

CALTRANS ESTIMATING PRACTICES

(Review of Consultant Estimates and Practices)

Purpose:

The purpose of this review is to compare the Department's estimating practices and results to those of qualified Consultant Engineers frequently used by the Department. The goal is to identify estimating practices and methods that, if adopted, would improve the consistency and accuracy of the Department's construction contract estimates.

Background:

In 2005, the California Transportation Commission (CTC) became concerned with what they observed as a significant increase in the number of requests made for Supplemental Funds, when bids were received for more than the Engineer's Estimates anticipated. They were concerned that, beyond the recent dramatic increases in the costs of cement and steel, the Department's estimates were not adequately projecting construction costs. In response, the Department agreed to review its estimating practices, including comparing its practices and results with those of its consultants.

Results:

Thirty-one (31) construction projects were selected for the review. A Task Order was issued to a consultant for each project, to prepare an estimate of the project costs based on the plans, specifications, list of contract items and quantities, and any available handout information, as provided to the bidders. The consultant estimate was then compared to the Engineer's Estimate developed by the Department and to the Low Bid accepted for the project.

The accuracy and variability of the consultants' estimates compared very closely to those generated by the Department. On average, the Department's estimates were 9.3 % over the Low Bid, while the consultants' estimates were 11.1% over Low Bid. Overall, the absolute difference of estimate to Low Bid was the same for both the consultants and the Department at 15.2%. Eighty percent (80%) of the Department's estimates differed from Low Bid by more than 10%, and 65% of consultant estimates did so. None of the consultants stood out as either significantly more or significantly less accurate than the Department. One consultant had a single Task Order assigned, which came out 29% over the Low Bid. However, there were only 2 bids received on the project, and there was a 25% spread between them. The Department's estimate was 11% under the Low Bid. Obviously, there were aspects of the project that made estimating problematic. The most common contract items that varied were : Time Related Overhead, Traffic Control, Earthwork, Aggregate Base, pavement, Concrete, Concrete barrier, and Mobilization.

Note should also be made that during the course of the review, the Department placed renewed focus on estimating and more timely updates. This may have resulted in the Department's estimates later in the review tending to be more frequently over the Low Bid.

A second part of the review concerned the consultants' estimating practices and resources. For each Task Order, the consultant reported the methods used to estimate the unit prices for the project, the resources used, and the various methods generally used in

estimating. In addition, several of the initial consultants were asked to provide a more in-depth report on estimating practices. The conclusion drawn from these reports is that the consultants use the same methodologies and practices as the Department, and the same resources, such as the Caltrans Construction Cost Data and Construction Price Index, and independent professional resources such as Engineering News Record, and RSMeans. Some of them reported having computer programs and databases to store information and assist in projecting estimated costs. While these may expedite estimates for frequent users familiar with the tools, no overall improvement was shown over the Department's methods, by the review.

Recommendations:

During the course of the review, discussions with both consultant and Department estimating experts suggested several improvements the Department should consider for its estimating resources and practices:

- more frequent updates to estimates (implemented by Department memo).
- base Caltrans Construction Cost Data on the average of the unit prices from the 3 low bids received, excluding obvious "flyers", as Structures OE does for their data for bridge items. This provides more stable estimates of unit costs, removing business decisions and bidding techniques of the contractors outside the purview of an estimate. Long term, if this provides unit costs higher than those being submitted as low bids, adjustment factors will be more clearly identifiable.
- in the Caltrans Construction Costs Data, provide additional average unit prices for Roadway Excavation, Aggregate Base, Asphalt Concrete, and Portland Cement Concrete Pavement, based on relative quantity groupings.
- for multi-year projects, project unit price estimates to the middle of construction of the contract item, considering staging and construction sequence.

Conclusions:

The results of the review do not identify practices or methods used by consultants, not already used by the Department, that would improve the consistency and accuracy of the Department's construction contract estimates. The consultants use basically the same methods and resources as the Department, with comparable results in predicting the low bid amounts. Indeed, the Department is using the professional industry standards for estimating.

Comments:

As part of the initial response to CTC, the Department prepared a presentation entitled "Transportation Project Cost Estimating", which included a chart of "Reasons for Poor Estimates". The reasons listed were: not updated, old and out of date; based on historic, not forecasted information; prepared by staff with limited estimating expertise; based upon low quality or high risk plans and specifications; not tailored to project construction schedule; prepared without quality control/assurance; constrained by programmed funding level.

Even with the improvements discussed above, there are other factors in estimating that can significantly affect estimated costs, but are difficult to anticipate or apply reliably. The number of bidders available to bid on a project, and the other projects

advertised for bid at the same time, by both the Department and local entities, vary widely from week to week, and from month to month. Such factors can be approximated only at the time of advertisement of a project. How they will apply to individual item prices is problematic, and it is not practical to revise a project allotment based on them during advertisement. Further, bidders have business strategies and techniques they use to "under-bid" their competitors, even up to the last minute before bid opening. It is imprudent include such factors in an Engineer's Estimate, as they are intangible and cannot be foreseen.

By continuing to actively address the "Reasons for Poor Estimates" and the recommendations above, the Department can continue to improve the quality and accuracy of its estimates. A number of these factors have already been successfully improved in response to the concerns of the CTC and Department Management. Others require consideration of business impacts versus anticipated improvements. The practice of constraining estimates to their programmed project funding levels is culturally engrained due to lack of confidence in our estimates, and therefore reluctance to timely inform the CTC . It will be difficult for estimators to gain the confidence to drop this practice. The quality of the plans and specifications is governed by 1) the experience level of the designers and 2) the urgency to deliver projects "on schedule". Optimizing the quality of the plans and specifications versus the relative risks presented (e.g. increased bids) is a business decision of Department Management that should be reviewed periodically.

The purpose of an Engineer's Estimate is to allot sufficient funds during planning and development of a project so that funds will be available for construction of the project. The accuracy required is directly related to that purpose. In the case of Caltrans, project funds are allocated by the CTC, rather than by the Legislature as for other departments. In addition, there is a "G-12" process assigning an amount of funds as assurance against overages. These processes are in recognition of the large number of projects the Department advertises, and the accuracy that can be expected of estimating such varied projects. The means to increase or decrease the funds allotted to a project are simplified accordingly. Therefore, Engineer's Estimates need only be accurate to the extent that, overall, projects are not over-estimated to the point that other projects cannot be programmed, and are not under-estimated to the point of depleting the available program G-12 funds. The Department Management must analyze the risks of returning projects to the CTC for Supplemental Funds against the costs of more refined and accurate estimates, and determine the optimal (i.e. cost effective) target percentage of projects that inevitably return to the CTC.

Donald R. Scheel
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Office Engineer
Division of Engineering Services

No.	EA	Consult.	Avg.		Abs. Avg.		Abs. Avg.>10%	
			CT	Consult	CT	Consult	CT	Consult
1	03-3822V4	PBQ&D	6.69	-13.72	6.69	13.72		13.72
2	04-470804	DEA	-10.62	-12.91	10.62	12.91	10.62	12.91
3	07-115454	HNTB	14.71	2.18	14.71	2.18	14.71	
4	08-354804	LAN	27.17	7.37	27.17	7.37	27.17	
5	11-080944	TY Lin	11.13	-29.09	11.13	29.09	11.13	29.09
6	05-0A4904	LAN	-13.38	6.39	13.38	6.39	13.38	
7	10-0N2104	LAN	-13.28	-8.21	13.28	8.21	13.28	
8	04-269604	DEA	-31.72	-18.71	31.72	18.71	31.72	18.71
9	01-4146V4	PB	-4.44	-25.03	4.44	25.03		25.03
10	04-174934	PB	-12.62	3.09	12.62	3.09	12.62	
11	02-311204	PB	-13.27	-2.98	13.27	2.98	13.27	
12	04-0A8004	"H,M,McD"	-18.06	-21.06	18.06	21.06	18.06	21.06
13	07-258004	"H,M,McD"	13.16	-34.59	13.16	34.59	13.16	34.59
14	03-0A6324	LAN	-1.61	7.61	1.61	7.61		
15	07-222224	"H,M,McD"	-9.87	-8.82	9.87	8.82		
16	06-419614	LAN	-12.84	-33.45	12.84	33.45	12.84	33.45
17	04-0120L4	"H,M,McD"	-10.39	-10.01	10.39	10.01	10.39	10.01
18	01-345404	LAN	-27.28	-25.23	27.28	25.23	27.28	25.23
19	04-226144	"H,M,McD"	-9.34	-3.47	9.34	3.47		
20	01-434604	LAN	7.53	-12.78	7.53	12.78		12.78
21	08-384204	"H,M,McD"	-13.02	-4.73	13.02	4.73	13.02	
22	09-317704	LAN	10.80	12.38	10.80	12.38	10.80	12.38
23	07-223304	"H,M,McD"	-26.42	-19.29	26.42	19.29	26.42	19.29
24	06-459404	LAN	-27.69	-18.96	27.69	18.96	27.69	18.96
25	11-2358U4	"H,M,McD"	-17.01	-24.75	17.01	24.75	17.01	24.75
26	06-430504	LAN	-19.32	-21.40	19.32	21.40	19.32	21.40

No.	EA	Consult.	Avg.		Abs. Avg.		Abs. Avg.>10%	
			CT	Consult	CT	Consult	CT	Consult
27	07-129934	"H,M,McD"	-26.97	-12.78	26.97	12.78	26.97	12.78
28	09-333004	LAN	-18.52	-28.38	18.52	28.38	18.52	28.38
29	02-359904	LAN	-11.61	6.97	11.61	6.97	11.61	
30	02-2C74U4	LAN	-23.39	-17.83	23.39	17.83	23.39	17.83
31	01-292004	LAN	-6.71	18.09	6.71	18.09		18.09
			-288.21	-344.08	470.57	472.25	424.37	410.43
		AVG.	-9.30%	-11.10%	15.20%	15.20%	17.00%	20.50%
2	04-470804	DEA	-10.62	-12.91	10.62	12.91	10.62	12.91
8	04-269604	DEA	-31.72	-18.71	31.72	18.71	31.72	18.71
			-42.34	-31.62	42.34	31.62	42.34	31.62
		AVG.	-14.10%	-10.50%	21.20%	15.80%	21.20%	15.80%
12	04-0A8004	"H,M,McD"	-18.06	-21.06	18.06	21.06	18.06	21.06
13	07-258004	"H,M,McD"	13.16	-34.59	13.16	34.59	13.16	34.59
15	07-222224	"H,M,McD"	-9.87	-8.82	9.87	8.82		
17	04-0120L4	"H,M,McD"	-10.39	-10.01	10.39	10.01	10.39	10.01
19	04-226144	"H,M,McD"	-9.34	-3.47	9.34	3.47		
21	08-384204	"H,M,McD"	-13.02	-4.73	13.02	4.73	13.02	
23	07-223304	"H,M,McD"	-26.42	-19.29	26.42	19.29	26.42	19.29
25	11-2358U4	"H,M,McD"	-17.01	-24.75	17.01	24.75	17.01	24.75
27	07-129934	"H,M,McD"	-26.97	-12.78	26.97	12.78	26.97	12.78
			-117.91	-139.49	144.23	139.49	125.02	122.47
		AVG.	-10.10%	-15.50%	16.00%	15.40%	17.90%	20.40%
3	07-115454	HNTB	14.71	2.18				

No.	EA	Consult.	Avg.		Abs. Avg.		Abs. Avg.>10%	
			CT	Consult	CT	Consult	CT	Consult
4	08-354804	LAN	27.17	7.37	27.17	7.37	27.17	
6	05-0A4904	LAN	-13.38	6.39	13.38	6.39	13.38	
7	10-0N2104	LAN	-13.28	-8.21	13.28	8.21	13.28	
14	03-0A6324	LAN	-1.61	7.61	1.61	7.61		
16	06-419614	LAN	-12.84	-33.45	12.84	33.45	12.84	33.45
18	01-345404	LAN	-27.28	-25.23	27.28	25.23	27.28	25.23
20	01-434604	LAN	7.53	-12.78	7.53	12.78		12.78
22	09-317704	LAN	10.80	12.38	10.80	12.38	10.80	12.38
24	06-459404	LAN	-27.69	-18.96	27.69	18.96	27.69	18.96
26	06-430504	LAN	-19.32	-21.40	19.32	21.40	19.32	21.40
28	09-333004	LAN	-18.52	-28.38	18.52	28.38	18.52	28.38
29	02-359904	LAN	-11.61	6.97	11.61	6.97	11.61	
30	02-2C74U4	LAN	-23.39	-17.83	23.39	17.83	23.39	17.83
31	01-292004	LAN	-6.71	18.09	6.71	18.09		18.09
			-130.14	-107.43	221.14	225.05	205.29	188.50
		AVG.	-9.30%	-7.70%	15.80%	16.10%	18.70%	20.90%
9	01-4146V4	PB	-4.44	-25.03	4.44	25.03		25.03
10	04-174934	PB	-12.62	3.09	12.62	3.09	12.62	
11	02-311204	PB	-13.27	-2.98	13.27	2.98	13.27	
			-30.34	-24.91	30.34	31.10	25.90	25.03
		AVG.	-10.10%	-8.30%	10.10%	10.40%	12.90%	25.00%
1	03-3822V4	PBQ&D	6.69	-13.72				
5	11-080944	TY Lin	11.13	-29.09				

COST ESTIMATES INDEPENDENT ASSURANCE (IA) TASK ORDER SUMMARY

6/10/2008
3:30 pm

Contract # Bid Open	Task order No. Consultant TO Max. Cost	ENGINEER'S ESTIMATE Bid v EE (TO Total Cost = \$1,061,662.90)	Consult. Estimate Bid v Conc E	LOW BID SECOND BID THIRD BID Mean Bid	Consult Est. Method Comments	No.
03-3822V4 1/11/06	59A0477 #1 PBQ&D 49,585	76,658,878.07 6.69	94,786,695 -13.72	81,784,984.2 82,333,333 83,942,103.25 82,686,806.82	CT CCD, Timberline escl. Roadway Exc., Imp. Borrow, CI 2 AB, AC(A), CIDH piling, Rebar	1
04-470804 6/14/06	59A0478 #1A DEA 20,000	21,133,678 -10.62	21,689,784 -12.91	18,888,605.5 19,363,492 19,870,915.9 19,374,337.80	CT CCD, CA & FHWA index Traffic Cntrl., Roadway Exc., CI 2 AB, AC, Str. Conc. Br., Rebar	2
07-115454 2/23/06	59A0479 #1 HNTB 36,000	51,654,883.85 14.71	57,986,200 2.18	59,253,187.9 70,645,791 72,107,185 67,335,387.97	CT CCD, ENR escl. CI 3 AB, LCB, PCCP, Furn Sign Str.	3

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08-354804 1/5/06	59A0481 #1 LAN 48,570.67	40,604,590.52 27.17	48,093,185 7.37	51,635,850 55,486,231 64,700,019 57,274,033.33	CT CCD, sim. projects A+B TRO, LCB, PCCP, 400mm CIDH, Str. Conc. Br., Sound wall (barrier), Rebar	4
11-080944 5/18/06	59A0480 #1 TY Lin 24,910.67	35,628,960 11.13	55,836,143 -29.09	39,592,936 49,976,845 44,784,890.5 44,784,890.50	CT CCD & Price Index 2 Bids TRO, K Rail, Roadway Exc., Str. Exc. Earth Ret. Str., CL 2 AB, AC, PCCP, Rebar, Furn Sign Str., 600mm RCP (TO Terminated)	5
05-0A4904 10/30/07	59A0481 #2 LAN 30,000	19,716,871 -13.38	16,052,157 6.39	17,078,159 17,728,302 17,732,242.15 17,512,901.05	CT CCD, Similar projects TRO, Consult. AC, Imp. Borrow, Cold Foam AC, Mob.	6

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10-0N2104 9/12/06	59A0481 #3 LAN 30,000	7,261,000 -13.28	6,860,000 -8.21	6,296,520 7,218,385 7,331,950 6,948,951.67	CT CCD, local projects TRO, Traffic Control, Cold Plane AC, Mob.	7
04-269604 3/7/07	59A0478 #4 DEA 30,000	50,716,163.5 -31.72	42,600,000 -18.71	34,630,397 39,158,855 41,355,038 38,381,430.00	CT CCD A+B Traffic Control, AC, Rubberized AC, Mob.	8
01-4146V4 8/29/06	59A0477 #2 PB 30,000	16,711,586.2 -4.44	21,300,000 -25.03	15,969,207.3 17,951,361 21,246,984 18,389,184.10	CT CCD Roadway Exc., Mob.	9

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04-174934 4/24/07	59A0478 #3 PB 30,000	10,264,802 -12.62	8,700,000 3.09	8,968,934 9,437,180 10,079,814 9,495,309.33	CT CCD A+B Roadway Exc., Soil Nail Wall, Shotcrete, Mob.	10
02-311204 8/1/06	59A0477 #3 PB 30,000	6,600,190 -13.27	5,900,000 -2.98	5,724,296 6,575,321 6,592,905 6,297,507.33	CT CCD TRO, Traffic Control, Str. Concrete Br.	11
04-0A8004 3/6/07	59A0548 #1A H,M,McD 19,478	4,722,082 -18.06	4,901,480.28 -21.06	3,869,432 3,999,086 5,235,740 4,368,086.00	CT CCD, Force Acct. TRO, K-Rail, CIDH, Mob.	12

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07-258004 3/8/07	59A0548 #1B H,M,McD 46,482	9,646,643 13.16	16,688,680 -34.59	10,915,756.8 11,755,950 11,900,222 11,523,976.27	CT CCD, Force Acct. TRO, Traffic Control, Roadway Exc., Metering Systems, Mob.	13
03-0A6324 2/27/07	59A0549 #1 LAN 29,606	65,527,577.65 -1.61	59,912,374 7.61	64,471,600 65,405,405 71,341,940 67,072,981.67	CT CCD, Force Acct. TRO, SWPPP Items, K-Rail, Roadway Exc., Imp. Borrow, Cl.2 AB, Str. Conc., Flared End Sec., Minor Conc., Conc. Barrier, Thermopl. Stripe, Lighting	14
07-222224 4/12/07	59A0548 #2 H,M,McD 38,200	18,980,599.93 -9.87	18,762,063 -8.82	17,107,480.55 18,885,863.5 21,889,898.4 19,294,414.15	CT CCD TRO, Traf. Control, Br. Removal, Treat Br. Deck, Conc. Barrier, Lighting, Mob.	15

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06-419614 4/10/07	59A0549 #2 LAN 34,920.56	5,942,563 -12.84	7,783,122 -33.45	5,179,566.05 5,453,435.5 5,515,960 5,382,987.18	CT CCD TRO, WPC Items, Traf. Control, Imp. Borrow, Str. Conc., Rebar, Mob.	16
04-0120L4 6/5/07	59A0548 #3 H,M,McD 146,000	198,392,812 -10.39	197,547,272 -10.01	177,777,778 194,476,270 195,336,669 189,196,905.6	CT CCD, similar projects A+B (Consult. added \$21M for OT) Transp. Engr., TRO, Const. Surveying, Roadway Exc., Str. Exc., Piling, Prestress, Str. Conc., Seismic Joints, Rebar, Mob.	17
01-345404 4/17/07	59A0549 #3 LAN 26,530	7,411,064.3 -27.28	7,207,417 -25.23	5,389,113 6,285,250 7,063,778 6,246,047.00	CT CCD TRO, Traf. Control, Roadway Exc., AC, Alt. Pipe Culvert, Mob.	18

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04-226144 5/30/07	59A0548 #4 H,M,McD 53,500	48,370,074.9 -9.34	45,426,100 -3.47	43,851,526 49,683,768 48,747,561 47,427,618.33	CT CCD, ENR, Means A+B CPM, TRO, Remove Sound Wall, Roadway Exc., Str. Conc. Ret. Wall, RR Track, Conc. Barrier	19
01-434604 4/25/07	59A0549 #4 LAN 35,000	6,660,168.1 7.53	8,211,354 -12.78	7,162,000 7,262,511 7,569,854.26 7,331,455.09	CT CCD (Note - Approx. \$5M in Bldg. Work at LS) TRO, Roadway Exc., Imp. Borrow, CI2 AB, AC, Bldg. Wk.	20
08-384204 6/7/07	59A0548 #5 H,M,McD 29,300	10,200,259 -13.02	9,313,026 -4.73	8,872,606 9,024,124 9,040,598 8,979,109.33	CT CCD similar projects TRO, Const. Site Mgt., Traf. Control, K-Rail, Port. Ch. Msg. Sign, Roadway Exc., CI2 AB, MBGR, Minor Conc., Ramp Metering, Wireless Comm. System	21

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Contract # Bid Open	Task order No. Consultant TO Max. Cost	ENGINEER'S ESTIMATE Bid v EE (TO Total Cost = \$1,061,662.90)	Consult. Estimate Bid v Conc E	LOW BID SECOND BID THIRD BID Mean Bid	Consult Est. Method Comments	No.
09-317704 5/1/07	59A0549 #5 LAN 14,100	6,355,900 10.80	6,266,377 12.38	7,042,407 7,117,350 7,481,600 7,213,785.67	CT CCD TRO, Traf. Control, Rubberized AC, Traf. Stripe	22
07-223304 6/7/07	59A0548 #6 H,M,McD 21,000	5,913,711.6 -26.42	5,391,152.34 -19.29	4,351,337.5 4,828,390 4,949,729.2 4,709,818.90	CT CCD TRO, WPC, Traf. Control, Roadway Exc., C13 AB, Binder, Screenings, AC, Rubberized AC, Monor Conc., Mob.	23
06-459404 5/8/07	59A0549 #6 LAN 20,000	12,868,890 -27.69	11,482,377 -18.96	9,305,686 10,398,449 10,839,631 10,181,255.33	CT CCD TRO, WPC, Traf. Control, Remove PCCP, Cold Plane AC, Roadway Exc., Imp. Borrow, AC, Rubberized AC, Replace PCCP, Mob.	24

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3:30 pm

Contract # Bid Open	Task order No. Consultant TO Max. Cost	ENGINEER'S ESTIMATE Bid v EE (TO Total Cost = \$1,061,662.90)	Consult. Estimate Bid v Conc E	LOW BID SECOND BID THIRD BID Mean Bid	Consult Est. Method Comments	No.
11-2358U4 6/28/07	59A0548 #7 H,M,McD 60,500	39,548,558 -17.01	43,615,899 -24.75	32,821,953 32,827,328 36,569,731 34,073,004.00	CT CCD A+B TRO, SWPPP Items, Traf. Control, K-Rail, Earthwork, Walls, PCCP, CIDH, Conc. Barrier, Signal & Lighting, Mob.	25
06-430504 5/22/07	59A0549 #7 LAN 17,500	7,013,586 -19.32	7,199,175 -21.40	5,658,383.5 6,299,864 6,313,542 6,090,596.50	CT CCD TRO, Traf. Control, Roadway Exc., Landscape, AC, Culverts, Mob.	26
07-129934 6/28/07	59A0548 #8 H,M,McD 35,000	14,377,681 -26.97	12,039,215 -12.78	10,500,300 11,405,773 11,470,335.5 11,125,469.50	CT CCD TRO, WPC, Traf. Control, Earthwork, AC, Str. Conc., Conduit, Traf. Monitor System, Closed Circ. TV, Data Nodes, Mob.	27

COST ESTIMATES INDEPENDENT ASSURANCE (IA) TASK ORDER SUMMARY

6/10/2008
3:30 pm

Contract # Bid Open	Task order No. Consultant TO Max. Cost	ENGINEER'S ESTIMATE Bid v EE (TO Total Cost = \$1,061,662.90)	Consult. Estimate Bid v Conc E	LOW BID SECOND BID THIRD BID Mean Bid	Consult Est. Method Comments	No.
09-333004 5/23/07	59A0549 #8 LAN 12,500	6,197,960 -18.52	7,051,008 -28.38	5,050,202 5,100,006 5,429,007 5,193,071.67	CT CCD TRO, Traf. Control, AC, Rubberized AC, Mob.	28
02-359904 5/23/07	59A0549 #9 LAN 22,000	7,468,484 -11.61	6,171,677 6.97	6,601,626 6,733,022 7,172,288 6,835,645.33	CT CCD ADDITIVE BID (Not included in Consult. Est., add \$400,000) TRO, Const. Area Signs, Traf. Control, Cold Plane AC, Earthwork, AC, PCCP, Minor Conc., Sig&Light	29
02-2C74U4 5/22/07	59A0549 #10 LAN 19,500	10,346,490.25 -23.39	9,646,351 -17.83	7,926,072.5 8,591,565.18 9,692,580.73 8,736,739.47	CT CCD TRO, Traf. Control, Remove PCCP&AC, Prep. Br. Deck, Rubberized AC, Approach Slab, Br. Overlay, Mob.	30

COST ESTIMATES INDEPENDENT ASSURANCE (IA) TASK ORDER SUMMARY

6/10/2008
3:30 pm

Contract # Bid Open	Task order No. Consultant TO Max. Cost	ENGINEER'S ESTIMATE Bid v EE (TO Total Cost = \$1,061,682.90)	Consult. Estimate Bid v Conc E	LOW BID SECOND BID THIRD BID Mean Bid	Consult Est. Method Comments	No.
01-292004	59A0549 #11	5,086,707.85	4,018,413	4,745,341	CT CCD	31
6/12/07	LAN	-6.71	18.09	5,743,938	2 Bids TRO, WPC itema, Remove Culvert, Cold Plane AC, AC, RCP.	
				5,244,639.5		
				5,244,639.50		