UNIT PRICE ANALYSIS

Project No:	AJ-Test-2	**Schedule:**	A	**Milestone:**	Test
Project Name:	AJ-Test-2	**Schedule Type:**	Base	**Date Complete:**	
Partner Agency Number:		**Designer Notes:**	Deep culverts near utilities		

Bid History from Masterworks Design Unit Price Analysis Report

Pay Item Number	Description	Unit
20301-1900	REMOVAL OF PIPE CULVERT	EACH

Add Remarks in Masterworks to provide information on how the unit price was selected.

Low $1,630.00 **High** $11,018.15 **Average Unit Price** $4,375.36 **Suggested Unit Price** $3,852.11

Unit Price Used $4,500.00

Bid History Filters

Project:		**Density:**		**Bid Status:**	Awarded,Not Awarded
State:	CA	**Terrain:**		**Inflation Index:**	California Highway CCI
Partner Agency:		**Standard Items Table:**	FP 14, FP 24	**Quanity Between:**	5 - 15
Construction Type:		**Search Based On:**	Pay Item No.		
Award Date From:	09/27/2020	**Award Date To:**	12/18/2025		

Select an appropriate inflation factor

Project Code	Project Name	Bid Status	Award Date	Pay Item No	Item Description	Supplemental Description	Quantity	Unit Price	Inflation	Inflated Unit Price	Conversion Factor	Original Unit	Schedule	Overall Contract Total
CA FLAP SCR T5(1)	Monterey Bay Sanctuary Scenic Trail	Awarded	04/25/2024	20301-1900	REMOVAL OF PIPE CULVERT		12.000	$1,630.00	0.00	$1,630.00	1.0000	EACH	A	$32,058,693.50
CA FLAP SCR T5(1)	Monterey Bay Sanctuary Scenic Trail	Not Awarded	04/25/2024	20301-1900	REMOVAL OF PIPE CULVERT		12.000	$2,200.00	0.00	$2,200.00	1.0000	EACH	A	$32,058,693.50
CA FLAP SCR T5(1)	Monterey Bay Sanctuary Scenic Trail	Not Awarded	04/25/2024	20301-1900	REMOVAL OF PIPE CULVERT		12.000	$1,963.86	0.00	$1,963.86	1.0000	EACH	A	$32,058,693.50
CA FTBR PONDEROSA BRIDGE(1) & CA FTBR MTN QUARRY BRIDGE	Ponderosa Bridge Replacement & Mtn Quarry Bridge Improvement	Not Awarded	06/15/2022	20301-1900	REMOVAL OF PIPE CULVERT		11.000	$3,500.00	46.81	$5,138.30	1.0000	EACH	A	$7,477,477.00

UNIT PRICE ANALYSIS

Project Code	Project Name	Bid Status	Award Date	Pay Item No	Item Description	Supplemental Description	Quantity	Unit Price	Inflation	Inflated Unit Price	Conversion Factor	Original Unit	Schedule	Overall Contract Total
CA FTBR PONDEROSA BRIDGE(1) & CA FTBR MTN QUARRY BRIDGE	Ponderosa Bridge Replacement & Mtn Quarry Bridge Improvement	Not Awarded	06/15/2022	20301-1900	REMOVAL OF PIPE CULVERT		11.000	$3,000.00	46.81	$4,404.26	1.0000	EACH	A	$7,477,477.00
CA FLAP MAD CR26(1) ET AL	Avenue 26 and Road 29	Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		10.000	$1,400.00	93.30	$2,706.21	1.0000	EACH	A	$16,725,752.00
CA FLAP MAD CR26(1) ET AL	Avenue 26 and Road 29	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		10.000	$5,700.00	93.30	$11,018.15	1.0000	EACH	A	$16,725,752.00
CA FLAP MAD CR26(1) ET AL	Avenue 26 and Road 29	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		10.000	$1,100.00	93.30	$2,126.31	1.0000	EACH	A	$16,725,752.00
CA FLAP MAD CR26(1) ET AL	Avenue 26 and Road 29	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		10.000	$5,000.00	93.30	$9,665.04	1.0000	EACH	A	$16,725,752.00
CA FTNP YOSE 15(2)	Glacier Point Road	Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		14.000	$2,500.00	93.30	$4,832.52	1.0000	EACH	A	$32,930,566.15
CA FTNP YOSE 15(2)	Glacier Point Road	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		14.000	$2,028.00	93.30	$3,920.14	1.0000	EACH	A	$32,930,566.15
CA FTNP YOSE 15(2)	Glacier Point Road	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		14.000	$1,500.00	93.30	$2,899.51	1.0000	EACH	A	$32,930,566.15
CA FLAP SCR T5(1)	Monterey Bay Sanctuary Scenic Trail	Not Awarded	04/25/2024	20301-1900	REMOVAL OF PIPE CULVERT		12.000	$4,000.00	0.00	$4,000.00	1.0000	EACH	A	$32,058,693.50
CA FTBR PONDEROSA BRIDGE(1) & CA FTBR MTN QUARRY BRIDGE	Ponderosa Bridge Replacement & Mtn Quarry Bridge Improvement	Awarded	06/15/2022	20301-1900	REMOVAL OF PIPE CULVERT		11.000	$680.00	46.81	$998.30	1.0000	EACH	A	$7,477,477.00
CA FTBR PONDEROSA BRIDGE(1) & CA FTBR MTN QUARRY BRIDGE	Ponderosa Bridge Replacement & Mtn Quarry Bridge Improvement	Not Awarded	06/15/2022	20301-1900	REMOVAL OF PIPE CULVERT		11.000	$7,500.00	46.81	$11,010.64	1.0000	EACH	A	$7,477,477.00
CA FLAP MAD CR26(1) ET AL	Avenue 26 and Road 29	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		10.000	$1,575.00	93.30	$3,044.49	1.0000	EACH	A	$16,725,752.00
CA FTNP YOSE 15(2)	Glacier Point Road	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		14.000	$4,900.00	93.30	$9,471.74	1.0000	EACH	A	$32,930,566.15

UNIT PRICE ANALYSIS

Project Code	Project Name	Bid Status	Award Date	Pay Item No	Item Description	Supplemental Description	Quantity	Unit Price	Inflation	Inflated Unit Price	Conversion Factor	Original Unit	Schedule	Overall Contract Total
CA FTNP YOSE 15(2)	Glacier Point Road	Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		15.000	$2,500.00	93.30	$4,832.52	1.0000	EACH	X	$32,930,566.15
CA FTNP YOSE 15(2)	Glacier Point Road	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		15.000	$1,982.00	93.30	$3,831.22	1.0000	EACH	X	$32,930,566.15
CA FTNP YOSE 15(2)	Glacier Point Road	Not Awarded	12/14/2021	20301-1900	REMOVAL OF PIPE CULVERT		15.000	$1,600.00	93.30	$3,092.81	1.0000	EACH	X	$32,930,566.15

U.S. Department of Transportation Federal Highway Administration

AD-HOC UNIT PRICE SEARCH RESULT - DETAILS REPORT

Bid History from Masterworks Ad-hoc Unit Price Search Results Report Report

ITEM DETAILS

Standard Items Table: FP 24 | Description: CONCRETE | Unit: CUYD
Measurement System: US Customary
Pay Item No: 60101-0000

SEARCH CRITERIA

Search Based On: Search In All Projects | Schedule Construction Type: | Supplemental Description:
Contractor: | Density: | Schedule Letter:
Terrain: | Inflation Index: 2.0 National Highway CCI
State: CA | Item Quantity: 500 | Bid Status: Awarded,Not Awarded
Partner Agency: | Quantity To: 0 | Project Number:
Standard Items Table: FP 14,FP 24 | Unit Price in $: 5,500.00 | Project Name:
Quantity From: 0

Select an appropriate inflation factor

BID DATE

Search Based On: Pay Item No. | Award Date From: 09/26/2021 | Award Date To: 12/18/2025

SEARCH RESULTS

Records Selected: 7 | High in $: 8,850.00
Low in $: 1,486.16 | Average Unit Price in $: 5,204.18
Suggested Unit Price in $: ~~92,617.80~~

Ignore regression equation suggested unit price

Used for Analysis	State	Project Code	Schdeule	Bid Status	Bid Award Date	Pay Item No	Item Description	Supplemental Description	Quantity	Unit Price in $	Inflation %	Inlfation Unit Price in $	Overall Contract Total in $	Terrain	Density	Schdelue Construction Type	Partner Agency	Conversion Factor	Original Unit	Original FP
True	CA	CA ERFO NP YOSE 2023-2(1)	A	Awarded	08/04/2025	60101-0000	CONCRETE		65.000	7,957.86	0.00	7,957.86	4,846,465.12	Mountainous	Rural	Trail	NPS	1.0000	CUYD	FP 24
True	CA	CA ERFO NP YOSE 2023-2(1)	A	Not Awarded	08/04/2025	60101-0000	CONCRETE		65.000	8,850.00	0.00	8,850.00	4,846,465.12	Mountainous	Rural	Trail	NPS	1.0000	CUYD	FP 24
True	CA	CA ERFO NP SEKI 2021-1(1)	A	Not Awarded	08/10/2023	60101-0000	CONCRETE		45.000	2,531.80	1.44	2,568.36	1,510,602.50	Mountainous	Rural		NPS	1.0000	CUYD	FP 14
True	CA	CA ERFO NP SEKI 2021-1(1)	A	Not Awarded	08/10/2023	60101-0000	CONCRETE		45.000	1,465.00	1.44	1,486.16	1,510,602.50	Mountainous	Rural		NPS	1.0000	CUYD	FP 14
True	CA	CA ERFO NP SEKI 2021-1(1)	A	Not Awarded	08/10/2023	60101-0000	CONCRETE		45.000	2,250.00	1.44	2,282.49	1,510,602.50	Mountainous	Rural		NPS	1.0000	CUYD	FP 14
True	CA	CA FTBR PONDEROSA BRIDGE (1) & CA FTBR MTN QUARRY BRIDGE	X	Awarded	06/15/2022	60101-0000	CONCRETE		2.000	4,200.00	13.54	4,768.75	7,477,477.00	Mountainous	Rural		BLM,BOR	1.0000	CUYD	FP 14
True	CA	CA FTBR PONDEROSA BRIDGE (1) & CA FTBR MTN QUARRY BRIDGE	X	Not Awarded	06/15/2022	60101-0000	CONCRETE		2.000	7,500.00	13.54	8,515.62	7,477,477.00	Mountainous	Rural		BLM,BOR	1.0000	CUYD	FP 14
False	CA	CA ERFO NP YOSE 2023-2(1)	A	Not Awarded	08/04/2025	60101-0000	CONCRETE		65.000	17,500.00	0.00	17,500.00	4,846,465.12	Mountainous	Rural	Trail	NPS	1.0000	CUYD	FP 24
False	CA	CA ERFO NP SEKI 2021-1(1)	A	Awarded	08/10/2023	60101-0000	CONCRETE		45.000	515.00	1.44	522.44	1,510,602.50	Mountainous	Rural		NPS	1.0000	CUYD	FP 14
False	CA	CA FLAP CR2N40(1)	A	Awarded	05/30/2023	60101-0000	CONCRETE	(RETENTION COLLAR)	7.000	2,000.00	1.44	2,028.88	7,676,561.00	Mountainous	-		USFS,County	1.0000	CUYD	FP 14
False	CA	CA FLAP CR2N40(1)	A	Not Awarded	05/30/2023	60101-0000	CONCRETE	(RETENTION COLLAR)	7.000	4,000.00	1.44	4,057.76	7,676,561.00	Mountainous	-		USFS,County	1.0000	CUYD	FP 14
False	CA	CA FLAP CR2N40(1)	A	Not Awarded	05/30/2023	60101-0000	CONCRETE	(RETENTION COLLAR)	7.000	3,068.97	1.44	3,113.29	7,676,561.00	Mountainous	-		USFS,County	1.0000	CUYD	FP 14
False	CA	CA FLAP CR2N40(1)	A	Not Awarded	05/30/2023	60101-0000	CONCRETE	(RETENTION COLLAR)	7.000	3,500.00	1.44	3,550.54	7,676,561.00	Mountainous	-		USFS,County	1.0000	CUYD	FP 14

U.S. Department of Transportation Federal Highway Administration

AD-HOC UNIT PRICE SEARCH RESULT - DETAILS REPORT

False	CA	CA FLAP CR2N40(1)	A	Not Awarded	05/30/2023	60101-0000	CONCRETE	(RETENTION COLLAR)	7.000	2,974.70	1.44	3,017.66	7,676,561.00	Mountainous	-		USFS,County	1.0000	CUYD	FP 14
False	CA	CA FTBR PONDEROSA BRIDGE (1) & CA FTBR MTN QUARRY BRIDGE	X	Not Awarded	06/15/2022	60101-0000	CONCRETE		2.000	7,650.00	13.54	8,685.93	7,477,477.00	Mountainous	Rural		BLM,BOR	1.0000	CUYD	FP 14
False	CA	CA FTBR PONDEROSA BRIDGE (1) & CA FTBR MTN QUARRY BRIDGE	X	Not Awarded	06/15/2022	60101-0000	CONCRETE		2.000	250.00	13.54	283.85	7,477,477.00	Mountainous	Rural		BLM,BOR	1.0000	CUYD	FP 14

Cost-Based Unit Price:
Aggregate Base

Project Name and Number: AZ PFH 123-1(1) Example Road

Cost-based Unit Price Spreadsheet

Pay Item Number: 30101-0100
Description: AGGREGATE BASE
Quantity: 25,000
Unit: TON

ASSUMPTIONS		
Description	**Assumed Value**	**Remarks**
Haul Assumptions		
Type of truck	Belly Dump	
Truck haul capacity (tons)	22	See RS Means for truck haul capacity
Number of trucks	10	
Load time (minutes)	5	Default = 5
Dump time (minutes)	10	Default = 10; includes turnaround time
Haul speed (MPH)	45	Slower speed when fully loaded
Return speed (MPH)	55	Speed limit along haul route
Haul distance (miles)	26	Distance from pit to project
Shift length (hours)	10	
Efficiency Factor	90%	Default = 90%; inefficiencies include breakdowns, weather, coffee breaks, etc
Finishing Assumptions		
Finishing production rate	0.25 mi/day	From RS Means

HAUL EQUIPMENT (COST PER HOUR) (1)								
Description	**Quantity**	**Cost / Hour (2)**	**Subtotal**	**Overhead (3)**	**Subtotal**	**Profit (4)**	**Total Cost / Hour**	**Remarks (5)**
Haul truck	10	$ 48.92	$ 489.20	10%	$538.12	10%	$591.93	From RS Means
Cat 966 Loader	1	$ 58.30	$ 58.30	10%	$64.13	10%	$70.54	From RS Means
Cat 120H Motor Grader	1	$ 56.87	$ 56.87	10%	$62.56	10%	$68.81	From RS Means
6,000 Gallon Water Truck	1	$ 78.88	$ 78.88	10%	$86.77	10%	$95.44	From RS Means
Cat PS-360C Pneumatic Roller	1	$ 21.25	$ 21.25	10%	$23.38	10%	$25.71	From RS Means
						TOTAL HAUL EQUIPMENT =	**$852.45**	

(1) These are typical types of equipment used in this operation. Adjust for any project-specific requirements.
(2) These costs/unit can be obtained from historical bid prices or from RS Means.
(3) Default overhead = 10%. If using historical UPA's, do not include overhead.
(4) Default profit = 10% If using historical UPA's, do not include profit.
(5) Note where the information was obtained.

H A U L L A B O R (COST PER HOUR) (1)									
Description	Quantity	Cost / Hour (2)	Subtotal	Payroll Burden	Subtotal	Overhead	Subtotal	Profit	Total Cost / Hour
Truck driver	11	$ 55.45	$ 609.95	35%	$ 823.43	10%	$ 905.78	10%	$ 996.35
Operators	4	$ 63.05	$ 252.20	35%	$ 340.47	10%	$ 374.52	10%	$ 411.97
Foreman w/truck	1	$ 85.42	$ 85.42	35%	$ 115.32	10%	$ 126.85	10%	$ 139.53
Superintendent w/truck	1	$ 95.42	$ 95.42	35%	$ 128.82	10%	$ 141.70	10%	$ 155.87
Dumpman	1	$ 47.25	$ 47.25	35%	$ 63.79	10%	$ 70.17	10%	$ 77.18
Scale person	1	$ 47.25	$ 47.25	35%	$ 63.79	10%	$ 70.17	10%	$ 77.18
T O T A L									**$ 1,858.09**

(1) These are typical types of labor used in this operation. Adjust for any project-specific requirements.

(2) Davis-Bacon link. Use Davis-Bacon labor rates. Include fringes. Not all labor classifications have rates in Davis-Bacon, use judgment where rates aren't available.

C Y C L E T I M E		
	Hours	Remarks
Load Time =	0.08	
Haul Time =	0.58	
Dump Time =	0.17	
Return Time =	0.47	
HOURS PER CYCLE	**1.44**	Adjusted by efficiency factor

Number of Cycles =	114	per haul truck
Total Number of Hours =	164.2	
Total Cost to Haul and Place Aggregate Base =	$ 444,961.41	
Haul and Place Unit Price =	$ 17.80	

Calculated Number of Haul Days* =	16
*Add time for weekends and expected rain delays	

HAUL UNIT PRICE = $ 17.80 per ton

M A T E R I A L S					
Description	Cost / Unit	Unit	Prime Mark-up	Total Cost / Unit	Remarks
Material Price at Pit	$ 34.00	ton	10%	$ 37.40	Quote from Big Pit on 04/27/23 (303-555-1234)

Document quotes from suppliers.

MATERIALS UNIT PRICE = $ 37.40 per ton

FINISHING EQUIPMENT									
Description [1]	Quantity	Unit	Cost / Unit [2]	Subtotal	Overhead [3]	Subtotal	Profit [4]	Total Cost / Hour	Remarks
Cat 120H Motor Grader	120	hour	$ 56.87	$ 6,824.40	10%	$7,506.84	10%	$8,257.52	3 miles at 0.25 miles/day = 12 days
6,000 Gallon Water Truck	120	hour	$ 78.88	$ 9,465.60	10%	$10,412.16	10%	$11,453.38	
Pneumatic Roller	120	hour	$ 21.25	$ 2,550.00	10%	$2,805.00	10%	$3,085.50	
							TOTAL FINISHING EQUIPMENT =	**$22,796.40**	

(1) These are typical types of equipment used in this operation. Adjust for any project-specific requirements.
(2) These costs/unit can be obtained from historical bid prices or from RS Means.
(3) Default overhead = 10%. If using historical UPA's, do not include overhead.
(4) Default profit = 10% If using historical UPA's, do not include profit.
(5) Note where the information was obtained.

FINISHING LABOR												
Description [1]	Quantity	Unit	Cost / Unit [2]	Subtotal	Payroll Burden [3]	Subtotal	Overhead [4]	Subtotal	Profit [5]	Total	Remarks
Operators	240	Hours	$ 63.05	$ 15,132.00	35%	$20,428.20	10%	$ 22,471.02	10%	$24,718.12	
Truck Driver	120	Hours	$ 55.45	$ 6,654.00	35%	$ 8,982.90	10%	$ 9,881.19	10%	$ 10,869.31	
Foreman w/truck	120	Hours	$ 85.42	$ 10,250.40	35%	$13,838.04	10%	$ 15,221.84	10%	$16,744.03	
Superintendent w/truck	120	Hours	$ 95.42	$ 11,450.40	35%	$15,458.04	10%	$ 17,003.84	10%	$18,704.23	
Laborer - Stake Jumper	120	Hours	$ 47.25	$ 5,670.00	35%	$ 7,654.50	10%	$ 8,419.95	10%	$ 9,261.95	
TOTAL										**$80,297.63**	

(1) These are typical types of labor used in this operation. Adjust for any project-specific requirements.
(2) Use Davis-Bacon labor rates (http://www.gpo.gov/davisbacon/allstates.html). Include fringes. Not all labor classifications have rates in Davis-Bacon, use judgement where rates aren't available.
(3) Default payroll burden = 35%
(4) Default overhead = 10%
(5) Default profit = 10%

Finishing Equipment Price =	$ 22,796.40
Finishing Labor Price =	$ 80,297.63
Total Cost / Unit for Finishing =	**$ 4.12**

FINISHING UNIT PRICE = $ 4.12

TOTAL UNIT PRICE (HAUL + FINISHING + MATERIAL) = $ 59.32 per ton

UNIT PRICE USED = $ 60.00 per ton

Discuss unit price with CFT. Document any updates to unit price at each milestone.