b>Daily</b> \$421.20 336.40	\$81.65 Hr. \$78.40 93.30 Hr. \$78.40 66.25 Hr. \$78.40	\$653.20 43.23 30.47 \$726.90 <b>Daily</b> \$1254.40 1492.80 \$2747.20 <b>Daily</b> \$1254.40 530.00 \$1784.40 <b>Daily</b> \$627.20 509.20	Bare Costs           \$54.70           8.38           \$63.08           Bare Costs           \$56.48           \$56.48           \$49.90           \$49.90           \$49.90           \$49.90           \$47.35           \$47.35	O&P           \$81.65           9.21           \$90.86           Incl.           O&P           \$85.85           \$85.85           Incl.           O&P           \$74.35           \$74.35           \$71.03           \$71.03

1 Carpenter

.5 Electrician

1 Carpenter Helper

20 L.H., Daily Totals

\$77.05

\$77.05

\$51.44

\$51.44

\$81.65

63.65

94.65

\$653.20

509.20

378.60

\$1541.00

\$437.60

336.40

254.80

\$1028.80

\$54.70

42.05

63.70

Crew No.		re Costs	Sut	Incl. os O&P		ost Ibor-Hour	Crew No.	Bare	: Costs		ncl. os O&P		Cost abor-Hour
Crew J-1	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P	Crew K-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
3 Plasterers	\$49.85	\$1196.40	\$74.25	\$1782.00	\$47.73	\$71.09	1 Carpenter	\$54.70	\$437.60	\$81.65	\$653.20	\$51.75	\$77.33
2 Plasterer Helpers	44.55	712.80	66.35	1061.60	0.00	2.10	1 Truck Driver (light)	48.80	390.40	73.00	584.00	53.10	50.44
1 Mixing Machine, 6 C.F. 40 L.H., Daily Totals		113.35 \$2022.55		124.69 \$2968.28	2.83 \$50.56	3.12 \$74.21	1 Flatbed Truck, Gas, 3 Ton 16 L.H., Daily Totals		850.05 \$1678.05		935.05 \$2172.26	53.13 \$104.88	58.44 \$135.77
40 L.n., Dally Totals		\$2022.00		\$2900.20			10 L.H., Daily Tolais		\$1070.00		ŞZ17Z.20		
Crew J-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew K-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
3 Plasterers	\$49.85	\$1196.40	\$74.25	\$1782.00	\$48.79	\$72.41	1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$57.13	\$87.57
2 Plasterer Helpers	44.55	712.80	66.35	1061.60			1 Struc. Steel Worker	60.30	482.40	93.30	746.40		
1 Lather	54.10	432.80	79.00	632.00			1 Truck Driver (light)	48.80	390.40	73.00	584.00		
1 Mixing Machine, 6 C.F.		113.35		124.69	2.36	2.60	1 Flatbed Truck, Gas, 3 Ton		850.05		935.05	35.42	38.96
48 L.H., Daily Totals		\$2455.35		\$3600.28	\$51.15	\$75.01	24 L.H., Daily Totals		\$2221.25		\$3036.66	\$92.55	\$126.53
Crew J-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	Crew L-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Terrazzo Worker	\$51.75	\$414.00	\$75.60	\$604.80	\$47.65	\$69.63	1 Electrician	\$63.70	\$509.60	\$94.65	\$757.20	\$65.70	\$97.85
1 Terrazzo Helper	43.55	348.40	63.65	509.20			1 Plumber	67.70	541.60	101.05	808.40	4.05 50	445.45
1 Floor Grinder, 22" Path 1 Terrazzo Mixer		96.05 162.90		105.66 179.19	16.18	17.80	16 L.H., Daily Totals		\$1051.20		\$1565.60	\$65.70	\$97.85
16 L.H., Daily Totals		\$1021.35		\$1398.85	\$63.83	\$87.43	Crew L-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Curry 1.4		Dailu		Dailu	Bare	Incl.	1 Carpenter	\$54.70	\$437.60	\$81.65	\$653.20	\$48.38	\$72.65
Crew J-4	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Carpenter Helper	42.05	336.40	63.65	509.20		4
2 Cement Finishers 1 Laborer	\$51.80 44.40	\$828.80 355.20	\$75.90 66.25	\$1214.40 530.00	\$49.33	\$72.68	16 L.H., Daily Totals		\$774.00		\$1162.40	\$48.38	\$72.65
1 Floor Grinder, 22" Path 1 Floor Edger, 7" Path	44.40	96.05 44.05	00.25	105.66 48.45			Crew L-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Vacuum Pick-Up System		44.05 74.95		48.45 82.44	8.96	9.86	1 Carpenter	\$54.70	\$437.60	\$81.65	\$653.20	\$59.64	\$89.16
24 L.H., Daily Totals		\$1399.05		\$1980.95	\$58.29	\$82.54	.5 Electrician	63.70	254.80	94.65	378.60		
		Q1055.00		Q1300.30	Bare	Incl.	.5 Sheet Metal Worker	65.45	261.80 \$954.20	98.70	394.80 \$1426.60	\$59.64	\$89.16
Crew J-4A	Hr.	Daily	Hr.	Daily	Costs	0&P	16 L.H., Daily Totals		Ş954.20		\$1420.00	\$59.64 Bare	\$89.10
2 Cement Finishers	\$51.80	\$828.80	\$75.90	\$1214.40	\$48.10	\$71.08	Crew L-3A	Hr.	Daily	Hr.	Daily	Costs	0&P
2 Laborers	44.40	710.40	66.25	1060.00			1 Carpenter Foreman (outside)	\$56.70	\$453.60	\$84.60	\$676.80	\$59.62	\$89.30
1 Floor Grinder, 22" Path 1 Floor Edger, 7" Path		96.05 44.05		105.66 48.45			.5 Sheet Metal Worker	65.45	261.80	98.70	394.80		
1 Vacuum Pick-Up System		74.95		82.44			12 L.H., Daily Totals		\$715.40		\$1071.60	\$59.62	\$89.30
1 Floor Auto Scrubber		179.55		197.51	12.33	13.56						Bare	Incl.
32 L.H., Daily Totals		\$1933.80		\$2708.46	\$60.43	\$84.64	Crew L-4	Hr.	Daily	Hr.	Daily	Costs	0&P
					Bare	Incl.	2 Skilled Workers	\$57.10	\$913.60	\$85.90	\$1374.40	\$52.08	\$78.48
Crew J-4B	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Helper	42.05	336.40	63.65	509.20	ĆE0.00	¢70.40
1 Laborer	\$44.40	\$355.20	\$66.25	\$530.00	\$44.40	\$66.25	24 L.H., Daily Totals		\$1250.00		\$1883.60	\$52.08	\$78.48
1 Floor Auto Scrubber 8 L.H., Daily Totals		179.55 \$534.75		197.51 \$727.51	22.44 \$66.84	24.69 \$90.94	Crew L-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
8 L.H., Dally Totals		\$034.70		\$727.51			1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$60.75	\$93.49
Crew J-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	5 Struc. Steel Workers	60.30	2412.00	93.30	3732.00		
2 Painters	\$46.45	\$743.20	\$68.90	\$1102.40	\$48.20	\$71.69	1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Building Laborer	44.40	355.20	66.25	530.00	\$10.20	Q/ 1.05	1 Hyd. Crane, 25 Ton		586.70		645.37	10.48	11.52
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60			56 L.H., Daily Totals		\$3988.70		\$5880.97	\$71.23	\$105.02
1 Air Compressor, 250 cfm		202.85		223.13					<b>.</b> "			Bare	Incl.
1 Sandblaster, Portable, 3 C.F.		83.85		92.23	0.45	10.00	Crew L-5A	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Set Sand Blasting Accessories		15.55		17.11	9.45	10.39	1 Struc. Steel Foreman (outside) 2 Structural Steel Workers	\$62.30 60.30	\$498.40 964.80	\$96.40 93.30	\$771.20 1492.80	\$61.09	\$93.64
32 L.H., Daily Totals		\$1844.65		\$2626.47	\$57.65	\$82.08	1 Equip. Oper. (crane)	61.45	964.80 491.60	93.30	732.40		
Crew J-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 S.P. Crane, 4x4, 25 Ton 32 L.H., Daily Totals	01.70	1155.00 \$3109.80	51.00	1270.50 \$4266.90	36.09 \$97.18	39.70 \$133.34
2 Painters	\$46.45	\$743.20	\$68.90	\$1102.40	\$46.45	\$68.90	32 L.A., Dally Totals		2210 <u>3</u> .00		Ş4200.9U	٥٢.١٥	ŞI 33.34
1 Floor Belt Sander		50.20		55.22	4 71	E 10							
1 Floor Sanding Edger		25.20	1	27.72	4.71	5.18							
16 L.H., Daily Totals		\$818.60		\$1185.34	\$51.16	\$74.08							

Crew No.	Bai	re Costs	Sub	Incl. os O&P		ost Ibor-Hour
Crew L-5B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Struc. Steel Foreman (outside)	\$62.30	\$498.40	\$96.40	\$771.20	\$62.33	\$94.01
2 Structural Steel Workers	60.30	964.80	93.30	1492.80		
2 Electricians	63.70	1019.20	94.65	1514.40		
2 Steamfitters/Pipefitters	68.35	1093.60	102.00	1632.00		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Equip. Oper. (oiler)	52.50	420.00	78.25	626.00		
1 Hyd. Crane, 80 Ton		1458.00		1603.80	20.25	22.27
72 L.H., Daily Totals		\$5945.60		\$8372.60	\$82.58	\$116.29
Crew L-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plumber	\$67.70	\$541.60	\$101.05	\$808.40	\$66.37	\$98.92
5 Electrician	63.70	254.80	94.65	378.60		
2 L.H., Daily Totals		\$796.40		\$1187.00	\$66.37	\$98.92
Crew L-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Carpenters	\$54.70	\$875.20	\$81.65	\$1306.40	\$53.04	\$79.11
1 Building Laborer	44.40	355.20	66.25	530.00		
.5 Electrician	63.70	254.80	94.65	378.60		
28 L.H., Daily Totals		\$1485.20		\$2215.00	\$53.04	\$79.11
Crew L-8	Hr.	Deily	Hr.	Doily	Bare	Incl. 0&P
2 Carpenters	\$54.70	Daily	нг. \$81.65	Chaily	Costs	\$85.53
5 Plumber	\$54.70 67.70	\$875.20 270.80	\$81.05 101.05	\$1306.40 404.20	\$57.30	Ş80.03
0 L.H., Daily Totals	07.70	\$1146.00	101.05	\$1710.60	\$57.30	\$85.53
U L.H., Dally Tolais		\$1146.00		\$1710.60		
Crew L-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
Labor Foreman (inside)	\$44.90	\$359.20	\$67.00	\$536.00	\$50.19	\$75.58
2 Building Laborers	44.40	710.40	66.25	1060.00		
Struc. Steel Worker	60.30	482.40	93.30	746.40		
5 Electrician	63.70	254.80	94.65	378.60		
6 L.H., Daily Totals		\$1806.80		\$2721.00	\$50.19	\$75.58
Crew L-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
	<b>Hr.</b> \$62.30	<b>Daily</b> \$498.40	<b>Hr.</b> \$96.40	<b>Daily</b> \$771.20		
Struc. Steel Foreman (outside)					Costs	0&P
Struc. Steel Foreman (outside) Structural Steel Worker	\$62.30	\$498.40	\$96.40	\$771.20	Costs	0&P
Struc. Steel Foreman (outside) Structural Steel Worker Equip. Oper. (crane)	\$62.30 60.30	\$498.40 482.40	\$96.40 93.30	\$771.20 746.40	Costs	0&P
L Struc. Steel Foreman (outside) L Structural Steel Worker L Equip. Oper. (crane) L Hyd. Crane, 12 Ton	\$62.30 60.30	\$498.40 482.40 491.60	\$96.40 93.30	\$771.20 746.40 732.40	<b>Costs</b> \$61.35	<b>0&amp;P</b> \$93.75
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton	\$62.30 60.30	\$498.40 482.40 491.60 475.80	\$96.40 93.30	\$771.20 746.40 732.40 523.38	Costs \$61.35 19.82	<b>0&amp;P</b> \$93.75 21.81
1 Struc: Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11	\$62.30 60.30 61.45 <b>Hr.</b>	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b>	\$96.40 93.30 91.55 <b>Hr.</b>	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b>	Costs \$61.35 19.82 \$81.17 Bare Costs	0&P \$93.75 21.81 \$115.56 Incl. 0&P
L Struc. Steel Foreman (outside) L Structural Steel Worker L Equip. Oper. (crane) L Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40	Costs \$61.35 19.82 \$81.17 Bare	0&P \$93.75 21.81 \$115.56 Incl.
Struc. Steel Foreman (outside) Structural Steel Worker Equip. Oper. (crane) Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers Equip. Oper. (crane)	\$62.30 60.30 61.45 <b>Hr.</b>	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b>	\$96.40 93.30 91.55 <b>Hr.</b>	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b>	Costs \$61.35 19.82 \$81.17 Bare Costs	0&P \$93.75 21.81 \$115.56 Incl. 0&P
Struc. Steel Foreman (outside) Structural Steel Worker Equip. Oper. (crane) Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 ? Wreckers Equip. Oper. (crane) Equip. Oper. (light)	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60	Costs \$61.35 19.82 \$81.17 Bare Costs	0&P \$93.75 21.81 \$115.56 Incl. 0&P
Struc. Steel Foreman (outside) Structural Steel Worker Equip. Oper. (crane) Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers Equip. Oper. (crane) Equip. Oper. (light) Hyd. Excavator, 2.5 C.Y.	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40	Costs \$61.35 19.82 \$81.17 Bare Costs	0&P \$93.75 21.81 \$115.56 Incl. 0&P
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers 1 Equip. Oper. (crane) 1 Equip. Oper. (light) 1 Hyd. Excavator, 2.5 C.Y. 1 Loader, Skid Steer, 78 H.P.	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00 1567.00	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60 1723.70	Costs           \$61.35           19.82           \$81.17           Bare           Costs           \$51.44	0&P \$93.75 21.81 \$115.56 <b>Incl.</b> 0&P \$77.26
L Struc. Steel Foreman (outside) L Structural Steel Worker L Equip. Oper. (crane) L Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers L Equip. Oper. (crane) L Equip. Oper. (light) L Hyd. Excavator, 2.5 C.Y. L Loader, Skid Steer, 78 H.P.	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00 1567.00 446.30	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60 1723.70 490.93	Costs           \$61.35           19.82           \$81.17           Bare           Costs           \$51.44           62.92           \$114.35	0&P \$93.75 21.81 \$115.56 <b>Incl.</b> 0&P \$77.26 69.21
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers 1 Equip. Oper. (crane) 1 Equip. Oper. (light) 1 Hyd. Excavator, 2.5 C.Y. 1 Loader, Skid Steer, 78 H.P.	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00 1567.00 446.30	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60 1723.70 490.93	Costs           \$61.35           19.82           \$81.17           Bare           Costs           \$51.44           62.92	0&P \$93.75 21.81 \$115.56 <b>Incl.</b> 0&P \$77.26 69.21 \$146.47
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers 1 Equip. Oper. (crane) 1 Equip. Oper. (light) 1 Hyd. Excavator, 2.5 C.Y. 1 Loader, Skid Steer, 78 H.P. 32 L.H., Daily Totals Crew M-1 3 Elevator Constructors	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45 55.50 <b>Hr.</b> \$90.30	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00 1567.00 446.30 \$3659.30 <b>Daily</b> \$2167.20	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55 82.70	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60 1723.70 490.93 \$4687.03	Costs           \$61.35           19.82           \$81.17           Bare           Costs           \$51.44           62.92           \$114.35           Bare	0&P \$93.75 21.81 \$115.56 <b>Incl.</b> 0&P \$77.26 69.21 \$146.47 <b>Incl.</b>
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers 1 Equip. Oper. (crane) 1 Equip. Oper. (light) 1 Hyd. Excavator, 2.5 C.Y. 1 Loader, Skid Steer, 78 H.P. 32 L.H., Daily Totals Crew M-1 3 Elevator Constructors	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45 55.50 <b>Hr.</b>	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00 1567.00 446.30 \$3659.30 <b>Daily</b>	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55 82.70 <b>Hr.</b>	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60 1723.70 490.93 \$4687.03 <b>Daily</b> \$3211.20 856.40	Costs           \$61.35           19.82           \$81.17           Bare           Costs           \$51.44           62.92           \$114.35           Bare           Costs	0&P \$93.75 21.81 \$115.56 <b>Incl.</b> 0&P \$77.26 69.21 \$146.47 <b>Incl.</b> 0&P
1 Struc. Steel Foreman (outside) 1 Structural Steel Worker 1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton 24 L.H., Daily Totals Crew L-11 2 Wreckers 1 Equip. Oper. (crane) 1 Equip. Oper. (light) 1 Hyd. Excavator, 2.5 C.Y. 1 Loader, Skid Steer, 78 H.P. 32 L.H., Daily Totals	\$62.30 60.30 61.45 <b>Hr.</b> \$44.40 61.45 55.50 <b>Hr.</b> \$90.30	\$498.40 482.40 491.60 475.80 \$1948.20 <b>Daily</b> \$710.40 491.60 444.00 1567.00 446.30 \$3659.30 <b>Daily</b> \$2167.20	\$96.40 93.30 91.55 <b>Hr.</b> \$67.40 91.55 82.70 <b>Hr.</b> \$133.80	\$771.20 746.40 732.40 523.38 \$2773.38 <b>Daily</b> \$1078.40 732.40 661.60 1723.70 490.93 \$4687.03 <b>Daily</b> \$3211.20	Costs           \$61.35           19.82           \$81.17           Bare           Costs           \$51.44           62.92           \$114.35           Bare           Costs	0&P \$93.75 21.81 \$115.56 <b>Incl.</b> 0&P \$77.26 69.21 \$146.47 <b>Incl.</b> 0&P

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew M-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman (outside)	\$65.70	\$525.60	\$97.65	\$781.20	\$67.62	\$100.41
1 Common Laborer	44.40	355.20	66.25	530.00	\$67.10L	<b>VICO</b> I
.25 Equipment Operator (med.)	59.00	118.00	87.90	175.80		
1 Elevator Constructor	90.30	722.40	133.80	1070.40		
1 Elevator Apprentice	72.25	578.00	107.05	856.40		
.25 S.P. Crane, 4x4, 20 Ton		143.59		157.95	4.22	4.65
34 L.H., Daily Totals		\$2442.79		\$3571.75	\$71.85	\$105.05
Crew M-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman (outside)	\$65.70	\$525.60	\$97.65	\$781.20	\$66.92	\$99.38
1 Common Laborer	44.40	355.20	66.25	530.00	\$00.5E	<i>ç</i> 55.00
.25 Equipment Operator, Crane	61.45	122.90	91.55	183.10		
.25 Equip. Oper. (oiler)	52.50	105.00	78.25	156.50		
1 Elevator Constructor	90.30	722.40	133.80	1070.40		
1 Elevator Apprentice	72.25	578.00	107.05	856.40		
.25 S.P. Crane, 4x4, 40 Ton		190.45		209.50	5.29	5.82
36 L.H., Daily Totals		\$2599.55		\$3787.09	\$72.21	\$105.20
•					Bare	Incl.
Crew Q-1	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Plumber	\$67.70	\$541.60	\$101.05	\$808.40	\$60.92	\$90.92
1 Plumber Apprentice	54.15	433.20	80.80	646.40	444.444	*** **
16 L.H., Daily Totals		\$974.80		\$1454.80	\$60.92	\$90.92
Crew Q-1A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
.25 Plumber Foreman (outside)	\$69.70	\$139.40	\$104.00	\$208.00	\$68.10	\$101.64
1 Plumber	67.70	541.60	101.05	808.40		
10 L.H., Daily Totals		\$681.00		\$1016.40	\$68.10	\$101.64
0					Bare	Incl.
CLEM D-TC	Hr.	Daily	Hr.	Daily	Costs	0&P
Crew Q-1C		Daily \$541.60		Daily \$808.40		
1 Plumber	Hr. \$67.70 54.15	<b>Daily</b> \$541.60 433.20	Hr. \$101.05 80.80	Daily \$808.40 646.40	\$60.28	<b>0&amp;P</b> \$89.92
•	\$67.70	\$541.60	\$101.05	\$808.40		
1 Plumber 1 Plumber Apprentice	\$67.70 54.15	\$541.60 433.20	\$101.05 80.80	\$808.40 646.40		
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium)	\$67.70 54.15	\$541.60 433.20 472.00	\$101.05 80.80	\$808.40 646.40 703.20	\$60.28	\$89.92
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals	\$67.70 54.15 59.00	\$541.60 433.20 472.00 1894.00 \$3340.80	\$101.05 80.80 87.90	\$808.40 646.40 703.20 2083.40 \$4241.40	\$60.28 78.92 \$139.20 Bare	\$89.92 86.81 \$176.72 Incl.
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2	\$67.70 54.15 59.00 <b>Hr.</b>	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b>	\$101.05 80.80 87.90 <b>Hr.</b>	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b>	\$60.28 78.92 \$139.20 Bare Costs	\$89.92 86.81 \$176.72 Incl. O&P
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80	\$60.28 78.92 \$139.20 Bare	\$89.92 86.81 \$176.72 Incl.
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice	\$67.70 54.15 59.00 <b>Hr.</b>	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20	\$101.05 80.80 87.90 <b>Hr.</b>	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40	\$60.28 78.92 \$139.20 Bare Costs \$63.18	\$89.92 86.81 \$176.72 Incl. 0&P \$94.30
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18	\$89.92 86.81 \$176.72 <b>Incl.</b> \$94.30 \$94.30
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40	\$60.28 78.92 \$139.20 Bare Costs \$63.18	\$89.92 86.81 \$176.72 Incl. 0&P \$94.30
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20	\$60.28 78.92 \$139.20 <b>Bare</b> <b>Costs</b> \$63.18 \$63.18 <b>Bare</b>	\$89.92 86.81 \$176.72 <b>Incl.</b> \$94.30 \$94.30 <b>Incl.</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b>	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b>	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b>	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b>	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> \$94.30 \$94.30 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> \$94.30 \$94.30 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80 101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> \$94.30 \$94.30 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice 32 L.H., Daily Totals	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80 101.05 80.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b>	\$89.92 86.81 \$176.72 Incl. 0&P \$94.30 \$94.30 Incl. 0&P \$96.17
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b>	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b>	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80 101.05 80.80 <b>Hr.</b>	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b>	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice 32 L.H., Daily Totals	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80 101.05 80.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b>	\$89.92 86.81 \$176.72 Incl. 0&P \$94.30 \$94.30 Incl. \$96.17 \$96.17 Incl.
Plumber     Plumber Apprentice     Equip. Oper. (medium)     Trencher, Chain Type, 8' D     24 L.H., Daily Totals     Crew Q-2     2 Plumbers     1 Plumber Apprentice     24 L.H., Daily Totals     Crew Q-3     1 Plumber Foreman (inside)     2 Plumbers     1 Plumber Apprentice     32 L.H., Daily Totals     Crew Q-4     1 Plumber Foreman (inside)	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60 541.60	\$101.05 80.80 87.90 Hr. \$101.05 80.80 Hr. \$101.80 101.05 80.80 Hr. \$101.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4 1 Plumber Foreman (inside) 1 Plumber Foreman (inside) 1 Plumber Foreman (inside) 1 Plumber Foreman (inside)	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60	\$101.05 80.80 87.90 Hr. \$101.05 80.80 Hr. \$101.80 101.05 80.80 Hr. \$101.80 101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40 \$3077.60	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4 1 Plumber Foreman (inside) 1 Plumber (plumber)	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60 541.60	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80 101.05 80.80 <b>Hr.</b> \$101.80 101.05 101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40 \$3077.60	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Foreman (inside) 1 Plumber Plumber 1 Welder (plumber) 1 Plumber Apprentice	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60 541.60 541.60 541.60 433.20	\$101.05 80.80 87.90 <b>Hr.</b> \$101.05 80.80 <b>Hr.</b> \$101.80 101.05 80.80 <b>Hr.</b> \$101.80 101.05 101.05	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40 808.40 808.40 808.40	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs \$64.44 \$64.44	\$89.92 86.81 \$176.72 Incl. 0&P \$94.30 \$94.30 Incl. 0&P \$96.17 \$96.17 Incl. 0&P \$96.17
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Foreman (inside) 2 Plumber S 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4 1 Plumber Foreman (inside) 1 Plumber 1 Plumber Apprentice 1 Plumber 1 Welder (plumber) 1 Plumber Apprentice 1 Welder, Electric, 300 amp 32 L.H., Daily Totals	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60 541.60 541.60 541.60 541.60 541.60 541.60 541.60	\$101.05 80.80 87.90 Hr. \$101.05 80.80 Hr. \$101.80 101.05 80.80 Hr. \$101.80 101.05 101.05 80.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40 808.40 808.40 808.40 808.40 808.40 808.40 \$3195.91	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.80 <b>Bare</b> Costs \$64.80 <b>Bare</b>	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b>
1 Plumber 1 Plumber Apprentice 1 Equip. Oper. (medium) 1 Trencher, Chain Type, 8' D 24 L.H., Daily Totals Crew Q-2 2 Plumbers 1 Plumber Apprentice 24 L.H., Daily Totals Crew Q-3 1 Plumber Foreman (inside) 2 Plumbers 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4 1 Plumber Foreman (inside) 1 Plumber Foreman (inside) 1 Plumber Foreman (inside) 1 Plumber Foreman (inside) 1 Plumber Apprentice 32 L.H., Daily Totals Crew Q-4 1 Plumber Apprentice 1 Welder (plumber) 1 Plumber Apprentice 1 Welder, Electric, 300 amp 32 L.H., Daily Totals Crew Q-5	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b>	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60 541.60 541.60 541.60 541.60 541.60 541.60 541.60 541.60 541.60	\$101.05 80.80 87.90 Hr. \$101.05 80.80 Hr. \$101.80 101.05 80.80 Hr. \$101.80 101.05 80.80 Hr.	\$808.40 646.40 703.20 2083.40 \$4241.40 \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40 808.40 808.40 646.40 118.31 \$3195.91 <b>Daily</b>	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b>
Plumber     Plumber Apprentice     Equip. Call Eq	\$67.70 54.15 59.00 <b>Hr.</b> \$67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15 <b>Hr.</b> \$68.20 67.70 54.15	\$541.60 433.20 472.00 1894.00 \$3340.80 <b>Daily</b> \$1083.20 433.20 \$1516.40 <b>Daily</b> \$545.60 1083.20 433.20 \$2062.00 <b>Daily</b> \$545.60 541.60 541.60 541.60 541.60 541.60 541.60 541.60	\$101.05 80.80 87.90 Hr. \$101.05 80.80 Hr. \$101.80 101.05 80.80 Hr. \$101.80 101.05 101.05 80.80	\$808.40 646.40 703.20 2083.40 \$4241.40 <b>Daily</b> \$1616.80 646.40 \$2263.20 <b>Daily</b> \$814.40 1616.80 646.40 \$3077.60 <b>Daily</b> \$814.40 808.40 808.40 808.40 808.40 808.40 808.40 \$3195.91	\$60.28 78.92 \$139.20 <b>Bare</b> Costs \$63.18 \$63.18 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs \$64.44 \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.44 <b>Bare</b> Costs \$64.80 <b>Bare</b> Costs \$64.80 <b>Bare</b>	\$89.92 86.81 \$176.72 <b>Incl.</b> <b>0&amp;P</b> \$94.30 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>0&amp;P</b> \$96.17 <b>Incl.</b> <b>3</b> .70 \$99.87 <b>Incl.</b>

### Crews - Standard

Crew No.	Ba	re Costs	Sub	Incl. os O&P		ost abor-Hour	Crew No.	Bare	: Costs		ncl. s O&P		Cost .abor-Hou
Crew 0-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew 0-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Steamfitters 1 Steamfitter Apprentice	\$68.35 54.70	\$1093.60 437.60	\$102.00 81.65	\$1632.00 653.20	\$63.80	\$95.22	2 Plumbers 1 Plumber Apprentice	\$67.70 54.15	\$1083.20 433.20	\$101.05 80.80	\$1616.80 646.40	\$63.18	\$94.30
24 L.H., Daily Totals	34.70	\$1531.20	01.00	\$2285.20	\$63.80	\$95.22	1 Welder, Electric, 300 amp	54.15	107.55	00.00	118.31	4.48	4.93
0	П.,	Dalla		D.:lu	Bare	Incl.	24 L.H., Daily Totals		\$1623.95		\$2381.51	\$67.66	\$99.23
Crew Q-7 1 Steamfitter Foreman (inside)	Hr. \$68.85	<b>Daily</b> \$550.80	Hr. \$102.75	Daily \$822.00	<b>Costs</b> \$65.06	0&P \$97.10	Crew 0-17	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
2 Steamfitters	68.35	300.80 1093.60	102.00	1632.00	\$05.00	\$97.10	1 Steamfitter	\$68.35	\$546.80	\$102.00	\$816.00	\$61.52	\$91.83
1 Steamfitter Apprentice	54.70	437.60	81.65	653.20			1 Steamfitter Apprentice	54.70	437.60	81.65	653.20		
32 L.H., Daily Totals		\$2082.00		\$3107.20	\$65.06	\$97.10	1 Welder, Electric, 300 amp		107.55		118.31	6.72	7.39
Crew Q-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	16 L.H., Daily Totals		\$1091.95		\$1587.51	\$68.25	\$99.22
1 Steamfitter Foreman (inside)	\$68.85	\$550.80	\$102.75	\$822.00	\$65.06	\$97.10	Crew Q-17A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Steamfitter	68.35	5550.80 546.80	102.00	\$816.00	Ş0J.00	\$57.10	1 Steamfitter	\$68.35	\$546.80	\$102.00	\$816.00	\$61.50	\$91.73
1 Welder (steamfitter)	68.35	546.80	102.00	816.00			1 Steamfitter Apprentice	54.70	437.60	81.65	653.20		
1 Steamfitter Apprentice	54.70	437.60	81.65	653.20			1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Welder, Electric, 300 amp		107.55		118.31	3.36	3.70	1 Hyd. Crane, 12 Ton		475.80		523.38		
32 L.H., Daily Totals		\$2189.55		\$3225.51	\$68.42	\$100.80	1 Welder, Electric, 300 amp		107.55		118.31	24.31	26.74
					Bare	Incl.	24 L.H., Daily Totals		\$2059.35		\$2843.28	\$85.81	\$118.47
Crew Q-9 1 Sheet Metal Worker	Hr. \$65.45	Daily \$523.60	<b>Hr.</b> \$98.70	Daily \$789.60	<b>Costs</b> \$58.90	0&P \$88.83	Crew 0-18	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Sheet Metal Apprentice	52.35	418.80	78.95	631.60	\$30.50	Ş00.03	2 Steamfitters	\$68.35	\$1093.60	\$102.00	\$1632.00	\$63.80	\$95.22
16 L.H., Daily Totals		\$942.40		\$1421.20	\$58.90	\$88.83	1 Steamfitter Apprentice	54.70	437.60	81.65	653.20		
					Bare	Incl.	1 Welder, Electric, 300 amp		107.55		118.31	4.48	4.93
Crew Q-10	Hr.	Daily	Hr.	Daily	Costs	0&P	24 L.H., Daily Totals		\$1638.75		\$2403.51	\$68.28	\$100.15
2 Sheet Metal Workers	\$65.45	\$1047.20	\$98.70	\$1579.20	\$61.08	\$92.12	Crew 0-19	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Sheet Metal Apprentice 24 L.H., Daily Totals	52.35	418.80 \$1466.00	78.95	631.60 \$2210.80	\$61.08	\$92.12	1 Steamfitter	\$68.35	\$546.80	\$102.00	\$816.00	\$62.25	\$92.77
24 L.N., Dally Iolais		\$1400.00		\$2210.00			1 Steamfitter Apprentice	54.70	437.60	81.65	653.20	Ş02.23	<i>ŞJL.11</i>
Crew Q-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Electrician	63.70	509.60	94.65	757.20		
1 Sheet Metal Foreman (inside)	\$65.95	\$527.60	\$99.50	\$796.00	\$62.30	\$93.96	24 L.H., Daily Totals		\$1494.00		\$2226.40	\$62.25	\$92.77
2 Sheet Metal Workers	65.45	1047.20	98.70	1579.20								Bare	Incl.
1 Sheet Metal Apprentice	52.35	418.80	78.95	631.60			Crew Q-20	Hr.	Daily	Hr.	Daily	Costs	0&P
32 L.H., Daily Totals		\$1993.60		\$3006.80	\$62.30	\$93.96	1 Sheet Metal Worker	\$65.45	\$523.60	\$98.70	\$789.60	\$59.86	\$89.99
					Bare	Incl.	1 Sheet Metal Apprentice .5 Electrician	52.35 63.70	418.80 254.80	78.95 94.65	631.60 378.60		
Crew Q-12	Hr.	Daily	Hr.	Daily	Costs	0&P	20 L.H., Daily Totals	03.70	\$1197.20	94.00	\$1799.80	\$59.86	\$89.99
1 Sprinkler Installer	\$66.50	\$532.00	\$99.35	\$794.80	\$59.85	\$89.42	20 Ent., Daily Totals		Ψ11 <i>31</i> .20		ψ1733.00	Bare	Jog.99
1 Sprinkler Apprentice 16 L.H., Daily Totals	53.20	425.60 \$957.60	79.50	636.00 \$1430.80	\$59.85	\$89.42	Crew Q-21	Hr.	Daily	Hr.	Daily	Costs	0&P
IO LITI., Daily IUlais		9911.00		¢1400.00			2 Steamfitters	\$68.35	\$1093.60	\$102.00	\$1632.00	\$63.77	\$95.08
Crew Q-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Steamfitter Apprentice	54.70	437.60	81.65	653.20		
1 Sprinkler Foreman (inside)	\$67.00	\$536.00	\$100.10	\$800.80	\$63.30	\$94.58	1 Electrician	63.70	509.60	94.65	757.20		
2 Sprinkler Installers	66.50	1064.00	99.35	1589.60		<b>43 1.00</b>	32 L.H., Daily Totals		\$2040.80		\$3042.40	\$63.77	\$95.08
1 Sprinkler Apprentice	53.20	425.60	79.50	636.00								Bare	Incl.
32 L.H., Daily Totals		\$2025.60		\$3026.40	\$63.30	\$94.58	Crew Q-22	Hr.	Daily	Hr.	Daily	Costs	0&P
					Bare	Incl.	1 Plumber	\$67.70	\$541.60	\$101.05	\$808.40	\$60.92	\$90.92
Crew Q-14	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Plumber Apprentice 1 Hyd. Crane, 12 Ton	54.15	433.20 475.80	80.80	646.40 523.38	29.74	32.71
1 Asbestos Worker	\$60.95	\$487.60	\$93.25	\$746.00	\$54.85	\$83.90	16 L.H., Daily Totals		\$1450.60		\$1978.18	\$90.66	\$123.64
1 Asbestos Apprentice 16 L.H., Daily Totals	48.75	390.00 \$877.60	74.55	596.40 \$1342.40	\$54.85	\$83.90						Bare	Incl.
Lo En la Dally Totalo		γ011.0U		¥107 <b>2.7</b> 0	Bare	505.90	Crew Q-22A	Hr.	Daily	Hr.	Daily	Costs	0&P
Crew Q-15	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Plumber	\$67.70	\$541.60	\$101.05	\$808.40	\$56.92	\$84.91
1 Plumber	\$67.70	\$541.60	\$101.05	\$808.40	\$60.92	\$90.92	1 Plumber Apprentice	54.15	433.20	80.80	646.40		
1 Plumber Apprentice	54.15	433.20	80.80	646.40			1 Laborer	44.40 61.45	355.20 491.60	66.25 91.55	530.00 732.40		
1 Welder, Electric, 300 amp 16 L.H., Daily Totals		107.55 \$1082.35		118.31 \$1573.11	6.72 \$67.65	7.39 \$98.32	1 Equip. Oper. (crane) 1 Hyd. Crane, 12 Ton	01.45	475.80	91.55	523.38	14.87	16.36

# Crews - Standard

Crew No.	Bai	re Costs	Sut	Incl. os O&P		ost Ibor-Hour	Crew No
Crew Q-23	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew
1 Plumber Foreman (outside)	\$69.70	\$557.60	\$104.00	\$832.00	\$65.47	\$97.65	1 Electrician Fore
1 Plumber	67.70	541.60	101.05	808.40			4 Electrician Line
1 Equip. Oper. (medium)	59.00	472.00	87.90	703.20			2 Electrician Ope
1 Lattice Boom Crane, 20 Ton		1526.00		1678.60	63.58	69.94	4 Electrician Gro
24 L.H., Daily Totals		\$3097.20		\$4022.20	\$129.05	\$167.59	1 Crew Truck 1 Flatbed Truck,
Crew R-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	1 Pickup Truck, 3
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$59.53	\$88.46	.2 Hyd. Crane, 5 .2 Hyd. Crane, 1
3 Electricians	63.70	1528.80	94.65	2271.60			.2 Flyd. Grafie, 1 .2 Earth Auger, 1
2 Electrician Apprentices	50.95	815.20	75.70	1211.20			1 Tractor w/Wind
48 L.H., Daily Totals		\$2857.60		\$4246.00	\$59.53	\$88.46	88 L.H., Daily To
Crew R-1A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P	
1 Electrician	\$63.70	\$509.60	\$94.65	\$757.20	\$57.33	\$85.17	Crew
1 Electrician Apprentice	50.95	407.60	75.70	605.60			1 Electrician Fore 4 Electrician Line
16 L.H., Daily Totals		\$917.20		\$1362.80	\$57.33	\$85.17	2 Electrician Ope
					Bare	Incl.	4 Electrician Gro
Crew R-1B	Hr.	Daily	Hr.	Daily	Costs	0&P	1 Crew Truck
1 Electrician	\$63.70	\$509.60	\$94.65	\$757.20	\$55.20	\$82.02	1 Flatbed Truck,
2 Electrician Apprentices	50.95	815.20	75.70	1211.20			1 Pickup Truck, 3
24 L.H., Daily Totals		\$1324.80		\$1968.40	\$55.20	\$82.02	.2 Hyd. Crane, 5
					Bare	Incl.	.2 Hyd. Crane, 1
Crew R-1C	Hr.	Daily	Hr.	Daily	Costs	0&P	.2 Earth Auger, 1
2 Electricians	\$63.70	\$1019.20	\$94.65	\$1514.40	\$57.33	\$85.17	1 Tractor w/Wind 3 Cable Trailers
2 Electrician Apprentices	50.95	815.20	75.70	1211.20			.5 Tensioning Rig
1 Portable cable puller, 8000 lb.		102.65		112.92	3.21	3.53	.5 Cable Pulling F
32 L.H., Daily Totals		\$1937.05		\$2838.51	\$60.53	\$88.70	88 L.H., Daily To
		\$1507100					
· · ·	114		Un		Bare	Incl.	
Crew R-2	Hr.	Daily	Hr.	Daily	Costs	0&P	Crew
Crew R-2 1 Electrician Foreman	\$64.20	<b>Daily</b> \$513.60	\$95.40	<b>Daily</b> \$763.20			
Crew R-2 1 Electrician Foreman 3 Electricians	\$64.20 63.70	<b>Daily</b> \$513.60 1528.80	\$95.40 94.65	<b>Daily</b> \$763.20 2271.60	Costs	0&P	1 Electrician Fore
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices	\$64.20 63.70 50.95	<b>Daily</b> \$513.60 1528.80 815.20	\$95.40 94.65 75.70	<b>Daily</b> \$763.20 2271.60 1211.20	Costs	0&P	1 Electrician Fore
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane)	\$64.20 63.70	<b>Daily</b> \$513.60 1528.80 815.20 491.60	\$95.40 94.65	<b>Daily</b> \$763.20 2271.60 1211.20 732.40	<b>Costs</b> \$59.81	<b>0&amp;P</b> \$88.90	1 Electrician Fore 5 Electrician Gro 1 Crew Truck
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices	\$64.20 63.70 50.95	<b>Daily</b> \$513.60 1528.80 815.20	\$95.40 94.65 75.70	<b>Daily</b> \$763.20 2271.60 1211.20	Costs	0&P	1 Electrician Fore 5 Electrician Gro 1 Crew Truck
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton	\$64.20 63.70 50.95	<b>Daily</b> \$513.60 1528.80 815.20 491.60 381.95	\$95.40 94.65 75.70	<b>Daily</b> \$763.20 2271.60 1211.20 732.40 420.14	Costs \$59.81 6.82 \$66.63	<b>0&amp;P</b> \$88.90 7.50 \$96.40	1 Electrician Fore 5 Electrician Gro 1 Crew Truck 48 L.H., Daily To Crew
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton	\$64.20 63.70 50.95	<b>Daily</b> \$513.60 1528.80 815.20 491.60 381.95	\$95.40 94.65 75.70	<b>Daily</b> \$763.20 2271.60 1211.20 732.40 420.14	Costs \$59.81 6.82	<b>0&amp;P</b> \$88.90 7.50	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily Tor Crew 1 Electrician Fore
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals	\$64.20 63.70 50.95 61.45	Daily \$513.60 1528.80 815.20 491.60 381.95 \$3731.15 Daily	\$95.40 94.65 75.70 91.55 <b>Hr.</b>	Daily \$763.20 2271.60 1211.20 732.40 420.14 \$5398.55 Daily	Costs \$59.81 6.82 \$66.63 Bare	0&P \$88.90 7.50 \$96.40 Incl. 0&P	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 3 Electrician Line
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals Crew R-3	\$64.20 63.70 50.95 61.45 <b>Hr.</b>	<b>Daily</b> \$513.60 1528.80 815.20 491.60 381.95 \$3731.15	\$95.40 94.65 75.70 91.55	<b>Daily</b> \$763.20 2271.60 1211.20 732.40 420.14 \$5398.55	Costs           \$59.81           6.82           \$66.63           Bare Costs	0&P \$88.90 7.50 \$96.40 Incl.	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily Tor Crew 1 Electrician Fore 3 Electrician Line 2 Electrician Grou
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals Crew R-3 1 Electrician Foreman	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20	Costs           \$59.81           6.82           \$66.63           Bare Costs	0&P \$88.90 7.50 \$96.40 Incl. 0&P	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 3 Electrician Line 2 Electrician Grou 1 Pickup Truck, 3
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals Crew R-3 1 Electrician Foreman 1 Electrician	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20	Costs           \$59.81           6.82           \$66.63           Bare Costs	0&P \$88.90 7.50 \$96.40 Incl. 0&P	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily Tor Crew 1 Electrician Fore 3 Electrician Line 2 Electrician Grou 1 Pickup Truck, 3 1 Crew Truck
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals Crew R-3 1 Electrician Foreman 1 Electrician 5 Equip. Oper. (crane)	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60           245.80	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20           366.20	Costs           \$59.81           6.82           \$66.63           Bare           Costs           \$63.45	O&P           \$88.90           7.50           \$96.40           Incl.           O&P           \$94.33	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 3 Electrician Line 2 Electrician Grou 1 Pickup Truck, 3
Crew R-2  1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals  Crew R-3  1 Electrician Foreman 1 Electrician 5 Equip. Oper. (crane) 5 S.P. Crane, 4x4, 5 Ton 20 L.H., Daily Totals	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70 61.45	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60           245.80           190.97           \$1459.97	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65 91.55	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20           366.20           210.07           \$2096.67	Costs           \$59.81           6.82           \$66.63           Bare           Costs           \$63.45           9.55           \$73.00           Bare	0&P \$88.90 7.50 \$96.40 Incl. 0&P \$94.33 10.50 \$104.83 Incl.	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily Tor Crew 1 Electrician Fore 3 Electrician Line 2 Electrician Grou 1 Pickup Truck, 3 1 Crew Truck
Crew R-2 1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals Crew R-3 1 Electrician Foreman 1 Electrician 5 Equip. Oper. (crane) 5 S.P. Crane, 4x4, 5 Ton 20 L.H., Daily Totals Crew R-4	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70 61.45 <b>Hr.</b>	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60           245.80           190.97           \$1459.97           Daily	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65 91.55 <b>Hr.</b>	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20           366.20           210.07           \$2096.67           Daily	Costs           \$59.81           6.82           \$66.63           Bare           Costs           \$63.45           \$73.00           Bare           Costs	0&P \$88.90 7.50 \$96.40 Incl. 0&P \$94.33 10.50 \$104.83 Incl. 0&P	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 3 Electrician Grou 1 Pickup Truck, 3 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 1 Electrician Fore
Crew R-2  1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals  Crew R-3  1 Electrician Foreman 1 Electrician 5 Equip. Oper. (crane) 5 S.P. Crane, 4x4, 5 Ton 20 L.H., Daily Totals  Crew R-4  1 Struc. Steel Foreman (outside)	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70 61.45 <b>Hr.</b> \$62.30	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60           245.80           190.97           \$1459.97           Daily           \$498.40	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65 91.55 <b>Hr.</b> \$96.40	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20           366.20           210.07           \$2096.67           Daily           \$771.20	Costs           \$59.81           6.82           \$66.63           Bare           Costs           \$63.45           9.55           \$73.00           Bare	0&P \$88.90 7.50 \$96.40 Incl. 0&P \$94.33 10.50 \$104.83 Incl.	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 3 Electrician Fore 3 Electrician Grou 1 Pickup Truck, 3 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 1 Electrician Fore 1 Electrician Line
Crew R-2  1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals  Crew R-3  1 Electrician 5 Equip. Oper. (crane) 5 S.P. Crane, 4x4, 5 Ton 20 L.H., Daily Totals  Crew R-4  1 Struc. Steel Foreman (outside) 3 Struc. Steel Workers	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70 61.45 <b>Hr.</b> \$62.30 60.30	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60           245.80           190.97           \$1459.97           Daily           \$498.40           1447.20	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65 91.55 <b>Hr.</b> \$96.40 93.30	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20           366.20           210.07           \$2096.67           Daily           \$771.20           2239.20	Costs           \$59.81           6.82           \$66.63           Bare           Costs           \$63.45           \$73.00           Bare           Costs	0&P \$88.90 7.50 \$96.40 Incl. 0&P \$94.33 10.50 \$104.83 Incl. 0&P	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily Tor <b>Crew</b> 1 Electrician Fore 3 Electrician Fore 3 Electrician Grou 1 Pickup Truck, 3 1 Crew Truck 48 L.H., Daily Tor <b>Crew</b> 1 Electrician Fore 1 Electrician Fore 1 Electrician Fore 2 Electrician Grou
Crew R-2  1 Electrician Foreman 3 Electricians 2 Electrician Apprentices 1 Equip. Oper. (crane) 1 S.P. Crane, 4x4, 5 Ton 56 L.H., Daily Totals  Crew R-3  1 Electrician 5 Equip. Oper. (crane) 5 S.P. Crane, 4x4, 5 Ton 20 L.H., Daily Totals  Crew R-4  1 Struc. Steel Foreman (outside)	\$64.20 63.70 50.95 61.45 <b>Hr.</b> \$64.20 63.70 61.45 <b>Hr.</b> \$62.30	Daily           \$513.60           1528.80           815.20           491.60           381.95           \$3731.15           Daily           \$513.60           509.60           245.80           190.97           \$1459.97           Daily           \$498.40	\$95.40 94.65 75.70 91.55 <b>Hr.</b> \$95.40 94.65 91.55 <b>Hr.</b> \$96.40	Daily           \$763.20           2271.60           1211.20           732.40           420.14           \$5398.55           Daily           \$763.20           757.20           366.20           210.07           \$2096.67           Daily           \$771.20	Costs           \$59.81           6.82           \$66.63           Bare           Costs           \$63.45           \$73.00           Bare           Costs	0&P \$88.90 7.50 \$96.40 Incl. 0&P \$94.33 10.50 \$104.83 Incl. 0&P	1 Electrician Fore 5 Electrician Grou 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 3 Electrician Fore 3 Electrician Grou 1 Pickup Truck, 3 1 Crew Truck 48 L.H., Daily To Crew 1 Electrician Fore 1 Electrician Fore 1 Electrician Line

Crew No.	Bare	Costs		ncl. os O&P		Cost abor-Hour
Crew R-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$55.87	\$83.45
4 Electrician Linemen	63.70	2038.40	94.65	3028.80		
2 Electrician Operators	63.70	1019.20	94.65	1514.40		
4 Electrician Groundmen	42.05	1345.60	63.65	2036.80		
1 Crew Truck		168.15		184.97		
1 Flatbed Truck, 20,000 GVW		204.05		224.46		
1 Pickup Truck, 3/4 Ton		112.20		123.42		
.2 Hyd. Crane, 55 Ton		198.03		217.83		
.2 Hyd. Crane, 12 Ton		95.16		104.68		
.2 Earth Auger, Truck-Mtd.		40.51		44.56		
1 Tractor w/Winch		377.65		415.42	13.59	14.95
88 L.H., Daily Totals		\$6112.55		\$8658.52	\$69.46	\$98.39
Crew R-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$55.87	\$83.45
4 Electrician Linemen	504.20 63.70	2038.40	94.65	3028.80	\$55.67	Ş03.40
2 Electrician Operators	63.70	1019.20	94.65	1514.40		
4 Electrician Groundmen	42.05	1345.60	63.65	2036.80		
1 Crew Truck	42.05	168.15	05.05	184.97		
1 Flatbed Truck, 20,000 GVW		204.05		224.46		
1 Pickup Truck, 3/4 Ton		112.20		123.42		
.2 Hyd. Crane, 55 Ton		198.03		217.83		
.2 Hyd. Crane, 12 Ton		95.16		104.68		
.2 Earth Auger, Truck-Mtd.		40.51		44.56		
1 Tractor w/Winch		377.65		415.42		
3 Cable Trailers		194.25		213.68		
.5 Tensioning Rig		55.75		61.33		
.5 Cable Pulling Rig		306.65		337.32	19.91	21.91
88 L.H., Daily Totals	-	\$6669.20		\$9270.84	\$75.79	\$105.35
					Bare	Incl.
Crew R-7	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$45.74	\$68.94
5 Electrician Groundmen	42.05	1682.00	63.65	2546.00	2.50	2.05
1 Crew Truck	<u> </u>	168.15		184.97	3.50	3.85
48 L.H., Daily Totals	<u> </u>	\$2363.75		\$3494.17	\$49.24	\$72.80
Crew R-8					Bare	Incl.
1 Electrician Foreman	Hr.	Daily	Hr.	Daily	Costs	0&P
I LIEUUIUIAII FUTEIIIIdII	Hr. \$64.20	<b>Daily</b> \$513.60	<b>Hr.</b> \$95.40	\$763.20	<b>Costs</b> \$56.57	<b>0&amp;P</b> \$84.44
3 Electrician Foreman						
	\$64.20	\$513.60	\$95.40	\$763.20		
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton	\$64.20 63.70	\$513.60 1528.80 672.80 112.20	\$95.40 94.65	\$763.20 2271.60 1018.40 123.42		
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck	\$64.20 63.70	\$513.60 1528.80 672.80	\$95.40 94.65	\$763.20 2271.60 1018.40 123.42 184.97	\$56.57 5.84	
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton	\$64.20 63.70	\$513.60 1528.80 672.80 112.20	\$95.40 94.65	\$763.20 2271.60 1018.40 123.42	\$56.57	\$84.44
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck	\$64.20 63.70	\$513.60 1528.80 672.80 112.20 168.15	\$95.40 94.65	\$763.20 2271.60 1018.40 123.42 184.97	\$56.57 5.84	\$84.44 6.42
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals	\$64.20 63.70 42.05	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55	\$95.40 94.65 63.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59	\$56.57 5.84 \$62.41 Bare	\$84.44 6.42 \$90.87 Incl.
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9	\$64.20 63.70 42.05 Hr.	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b>	\$95.40 94.65 63.65 <b>Hr.</b>	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b>	\$56.57 5.84 \$62.41 Bare Costs	\$84.44 6.42 \$90.87 Incl. O&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman	\$64.20 63.70 42.05 <b>Hr.</b> \$64.20	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20	\$56.57 5.84 \$62.41 Bare Costs	\$84.44 6.42 \$90.87 Incl. O&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Lineman	\$64.20 63.70 42.05 Hr. \$64.20 63.70	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20	\$56.57 5.84 \$62.41 Bare Costs	\$84.44 6.42 \$90.87 Incl. O&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Lineman 2 Electrician Operators	\$64.20 63.70 42.05 <b>Hr.</b> \$64.20 63.70 63.70	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40	\$56.57 5.84 \$62.41 Bare Costs	\$84.44 6.42 \$90.87 Incl. O&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Lineman 2 Electrician Operators 4 Electrician Groundmen	\$64.20 63.70 42.05 <b>Hr.</b> \$64.20 63.70 63.70	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20 1345.60	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80	\$56.57 5.84 \$62.41 Bare Costs	\$84.44 6.42 \$90.87 Incl. O&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Lineman 2 Electrician Operators 4 Electrician Groundmen 1 Pickup Truck, 3/4 Ton	\$64.20 63.70 42.05 <b>Hr.</b> \$64.20 63.70 63.70	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20 1345.60 112.20	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42	\$56.57 5.84 \$62.41 Bare Costs \$52.94	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Lineman 2 Electrician Operators 4 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck	\$64.20 63.70 42.05 <b>Hr.</b> \$64.20 63.70 63.70	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20 1345.60 112.20 168.15	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42 184.97	\$56.57 5.84 \$62.41 <b>Bare</b> <b>Costs</b> \$52.94 4.38	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24 4.82
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Lineman 2 Electrician Operators 4 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 64 L.H., Daily Totals	\$64.20 63.70 42.05 <b>Hr.</b> \$64.20 63.70 63.70 42.05	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20 1345.60 112.20 168.15 \$3668.35	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65 63.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42 184.97 \$5379.98	\$56.57 5.84 \$62.41 <b>Bare</b> <b>Costs</b> \$52.94 4.38 \$57.32 <b>Bare</b>	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24 4.82 \$84.06 Incl.
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Operators 4 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 64 L.H., Daily Totals Crew R-10	\$64.20 63.70 42.05 Hr. \$64.20 63.70 63.70 42.05 Hr.	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20 1345.60 112.20 168.15 \$3668.35 <b>Daily</b>	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65 63.65 <b>Hr.</b>	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42 184.97 \$5379.98 <b>Daily</b>	\$56.57 5.84 \$62.41 <b>Bare</b> <b>Costs</b> \$52.94 4.38 \$57.32 <b>Bare</b> <b>Costs</b>	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24 4.82 \$84.06 Incl. 0&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Operators 4 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 64 L.H., Daily Totals Crew R-10 1 Electrician Foreman	\$64.20 63.70 42.05 Hr. \$64.20 63.70 63.70 42.05 Hr. \$64.20	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 1019.20 1345.60 112.20 168.15 \$3668.35 <b>Daily</b> \$513.60	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65 63.65 <b>Hr.</b> \$95.40	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42 184.97 \$5379.98 <b>Daily</b> \$763.20	\$56.57 5.84 \$62.41 <b>Bare</b> <b>Costs</b> \$52.94 4.38 \$57.32 <b>Bare</b> <b>Costs</b>	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24 4.82 \$84.06 Incl. 0&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Operators 4 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 64 L.H., Daily Totals Crew R-10 1 Electrician Foreman 4 Electrician Linemen	\$64.20 63.70 42.05 Hr. \$64.20 63.70 42.05 Hr. \$64.20 63.70 42.05	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 1019.20 1345.60 112.20 168.15 \$3668.35 <b>Daily</b> \$513.60 2038.40	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65 63.65 <b>Hr.</b> \$95.40 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42 184.97 \$5379.98 <b>Daily</b> \$763.20 3028.80	\$56.57 5.84 \$62.41 <b>Bare</b> <b>Costs</b> \$52.94 4.38 \$57.32 <b>Bare</b> <b>Costs</b>	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24 4.82 \$84.06 Incl. 0&P
3 Electrician Linemen 2 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 48 L.H., Daily Totals Crew R-9 1 Electrician Foreman 1 Electrician Groundmen 1 Pickup Truck, 3/4 Ton 1 Crew Truck 64 L.H., Daily Totals Crew R-10 1 Electrician Foreman 4 Electrician Foreman 4 Electrician Linemen 1 Electrician Linemen 1 Electrician Groundman	\$64.20 63.70 42.05 Hr. \$64.20 63.70 42.05 Hr. \$64.20 63.70 42.05	\$513.60 1528.80 672.80 112.20 168.15 \$2995.55 <b>Daily</b> \$513.60 509.60 1019.20 1345.60 112.20 168.15 \$3668.35 <b>Daily</b> \$513.60 2038.40 336.40	\$95.40 94.65 63.65 <b>Hr.</b> \$95.40 94.65 94.65 63.65 <b>Hr.</b> \$95.40 94.65	\$763.20 2271.60 1018.40 123.42 184.97 \$4361.59 <b>Daily</b> \$763.20 757.20 1514.40 2036.80 123.42 184.97 \$5379.98 <b>Daily</b> \$763.20 3028.80 509.20	\$56.57 5.84 \$62.41 <b>Bare</b> <b>Costs</b> \$52.94 4.38 \$57.32 <b>Bare</b> <b>Costs</b>	\$84.44 6.42 \$90.87 Incl. 0&P \$79.24 4.82 \$84.06 Incl. 0&P

# Crews - Standard

Crew No.	Bar	re Costs	Sut	Incl. os O&P	Cost Per Labor-Hou	
Crew R-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$60.69	\$90.26
4 Electricians	63.70	2038.40	94.65	3028.80		
1 Equip. Oper. (crane)	61.45	491.60	91.55	732.40		
1 Common Laborer	44.40	355.20	66.25	530.00		
1 Crew Truck		168.15		184.97	11 50	10.65
1 Hyd. Crane, 12 Ton 56 L.H., Daily Totals		475.80 \$4042.75		523.38 \$5762.74	11.50 \$72.19	12.65 \$102.91
JU L.H., Dally Totals		94042.7J		ŞJ702.74	Bare	Incl.
Crew R-12	Hr.	Daily	Hr.	Daily	Costs	0&P
1 Carpenter Foreman (inside)	\$55.20	\$441.60	\$82.40	\$659.20	\$51.90	\$77.75
4 Carpenters	54.70	1750.40	81.65	2612.80		
4 Common Laborers 1 Equip. Oper. (medium)	44.40 59.00	1420.80 472.00	66.25 87.90	2120.00 703.20		
1 Steel Worker	60.30	472.00	93.30	746.40		
1 Dozer, 200 H.P.		1520.00	50.00	1672.00		
1 Pickup Truck, 3/4 Ton		112.20		123.42	18.55	20.40
88 L.H., Daily Totals		\$6199.40		\$8637.02	\$70.45	\$98.15
Crew R-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$61.55	\$91.52
3 Electricians	63.70	1528.80	94.65	2271.60		
.25 Equip. Oper. (crane)	61.45	122.90	91.55	183.10		
1 Equipment Oiler	52.50	420.00	78.25	626.00		
.25 Hydraulic Crane, 33 Ton		245.79		270.37	5.85	6.44
42 L.H., Daily Totals		\$2831.09		\$4114.27	\$67.41	\$97.96
Crew R-15	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$62.42	\$92.78
4 Electricians	63.70	2038.40	94.65	3028.80		
1 Equipment Oper. (light)	55.50	444.00	82.70	661.60		
1 Telescoping Boom Lift, to 40'		281.90		310.09	5.87	6.46
48 L.H., Daily Totals		\$3277.90		\$4763.69	\$68.29	\$99.24
Crew R-15A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. 0&P
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$55.98	\$83.32
2 Electricians	63.70	1019.20	94.65	1514.40		
2 Common Laborers	44.40	710.40	66.25	1060.00		
1 Equip. Oper. (light)	55.50	444.00	82.70	661.60	E 07	6 46
1 Telescoping Boom Lift, to 40' 48 L.H., Daily Totals		281.90 \$2969.10		310.09 \$4309.29	5.87 \$61.86	6.46 \$89.78
40 L.H., Dally lotals		\$2909.10		Ş4JUJ.2J	Bare	lncl.
Crew R-18	Hr.	Daily	Hr.	Daily	Costs	0&P
.25 Electrician Foreman	\$64.20	\$128.40	\$95.40	\$190.80	\$55.89	\$83.05
1 Electrician	63.70	509.60	94.65	757.20		
2 Electrician Apprentices 26 L.H., Daily Totals	50.95	815.20 \$1453.20	75.70	1211.20 \$2159.20	\$55.89	\$83.05
, ,					Bare	Incl.
Crew R-19	Hr.	Daily	Hr.	Daily	Costs	0&P
.5 Electrician Foreman 2 Electricians	\$64.20 63.70	\$256.80 1019.20	\$95.40 94.65	\$381.60 1514.40	\$63.80	\$94.80
20 L.H., Daily Totals	03.70	\$1276.00	54.00	\$1896.00	\$63.80	\$94.80
			Hr.	Daily	Bare	Incl.
Curran B 01	Lu	Dailer		Daliv	Costs	0&P
Crew R-21	Hr.	CE12.60		-		
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20	\$63.71	\$94.67
1 Electrician Foreman 3 Electricians	\$64.20 63.70	\$513.60 1528.80	\$95.40 94.65	\$763.20 2271.60		
1 Electrician Foreman	\$64.20	\$513.60	\$95.40	\$763.20		

Crew No.	Bare	Costs	Incl. Subs O&P		Cost Per Labor-Hou	
Crew R-22	Hr.	Daily	Hr.	Daily	Bare Costs	inci. 0&P
.66 Electrician Foreman	\$64.20	\$338.98	\$95.40	\$503.71	\$58.30	\$86.62
2 Electricians	63.70	1019.20	94.65	1514.40		
2 Electrician Apprentices	50.95	815.20	75.70	1211.20		
37.28 L.H., Daily Totals		\$2173.38		\$3229.31	\$58.30	\$86.62
Crew R-30	Hr.	Daily	Hr.	Daily	Bare Costs	inci. 0&P
.25 Electrician Foreman (outside)	\$65.70	\$131.40	\$97.65	\$195.30	\$51.98	\$77.40
1 Electrician	63.70	509.60	94.65	757.20		
2 Laborers (Semi-Skilled)	44.40	710.40	66.25	1060.00		
26 L.H., Daily Totals		\$1351.40		\$2012.50	\$51.98	\$77.40
Crew R-31	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P
1 Electrician	\$63.70	\$509.60	\$94.65	\$757.20	\$63.70	\$94.65
1 Core Drill, Electric, 2.5 H.P.		62.65		68.92	7.83	8.61
8 L.H., Daily Totals		\$572.25		\$826.12	\$71.53	\$103.26
Crew W-41E	Hr.	Daily	Hr.	Daily	Bare Costs	Inci. 0&P
.5 Plumber Foreman (outside)	\$69.70	\$278.80	\$104.00	\$416.00	\$58.78	\$87.72
1 Plumber	67.70	541.60	101.05	808.40		
1 Laborer	44.40	355.20	66.25	530.00		
20 L.H., Daily Totals		\$1175.60		\$1754.40	\$58.78	\$87.72

# Appendix D.4 (continued)

Caterpillar Handbook Pages

# Caterpillar Performance Handbook

# **Edition 29**

# **CATERPILLAR®**

## CONSTRUCTION & MINING TRUCKS CONSTRUCTION & MINING TRACTORS

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#### Features:

- Caterpillar four-stroke-cycle diesels ... turbocharged, aftercooled, adjustment-free fuel system (direct injection).
- Electronically-controlled automatic transmission ... speed sensing device automatically shifts transmission between 1st and gear selected by operator.
- Truck Production Management System (TPMS) utilizes strut pressure sensors and an on-board microprocessor to determine payload weight, cycle segment times, delay times, actual clock time and date of each cycle.
- Vital Information Management System (VIMS) Monitors all vital machine functions. Keeps operator informed of current machine operating conditions, helps reduce downtime and allows service personnel easy access to data for fast accurate diagnosis. VIMS includes Production Management System.

- Electronic Unit Injection (EUI) in the 776D-793C and Hydraulic Electronic Unit Injection (HEUI) on 769D-775D electronically maintains fuel settings, provides automatic altitude and air filter restriction compensation, automatic variable timing, improved diagnostics and increased fuel efficiency.
- **Oil cooled disc brakes** provide retarding, service, parking, and secondary braking in one sealed, fade-resistant, maintenance-free unit. 769D-777D front brakes are caliper disc, can be switched out of the service system when not needed but activate as part of the secondary system. (Front oil-cooled brakes optional on 777D.) 784C-793C front brakes are oil-cooled disc.
- Automatic Retarder Control (ARC) electronically controls braking on grade to maintain faster downhill speeds and consistently higher engine speed.
- Full hydraulic steering, with front suspension cylinders serving as kingpins.
- Four independent, self-contained, oil-pneumatic suspension cylinders absorb loading and road shocks. Wide spacing for stability.
- **Dual slope body** has V-bottom for load balance and retention. Low loading height and center of gravity.
- Quarry trucks have single-slope flat floor for smooth, metered dumping into crushers or hoppers. Optional flat floor body available for 769D, 773D.
- Integral Roll Over Protective Structure (ROPS) cab standard on all models.
- Separate hydraulic systems prevents cross contamination.

#### **Tractor Features:**

- Yoke type hitch oscillates four ways to reduce frame stresses. Rugged turn stops prevent excessive wagon rotation either direction.
- **Rear platform** functions as a power train guard and provides safe, stable work area. Fenders and mud flaps protect from material thrown by tires.
- NOTE: Listed features may be standard on some models. Optional on others. Contact your Caterpillar Dealer for specific information.

# Construction & Mining Trucks Specifications

MODEL	76	69D	769D		771D	
Body Туре	Flat	Floor	Dual	Slope	Qu	arry
Gross Vehicle Weight	68 180 kg	150,000 lb	68 180 kg	150,000 lb	73 970 kg	163,100 lb
Chassis Weight*	22 950 kg	50,600 lb	22 950 kg	50,600 lb	22 950 kg	50,600 lb
Body Weight	7800 kg	17,200 lb	7330 kg	16,170 lb	10 350 kg	22,820 lb
Maximum Payload**	37 430 kg	82,533 lb	37 900 kg	83,570 lb	40 670 kg	89,680 lb
Standard Liner Weight	3300 kg	7280 lb	3160 kg	6970 lb		_
Payload with Standard Liner	34 130 kg	75,250 lb	34 740 kg	76,600 lb		_
Capacity:						
Struck (SAE)	16.5 m <sup>3</sup>	21.6 yd <sup>3</sup>	17 m <sup>3</sup>	22.2 yd <sup>3</sup>	20.2 m <sup>3</sup>	26.4 yd <sup>3</sup>
Heaped (2:1) (SAE)	24.2 m <sup>3</sup>	31.7 yd³	24.2 m <sup>3</sup>	31.7 yd <sup>3</sup>	27.5 m³	36 yd³
Distribution Empty:						
Front	49	.7%	49	.8%	46.3%	
Rear	50	.3%	50	.2%	53.7%	
Distribution Loaded:						
Front	33	.2%	33	.3%	32.9%	
Rear	66	.8%	66.7%		67.1%	
Engine Model	34	08E	34	08E	3408E	
Number of Cylinders		8		8		8
Bore	137 mm	5.4"	137 mm	5.4"	137 mm	5.4"
Stroke	152 mm	6"	152 mm	6"	152 mm	6"
Displacement	18 L	1099 in <sup>3</sup>	18 L	1099 in <sup>3</sup>	18 L	1099 in <sup>3</sup>
Flywheel Power	362 kW	485 hp	362 kW	485 hp	362 kW	485 hp
Gross Power	380 kW	510 hp	380 kW	510 hp	380 kW	510 hp
Standard Tires	18.00	R33(E-4)	18.00F	833(E-4)	18.00F	R33(E-4)
Machine Clearance Turning Circle	19.8 m	65'0"	19.8 m	65'0"	19.8 m	65'0"
Fuel Tank Refill Capacity	530 L	140 U.S. gal	530 L	140 U.S. gal	530 L	140 U.S. ga
Top Speed (Loaded)	75 km/h	47 mph	75 km/h	47 mph	56 km/h	35 mph
GENERAL DIMENSIONS						
(Empty):						
Height to Canopy Rock Guard Rail	4.07 m	13'4"	4.03 m	13'3"	4.02 m	13'2"
Wheelbase	3.71 m	12'2"	3.71 m	12'2"	3.71 m	12'2"
Overall Length	8.73 m	28'7"	8.57 m	28'1"	8.73 m	28'7"
Loading Height (Empty)	3.19 m	10'6"	3.14 m	10'4"	3.40 m	11'2"
Height at Full Dump	7.75 m	25'5"	7.71 m	25'3"	7.74 m	25'5"
Body Length (Target Length)	5.43 m	17'10"	5.28 m	17'4"	5.52 m	18'1"
Width (Operating)	5.01 m	16'5"	5.01 m	16'5"	5.01 m	16'5"
Width (Shipping)***	3.95 m	12'11"	3.95 m	12'11"	3.95 m	12'11"
Front Tire Tread	3.10 m	10'2"	3.10 m	10'2"	3.10 m	10'2"

\*Weights include lubricants, coolants, and 10% fuel. \*\*Maximum rating requires selection of proper tires and is dependent on selection of optional equipment. Gross vehicle weight should not be exceeded. \*\*\*Disassembled.

# Caterpillar Performance Handbook

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# CATERPILLAR PERFORMANCE HANDBOOK

a publication by Caterpillar Inc., Peoria, Illinois, U.S.A.

JANUARY 2011

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Performance information in this booklet is intended for estimating purposes only. Because of the many variables peculiar to individual jobs (including material characteristics, operator efficiency, underfoot conditions, altitude, etc.), neither Caterpillar Inc. nor its dealers warrant that the machines described will perform as estimated.

#### NOTE: Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Materials and specifications are subject to change without notice.

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### Wheel Tractor-Scrapers

- Specifications

  Tandem Powered
  Push-Pull

					J.A	
MODEL	62	7G	63	97G	65	7G
Flywheel Power: Tractor	246/272 kW	330/365 hp	345/373 kW	462/500 hp	421/447 kW	564/600 hp
Scraper	178/198 kW	239/266 hp	198/211 kW	266/283 hp	306/337 kW	410/451 hp
Approx. Operating Weight (Empty)◀	37 922 kg	83,604 lb	51 963 kg	114,559 lb	68 384 kg	150,760 lb
Scraper Capacity: Struck	12 m³	15.7 yd³	18.3 m³	24 yd <sup>3</sup>	24.5 m <sup>3</sup>	32 yd <sup>3</sup>
Heaped	17 m³	22 yd <sup>3</sup>	26 m <sup>3</sup>	34 yd <sup>3</sup>	33.6 m³	44 yd <sup>3</sup>
Rated Load	23 950 kg	52,800 lb	37 013 kg	81,600 lb	47 174 kg	104,000 lb
Weight Distribution — Empty: Front	59	9%	5	9%	58	3%
Rear	41	1%	4	1%	42	2%
Weight Distribution — Loaded: Front	50	0%	5	0%	50	0%
Rear	50	0%	5	0%	50	0%
Engine Model: Tractor	C15 A	CERT	C18 /	ACERT	C18 A	CERT
Scraper	C9 A	CERT	C9 A	CERT	C15 A	CERT
Rated Engine RPM: Tractor	18	00	18	800	1800	
Scraper	20	00	20	000	18	800
Displacement: Tractor	15.2 L	928 in <sup>3</sup>	18.1 L	1105 in <sup>3</sup>	18.1 L	1105 in <sup>3</sup>
Scraper	8.8 L	538 in <sup>3</sup>	8.8 L	538 in <sup>3</sup>	15.2 L	928 in <sup>3</sup>
Top Speed (Loaded)	51 km/h	32 mph	53 km/h	33 mph	53 km/h	33 mph
180° Curb-to-Curb Turning Width	11.7 m	38'5"	12.2 m	40'1"	14.2 m	46'7"
Tires — Tractor Drive	33.25R	29★★E3	37.25R	35 <b>★</b> ★E3	40.5/75R39★★E3	
Scraper	33.25R	29★★E3	37.25R	35 <b>★</b> ★E3	40.5/75R39★★E3	
Width of Cut	3.02 m	9'11"	3.51 m	11'6"	3.85 m	12'8"
Maximum Depth of Cut	333 mm	13.1"	437 mm	17"	440 mm	17.3"
Maximum Depth of Spread	522 mm	20.6"	480 mm	18.9"	660 mm	26"
Fuel Tank Refill Capacity: Tractor	-	_	-	_	-	_
Scraper	1105 L	292 U.S. gal	1268 L	335 U.S. gal	1597 L	424 U.S. gal
GENERAL DIMENSIONS:		_		_		-
Height to Top of Scraper	3.81 m	12'6"	4.18 m	13'9"	4.62 m	15'2"
Wheelbase	7.72 m	25'4"	8.77 m	28'9"	9.96 m	32'8"
Overall Length	12.88 m	42'3"	14.71 m	48'3"	16.2 m	53'1"
Overall Width	3.58 m	11'9"	3.94 m	** 12'11"	4.35 m	14'4"
Shipping Width						
(Draft Arm on Inside of Bowl)	-	_	3.63 m	* 11'11"	3.91 m	** 12'10"
Scraper Tread	2.23 m	7'4"	2.46 m	8'1"	2.81 m	9'3"
Tractor Tread	2.20 m	7'3"	2.46 m	8'1"	2.63 m	8'8"
PUSH-PULL GENERAL DIMENSIONS:						
Operating Weight (Empty)◀	39 443 kg	86,957 lb	54 057 kg	119,175 lb	72 804 kg	160,505 lb
Overall Length	15.2 m	49'7"	16.64 m	54'7"	18.01 m	59'1"
Weight Distribution — Empty: Front	59	9%	6	0%	51	3%
Rear	41	1%	4	0%	4:	2%
Weight Distribution — Loaded: Front	51	1%	5	1%	5	1%
Rear	49	9%	4	9%	49	9%

\*Optional Shipping Configuration. \*\*Standard Shipping Configuration. Operating weight includes standard machine, coolant, lubricants, full fuel tank, and operator.

# • Coal Bowl Wheel Tractor-Scrapers

#### Wheel Tractor-Scrapers

MODEL	•	6370	ì		657G	•
Flywheel Power: Tractor	345/373 kW		462/500 hp	421/447 kW		564/600 hp
Scraper	198/211 kW		266/283 hp	306/337 kW		410/451 hp
Approx. Operating Weight (Empty)	54 050 kg		118,909 lb	72 190 kg		158,817 lb
Scraper Capacity: Struck	31 m³		41 yd <sup>3</sup>	45 m <sup>3</sup>		59 yd³
Heaped	38 m³		50 yd <sup>3</sup>	56 m <sup>3</sup>		73 yd³
Rated Load	34 473 kg		76,000 lb	49 895 kg		110,000 lb
Approx. Operating Weight (Loaded)	88 409 kg		194,909 lb	121 933 kg		268,817 lb
Top Speed (Loaded)	53 km/h		33 mph	53 km/h		33 mph
180° Curb-to-Curb Turning Width	13.7 m		44'10"	15.6 m		51'3"
GENERAL DIMENSIONS:						
Height to Top of Scraper	4.18 m		13'9"	4.62 m		15'2"
Wheelbase	9.53 m		31'3"	11.01 m		36'1"
Overall Length	15.47 m		50'9"	17.21 m		56'5"
Overall Width	3.94 m	**	12'11"	4.35 m		14'4"
Shipping Width (Draft Arm on Inside of Bowl)	3.63 m	*	11'11"	3.91 m	**	12'10"
Scraper Tread	2.46 m		8'1"	2.81 m		9'3"
Tractor Tread	2.46 m		8'1"	2.63 m		8'8"

\*Optional Shipping Configuration.

\*\*Standard Shipping Configuration.

#### Coal Bowl

Coal Bowl Wheel Tractor-Scrapers are typically used for building and maintaining coal stockpiles and hauling coal to the supply system at coal power plants. The self-loading capability, large capacity, coal pile compaction, and high speed of Coal Bowl Wheel Tractor-Scrapers make them the tool of choice for moving coal both short and long distances. Coal Bowl Wheel Tractor-Scrapers are available in the 637G and 657G tandem engine models.

#### **Coal Bowl Advantages:**

- Load hoppers
- Manage coal stockpiles
- Compaction reduces risk of spontaneous combustion in coal stockpile
- Exclusively designed large capacity coal bowls

#### Notes:

- The 637G Coal Scraper is 736 mm (29.0") longer, the bowl sides are 476 mm (18.7") taller, and the apron is 499 mm (19.6") taller than its earthmoving counterpart.
- The 657G Coal Scraper is 1072 mm (42.2") longer, the bowl sides are 1010 mm (39.8") taller, the apron is 677 mm (26.7") taller, and the ejector is 944 mm (37.2") taller than its earthmoving counterpart.

## WHEEL LOADERS INTEGRATED TOOLCARRIERS

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#### WHEEL LOADERS

#### Features:

- Cat heavy duty diesel engine.
- Productive operator environment. Excellent visibility.
- Automatic lift and bucket controls.
- Adjustable suspension seat and steering column.
- Four wheel enclosed wet disc brakes.
- Automatic power shift transmissions. Allows operator to select automatic or manual mode.
- Hydrostatic drive on 906H, 908H and 914G.
- Transmission neutralizer switch (924H, 924Hz, 928Hz, 930H, 938H-980H).
- Computerized machine function monitoring.
- **Command control steering** with integrated transmission controls and electro-hydraulic controls ... 950H-980H.
- Lock up clutch on 990H and 994F (optional on 988H).
- Impeller clutch on 988H, 990H, 992K, 993K and 994F.
- Tilting hood ... 938H-980H.
- Brake wear indicator.
- Limited slip differentials.
- Differential locks ... 938H.
- Automatic Ride Control suspension system. Operator select "on", "off" or "automatic".
- Payload control system.
- Optional Fusion<sup>™</sup> coupler system for work tool interchangeability with pin-on performance. Work tools can interchange across the entire SWL/MWL/ IT line.

Listed features may be standard on some models, optional or unavailable on others. Contact your Cat dealer for specific information.

#### Specifications

Wheel Loaders Integrated Toolcarriers









			_						
MODEL	9	72H	9	80H	98	B8H	9	90H	
Flywheel Power: Net	214 kW	287 hp	260 kW	349 hp	373 kW	501 hp	468 kW	627 hp	
Gross	229 kW	307 hp	293 kW	392 hp	414 kW	555 hp	512 kW	687 hp	
Rated Payload*		_		_	11.4 t	12.5 T	15 t	16.5 T	
Gross Rated Bucket Payload*		_		_	16 300 kg	36,000 lb	22 700 kg	50,000 lb	
Engine Model	C13	ATAAC	C15	ATAAC	C18 /	ACERT	C27	ACERT	
Rated Engine RPM	1	800	1	1800	1	800	2	000	
Bore	130 mm	5.1"	137 mm	5.4"	145 mm	5.7"	137 mm	5.4"	
Stroke	157 mm	6.2"	171 mm	6.75"	183 mm	7.2"	152 mm	6"	
No. Cylinders		6		6		6		12	
Displacement	12.5 L	763 in <sup>3</sup>	15.2 L	928 in <sup>3</sup>	18.1 L	1104.5 in <sup>3</sup>	27.1 L	1666 in <sup>3</sup>	
Speeds Forward	km/h	mph	km/h	mph	km/h	mph	km/h	mph	
1st	7.2	4.5	6.6	4.1	6.7	4.2	7.0	4.3	
2nd	12.6	7.8	11.8	7.3	11.8	7.3	12.1	7.5	
3rd	21.4	13.3	20.7	12.9	20.8	12.9	20.8	13.0	
4th	36.9	22.9	36.3	22.6	36.0	22.3		_	
Speeds Reverse									
1st	8.2	5.1	7.6	4.7	7.6	4.7	7.7	4.8	
2nd	14.2	8.8	13.5	8.4	13.5	8.4	13.4	8.3	
3rd	24.3	15.1	23.6	14.7	23.7	14.7	22.9	14.2	
4th	38.8	24.0	41.5	25.8				_	
Hydraulic Cycle Time,									
Rated Load in Bucket:	See	conds	Se	conds	Sec	onds	See	conds	
Raise		5.9		6.0		9.4		9.2	
Dump		2.1		2.1		2.4		2.9	
Lower									
(Empty, Float Down)		2.4		3.4		3.8		3.8	
Total	1	0.4		11.5		5.6		5.9	
Tread Width	2.23 m	7'4"	2.44 m	8'0"	2.59 m	8'6"	3.1 m	10'2"	
Width Over Tires	3.00 m	9'10"	3.23 m	10'7"	3.54 m	11'7"	4.1 m	13'5"	
Ground Clearance	494 mm	20"	442 mm	17.4"	549 mm	22"	478 mm	18.8"	
Fuel Tank Capacity	380 L	100 U.S. gal	479 L	127 U.S. gal	712 L	188 U.S. gal	1074 L	284 U.S. gal	
Hydraulic Tank Capacity	110 L	29 U.S. gal	125 L	33 U.S. gal	267 L	70 U.S. gal	174 L†	46 U.S. gal	
Hydraulic System Capacity									
(includes tank)	200 L	52 U.S. gal	250 L	66 U.S. gal	470 L	124 U.S. gal	435 L†	115 U.S. gal	

\*Changes in bucket weight, including field installed wear iron, can impact rated payload. Consult your Cat dealer for assistance in selecting and configuring the proper bucket for the application. The Cat Large Wheel Loader Payload Policy is a guideline intended to maximize wheel loader structural and component life. The Cat Payload Policy is that the "Gross Bucket plus Payload Capacity" is the MAXIMUM weight that should be carried on the end of the Lift Arm/Boom.

+990H has a separate hydraulic system for steering and engine cooling fan. System (including tank) 194 L (51 U.S. gal), tank only 132 L (35 U.S. gal).

#### Wheel Loaders (cont'd)

Model	Product Ident. No. Prefix	Years Built	Flywheel Horse- power	Approx. Shipping Wt. kg (Ib)	Rated Capacity m³ (yd³)	Breakout Force kg (lb)	Width Over Tires m (ft)	Ground Clearance mm (in)	Max. Reach at max. height mm (ft)	Dump Clearance at max. height m (ft)	Spe	mum eds (mph) Rev.	Remarks
988	87A	63-76	325	35 800 ( <b>79,000)</b>	4.6-5.4 (6.0-7.0)	21 380 (47,130)	3.20 (10'7")	570 <b>(22.5")</b>	1450 <b>(4'9")</b>	3.33 (10'11")	30.6 (19.0)	30.6 (19.0)	
988B	50W	76-93	375	43 365 (95,600)	5.4-6.3 (7.0-8.25)	36 330 (80,100)	3.52 (11'7")	474 (18")	2150 (7'1")	3.19 <b>(10'5")</b>	36.2 (22.5)	41.4 (25.7)	3408 Engine Z Bar Linkage
988F	8YG	93-95	400	43 540 <b>(95,900)</b>	5.4-6.1 <b>(7.0-8.0)</b>	37 363 <b>(82,371)</b>	3.52 <b>(11'7")</b>	496 <b>(19")</b>	1830 <b>(6'0")</b>	3.21 <b>(10'6")</b>	35.1 <b>(21.8)</b>	23.5 <b>(14.6)</b>	Bucket/HP increase STIC Steer
988F Series II	2ZR	95-00	475	45 678 <b>(100,492)</b>	6.1-6.9 <b>(8.0-9.0)</b>	37 400 <b>(82,282)</b>	3.52 <b>(11'7")</b>	496 (1'7")	1611 <b>(5'3")</b>	3.22 (10'7")	35.1 <b>(21.8)</b>	23.5 <b>(14.6)</b>	3048E HEUI Engine Axle Shaft Brakes
988G	2TW	01	475	50 040 (110,320)	6.3-7.0 <b>(8.2-9.2)</b>	46 950 (103,500)	3.47 <b>(11'5")</b>	549 <b>(21.6")</b>	2113 <b>(6'11")</b>	4.0 <b>(13'1")</b>	38.7 <b>(24.0)</b>	22.3 <b>(13.8)</b>	6 Bar Linkage "G" Series
988G	BNH	01-05	475	50 040 (110,320)	6.3-7.0 <b>(8.2-9.2)</b>	46 950 (103,500)	3.47 <b>(11'5")</b>	549 <b>(21.6")</b>	2113 <b>(6'11")</b>	4.0 <b>(13'11")</b>	38.6 <b>(24.0)</b>	25.1 <b>(15.6)</b>	6 Bar Linkage "G" Series
988H	BXY	05	501	49 546 (109,249)	6.4-7.0 (8.33-9.2)	378.4 ( <b>85,068)</b>	3.47 <b>(11'5")</b>	549 <b>(22")</b>	5.85 <b>(19'2")</b>	3466 (11' <b>37")</b>	36 <b>(22.3)</b>	23.7 (14.7)	3.88 Meter Linkage
990	7HK	93-95	610	72 910 <b>(160,600)</b>	8.6 <b>(11.2)</b>	59 776 (131,784)	4.13 <b>(13'6")</b>	552 <b>(21.7")</b>	2070 <b>(6'10")</b>	3.99 <b>(13'1")</b>	22.5 <b>(14.0)</b>	25.0 <b>(15.5)</b>	ICTC & New Model
990 Series II	4FR	96-05	625	72 200 (159,170)	8.4-9.2 <b>(11-12)</b>	63 100 (138,800)	4.0 (13'1")	490 <b>(19.3")</b>	1990 <b>(6'6")</b>	4.05 (13'3")	22.5 <b>(14.0)</b>	25.0 <b>(15.5)</b>	HEUI Engine
990H	BWX	05	627	77 842 <b>(171,642)</b>	8.6-9.2 (11.25-12)	602 (135,429)	4.16 <b>(13'3")</b>	478 <b>(18'8")</b>	8.07 <b>(26'6")</b>	4220 (13'10")	22.4 <b>(13.92)</b>	24.8 (15.41)	Standard Lift 8.6 m <sup>3</sup> / <b>11.2 yd</b> <sup>3</sup> Bucket
992	25K	68-73	550	47 670 (105,100)	7.65 <b>(10.0)</b>	36 900 ( <b>81,360)</b>	3.93 (12'11")	530 <b>(21")</b>	2820 (8'3")	4.52 (14'10")	35.6 <b>(22.1)</b>	38.5 <b>(23.8)</b>	
992B	25K	73-77	550	64 320 <b>(141,800)</b>	7.65 <b>(10.0)</b>	29 330 <b>(84,660)</b>	_	_	1930 <b>(6'4")</b>	4.34 <b>(14'3")</b>	40.2 <b>(25.0)</b>	43.6 <b>(27.1)</b>	
992C	42X	77-81	690	85 640 <b>(188,800)</b>	9.6 <b>(12.5)</b>	66 240 (146,030)	4.55 (14'11")	533 <b>(21")</b>	2310 <b>(7'7")</b>	4.17 <b>(13'8")</b>	21.1 <b>(13.1)</b>	23.3 <b>(14.5)</b>	3412 PCT Engine Z Bar Linkage
992C	49Z	81-92	690	88 430 (194,950)	10.4 <b>(13.5)</b>	66 285 (146,132)	4.50 (14'9")	544 <b>(21")</b>	2310 (7'7")	4.17 <b>(13'8")</b>	21.0 <b>(13.0)</b>	22.9 <b>(14.2)</b>	3412 DIT Engine
992D	7MJ	92-97	710	88 690 (195,125)	10.7 <b>(14.0)</b>	62 670 (137,870)	4.50 (14'9")	544 <b>(21")</b>	2300 (7'7")	4.17 <b>(13'8")</b>	21.0 <b>(13.0)</b>	22.9 <b>(14.2)</b>	
992G	7HR	98-00	800	91 540 <b>(201,810)</b>	11.5-12.3 <b>(15-16)</b>	62 650 (137,840)	4.5 (14'9")	691 <b>(27.2")</b>	2300 (7'7")	4.6 <b>(15'3")</b>	20.2 <b>(12.5)</b>	22.7 <b>(14.1)</b>	6 Bar Linkage "G" Series
992K	H4C	07	801	97 294 <b>(214,535)</b>	10.7-12.3 <b>(14-16)</b>	584.66 (128,917)	_	682 <b>(2'2")</b>	9313 <b>(30'6")</b>	4480 <b>(14'8")</b>	20.6 <b>(12.8)</b>	22.4 <b>(13.9)</b>	10.7 m³/ <b>14 yd</b> ³ Bucket
993K	Z9K	07	945	133 637 <b>(294,800)</b>	12.8-14.5 (16.7-19)	709 ( <b>159,500)</b>	4.93 (16'2")	783 <b>(30'8")</b>	9313 <b>(30'7")</b>	4849 (15'11")	20.1 <b>(22.1)</b>	12.5 (13.7)	12.8 m <sup>3</sup> / <b>16.7 yd</b> <sup>3</sup> Bucket
994	9YF	90-98	1250	177 000 ( <b>390,300</b> )	10.3 ( <b>13.4</b> )	103 420 (228,000)	5.20 (17'1")	662 ( <b>26</b> ")	2692 (8'10")	6.20 (20'4")	24.7 (15.0)	26.6 (16.5)	

## CATERPILLAR PERFORMANCE HANDBOOK

a publication by Caterpillar, Peoria, Illinois, U.S.A.

**JUNE 2018** 

Performance information in this booklet is intended for estimating purposes only. Because of the many variables peculiar to individual jobs (including material characteristics, operator efficiency, underfoot conditions, altitude, etc.), neither Caterpillar nor its dealers warrant that the machines described will perform as estimated.

NOTE: Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Materials and specifications are subject to change without notice.

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SEBD0351-48

# **ARTICULATED TRUCKS**

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#### Features:

- Cat<sup>®</sup> engines with ACERT<sup>™</sup> Technology meet U.S. EPA Tier 4 Final/EU Stage IV/Japan 2014 (Tier 4 Final), or Tier 2/Stage II/Japan 2001 (Tier 2) equivalent emission standards. The four core elements of meeting these standards are:
  - I) Common Rail;
  - II) Electronics, ADEM<sup>™</sup> A4;
  - III) Fuel delivery, Mechanical-activated Electronic Unit Injection (MEUI<sup>™</sup> A-C);
  - IV) Air Management, Wastegate Turbocharging, Air to Air Aftercooling (ATAAC) with the proven technology of a crossflow cylinder head.
- Cat electronically controlled transmissions ... Transmissions purpose built and designed for articulated trucks and their applications. Advanced Productivity Electronic Control Strategy (APECS) delivering smooth shifting transmissions with improved acceleration and high productivity. Providing complete integration with the engines for efficient power delivery as well as offering advanced diagnostic and troubleshooting capabilities.

- Articulating and fully oscillating hitch ... Links front and rear frames for exceptional maneuverability and traction on uneven terrain while eliminating damaging twisting of the frames. Bolted hitch design allows optimum material choices for the cast hitch head and the hard-wearing tube. Bolted design allows easier rebuild and repair.
- Three-point front suspension ... Three-point front suspension with long-stroke, low-pressure suspension cylinders provide unparalleled ride quality for operator comfort and higher average haul speeds. Front and rear suspension together with the hitch provide for excellent traction in all conditions.
- Wide, long and low dump body design ... For excellent loadability and high fill factors, excellent machine stability and load retention as well as a good match for other Cat loading systems. Diverging flow design also gives excellent material ejection.
- Standard ROPS/FOPS, low sound level cab ... Two man cab common across the range. Large cab with excellent visibility, ergonomic control layout and plentiful storage.
- High capacity low pressure tires in single formation ... For superior traction and flotation in poor underfoot conditions.
- Bare Chassis offerings ... For certain applications the Caterpillar OEM Solutions Group offers non-dumper/ Bare Chassis arrangements.

Bare Chassis arrangements applications could include: water, service (fuel and lube), high capacity body (waste, coal, etc.), open body (log, pipe, etc.), container carrier, hook lift, tow, cable reel, etc. Please refer to specific OEM for additional information.

MODEL	72	25C2	73	80C2	730	<b>)C2</b> EJ
Gross Power — SAE J1995	239 kW	320 hp	280 kW	375 hp	280 kW	375 hp
Net Power – SAE J1349	234 kW	314 hp	274 kW	367 hp	274 kW	367 hp
Net Power – ISO 14396	236 kW	316 hp	276 kW	370 hp	276 kW	370 hp
Operating Weight (Empty)*	23 040 kg	50,795 lb	23 725 kg	52,305 lb	26 395 kg	57,277 lb
Top Speed (Loaded)	55 km/h	34 mph	55 km/h	34 mph	55 km/h	34 mph
Gross Machine Weight	47 040 kg	103,707 lb	51 725 kg	114,034 lb	54 515 kg	119,270 lb
Distribution Empty:						
Front	6	63%	6	62%	5	59%
Center	1	19%	1	19%	2	21%
Rear	1	18%	1	19%	2	20%
Distribution Loaded:						
Front	3	86%	3	34%	3	30%
Center	3	32%	3	33%	35%	
Rear	3	32%	3	33%	35%	
Max. Capacity**	24.0 t	26.5 T	28 t	31 T	28 t	31 T
Struck (SAE)	11 m <sup>3</sup>	14.4 yd <sup>3</sup>	13.3 m <sup>3</sup>	17.4 yd³	13.5 m³	17.7 yd³
Heaped (2:1) (SAE)	15 m³	19.6 yd³	17.5 m³	23 yd <sup>3</sup>	16.9 m³	22.1 yd <sup>3</sup>
Tailgate Heaped SAE 2:1	15.6 m³	20.4 yd <sup>3</sup>	18.8 m³	24.6 yd <sup>3</sup>		_
Tailgate Struck	11.1 m <sup>3</sup>	14.5 yd <sup>3</sup>	13.9 m³	18.2 yd <sup>3</sup>		_
Engine Model	C9.3	ACERT	C13	ACERT	C13	ACERT
No. Cylinders		6	6			6
Bore	115 mm	4.53"	130 mm	5.12"	130 mm	5.12"
Stroke	149 mm	5.87"	157 mm	6.18"	157 mm	6.18"
Displacement	9.3 L	567 in <sup>3</sup>	12.5 L	763 in <sup>3</sup>	12.5 L	763 in <sup>3</sup>
Tires	23	.5R25	23	.5R25	750/	65/R26
Clearance Radius	8075 mm	317.9"	8075 mm	317.9"	8075 mm	317.9"
FuelTank Refill Capacity	412 L	108.8 U.S. gal	412 L	108.8 U.S. gal	412 L	108.8 U.S. gal
DEF Tank Capacity	20 L	5.3 U.S. gal	20 L	5.3 U.S. gal	20 L	5.3 U.S. gal
General Dimensions (Empty):						
Height to CabTop	3482 mm	137.1"	3482 mm	137.1"	3461 mm	136"
Overall Length	10 547 mm	415.2"	10 555 mm	415.6"	10 376 mm	408.5"
Loading Height (Empty)	2725 mm	107.3"	2911 mm	114.6"	3025 mm	119.1"
Height at Full Dump	6306 mm	248.3"	6464 mm	254.5"		_
Body Length	5696 mm	224.3"	5783 mm	227.7"	5340 mm	210.2"
Width (Operating – Over Mirrors)	3704 mm	145.8"	3704 mm	145.8"	3704 mm	145.8"

\*Includes coolant, lubricant and full fuel tank. \*\*Rating dependent on optional equipment. Maximum gross weight (empty weight plus payload) should not be exceeded.

# SpecificationsC Series• Tier 2/Stage II/Japan 2001 (Tier 2) equivalentArticulated Trucks

MODEL	72	25C2	73	80C2	730	<b>C2</b> EJ	
Gross Power — SAE J1995	239 kW	320 hp	280 kW	375 hp	280 kW	375 hp	
Net Power — SAE J1349	234 kW	314 hp	274 kW	367 hp	274 kW	367 hp	
Net Power – ISO 14396	236 kW	316 hp	276 kW	370 hp	276 kW	370 hp	
Operating Weight (Empty)*	22 775 kg	50,211 lb	23 305 kg	51,378 lb	25 980 kg	57,277 lb	
Top Speed (Loaded)	55 km/h	34 mph	55 km/h	34 mph	55 km/h	34 mph	
Gross Machine Weight	46 775 kg	103,121 lb	51 305 kg	113,107 lb	54 100 kg	119,270 lb	
Distribution Empty:							
Front	6	62%	6	62%	5	8%	
Center	1	19%	1	19%	2	21%	
Rear	1	19%	1	19%	2	21%	
Distribution Loaded:							
Front	3	35%	3	84%	2	9%	
Center	3	33%	3	33%	36%		
Rear	3	32%	3	3%	35%		
Max. Capacity**	24.0 t	26.5 T	28 t	31 T	28 t	31 T	
Struck (SAE)	11 m³	14.4 yd <sup>3</sup>	13.3 m³	17.4 yd³	13.5 m³	17.7 yd³	
Heaped (2:1) (SAE)	15 m³	19.6 yd³	17.5 m³	23 yd <sup>3</sup>	16.9 m³	22.1 yd <sup>3</sup>	
Tailgate Heaped SAE 2:1	15.6 m³	20.4 yd <sup>3</sup>	18.8 m³	24.6 yd <sup>3</sup>		_	
Tailgate Struck	11.1 m³ <b>14.5 yd</b> ³		13.9 m³ <b>18.2 yd</b> ³		-		
Engine Model	C9.3	ACERT	C13 ACERT		C13	ACERT	
No. Cylinders		6		6		6	
Bore	115 mm	4.53"	130 mm	5.12"	130 mm	5.12"	
Stroke	149 mm	5.87"	157 mm	6.18"	157 mm	6.18"	
Displacement	9.3 L	567 in <sup>3</sup>	12.5 L	763 in <sup>3</sup>	12.5 L	763 in <sup>3</sup>	
Tires	23	.5R25	23	.5R25	750/	65/R26	
Clearance Radius	8075 mm	317.9"	8075 mm	317.9"	8075 mm	317.9"	
FuelTank Refill Capacity	412 L	108.8 U.S. gal	412 L	108.8 U.S. gal	412 L	108.8 U.S. gal	
General Dimensions (Empty):							
Height to CabTop	3482 mm	137.1"	3482 mm	137.1"	3461 mm	136"	
Overall Length	10 547 mm	415.2"	10 555 mm	415.6"	10 376 mm	408.5"	
Loading Height (Empty)	2725 mm	107.3"	2911 mm	114.6"	3025 mm	119.1"	
Height at Full Dump	6306 mm	248.3"	6464 mm <b>254.5</b> "			-	
Body Length	5696 mm	224.3"	5783 mm	227.7"	5340 mm	210.2"	
Width (Operating – Over Mirrors)	3704 mm	145.8"	3704 mm	145.8"	3704 mm	145.8"	

\*Includes coolant, lubricant and full fuel tank. \*\*Rating dependent on optional equipment. Maximum gross weight (empty weight plus payload) should not be exceeded.

# **HYDRAULIC EXCAVATORS**

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#### HYDRAULIC EXCAVATORS

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#### Hydraulic Excavators

#### **Cycle Time Estimating Chart**

Model		308E2 CR SB	311D LRR	312D, 312D L	315D L	319D L, 319D LN	M314F, M315D2	M316F, M317D2, M318F	M320F, M320D2	M322F, M322D2
Bucket Size	L	220	450	520	520	800	610	750	900	1050
	yd³	0.30	0.59	0.68	0.68	1.05	0.80	0.98	1.18	1.37
Soil Type		<		Packed Earth	i ———	<b>├</b> →	<	Sand/	Gravel —	<b>├</b> →
Digging Depth	m	1.8	1.5	1.8	3.0	3.0	3.0	3.0	3.0	3.0
	ft	6'0"	5'0"	6'0"	10'0"	10'0"	10'0"	10'0"	10'0"	10'0"
Load Bucket	min	0.08	0.07	0.07	0.07	0.09	0.05	0.06	0.06	0.08
Swing Loaded	min	0.03	0.06	0.06	0.08	0.09	0.05	0.05	0.06	0.06
Dump Bucket	min	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Swing Empty	min	0.08	0.05	0.05	0.06	0.07	0.04	0.04	0.05	0.05
Total Cycle Time	min	0.22	0.21	0.21	0.24	0.28	0.17	0.18	0.20	0.23

#### **Cycle Time Estimating Chart**

Model		320D2	320D RR, 321D CR, 323D2	324D	328D LCR	329D	336D	349D2, 349E, 349F	365C L	385C
Bucket Size	L	800	800	1000	N/A	1100	1400	2400	1900	3760
	yd³	1.05	1.05	1.31		1.44	1.83	3.0	2.5	5.0
Soil Type		<				Hard Clay				
Digging Depth	m	2.3	2.3	3.2	N/A	3.2	3.4	4.0	4.2	5.6
	ft	8	8	10		10	11	13	14	18
Load Bucket	min	0.09	0.09	0.09	N/A	0.09	0.09	0.13	0.10	0.19
Swing Loaded	min	0.06	0.06	0.06	N/A	0.06	0.07	0.07	0.09	0.06
Dump Bucket	min	0.03	0.03	0.04	N/A	0.04	0.04	0.02	0.04	0.03
Swing Empty	min	0.05	0.05	0.06	N/A	0.06	0.07	0.06	0.07	0.07
Total Cycle Time	min	0.23	0.23	0.25	N/A	0.25	0.27	0.28	0.30	0.35

N/A = Not Applicable

# **MINING & OFF-HIGHWAY TRUCKS**

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# Mining & Off-Highway Trucks Specifications

MODEL	78	5C	78	5D	789D		
BodyType	Dual	Slope	Dual	Slope	Dual	Slope	
Target Gross Machine Weight §	249 476 kg	550,000 lb	249 476 kg	550,000 lb	324 319 kg	715,000 lb	
Basic Machine Weight*	59 385 kg	130,922 lb	46 240 kg	101,942 lb	48 554 kg	107,043 lb	
Attachments**	21 602 kg	47,624 lb	35 781 kg	78,885 lb	52 249 kg	115,190 lb	
Body Weight without Liners***	22 997 kg	50,700 lb	22 997 kg	50,700 lb	26 606 kg	58,656 lb	
Full Liner	8113 kg	17,886 lb	8113 kg	17,886 lb	9692 kg	21,367 lb	
Operating Machine Weight	112 097 kg	247,132 lb	113 131 kg	249,412 lb	137 101 kg	302,256 lb	
Debris							
(3% of Operating Machine Weight)	3363 kg	7414 lb	3394 kg	7482 lb	4113 kg	9068 lb	
Empty Operating Weight	115 460 kg	254,546 lb	116 525 kg	256,894 lb	141 214 kg	311,324 lb	
Target Payload §	134.0 m tons	147.7 tons	133.0 m tons	146.6 tons	183.1 m tons	201.8 tons	
Capacity:							
Heaped (2:1) (SAE) Base Body	78 m³	102 yd <sup>3</sup>	78 m³	102 yd <sup>3</sup>	108 m³	141 yd <sup>3</sup>	
Heaped (2:1) (SAE) with	04 3	440 12	<b>04</b> 3	440 12	405 3	101 12	
Std. Sideboards	91 m³	119 yd³	91 m <sup>3</sup>	119 yd³	125 m³	161 yd³	
Distribution Empty:				-0/			
Front		5%	45.		46% 54%		
Rear	55	5%	54.	5%	54	%	
Distribution Loaded:		- 0/		- 0/			
Front		3%		3%	33%		
Rear		7%		7%	66%		
Engine Model		BEUI		HD-EUI	3516C HD		
Number of Cylinders		2	12		16		
Bore	170 mm	6.7"	170 mm	6.7"	170 mm	6.7 in	
Stroke	190 mm	7.5"	215 mm	8.46"	210 mm	8.3 in	
Displacement	51.8 L	3158 in <sup>3</sup>	58.56 L	3574 in <sup>3</sup>	78.1 L	4766 in <sup>3</sup>	
Net Power	979 kW	1313 hp	979 kW	1313 hp	1468 kW	1969 hp	
Gross Power	1082 kW	1450 hp	1082 kW	1450 hp	1566 kW	2100 hp	
StandardTires	33.0	0R51	33.0	0R51	37.00	DR57	
Machine Clearance Turning Circle	30.6 m	100'5"	33.2 m	108'11"	30.23 m	99'2"	
FuelTank Refill Capacity	1893 L	500 U.S. gal	1893 L	500 U.S. gal	2082 L	550 U.S. gal	
Top Speed (Loaded)	56.5 km/h	35.1 mph	56.5 km/h	35.1 mph	57.2 km/h	35.5 mph	
GENERAL DIMENSIONS (Empty):							
Height to Canopy Rock Guard Rail	5.77 m	19'0"	5.68 m	18'7"	6.50 m	21'4"	
Wheelbase	5.18 m	17'0"	5.18 m	17'0"	5.70 m	18'8"	
Overall Length (Base Body)	11.02 m	36'3"	11.55 m	37'9"	12.72 m	41'9"	
Loading Height (Base Body)	4.97 m	16'4"	4.97 m	16'4"	5.60 m	18'4"	
Height at Full Dump	11.21 m	36'10"	11.81 m	38'9"	13.20 m	43'4"	
Body Length (Target Length)	7.65 m	25'2"	7.65 m	25'2"	8.29 m	27'3"	
Width (Operating)	6.64 m	21'10"	7.06 m	23'2"	7.65 m	25'1"	
Width (Shipping)****	3.91 m	12'10"	3.91 m	12'10"	3.84 m	12'7"	
FrontTireTread	4.85 m	15'11"	4.85 m	15'11"	5.37 m	17'8"	

\*See Weight Definitions and Relations on page 18 of this section. Note: No mandatory or optional attachments or fuel. \*\*Typical selection of mandatory and optional attachments. \*\*\*Data provided is for a representative body and liner package. Several dual slope, flat floor, and mine specific design (MSD) bodies and liner packages are available. All weights, capacities, and dimensions are dependent on the machine configuration (body type, attachments, tires, and optional equipment selected). \*\*\*\*Disassembled. September 2. Control (Jack 2010) Package Relieu for information on group machine operation unjust and torget package.

\*\*\*\*Disassempled. §Reference Caterpillar's latest 10/10/20 Payload Policy for information on gross machine operating weight and target payload. NOTE: Contact Mining Representative to use Caterpillar Weight Configurator for application specific weights.

#### **USE OF BRAKE PERFORMANCE CURVES**

The speed that can be maintained when the machine is descending a grade with retarder applied can be determined from the retarder curves in this section when gross machine weight and total effective grade are known.

Select appropriate grade distance chart that covers total downhill haul; don't break haul into individual segments. To determine brake performance: Read from gross

weight down to the percent effective grade. (Effective grade equals actual % grade *minus* 1% for each 10 kg/ metric ton (20 lb/U.S. ton) of rolling resistance.) From this weight-effective grade point, read horizontally to the curve with the highest obtainable speed range, then down to maximum descent speed brakes can safely handle without exceeding cooling capacity. When braking, engine RPM should be maintained at the highest possible level without overspeeding. If cooling oil overheats, reduce ground speed to allow transmission to shift to next lower speed range.

Brake Performance Curves are made in compliance with ISO 10268 and applicable to Sea Level and 32° C (90° F) temperature. Contact Factory for Application Specific Performance.

#### USE OF RIMPULL-SPEED-GRADEABILITY CURVES

For best results, use Caterpillar Fleet Production and Cost Analysis (FPC) to simulate cycle time, fuel burn, and production for Application Specific Performance inquiries. Contact Factory Representative or visit catminer.cat. com/stb for more information.

(See Wheel Tractor Scraper Section)

**Total Effective Grade** (or Total Resistance) is grade assistance *minus* rolling resistance.

10 kg/metric ton (20 lb/U.S. ton) = 1% adverse grade.

#### Example —

With a favorable grade of 20% and rolling resistance of 50 kg/metric ton (100 lb/U.S. ton), find Total Effective Grade.

$$(50 \text{ kg/metric ton}) = 50 \div 10 = 5\%$$
 Effective Grade  
(from Rolling Resistance)

#### **TYPICAL FIXED TIMES FOR HAULING UNITS**

Wait time, delays and operator efficiency all impact cycle time. Minimizing truck exchange time can have a significant effect on productivity.

Fixed time for hauling units include:

- 1. Truck load time (various with loading tool)
- 2. Truck maneuver in load area (Truck exchange) (Typically 0.6-0.8 min.)
- 3. Maneuver and dump time at dump point (Typically 1.0-1.2 min.)

Total cycle time is the combination of:

- 1. The above fixed time
- 2. Hauling time (Loaded)
- 3. Return time (Empty)

Example — assume load tool spots hauler with full bucket

		988F	5130B
cycle	times		.45
First pass	(dump time)		.05 min.
2 passes	(full cycle)		.50
3 passes			.95
4 passes			1.40
5 passes			1.85
6 passes			2.30
7 passes			2.75
8 passes			3.20
9 passes			3.65
10 passes			4.10

**NOTE:** Other sizes of loading tools will have different cycle times. See Wheel Loader section for **average** cycle times for truck loading.

## **MOTOR GRADERS**

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#### **INDUSTRIES SERVED**

The motor grader is one of the most versatile work tools in the Cat<sup>®</sup> product line. The M Series machines are used in numerous applications within a wide range of industries. The major industries using Cat motor graders, along with the typical applications within each, are summarized below.

#### • Heavy Construction

Highway Construction Paving/Resurfacing Airport Construction Railroad Construction Dam and Levee Construction Haul Road Maintenance

#### • Governmental

Road Maintenance Road Construction Ditch Building/Cleaning Snow Removal

#### • Building Construction

Residential Construction Commercial Construction Industrial Construction Sewer and Water Systems

#### • Industrial

Waste Disposal Pipeline Construction

#### • Mining

Haul Road Maintenance Snow Removal

#### • Forestry

Access Road Construction Forest Development Snow Removal Haul Road Maintenance

• Geographic Versions — Cat motor graders were specifically designed to meet the needs of different geographic regions and regulations. K/K2 Series for less regulated locations and M/M2/M3 Series are available with an assortment of standard features and optional equipment. All motor graders feature advanced electronically controlled Cat engines, power train components, hydraulics and machine structures.

#### FEATURES, M Series Motor Graders:

Building on the strong heritage of the H Series, the M Series delivers multiple technological breakthroughs, setting the new standard for motor graders. The H Series has been the industry standard in a variety of heavy construction, mining, road building and governmental applications. The M Series continues this tradition, incorporating revolutionary, customer-driven enhancements by:

- Improving ease of operation and operation training time
- Offering best-in-class operator station and unmatched visibility
- Delivering maximum productivity
- Improving availability and decreasing maintenance time

The M Series line includes eleven models: 120, 120 AWD, 140, 140 AWD, 160, 160 AWD, 12, 12 AWD, 14, 16, 24. The 120 through 14 meet construction, road building, and governmental applications. The All Wheel Drive models improve traction in poor underfoot conditions such as snow, mud, and sand. The 16 and 24 meet the specialized needs of large mining customers.

• **Operation Station:** The 120 through 16 models feature a revolutionary cab design that provides unmatched comfort, visibility, storage and ease of use, which can enhance operator confidence and productivity. The interior noise level is maintained between 70 and 74 dB(A) with the doors and windows closed.

**Ease of Operation.** The revolutionary joystick controls and exceptional visibility make operating easier without sacrificing control. The intuitive joystick control pattern allows both new and experienced operators to become productive quickly. Logical grouping of hydraulic functions in the joysticks allow any operator to easily control several functions at the same time. This allows the operator to be more productive and remain comfortable throughout the work shift. Advanced Joystick Controls. Two electro-hydraulic joysticks reduce hand and wrist movement as much as 78% compared to conventional lever controls for greatly enhanced operator efficiency. The intuitive pattern is easy to learn and provides the precise implement control to allow both new and experienced operators to become productive quickly. Logical grouping of hydraulic functions in the joysticks allow any operator to control several functions at the same time for more productivity.

**Visibility.** The 120 through 16 models boast excellent visibility to the work area, made possible with angled cab doors, a tapered engine enclosure and a patented sloped rear window. Ample glass area and carefully placed components provide excellent visibility to enhance operator confidence and productivity in all motor grader applications. The cab design gives the operator an exceptional view forward to the blade, working surface and front tires. The black glare-reducing paint on the front frame and engine enclosure enhances visibility.

• Drawbar, Circle and Moldboard: The 120 through 16 models provide a broad range of extended blade positions particularly beneficial in mid-range bank sloping, ditch cutting and ditch cleaning. A long wheel base allows for an aggressive blade angle permitting material to roll more freely, reducing power requirements. Top-accessible drawbar wear inserts and the shimless moldboard retention system make DCM adjustments fast and simple, delivering more precise material control while lowering operating costs.

**Top-Adjust Drawbar Wear Strips.** The patented topadjust wear strips dramatically reduce drawbar/circle adjustment time. By removing the access plates on top of the drawbar, shims and wear strips can easily be added or replaced. This feature reduces service downtime and lowers overall machine operating costs.

Shimless Moldboard Retention System. The unique shimless moldboard retention system reduces the potential for blade chatter. Adjusting screws keep the moldboard's wear strips aligned for precise blade control and dramatic reductions in service time. • **Power Train:** Integrated, electronically controlled systems, deliver smooth reliable performance with reduced operating costs.

**Smooth Shifting Transmission.** The transmission design combines several key innovations to ensure smooth, powerful shifts throughout the gear range.

Advanced Productivity Electronics Control Strategy (APECS). APECS utilizes an electronic control strategy to read the input from sensors to shift the transmission at the optimal point. Event based shifting allows operators to experience faster, smoother and more consistent shifts. Note: M Series 3 Only.

**Electronically Controlled Shifting.** The full Electronic Clutch Pressure Control (ECPC) system optimizes inching modulation and smoothes shifting between all gears and directional changes. This provides outstanding control and also extends the life of the transmission by reducing stress on gears.

**Load Compensation.** This standard feature ensures consistent shift quality regardless of blade or machine load.

**Hydraulic Brakes.** The oil bathed, multi-disc service brakes are hydraulically actuated, providing smooth predictable braking and lower operating costs. With brakes located at each tandem wheel, the Cat motor graders offer the largest total brake surface area in the industry, delivering dependable stopping power and longer brake life.

• Engine: The Cat motor grader combines power management with ACERT<sup>™</sup> Technology to deliver maximum power and efficiency while reducing the environmental impact.

ACERT Technology. ACERT Technology allows Cat engines to supply more power per unit of displacement without causing premature wear. This breakthrough technology reduces emissions during the combustion process by using advanced technology in the air and fuel systems, in conjunction with integrated electronics. ACERT Technology enhances overall engine performance while dramatically reducing exhaust emissions. **Power Management.** Power Management utilizes Variable Horse Power (VHP) and Variable Horse Power Plus (VHP Plus) to optimize motor grader performance. VHP delivers additional power in the working gear while balancing fuel consumption, traction and horsepower. VHP Plus, delivers additional power in each forward gear 5th through 8th for increased speed on grade and performance.

**Exhaust Emission Standards.** The Cat ACERT Technology engines in the M Series Motor Graders meet U.S. EPA Tier 3/EU Stage IIIA equivalent/Japan 2006 (Tier 3) emission standards. The M Series 2 machines meet U.S. EPA Tier 4 Interim/EU Stage IIIB/Japan 2011 (Tier 4 Interim) equivalent emission standards. The M Series 3 machines meet U.S. EPA Tier 4 Final/EU Stage IV/Japan 2014 (Tier 4 Final) emission standards.

• **Hydraulics:** Electro-hydraulics enable advanced machine controls with precise and predictable movements.

Advanced Electro-Hydraulic System. The Cat motor grader product line incorporates a state-of-the-art electro-hydraulic system. This technology is the foundation for revolutionary changes of the machine and implement controls. Advanced joystick controls provide unmatched controllability with precise, predictable hydraulic movements and the reliability you expect from Cat products.

Load Sensing Hydraulics (PPPC). The time proven load-sensing system and the advanced Proportional Priority Pressure-Compensating (PPPC, or "triple-PC") electro-hydraulic valves are designed to provide superior implement control and enhanced machine performance in all applications. Continuous matching of hydraulic flow and pressure to power demands creates less heat and reduces power consumption.

#### • Serviceability:

**Grouped Service Points.** Grouped daily service points in the left side service center help ensure proper maintenance and inspection routines.

**Extended Service Intervals.** Extended service intervals, such as 500-hour engine oil changes and 4000-hour hydraulic oil changes, reduce machine service time and increase availability.

**Ecology Drains.** Conveniently located ecology drains shorten service times and help keep the environment safe by preventing spills.

**Diagnostics and Monitoring.** Cat Messenger and Cat Message are offered as standard equipment to enhance diagnostic capabilities by displaying machine system errors and fault codes. Cat Electronic Technician is a two way communication tool that provides easy access to stored diagnostic data and lets technicians configure machine parameters through the Cat Data Link. Product Link<sup>™</sup> provides a communication flow of vital machine data and location. Cat motor graders integrate Cat Messenger, Cat Electronic Technician, and S•O•S<sup>SM</sup> analysis for easy monitoring and fast trouble-shooting, keeping your machine up and running. Note: Cat Messenger is standard on M Series 3 only.

• Safety. Safety is an integral part of all machine and system designs. Cat motor graders provide a safe working environment for both the operator and ground personnel. ROPS and FOPS structures meeting current SAE and ISO requirements are standard on all Global machines. Back-up alarms are a standard feature.

**Operator Presence System.** The Operator Presence System keeps the parking brake engaged until the operator is seated for safe operation.

**Secondary Steering System.** The standard secondary steering system automatically engages in case of a drop in steering pressure, allowing the operator to steer the machine to a stop.

**Speed Sensitive Steering.** The steering software automatically provides an infinitely variable ratio between the joystick and the steer tires, resulting in less sensitive steering as the groundspeed increases.

**Hydraulic Lockout.** A simple switch located in the cab disables all implement functions while still providing machine steering control. This safety feature is especially useful while the machine is roading.

**Circle Drive Slip Clutch.** This standard feature protects the drawbar, circle and moldboard from shock loads when the end of the blade encounters immovable objects. It also reduces the possibility of abrupt directional changes in poor traction conditions, protecting the machine, operator and surroundings.

**Blade Lift Accumulators.** This optional feature uses accumulators to help absorb impact loads to the moldboard by allowing vertical blade travel. Blade lift accumulators reduce unnecessary wear and help to avoid unintended machine movement for increased operator safety.

**Drop-Down Rear Lights.** Optional drop-down lights fold out from the rear of the machine. This creates a wider, lower profile, to be better aligned with passenger cars.

**Rearview Camera.** Visibility is further enhanced with an optional Work Area Vision System (WAVS) LCD color monitor in the cab.

- Automatic Differential Lock/Unlock. The Auto Diff-Lock feature automatically unlocks the differential during a turn, re-locks when straight, for easier operation and improved power train protection.
- Swing Out Cooling Fan. This standard feature allows for easy access to the cooling cores reducing time required for clean out. The latched door requires no tools for opening and closing. Note: M Series 2 and M Series 3 Only.

#### **APPLICATIONS, Motor Graders:**

The broad line of Cat motor graders allows the customer to choose a motor grader that best fits the intended application. Below is a summary of the typical motor grader applications.

#### **Finish Grading**

This application involves preparing a roadway or site surface for future paving or other construction activity. The material being moved is usually a hard, dry base material on a solid underfoot. Finish blading is the motor grader application that requires the highest degree of accuracy. Thus, it is primarily done at low operating speeds — usually less than 5 km/h (3 mph) — in gears 1 and 2. To ensure a smooth, even finished surface, one gear is usually maintained for a given pass. Pass lengths during this application are usually less than 600 m (2000 feet) for road construction and 150 m (500 feet) for site development. Most finish blading is performed by contractors in the Heavy Construction and Building Construction industries.

#### **Heavy Blading**

This application involves cutting, moving, and mixing material, usually in the initial stages of surface preparation. A variety of material types are moved in this manner, and the blade tip position varies accordingly. Full blade loads are usually experienced during heavy blading, since moving material is the primary goal. Pass lengths within this application vary, but are usually less than 600 m (2000 feet). Unlike finish blading, the speed of the machine is dependent on the load being moved when heavy blading material. Typical operating speeds are from 0-10 km/h (0 to 6 mph). Therefore, gears 2 through 4 are frequently used in this application. Most heavy blading activity is performed by contractors in the Heavy Construction, Governmental, Industrial, and Forestry industries.

#### **Site Preparation**

This application involves any material cutting, moving, and mixing necessary to prepare a residential, commercial, or industrial site for construction. A variety of materials are encountered in this application. Blade loads vary depending on the activity being performed. Both heavy blading and finish blading are performed when preparing a site. Pass lengths are typically in the range of 30-300 m (100 to 1000 feet). Typical operating speeds for site preparation vary depending on whether heavy blading or finish blading activities are being performed. Most site preparation activities are performed by contractors in the Building Construction industry.

#### **Road Maintenance**

This application involves reshaping dirt or gravel roads to maintain a crown or superelevation, or restoring the surface itself. This generally involves secondary roads maintained by governmental bodies such as townships and counties. Materials being moved in this application vary from extremely hard dirt bases to moist gravel surfaces. The typical blade load falls between that of finish blading and heavy blading. Pass lengths are frequently longer than 600 m (2000 feet) and can extend for miles. The general speed range for this application is 5-16 km/h (3 to 10 mph), corresponding to gears 2 (heavy dirt) through 5 (soft gravel). As with finish blading, accuracy of the graded surface is the primary concern in this application. Thus, frequent shifts should be avoided whenever possible. A gear should be chosen and maintained unless there is a significant change in the material being moved. Most road maintenance activities are performed by the Governmental industry.

#### **Haul Road Maintenance**

This application of the motor grader involves reshaping haul roads at mining, construction, or forestry work sites, usually for the purpose of maintaining smooth travel surfaces for equipment. Materials being moved while maintaining haul roads vary widely. Typical blade loads are about one-third to half of full capacity. Haul roads that experience large hauling units travelling on soft material may require heavy blade loads in order to reshape the road surface. Pass lengths vary depending on the application but can extend for miles on remote forestry or large mine haul roads. The general speed range for haul road maintenance is heavily dependent on the material being moved as well as the grade of the haul road. Many mine sites are in mountainous areas. requiring haul roads with steep grades. Generally, haulroad maintenance is performed at speeds similar to those required for general road maintenance 5-16 km/h (3 to 10 mph).

A travel surface that allows for the safe and efficient movement of machinery is the ultimate goal with this motor grader application. Very precise roadway elevations and slopes are desired but less crucial than when finish blading. Most haul road maintenance activities are performed by the Mining, Heavy Construction, and Forestry industries.

#### Side/Bank Slope Work

This application involves preparing side slopes or bank slopes along roadways by placing the moldboard on a sloped surface. Slopes of up to a 2:1 angle can be cut using a motor grader. Often the motor grader is operated on the level surface adjacent to the slope, and the moldboard is extended outward to the sloped surface. Fine soils are generally encountered in this application of the motor grader. Blade loads are usually less than half of the full blade capacity, and pass lengths are seldom longer than 600 m (2000 feet). A smooth-graded sloped surface is the primary concern in this application so frequent shifts should be avoided. The typical speed range is 0-6 km/h (0 to 4 mph), corresponding to a gear selection of 1 to 3. The nominal speed is heavily dependent on the type of material being moved and on the slope of the surface. Most side/bank slope work is performed by the Heavy Construction and Governmental industries.

#### **Ditch Building/Cleaning**

This application involves cutting "V" and flat-bottom ditches for drainage purposes and rebuilding them when necessary. Due to excessive rain and/or poor material, ditches often need cleaning and reshaping. When building ditches, materials with a wide range of densities are encountered. Blade loads vary accordingly, from half to full-blade capacity. Pass lengths are usually less than 600 m (2000 feet). The primary objective is to move material in a manner that yields a ditch with the desired slope. Ditch building often involves cutting and moving material of high density. Therefore, typical speed ranges vary. Most ditch building work, however, is performed in gears 1 through 3, corresponding to a maximum speed of about 8 km/h (5 mph). Ditch cleaning usually involves blading moist materials underneath a sod cover. Blade loads are usually less than half of full blade capacity when cleaning ditches, and pass lengths are similar to those encountered in ditch building. Typical maximum speeds for this activity are similar to that of ditch building, but less of a blade load is experienced. Ditch building and cleaning activities are usually performed by the Heavy Construction and Governmental industries.

#### Applications Truck to Motor Grader Match

#### **Ripping/Scarifying**

This application involves conditioning hard, rough soils before they are bladed. Shanks on the ripper and/ or scarifier are pushed into the ground, thus breaking up otherwise hard surfaces. Hard materials such as asphalt can also be loosened in order to make grading operations less damaging to the moldboard. Rippers and scarifiers can also be used to mix aggregates together. The materials being ripped/ scarified are usually hard and dry. Rippers generally penetrate 150-300 mm (6 to 12 inches) into the ground, while scarifiers typically penetrate to a depth of 25-200 mm (1 to 8 inches). Pass lengths are generally less than 600 m (2000 feet) for both activities. Since the material being ripped/scarified is generally hard, the typical maximum speed for this application is about 6 km/h (4 mph) gears 1-2. If the ripper/scarifier is used for mixing aggregates, the typical operating range becomes 6-20 km/h (4 to 12 mph) gears 3-6. Most ripping/scarifying activities are performed by the Heavy Construction and Governmental industries.

#### Snow Removal

Snow removal is the process of cutting and removing snow or ice from the roadway. In addition to the standard motor grader moldboard, other attachments such as a snow wing, V-plow, one-way plow, or reversible plow can be used to remove the snow. The moldboard itself is the most commonly used attachment for snow plowing. It is used in areas where snow depths are low, the terrain is relatively flat, and where excessive drifting does not occur. A snow wing is a moldboard that attaches to the machine's right side. The wing's curvature lifts the snow and "wings" it off the plowed surface. The snow wing is often used in conjunction with the standard moldboard, where the moldboard cuts the material and feeds it onto the wing. V-plows are mounted in front of the motor grader and are designed to dig into and lift packed snow. The typical speed range for snow removal is 10-30 km/h (6 to 18 mph), corresponding to a gear range of 3 to 7. Snow plowing often involves lower speeds than snow removal. The typical operating range for snow plowing is 8-19 km/h (5 to 12 mph) gears 2 to 4. The majority of Snow Removal/Plowing operations are performed by the Governmental, Mining, and Forestry industries.

	740	770	775	777	785	789	793	797
12/140/160								
14								
16								
18								
24								

#### TRUCK TO MOTOR GRADER MATCH

NOTE: Calculations based on 30 degree blade angle, standard moldboard width. May not be applicable in all applications depending on haul road damage. Rule of thumb 2.5 times the truck width.

# Specifications Motor Graders Global Versions

MODEL	14	M3	16	M3		
Base Power — Net	178 kW	238 hp	216 kW	290 hp		
VHP Range — Net	178-213 kW	238-285 hp	216-259 kW	290-348 hp		
VHP Plus Range — Net	180-215 kW	241-289 hp	-	-		
Operating Weight*	25 968 kg	57,250 lb	32 411 kg	71,454 lb		
Engine Model	C13 A	CERT	C13 A	CERT		
Rated Engine RPM	18	350	20	00		
No. of Cylinders		6		3		
Displacement	12.5 L	763 in <sup>3</sup>	12.5 L	763 in <sup>3</sup>		
Max. Torque:						
Tier 4 Final <sup>1</sup>	1542 N⋅m	1137 lb-ft	1771 N·m	1306 lb-ft		
Tier 2 and Tier 3 Equivalent <sup>2</sup>	1542 N·m	1137 lb-ft	1721 N·m	1270 lb-ft		
No. of Speeds Forward/Reverse	8	/6	8	/6		
Top Speed: Forward	50.5 km/h	31.4 mph	51.7 km/h	32.1 mph		
Reverse	39.9 km/h	24.8 mph	40.8 km/h	25.3 mph		
Std. Tires – Front and Rear	20.5	5R25	23.5	R25		
Front Axle/Steering:						
Oscillation Angle	3	2°	3	5°		
Wheel Lean Angle – Left/Right	-	/17.1°		/17°		
Steering Angle		0°		.5°		
Articulation Angle	-	0°		0°		
Minimum Turning Radius**	7.9 m	25'11"	9.3 m	30'6"		
No. Circle Support Shoes		6		5		
Hydraulics:		-		-		
PumpType	Variabl	e Piston	Variable	Piston		
Max. Pump Flow	257 L/min	68 gpm	280 L/min	74 gpm		
Tank Capacity	64 L	16.9 U.S. gal	70 L	18.5 U.S. gal		
Implement Pressure: Max.	24 100 kPa	3495 psi	24 750 kPa	3590 psi		
Min.	3400 kPa	493 psi	3400 kPa	493 psi		
Interior Sound Level/SAE J919:		100 poi		100 po.		
Tier 4 Final/EU Certified <sup>1</sup>	73 d	IB(A)	71 dB(A)			
Tier 2 and Tier 3 Equivalent <sup>2</sup>		IB(A)		B(A)		
Electrical:		-()				
System Size	24	4V	24	V		
Std. Battery CCA @ 0° F		25	1400			
Std. Alternator		50	150			
GENERAL DIMENSIONS:						
Height (to top of ROPS)	3566 mm	140.4"	3719 mm	146.4"		
Overall Length	9677 mm	381"	10 593 mm	417"		
With Ripper and Pushplate	10 899 mm	429.1"	12 051 mm	474.4"		
Wheelbase	6616 mm	260.5"	7365 mm	290"		
Blade Base	2880 mm	113.4"	3066 mm	120.7"		
Overall Width (at top of front tires)	3050 mm	120.1"	3411 mm	134.3"		
Standard Blade: Length	4267 mm	14'0"	4877 mm	16'0"		
Height	585 mm	23.0"	787 mm	31.0"		
Thickness	25.4 mm	1.0"	25 mm	1.0"		
Lift Above Ground	438 mm	17.2"	400 mm	15.7"		
Max. Shoulder Reach:***						
Frame Straight – Left	3460 mm	136.2"	2311 mm	91"		
Frame Straight – Right	3350 mm	131.9"	2311 mm	91"		
Fuel Tank Capacity	416 L	109.9 U.S. gal	496 L	131 U.S. gal		
*Operating Weight — based on standard machine of	-	-		101 0.0. gai		

\*Operating Weight — based on standard machine configuration with full fuel tank, coolant, lubricants and operator. \*\*Minimum Turning Radius — combining the use of articulated frame steering, front wheel steer and unlocked differential.

\*\*\*Applicable for the standard blade with hydraulic sideshift and tip control. Maximum shoulder reach is obtainable to the right.

<sup>1</sup>Meets Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards.

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<sup>2</sup> Meets Tier 2/Stage II/Japan 2001 (Tier 2) equivalent and Tier 3/Stage IIIA/Japan 2006 (Tier 3) equivalent emission standards.

G	iear	1		2	2	3	3	4	Ļ	Ę	5	6	6	7	7	8	3
		km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph
120M	Forward	4.1	2.6	5.6	3.5	8.2	5.1	11.2	7.0	17.5	10.8	23.7	14.8	32.7	20.3	47.5	29.5
	Reverse	3.3	2.0	6.1	3.8	8.9	5.5	13.8	8.6	25.8	16.0	37.5	23.3	—	_	—	
120M2	Forward	4.0	2.5	5.4	3.4	7.8	4.8	10.8	6.7	16.8	10.4	22.8	14.2	31.4	19.5	45.7	28.4
	Reverse	3.1	1.9	5.9	3.9	8.5	5.3	13.2	8.2	24.8	15.4	36.1	22.4	—	—	—	_
12M	Forward	4.0	2.5	5.5	3.4	8.0	5.0	11.0	6.8	17.1	10.6	23.3	14.5	32.0	19.9	46.6	29.0
	Reverse	3.2	2.0	6.0	3.7	8.7	5.4	13.5	8.4	25.3	15.7	36.8	22.9	—	—	—	_
12M2	Forward	4.1	2.5	5.5	3.4	8.0	5.0	11.0	6.9	17.1	10.6	23.3	14.5	32.0	19.9	46.6	29.0
	Reverse	3.2	2.0	6.0	3.7	8.7	5.4	13.5	8.4	25.3	15.7	36.8	22.9	—	—	—	_
12M3	Forward	4.1	2.5	5.5	3.4	8.0	5.0	11.0	6.9	17.1	10.6	23.3	14.5	32.0	19.9	46.6	29.0
	Reverse	3.2	2.0	6.0	3.7	8.7	5.4	13.5	8.4	25.3	15.7	36.8	23.0	—	—	—	_
140M	Forward	4.0	2.5	5.5	3.4	8.0	5.0	11.0	6.9	17.1	10.6	23.3	14.5	32.0	19.9	46.6	29.0
	Reverse	3.2	2.0	6.0	3.7	8.7	5.4	13.5	8.4	25.3	15.7	36.8	22.9	—	—	—	_
140M2	Forward	4.1	2.5	5.5	3.4	8.0	5.0	11.0	6.9	17.1	10.6	23.3	14.5	32.0	19.9	46.6	29.0
	Reverse	3.2	2.0	6.0	3.7	8.7	5.4	13.5	8.4	25.3	15.7	36.8	22.9	—	—	—	_
140M3	Forward	4.1	2.5	5.5	3.4	8.0	5.0	11.0	6.9	17.1	10.6	23.3	14.5	32.0	19.9	46.6	29.0
	Reverse	3.2	2.0	6.0	3.7	8.7	5.4	13.5	8.4	25.3	15.7	36.8	23.0	—	—	—	_
160M	Forward	4.1	2.5	5.6	3.5	8.1	5.0	11.2	7.0	17.4	10.8	23.7	14.7	32.6	20.3	47.4	29.5
	Reverse	3.3	2.0	6.1	3.8	8.8	5.5	13.7	8.5	25.7	16.0	37.4	23.3	—	—	—	—
160M2	Forward Reverse	4.1 3.3	2.6 2.0	5.6 6.1	3.5 3.8	8.1 8.9	5.1 5.5	11.2 13.7	7.0 8.5	17.4 25.7	10.8 16.0	23.7 37.4	14.7 23.3	32.6 —	20.3 _	47.4	29.5 —
160M3	Forward	4.1	2.6	5.6	3.5	8.1	5.1	11.2	7.0	17.4	10.8	23.7	14.7	32.6	20.3	47.4	29.5
	Reverse	3.3	2.0	6.1	3.8	8.8	5.5	13.7	8.5	25.7	16.0	37.4	23.3	—	—	—	—
14M3	Forward	4.4	2.7	5.9	3.7	8.6	5.3	11.8	7.4	18.4	11.4	24.9	15.5	34.3	21.3	49.9	31.0
	Reverse	3.4	2.1	6.4	4.0	9.4	5.8	14.5	9.0	27.0	16.8	39.4	24.5	—	—	—	_
16M3	Forward	4.5	2.8	6.1	3.8	8.9	5.5	12.3	7.6	19.0	11.8	25.8	16.0	35.5	22.0	51.7	32.1
	Reverse	3.6	2.2	6.6	4.1	9.7	6.0	15.0	9.3	28.0	17.4	40.8	25.3	—	—	—	—
18M3	Forward	4.5	2.8	6.1	3.8	8.9	5.5	12.3	7.6	19.0	11.8	25.8	16.0	35.5	22.0	51.7	32.1
	Reverse	3.6	2.2	6.6	4.1	9.7	6.0	15.0	9.3	28.0	17.4	40.8	25.3	—	_	—	—
24M	Forward Reverse	3.7 5.5	2.3 3.4	5.7 14.5	3.6 9.0	9.7 41.6	6.0 25.8	15.1 —	9.4 —	28.0 —	17.4 —	43.4 —	27.0 —	-	_	-	_

#### TRAVEL SPEEDS @ MAXIMUM RPM WITH STD. TIRES (M/M2/M3 SERIES)

NOTE: 120M speeds were calculated with a 628 mm (24.7") tire at 2000 rpm rated speed. 120M2 speeds were calculated with a 620 mm (24.4") tire at high idle, 2150 rpm.

12M2-160M2 speeds were calculated with a 655 mm (**25.8**") tire at high idle, 2150 rpm. 12M3-160M3 speeds were calculated with a 655 mm (**25.8**") tire at 2000 rpm rated speed.

#### PRODUCTION

The motor grader is used in a variety of applications in a variety of industries. Therefore, there are many ways to measure its operating capacity, or production. One method expresses a motor grader's production in relation to the area covered by the moldboard.

#### Formula:

$A = S \times (L_e - L_o)$	×	1000	×	Е	(Metric)
$A = S \times (L_e - L_o)$	×	5280	×	Е	(English)

- where
- A: Hourly operating area (m<sup>2</sup>/h or ft<sup>2</sup>/h)
   S: Operating speed (km/h or mph)
  - $L_e$ : Effective blade length (m or ft)
  - $L_0$ : Width of overlap (m or ft)
  - E: Job efficiency

#### Operating Speeds:

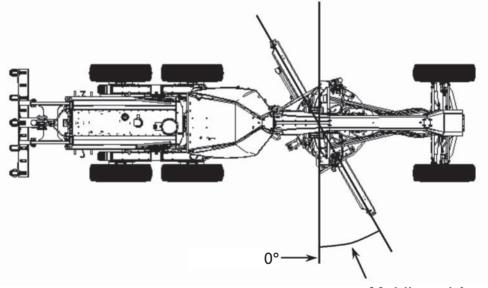
Typical operating speeds by application

Finish Grading:	0-4 km/h	(0-2.5 mph)
Heavy Blading:	0-9 km/h	(0-6 mph)
Ditch Repair:	0-5 km/h	(0-3 mph)
Ripping:	0-5 km/h	(0-3 mph)
Road Maintenance:	5-16 km/h	(3-9.5 mph)
Haul Road Maintenance:	5-16 km/h	(3-9.5 mph)
Snow Plowing:	7-21 km/h	(4-13 mph)
Snow Winging:	15-28 km/h	(9-17 mph)

#### Effective Blade Length:

Since the moldboard is usually angled when moving material, an effective blade length must be computed to account for this angle. This is the actual width of material swept by the moldboard.

**NOTE:** Angles are measured as shown below. The effective length becomes shorter as the angle increases.



Moldboard Angle

Moldboard Length, m (ft)	Effective Length, m (ft) 30 degree blade angle	Effective Length, m (ft) 45 degree blade angle
3.658 (12)	3.17 (10.4)	2.59 (8.5)
4.267 (14)	3.70 (12.1)	3.02 (9.9)
4.877 (16)	4.22 (13.9)	3.45 (11.3)
7.315 (24)	6.33 <b>(20.8)</b>	5.17 <b>(17.0)</b>

For other blade lengths and carry angles:

Effective length = COS [Radians (Blade L)] 3 Blade Length

#### Width of Overlap:

The width of overlap is generally 0.6 m (2.0 ft). This overlap accounts for the need to keep the tires out of the windrow on the return pass.

#### Job Efficiency:

Job efficiencies vary based on job conditions, operator skill, etc.

A good estimation for efficiency is approximately 0.70 to 0.85, but actual operating conditions should be used to determine the best value.

#### Example problem:

A Cat motor grader with a 3.66 m (12 ft) moldboard is performing road maintenance on a township road. The machine is working at an average speed of 13 km/h (8 mph) with a moldboard carry angle of 30 degrees. What is the motor grader's production based on coverage area?

Note: Due to the long passes involved in road maintenance — fewer turnarounds — a higher job efficiency of 0.90 is chosen.

#### Solution:

From the table, the effective blade length is 3.17 m (10.4 ft).

Metric

Production, 
$$A = 13 \text{ km/h} \times (3.17 \text{ m} - 0.6 \text{ m}) \times 1000 \times 0.90$$
  
= 30 069 m<sup>2</sup>/hr (3.07 hectares/hr)

#### English

Production, A = 8 mph × (10.4 ft - 2.0 ft) ×  $5280 \times 0.90$ = 319,334 ft<sup>2</sup>/hr (7.33 acres/hr)

To pinpoint the theoretical number of motor graders required to properly maintain your haul roads, based on your specific mining applications, please download the haul road maintenance calculator on *https://catminer.cat.com*.

Haul road maintenance impacts cycle time, tire, frame and drive train components, safety and ultimately your cost per ton. To achieve optimal truck productivity, your haul roads must be properly maintained.

Moderate: • Road Maintenance

- Pad Cleaning
- Rock Clearing
- Shoulder Sweeping

- Difficult: Ripping
  - Spreading Dump Material
  - Road Profiling/Reshaping

#### **BLADE PULL**

This specification is also known as drawbar pull. This spec can be calculated as follows:

Variables:

Rear weight of machine = Wr

Tire traction

coefficient = T (Look up the table entitled "Coefficient of Traction Factors")

 $Wr \times T = Blade Pull$ 

Example problem:

Calculate the blade pull for a 140M Global Version version machine operating in a quarry pit...

Metric

RW = 10501 kg

T = 0.65

 $10\ 501\ imes\ 0.65\ =\ 6825.65$ 

English

RW = 23,151 lbT = 0.65

 $23,151 \times 0.65 = 15,048.15$ 

#### **BLADE DOWN PRESSURE**

This spec can be calculated as follows: Variables:

Blade to front axle length = BA

Wheel base length = WB

Weight on front wheels = FW Blade down pressure = BD

ade down pressure 
$$=$$
 BD

$$\frac{WB}{WB - BA} \times FW = BD$$

#### Example problem:

Calculate the blade down pressure for a 140M Global Version version machine...

Metric

BA = 2565 mm FW = 4223 kg WB = 6086 mm BD = ?  $\frac{6086}{(6086 - 2565)} \times 4223 = 7299 kg$  English BA = 101 in FW = 9310 lb WB = 240 in BD = ?  $\frac{240}{(240 - 101)} \times 9310 = 16,075 \text{ lb}$ 

This specification is only a minor indicator of a motor grader's productivity. It alone gives no measure of overall machine productivity. When considering motor grader production you need an optimum balance between the machine's front and rear weights. If a machine has too much weight on the front axle, it might have a high blade down pressure spec. It will, however, lack the essential rear weight and traction needed to push through the load. Too much weight in the rear and it will not have the necessary weight in the front during heavy cuts to maintain proper steering control.

Cat machines are built with this optimum balance in mind. A Cat motor grader is engineered with the proper weight distribution necessary for maximum productivity.

Effective Blade Length\*

		Moldboard											
		3.66 r	7.32 m (24')										
		m	ft	m	ft	m	ft	m	ft				
	0°	3.66	12.00	4.27	14.00	4.88	16.00	7.32	24.00				
	5°	3.64	11.95	4.25	13.95	4.86	15.94	7.29	23.91				
°	10°	3.60	11.82	4.20	13.79	4.80	15.76	7.21	23.64				
	15°	3.53	11.59	4.12	13.52	4.71	15.45	7.07	23.18				
Angle°	20°	3.44	11.28	4.01	13.16	4.58	15.04	6.87	22.55				
Ā	25°	3.32	10.88	3.87	12.69	4.42	14.50	6.63	21.75				
	30°	3.17	10.39	3.69	12.12	4.22	13.86	6.33	20.78				
	35°	3.00	9.83	3.50	11.47	4.00	13.11	5.99	19.66				
	40°	2.80	9.19	3.27	10.72	3.74	12.26	5.61	18.39				
	45°	2.59	8.49	3.02	9.90	3.45	11.31	5.17	16.97				

\*Effective blade length is the amount of blade coverage the machine is capable of when the blade is at a given angle.

# EXTREME SLOPE OPERATION

There are two ways of defining slope work. The slope perpendicular to the machine's direction of travel is commonly referred to as "Side Sloping." The slope parallel to the machine's direction of travel — the machines ability to travel up or down terrain, is commonly referred to as "Gradeability."

Side Sloping capability for our Cat graders is somewhat subjective, but general agreement among professional operators is that working on a slope ratio of 2.5:1 (21.8 degrees) is the safe limit ... an experienced operator may be able to operate on a 2:1 (28 degrees) slope. Many factors influence this limit such as operator experience, machine configuration, tires and soil conditions, but a 2.5:1 is achievable. Further, a 3:1 slope is the approximate maximum side slope a grader can work on in straight frame configuration. The steeper side slopes all require the machine be articulated to safely navigate the slope.

Gradeability is approximately 22 degrees. This is established by the grader's ability to stop without skidding the tires while moving downhill. The motor grader can, however, *climb* grades steeper than 22 degrees. The traction coefficient is the critical factor in determining whether a grader can safely navigate the slope. Caterpillar recommends that you never climb a slope steeper than you can safely descend.

Maximum lubrication angle: We have measured the graders on a tilt table and pump cavitation occurs around 30 degrees (58% or 1.7:1). This is beyond the grade or slope a motor grader can operate on.

When working side hills and slopes, consideration should be given to the following important points.

- Speed of Travel At higher speeds, inertia forces tend to make the grader less stable.
- Roughness of Terrain or Surface Ample allowance should be made where the terrain or surface is uneven.
- Mounted Equipment Mounted attachments such as front plows, snow wings, rippers and other mounted equipment cause the tractor to balance differently.
- Nature of Surface New earthen fills may give way with the weight of the grader. Rocky surfaces may promote side slipping of grader.
- Excessive Loads or Side Draft This may cause wheel slippage, where the downhill tires "dig in," increasing the angle of grader.
- Tire Selection and Maintenance Consideration should be given to proper tire selection and air pressure. For more information, consult Caterpillar publications Motor Grader Tire Selection Guide and Operation and Maintenance Manual.
- Drawbar, Circle and Blade Position The position of the blade can affect the stability of the machine.
- Articulation Angle Articulation angle can affect the stability of the machine.
- Wheel Lean Angle Wheel lean angle can affect the stability of the machine.
- **NOTE:** Safe operation on steep slopes may require special machine maintenance as well as excellent operator skill and proper equipment setup for the specific application. Consult Caterpillar publications for further operating tips — Operation & Maintenance Manual, Motor Grader Application Guide, and the Grade Comparison Chart in the Tables section of this Performance Handbook.

# WorkTools Motor Graders

Work Tool	120M/ 120M2	12M/ 12M2/ 12M3	140M/ 140M2/ 140M3	160M/ 160M2/ 160M3	16M3/ 18M3	14M3	24M
Lift Group	x	x	x	x	х	x	-
V-Plow	x	х	x	x	_	x	-
One Way Plow	x	x	x	x	_	x	_
Manual Reversible Plow	_	_	_	_	_	x	_
Hydraulic Reversible Plow	x	x	x	x	_	x	_
Snow Wing	x	x	x	x	_	x	_
Mid Mount Scarifier	x	x	x	-	_	-	-
Front Scarifier	x	x	x	x	_	x	_
Manual Angle Blade	x	x	x	x	_	x	_
Hydraulic Angle Blade	x	x	x	x	_	x	-
Straight Blade	x	x	x	x	х	x	_

This list is not all-inclusive.

See Price Lists, Cat WorkTools (Cat WT) Price List, and your Cat dealer for special attachment needs.

Attachments for Cat motor graders require additional hydraulics.

Most front-mounted attachments require a Quick Attach-Detach Parallel Lift Group.

11

# **TRACK LOADERS**

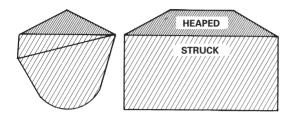
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# Features common to all D Series models (953D-963D-973D):

- Improved serviceability. All D Series Track-Type Loaders are equipped with a tiltable cab that allows complete service of the hydraulic system. Most daily maintenance checks are performed from the machine's right side, facilitating quick start up. Easy access to major components enhances serviceability and increase uptime.
- Operator station. Experience a high level of efficiency, comfort and productivity with the new D Series cab. The cab features a new gauge cluster, a fully air-suspension seat, the new seat mounted controls, an automatic air climate control and provides excellent visibility.
- Messenger. Messenger is a new electronic monitoring system with real time, visual feedback on engine and machine operating conditions. It provides information on diagnostic data, maintenance, and allows operating settings such as implement reactions.
- Hydrostatic drive. The closed loop hydrostatic drive with electronic control provides precise modulation for quick, smooth operation and superior maneuverability. Shorter cycle times, high efficiency, and excellent maneuverability results in increased productivity.

# SAE BUCKET RATING



# **SAE Bucket Capacities**

*Struck capacity* is that volume contained in a bucket after a load is leveled by drawing a straight edge resting on the cutting edge and the back of the bucket.

*Heaped capacity* is a struck capacity *plus* that additional material that would heap on the struck load at a 2:1 angle of repose with the struck line parallel to the ground.

SAE J742 (Oct. 79) specifies that the addition of any auxiliary spill guard to protect against spillage of material which might injure the operator will not be included in bucket capacity ratings. Buckets with irregular shaped cutting edges (vee edge) the strike plane should be drawn at one-third the distance of the protruding portion of the cutting edge. Cat rock buckets are built with integral seethrough rock guards. Cat light material buckets come standard with bolt-on edges. These features which add to actual bucket capacity are included in published ratings.

# **Dump Height**

SAE J732 JUN92 specifies that dump height is the vertical distance from the ground to the lowest point of the cutting edge with the bucket hinge pin at maximum height and the bucket at a 45° dump angle. Dump angle is the angle in degrees that the longest flat section of the inside bottom of the bucket will rotate below horizontal.

# **Static Tipping Load**

The minimum weight at center of gravity of "SAE Rated" load in bucket which will rotate rear of machine to a point where, on track loaders, front rollers are clear of the track under the following conditions:

- a. Loader on hard level surface and stationary.
- b. Unit at standard operating weight.
- c. Bucket at maximum rollback position.

- d. Load at maximum forward position during raising cycle.
- e. Unit with standard equipment as described in specifications unless otherwise noted under the heading.

# **Operating Load**

In order to comply with SAE standard J818 MAY87, the operating load for track loaders should not exceed 35% of the Static Tipping load rating. See "Performance Data" of each machine in this handbook for increases to static tipping load by adding cab, counterweights, ripper-scarifier, etc.

# **SELECTING A MACHINE**

# Steps in selecting the proper size loader:

- 1. Determine production required or desired.
- 2. Determine loader cycle time and cycles per hour. A machine size must be assumed to select a basic cycle time.
- 3. Determine required payload per cycle in loose cubic yards and pounds (meters and kilograms).
- 4. Determine bucket size needed.
- 5. Make machine selection using bucket size and payload as criteria to meet production requirements.
- 6. Compare the loader cycle time used in calculations to the cycle time of the machine selected. If there is a difference, rework the process beginning at step 2.

# **1. Production Required**

The production required of a track loader should be slightly greater than the production capability of the other critical units in the earth or material moving system. For example, if a hopper can handle 300 tons per hour, a loader capable of slightly more than 300 tons should be used. Required production should be carefully calculated so the proper machine and bucket selections are made.

# 2. Loader Cycle Times

Material type, pile height, and other factors may improve or reduce production, and should be added to or subtracted from the basic cycle time when applicable.

When hauls are involved, obtain haul and return portions of the cycle from the estimated travel chart (this section). Add the haul and return times to the estimated basic cycle time to obtain total cycle time.

# **Track Loaders**

# Cycle Time Factors Estimating Cycle Time

# CYCLE TIME FACTORS

A basic cycle time (Load, Dump, Maneuver) of 0.25-0.35 minutes is average for a track loader [the basic cycle for large track loaders, 2 m<sup>3</sup> (2.6 yd<sup>3</sup>) and up, can be slightly longer], but variations can be authenticated in the field. The following values for many variable elements are based on normal operations. Adding or subtracting any of the variable times will give the total basic cycle time.

## **Estimating Cycle Time**

Cycle time of a track loader needs to be determined to find loads per hour. Total cycle time includes the following segments:

Load Time + Maneuver Time + Travel Time + Dump Time

1	oad	Tim	e —

Material	Minutes
Uniform aggregates	0.03-0.05
Moist mixed aggregates	0.03-0.06
Moist loam	0.03-0.07
Soil, boulders, roots	0.04-0.20
Cemented materials	0.05-0.20

**ManeuverTime** — includes basic travel, four changes of direction and turning time, and will be about 0.20 minutes with a competent operator.

**Travel Time** — in a load and carry operation is comprised of haul and return times which can be determined by the travel charts in this section.

**DumpTime** — is dictated by the size and strength of the dump target and varies from 0.00 to 0.10 minutes. Typical dump times into highway trucks are from 0.04 to 0.07 minutes.

NOTE: When comparing hydrostatic track loaders with former power shift models (using the production estimating method) two factors must be considered: (1) The hydrostatic track loaders on the average outcycle power shift models by up to 10 percent due to faster machine speed and easier operation. (2) Larger, rear engine hydrostatic track loaders incorporate Z-bar linkage, which provides substantially better bucket fill factors. The degree to which each factor affects estimated production should be left to the user's judgment depending on the particular job application and conditions. Example: Moist loam is being excavated from a bank and loaded into trucks.

# Minutes Load — moist loam 0.05 Maneuver Time 0.20 Travel — none required 0.00 Dump 0.05 Total Cycle 0.30 min. or 200 cycles per 60 min. hour Minutes added (+) or Subtracted (-) From Basic Cycle

# Materials

Water fails
— Mixed +0.02
- Up to 3 mm (1/8 in) +0.02
-3  mm (1/8  in)  to
20 mm (3/4 in)0.02
- 20  mm (3/4  in)  to
150 mm (6 in) 0.00
— 150 mm (6 in) and over +0.03 and Up
— Bank or broken +0.04 and Up
Pile
<ul> <li>Conveyor or Dozer piled</li> </ul>
3 m (10 ft) and up 0.00
<ul> <li>Conveyor or Dozer piled</li> </ul>
3 m (10 ft) or less +0.01
— Dumped by truck +0.02
Miscellaneous
<ul> <li>Common ownership of</li> </ul>
trucks and loaders Up to –0.04
— Independently owned trucks Up to +0.04
— Constant operation Up to –0.04
— Inconsistent operation Up to +0.04
- Small target
— Fragile target Up to +0.05

Using actual job conditions and the above factors, total cycle time can be estimated. Convert total cycle time to cycles per hour.

Cycles per hour at  
100% Efficiency = 
$$\frac{60 \text{ Min}}{\text{Total Cycle Time}}$$
  
in Minutes

Job efficiency is an important factor in machine selection. Efficiency is the actual number of minutes worked during an hour. Job efficiency accounts for operator breaks, and other work interruptions. See "Efficiency Considerations" in this section.

# **Track Loaders**

 Bucket Fill Factors
 Recommended Operating Capacities Loader Production

# **Bucket Fill Factors**

The following indicates the approximate amounts of material as a percent of rated bucket capacity which will actually be delivered per bucket per cycle. This is known as "Bucket Fill Factor."

Loose Material	Fill Factor
Mixed Moist Aggregates	95-110%
Uniform Aggregates	
up to 3 mm (1/8 in)	95-110
3 mm-9 mm (1/8 in-3/8 in)	90-110
12 mm-20 mm (1/2 in-3/4 in)	90-110
24 mm and over (1 in)	90-110
Blasted Rock	
Well	80-95%
Average	75-90
Poor	60-75
Other	
Rock Dirt Mixtures	100-120%
Moist Loam	100-120
Soil, Boulders, Roots	80-100
Cemented Materials	85-100

Fill factors on track loaders are affected by bucket penetration, breakout force, rack back angle, bucket profile and ground engaging tools such as bucket teeth and segments or bolt-on replaceable cutting edges.

# GENERAL PURPOSE BUCKET W/TEETH & SEGMENTS MAXIMUM OPERATING CAPACITIES

	PUR	eral Pose Et size	OPER	IMUM Ating Acity
MODEL	m³	yd³	kg	lb
953D/953K	1.85	2.4	3182	7015
963D/963K	2.45	3.2	4214	9290
973D	3.21	4.2	5521	12,174

# LOADER PRODUCTION

Loader production equals quantity of material the bucket carries per load  $\times$  number of bucket loads per hour.

# **Estimating Bucket Load**

The quantity of material in a loader bucket is estimated by two methods, depending on whether the material being loaded is in a loose or bank state.

- 1. When the material is loose, as in stockpile loading, the bucket load is estimated in loose meters (or cubic yards) by a Bucket Fill Factor (see Tables Section or chart following this discussion). The quantity of material is determined as follows:
  - Rated Bucket Capacity × Bucket Fill Factor = Bucket Payload in Loose m<sup>3</sup> (yd<sup>3</sup>)

For example, a 973 with a 3.2 m<sup>3</sup> (4.2 yd<sup>3</sup>) General Purpose bucket loading moist loam material will carry:

 $3.2 \text{ m}^3 \times 1.15 = 3.68$  loose cubic meters ( $4.2 \text{ yd}^3 \times 1.15 = 4.83$  loose cubic yards)

Once the potential bucket load has been determined, check the static tipping load ratings on the specific machine to determine if bucket load is in fact a safe operating load. (*Safe operating load as defined* by SAE for track loaders should not exceed 35% of static tipping load.)

Productivity in many applications is measured in tons. See Tables Section for material densities if conversion to tons is desired.

2. When material is in the bank state, as in excavation, productivity is measured in bank meters (cubic yards). Bucket load in Bm<sup>3</sup> (BCY) is estimated by applying one of the load factors from the Tables section to convert the excavated material in the bucket from Bm<sup>3</sup> (BCY) to Lm<sup>3</sup> (LCY) to allow for the digging and carrying characteristics of the material. The quantity of excavated material a bucket carries is then determined as follows:

Rated Bucket Capacity  $\times$  Load Factor  $\times$  Bucket Fill Factor = Bucket Payload in Bm<sup>3</sup> (BCY)

Example: a 953D with a 1.85 m<sup>3</sup> (2.4 yd<sup>3</sup>) General Purpose bucket loading wet loam earth from bank:

 $1.85 \text{ m}^3 \times 0.79 \times 1.15 = 1.68 \text{ Bm}^3$ (2.4 yd<sup>3</sup> × 0.79 × 1.15 = 2.18 BCY)

# **Track Loaders**

# Loader Production • Estimating Production • Alternative Machine Selection Method

# **Estimating Production**

Machine and job considerations include:

- Machine model and bucket size
- Material type, particle size, density and load factor (see Tables Section)
- Bucket fill factor
- Haul distance
- Underfoot conditions
- Altitude
- Dump target size, height, and type

### Example:

Conditions –	
Machine	953D
Bucket size	$1.85 \text{ m}^3 (2.4 \text{ yd}^3)$
Material	Moist Loam
Bucket fill factor	1.15
Haul length	30 m (100 ft)
Dump target	Pile
Travel in forward speed	
CycleTime	Minutes
Load time	0.15
Maneuver time	0.20
Travel time (from curves)	0.40
Dump time	0.05
Total	0.80
Loads Per Hour —	
$60 \min/\ln n = 75 = 1$	1

60 min/hr	75 cycles per hour @
0.80 min/cycle	100% efficiency

### Load Per Cycle -

1.85 m<sup>3</sup> × 1.15 BFF = 2.13 Lm<sup>3</sup> × 0.81 LF = 1.72 Bm<sup>3</sup> (2.4 yd<sup>3</sup> × 1.15 BFF = 2.76 LCY × 0.81 LF

= 2.24 BCY

# Hourly Production -

 $1.72 \text{ Bm}^3 \times 75 \text{ cycles/h} = 129 \text{ Bm}^3/\text{h}$ (2.24 BCY × 75 cycles/hr = 168 BCY/hr)

More accurate production estimates can be made by recording actual machine cycle times in the same or similar application. Then visually verify the approximate bucket fill factor.

# **Efficiency Considerations**

Loader capacity should always be matched to peak production requirements of the job. Actual "on-the-job" loader productivity will be influenced by factors such as operator skill, personal delays, job layout and other delays. Experience and knowledge of local conditions will be the best indicators of actual job efficiency.

		Efficiency
Operation	Working Hour	Factor
Day	50 min/Hr	0.83

# An Alternative Machine Selection Method

Another method of selecting the right Track Loader and bucket to meet production requirements is by use of the nomographs on the following pages. The method is quicker and easier than the proceeding example because it does not require as many calculations, yet the accuracy is about the same within the normal limits of input data.

Be careful when entering and reading data from the nomographs because some scales increase from bottom to top, while others are the reverse. Do not be overly concerned with the precision as affected by pencil line width or reading to the hundredth of a m<sup>3</sup> (yd<sup>3</sup>). Remember that bucket fill factor, material density, and cycle time are at best close estimates.

### Example problem

A track loader must produce 200 Lm<sup>3</sup> (262 LCY) per hour. Estimated cycle time is 0.5 minutes, working 50 minutes per hour. Bucket fill factor is 110% and the material density is 1600 kg/Lm<sup>3</sup> (2700 lb/LCY).

Determine bucket size, machine model and hourly production in tons and yards.

# Solution

At full efficiency, it will cycle 120 times per hour. Since only an average 50 minutes are available, only 100 cycles will be completed per hour.

Starting on Scale A at 100 cycles per hour draw a straight line intersecting 200 m<sup>3</sup>/hr (262 yd<sup>3</sup>/hr) on Scale B and continuing the line on to Scale C giving  $2.0 \text{ m}^3$  (2.62 yd<sup>3</sup>) required payload.

Follow steps 1 through 7 on the next two pages.

....

# **TRACK-TYPE TRACTORS Hydraulic Controls Bulldozers Rippers and Winches**

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# **TRACK-TYPE TRACTORS**

# Features:

- Cat<sup>®</sup> Diesel Engines provide the power, high torque rise, reliability and performance you can depend on.
- HEUI<sup>TM</sup> on D6R and D7R increases fuel efficiency, reduces smoke, improves cold starting and enhances diagnostic capabilities.
- Mechanical Electronic Unit Injector (MEUITM) on D8T, D9T, D10T2 and D11T excels in its ability to control injection pressure over the entire engine operating speed range. It combines the technical advancement of an electronic control system with the simplicity of direct mechanically controlled unit fuel injection. These features allow the engine to have complete control over injection timing, duration, and pressure.
- Common Rail fuel injection system on D3K2, D4K2, D5K2, D6K2, D5R2, D6N, D6T and D7E machines; optimizes performance and fuel consumption, minimizes heat rejection, and lowers emissions.

- Oil cooled steering clutches and brakes standard on D9R, D10T2 and D11T.
- Finger Tip Controls (FTC) of transmission, steering clutches and brakes on D10T2 and D11T.
- Differential steering allows infinitely variable turning radius. Standard on the D5R2, D6N, D6R2, D6T, D7R, D7E, D8R, D8T and D9T, allows the tractor to make a "power turn" keeping both tracks working for more traction and higher performance.
- Electronic Hydrostatic Power Train System on D3K2 through D6K2 allows power turns, stepless speed range, smooth modulation, dynamic hydrostatic braking, superior maneuverability and excellent controllability.
- Electric Drive Power Train System on D7E allows stepless speed range, smooth modulation, and excellent efficiency. When coupled with differential steer it provides superior maneuverability with locked-track pivot turn capability and excellent controllability.
- **Combined hand lever steering** located left of operator provides easier operation on D9R.
- Standard Tractors designed for heavy dozing and general grading.
- XL Tractor D6T offers higher horsepower and longer roller frames for increased finish grading capability, flotation and productivity.
- Extra Wide (XW) gauge on D6T length roller frame provides wider shoes for greater flotation and stability for steep slope grading.
- Sealed and Lubricated Track reduces pin and bushing wear for lower undercarriage repair costs. Sealed and lubricated track is standard on the D3K2, D4K2, and D5K2 while heavy duty track chain is available on D5R, D6K2, D6N, D6T, and D7E improves wear life and reduces pin/bore stretching and cracking.

- SystemOne<sup>™</sup> Undercarriage extends undercarriage system life, improves reliability, and reduces owning and operating costs. Optional on D6T (all sources), D5R2, D6K2, D6N, D6R2, optional on D8T and D8R (all sources), D3K2, D4K2, D5K2.
- Elevated sprockets (not on D6K2 or D7E) eliminate final drive stress induced by roller frame movement and ground impact loads. Final drives pull chain only. Seals moved up out of dirt, sand and water for longer life. Blade visibility improved because operator sits higher.
- **Resilient mounted bogie undercarriage** on D8R, D8T, D9T, D10T2 and D11T reduces shock transmitted to tractor. Allows track to conform to rough ground for better traction.
- Solid mounted undercarriage standard on D3K2 through D5K2 provides stable platform for low impact, and high abrasion applications. Provides optimum finish grading performance.
- Oscillating undercarriage on D6K2 through D7E and optional on the D8R and D8T decreases ground shock to the machine and provides a smoother, more comfortable ride for the operator.
- Accessible modular design on D6N XL and up greatly reduces drive train removal and installation time resulting in reduced repair costs.
- Tag link on D7R, D8R/D8T and up; L-shaped push arms on D6N, D6T and D7E. Both designs allow closer mounting of dozer blades. This reduces total tractor length, improves maneuverability, balance, blade penetration and pryout.
- Low ground pressure (LGP) tractors offer greater flotation in soft, swampy conditions. Available on D3K2 through D8T.

\_

MODEL	D	6T	D61	Γ XL
Emission Standards	Tier 3/St Japan 2006 (Ti	tage IIIA/ er 3) equivalent		tage IIIA/ er 3) equivalent
Flywheel Power	149 kW	200 hp	149 kW	200 hp
Operating Weight:1				
Power Shift Differential Steer				
SU Blade	20 580 kg	45,370 lb	21 600 kg	47,620 lb
Engine Model	C9 A	CERT	C9 A	CERT
Rated Engine RPM: Power Shift	18	50	18	50
No. of Cylinders		6		6
Bore	112 mm	4.4"	112 mm	4.4"
Stroke	149 mm	5.9"	149 mm	5.9"
Displacement	8.8 L	537 in <sup>3</sup>	8.8 L	537 in <sup>3</sup>
Track Rollers (Each Side)		6		7
Width of Standard Track Shoe	560 mm	22"	560 mm	22"
Length of Track on Ground	2.61 m	8'7"	2.81 m	9'3"
Ground Contact Area (w/Std. Shoe)	2.92 m <sup>2</sup>	4531 in <sup>2</sup>	3.15 m²	4878 in <sup>2</sup>
Track Gauge	1.88 m	74"	1.88 m	74"
GENERAL DIMENSIONS:				
Height <sup>2</sup> (Stripped Top) <sup>3</sup>	2.40 m	7'11"	2.40 m	7'11"
Height <sup>2</sup> (To Top of ROPS Canopy)	3.11 m	10'2"	3.11 m	10'2"
Height <sup>2</sup> (To Top of ROPS Cab)	3.11 m	10'2"	3.11 m	10'2"
Overall Length (without Blade)	3.85 m	12'7"	3.85 m	12'7"
with SU Blade	5.08 m	16'8"	5.33 m	17'6"
with Angle Blade	5.00 m	16'5"	5.21 m	17'1"
Width (over Trunnion)	2.64 m	8'8"	2.64 m	8'8"
Width (w/oTrunnion — Std. Track)	2.44 m	8'0"	2.44 m	8'0"
Ground Clearance <sup>2</sup>	384 mm	1'3"	384 mm	1'3"
Blade Types and Widths:				
Angle Straight	4.16 m	13'8"	4.16 m	13'8"
Full 25° Angle	3.77 m	12'5"	3.77 m	12'5"
Semi-U	3.26 m	10'8"	3.26 m	10'8"
Fuel Tank Refill Capacity	425 L	112 U.S. gal	425 L	112 U.S. gal
Operating weight includes cab operator lubricants, coolant, full fu	al tank standard track k	wdraulic controls and f	luid SII blade drawba	r and counterweight

<sup>1</sup> Operating weight includes cab, operator, lubricants, coolant, full fuel tank, standard track, hydraulic controls and fluid, SU blade, drawbar and counterweight. <sup>2</sup> Dimensions measured from ground line. Add grouser height for total dimension on hard surfaces.

<sup>3</sup> Height (Stripped Top) — without ROPS canopy, exhaust, seat back or other easily removed encumbrances.

# Track-Type Tractor Sustainability

Well matched engine and power train systems enhance productivity and fuel efficiency.

19

MODEL	D6 <sup>-</sup>	T XL	D61	гхw	D6T LGP		
Emission Standards		al/Stage IV/		al/Stage IV/		I/Stage IV/	
	-	(Tier 4 Final)	•	(Tier 4 Final)	-	(Tier 4 Final)	
Flywheel Power	151 kW	202 hp	151 kW	202 hp	151 kW	202 hp	
Operating Weight:1							
Power Shift Differential Steer	20 985 kg	46,263 lb	21 788 kg	48,034 lb	22 902 kg	50,490 lb	
VPAT	23 663 kg	52,167 lb	24 118 kg	53,170 lb	24 336 kg	53,651 lb	
Engine Model		ACERT		ACERT		ACERT	
Advertised Engine RPM		000	2	000		000	
No. of Cylinders		6		6		6	
Bore	115 mm	4.5"	115 mm	4.5"	115 mm	4.5"	
Stroke	149 mm	5.9"	149 mm	5.9"	149 mm	5.9"	
Displacement	9.3 L	567 in <sup>3</sup>	9.3 L	567 in <sup>3</sup>	9.3 L	567 in <sup>3</sup>	
Track Rollers (Each Side)		7		7		8	
VPAT		7		8		8	
Width of Standard Track Shoe	560 mm	22"	760 mm	30"	915 mm	36"	
VPAT	560 mm	22"	710 mm	28"	785 mm	31"	
Length of Track on Ground	2.84 m	9'5"	2.84 m	9'5"	3.25 m	10'9"	
VPAT	2.84 m	9'5"	3.25 m	10'9"	3.25 m	10'9"	
Ground Contact Area (w/Std. Shoe)	3.54 m <sup>2</sup>	5489 in <sup>2</sup>	4.81 m <sup>2</sup>	7449 in <sup>2</sup>	6.53 m <sup>2</sup>	10,122 in <sup>2</sup>	
VPAT	3.54 m <sup>2</sup>	5489 in <sup>2</sup>	5.10 m <sup>2</sup>	7909 in <sup>2</sup>	5.60 m <sup>2</sup>	8684 in <sup>2</sup>	
Track Gauge	1.88 m	74"	2.03 m	80"	2.29 m	90"	
VPAT	2.13 m	84"	2.29 m	90"	2.29 m	90"	
GENERAL DIMENSIONS:							
Height <sup>2</sup> (Stripped Top <sup>3</sup> )	2.46 m	8'1"	2.46 m	8'1"	2.51 m	8'3"	
VPAT	2.46 m	8'1"	2.51 m	8'3"	2.51 m	8'3"	
Height <sup>2</sup> (To Top of ROPS Canopy)	3.11 m	10'2"	3.11 m	10'2"	3.16 m	10'4"	
VPAT	3.11 m	10'2"	3.16 m	10'4"	3.16 m	10'4"	
Height <sup>2</sup> (To Top of ROPS Cab)	3.15 m	10'4"	3.15 m	10'4"	3.20 m	10'6"	
VPAT	3.15 m	10'4"	3.20 m	10'6"	3.20 m	10'6"	
Overall Length (without Blade)	3.89 m	12'9"	3.89 m	12'9"	4.25 m	13'11"	
VPAT	3.89 m	12'9"	4.25 m	13'11"	4.25 m	13'11"	
with S Blade		-		-	5.50 m	18'1"	
with SU Blade	5.33 m	17'6"	5.33 m	17'6"		_	
with VPAT Blade	5.39 m	17'8"	5.53 m	18'2"	5.53 m	18'2"	
with Angle Blade	5.21 m	17'1"	5.29 m	17'4"	5.81 m	19'1"	
Width (over Trunnion)	2.69 m	8'10"	2.94 m	9'8"	3.48 m	11'5"	
Width (w/oTrunnion — Std.Track)	2.59 m	8'6"	2.79 m	9'2"	3.20 m	10'6"	
VPAT	2.72 m	8'11"	3.00 m	9'10"	3.14 m	10'4"	
Ground Clearance <sup>2</sup>	372 mm	1'3"	372 mm	1'3"	406 mm	1'4"	
VPAT	372 mm	1'3"	406 mm	1'4"	406 mm	1'4"	
Blade Types and Widths:							
Straight		-		-	4.06 m	13'4"	
Angle Straight	4.16 m	13'8"	4.52 m	14'10"	5.07 m	16'8"	
Full 25° Angle	3.77 m	12'5"	4.11 m	13'6"	4.63 m	15'2"	
Semi-U	3.26 m	12'8"	3.56 m	11'8"		_	
VPAT							
Straight	3.88 m	12'9"	4.16 m	13'8"	4.16 m	13'8"	
Full 24° Angle	3.54 m	11'7"	3.79 m	12'5"	3.79 m	12'5"	
Fuel Tank Refill Capacity	411 L	109 U.S. gal	411 L	109 U.S. gal	411 L	109 U.S. gal	
DEF Tank Refill Capacity	17.1 L	4.5 U.S. gal	17.1 L	4.5 U.S. gal	17.1 L	4.5 U.S. gal	

<sup>1</sup> Operating weight includes cab, operator, lubricants, coolant, full fuel tank, standard track, hydraulic controls and fluid, SU blade and drawbar.
 <sup>2</sup> Dimensions measured from ground line. Add grouser height for total dimension on hard surfaces.
 <sup>3</sup> Height (StrippedTop) — without ROPS canopy, exhaust, seat back or other easily removed encumbrances.

MODEL	D	9R	D	9T	D9T			
Emission Standards		_	Japan 20	Stage IIIA/ 106 (Tier 3) valent <sup>1</sup>		al/Stage IV/ (Tier 4 Final)		
Flywheel Power	302 kW	405 hp	306 kW	410 hp	325 kW	436 hp		
Operating Weight: <sup>2</sup>								
Power Shift Clutch Brake	48 784 kg	107,548 lb		_		_		
Power Shift Differential Steer		_	47 872 kg	105,539 lb	48 361 kg	106,618 lb		
Engine Model	34080	SCAC	C18	ACERT	C18	ACERT		
Rated Engine RPM	19	900	1	833	1	800		
No. of Cylinders		8		6		6		
Bore	137 mm	5.4"	145 mm	5.7"	145 mm	5.7"		
Stroke	152 mm	6"	183 mm	7.2"	183 mm	7.2"		
Displacement	18 L	1099 in <sup>3</sup>	18.1 L	1106 in <sup>3</sup>	18.1 L	1106 in <sup>3</sup>		
Track Rollers (Each Side)		8		8		8		
Width of Standard Track Shoe	610 mm	24"	610 mm	24"	610 mm	24"		
Length of Track on Ground	3.47 m	11'5"	3.47 m	11'5"	3.47 m	11'5"		
Ground Contact Area (w/Std. Shoe)	4.24 m <sup>2</sup>	6569 in <sup>2</sup>	4.24 m <sup>2</sup>	6569 in <sup>2</sup>	4.24 m <sup>2</sup>	6569 in <sup>2</sup>		
Track Gauge	2.25 m	7'5"	2.25 m	7'5"	2.25 m	7'5"		
GENERAL DIMENSIONS:								
Height <sup>3</sup> (Stripped Top) <sup>4</sup>	3.69 m	12'1"	3.69 m	12'1"	3.69 m	12'1"		
Height <sup>3</sup> (To Top of ROPS Canopy)	4.00 m	13'1"	4.00 m	13'1"	4.00 m	13'1"		
Height <sup>3</sup> (To Top of FOPS Cab)	3.82 m	12'6"	3.82 m	12'6"	3.82 m	12'6"		
Overall Length (with SU Blade)⁵	6.88 m	22'6"	6.88 m	22'6"	6.88 m	22'6"		
(without Blade)	5.18 m	17'0"	5.18 m	17'0"	5.18 m	17'0"		
(with SU Blade and Ripper)⁵	8.23 m	27'0"	8.23 m	27'0"	8.23 m	27'0"		
(without Blade and Ripper)	4.91 m	16'1"	4.91 m	16'1"	4.91 m	16'1"		
Width (over Trunnion)	3.30 m	10'8"	3.30 m	10'8"	3.30 m	10'8"		
Width (w/oTrunnion — Std. Shoe)	2.88 m	9'5"	2.88 m	9'5"	2.88 m	9'5"		
Ground Clearance <sup>6</sup>	496 mm	1'7"	496 mm	1'7"	496 mm	1'7"		
Blade Types and Widths:								
Universal	4.65 m	15'3"	4.65 m	15'3"	4.65 m	15'3"		
Semi-U	4.31 m	14'2"	4.31 m	14'2"	4.31 m	14'2"		
Fuel Tank Refill Capacity	818 L	216 U.S. gal	889 L	235 U.S. gal	821 L	217 U.S. gal		
DEF Tank Refill Capacity		_			36 L	9.5 U.S. gal		

<sup>1</sup> Product available to meet Tier 2/Stage II/Japan 2001 (Tier 2) equivalent OR Tier 3/Stage III/Japan 2006 (Tier 3) equivalent emission standards. <sup>2</sup> Operating weight includes ROPS canopy, operator, lubricants, coolant, full fuel tank, hydraulic controls and fluids, semi universal blade with tilt, back-up alarm, seat belts, lights, and single shank ripper.

DBR equipped with track guides, ROPS/FOPS cab, single shank ripper and SU blade.
 <sup>3</sup> Dimensions measured from ground line. Add grouser height for total dimension on hard surfaces.

<sup>4</sup> Height (StrippedTop) – without ROPS canopy, exhaust, seat back or other easily removed encumbrances.

<sup>5</sup> Includes drawbar.

<sup>6</sup> Per ISO 6746 – Must add grouser height for total dimension on hard surfaces.

MODEL	D1	0T2	D	I1T	D11T CD		
Emission Standards		I/Stage IV/		I/Stage IV/		I/Stage IV/	
		(Tier 4 Final) <sup>1</sup>		(Tier 4 Final) <sup>1</sup>	Japan 2014 (Tier 4 Final) <sup>1</sup>		
Flywheel Power	447 kW	600 hp	634 kW	850 hp	634 kW	850 hp	
Reverse Gears	538 kW	722 hp	-	-	-	-	
Operating Weight: <sup>2</sup>							
Power Shift Clutch Brake	70 171 kg	154,700 lb	104 236 kg	229,800 lb	112 718 kg	248,500 lb	
Engine Model	C27 /	ACERT	C32 /	ACERT	C32 A	CERT	
Rated Engine RPM	18	300	18	300	18	300	
No. of Cylinders	1	12	1	12	1	12	
Bore	137 mm	5.4"	145 mm	5.71"	145 mm	5.71"	
Stroke	152 mm	6"	162 mm	6.38"	162 mm	6.38"	
Displacement	27 L	1648 in <sup>3</sup>	32.1 L	1959 in <sup>3</sup>	32.1 L	1959 in <sup>3</sup>	
Track Rollers (Each Side)		8		8		8	
Width of Standard Track Shoe	610 mm	24"	710 mm	28"	915 mm	36"	
Length of Track on Ground (Idler to Idler)	3.88 m	12'9"	4.44 m	14'7"	4.44 m	14'7"	
Ground Contact Area (w/Std. Shoe)	4.74 m <sup>2</sup>	7347 in <sup>2</sup>	6.31 m <sup>2</sup>	9781 in <sup>2</sup>	8.13 m <sup>2</sup>	12,605 in <sup>2</sup>	
Track Gauge	2.55 m	8'4"	2.89 m	9'6"	2.89 m	9'6"	
GENERAL DIMENSIONS:							
Height (Stripped Top) <sup>3</sup>	3.222 m	10'7"	3.64 m	11'11"	3.64 m	11'11"	
Height (To Top of ROPS Canopy)	4.41 m	14'5"	4.70 m	15'5"	4.70 m	15'5"	
Height (To Top of FOPS Cab)	4.10 m	13'5"	4.39 m	14'5"	4.39 m	14'5"	
Overall Length:							
(with SU Blade and SS Ripper)⁴	9.16 m	30'1"	10.59 m	34'9"	10.70 m	35'1"	
(without Blade and Ripper)⁵	5.32 m	17'5"	6.16 m	20'3"	6.16 m	20'3"	
Width (over Trunnion)	3.74 m	12'3"	4.38 m	14'4"	4.38 m	14'4"	
Width (w/oTrunnion — Std. Shoe)	3.30 m	10'10"	3.78 m	12'5"	3.81 m	12'6"	
Ground Clearance <sup>6</sup>	632 mm	2'1"	675 mm	2'3"	675 mm	2'3"	
BladeTypes and Widths:							
CarryDozer	.	_	-	_	6.71 m	22'0"	
Universal	5.26 m	17'3"	6.36 m	20'10"	-	_	
Semi-U	4.94 m	16'3"	5.60 m	18'4"		_	
Fuel Tank Refill Capacity	1204 L	314 U.S. gal	1609 L	425 U.S. gal	1609 L	425 U.S. gal	
FuelTank Refill Capacity (Extra Capacity)		-	1987 L	505 U.S. gal	1987 L	505 U.S. gal	

<sup>1</sup> Product available to meet Tier 2/Stage II/Japan 2001 (Tier 2) equivalent OR Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards.

<sup>2</sup> Operating weight includes coolant, lubricants, full fuel tank, ROPS, FOPS cab, SU ABR bulldozer (D10T2) or U ABR bulldozer (D11T), dual tilt, single-shank ripper with pin-puller, fast fuel, standard ES shoes, and operator.

D11T CD has 11 Carrydozer and single-shank Carrydozer ripper.

<sup>3</sup> Height (Stripped Top) – without ROPS canopy, cab, exhaust, lift cylinders, seat back or other easily removed encumbrances.

<sup>4</sup> Overall length of D1T CD includes Straight (CarryDozer) Blade and SS Ripper.
 <sup>5</sup> Overall length of machine from front tag link trunnion to rigid drawbar and excludes track grouser height.

<sup>6</sup> Per ISO 6746 – Must add grouser height for total dimension on hard surfaces.

All dimensions are approximate.

# **TRAVEL SPEED**

POWER SHIFT MODEL		K21 odels	D3K2 All Models			D4K2 <sup>1</sup> All Models		D4K2 All Models																								K21 odels	D5 All M		D6 All M	
HYDROSTATIC	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph																						
FORWARD	9.0	5.6	9.0	5.6	9.0	5.6	9.0	5.6	9.0	5.6	9.0	5.6	10.0	6.2																						
REVERSE	10.0	6.2	10.0	6.2	10.0	6.2	10.0	6.2	10.0	6.2	10.0	6.2	10.0	6.2																						

<sup>1</sup>Meets Tier 3/Stage IIIA/Japan 2006 (Tier 3) equivalent emission standards.

POWER SHIFT MODEL	D5 Powe	rshift	D6 Powe	rshift	D	Ŧ			075			10
	with Au		with Au		D	-	D		D7E	-	DZ	
FORWARD	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph
1	3.3	2.1	3.8	2.4	3.8	2.3	-	-	-	-	3.52	2.19
1.5	4.2	2.6	4.8	3.0	_	-	-	-	-	-	-	-
2	5.8	3.6	6.5	4.1	6.5	4.0	-	-	_	-	6.10	3.79
2.5	7.3	4.5	8.4	5.2	_	-	-	-	-	-	-	—
3	10.1	6.3	11.5	7.1	11.3	7.0	-	_	_	_	10.54	6.55
REVERSE												
1	4.2	2.6	4.8	3.0	4.7	2.9	-	-	-	-	4.54	2.82
1.5	5.2	3.2	6.2	3.9	_	_	-	_	_	_	-	_
2	7.3	4.5	8.4	5.2	8.3	5.1	-	-	_	-	7.85	4.88
2.5	7.3	4.5	8.4	5.2	_	-	-	-	_	-	-	—
3	12.5	7.8	14.5	9.1	14.6	9.0	—	—	-	_	13.58	8.44
ELECTRIC												
FORWARD	_	_	-	_	_	-	11.3	7.0	11.3	7.0	_	_
REVERSE	—	—	—	-	—	-	11.3	7.0	11.3	7.0	-	_

			D0	IN
	De	N*	Powershift wit	th AutoShift —
GEAR	Powershift v	ith AutoShift	Sound Su	ppressed
FORWARD	km/h	mph	km/h	mph
0.5	2.5	1.6	2.4	1.5
0.7	2.8	1.7	2.7	1.6
1.0	3.3	2.1	3.0	1.9
1.5	4.4	2.7	4.4	2.7
1.7	4.9	3.0	4.9	3.0
2.0	5.8	3.6	5.8	3.6
2.5	7.5	4.7	7.5	4.7
2.7	8.3	5.2	8.3	5.2
3.0	9.8	6.1	9.8	6.1
REVERSE				
0.5	3.1	1.9	2.9	1.8
0.7	3.4	2.1	3.1	1.9
1.0	4.1	2.5	3.5	2.2
1.5	5.4	3.4	5.4	3.4
1.7	6.0	3.7	6.0	3.7
2.0	7.1	4.4	7.1	4.4
2.5	9.5	5.9	9.5	5.9
2.7	10.5	6.5	10.5	6.5
	12.2	7.6	12.2	7.6

D6N\*

\*MeetsTier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards.

# **TRAVEL SPEED**

POWER SHIFT MODEL	Differ Ste D8	er	D	вт	D	ÐR	D	ЭТ	D1(	)T2	D111	/CD	D111 High A	
FORWARD	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph
1	3.5	2.2	3.4	2.1	3.8	2.4	3.9	2.4	4.0	2.5	3.9	2.4	4.0	2.5
2	6.2	3.9	6.0	3.7	6.8	4.2	6.8	4.2	7.2	4.5	6.8	4.2	7.0	4.4
3	10.8	6.7	10.6	6.6	11.9	7.4	11.7	7.3	12.7	7.9	11.8	7.3	12.0	7.5
REVERSE														
1	4.7	2.9	4.5	2.8	4.7	2.9	4.7	2.9	5.2	3.2	4.7	2.9	4.8	3.0
2	8.1	5.0	7.9	4.9	8.4	5.2	8.4	5.2	9.0	5.6	8.2	5.1	8.3	5.2
3	13.9	8.6	14.2	8.8	14.7	9.1	14.3	8.9	15.8	9.8	14.0	8.7	14.9	9.0

GEAR		6T ⁄ith AutoShift	D6T Powershift with AutoShift Sound Suppressed	
FORWARD	km/h	mph	km/h	mph
0.5	2.7	1.7	2.7	1.7
0.7	3.3	2.0	3.2	2.0
1.0	3.7	2.3	3.2	2.0
1.5	4.7	2.9	4.7	2.9
1.7	5.7	3.6	5.7	3.6
2.0	6.5	4.0	6.3	3.9
2.5	8.2	5.1	8.2	5.1
2.7	10.0	6.2	10.0	6.2
3.0	11.3	7.0	10.9	6.8
REVERSE				
0.5	3.5	2.2	3.5	2.2
0.7	4.2	2.6	3.9	2.4
1.0	4.7	2.9	3.9	2.4
1.5	6.0	3.7	6.0	3.7
1.7	7.3	4.5	7.3	4.5
2.0	8.3	5.1	8.0	5.0
2.5	10.4	6.5	10.4	6.5
2.7	12.7	7.9	12.7	7.9
3.0	14.4	9.0	13.8	8.6

# **HYDRAULIC CONTROLS**

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## Features:

- **Designed and built for specific tractor applications.** Valves and components sized for exacting quality and performance.
- Job requirements matched through various arrangements.
- Hydraulic blade and ripper controls: Mechanical controls on G Series. Electro hydraulic controls on D6N and D6K2. Pilot blade and ripper controls on D6T Tier 3/Stage IIIA, Japan 2006 (Tier 3) equivalent with optional electro hydraulic blade control. Electro hydraulic blade and ripper controls on D6T Tier 4 Interim/ Stage IIIB/Japan 2011 (Tier 4 Interim) equivalent Mechanical controls on D9R. Electro hydraulic blade and ripper controls on D7E, D8T, D9T, D10T2, and D11T.
- Full flow filters\*... all oil completely filtered.
- Dual tilt standard on D11T and D11T CD, attachment option on D7E, D8R, D8T, D9R, D9T, D10T2.

\*Exception - D8R 2-pump.

# BULLDOZERS

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### Features:

- **Straight Bulldozers** adjustable tilt angle controls blade penetration.
- Variable cutting edge Power Angle and Tilt (VPAT) — blade is available on the D3K2, D4K2, D5K2, D6K2, D6N, and D6T. The blade can be mechanically tipped forward for improved penetration or back for more productivity and easier finish grading.
- Angling Bulldozers 25° right/left angling; C-frame allows mounting other tools.
- Universal Bulldozers 25° wings provide increased capacity, less spillage.
- Semi-Universal Bulldozers combines penetration ability of straight blade with increased load capacity provided by short 25° wings.
- Wheel Dozer blades are offered in straight and universal blade design with hydraulic pitch and tilt control.
- **Box-section construction** on blades adds rigidity and strength.
- **Cutting edges** are heat treated and reversible for extra life.

# **BLADE SELECTION**

Properly matching tractor and dozer is a basic requirement for maximizing production. First consider the kind of work the tractor will be doing most of its life. Then evaluate:

- Material to be moved.
- Tractor limitations.

# Materials to be moved

Most materials are dozeable. However, dozer performance will vary with material characteristics such as: *Particle Size and Shape* — The larger the individual particle size, the harder it is for a cutting edge to penetrate. Particles with sharp edges resist the natural rolling action of a dozer blade. These particles require more horsepower to move than a similar volume of material with rounded edges.

*Voids* — Few voids or the absence of voids means the individual particles have most or all of their surface area in contact with other particles. This forms a bond which must be broken. A well graded material, which lacks voids, is generally heavy, and will be hard to remove from the bank state.

*Water Content* — In most materials the lack of moisture increases the bond between particles and makes the material difficult to remove from the bank state. A high moisture content makes dozing difficult because the material is heavy and requires more force to move. Optimum moisture reduces dust and offers the best condition for dozing ease and operator comfort.

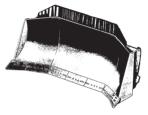
The effect of freezing depends on the moisture content. When frozen, the material's bond strengthens as moisture content increases and temperature decreases. However, freezing a completely dry material does not change its characteristics.

An indication of a blade's ability to penetrate and obtain a blade load is kW per meter (or horsepower per foot) of cutting edge. The higher the kW/meter (HP/foot), the more aggressive the blade. Kilowatt per Lm<sup>3</sup> (horsepower per loose cubic yard) indicates a blade's ability to push material. The higher the kW/Lm<sup>3</sup> (HP/ LCY), the greater the blade's potential capability for carrying material at a greater speed.

# **Tractor Limitations**

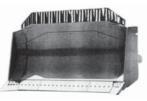
The weight and horsepower of the machine determines its ability to push. No tractor can exert more pounds push than the machine itself weighs and its power train can develop. Various terrain and underfoot conditions on the job limit the tractor's ability to use its weight and horsepower. The "approximate coefficient of traction factors" chart in the Tables Section presents these traction factors for common materials. To use the chart, take the total tractor weight (with attachments) times the factor to arrive at the maximum usable push the dozer can exert.

# **Production Dozing Tools**



"U" — Universal blade the large wings on this blade include one end bit and at least one section of cutting edge which make it efficient for moving big loads over long distances as in land reclamation, stockpile work, charging hoppers and trap-

ping for loaders. As this blade has a lower kW/meter (HP/foot) of cutting edge than an "S" or "SU", penetration should not be a prime objective. With a lower kW/Lm<sup>3</sup> (HP/LCY) than an "S" or "SU", this blade is best for lighter or relatively easily dozed material. If equipped with tilt cylinders the U blade can be used to pry out, level, cut ditches and steer the tractor.



**"SU"**— The Semi-U blade combines the desirable characteristics of S and U-blades into one package. It has increased capacity by the addition of short wings which include only the dozer end bits. The

wings provide improved load retention capabilities while maintaining the blade's ability to penetrate and load quickly in tightly packed materials and to handle a wide variety of materials in production oriented applications. Tilt cylinder(s) increase both the productivity and versatility of this dozer. Equipped with a push plate, it is effectively used for push loading scrapers.

# Production Dozing Tools General Purpose Dozing Tools Special Application Dozing Tools



"CD" — The CD or Carry-Dozer Blade is available for the D11T CarryDozer only. It is built to the same high standard of structural integrity as the "U" and "SU" Dozers. The CD Blade has

a unique "bucket" shape that allows it to carry several cubic vards or cubic meters of material in the blade. This acts as a disposable counterweight that allows the CarryDozer to push more material per pass than a standard D11T. The CarryDozer will not be as effective as the "U" or "SU" dozer in tightly packed or poorly shot material. It is also more sensitive to the carryback in sticky materials.

# **General Purpose Dozing Tools**



"S" — The Straight blade provides excellent versatility. Since it is physically smaller than the SU or Ublade, it is easier to maneuver and can handle a wider range of materials. It has a higher kW/ meter (HP/foot)

of cutting edge than the SU or U-blade; consequently, the "S" is more aggressive in penetrating and obtaining a blade load. A tilt cylinder increases both the productivity and versatility of this dozer. With a high kW/Lm<sup>3</sup> (HP/LCY), the S-blade can handle heavy material easily.



**Power Angle and Tilt Blade** — Versatility is its key feature with its ability to perform a variety of site development to general dozing work as well as heavy-duty appli-

cations. Angle and tilt control is with 2 levers on some machines, 1 lever on others.

Variable Power Angle and Tilt (VPAT) blade can be mechanically tipped forward for improved penetration or shedding sticky material and backward for finish grading and improved productivity.

# Special Application Dozing Tools

Caterpillar provides specialty bulldozers for specific applications. The blades are designed to increase production while performing certain tasks. Following are the most popular special applications blades.

# Variable Radius (VR) Blades



Variable Radius Semi-U Blades are excellent tools for land improvement, soil conservation. site development or general construction. They combine the

penetration ability of a Semi-U Blade with the load retention and high capacity of a U-blade.

**Blade Selection** 

They provide the aggressive cutting action needed for digging, while having the material retention characteristics needed for moving high volumes over a distance. This is accomplished through a moldboard which varies in radius from the edge to the center. This creates a rolling action in the material being moved, pushing it to the center of the blade for better retention. The extended side wings, angled to thirty degrees, further increase the capacity over a standard blade.

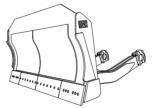
## Angle Blade (A-Blade)



"A" — Or Angling blade can be positioned straight or angled 25 degrees to either side. It is designed for sidecasting, pioneering roads,

backfilling, cutting ditches and other similar tasks. It can reduce the amount of maneuvering required to do these jobs. Its "C" frame can be used for attachments such as pushing, land clearing, or snow removal tools. A-blades are not recommended for rock or severe applications.

### **Cushion Dozers**



**Cushion Dozers** are designed to push-load wheel-tractor scrapers, or track-type tractors. The heavy-duty design includes reinforcement to transfer machine power without damaging the blade or the

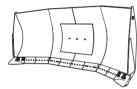
tractor. Blade cylinders are pinned to the C-frame, and the blade height is such that the blade lift cylinders are isolated from damaging forces.

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# Blade SelectionSpecial Application Dozing Tools

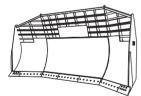
The taller blade allows pushing from a higher position, eliminating blade drag and increasing productivity. The blade curvature is matched to the curve of the Cat Push Block for maximum contact area, preventing the block from riding over the top of the blade. Extended side plates make it easier for operators to "catch" the stinger when repositioning for a new pass. The center of the blade is armored with T-1 plate steel for maximum service life. The narrow width of the cushion blade increases machine maneuverability in congested cuts and reduces the possibility of cutting tires associated with SU and U-blades.

When not push-loading, the dozer can be used for cut maintenance and other general dozing jobs.



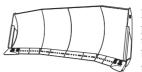
**Coal U-Blades** are designed specifically to move large volumes of coal in coal piles, at powerplants and transshipment points. The wing angle of thirty degrees crowds material to the center of the

blade, maximizing capacity by minimizing side spill. The moldboard is much higher and wider than standard, specifically to match the material density and loading characteristics of coal. The curve of the moldboard rolls the material forward, enhancing the carrying capacity. With this design, coal-moving capacity can be as much as 200 percent greater than a standard U-blade.



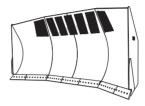
Landfill U-Blades provide capacity increases of up to fifty percent over a straight blade. Landfill blades have the height and width to handle large volumes of lowdensity refuse, but are tough

enough to dig and bulldoze ground cover. Vision to the load is provided by areas of screen in the upper blade. Angled wings slice into natural bed earth for trenches or cover material, adding to the versatility in the landfill.



**Reclamation U-Blades** — are purpose-built for reclamation of mine spoil piles. The blade has a larger capacity than a standard U-blade.

The wing angle of 28 degrees provides a good balance between load retention and shearing action, keeping the optimal load in front of the blade, but cutting cleanly through the material when necessary.



The width of **Woodchip U-Blades** gives operators maximum control and greater confidence, even in steep chip piles. Deep curvature of the moldboard keeps material flowing to liven dead chips and optimize production on

long pushes. Blade height and wings angled at thirty degrees combine for excellent material retention – giving better production with every pass. An operator visibility window in the top section is standard.

# **Multi-Application/Rock and Root Rakes**



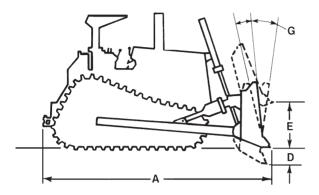
Multi-Application/Rock and Root Rakes are perfectly suited for heavy duty land clearing including removal of stumps, large rocks or large trees and for work in clay and other heavy soils.

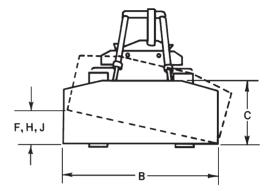
Frames are constructed of high strength steel for longer life. Cast teeth, with replaceable tips, are designed for maximum ground penetration and resistance to shock loading when prying or pushing trees, stumps and rocks. Brush rack is standard and increases height and capacity by as much as 40%.

Rake is a direct replacement for existing blade, and utilizes existing push arms and C-frames.

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# General Dimensions Key • Tractor and Blade • SAE Blade Capacity Definition





# KEY

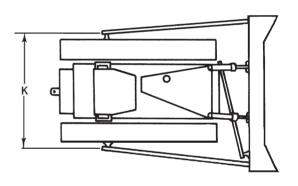
- A Length (Blade Straight) Blade:
- **B** Width (including standard end bits)
- **C** Height
- **D** Maximum Digging Depth
- **E** Ground Clearance @ Full Lift
- **F** Maximum Tilt (Manual)
- **G** Maximum Pitch Adjustment
- **H** Maximum Hydraulic Tilt
- **J** Hydraulic Tilt (manual brace centered)
- **K** Push Arm Trunnion Width (to Ball Centers)

Blade capacities on the following pages are as determined by SAE recommended practice J1265. Capacities are defined as:

 $Vs = 0.8 WH^2$ .

$$Vu = ZH (W-Z) \tan X.$$

- Where: Vs = Capacity of straight or angling blade.
  - Vu = Capacity of semi-U or full U-blade.
  - W = Blade width exclusive of end bits.
  - H = Effective blade height considering tapered top corners, etc.
  - Z = Wing length measured parallel to blade width @ ground line of cutting edges.
  - X = Wing angle.



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	D6R2											
MODEL	6	S	6S	U	6SU	XL	6S LGP					
Gauge	-	- 1		74"	1880 mm	74"	2286 mm	90"				
Туре	Stra	ight	Semi-U	niversal	Semi-U	niversal	Stra	ight				
Blade Capacities*	3.89 m³	5.1 yd <sup>3</sup>	5.61 m <sup>3</sup>	7.3 yd³	5.55 m³	7.26 yd <sup>3</sup>	3.75 m <sup>3</sup>	4.9 yd <sup>3</sup>				
Weight, Shipping** (Dozer)	2251 kg	4963 lb	2333 kg	5143 lb	2570 kg	5666 lb	2418 kg	5331 lb				
Tractor and Dozer Dimensions:												
A Length (Blade Straight)	4903 mm	193.1"	5095 mm	200.6"	5332 mm	210.0"	5465 mm	215.2"				
Blade Dimensions:												
B Width (including std. end bits)	3360 mm	132.3"	3260 mm	128.3"	3260 mm	128.3"	4063 mm	160"				
C Height	1257 mm	49.5"	1412 mm	55.6"	1412 mm	55.6"	1101 mm	43.3"				
D Max. Digging Depth	473 mm	18.6"	473 mm	18.6"	459 mm	18.1"	655 mm	25.8"				
E Ground Clearance @ Full Lift	1104 mm	43.5"	1104 mm	43.5"	1195 mm	47.0"	1083 mm	42.6"				
G Max. Pitch Adjustment	+5.3 t	o 4.8°	+5.6 to	–5.2°	+5.6 to	o −5.2°	+4.4 to	o −4.4°				
H Max. HydraulicTilt	765 mm	30.1"	743 mm	29.3"	743 mm	29.3"	701 mm	27.6"				
K Push Arm Trunnion Width												
(to Ball Centers)	2640 mm	103.9"	2640 mm	103.9"	2640 mm	103.9"	3490 mm	137.4"				

		De	6R2		D6T						
MODEL	6	6A		XL	6A		65	SU			
Gauge	1880 mm	74"	1880 mm	74"	1880 mm	74"	1880 mm	74"			
Туре	Ang	ling	Ang	Angling		Angling		niversal			
Blade Capacities*	3.93 m <sup>3</sup>	5.1 yd <sup>3</sup>	3.89 m <sup>3</sup>	5.1 yd <sup>3</sup>	3.64 m <sup>3</sup>	4.75 yd <sup>3</sup>	5.35 m <sup>3</sup>	6.99 yd³			
Weight, Shipping** (Dozer)	2715 kg	5986 lb	2625 kg	5787 lb	3138 kg	6904 lb	2973 kg	6540 lb			
Tractor and Dozer Dimensions:											
A Length (Blade Straight)	5007 mm	197.2"	5209 mm	205.1"	5.00 m	16'5"	5.08 m	17'6"			
Length (Blade Angled)		-		-	5.83 m	19'2"		-			
Width (Blade Angled)		-		-	3.78 m	12'5"	_				
Width (with C-Frame only)		-		-	2.93 m	9'8"		_			
Blade Dimensions:											
B Width (including std. end bits)	4166 mm	164.0"	4166 mm	164.0"	4.16 m	13'8"	3.26 m	10'8"			
C Height	1155 mm	45.5"	1155 mm	45.5"	1154 mm	3'10"	1411 mm	4'8"			
D Max. Digging Depth	506 mm	19.9"	524 mm	20.6"	506 mm	1'8"	453 mm	1'6"			
E Ground Clearance @ Full Lift	1142 mm	45.0"	1205 mm	47.4"	1144 mm	3'9"	1204 mm	3'11"			
G Max. Pitch Adjustment	25	5°	25	°		-	+5.6° t	o –5.2°			
H Max. Hydraulic Tilt	408 mm	16.1"	408 mm	16.1"	519 mm	1'8"	811 mm	2'8"			
Blade Angle		-		-	2!	5°		_			
J HydraulicTilt (Manual Brace Centered)		_	_	_		_	455 mm	1'6"			
K Push Arm Trunnion Width	-	-	-	-	-	-	400 11111	10			
(to Ball Centers)	2640 mm	103.9"	2625 mm	103.9"	2.58 m	8'6"	2.58 m	8'6"			

\*Blade capacities as determined by SAE J1265. Tractor and dozer dimensions variations due to SystemOne undercarriage products are negligible. Notice that the capacity of the SU-blade is the volume carried by a straight blade of the same dimensions plus the volume included in the "cup" of the SU-blade. It is intended for **relative comparisons of dozer sizes**, and not for predicting capacities or productivities in actual field conditions. \*\*Shipping Weight — Total Bulldozer Arrangement includes: Blade, push arms or C-frame, braces, cylinders, lines, trunnions and lift cylinder mountings.

				D	6Т			
MODEL	6A	XL	6SU	XL	6VPA	T XL	6A	XW
Gauge	1.88 m	74"	1.88 m	74"	2.13 m	84"	2.03 m	80"
Туре	Ang	ling	Semi-U	Semi-Universal		AT	Angling	
Blade Capacities*	3.94 m³	5.15 yd <sup>3</sup>	5.55 m³	7.26 yd <sup>3</sup>	4.64 m <sup>3</sup>	6.07 yd <sup>3</sup>	4.35 m <sup>3</sup>	5.69 yd
Weight, Shipping** (Dozer)	3086 kg	6803 lb	2831 kg	6242 lb	3464 kg	7637 lb	3731 kg	8226 lk
Tractor and Dozer Dimensions:								
A Length (Blade Straight)	5.21 m	17'1"	5.33 m	17'6"	5.39 m	17'8"	5.29 m	17'4"
Length (Blade Angled)	6.05 m	19'10"		-	3.54 m	11'7"	6.20 m	20'4"
Width (Blade Angled)	3.77 m	12'5"	-	-	3.49 m	11'5"	4.11 m	13'6"
Width (with C-Frame only)	2.99 m	9'10"		-		-	3.29 m	10'10"
Blade Dimensions:								
B Width (including std. end bits)	4.16 m	13'8"	3.26 m	10'8"	3.88 m	12'9"	4.52 m	14'10"
C Height	1154 mm	3'10"	1407 mm	4'7"	1294 mm	4'3"	1153 mm	3'9"
D Max. Digging Depth	555 mm	1'10"	501 mm	1'7"	792 mm	2'7"	541 mm	1'9"
E Ground Clearance @ Full Lift	1112 mm	3'7"	1180 mm	3'10"	1053 mm	3'5"	1139 mm	3'9"
G Max. Pitch Adjustment	-	_	+4.0° t	o –4.0°	+0.5° t	o –3.1°		_
H Max. Hydraulic Tilt	424 mm	1'5"	811 mm	2'8"	410 mm	1'4"	424 mm	1'5"
Blade Angle	2	5°	-	-	24	4°	2	5°
J Hydraulic Tilt (Manual Brace Centered)	-	_	455 mm	1'6"	-	-	-	_
K Push Arm Trunnion Width (to Ball Centers)	2.58 m	8'6"	2.58 m	8'6"	-	_	2.89 m	9'8"

				D	6T				
MODEL	6SU	XW	6A I	_GP	6S	LGP	6VPAT LGP/XW		
Gauge	2.03 m	80"	2.29 m	90"	2.29 m	90"	2.29 m	90"	
Туре	Semi-U	niversal	Ang	Angling		ight	VF	PAT	
Blade Capacities*	5.64 m <sup>3</sup>	7.38 yd <sup>3</sup>	4.94 m <sup>3</sup>	6.46 yd <sup>3</sup>	3.79 m <sup>3</sup>	4.96 yd <sup>3</sup>	5.02 m <sup>3</sup>	6.57 yd <sup>3</sup>	
Weight, Shipping** (Dozer)	2976 kg	6562 lb	3745 kg	8255 lb	2720 kg	5997 lb	3558 kg	7845 lb	
Tractor and Dozer Dimensions:									
A Length (Blade Straight)	5.33 m	17'6"	5.81 m	19'1"	5.50 m	18'1"	5.53 m	18'2"	
Length (Blade Angled)	-	_	6.81 m	22'4"		-	-	-	
Width (Blade Angled)	-	-	4.63 m	15'2"	-	-	3.72 m	12'2"	
Width (with C-Frame only)		_	3.77 m	12'5"	-		_		
Blade Dimensions:									
B Width (including std. end bits)	3.56 m	11'8"	5.07 m	16'8"	4.06 m	13'3"	4.16 m	13'8"	
C Height	1407 mm	4'7"	1150 mm	3'9"	1108 mm	3'8"	1294 mm	4'3"	
D Max. Digging Depth	502 mm	1'7"	853 mm	2'10"	590 mm	1'11"	743 mm	2'5"	
E Ground Clearance @ Full Lift	1180 mm	3'10"	1004 mm	3'3"	1094 mm	3'7"	1102 mm	3'7"	
G Max. Pitch Adjustment	+4.0° t	o –4.0°		-	+4.4° t	o –4.4°	+0.5° t	o –3.1°	
H Max. Hydraulic Tilt	791 mm	2'7"	618 mm	2'0"	747 mm	2'5"	435 mm	1'5"	
Blade Angle		_	24	.2°		-	24°		
J HydraulicTilt (Manual Brace Centered)	442 mm	1'5"	_	_	399 mm	1'4"	_	_	
K Push Arm Trunnion Width						. 4			
(to Ball Centers)	2.89 m	9'8"	3.42 m	11'5"	3.42 m	11'5"	-	_	

\*Blade capacities as determined by SAE J1265. Notice that the capacity of the SU-blade is the volume carried by a straight blade of the same dimensions plus the volume included in the "cup" of the SU-blade. It is intended for relative comparisons of dozer sizes, and not for predicting capacities or productivities in actual field conditions.

\*\*Shipping Weight - Total Bulldozer Arrangement includes: Blade, push arms or C-frame, braces, cylinders, lines, trunnions and lift cylinder mountings.

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		D9R	/D9T					
MODEL	95	SU	9U Universal					
Туре	Sen	ni-U						
Blade Capacities*	13.5 m³	17.7 yd <sup>3</sup>	16.4 m <sup>3</sup>	21.4 yd³				
Weight, Shipping** (Dozer)	6863 kg	15,130 lb	7388 kg	16,288 lb				
Tractor and Dozer Dimensions:								
A Length (Blade Straight)	6.60 m	21'6"	6.96 m	22'8"				
Blade Dimensions:								
B Width (including std. end bits)	4.31 m	14'1"	4.65 m	15'2"				
C Height	1934 mm	6'4.1"	1934 mm	6'4.1"				
D Max. Digging Depth	606 mm	1'11.9"	606 mm	1'11.9"				
E Ground Clearance @ Full Lift	1422 mm	4'8"	1422 mm	4'8"				
G Max. Pitch Adjustment	+3.4° 1	to 2.9°	+3.4° to 2.9°					
H Max. HydraulicTilt	940 mm	3'1"	1014 mm	3'3.9"				
J Hydraulic Tilt (Manual Brace Centered)	570 mm	1'10.4"	616 mm	2'0.3"				
K Push Arm Trunnion Width (to Ball Centers)	3.30 m	10'8"	3.30 m	10'8"				
Maximum Track Width Permitted	762 mm	2'6"	762 mm	2'6"				
DualTilt Option								
G Dual Pitch Adj.	+4.8° 1	to 5.2°	+4.8° 1	to 4.9°				
H Dual Max. Hyd. Tilt	1139 mm	3'8.8"	1231 mm	4'0.5"				

\*Blade capacities as determined by SAE J1265.

Notice that the capacity of the U-blade is the volume carried by a straight blade of the same dimensions plus the volume included in the "cup" of the U-blade. It is intended for **relative comparisons of dozer sizes**, and not for predicting capacities or productivities in actual field conditions.

Notice that the capacity of the SU-blade is the volume carried by a straight blade of the same dimensions plus the volume included in the "cup" of the SU-blade. It is intended for relative comparisons of dozer sizes, and not for predicting capacities or productivities in actual field conditions.

\*\*Shipping Weight – Total Bulldozer Arrangement includes: Blade, push arms or C-frame, braces, cylinders, lines, trunnions and lift cylinder mountings.

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			D1	1 <b>T</b>			
MODEL	11:	SU	11	U	11 CD		
Туре	Ser	ni-U	Univ	ersal	Carry	ryDozer	
Blade Capacities*	27.2 m³	35.5 yd³	34.4 m <sup>3</sup>	45.0 yd <sup>3</sup>	43.6 m <sup>3</sup>	57.0 yd <sup>3</sup>	
Weight, Shipping**		-		-		-	
Standard Dozer	14 813 kg	32,658 lb	17 296 kg	38,131 lb	24 085 kg	53,099 lb	
Abrasion Dozer	16 192 kg	35,698 lb	18 823 kg	41,498 lb	-	_	
Tractor and Dozer Dimensions:							
A Length	8.58 m	28'2"	8.64 m	28'4"	8.77 m	28'9"	
Width	5.50 m	18'1"	6.26 m	20'7"	6.43 m	21'1"	
Blade Dimensions:							
B Width (including std. end bits)	5.58 m	18'4"	6.35 m	20'10"	6.71 m	22'0"	
C Height	2.75 m	9'0"	2.83 m	9'3"	2.96 m***	9'8"***	
D Max. Digging Depth	766 mm	2'6.2"	766 mm	2'6.2"	688 mm	2'3"	
E Ground Clearance @ Full Lift	1533 mm	5'0.4"	1533 mm	5'0.4"	1850 mm	6'1"	
G Max. Pitch Adjustment	+2.1°	to 2.2°	+2.1°	to 2.2°	-	_	
H Max. Hydraulic Tilt	1184 mm	3'10.6"	1344 mm	4'4.9"	1800 mm	5'11''	
J HydraulicTilt (Manual Brace Centered)	886 mm	2'10.9"	1006 mm	3'3.6"	-	_	
K Push Arm Trunnion Width (to Ball Centers)	4.18 m	13'9"	4.18 m	13'9"	4.18 m	13'9"	
Maximum Track Width Permitted	914 mm	3'0"	914 mm	3'0"	914 mm	3'0"	
DualTilt Option	+7.5°	to 7.6°	+7.5° 1	to 7.6°			
	C	or	c	or			
G Dual Pitch Adjustment	+0° t	o 13°	+0° t	o 13°	+47.8° 1	to 10.4°	
H Dual Max. Hyd. Tilt	1706 mm	5'7.2"	1938 mm	6'4.3"		_	

\*Blade capacities as determined by SAE J1265.

Notice that the capacity of the U-blade is the volume carried by a straight blade of the same dimensions plus the volume included in the "cup" of the U-blade. It is intended for relative comparisons of dozer sizes, and not for predicting capacities or productivities in actual field conditions.

Notice that the capacity of the SU-blade is the volume carried by a straight blade of the same dimensions plus the volume included in the "cup" of the SU-blade. It is intended for relative comparisons of dozer sizes, and not for predicting capacities or productivities in actual field conditions. \*\*Shipping Weight — Total Bulldozer Arrangement includes: Blade, push arms or C-frame, braces, cylinders, lines, trunnions and lift cylinder mountings.

\*\*\*Blade height with cutting edge at 53°.

All dimensions are approximate.

# **BULLDOZER PRODUCTION OFF-THE-JOB**

You can estimate bulldozer production using the production curves that follow and the correction factors that are applicable. Use this formula:

 $\frac{\text{Production (Lm<sup>3</sup>/hr)}}{(\text{LCY/hr})} = \frac{\text{Maximum}}{\text{production}} \times \frac{\text{Correction}}{\text{factors}}$ 

The bulldozer production curves give maximum uncorrected production for universal, semi-universal, and straight blades and are based on the following conditions:

- 1. 100% efficiency (60 minute hour level cycle).
- 2. Power shift machines with 0.05 min. fixed times.
- 3. Machine cuts for 15 m (50 feet), then drifts blade load to dump over a high wall. (Dump time 0 sec.)
- 4. Soil density of 1370 kg/Lm<sup>3</sup> (2300 lb/LCY).
- 5. Coefficient of traction:\*
  - a. Track machines 0.5 or better
  - b. Wheel machines -0.4 or better
- 6. Hydraulic controlled blades used.
- 7. Dig 1F\*\* Carry 2F\*\* Return 2R\*\*

To obtain estimated production in bank cubic meters or bank cubic yards, appropriate load factor from the Tables section should be applied to the corrected production as calculated above.

Production Bm <sup>3</sup> /hr	Lm³/hr	× LF
$(BCY/h) \equiv$	(LCY/h)	× LF

\*Coefficient of traction assumed to be at least 0.4. While poor traction affects both track and wheel vehicles, causing them to take smaller blade loads, wheeled units are affected more severely and production falls much more rapidly. While no fixed rules can predict this production loss, a rough rule of thumb is that wheel dozer production falls off 4% for each one-hundredth decrease in coefficient of traction below 0.40. If, for example, coefficient of traction is 0.30, the difference is ten-hundredths (0.10), and production is 60% ( $10 \times 4\% = 40\%$  decrease).

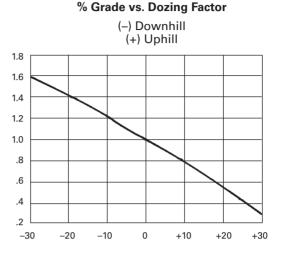
\*\*This gear sequence is based on level to downhill terrain, light to medium density material, and no blade extensions such as spill plates, rock guards, etc. Exceeding these conditions may require carry in 1F, but productivity should equal or exceed "standard conditions" due to the larger loads that can be carried in 1F.

# Job Factors Estimating Production Off-the-Job • Example Problem

# JOB CONDITION CORRECTION FACTORS

	TRACK-TYPE TRACTOR
OPERATOR -	
Excellent	1.00
Average	0.75
Poor	0.60
MATERIAL —	
Loose stockpile	1.20
Hard to cut; frozen —	
with tilt cylinder	0.80
without tilt cylinder	0.70
Hard to drift; "dead" (dry, non-	0.80
cohesive material) or very sticky material	
Rock, ripped or blasted	0.60-0.80
SLOT DOZING	1.20
SIDE BY SIDE DOZING	1.15-1.25
VISIBILITY -	
Dust, rain, snow, fog or darkness	0.80
JOB EFFICIENCY —	
50 min/hr	0.83
40 min/hr	0.67
BULLDOZER*	
Adjust based on SAE capacity relative to the base blade used in the Estimated Dozing Production graphs.	
GRADES — See following graph.	

\*NOTE: Angling blades and cushion blades are not considered production dozing tools. Depending on job conditions, the A-blade and C-blade will average 50-75% of straight blade production.



# ESTIMATING DOZER PRODUCTION OFF-THE-JOB

Example problem:

Determine average hourly production of a D8T/8SU (with tilt cylinder) moving hard-packed clay an average distance of 45 m (150 feet) down a 15% grade, using a slot dozing technique.

Estimated material weight is 1600 kg/Lm<sup>3</sup> (2650 lb/ LCY). Operator is average. Job efficiency is estimated at 50 min/hr.

Uncorrected Maximum Production — 458 Lm<sup>3</sup>/h (600 LCY/hr) (example only)

### Applicable Correction Factors:

Hard-packed clay is "hard to cut" material0.80
Grade correction (from graph)1.30
Slot dozing
Average operator
Job efficiency (50 min/hr)0.83
Weight correction (2300/2650)–0.87

- Production = Maximum Production × Correction Factors
  - = (600 LCY/hr) (0.80) (1.30) (1.20) (0.75)(0.83) (0.87)
  - = 405.5 LCY/hr

To obtain production in metric units, the same procedure is used substituting maximum uncorrected production in Lm<sup>3</sup>.

> =  $458 \text{ Lm}^3/\text{h} \times \text{Factors}$ =  $309.6 \text{ Lm}^3/\text{h}$

# **RIPPERS**

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### Features:

- Parallelogram linkage with hydraulically variable pitch on D7E, D7R, D8R/D8T, D9R/D9T, D10T2 and D11T. Operator can adjust angle of ripper tip to the material for penetration at all ripping depths to increase production.
- Fixed Parallelogram linkage design used on D3K2, D4K2, D5K2, D6K2, D6N, D6R, D6R XL, D6T and D6T XL. This design holds tooth angle constant at all ripping depths.
- Adjustable Single shank arrangements available for D8R/D8T, D9R/D9T, D10T2 and D11T for tough ripping applications and deep ripping requirements.
- Hydraulically Variable Pitch Multi-shank arrangements available on D7E, D7R, D8R/D8T, D9R/D9T, D10T2 and D11T allow wide-beam coverage in easier-to-rip materials.
- Counterweighted CarryDozer Ripper single shank available for D11T and D11T CD, multi-shank available for D11T CD.

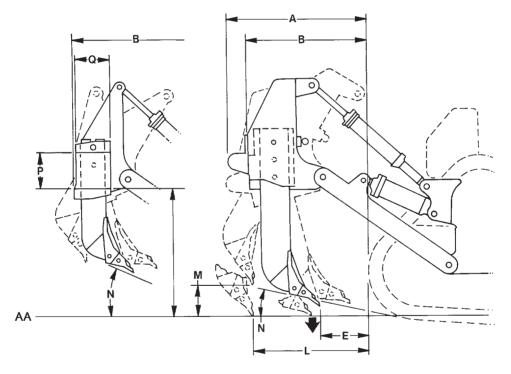
**Rippers** 

Specification Diagrams • Adjustable Parallelogram Ripper

# DEFINITION OF FORCES SHOWN IN TABLES THAT FOLLOW

"Pryout," (Breakout) kilonewtons (and pounds) — the maximum sustained upward force, generated by the lift cylinders measured at the ripper tip. Breakout force is measured with the shank in the top hole, shank vertical and ripper full down. Breakout force may be hydraulically or balance limited.

"Penetration force," kilonewtons (and pounds) — the maximum sustained downward force, generated by the ripper lift cylinders measured at the ripper tip, which is required to raise the back end of the vehicle with the tip on ground and the shank (pinned in the top hole) vertical.

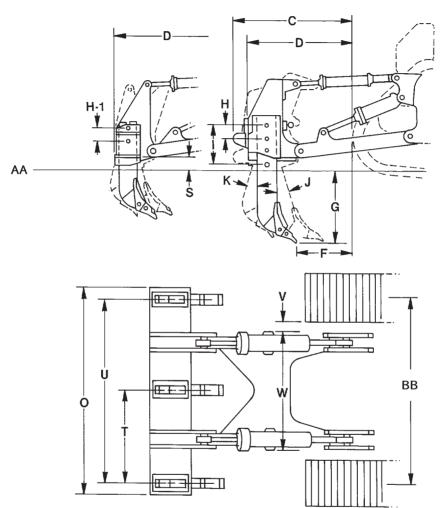


# Adjustable Parallelogram Ripper

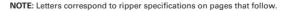
NOTE: Letters correspond to ripper specifications on pages that follow.



# **Rippers**

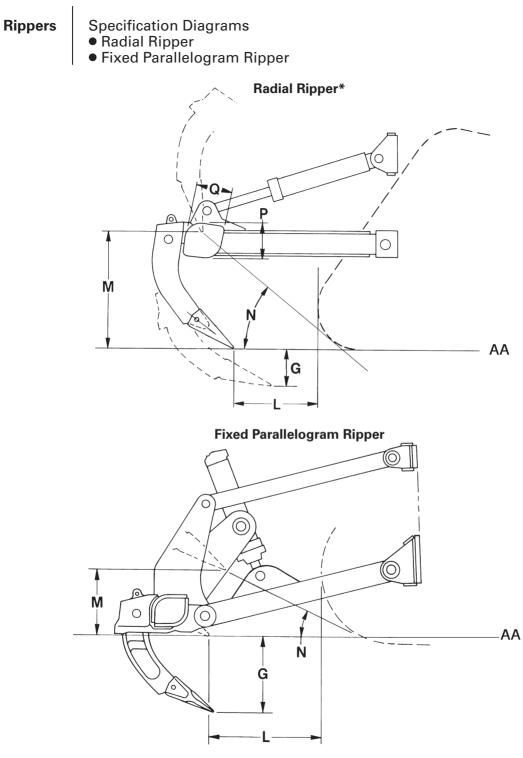


# Adjustable Parallelogram Ripper





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NOTE: Letters correspond to ripper specifications on pages that follow.



TRACTOR/RIPPER	D1	1T	D1 <sup>*</sup>	D11T		
	Adjustable Parallelogram					
Ripper Type	Multi-	shank	CD Mult	CD Multi-shank		
Dimensions:						
Ripper to Track						
Ripper length behind track, shank vertical, ripper up (A)						
A With Pushblock	N	Ά	N/	A		
B Without Pushblock	1.69 m	5'6"	1.71 m	5'8"		
Ripper length behind track, shank vertical, ripper down (A)						
C With Pushblock	N	/Α	N/	Α		
D Without Pushblock	2.16 m	7'1"	2.16 m	7'1"		
Tip to track distance, shank vertical (A)						
E Ripper Up	0.78 m	2'7"	0.78 m	2'7"		
F Ripper Down	1.95 m	6'5"	1.96 m	6'5"		
Shank*						
G Maximum digging depth	1100 mm	3'7.3"	1100 mm	3'7.3"		
H Dig adjustment per hole	280 mm	11"	280 mm	11"		
Total dig adjustment	280 mm	11"	280 mm	11"		
Pitch Adjustment, ripper down:						
J Forward	12	.2°	12.1	2°		
K Backward	31	.8°	31.8°			
L Maximum reach at ground line	1.71 m	5'7"	1.71 m	5'7"		
M Maximum ground clearance under tooth (shank pinned in bottom hole)	1090 mm	3'6.9"	1090 mm	3'6.9"		
N Maximum ramp angle, ripper up (shank pinned in bottom hole)	36	36.4°		4°		
Shank Section	100 × 400 mm	3.9" × 15.7"	100 × 400 mm	3.9" × 15.7"		
Ripper Beam						
Overall width	3.33 m	10'11"	3.34 m	10'11.5"		
P Height	560 mm	22"	595 mm	23.4"		
<b>Q</b> Length	560 mm	22"	595 mm	23.4"		
Clearance under beam, shank vertical						
R Ripper Up	2.06 m	6'9"	2.03 m	6'8"		
S Ripper Down	282 mm	11.1"	247 mm	9.7"		
Number of Pockets	3	3	3			
T Pocket Spacing	1.5 m	4'11"	1.5 m	4'11"		
U Shank Gauge	3.0 m	9'10"	3.0 m	9'10"		
V Track Clearance with standard shoe	166 mm	5.6"	166 mm	5.6"		
W Width across widest part of lift cylinders	1.9 m	6'3"	1.9 m	6'3"		
Installed Weights:						
Ripper with standard shank	8674 kg	19,123 lb	11 790 kg	25,993 lb		
Each additional tooth group	689 kg	1519 lb	689 kg	1519 lb		
Ripper Forces:**	5					
Penetration Force, shank vertical	335 kN	75,311 lb	365 kN	82,055 lb		
Pryout Force, shank vertical	632 kN	142,079 lb	636 kN	142,978 lb		

\*Hydraulic pin puller is standard with deep ripping shank. Deep Ripping Arrangement maximum digging depth is 2.18 m (7'2").

\*\*Forces are for a ripper on a tractor equipped with an EROPS, U-Dozer and performance track. Forces will vary slightly with other vehicle configurations.

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# TIP SELECTION FOR THE D8R/D8T, D9R/D9T, D10T2 AND D11T RIPPERS

Three tip configurations (short, intermediate and long) in two styles (centerline and penetration) are available for economical operation in a variety of conditions.

# RECOMMENDED TIP USAGE

- Short Use in high impact conditions where breakage problems occur. The shorter the tip, the more it resists breakage.
- Intermediate Most effective in moderate impact conditions where abrasion is not excessive.
- Long Use in loose, abrasive materials where breakage is not a problem. Generally offers the most wear material.

# **Centerline vs Penetration**

The materials being ripped and the tractor doing the ripping will both have an effect on which tip will do the best job. High density material requires a "penetration" tip. High impact material requires a "centerline" tip. The following is a general guide to tip application.

	Tips to use		
<b>Ripping Condition</b>	D8R/D8T D9R/D9T	D10T2	D11T
Tandem Tractors	Short	Short	Short
Single Shank and Multi-shank			
Extreme Duty	Int.	Short	Short
Medium Duty	-	Int.	Int.
Abrasive Duty	Long	Long	Long

Always use the longest tip that will wear without excessive breakage. Different tips should be tried to determine the most economical.

# **ESTIMATING RIPPING PRODUCTION**

Ripping costs must be compared to other methods of loosening the material — usually drilling and blasting — on a cost per ton or bank cubic yard basis. Thus, an accurate estimation of ripper production is needed to determine unit ripping costs. There are three general methods of estimating ripping production:

- 1. The best method is to record the time spent ripping, then remove (using scrapers or loaders and trucks) and weigh the ripped material. The total weight divided by the time spent will give hourly production. If the contractor is paid by volume, then a density must be used and the accuracy is only as good as the density used. For payment by volume removed, method 2 may be desirable. Some care will be needed to assure that only ripped material is removed.
- 2. Another method is to cross-section the area and then record the time spent ripping. After the material has been removed, cross-section the area again to determine the volume of rock removed. The volume divided by the time spent ripping gives the ripping rate per minute or hour.
- 3. Timing the ripper over a measured distance is the least accurate method, but valuable for quick estimating on the job. An average cycle time should be determined from a number of timed cycles. Turn-around or back-up time must be included. Measure the average rip distance, rip spacing and depth of penetration. This data will give the volume per cycle from which the production in bank cubic yards can be calculated. Experience has shown results obtained from this method are about 10 to 20% higher than the more accurate method of cross-sectioning.

An example of the measured distance method for calculating ripper production is:

Data - D10T2 - No. 10 with one shank.

910 mm (36 in) between passes.

- 1.6 km/h (1 mph) average speed (including slippage and stalls).
- Every 91 m (300 ft) requires 0.25 min to raise, pivot, turn, and lower again: 91 m (300 ft) = 1 pass.
- 610 mm (24 in) penetration.
- Full time ripping (no pushing or dozing assignment).

*Example of Estimating Production* (Metric)

Time per pass:

1.6 km/h = 26.7 m/min. Then  $\frac{91 \text{ m}}{26.7 \text{ m/min}}$  = 3.41 min;

3.41 min + 0.25 min (turn time) = 3.66 min/pass.

If the operator works an average of 45 min per h, it is possible to make =  $\frac{45}{3.66}$  = 12.3 passes per h

Volume ripped: 91 m  $\times$  0.9 m  $\times$  0.6 m = 49.1 BCM per pass

Production =  $49.1 \times 12.3 = 604$  BCM per h

Remember the results from this method are usually 10 to 20 per cent higher than the actual production that can be expected on the job.

...

Example of Estimating Production (English)

Time per pass:

MPH = 88 fpm. Then  $\frac{300 \text{ ft}}{88 \text{ fpm}}$  = 3.41 min;

 $3.41 \min + 0.25 \min$ . (turn time) =  $3.66 \min$ /pass.

If the operator works an average of 45 min per h, it is possible to make =  $\frac{45}{3.66}$  = 12.3 passes per h

Volume ripped:  $\frac{300 \times 3 \times 2}{27} = 66.7$  BCY per pass

Production =  $66.7 \times 12.3 = 820$  BCY per hr

**NOTE:** The demands of heavy ripping will increase the normal owning and operating costs of the tractor.

These costs should be increased no less than 30-40% in heavy ripping applications to estimate rock loosening costs.

There is no ready answer or rule-of-thumb solution to predict ripping production. Even if everything is known about the seismic velocity of the material, its composition, job conditions, equipment and operator, only a "guesstimate" can be given. The final answer must come from a production study obtained on the job site.

### Sample problem (Metric)

Determine the loosening costs in the following situation:

	Machine		D10T2 Tractor with No. 10
			Single Shank Ripper
	Rip Spacing		915 mm
	<b>Ripper Penetration</b>		610 mm
	Rip Distance		91 m
	Rip Time		3.41 minutes
	Maneuver Time		0.25 minutes
	Seismic Velocity		1830 meters per second
	Assume 60 min. ho	ur	-
2	alution.		

Solution:

- 1. Total Cycle Time = 3.41 + 0.25 = 3.66 min Cycles/hour =  $\frac{60 \text{ min/hr}}{3.66 \text{ min/cycle}} = 16.4$
- 2. Production per cycle =  $91 \text{ m} \times 0.9 \text{ m} \times 0.6 \text{ m} = 49.1 \text{ BCM/cycle}$
- 3. Production = 49.1 BCM/cycle × 16.4 cycles/h = 805 BCM/h
- 4. Remember results of this method are usually 10 to 20% high.

Actual Production = 80% of 805 BCM/h = 644 BCM/h Or 90% of 805 BCM/h = 725 BCM/h

- Owning and Operating Costs
   A D10T2 (ripping only) could have a \$115.00/h O & O costs including \$30/h operator.
- 6. Loosening Costs \$115.00/hr ÷ 644 BCM/h = \$0.179/BCM \$115.00/hr ÷ 725 BCM/h = \$0.159/BCM The loosening cost should range from 15.9¢ to 17.9¢/BCM

### •••

# Sample problem (English)

Determine the loosening costs in the following situation:

Machine		D10T2 Tractor with No. 10
		Single Shank Ripper
Rip Spacing		3 feet
<b>Ripper Penetration</b>		2 feet
Rip Distance		300 feet
Rip Time	_	3.41 minutes
Maneuver Time		0.25 minutes
Seismic Velocity		6000 feet per second
Assume 60 min. ho	ur	

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Solution:

1. Total Cycle Time = 3.41 + 0.25 = 3.66 min

$$Cycles/hour = \frac{60 \text{ min/hr}}{3.66 \text{ min/cycle}} = 16.4$$

2. Production per cycle = 
$$\frac{300 \times 3 \times 2}{27}$$
 = 66.7 BCY/cycle

- 3. Production = 66.7 BCY/cycle × 16.4 cycles/hr = 1094 BCY/hour
- 4. Remember results of this method are usually 10 to 20% high.

Actual Production =  $80\% \times 1094$ = 875 BCY/hror  $90\% \times 1094$  = 984 BCY/hr

- 5. Owning and Operating Costs A D10T2 (ripping only) could have a \$115.00/hr O & O costs including \$30/hr operator
- 6. Loosening Costs
  - $115.00/hr \div 875 BCY/hr = 0.131/BCY$

 $115.00/hr \div 984 BCY/hr = 0.117/BCY$ 

The loosening cost should range from 11.7¢ to 13.1¢/BCY

USE OF SEISMIC VELOCITY CHARTS

The charts of ripper performance estimated by seismic wave velocities have been developed from field tests conducted in a variety of materials. Considering the extreme variations among materials and even among rocks of a specific classification, the charts must be recognized as being at best only one indicator of rippability.

Accordingly, consider the following precautions when evaluating the feasibility of ripping a given formation:

— Tooth penetration is often the key to ripping success, regardless of seismic velocity. This is particularly true in homogeneous materials such as mudstones and claystones and the fine-grained caliches. It is also true in tightly cemented formations such as conglomerates, some glacial tills and caliches containing rock fragments.

- Low seismic velocities of sedimentaries can indicate probable rippability. However, if the fractures and bedding joints do not allow tooth penetration, the material may not be ripped effectively.
- Pre-blasting or "popping" may induce sufficient fracturing to permit tooth entry, particularly in the caliches, conglomerates and some other rocks; but the economics should be checked carefully when considering popping in the higher grades of sandstones, limestones and granites.

Ripping is still more art than science, and much will depend on operator skill and experience. Ripping for scraper loading may call for different techniques than if the same material is to be dozed away. Cross-ripping requires a change in approach. The number of shanks used, length and depth of shank, tooth angle, direction, throttle position — all must be adjusted according to field conditions. Ripping success may well depend on the operator finding the proper combination for those conditions.

# WHEEL LOADERS INTEGRATED TOOLCARRIERS

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# WHEEL LOADERS

#### Features:

- Cat<sup>®</sup> heavy duty diesel engine.
- Productive operator environment. Excellent visibility.
- Automatic lift and bucket controls.
- Adjustable suspension seat and steering column.
- Four wheel enclosed wet disc brakes.
- Automatic power shift transmissions. Allows operator to select automatic or manual mode.
- Hydrostatic drive on 903C2, 906K/M, 907K/M, 908K/M, 910K/M, 914K/M, 918M, 924K, 926M, 930K/M and 938K/M.
- Transmission neutralizer switch (950H-980H, 950K-980K, 950L-980L and 950M-982M).
- Advanced power train with continuously variable transmission available on the 966M XE and 972M XE.
- Computerized machine function monitoring.
- Command control steering with integrated transmission controls and electro-hydraulic controls ... 950H-980H.
- Electro-Hydraulic (EH) Joystick Steering with Force Feedback (Speed Sensitive) on 966K, 966M, 972K, 972M, 980K, 980M and 982M (optional on 950M and 962M).

- Lock up clutch on 950L, 950M, 962L, 962M, 966L, 966M, 972L, 972M, 980L, 980M, 982M, 988K, 990K and 994K (optional on the 980K, 992K and 993K).
- Impeller clutch on 988K, 990K, 992K, 993K and 994K.
- Tilting hood ... 950H-980H, 950K-980K, 950L-980L and 950M-982M.
- Brake wear indicator.
- Limited slip differentials on 924K, 926M, 930K/M, 938K/M (optional on 950H-980H, 950K-980K, 980L, 980M and 982M).
- Differential locks ... 903C2, 906K/M, 907K/M, 908K/M, 910K/M, 914K/M, 918M, 924K, 926M, 930K/M, 938K/M, 950M, 962M, 966M and 972M (optional on 950L, 962L, 966L and 972L).
- Automatic Ride Control suspension system. Operator select "on," "off" or "automatic" (excluding 903C2).
- Payload control system (excluding models below 924K).
- Optional Fusion coupler system for attachment interchangeability with pin-on performance. Attachments can interchange across the entire SWL/MWL/IT line (excluding models below 924K).
- Performance Series Buckets Reduced dig times and better material retention lead to significant productivity and fuel efficiency improvements (910K/M, 914K/M, 918M, 924K, 926M, 930K/M, 938K/M, 950H-980H, 950K- 980K, 950L-980L and 950M-982M).

Listed features may be standard on some models, optional or unavailable on others. Contact your Cat dealer for specific information.

# Wheel Loaders Specifications Integrated Toolcarriers

MODEL	95	50H	96	62H	966H	
Emission Standards	Tier 3 eo	quivalent*	Tier 3 ec	uivalent*	Tier 3 e	quivalent*
Maximum Engine: Net	147 kW	197 hp	156 kW	209 hp	195 kW	262 hp
Gross	162 kW	217 hp	172 kW	231 hp	211 kW	283 hp
Engine Model	C7 A	CERT	C7 A	CERT	C11 ACERT	
Maximum Net Power Engine RPM	1800		18	B00	1	800
Bore	110 mm	4.3"	110 mm	4.3"	130 mm	5.1"
Stroke	127 mm	5"	127 mm	5"	140 mm	5.5"
No. Cylinders		6		6		6
Displacement	7.2 L	439 in <sup>3</sup>	7.2 L	439 in <sup>3</sup>	11.1 L	677 in <sup>3</sup>
Speeds Forward:	km/h	mph	km/h	mph	km/h	mph
1st	6.9	4.3	7.0	4.4	6.7	4.2
2nd	12.7	7.9	13.0	8.1	12.6	7.8
3rd	22.3	13.9	22.6	14.0	22.1	13.7
4th	37.0	23.0	38.0	23.6	37.4	23.2
Speeds Reverse:	km/h	mph	km/h	mph	km/h	mph
1st	7.6	4.7	7.6	4.7	7.4	4.6
2nd	13.9	8.6	13.9	8.6	13.9	8.6
3rd	24.5	15.2	24.5	15.2	24.3	15.1
4th	40.0	24.9	40.0	24.9	37.4	23.2
Hydraulic Cycle Time, Rated Load in Bucket:	Sec	onds	Sec	onds	See	conds
Raise (from Carry Position)		6.2		6.2	!	5.9
Dump (at Maximum Raise)		2.0		2.0		1.6
Lower (Empty, Float Down)		2.5		2.5	:	2.4
Total	1	0.7	1	0.7	:	9.9
Tread Width	2.14 m	7'0"	2.14 m	7'0"	2.23 m	7'4"
Width Over Tires	2.79 m	9'2"	2.79 m	9'2"	3.06 m	9'10"
Ground Clearance	412 mm	16"	412 mm	16"	434 mm	17"
Fuel Tank Capacity	264 L	70 U.S. gal	264 L	70 U.S. gal	380 L	100 U.S. ga
Hydraulic Tank Capacity	110 L	29 U.S. gal	110 L	29 U.S. gal	110 L	29 U.S. ga
Hydraulic System Capacity (includes tank)	186 L	48.4 U.S. gal	186 L	48.4 U.S. gal	200 L	52 U.S. ga

\*Meets Tier 3, Stage IIIA, Japan 2006 (Tier 3) equivalent emission standards. NOTE: Net Engine Power is provided according to SAE J1349 and ISO 3249. Gross Engine Power is provided according to SAE J1995. Machines may only be available in certain regions. Contact your local Cat dealer for product availability.

# Specifications Wheel Loaders Integrated Toolcarriers

MODEL	97	'2H	98	30H	98	36H	990K		
Emission Standards	Tier 3 eq	uivalent*	Tier 3 ec	quivalent*		quivalent quivalent**		juivalent Final***	
Maximum Engine: Net	214 kW	287 hp	260 kW	349 hp	305 kW	409 hp	521 kW	699 hp	
Gross	232 kW	311 hp	293 kW	392 hp	335 kW	449 hp	561 kW	752 hp	
Rated Payload <sup>†</sup>		-		-	10 tonnes	11 tons	15.9 tonnes	17.5 tons	
Gross Rated Bucket Payload†		-		-	-		24 249 kg	53,460 lb	
Engine Model	C13 A	ACERT	C15	ACERT	C15	ACERT	C27 A	CERT	
Maximum Net Power Engine RPM	18	300	1:	800	1	800	18	00	
Bore	130 mm	5.1"	137 mm	5.4"	137 mm	5.4"	137 mm	5.4"	
Stroke	157 mm	6.2"	171 mm	6.75"	171 mm	6.75"	152 mm	6"	
No. Cylinders		6		6		6	1	2	
Displacement	12.5 L	763 in³	15.2 L	928 in <sup>3</sup>	15.2 L	928 in <sup>3</sup>	27.0 L	1650 in <sup>3</sup>	
Speeds Forward:	km/h	mph	km/h	mph	km/h	mph	km/h	mph	
1st	7.2	4.5	6.6	4.1	7.3	5	7.3	4.5	
2nd	12.6	7.8	11.8	7.3	12.7	8	13.3	8.3	
3rd	21.4	13.3	20.7	12.9	22	14	22.9	14.2	
4th	36.9	22.9	36.3	22.6	39	24	-	-	
Speeds Reverse:	km/h	mph	km/h	mph	km/h	mph	km/h	mph	
1st	8.2	5.1	7.6	4.7	7.6	5	7.9	4.9	
2nd	14.2	8.8	13.5	8.4	14.1	9	14.7	9.1	
3rd	24.3	15.1	23.6	14.7	25	12	24.9	15.5	
4th	38.8	24.0	41.5	25.8		_		-	
Hydraulic Cycle Time, Rated Load in Bucket:	Sec	onds	Seconds		Seconds		Seconds		
Raise††	! !	5.9		6.0	1	8.5	8	.2	
Dump (at Maximum Raise)	:	2.1		2.1	3		2	2.9	
Lower (Empty, Float Down)	:	2.4		3.4		4.3	3	8.6	
Total	10	0.4	1	1.5	1	5.8	13	8.8	
Tread Width	2.23 m	7'4"	2.43 m	8'0"	2.59 m	8'6"	3.1 m	10'2"	
Width Over Tires	3.00 m	9'10"	3.18 m	10'5"	3.54 m	11'7"	4.1 m	13'5"	
Ground Clearance	434 mm	17"	430 mm	16.9"	459 mm	18"	596 mm	23.5"	
Fuel Tank Capacity	380 L	100 U.S. gal	453 L	120 U.S. gal	600 L	159 U.S. gal	1114 L	294 U.S. gal	
Hydraulic Tank Capacity	110 L	29 U.S. gal	125 L	33 U.S. gal	130 L	34 U.S. gal	-	-	
Implement and Fan		-		-		-	261 L	68.9 U.S. gal	
Steering and Braking		-		-	_		132 L	34.9 U.S. gal	
Hydraulic System Capacity (includes tank)	200 L	52 U.S. gal	250 L	66 U.S. gal	330 L	87 U.S. gal	795 L	210 U.S. gal	

\*Meets Tier 3, Stage IIIA, Japan 2006 (Tier 3) equivalent emission standards.

\*\*Meets Tier 2/Stage II/Japan 2001 (Tier 2) equivalent OR Tier 3/Stage IIIA/Japan 2006 (Tier 3) equivalent emission standards.

\*\*\*Meets Tier 2/Stage II/Japan 2001 (Tier 2) equivalent OR Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards.

+Changes in bucket weight, including field installed wear iron, can impact rated payload. Consult your Cat dealer for assistance in selecting and configuring the proper bucket for the application. The Cat Large Wheel Loader Payload Policy is a guideline intended to maximize wheel loader structural and component life. The Cat Payload Policy is that the "Gross Bucket plus Payload Capacity" is the MAXIMUM weight that should be carried on the end of the Lift Arm/Boom. ††Raise is from carry position for the 972H and 980H.

NOTE: 972H and 980H Net Engine Power is provided according to SAE J1349 and ISO 9249. Gross Engine Power is provided according to SAE J1995. The 972H and 980H are not available in all regions. Contact your local Cat dealer for product availability.

# Wheel Loaders Integrated Toolcarriers

MODEL	99	2K	99	3K	99	4K
Maximum Engine: Net	607 kW	814 hp	764 kW	1024 hp	1297 kW	1739 hp
Gross	671 kW	900 hp	773 kW	1036 hp	1377 kW	1847 hp
Rated Payload:*						
STD	21.8 tonnes	24 tons	22.7 tonnes	30 tons	40.8 tonnes	45 tons
HL, EHL, SHL	19 tonnes	21 tons	24.9 tonnes	27.5 tons	38.1 tonnes	42 tons
Gross Rated Bucket Payload:*						
STD	33 687 kg	74,265 lb	42 912 kg	94,603 lb	64 791 kg	142,838 lb
HL	30 138 kg	66,441 lb	40 459 kg	89,195 lb	61 458 kg	135,489 lb
Engine Model	C32 A0	CERT**	C32 A0	CERT**	35	16E
Emission Level						
Rated Engine RPM	1750		19	900	16	00
Bore	145 mm	5.7"	145 mm	5.7"	170 mm	6.7"
Stroke	162 mm	6.4"	162 mm	6.4"	215 mm	8.5"
No. Cylinders	1	12	1	12	1	6
Displacement	32.1 L	1959 in <sup>3</sup>	32.1 L	1959 in <sup>3</sup>	78 L	4766 in <sup>3</sup>
Speeds Forward:	km/h	mph	km/h	mph	km/h	mph
1st	7.1	4.4	6.8	4.2	7.4	4.6
2nd	12.2	7.6	11.9	7.4	12.9	8.0
3rd	20.6	12.8	20.5	12.7	24.0	14.9
Speeds Reverse:	km/h	mph	km/h	mph	km/h	mph
1st	7.4	4.6	7.5	4.7	8.1	5.0
2nd	13.0	8.1	13.1	8.1	14.1	8.8
3rd	22.4	13.9	22.5	13.9	24.0	14.9
Hydraulic Cycle Time, Rated Load in Bucket:	Sec	onds	Sec	onds	Sec	onds
Raise		9.4		9.2	12	2.6
Dump		1.8		1.8	3	3.1
Lower (Empty, Float Down)	3	3.7	3	3.1	4	.2
Total	14	4.9	14	4.1	19	9.9
Tread Width	3.3 m	10'10"	3.54 m	11'6"	4.3 m	14'1"
Width Over Tires	4.5 m	14'9"	4.93 m	16'2"	5.49 m	18'10"
Ground Clearance	682 mm	26.8"	721 mm	2'5"	898 mm	33"
Fuel Tank Capacity	1610 L	425 U.S. gal	2170 L	573 U.S. gal	3445 L	910 U.S. gal
Hydraulic Systems:						
Lift, Tilt	646 L	171 U.S. gal	755 L	199 U.S. gal	1022 L	270 U.S. gal
Tank Only	326 L	86 U.S. gal	553 L	146 U.S. gal	756 L	200 U.S. gal
Steering and Brakes	231 L	61 U.S. gal	227 L	60 U.S. gal	379 L	100 U.S. gal
Tank Only	159 L	42 U.S. gal	185 L	48.9 U.S. gal	340 L	90 U.S. gal

\*Changes in bucket weight, including field installed wear iron, can impact rated payload. Consult your Cat dealer for assistance in selecting and configuring the proper bucket for the application. The Cat Large Wheel Loader Payload Policy is a guideline intended to maximize wheel loader structural and component life. The Cat Payload Policy is that the "Gross Bucket plus Payload Capacity" is the MAXIMUM weight that should be carried on the end of the Lift Arm/Boom. \*\*Products available to meet Tier 2/Stage II/Japan 2001 (Tier 2) equivalent OR Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards. NOTE: The 994K meets Tier 1 equivalent emission standards.

# Performance DataWheel Loaders• 966HIntegrated Toolcarriers

Bucket Type				G	eneral Purpo	ose – Pin	On			
Edge Type		Bolt-on Cutting Edges	Teeth & Segments	High Lift Delta						
Capacity – rated	m <sup>3</sup>	3.80	3.80	4.00	4.00	4.20	4.20	4.60	4.60	_
	yd³	4.97	4.97	5.23	5.23	5.49	5.49	6.02	6.02	_
Capacity – 110%	m <sup>3</sup>	4.18	4.18	4.40	4.40	4.62	4.62	5.06	5.06	_
	yd³	5.47	5.47	5.75	5.75	6.04	6.04	6.62	6.62	_
Width	mm	3220	3271	3220	3271	3220	3271	3220	3271	-
	ft/in	10'6"	10'8"	10'6"	10'8"	10'6"	10'8"	10'6"	10'8"	-
Dump clearance at maximum lift	mm	3067	2915	3058	2905	2991	2837	2977	2823	558
and 45° discharge	ft/in	10'0"	9'6"	10'0"	9'6"	9'9"	9'3"	9'9"	9'3"	1'9"
Reach at maximum lift	mm	1327	1467	1334	1473	1388	1525	1400	1537	-25
and 45° discharge	ft/in	4'4"	4'9"	4'4"	4'10"	4'6"	5'0"	4'7"	5'0"	-1"
Reach at level lift arm	mm	2739	2943	2750	2955	2838	3043	2857	3062	404
and bucket level	ft/in	8'11"	9'7"	9'0"	9'8"	9'3"	9'11"	9'4"	10'0"	1'3"
Digging depth	mm	124	124	124	124	124	124	124	124	-25
	in	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	-1"
Overall length	mm	8681	8906	8693	8918	8780	9005	8799	9024	697
	ft/in	28'6"	29'3"	28'7"	29'4"	28'10"	29'7"	28'11"	29'8"	2'3"
Overall height with	mm	5788	5788	5902	5902	5902	5902	5874	5874	558
bucket at maximum lift	ft/in	19'0"	19'0"	19'5"	19'5"	19'5"	19'5"	19'4"	19'4"	1'9"
Loader clearance circle with	mm	14 727	14 899	14 733	14 905	14 778	14 951	14 787	14 961	481
bucket at carry position	ft/in	48'4"	48'11"	48'5"	48'11"	48'6"	49'1"	48'7"	49'1"	1'6"
Static tipping load, straight	kg	16 045	15 863	16 024	15 842	15 831	15 648	15 822	15 636	372
(ISO)*	lb	35,364	34,963	35,319	34,915	34,893	34,488	34,872	34,463	821
Static tipping load, straight	kg	17 316	17 131	17 305	17 120	17 104	16 917	17 120	16 931	299
(rigid tire)*	lb	38,164	37,757	38,141	37,733	37,697	37,287	37,732	37,318	658
Static tipping load, articulated	kg	14 052	13 869	14 028	13 845	13 848	13 664	13 829	13 643	166
(ISO)*	lb	30,971	30,569	30,918	30,514	30,522	30,117	30,479	30,070	366
Static tipping load, articulated	kg	15 312	15 128	15 298	15 113	15 111	14 925	15 116	14 928	112
(rigid tire)*	lb	33,749	33,342	33,718	33,309	33,304	32,894	33,316	32,901	248
Breakout force**	kN	187	185	185	183	173	171	170	168	-14
	lbf	42,151	41,781	41,695	41,326	38,984	38,618	38,277	37,912	-3170
Operating weight*	kg	23 073	23 211	23 125	23 263	23 181	23 319	23 221	23 359	1763
	lb	50,853	51,157	50,968	51,272	51,091	51,395	51,179	51,483	3888

\*Static tipping loads and operating weights shown are based on standard machine configuration with 26.5R25 L3 Michelin XHA2 radial tires, power train guard, full fuel tank, coolants, lubricants, air conditioner and operator.

Static tipping loads conform to the international standard as defined in ISO 14397-1 (SEPT2007).

\*\*Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732 (APR2007).

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standard J732 (APR2007) which governs loader ratings.

# Wheel LoadersPerformance DataIntegrated Toolcarriers• 966H

Bucket Type		Rock –	- Pin On	Mate	erial Handling/	Standard – P	in On	
EdgeType		Bolt-on Cutting Edges	Teeth & Segments	Bolt-on Cutting Edges	Teeth & Segments	Bolt-on Cutting Edges	Teeth & Segments	High Lift Delta
Capacity – rated	m <sup>3</sup>	3.40	3.40	4.00	4.00	4.60	4.60	-
capacity – fated	vd <sup>3</sup>	<b>4.45</b>	4.45	4.00 5.23	5.23	6.02	6.02	_
Capacity – 110%	yu m <sup>3</sup>	3.74	3.74	4.40	4.40	5.06	5.06	
capacity = 110%	vd <sup>3</sup>	4.89	4.89	4.40 5.75	4.40 5.75	6.62	6.62	_
Width	mm	3252	3252	3220	3271	3220	3271	
Width	ft/in	10'8"	10'8"	10'6"	10'8"	10'6"	10'8"	_
Dump clearance at maximum lift	mm	3124	3026	2978	2815	2893	2730	558
and 45° discharge	ft/in	10'2"	9'11"	9'9"	9'2"	9'5"	8'11"	1'9"
Reach at maximum lift	mm	1454	1576	1252	1379	1337	1464	-25
and 45° discharge	ft/in	4'9"	5'2"	4'1"	4'6"	4'4"	4'9"	-1"
Reach at level lift arm	mm	2818	2974	2769	2973	2889	3093	404
and bucket level	ft/in	9'2"	9'9"	9'1"	9'9"	9'5"	10'1"	1'3"
Digging depth	mm	68	68	124	124	124	124	-25
	in	2.7	2.7	4.9	4.9	4.9	4.9	-1"
Overall length	mm	8745	8906	8711	8936	8831	9056	697
	ft/in	28'9"	29'3"	28'7"	29'4"	29'0"	29'9"	2'3"
Overall height with	mm	5845	5845	5858	5858	5982	5982	558
bucket at maximum lift	ft/in	19'3"	19'3"	19'3"	19'3"	19'8"	19'8"	1'9"
Loader clearance circle with	mm	14 813	14 901	14 742	14 914	14 804	14 978	481
bucket at carry position	ft/in	48'8"	48'11"	48'5"	49'0"	48'7"	49'2"	1'6"
Static tipping load, straight	kg	16 255	16 185	15 834	15 653	15 622	15 438	372
(ISO)*	lb	35,826	35,672	34,899	34,499	34,431	34,026	821
Static tipping load, straight	kg	17 542	17 471	17 078	16 894	16 885	16 699	299
(rigid tire)*	lb	38,663	38,507	37,640	37,235	37,216	36,805	658
Static tipping load, articulated	kg	14 217	14 147	13 861	13 680	13 655	13 471	166
(ISO)*	lb	31,334	31,180	30,551	30,151	30,096	29,690	366
Static tipping load, articulated	kg	15 496	15 425	15 097	14 913	14 909	14 723	112
(rigid tire)*	lb	34,153	33,998	33,274	32,870	32,861	32,450	248
Breakout force**	kN	186	185	182	181	166	165	-14
	lbf	41,828	41,704	41,111	40,742	37,481	37,117	-3170
Operating weight*	kg	24 004	24 056	23 134	23 272	23 267	23 404	1763
	lb	52,905	53,019	50,987	51,291	51,279	51,583	3888

\*Static tipping loads and operating weights shown are based on standard machine configuration with 26.5R25 L3 Michelin XHA2 radial tires, power train guard, full fuel tank, coolants, lubricants, air conditioner and operator.

Static tipping loads conform to the international standard as defined in ISO 14397-1 (SEPT2007).

\*\*Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732 (APR2007).

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standard J732 (APR2007) which governs loader ratings.

# Performance DataWheel Loaders• 980HIntegrated Toolcarriers

Bucket Type				General Purp	ose – Pin On			
EdgeType		Bolt-on Cutting Edges	Teeth & Segments	Bolt-on Cutting Edges	Teeth & Segments	Bolt-on Cutting Edges	Teeth & Segments	High Lift Delta
Capacity – rated	m <sup>3</sup>	5.40	5.40	5.70	5.70	6.00	6.00	Delta
Capacity – Tated	vd <sup>3</sup>	7.06	7.06	7.46	5.70 7.46	7.85	7.85	_
Capacity – 110%	yu m <sup>3</sup>	5.94	5.94	6.27	6.27	6.60	6.60	
	vd <sup>3</sup>	7.77	7.77	8.20	8.20	8.63	8.63	_
Width	mm	3447	3535	3447	3535	3447	3535	
Width	ft/in	11'3"	11'7"	11'3"	11'7"	11'3"	11'7"	_
Dump clearance at maximum lift	mm	3242	3077	3174	3007	3156	2989	220
and 45° discharge	ft/in	10'7"	10'1"	10'4"	9'10"	10'4"	9'9"	8"
Reach at maximum lift	mm	1580	1717	1628	1762	1649	1784	2
and 45° discharge	ft/in	5'2"	5'7"	5'4"	5'9"	5'4"	5'10"	0"
Reach at level lift arm	mm	3064	3276	3148	3360	3176	3388	160
and bucket level	ft/in	10'0"	10'8"	10'3"	11'0"	10'5"	11'1"	6"
Digging depth	mm	133	133	133	133	133	133	-1
	in	5.2	5.2	5.2	5.2	5.2	5.2	-0
Overall length	mm	9637	9878	9721	9962	9749	9990	200
	ft/in	31'8"	32'5"	31'11"	32'9"	32'0"	32'10"	8"
Overall height with	mm	6391	6391	6213	6213	6239	6239	221
bucket at maximum lift	ft/in	21'0"	21'0"	20'5"	20'5"	20'6"	20'6"	9"
Loader clearance circle with	mm	15 857	16 080	15 902	16 125	15 917	16 141	175
bucket at carry position	ft/in	52'1"	52'10"	52'3"	52'11"	52'3"	53'0"	7"
Static tipping load, straight	kg	20 504	20 322	20 272	20 089	20 136	19 952	-1720
(ISO)*	lb	45,192	44,790	44,681	44,277	44,379	43,974	-3792
Static tipping load, straight	kg	22 086	21 900	21 855	21 667	21 719	21 531	-1950
(rigid tire)*	lb	48,678	48,268	48,168	47,755	47,870	47,456	-4299
Static tipping load, articulated	kg	17 895	17 710	17 677	17 492	17 544	17 358	-1550
(ISO)*	lb	39,441	39,035	38,961	38,552	38,667	38,257	-3416
Static tipping load, articulated	kg	19 764	19 578	19 546	19 358	19 414	19 226	-1787
(rigid tire)*	lb	43,561	43,150	43,079	42,666	42,789	42,375	-3939
Breakout force**	kN	201	199	190	188	186	184	3
	lbf	45,379	44,838	42,792	42,264	41,931	41,407	719
Operating weight*	kg	29 945	30 084	30 028	30 167	30 124	30 263	115
	lb	65,999	66,304	66,182	66,487	66,393	66,698	253

\*Static tipping loads and operating weights shown are based on standard machine configuration with 29.5R25, L3 Michelin XHA2 radial tires, power train guard, full fuel tank, coolant, lubricants, air conditioner and operator.

Static tipping loads conform to the international standard as defined in ISO 14397-1 (SEPT2007).

\*\*Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732 (APR2007).

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standard J732 (APR2007) which governs loader ratings.

# Integrated Toolcarriers • 980H

# Wheel Loaders Performance Data

			landling –			Coal –		Purpose/	
Bucket Type			On		Pin On	Pin On		y — Pin On	
		Bolt-on	<b>T</b> (1 0	Bolt-on	-	Bolt-on	Bolt-on		High
EdgeTupe		Cutting Edges	Teeth & Segments	Cutting Edges	Teeth &	Cutting	Cutting	Teeth & Segments	Lift Delta
Edge Type Capacity — rated	m <sup>3</sup>	5.70	5.70	4.40	Segments 4.40	Edges 8.20	Edges 5.70	5.70	Deita
Capacity – rated		5.70 7.46	5.70 7.46	4.40 5.75	4.40 5.75	8.20 <b>10.73</b>	5.70 7.46	5.70 7.46	_
Quere a : t = 1100/	yd <sup>3</sup> m <sup>3</sup>	-	-				-		-
Capacity — 110%		6.27	6.27	4.84	4.84	9.02	6.27	6.27	_
NA/2 1-1	yd³	8.20	8.20	6.33	6.33	11.80	8.20	8.20	_
Width	mm	3447	3535	3504	3504	3638	3447	3535	_
	ft/in	11'3"	11'7"	11'5"	11'5"	11'11"	11'3"	11'7"	-
Dump clearance at maximum lift	mm	3075	2898	3101	3101	2887	3174	3007	220
and 45° discharge	ft/in	10'1"	9'6"	10'2"	10'2"	9'5"	10'4"	9'10"	8"
Reach at maximum lift	mm	1543	1665	1844	1844	1724	1628	1762	2
and 45° discharge	ft/in	5'0"	5'5"	6'0"	6'0"	5'7"	5'4"	5'9"	0"
Reach at level lift arm	mm	3173	3385	3360	3360	3435	3148	3360	160
and bucket level	ft/in	10'4"	11'1"	11'0"	11'0"	11'3"	10'3"	11'0"	6"
Digging depth	mm	133	133	106	106	138	133	133	-1
	in	5.2	5.2	4.1	4.1	5.4	5.2	5.2	-0
Overall length	mm	9746	9987	9949	9949	10 011	9721	9962	200
	ft/in	32'0"	32'10"	32'8"	32'8"	32'11"	31'11"	32'9"	8"
Overall height with	mm	6212	6212	6184	6184	6506	6213	6213	221
bucket at maximum lift	ft/in	20'5"	20'5"	20'4"	20'4"	21'5"	20'5"	20'5"	9"
Loader clearance circle with	mm	15 916	16 139	16 094	16 093	16 236	15 902	16 125	175
bucket at carry position	ft/in	52'3"	53'0"	52'10"	52'10"	53'4"	52'3"	52'11"	7"
Static tipping load, straight	kg	19 825	19 643	21 253	21 285	19 512	20 116	19 932	-1720
(ISO)*	lb	43,694	43,295	46,843	46,913	43,006	44,336	43,932	-3792
Static tipping load, straight	kg	21 360	21 175	22 897	22 940	21 151	21 694	21 507	-1950
(rigid tire)*	lb	47,078	46,670	50,466	50,560	46,616	47,815	47,402	-4299
Static tipping load, articulated	kg	17 271	17 088	18 537	18 550	16 932	17 519	17 334	-1550
(ISO)*	lb	38,067	37,663	40,857	40,884	37,318	38,613	38,204	-3416
Static tipping load, articulated	kg	19 091	18 906	20 482	20 509	18 854	19 385	19 198	-1787
(rigid tire)*	lb	42,078	41,670	45,144	45,202	41,556	42,726	42,313	-3939
Breakout force**	kN	187	184	190	189	157	189	187	3
	lbf	42,029	41,504	42,739	42,551	35,358	42,665	42,136	719
Operating weight*	kg	30 153	30 292	31 109	31 184	30 532	30 175	30 313	115
epoteting worght	lb	66,457	66,762	68,564	68,730	67.293	66,504	66,809	253

\*Static tipping loads and operating weights shown are based on standard machine configuration with 29.5R25, L3 Michelin XHA2 radial tires, power train guard, full fuel tank, coolant, lubricants, air conditioner and operator.

Static tipping loads conform to the international standard as defined in ISO 14397-1 (SEPT2007).

\*\*Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732 (APR2007).

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standard J732 (APR2007) which governs loader ratings.

# Performance DataWheel Loaders• 980HIntegrated Toolcarriers

Bucket Type				Rock — Pin O	n		Rock/ Heavy Duty/Extra Wide Bucket — Pin On	
		Teeth & Segments + Side	Teeth + Side	Teeth & Segments + Side	Teeth + Side	Teeth + Side	Teeth & Segments	High Lift
EdgeType		Protector	Protector	Protector	Protector	Protector	+ Side Protector	Delta
Capacity – rated	m³	4.48	4.31	5.66	5.38	5.38	5.41	_
	yd <sup>3</sup>	5.86	5.64	7.40	7.03	7.03	7.07	-
Capacity — 110%	m <sup>3</sup>	4.93	4.75	6.22	5.91	5.91	5.95	-
	yd <sup>3</sup>	6.45	6.21	8.14	7.74	7.74	7.78	-
Width	mm	3504	3504	3504	3504	3510	3645	-
	ft/in	11'5"	11'5"	11'5"	11'5"	11'6"	11'11"	_
Dump clearance at maximum lift	mm	3051	3051	2890	2890	2983	2941	220
and 45° discharge	ft/in	10'0"	10'0"	9'5"	9'5"	9'9"	9'7"	8"
Reach at maximum lift	mm	1788	1788	1979	1979	1930	1965	2
and 45° discharge	ft/in	5'10"	5'10"	6'5"	6'5"	6'4"	6'5"	0"
Reach at level lift arm	mm	3359	3359	3608	3608	3512	3561	160
and bucket level	ft/in	11'0"	11'0"	11'10"	11'10"	11'6"	11'8"	6"
Digging depth	mm	106	71	106	71	77	77	-1
	in	4.1	2.8	4.1	2.8	3.0	3.0	-0
Overall length	mm	9948	9948	10 197	10 197	10 069	10 156	200
	ft/in	32'8"	32'8"	33'6"	33'6"	33'1"	33'4"	8"
Overall height with	mm	6204	6204	6378	6378	6378	6378	221
bucket at maximum lift	ft/in	20'5"	20'5"	21'0"	21'0"	21'0"	21'0"	9"
Loader clearance circle with	mm	16 093	16 093	16 235	16 235	16 156	16 340	175
bucket at carry position	ft/in	52'10"	52'10"	53'4"	53'4"	53'1"	53'8"	7"
Static tipping load, straight	kg	20 998	21 519	20 119	20 693	20 705	19 813	-1720
(ISO)*	lb	46,279	47,428	44,343	45,607	45,635	43,669	-3792
Static tipping load, straight	kg	22 649	23 190	21 764	22 361	22 374	21 461	-1950
(rigid tire)*	lb	49,918	51,112	47,968	49,285	49,313	47,301	-4299
Static tipping load, articulated	kg	18 265	18 775	17 439	17 995	18 008	17 091	-1550
(ISO)*	lb	40,257	41,381	38,436	39,663	39,690	37,669	-3416
Static tipping load, articulated	kg	20 223	20 750	19 387	19 965	19 977	19 053	-1787
(rigid tire)*	lb	44,572	45,733	42,730	44,003	44,031	41,993	-3939
Breakout force**	kN	188	204	159	172	184	173	3
	lbf	42,289	45,879	35,932	38,725	41,402	38,896	719
Operating weight*	kg	31 475	31 175	31 821	31 521	31 517	32 239	115
	lb	69,370	68,709	70,132	69,471	69,463	71,055	253

\*Static tipping loads and operating weights shown are based on standard machine configuration with 29.5R25, L3 Michelin XHA2 radial tires, power train guard, full fuel tank, coolant, lubricants, air conditioner and operator.

Static tipping loads conform to the international standard as defined in ISO 14397-1 (SEPT2007).

\*\*Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732 (APR2007).

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standard J732 (APR2007) which governs loader ratings.

# Performance Data • 992K

# Wheel Loaders Integrated Toolcarriers

						Standard Lift					
Bucket Type				Rock Heavy Duty Rock							
o 15 · T I			Teeth &	Teeth &	Teeth &	Teeth &	Teeth &	Teeth &	Teeth &		
Ground Engaging Tools			Segments	Segments	Segments	Segments	Segments	Segments	Segments		
Cutting Edge Type			Spade	Spade	Spade	Spade	Spade	Spade	Spade		
Rated bucket capacity (§)		m <sup>3</sup>	10.7	11.5	12.3	10.7	11.5	10.7	10.7		
		yd³	14.0	15.0	16.0	14.0	15.0	14.0	14.0		
Operating load at rated		kg	21 773	21 773	21 773	21 773	21 773	21 773	21 773		
capacity		lb	48,000	48,000	48,000	48,000	48,000	48,000	48,000		
Struck capacity (§)		m³	8.9	9.5	10.2	8.9	9.5	8.9	8.9		
		yd³	11.6	12.4	13.3	11.6	12.4	11.6	11.6		
Bucket width (§)		mm	4824	4884	4824	5068	4824	5165	5068		
		ft/in	15'10"	16'0"	15'10"	16'7"	15'10"	16'11"	16'7"		
Dump clearance at full lift		mm	4849	4785	4741	4849	4788	4935	4935		
SAE 45° discharge (§)		ft/in	15'11"	15'8"	15'7"	15'11"	15'8"	16'2"	16'2"		
T	ooth tip	mm	4607	4548	4495	4612	4545	4699	4699		
		ft/in	15'1"	14'11"	14'8"	15'1"	14'11"	15'5"	15'5"		
Reach at full lift SAE		mm	2092	2149	2194	2092	2151	2036	2036		
45° discharge (§)		ft/in	6'11"	7'0"	7'2"	6'11"	7'11"	6'10"	6'10"		
Т	ooth tip	mm	2326	2378	2427	2322	2385	2292	2292		
		ft/in	7'7"	7'10"	8'0"	7'7'	7'10"	7'6"	7'6"		
Reach with boom horizontal		mm	5114	5193	5265	5108	5200	5025	5025		
and bucket level		ft/in	16'10"	17'0"	17'4"	16'10"	17'1"	16'6"	16'6"		
Digging depth (segment) (§)		mm	196	201	201	196	198	175	175		
		in	7.7	7.9	7.9	7.7	7.8	6.9	6.9		
Overall length – bucket		mm	15 736	15 818	15 890	15 729	15 823	15 632	15 632		
level ground (§)		ft/in	51'7"	51'11"	51'1"	51'7"	51'11"	51'4"	51'4"		
Overall height with bucket		mm	9313	9313	9492	9313	9313	9392	9313		
at full raise (§)		ft/in	30'7"	30'7"	31'1"	30'7"	30'7"	30'10"	30'7"		
Loader clearance radius with		mm	11 097	11 121	11 131	11 096	11 122	11 085	11 085		
bucket in carry position (§)		ft/in	36'5"	36'6"	36'6"	36'5"	36'6"	36'5"	36'5"		
Tipping load straight* (§)		kg	55 216	54 526	54 184	53 745	54 784	51 692	53 325		
		lb	121,730	120,209	119,455	118,487	120,778	113,961	117,561		
Static tipping load		kg	48 361	47 695	47 341	46 893	47 953	44 839	46 474		
full 35° turn* (§)		lb	106,618	105,149	104,369	103,381	105,718	98,853	102,458		
Static tipping load		kg	46 440	45 780	45 422	44 972	46 037	42 919	44 554		
full 40° turn* (§)		lb	102,383	100,928	100,138	99,146	101,494	94,620	98,225		
Static tipping load		kg	45 201	44 546	44 185	43 735	44 803	41 681	43 316		
full 43° turn* (§)		lb	99,651	98,207	97,411	96,419	98,774	91,891	95,495		
Tipping load straight** (§)		kg	57 096	56 402	56 093	55 615	56 662	53 564	55 194		
		lb	125,874	124,344	123,663	122,610	124,918	118,088	121,681		
Static tipping load		kg	51 328	50 653	50 338	49 847	50 913	47 796	49 426		
full 35° turn** (§)		lb	113,158	111,671	110,976	109,893	112,244	105,372	108,965		
Static tipping load		kg	49 634	48 965	48 648	48 153	49 225	46 102	47 732		
full 40° turn** (§)		lb	109,424	107,950	107,250	106,159	108,523	101,638	105,231		
Static tipping load		kg	48 527	47 863	47 544	47 047	48 123	44 996	46 625		
full 43° turn** (§)		lb	106,984	105,519	104,817	103,720	106,092	99,198	102,791		
Breakout force*** (§)		kg	58 466	55 998	54 249	57 842	56 147	59 381	60 218		
		lbf	128,894	123,454	119,599	127,519	123,782	130,913	132,758		
Operating weight*** (§)		kg	98 610	99 012	99 391	100 786	97 469	102 956	101 232		

\*Tipping loads were calculated within guidelines of ISO 14397-1:2007 to include tire squash (Tire pressure at 683 kPa [99 psi]). \*\*Tipping load is calculated without tire squash.

\*\*\*Static tipping load and operating weight shown are based on standard machine configurations with a fuel tank, coolant, lubricants, and operator.

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society for Automotive Engineers. SAE Standards J732C govern loader ratings and are denoted in the text by (§).

# Wheel LoadersPerformance DataIntegrated Toolcarriers• 992K

					High Lift			
Bucket Type			Rock		Heavy D		High Abrasion Rock	
Ground Engaging Tools		Teeth & Segments	Teeth & Segments	Teeth & Segments	Teeth & Segments	Teeth & Segments	Teeth & Segments	Teeth & Segments
Cutting Edge Type		Spade	Spade	Spade	Spade	Spade	Spade	Spade
Rated bucket capacity (§)	m <sup>3</sup>	10.7	11.5	12.3	10.7	11.5	10.7	10.7
	yd <sup>3</sup>	14.0	15.0	16.0	14.0	15.0	14.0	14.0
Operating load at rated	kg	19 051	19 051	19 051	19 051	19 051	19 051	19 051
capacity	lb	42,000	42,000	42,000	42,000	42,000	42,000	42,000
Struck capacity (§)	m³	8.9	9.5	10.2	8.9	9.5	8.9	8.9
	yd <sup>3</sup>	11.6	12.4	13.3	11.6	12.4	11.6	11.6
Bucket width (§)	mm	4824	4884	4824	4884	4824	4900	4900
	ft/in	15'10"	16'0"	15'10"	16'7"	15'10"	16'11"	16'7"
	mm	5224	5166	5112	5229	5162	5316	5316
	ft/in	17'2"	16'11"	16'9"	17'2"	16'11"	17'5"	17'5"
	mm	2193	2246	2294	2189	2252	2159	2159
	ft/in	7'2"	7'4"	7'6"	7'2"	7'5"	7'1"	7'1"
	mm	5504	5583	5655	5498	5590	5415	5415
	ft/in	18'1"	18'4"	18'7"	18'0"	18'4"	17'9"	17'9"
Digging depth (segment) (§)	mm	176	181	181	176	178	155	155
	in	7.0	7.0	7.0	7.0	7.0	6.0	6.0
	mm	16 197	16 279	16 351	16 191	16 284	16 095	16 095
<b>0</b>	ft/in	53'2"	53'5"	53'8"	53'1"	53'5"	52'10"	52'10"
	mm	9930	9930	9930	9930	9930	9930	9930
	ft/in	32'7"	32'7"	32'7"	32'7"	32'7"	32'7"	32'7"
	mm	11 326	11 352	11 349	11 324	11 352	11 313	11 313
	ft/in	37'2"	37'3"	37'3"	37'2"	37'3"	37'1"	37'1"
Tipping load straight* (§)	•	51 408	50 761	50 436	49 938	51 017	47 875	49 522
Static tipping load		<b>113,335</b> 44 798	<b>111,909</b> 44 172	<b>111,192</b> 43 833	110,094	<b>112,473</b> 44 427	<b>105,546</b> 41 268	<b>109,177</b> 42 916
full 35° turn* (§)	kg Ib	44 798 98,763	97,382	43 833 96,635	43 332 <b>95,531</b>	44 427 97,945	90,980	94,613
Static tipping load		42 946	42 325	41 981	41 481	42 580	39 417	41 065
full 40° turn* (§)		42 940 94,680	42 325 93,311	92,552	91,450	93,873	86,900	<b>90,533</b>
Static tipping load		41 753	41 135	40 789	40 288	41 390	38 224	39 873
full 43° turn* (§)		92.049	90.687	<b>89,924</b>	88.820	91,249	84,269	87.905
Tipping load straight** (§)		53 044	52 396	52 099	51 567	52 653	49 505	51 149
ripping load straight (3)		116,942	115,513	114,858	113,686	116,080	109,140	112,764
Static tipping load		47 472	46 840	46 535	45 994	47 097	43 932	45 577
full 35° turn** (§)	•	104,658	103,264	102,592	101,399	103,831	96,853	100,480
Static tipping load		45 835	45 209	44 901	44 358	45 466	42 296	43 940
full 40° turn** (§)	•	101,049	99,669	98,990	97.793	100,235	93,247	96,871
Static tipping load		44 766	44 143	43 834	43 289	44 400	41 227	42 871
full 43° turn** (§)	U 1	98,692	97,319	96,637	95,436	97,885	90,890	94,514
Breakout force*** (§)		57 948	55 495	53 760	57 324	55 656	58 856	59 693
	U 1	127,753	122,345	118,520	126,378	122,700	129,755	131,600
Operating weight*** (§)		99 788	100 182	100 561	101 956	99 963	104 126	102 404
	-	219,995	220,863	221,699	224,774	220,380	229,558	225,762

\*Tipping loads were calculated within guidelines of ISO 14397-1:2007 to include tire squash (Tire pressure at 683 kPa [99 psi]).

\*\*Tipping load is calculated without tire squash.

\*\*\*Static tipping load and operating weight shown are based on standard machine configurations with a fuel tank, coolant, lubricants, and operator.

NOTE: Specifications and ratings conform to all applicable standards recommended by the Society for Automotive Engineers. SAE Standards J732C govern loader ratings and are denoted in the text by (§).

# SPECIFICATION DEFINITIONS FOR FRONT END LOADERS

Cat wheel and track loader specifications conform to Society of Automotive Engineers (SAE) definitions as expressed in standards J732 (JUN92), as follows:

### **Description of Specification Machine**

On wheel loaders the tire inflation pressure at which specifications are taken must be described in addition to the current written basic machine description. On track loaders the type of grouser must be specified.

## Hydraulic Cycle Times

- a. "Raise Time" Time in seconds required to raise the bucket from level position on the ground.
- b. "Lower Time" Time in seconds required to lower the empty bucket from the full height to a level position on the ground.
- c. "Dump Time" Time in seconds required to move the bucket at maximum height from the maximum rollback position to full dump position while dumping the SAE loose material operating load.

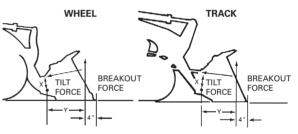
# **Breakout Force**

"Breakout force," pounds (and kilonewtons or kilograms) — the maximum sustained vertical upward force exerted 100 mm (4") behind the tip of the bucket cutting edge and achieved through the ability to lift and/or rollback about the specified pivot point under the following conditions:

- a. Loader on a hard level surface with transmission in neutral.
- b. All brakes released.
- c. Unit at standard operating weight rear of loader not tied down.
- d. Bottom of cutting edge parallel to and not more than 20 mm (0.75") above or below the ground line.

- e. When bucket circuit is used the pivot point must be specified as the bucket hinge pin, and the unit blocked under the bucket hinge pin pivot point in order to minimize linkage movement.
- f. When the lift circuit is used, the pivot point must be specified as the lift arm hinge pin. Wheel loaders shall have front axle blocked to eliminate change in position of pivot pins due to tire deflection.
- g. If both circuits are used simultaneously, the dominating pivot point listed in (e) or (f) must be specified.
- h. If the circuit used causes the rear of the vehicle to leave the ground, then the vertical force value required to raise the rear of the vehicle is the breakout force.
- i. For irregular shaped buckets, the tip of the bucket cutting edge referred to above shall mean the farther forward point of the cutting edge.

The following are illustrations used (according to provisions of SAE J732 JUN92) to measure Cat Loader breakout forces.

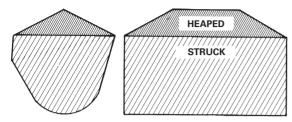


- a. Breakout force resulting from rack back: (Tilt Force) × (Dist. "X") = ("Y" Dist.) × (Breakout Force)
- $\frac{\text{(Tilt Force)} \times \text{(Dist. "X")}}{"Y" \text{ Dist.}} = \text{Breakout Force}$

# Wheel Loaders Integrated Toolcarriers

SAE Loader Ratings Machine Selection • Cycle Time Factors

# SAE BUCKET RATING



## **SAE Bucket Capacities**

*Struck capacity* is that volume contained in a bucket after a load is leveled by drawing a straight edge resting on the cutting edge and the back of the bucket.

*Heaped capacity* is a struck capacity plus that additional material that would heap on the struck load at a 2:1 angle of repose with the struck line parallel to the ground.

SAE J742 (FEB85) specifies that the addition of any auxiliary spill guard to protect against spillage which might injure the operator will not be included in bucket capacity ratings. Buckets with irregular shaped cutting edges (vee edge) the strike plane should be drawn at one-third the distance of the protruding portion of the cutting edge. Cat rock buckets are built with integral see-through rock guards. Cat light material buckets come standard with bolt-on edges. These features which add to actual bucket capacity are included in published ratings.

# **Dump Height**

SAE J732 JUN92 specifies that dump height is the vertical distance from the ground to the lowest point of the cutting edge with the bucket hinge pin at maximum height and the bucket at a 45° dump angle. Dump angle is the angle in degrees that the longest flat section of the inside bottom of the bucket will rotate below horizontal.

# **SELECTING A MACHINE**

### Steps in selecting the proper size loader:

- 1. Determine production required or desired.
- 2. Determine loader cycle time and cycles per hour. A machine size must be assumed to select a basic cycle time.

- 3. Determine required payload per cycle in loose cubic yards and pounds (meters and kilograms).
- 4. Determine bucket size needed.
- 5. Make machine selection using bucket size and payload as criteria to meet production requirements.
- 6. Compare the loader cycle time used in calculations to the cycle time of the machine selected. If there is a difference, rework the process beginning at step 2.

## 1. Production Required

The production required of a wheel or track loader should be slightly greater than the production capability of the other critical units in the earth or material moving system. For example, if a hopper can handle 300 tons per hour, a loader capable of slightly more than 300 tons should be used. Required production should be carefully calculated so the proper machine and bucket selections are made.

## 2. Loader Cycle Times

When hauling loose granular material on a hard smooth operating surface, a .45-.55 minute basic cycle time is considered reasonable for Cat articulated loaders with a competent operator. This includes load, dump, four reversals of direction, full cycle of hydraulics and minimum travel.

Material type, pile height, and other factors may improve or reduce production, and should be added to or subtracted from the basic cycle time when applicable.

When hauls are involved, obtain the haul and return portion of the cycle from the estimated travel chart (this section). Add the haul and return times to the estimated basic cycle time to obtain total cycle time.

# CYCLE TIME FACTORS

A basic cycle time (Load, Dump, Maneuver) of .45-.55 minutes is average for an articulated loader [the basic cycle for large loaders, 3 m<sup>3</sup> (4 yd<sup>3</sup>) and up, can be slightly longer], but variations can be anticipated in the field. The following values for many variable elements are based on normal operations. Adding or subtracting any of the variable times will give the total basic cycle time.

# Machine Selection • Truck Loading • Bucket Fill Factors

# Wheel Loaders Integrated Toolcarriers

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	<i>Minutes added (+)</i>	1
	or Subtracted (–) From Basic Cycle	2 9
Machine	110m Dusie Cycle	ģ
— Material handler	05	9
Materials		9
— Mixed	+.02	3
— Up to 3 mm (1/8 in)		
-3  mm (1/8  in)  to  20  mm (3/4)		
— 20 mm (3/4 in) to 150 mm (6		r ł
— 150 mm (6 in) and over		1
— Bank or broken	-	4
Pile	1	
— Conveyor or Dozer piled 3 m	1	t
(10 ft) and up		(
— Conveyor or Dozer piled 3 m	1	C
(10 ft) or less	+.01	
— Dumped by truck	+.02	(
Miscellaneous		1
— Common ownership of truck	CS	1
and loaders	Up to –.04	
- Independently owned trucks	Up to +.04	i
— Constant operation	Up to –.04	t
— Inconsistent operation	Up to +.04	t
— Small target	Up to +.04	6
— Fragile target	Up to +.05	
Using actual job conditions an		C
total cycle time can be estimated		f

total cycle time can be estimated. Convert total cycle time to cycles per hour.

 $\frac{Cycles \ per \ hour \ at}{100\% \ Efficiency} = \frac{60 \ min}{Total \ Cycle \ Time \ in \ Minutes}$ 

Job efficiency is an important factor in machine selection. Efficiency is the actual number of minutes worked during an hour. Job efficiency accounts for bathroom breaks and other work interruptions.

Cycles per hour

at 50 minutes	Cycles per hour	50 min
per hour	= at 100%	imes actual work
(83% efficiency)	efficiency	time
		60 min hour

### TRUCK LOADING

Average loader cycle times	
910K-962H	0.45-0.50 min
966H-980H	0.50-0.55 min
986H-990K	0.55-0.60 min
992K-994K	0.60-0.70 min

# 3. Required Payload Per Cycle

Required payload per cycle is determined by dividing required hourly production by the number of cycles per hour.

## 4. Bucket Selection

After required payload per cycle has been calculated, the payload should be divided by the loose cubic yard (meter) material weight to determine number of loose cubic yards (meters) required per cycle.

The bulk of material handled does not weigh 1800 kg/m<sup>3</sup> (3000 lb/yd<sup>3</sup>), so a reasonable knowledge of material weight is necessary for accurate production estimates. The Tables Section has average weight for certain materials when actual weights are not known.

The percentage of rated capacity a bucket carries in various materials is estimated below. The bucket size required to handle the required volume per cycle is found with the aid of the percentage of rated bucket capacity called "Bucket Fill Factor."

The bucket size needed is determined by dividing loose cubic meters (or yards) required per cycle by the bucket fill factor.

# BUCKET FILL FACTORS

The following indicates the approximate amounts of material as a percent of rated bucket capacity which will actually be delivered per bucket per cycle. This is known as "Bucket Fill Factor."

Loose Material	Fill factor
Mixed moist aggregates	95-100%
Uniform aggregates up to 3 mm (1/8 in)	95-100
3 mm (1/8 in) to 9 mm (3/8 in)	
$12 \text{ mm} (1/2 \text{ in}) \text{ to } 20 \text{ mm} (3/4 \text{ in}) \dots$	85-90
24 mm (1.0 in) and over	85-90

Wheel Loaders Integrated Toolcarriers

# Machine Selection • Bucket Fill Factors • Example Problem

. .....

# Blasted Rock

Well blasted
Average
Poor
Other
Rock dirt mixtures 100-120%
Moist loam 100-110
Soil, boulders, roots
Cemented materials 85-95

**NOTE:** Fill factors on wheel loaders are affected by bucket penetration, breakout force, rack back angle, bucket profile and ground engaging tools such as bucket teeth or bolt-on replaceable cutting edges.

#### Example:

12 mm (1/2 in) material and 3 m<sup>3</sup> (4 yd<sup>3</sup>) bucket.  $0.90 \times 3$  m<sup>3</sup> = 2.75 Loose m<sup>3</sup> delivered per cycle.  $0.90 \times 4$  yd<sup>3</sup> = 3.6 Loose yd<sup>3</sup> delivered per cycle.

**NOTE:** Check the static tipping load on the specific machine to determine if bucket load is in fact a safe operating load.

**Bucket Selection** 

$$Tons \ Required|Cycle = \frac{Tons \ Required|Hour}{Cycles|Hour}$$

$$Kg \ (Pounds)$$

$$Required|Cycle = Tons \ Required|Cycle \times 907 \ kg \ (2000 \ lb)$$

$$Volume \ Required|Cycle = \frac{kg \ (Pounds) \ Cycle}{Material \ Weight}$$

$$kg (m^3 \ (lb)yd^3)$$

Always select a machine with a greater capacity than the calculated required operating capacity. For most applications, payload above recommended and excessive counterweight can hinder machine performance and reduce dynamic stability and machine life.

For optimum performance in fast cycling situations such as truck loading, operating loads should not exceed the recommended capacity. To provide extra stability, calcium chloride (CaCl<sub>2</sub>) ballast may be desired when operating at recommended operating load, see SAE Loader rating pages in this section. For specific stability data and optional tire sizes, see the "Performance Data" pages in this section. When selecting special application buckets, such as multi-purpose and side dump the additional bucket weight must be deducted from recommended capacity.

Specific circumstances may involve other conditions which would also affect loader capacity. Because of the greatly varied applications and conditions, your Cat dealer should be contacted for guidance.

#### Example problem:

JOB CONDITIONS	
Application	Truck loading
Production Required	450 metric ton (496 Tons)
	per hour
Material	9 mm (3/8") gravel in 6 m
	(20 ft) high stockpile
Density	1660 kg/m <sup>3</sup> (2800 lb/yd <sup>3</sup> )

Trucks are 6-9 m<sup>3</sup> (8-12 yd<sup>3</sup>) capacity and are owned by three contractors. Loading is constant. Hard level surface for loader maneuvering.

#### 1. PRODUCTION REQUIRED: Given

2. *CYCLE TIME:* Assume loader size between 910K and 962H for initial choice of basic cycle.

(Refer to Cycle Time Factors in this section)

Independent trucks	.04 min
Basic Cycle	.50 min
Material	02 min
Independent trucks	+.04 min
Constant operation	02 min
Total Cycle	.50 min

NOTE: Load and carry times not required in total cycle.

Cycles/hr		50 min actual	
at 83%	= 120 cycles/hr $\times$	work time	
efficiency		60 min per hr	
		= 100	cycles/hr

### 3. VOLUME REQUIRED PER CYCLE

(Density in tons)

Density in this example was given. When not given, refer to Tables Section to obtain an estimated density for the material being handled.

Metric: 
$$\frac{1660 \text{ kg/m}^3}{1000 \text{ kg/ton}} = 1.66 \text{ ton/m}^3$$

English:  $\frac{2800 \text{ lb/yd}^3}{2000 \text{ lb/ton}} = 1.4 \text{ tons/yd}^3$ 

# **Machine Selection** Example Problem Alternative Method

# Wheel Loaders Integrated Toolcarriers

#### **Production Rate Required**

Metric: 
$$\frac{450 \text{ tons/hr}}{1.66 \text{ tons/m}^3} = 271 \text{ m}^3/\text{hr}$$

English: 
$$\frac{496 \text{ tons/hr}}{1.4 \text{ tons/yd}^3} = 354 \text{ yd}^3/\text{hr}$$

**Volume Required per Cycle** 

Metric:  $\frac{271 \text{ m}^3/\text{hr}}{100 \text{ cycles/hr}} = 2.71 \text{ m}^3/\text{cycle}$ 

English:  $\frac{354 \text{ yd}^3/\text{hr}}{100 \text{ cycles/hr}} = 3.54 \text{ yd}^3/\text{cycle}$ 

# 4. DETERMINE BUCKET SIZE

#### BUCKET FILL FACTOR

The volume of material required per cycle has been determined. Because of varying material fill factors, buckets do not always carry their rated load, a larger capacity bucket may be needed to carry the volume required. For fill factors, refer to Bucket Fill Factor Chart in this section.

Rated Bucket Capacity Required (Heaped)

 $\frac{2.71 \text{ m}^3/\text{cycle}}{0.95 \text{ fill factor}} = 2.85 \text{ m}^3$ 

 $\frac{3.54 \text{ yd}^3/\text{cycle}}{0.95 \text{ fill factor}} = 3.73 \text{ yd}^3$ 

A 2.9 m<sup>3</sup> (3.75 yd<sup>3</sup>) bucket would provide the required capacity.

#### 5. MACHINE SELECTION

The bucket size required and material density lead to the choice of a 950H with a 2.9 m<sup>3</sup> (3.75 yd<sup>3</sup>) General Purpose Bucket (see bucket selection guide pages which follow.)

Finally, SAE payload criteria must be satisfied as follows:

The required operating capacity must not exceed one-half of the full turn static tipping load of the loader as equipped with a specific bucket.

The required operating capacity of the machine is determined by the volume the machine will carry per load times the density.

 $2.9 \text{ m}^3 \times 1660 \text{ kg/m}^3 = 4814 \text{ kg}$  $(3.75 \text{ vd}^3 \times 2800 \text{ lb/vd}^3 = 10,500 \text{ lb})$ 

One half of full turn static tipping load for the 950H with a 2.9 m<sup>3</sup> (3.75 vd<sup>3</sup>) General Purpose Bucket is 5410 kg (11,925 lb). SAE criteria is satisfied.

### An Alternative Method of Machine Selection

Another method of selecting the right Wheel Loader and bucket to meet production requirements is by use of the nomographs on the following pages. The method is quicker and easier than the preceding example because it does not require as many calculations, yet the accuracy is about the same within the normal limits of input data.

Be careful when entering and reading data from the nomographs because some scales increase from bottom to top, while others are the reverse. Do not be overly concerned with the precision as affected by pencil line width or reading to the hundredth of a m<sup>3</sup> (yd<sup>3</sup>). Remember that bucket fill factor, material density and cycle time are at best close estimates.

### Example problem:

A Wheel Loader must produce 230 m<sup>3</sup> (300 yd<sup>3</sup>) per hour in a truck loading application. Estimated cycle time is .6 minutes, working 45 minutes per hour. Bucket fill factor is 95% and material density is 1780 kg/m<sup>3</sup> (3000 lb/yd3).

Determine bucket size and machine model.

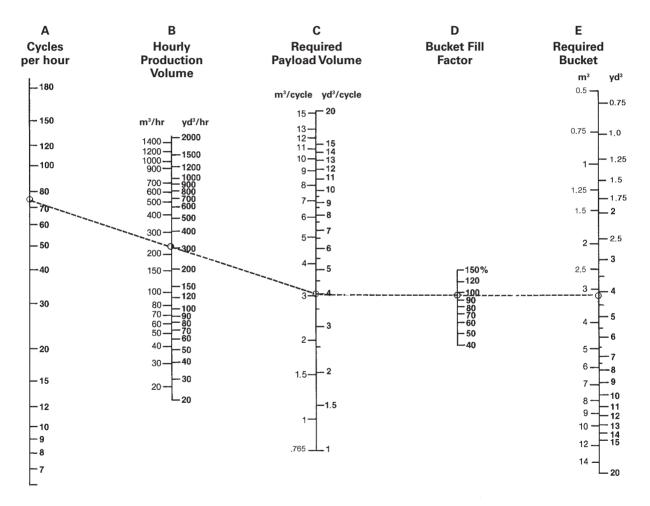
### Solution:

At full efficiency, the Wheel Loader will cycle 100 times per hour. Since only an average of 45 minutes are available, only 75 cycles will be completed.

Starting on Scale A at 75 cycles per hour draw a straight line intersecting 230 m3/hr (300 yd3/hr) on Scale B and extending it on to Scale C giving 3 m<sup>3</sup>/cycle (4 yd<sup>3</sup>/cycle) required payload. Follow solution steps 1-10.

# Wheel Loaders Integrated Toolcarriers

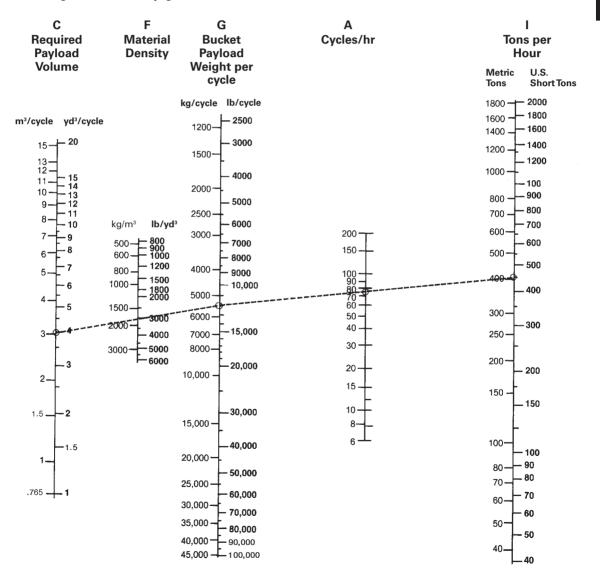
- 1. Enter required hourly production on Scale B 230 m<sup>3</sup>/hr (300 yd<sup>3</sup>/hr).
- 2. Enter cycles per hour on Scale A (60  $\div$  .6 = 100  $\times$  .75 = 75 cycles/hr).
- 3. Connect A through B to C. This shows a required payload of 3 m<sup>3</sup> (4 yd<sup>3</sup>) per cycle.
- 4. Enter estimated bucket fill factor on Scale D (0.95).
- Connect C through Scale D to E for required bucket size 3 m<sup>3</sup> (4 yd<sup>3</sup>).
- 6. Transfer cycles per hour Scale A and required payload Scale C to the following page.



- Enter material density on Scale F 1780 kg/m<sup>3</sup> (3000 lb/yd<sup>3</sup>).
- 8. Connect C through Scale F to Scale G to give payload weight per cycle 5300 kg (11,500 lb).
- 9. Compare Scale G quantity 5300 kg (11,500 lb) with recommended machine working range listed on the following bucket selection pages.

Operating capacity for the 950H with  $3.1 \text{ m}^3$  (4 yd<sup>3</sup>) bucket is dependent on material density and bucket capacity (see bucket selection pages that follow).

10. For hourly tonnage, draw a straight line from Scale G through Scale A to Scale I 400 metric tons (450 U.S. tons).



# Wheel LoadersBucketsIntegrated Toolcarriers• Americas North

Model	Interface	Bucket Type	Wie Rar			acity nge		eight Inge	GET
			mm	in	m <sup>3</sup>	yd <sup>3</sup>	kg	lb	
986H	Pin On	General Purpose Performance Series	3695	145	6.1-7.7	8.0-10.0	3648-4065	8042-8962	K110
		Rock Performance Series	3772	149	5.4-6.1	7.0-8.0	3726-3941	8214-8688	K110
		Heavy Duty Rock Performance Series	4014	158	5.4	7.0	5061	11,158	K130
		Extreme Duty Rock	4146	163	5.0	6.5	5195	12,050	K130
		Serrated Edge Rock	3812	150	6.1	8.0	4232	9330	N/A
		Coal	3692	145	10.0	13.5	5195	11,453	BOCE Included
988K	Pin On	General Purpose Performance Series	3855	152	6.9-8.4	9.0-11.0	4539-4994	10,007-11,010	K110
		Rock Performance Series	4020	158	6.4-7.7	8.3-10.0	4880-5263	10,759-11,603	K130
		Heavy Duty Rock Performance Series	4080	161	6.4	8.3	6360	14,021	K130
		Heavy Duty Granite Performance Series	3986	157	6.4	8.3	7433	16,385	K130
		Serrated Edge Rock	3968	156	6.4-6.9	8.3-9.0	5455-5634	12,026-12,421	N/A
		Iron Ore	3922	154	4.7	6.2	5771	12,723	K130
		Coal	4120	162	11.5-13.0	15.0-17.0	6023-6435	13,278-14,186	BOCE Included
		Slag	3900- 4032	154- 159	5.4-6.4	7.0-8.3	7633-8454	16,828-18,638	J600/Serrated Edge

N/A = Not Applicable

# BucketsWheel Loaders• Americas NorthIntegrated Toolcarriers

Model	Interface	Bucket Type	Wie Rar			acity nge		ight nge	GET
			mm	in	m <sup>3</sup>	yd <sup>3</sup>	kg	lb	
990K	Pin On	Rock Performance Series	4610	182	8.6-10.0	11.25-13.0	7247-7497	15,977-16,528	K130
		Heavy Duty Rock Performance Series	4670	184	8.6	11.25	8980	19,798	K130
		Heavy Duty Granite Performance Series	4634	182	8.6	11.25	12 055	26,520	K150
		Slag	4450- 4500	175- 177	8.5-9.2	11.2-12.0	9149-9613	20,127-21,149	Weld-on edge included
		Coal	4370	172	13.4	17.5	7460	16,410	BOCE Included
		Iron Ore	4450	175	7.0	9.2	8525	18,750	K150
		Serrated Edge Rock	4610	182	9.5	12.4	8140	17,910	N/A
992K	Pin On	Rock	4824- 4884	190- 192	10.7-12.2	14.0-16.0	9382-10 574	20,684-23,262	K150/K170
		Heavy Duty Rock	5068	200	10.7	14.0	11 560	25,485	K170
		High Abrasion Rock	5068	200	10.7	14.0	11 927	26,295	K150
		Heavy Duty Granite	5165	203	10.7	14.0	13 720	30,247	K150
		Coal	6170	243	19.0	25.0	12 504	27,506	BOCE Included
		Iron Ore	4900	193	9.0	11.8	11 172	24,577	K150
		Serrated Edge Rock	4824	190	12.3	16.0	10 282	22,620	N/A
993K	Pin On	Rock	5068	200	12.2-14.5	16.0-19.0	12 864-14 209	28,301-31,260	K170
		High Abrasion Rock	5160	203	12.2-13.0	16.0-17.0	15 205-15 456	33,451-34,004	K170
		Heavy Duty Granite	5160	203	13.0	17.0	17 418	38,320	K170
		Coal	6300	248	23.0	31.0	17 673	38,880	K170
		Iron Ore	5160	203	10.0	13.0	14 063	30,940	K170
		Serrated Edge Rock	5080	200	15.0	19.5	13 915	30,615	N/A
994K	Pin On	Rock	6223	245	19.1-24.5	25-32	19 205-21 293	42,340-46,942	Spade edge*
		Heavy Duty Rock	6240	246	19.1-21.4	25-28	20 699-21 303	45,633-46,966	Spade edge*
		Coal	6964	274	32.1-39.8	42-52	20 862-22 773	45,992-50,206	Straight edge <sup>3</sup>
		Iron Ore	6240	246	17.2	22.5	19 518	43,029	Spade edge*

\*With teeth and segments. N/A = Not Applicable

# 986H — Standard Lift

	Materia	Bucket	Volume		
kg/m³	tonnes/m <sup>3</sup>	lb/yd³	tons/yd <sup>3</sup>	m <sup>3</sup>	yd³
1632-1795	1.63-1.80	2750-3025	1.38-1.51	6.1	8
1740-1914	1.74-1.91	2933-3227	1.46-1.61	5.7	7.5
1865-2051	1.86-2.05	3143-3457	1.57-1.73	5.4	7

\*Density range covers 100% rated payload to 110% rated payload in accordance with Large Wheel Loader payload policy.

### 988K

	Materia	Bucket	Volume		
kg/m³	tonnes/m <sup>3</sup>	lb/yd <sup>3</sup>	tons/yd³	m <sup>3</sup>	yd³
1468-1614	1.47-1.61	2500-2750	1.25-1.38	7.7	10
1638-1801	1.64-1.80	2778-3056	1.39-1.53	6.9	9
1766-1942	1.77-1.94	3001-3300	1.50-1.65	6.4	8.33

# 990K

	Material	Bucket	Volume		
kg/m³	tonnes/m <sup>3</sup>	lb/yd³	tons/yd <sup>3</sup>	m³	yd³
1590-1749	1.59-1.75	2692-2962	1.35-1.48	10	13
1728-1901	1.73-1.90	2917-3208	1.46-1.60	9.2	12
1849-2034	1.85-2.03	3111-3422	1.56-1.71	8.6	11.25

# Bucket Selection Wheel Loaders Integrated Toolcarriers • 992K-993K

992K —	Standard	Up to specified dens	ity for 100% fill factor
Bucket	Volume	Materia	Density
m <sup>3</sup>	yd <sup>3</sup>	kg/m³	lb/yd³
12.2	16	1780	3000
11.5	15	1890	3200
10.7	14	2030	3430

992K — Hig	gh Lift
------------	---------

992K —	High Lift         Up to specified density for 100% fill factor		
Bucket Volume		Material	Density
m <sup>3</sup>	yd <sup>3</sup>	kg/m³	lb/yd³
12.2	16	1560	2630
11.5	15	1560	2630
10.7	14	1560	2630

# 993K – Standard

Up to specified density for 100% fill factor

Bucket	Volume	Material Density	
m <sup>3</sup>	yd³	kg/m³	lb/yd³
15.3	20	1780	3000
14.5	19	1870	3160
13.8	18	1970	3330

# 993K - High Lift

Up to specified density for 100% fill factor

			,
Bucket	Volume	Material	Density
m <sup>3</sup>	yd³	kg/m³	lb/yd³
14.5	19	1720	2890
13.8	18	1810	3060
13.0	17	1920	3240

# WHEELTRACTOR-SCRAPERS

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# Wheel Tractor-Scrapers

- Specifications Twin Engine Open Bowl Optional Push-Pull

MODEL	62	27K	63	37K	65	7G
Flywheel Power: Tractor	304 kW	407 hp	425 kW	570 hp	421/447 kW	564/600 hp
Scraper	216 kW	290 hp	216 kW	290 hp	306/337 kW	410/451 hp
Approx. Operating Weight (Empty)◀	40 811 kg	89,973 lb	52 140 kg	114,950 lb	68 384 kg	150,760 lb
Scraper Capacity: Struck	13 m³	17.1 yd <sup>3</sup>	18.3 m³	24 yd <sup>3</sup>	24.5 m <sup>3</sup>	32 yd <sup>3</sup>
Heaped	18.4 m³	24 yd <sup>3</sup>	26 m³	<b>34 yd</b> <sup>3</sup>	33.6 m³	44 yd <sup>3</sup>
Rated Load	26 127 kg	57,610 lb	37 285 kg	82,200 lb	47 174 kg	104,000 lb
Weight Distribution — Empty: Front	5	9%	5	9%	58	8%
Rear	4	1%	4	1%	42	2%
Weight Distribution — Loaded: Front	50	0%	5	0%	50	)%
Rear	50	0%	5	0%	50	)%
Engine Model: Tractor	C13/	ACERT	C18 /	ACERT	C18 A	CERT
Scraper	C9.3	ACERT	C9 A	CERT	C15 A	CERT
Emission Standards		I/Stage IV/ (Tier 4 Final)		al/Stage IV/ (Tier 4 Final)		tage IIIA/ er 3) equivalent
Rated Engine RPM: Tractor	20	000	19	900	18	00
Scraper	21	150	2'	150	18	00
Displacement: Tractor	12.5 L	763 in <sup>3</sup>	18.1 L	1105 in <sup>3</sup>	18.1 L	1105 in <sup>3</sup>
Scraper	9.3 L	567 in <sup>3</sup>	9.3 L	567 in <sup>3</sup>	15.2 L	928 in <sup>3</sup>
Top Speed (Loaded)	53.9 km/h	33.5 mph	55.8 km/h	34.7 mph	53 km/h	33 mph
180° Curb-to-Curb Turning Width	18.25 m	59'11"	19.94 m	65'5"	22.33 m	73'3"
Tires — Tractor/Scraper	33.25R	29★★E3	37.25R	35★★E3	40.5/75	R39★★E3
Width of Cut	3.14 m	10'4"	3.51 m	11'6"	3.85 m	12'8"
Maximum Depth of Cut	315 mm	12.4"	475 mm	18.7"	440 mm	17.3"
Maximum Depth of Spread	540 mm	21.3"	451 mm	17.8"	660 mm	26"
Fuel Tank Refill Capacity	1272 L	336 U.S. gal	1400 L	370 U.S. gal	1597 L	424 U.S. gal
Tractor DEF Tank	31.5 L	8.3 U.S. gal	31.5 L	8.3 U.S. gal	-	-
Scraper DEF Tank	23.1 L	6.1 U.S. gal	22.9 L	6.0 U.S. gal	-	_
GENERAL DIMENSIONS: Non Push-Pull						
Height — Overall Shipping	4.03 m	13'2"	4.15 m	13'7"	4.62 m	15'2"
Wheelbase	7.99 m	26'2"	8.81 m	28'11"	9.96 m	32'8"
Overall Length	14.02 m	45'10"	15.04 m	49'4"	16.2 m	53'1"
Overall Width	3.57 m	11'7"	3.94 m	12'11"	4.35 m	14'4"
Shipping Width						
(Draft Arm on Inside of Bowl)		_		-	0.01111	* 12'10"
Center Line of Scraper Tread	2.29 m	7'5"	2.46 m	8'1"	2.81 m	9'3"
Center Line of Tractor Tread	2.28 m	7'4"	2.46 m	8'1"	2.63 m	8'8"
GENERAL DIMENSIONS: Push-Pull						
Operating Weight (Empty)◀	42 158 kg	92,942 lb	54 005 kg	119,060 lb	72 804 kg	160,505 lb
Overall Length	15.58 m	51'1"	16.64 m	54'7"	18.01 m	59'1"
Weight Distribution – Empty:	_	- 0 /	-	- 0 (		
Front		9%	-	1%		8%
Rear	4	1%	3	9%	42	2%
Weight Distribution – Loaded:	_	-0/	_	- 0/		
Front		0%	-	1%	-	1%
Rear	50	0%	4	9%	49	)%

\*Standard Shipping Configuration.

Operating weight includes standard machine, coolant, lubricants, full fuel tank, and operator. Operating weights for the 627K and 637K are based on Tier 4 Final/ Stage IV/Japan 2014 (Tier 4 Final) platform machines. Deduct 569 kg (1254 lb) for the operating weight for the 627K Tier 2/Stage II/Japan 2001 (Tier 2) equivalent. Deduct 650 kg (1433 lb) for the operating weight for the 637K Tier 2/Stage II/Japan 2001 (Tier 2) equivalent. 657G is not available in Tier 2/ Stage II/Japan 2001 (Tier 2) equivalent.

NOTE: Wheel Tractor-Scrapers are not emission certified in Japan market.

# Wheel Tractor-Scrapers

# SpecificationsCoal Bowl

MODEL	63	7K	65	7G
Flywheel Power: Tractor	425 kW	570 hp	421/447 kW	564/600 hp
Scraper	216 kW	290 hp	306/337 kW	410/451 hp
Approx. Operating Weight (Empty)	53 425 kg	117,782 lb	72 190 kg	158,817 lb
Scraper Capacity: Struck	31 m <sup>3</sup>	41 yd <sup>3</sup>	45 m³	59 yd <sup>3</sup>
Heaped	38 m³	50 yd <sup>3</sup>	56 m³	73 yd³
Emission Standards		I/Stage IV/ (Tier 4 Final)		tage IIIA/ er 3) equivalent
Rated Load	37 285 kg	82,200 lb	49 895 kg	110,000 lb
Approx. Operating Weight (Loaded)	90 710 kg	199,982 lb	121 933 kg	268,817 lb
Top Speed (Loaded)	55.8 km/h	34.7 mph	53 km/h	33 mph
180° Curb-to-Curb Turning Width	21.46 m	70'5"	24.43 m	80'2"
GENERAL DIMENSIONS:				
Height — Overall Shipping	4.15 m	13'7"	4.62 m	15'2"
Wheelbase	9.57 m	31'5"	11.01 m	36'1"
Overall Length	15.48 m	50'10"	17.21 m	56'5"
Overall Width	3.94 m	12'11"	4.35 m	14'4"
Shipping Width (Draft Arm on Inside of Bowl)	-	_	3.91 m	* 12'10"
Center Line of Scraper Tread	2.46 m	8'1"	2.81 m	9'3"
Center Line of Tractor Tread	2.46 m	8'1"	2.63 m	8'8"

\*Standard Shipping Configuration.

Operating weight includes standard machine, coolant, lubricants, full fuel tank, and operator. Operating weights for the 637K are based on Tier 4 Final/ Stage IV/Japan 2014 (Tier 4 Final) and operating weights for the 657G are based on Tier 3/Stage IIIA/Japan 2006 (Tier 3) equivalent platform machines. Deduct 650 kg (1433 lb) for the operating weight for the 637K Tier 2/Stage II/Japan 2001 (Tier 2) equivalent.

NOTE: Wheel Tractor-Scrapers are not emission certified in Japan market.

#### **Coal Bowl**

Coal Bowl Wheel Tractor-Scrapers are typically used for building and maintaining coal stockpiles and hauling coal to the supply system at coal power plants. The self-loading capability, large capacity, coal pile compaction, and high speed of Coal Bowl Wheel Tractor-Scrapers make them the tool of choice for moving coal both short and long distances. Coal Bowl Wheel Tractor-Scrapers are available in the 637K and 657G tandem engine models.

#### **Coal Bowl Advantages:**

- Load hoppers
- Manage coal stockpiles
- Compaction reduces risk of spontaneous combustion in coal stockpile
- Exclusively designed large capacity coal bowls

#### Notes:

- The 637K Coal Scraper is 736 mm (29.0") longer, the bowl sides are 476 mm (18.7") taller, and the apron is 499 mm (19.6") taller than its earthmoving counterpart.
- The 657G Coal Scraper is 1072 mm (42.2") longer, the bowl sides are 1010 mm (39.8") taller, the apron is 677 mm (26.7") taller, and the ejector is 944 mm (37.2") taller than its earthmoving counterpart.

# USE OF RIMPULL-SPEED-GRADEABILITY CURVES

The following explanation applies to Rimpull-Speed-Gradeability curves for Wheel Tractor-Scrapers, Construction & Mining Trucks/Tractors and Articulated Trucks.

Maximum speed attainable, gear range and available rimpull can be determined from curves on the following pages when machine weight and total effective grade (or total resistance) are known.

- **Rimpull** is the force (in kg, lb or kN) available between the tire and the ground to propel the machine (limited by traction).
- **Weight** is defined as Gross Machine Weight (kg or lb) = Machine + Payload.
- **Total Effective Grade (or Total Resistance)** is grade resistance plus rolling resistance expressed as percent grade.

Grade is measured or estimated.

Rolling resistance is estimated (see Tables section for typical values.)

10 kg/metric ton (20 lb/U.S. ton) = 1% adverse grade.

# Example

With a 6% grade and a rolling resistance of 40 kg/ metric ton (80 lb/U.S. ton), find total resistance.

Rolling resistance =  $40 \text{ kg/t} \div 10 = 4\%$  Effective Grade (English:  $80 \text{ lb} \div 20 = 4\%$ )

Total resistance = 4% rolling + 6% grade = 10%

# **Altitude Derating**

Rimpull force and speed must be derated for altitude similar to flywheel horsepower. The percentage loss in rimpull force approximately corresponds to the percentage loss in flywheel horsepower. See Tables Section for altitude derations.

### **Rimpull-Speed-Gradeability**

To determine gradeability performance: Read from gross weight down to the % of total resistance. (Total resistance equals actual % grade *plus* 1% for each 10 kg/metric ton (20 lb./U.S. ton) of rolling resistance.) From this weight-resistance point, read horizontally to the curve with the highest obtainable speed range, then down to the maximum speed. Usable rimpull depends upon traction and weight on drive wheels.

### Example problem:

A 631K with an estimated payload of 37 013 kg (81,600 lb) is operating on a total effective grade of 10%. Find the available rimpull and maximum attainable speed.

Empty weight payload = Gross Weight 47 628 kg + 37 013 kg = 84 641 kg (105,002 lb + 81,600 lb = 186,602 lb)

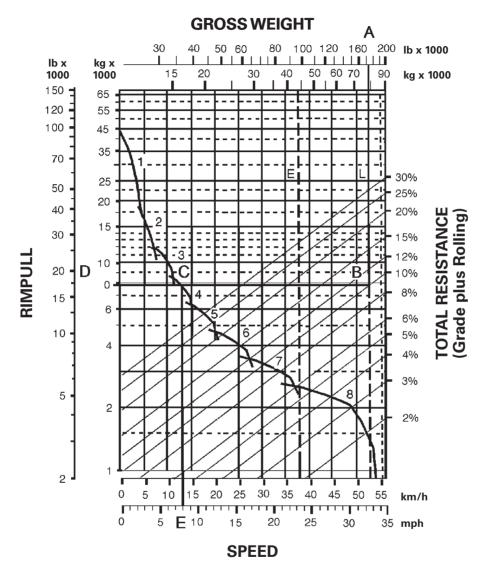
*Solution:* Using graph on the next page, read from 84 641 kg (186,602 lb) (point A) on top of gross weight scale down the line to the intersection of the 10% total resistance line (point B).

Go across horizontally from B to the Rimpull Scale on the left (point D). This gives the required rimpull: 7756 kg (17,100 lb).

Where the line cuts the speed curve (point C), read down vertically (point E) to obtain the maximum speed attainable for the 10% effective grade: 12.9 km/h (8 mph).

ANSWER: The machine will climb the 10% effective grade at a maximum speed of 12.9 km/h (8 mph) in 4th gear. Available rimpull is 7756 kg (17,100 lb).





# KEY

- 1 1st Gear Torque Converter Drive
- 2 2nd GearTorque Converter Drive
- 3 3rd Gear Direct Drive
- 4 4th Gear Direct Drive
- 5-5th Gear Direct Drive
- 6 6th Gear Direct Drive
- 7 7th Gear Direct Drive
- 8 8th Gear Direct Drive

- KEY
- A Loaded 84 641 kg (186,602 lb)
- B Intersection with 10% total resistance line
- C Intersection with rimpull curve (4th gear)
- D Required rimpull 7756 kg (17,100 lb)
- E Speed 12.9 km/h (8 mph)

(Times may vary depending on job conditions)	(Times	may vary	depending	on job	conditions)
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Model	Loaded By	Load Time (Min.)	Maneuver and Spread or Maneuver and Dump (Min.)
613G	Self	0.9	0.7
623K	Self	0.9	0.7
621K	One D8	0.5	0.7
627K	One D8	0.5	0.6
621K	One D9	0.4	0.7
627K	One D9	0.4	0.6
627K/PP	Self	0.9*	0.6
631K	One D9	0.6	0.7
637K	One D9	0.6	0.6
631K	One D10	0.5	0.7
637K	One D10	0.5	0.6
637K/PP	Self	1.0*	0.6
657G	One D11	0.6	0.6
657G	Push Pull Self	1.1*	0.6
637K	Coal	0.8	0.7
657G	Coal	0.8	0.6

\*Load time per pair, including transfer time.

**NOTE:** Empty Weights shown on the Wheel Tractor-Scraper charts includes ROPS Canopy. When calculating TMPH loadings *any* additional weight must be considered in establishing mean tire loads.

# **USE OF RETARDER CURVES**

The following explanation applies to retarder curves for Wheel Tractor-Scrapers and Articulated Trucks.

The speed that can be maintained (without use of service brake) when the machine is descending a grade with retarder fully on can be determined from the retarder curves in this section if gross machine weight and total effective grade are known.

**Total Effective Grade (or Total Resistance)** is grade assistance *minus* rolling resistance.

10 kg/metric ton (20 lb/U.S. ton) = 1% adverse grade.

#### Example

15% favorable grade with 5% rolling resistance. Find Total Effective Grade.

- Total Effective Grade = 15% Grade Assistance 5%
- Rolling Resistance = 10% Total Effective Grade Assistance.

#### Example problem:

A 651E with an estimated payload of 47 175 kg (104,000 lb) descends a 10% total effective grade. Find constant speed and gear range with maximum retarder effort. Find travel time if the slope is 610 m (2000 ft) long.

Empty Weight + Payload = Gross Weight = 60 950 kg + 47 175 kg = 108 125 kg (134,370 lb + 104,000 lb = 238,370 lb) **GROSS WEIGHT** 

Solution: Using the retarder curve below, read from 108 125 kg (238,370 lb) (point A) on top of gross weight scale down the line to the intersection of the 10% effective grade line (point B).

Go across horizontally from point B to the intersection of the retarder curve (point C). Point C intersects at the 5 (5th gear) range.

Where point C intersects the retarder curve, read down vertically to point D on the bottom scale to obtain the constant speed: 21.7 km/h (13.5 mph).

ANSWER: The 651E will descend the slope at 21.7 km/h (13.5 mph) in 5th gear. Travel time is 1.68 minutes.

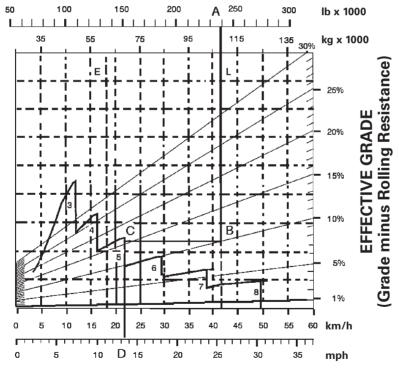
$$\frac{610 \text{ m}}{363 \text{ m/min}} = 1.68 \text{ min}$$
  
2000 ft

 $*(mph \times 88 = F.P.M.)$ 

 $\frac{2000 \text{ H}}{13.5 \text{ mph} \times 88^*} = 1.68 \text{ min}$ 

**NOTE:** The basic Distance-Speed-Time formula is 60 D  $\div$  S = T (or "60 D Street"), where 60 is minutes, D is distance, S is speed and T is time. In the above problem, 60 × 610 m  $\div$  21.7 km/h × 1000 = T.

$$\frac{60 \times 610}{21.7 \times 1000} = T = (1.68)$$



SPEED

### KEY

- 3 3rd Gear Direct Drive
  4 4th Gear Direct Drive
  5 5th Gear Direct Drive
  6 6th Gear Direct Drive
- 7 7th Gear Direct Drive
- 8 8th Gear Direct Drive

# KEY

- A Loaded 108 125 kg (238,370 lb)
- B Intersection with 10% effective grade line
- C Intersection with retarder curve (5th gear)
- D Constant speed 21.7 km/h (13.5 mph)

# MINING AND EARTHMOVING

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## INTRODUCTION

This section explains the earthmoving principles used to determine machine productivity. It shows how to calculate production on-the-job or estimate production off-the-job.

# **ELEMENTS OF PRODUCTION**

Production is the hourly rate at which material is moved. Production can be expressed in various units:

### Metric

Bank Cubic Meters	— BCM — bank m <sup>3</sup>
Loose Cubic Meters	$-LCM - loose m^3$
Compacted Cubic Meter	rs — CCM — compacted m <sup>3</sup>
Tonnes	-

#### English

Bank Cubic Yards	- BCY $-$ bank yd <sup>3</sup>
Loose Cubic Yards	$-LCY - loose yd^3$
Compacted Cubic Yards	$-CCY - compacted yd^3$
Tons	

For most earthmoving and material handling applications, production is calculated by multiplying the quantity of material (load) moved per cycle by the number of cycles per hour.

Production = Load/cycle  $\times$  cycles/hour

The load can be determined by

- 1) load weighing with scales
- 2) load estimating based on machine rating
- 3) surveyed volume divided by load count
- 4) machine payload measurement system

Generally, earthmoving and overburden removal for coal mines are calculated by volume (bank cubic meters or bank cubic yards). Metal mines and aggregate producers usually work in weight (tons or tonnes).

# Mining and Earthmoving

# **Elements of Production** • Volume Measure • Swell Load Factor Material Density

**Volume Measure** — Material volume is defined according to its state in the earthmoving process. The

three measures of volume are: BCM (BCY) — one cubic meter (vard) of material

- as it lies in the natural bank state.
- LCM (LCY) one cubic meter (vard) of material which has been disturbed and has swelled as a result of movement.
- CCM (CCY) one cubic meter (vard) of material which has been compacted and has become more dense as a result of compaction.

In order to estimate production, the relationships between bank measure, loose measure, and compacted measure must be known.

Swell — Swell is the percentage of original volume (cubic meters or cubic yards) that a material increases when it is removed from the natural state. When excavated, the material breaks up into different size particles that do not fit together, causing air pockets or voids to reduce the weight per volume. For example to hold the same weight of one cubic unit of bank material it takes 30% more volume (1.3 times) after excavation. (Swell is 30%.)

$$1 + Swell = \frac{Loose cubic volume}{Bank cubic volume for}$$
the same given weight

 $Bank = \frac{Loose}{(1 + Swell)}$ Loose = Bank  $\times$  (1 + Swell)

# Example Problem:

If a material swells 20%, how many loose cubic meters (loose cubic yards) will it take to move 1000 bank cubic meters (1308 bank cubic yards)?

Loose = Bank  $\times$  (1 + Swell) =  $1000 \text{ BCM} \times (1 + 0.2) = 1200 \text{ LCM}$  $1308 \text{ BCY} \times (1 + 0.2) = 1570 \text{ LCY}$ 

How many bank cubic meters (yards) were moved if a total of 1000 loose cubic meters (1308 yards) have been moved? Swell is 25%.

 $Bank = Loose \div (1 + Swell) =$  $1000 \text{ LCM} \div (1 + 0.25) = 800 \text{ BCM}$  $1308 \text{ LCY} \div (1 \pm 0.25) = 1046 \text{ BCY}$ 

Load Factor — Assume one bank cubic yard of material weighs 3000 lb. Because of material characteristics, this bank cubic vard swells 30% to 1.3 loose cubic yards when loaded, with no change in weight. If this 1.0 bank cubic yard or 1.3 loose cubic yards is compacted, its volume may be reduced to 0.8 compacted cubic yard, and the weight is still 3000 lb.

Instead of dividing by 1 + Swell to determine bank volume, the loose volume can be multiplied by the load factor.

If the percent of material swell is known, the load factor (L.F.) may be obtained by using the following relationship:

L.F. = 
$$\frac{100\%}{100\% + \%}$$
 swell

Load factors for various materials are listed in the Tables Section of this handbook.

To estimate the machine payload in bank cubic vards, the volume in loose cubic yards is multiplied by the load factor:

Load (BCY) = Load (LCY) 
$$\times$$
 L.F.

The ratio between compacted measure and bank measure is called shrinkage factor (S.F.):

S.F. = 
$$\frac{\text{Compacted cubic yards (CCY)}}{\text{Bank cubic yards (BCY)}}$$

Shrinkage factor is either estimated or obtained from job plans or specifications which show the conversion from compacted measure to bank measure. Shrinkage factor should not be confused with percentage compaction (used for specifying embankment density, such as Modified Proctor or California Bearing Ratio [CBR]).

Material Density — Density is the weight per unit volume of a material. Materials have various densities depending on particle size, moisture content and variations in the material. The denser the material the more weight there is per unit of equal volume. Density estimates are provided in the Tables Section of this handbook.

Density = 
$$\frac{\text{Weight}}{\text{Volume}} = \frac{\text{kg (lb)}}{\text{m}^3(\text{yd}^3)}$$
  
Weight = Volume × Density

# Elements of Production • Fill Factor • Soil Density Tests

# Mining and Earthmoving

A given material's density changes between bank and loose. One cubic unit of loose material has less weight than one cubic unit of bank material due to air pockets and voids. To correct between bank and loose use the following equations.

$$1 + \text{Swell} = \frac{\text{kg/BCM}}{\text{kg/LCM}} \text{ or } \frac{\text{lb/BCY}}{\text{lb/LCY}}$$
$$1\text{b/LCY} = \frac{\text{lb/BCY}}{(1 + \text{Swell})}$$
$$1\text{b/BCY} = 1\text{b/LCY} \times (1 + \text{Swell})$$

**Fill Factor** — The percentage of an available volume in a body, bucket, or bowl that is actually used is expressed as the fill factor. A fill factor of 87% for a hauler body means that 13% of the rated volume is not being used to carry material. Buckets often have fill factors over 100%.

## Example Problem:

A 14 cubic yard (heaped 2:1) bucket has a 105% fill factor when operating in a shot sandstone (4125 lb/BCY and a 35% swell).

- a) What is the loose density of the material?
- b) What is the usable volume of the bucket?
- c) What is the bucket payload per pass in BCY?
- d) What is the bucket payload per pass in tons?
- a) lb/LCY = lb/BCY ÷ (1 + Swell) = 4125 ÷ (1.35) = 3056 lb/LCY
- b) LCY = rated LCY  $\times$  fill factor = 14  $\times$  1.05 = 14.7 LCY
- c) lb/pass = volume × density lb/LCY =  $14.7 \times 3056$ = 44,923 lb

BCY/pass = weight  $\div$  density lb/BCY = 44,923  $\div$  4125 = 10.9 BCY

or bucket LCY from part b  $\div$  (1 + Swell) = 14.7  $\div$ 1.35 = 10.9 BCY

d) tons/pass = lb ÷ 2000 lb/ton = 44,923 ÷ 2000 = 22.5 tons

# Example Problem:

Construct a 10,000 compacted cubic yard (CCY) bridge approach of dry clay with a shrinkage factor (S.F.) of 0.80. Haul unit is rated 14 loose cubic yards struck and 20 loose cubic yards heaped.

- a) How many bank yards are needed?
- b) How many loads are required?

a) BCY = 
$$\frac{CCY}{S.F.} = \frac{10,000}{0.80} = 12,500$$
 BCY  
b) Load (BCY) = Capacity (LCY)  
× Load factor (L.F.) = 20 × 0.81  
= 16.2 BCY/Load  
(L.F. of 0.81 from Tables)  
Number of  
loads required =  $\frac{12,500 \text{ BCY}}{16.2 \text{ BCY/Load}} = 772 \text{ Loads}$ 

**Soil Density Tests** — There are a number of acceptable methods that can be used to determine soil density. Some that are currently in use are:

> Nuclear density moisture gauge Sand cone method Oil method Balloon method Cylinder method

All these except the nuclear method use the following procedure:

- 1. Remove a soil sample from bank state.
- 2. Determine the volume of the hole.
- 3. Weigh the soil sample.
- 4. Calculate the bank density kg/BCM (lb/BCY).

The nuclear density moisture gauge is one of the most modern instruments for measuring soil density and moisture. A common radiation channel emits either neutrons or gamma rays into the soil. In determining soil density, the number of gamma rays absorbed and back scattered by soil particles is *indirectly* proportional to the soil density. When measuring moisture content, the number of moderated neutrons reflected back to the detector after colliding with hydrogen particles in the soil is *directly* proportional to the soil's moisture content.

All these methods are satisfactory and will provide accurate densities when performed correctly. Several repetitions are necessary to obtain an average.

**NOTE:** Several newer methods have been successfully applied, along with weigh scales to determine volume and loose density of material moved in hauler bodies. These measurements include photogrammatic and laser scanning technologies.

# Mining and Earthmoving

- **Figuring Production On-the-Job**
- Load Weighing
- Time Studies
  Example (English)

# FIGURING PRODUCTION ON-THE-JOB

Load Weighing — The most accurate method of determining the actual load carried is by weighing. This is normally done by weighing the haul unit one wheel or axle at a time with portable scales. Any scales of adequate capacity and accuracy can be used. While weighing, the machine must be level to reduce error caused by weight transfer. Enough loads must be weighed to provide a good average. Machine weight is the sum of the individual wheel or axle weights.

The weight of the load can be determined using the empty and loaded weight of the unit. Weight of

load = gross machine weight - empty weight

To determine the bank cubic measure carried by a machine, the load weight is divided by the bankstate density of the material being hauled.

$$BCY = \frac{\text{Weight of load}}{\text{Bank density}}$$

**Times Studies** — To estimate production, the number of complete trips a unit makes per hour must be determined. First obtain the unit's cycle time with the help of a stop watch. Time several complete cycles to arrive at an average cycle time. By allowing the watch to run continuously, different segments such as load time, wait time, etc. can be recorded for each cycle. Knowing the individual time segments affords a good opportunity to evaluate the balance of the spread and job efficiency. The following is an example of a scraper load time study form. Numbers in the white columns are stop watch readings; numbers in the shaded columns are calculated:

Total								
Cycle								
Times								
(less	Arrive	Wait	Begin	Load	End	Begin	Delay	End
delays)	Cut	Time	Load	Time	Load	Delay	Time	Delay
	0.00	0.30	0.30	0.60	0.90			
3.50	3.50	0.30	3.80	0.65	4.45			
4.00	7.50	0.35	7.85	0.70	8.55	9.95	1.00	10.95
4.00	12.50	0.42	12.92	0.68	13.60			

NOTE: All numbers are in minutes

This may be easily extended to include other segments of the cycle such as haul time, dump time, etc. Haul roads may be further segmented to more accurately define performance, including measured speed traps. Similar forms can be made for pushers, loaders, dozers, etc. Wait Time is the time a unit must wait for another unit so that the two can function together (haul unit waiting for pusher). Delay Time is any time, other than wait time, when a machine is not performing in the work cycle (scraper waiting to cross railroad track).

To determine trips-per-hour at 100% efficiency, divide 60 minutes by the average cycle time less all wait and delay time. Cycle time may or may not include wait and/or delay time. Therefore, it is possible to figure different kinds of production: measured production, production without wait or delay, maximum production, etc. For example:

Actual Production: includes all wait and delay time.

- Normal Production (without delays): includes wait time that is considered normal, but no delay time.
- Maximum Production: to figure maximum (or optimum) production, both wait time and delay time are eliminated. The cycle time may be further altered by using an optimum load time.

## Example (English)

A job study of a Wheel Tractor-Scraper might yield the following information:

= 0.28	minute
= 0.65	
= 0.25	
= 4.26	
= 0.50	
= 2.09	
= 8.03	minutes
= 0.53	
= 7.50	minutes
y — 48. ed —	,650 lb
3,420 lb	
9,770 lb	
3,760 lb	
	= 0.65 = 0.25 = 0.25 = 4.26 = 0.50 = 2.09 = 8.03 = 0.53 = 7.50 y - 48 ed

umi #5 —	88,700 10	
	271,950 lb;	
	average =	90,650 lb

- 1. Average load weight = 90,650 lb 48,650 lb = 42,000 lb
- 2. Bank density = 3125 lb/BCY

3. Load = 
$$\frac{\text{Weight of load}}{1000}$$

Bank density  
= 
$$\frac{42,000 \text{ lb}}{3125 \text{ lb/BCY}} = 13.4 \text{ BCY}$$

4. Cycles/hr =  $\frac{1}{2}$ 60 min/hr 60 min/hr = 80 cycles/hr

5. Production = Load/cycle  $\times$  cycles/hr (less delays) =  $13.4 \text{ BCY/cycle} \times 8.0 \text{ cycles/hr}$ = 107.2 BCY/hr

# Figuring Production On-the-Job • Example (Metric) Estimating Production Off-the-Job • Rolling Resistance

# Mining and Earthmoving

#### Example (Metric)

A job study of a Wheel Tractor-Scraper might yield the following information:

rono ning internation.	
Average wait time	= 0.28 minute
Average load time	= 0.65
Average delay time	= 0.25
Average haul time	= 4.26
Average dump time	
Average return time	= 2.09
Average total cycle	= 8.03 minutes
Less wait & delay time	$\overline{=0.53}$
Average cycle 100% eff.	
Weight of haul unit empt	
Weights of haul unit load	ed —
Weighing unit #1 — 42	2 375 kg
Weighing unit #2 — 40	) 720 kg
Weighing unit #3 — 40	) 260 kg
123	3 355 kg;
	werage = $41 \ 120 \ \text{kg}$
1. Average load weight	$x = 41 \ 120 \ \text{kg} - 22 \ 070 \ \text{kg} =$
19 050 kg	
2. Bank density = $1854 \text{ k}$	g/BCM
Weight of loa	d
3. Load = $\frac{\text{Weight of loa}}{\text{Bank density}}$	7
-	
_ 19 050 kg	-10.2 PCM
$= \frac{19\ 050\ \text{kg}}{1854\ \text{kg/BCM}}$	$\frac{-10.3 \text{ BCM}}{1}$
4. Cycles/hr =	
60 min/hr	60 min/hr
$\overline{\text{Cycle time}} =$	$\overline{7.50 \text{ min/cycle}} = 80 \text{ cycles/hr}$
5. Production = Load/c	ycle × cycles/hr

(less delays) = 10.3 BCM/cycle × 8.0 cycles/hr = 82 BCM/hrr

•••

# ESTIMATING PRODUCTION OFF-THE-JOB

It is often necessary to estimate production of earthmoving machines which will be selected for a job. As a guide, the remainder of the section is devoted to discussions of various factors that may affect production. Some of the figures have been rounded for easier calculation.

**Rolling Resistance** (RR) is a measure of the force that must be overcome to roll or pull a wheel over the ground. It is affected by ground conditions and load — the deeper a wheel sinks into the ground, the higher the rolling resistance. Internal friction and tire flexing also contribute to rolling resistance. Experience has shown that minimum resistance is 1%-1.5% (see Typical Rolling Resistance Factors in Tables section) of the gross machine weight (on tires). A 2% base resistance is quite often used for estimating. Resistance due to tire penetration is approximately 1.5% of the gross machine weight for each inch of tire penetration (0.6% for each cm of tire penetration). Thus rolling resistance can be calculated using these relationships in the following manner:

RR = 2% of GMW + 0.6% of GMW per cm tire penetration

RR = 2% of GMW + 1.5% of GMW per inch tire penetration

It's *not* necessary for the tires to actually penetrate the road surface for rolling resistance to increase above the minimum. If the road surface flexes under load, the effect is nearly the same — the tire is always running "uphill." Only on very hard, smooth surfaces with a well compacted base will the rolling resistance approach the minimum.

When actual penetration takes place, some variation in rolling resistance can be noted with various inflation pressures and tread patterns.

**NOTE:** When figuring "pull" requirements for tracktype tractors, rolling resistance applies only to the trailed unit's *weight on wheels*. Since tracktype tractors utilize steel wheels moving on steel "roads," a tractor's rolling resistance is relatively constant and is accounted for in the Drawbar Pull rating.

# Mining and Earthmoving

- **Estimating Production Off-the-Job**
- Grade Resistance
- Total Resistance
- Traction

**Grade Resistance** is a measure of the force that must be overcome to move a machine over unfavorable grades (uphill). Grade assistance is a measure of the force that assists machine movement on favorable grades (downhill).

Grades are generally measured in percent slope, which is the ratio between vertical rise or fall and the horizontal distance in which the rise or fall occurs. For example, a 1% grade is equivalent to a 1 m (ft) rise or fall for every 100 m (ft) of horizontal distance; a rise of 4.6 m (15 ft) in 53.3 m (175 ft) equals an 8.6% grade.

 $\frac{4.6 \text{ m (rise)}}{53.3 \text{ m (horizontal distance)}} = 8.6\% \text{ grade}$ 15 ft (rise)

 $\frac{13 \text{ fr}(1180)}{175 \text{ ft (horizontal distance)}} = 8.6\% \text{ grade}$ 

Uphill grades are normally referred to as adverse grades and downhill grades as favorable grades. Grade resistance is usually expressed as a positive (+) percentage and grade assistance is expressed as a negative (-) percentage.

It has been found that for each 1% increment of adverse grade an additional 10 kg (20 lb) of resistance must be overcome for each metric (U.S.) ton of machine weight. This relationship is the basis for determining the Grade Resistance Factor which is expressed in kg/ metric ton (lb/U.S. ton):

Grade Resistance Factor =  $10 \text{ kg/m ton } \times \%$  grade =  $20 \text{ lb/U.S. ton } \times \%$  grade

Grade resistance (assistance) is then obtained by multiplying the Grade Resistance Factor by the machine weight (GMW) in metric (U.S.) tons.

Grade Resistance = GR Factor × GMW in metric (U.S.) tons

Grade resistance may also be calculated using percentage of gross weight. This method is based on the relationship that grade resistance is approximately equal to 1% of the gross machine weight for 1% of grade.

Grade Resistance = 1% of GMW × % grade

Grade resistance (assistance) affects both wheel and track-type machines.

**Total Resistance** is the combined effect of rolling resistance (wheel vehicles) and grade resistance. It can be computed by summing the values of rolling resistance and grade resistance to give a resistance in kilogram (pounds) force.

Total Resistance = Rolling Resistance + Grade Resistance Total resistance can also be represented as consisting completely of grade resistance expressed in percent grade. In other words, the rolling resistance component is viewed as a corresponding quantity of additional adverse grade resistance. Using this approach, total resistance can then be considered in terms of percent grade.

This can be done by converting the contribution of rolling resistance into a corresponding percentage of grade resistance. Since 1% of adverse grade offers a resistance of 10 kg (20 lb) for each metric or (U.S.) ton of machine weight, then each 10 kg (20 lb) of resistance per ton of machine weight can be represented as an additional 1% of adverse grade. Rolling resistance in percent grade and grade resistance in percent grade can then be summed to give Total Resistance in percent or Effective Grade. The following formulas are useful in arriving at Effective Grade.

Rolling Resistance (%) = 2% + 0.6% per cm tire penetration = 2% + 1.5% per inch tire penetration Grade Resistance (%) = % grade Effective Grade (%) = RR (%) + GR (%)

Effective grade is a useful concept when working with Rimpull-Speed-Gradeability curves, Retarder curves, Brake Performance curves, and Travel Time curves.

**Traction** — is the driving force developed by a wheel or track as it acts upon a surface. It is expressed as usable Drawbar Pull or Rimpull. The following factors affect traction: weight on the driving wheel or tracks, gripping action of the wheel or track, and ground conditions. The coefficient of traction (for any roadway) is the ratio of the maximum pull developed by the machine to the total weight on the drivers.

Coeff. of traction = 
$$\frac{\text{Pull}}{\text{weight on drivers}}$$

Therefore, to find the usable pull for a given machine: Usable pull = Coeff. of traction  $\times$  weight on drivers

# Example: Track-Type Tractor

What usable drawbar pull (DBP) can a 26 800 kg (59,100 lb) Track-type Tractor exert while working on firm earth? on loose earth? (See table section for coefficient of traction.)

Answer:
Firm earth — Usable DBP =
$0.90 \times 26800 \text{ kg} = 24120 \text{ kg}$
$(0.90 \times 59,100 \text{ lb} = 53,190 \text{ lb})$
Loose earth — Usable DBP =
$0.60 \times 26\ 800\ \text{kg} = 16\ 080\ \text{kg}$
$(0.60 \times 59,100 \mathrm{lb} = 35,460 \mathrm{lb})$

If a load required 21 800 kg (48,000 lb) pull to move it, this tractor could move the load on firm earth. However, if the earth were loose, the tracks would spin.

**NOTE:** D8R through D11R Tractors may attain higher coefficients of traction due to their suspended undercarriage.

#### Example: Wheel Tractor-Scraper

What usable rimpull can a 621F size machine exert while working on firm earth? on loose earth? The total loaded weight distribution of this unit is:

Drive unit	Scraper unit
wheels: 23 600 kg	wheels: 21 800 kg
(52,000 lb)	(48,000 lb)

Remember, use weight on drivers only. Answer:

Firm earth —	$0.55 \times 23\ 600\ \text{kg} = 12\ 980\ \text{kg}$	
	$(0.55 \times 52,000 \text{ lb} = 28,600 \text{ lb})$	
Loose earth —	$0.45 \times 23\ 600\ \text{kg} = 10\ 620\ \text{kg}$	
	$(0.45 \times 52,000 \mathrm{lb} = 23,400 \mathrm{lb})$	

On firm earth this unit can exert up to 12 980 kg (28,600 lb) rimpull without excessive slipping. However, on loose earth the drivers would slip if more than 10 620 kg (23,400 lb) rimpull were developed.

#### $\bullet \bullet \bullet$

Altitude — Specification sheets show how much pull a machine can produce for a given gear and speed when the engine is operating at rated horsepower. When a standard machine is operated in high altitudes, the engine may require derating to maintain normal engine life. This engine deration will produce less drawbar pull or rimpull.

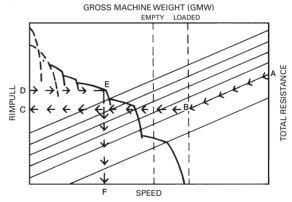
The Tables Section gives the altitude deration in percent of flywheel horsepower for current machines. It should be noted that some turbocharged engines can operate up to 4570 m (15,000 ft) before they require derating. Most machines are engineered to operate up to 1500-2290 m (5000-7500 ft) before they require deration.

The horsepower deration due to altitude must be considered in any job estimating. The amount of power deration will be reflected in the machine's gradeability and in the load, travel, and dump and load times (unless loading is independent of the machine itself). Altitude may also reduce retarding performance. Consult a Cat representative to determine if deration is applicable. Fuel grade (heat content) can have a similar effect of derating engine performance.

The example job problem that follows indicates one method of accounting for altitude deration: by increasing the appropriate components of the total cycle time by a percentage equal to the percent of horsepower deration due to altitude. (i.e., if the travel time of a hauling unit is determined to be 1.00 minute at full HP, the time for the same machine derated to 90% of full HP will be 1.10 min.) This is an approximate method that yields reasonably accurate estimates up to 3000 m (10,000 feet) elevation.

Travel time for hauling units derated more than 10% should be calculated as follows using Rimpull-Speed-Gradeability charts.

1) Determine total resistance (grade plus rolling) in percent.



2) Beginning at point A on the chart follow the total resistance line diagonally to its intersection, B, with the vertical line corresponding to the appropriate gross machine weight. (Rated loaded and empty GMW lines are shown dotted.)

3) Using a straight-edge, establish a horizontal line to the left from point B to point C on the rim-pull scale.

4) Divide the value of point C as read on the rimpull scale by the percent of total horsepower available after altitude deration from the Tables Section. This yields rimpull value D higher than point C.

#### Mining and Earthmoving

**Estimating Production Off-the-Job** 

• Job Efficiency

• Example Problem (English)

5) Establish a horizontal line right from point D. The farthest right intersection of this line with a curved speed range line is point E.

6) A vertical line down from point E determines point F on the speed scale.

7) Multiply speed in kmh by 16.7 (mph by 88) to obtain speed in m/min (ft/min). Travel time in minutes for a given distance in feet is determined by the formula:

Distance in m (ft) Time (min) =Speed in m/min (ft/min)

The Travel Time Graphs in sections on Wheel Tractor-Scrapers and Construction & Mining Trucks can be used as an alternative method of calculating haul and/or return times.

The following example provides a method to manually estimate production and cost. Today, computer programs, such as Caterpillar's Fleet Production and Cost Analysis (FPC), provide a much faster and more accurate means to obtain those application results.

#### Example problem (English)

A contractor is planning to put the following spread on a dam job. What is the estimated production?

#### **Equipment:**

- 11 631G Wheel Tractor-Scrapers
- 2 D9T Tractors with C-dozers
- 2 12H Motor Graders
- 1 825G Tamping Foot Compactor

#### Material:

Description — Sandy clay; damp, natural bed Bank Density - 3000 lb/BCY Load Factor - 0.80 Shrinkage Factor - 0.85 Traction Factor - 0.50 Altitude - 7500 ft

#### Job Layout — Haul and Return:

Job Efficiency is one of the most complex elements of estimating production since it is influenced by factors such as operator skill, minor repairs and adjustments, personnel delays, and delays caused by job layout. An approximation of efficiency, if no job data is available, is given below.

		Efficiency
Operation	Working Hour	Factor
Day	50 min/hr	0.83
Night	45 min/hr	0.75

These factors do not account for delays due to weather or machine downtime for maintenance and repairs. You must account for such factors based on experience and local conditions.

#### 

#### 1. Estimate Payload:

Est. load (LCY)  $\times$  L.F.  $\times$  Bank Density = payload  $31 \text{ LCY} \times 0.80 \times 3000 \text{ lb/BCY} = 74,400 \text{ lb payload}$ 

#### 2. Establish Machine Weight:

Empty Wt.		102,460 lb or 51.27 tons
Wt. of Load	_	74,400 lb or 37.2 tons
Total (GMW)		176,860 lb or 88.4 tons

#### 3. Calculate Usable Pull (traction limitation):

*Loaded:* (weight on driving wheels = 54%) (GMW) Traction Factor  $\times$  Wt. on driving wheels =  $0.50 \times 176.860 \text{ lb} \times 54\% = 47.628 \text{ lb}$ *Empty:* (weight on driving wheels = 69%) (GMW) Traction Factor  $\times$  Wt. on driving wheels =  $0.50 \times 102.460$  lb  $\times 69\% = 35.394$  lb

#### 4. Derate for Altitude:

Check power available at 7500 ft from altitude deration table in the Tables Section.

631G — 100%	12H — 83%
D9T — 100%	825G —100%



#### Total Effective Grade = $RR(\%) \pm GR(\%)$

Sec. A: Total Effective Grade = 10% + 0% = 10%Sec. B: Total Effective Grade = 4% + 0% = 4%Sec. C: Total Effective Grade = 4% + 4% = 8%**Sec. D:** Total Effective Grade = 10% + 0% = 10%

Grade Assistance —

Then adjust if necessary:

Load Time — controlled by D9T, at 100% power, no change. Travel, Maneuver and Spread time — 631G, no change. 5. Compare Total Resistance to Tractive Effort on haul: Grade Resistance —  $GR = lb/ton \times tons \times adverse grade in percent$ Sec. C: = 20 lb/ton  $\times$  88.4 tons  $\times$  4% grade = 7072 lb Rolling Resistance — RR = RR Factor (lb/ton) × GMW (tons) Sec. A: = 200 lb/ton  $\times$  88.4 tons = 17.686 lb Sec. B: =  $80 \text{ lb/ton} \times 88.4 \text{ tons} = 7072 \text{ lb}$ Sec. C: =  $80 \text{ lb/ton} \times 88.4 \text{ tons} = 7072 \text{ lb}$ Sec. D: =  $200 \text{ lb/ton} \times 88.4 \text{ tons} = 17.686 \text{ lb}$ Total Resistance — TR = RR + GRSec. A: = 17.686 lb + $= 17.686 \, lb$ 0 Sec. B: = 7072 lb + $= 7072 \, lb$ 0 Sec. C: =7072 lb + 6496 lb = 14.144 lbSec. D: = 17.686 lb +0  $= 17.686 \, lb$ Check usable pounds pull against maximum pounds pull required to move the 631G. Pull usable ... 47,628 lb loaded Pull required ... 17,686 lb maximum total resistance Estimate travel time for haul from 631G (loaded) travel time curve: read travel time from distance and effective grade. Travel time (from curves): Sec. A: 0.60 min Sec. B: 1.00 Sec. C: 1.20 Sec. D: 0.60 3.40 min

**NOTE:** This is an estimate only; it *does not account for all the acceleration and deceleration time*, therefore it is not as accurate as the information obtained from a computer program.

#### $GA = 20 \text{ lb/ton } \times \text{ tons } \times \text{ negative grade in percent}$ Sec. C: = 20 lb/ton $\times$ 51.2 tons $\times$ 4% grade = 4096 lb Rolling Resistance — RR = RR Factor × Empty Wt (tons) Sec. D: = $200 \text{ lb/ton} \times 51.2 \text{ tons} = 10.240 \text{ lb}$ Sec. C: = $80 \text{ lb/ton} \times 51.2 \text{ tons} = 4091 \text{ lb}$ Sec. B: = $80 \text{ lb/ton} \times 51.2 \text{ tons} = 4091 \text{ lb}$ Sec. A: = $200 \text{ lb/ton} \times 51.2 \text{ tons} = 10.240 \text{ lb}$ Total Resistance — TR = RR - GASec. D: = 10.240 lb -0 = 10.240 lb Sec. C: = $4096 \, \text{lb} - 4096 \, \text{lb} = 0$ Sec. B: = 4096 lb -= 4096 lb 0 Sec. A: = 10.240 lb -0 = 10.240 lb Check usable pounds pull against maximum pounds pull required to move the 631G. Pounds pull usable ... 35,349 lb empty Pounds pull required ... 10.240 lb Estimate travel time for return from 631G empty travel time curve. Travel time (from curves): Sec. A: 0.40 min Sec. B: 0.55 Sec. C: 0.80 Sec. D: 0.40 2.15 min

6. Compare Total Resistance to Tractive Effort on return:

#### 7. Estimate Cycle Time:

Total Travel Time (Haul plus Return)	= 5.55 min
Adjusted for altitude: $100\% \times 5.55$ min	= 5.55 min
Load Time	0.7 min
Maneuver and Spread Time	0.7 min
Total Cycle Time	6.95 min

#### Mining and Earthmoving

**Estimating Production Off-the-Job** 

• Example Problem (English)

• Example Problem (Metric)

#### 8. Check pusher-scraper combinations:

Pusher cycle time consists of load, boost, return and maneuver time. Where actual job data is not available, the following may be used.

Boost time = 0.10 minute Return time = 40% of load time Maneuver time = 0.15 minute Pusher cycle time = 140% of load time + 0.25 minute Pusher cycle time = 140% of 0.7 min + 0.25 minute = 0.98 + 0.25 = 1.23 minute

Scraper cycle time divided by pusher cycle time indicates the number of scrapers which can be handled by each pusher.

$$\frac{6.95 \text{ min}}{1.23 \text{ min}} = 5.65$$

Each push tractor is capable of handling five plus scrapers. Therefore the two pushers can adequately serve the eleven scrapers.

#### 9. Estimate Production:

Cycles/hour	$= 60 \min \div$ Total cycle time
-	$= 60 \text{ min/hr} \div 6.95 \text{ min/cycle}$
	= 8.6 cycles/hr
Estimated load	= Heaped capacity $\times$ L.F.
	$= 31 \text{ LCY} \times 0.80$
	= 24.8 BCY
Hourly unit	= Est. load $\times$ cycles/hr
production	= $24.8 \text{ BCY} \times 8.6 \text{ cycles/hr}$
-	= 213 BCY/hr
Adjusted	= Efficiency factor $\times$ hourly
production	production
	$= 0.83 (50 \text{ min hour}) \times 213 \text{ BCY}$
	= 177 BCY/hr
Hourly fleet	= Unit production $\times$ No. of units
production	$= 177 \text{ BCY/hr} \times 11$
	= 1947 BCY/hr

#### **10. Estimate Compaction:**

Compaction requirement	= S.F. × hourly fleet p = 0.85 × 1947 BCY/h = 1655 CCY/hr	
	pability (given the follo	0/
Compacting		(W)
Average comp	pacting speed, 6 mph	(S)
Compacted li	ift thickness, 7 in	(L)
No. of passes	s required, 3	(P)
825G productio	n =	
$CCY/hr = \frac{W \times W}{M}$	$\frac{\text{S} \times \text{L} \times 16.3}{\text{P}}$ (conve	ersion constant)

$$= \frac{7.4 \times 6 \times 7 \times 16.3}{3}$$
$$= 1688 \text{ CCY/hr}$$

Given the compaction requirement of 1655 CCY/hr, the 825G is an adequate compactor match-up for the rest of the fleet. However, any change to job layout that would increase fleet production would upset this balance.

#### •••

#### Example problem (Metric)

A contractor is planning to put the following spread on a dam job. What is the estimated production?

#### Equipment:

11 — 631G Wheel Tractor-Scrapers

- 2 D9T Tractors with C-dozers
- 2 12H Motor Graders
- 1 825G Tamping Foot Compactor

#### Material:

Description — Sandy clay; damp, natural bed Bank Density — 1770 kg/BCM Load Factor — 0.80 Shrinkage Factor — 0.85 Traction Factor — 0.50 Altitude — 2300 meters

#### Job Layout — Haul and Return:

L	0% Grade
	Sec. A — Cut 150 m RR = 100 kg/t
	Eff. Grade = 10%

Sec. B — Haul 450 m RR = 40 kg/t Eff. Grade = 4%

0% Grade

4% Grade0%Sec. C - Haul 300 mSec. D -<br/>RR = 100RR = 40 kg/tRF. GradeEff. Grade = 8%Eff. Grade

Sec. D — Fill 150 m RR = 100 kg/t Eff. Grade = 10%

0% Grade

#### Total Effective Grade = RR (%) ± GR (%)

Sec. A: Total Effective Grade = 10% + 0% = 10%Sec. B: Total Effective Grade = 4% + 0% = 4%Sec. C: Total Effective Grade = 4% + 4% = 8%Sec. D: Total Effective Grade = 10% + 0% = 10%

#### 1. Estimate Payload:

Est. load (LCM)  $\times$  L.F.  $\times$  Bank Density = payload 24 LCM  $\times$  0.80  $\times$  1770 kg/BCM = 34 000 kg payload

#### 2. Machine Weight:

Empty Wt. -46475 kg or 46.48 metric tons Wt. of Load -34000 kg or 34 metric tons Total (GMW) -80475 kg or 80.48 metric tons

#### 3. Calculate Usable Pull (traction limitation):

Loaded: (weight on driving wheels = 54%) (GMW) Traction Factor × Wt. on driving wheels = 0.50 × 80 475 kg × 54% = 21 728 kg Empty: (weight on driving wheels = 69%) (GMW)

Traction Factor × Wt. on driving wheels =  $0.50 \times 46475 \text{ kg} \times 69\% = 16034 \text{ kg}$ 

#### 4. Derate for Altitude:

Check power available at 2300 m from altitude deration table in the Tables Section.

631G — 100%	12H — 83%
D9T — 100%	825G — 100%

Then adjust if necessary:

*Load Time* — controlled by D9T, at 100% power, no change.

Travel, Maneuver and Spread time - 631G, no change.

**5.** Compare Total Resistance to Tractive Effort on haul: *Grade Resistance* —

- $GR = 10 \text{ kg/metric ton } \times \text{ tons } \times \text{ adverse grade}$ in percent
  - Sec. C: = 10 kg/metric ton  $\times$  80.48 metric tons  $\times$  4% grade = 3219 kg

Rolling Resistance —

- RR = RR Factor (kg/mton) × GMW (metric tons) Sec. A: = 100 kg/metric ton × 80.48 metric tons = 8048 kg
  - Sec. B: =  $40 \text{ kg/metric ton} \times 80.48 \text{ metric tons}$ = 3219 kg
  - Sec. C: =  $40 \text{ kg/metric ton} \times 80.48 \text{ metric tons}$ = 3219 kg
  - Sec. D: =  $100 \text{ kg/metric ton} \times 80.48 \text{ metric tons}$ = 8048 kg

Total Resistance

TR = RR + GR

Sec. A: = 8048 kg + 0 = 8048 kgSec. B: = 3219 kg + 0 = 3219 kgSec. C: = 3219 kg + 3219 kg = 6438 kgSec. D: = 8048 kg + 0 = 8048 kg

Check usable kilogram force against maximum kilogram force required to move the 631G.

Force usable ... 21 728 kg loaded

Force required ... 8048 kg maximum total resistance

Estimate travel time for haul from 631G (loaded) travel time curve; read travel time from distance and effective grade.

Travel time (from curves):

- Sec. A: 0.60 min
- Sec. B: 1.00
- Sec. C: 1.20
- Sec. D: 0.60

3.40 min

**NOTE:** This is an estimate only; it *does not account for all the acceleration and deceleration time*, therefore it is not as accurate as the information obtained from a computer program.

#### 6. Compare Total Resistance to Tractive Effort on return:

Grade Assistance —

- $GA = 10 \text{ kg/mton} \times \text{metric tons} \times \text{negative grade}$ in percent
  - Sec. C: = 10 kg/metric ton  $\times$  46.48 metric tons  $\times$  4% grade = 1859 kg

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#### Mining and Earthmoving

#### Estimating Production Off-the-Job • Example Problem (Metric)

Rolling Resistance — RR = RR Factor × Empty Wt. Sec. D: =  $100 \text{ kg/metric ton } \times 46.48 \text{ metric tons}$ = 4648 kg Sec. C: =  $40 \text{ kg/metric ton} \times 46.48 \text{ metric tons}$ = 1859 kgSec. B: =  $40 \text{ kg/metric ton} \times 46.48 \text{ metric tons}$ = 1859 kgSec. A: =  $100 \text{ kg/metric ton} \times 46.48 \text{ metric tons}$ = 4648 kgTotal Resistance -TR = RR - GASec. D: = 4648 kg - 0 = 4648 kgSec. C: = 1859 kg - 1859 kg = 0Sec. B: = 1859 kg - 0= 1859 kgSec. A: = 4648 kg – 0 = 4648 kgCheck usable kilogram force against maximum force required to move the 631G. Kilogram force usable ... 16 034 kg empty Kilogram force required ... 4645 kg Estimate travel time for return from 631G empty

travel time curve.

Travel time (from curves):

Sec. A: 0.40 min

Sec. B: 0.55

Sec. C: 0.80

Sec. D: 0.40

$$\overline{2.15}$$
 mir

#### 7. Estimate Cycle Time:

Total Travel Time (Haul plus Return)	= 5.55 min
Adjusted for altitude: $100\% \times 5.55$ min	= 5.55 min
Load Time	0.7 min
Maneuver and Spread Time	0.7 min
Total Cycle Time	6.95 min

#### 8. Check pusher-scraper combinations:

Pusher cycle time consists of load, boost, return and maneuver time. Where actual job data is not available, the following may be used.

Boost time = 0.10 minute Return time = 40% of load time Maneuver time = 0.15 minute Pusher cycle time = 140% of load time + 0.25 minute Pusher cycle time = 140% of 0.7 min + 0.25 minute = 0.98 + 0.25 = 1.23 minute

Scraper cycle time divided by pusher cycle time indicates the number of scrapers which can be handled by each pusher.

$$\frac{6.95 \text{ min}}{1.23 \text{ min}} = 5.65$$

Each push tractor is capable of handling five plus scrapers. Therefore the two pushers can adequately serve the eleven scrapers.

#### 9. Estimate Production:

9. Estimate FIG	
Cycles/hour	= 60 min ÷ Total cycle time = 60 min/hr ÷ 6.95 min/cycle
	= 8.6  cycles/hr
Estimated load	= Heaped capacity $\times$ L.F.
Listillated load	$= 24 \text{ LCM} \times 0.80$
	= 19.2  BCM
Hourly unit	= Est. load $\times$ cycles/hr
production	= $19.2 \text{ BCM} \times 8.6 \text{ cycles/hr}$
1	= 165 BCM
Adjusted	= Efficiency factor $\times$ hourly
production	production
	$= 0.83 (50 \text{ min hour}) \times 165 \text{ BCM}$
	= 137 BCM/hour
Hourly fleet	= Unit production $\times$ No. of units
production	
	= 1507 BCM/hr
10. Estimate C	ompaction:
Compaction	
requirement	$= 0.85 \times 1507 \text{ BCM/hr}$
	= 1280 CCM/hr
Compaction ca	pability (given the following):
	width, 2.26 m (W)
Average com	pacting speed, 9.6 km/h (S)
	ift thickness, 18 cm (L)
No. of passes	
825G production	
W	$\frac{1 \times S \times L \times 10}{P}$ (conversion factor)
CCY/hr =	P (conversion factor)
2.26	$\times$ 9.6 $\times$ 18 $\times$ 10
=	3
= 1302	2

Given the compaction requirement of 1280 CCM/h, the 825G is an adequate compactor match-up for the rest of the fleet. However, any change to job layout that would increase fleet production would upset this balance.

•••

#### Mining and Earthmoving

Production Estimating • Loading Match Fuel Consumption and Productivity

#### **PRODUCTION ESTIMATING**

**Loading Match** — Loading tools have a production range that varies with material, bucket configuration, target size, operator skill and load area conditions. The loader/truck matches given in the following table are with the typical number of passes and production range.

Your Cat<sup>®</sup> dealer can provide advice and estimates based on your specific conditions.

#### FUEL CONSUMPTION AND PRODUCTIVITY

Fuel efficiency is the term used to relate fuel consumption and machine productivity. It is expressed in units of material moved per volume of fuel consumed. Common units are cubic meters or tonnes per liter of fuel (cubic yards or tons/gal). Determining fuel efficiency requires measuring both fuel consumption and production.

Measuring fuel consumption involves tapping into the vehicle's fuel supply system — without contaminating the fuel. The amount of fuel consumed during operation is then measured on a weight or volumetric basis and correlated with the amount of work the machine has done. Cat machines equipped with VIMS<sup>™</sup> system can record fuel consumed with relative accuracy, given the engine is performing close to specifications.

#### Cat Earthmoving and Mining Systems Production/50 Min. Hr.

Please refer to the individual machine section for production targets.

#### Cat Aggregate Systems Production/50 Min. Hr.

Please refer to the individual machine section for production targets.

#### Mining and Earthmoving

#### FORMULAS AND RULES OF THUMB

Production, hourly	= Load (BCM)/cycle × cycles/hr
	= Load (BCY)/cycle × cycles/hr
	100%
Load Factor (L.F.)	$= \frac{100\% + \% \text{ swell}}{100\% + \% \text{ swell}}$
Load (bank measure)	= Loose cubic meters $(LCM) \times L.F.$
	= Loose cubic yards (LCY) × L.F.
	Compacted cubic meters (or yards)
Shrinkage Factor (S.F.)	Bank cubic meters (or yards)
Density	= Weight/Unit Volume
	Weight of load
Load (bank measure)	= Bank density
Rolling Resistance Fac = $20 \text{ kg/t} + (6 \text{ kg/t/c})$ = $40 \text{ lb/ton} + (30 \text{ lb/c})$	$m \times cm$ )
Rolling Resistance	
= RR Factor (kg/t) = RR Factor (lb/ton	
Rolling Resistance (gen	
	6% of GMW per cm tire
penetration = 2% of GMW + 1. penetration	5% of GMW per inch tire
vertical	change in elevation (rise)
% Grade = corre	esponding horizontal distance (run)
Grade Resistance Facto	$pr = 10 \text{ kg/m ton } \times \% \text{ grade}$ = 20 lb/ton $\times \% \text{ grade}$
	R Factor (kg/t) × GMW (tons) R Factor (lb/ton) × GMW (tons)
Grade Resistance = 1%	o of GMW $\times$ % grade

Total Resistance = Rolling Resistance (kg or lb) + Grade Resistance (kg or lb) Total Effective Grade (%) = RR(%) + GR(%)*Usable pull (traction limitation)* = Coeff. of traction  $\times$  weight on drivers = Coeff. of traction  $\times$  (Total weight  $\times$  % on drivers) *Pull required* = Rolling Resistance + Grade Resistance = Total Resistance *Total Cycle Time* = Fixed time + Variable time Fixed time: See respective machine production section. *Variable time* = Total haul time + Total return time Travel Time =  $\frac{1}{\text{Speed (m/min)}}$  $= \frac{\text{Distance (ft)}}{\text{Speed (fpm)}}$ 60 min/hr  $Cycles per hour = \frac{1}{\text{Total cycle time (min/cycle)}}$ Adjusted production = Hourly production  $\times$ Efficiency factor Hourly production required No. of units required =Unit hourly production No. of scrapers a Scraper cycle time pusher will load = Pusher cycle time Pusher cycle time (min) = 1.40 Load time (min) + 0.25 min GMW (kg) × Total Effective Grade  $\times$  Speed (km/h) Grade Horsepower = 273.75 GMW (lb) × Total Effective Grade  $\times$  Speed (mph) = -375

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#### SWELL - VOIDS - LOAD FACTORS

SWELL (%)	VOIDS (%)	LOAD FACTOR
5	4.8	0.952
10	9.1	0.909
15	13.0	0.870
20	16.7	0.833
25	20.0	0.800
30	23.1	0.769
35	25.9	0.741
40	28.6	0.714
45	31.0	0.690
50	33.3	0.667
55	35.5	0.645
60	37.5	0.625
65	39.4	0.606
70	41.2	0.588
75	42.9	0.571
80	44.4	0.556
85	45.9	0.541
90	47.4	0.526
95	48.7	0.513
100	50.0	0.500

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Throughout this document, references to Tier 4 Interim/Stage IIIB/Japan 2011 (Tier 4 Interim) include U.S. EPA Tier 4 Interim, EU Stage IIIB, and Japan 2011 (Tier 4 Interim) equivalent emission standards. References to Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) include U.S. EPA Tier 4 Final, EU Stage IV, and Japan 2014 (Tier 4 Final) emission standards.

Throughout this document, references to Tier I/Stage I include U.S. EPA Tier 1 and EU Stage I equivalent emission standards. References to Tier 2/Stage II/Japan 2001 (Tier 2) equivalent include U.S. EPA Tier 2, EU Stage II, and Japan 2001 (Tier 2) equivalent emission standards. References to Tier 3/Stage IIIA/Japan 2006 (Tier 3) equivalent include U.S. EPA Tier 3, EU Stage IIIA, and Japan 2006 (Tier 3) equivalent emission standards.

Loose Material	Fill Factor
Mixed Moist Aggregates	95-100%
Uniform Aggregates up to 3 mm (1/8")	95-100
3 mm-9 mm (1/8"-3/8")	90-95
12 mm-20 mm (1/2"-3/4")	85-90
24 mm (1") and over	85-90
Blasted Rock	
Well Blasted	80-95%
Average Blasted	75-90
Poorly Blasted	60-75
Other	
Rock Dirt Mixtures	100-120%
Moist Loam	100-110
Soil, Boulders, Roots	80-100
Cemented Materials	85-95

**NOTE:** Loader bucket fill factors are affected by bucket penetration, breakout force, rack back angle, bucket profile and ground engaging tools such as bucket teeth or bolt-on replaceable cutting edges.

NOTE: For bucket fill factors for hydraulic excavators, see bucket payloads in the hydraulic excavator section.

NOTE: Above values are not valid for Hydraulic Mining Shovels.

#### ANGLE OF REPOSE OF VARIOUS MATERIALS

	ANGLE BETWEEN HORIZONTAL AND SLOPE OF HEAPED PILE		
MATERIAL	Ratio	Degrees	
Coal, industrial	1.4:1-1.3:1	35-38	
Common earth, Dry	2.8:1-1.0:1	20-45	
Moist	2.1:1-1.0:1	25-45	
Wet	2.1:1-1.7:1	25-30	
Gravel, Round to angular	1.7:1-0.9:1	30-50	
Sand & clay	2.8:1-1.4:1	20-35	
Sand, Dry	2.8:1-1.7:1	20-30	
Moist	1.8:1-1.0:1	30-45	
Wet	2.8:1-1.0:1	20-45	

#### **TYPICAL ROLLING RESISTANCE FACTORS**

Various tire sizes and inflation pressures will greatly reduce or increase the rolling resistance. The values in this table are approximate, particularly for the track and track + tire machines. These values can be used for estimating purposes when specific performance information on particular equipment and given soil conditions is not available. See Mining and Earthmoving Section for more detail.

	ROL	LING RE PERCE		NCE,
	Tii	res	Track	Track
UNDERFOOTING	Bias	Radial	**	+Tires
A very hard, smooth roadway, concrete, cold asphalt or dirt sur- face, no penetration or flexing A hard, smooth, stabilized surfaced	1.5%*	1.2%	0%	1.0%
roadway without penetration under load, watered, maintained A firm, smooth, rolling roadway	2.0%	1.7%	0%	1.2%
with dirt or light surfacing, flexing slightly under load or undulat- ing, maintained fairly regularly, watered	3.0%	2.5%	0%	1.8%
no water, 25 mm (1") tire pen- etration or flexing A dirt roadway, rutted or flexing	4.0%	4.0%	0%	2.4%
under load, little maintenance, no water, 50 mm (2") tire pen- etration or flexing	5.0%	5.0%	0%	3.0%
bilization, 100 mm (4") tire pen- etration or flexing	8.0%	8.0%	0%	4.8%
Loose sand or gravel	10.0%	10.0%	2%	7.0%
Rutted dirt roadway, soft under travel, no maintenance, no sta- bilization, 200 mm (8") tire pen- etration and flexing	14.0%	,	5%	10.0%
way, 300 mm (12") tire penetra- tion, no flexing	20.0%	20.0%	8%	15.0%

\*Percent of combined machine weight.

\*\*Assumes drag load has been subtracted to give Drawbar Pull for good to moderate conditions. Some resistance added for very soft conditions.

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	LO	OSE	BA	NK	LOAD
WEIGHT* OF MATERIALS	kg/m³	lb/yd <sup>3</sup>	kg/m³	lb/yd³	FACTORS
Basalt	1960	3300	2970	5000	0.67
Bauxite, Kaolin	1420	2400	1900	3200	0.75
Caliche	1250	2100	2260	3800	0.55
Carnotite, uranium ore	1630	2750	2200	3700	0.74
Cinders	560	950	860	1450	0.66
Clay — Natural bed	1660	2800	2020	3400	0.82
Dry	1480	2500	1840	3100	0.81
Wet	1660	2800	2080	3500	0.80
Clay & gravel – Dry	1420	2400	1660	2800	0.85
Wet	1540	2600	1840	3100	0.85
Coal — Anthracite, Raw	1190	2000	1600	2700	0.74
Washed	1100	1850			0.74
Ash, Bituminous Coal	530-650	900-1100	590-890	1000-1500	0.93
Bituminous, Raw	950	1600	1280	2150	0.74
Washed	830	1400	.200		0.74
Decomposed rock –	000	1100			0.74
75% Rock, 25% Earth	1960	3300	2790	4700	0.70
50% Rock, 50% Earth	1720	2900	2280	3850	0.75
25% Rock, 75% Earth	1570	2650	1960	3300	0.80
Earth – Dry packed	1570	2550	1900	3200	0.80
Wet excavated	1600	2700	2020	3400	0.79
Loam	1250	2100	1540	2600	0.79
Granite – Broken		2800		4600	
	1660		2730		0.61
Gravel – Pitrun.	1930	3250	2170	3650	0.89
Dry	1510	2550	1690	2850	0.89
Dry 6-50 mm (1/4"-2")	1690	2850	1900	3200	0.89
Wet 6-50 mm (1/4"-2")	2020	3400	2260	3800	0.89
Gypsum – Broken	1810	3050	3170	5350	0.57
Crushed	1600	2700	2790	4700	0.57
Hematite, iron ore, high grade	1810-2450	4000-5400	2130-2900	4700-6400	0.85
Limestone – Broken	1540	2600	2610	4400	0.59
Crushed	1540	2600	-	-	-
Magnetite, iron ore	2790	4700	3260	5500	0.85
Pyrite, iron ore	2580	4350	3030	5100	0.85
Sand — Dry, loose	1420	2400	1600	2700	0.89
Damp	1690	2850	1900	3200	0.89
Wet	1840	3100	2080	3500	0.89
Sand & clay — Loose	1600	2700	2020	3400	0.79
Compacted	2400	4050			
Sand & gravel — Dry	1720	2900	1930	3250	0.89
Wet	2020	3400	2230	3750	0.91
Sandstone	1510	2550	2520	4250	0.60
Shale	1250	2100	1660	2800	0.75
Slag — Broken	1750	2950	2940	4950	0.60
Snow – Dry	130	220			
Wet	520	860			
Stone – Crushed	1600	2700	2670	4500	0.60
Taconite	1630-1900	3600-4200	2360-2700	5200-6100	0.58
Top Soil	950	1600	1370	2300	0.70
Taprock – Broken	1750	2950	2610	4400	0.67
Wood Chips**	_	_		_	_
			1		

\*Varies with moisture content, grain size, degree of compaction, etc. Tests must be made to determine exact material characteristics.

\*\*Weights of commercially important wood species can be found in the last pages of the Logging & Forest Products section. To obtain wood weights use the following equations:  $lb/yd^3 = (lb/ft^3) \times .4 \times 27$ kg/m<sup>3</sup> = (kg/m<sup>3</sup>) × .4

#### **ALTITUDE DERATION**

#### PERCENT FLYWHEEL HORSEPOWER AVAILABLE AT SPECIFIED ALTITUDES

	0-760 m	760-1500 m	1500-2300 m	2300-3000 m	3000-3800 m	3800-4600 m
MODEL	(0-2500')	(2500-5000')	(5000-7500')	(7500-10,000')	(10,000-12,500')	(12,500-15,000')
D3K XL	100	100	100	100	88	85
D3K LGP	100	100	100	100	88	85
D4K XL	100	100	100	100	88	85
D4K LGP	100	100	100	100	88	85
D5K XL	100	100	100	100	88	85
D5K LGP	100	100	100	100	88	85
D5R2 XL & LGP	100	100	100	100	N/A	N/A
D5T XL	100	100	100	100	N/A	N/A
D6K2 XL & LGP	100	100	100	100	N/A	N/A
D6N XL & LGP*	100	100	100	100	100	100
D6R Series 3 (AII)	100	100	100	100	92	84
D6R2	100	100	100	100	92	84
D6T <sup>1</sup>	100	100	100	100	100	100
D7E	100	100	100	100	99	95
D7R	100	100	100	100	100	96
D8R	100	100	100	93	85	77
D8T	100	100	100	100	100	100
D9R	100	100	100	93	85	77
D9T <sup>1</sup>	100	100	100	100	100	100
D9T <sup>2</sup>	100	100	100	99	92	83
D9T <sup>3</sup>	100	100	100	100	100	100
D9T⁴	100	100	100	98	91	80
D9T⁵	100	100	100	100	99	88
D10T2 <sup>5</sup> **	100	100	100	100	100	100
D10T2 <sup>6</sup> **	100	100	100	100	100	100
D11T/D11T CD <sup>5</sup> ***	100	100	100	100	100	86
D11T/D11T CD6***	100	100	100	100	83	67

\*Information not available at time of printing. \*\*In forward gears.

\*\*\*D11T - High altitude arrangement available.

<sup>1</sup> Meets Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards.
 <sup>2</sup> Meets Tier 3 equivalent emission standards, North America — Standard Altitude.
 <sup>3</sup> Meets Tier 3 equivalent emission standards, North America — High Altitude.

<sup>4</sup>Meets Stage IIIA/Japan 2006 (Tier 3) equivalent emission standards.

<sup>5</sup>Meets Tier 2/Stage II/Japan 2001 (Tier 2) equivalent emission standards.

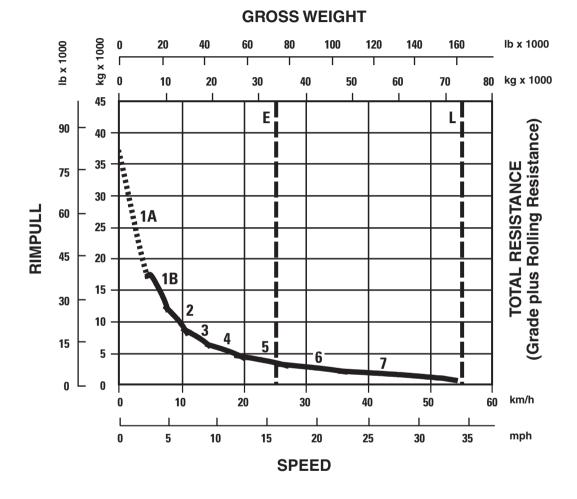
<sup>6</sup>Meets Tier 4 Final.

ALTITUDE	DERATION	(Continued)
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	0-760 m	760-1500 m	1500-2300 m	2300-3000 m	3000-3800 m	3800-4600 m
MODEL	(0-2500')	(2500-5000')	(5000-7500')	(7500-10,000')	(10,000-12,500')	(12,500-15,000')
120K	100	100	100	97	92	85
120K2	100	100	100	97	92	85
120M	100	100	100	100	95	88
120M AWD	100	98	96	94	89	85
120M2	100	100	100	100	94	82
120M2 AWD	100	100	100	100	94	82
12K	100	99	98	94	89	85
12M	100	100	100	100	95	88
12M2	100	100	100	100	100	100
12M2 AWD	100	100	100	100	100	99
12M3	100	100	100	100	100	100
12M3 AWD	100	100	100	100	100	98
140K	100	100	100	100	92	90
140K2	100	100	100	100	92	90
140M	100	100	100	100	92	90
140M AWD	100	100	100	100	92	90
140M2	100	100	100	100	100	99
140M2 AWD	100	100	100	100	97	93
140M3	100	100	100	100	100	98
140M3 AWD	100	100	100	100	100	90
160K	100	100	100	100	92	90
160M	100	100	100	100	92	90
160M AWD	100	100	100	100	92	90
160M2	100	100	100	99	95	91
160M2 AWD	100	100	100	99	94	88
160M3	100	100	100	100	100	90
160M3 AWD	100	100	100	100	98	83
14M3*	100	100	100	100	100	97
14M3**	100	100	100	100	100	100
14M3***	100	100	100	100	100	100
16M3*	100	100	100	100	100	100
16M3**	100	100	100	100	100	95
16M3***	100	100	100	100	100	100
18M3*	100	100	100	100	100	100
18M3**	100	100	100	100	100	95
18M3***	100	100	100	100	100	100
24M B9K**	100	100	95	90	80	70
24M B9K Unregulated	100	100	100	100	90	85
24M B93**	100	100	100	98	89	75
24M B93*	100	100	100	100	91	86

\*Meets Tier 2/Stage II/Japan 2001 (Tier 2) equivalent emission standards. \*\*Meets Tier 3/Stage IIIA/Japan 2006 (Tier 3) equivalent emission standards. \*\*\*Meets Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards.

#### STANDARD\*



KEY

- 1A 1st Gear (Converter Drive)
- 1B 1st Gear (Direct Drive)
  - 2 2nd Gear
  - 3 3rd Gear
  - 4 4th Gear
  - 5 5th Gear
  - 6 6th Gear
  - 7 7th Gear

KE

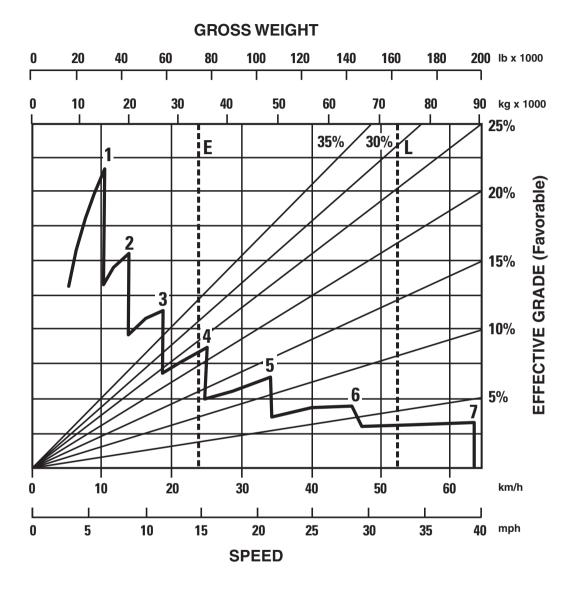
E — Empty 34 393 kg (75,824 lb)

L — Loaded 73 975 kg (163,087 lb)

\*At sea level.

10

740B Series Brake/Retarder Performance Curve • 29.5R25 Tires

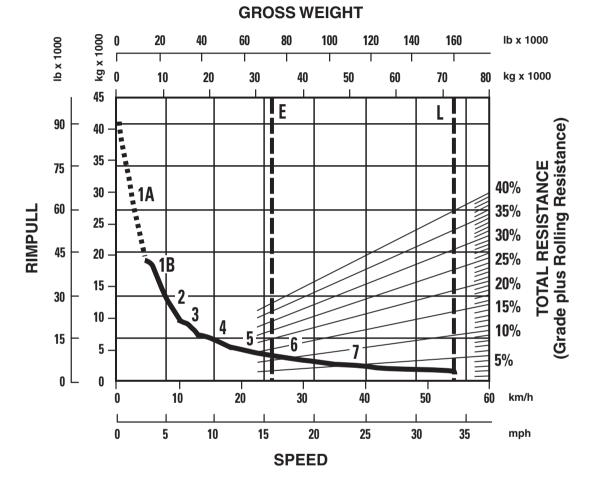


#### KEY

- 1 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

- KEY
- E Empty 34 393 kg (75,824 lb)
- L Loaded 73 975 kg (163,087 lb)

#### STANDARD\*



#### KEY

- 1A 1st Gear (Converter Drive)
- 1B 1st Gear (Direct Drive)
  - 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

K	E	Y
	_	-

E — Empty 34 127 kg (75,237 lb) L — Loaded 73 709 kg (162,500 lb)

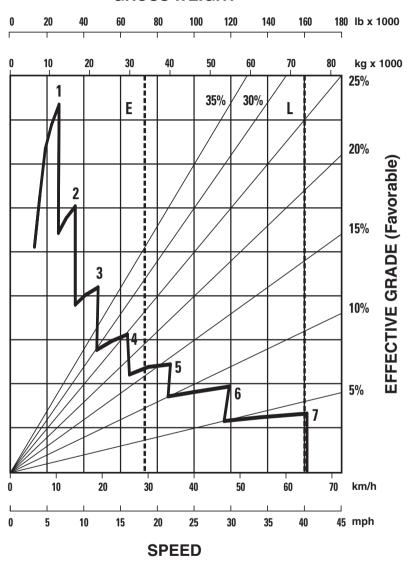
\*At sea level.

**Articulated Trucks** 

740B Series Brake/Retarder Performance Curve

• 29.5R25 Tires

• Tier 2



**GROSS WEIGHT** 

#### KEY

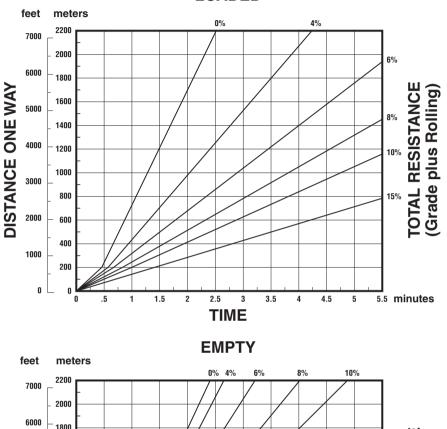
- 1 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

KEY

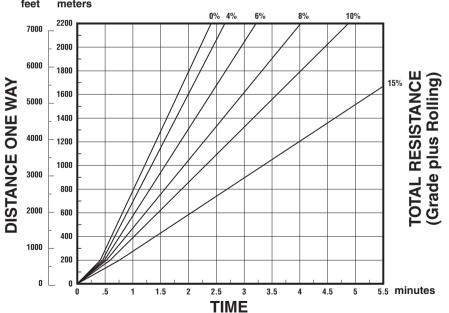
E — Empty 34 127 kg (75,237 lb)

L — Loaded 73 709 kg (162,500 lb)

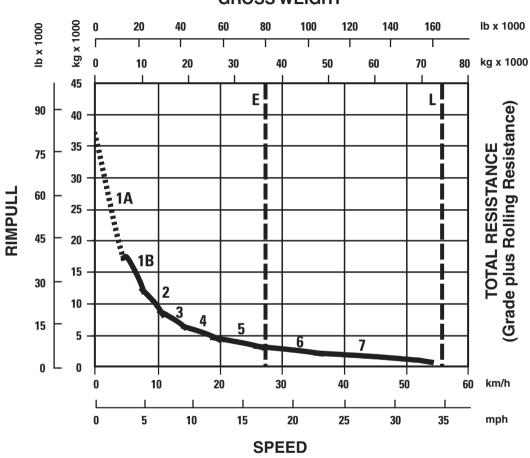
740B Series Travel Time — Loaded/Empty • 29.5R25 Tires • Preliminary Information



LOADED



#### STANDARD\*



### **GROSS WEIGHT**

#### KEY

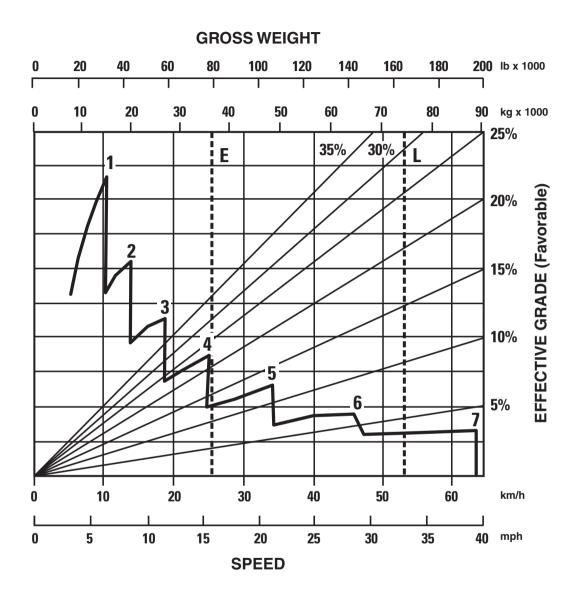
- 1A 1st Gear (Converter Drive)
- 1B 1st Gear (Direct Drive)
  - 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

#### KEY

E — Empty 36 895 kg (81,340 lb)

L — Loaded 74 895 kg (165,115 lb)

\*At sea level.



#### KEY

- 1 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

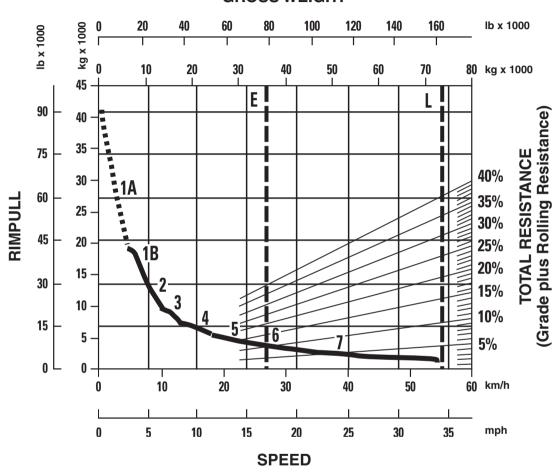
- KEY
- E Empty 36 895 kg (81,340 lb)
- L Loaded 74 895 kg (165,115 lb)

#### **Articulated Trucks**

740B EJ Series Rimpull-Speed-Gradeability

- 29.5R25 Tires
- Tier 2

#### STANDARD\*



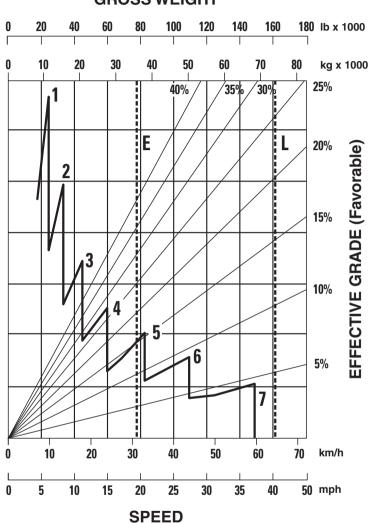
**GROSS WEIGHT** 

#### KEY

- 1A 1st Gear (Converter Drive)
- 1B 1st Gear (Direct Drive)
  - 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

KEY
E — Empty 36 629 kg (80,753 lb)
L — Loaded 74 629 kg (164,529 lb)

\*At sea level.



#### GROSS WEIGHT

#### KEY

- 1 1st Gear
- 2 2nd Gear
- 3 3rd Gear
- 4 4th Gear
- 5 5th Gear
- 6 6th Gear
- 7 7th Gear

- KEY
- E Empty 36 629 kg (80,753 lb)
- L Loaded 74 629 kg (164,529 lb)

Specifications B Series Articulated Trucks





		•				•
MODEL	735B	Series	740B	Series	740B e	J Series
Gross Power — SAE J1995	337 kW	452 hp	365 kW	489 hp	365 kW	489 hp
Net Power — SAE J1349	326 kW	437 hp	354 kW	474 hp	354 kW	474 hp
Net Power — ISO 14396	333 kW	447 hp	361 kW	484 hp	361 kW	484 hp
Operating Weight (Empty)*	32 473 kg	71,591 lb	34 393 kg	75,824 lb	36 895 kg	81,340 lb
Top Speed (Loaded)	51.1 km/h	31.7 mph	54.7 km/h	34 mph	54.7 km/h	34 mph
GMW — Gross Machine Weight	65 173 kg	143,682 lb	73 975 kg	163,087 lb	74 895 kg	165,115 lb
Distribution Empty:	_		-		-	
Front	61	1.9%	60	.1%	58	8.0%
Center	20	).2%	21.0%		22	2.0%
Rear	18	3.0%	18	9.9%	20	0.0%
Distribution Loaded:						
Front	36	5.0%	35	5.0%	30	0.8%
Center	33	3.0%	33	3.0%	35	5.1%
Rear	32	2.0%	32	2.0%	34	1.1%
Max. Capacity**	32.7 t	36 T	39.5 t	43.5 T	38 t	42 T
Struck (SAE)	14.7 m <sup>3</sup>	19.2 yd <sup>3</sup>	18.5 m³	24.2 yd <sup>3</sup>	17.8 m <sup>3</sup>	23.3 yd <sup>3</sup>
Heaped (2:1) (SAE)	19.7 m <sup>3</sup>	25.8 yd <sup>3</sup>	24 m³	31.4 yd³	23.1 m <sup>3</sup>	30.2 yd <sup>3</sup>
Tailgate Heaped SAE 2:1	20.9 m <sup>3</sup>	27.3 yd <sup>3</sup>	25.5 m <sup>3</sup>	33.5 yd <sup>3</sup>		_
Tailgate Struck	15.2 m <sup>3</sup>	19.9 yd³	19.5 m <sup>3</sup>	25.5 yd <sup>3</sup>		_
Engine Model	ACE	RT C15	ACE	RT C15	ACERT C15	
No. Cylinders		6		6		6
Bore	137 mm	5.4"	137 mm	5.4"	137 mm	5.4"
Stroke	171.5 mm	6.75"	171.5 mm	6.75"	171.5 mm	6.75"
Displacement	15.2 L	926 in <sup>3</sup>	15.2 L	926 in <sup>3</sup>	15.2 L	926 in <sup>3</sup>
Tires, Front, Center, Rear	26.5R2	5 Radials	29.5R2	5 Radials	29.5R2	5 Radials
Circular Clearance Diameter	17.2 m	56'5"	17.2 m	56'5"	18.2 m	59'6"
Fuel Tank Refill Capacity	565 L	149.3 U.S. gal	565 L	149.3 U.S. gal	565 L	149.3 U.S. gal
General Dimensions (Empty):						
Height to Cab Top	3.7 m	12'1"	3.75 m	12'3"	3.75 m	12'3"
Wheel Base (Front-Center of Bogie)	5.23 m	17'2"	5.23 m	17'2"	5.58 m	18'3"
Overall Length	10.99 m	36'1"	10.99 m	36'1"	11.69 m	38'4"
Loading Height (Empty)	2.98 m	9'8"	3.2 m	10'6"	3.07 m	10'1"
Height at Full Dump	6.81 m	22'4"	7.1 m	23'4"		_
Body Length	6.09 m	20'0"	6.3 m	20'6"	6.73 m	22'1"
Width (Operating — Over Mirrors)	3.82 m	12'6"	3.82 m	12'6"	3.82 m	12'6"
Front Tire Tread	2.69 m	8'8"	2.69 m	8'8"	2.69 m	8'8"

\*Includes coolant, lubricant and full fuel tank. \*\*Rating dependent on optional equipment. Maximum gross weight (empty weight plus payload) should not be exceeded.

# B Series Specifications • Tier 2

	77		77		77	
MODEL	735B	Series	740B	Series	740B E	J Series
Gross Power — SAE J1995	336 kW	450 hp	361 kW	484 hp	361 kW	484 hp
Net Power — SAE J1349	326 kW	438 hp	352 kW	472 hp	352 kW	472 hp
Net Power — ISO 9249	330 kW	442 hp	356 kW	477 hp	356 kW	477 hp
Net Power — EEC 80/1269	330 kW	442 hp	356 kW	477 hp	356 kW	477 hp
Operating Weight (Empty)*	32 206 kg	71,002 lb	34 127 kg	75,237 lb	36 629 kg	80,753 lb
Top Speed (Loaded)	51.1 km/h	31.7 mph	54.7 km/h	34 mph	54.7 km/h	34 mph
GMW — Gross Machine Weight	64 906 kg	143,093 lb	73 709 kg	162,500 lb	74 629 kg	164,529 lb
Distribution Empty:						
Front	6	1.2%	59	9.5%	57	.4%
Center	20	0.5%	21	.3%	22	2.3%
Rear	18	3.3%	19	9.2%	20	0.3%
Distribution Loaded:						
Front	3	5.6%	34	1.6%	30	).4%
Center	32	2.8%	33.2%		35	5.3%
Rear	3	1.7%	32	2.2%	34.3%	
Max. Capacity**	32.7 t	36 T	39.5 t	43.5 T	38 t	42 T
Struck (SAE)	14.7 m <sup>3</sup>	19.2 yd³	18.5 m³	24.2 yd³	17.8 m³	23.3 yd <sup>3</sup>
Heaped (2:1) (SAE)	19.7 m <sup>3</sup>	25.8 yd³	24 m³	31.4 yd³	23.1 m <sup>3</sup>	30.2 yd³
Tailgate Heaped SAE 2:1	20.9 m <sup>3</sup>	27.3 yd³	25.5 m <sup>3</sup>	33.5 yd³		_
Tailgate Struck	15.2 m <sup>3</sup>	19.9 yd³	19.5 m³	25.5 yd <sup>3</sup>		_
Engine Model	ACE	RT C15	ACE	RT C15	ACE	RT C15
No. Cylinders		6		6		6
Bore	137 mm	5.4"	137 mm	5.4"	137 mm	5.4"
Stroke	171.5 mm	6.75"	171.5 mm	6.75"	171.5 mm	6.75"
Displacement	15.2 L	926 in <sup>3</sup>	15.2 L	926 in <sup>3</sup>	15.2 L	926 in <sup>3</sup>
Tires, Front, Center, Rear	26.5R2	5 Radials	29.5R2	5 Radials	29.5R2	5 Radials
Circular Clearance Diameter	17.2 m	56'5"	17.2 m	56'5"	18.2 m	59'6"
Fuel Tank Refill Capacity	565 L	149.3 U.S. gal	565 L	149.3 U.S. gal	565 L	149.3 U.S. gal
General Dimensions (Empty):		-		-		
Height to Cab Top	3.7 m	12'1"	3.75 m	12'3"	3.75 m	12'3"
Wheel Base (Front-Center of Bogie)	5.23 m	17'2"	5.23 m	17'2"	5.58 m	18'3"
Overall Length	10.99 m	36'1"	10.99 m	36'1"	11.69 m	38'4"
Loading Height (Empty)	2.98 m	9'8"	3.2 m	10'6"	3.07 m	10'1"
Height at Full Dump	6.81 m	22'4"	7.1 m	23'4"		_
Body Length	6.09 m	20'0"	6.3 m	20'6"	6.73 m	22'1"
Width (Operating — Over Mirrors)	3.82 m	12'6"	3.82 m	12'6"	3.82 m	12'6"
Front Tire Tread	2.69 m	8'8"	2.69 m	8'8"	2.69 m	8'8"

\*Includes coolant, lubricant and full fuel tank.

\*\*Rating dependent on optional equipment. Maximum gross weight (empty weight plus payload) should not be exceeded.

### Construction & Mining Trucks

Specifications





MODEL	77	7D†	77	7F
Body Type	Dual Slo	pe Lined	Dual Slo	pe Lined
Target Gross Machine Weight §	163 360 kg	360,143 lb	163 293 kg	360,000 lb
Basic Machine Weight*	33 951 kg	74,849 lb	33 438 kg	73,718 lb
Attachments**	17 377 kg	38,310 lb	17 114 kg	37,730 lb
Body Weight without Liners***	16 070 kg	35,428 lb	16 420 kg	36,200 lb
Full Liner	5432 kg	11,975 lb	5767 kg	12,714 lb
Operating Machine Weight	72 830 kg	160,562 lb	72 739 kg	160,360 lb
Debris (2% of Operating Machine Weight)	1457 kg	3211 lb	1455 kg	3207 lb
Empty Operating Weight	74 287 kg	163,774 lb	74 194 kg	163,568 lb
Target Payload §	90.9 m tons	100 tons	90.7 m tons	100 tons
Capacity:				
Heaped (2:1) (SAE) Base Body	60.1 m <sup>3</sup>	78.6 yd <sup>3</sup>	60.2 m <sup>3</sup>	78.8 yd <sup>3</sup>
Distribution Empty:				
Front	4	7%	4	5%
Rear	5	3%	5	5%
Distribution Loaded:				
Front	3	3%	3	3%
Rear	6	7%	6	7%
Engine Model	3508	BEUI	C32 /	ACERT
Number of Cylinders		8	1	2
Bore	170 mm	6.7"	145 mm	5.7"
Stroke	190 mm	7.5"	162 mm	6.4"
Displacement	34.5 L	2105 in <sup>3</sup>	32.1 L	1959 in <sup>3</sup>
Net Power	699 kW	938 hp	700 kW	938 hp
Gross Power	746 kW	1000 hp	758 kW	1016 hp
Standard Tires	27.00-l	R49 (E4)	27.00F	849 (E4)
Machine Clearance Turning Circle	28.4 m	93'2"	28.4 m	93'2"
Fuel Tank Refill Capacity	1137 L	300 U.S. gal	1136 L	300 U.S. gal
Top Speed (Loaded)	60.4 km/h	39.9 mph	64.5 km/h	40.1 mph
GENERAL DIMENSIONS (Empty):				
Height to Canopy Rock Guard Rail	5.14 m	16'10"	5.17 m	17'0"
Wheelbase	4.57 m	15'0"	4.56 m	15'0"
Overall Length (Base Body)	9.78 m	32'1"	10.54 m	34'7"
Loading Height (Base Body)	4.38 m	14'4"	4.38 m	14'4"
Height at Full Dump	10.06 m	33'0"	10.33 m	33'11"
Body Length (Target Length)	7.23 m	23'9"	9.83 m	32'3"
Width (Operating)	6.11 m	20'0"	6.49 m	21'4"
Width (Shipping)***	3.51 m	11'5"	3.51 m	11'5"
Front Tire Tread	4.17 m	13'8"	4.17 m	13'8"

\*See Weight Definitions and Relations on 9-11. Note: No mandatory or optional attachments or fuel. \*\*Typical selection of mandatory and optional attachments. \*\*\*Data provided is for a representative body and liner package. Several dual slope, flat floor, and mine specific design (MSD) bodies and liner packages are available. All weights, capacities, and dimensions are dependent on the machine configuration (body type, attachments, tires, and optional equipment selected).

S Reference Caterpillar's latest 10/10/20 Payload Policy for information on gross machine operating weight and target payload. † India sourced, only available in Asia Pacific.

# **Appendix D.5**

# **Direct Quotes**

#### **Fred Charles**

From:	Fawcett, Clayton <cfawcett@conteches.com></cfawcett@conteches.com>
Sent:	Tuesday, February 5, 2019 9:25 AM
То:	Fred Charles
Subject:	RE: confirm or update costs for ACBs (reply requested by end of day Monday Feb 4, if possible)

Fred,

Hello and good morning. I hope this message finds you doing well. I made it back in to the office this morning and saw your e-mails.

Material and installation costs we discussed in September are still good. Please feel free to use those to complete your estimate.

Regarding your questions:

- 1 Yes, installation costs are the same for both downchutes and dissipator basins.
- 2 Yes, installation cost does include crushed stone infill (purchase and install)

Regarding your follow up e-mail with questions pertaining to cut-off walls.

- 1 Cut-off walls are not always required, however they are a good idea. The use of cut-off walls has increased in the last five years and as such, they are now recommended for inclusion at dissipator basins.
- 2 Material and installation costs for the installation of a cut-off wall <u>are not</u> included in the costs previously discussed and should be added.

I hope this information helps. Feel free to contact me directly with any additional questions.

Regards,

Clayton Fawcett PE (co) Armortec Area Manager - West

CONTECH Engineered Solutions 970-290-2971 (cell) <u>cfawcett@conteches.com</u>

From: Fred Charles [mailto:fcharles@telesto-inc.com]
Sent: Sunday, February 3, 2019 3:28 PM
To: Fawcett, Clayton <CFawcett@conteches.com>
Subject: confirm or update costs for ACBs (reply requested by end of day Monday Feb 4, if possible)

Hi Clayton. This email is a follow up to our email correspondence in September 2018 regarding material and installation costs for articulated concrete blocks (ACBs) used for downdrains at Chino. We've been using the cost info you passed along to me at that time. Now, I need you to confirm those costs or update them. We will use this information in a reclamation cost estimate (financial assurance for closure bonding) which we are currently finalizing for Chino and other mines in that area.

#### <u>Costs</u>

As we had discussed, the material costs for ACBs (includes non-woven geotextile and microgrid/geogrid) are as follows:

\$7.42/square foot (Block Class 40T, for the channel of each downdrain)

- \$10.65/square foot (Block Class 70T, for the dissipation basin at bottom of each downdrain)

Also, you quoted \$4.63/square foot for installation costs, which covers the following installation process: off-load the truck and place delivered ACBs in temporary storage area, fine grade base/subgrade soils, compact soils to 90% Standard Proctor (D698), place and secure filter fabric (non-woven geotextile), place 4-6" drainage layer overlaid by geogrid, place ACBs in final configuration, grout seams, and backfill ACBs with crushed stone.

#### 2 questions

In addition to you confirming or updating the material and installation costs, I have two questions: (1) Is the installation cost (\$4.63/square foot) the same for both channel downdrains and dissipation basins? (2) Does the installation or material cost include the crushed stone used to backfill the ACBs?

Please create a new email to me with updated unit costs <u>or</u> reply to this email to confirm what I show is still correct. I will present what you provide for documentation in the cost estimate we submit to the state agencies.

Thanks,

**Fred Charles, Ph.D., P.E.** Senior Engineer Office: 970-484-7704, Ext 120 Cell: 720-318-5021 3801 Automation Way, Suite 201, Fort Collins, CO 80525 <u>fcharles@telesto-inc.com</u>



#### www.telesto-inc.com

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#### **Taryn Tigges**

From:	Clayton Fawcett <clayton.fawcett@contechllc.com></clayton.fawcett@contechllc.com>
Sent:	Monday, January 11, 2021 10:45 AM
То:	Taryn Tigges
Subject:	RE: [EXTERNAL] RE: Tyrone Mine Armorflex Analysis 40T

That make sense.

We are including the geotextile, geogrid, ACB, and freight to the jobsite.

Clayton Fawcett PE (co) Armortec Area Manager - West

CONTECH Engineered Solutions 970-290-2971 (cell) <u>cfawcett@conteches.com</u>

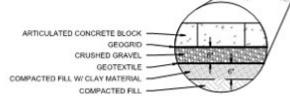
From: Taryn Tigges [mailto:ttigges@telesto-inc.com]
Sent: Monday, January 11, 2021 10:44 AM
To: Clayton Fawcett <Clayton.Fawcett@ContechLLC.com>
Subject: [EXTERNAL] RE: Tyrone Mine Armorflex Analysis 40T

# **CAUTION:** This email originated from outside of the organization. Exercise caution when opening attachments or clicking links, especially from *UNKNOWN* senders.

Hi Clayton,

You too! Weekends go by too quickly.

Thanks for the information. They are just updating costing information. Can you also confirm again what's included in that cost? Our current design includes the following:



Can you let me know what I need to account for separately? I believe you had mentioned geotextile is part of the cost.

Thanks,

**Taryn Tigges, PE** | Civil Engineer Office: 970-484-7704 | Cell: 515-520-9454 750 14<sup>th</sup> St SW | Loveland, CO 80537



www.telesto-inc.com

From: Clayton Fawcett <<u>Clayton.Fawcett@ContechLLC.com</u>>
Sent: Monday, January 11, 2021 10:39 AM
To: Taryn Tigges <<u>ttigges@telesto-inc.com</u>>; <u>CFawcett@conteches.com</u>
Cc: <u>KMeyer@conteches.com</u>
Subject: RE: Tyrone Mine Armorflex Analysis 40T

Hi Taryn,

I hope the weekend treated you well. Current pricing as of January 2021 is 10.27 / sf delivered for this material.

Are they getting ready to proceed or just updating the costing information?

Regards,

Clayton Fawcett PE (co) Armortec Area Manager - West

CONTECH Engineered Solutions 970-290-2971 (cell) <u>cfawcett@conteches.com</u>

From: Taryn Tigges [mailto:ttigges@telesto-inc.com] Sent: Thursday, January 7, 2021 2:15 PM To: <u>CFawcett@conteches.com</u> Cc: <u>KMeyer@conteches.com</u> Subject: FW: Tyrone Mine Armorflex Analysis 40T

Hi Clayton,

It has been a few months since I talked to you but I was wondering if you could send an updated cost for current (January 2021) prices for the Armorflex 50T ACB system? Let me know if you need any additional information.

Thanks,

**Taryn Tigges, PE** | Civil Engineer Office: 970-484-7704 | Cell: 515-520-9454 750 14<sup>th</sup> St SW | Loveland, CO 80537



From: Fawcett, Clayton <<u>CFawcett@conteches.com</u>>
Sent: Thursday, May 28, 2020 3:28 PM
To: Taryn Tigges <<u>ttigges@telesto-inc.com</u>>
Cc: Meyer, Kenneth <<u>KMeyer@conteches.com</u>>
Subject: RE: Tyrone Mine Armorflex Analysis 40T

Taryn,

Good speaking with you this afternoon. See attached for revised calculations per your direction below. That is, with the exception of the Manning's *n* value which is 0.025.

Cost for the Armorflex 50T ACB system is \$9.77 / sf delivered. This does include ACB mats with galvanized cable, geotextile fabric, and freight to the jobsite via Over the Road Flatbed Trucks.

Feel free to let me know if you have any additional questions.

Regards,

Clayton Fawcett PE (co) Armortec Area Manager - West

CONTECH Engineered Solutions 970-290-2971 (cell) <u>cfawcett@conteches.com</u>

From: Taryn Tigges [mailto:ttigges@telesto-inc.com] Sent: Thursday, May 28, 2020 2:16 PM To: Fawcett, Clayton <<u>CFawcett@conteches.com</u>> Subject: RE: Tyrone Mine Armorflex Analysis 40T

Hi Clayton,

You previously spoke with our intern, Jessica, for ACB selection on a Freeport project. I have a couple questions for you regarding that project:

- I had run some calculations with the following factor of safety method, which is giving me different results than your spreadsheet: <u>https://www.conteches.com/knowledge-center/pdh-article-series/articulated-concreteblock-design</u> Are you using a newer method?
- 2. Can you revise your calculations for the following channel design and flow rate:
  - a. Manning's n = 0.015
  - b. Bed Slope = 0.05
  - c. Side slope = 2:1
  - d. Bottom width = 15 feet, Top width = 28 feet
  - e. Hydraulic Depth = 3.3 feet
  - f. Radius of curvature = 240 feet

g. Flow rate = 2717 cfs (velocity = 38.8 ft/s for area of 70.1 sf)

A side slope of 3:1 is not obtainable for this project so you don't need to run that calculation. Let me know if you need additional information and let me know what block type you recommend based on these conditions.

Thank you for your time!

**Taryn Tigges, PE** | Civil Engineer Office: 970-484-7704 | Cell: 515-520-9454 750 14<sup>th</sup> St SW | Loveland, CO 80537



www.telesto-inc.com

From: Jessica Menconi <<u>imenconi@telesto-inc.com</u>> Sent: Wednesday, April 22, 2020 2:12 PM To: Taryn Tigges <<u>ttigges@telesto-inc.com</u>> Subject: FW: Tyrone Mine Armorflex Analysis 40T

From: Fawcett, Clayton <<u>CFawcett@conteches.com</u>> Sent: Wednesday, April 22, 2020 12:29 PM To: Jessica Menconi <<u>jmenconi@telesto-inc.com</u>> Cc: Taryn Tigges <<u>taryn.tigges@gmail.com</u>> Subject: RE: Tyrone Mine Armorflex Analysis 40T

Jessica,

I have to apologize. I thought I sent that already.

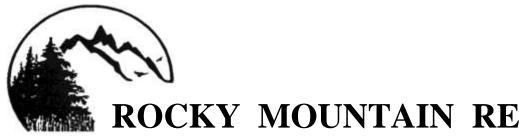
See attached. My guess is that Freeport won't accept it as it is below the minimum 1.8 Factor of Safety that they have previously established.

Regards,

Clayton Fawcett PE (co) Armortec Area Manager - West

CONTECH Engineered Solutions 970-290-2971 (cell) <u>cfawcett@conteches.com</u>

From: Jessica Menconi [mailto:jmenconi@telesto-inc.com] Sent: Wednesday, April 22, 2020 12:15 PM



Revegetation/Reclamation Rangeland Rehabilitation Landscaping / Fencing Hydroseeding **Environmental Consulting** 

## **ROCKY MOUNTAIN RECLAMATION**

Phone

(307) 745-5235 (307) 745-5230

ron@reveg.us www.reveg.us

P.O. Box 1695 Laramie, WY 82073

#### FREEPORT MCMORAN – NEW MEXICO MINING OPERATIONS

#### PRICE ESTIMATES FOR REVEGETATION SERVICES FOR BUDGETING ESTIMATES

Table 1 – Freeport McMoRan, New Mexico Mining Operations – Price Estimates for **Revegetation Services for Budgeting Estimates, prepared April, 2018.** 

		ESTIMATED		COST/UNIT	
	<b>REVEGETATION OPERATION</b>	QUANTITY	UNITS	(\$)	TOTAL COST
I.	<b>OPERATIONS:</b>				
1	SCARIFYING	500	Acres	\$30.00	\$15,000.00
2	DISCING	500	Acres	\$20.00	\$10,000.00
3	DRILL SEEDING (special Rangeland Drill)	500	Acres	\$80.00	\$40,000.00
4	MULCHING	500	Acres	\$148.00	\$74,000.00
5	CRIMPING	500	Acres	\$55.00	\$27,500.00
6	DAILY PER DIEM, ETC.	50	Days	\$385.00	\$19,250.00
7	MOBILIZATION	1	Each	\$13,500.00	\$13,500.00
	Subtotal				\$199,250.00
II.	MATERIALS:				
1	SEED at 8.9 PLS/acre	500	Acres	\$210.00	\$105,000.00
2	HAY MULCH - nox. weed free, native	1000	Tons	\$245.00	\$245,000.00
	Subtotal			_	\$350,000.00
	TOTAL ESTIMATED REVEGETATION COST	Г BEFORE ТА	X		\$549,250.00
	Add New Mexico Gross Receipts Tax	5.9375	%	-	\$32,611.72
	ESTIMATED REVEGETATION COST PER A	CRE:		\$1,163.72	
	TOTAL ESTIMATED REVEGETATION COST	Г			\$581,861.72

Estimate prepared by Ron Schreibeis, Rocky Mountain Reclamation, for use for Budgeting Estimates.

#### **Fred Charles**

From:	Medhurst, Audie <audie.medhurst@gcinc.com></audie.medhurst@gcinc.com>
Sent:	Tuesday, July 9, 2019 1:38 PM
То:	Fred Charles
Subject:	RE: request for cost information - well/exploratory borehole abandonment

Hi Fred The information as written in the mail below is correct Thank you Audie

#### Audie Medhurst

General Manager Mineral Services Division

12030 E Riggs Road Chandler AZ 85249

Direct: 602-824-0934|Cell: 602-359-3010 Email: <u>Audie.Medhurst@gcinc.com</u>

www.graniteconstruction.com

From: Fred Charles <fcharles@telesto-inc.com>
Sent: Tuesday, July 9, 2019 11:12 AM
To: Medhurst, Audie <Audie.Medhurst@gcinc.com>
Subject: request for cost information - well/exploratory borehole abandonment

Hi Audie (with Layne, A Granite Company – formerly Layne Christensen Company). Thanks for the updated cost information you provided for abandonment of wells and boreholes. Please confirm the following is correct in an email reply to me. We will include this email in documentation we provide to the State for the reclamation cost estimate.

Estimate 7000.00 per day rig time- estimate 300 days to complete. \$2,100,000.00

Estimate 6.00 per foot abandonment material costs. \$ 1,035,786.00

Mob 15,000.00 Demob 15,000.00

As I communicated with you, the estimated costs reflect requirements for the work which include:

- 1. All work done in conformance with New Mexico requirements/guidance
- 2. Costs include mobilization/demobilization (site is in Grant County, NM), which includes moving between wells assumed at 1,000 ft apart
- 3. Costs include labor, equipment, and materials
- 4. Wells/boreholes will be plugged and abandoned from bottom of hole to the surface total well lengths and diameters are combined for monitoring wells and exploration boreholes, as follows:
  - 2-inch diameter PVC 431 ft total well length
  - 4-inch diameter PVC 102,876 ft total well length
  - 5.5-inch diameter PVC 63,240 ft total well length

• 6-inch diameter PVC – 6,084 ft total well length

Thanks,

Fred Charles, Ph.D., P.E. Senior Engineer Office: 970-484-7704, Ext 120 Cell: 720-318-5021 3801 Automation Way, Suite 201, Fort Collins, CO 80525 fcharles@telesto-inc.com



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	<u>y</u> 1a	x: 480.895.953			
Company:	Freeport McMc		Date: July 31, 2018		
Contact:	David Princeho			Abandonment	
Address:		0 South	Location: Tyrone Mine		
City:	•		Estimated By: Joel Campb	ell	
State:			Proposal Number: 18-000-RC		
Postal Code: Phone:			Estimated Footage: 1,500 feet Number of Holes: 1		
Cell:	575 654 5246		Max. Depth: 1,500 feet		
•••…	dprinceh@fmi.con	n	Average Depths: 1,500 feet		
HAMMER DRILLING	RATE PER		OPERATING HOURLY RIG RATE		PER HOUR
FOOTAGE RANGE	Hole Size	Hourly	DRILL HOLE ABANDONMENT		\$375.00
0-1,500 Feet	5.5-inch	\$375.00			*
MOB / DEMOB	LUMP SUM	HOURLY			
MOBILIZATION	\$5,000.00	HOURLY			
MOB / DEMOB MOBILIZATION DEMOBILIZATION		HOURLY			
MOBILIZATION DEMOBILIZATION	\$5,000.00	HOURLY PER HOUR	STANDBY HOURLY RIG RATE CLIENT DIRECTED STANDBY WITH (		PER HOUR \$300.00
MOBILIZATION	\$5,000.00 \$5,000.00	PER HOUR		CREW	
MOBILIZATION DEMOBILIZATION ADDITIONAL EQUIPMEN ORKLIFT RENTAL	\$5,000.00 \$5,000.00	PER HOUR	CLIENT DIRECTED STANDBY WITH O WEATHER DELAY- NON OPERATING	CREW	\$300.00
MOBILIZATION DEMOBILIZATION	\$5,000.00 \$5,000.00 PER MONTH	PER HOUR	CLIENT DIRECTED STANDBY WITH O WEATHER DELAY- NON OPERATING SUPPLIES	CREW	\$300.00 \$300.00 RATE
MOBILIZATION DEMOBILIZATION ADDITIONAL EQUIPMEN ORKLIFT RENTAL	\$5,000.00 \$5,000.00 PER MONTH	PER HOUR N/A \$20.00	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH	CREW	\$300.00 \$300.00 <b>RATE</b> \$7.61
MOBILIZATION DEMOBILIZATION ADDITIONAL EQUIPMEN ORKLIFT RENTAL AUX. AIR OP RATE PER DIEM CHARGE	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P	PER HOUR N/A \$20.00 ER DAY	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH	CREW	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00
MOBILIZATION DEMOBILIZATION DDITIONAL EQUIPMEN ORKLIFT RENTAL	\$5,000.00 \$5,000.00 PER MONTH	PER HOUR N/A \$20.00 ER DAY	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL	CREW	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost
MOBILIZATION DEMOBILIZATION DDITIONAL EQUIPMEN ORKLIFT RENTAL UX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0	<b>PER HOUR</b> N/A \$20.00 <b>ER DAY</b> 0	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL DRILLING FLUID ADDITIVES	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost Cost plus 10%
MOBILIZATION DEMOBILIZATION DEMOBILIZATION ORKLIFT RENTAL UX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW FUEL	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0 RATI	PER HOUR N/A \$20.00 ER DAY 0	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost Cost plus 10%
MOBILIZATION DEMOBILIZATION DEMOBILIZATION ORKLIFT RENTAL UX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW FUEL	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0	PER HOUR N/A \$20.00 ER DAY 0	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL DRILLING FLUID ADDITIVES	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost Cost plus 10%
MOBILIZATION DEMOBILIZATION ORKLIFT RENTAL UX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW FUEL	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0 RAT	PER HOUR N/A \$20.00 ER DAY 0	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL DRILLING FLUID ADDITIVES	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost Cost plus 10%
MOBILIZATION DEMOBILIZATION DEMOBILIZATION ORKLIFT RENTAL UX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW FUEL	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0 RATI	PER HOUR N/A \$20.00 ER DAY 0 E T T	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL DRILLING FLUID ADDITIVES	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost Cost plus 10%
MOBILIZATION DEMOBILIZATION ORKLIFT RENTAL AUX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW FUEL SUPPLIED BY TYRONE	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0 RATI COS	PER HOUR N/A \$20.00 ER DAY 0 E	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL DRILLING FLUID ADDITIVES	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00
MOBILIZATION DEMOBILIZATION DEMOBILIZATION ORKLIFT RENTAL UX. AIR OP RATE PER DIEM CHARGE 3 MAN CREW FUEL UPPLIED BY TYRONE CREW TRAVE	\$5,000.00 \$5,000.00 PER MONTH N/A PER MAN/P \$85.0 RATI COS	PER HOUR N/A \$20.00 ER DAY 0 E T T RATE N/C	CLIENT DIRECTED STANDBY WITH ( WEATHER DELAY- NON OPERATING SUPPLIES CEMENT 47Ib BAG EACH ABANTONITE 50Ib BAG EACH LOST TOOLING / DRILL STEEL DRILLING FLUID ADDITIVES OTHER MATERIALS / SUPPLIES AS I	CREW 3 RATE	\$300.00 \$300.00 <b>RATE</b> \$7.61 \$16.00 Cost Cost plus 10%

#### **BID CONDITIONS:**

- RIG WILL WORK 1 (ONE) - 12 HOUR SHIFT PER DAY ON A 10 DAYS ON WITH 4 DAYS OFF SCHEDULE OR AS AGREED BY THE PARTIES. - WATER SUPPLY, ACCESS, DRILL SITES, AND ALL REQUIRED PERMITS ARE THE RESPONSIBILITY OF THE



### Layne Christensen Company

12030 E. Riggs Road Chandler, Arizona 85249 Office: 480.895.9336 Fax: 480.895.9536

# **Estimate**

Company: Fr	eeport McMoRan Tyrone		Date:	July 31, 2018	
Contact: Da	avid Princehouse		Project:	Tyrone Hole Al	pandonment
Address: Bo	ox 571 Hwy 90 South		Location:	Tyrone Mine	
City: Ty	vrone	Est	timated By:	Joel Campbell	
State: N	M	-	al Number:		
Postal Code: 88	065	Estimate	d Footage:	1,500 feet	
Phone: 57	75 912 5752	Numbe	er of Holes:	1	
Cell: 57	75 654 5246		lax. Depth:	-	
Email: dprir	nceh@fmi.com		ge Depths:		
	Description	Quantity	Unit	Cost	Total
Mobilization and Movi					
Move Rig and Equipmer	nt	1	LS	\$5,000.00	\$5,000.00
De -Mobilize Rig and Eq	uipment	1	LS	\$5,000.00	\$5,000.00
Move between holes 12	2hrs / move		HR	\$375.00	\$0.00
				Job Total	\$10,000.00
Abandon 1	x 5.5-inch Hole to 1,500 Feet				
	Grout Whilst Pulling Rods	6	HR	\$375.00	\$2,250.00
Cement Materials		454	Bag	\$7.61	\$3,454.94
Sundry Materials Suppli	ied - cost plus 15%				\$0.00
					\$0.00
					\$0.00
					\$0.00
		4	ł	Total 1 Well	\$5,704.94



July 31, 2018

To: David Princehouse Tyrone Mining NM

#### **Re: Abandonment of Exploration Holes**

Layne intends to abandon the exploration holes drilled for Tyrone Mining for the RC Exploration program adhering to the following procedures

- 1. Upon reaching total depth the hole will be backfilled filling from the bottom up through the drill rods with a neat cement grout.
- Verification of proper sealing is that the volume of sealing material placed in the hole during abandonment operations equals or exceeds the volume of the borehole to be filled and sealed

Regards

### Audie Medhurst

General Manager, Mineral Exploration Mineral Services Western US

LAYNE | water + mineral + energy 12030 E. Riggs Road | Chandler, AZ | 85249 Office: 602-824-0934 | Cell: 602-359-3010 audie.medhurst@layne.com | layne.com

#### **MINERAL EXPLORATION**

August 23, 2011 Revised August 25, 2011

Kurt Stauder Telesto Solutions, Inc. 2950 E. Harmony Rd. Suite 200 Fort Collins, CO 80528 Phone: (970) 484-7704

#### RE: Shramrock Exploration Project Silver City, New Mexico Wilcox Proposal No.: 14.00645

#### Via Email: kstauder@telesto-inc.com

Dear Mr. Stauder:

Wilcox Professional Services, LLC (Wilcox) is pleased to submit this proposal to provide exploratory drilling services in connection with the Shamrock Exploration Project located West of Silver City, New Mexico. Wilcox appreciates this opportunity and looks forward to working with you to make this a successful endeavor for all involved.

This proposal is based upon scope of work and bid sheets dated August 23, 2011 and are subject to negotiations between Wilcox and Hoffman Consulting & NV Gold Corp. (Client), if needed.

Drilling Scope of Work:

- Consists of 10 to 25 exploration holes to an anticipated depth of 300' each
- Reverse Circulation (RC)
- Vertical holes
- Schedule and Crew: One 12 hr. shift per day, drill till complete
- Commence October 2011

It is understood that to facilitate this drilling program the Client will provide the following at no cost to Wilcox:

- A suitable water supply (if required)
- Full time on site Geologist capable of making decisions on program to avoid delays
- Legal access to the site from public roads
- Staging area for unloading and loading equipment
- Drill pad construction and reclamation (if required)
- Road and mud pit construction and reclamation (if required)
- Any bonding and all permitting fees (if required)

The Client will be responsible for reimbursing Wilcox for the following items at suppliers' list price plus 10 percent (10%). Client may provide certain items as mutually agreed.

- Drilling mud and additives
- Cement and cementing services
- Chip boxes and lids, sample bags and marker blocks
- Special tools or drilling accessories, rig well for testing purposes or which may be a lift in the hole upon client request
- All casing shoes
- Down Hole Survey Interment (Reflex EZ-SHOT or equivalent)

This proposal is not a binding contract. It is a submission for information purposes only and until bound by a contract, is subject to revision by either party.

Vilcox

PROFESSIONAL SERVICES CREATING INDUSTRY LEADING RESULTS

> 1055 S 63rd Avenue Phoenix, Arizona 85043 t 602.442.0667 l f.602.442.0669

- Core drilling bits, reamers and tricones
- Casing lost/left in holes or recovered but damaged
- All materials lost in the hole
- Sump liners/tank, if required
- Sanitary facilities
- Disposal of all liquids and solid waste generated on site
- Other items as negotiated

Wilcox will provide specialized equipment and services for completion of your drilling program, including in Drilling Unit Price:

- 1 RC Drill Rig
- RC Drilling System
- MSHA Certified Drill Crews (2 man)
- Water transport (if required)
- Support equipment (welding, pickup & tools)

#### **General Provisions**

#### a. Lost Materials

In the event that drill rods, casing, or other equipment become lost, broken, or stuck in the hole while drilling at the footage rates, the Client agrees to reimburse the Contractor at field cost rates. These rates will include time and materials expended in recovery attempts. If materials are unrecoverable, the Contractor shall be reimbursed for same at replacement cost.

#### b. Unsatisfactory Progress In Hole and Hole Abandonment

In the event that excessive water flows, cavities, loose, swelling, caving materials, or hole stability problems are encountered, and they prevent the completion or satisfactory progress of a hole the Contractor does not guarantee to drill to a predetermined depth. If it becomes necessary to abandon the hole the Contractor shall charge the Client for the holes abandoned. Such charges will include the depth of abandonment and the rates specified in our proposal. If the Client requests the Contractor to proceed in the hole, the Contractor has the option to revert to the operating field cost rates plus all materials, supplies, and equipment required at replacement cost plus ten percent (10%). These charges will be subject to the Client's approval.

#### c. Field Cost Definitions

1. Operating

It is agreed that the operating rates shall include the labor of a regular three-man crew per shift, and drill and support equipment rental. The cost of rods, casing, below-the-head consumables, and other materials and supplies consumed onsite shall be charged to the Client at cost plus ten percent (10%).

In the event that extra labor over and above the regular two-man crew per shift is utilized, the Contractor agrees to supply such additional labor at the rates specified in Bid Prices, Section 5.

2. Non-Operating (Standby)

It is agreed that the non-operating rates shall prevail when work is interrupted due to delays not caused by the Contractor, or delays beyond his control.

#### Pricing of Services

3000 ft Estimate				
ltem	Quantity	Unit	Cost	Price
DRILLING COSTS				
Mobilization	1	LS	5,000	\$5,000.00
Demobilization	1	LS	5,000	\$5,000.00
SURFACE CASING				
Vertical Casing Advancement Drilling	40	HR	150	\$6,000.00
DRILLING WITH DOWN HOLE HAMMER				
Vertical DHH Drilling; 5 1/2" Borehole, 0'-Up to 300'	300	FT	32	\$96,000.00
RIG TIME OTHER THAN DRILLING - OPERATING				
Plugging	100	HR	150	\$15,000.00
RIG TIME OTHER THAN DRILLING - NON-OPERATING				
Move-on, Set-up, Take-down Between Holes	50	HR	150	\$7,500.00
MATERIALS				
Portland Cement; 97lb. Sack	700	EA	15	\$10,500.00
Bentonite- AquaGuard or e; 50lb. Sack	90	EA	25	\$2,250.00
DAILY CHARGES				
Daily Crew Travel and/or Per Diem (Per Shift)	25	EA	300	\$7,500.00
Stand-by Time	25	HR	150	\$3,750.00
Contingency			10%	\$15,000.00
		То	otal	\$173,500

#### 4500 ft Estimate

Item	Quantity	Unit	Cost	Price
DRILLING COSTS				
Mobilization	1	LS	5,000	\$5,000.00
Demobilization	1	LS	5,000	\$5,000.00
SURFACE CASING				
Vertical Casing Advancement Drilling	50	HR	150	\$7,500.00
DRILLING WITH DOWN HOLE HAMMER				
Vertical DHH Drilling; 5 1/2" Borehole, 0'-Up to 300'	4500	FT	30	\$135,000.00
RIG TIME OTHER THAN DRILLING - OPERATING	and the second se			
Plugging	125	HR	150	\$18,750.00
RIG TIME OTHER THAN DRILLING - NON-OPERATING				
Move-on, Set-up, Take-down Between Holes	100	HR	150	\$15,000.00
MATERIALS				
Portland Cement; 97lb. Sack	1000	EA	15	\$15,000.00
Bentonite- AquaGuard or e; 50lb. Sack	100	EA	25	\$2,500.00
DAILY CHARGES				
Daily Crew Travel and/or Per Diem (Per Shift)	35	EA	300	\$10,500.00
Stand-by Time	35	HR	150	\$5,250.00
Contingency			10%	\$20,000.00
		Тс	otal	\$239,500.00

This proposal is not a binding contract. It is a submission for information purposes only and until bound by a contract, is subject to revision by either party.

- AssuMES FULL CHARGE

	7500 ft Estimate					
	Item	Quantity	Unit	Cost	Price	
	DRILLING COSTS					
<u>م</u> ل،	Mobilization	1	LS	5,000	\$5,000.00	# 1.5/ft
-*	Demobilization	1	LS	5,000	\$5,000.00	
	SURFACE CASING					
	Vertical Casing Advancement Drilling	50	HR	125	\$6,250.00	
	DRILLING WITH DOWN HOLE HAMMER					
	Vertical DHH Drilling; 5 1/2" Borehole, 0'-Up to 300'	7500	FT	27.5	\$206,250.00	
	RIG TIME OTHER THAN DRILLING - OPERATING					to are
$\checkmark$	Plugging	150	HR	125	\$18,750.00	\$18,750 = Z.5 7,500 A
	RIG TIME OTHER THAN DRILLING - NON-OPERATING					·/ ··
X	Move-on, Set-up, Take-down Between Holes	100	HR	125	\$12,500.00	
	MATERIALS					
$\sim$	Portland Cement; 97lb. Sack	1500	EA	15	\$22,500.00	\$27,500 - 3
Å	Bentonite- AquaGuard or e; 50lb. Sack	125	EA	25	\$3,125.00	5 7 91
	DAILY CHARGES					
*	Daily Crew Travel and/or Per Diem (Per Shift)	50	EA	300	\$15,000.00	- 3 \$1
1	Stand-by Time	50	HR	150	\$6,250.00	
	Contingency			10%	\$30,000.00	16-1
			Тс	otal	\$330,625.00	2/19/FT

#### 7500 ft Estimate

111

#### Wilcox Professional Services 2011 Billing Rates

Standard Hourly Rates are set forth in this Exhibit and include salaries and wages paid to Personnel in each billing class plus the cost of customary and statutory benefits, general Administrative overhead, non-project operating costs, and operating margin or profit.

#### <u>Personnel</u>

Project Director	\$190.00/per hour
Project Manager / Sr. Professional	\$150.00/per hour
Project Engineer / Surveyor	\$130.00/per hour
Sr. Technician / Sr. Designer	\$110.00/per hour
Technician / CAD Drafter	\$90.00/per hour
Superintendent	\$150.00/per hour
Survey Crew	\$150.00/per hour
Clerical	\$60.00/per hour

#### Outside Consultants (Client Authorized)

Coordination at Personnel Hourly Rates listed above Cost + 10%

Wilcox will require a deposit amount of \$30,000.00 be received upon authorization of the contract to hold the drilling rig, crew and equipment. The deposit will be applied towards the final invoice. A 15 days notice to prepare and transport rig to project site will also be required.

We appreciate your confidence in Wilcox and look forward to working with you on this and other projects. Thanks again for this opportunity to submit out proposal. Wilcox is ready to commence work upon receipt of authorization. If you have questions, please do not hesitate to call me at 602-442-0667.

 $t_{ij}$ 

Sincerely, WILCOX PROFESSIONAL SERVICES, LLC

D, Withof inard

Richard D. Wilcox, P.E. President

Enclosures

CC:



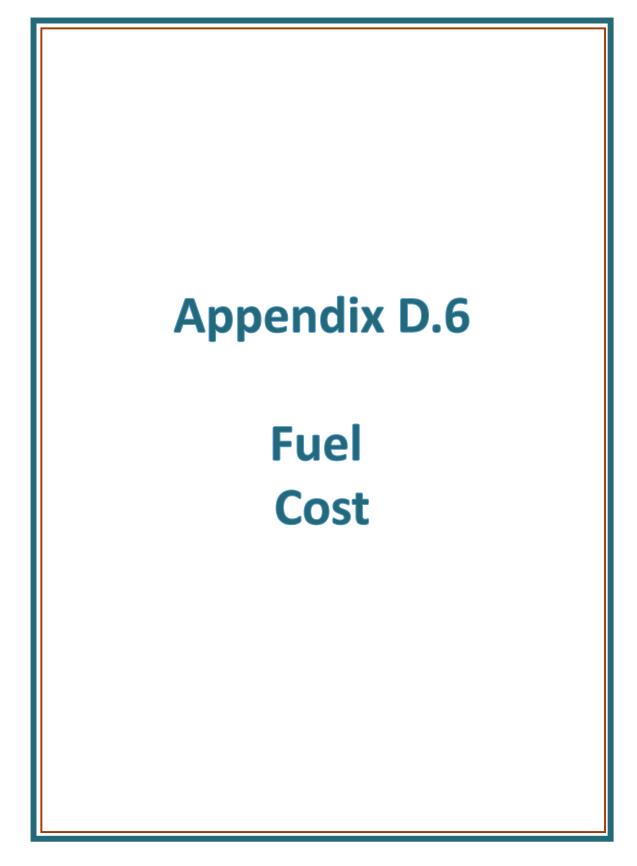
#### P.O. Box 3810 ~ Butte, MT 59702 Office: (406) 494-3310 Fax: (406) 494-3301 Email: info@okeefedrilling.com

Ttom			Estimated			<b></b>	
Item Drilli	Description	Unit 🖓	Quantity	τ	<b>Init Cost</b>		Total
1	Mobilization/ Demobilization (RC/ Dual Rotary)	LS	1	\$	7,000.00	\$	7,000.00
2	Mobilization-Pump Truck	LS	1	\$	2,500.00	\$	2,500.00
3	Set-up between holes	Each	54	\$	1,500.00	\$	81,000.00
4	Decontamination-Drilling	LS	54	\$	1,000.00	\$	54,000.00
5	Drilling (Pilot Holes-Mud Rotary)*	Ft	3600	\$	-	\$	-
6	Abandonment-Pilot Holes	Ft	3600	\$	-	\$	_
./	Drilling (Reverse Circulation)	Ft	4650	\$	34.00	\$	158,100.00
8	Drilling (Dual Rotary)	Ft	4650	\$	40.00	Ŝ	186,000.00
9	4-inch SCH-40 PVC Well - Installed					\$	- 1
	Screen	Ft	1080	\$	65.00	\$	70,200.00
	Sand (5' above screen)	Ft	1350	\$	55.00	\$	74,250.00
	Blank Casing	Ft	8220	\$	12.00	\$	98,640.00
	Grout	Ft	7950	\$	6.00	\$	47,700.00
10	Surface Completion	Each	54	\$	375.00	\$	20,250.00
						_	
Well I	Development and Sampling						
11	Well Development	Hour	400	\$	165.00	\$	66,000.00
	Decontamination-Development	LS	54	\$	165.00	\$	8,910.00
13	Stand-by Time (Pump Truck)	Hour		\$	115.00	\$	8,910.00
	Per diem	Day	113	\$	275.00	\$	21.075.00
15	Stand-by Time (Drill Rig)	Hour	115	\$	The second se	_	31,075.00
	Interm Travel	Per Hour	06		220.00	\$	-
		i el nour	96	\$	100.00	\$	9,600.00
					Total	\$	915,225.00

Note: The Mud Rotary Drilling will be drilled by others

#9300 #100/44

PBRO



#### Fuel Price Data

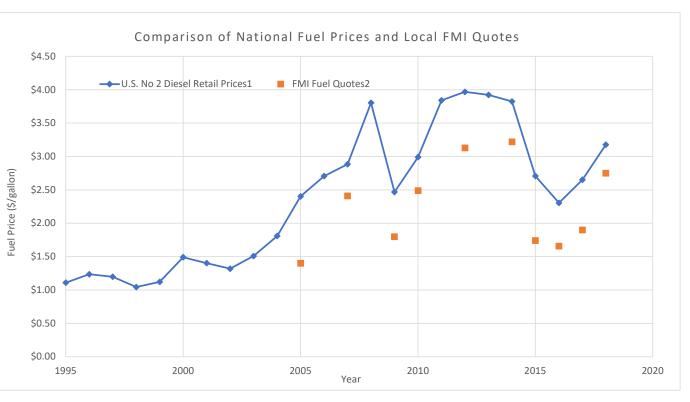
Data 1: U.S. No 2 Diesel Retail Prices (Dollars per Gallon)							
Date	U.S. No 2 Diesel Retail Prices <sup>1</sup>						
1995	1.109						
1996	1.235						
1997	1.198						
1998	1.044						
1999	1.121						
2000	1.491						
2001	1.401						
2002	1.319						
2003	1.509						
2004	1.81						
2005	2.402						
2006	2.705						
2007	2.885						
2008	3.803						
2009	2.467						
2010	2.992						
2011	3.84						
2012	3.968						
2013	3.922						
2014	3.825						
2015	2.707						
2016	2.304						
2017	2.65						
2018	3.178						
2019	3.056						
2020	2.555						
Date	U.S. No 2 Diesel Retail Prices <sup>1</sup>						
D. 0000	0.505						
Dec 2020	2.585						

FMI Fuel Quotes <sup>2</sup>									
		Dyed, low-sulfur							
Site	Date	diesel	Notes						
Continental	1/21/2005	\$1.40	Tom Shelley - quote from fuel broker						
Chino & Tyrone	5/9/2007	\$2.41	Porter Oil Quote (7500 gal capacity)						
Continental	1/23/2009	\$1.80	Porter Oil Quote (7500 gal capacity)						
Tyrone (Little Rock)	1/14/2010	\$2.49	Porter Oil Quote (7500 gal capacity)						
Tyrone	7/7/2012	\$3.13	Western Refining Oil						
Continental	6/18/2014	\$3.22	Western Refining Oil						
Chino (North Lampbright)	11/5/2015	\$1.74	Western Refining Oil						
Chino	5/20/2016	\$1.66	Western Refining Oil						
Tyrone (Little Rock)	4/24/2017	\$1.90	Western Refining Oil						
Continental	3/12/2018	\$2.75	Griffin Propane						
Chino	10/10/2018	\$2.75	Griffin Propane						

1. U.S. Energy Information Administration <u>https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD\_EPD2D\_PTE\_NUS\_DPG&f=M</u> 2. Quotes obtained from Freeport-McMoRan (FMI)

#### Correlation Between U.S. No.2 Diesel Retail Prices and FMI Fuel Quotes Since 1995

Year	U.S. No 2 Diesel Retail Prices <sup>1</sup>	FMI Fuel Quotes <sup>2</sup>
1995	1.109	
1996	1.235	
1997		
1998	1.044	
1999	1.121	
2000	1.491	
2001	1.401	
2002	1.319	
2003	1.509	
2004	1.81	
2005	2.402	\$1.40
2006	2.705	
2007	2.885	\$2.41
2008	3.803	
2009	2.467	\$1.80
2010	2.992	\$2.49
2011	3.84	
2012	3.968	\$3.13
2013	3.922	
2014	3.825	\$3.22
2015	2.707	\$1.74
2016	2.304	\$1.66
2017	2.65	\$1.90
2018	3.178	\$2.75
2019	3.056	
2020	2.896	



Correlation 0.952

1. U.S. Energy Information Administration

https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD\_EPD2D\_PTE\_NUS\_DPG&f=M 2. Quotes obtained from Freeport-McMoRan (FMI)

#### Calculations and Results for Fuel Price Prediction

U.S. No. 2 Diesel Retail Prices <sup>1</sup>	FMI Fuel Quotes <sup>2</sup>	Difference Between Retail Prices and FMI Quotes	Calculated FMI Values Based on Average Difference	Calculated FMI Values and Quotes	y = -0.0593x3 + 0.4528x2 - 0.0447x + 0.012		\$3.50	Со	mpariso	n of Nat FMI F				Diesel) d by Yea		rices a	ind	
\$0.00				\$0.00	\$0.01													•
\$1.11			\$0.42	\$0.42	\$0.44	-	\$3.00						-					
\$1.24			\$0.55	\$0.55	\$0.54	lo	\$2.50									•		
\$1.20			\$0.51	\$0.51	\$0.51	FMI Quotes (\$/gallon)	ŞZ.50								•			
\$1.04			\$0.36	\$0.36	\$0.39	\$ (\$	\$2.00											
\$1.12			\$0.43	\$0.43	\$0.45	ote:								• •				
\$1.49			\$0.80	\$0.80	\$0.76	Suc	\$1.50						_	-				
\$1.40			\$0.71	\$0.71	\$0.67	JE								•				
\$1.32			\$0.63	\$0.63	\$0.60	L L	\$1.00											
\$1.51			\$0.82	\$0.82	\$0.77		\$0.50											
\$1.81			\$1.12	\$1.12	\$1.06		<i>J</i> 0. <i>J</i> 0											
\$2.40	\$1.40	\$1.00		\$1.40	\$1.69		\$0.00											
\$2.71			\$2.02	\$2.02	\$2.03		\$0	00	\$0.50	\$1.00	\$1.5	D	\$2.00	\$2.50	\$3	3.00	\$3.50	\$4.00
\$2.89	\$2.41	\$0.47		\$2.41	\$2.23					No	2 Diese	Retail	Price (	5/gallon)				
\$3.80			\$3.11	\$3.11	\$3.13					110.	2 Diese	netun	11100 (.	, Banoni				
\$2.47	\$1.80	\$0.67		\$1.80	\$1.77													
\$2.99	\$2.49	\$0.50		\$2.49	\$2.34				Rel	ationshi	o of Na	itiona	l Retai	l Fuel P	rices t	0		
\$3.84			\$3.15	\$3.15	\$3.16					FMI Q	uotes a	and Ca	alculat	ed Valu	es			
\$3.97	\$3.13	\$0.84		\$3.13	\$3.26	es	\$3.5	0										
\$3.92			\$3.23	\$3.23	\$3.22	alu											.8%	
\$3.83	\$3.22	\$0.61		\$3.22	\$3.14	~ 7	\$3.0	0 -	0.050	2 0 150	2 2 2 2 2							
\$2.71	\$1.74	\$0.97		\$1.74	\$2.03	ate			y = -0.059	$3x^3 + 0.452$ $R^2 = 0$		147x+0	0.012		•			
\$2.30	\$1.66	\$0.65		\$1.66	\$1.59	cn	\$2.5	0		R- = 0	.9888							
\$2.65	\$1.90	\$0.75		\$1.90	\$1.97	D) Cal												
\$3.18	\$2.75	\$0.43		\$2.75	\$2.54	olle	\$2.0	0										
\$3.06			\$2.37	\$2.37	\$2.41	s a		_										
\$2.90			\$2.21	\$2.21	\$2.24	ote (\$	\$1.5	0										
	Average	\$0.69				Qu	\$1.0	_										
						(F)	φ1.U											
Correlations	_					(FN	\$0.5	0			•••							
Between No. 2 Re				0.95		Local (FMI) Quotes and Calculated Values $(\xi/gallon)$	+ 510	-										
		nd 3rd order polynomial		0.99		Lo	\$0.0	0 🖕										
3etween New FM	Il quotes ar	d 3rd order polynomial F	-MI Quotes	0.96				\$0.00	\$0.50	\$1.00	\$1.50	\$2.	00 \$	2.50	\$3.00	\$3.50	\$4.00	\$4.50
3etween FMI quo	tes and 3rd	order polynomial FMI C	Quotes	0.99						tional Ret		/.			(6) 11	,		

New Fuel Rate	U.S. No 2 [	Proposed Fuel Quote			
	Dec 2020	\$2.59	\$1.90		

1. U.S. Energy Information Administration <u>https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD\_EPD2D\_PTE\_NUS\_DPG&f=M</u> 2. Quotes obtained from Freeport-McMoRan (FMI)