

Transmittal

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Subject: Primary Mitigation Report

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Item No.	Copies	Description	Rev. No.	Date
1	1	Primary Mitigation Report		01/31/13

If enclosures are not as noted, kindly notify us at once.

Remarks:

Attached please find Primary Mitigation Report summarizing costs savings between 65% Estimate and 100 % Estimates for three underground stations.


 John Funghi
 Program Director

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 CS File No. M544.1.5.4020.a

**REPORT ON CONSTRUCTION COST SAVINGS FOR
PRIMARY MITIGATIONS TO UNION SQUARE/MARKET
STREET, CHINATOWN, AND MOSCONE STATIONS**

January 31, 2013

EXECUTIVE SUMMARY

A. Introduction

FTA issued a report in September 2011 documenting the Pre – FFGA Risk and Contingency Review, in which the Project Management Oversight Contractor (PMOC) presented an evaluation of the cost savings proposed by the San Francisco Municipal Transportation Agency (SFMTA). SFMTA had assessed an amount of \$87,704,000 to be saved in their revised ten percentile (P10) Baseline Cost Estimate (BCE) for design modifications and construction method changes to the underground stations of the Central Subway Project (CSP). In performing the evaluation the PMOC had to note that the estimate information provided by SFMTA was for a P10 scenario; and for adjustment to the existing 65 percent estimate, a more middle-of-the-road realistic savings amount needed to be calculated. The PMOC evaluation resulted in both a projected time and cost savings in the amount of \$35 million.

These proposed cost savings are identified as primary mitigations and constitute an important element in addressing the \$67.7 million gap between the current project amount of \$1.5783 billion and the 50 percent cost of \$1.646 billion resulting from the Risk Workshop model output. The PMOC recommended several actions be taken by SFMTA to address the risks.

B. Summary of Actions Taken to Address PMOC Recommendations

SFMTA agreed to accept the PMOC recommended savings amount of \$34,745,313 for the evolving station design modifications and the construction method changes for the stations together with the reduced construction period for all three stations.

SFMTA developed risk mitigation strategies to address the cost and schedule reductions for each of the three underground stations.

SFMTA continued to develop and refine the station bid design to incorporate the revised construction approach characterized as a primary mitigation strategy and report on it monthly.

At the 90% and 100% design phases, estimate checks were made by SFMTA to show that these cost savings have been incorporated in the design, schedule, and estimate.

SFMTA agreed to actively pursuing the primary mitigations proposed, and providing FTA/the PMOC documentation to verify that the cost and schedule savings proposed were accomplished.

C. SFMTA Mitigation Strategies

- Revise contract documents for street and lane closure to allow for larger staging areas and better access to the site.
- Address ambiguities in the contract documents to allow for multiple shift work.

- Adjust cost estimates to reflect production rates for the construction change from top-down to bottom-up as it applies to Union Square / Market Street Station (UMS) and Moscone Station (MOS).
- Adjust cost estimates to reflect closing Stockton Street for UMS and occupying more lanes for MOS, improved access and productivity as a consequence of a larger lay down area and the adoption of the conventional bottom-up construction method.
- The SFMTA considers the savings contained in this report for the stations involving design and construction method changes are realistic and conservative, based upon the issued for bid design information.

D. SUMMARY OF COST SAVING FROM PRIMARY MITIGATIONS

The comparison of cost savings indicate that although a substantial saving of \$20M was represented when comparing the 100% Estimate to the 65% Estimate values, the saving fell short of the estimated saving generated by the PMOC in September 2011. The approximately \$14M of unrealized savings can be primarily attributed to different methods of estimating and utilization of more conservative approach to productively and unit rates.

SUMMARY: Station Mitigation Year of Expenditure Cost Calculation						
PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates]						Date: June 27, 2011
CENTRAL SUBWAY PROJECT , SAN FRANCISCO						
		Revised Est. Cost for Station	Original 65% Design Est.	Estimate Difference	NEW INFO	
		YOE	YOE	YOE Savings	100% Engineer's Estimate	SFMTA Estimate Difference
SCC	CATEGORY ITEM				YOE	YOE Savings
	Combined Total Savings for Station Mitigation SCC 20.03 & SCC 40.08	492,218,185	526,963,495	34,745,313	506,503,651	20,459,844

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**REPORT ON CONSTRUCTION COST SAVINGS
FOR PRIMARY MITIGATIONS
AT
UNION SQUARE/MARKET ST., CHINATOWN, AND MOSCONE STATIONS**

I. INTRODUCTION**A. SFMTA Actions to address PMOC Recommendations**

SFMTA accepted the evaluation of the PMOC for the recommended savings amount of \$34,745,313 for the evolving station design modifications and the construction method changes for the stations together with the reduced construction period for all three stations. These proposed design and construction method changes were reviewed separately as mitigation cost savings. Risks were identified for each of the three stations to address the required design modifications and construction method changes and mitigation strategies developed for each. Risk status reports were created, mitigations identified and ownership assigned. Risk status reports were updated and reported on monthly until complete. Cost estimates were revised at the 90% and 100% design documents to reflect design modifications and construction method changes.

B. Primary Mitigation Strategy

Three broad mitigations were identified for each of the three stations. (1) Allow for greater street/lane closures; (2) clarify multiple shift work; (3) provide open access for better production rates- specifically bottoms up construction rather than top down at UMS and YBA/MOS and improved reliable access to CTS head house for excavation and spoil removals. Six specific primary mitigations for each station were developed to address risks associated with the direct and indirect costs for each. Using a more center-of-the-road realistic or conservative savings amount the results were compared to the 65% estimate.

C. Supporting Documentation

The SFMTA developed the following documents to verify that the cost and schedule savings proposed were accomplished.

- Primary Mitigation Status Reports, dated June 14, 2012.
- Central Subway 100% Estimate Results for SCC 20.03 and 40.08 dated October 5, 2012.
- Success 100% detail estimate backup for SCC 20.03 and 40.08 Underground Stations

II. GENERAL OBSERVATIONS

The PMOC evaluation of savings for SCC 20.03 and 40.08 dated September 2011, was developed utilizing a revised estimated cost for Stations compared to the original 65% estimate as the following statement of savings was made for design and construction method changes to the underground stations.

Table 1

SUMMARY: Station Mitigation Year of Expenditure Cost Calculation						
PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates]						Date: June 27, 2011
CENTRAL SUBWAY PROJECT , SAN FRANCISCO					NEW INFO	
		Revised Est. Cost for Station	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate	SFMTA Estimate Difference
SCC	CATEGORY ITEM	YOE	YOE	YOE Savings	YOE	YOE Savings
	Combined Total Savings for Station Mitigation SCC 20.03 & SCC 40.08	492,218,185	526,963,495	34,745,313	506,503,651	20,459,844

New information was added to the above table to provide a direct comparison to the PMOC evaluation. The 100% estimates present a more conservative estimate for the proposed saving, incorporating the design and construction method modifications. To accurately compare the values, the above numbers have maintained the same allocated contingency and escalation values that were utilized in the PMOC analysis and are presented for actual Year of Expenditure (YOE) costs.

Additional design information included review of the structural design components to verify that bottom up construction was not precluded; street /lane closures specification and drawings were revised to allow for greater time periods and more space; language clarified to allow for the complete closure of Stockton Street; specification requirements for work hours and requirements for working outside normal work hours were revised to clarify conditions to be met. The change in construction method, top down versus bottoms up, is applicable only to UMS and MOS stations and involves closing the street during some of the construction and giving the contractor a large staging area. For CTS excavation, grouting, and soil removal productions were adjusted from those that had been used and incorporated in the 65 percent Design Estimate.

III. SUPPORTING DOCUMENTATION

The documents utilized by SFMTA to substantiate the cost savings associated with the design and construction method changes for the stations were based upon the Primary Mitigation Status forms, the 100% Estimate information for each of the three stations, as well as the detailed output from the estimating software used in estimate preparation.

Back-up estimate information for SCC 20.03 and SCC 40.08, is provided to substantiate the 100% Estimate cost savings shown in the report. A review of the estimate and the unit quantities and prices used, demonstrate that the unit costs used were in most cases very conservative numbers. The back-up information shows the thoroughness of the estimate, as adjustments in cost for individual items of work for the new construction method.

A. Major Cost Saving between the 65% Design and 100% Estimates

The numbers given below are comparing how the primary mitigations influenced cost saving between 65% Estimates and 100% Estimates. Major savings are shown for both standard cost categories (SCC) 20.03 and 40.08. Key elements of work are delineated to provide a meaningful comparison to the PMOC evaluations performed in September 2011. Not all elements are influenced by the primary mitigations. Some elements show cost increases which are unrelated to primary mitigations. These cost increases are primarily due to additional detailed information available for 100% estimate that was not available at the 65% estimate.

For consistency in the evaluation of the cost savings the same allocated contingency percentages used by PMOC in their September 2011 Report have been employed and added to the base cost.

The same principle that has been used for allocated contingencies has also been adopted for calculating escalation costs. All presentations in the tables below are shown in Year of Expenditure (YOE) dollars.

B. Comparison of Cost Savings for Station Modification and Construction Method Changes under SCC 20.03 PMOC SFMTA

Overall cost savings between estimates for these combined elements is relatively small due to significant increases in costs not influenced by the primary mitigations. The cost savings generated by the primary mitigations are detailed below for each station

1. Union Square/Market Street Station

Of the three underground stations, UMS showed the largest cost savings. Table 2 compares the 65 percent base estimate amount for SCC 20.03 with the 100 percent estimate.

Table 2

SCC	CATEGORY ITEM	REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
		YOE	YOE	YOE Savings	YOE
20	STATIONS, STOPS AND TERMINALS				
20.03	Underground Stations	382,388,597	410,684,845	28,296,248	403,420,115
	<u>1253 Union Square Market Street Station</u>				
	Excavation improved access and performance	75,663,408	85,981,146	10,317,738	65,693,943
	Instrumentation & Compensation Grouting	8,830,335	9,295,090	464,755	15,362,806
	Structural	32,064,930	34,664,790	2,599,860	40,056,640
	Architectural	14,312,204	14,604,289	292,085	20,179,177
	Mechanical	9,148,389	9,335,090	186,701	10,092,677
	Electrical	7,523,602	7,677,144	153,542	7,242,196
	Total Cost for 1253 UMS	147,542,869	161,557,549	14,014,680	158,627,440

There is a very large cost savings represented in the excavation which is a savings of nearly \$20M between the estimates. This was achieved by improving productivity by implementing mitigation measures to allow street closure, better access and laydown and ability to work multiple shifts, some design changes that simplified construction, and the change from a top-down construction procedure to the more traditional bottom-up method. Time and cost were saved in ground support and excavation with more efficient use of equipment. Employing the new construction method will entail closure of Stockton Street.

2. Chinatown Station

This station showed the second largest savings. Table 3 compares the 65 percent base estimate amount for SCC 20.03 with the 100 percent estimate.

Table 3

SCC	CATEGORY ITEM	REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
		YOE	YOE	YOE Savings	YOE
20	STATIONS, STOPS AND TERMINALS				
	<u>1254 Chinatown Station</u>				
	Excavation improved access and performance Headhouse	27,861,197	30,956,886	3,095,689	34,210,569
	SEM Excavation	51,107,527	52,150,537	1,043,010	35,141,870
	Structural	29,337,210	30,881,274	1,544,064	34,780,289
	Architectural	10,711,279	10,929,876	218,597	14,245,129
	Mechanical	8,975,095	9,158,259	183,164	10,784,528
	Electrical	5,324,705	5,433,372	108,667	7,483,861
	Total Cost for 1254 CTS	133,317,012	139,510,204	6,193,192	136,646,244

The very large approximately \$18M cost savings between the estimates can be found in the SEMexcavation. Implementation of primary mitigations related to improved access and working outside regular working hours multiple shifts seven days a week produced this significant saving.

3. Moscone Station

Of the three underground stations, MOS showed the smallest cost savings. Table 4 compares the 65 percent base estimate amount for SCC 20.03 with the 100% estimate.

Table 4

		REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
SCC	CATEGORY ITEM	YOE	YOE	YOE Savings	YOE
20	STATIONS, STOPS AND TERMINALS				
	<u>1255 Moscone Station</u>				
	Excavation improved access and performance	42,308,869	48,078,261	5,769,392	46,836,552
	Compensation Grouting	3,395,541	3,574,253	178,712	1,827,448
	Instrumentation	1,846,537	1,893,884	47,347	2,417,206
	Structural	29,017,169	30,544,388	1,527,219	32,596,702
	Demolition	1,747,349	1,839,315	91,966	423,370
	Architectural	7,532,243	7,685,962	153,719	10,157,079
	Mechanical	10,911,764	11,134,454	222,690	8,124,789
	Electrical	4,769,244	4,866,575	97,331	5,763,284
	Total Cost for 1255 MOS	101,528,716	109,617,092	8,088,376	108,146,431

There is approximately \$4M in cost savings for excavation and compensation grouting elements of work. Similar to UMS this was achieved by some design changes that simplified construction, and the change from a top-down construction procedure to the more traditional bottom-up method. With the more efficient use of equipment and a larger staging area, time and cost were saved in ground support and excavation.

C. Comparison of Cost Savings for SFMTA Station Modification and Construction Method Changes under SCC 40.08 Temporary Facilities and other Indirect Costs

The 65% Estimates prepared by SFMTA had incorrectly allocated general contractor’s site administration and general conditions cost under this section, instead of distributing these costs to the SCCs of work. These costs have been added to the temporary work costs such as dewatering, traffic control, and Trolley bus overhead cable diversion. Table 5 compares the 65 percent base estimate amount for SCC 40.08 with the 100% estimate.

Table 5

PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates]					Date: June 27, 2011
CENTRAL SUBWAY PROJECT , SAN FRANCISCO					
		REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
SCC	CATEGORY ITEM	YOE	YOE	YOE Savings	YOE
40	Sitework & Special Conditions				
40.08	Temporary Facilities	109,829,589	116,278,650	6,449,064	103,083,536

The \$13M overall savings is primarily due to reallocation of the dollars to the correct SCC item. The primary drivers of changes in cost are related to duration of time for the contract or work element. Although the overall contract durations remain relatively unchanged, in fact all three underground stations increased in duration, the work elements affected by the primary mitigations were overall shorter in duration. The tables below for the individual stations demonstrate how most of the cost savings were generated in CTS, the result of reallocation to proper SCC.

1. Union Square/Market Street Station

Table 6

		REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
SCC	CATEGORY ITEM	YOE	YOE	YOE Savings	YOE
40	Sitework & Special Conditions				
40.08	Temporary Facilities	109,829,589	116,278,650	6,449,064	103,083,536
	<u>1253 Union Square Market Street Station</u>				
	Field Supervision	19,157,485	21,286,095	2,128,610	18,078,085
	Project Expenses	7,699,456	8,104,689	405,234	11,323,723
	Traffic Control	3,369,832	3,547,191	177,360	3,980,388
	Overhead Traction Power	682,372	682,372	-	800,390
	Total Cost for 1253 UMS	30,909,144	33,620,347	2,711,205	34,182,587

2. Chinatown Station

Table 7

		REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
SCC	CATEGORY ITEM	YOE	YOE	YOE Savings	YOE
40	Sitework & Special Conditions				
40.08	Temporary Facilities	109,829,589	116,278,650	6,449,064	103,083,536
	<u>1254 Chinatown Station</u>				
	Field Supervision	11,961,239	13,001,346	1,040,108	28,612,130
	Project Expenses Overhead & Profit	30,194,215	31,128,057	933,842	9,747,716
	Traffic Control	1,614,967	1,664,914	49,947	1,498,958
	Dewatering	433,017	433,017	-	1,002,280
	Overhead Traction Power	149,684	149,684	-	156,240
	Contractors Contingency	8,300,957	8,300,957	-	1,081,318
	Total Cost for 1254 CTS	52,654,079	54,677,975	2,023,897	42,098,642

3. Moscone Station

Table 8

		REVISED ESTIMATE COST FOR	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate
SCC	CATEGORY ITEM	YOE	YOE	YOE Savings	YOE
40	Sitework & Special Conditions				
40.08	Temporary Facilities	109,829,589	116,278,650	6,449,064	103,083,536
	<u>1255 Moscone Station</u>				
	Field Supervision	17,137,920	18,628,174	1,490,254	15,474,932
	Project Expenses	6,670,265	6,876,563	206,298	8,929,176
	Traffic Control	562,949	580,360	17,411	593,980
	Dewatering	1,073,239	1,073,239	-	989,904
	Overhead Traction Power	821,992	821,992	-	814,315
	Total Cost for 1255 MOS	26,266,366	27,980,328	1,713,962	26,802,307

APPENDIX A – REVISED BASE COST FOR STATION MITIGATION

Table A-1: Mitigation Base Cost Calculations

PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates]										Date: June 27, 2011	
CENTRAL SUBWAY PROJECT , SAN FRANCISCO											
		REVISED BASE ESTIMATE COST FOR STATION MITIGATION							100% Engineer's Estimate		
SCC	CATEGORY ITEM	Direct Base Cost	Ins Bonds Fee	Base Cost 2010	Percentage Reduction	Adjusted Amount	Revised Base Estimate Amount	Revised Base 2012 Dollars	Direct Base Cost	Ins Bonds Fee	Base Cost 2012 Dollars
20	STATIONS, STOPS AND TERMINALS										
20.03	Underground Stations	273,983,783	15,479,361	289,463,144	6.87%	19,889,060	269,574,084	287,659,539	298,846,447	12,982,487	311,828,934
	<u>1253 Union Square Market Street Station</u>										
	Excavation improved access and performance	58,937,271	4,021,881	62,959,152	12.00%	7,555,098	55,404,054	59,121,056	47,993,109	2,084,917	50,078,026
	Instrumentation & Compensation Grouting	6,371,481	434,790	6,806,271	5.00%	340,314	6,465,957	6,899,752	12,347,198	536,387	12,883,585
	Structural	23,761,583	1,621,491	25,383,074	7.50%	1,903,731	23,479,343	25,054,549	31,047,558	1,348,768	32,396,326
	Architectural	10,010,764	683,135	10,693,899	2.00%	213,878	10,480,021	11,183,115	15,874,121	689,604	16,563,725
	Mechanical	6,398,900	436,661	6,835,561	2.00%	136,711	6,698,850	7,148,269	7,687,175	333,946	8,021,121
	Electrical	5,262,432	359,109	5,621,541	2.00%	112,431	5,509,110	5,878,711	5,394,495	234,348	5,628,843
	Total Cost for 1253 UMS	110,742,431	7,557,067	118,299,498	8.67%	10,262,162	108,037,336	115,285,452	120,343,656	5,227,969	125,571,625
	<u>1254 Chinatown Station</u>										
	Excavation improved access and performance	21,919,958	747,821	22,667,779	10.00%	2,266,778	20,401,001	21,769,684	26,793,482	1,163,962	27,957,444
	SEM Excavation	36,926,763	1,259,793	38,186,556	2.00%	763,731	37,422,825	39,933,485	24,956,333	1,084,153	26,040,486
	Structural	21,866,419	745,994	22,612,413	5.00%	1,130,621	21,481,792	22,922,984	27,124,180	1,178,329	28,302,509
	Architectural	7,739,229	264,031	8,003,260	2.00%	160,065	7,843,195	8,369,387	11,258,262	489,081	11,747,343
	Mechanical	6,484,782	221,235	6,706,017	2.00%	134,120	6,571,897	7,012,799	8,424,439	365,974	8,790,413
	Electrical	3,847,263	131,253	3,978,516	2.00%	79,570	3,898,946	4,160,522	5,949,208	258,445	6,207,653
	Total Cost for 1254 CTS	98,784,414	3,370,127	102,154,541	4.44%	4,534,886	97,619,655	104,168,861	104,505,904	4,539,945	109,045,849
	<u>1255 Moscone Station</u>										
	Excavation improved access and performance	28,270,933	1,996,589	30,267,522	12.00%	3,632,103	26,635,419	28,422,363	31,678,939	1,376,196	33,055,135
	Compensation Grouting	2,101,729	148,431	2,250,160	5.00%	112,508	2,137,652	2,281,065	869,988	37,794	907,782
	Instrumentation	1,113,640	78,649	1,192,289	2.50%	29,807	1,162,482	1,240,472	1,705,633	74,096	1,779,729
	Structural	17,960,682	1,268,444	19,229,126	5.00%	961,456	18,267,670	19,493,229	23,099,074	1,003,470	24,102,544
	Demolition	1,081,552	76,383	1,157,935	5.00%	57,897	1,100,038	1,173,839	-	-	-
	Architectural	4,519,492	319,182	4,838,674	2.00%	96,773	4,741,901	5,060,030	7,528,074	327,035	7,855,109
	Mechanical	6,547,271	462,390	7,009,661	2.00%	140,193	6,869,468	7,330,334	4,952,068	215,128	5,167,196
	Electrical	2,861,639	202,099	3,063,738	2.00%	61,275	3,002,463	3,203,895	4,163,111	180,854	4,343,965
	Total Cost for 1255 MOS	64,456,938	4,552,167	69,009,105	7.38%	5,092,012	63,917,093	68,205,226	73,996,887	3,214,573	77,211,460
40	Sitework & Special Conditions										
40.08	Temporary Facilities	78,215,010	4,055,449	82,270,459	5.53%	4,546,253	77,724,206	82,938,645	74,643,857	3,242,678	77,886,535
	<u>1253 Union Square Market Street Station</u>										
	Field Supervision	14,590,924	995,685	15,586,609	10.00%	1,558,661	14,027,948	14,969,069	13,418,033	582,906	14,000,939
	Project Expenses	5,555,500	379,108	5,934,608	5.00%	296,730	5,637,878	6,016,117	8,949,991	388,806	9,338,797
	Traffic Control	2,431,484	165,925	2,597,409	5.00%	129,870	2,467,539	2,633,083	3,061,891	133,015	3,194,906
	Overhead Traction Power	467,744	31,919	499,663	0.00%	-	499,663	533,185	641,814	27,882	669,696
	Total Cost for 1253 UMS	23,045,652	1,572,637	24,618,289	8.06%	1,985,262	22,633,027	24,151,454	26,071,729	1,132,608	27,204,337
	<u>1254 Chinatown Station</u>										
	Field Supervision	9,205,996	314,072	9,520,068	8.00%	761,605	8,758,463	9,346,059	23,703,121	1,029,711	24,732,832
	Project Expenses Overhead & Profit	22,041,161	751,956	22,793,117	3.00%	683,794	22,109,323	23,592,616	5,094,311	221,307	5,315,618
	Traffic Control	1,178,893	40,219	1,219,112	3.00%	36,573	1,182,539	1,261,874	1,128,983	49,045	1,178,028
	Dewatering	306,611	10,460	317,071	0.00%	-	317,071	338,343	828,718	36,001	864,719
	Overhead Traction Power	105,988	3,616	109,604	0.00%	-	109,604	116,957	119,805	5,205	125,010
	Contractors Contingency	5,877,743	200,525	6,078,268	0.00%	-	6,078,268	6,486,053	-	-	-
	Total Cost for 1254 CTS	38,716,392	1,320,848	40,037,240	3.70%	1,481,972	38,555,268	41,141,902	30,874,938	1,341,269	32,216,207
	<u>1255 Moscone Station</u>										
	Field Supervision	10,953,721	773,589	11,727,310	8.00%	938,185	10,789,125	11,512,957	9,804,070	425,908	10,229,978
	Project Expenses	4,043,550	285,569	4,329,119	3.00%	129,874	4,199,245	4,480,969	6,332,268	275,086	6,607,354
	Traffic Control	341,263	24,101	365,364	3.00%	10,961	354,403	378,180	396,215	17,212	413,427
	Dewatering	631,085	44,569	675,654	0.00%	-	675,654	720,983	631,983	27,455	659,438
	Overhead Traction Power	483,347	34,136	517,483	0.00%	-	517,483	552,200	532,654	23,140	555,794
	Total Cost for 1255 MOS	16,452,966	1,161,964	17,614,930	6.13%	1,079,019	16,535,911	17,645,288	17,697,190	768,801	18,465,991

Table A-2: Station Mitigation Year of Expenditure Cost Calculation

Table A-2: Station Mitigation Year of Expenditure Cost Calculation												
PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates] Date: June 27, 2011												
CENTRAL SUBWAY PROJECT, SAN FRANCISCO												
SCC	CATEGORY ITEM	REVISED ESTIMATE COST FOR STATION MITIGATION					Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate			
		Revised Base	Allocated Cont	Base + Allocated Cont	Escalation	YOE	YOE	YOE Savings	Base Cost 2012	Allocated Cont	Escalation	YOE
20	STATIONS, STOPS AND TERMINALS											
20.03	Underground Stations	269,574,084	63,306,086	332,880,170	49,508,427	382,388,597	410,684,845	28,296,248	310,102,448	63,306,086	30,011,581	403,420,115
	<u>1253 Union Square Market Street Station</u>											
	Excavation improved access and performance	55,404,054	10,943,638	66,347,692	9,315,716	75,663,408	85,981,146	10,317,738	50,078,026	10,943,638	4,672,280	65,693,943
	Instrumentation & Compensation Grouting	6,465,957	1,277,183	7,743,140	1,087,195	8,830,335	9,295,090	464,755	12,883,585	1,277,183	1,202,038	15,362,806
	Structural	23,479,343	4,637,737	28,117,080	3,947,850	32,064,930	34,664,790	2,599,860	32,396,326	4,637,737	3,022,577	40,056,640
	Architectural	10,480,021	2,070,057	12,550,078	1,762,126	14,312,204	14,604,289	292,085	16,563,725	2,070,057	1,545,396	20,179,177
	Mechanical	6,698,850	1,323,185	8,022,035	1,126,354	9,148,389	9,335,090	186,701	8,021,121	1,323,185	748,371	10,092,677
	Electrical	5,509,110	1,088,182	6,597,292	926,310	7,523,602	7,677,144	153,542	5,628,843	1,088,182	525,171	7,242,196
	Total Cost for 1253 UMS	108,037,336	21,339,982	129,377,318	18,165,551	147,542,869	161,557,549	14,014,680	125,571,625	21,339,982	11,715,833	158,627,440
	<u>1254 Chinatown Station</u>											
	Excavation improved access and performance Headhouse	20,401,001	3,629,318	24,030,319	3,830,878	27,861,197	30,956,886	3,095,689	27,957,444	3,629,318	2,623,806	34,210,569
	SEM Excavation	37,422,825	6,657,484	44,080,309	7,027,218	51,107,527	52,150,537	1,043,010	26,400,486	6,657,484	2,443,900	35,141,870
	Structural	21,481,792	3,821,590	25,303,382	4,033,828	29,337,210	30,881,274	1,544,064	28,302,509	3,821,590	2,656,190	34,780,289
	Architectural	7,843,195	1,395,297	9,238,492	1,472,787	10,711,279	10,929,876	218,597	11,747,343	1,395,297	1,102,488	14,245,129
	Mechanical	6,571,897	1,169,134	7,741,031	1,234,064	8,975,095	9,158,259	183,164	8,790,413	1,169,134	824,980	10,784,528
	Electrical	3,898,946	693,619	4,592,565	732,140	5,324,705	5,433,372	108,667	6,207,653	693,619	582,588	7,483,861
	Total Cost for 1254 CTS	97,619,655	17,366,442	114,986,097	18,330,915	133,317,012	139,510,204	6,193,192	109,045,849	17,366,442	10,233,953	136,646,244
	<u>1255 Moscone Station</u>											
	Excavation improved access and performance	26,635,419	10,251,128	36,886,547	5,422,322	42,308,869	48,078,261	5,769,392	33,055,135	10,251,128	3,530,288	46,836,552
	Compensation Grouting	2,137,652	822,715	2,960,367	435,174	3,395,541	3,574,253	178,712	907,782	822,715	96,951	1,827,448
	Instrumentation	1,162,482	447,402	1,609,884	236,653	1,846,537	1,893,884	47,347	1,779,729	447,402	190,075	2,417,206
	Structural	18,267,670	7,030,647	25,298,317	3,718,852	29,017,169	30,544,388	1,527,219	23,099,074	7,030,647	2,466,981	32,596,702
	Demolition	1,100,038	423,370	1,523,408	223,941	1,747,349	1,839,315	91,966	-	423,370	-	423,370
	Architectural	4,741,901	1,825,007	6,566,908	965,335	7,532,243	7,685,962	153,719	7,528,074	1,825,007	803,998	10,157,079
	Mechanical	6,869,468	2,643,840	9,513,308	1,398,456	10,911,764	11,134,454	222,690	4,952,068	2,643,840	528,881	8,124,789
	Electrical	3,002,463	1,155,553	4,158,016	611,228	4,769,244	4,866,575	97,331	4,163,111	1,155,553	444,620	5,763,284
	Total Cost for 1255 MOS	63,917,093	24,599,662	88,516,755	13,011,961	101,528,716	109,617,092	8,088,376	75,484,974	24,599,662	8,061,795	108,146,431
40	Sitework & Special Conditions											
40.08	Temporary Facilities	77,724,206	17,693,660	95,417,866	14,411,725	109,829,589	116,278,650	6,449,064	77,858,654	17,693,660	7,531,222	103,083,536
	<u>1253 Union Square Market Street Station</u>											
	Field Supervision	14,027,948	2,770,858	16,798,806	2,358,679	19,157,485	21,286,095	2,128,610	14,000,939	2,770,858	1,306,288	18,078,085
	Project Expenses	5,637,878	1,113,617	6,751,495	947,961	7,699,456	8,104,689	405,234	9,338,797	1,113,617	871,310	11,323,723
	Traffic Control	2,467,539	487,398	2,954,937	414,895	3,369,832	3,547,191	177,360	3,194,906	487,398	298,085	3,980,388
	Overhead Traction Power	499,663	98,695	598,358	84,014	682,372	682,372	-	641,814	98,695	59,881	800,390
	Total Cost for 1253 UMS	22,633,027	4,470,568	27,103,595	3,805,549	30,909,144	33,620,347	2,711,205	27,176,455	4,470,568	2,535,563	34,182,587
	<u>1254 Chinatown Station</u>											
	Field Supervision	8,758,463	1,558,122	10,316,585	1,644,655	11,961,239	13,001,346	1,040,108	24,732,832	1,558,122	2,321,176	28,612,130
	Project Expenses Overhead & Profit	22,109,323	3,933,227	26,042,550	4,151,665	30,194,215	31,128,057	933,842	5,315,618	3,933,227	498,871	9,747,716
	Traffic Control	1,182,539	210,372	1,392,911	222,056	1,614,967	1,664,914	49,947	1,178,028	210,372	110,558	1,498,958
	Dewatering	317,071	56,407	373,478	59,539	433,017	433,017	-	864,719	56,407	81,154	1,002,280
	Overhead Traction Power	109,604	19,498	129,102	20,581	149,684	149,684	-	125,010	19,498	11,732	156,240
	Contractors Contingency	6,078,268	1,081,318	7,159,586	1,141,371	8,300,957	8,300,957	-	-	1,081,318	-	1,081,318
	Total Cost for 1254 CTS	38,555,268	6,858,944	45,414,212	7,239,867	52,654,079	54,677,975	2,023,897	32,216,207	6,858,944	3,023,491	42,098,642
	<u>1255 Moscone Station</u>											
	Field Supervision	10,789,125	4,152,392	14,941,517	2,196,403	17,137,920	18,628,174	1,490,254	10,229,978	4,152,392	1,092,562	15,474,932
	Project Expenses	4,199,245	1,616,156	5,815,401	854,864	6,670,265	6,876,563	206,298	6,607,354	1,616,156	705,665	8,929,176
	Traffic Control	354,403	136,399	490,802	72,148	562,949	580,360	17,411	413,427	136,399	44,154	593,980
	Dewatering	675,654	260,038	935,692	137,547	1,073,239	1,073,239	-	659,438	260,038	70,428	989,904
	Overhead Traction Power	517,483	199,163	716,646	105,347	821,992	821,992	-	555,794	199,163	59,359	814,315
	Total Cost for 1255 MOS	16,535,911	6,364,148	22,900,059	3,366,309	26,266,366	27,980,328	1,713,962	18,465,991	6,364,148	1,972,168	26,802,307
	Combined Total Savings for Station Mitigation SCC 20.03 & SCC 40.08	347,298,289	80,999,746	428,298,035	63,920,152	492,218,185	526,963,495	34,745,313	387,961,102	80,999,746	37,542,803	506,503,651

Table A-3 SUMMARY: Station Mitigation Year of Expenditure Cost Calculation

PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates] Date: June 27, 2011						
CENTRAL SUBWAY PROJECT, SAN FRANCISCO						
SCC	CATEGORY ITEM	Revised Est. Cost for Station	Original 65% Design Est.	Estimate Difference	100% Engineer's Estimate	SFMTA Estimate Difference
		YOE	YOE	YOE Savings	YOE	YOE Savings
	Combined Total Savings for Station Mitigation SCC 20.03 & SCC 40.08	492,218,185	526,963,495	34,745,312	506,503,651	20,459,844

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APPENDIX B
EXPANDED ESTIMATE BACKUP

APPENDIX A - REVISED BASE COST FOR STATION MITIGATION
Table A-1: Mitigation Base Cost Calculations

DETAILED BACKUP FOR PRIMARY
 MITIGATION REPORT - REFERENCE CODES
 MAY BE FOUND IN BACKUP ATTACHED

PMOC RECOMMENDATION SAVING FOR STATION CONSTRUCTION CHANGE ESTIMATE [Based upon SFMTA Estimates] Date: June 27, 2011											
CENTRAL SUBWAY PROJECT , SAN FRANCISCO											
SCC	CATEGORY ITEM	REVISED BASE ESTIMATE COST FOR STATION MITIGATION							100% Engineer's Estimate		
		Direct Base Cost	Ins Bonds Fee	Base Cost 2010	Percentage Reduction	Adjusted Amount	Revised Base Estimate Amount	Revised Base 2012 Dollars	Direct Base Cost	Ins Bonds Fee	Base Cost 2012 Dollars
20	STATIONS, STOPS AND TERMINALS										
20.03	Underground Stations	273,983,783	15,479,361	289,463,144	6.87%	19,889,060	269,574,084	287,659,539	298,846,447	12,982,487	311,828,934
	<u>1253 Union Square Market Street Station</u>										
	Excavation improved access and performance	38,937,271	4,021,881	62,959,152	12.00%	7,555,098	55,404,054	59,121,056	47,993,109	2,084,917	50,078,026
	UM200306								6,114,258		
	UM200308								35,266,557		
	UM200310								4,725,110		
	UM200311								667,369		
	UM200312								1,219,815		
	Instrumentation & Compensation Grouting	6,371,481	434,790	6,806,271	5.00%	340,314	6,465,957	6,899,752	12,347,198	536,387	12,883,585
	UM200313								12,347,198		
	Structural	23,761,583	1,621,491	25,383,074	7.50%	1,903,731	23,479,343	25,054,549	31,047,558	1,348,768	32,396,326
	UM200314								2,732,780		
	UM200316								4,335,757		
	UM200318								4,870,709		
	UM200320								5,261,999		
	UM200322								3,367,683		
	UM200326								5,674,087		
	UM200330								384,531		
	UM200334								462,022		
	UM200336								1,646,879		
	UM200344								192,232		
	UM200338								2,084,987		
	UM200348								33,892		
	Architectural	10,010,764	683,135	10,693,899	2.00%	213,878	10,480,021	11,183,115	15,874,121	689,604	16,563,725
	UM200349								2,250,645		
	UM200350								5,149,640		
	UM200351								736,088		
	UM200353								1,390,140		
	UM200354								2,092,253		
	UM200356								2,781,825		
	UM200358								1,473,530		
	Mechanical	6,398,900	436,661	6,835,561	2.00%	136,711	6,698,850	7,148,269	7,687,175	333,946	8,021,121
	UM200370								675,521		
	UM200372								1,069,290		
	UM200374								5,942,364		
	Electrical	5,262,432	359,109	5,621,541	2.00%	112,431	5,509,110	5,878,711	5,394,495	234,348	5,628,843
	UM200376								1,495,743		
	UM200378								3,898,752		
	Total Cost for 1253 UMS	110,742,431	7,557,067	118,299,498	8.67%	10,262,162	108,037,336	115,285,452	120,343,656	5,227,969	125,571,625
	<u>1254 Chinatown Station</u>										
	Excavation improved access and performance	21,919,958	747,821	22,667,779	10.00%	2,266,778	20,401,001	21,769,684	26,793,482	1,163,962	27,957,444
	Headhouse								25,581,984		
	CT200306								361,114		
	CT200312								712,256		
	CT200313								138,128		
	CT200314										
	SEM Excavation	36,926,763	1,259,793	38,186,556	2.00%	763,731	37,422,825	39,933,485	24,956,333	1,084,153	26,040,486
	CT200308								5,255,477		
	CT200310								19,700,856		
	Structural	21,866,419	745,994	22,612,413	5.00%	1,130,621	21,481,792	22,922,984	27,124,180	1,178,329	28,302,509
	CT200330								857,808		
	CT200332								4,425,263		
	CT200334								272,200		
	CT200335								142,555		
	CT200336								36,920		
	CT200338								763,469		
	CT200340								2,292,111		
	CT200343								2,372,917		
	CT200344								2,085,062		
	CT200345								2,364,176		
	CT200346								2,300,475		
	CT200348								1,869,398		
	CT200350								5,905,862		
	CT200352								826,065		
	CT200354								609,899		
	Architectural	7,739,229	264,031	8,003,260	2.00%	160,065	7,843,195	8,369,387	11,258,262	489,081	11,747,343
	CT200355								205,199		
	CT200356								998,367		
	CT200357								1,433,820		
	CT200359								687,742		
	CT200360								1,807,535		
	CT200362								1,734,192		
	CT200364								377,151		
	CT200366								1,878,855		
	CT200368								270,517		
	CT200372								1,864,884		
	Mechanical	6,484,782	221,235	6,706,017	2.00%	134,120	6,571,897	7,012,799	8,424,439	365,974	8,790,413

	CT200378								675,912		
	CT200379								1,867,372		
	CT200380								5,881,155		
Electrical		3,847,263	131,253	3,978,516	2.00%	79,570	3,898,946	4,160,522	5,949,208	258,445	6,207,653
	CT200382								766,395		
	CT200383								5,182,813		
Total Cost for 1254 CTS		98,784,414	3,370,127	102,154,541	4.44%	4,534,886	97,619,655	104,168,861	104,505,904	4,539,945	109,045,849
1255 Moscone Station											
Excavation improved access and performance											
	MS200301	28,270,933	1,996,589	30,267,522	12.00%	3,632,103	26,635,419	28,422,363	31,678,939	1,376,196	33,055,135
	MS200302								20,468,749		
Compensation Grouting		2,101,729	148,431	2,250,160	5.00%	112,508	2,137,652	2,281,065	869,988	37,794	907,782
	MS200303								11,210,190		
Instrumentation		1,113,640	78,649	1,192,289	2.50%	29,807	1,162,482	1,240,472	869,988	74,096	1,779,729
	MS200304								1,705,633		
Structural		17,960,682	1,268,444	19,229,126	5.00%	961,456	18,267,670	19,493,229	23,099,074	1,003,470	24,102,544
	MS200308								211,635		
	MS200310								3,070,823		
	MS200312								2,674,266		
	MS200314								1,494,766		
	MS200316								3,250,042		
	MS200318								1,841,269		
	MS200320								3,375,696		
	MS200322								2,432,295		
	MS200324								4,748,282		
Demolition		1,081,552	76,383	1,157,935	5.00%	57,897	1,100,038	1,173,839	-	-	-
Architectural		4,519,492	319,182	4,838,674	2.00%	96,773	4,741,901	5,060,030	7,528,074	327,035	7,855,109
	MS200332								988,713		
	MS200334								500,550		
	MS200336								350,760		
	MS200338								731,190		
	MS200340								2,369,133		
	MS200342								132,552		
	MS200344								1,483,208		
	MS200346								971,968		
Mechanical		6,547,271	462,390	7,009,661	2.00%	140,193	6,869,468	7,330,334	4,952,068	215,128	5,167,196
	MS200370								508,268		
	MS200372								1,103,039		
	MS200374								3,340,761		
Electrical		2,861,639	202,099	3,063,738	2.00%	61,275	3,002,463	3,203,895	4,163,111	180,854	4,343,965
	MS200376								669,789		
	MS200378								3,493,322		
Total Cost for 1255 MOS		64,456,938	4,552,167	69,009,105	7.38%	5,092,012	63,917,093	68,205,226	73,996,887	3,214,573	77,211,460
40 Sitework & Special Conditions											
40.08 Temporary Facilities											
		78,215,010	4,055,449	82,270,459	5.53%	4,546,253	77,724,206	82,938,645	74,643,858	3,242,678	77,886,536
1253 Union Square Market Street Station											
Field Supervision											
	UM4008011121 - Field Overhead	14,590,924	995,685	15,586,609	10.00%	1,558,661	14,027,948	14,969,069	13,418,033	582,906	14,000,939
	UM4008011125 - Inspection Requirements								12,350,829		
Project Expenses		5,555,500	379,108	5,934,608	5.00%	296,730	5,637,878	6,016,117	1,067,204	388,806	9,338,797
	UM4008011104 - Dewatering								1,342,226		
	UM4008011122 - GC Expenses								3,537,172		
	UM4008011123 - Hoisting								3,589,410		
	UM4008011124 - SP & DIV 1 Requirements								481,183		
Traffic Control		2,431,484	165,925	2,597,409	5.00%	129,870	2,467,539	2,633,083	3,061,892	133,015	3,194,907
	UM4008011103 - Traffic Control								3,061,892		
Overhead Traction Power		467,744	31,919	499,663	0.00%	-	499,663	533,185	641,814	27,882	669,696
	UM4008011101 - Overhead Traction Power								641,814		
Total Cost for 1253 UMS		23,045,652	1,572,637	24,618,289	8.06%	1,985,262	22,633,027	24,151,454	26,071,730	1,132,608	27,204,338
1254 Chinatown Station											
Field Supervision											
	CT4008001201 - PM & Field Supervision	9,205,996	314,072	9,520,068	8.00%	761,605	8,758,463	9,346,059	23,703,121	1,029,711	24,732,832
Project Expenses Overhead & Profit		22,041,161	751,956	22,793,117	3.00%	683,794	22,109,323	23,592,616	5,094,311	221,307	5,315,618
	CT40080022 - GC Expenses								3,057,936		
	CT40080015 - Temporary Construction								349,276		
	CT40080024 - SP & DIV 1 Requirements								521,153		
	CT40080026 - Inspection Requirements								1,165,946		
Traffic Control		1,178,893	40,219	1,219,112	3.00%	36,573	1,182,539	1,261,874	1,128,983	49,045	1,178,028
	CT40080011 - Traffic Control								1,128,983		
Dewatering		306,611	10,460	317,071	0.00%	-	317,071	338,343	828,718	36,001	864,719
	CT1007970113 - Dewatering								828,718		
Overhead Traction Power		105,988	3,616	109,604	0.00%	-	109,604	116,957	119,805	5,205	125,010
	CT4008001301 - Overhead Traction Power								119,805		
Contractors Contingency		5,877,743	200,525	6,078,268	0.00%	-	6,078,268	6,486,053	-	-	-
Total Cost for 1254 CTS		38,716,392	1,320,848	40,037,240	3.70%	1,481,972	38,555,268	41,141,902	30,874,938	1,341,269	32,216,207
1255 Moscone Station											
Field Supervision											
	MS4008011104 - Field Overhead	10,953,721	773,589	11,727,310	8.00%	938,185	10,789,125	11,512,957	9,804,070	425,908	10,229,978
	MS4008011106 - Inspection Requirements								9,271,664		
Project Expenses		4,043,550	285,569	4,329,119	3.00%	129,874	4,199,245	4,480,969	6,332,268	275,086	6,607,354
	MS4008011105 - GC Expenses								5,799,436		
	MS4008011107 - SP & DIV 1 Requirements								532,832		
Traffic Control		341,263	24,101	365,364	3.00%	10,961	354,403	378,180	396,215	17,212	413,427
	MS4008011102 - Traffic Control								396,215		

Dewatering	631,085	44,569	675,654	0.00%	-	675,654	720,983	631,983	27,455	659,438
MS4008011103 - Dewatering								631,983		
Overhead Traction Power	483,347	34,136	517,483	0.00%	-	517,483	552,200	532,654	23,140	555,794
MS4008011101 - Overhead Contact System								532,654		
Total Cost for 1255 MOS	16,452,966	1,161,964	17,614,930	6.13%	1,079,019	16,535,911	17,645,288	17,697,190	768,801	18,465,991

PRIME CONTRACTOR SUMMARY REPORT

Project Element: UMS 100% REV 0

Prime Contractor: PRIME CONTRACTOR

Markup Description	Markup	Total
UMS 100% REV 0		
Cost to Prime for PRIME PRIME CONTRACTOR		\$170,169,170
PRIME HOME OFFICE OVERHEAD & PROFIT <i>% Applied only to: Labor, Equipment, Material, Other1,</i>	7.000%	\$11,911,842
SMALL TOOLS & MISC. <i>% Applied only to: Labor, Equipment, Material,</i>	1.500%	\$2,731,215
INSURANCE & BOND	4.000%	\$7,392,489
Total Estimate with Prime Contractor Markups	12.949%	\$192,204,716

All codes referenced in Table A-1: "Mitigation Base Cost Calculations" have been highlighted below. The codes beginning with "UM2003..." were derived at a higher level in the estimate folder structure than the costs associated with codes beginning with "UM4008...". The supporting values for codes beginning with "UM2003..." may be arrived at by dividing the highlighted costs below by the prime contractor markup. For example, the cost highlighted for UM200308 below is \$39,833,294. To arrive at the direct cost the prime contractor mark up is backed out of the amount as follows:

$$\text{UM200308: } \$39,833,294 / (\$192,204,716 / \$170,169,170) = \$35,266,557.$$

The direct costs for codes beginning with "UM4008..." may be arrived at by adding the costs highlighted below at a lower level in the estimate folder structure. For example, the direct cost for UM4008011103 can be arrived at by adding the associated costs before prime contractor markup as follows:

$$\text{UM4008011103: } \$2,991,931 + \$69,961 = \$3,061,892$$

C--Assembly Category Report

SUBMITTAL: 100%
SOFTWARE VERSION: SUCCESS 5.X
REPORT REVISION: Nov. 5 2003
ESTIMATE SAVED AS: UMS 100% Estimate - Revised Markups per Program.pws

CONSTRUCTION CONTRACT: PACKAGE 1253
DATABASE USED: RSM MODIFIED
PRINTING DATE: 04/30/2012
Page: 1 OF 2

PROJECT: UNION SQUARE MARKET STREET STATION
PROJECT SITE: SAN FRANCISCO, CA
A/E NAME: SFMTA - DESIGN GROUP
PROJECT SIZE: 1.00LS
CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$192,500,000

ESTIMATOR: HILL INTERNATIONAL
CAT CODE:
UIC:
PROJECT #: UMS-90%
DATE OF ESTIMATE: 04/30/12

WBS CODE	DESCRIPTION	COST/WBS		TOTAL MARKED UP COSTS				
		BASED ON	COST/	MATL	LABOR	EQUIP	UNIT COST	TOTAL
		1 LS	WBS UNIT					
				UMS 100% REV 0a, PROJECT TOTALS				192,205,000
PROJECT LEVEL NOTE: The markups used in this estimate differ from the markups Hill International recommends for this project.								
*****PROJECT SUBTOTALS*****				75,979,930	87,438,934	28,785,852	0	192,204,716
BASE BID				75,979,930	87,438,934	28,785,852	0	192,204,716
-UNION SQUARE - MARKET STATION				75,979,930	87,438,934	28,785,852	0	192,204,716
UMUNION SQUARE - MARKET STATION - PACKAGE 1253				75,979,930	87,438,934	28,785,852	0	192,204,716
UM200	STATIONS, STOPS, TERMINALS, INTERMODAL (NUMBER)			65,466,783	58,614,015	21,340,966	0	145,421,763
UM2003	UNDERGROUND STATION, STOP, SHELTER, MALL, TERMINAL, PLATFORM			61,298,706	55,010,196	19,618,296	0	135,927,198
UM20030	EXCAVATION & GROUND SUPPORT - NORTH CONCOURSE BOX	57040@ 121.07	SSF	2,330,014	2,798,250	1,777,741	0	6,906,005
UM20030	EXCAVATION & GROUND SUPPORT - STATION BOX	57040@ 698.34	SSF	17,357,459	15,405,565	7,070,270	0	39,833,294
UM20031	EXCAVATION & GROUND SUPPORT - SOUTH CONCOURSE BOX	57040@ 93.57	SSF	1,666,837	2,419,812	1,250,325	0	5,336,974
UM20031	EXCAVATION & GROUND SUPPORT - STATION EE NO. 3/4	57040@ 13.22	SSF	218,457	330,492	204,839	0	753,788
UM20031	EXCAVATION & GROUND SUPPORT - ELLIS ANNEX	57040@ 24.15	SSF	547,489	596,630	233,652	0	1,377,771
UM20031	EXCAVATION & GROUND SUPPORT - INSTRUMENTATION/COMPENSATION GROUTING	57040@ 244.50	SSF	5,696,291	5,072,989	3,176,781	0	13,946,061
UM20031	STRUCTURAL - STATION SURFACE LEVEL	32799@ 94.11	SF	2,047,420	926,910	112,323	0	3,086,653
UM20031	STRUCTURAL - STATION CONCOURSE LEVEL	33630@ 145.62	SF	2,135,984	2,373,622	387,597	0	4,897,203
UM20031	STRUCTURAL - STATION INTERMEDIATE STRUT LEVEL	28915@ 190.26	SF	2,299,239	2,677,503	524,684	0	5,501,427
UM20032	STRUCTURAL - STATION MEZZANINE LEVEL	19733@ 301.19	SF	2,348,896	3,108,974	485,516	0	5,943,386
UM20032	STRUCTURAL - STATION PLATFORM STRUT LEVEL	21081@ 180.44	SF	1,873,313	1,666,708	263,750	0	3,803,772
UM20032	STRUCTURAL - STATION PLATFORM LEVEL	22212@ 288.53	SF	3,004,914	2,259,474	1,144,447	0	6,408,836
UM20033	STRUCTURAL - STATION EE NO. 3/4	2044@ 212.49	SF	236,973	175,883	21,470	0	434,325
UM20033	STRUCTURAL - ELLIS ANNEX SURFACE LEVEL	2408@ 216.72	SF	337,404	164,163	20,282	0	521,850
UM20033	STRUCTURAL - ELLIS ANNEX CONCOURSE LEVEL	5168@ 359.93	SF	943,888	679,433	236,815	0	1,860,137
UM20034	STRUCTURAL - VENTILATION SHAFT 1&2			90,402	118,803	7,919	0	217,125
UM20033	STRUCTURAL - GARAGE	41623@ 56.58	SF	1,183,778	986,460	184,738	0	2,354,976
UM20034	STRUCTURAL - ENTRANCE AT POWELL STREET BART/MUNI STATION	2580@ 14.84	SF	27,716	9,106	1,459	0	38,281
UM20034	ARCHITECTURAL - STATION SURFACE LEVEL	32799@ 77.50	SF	1,068,439	1,328,899	144,747	0	2,542,085
UM20035	ARCHITECTURAL - STATION CONCOURSE LEVEL	49062@ 118.55	SF	2,663,103	2,274,321	879,053	0	5,816,477
UM20035	ARCHITECTURAL - INTERMEDIATE STRUT LEVEL	28304@ 29.37	SF	381,626	389,414	60,366	0	831,406
UM20035	ARCHITECTURAL - STATION MEZZANINE LEVEL	19131@ 82.07	SF	667,110	772,284	130,758	0	1,570,152
UM20035	ARCHITECTURAL - STATION PLATFORM STRUT LEVEL	4351@ 543.14	SF	1,093,848	1,081,547	187,789	0	2,363,183
UM20035	ARCHITECTURAL - STATION PLATFORM LEVEL	21898@ 143.49	SF	1,482,105	1,359,907	300,037	0	3,142,049
UM20035	ARCHITECTURAL - STATION STAIRS & LANDING	4680@ 355.63	SF	1,319,844	308,774	35,722	0	1,664,340
UM20037	MECHANICAL - PLUMBING	194630@ 3.92	SF	428,527	320,985	13,483	0	762,995
UM20037	MECHANICAL - FIRE PROTECTION	194630@ 6.21	SF	342,863	773,934	90,957	0	1,207,755
UM20037	MECHANICAL - HVAC & EMERGENCY VENTILATION	194630@ 34.49	SF	4,500,974	1,767,164	443,715	0	6,711,853
UM20037	ELECTRICAL - LIGHTING	194630@ 8.68	SF	523,610	1,080,087	85,732	0	1,689,430
UM20037	ELECTRICAL - POWER DISTRIBUTION	194630@ 22.63	SF	2,480,180	1,782,103	141,326	0	4,403,609
UM2007	ELEVATORS, ESCALATORS	11@ 863142.33	EA	4,168,076	3,603,819	1,722,670	0	9,494,566
UM2007	CONVEYING - ELEVATORS/ESCALATORS	13@ 730351.20	EA	4,168,076	3,603,819	1,722,670	0	9,494,566
UM400	SITEWORK & SPECIAL CONDITIONS	57040@ 672.31	SSF	5,201,261	25,954,697	7,192,574	0	38,348,532
UM4001	DEMOLITION, CLEARING, EARTHWORK	57040@ 23.18	SSF	0	1,045,420	276,564	0	1,321,984
UM4001	DEMOLITION, CLEARING, EARTHWORK	57040@ 23.18	SSF	0	1,045,420	276,564	0	1,321,984
UM4002	SITE UTILITIES, UTILITY RELOCATION	57040@ 59.12	SSF	1,354,696	1,805,530	212,157	0	3,372,384
UM4002	CIVIL - STOCKTON ST/GEARY ST/O'FARRELL ST	57040@ 43.93	SSF	1,010,194	1,332,602	162,874	0	2,505,670
UM4002	CIVIL - ELLIS STREET	57040@ 15.19	SSF	344,502	472,928	49,283	0	866,714
UM4003	HAZ. MAT'L, CONTAM'D SOIL REMOVAL/MITIGATION, GROUND WATER TREATMENTS	57040@ 8.82	SSF	209,857	194,735	98,756	0	503,348
UM4003	HAZ. MAT'L, CONTAM'D SOIL REMOVAL/MITIGATION, GROUND WATER TREATMENTS	57040@ 8.82	SSF	209,857	194,735	98,756	0	503,348
UM4004	ENVIRONMENTAL MITIGATION WETLANDS HISTORIC ARCHEOLOGIC	57040@ 8.00	SSF	190,260	176,550	89,534	0	456,344
UM4004	ENVIRONMENTAL MITIGATION WETLANDS HISTORIC ARCHEOLOGIC	57040@ 8.00	SSF	190,260	176,550	89,534	0	456,344
UM4006	PEDESTRIAN / BIKE ACCESS & ACCOMMODATION, LANDSCAPING	57040@ 9.63	SSF	328,715	187,069	33,705	0	549,489

C--Assembly Category Report

SUBMITTAL: 100%
SOFTWARE VERSION: SUCCESS 5.X
REPORT REVISION: Nov. 5 2003
ESTIMATE SAVED AS: UMS 100% Estimate - Revised Markups per Program.pws

CONSTRUCTION CONTRACT: PACKAGE 1253
DATABASE USED: RSM MODIFIED
PRINTING DATE: 04/30/2012
Page: 2 OF 2

PROJECT: UNION SQUARE MARKET STREET STATION
PROJECT SITE: SAN FRANCISCO, CA
A/E NAME: SFMTA - DESIGN GROUP
PROJECT SIZE: 1.00LS
CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$192,500,000

ESTIMATOR: HILL INTERNATIONAL
CAT CODE:
UIC:
PROJECT #: UMS-90%
DATE OF ESTIMATE: 04/30/12

WBS CODE	DESCRIPTION	COST/WBS BASED ON 1 LS	COST/ WBS UNIT	TOTAL MARKED UP COSTS				
				MATL	LABOR	EQUIP	UNIT COST	TOTAL
UM40061	PEDESTRIAN / BIKE ACCESS & ACCOMMODATION, LANDSCAPING		57040@ 9.63SSF	328,715	187,069	33,705	0	549,489
UM4007	AUTO,BUS, VAN ACCESSWAYS INCL ROADS & PKG LOTS		57040@ 47.29SSF	1,534,163	861,519	301,490	0	2,697,172
UM40070	AUTO,BUS, VAN ACCESSWAYS INCL ROADS & PKG LOTS		57040@ 47.29SSF	1,534,163	861,519	301,490	0	2,697,172
UM4008	TEMPORARY FACILITIES & OTHER INDIRECT COSTS DURING CONSTRUCTION		57040@ 516.27SSF	1,583,570	21,683,875	6,180,367	0	29,447,812
UM40080	TEMPORARY FACILITIES & OTHER INDIRECT COSTS DURING CONSTRUCTION		57040@ 516.27SSF	1,583,570	21,683,875	6,180,367	0	29,447,812
UM50	SYSTEMS		215129@ 39.21BSF	5,311,886	2,870,222	252,312	0	8,434,420
UM5003	TPSS STATIONS		215129@ 21.12BSF	3,519,777	924,357	98,886	0	4,543,020
UM50030	TPSS STATIONS		215129@ 21.12BSF	3,519,777	924,357	98,886	0	4,543,020
UM5005	COMMUNICATIONS		215129@ 17.18BSF	1,735,049	1,816,443	143,510	0	3,695,002
UM50050	COMMUNICATIONS		215129@ 17.18BSF	1,735,049	1,816,443	143,510	0	3,695,002
UM5006	FARE COLLECTION SYSTEMS		215129@ 0.91BSF	57,060	129,423	9,915	0	196,398
***	FROM AECOM 65% ESTIMATE							
UM50068	FARE COLLECTION SYSTEMS		215129@ 0.91BSF	57,060	129,423	9,915	0	196,398

E--Detail Report
100%

ESTIMATE NAME:
PRINTING DATE: 04/30/2012
Page No. 221

					TOTAL COSTS					
CODE	SUB/CREW	DESCRIPTION	QTY	UM	MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	TOTAL	
UM4007 AUTO,BUS, VAN ACCESSWAYS INCL ROADS & PKG LO										
<u>UM4007019808 CONCRETE CURB & GUTTER</u> LEVEL CONTRACTOR ID APPLIED--PRIME										
Subtotal Direct Costs					5,355	5,007	335	0	10,697	
Subcontractor Markups					455	75	28	0	559	
Prime Contractor Markups					752	658	47	0	1,457	
TOTAL UM4007019808 CONCRETE CURB & GUTTER					70 HRS	6,563	5,740	410	0	12,713
765.00 LF					Level Unit Cost-->	8.58	7.50	0.54	0.00	16.62
UM4007019811 TEMP ROAD STRIPING, LETTERS, SYMBOLS LEVEL CONTRACTOR ID APPLIED--PRIME										
32172.31 - 30		Line, Solid White, 8"			0.72	1.28	0.26	0.00	2.27	
	SUB-211/211	0.018 hrs/unit	6 TOTAL HRS	341.00 LF	247	438	88	0	773	
01552.60 - 01		Line, Broken White, 4"			0.27	0.36	0.47	0.00	1.10	
	SUB-211/211	0.005 hrs/unit	2 TOTAL HRS	475.00 LF	128	169	225	0	523	
01552.60 - 31		Line, Double Yellow, 4"			0.50	0.43	0.47	0.00	1.40	
	SUB-211/211	0.006 hrs/unit	4 TOTAL HRS	590.00 LF	295	252	280	0	827	
32172.31 - 30		Symbol, Arrow			75.00	35.66	25.00	0.00	135.66	
	SUB-211/211	0.5 hrs/unit	1 TOTAL HRS	2.00 EA	150	71	50	0	271	
32172.31 - 30		Symbol, Word			125.00	71.32	25.00	0.00	221.32	
	SUB-211/211	1 hrs/unit	4 TOTAL HRS	4.00 EA	500	285	100	0	885	
Subtotal Direct Costs					1,320	1,216	742	0	3,279	
Subcontractor Markups					112	18	63	0	194	
Prime Contractor Markups					186	160	104	0	450	
TOTAL UM4007019811 TEMP ROAD STRIPING, LETTERS, SYMBOLS					17 HRS	1,618	1,394	910	0	3,922
57,040.00 SSF					Level Unit Cost-->	0.03	0.02	0.02	0.00	0.07
SUBTOTAL UM40070198 ELLIS STREET					293,511	48,259	29,294	0	371,064	
MARKUP					1,225	1,146	1,225	0.000	1,215	
TOTAL UM40070198 ELLIS STREET					359,697	55,326	35,900	0	450,923	
UM4008 TEMPORARY FACILITIES & OTHER INDIRECT COSTS										
<u>UM4008011101 OVERHEAD TRACTION POWER</u> LEVEL CONTRACTOR ID APPLIED--PRIME										
34230.01 - 02		PROVIDE STEEL POLE TYPE 765N			3138.01	2958.99	1448.58	0.00	7,545.58	
	SUB-511/511	43.95 hrs/unit	132 TOTAL HRS	3.00 EA	9,414	8,877	4,346	0	22,637	
34230.01 - 02		PROVIDE STEEL POLE TYPE 770			4482.88	4241.68	2069.41	0.00	10,793.97	
	SUB-165/165	71.914 hrs/unit	288 TOTAL HRS	4.00 EA	17,932	16,967	8,278	0	43,176	
34230.01 - 02		PROVIDE POLE FOUNDATION FOR 765N			2241.43	2116.43	1034.70	0.00	5,392.58	
	SUB-314/314	34.834 hrs/unit	70 TOTAL HRS	2.00 EA	4,483	4,233	2,069	0	10,785	
34230.01 - 02		PROVIDE POLE FOUNDATION FOR 770			3056.51	2892.04	1410.96	0.00	7,359.50	
	SUB-165/165	49.032 hrs/unit	245 TOTAL HRS	5.00 EA	15,283	14,460	7,055	0	36,798	
34230.01 - 02		PROVIDE 2/0 TROLLEYWIRE			21.00	3.77	0.28	0.00	25.05	
	SUB-165/165	0.064 hrs/unit	172 TOTAL HRS	2,682.00 LF	56,322	10,124	746	0	67,192	
34421.61 - 01		GUYWIRE			0.89	1.59	0.12	0.00	2.59	
	SUB-161/161	0.018 hrs/unit	41 TOTAL HRS	2,295.00 LF	2,030	3,649	275	0	5,954	
02890.90 - 00		SIGNAL MAST ARM AND CONNECTION - 20'			1500.00	952.45	225.56	0.00	2,678.01	
	SUB-165/165	16.148 hrs/unit	32 TOTAL HRS	2.00 EA	3,000	1,905	451	0	5,356	
16531.00 - 00		R/D (E) POLE FOUNDATION			815.07	827.08	376.26	0.00	2,018.41	
	SUB-221/221	11.903 hrs/unit	36 TOTAL HRS	3.00 EA	2,445	2,481	1,129	0	6,055	
34411.31 - 03		REMOVE & DISPOSE WIRING			0.00	9.45	0.70	0.00	10.15	
	SUB-161/161	0.107 hrs/unit	176 TOTAL HRS	1,646.00 LF	0	15,556	1,153	0	16,709	
16060.80 - 00		GRND WIRE/COPPER WIRE/BARE STRANDED/1/0			1.78	2.65	0.13	0.00	4.56	
	SUB-161/161	0.03 hrs/unit	4 TOTAL HRS	140.00 LF	249	371	18	0	638	
26052.68 - 00		GROUND ROD COPPER, 3/4" X 10' L			38.36	189.19	13.94	0.00	241.48	
	SUB-161/161	2.142 hrs/unit	15 TOTAL HRS	7.00 EA	269	1,324	98	0	1,690	
16531.00 - 00		R/S (E) TROLLEY POLE			350.00	567.35	220.56	0.00	1,137.91	
	SUB-221/221	8.165 hrs/unit	33 TOTAL HRS	4.00 EA	1,400	2,269	882	0	4,552	
34230.01 - 02		PROVIDE TANGENT SPAN			3675.05	5674.55	418.80	0.00	9,768.40	
	SUB-165/165	96.207 hrs/unit	1347 TOTAL HRS	14.00 EA	51,451	79,444	5,863	0	136,758	
34230.01 - 00		SPECIAL WORK STOCKTON - ELLIS STREET			81506.85	76999.58	37625.57	0.00	196,132.00	
	SUB-211/211	1079.6 hrs/unit	1080 TOTAL HRS	1.00 LS	81,507	77,000	37,626	0	196,132	
27210.50 - 01		SPARES - ALLOWANCE - TRACTION POWER			52500.00	0.00	0.00	0.00	52,500.00	
	SUB-161/161			1.00 LS	52,500	0	0	0	52,500	
Subtotal Direct Costs					298,284	238,659	69,988	0	606,931	
Subcontractor Markups					25,354	3,580	5,949	0	34,883	
Prime Contractor Markups					41,909	31,368	9,833	0	83,110	
TOTAL UM4008011101 OVERHEAD TRACTION POWER					3,670 HRS	365,546	273,607	85,770	0	724,924
57,040.00 SSF					Level Unit Cost-->	6.41	4.80	1.50	0.00	12.71

E--Detail Report
100%

ESTIMATE NAME:
PRINTING DATE: 04/30/2012
Page No. 222

					TOTAL COSTS					
CODE	SUB/CREW	DESCRIPTION	QTY	UM	MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	TOTAL	
UM4008 TEMPORARY FACILITIES & OTHER INDIRECT COSTS										
UM4008011103 TRAFFIC CONTROL LEVEL CONTRACTOR ID APPLIED--PRIME										
65% ESTIMATE INFORMATION USED										
01552.60	- 01	Traffic Control Supervisor			0.00	66.89	0.00	0.00	66.89	
		SUB-997/120 0.923 hrs/unit 5538 TOTAL HRS	6,000.00	hr	0	401,333	0	0	401,333	
01552.60	- 01	SF Parking & Traffic Control Officer			0.00	61.74	0.00	0.00	61.74	
		SUB-997/120 0.852 hrs/unit 17041 TOTAL HRS	20,000.00	hr	0	1,234,870	0	0	1,234,870	
01552.60	- 01	Off Duty SFPD Uniform Officer			0.00	87.47	0.00	0.00	87.47	
		SUB-997/120 1.207 hrs/unit 4828 TOTAL HRS	4,000.00	hr	0	349,880	0	0	349,880	
01552.60	- 01	Traffic Control Crew			0.00	51.45	0.00	0.00	51.45	
		SUB-997/120 0.71 hrs/unit 4260 TOTAL HRS	6,000.00	hr	0	308,717	0	0	308,717	
01552.60	- 01	Traffic Water Filled Barrier, Rental			25.00	175.66	25.00	0.00	225.66	
		SUB-111/111 3 hrs/unit 1617 TOTAL HRS	539.00	EA	13,475	94,681	13,475	0	121,631	
02820.13	- 07	Sign, Detour			150.00	184.46	25.00	0.00	359.46	
		SUB-153/153 2 hrs/unit 78 TOTAL HRS	39.00	EA	5,850	7,194	975	0	14,019	
01562.95	- 03	Temp Roadway Decking			60.00	60.76	20.00	0.00	140.76	
		SUB-314/314 1 hrs/unit 1067 TOTAL HRS	1,067.00	SF	64,020	64,829	21,340	0	150,189	
01552.60	- 09	Sign, Changable Message (CMS)			10188.36	8558.66	4703.20	0.00	23,450.21	
		SUB-211/211 120 hrs/unit 480 TOTAL HRS	4.00	EA	40,753	34,235	18,813	0	93,801	
01552.60	- 06	Rework Traffic Signal for Traffic Re-Route			5000.00	1711.73	3000.00	0.00	9,711.73	
		SUB-211/211 24 hrs/unit 432 TOTAL HRS	18.00	EA	90,000	30,811	54,000	0	174,811	
07121.32	- 00	Covered Walkway, 6' W, at Boring Machine			50.00	134.65	10.00	0.00	194.65	
		SUB-511/511 2 hrs/unit 572 TOTAL HRS	286.00	LF	14,300	38,511	2,860	0	55,671	
07121.32	- 00	Covered Walkway Relocation			200.00	1346.52	150.00	0.00	1,696.52	
		SUB-511/511 20 hrs/unit 640 TOTAL HRS	32.00	EA	6,400	43,089	4,800	0	54,289	
01552.60	- 01	Traffic Water Filled Barrier, Rental			25.00	175.66	25.00	0.00	225.66	
		SUB-111/111 3 hrs/unit 435 TOTAL HRS	145.00	EA	3,625	25,471	3,625	0	32,721	
Subtotal Direct Costs					238,423	2,633,619	119,888	0	2,991,931	
Subcontractor Markups					20,266	39,504	10,190	0	69,961	
Prime Contractor Markups					33,498	346,148	16,844	0	396,490	
TOTAL UM4008011103 TRAFFIC CONTROL					36,988 HRS	292,188	3,019,272	146,922	0	3,458,382
83,706.00 SF					Level Unit Cost-->	3.49	36.07	1.76	0.00	41.32
NOTE: 65% ESTIMATE INFORMATION USED										
UM4008011104 DEWATERING LEVEL CONTRACTOR ID APPLIED--PRIME										
65% ESTIMATE INFORMATION USED										
31231.92	- 02	Drill Well - 6" dia.			20.00	54.65	59.95	0.00	134.60	
		SUB-221/211 0.766 hrs/unit 920 TOTAL HRS	1,200.00	lf	24,000	65,585	71,941	0	161,526	
31231.92	- 02	Steel Casing - 6" dia.			35.00	24.29	26.65	0.00	85.94	
		SUB-221/211 0.341 hrs/unit 409 TOTAL HRS	1,200.00	lf	42,000	29,149	31,974	0	103,122	
31231.92	- 02	Steel Pipe Screen - 6" dia.			45.00	24.29	26.64	0.00	95.93	
		SUB-221/211 0.341 hrs/unit 82 TOTAL HRS	240.00	lf	10,800	5,829	6,395	0	23,024	
31231.92	- 02	Submersible pump - 6" dia. - 25 HP - 250 GPM			2658.68	2637.24	1251.14	0.00	6,547.05	
		SUB-221/211 36.976 hrs/unit 887 TOTAL HRS	24.00	ea	63,808	63,294	30,027	0	157,129	
31231.92	- 02	Observation well - 6" dia.			9002.24	8929.64	4236.35	0.00	22,168.22	
		SUB-221/211 125.2 hrs/unit 250 TOTAL HRS	2.00	ea	18,004	17,859	8,473	0	44,336	
31231.92	- 02	Flow meter - 6" dia.			564.73	560.17	265.75	0.00	1,390.65	
		SUB-221/211 7.854 hrs/unit 94 TOTAL HRS	12.00	ea	6,777	6,722	3,189	0	16,688	
31231.92	- 02	Dewatering operation, maintenance Allowance, (incl. wells, pumps, piping, etc)			38812.79	104227.62	18264.84	0.00	161,305.25	
		SUB-221/221 1500 hrs/unit 1500 TOTAL HRS	1.00	ls	38,813	104,228	18,265	0	161,305	
31231.92	- 02	Water disposal			38812.79	416910.49	160000.00	0.00	615,723.28	
		SUB-221/221 6000 hrs/unit 6000 TOTAL HRS	1.00	ls	38,813	416,910	160,000	0	615,723	
Subtotal Direct Costs					243,015	709,577	330,263	0	1,282,854	
Subcontractor Markups					20,656	10,644	28,072	0	59,372	
Prime Contractor Markups					34,143	93,263	46,402	0	173,808	
TOTAL UM4008011104 DEWATERING					10,142 HRS	297,815	813,483	404,736	0	1,516,034
83,706.00 SF					Level Unit Cost-->	3.56	9.72	4.84	0.00	18.11
NOTE: 65% ESTIMATE INFORMATION USED										
UM4008011121 FIELD OVERHEAD, DETAIL ITEMS LEVEL CONTRACTOR ID APPLIED--PRIME										
01101.01	- 05	Project Director			0.00	168.11	0.00	0.00	168.11	
		PRIME/1101 1 hrs/unit 5500 TOTAL HRS	5,500.00	MH	0	924,620	0	0	924,620	
		* LINE ITEM ASSEMBLY Factor:100.0000								
01101.01	- 05	Project Manager			0.00	144.10	0.00	0.00	144.10	
		PRIME/1102 1 hrs/unit 9680 TOTAL HRS	9,680.00	MH	0	1,394,899	0	0	1,394,899	
		* LINE ITEM ASSEMBLY Factor:176.0000								
01101.01	- 05	General Superintendent			0.00	87.76	0.00	0.00	87.76	
		PRIME/1104 1 hrs/unit 9680 TOTAL HRS	9,680.00	MH	0	849,517	0	0	849,517	
		* LINE ITEM ASSEMBLY Factor:176.0000								
01101.01	- 05	Asst. Superintendent			0.00	68.68	0.00	0.00	68.68	

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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS									
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	TOTAL					
		PRIME/1105	1	hrs/unit	19250	TOTAL HRS	19,250.00	MH	0	1,322,090	0	0	0	1,322,090
		* LINE ITEM ASSEMBLY				Factor:350.0000								
01101.01	- 05	Project Engineer							0.00	138.09	0.00	0.00	0.00	138.09
		PRIME/1103	1	hrs/unit	19250	TOTAL HRS	19,250.00	MH	0	2,658,239	0	0	0	2,658,239
		* LINE ITEM ASSEMBLY				Factor:350.0000								
01101.01	- 05	Admin / Secretary							0.00	48.04	0.00	0.00	0.00	48.04
		PRIME/1106	1	hrs/unit	19250	TOTAL HRS	19,250.00	MH	0	924,750	0	0	0	924,750
		* LINE ITEM ASSEMBLY				Factor:350.0000								
01101.01	- 05	Payroll / Timekeeper							0.00	38.42	0.00	0.00	0.00	38.42
		PRIME/1107	1	hrs/unit	9680	TOTAL HRS	9,680.00	MH	0	371,953	0	0	0	371,953
		* LINE ITEM ASSEMBLY				Factor:176.0000								
01101.01	- 05	Cost Engineer - Accountant "Pre Construction"							0.00	72.05	0.00	0.00	0.00	72.05
		PRIME/1108	1	hrs/unit	4400	TOTAL HRS	4,400.00	MH	0	317,022	0	0	0	317,022
		* LINE ITEM ASSEMBLY				Factor:80.0000								
01101.01	- 05	Project Scheduler							0.00	72.05	0.00	0.00	0.00	72.05
		PRIME/1110	1	hrs/unit	9680	TOTAL HRS	9,680.00	MH	0	697,449	0	0	0	697,449
		* LINE ITEM ASSEMBLY				Factor:176.0000								
01101.01	- 05	Project Estimator							0.00	86.46	0.00	0.00	0.00	86.46
		PRIME/1111	1	hrs/unit	2200	TOTAL HRS	2,200.00	MH	0	190,220	0	0	0	190,220
		* LINE ITEM ASSEMBLY				Factor:40.0000								
01101.01	- 05	Quality Control							0.00	96.06	0.00	0.00	0.00	96.06
		PRIME/1112	1	hrs/unit	9680	TOTAL HRS	9,680.00	MH	0	929,882	0	0	0	929,882
		* LINE ITEM ASSEMBLY				Factor:176.0000								
01101.01	- 05	Estimator "Chief - Senior"							0.00	138.09	0.00	0.00	0.00	138.09
		PRIME/1113	1	hrs/unit	550	TOTAL HRS	550.00	MH	0	75,950	0	0	0	75,950
		* LINE ITEM ASSEMBLY				Factor:10.0000								
01101.01	- 05	Estimator							0.00	96.06	0.00	0.00	0.00	96.06
		PRIME/1114	1	hrs/unit	1500	TOTAL HRS	1,500.00	MH	0	144,093	0	0	0	144,093
01101.01	- 05	Purchasing							0.00	45.79	0.00	0.00	0.00	45.79
		PRIME/1115	1	hrs/unit	40	TOTAL HRS	40.00	MH	0	1,832	0	0	0	1,832
01101.01	- 05	Safety Engineer							0.00	72.05	0.00	0.00	0.00	72.05
		PRIME/1116	1	hrs/unit	350	TOTAL HRS	350.00	MH	0	25,218	0	0	0	25,218
01101.01	- 05	Daily Cleaning "Laborer"							0.00	45.63	0.00	0.00	0.00	45.63
		PRIME/1119	1	hrs/unit	220	TOTAL HRS	220.00	MH	0	10,039	0	0	0	10,039
01101.01	- 11	Punch List							0.10	0.15	0.05	0.00	0.00	0.30
		PRIME/NoCrew	0.013	hrs/unit	2429	TOTAL HRS	192,000.00	SF	19,200	28,800	9,600	0	0	57,600
01101.01	- 11	Final Cleaning "In House Forces"							0.03	0.08	0.01	0.00	0.00	0.12
		PRIME/NoCrew	0.013	hrs/unit	2429	TOTAL HRS	192,000.00	SF	5,760	15,360	1,920	0	0	23,040
01101.01	- 11	Final Cleaning "Glass"							0.02	0.03	0.00	0.00	0.00	0.05
		PRIME/NoCrew	0.013	hrs/unit	2429	TOTAL HRS	192,000.00	SF	3,840	5,760	0	0	0	9,600
01101.01	- 08	Printing (Dwgs,O&M,Subm)							0.75	0.00	0.00	0.00	0.00	0.75
		PRIME/NoCrew	96	hrs/unit	384000	TOTAL HRS	4,000.00	PGS	3,000	0	0	0	0	3,000
01101.01	- 11	Warranty Costs							0.00	0.02	0.00	0.00	0.00	0.02
		PRIME/NoCrew	0.013	hrs/unit	2429	TOTAL HRS	192,000.00	SF	0	3,840	0	0	0	3,840
Subtotal Direct Costs									31,800	10,891,533	11,520	0	0	10,934,853
Subcontractor Markups									4,118	1,410,366	1,492	0	0	1,415,976
Prime Contractor Markups									4,651	1,592,998	1,685	0	0	1,599,334
TOTAL UM4008011121 FIELD OVERHEAD, DETAIL ITEMS					514,625	HRS			40,569	13,894,897	14,697	0	0	13,950,163
55.00 MTH									737.62	252,634.50	267.21	0.00	0.00	253,639.33
Level Unit Cost-->														
UM4008011122 GC EXPENSES					LEVEL CONTRACTOR ID APPLIED--PRIME									
01101.01	- 06	On Site Vehicle Pm							0.00	0.00	3.50	0.00	0.00	3.50
		PRIME/NoCrew	1	hrs/unit	9680	TOTAL HRS	9,680.00	HR	0	0	33,880	0	0	33,880
		* LINE ITEM ASSEMBLY				Factor:176.0000								
01101.01	- 06	On Site Vehicle Super							0.00	0.00	3.50	0.00	0.00	3.50
		PRIME/NoCrew	96	hrs/unit	792000	TOTAL HRS	8,250.00	HR	0	0	28,875	0	0	28,875
		* LINE ITEM ASSEMBLY				Factor:150.0000								
01101.01	- 06	On Site Vehicle Others							0.00	0.00	3.25	0.00	0.00	3.25
		PRIME/NoCrew	96	hrs/unit	*****	TOTAL HRS	19,360.00	HR	0	0	62,920	0	0	62,920
		* LINE ITEM ASSEMBLY				Factor:352.0000								
01107.01	- 00	Drug Testing Services							0.00	44.19	0.00	0.00	0.00	44.19
		PRIME/GC-1122	1	hrs/unit	600	TOTAL HRS	600.00	HR	0	26,514	0	0	0	26,514
01101.01	- 07	Security Check							0.00	44.19	0.00	0.00	0.00	44.19
		PRIME/GC-1122	1	hrs/unit	600	TOTAL HRS	600.00	HR	0	26,514	0	0	0	26,514
01101.01	- 07	Professional Survey & Layout							0.00	78.53	0.00	0.00	0.00	78.53
		PRIME/GC-1123	1	hrs/unit	3000	TOTAL HRS	3,000.00	HR	0	235,575	0	0	0	235,575
01101.01	- 08	Field Office "Storefront"							0.00	0.00	35.00	0.00	0.00	35.00
		PRIME/NoCrew	96	hrs/unit	929280	TOTAL HRS	9,680.00	HR	0	0	338,800	0	0	338,800
		* LINE ITEM ASSEMBLY				Factor:176.0000								
01101.01	- 08	Rails - Platforms - Stairs - Ramps							*****	*****	*****	*****	*****	*****
		PRIME/221	*****				0.00	HR	0	0	0	0	0	0
01101.01	- 08	Setup Temp Office/Remove							*****	*****	*****	*****	*****	*****
		PRIME/221	*****				0.00	HR	0	0	0	0	0	0

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					TOTAL COSTS				
CODE	SUB/CREW	DESCRIPTION	QTY	UM	MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	TOTAL
01101.01 - 08		Computers - Monitors			0.00	0.00	0.55	0.00	0.55
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	0	0	42,592	0
		* LINE ITEM ASSEMBLY			Factor:1408.0000				42,592
01101.01 - 08		Software			0.30	0.00	0.00	0.00	0.30
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	23,232	0	0	0
		* LINE ITEM ASSEMBLY			Factor:1408.0000				23,232
01101.01 - 08		Printers			0.00	0.00	1.10	0.00	1.10
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	0	0	21,296	0
		* LINE ITEM ASSEMBLY			Factor:352.0000				21,296
01101.01 - 08		Office Furniture			0.00	0.00	1.75	0.00	1.75
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	0	0	16,940	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				16,940
01101.01 - 08		Office Supplies			4.50	0.00	0.00	0.00	4.50
		PRIME/NoCrew	96	hrs/unit	924000 TOTAL HRS	43,313	0	0	0
		* LINE ITEM ASSEMBLY			Factor:175.0000				43,313
01101.01 - 08		Office Equipment			***** **	***** **	***** **	***** **	***** **
		PRIME/NoCrew	*****	0.00	HR	0	0	0	0
01101.01 - 08		Postage - Special Delievery Services			0.30	0.00	0.00	0.00	0.30
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	2,904	0	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				2,904
01101.01 - 08		First Aid Supplies			0.25	0.00	0.00	0.00	0.25
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	2,420	0	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				2,420
01101.01 - 08		Cups - Ice - Drinking Water			0.30	0.00	0.00	0.00	0.30
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	2,904	0	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				2,904
01101.01 - 08		Printing - Blue Prints			0.40	0.00	0.00	0.00	0.40
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	3,872	0	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				3,872
01101.01 - 08		Photo Copier Machine			0.60	0.00	0.22	0.00	0.82
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	5,808	0	2,130	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				7,938
01101.01 - 08		Photo Copier Supplies			0.15	0.00	2.00	0.00	2.15
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	1,452	0	19,360	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				20,812
01101.01 - 08		Storage & Tool Trailers			0.00	0.00	2.00	0.00	2.00
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	0	0	38,720	0
		* LINE ITEM ASSEMBLY			Factor:352.0000				38,720
01101.01 - 08		Setup Temp Tool Trailers			0.00	0.00	500.00	0.00	500.00
		PRIME/NoCrew	96	hrs/unit	384 TOTAL HRS	0	0	2,000	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				2,000
01101.01 - 08		Equip Rental/Small Tools			0.00	0.00	3.00	0.00	3.00
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	0	0	29,040	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				29,040
01101.01 - 08		Small Tools Expendable			1.50	0.00	0.00	0.00	1.50
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	14,520	0	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				14,520
01101.01 - 08		Telephone Exp, Incl Cell			1.10	0.00	0.00	0.00	1.10
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	21,296	0	0	0
		* LINE ITEM ASSEMBLY			Factor:352.0000				21,296
01101.01 - 08		Internet Connections - Service			0.00	0.00	0.25	0.00	0.25
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	0	0	19,360	0
		* LINE ITEM ASSEMBLY			Factor:1408.0000				19,360
01101.01 - 08		Network / Communications Eqpt			0.00	0.00	1.20	0.00	1.20
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	0	0	11,616	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				11,616
01101.01 - 08		Field Radios			0.00	0.00	2.20	0.00	2.20
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	0	0	21,296	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				21,296
01101.01 - 08		Temporary Toilets (5)			0.00	0.00	1.20	0.00	1.20
		PRIME/NoCrew	96	hrs/unit	***** TOTAL HRS	0	0	23,232	0
		* LINE ITEM ASSEMBLY			Factor:352.0000				23,232
01101.01 - 08		Temporary Plumbing			***** **	***** **	***** **	***** **	***** **
		PRIME/221	*****	0.00	LF	0	0	0	0
01101.01 - 08		Temporary Holding Tanks			***** **	***** **	***** **	***** **	***** **
		PRIME/NoCrew	*****	0.00	HR	0	0	0	0
01101.01 - 08		Project Sign			1650.00	0.00	0.00	0.00	1,650.00
		PRIME/NoCrew	96	hrs/unit	384 TOTAL HRS	6,600	0	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				6,600
01101.01 - 08		Temporary Lighting & Elec Hourly Charges			0.00	0.00	2.00	0.00	2.00
		PRIME/NoCrew	96	hrs/unit	929280 TOTAL HRS	0	0	19,360	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				19,360
01101.01 - 12		Temporary Fencing			12.85	5.19	1.36	0.00	19.40
		PRIME/221	0.075	hrs/unit	45 TOTAL HRS	7,710	3,116	813	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				11,640
01101.01 - 12		Truck Entrances			0.00	5.19	4500.00	0.00	4,505.19
		PRIME/221	0.075	hrs/unit		0	5	4,500	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				4,505
01101.01 - 12		Silt Fence			1.25	5.19	0.00	0.00	6.44
		PRIME/221	0.075	hrs/unit	45 TOTAL HRS	750	3,116	0	0
		* LINE ITEM ASSEMBLY			Factor:176.0000				3,866

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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	
01101.01 - 10		Safety "General Signage"			0.02	0.88	0.00	0.00	0.90
		PRIME/221 0.013 hrs/unit 190 TOTAL HRS	15,000.00	SF	300	13,185	0	0	13,485
01101.01 - 08		Special Scaffolding "Rental"			0.00	0.00	12.00	0.00	12.00
		PRIME/NoCrew 96 hrs/unit 57600 TOTAL HRS	600.00	LF	0	0	7,200	0	7,200
01101.01 - 08		Special Scaffolding "Setup Labor"			0.00	22.00	0.00	0.00	22.00
		PRIME/NoCrew 96 hrs/unit 57600 TOTAL HRS	600.00	LF	0	13,200	0	0	13,200
01101.01 - 08		Special Scaffolding "Take Down Labor"			0.00	2.75	0.00	0.00	2.75
		PRIME/NoCrew 96 hrs/unit 57600 TOTAL HRS	600.00	LF	0	1,650	0	0	1,650
01101.01 - 08		Fire Protection Equipment			0.00	0.00	0.15	0.00	0.15
		PRIME/NoCrew 96 hrs/unit 792000 TOTAL HRS	8,250.00	HR	0	0	1,238	0	1,238
		* LINE ITEM ASSEMBLY Factor:150.0000							
01101.01 - 08		Temp Water Services			3.50	0.00	0.00	0.00	3.50
		PRIME/NoCrew 96 hrs/unit ***** TOTAL HRS	15,000.00	SF	52,500	0	0	0	52,500
01101.01 - 08		Weather Protection Materials			0.07	0.02	0.00	0.00	0.09
		PRIME/NoCrew 96 hrs/unit ***** TOTAL HRS	15,000.00	SF	1,050	300	0	0	1,350
01101.01 - 08		Temp Heat/Winter Weather Hourly Charges			0.00	0.00	0.07	0.00	0.07
		PRIME/NoCrew 96 hrs/unit 422400 TOTAL HRS	4,400.00	HR	0	0	308	0	308
		* LINE ITEM ASSEMBLY Factor:80.0000							
01101.01 - 08		Trash Hauling			3.75	0.00	0.00	0.00	3.75
		PRIME/NoCrew 96 hrs/unit 792000 TOTAL HRS	8,250.00	HR	30,938	0	0	0	30,938
		* LINE ITEM ASSEMBLY Factor:150.0000							
01101.01 - 09		Man / Material Lift "Rental"			0.00	0.00	23.00	0.00	23.00
		PRIME/NoCrew 0.013 hrs/unit 53 TOTAL HRS	4,224.00	HR	0	0	97,152	0	97,152
01101.01 - 09		Man / Material Lift "Foundation"			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/311 *****	0.00	CY	0	0	0	0	0
01101.01 - 09		Man / Material Lift "Doors - Enclosures - Platforms"			335.00	0.00	0.00	0.00	335.00
		PRIME/NoCrew 0.013 hrs/unit	6.00	HR	2,010	0	0	0	2,010
01101.01 - 09		Man / Material Lift "Set Up"			0.00	0.00	1800.00	0.00	1,800.00
		PRIME/NoCrew 0.013 hrs/unit	5.00	HR	0	0	9,000	0	9,000
01101.01 - 09		Man / Material Lift "Take Down"			0.00	0.00	1800.00	0.00	1,800.00
		PRIME/NoCrew 0.013 hrs/unit	5.00	HR	0	0	9,000	0	9,000
01101.01 - 09		Man / Material Lift "Operator"			0.00	69.48	0.00	0.00	69.49
		PRIME/221 1 hrs/unit 6600 TOTAL HRS	6,600.00	MH	0	458,602	0	0	458,602
		* LINE ITEM ASSEMBLY Factor:120.0000							
01101.01 - 09		Forklift			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/NoCrew *****	0.00	HR	0	0	0	0	0
01101.01 - 09		Forklift "Operator"			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/NoCrew *****	0.00	HR	0	0	0	0	0
01101.01 - 09		Forklift "Fuel & Maintenance"			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/NoCrew *****	0.00	HR	0	0	0	0	0
01101.01 - 09		Skiploader			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/NoCrew *****	0.00	HR	0	0	0	0	0
01101.01 - 09		Skip Loader "Operator"			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/221 *****	0.00	MH	0	0	0	0	0
01101.01 - 09		Skiploader "Fuel & Maintenance"			***** **	***** **	***** **	***** **	** , ** , ** , **
		PRIME/NoCrew *****	0.00	HR	0	0	0	0	0
01101.01 - 11		Street Cleaning			0.00	0.00	65.00	0.00	65.00
		PRIME/NoCrew 0.013 hrs/unit 76 TOTAL HRS	6,000.00	HR	0	0	390,000	0	390,000
01101.01 - 08		Printing (Dwgs,O&M,Subm)			0.75	0.00	0.00	0.00	0.75
		PRIME/NoCrew 96 hrs/unit ***** TOTAL HRS	12,000.00	PGS	9,000	0	0	0	9,000
01521.32 - 00		Small tools			0.00	0.00	866666.67	0.00	866,666.67
		PRIME/120	1.00	ls	0	0	866,667	0	866,667
Subtotal Direct Costs					232,578	781,777	2,117,294	0	3,131,649
Subcontractor Markups					30,117	101,234	274,173	0	405,523
Prime Contractor Markups					34,017	114,343	309,676	0	458,036
TOTAL UM4008011122 GC EXPENSES					296,712	997,354	2,701,142	0	3,995,208
55.00 MTH Level Unit Cost-->					5,394.76	18,133.70	49,111.68	0.00	72,640.15

UM4008011123 HOISTING LEVEL CONTRACTOR ID APPLIED--PRIME

15906.00 - 15		RENT CRAWLER MNTD/LATTICE BOOM CRANE/350 TON/80' BOOM			115.00	570.58	1840.00	0.00	2,525.58
		SUB-211/211 8 hrs/unit 4800 TOTAL HRS	600.00	DY	69,000	342,346	1,104,000	0	1,515,346
15906.00 - 16		RENT CRANE TRUCK MOUNT/CABLE 6X4 DRIVE 20 TON/10' RADIUS			85.00	570.58	1150.00	0.00	1,805.58
		SUB-211/211 8 hrs/unit 2560 TOTAL HRS	320.00	DY	27,200	182,585	368,000	0	577,785
01900.00 - 14		52 Meter Concrete Boom Pump			0.00	71.32	175.00	0.00	246.32
		SUB-211/211 1 hrs/unit 2000 TOTAL HRS	2,000.00	HRS	0	142,644	350,000	0	492,644
		NOTE: Quantity is for 125 days.							
15906.00 - 31		RENT CRANE-TELESCOPING BOOM/40 TON BUCKET RIG			230.00	570.58	1150.00	0.00	1,950.58
		SUB-211/211 8 hrs/unit 3200 TOTAL HRS	400.00	DY	92,000	228,231	460,000	0	780,231

E--Detail Report
100%

ESTIMATE NAME:
PRINTING DATE: 04/30/2012
Page No. 226

CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL		
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)			
		Subtotal Direct Costs			188,200	895,806	2,282,000	0	3,366,006		
		Subcontractor Markups			15,997	13,437	193,970	0	223,404		
		Prime Contractor Markups			26,442	117,740	320,618	0	464,800		
TOTAL UM4008011123 HOISTING					12,560 HRS	230,639	1,026,983	2,796,588	0	4,054,210	
		83,706.00 SF			Level Unit Cost-->	2.76	12.27	33.41	0.00	48.43	
UM4008011124 SP & DIV 1 REQUIREMENTS					LEVEL CONTRACTOR ID APPLIED--PRIME						
01101.01 - 50		MAINTAIN STATION FROM COMPLETION TO REVENUE STATION (ASSUME A 5 MAN CREW FOR 3 MONTH)					8.85	0.00	97.87		
		SUB-211/211	1	hrs/unit	977 TOTAL HRS	977.00 MH	17,293	69,682	8,646	0	95,621
01101.01 - 50		ASSESSMENTS FOR CANCELLED SHUTDOWN WITHIN 5 DAYS					0.00	5705.77	0.00	0.00	5,705.77
		SUB-211/211	80	hrs/unit	640 TOTAL HRS	8.00 EA	0	45,646	0	0	45,646
01101.01 - 50		ASSESSMENTS FOR ADDITIONAL SHUTDOWN					2000.00	6846.92	1250.00	0.00	10,096.92
		SUB-211/211	96	hrs/unit	768 TOTAL HRS	8.00 EA	16,000	54,775	10,000	0	80,775
01101.01 - 50		ADDED COST FOR CITY PERSONNEL TO RESTORE OH CONTACT SYSTEM					150.00	4279.33	1200.00	0.00	5,629.33
		SUB-211/211	60	hrs/unit	300 TOTAL HRS	5.00 EA	750	21,397	6,000	0	28,147
01101.01 - 50		COST FOR MUNI INSPECTOR WHEN MOVING WIRES					0.00	713.22	50.00	0.00	763.22
		SUB-211/211	10	hrs/unit	50 TOTAL HRS	5.00 EA	0	3,566	250	0	3,816
01101.01 - 50		PAY 50% OF DRB COSTS					0.00	150.00	0.00	0.00	150.00
		SUB-997/GC-1132	1	hrs/unit	1134 TOTAL HRS	1,134.00 MH	0	170,100	0	0	170,100
01101.01 - 50		COST TO ESCROW BID DOCUMENTS					250.00	0.00	0.00	0.00	250.00
		SUB-211/211			60.00 MO		15,000	0	0	0	15,000
01101.01 - 50		PAY FOR OFF DUTY POLICE OFFICERS					0.00	74.67	0.00	0.00	74.67
		SUB-997/GC-1131	1	hrs/unit	400 TOTAL HRS	400.00 HR	0	29,867	0	0	29,867
		Subtotal Direct Costs					49,043	395,033	24,896	0	468,973
		Subcontractor Markups					4,169	5,926	2,116	0	12,210
		Prime Contractor Markups					6,890	51,921	3,498	0	62,309
TOTAL UM4008011124 SP & DIV 1 REQUIREMENTS					4,269 HRS	60,102	452,880	30,511	0	543,492	
		83,706.00 SF			Level Unit Cost-->	0.72	5.41	0.36	0.00	6.49	
UM4008011125 INSPECTION REQUIREMENTS					LEVEL CONTRACTOR ID APPLIED--PRIME						
01101.01 - 50		WELDING - TESTING & INSPECTION					0.00	71.32	0.00	0.00	71.32
		SUB-211/211	1	hrs/unit	2080 TOTAL HRS	2,080.00 MH	0	148,350	0	0	148,350
01101.01 - 50		EXCAVATION TRACKING OBSERVATIONS - ACCOUNTING 2 MEN 18 MONTHS					0.00	71.32	0.00	0.00	71.32
		SUB-211/211	1	hrs/unit	6336 TOTAL HRS	6,336.00 MH	0	451,897	0	0	451,897
14505.00 - 55		PCC INSPECTION TECHNICIAN/PER DAY					0.00	71.32	0.00	0.00	71.32
		SUB-312/211	1	hrs/unit	2400 TOTAL HRS	2,400.00 MH	0	171,173	0	0	171,173
14505.00 - 55		CMU INSPECTION TECHNICIAN/PER DAY					0.00	71.32	0.00	0.00	71.32
		SUB-312/211	1	hrs/unit	1530 TOTAL HRS	1,530.00 MH	0	109,123	0	0	109,123
14505.00 - 55		REBAR INSPECTION TECHNICIAN/PER DAY					0.00	71.32	0.00	0.00	71.32
		SUB-312/211	1	hrs/unit	2080 TOTAL HRS	2,080.00 MH	0	148,350	0	0	148,350
14505.00 - 34		MASONRY TESTING/COMPRESSIVE STRENGTH/PER 5 BRICKS/ASTM C 67					0.00	14.80	0.00	0.00	14.80
		SUB-422/311	0.2	hrs/unit	60 TOTAL HRS	300.00 EA	0	4,440	0	0	4,440
14505.00 - 19		PCC TESTING/COMPRESSIVE STRENGTH TEST/INCL PICKED UP BY LAB/AVG					0.00	14.80	0.00	0.00	14.80
		SUB-422/311	0.2	hrs/unit	180 TOTAL HRS	900.00 EA	0	13,320	0	0	13,320
14505.00 - 42		REINFRNG STL/TENSILE TEST/#9 TO #11 BAR					0.00	8.08	0.00	0.00	8.08
		SUB-511/511	0.12	hrs/unit	12 TOTAL HRS	100.00 EA	0	808	0	0	808
14505.00 - 42		REINFRNG STL/TENSILE TEST/#14 BAR & LARGER					0.00	8.08	0.00	0.00	8.08
		SUB-511/511	0.12	hrs/unit	24 TOTAL HRS	200.00 EA	0	1,616	0	0	1,616
14505.00 - 58		NON-DESTRUCIVE MTL TESTING/RADIOGRAPHY					0.00	16.83	0.00	0.00	16.83
		SUB-511/511	0.25	hrs/unit	13 TOTAL HRS	50.00 EA	0	842	0	0	842
14505.00 - 58		NON-DESTRUCIVE MTL TESTING/ULTRASONIC					0.00	10.10	0.00	0.00	10.10
		SUB-511/511	0.15	hrs/unit	23 TOTAL HRS	150.00 EA	0	1,515	0	0	1,515
		Subtotal Direct Costs					0	1,051,433	0	0	1,051,433
		Subcontractor Markups					0	15,771	0	0	15,771
		Prime Contractor Markups					0	138,194	0	0	138,194
TOTAL UM4008011125 INSPECTION REQUIREMENTS					14,737 HRS	0	1,205,399	0	0	1,205,399	
SUBTOTAL UM40080111 UNION SQUARE MARKET ST. STATION (UMS)						1,281,343	17,597,438	4,955,849	0	23,834,630	
MARKUP						1,236	1,232	1,247	0.000	1,236	
TOTAL UM40080111 UNION SQUARE MARKET ST. STATION (UMS)						1,583,570	21,683,875	6,180,367	0	29,447,812	

UM50 SYSTEMS

UM5003 TPSS STATIONS

UM5003018011 MEDIUM VOLTAGE SINGLE CONDUCTOR CABLE LEVEL CONTRACTOR ID APPLIED--PRIME

PRODUCTIVITY = 0.083 MH/LF

26051.31 - 61		1/C #500KCMil , EPR 2.4/5KV Cu Cable					11.88	6.62	0.47	0.00	18.98
		SUB-161/161	0.075	hrs/unit	19 TOTAL HRS	250.00 LF	2,970	1,655	119	0	4,744

PRIME CONTRACTOR SUMMARY REPORT

Project Element: **MOS 100% ESTIMATE**

Prime Contractor: **PRIME CONTRACTOR**

Markup Description	Markup	Total
MOS 100% ESTIMATE		
Cost to Prime for PRIME PRIME CONTRACTOR		\$105,474,402
PRIME HOME OFFICE OVERHEAD & PROFIT	7.000%	\$7,383,208
SMALL TOOLS & MISC	2.100%	\$2,370,010
INSURANCE & BOND	4.000%	\$4,609,105
Total Estimate with Prime Contractor Markups	13.617%	\$119,836,725

All codes referenced in Table A-1: "Mitigation Base Cost Calculations" have been highlighted below. The codes beginning with "MS2003..." were derived at a higher level in the estimate folder structure than the costs associated with codes beginning with "MS4008...". The supporting values for codes beginning with "MS2003..." may be arrived at by dividing the highlighted costs below by the prime contractor markup. For example, the cost highlighted for MS200301 below is \$20,468,749. To arrive at the direct cost the prime contractor mark up is backed out of the amount as follows:

$$\text{MS200301: } \$23,255,954 / (\$119,836,725 / \$105,474,402) = \$20,468,749$$

The direct costs for codes beginning with "MS4008..." may be arrived at by adding the costs highlighted below at a lower level in the estimate folder structure. For example, the direct cost for MS4008011102 can be arrived at by adding the associated costs before prime contractor markup as follows:

$$\text{MS4008011102: } \$378,438 + \$17,777 = \$396,215$$

C--Assembly Category Report

SUBMITTAL: 100%
 SOFTWARE VERSION: SUCCESS 5.X
 REPORT REVISION: Nov. 5 2003
 ESTIMATE SAVED AS: MOS 100% Estimate - Program Markups.PWS

CONSTRUCTION CONTRACT: PACKAGE 1255
 DATABASE USED: SFMTA SPECIALIZE
 PRINTING DATE: 05/31/2012
 Page: 1 OF 2

PROJECT: MOSCONE STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$150,000,000

ESTIMATOR: HILL INTERNATIONAL
 CAT CODE:
 UIC:
 PROJECT #: MOS-100%
 DATE OF ESTIMATE: 5/24/12

WBS CODE	DESCRIPTION	COST/WBS		TOTAL MARKED UP COSTS				
		BASED ON	COST/	MATL	LABOR	EQUIP	UNIT COST	TOTAL
		1 LS	WBS UNIT					
MOS 100% ESTIMATE, PROJECT TOTALS								119,837,000
PROJECT LEVEL NOTE: The markups used in this estimate differ from the markups Hill International recommends for this project.								
*****PROJECT SUBTOTALS*****				48,743,062	54,588,376	16,505,287	0	119,836,725
BASE BID				48,743,062	54,588,376	16,505,287	0	119,836,725
-1255 MOSCONE STATION				48,743,062	54,588,376	16,505,287	0	119,836,725
MSMOSCONE STATION - PKG 1255				48,743,062	54,588,376	16,505,287	0	119,836,725
MS200	STATIONS - STOPS	106682@	822.71SF	40,376,646	35,539,366	11,852,808	0	87,768,820
MS2003	UNDERGROUND STATION	106682@	788.07SF	38,817,040	34,119,574	11,136,339	0	84,072,953
MS200301	EXCAVATION & GROUND SUPPORT - STATION BOX	73528@	316.29SF	9,819,977	10,140,346	3,295,631	0	23,255,954
MS200302	EXCAVATION & GROUND SUPPORT - HEADHOUSE	73528@	173.22SF	5,614,785	5,635,911	1,485,972	0	12,736,668
MS200303	EXCAVATION & GROUND SUPPORT - COMPENSATION GROUTING	73528@	13.44SF	362,878	363,136	262,439	0	988,453
MS200304	EXCAVATION & GROUND SUPPORT - INSTRUMENTATION & MONITORING	73528@	26.36SF	827,082	839,290	271,515	0	1,937,887
MS200305	STRUCTURAL - HEADHOUSE ROOF LEVEL	2847@	84.46SF	103,200	118,655	18,598	0	240,453
MS200310	STRUCTURAL - HEADHOUSE SURFACE LEVEL	12080@	288.82SF	1,483,788	1,498,729	506,457	0	3,488,973
MS200312	STRUCTURAL - STATION SURFACE LEVEL	21403@	141.96SF	1,423,764	1,049,047	565,607	0	3,038,418
MS200314	STRUCTURAL - HEADHOUSE MEZZANINE LEVEL	14123@	120.25SF	712,040	726,323	259,943	0	1,698,306
MS200316	STRUCTURAL - STATION MEZZANINE LEVEL	18650@	197.99SF	1,658,105	1,459,460	575,031	0	3,692,596
MS200318	STRUCTURAL - HEADHOUSE CONCOURSE LEVEL	14250@	146.81SF	899,619	892,037	300,337	0	2,091,993
MS200320	STRUCTURAL - STATION CONCOURSE LEVEL	18650@	205.65SF	1,635,134	1,542,452	657,775	0	3,835,361
MS200322	STRUCTURAL - HEADHOUSE PLATFORM/INVERT LEVEL	14017@	197.15SF	1,277,017	963,064	523,417	0	2,763,498
MS200324	STRUCTURAL - STATION PLATFORM/INVERT LEVEL	18650@	289.27SF	2,439,739	2,041,799	913,312	0	5,394,850
MS200332	ARCHITECTURAL - HEADHOUSE SURFACE LEVEL	4942@	227.31SF	499,959	472,846	150,539	0	1,123,345
MS200334	ARCHITECTURAL - HEADHOUSE MEZZANINE LEVEL	12935@	43.97SF	252,078	244,247	72,384	0	568,709
MS200336	ARCHITECTURAL - STATION MEZZANINE LEVEL	18813@	21.18SF	143,185	231,846	23,492	0	398,523
MS200338	ARCHITECTURAL - HEADHOUSE CONCOURSE LEVEL	11937@	69.59SF	389,466	351,406	89,883	0	830,755
MS200340	ARCHITECTURAL - STATION CONCOURSE LEVEL	18867@	142.67SF	1,443,089	917,102	331,543	0	2,691,735
MS200342	ARCHITECTURAL - HEADHOUSE PLATFORM LEVEL	11968@	12.58SF	70,955	68,687	10,959	0	150,601
MS200344	ARCHITECTURAL - STATION PLATFORM LEVEL	19017@	88.61SF	1,038,533	518,947	127,695	0	1,685,174
MS200346	ARCHITECTURAL - STAIRS & LANDING	579@	1907.29RISR	886,606	200,734	16,979	0	1,104,319
MS200370	MECHANICAL - PLUMBING	106682@	5.41SF	266,569	286,464	24,445	0	577,478
MS200372	MECHANICAL - FIRE PROTECTION	106682@	11.75SF	438,427	667,148	147,664	0	1,253,238
MS200374	MECHANICAL - HVAC & EMERGENCY VENTILATION	106682@	35.58SF	2,214,252	1,240,486	340,930	0	3,795,668
MS200376	ELECTRICAL - LIGHTING	106682@	7.13SF	334,947	393,913	32,133	0	760,994
MS200378	ELECTRICAL - POWER DISTRIBUTION	106682@	37.20SF	2,581,844	1,255,502	131,657	0	3,969,004
MS2007	ELEVATORS, ESCALATORS	8@	461983.37EA	1,559,606	1,419,792	716,469	0	3,695,867
MS200752	CONVEYING - ELEVATORS / ESCALATORS	8@	461983.37EA	1,559,606	1,419,792	716,469	0	3,695,867
MS400	SITEWORK & SPECIAL CONDITIONS	73528@	343.38SF	3,784,094	16,994,796	4,469,264	0	25,248,154
MS4001	DEMOLITION, CLEARING, EARTHWORK	73528@	4.91SF	1,621	248,944	110,623	0	361,188
MS400102	CIVILWORK	73528@	1.03SF	1,621	55,900	17,961	0	75,483
MS400103	GAS STATION DEMOLITION (4TH / FOLSOM)			0	193,044	92,661	0	285,705
MS4002	SITE UTILITIES, UTILITY RELOCATION	73528@	26.79SF	756,102	1,019,377	193,997	0	1,969,476
MS400201	SITE UTILITIES, UTILITY RELOCATION	73528@	26.79SF	756,102	1,019,377	193,997	0	1,969,476
MS4003	HAZ. MAT'L, CONTAM'D SOIL REMOVAL/MITIGATION, GROUND WATER TREATMENTS	73528@	19.23SF	602,851	533,071	278,229	0	1,414,152
MS400306	EXCAVATION & GROUND SUPPORT - HEADHOUSE			330,565	292,281	152,561	0	775,407
MS400311	EXCAVATION & GROUND SUPPORT - STATION BOX			272,286	240,790	125,668	0	638,744
MS4004	ENVIRONMENTAL MITIGATION WETLANDS HISTORIC ARCHEOLOGIC	73528@	6.41SF	200,954	177,593	92,765	0	471,313
MS400400	MOSCONE STATION	73528@	6.41SF	200,954	177,593	92,765	0	471,313
MS4006	PEDESTRIAN / BIKE ACCESS - LANDSCAPING	73528@	3.47SF	148,233	91,535	15,515	0	255,282
MS400601	STREET RESTORATION	73528@	3.47SF	148,233	91,535	15,515	0	255,282
MS4007	AUTO,BUS, VAN ACCESSWAYS INCL ROADS & PKG LOTS	73528@	9.11SF	325,334	311,417	32,998	0	669,748
MS400701	AUTO,BUS, VAN ACCESSWAYS INCL ROADS & PKG LOTS	73528@	9.11SF	325,334	311,417	32,998	0	669,748
MS4008	TEMPORARY FACILITIES	73528@	273.46SF	1,748,999	14,612,859	3,745,138	0	20,106,995
MS400801	TEMPORARY FACILITIES & OTHER INDIRECT COSTS DURING CONSTRUCTION	73528@	273.46SF	1,748,999	14,612,859	3,745,138	0	20,106,995
MS500	SYSTEMS	106682@	63.93SF	4,582,321	2,054,215	183,215	0	6,819,751
MS5003	PSS STATIONS	106682@	38.44SF	3,266,919	775,758	58,314	0	4,100,991
MS500301	PSS STATIONS	106682@	38.44SF	3,266,919	775,758	58,314	0	4,100,991
MS5005	COMMUNICATIONS	106682@	24.87SF	1,295,225	1,235,980	121,552	0	2,652,757
MS500501	COMMUNICATIONS	106682@	24.87SF	1,295,225	1,235,980	121,552	0	2,652,757
MS5006	FARE COLLECTION SYSTEMS	106682@	0.62SF	20,178	42,477	3,349	0	66,003
MOSCONE STATION								

C--Assembly Category Report

SUBMITTAL: 100%
 SOFTWARE VERSION: SUCCESS 5.X
 REPORT REVISION: Nov. 5 2003
 ESTIMATE SAVED AS: MOS 100% Estimate - Program Markups.PWS

CONSTRUCTION CONTRACT: PACKAGE 1255
 DATABASE USED: SFMTA SPECIALIZE
 PRINTING DATE: 05/31/2012
 Page: 2 OF 2

PROJECT: MOSCONE STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$150,000,000

ESTIMATOR: HILL INTERNATIONAL
 CAT CODE:
 UIC:
 PROJECT #: MOS-100%
 DATE OF ESTIMATE: 5/24/12

WBS CODE	DESCRIPTION	COST/WBS BASED ON 1 LS	COST/ WBS UNIT	TOTAL MARKED UP COSTS				
				MATL	LABOR	EQUIP	UNIT COST	TOTAL
MS50068	FARE COLLECTION SYSTEMS		106682 @ 0.62SF	20,178	42,477	3,349	0	66,003

E--Detail Report
100%

ESTIMATE NAME:
PRINTING DATE: 05/31/2012
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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL					
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)						
		SUB-161/161	25.702	hrs/unit	26	TOTAL HRS	1.00	EA	10,500	2,270	167	0	12,938	
		Subtotal Direct Costs							24,326	159,642	15,523	0	199,491	
		Subcontractor Markups							2,068	2,395	1,319	0	5,782	
		Prime Contractor Markups							3,594	22,064	2,293	0	27,952	
TOTAL MS4007019613 TRAFFIC SIGNALS					1,826	HRS			29,988	184,100	19,136	0	233,224	
MS4007019614 ROADS & SIDEWALKS					<i>LEVEL CONTRACTOR ID APPLIED--PRIME</i>									
02740.30	- 00	ASPHALTIC CONC PAVEMENT, AND LG PAVED AREAS, WEARING COURSE, 2" THICK	3.25		90	TOTAL HRS	5,360.00	SY	17,447	1.17	0.05	0.00	4.47	
		SUB-221/221	0.017	hrs/unit	90	TOTAL HRS	5,360.00	SY	17,447	6,264	265	0	23,975	
32131.32	- 30	10" THICK CONCRETE BASE							39.62	2.00	0.53	0.00	42.15	
		SUB-211/211	0.028	hrs/unit	104	TOTAL HRS	3,719.00	SY	147,362	7,427	1,982	0	156,771	
02785.60	- 03	AC SURF TRTM/PVMT OVRLAY/POLYPROPYLENE/ADVERSE COND/6 OZ PER SY	0.14						0.14	0.17	0.01	0.00	0.32	
		SUB-211/211	0.002	hrs/unit	169	TOTAL HRS	69,664.00	SF	9,391	12,029	996	0	22,416	
32131.32	- 30	8" THICK CONCRETE BASE							30.48	2.12	0.41	0.00	33.01	
		SUB-211/211	0.03	hrs/unit	6	TOTAL HRS	193.00	SY	5,883	409	80	0	6,371	
02740.31	- 00	PLANT-MX AC PAVNG/FOR HWAYS & LG PAVED AREAS/WEARNG COURSE/3-1/2" THK	0.66						0.09	0.09	0.01	0.00	0.76	
		SUB-211/211	0.001	hrs/unit	27	TOTAL HRS	21,429.00	SF	14,212	1,943	161	0	16,315	
02740.31	- 00	PLANT-MIX AC PAVING/FOR HWAYS & LG PAVED AREAS/WEARING COURSE/2" THK	0.38						0.07	0.07	0.01	0.00	0.45	
		SUB-211/211	0.001	hrs/unit	1	TOTAL HRS	940.00	SF	361	61	5	0	427	
02740.31	- 52	AC PCC PAVING/FILL POT HOLES/COLD PATCH/2" THK	0.50						0.50	1.22	0.10	0.00	1.82	
		SUB-221/221	0.018	hrs/unit	604	TOTAL HRS	34,509.00	SF	17,393	41,972	3,568	0	62,932	
		Subtotal Direct Costs							212,047	70,104	7,057	0	289,208	
		Subcontractor Markups							18,024	1,052	600	0	19,675	
		Prime Contractor Markups							31,329	9,689	1,043	0	42,060	
TOTAL MS4007019614 ROADS & SIDEWALKS					1,001	HRS			261,400	80,844	8,699	0	350,943	
		73,528.00 SF							3.56	1.10	0.12	0.00	4.77	
<i>Level Unit Cost--></i>														
SUBTOTAL MS40070196 STREET RESTORATION 1									263,910	270,043	26,768	0	560,721	
		MARKUP							1,233	1,153	1,233	0.000	1.194	
TOTAL MS40070196 STREET RESTORATION 1									325,334	311,417	32,998	0	669,748	
MS4008 TEMPORARY FACILITIES														
MS4008011101 OVERHEAD CONTACT SYSTEM					<i>LEVEL CONTRACTOR ID APPLIED--PRIME</i>									
34230.01	- 02	PROVIDE STEEL POLE TYPE 765N							3138.01	2958.99	1448.58	0.00	7,545.58	
		SUB-511/511	43.95	hrs/unit	88	TOTAL HRS			6,276	5,918	2,897	0	15,091	
34230.01	- 02	PROVIDE STEEL POLE TYPE 770							4482.88	4241.68	2069.41	0.00	10,793.97	
		SUB-165/165	71.914	hrs/unit	144	TOTAL HRS			8,966	8,483	4,139	0	21,588	
34230.01	- 02	PROVIDE POLE FOUNDATION FOR 765N							2241.43	2116.43	1034.70	0.00	5,392.58	
		SUB-314/314	34.834	hrs/unit	70	TOTAL HRS			4,483	4,233	2,069	0	10,785	
34230.01	- 02	PROVIDE POLE FOUNDATION FOR 770							3056.51	2892.04	1410.95	0.00	7,359.51	
		SUB-165/165	49.032	hrs/unit	98	TOTAL HRS			6,113	5,784	2,822	0	14,719	
16120.40	- 60	SPLICE CABLES - OUTDOOR - ARIAL							0.00	294.91	0.00	0.00	294.91	
		SUB-165/165	5	hrs/unit	40	TOTAL HRS			0	2,359	0	0	2,359	
34230.01	- 02	PROVIDE 2/0 TROLLEYWIRE							21.00	3.77	0.28	0.00	25.05	
		SUB-165/165	0.064	hrs/unit	126	TOTAL HRS	1,969.00	lf	41,349	7,433	548	0	49,329	
34230.01	- 04	REMOVE EXISTING TROLLEY / LT POLES, WIRES & FDN							840.00	2265.97	67.72	0.00	3,173.69	
		SUB-111/111	38.699	hrs/unit	116	TOTAL HRS			2,520	6,798	203	0	9,521	
34421.61	- 01	TRAIN CONTROL - CABLE 12C#14 (SWITCH CONTROL)							7.67	3.62	0.27	0.00	11.55	
		SUB-161/161	0.041	hrs/unit	11	TOTAL HRS			2,047	967	72	0	3,085	
34421.61	- 01	GUYWIRE							0.89	1.59	0.12	0.00	2.59	
		SUB-161/161	0.018	hrs/unit	31	TOTAL HRS	1,746.00	LF	1,545	2,776	210	0	4,530	
34420.02	- 01	SWITCH CONTROL RECEIVER							2625.00	189.19	13.96	0.00	2,828.15	
		SUB-161/161	2.142	hrs/unit	4	TOTAL HRS			5,250	378	28	0	5,656	
34230.01	- 03	PROSPECT HOLE FOR DEPTH GREATER THAN 3 FEET							262.74	833.96	45.16	0.00	1,141.85	
		SUB-165/165	14.139	hrs/unit	28	TOTAL HRS			525	1,668	90	0	2,284	
34230.01	- 03	PROSPECT HOLE FOR DEPTH UP TO 3 FEET							210.00	624.04	33.40	0.00	867.44	
		SUB-221/221	8.981	hrs/unit	18	TOTAL HRS			420	1,248	67	0	1,735	
34230.01	- 02	PROVIDE TANGENT SPAN							3675.05	5674.55	418.80	0.00	9,768.40	
		SUB-165/165	96.207	hrs/unit	192	TOTAL HRS			7,350	11,349	838	0	19,537	
34230.01	- 01	SPECIAL WORK 4TH - FOLSOM							81506.85	76999.58	37625.57	0.00	196,132.00	
		SUB-211/211	1079.6	hrs/unit	1080	TOTAL HRS			81,507	77,000	37,626	0	196,132	
34230.01	- 01	SPECIAL WORK 4TH - HOWARD							20376.71	19249.91	9406.39	0.00	49,033.01	
		SUB-211/211	269.9	hrs/unit	270	TOTAL HRS			20,377	19,250	9,406	0	49,033	
34230.01	- 01	SPECIAL WORK 4TH - CLEMENTINA							40753.43	38499.75	18812.79	0.00	98,065.97	
		SUB-211/211	539.8	hrs/unit	540	TOTAL HRS			40,753	38,500	18,813	0	98,066	

E--Detail Report
100%

ESTIMATE NAME:
PRINTING DATE: 05/31/2012
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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	
Subtotal Direct Costs					229,480	194,144	79,826	0	503,450
Subcontractor Markups					19,506	2,912	6,785	0	29,203
Prime Contractor Markups					33,904	26,833	11,794	0	72,531
TOTAL MS4008011101 OVERHEAD CONTACT SYSTEM					282,890	223,889	98,405	0	605,185
3,982.00 LF Level Unit Cost-->					71.04	56.23	24.71	0.00	151.98
MS4008011102 TRAFFIC CONTROL LEVEL CONTRACTOR ID APPLIED--PRIME									
01552.60 - 01		TRAFFIC WATER FILLED BARRIER			407.54	384.93	188.13	0.00	980.60
		SUB-111/111 6.574 hrs/unit 565 TOTAL HRS	86.00	EA	35,048	33,104	16,179	0	84,331
01552.60 - 01		CHANGEABLE MESSAGE SIGNS			6113.02	5774.95	2821.92	0.00	14,709.89
		SUB-211/211 80.97 hrs/unit 486 TOTAL HRS	6.00	EA	36,678	34,650	16,932	0	88,259
01552.60 - 01		CONSTRUCTION AREA AND SPECIAL TRAFFIC SIGNS			81.51	77.03	37.63	0.00	196.17
		SUB-211/211 1.08 hrs/unit 11 TOTAL HRS	10.00	EA	815	770	376	0	1,962
01552.60 - 01		TEMPORARY TRAFFIC PAVEMENT MARKINGS & STRIPING			1.02	0.93	0.47	0.00	2.42
		SUB-211/211 0.013 hrs/unit 52 TOTAL HRS	4,000.00	LF	4,074	3,709	1,895	0	9,678
01552.60 - 01		TRAFFIC SUPERVISOR PROVIDED BY TRAFFIC SUBCONTRACTOR			0.00	56.60	0.00	0.00	56.60
		SUB-120/120 0.781 hrs/unit 351 TOTAL HRS	450.00	HR	0	25,468	0	0	25,468
01552.60 - 01		SF PARKING & TRAFFIC CONTROL OFFICER			0.00	61.74	0.00	0.00	61.74
		SUB-120/120 0.852 hrs/unit 341 TOTAL HRS	400.00	HR	0	24,697	0	0	24,697
01552.60 - 01		OFF DUTY SFPD UNIFORM OFFICER			0.00	87.47	0.00	0.00	87.47
		SUB-120/120 1.207 hrs/unit 241 TOTAL HRS	200.00	HR	0	17,493	0	0	17,493
01552.60 - 01		TRAFFIC CONTROL CREW			0.00	51.45	0.00	0.00	51.45
		SUB-120/120 0.71 hrs/unit 355 TOTAL HRS	500.00	HR	0	25,726	0	0	25,726
01552.60 - 02		PROJECT SIGNS			1222.60	1154.99	564.39	0.00	2,941.98
		SUB-211/211 16.194 hrs/unit 32 TOTAL HRS	2.00	EA	2,445	2,310	1,129	0	5,884
01552.60 - 02		DETOUR SIGNS			203.76	192.50	94.06	0.00	490.32
		SUB-211/211 2.699 hrs/unit 119 TOTAL HRS	44.00	SF	8,966	8,470	4,139	0	21,574
01552.60 - 02		TEMPORARY TOW-AWAY SIGNS			40.75	38.51	18.81	0.00	98.07
		SUB-211/211 0.54 hrs/unit 11 TOTAL HRS	20.00	SF	815	770	376	0	1,961
01552.60 - 03		CHANNELIZER			105.00	59.27	2.82	0.00	167.09
		SUB-211/211 0.831 hrs/unit 42 TOTAL HRS	50.00	EA	5,250	2,963	141	0	8,355
01552.60 - 03		TEMPORARY PAVEMENT MARKERS			6.30	5.16	0.00	0.00	11.46
		SUB-211/211 0.072 hrs/unit 14 TOTAL HRS	200.00	EA	1,260	1,032	0	0	2,292
01552.60 - 03		BARRICADE			52.50	43.01	0.00	0.00	95.50
		SUB-211/211 0.603 hrs/unit 45 TOTAL HRS	75.00	EA	3,938	3,225	0	0	7,163
01552.60 - 03		FLASHING BEACON (PORTABLE)			525.00	387.42	0.00	0.00	912.42
		SUB-120/120 5.346 hrs/unit 27 TOTAL HRS	5.00	EA	2,625	1,937	0	0	4,562
01552.60 - 09		TEMPORARY SIGNALS			10188.36	9624.92	4703.19	0.00	24,516.48
		SUB-211/211 134.95 hrs/unit 270 TOTAL HRS	2.00	EA	20,377	19,250	9,406	0	49,033
Subtotal Direct Costs					122,290	205,575	50,573	0	378,438
Subcontractor Markups					10,395	3,084	4,299	0	17,777
Prime Contractor Markups					18,068	28,413	7,472	0	53,952
TOTAL MS4008011102 TRAFFIC CONTROL					150,753	237,071	62,344	0	450,167
MS4008011103 DEWATERING LEVEL CONTRACTOR ID APPLIED--PRIME									
31231.92 - 02		DRILL WELL - 6" DIA			21.00	54.63	61.75	0.00	137.38
		SUB-211/211 0.766 hrs/unit 919 TOTAL HRS	1,200.00	LF	25,200	65,559	74,098	0	164,858
31231.92 - 02		STEEL CASING - 6" DIA			36.75	24.32	27.44	0.00	88.51
		SUB-211/211 0.341 hrs/unit 286 TOTAL HRS	840.00	LF	30,870	20,430	23,049	0	74,348
31231.92 - 02		STEEL PIPE SCREEN - 6" DIA			47.25	24.32	27.44	0.00	99.01
		SUB-211/211 0.341 hrs/unit 123 TOTAL HRS	360.00	LF	17,010	8,756	9,878	0	35,644
31231.92 - 02		SUBMERSIBLE PUMP - 6" DIA- 25 HP - 250 GPM			2791.61	2637.21	1288.67	0.00	6,717.50
		SUB-211/211 36.976 hrs/unit 887 TOTAL HRS	24.00	EA	66,999	63,293	30,928	0	161,220
31231.92 - 02		OBSERVATION WELL - 6" DIA			9452.35	8929.67	4363.44	0.00	22,745.47
		SUB-211/211 125.2 hrs/unit 250 TOTAL HRS	2.00	EA	18,905	17,859	8,727	0	45,491
31231.92 - 02		FLOW METER - 6" DIA			592.97	560.16	273.72	0.00	1,426.85
		SUB-211/211 7.854 hrs/unit 94 TOTAL HRS	12.00	EA	7,116	6,722	3,285	0	17,122
31231.92 - 02		DEWATERING OPERATION, MAINTENANCE ALLOWANCE, (INCL WELLS, PUMPS, ETC)			4078.73	38488.76	18812.79	0.00	98,054.98
		SUB-221/221 553.91 hrs/unit 554 TOTAL HRS	1.00	LS	40,753	38,489	18,813	0	98,055
Subtotal Direct Costs					206,852	221,107	168,778	0	596,738
Subcontractor Markups					17,582	3,317	14,346	0	35,245
Prime Contractor Markups					30,561	30,560	24,936	0	86,056
TOTAL MS4008011103 DEWATERING					254,996	254,984	208,060	0	718,039
MS4008011104 FIELD OVERHEAD, DETAIL ITEMS LEVEL CONTRACTOR ID APPLIED--PRIME									
01101.01 - 05		PROJECT DIRECTOR			0.00	168.11	0.00	0.00	168.11
		PRIME/NoCrew 1 hrs/unit 5000 TOTAL HRS	5,000.00	MH	0	840,564	0	0	840,564
		* LINE ITEM ASSEMBLY Factor:100.0000							

E--Detail Report
100%

ESTIMATE NAME:
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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	
01101.01 - 05		PROJECT MANAGER			0.00	144.10	0.00	0.00	144.10
		PRIME/NoCrew 1 hrs/unit 8800 TOTAL HRS	8,800.00	MH	0	1,268,090	0	0	1,268,090
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 05		GENERAL SUPERINTENDENT			0.00	87.76	0.00	0.00	87.76
		PRIME/NoCrew 1 hrs/unit 11000 TOTAL HRS	11,000.00	MH	0	965,360	0	0	965,360
		* LINE ITEM ASSEMBLY Factor:220.0000							
01101.01 - 05		ASST. SUPERINTENDENT			0.00	68.68	0.00	0.00	68.68
		PRIME/NoCrew 1 hrs/unit 8800 TOTAL HRS	8,800.00	MH	0	604,384	0	0	604,384
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 05		PROJECT ENGINEER			0.00	138.09	0.00	0.00	138.09
		PRIME/NoCrew 1 hrs/unit 8800 TOTAL HRS	8,800.00	MH	0	1,215,195	0	0	1,215,195
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 05		ADMIN / SECRETARY			0.00	48.04	0.00	0.00	48.04
		PRIME/NoCrew 1 hrs/unit 8800 TOTAL HRS	8,800.00	MH	0	422,743	0	0	422,743
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 05		PAYROLL / TIMEKEEPER			0.00	38.42	0.00	0.00	38.42
		PRIME/NoCrew 1 hrs/unit 4000 TOTAL HRS	4,000.00	MH	0	153,699	0	0	153,699
		* LINE ITEM ASSEMBLY Factor:80.0000							
01101.01 - 05		COST ENGINEER - ACCOUNTANT "PRE CONSTRUCTION"			0.00	72.05	0.00	0.00	72.05
		PRIME/NoCrew 1 hrs/unit 4000 TOTAL HRS	4,000.00	MH	0	288,202	0	0	288,202
		* LINE ITEM ASSEMBLY Factor:80.0000							
01101.01 - 05		PROJECT SCHEDULER			0.00	72.05	0.00	0.00	72.05
		PRIME/NoCrew 1 hrs/unit 4000 TOTAL HRS	4,000.00	MH	0	288,202	0	0	288,202
		* LINE ITEM ASSEMBLY Factor:80.0000							
01101.01 - 05		PROJECT ESTIMATOR			0.00	72.05	0.00	0.00	72.05
		PRIME/NoCrew 1 hrs/unit 2000 TOTAL HRS	2,000.00	MH	0	144,101	0	0	144,101
		* LINE ITEM ASSEMBLY Factor:40.0000							
01101.01 - 05		QUALITY CONTROL			0.00	86.46	0.00	0.00	86.46
		PRIME/NoCrew 1 hrs/unit 7500 TOTAL HRS	7,500.00	MH	0	648,479	0	0	648,479
		* LINE ITEM ASSEMBLY Factor:150.0000							
01101.01 - 05		ESTIMATOR "CHIEF - SENIOR"			0.00	96.06	0.00	0.00	96.06
		PRIME/NoCrew 1 hrs/unit 500 TOTAL HRS	500.00	MH	0	48,031	0	0	48,031
		* LINE ITEM ASSEMBLY Factor:10.0000							
01101.01 - 05		PURCHASING			0.00	96.06	0.00	0.00	96.06
		PRIME/NoCrew 1 hrs/unit 40 TOTAL HRS	40.00	MH	0	3,842	0	0	3,842
01101.01 - 05		SAFETLY ENGINEER			0.00	45.79	0.00	0.00	45.79
		PRIME/NoCrew 1 hrs/unit 8800 TOTAL HRS	8,800.00	MH	0	402,952	0	0	402,952
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 05		DAILY CLEANING "LABORER"			0.00	31.99	0.00	0.00	31.99
		PRIME/NoCrew 1 hrs/unit 22000 TOTAL HRS	22,000.00	MH	0	703,780	0	0	703,780
		* LINE ITEM ASSEMBLY Factor:440.0000							
01101.01 - 11		PUNCH LIST			0.05	0.16	0.10	0.00	0.32
		PRIME/111 0.003 hrs/unit 292 TOTAL HRS	106,682.00	SF	5,601	17,101	10,988	0	33,690
01101.01 - 11		FINAL CLEANING "IN HOUSE FORCES"			0.01	0.09	0.03	0.00	0.13
		PRIME/111 0.001 hrs/unit 156 TOTAL HRS	106,682.00	SF	1,120	9,121	3,296	0	13,537
01101.01 - 11		FINAL CLEANING "GLASS"			0.00	0.04	0.02	0.00	0.06
		PRIME/111 0.001 hrs/unit 78 TOTAL HRS	106,682.00	SF	0	4,560	2,198	0	6,758
01101.01 - 08		PRINTING (DWGS, O&M, SUBMITTALS)			0.00	0.00	0.77	0.00	0.77
		PRIME/211	4,000.00	PGS	0	0	3,090	0	3,090
01101.01 - 11		WARRANTY COSTS			0.20	0.59	0.20	0.00	0.99
		PRIME/111 0.01 hrs/unit 1077 TOTAL HRS	106,682.00	SF	21,336	63,091	21,336	0	105,764
Subtotal Direct Costs					28,057	8,091,498	40,909	0	8,160,464
Subcontractor Markups					3,821	1,101,810	5,570	0	1,111,201
Prime Contractor Markups					4,341	1,251,842	6,329	0	1,262,511
TOTAL MS4008011104 FIELD OVERHEAD, DETAIL ITEMS					36,219	10,445,149	52,808	0	10,534,176
50.00 MTH Level Unit Cost-->					724.37	208,902.98	1,056.17	0.00	210,683.51
MS4008011105 GC EXPENSES LEVEL CONTRACTOR ID APPLIED--PRIME									
01101.01 - 06		ON SITE VEHICLE PM			3.67	0.00	0.00	0.00	3.68
		PRIME/211	8,800.00	HR	32,340	0	0	0	32,340
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 06		ON SITE VEHICLE SUPER			3.67	0.00	0.00	0.00	3.68
		PRIME/211	7,500.00	HR	27,563	0	0	0	27,563
		* LINE ITEM ASSEMBLY Factor:150.0000							
01101.01 - 06		ON SITE VEHICLE OTHERS			3.41	0.00	0.00	0.00	3.41
		PRIME/211	17,600.00	HR	60,060	0	0	0	60,060
		* LINE ITEM ASSEMBLY Factor:352.0000							
01107.01 - 00		DRUG TESTING SERVICES			0.00	70.81	0.00	0.00	70.81
		PRIME/NoCrew 1 hrs/unit 300 TOTAL HRS	300.00	HR	0	21,242	0	0	21,242
01101.01 - 07		SECURITY CHECK			0.00	48.04	0.00	0.00	48.04
		PRIME/NoCrew 1 hrs/unit 300 TOTAL HRS	300.00	HR	0	14,412	0	0	14,412
01101.01 - 07		PROFESSIONAL SURVEY & LAYOUT			0.00	50.43	0.00	0.00	50.43
		PRIME/NoCrew 1 hrs/unit 1200 TOTAL HRS	1,200.00	HR	0	60,517	0	0	60,517
01101.01 - 08		FIELD OFFICE			14.18	0.00	0.00	0.00	14.18

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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	
		PRIME/211	8,800.00	HR	124,740	0	0	0	124,740
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		COMPUTERS - MONITORS			0.58	0.00	0.00	0.00	0.58
		PRIME/211	70,400.00	HR	40,656	0	0	0	40,656
		* LINE ITEM ASSEMBLY Factor:1408.0000							
01101.01 - 08		SOFTWARE			0.00	0.00	0.31	0.00	0.31
		PRIME/211	70,400.00	HR	0	0	21,754	0	21,754
		* LINE ITEM ASSEMBLY Factor:1408.0000							
01101.01 - 08		PRINTERS			1.16	0.00	0.00	0.00	1.16
		PRIME/211	17,600.00	HR	20,328	0	0	0	20,328
		* LINE ITEM ASSEMBLY Factor:352.0000							
01101.01 - 08		OFFICE FURNITURE			1.84	0.00	0.00	0.00	1.84
		PRIME/211	8,800.00	HR	16,170	0	0	0	16,170
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		OFFICE SUPPLIES			0.00	0.00	4.63	0.00	4.64
		PRIME/211	8,750.00	HR	0	0	40,556	0	40,556
		* LINE ITEM ASSEMBLY Factor:175.0000							
01101.01 - 08		POSTAGE - SPECIAL DELIEVERY SERVICES			0.00	0.00	0.31	0.00	0.31
		PRIME/211	8,800.00	HR	0	0	2,719	0	2,719
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		FIRST AID SUPPLIES			0.00	0.00	0.26	0.00	0.26
		PRIME/211	8,800.00	HR	0	0	2,266	0	2,266
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		CUPS - ICE - DRINKING WATER			0.00	0.00	0.31	0.00	0.31
		PRIME/211	8,800.00	HR	0	0	2,719	0	2,719
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		PRINTING - BLUE PRINTS			0.00	0.00	0.41	0.00	0.41
		PRIME/211	8,800.00	HR	0	0	3,626	0	3,626
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		PHOTO COPIER MACHINE			0.23	0.00	0.62	0.00	0.85
		PRIME/211	8,800.00	HR	2,033	0	5,438	0	7,471
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		PHOTO COPIER SUPPLIES			2.10	0.00	0.16	0.00	2.25
		PRIME/211	8,800.00	HR	18,480	0	1,360	0	19,840
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		STORAGE & TOOL TRAILERS			2.10	0.00	0.00	0.00	2.10
		PRIME/211	17,600.00	HR	36,960	0	0	0	36,960
		* LINE ITEM ASSEMBLY Factor:352.0000							
01101.01 - 08		SETUP TEMP TOOL TRAILERS			525.00	0.00	0.00	0.00	525.00
		PRIME/211	4.00	HR	2,100	0	0	0	2,100
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		EQUIP RENTAL / SMALL TOOLS			3.15	0.00	0.00	0.00	3.15
		PRIME/211	8,800.00	HR	27,720	0	0	0	27,720
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		SMALL TOOLS EXPENDABLE			0.00	0.00	1.54	0.00	1.55
		PRIME/211	8,800.00	HR	0	0	13,596	0	13,596
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		TELEPHONE EXP. INCL. CELL			0.00	0.00	1.13	0.00	1.13
		PRIME/211	17,600.00	HR	0	0	19,941	0	19,941
		* LINE ITEM ASSEMBLY Factor:352.0000							
01101.01 - 08		INTERNET CONNECTIONS - SERVICE			0.26	0.00	0.00	0.00	0.26
		PRIME/211	70,400.00	HR	18,480	0	0	0	18,480
		* LINE ITEM ASSEMBLY Factor:1408.0000							
01101.01 - 08		NETWORK / COMMUNICATIONS EQUIP.			1.26	0.00	0.00	0.00	1.26
		PRIME/211	8,800.00	HR	11,088	0	0	0	11,088
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		FIELD RADIOS			2.31	0.00	0.00	0.00	2.31
		PRIME/211	8,800.00	HR	20,328	0	0	0	20,328
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		TEMPORARY TOILETS (5)			1.26	0.00	0.00	0.00	1.26
		PRIME/211	17,600.00	HR	22,176	0	0	0	22,176
		* LINE ITEM ASSEMBLY Factor:352.0000							
01101.01 - 08		PROJECT SIGN			0.00	0.00	1699.50	0.00	1,699.50
		PRIME/211	4.00	HR	0	0	6,798	0	6,798
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 08		TEMPORARY LIGHTING & ELEC. HOURLY CHARGES			2.10	0.00	0.00	0.00	2.10
		PRIME/211	8,800.00	HR	18,480	0	0	0	18,480
		* LINE ITEM ASSEMBLY Factor:176.0000							
01101.01 - 12		TEMPORARY FENCING			1.43	3.66	13.24	0.00	18.33
		PRIME/221 0.053 hrs/unit 32 TOTAL HRS	600.00	LF	857	2,198	7,941	0	10,996
01101.01 - 12		TRUCK ENTRANCES			4725.00	3.66	0.00	0.00	4,728.66
		PRIME/221 0.053 hrs/unit	1.00	HR	4,725	4	0	0	4,729
01101.01 - 12		SILT FENCE			0.00	3.66	1.29	0.00	4.95
		PRIME/221 0.053 hrs/unit 32 TOTAL HRS	600.00	LF	0	2,198	773	0	2,971
01101.01 - 10		SAFETY "GENERAL SIGNAGE"			0.00	0.62	0.02	0.00	0.64
		PRIME/221 0.009 hrs/unit 135 TOTAL HRS	15,000.00	SF	0	9,348	309	0	9,657
01101.01 - 08		SPECIAL SCAFFOLDING "RENTAL"			12.60	0.00	0.00	0.00	12.60
		PRIME/211	600.00	LF	7,560	0	0	0	7,560

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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	
01101.01 - 08		SPECIAL SCAFFOLDING "SETUP LABOR"			0.00	125.49	0.00	0.00	125.49
		PRIME/NoCrew 2.75 hrs/unit 1650 TOTAL HRS	600.00	LF	0	75,292	0	0	75,292
01101.01 - 08		SPECIAL SCAFFOLDING "TAKE DOWN LABOR"			0.00	35.09	0.00	0.00	35.09
		PRIME/NoCrew 0.344 hrs/unit 206 TOTAL HRS	600.00	LF	0	21,053	0	0	21,053
01101.01 - 08		FIRE PROTECTION EQUIPMENT			0.16	0.00	0.00	0.00	0.16
		PRIME/211 7,500.00 HR			1,181	0	0	0	1,181
		* LINE ITEM ASSEMBLY Factor:150.0000							
01101.01 - 08		TEMP. WATER SERVICES			0.00	0.00	3.61	0.00	3.61
		PRIME/211 15,000.00 SF			0	0	54,075	0	54,075
01101.01 - 08		WEATHER PROTECTION MATERIALS			0.00	0.01	0.07	0.00	0.09
		PRIME/221 hrs/unit 3 TOTAL HRS	15,000.00	SF	0	217	1,082	0	1,299
01101.01 - 08		TEMP. HEAT/WINTER WEATHER HOURLY CHARGES			0.07	0.00	0.00	0.00	0.07
		PRIME/211 4,000.00 HR			294	0	0	0	294
		* LINE ITEM ASSEMBLY Factor:80.0000							
01101.01 - 08		TRASH HAULING			0.00	0.00	3.86	0.00	3.86
		PRIME/211 7,500.00 HR			0	0	28,969	0	28,969
		* LINE ITEM ASSEMBLY Factor:150.0000							
01101.01 - 09		MAN / MATERIAL LIFT "RENTAL"			24.15	0.00	0.00	0.00	24.15
		PRIME/211 4,224.00 HR			102,010	0	0	0	102,010
01101.01 - 09		MAN / MATERIAL LIFT "DOORS - EXCLOSURES - PLATFORMS"			0.00	0.00	345.05	0.00	345.05
		PRIME/211 6.00 HR			0	0	2,070	0	2,070
01101.01 - 09		MAN / MATERIAL LIFT "SET UP"			1890.00	0.00	0.00	0.00	1,890.00
		PRIME/211 5.00 HR			9,450	0	0	0	9,450
01101.01 - 09		MAN / MATERIAL LIFT "TAKE DOWN"			1890.00	0.00	0.00	0.00	1,890.00
		PRIME/211 5.00 HR			9,450	0	0	0	9,450
01101.01 - 09		MAN / MATERIAL LIFT "OPERATOR"			0.00	71.32	0.00	0.00	71.32
		PRIME/211 1 hrs/unit 6000 TOTAL HRS	6,000.00	MH	0	427,933	0	0	427,933
		* LINE ITEM ASSEMBLY Factor:120.0000							
01101.01 - 11		STREET CLEANING			68.25	0.00	0.00	0.00	68.25
		PRIME/211 1,500.00 HR			102,375	0	0	0	102,375
01101.01 - 11		PUNCH LIST			0.05	0.16	0.10	0.00	0.32
		PRIME/111 0.003 hrs/unit 292 TOTAL HRS	106,682.00	SF	5,601	17,101	10,988	0	33,690
01101.01 - 11		FINAL CLEANING "IN HOUSE FORCES"			0.01	0.09	0.03	0.00	0.13
		PRIME/111 0.001 hrs/unit 156 TOTAL HRS	106,682.00	SF	1,120	9,121	3,296	0	13,537
01101.01 - 11		FINAL CLEANING "GLASS"			0.00	0.04	0.02	0.00	0.06
		PRIME/111 0.001 hrs/unit 78 TOTAL HRS	106,682.00	SF	0	4,560	2,198	0	6,758
01101.01 - 08		PRINTING (DWGS, O&M, SUBMITTALS)			0.00	0.00	0.77	0.00	0.77
		PRIME/211 12,000.00 PGS			0	0	9,270	0	9,270
01101.01 - 11		WARRANTY COSTS			0.00	0.02	0.00	0.00	0.02
		PRIME/111 hrs/unit 39 TOTAL HRS	106,682.00	SF	0	2,280	0	0	2,280
01521.32 - 00		EQUIPMENT			0.00	0.00	240086.76	0.00	240,086.76
		PRIME/120 1.00 LS			0	0	240,087	0	240,087
01900.00 - 26		CRANES & EXCAVATORS SELF PROPELLED; RT-9100			0.00	142.64	258.47	0.00	401.11
		PRIME/211 2 hrs/unit 16000 TOTAL HRS	8,000.00	HR	0	1,141,154	2,067,746	0	3,208,900
02305.25 - 02		MOBIL OR DMOBL/CRANE/CRAWLER-MNTD/OVER 75 TON			0.00	852.38	72.44	0.00	924.82
		PRIME/221 12.267 hrs/unit 25 TOTAL HRS	2.00	EA	0	1,705	145	0	1,850
Subtotal Direct Costs					744,324	1,810,334	2,549,721	0	5,104,379
Subcontractor Markups					101,354	246,511	347,192	0	695,057
Prime Contractor Markups					115,155	280,078	394,469	0	789,702
TOTAL MS4008011105 GC EXPENSES					960,833	2,336,923	3,291,382	0	6,589,138
50.00 MTH Level Unit Cost-->					19,216.65	46,738.46	65,827.64	0.00	131,782.76

MS4008011106 INSPECTION REQUIREMENTS LEVEL CONTRACTOR ID APPLIED--PRIME

01101.01 - 50		WELDING - TESTING & INSPECTION			0.00	71.32	0.00	0.00	71.32
		SUB-211/211 1 hrs/unit 1040 TOTAL HRS	1,040.00	MH	0	74,175	0	0	74,175
01101.01 - 50		EXCAVATION TRACKING OBSERVATIONS - ACCOUNTING 2 MEN 18 MONTHS			0.00	71.32	0.00	0.00	71.32
		SUB-211/211 1 hrs/unit 3168 TOTAL HRS	3,168.00	MH	0	225,948	0	0	225,948
14505.00 - 55		PCC INSPECTION TECHNICIAN/PER DAY			0.00	71.32	0.00	0.00	71.32
		SUB-312/211 1 hrs/unit 1200 TOTAL HRS	1,200.00	MH	0	85,587	0	0	85,587
14505.00 - 55		CMU INSPECTION TECHNICIAN/PER DAY			0.00	71.32	0.00	0.00	71.32
		SUB-312/211 1 hrs/unit 765 TOTAL HRS	765.00	MH	0	54,561	0	0	54,561
14505.00 - 55		REBAR INSPECTION TECHNICIAN/PER DAY			0.00	71.32	0.00	0.00	71.32
		SUB-312/211 1 hrs/unit 1040 TOTAL HRS	1,040.00	MH	0	74,175	0	0	74,175
14505.00 - 34		MASONRY TESTING/COMPRESSIVE STRENGTH/PER 5 BRICKS/ASTM C 67			0.00	14.80	0.00	0.00	14.80
		SUB-422/311 0.2 hrs/unit 30 TOTAL HRS	150.00	EA	0	2,220	0	0	2,220
14505.00 - 19		PCC TESTING/COMPRESSIVE STRENGTH TEST/INCL PICKED UP BY LAB/AVG			0.00	14.80	0.00	0.00	14.80
		SUB-422/311 0.2 hrs/unit 90 TOTAL HRS	450.00	EA	0	6,660	0	0	6,660
14505.00 - 42		REINFRNG STL/TENSILE TEST/#9 TO #11 BAR			0.00	8.08	0.00	0.00	8.08
		SUB-511/511 0.12 hrs/unit 6 TOTAL HRS	50.00	EA	0	404	0	0	404
14505.00 - 42		REINFRNG STL/TENSILE TEST/#14 BAR & LARGER			0.00	8.08	0.00	0.00	8.08
		SUB-511/511 0.12 hrs/unit 12 TOTAL HRS	100.00	EA	0	808	0	0	808

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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS			UNIT COST (SUB QUOTE)	TOTAL	
					MATERIAL	LABOR	EQUIPMENT			
		Subtotal Direct Costs			0	524,538	0	0	524,538	
		Subcontractor Markups			0	7,868	0	0	7,868	
		Prime Contractor Markups			0	72,497	0	0	72,497	
TOTAL MS4008011106 INSPECTION REQUIREMENTS					7,351 HRS	0	604,903	0	604,903	
MS4008011107 SP & DIV 1 REQUIREMENTS LEVEL CONTRACTOR ID APPLIED--PRIME										
01101.01	- 50	MAINTAIN STATION FROM COMPLETION TO REVENUE STATION (ASSUME A 5 MAN CREW FOR 3 MONTH)					8.85	0.00	97.87	
		PRIME/211	1 hrs/unit	977 TOTAL HRS	977.00 MH	17,293	69,682	8,646	0	
01101.01	- 50	ASSESSMENTS FOR CANCELLED SHUTDOWN WITHIN 5 DAYS				0.00	5705.77	0.00	5,705.77	
		PRIME/211	80 hrs/unit	640 TOTAL HRS	8.00 EA	0	45,646	0	45,646	
01101.01	- 50	ASSESSMENTS FOR ADDITIONAL SHUTDOWN				2000.00	6846.92	1250.00	10,096.92	
		PRIME/211	96 hrs/unit	768 TOTAL HRS	8.00 EA	16,000	54,775	10,000	80,775	
01101.01	- 50	ADDED COST FOR CITY PERSONNEL TO RESTORE OH CONTACT SYSTEM				150.00	4279.33	1200.00	5,629.33	
		PRIME/211	60 hrs/unit	300 TOTAL HRS	5.00 EA	750	21,397	6,000	28,147	
01101.01	- 50	COST FOR MUNI INSPECTOR WHEN MOVING WIRES				0.00	713.22	50.00	763.22	
		PRIME/211	10 hrs/unit	50 TOTAL HRS	5.00 EA	0	3,566	250	3,816	
01101.01	- 50	PAY 50% OF DRB COSTS				0.00	150.00	0.00	150.00	
		PRIME/GC-1132	1 hrs/unit	1134 TOTAL HRS	1,134.00 MH	0	170,100	0	170,100	
01101.01	- 50	COST TO ESCROW BID DOCUMENTS				250.00	0.00	0.00	250.00	
		PRIME/211			60.00 MO	15,000	0	0	15,000	
01101.01	- 50	PAY FOR OFF DUTY POLICE OFFICERS				0.00	74.67	0.00	74.67	
		PRIME/GC-1131	1 hrs/unit	400 TOTAL HRS	400.00 HR	0	29,867	0	29,867	
		Subtotal Direct Costs				49,043	395,033	24,896	468,973	
		Subcontractor Markups				6,678	53,791	3,390	63,859	
		Prime Contractor Markups				7,587	61,116	3,852	72,555	
TOTAL MS4008011107 SP & DIV 1 REQUIREMENTS					4,269 HRS	63,308	509,941	32,138	605,387	
SUBTOTAL MS40080111 MOSCONE STATION (MS)						1,380,047	11,442,229	2,914,703	0	15,736,979
MARKUP						1,267	1,277	1,285	0.000	1,278
TOTAL MS40080111 MOSCONE STATION (MS)						1,748,999	14,612,859	3,745,138	0	20,106,995

MS50 SYSTEMS

MS5003 TPSS STATIONS

MS5003018011 MEDIUM VOLTAGE SINGLE CONDUCTOR CABLE LEVEL CONTRACTOR ID APPLIED--PRIME

PRODUCTIVITY = 0.083 MH/LF

26051.31	- 61	1/C #750KCMIL , EPR 24/5KV CU CABLE				22.00	7.07	0.51	0.00	29.58
		SUB-161/161	0.08 hrs/unit	676 TOTAL HRS	8,448.00 LF	185,856	59,693	4,308	0	249,857
26051.31	- 61	1/C #500KCMIL , EPR 24/5KV CU CABLE				11.88	6.62	0.47	0.00	18.97
		SUB-161/161	0.075 hrs/unit	26 TOTAL HRS	350.00 LF	4,158	2,319	165	0	6,641
26051.31	- 61	#2, 1/C CABLE, 15KV, XLP SHIELDING				3.15	3.98	0.29	0.00	7.41
		SUB-161/161	0.045 hrs/unit	16 TOTAL HRS	365.00 LF	1,150	1,451	105	0	2,706
26051.31	- 62	#2/0, 1/C CABLE, 15KV, XLP SHIELDING (PRIMARY PWR)				3.94	4.24	0.31	0.00	8.49
		SUB-161/161	0.048 hrs/unit	31 TOTAL HRS	650.00 LF	2,559	2,756	201	0	5,516
		Subtotal Direct Costs				193,723	66,218	4,779	0	264,720
		Subcontractor Markups				16,466	993	406	0	17,866
		Prime Contractor Markups				28,621	9,152	706	0	38,479
TOTAL MS5003018011 MEDIUM VOLTAGE SINGLE CONDUCTOR CABLE					530 HRS	238,811	76,363	5,891	0	321,065
					8,151.00 LF	29.30	9.37	0.72	0.00	39.39
NOTE: PRODUCTIVITY = 0.083 MH/LF										

MS5003018012 CABLE CONNECTORS LEVEL CONTRACTOR ID APPLIED--PRIME

PRODUCTIVITY = 17.138 MH/EA

26051.92	- 51	MULTI-TAP CONNECTOR BLOCK (12 WAY)				2100.00	1513.61	0.42	0.00	3,614.03
		SUB-161/161	17.137 hrs/unit	69 TOTAL HRS	4.00 EA	8,400	6,054	2	0	14,456
		Subtotal Direct Costs				8,400	6,054	2	0	14,456
		Subcontractor Markups				714	91	0	0	805
		Prime Contractor Markups				1,241	837	0	0	2,078
TOTAL MS5003018012 CABLE CONNECTORS					69 HRS	10,355	6,982	2	0	17,339
					4.00 EA	2,588.76	1,745.51	0.52	0.00	4,334.79
NOTE: PRODUCTIVITY = 17.138 MH/EA										

MS5003018013 CABLE TERMINATIONS LEVEL CONTRACTOR ID APPLIED--PRIME

PRODUCTIVITY = 6.425 MH/EA

26051.93	- 51	5KV CABLE TERMINATION, 1/C - #3/0 - 500KCMIL, INCL TEST				210.00	378.38	27.92	0.00	616.30
		SUB-161/161	4.284 hrs/unit	69 TOTAL HRS	16.00 EA	3,360	6,054	447	0	9,861
26051.93	- 51	5KV CABLE TERMINATION, 1/C - 750KCMIL, INCL TEST				262.50	567.66	41.87	0.00	872.03

MOSCONE STATION

MOS 100% ESTIMATE - PROGRAM MARKUPS.PWS

May 31, 2012

PRIME CONTRACTOR SUMMARY REPORT

Project Element: **SFMTA - CHINATOWN STATION 100% REV 0**

Prime Contractor: **PRIME CONTRACTOR**

Markup Description	Markup	Total
SFMTA - CHINATOWN STATION 100% REV 0		
Cost to Prime for PRIME PRIME CONTRACTOR		\$174,981,060
PRIME HOME OFFICE OVERHEAD <i>% Applied only to: Labor, Equipment, Material, Other1,</i>	2.500%	\$4,374,526
PRIME PROFIT <i>% Applied only to: Labor, Equipment, Material, Other1,</i>	3.500%	\$6,277,446
BOND <i>% Applied only to: Labor, Equipment, Material, Other1,</i>	0.800%	\$1,485,064
BUILDERS RISK <i>% Applied only to: Labor, Equipment, Material,</i>	0.350%	\$653,963
INSURANCE	2.100%	\$3,943,213
Total Estimate with Prime Contractor Markups	9.563%	\$191,715,272

All codes referenced in Table A-1: "Mitigation Base Cost Calculations" have been highlighted below. The codes and costs were derived at a high level in the estimate folder structure. The supporting values for codes may be arrived at by dividing the highlighted costs below by the prime contractor markup. For example, the cost highlighted for CT200308 below is \$19,700,733. To arrive at the direct cost the prime contractor mark up is backed out of the amount as follows:

$$CT200310: \$21,584,802 / (\$191,715,272 / \$174,981,060) = \$19,700,733$$

Note: The total estimate amount shown on these reports differs from the CTS 100% Engineers Estimate as alterations to the estimate were necessary to provide appropriate backup to the primary mitigation table. All of these number are still accurate and represent the actual dollar amounts contained in the CTS 100% Engineer's Estimate. If the calculation supplied above is used then it may calculate something that is ~\$100 off of what is shown in Table A-1 as this calculation is a general application contrary to what is shown in the table which contains exact numbers extracted from the Engineer's Estimate. This is unique to the CTS Engineer's Estimate as the mark ups were applied in a slightly different manner than the other estimates. The reason the total estimate value above is because subcontractors mark up for profit was removed to better identify costs needed to populate Table A-1.

C--Assembly Category Report

SUBMITTAL: 100%
 SOFTWARE VERSION: SUCCESS 5.X
 REPORT REVISION: Nov. 5 2003
 ESTIMATE SAVED AS: CTS_100%_Estimate_Primary_Mitigation.pws

CONSTRUCTION CONTRACT: PACKAGE 1254
 DATABASE USED: RSM MODIFIED
 PRINTING DATE: 10/29/2012
 Page: 1 OF 5

PROJECT: CHINATOWN STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$250,000,000

ESTIMATOR: HILL
 CAT CODE:
 UIC:
 PROJECT #: CTS-100%
 DATE OF ESTIMATE: 2/16/12 REV 0

WBS CODE	DESCRIPTION	COST/WBS BASED ON 1 LS	COST/ WBS UNIT	TOTAL MARKED UP COSTS					
				MATL	LABOR	EQUIP	UNIT COST	TOTAL	
SFMTA - CHINATOWN STATION 100% REV 0, PROJECT TOTALS				191,715,000					
*****PROJECT SUBTOTALS*****				77,450,215	81,329,249	32,658,672	277,137	191,715,272	
BASE BID				77,450,215	81,329,249	32,658,672	277,137	191,715,272	
-CHINATOWN STATION - PACKAGE 1254				77,450,215	81,329,249	32,658,672	277,137	191,715,272	
CT GUIDEWAY & TRACK ELEMENTS				7,253,991	9,683,474	5,673,791	69,284	22,680,541	
CT10GUIDEWAY UNDERGROUND TUNNEL				7,253,991	9,683,474	5,673,791	69,284	22,680,541	
CT1007GUIDEWAY: UNDERGROUND TUNNEL				522@ 30699.59DY	4,784,225	6,689,648	4,535,965	0	16,009,838
CT100720GUIDEWAY: UNDERGROUND TUNNEL				522@ 30699.59DY	4,784,225	6,689,648	4,535,965	0	16,009,838
CT1007STRUCTURAL - FINAL LINING GEOMETRY CROSSOVER CAVERN					1,988,004	2,077,321	348,711	0	4,414,035
CT100731STRUCTURAL - FINAL LINING GEOMETRY CROSSOVER CAVERN					1,988,004	2,077,321	348,711	0	4,414,035
CT1007TUNNEL EXCV BY SEM				94@ 24007.10DY	481,762	916,506	789,116	69,284	2,256,668
CT100797TUNNEL EXCV BY SEM				94@ 24007.10DY	481,762	916,506	789,116	69,284	2,256,668
CT STATIONS, STOPS, TERMINALS, INTERMODAL (NUMBER)				106586@ 1128.13B-SF	52,049,384	47,541,596	20,538,468	113,374	120,242,822
CT20 UNDERGROUND STATION, STOP, SHELTER, MALL, TERMINAL, PLATFORM				106586@ 1074.26B-SF	49,549,991	45,393,709	19,444,472	113,374	114,501,545
CT2003EXCAVATION & GROUND SUPPORT - HEADHOUSE				106586@ 262.97B-SF	12,071,479	11,182,955	4,774,210	0	28,028,644
CT200306MASS EXCAVATION				49938@ 17.03CY	305,575	522,766	22,103	0	850,444
CT200306WORKING SLABS				13313@ 3.73SF	25,389	20,621	3,601	0	49,611
CT200306SHORING				7498@ 879.85LF	3,686,643	2,869,393	41,062	0	6,597,099
CT200306SLURRY WALLS				75744@ 261.52SF	7,710,717	7,471,928	4,626,271	0	19,808,916
CT200306OTHER WALLS				730@ 350.94LF	101,084	113,079	42,027	0	256,190
CT200306INSTRUMENTATION					242,071	185,168	39,145	0	466,384
CT2003EXCAVATION & GROUND SUPPORT - CROSS CUT CAVERN					1,724,834	2,447,473	1,541,559	44,090	5,757,956
CT200308EXCAVATION & GROUND SUPPORT - CROSS CUT CAVERN					1,724,834	2,447,473	1,541,559	44,090	5,757,956
CT2003EXCAVATION & GROUND SUPPORT - PLATFORM CAVERN					7,105,632	8,660,854	5,749,032	69,284	21,584,802
CT200310EXCAVATION & GROUND SUPPORT - PLATFORM CAVERN					7,105,632	8,660,854	5,749,032	69,284	21,584,802
CT2003EXCAVATION & GROUND SUPPORT - NORTH EMERGENCY EXIT					115,387	179,759	100,505	0	395,651
CT200312EXCAVATION & GROUND SUPPORT - NORTH EMERGENCY EXIT					115,387	179,759	100,505	0	395,651
CT2003EXCAVATION & GROUND SUPPORT - NORTH EMERGENCY EXIT TUNNEL					108,249	424,612	247,515	0	780,376
CT200313EXCAVATION & GROUND SUPPORT - NORTH EMERGENCY EXIT TUNNEL					108,249	424,612	247,515	0	780,376
CT2003EXCAVATION & GROUND SUPPORT - SOUTH EMERGENCY EXIT					18,291	84,273	48,774	0	151,338
CT200314EXCAVATION & GROUND SUPPORT - SOUTH EMERGENCY EXIT					18,291	84,273	48,774	0	151,338
CT2003STRUCTURAL - FINAL LINING GEOMETRY CROSS CUT CAVERN					423,269	440,934	75,646	0	939,848
CT200330STRUCTURAL - FINAL LINING GEOMETRY CROSS CUT CAVERN					423,269	440,934	75,646	0	939,848
CT2003STRUCTURAL - FINAL LINING GEOMETRY PLATFORM CAVERN					2,070,207	2,394,837	383,451	0	4,848,495
CT200332STRUCTURAL - FINAL LINING GEOMETRY PLATFORM CAVERN					2,070,207	2,394,837	383,451	0	4,848,495
CT2003STRUCTURAL - FINAL LINING NORTH EMERGENCY EXIT SHAFT					117,593	154,308	26,333	0	298,234
CT200334STRUCTURAL - FINAL LINING NORTH EMERGENCY EXIT SHAFT					117,593	154,308	26,333	0	298,234
CT2003STRUCTURAL - FINAL LINING NORTH EMERGENCY EXIT TUNNEL					54,416	88,892	12,881	0	156,189
CT200335STRUCTURAL - FINAL LINING NORTH EMERGENCY EXIT TUNNEL					54,416	88,892	12,881	0	156,189
CT2003STRUCTURAL - FINAL LINING GEOMETRY SOUTH EMERGENCY EXIT					14,202	22,904	3,345	0	40,451
CT200336STRUCTURAL - FINAL LINING GEOMETRY SOUTH EMERGENCY EXIT					14,202	22,904	3,345	0	40,451
CT2003STRUCTURAL - HEADHOUSE ROOF LEVEL				6625@ 126.26SF	316,630	456,098	63,759	0	836,488
CT200338CONCRETE SLABS				824@ 56.28SF	18,878	21,754	5,740	0	46,372
CT200338CONCRETE BEAMS				204@ 334.22LF	27,010	30,119	11,052	0	68,181
CHINATOWN STATION									

C--Assembly Category Report

SUBMITTAL: 100%
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CONSTRUCTION CONTRACT: PACKAGE 1254
 DATABASE USED: RSM MODIFIED
 PRINTING DATE: 10/29/2012
 Page: 2 OF 5

PROJECT: CHINATOWN STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$250,000,000

ESTIMATOR: HILL
 CAT CODE:
 UIC:
 PROJECT #: CTS-100%
 DATE OF ESTIMATE: 2/16/12 REV 0

WBS CODE	DESCRIPTION	COST/WBS BASED ON		TOTAL MARKED UP COSTS				
		1 LS	COST/ WBS UNIT	MATL	LABOR	EQUIP	UNIT COST	TOTAL
CT200338	CONCRETE WALLS	4924@	65.65SF	108,747	173,304	41,187	0	323,239
CT200338	STEEL BEAMS	975@	165.55LF	138,154	20,463	2,793	0	161,410
CT200338	SLAB ON STEEL DECK	3232@	73.42SF	23,840	210,458	2,987	0	237,285
CT2003	STRUCTURAL - HEADHOUSE SURFACE LEVEL	8780@	286.03SF	1,015,664	1,105,737	389,927	0	2,511,329
CT200340	CONCRETE SLABS	8359@	85.80SF	319,498	278,472	119,250	0	717,220
CT200340	CONCRETE WALLS	6391@	63.27SF	137,597	216,056	50,717	0	404,370
CT200340	CONCRETE BEAMS	862@	1222.61LF	423,481	424,560	205,850	0	1,053,891
CT200340	CONCRETE COLUMNS	92@	466.97VLF	12,641	23,202	7,119	0	42,962
CT200340	STEEL COLUMNS	250@	283.59LF	60,683	8,988	1,227	0	70,898
CT200340	STEEL BEAMS	253@	185.96LF	40,268	5,965	814	0	47,047
CT200340	SLAB ON STEEL DECK	3612@	48.43SF	21,496	148,495	4,951	0	174,942
CT2003	STRUCTURAL - HEADHOUSE UPPER MEZZANINE LEVEL	9347@	278.15SF	1,451,884	857,128	290,851	0	2,599,862
CT200343	CONCRETE SLABS	7130@	47.79SF	145,715	145,067	49,980	0	340,762
CT200343	CONCRETE WALLS	6946@	73.42SF	228,197	229,033	52,723	0	509,953
CT200343	CONCRETE BEAMS	846@	1056.25LF	363,310	361,233	169,048	0	893,591
CT200343	STEEL BEAMS	344@	2393.69LF	704,788	104,394	14,247	0	823,428
CT200343	CONCRETE COLUMNS	38@	845.45VLF	9,873	17,401	4,853	0	32,127
CT2003	STRUCTURAL - HEADHOUSE LOWER MEZZANINE LEVEL	9959@	229.39SF	1,037,116	918,093	329,269	0	2,284,478
CT200344	CONCRETE SLABS	7331@	51.99SF	162,831	163,089	55,239	0	381,159
CT200344	CONCRETE WALLS	8144@	91.94SF	345,164	326,119	77,508	0	748,791
CT200344	CONCRETE BEAMS	853@	1076.29LF	371,057	369,854	177,168	0	918,078
CT200344	CONCRETE COLUMNS	80@	1017.59VLF	25,361	39,375	16,671	0	81,407
CT200344	STEEL BEAMS	154@	1006.77LF	132,704	19,656	2,683	0	155,042
CT2003	STRUCTURAL - HEADHOUSE INTERMEDIATE LEVEL	7433@	348.48SF	1,263,441	946,105	380,739	0	2,590,285
CT200345	CONCRETE SLABS	4644@	68.08SF	124,760	120,036	71,383	0	316,178
CT200345	CONCRETE WALLS	7260@	159.68SF	527,271	464,036	167,940	0	1,159,247
CT200345	CONCRETE BEAMS	639@	1003.67LF	265,619	261,930	113,798	0	641,347
CT200345	CONCRETE COLUMNS	72@	1308.10VLF	29,346	45,317	19,519	0	94,183
CT200345	STEEL BEAMS	267@	1420.71LF	316,446	54,785	8,098	0	379,329
CT2003	STRUCTURAL - HEADHOUSE CONCOURSE LEVEL	12139@	207.64SF	1,055,017	1,031,174	434,301	0	2,520,492
CT200346	CONCRETE SLABS	9607@	49.18SF	201,035	198,659	72,733	0	472,428
CT200346	CONCRETE WALLS	6847@	119.32SF	354,986	336,673	125,301	0	816,960
CT200346	CONCRETE BEAMS	1075@	1033.92LF	447,863	447,297	216,307	0	1,111,467
CT200346	CONCRETE COLUMNS	72@	1308.10VLF	29,346	45,317	19,519	0	94,183
CT200346	STEEL BEAMS	94@	184.01LF	14,804	2,193	299	0	17,297
CT200346	STEEL POSTS			6,983	1,034	141	0	8,159
CT2003	STRUCTURAL - HEADHOUSE PLATFORM LEVEL	12375@	165.51SF	848,606	851,240	348,342	0	2,048,187
CT200348	CONCRETE SLABS	10776@	47.56SF	217,885	216,016	78,626	0	512,527
CT200348	CONCRETE WALL	6109@	48.34SF	123,936	143,589	27,810	0	295,335
CT200348	CONCRETE BEAMS	1040@	1122.14LF	483,052	456,133	227,843	0	1,167,028
CT200348	CONCRETE COLUMNS	54@	1357.36VLF	23,733	35,501	14,063	0	73,298
CT2003	STRUCTURAL - HEADHOUSE/STATION UNDER PLATFORM LEVEL	12241@	528.61SF	2,640,783	2,256,566	1,573,349	0	6,470,698
CT200350	CONCRETE SLABS	31556@	166.94SF	2,194,865	1,656,874	1,416,173	0	5,267,912
CT200350	CONCRETE WALLS	16130@	67.51SF	409,893	543,800	135,178	0	1,088,870
CT200350	CONCRETE COLUMNS	95@	1179.84VLF	33,954	55,585	21,957	0	111,495
CT200350	STEEL POSTS			2,072	307	42	0	2,421
CT2003	STRUCTURAL - STATION CONCOURSE LEVEL	7488@	120.87SF	347,421	414,762	142,886	0	905,069
CT200352	CONCRETE BEAMS	463@	826.53LF	151,400	156,910	74,372	0	382,682
CT200352	CONCRETE WALLS	5239@	64.00SF	108,652	183,099	43,531	0	335,281
CT200352	CONCRETE SLABS	3548@	46.91SF	69,682	72,134	24,626	0	166,442
CT200352	STEEL BEAMS	80@	110.59LF	7,573	1,122	153	0	8,847
CT200352	STEEL COLUMNS	134@	88.19LF	10,114	1,498	204	0	11,817
CT2003	STRUCTURAL - STATION PLATFORM LEVEL	20199@	33.08SF	242,899	326,075	99,255	0	668,229
CT200354	CONCRETE SLABS	6528@	42.36SF	107,871	125,779	42,870	0	276,520
CT200354	CONCRETE BEAMS	64@	806.94LF	18,503	19,658	13,483	0	51,644
CT200354	CONCRETE WALLS	5148@	64.06SF	107,700	179,332	42,724	0	329,755
CT200354	STEEL COLUMNS	113@	64.37LF	6,226	922	126	0	7,274
CT200354	STEEL POSTS			2,599	385	53	0	3,036
CT2003	ARCHITECTURAL - HEADHOUSE ROOF LEVEL	6625@	33.94SF	84,858	119,157	20,810	0	224,825
CT200355	SPECIALTIES	78@	22.72SF	498	980	294	0	1,772
CT200355	GLAZING	223@	70.66SF	5,185	9,544	1,028	0	15,757
CT200355	EXTERIOR CLOSURES	5@	3948.55EA	9,843	8,032	1,868	0	19,743
CT200355	ROOFING	3946@	14.73SF	26,702	24,656	6,774	0	58,132
CT200355	METALS	6625@	19.54SF	42,630	75,945	10,846	0	129,420
CT2003	ARCHITECTURAL - HEADHOUSE SURFACE LEVEL	8780@	124.58SF	519,189	423,887	150,775	0	1,093,851
CT200356	SIGNAGE & DIRECTORIES	7@	5650.83EA	29,358	2,440	7,758	0	39,556
CT200356	BIRD CONTROL DEVICES	8780@	0.70SF	2,556	2,359	1,211	0	6,126
CT200356	SITE EQUIPMENT	8780@	0.21SF	767	708	363	0	1,838

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 Page: 3 OF 5

PROJECT: CHINATOWN STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$250,000,000

ESTIMATOR: HILL
 CAT CODE:
 UIC:
 PROJECT #: CTS-100%
 DATE OF ESTIMATE: 2/16/12 REV 0

WBS CODE	DESCRIPTION	COST/WBS		TOTAL MARKED UP COSTS				
		BASED ON	COST/	MATL	LABOR	EQUIP	UNIT COST	TOTAL
		1 LS	WBS UNIT					
CT200356	TREES			797	301	93	0	1,191
CT200356	FLOOR FINISHES	6602@ 10.80SF		29,382	31,391	10,542	0	71,315
CT200356	CEILING FINISHES	1429@ 3.08SF		1,874	1,854	670	0	4,397
CT200356	WALL FINISHES	5490@ 11.67SF		25,792	26,108	12,193	0	64,093
CT200356	PARTITIONS	460@ 31.46SF		8,205	4,934	1,332	0	14,472
CT200356	DOORS	13@ 10136.13EA		57,748	60,292	13,730	0	131,770
CT200356	EMERGENCY HATCHES	2@ 12113.88EA		10,347	9,077	4,804	0	24,228
CT200356	ROOFING	2296@ 4.54SF		4,668	5,305	443	0	10,416
CT200356	METALS	8780@ 0.76SF		4,819	1,415	440	0	6,674
CT200356	GLAZING	5911@ 91.49SF		266,723	190,751	83,324	0	540,797
CT200356	ARTWORK COORDINATION			66,226	71,974	12,357	0	150,556
CT200356	INTUMESCENT PAINT/FIREPROOFING			9,927	14,980	1,515	0	26,422
	*** PRODUCTIVITY = 475 SF/DAY							
CT2003	ARCHITECTURAL - HEADHOUSE UPPER MEZZANINE LEVEL		9347@ 168.07SF	623,113	780,838	166,999	0	1,570,950
CT200357	SIGNAGE & DIRECTORIES			8,548	1,168	2,316	0	12,032
CT200357	FLOOR FINISHES	4230@ 15.66SF		28,357	25,642	12,237	0	66,236
CT200357	CEILING FINISHES	6010@ 41.85SF		107,783	94,204	49,527	0	251,514
CT200357	WALL FINISHES	12326@ 3.32SF		17,484	16,605	6,874	0	40,962
CT200357	DOORS	12@ 7689.30EA		42,269	41,100	8,903	0	92,272
CT200357	CMU WALLS	9028@ 40.17SF		145,515	192,266	24,874	0	362,655
CT200357	GLAZING	875@ 160.23SF		64,893	52,115	23,193	0	140,201
CT200357	INTUMESCENT PAINT/FIREPROOFING			208,263	314,285	31,790	0	554,338
	*** PRODUCTIVITY = 475 SF/DAY							
CT200357	ARTWORK COORDINATION			0	43,455	7,285	0	50,740
CT2003	ARCHITECTURAL - HEADHOUSE LOWER MEZZANINE LEVEL		9959@ 75.66SF	319,275	354,253	79,989	0	753,517
CT200359	FLOOR FINISHES	4337@ 4.75SF		12,618	6,400	1,599	0	20,617
CT200359	CEILING FINISHES	3355@ 18.34SF		26,156	23,492	11,869	0	61,517
CT200359	WALL FINISHES	18204@ 4.60SF		35,321	32,756	15,645	0	83,722
CT200359	DOORS	14@ 6609.63EA		43,084	40,850	8,601	0	92,535
CT200359	CMU WALLS	10835@ 39.90SF		174,866	227,583	29,901	0	432,350
CT200359	GLAZING	447@ 133.63SF		25,544	22,338	11,848	0	59,730
CT200359	SIGNAGE & DIRECTORIES			1,687	834	526	0	3,047
CT2003	ARCHITECTURAL - HEADHOUSE CONCOURSE LEVEL		12139@ 163.14SF	816,554	888,242	275,612	0	1,980,408
CT200360	SIGNAGE & DIRECTORIES			45,692	3,988	12,121	0	61,800
CT200360	FLOOR FINISHES	8269@ 32.23SF		115,021	102,255	49,207	0	266,483
CT200360	CEILING FINISHES	5357@ 37.27SF		85,291	75,076	39,273	0	199,641
CT200360	WALL FINISHES	32108@ 14.30SF		187,914	190,774	80,397	0	459,086
CT200360	DOORS	23@ 6699.83EA		69,368	70,379	14,349	0	154,096
CT200360	CMU WALLS	13505@ 36.46SF		191,827	265,375	35,141	0	492,342
CT200360	SPECIALTIES	28@ 391.16EA		8,186	2,545	222	0	10,952
CT200360	GLAZING	1050@ 158.82SF		76,923	62,003	27,831	0	166,757
CT200360	METALS	12139@ 0.44SF		2,962	1,970	444	0	5,375
CT200360	FURNISHINGS	31@ 176.42LF		3,007	1,913	549	0	5,469
CT200360	INTUMESCENT PAINT/FIREPROOFING			30,364	45,821	4,635	0	80,819
	*** PRODUCTIVITY = 475 SF/DAY							
CT200360	ARTWORK COORDINATION			0	66,143	11,443	0	77,586
CT2003	ARCHITECTURAL - STATION CONCOURSE LEVEL		7488@ 253.75SF	866,305	694,641	339,104	0	1,900,050
CT200362	SIGNAGE & DIRECTORIES			30,592	2,206	8,062	0	40,860
CT200362	FLOOR FINISHES	3954@ 33.45SF		55,923	50,845	25,500	0	132,268
CT200362	DOORS			4,929	4,990	995	0	10,913
CT200362	CEILING FINISHES	47358@ 27.87SF		583,565	489,224	246,981	0	1,319,770
CT200362	CMU WALLS	655@ 32.34SF		9,190	10,283	1,708	0	21,181
CT200362	WALL FINISHES	10596@ 3.19SF		11,552	18,275	3,948	0	33,775
CT200362	GLAZING	1832@ 142.04SF		117,390	95,123	47,703	0	260,215
CT200362	FURNISHINGS	64@ 262.35LF		7,804	7,872	1,028	0	16,704
CT200362	METALS	317@ 198.51LF		44,324	15,586	3,017	0	62,927
CT200362	SPECIALTIES			1,035	238	162	0	1,435
CT2003	ARCHITECTURAL - HEADHOUSE PLATFORM LEVEL		12375@ 33.39SF	172,104	205,745	35,372	0	413,221
CT200364	FLOOR FINISHES	9824@ 0.96SF		4,247	4,168	979	0	9,395
CT200364	DOORS	9@ 13463.16EA		55,967	53,863	11,339	0	121,168
CT200364	CEILING FINISHES	12862@ 2.48SF		13,642	13,775	4,474	0	31,892
CT200364	WALL FINISHES	20138@ 1.35SF		11,532	12,157	3,426	0	27,115
CT200364	CMU WALLS	5010@ 44.24SF		85,592	121,226	14,803	0	221,621
CT200364	SIGNAGE & DIRECTORIES			1,125	556	350	0	2,031
CT2003	ARCHITECTURAL - STATION PLATFORM LEVEL		20199@ 101.91SF	1,035,500	724,111	298,938	0	2,058,549
CT200366	SIGNAGE & DIRECTORIES			297,836	19,564	78,155	0	395,555
CT200366	KIOSKS		4@ 11979.87EA	20,105	18,331	9,484	0	47,919

C--Assembly Category Report

SUBMITTAL: 100%
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CONSTRUCTION CONTRACT: PACKAGE 1254
 DATABASE USED: RSM MODIFIED
 PRINTING DATE: 10/29/2012
 Page: 4 OF 5

PROJECT: CHINATOWN STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$250,000,000

ESTIMATOR: HILL
 CAT CODE:
 UIC:
 PROJECT #: CTS-100%
 DATE OF ESTIMATE: 2/16/12 REV 0

WBS CODE	DESCRIPTION	COST/WBS BASED ON		TOTAL MARKED UP COSTS				
		1 LS	COST/ WBS UNIT	MATL	LABOR	EQUIP	UNIT COST	TOTAL
CT200366	FLOOR FINISHES		6225@ 40.67SF	112,809	101,132	39,216	0	253,157
CT200366	CEILING FINISHES		3422@ 35.57SF	53,231	45,311	23,194	0	121,736
CT200366	WALL FINISHES		11151@ 1.93SF	9,050	9,928	2,502	0	21,480
CT200366	DOORS		14@ 7161.85EA	45,994	44,806	9,466	0	100,266
CT200366	CMU WALLS		2969@ 35.04SF	38,533	57,924	7,588	0	104,045
CT200366	METALS		20199@ 8.82SF	90,612	75,680	11,875	0	178,167
CT200366	SPECIALTIES		16@ 303.14EA	3,499	1,243	108	0	4,850
CT200366	GLAZING		621@ 133.63SF	35,487	31,034	16,460	0	82,981
CT200366	FURNISHINGS		13@ 28.52LF	246	115	10	0	371
CT200366	SMOKE EVACUATION CURTAIN			257,915	197,952	78,617	0	534,483
CT200366	ARTWORK COORDINATION			70,185	121,090	22,264	0	213,539
CT2003	ARCHITECTURAL - UNDER PLATFORM LEVEL		17355@ 17.08SF	135,216	133,505	27,669	0	296,390
CT200368	FLOOR FINISHES		8184@ 0.59SF	2,039	1,845	964	0	4,848
CT200368	CEILING FINISHES		13381@ 5.98SF	37,957	33,695	8,317	0	79,969
CT200368	WALL FINISHES		14323@ 1.14SF	7,140	8,077	1,102	0	16,320
CT200368	DOORS		5@ 13560.98EA	33,909	26,196	7,699	0	67,805
CT200368	CMU WALLS		3292@ 37.68SF	51,922	63,104	9,008	0	124,034
CT200368	SIGNAGE & DIRECTORIES			2,249	587	578	0	3,414
CT2003	ARCHITECTURAL - HEADHOUSE STAIRS & LANDING		5361@ 381.32SF	1,567,579	452,418	24,340	0	2,044,337
CT200372	STAIRS		527@ 2364.55RISR	862,181	369,158	14,780	0	1,246,119
CT200372	STAIR FINISHES		5361@ 33.81SF	156,818	21,263	3,167	0	181,248
CT200372	RAILING		2300@ 262.98LF	543,410	57,461	3,992	0	604,863
CT200372	EMERGENCY HATCH			5,170	4,536	2,400	0	12,106
CT2003	MECHANICAL - PLUMBING		106586@ 6.95B-SF	360,142	346,187	34,228	0	740,557
CT200378	MECHANICAL - PLUMBING		106586@ 6.95B-SF	360,142	346,187	34,228	0	740,557
CT2003	MECHANICAL - FIRE PROTECTION		106586@ 19.20B-SF	847,274	943,017	255,676	0	2,045,967
CT200379	MECHANICAL - FIRE PROTECTION		106586@ 19.20B-SF	847,274	943,017	255,676	0	2,045,967
CT2003	MECHANICAL - HVAC & EMERGENCY VENTILATION		106586@ 60.45B-SF	4,420,293	1,577,283	446,053	0	6,443,629
CT200380	MECHANICAL - HVAC & EMERGENCY VENTILATION		106586@ 60.45B-SF	4,420,293	1,577,283	446,053	0	6,443,629
CT2003	ELECTRICAL - LIGHTING		106586@ 7.88B-SF	287,508	504,685	47,500	0	839,693
CT200382	ELECTRICAL - LIGHTING		106586@ 7.88B-SF	287,508	504,685	47,500	0	839,693
CT2003	ELECTRICAL - POWER DISTRIBUTION		106586@ 53.28B-SF	3,452,061	2,000,960	225,476	0	5,678,497
CT200383	ELECTRICAL - POWER DISTRIBUTION		106586@ 53.28B-SF	3,452,061	2,000,960	225,476	0	5,678,497
CT20	ELEVATORS, ESCALATORS		10@ 574127.65EA	2,499,393	2,147,887	1,093,996	0	5,741,276
CT2007	CONVEYING - ELEVATORS / ESCALATORS		10@ 574127.65EA	2,499,393	2,147,887	1,093,996	0	5,741,276
CT200776	ELEVATORS		4@ 386919.70EA	713,277	564,455	269,947	0	1,547,679
CT200776	ESCALATORS		6@ 698932.94EA	1,786,116	1,583,433	824,049	0	4,193,598
CT SITEWORK & SPECIAL CONDITIONS			14775@ 2639.75SF	11,394,837	21,380,316	6,132,664	94,478	39,002,296
CT40	DEMOLITION, CLEARING, EARTHWORK		14775@ 22.89SF	63,800	211,216	63,158	0	338,174
CT4001	CIVILWORK		14775@ 22.89SF	63,800	211,216	63,158	0	338,174
CT400102	SELECTIVE DEMOLITION		14775@ 10.10SF	13,289	89,793	46,119	0	149,201
CT400102	BUILDING DEMOLITION		225710@ 0.84CF	50,511	121,423	17,038	0	188,973
CT40	SITE UTILITIES, UTILITY RELOCATION		14775@ 151.79SF	814,288	1,221,432	206,966	0	2,242,686
CT4002	CIVILWORK		14775@ 151.79SF	814,288	1,221,432	206,966	0	2,242,686
CT400202	UTILITY INSTALLATION		1850@ 629.05LF	434,726	628,140	100,554	0	1,163,419
CT400202	UTILITY REMOVAL		331@ 942.16LF	119,592	137,107	55,155	0	311,854
CT400202	UTILITY ABANDONMENT		698@ 213.75LF	27,765	107,029	14,401	0	149,196
CT400202	JOINT TRENCH			129,874	242,528	20,520	0	392,922
CT400202	ROADS & SIDEWALKS		9@ 1684.25EA	6,097	6,183	2,878	0	15,158
CT400202	DEWATERING		1890@ 21.84LF	0	39,851	1,419	0	41,270
CT400202	ASPHALT PAVING		477@ 55.34SY	4,631	19,575	2,191	0	26,397
CT400202	UTILITY SERVICE DEMOLITION		7@ 1643.13EA	4,827	4,396	2,279	0	11,502
CT400202	SELECTIVE DEMOLITION, PIPE			0	378	26	0	404
CT400202	WATER UTILITIES DISTRIBUTION		14775@ 3.49SF	39,189	11,039	1,276	0	51,505
CT400202	AWSS SYSTEM		14775@ 4.81SF	45,763	21,654	3,584	0	71,001
CT400202	ELECTRIC UNDERGROUND		95@ 84.83LF	1,823	3,553	2,683	0	8,059
CT40	HAZ. MAT'L, CONTAM'D SOIL REMOVAL/MITIGATION, GROUND WATER TREATMENTS		14775@ 13.09SF	80,974	74,262	38,185	0	193,421
CT4003	EXCAVATION & GROUND SUPPORT - HEADHOUSE			60,755	55,665	28,546	0	144,966
CT400306	DISPOSAL		1090@ 133.00TON	60,755	55,665	28,546	0	144,966
CT4003	EXCAVATION & GROUND SUPPORT - CROSS CUT CAVERN			3,507	3,226	1,672	0	8,405
CT400308	DISPOSAL		17@ 494.44EA	3,507	3,226	1,672	0	8,405
CT4003	EXCAVATION & GROUND SUPPORT - PLATFORM CAVERN			9,697	8,919	4,623	0	23,239
CT400310	DISPOSAL		47@ 494.44EA	9,697	8,919	4,623	0	23,239
CT4003	TUNNEL WORK - CROSSOVER CAVERN			7,015	6,452	3,344	0	16,811
CT400320	DISPOSAL		34@ 494.44EA	7,015	6,452	3,344	0	16,811
CT40	ENVIRONMENTAL MITIGATION WETLANDS HISTORIC ARCHEOLOGIC		14775@ 33.30SF	206,313	188,885	96,841	0	492,039
CT4004	CHINATOWN STATION			206,313	188,885	96,841	0	492,039
	CHINATOWN STATION			206,313	188,885	96,841	0	492,039

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 Page: 5 OF 5

PROJECT: CHINATOWN STATION
 PROJECT SITE: SAN FRANCISCO, CA
 A/E NAME: SFMTA - DESIGN GROUP
 PROJECT SIZE: 1.00LS
 CONSTRUCTION FUNDS AVAILABLE, DOLLARS: \$250,000,000

ESTIMATOR: HILL
 CAT CODE:
 UIC:
 PROJECT #: CTS-100%
 DATE OF ESTIMATE: 2/16/12 REV 0

WBS CODE	DESCRIPTION	COST/WBS		TOTAL MARKED UP COSTS				
		BASED ON 1 LS	COST/ WBS UNIT	MATL	LABOR	EQUIP	UNIT COST	TOTAL
CT400400	GENERAL			206,313	188,885	96,841	0	492,039
CT40	PEDESTRIAN / BIKE ACCESS - LANDSCAPING		14775@ 9.44SF	52,494	71,872	15,124	0	139,491
CT4006	STREET RESTORATION		4588@ 13.06SF	30,342	21,930	7,634	0	59,906
CT400695	CONCRETE PAVEMENT		4588@ 13.06SF	30,342	21,930	7,634	0	59,906
CT4006	STRUCTURES		159@ 500.53LF	22,153	49,942	7,490	0	79,584
CT400698	STRUCTURES		159@ 500.53LF	22,153	49,942	7,490	0	79,584
CT40	AUTO,BUS, VAN ACCESSWAYS INCL ROADS & PKG LOTS		14775@ 119.73SF	326,872	500,629	941,500	0	1,769,001
CT4007	STREET RESTORATION		9167@ 192.97SF	326,872	500,629	941,500	0	1,769,001
CT400795	STREET LIGHTING			14,653	16,998	5,745	0	37,395
CT400795	ADJUSTMENT OF CITY-OWNED FRAMES & CASTING		15@ 1457.92EA	13,290	6,995	1,583	0	21,869
CT400795	CONCRETE PAVEMENT		9167@ 12.78SF	108,173	7,841	1,148	0	117,162
CT400795	CONCRETE CURB & GUTTER		643@ 24.53LF	7,498	7,599	673	0	15,770
CT400795	TRAFFIC SIGNALS			180,050	459,454	932,206	0	1,571,711
CT400795	M-SF CONTROLLER			3,207	1,742	144	0	5,094
CT40	TEMPORARY FACILITIES		14775@ 2289.51SF	9,850,096	19,112,019	4,770,890	94,478	33,827,484
CT4008	CHINATOWN STATION		14775@ 2289.51SF	9,850,096	19,112,019	4,770,890	94,478	33,827,484
CT400800	TRAFFIC CONTROL		14775@ 83.72SF	298,398	917,359	21,201	0	1,236,959
CT400800	PROJECT MANAGEMENT & FIELD SUPERVISION		14775@ 1819.14SF	9,034,272	15,368,129	2,380,853	94,478	26,877,732
CT400800	OVERHEAD TRACTION POWER		15@ 8750.85EA	53,973	51,779	25,510	0	131,263
CT400800	TEMPORARY CONSTRUCTION		14775@ 25.90SF	94,820	228,948	58,913	0	382,680
CT400800	GC EXPENSES		59@ 57271.74MTH	303,459	795,525	2,251,412	0	3,350,397
CT400800	SP & DIV 1 REQUIREMENTS			65,173	472,823	33,001	0	570,996
CT400800	INSPECTION REQUIREMENTS			0	1,277,457	0	0	1,277,457
CT SYSTEMS				6,752,002	2,723,863	313,748	0	9,789,614
CT50	TPSS STATIONS			4,254,767	824,217	108,406	0	5,187,389
CT5003	ELECTRICAL - TRACTION POWER			4,254,767	824,217	108,406	0	5,187,389
CT500384	ELECTRICAL - TRACTION POWER			4,254,767	824,217	108,406	0	5,187,389
CT50	COMMUNICATIONS			2,476,417	1,863,322	202,244	0	4,541,983
CT5005	COMMUNICATIONS			2,476,417	1,863,322	202,244	0	4,541,983
CT500501	COMMUNICATIONS - ACCESS CONTROL & CCTV			1,261,476	648,033	72,525	0	1,982,034
CT500501	COMMUNICATIONS - TELEPHONE & RADIO SYSTEMS			729,738	662,318	71,943	0	1,463,999
CT500501	COMMUNICATIONS - FIRE ALARM SYSTEMS			257,194	360,552	39,273	0	657,019
CT500501	COMMUNICATIONS - PUBLIC ADDRESS			228,009	192,420	18,503	0	438,932
CT50	FARE COLLECTION SYSTEM			20,819	36,324	3,099	0	60,241
CT5006	FARE COLLECTION			20,819	36,324	3,099	0	60,241
CT500687	FARE COLLECTION			20,819	36,324	3,099	0	60,241

E-SYS Estimate Detail Report

100%

ESTIMATE NAME:

PRINTING DATE: 10/24/2012

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				TOTAL COSTS							
CODE	SUB/CREW	DESCRIPTION	QTY	UM	MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	TOTAL		
		SUB-211/211	1.08	hrs/unit	13	TOTAL HRS					
		NOTE: DAILY PRODUCTIVITY = 74 EA/DAY			12.00	EA	932	924	438	0	2,294
01552.61	- 53	TEMPORARY BARRIER (TYPE K)					50.00	59.70	23.37	0.00	133.07
		SUB-211/211	0.837	hrs/unit	80	TOTAL HRS					
		NOTE: DAILY PRODUCTIVITY = 95.6 LF/DAY			95.00	lf	4,750	5,671	2,220	0	12,641
01101.01	- 12	TEMPORARY FENCING					1.43	3.66	13.23	0.00	18.33
		SUB-221/221	0.053	hrs/unit	22	TOTAL HRS					
		NOTE: DAILY PRODUCTIVITY = 1660 LF/DAY			417.00	LF	595	1,528	5,519	0	7,643
01552.61	- 43	FLASHING BEACON (PORTABLE)					500.15	387.54	0.00	0.00	887.69
		SUB-120/120	5.348	hrs/unit	5	TOTAL HRS					
		NOTE: DAILY PRODUCTIVITY = 6 EA/DAY			1.00	EA	500	388	0	0	888
01107.70	- 00	CONTROL MONUMENT					5250.00	499.62	160.43	0.00	5,910.05
		SUB-120/120	6.895	hrs/unit	283	TOTAL HRS					
		NOTE: DAILY PRODUCTIVITY = 4.6 EA/DAY			41.00	EA	215,250	20,484	6,578	0	242,312
01552.60	- 41	TRAFFIC SUPERVISOR PROVIDED BY TRAFFIC SUBCONTRACTOR					0.00	56.89	0.00	0.00	56.89
		SUB-120/120	0.785	hrs/unit	3591	TOTAL HRS					
					4,575.00	HR	0	260,254	0	0	260,254
01552.60	- 51	SF PARKING & TRAFFIC CONTROL OFFICER					0.00	62.03	0.00	0.00	62.03
		SUB-120/120	0.856	hrs/unit	3595	TOTAL HRS					
					4,200.00	HR	0	260,531	0	0	260,531
01552.60	- 61	OFF DUTY SFPD UNIFORM OFFICER					0.00	87.61	0.00	0.00	87.61
		SUB-120/120	1.209	hrs/unit	1028	TOTAL HRS					
					850.00	HR	0	74,470	0	0	74,470
01552.60	- 71	TRAFFIC CONTROL CREW					0.00	52.06	0.00	0.00	52.07
		SUB-211/211	0.73	hrs/unit	1679	TOTAL HRS					
					2,300.00	HR	0	119,750	0	0	119,750
		Subtotal Direct Costs					224,550	746,502	15,943	0	986,995
		Subcontractor Markups					47,801	90,780	3,407	0	141,988
		Prime Contractor Markups					26,048	80,078	1,851	0	107,976
TOTAL CT4008001101 TRAFFIC CONTROL					10,331	HRS	298,398	917,359	21,201	0	1,236,959
CT4008001201 PROJECT MANAGEMENT & FIELD SUPERVISION					<i>LEVEL CONTRACTOR ID APPLIED--PRIME</i>						
31712.31	- 00	DEWATERING WELL, SURFACE					643.97	15013.50	0.00	0.00	15,657.47
		SUB-211/111	256.41	hrs/unit	5128	TOTAL HRS					
					20.00	EA	12,879	300,270	0	0	313,149
31712.31	- 00	EQUIPMENT OWNERSHIP NOT IN DIRECT COST					399027.40	0.00	830000.00	0.00	1,229,027.40
		SUB-997/NoCrew	8000	hrs/unit	8000	TOTAL HRS					
					1.00	LS	399,027	0	830,000	0	1,229,027
31712.31	- 00	GENERAL MOBILIZATION					1484900.00	153562.81	27792.69	0.00	1,666,255.50
		SUB-997/211	2153.1	hrs/unit	2153	TOTAL HRS					
					1.00	LS	1,484,900	153,563	27,793	0	1,666,256
31712.31	- 00	DEMobilIZATION / PUNCHLIST					194026.48	49204.78	12821.92	0.00	256,053.18
		SUB-997/211	689.89	hrs/unit	690	TOTAL HRS					
					1.00	LS	194,026	49,205	12,822	0	256,053
31712.31	- 00	GENERAL PLANT OPERATIONS / MAINTENANCE					1448628.31	508800.42	0.00	0.00	1,957,428.73
		SUB-995/995	5456.1	hrs/unit	5456	TOTAL HRS					
					1.00	LS	1,448,628	508,800	0	0	1,957,429
31712.31	- 00	WEEKEND MAINTENANCE					153.42	0.00	1411.69	0.00	1,565.11
		SUB-997/NoCrew	78.15	hrs/unit	7893	TOTAL HRS					
					101.00	DAY	15,495	0	142,581	0	158,076
31712.31	- 00	FIELD SUPERVISION					0.00	9324297.88	0.00	0.00	9,324,297.88
		SUB-997/211	130735	hrs/unit	130735	TOTAL HRS					
					1.00	LS	0	9,324,298	0	0	9,324,298
31712.31	- 00	OVERHEAD MAINTENANCE / SERVICE					2251335.00	1744433.58	131297.40	0.00	4,127,065.98
		SUB-997/120	24072	hrs/unit	24072	TOTAL HRS					
					1.00	LS	2,251,335	1,744,434	131,297	0	4,127,066
31712.31	- 00	FINANCING CHARGES					746204.57	578192.19	0.00	0.00	1,324,396.76
		SUB-995/120	7978.8	hrs/unit	7979	TOTAL HRS					
					1.00	LS	746,205	578,192	0	0	1,324,397
31712.31	- 00	MOCK-UPS & SUBMITTALS					175000.00	163193.63	40000.00	0.00	378,193.63
		SUB-995/995	1750	hrs/unit	1750	TOTAL HRS					
					1.00	LS	175,000	163,194	40,000	0	378,194
31712.31	- 00	GANTRY CRANE					85000.00	0.00	540000.00	0.00	625,000.00
		SUB-997/NoCrew	4000	hrs/unit	4000	TOTAL HRS					
					1.00	LS	85,000	0	540,000	0	625,000
		Subtotal Direct Costs					6,812,497	12,821,955	1,724,493	0	21,358,945
		Subcontractor Markups					1,169,243	902,476	272,458	0	2,344,177
		Prime Contractor Markups					763,373	1,312,604	190,988	0	2,266,966
TOTAL CT4008001201 PROJECT MANAGEMENT & FIELD SUPERVISION					14,775.00	SF	8,745,113	15,037,035	2,187,939	0	25,970,087
							591.89	1,017.74	148.08	0.00	1,757.70
Subtotal Direct Costs							7,031,376	13,094,972	1,870,431	75,000	22,071,779
MARKUP							1.285	1.174	1.273	1.260	1.218
TOTAL CT40080012 PROJECT MANAGEMENT & FIELD SUPERVISION							9,034,272	15,368,129	2,380,853	94,478	26,877,732

CT10 GUIDEWAY & TRACK ELEMENTS

CT1007 GUIDEWAY UNDERGROUND TUNNEL

CT1007970113 CTS_050_ES.701-Dewatering *LEVEL CONTRACTOR ID APPLIED--PRIME*

01101.02	- 06	Small Tools and Supplies					2.74	1.97	0.40	0.00	5.11
		SUB-995/NoCrew			320.00	HRS	877	630	128	0	1,635
01510.00	- 00	Labor FM					0.00	66.00	0.00	0.00	66.00
		SUB-995/NoCrew			120.00	MH	0	7,920	0	0	7,920
01510.00	- 00	Flagman					0.00	60.33	0.00	0.00	60.33

E-SYS Estimate Detail Report

100%

ESTIMATE NAME:

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CODE	SUB/CREW	DESCRIPTION	QTY	UM	TOTAL COSTS				TOTAL
					MATERIAL	LABOR	EQUIPMENT	UNIT COST (SUB QUOTE)	
		SUB-995/NoCrew	240.00	MH	0	14,479	0	0	14,479
31231.92 - 02		DRILL WELL - 6" DIA			21.00	54.63	61.75	0.00	137.38
		SUB-211/211 0.766 hrs/unit 590 TOTAL HRS	770.00	lf	16,170	42,067	47,546	0	105,784
31231.92 - 02		STEEL CASING - 6" DIA			36.75	24.32	27.44	0.00	88.51
		SUB-211/211 0.341 hrs/unit 263 TOTAL HRS	770.00	lf	28,298	18,727	21,128	0	68,153
31231.92 - 02		STEEL PIPE SCREEN - 6" DIA			47.25	24.32	27.44	0.00	99.01
		SUB-211/211 0.341 hrs/unit 143 TOTAL HRS	420.00	lf	19,845	10,215	11,524	0	41,584
31231.92 - 02		SUBMERSIBLE PUMP - 6" DIA- 25 HP - 250 GPM			2791.61	2637.21	1288.67	0.00	6,717.50
		SUB-211/211 36.976 hrs/unit 259 TOTAL HRS	7.00	EA	19,541	18,460	9,021	0	47,022
31231.92 - 02		OBSERVATION WELL - 6" DIA			9452.35	8929.67	4363.44	0.00	22,745.47
		SUB-211/211 125.2 hrs/unit 376 TOTAL HRS	3.00	EA	28,357	26,789	13,090	0	68,236
31231.92 - 02		SUBMERSIBLE PUMP - Backup			2791.61	0.00	0.00	0.00	2,791.61
		SUB-211/211	7.00	EA	19,541	0	0	0	19,541
31231.92 - 02		WATER DISPOSAL			115.00	106.98	58.00	0.00	279.98
		SUB-995/211 1.5 hrs/unit 1125 TOTAL HRS	750.00	LDS	86,250	80,237	43,500	0	209,987
31231.92 - 02		SPARE PARTS			0.00	53491.59	0.00	75000.00	128,491.59
		SUB-995/211 750 hrs/unit 750 TOTAL HRS	1.00	LS	0	53,492	0	75,000	128,492
Subtotal Direct Costs					218,879	273,017	145,938	75,000	712,834
Subcontractor Markups					45,039	29,175	30,136	11,533	104,350
Prime Contractor Markups					25,241	28,902	16,840	7,945	70,982
TOTAL CT1007970113 CTS_050_ES.701-Dewatering					289,159	331,094	192,914	94,478	907,645
34.00 DY Level Unit Cost-->					8,504.68	9,738.05	5,673.94	2,778.78	26,695.45

SUBTOTAL CT40080012 PROJECT MANAGEMENT & FIELD SUPERVISION					7,031,376	13,094,972	1,870,431	75,000	22,071,779
MARKUP					1,285	1,174	1,273	1,260	1,218
TOTAL CT40080012 PROJECT MANAGEMENT & FIELD SUPERVISION					9,034,272	15,368,129	2,380,853	94,478	26,877,732

CT40 SITEWORK & SPECIAL CONDITIONS

CT4008 TEMPORARY FACILITIES

CT4008001301 OVERHEAD TRACTION POWER LEVEL CONTRACTOR ID APPLIED--PRIME

34230.01 - 01		PROSPECT HOLE FOR DEPTH < 3'			0.00	566.58	40.64	0.00	607.22
		SUB-221/221 8.154 hrs/unit 16 TOTAL HRS	2.00	EA	0	1,133	81	0	1,214
34230.01 - 01		PROSPECT HOLE FOR DEPTH > 3'			0.00	755.37	53.88	0.00	809.25
		SUB-221/221 10.871 hrs/unit 11 TOTAL HRS	1.00	EA	0	755	54	0	809
34230.01 - 02		PROVIDE STEEL POLE TYPE 761N			2134.70	2120.84	1004.57	0.00	5,260.11
		SUB-161/165 35.957 hrs/unit 144 TOTAL HRS	4.00	EA	8,539	8,483	4,018	0	21,040
34230.01 - 02		PROVIDE SPECIAL POLE FOUNDATION			4851.60	4820.13	2283.11	0.00	11,954.84
		SUB-161/165 81.721 hrs/unit 327 TOTAL HRS	4.00	EA	19,406	19,281	9,132	0	47,819
34230.01 - 03		PROVIDE PULL OFF			3105.02	3084.86	1461.19	0.00	7,651.07
		SUB-161/165 52.301 hrs/unit 105 TOTAL HRS	2.00	EA	6,210	6,170	2,922	0	15,302
34230.01 - 04		PROVIDE TANGENT OR INVERT SPAN			3105.02	3084.86	1461.19	0.00	7,651.07
		SUB-161/165 52.301 hrs/unit 105 TOTAL HRS	2.00	EA	6,210	6,170	2,922	0	15,302
Subtotal Direct Costs					40,365	41,992	19,131	0	101,488
Subcontractor Markups					8,897	5,267	4,153	0	18,317
Prime Contractor Markups					4,711	4,520	2,227	0	11,458
TOTAL CT4008001301 OVERHEAD TRACTION POWER					53,973	51,779	25,510	0	131,263
15.00 EA Level Unit Cost-->					3,598.23	3,451.93	1,700.69	0.00	8,750.85

CT4008001511 CTS_AB_CV.201 - Temporary Alternate Curb Ramp A LEVEL CONTRACTOR ID APPLIED--PRIME

DAILY PRODUCTIVITY = 11.3 EA/DAY

32161.31 - 30		CONCRETE CURB RAMP WITH DETECTABLE SURFACE TILES			525.00	504.46	102.22	0.00	1,131.68
		SUB-211/211 7.073 hrs/unit 21 TOTAL HRS	3.00	ea	1,575	1,513	307	0	3,395
		* LINE ITEM ASSEMBLY Factor:1.0000							
Subtotal Direct Costs					1,575	1,513	307	0	3,395
Subcontractor Markups					335	181	64	0	580
Prime Contractor Markups					183	162	35	0	380
TOTAL CT4008001511 CTS_AB_CV.201 - Temporary Alternate Curb Ramp A					2,093	1,856	406	0	4,356
3.00 EA Level Unit Cost-->					697.67	618.74	135.49	0.00	1,451.90

NOTE: DAILY PRODUCTIVITY = 11.3 EA/DAY

CT4008001512 CTS_AA_CV.201 - Temporary 3.5IN Thick Asphalt Sidwalk LEVEL CONTRACTOR ID APPLIED--PRIME

DAILY PRODUCTIVITY = 247 TN/DAY

02740.30 - 02		AC PAVING, WEARING COURSE, 3.5" THICK			89.25	24.77	13.13	0.00	127.15
		SUB-221/221 0.356 hrs/unit 9 TOTAL HRS	26.62	TN	2,376	659	350	0	3,385
		* LINE ITEM ASSEMBLY Factor:0.0200							
01552.35 - 00		AGGREGATE BASE COURSE, 8" THICK			10.55	1.15	0.86	0.00	12.57
		SUB-211/211 0.016 hrs/unit 1 TOTAL HRS	59.89	TN	632	69	52	0	753

APPENDIX C
PRIMARY MITIGATION STATUS REPORTS

PRIMARY MITIGATIONS

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PAGE	TITLE
1.	MOS SCC 20.03.01 Street/Lane Closure 100% drawings show continuous lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.
2.	MOS SCC 20.03.02 Multiple Shift FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.
3.	MOS SCC 20.03.03 Open Access Constructability review completed. Design will be completed using the 65% FD concepts. 100% drawings show lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.
4.	MOS SCC 40.08.01 Street/Lane Closure 100% drawings show lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.
5.	MOS SCC 40.08.02 Multiple Shift FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.
6.	MOS SCC 40.08.03 Open Access Constructability review completed. Design will be completed using the 65% FD concepts. 100% drawings show lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.
7.	UMS SCC 20.03.01 Street/Lane Closure Union Square Garage will be used as an access and staging area. 100% TR drawings and specifications allows limited closure of Stockton Street to perform the work.
8.	UMS SCC 20.03.02 Multiple Shift FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.
9.	UMS SCC 20.03.03 Open Access 100% construction documents dated 2/15/2012 show street closures to allow installation of roof beams from wall to wall.
10.	UMS SCC 40.08.01 Street/Lane Closure Union Square Garage will be used as an access and staging area. 100% TR drawings and specifications allows limited closure of Stockton Street to perform the work.
11.	UMS SCC 40.08.02 Multiple Shift FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.
12.	UMS SCC 40.08.03 Open Access 100% construction documents dated 2/15/2012 show street closures to allow installation of roof beams from wall to wall.
13.	CTS SCC 20.03.01 Street Closure

PRIMARY MITIGATIONS

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PAGE	TITLE
	Washington Street will be closed to allow construction of the headhouse roof in Washington Street. Traffic will be detoured away from headhouse on Washington.
14.	CTS SCC 20.03.02 Multiple Shift FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.
15.	CTS SCC 20.03.03 Open Access 100% construction documents provide access to the headhouse and caverns mainly from the headhouse site.
16.	CTS SCC 40.08.01 Street Closure Washington Street will be closed to allow construction of the headhouse roof in Washington St. Traffic will be detoured away from headhouse on Washington.
17.	CTS SCC 40.08.02 Multiple Shift FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.
18.	CTS SCC 40.08.03 Open Access

Access to the headhouse and caverns is planned to occur mainly from the headhouse site.

Moscone Station — 20.03.01

Primary Mitigation ID	MOS 20.03.01	Risk Owner	Chin	CP Affected	1255	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed utilizing street or lane closures with approval from Permit issuing authority and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding street and/or lane closures. Use convincing evidence that short term disruptions outweigh cost and schedule impacts.			Root Cause	Regulations for Working San Francisco Streets stipulates maintaining minimum through traffic lanes during normal and moratorium time periods unless permitted by DPT.						
Update Summary	100% drawings show continuous lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain Special Traffic Permit to conduct work with street and/or lane closures at the project site.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
20.03.01.01	Research and document traffic requirements governing construction in the ROW and for street/lane closures.			Copy of applicable traffic stipulation which apply to street and lanes closures.		Chin	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book"				Complete
20.03.01.02	Work with Traffic Engineer to overcome project constraints.			Traffic routing plans will delineate appropriate lane closures.		Chin	7/26/2011	2/19/2012	100% Final Design TR plans, dated 2/19/12 and Specification section 01 55 26 delineate lane closures				Complete
20.03.01.03	Obtain concurrences from SFFD			Documentation showing acceptance from SFFD		Chin	12/19/2011	3/19/2012					In Process
20.03.01.04	Coordinate design documents with approvals for agreed-upon street/lane closures for the project area.			Update traffic plans, construction sequence drawings, general requirements and special provisions.		Chin	7/26/2011	2/19/2012	100% plans updated to include lane closures on Fourth Street.				Complete
20.03.01.05	Perform Public Outreach for notification (CAG).			Public relations campaign.		Norris	2/19/2012	5/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.01.06	Obtain concurrences from community			Documentation showing acceptance from Moscone Convention Center, Yerba Buena Gardens, Wolff House		Norris	2/19/2012	5/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.01.07	Coordinate revised design approach with the construction schedule.			Addendum to Contract Documents and updated project documents.		Chin	2/19/2012	5/17/2012	Addendum related to public comment is not anticipated at this time.				Complete
20.03.01.08	Impact (Cost Benefit)												
20.03.01.09	Excavation Support	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate				Complete
20.03.01.10	Excavation	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate				Complete
20.03.01.11	Structure	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate				Complete

Moscone Station — 20.03.02

Primary Mitigation ID	MOS 20.03.02	Risk Owner	Chin	CP Affected	1255	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work outside normal work hours with approval from Permit issuing authority and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding work hours. Use convincing evidence that short-term disruptions outweigh cost and schedule impacts.				Root Cause	Noise Control Ordinance stipulates maintaining certain noise levels for work outside of normal working hours unless permitted by DPW.					
Update Summary	FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain permit to perform work outside of normal work hours.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update			Task Status	
20.03.02.01	Research, identify and confirm applicability of city codes, local ordinances and EIR for work outside of normal working hours.			Documentation of applicable city codes, rules, regulations (SF Blue Book), local ordinances (Noise Control) & EIR which apply to work outside normal hours.		Chin	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book" SF Police Code - Section 2908			Complete	
20.03.02.02	Describe expected noise level from construction activities.			Expected noise levels generated during construction.		Benson	7/26/2011	4/2/2012				In Process	
20.03.02.03	Obtain concurrence with City Agencies prior to bid opening.			Concurrence establishing the agreement on the work hours with DPW & DBI		Chin	7/26/2011	6/1/2012	Program feels that contract is sufficiently clear in contract documents on contractor's ability to obtain a night noise permit without obtaining concurrence from City Agencies prior to construction.			Complete	
20.03.02.04	Implement and coordinate Contract Documents and project documentation based on agreed-upon work hours.			100% Construction Documents		Chin	7/26/2011	2/19/2012	Contract documents allow night work per SF Police Code Section 2908.			Complete	
20.03.02.05	Perform Public Outreach for notification prior to construction.			Public Relations Campaign (Moscone Convention Center, Yerba Buena Gardens, Wolff House, BOS, SFPD, OES)		Norris	2/19/2012	5/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.			Complete	
20.03.02.06	Coordinate and update revised construction sequencing and plans to the construction schedule.			Addendum to Contract Documents and updated project documents.		Chin	2/19/2012	8/1/2012	No addendum is anticipated at this time.			Complete	
20.03.02.07	Impact (Cost Benefit)												
20.03.02.08	Excavation Support	Improved efficiency (minimizing startup/shutdown times per shift cycle) for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.02.09	Excavation	Improved efficiency (minimizing startup/shutdown times per shift cycle) for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.02.10	Structure	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.02.11	Architecture	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	7/26/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.02.12	MEP	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	

Moscone Station — 20.03.03

Primary Mitigation ID	MOS 20.03.03	Risk Owner	Chin	CP Affected	1255	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed with open access at street level with approval from Permit issuing authority and all effected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding open access for the excavation and construction of the station box. Use convincing evidence that some surface disruptions outweigh cost and schedule impacts.				Root Cause	Interpretation of EIR compliance and interpretation of the Preliminary Engineering (PE) final documents may preclude use of additional open access points at street level.					
Update Summary	Constructability review completed. Design will be completed using the 65% FD concepts. 100% drawings show lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to perform work with improved efficiency.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update			Task Status	
20.03.03.01	Perform Constructability Review.			Constructability Assessment Technical Memorandum		Chin	6/8/2011	8/15/2011	Constructability Review conducted in August 2011.			Complete	
20.03.03.02	Develop cost reduction options and perform a ROM Cost Comparison Analysis between options.			Sketches of Cost-Savings Options (for estimating) and QTO of significant cost driver elements.		Chin	8/15/2011	12/19/2011	Several cost-saving options were generated from constructability review.			Complete	
20.03.03.03	Implement selected cost-saving option.			Updated Contract Drawings and Specifications; General Requirements and Special Provisions.		Chin	12/19/2011	2/19/2012	Design did not change as a result of the constructability review.			Complete	
20.03.03.04	Impact (Cost Benefit)												
20.03.03.05	Excavation Support	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.06	Excavation	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.07	Structure	Bottoms-up method will be less sensitive to traffic and on-site restrictions for cost improvement.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.08	Architecture	Improved efficiency and sequencing of work including supply of material and equipment to site.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.09	MEP	Improved efficiency and sequencing of work including supply of material and large equipment to site by improved access.		Cost Estimate Update		Berry	12/19/2011	5/15/2012	Incorporated into 100% cost estimate			Complete	

Primary Mitigation ID	MOS 40.08.01	Risk Owner	Chin	CP Affected	1255	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed utilizing street or lane closures with approval from Permit issuing authority, and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding street and/or lane closures. Use convincing evidence that short term disruptions outweigh cost and schedule impacts.				Root Cause	Regulations for Working San Francisco Streets stipulates maintaining minimum through traffic lanes during normal and moratorium time periods.					
Status Update	100% drawings show lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain Special Traffic Permit to conduct work with street and/or lane closures at the project site							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
40.08.01.01	Research and document traffic requirements governing construction in the ROW and for street/lane closures.			Copy of applicable traffic stipulation which apply to street and lanes closures.		Chin	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book"				Complete
40.08.01.02	Work with Traffic Engineer to overcome project constraints.			Traffic routing plans will delineate appropriate lane closures.		Chin	7/26/2011	12/19/2011	100% Final Design TR plans, dated 2/19/12 and Specification section 01 55 26 delineate lane closures				Complete
40.08.01.03	Obtain concurrences from SFFD & SFPD.			Documentation showing acceptance from SFFD.		Chin	12/19/2011	2/19/2012					Complete
40.08.01.04	Coordinate design documents with approvals for agreed-upon street/lane closures for the project area.			Update traffic plans, construction sequence drawings, general requirements and special provisions.		Chin	7/26/2011	2/19/2012	100% plans updated to include lane closures on Fourth Street.				Complete
40.08.01.05	Perform Public Outreach for notification (CAG).			Public relations campaign.		Norris	2/19/2012	5/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
40.08.01.06	Obtain concurrences from community.			Documentation showing acceptance from Moscone Convention Center, Yerba Buena Gardens, Wolf House		Norris	2/19/2012	5/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
40.08.01.07	Coordinate revised design approach with the construction schedule.			Addendum to Contract Documents and updated project documents.		Chin	2/19/2012	8/1/2012	Addendum related to public comment is not anticipated at this time.				Complete
40.08.01.08	Impact (Schedule Benefit)												
40.08.01.09	Project Management & Field Supervision			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete
40.08.01.10	Project Expenses			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete
40.08.01.11	Traffic Control			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete

Moscone Station — 40.08.02

Primary Mitigation ID	MOS 40.08.02	Risk Owner	Chin	CP Affected	1255	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work outside normal work hours with approval from Permit issuing authority and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding work hours. Use convincing evidence that short-term disruptions outweigh cost and schedule impacts.				Root Cause	Noise Control Ordinance stipulates maintaining certain noise levels for work outside of normal working hours.					
Status Update	FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain permit to perform work outside of normal work hours.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
20.03.02.01	Research, identify and confirm applicability of city codes, local ordinances and EIR for work outside of normal working hours.			Documentation of applicable city codes, rules, regulations (SF Blue Book), local ordinances (Noise Control) & EIR which apply to work		Chin	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book" SF Police Code - Section 2908				Complete
20.03.02.02	Describe expected noise level from construction activities.			Expected noise levels generated during construction.		Benson	7/26/2011	3/2/2012					In Process
20.03.02.03	Obtain concurrence with City Agencies prior to bid opening.			Concurrence establishing the agreement on the work hours with DPW & DBI		Chin	7/26/2011	6/1/2012	Program feels that contract is sufficiently clear in contract documents on contractor's ability to obtain a night noise permit without obtaining concurrence from City Agencies prior to construction.				Complete
20.03.02.04	Implement and coordinate Contract Documents and project documentation based on agreed-upon work hours.			100% Construction Documents		Chin	7/26/2011	2/19/2012	Contract documents allow night work per SF Police Code Section 2908.				Complete
20.03.02.05	Perform Public Outreach for notification prior to construction.			Public Relations Campaign (Moscone Convention Center, Yerba Buena Gardens, Wolff House, BOS, SFPD, OES)		Norris	2/19/2012	5/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.02.06	Coordinate and update revised construction sequencing and plans to the construction schedule.			Addendum to Contract Documents and updated project documents.		Chin	2/19/2012	8/1/2012	No addendum is anticipated at this time.				Complete
20.03.02.07	Impact (Schedule Benefit)												
20.03.02.08	Project Management & Field Supervision			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete
20.03.02.09	Project Expenses			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete
20.03.02.10	Traffic Control			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete

Moscone Station — 40.08.03

Primary Mitigation ID	MOS 40.08.03	Risk Owner	Chin	CP Affected	1255	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed with open access at street level with approval from Permit issuing authority and all effected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding open access for the excavation and construction of the station box. Use convincing evidence that some surface disruptions outweigh cost and schedule impacts.				Root Cause	Interpretation of EIR compliance and interpretation of the Preliminary Engineering (PE) final documents may preclude use of additional open access points at street level.					
Status Update	Constructability review completed. Design will be completed using the 65% FD concepts. 100% drawings show lane closures to allow staging area on west side of Fourth St. adjacent to the headhouse.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to perform work with improved efficiency.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date					Task Status
40.08.03.01	Perform Constructability Review.			Constructability Assessment Technical Memorandum		Chin	6/8/2011	8/15/2011	Constructability Review conducted in August 2011.				Complete
40.08.03.02	Develop cost reduction options and perform a ROM Cost Comparison Analysis between options.			Sketches of Cost-Savings Options (for estimating) and QTO of significant cost driver elements.		Chin	8/15/2011	12/19/2011	Several cost-saving options were generated from constructability review.				Complete
40.08.03.03	Implement selected cost-saving option.			Updated Contract Drawings and Specifications; General Requirements and Special Provisions.		Chin	12/19/2011	2/19/2012	Design did not change as a result of the constructability review.				Complete
40.08.03.04	Impact (Schedule Benefit)												
40.08.03.05	Project Management & Field Supervision			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete
40.08.03.06	Project Expenses			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete
40.08.03.07	Traffic Control			Construction Schedule Update		Berry	12/19/2011	5/15/2012	Included in MPS				Complete

UMS Station — 20.03.01

Primary Mitigation ID	UMS 20.03.01	Risk Owner	Wang	CP Affected	1253	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed utilizing street or lane closures with approval from Permit issuing authority, and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding street and/or lane closures. Use convincing evidence that short term disruptions outweigh cost and schedule impacts.				Root Cause	Regulations for Working San Francisco Streets stipulates maintaining minimum through traffic lanes during normal and moratorium time periods.					
Status Update	Union Square Garage will be used as an access and staging area. 100% TR drawings and specifications allows limited closure of Stockton Street to perform the work.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain Special Traffic Permit to conduct work with street and/or lane closures at the project site.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
20.03.01.01	Research and document traffic requirements governing construction in the ROW and for street/lane closures.			Copy of applicable traffic stipulation which apply to street and lanes closures.		Wang	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book"				Complete
20.03.01.02	Work with Traffic Engineer to overcome project constraints.			Traffic routing plans will delineate appropriate lane closures.		Wang	7/26/2011	2/19/2012	100% Final Design TR plans, dated 2/19/12 and Specification section 01 55 26 delineate lane closures				Complete
20.03.01.03	Obtain concurrences from SFFD.			Documentation showing acceptance from SFFD.		Wang	12/19/2011	2/19/2012	Approval from SFFD for traffic closure on Stockton Street received 2/10/12.				Complete
20.03.01.04	Coordinate design documents with approvals for agreed-upon street/lane closures for the project area.			Update traffic plans, construction sequence drawings, general requirements and special provisions.		Wang	7/26/2011	2/19/2012	100% plans updated to include lane closures on Stockton Street.				Complete
20.03.01.05	Perform Public Outreach for notification (CAG).			Public relations campaign		Norris	12/19/2011	2/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.01.06	Obtain concurrences from community.			Documentation showing acceptance from BID, Hoteliers & Merchants, Dept. Rec & Park, BART.		Norris	2/19/2012	2/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.01.07	Coordinate revised design approach with the construction schedule, if needed.			Addendum to Contract Documents and updated project documents.		Wang	4/4/2012	8/1/2012	Addendum related to public comment is not anticipated at this time.				Complete
20.03.01.08	Impact (Cost Benefit)												
20.03.01.09	Excavation Support	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete
20.03.01.10	Excavation	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete
20.03.01.11	Structure	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete

UMS Station – 20.03.02

Primary Mitigation ID	UMS 20.03.02	Risk Owner	Wang	CP Affected	1253	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work outside normal work hours with approval from Permit issuing authority and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding work hours. Use convincing evidence that shorter term disruptions outweigh cost and schedule impacts.				Root Cause	Noise Control Ordinance stipulates maintaining certain noise levels for work outside of normal working hours.					
Status Update	FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain permit to perform work outside of normal work hours.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
20.03.02.01	Research, identify and confirm applicability of city codes, local ordinances and EIR for work outside of normal working hours.			Documentation of applicable city codes, rules, regulations (SF Blue Book), local ordinances (Noise Control) & EIR which apply to work outside		Wang	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book" SF Police Code - Section 2908				Complete
20.03.02.02	Describe expected noise level from construction activities.			Expected noise levels generated during construction.		Benson	7/26/2011	4/2/2012					In Process
20.03.02.03	Obtain concurrence with City Agencies prior to bid opening.			Concurrence establishing the agreement on the work hours with DPW & DBI		Wang	7/26/2011	6/1/2012	Program feels that contract is sufficiently clear in contract documents on contractor's ability to obtain a night noise permit without obtaining concurrence from City Agencies prior to construction.				Complete
20.03.02.04	Implement and coordinate Contract Documents and project documentation based on night noise permit being granted.			100% Construction Documents		Wang	7/26/2011	2/15/2012	Contract documents allow night work per SF Police Code Section 2908.				Complete
20.03.02.05	Perform Public Outreach for notification prior to construction.			Public Relations Campaign (BID, Hoteliers & Merchants, Dept. Rec & Park, BART, BOS SFPD, OES).		Norris	2/19/2012	2/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.02.06	Coordinate and update revised construction sequencing and plans to the construction schedule.			Addendum to Contract Documents and updated project documents.		Wang	4/4/2012	8/1/2012	No addendum is anticipated at this time.				Complete
20.03.02.07	Impact (Cost Benefit)												
20.03.02.08	Excavation Support	Improved efficiency (minimizing startup/shutdown times per shift cycle) for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete
20.03.02.09	Excavation	Improved efficiency (minimizing startup/shutdown times per shift cycle) for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete
20.03.02.10	Structure	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete
20.03.02.11	Architecture	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	7/26/2011	4/20/2012	Incorporated into 100% cost estimate				Complete
20.03.02.12	MEP	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate				Complete

Primary Mitigation ID	UMS 20.03.03	Risk Owner	Wang	CP Affected	1253	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed with open access at street level with approval from Permit issuing authority and all effected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding open access for the excavation and construction of the station box. Use convincing evidence that some surface disruptions outweigh cost and schedule impacts.				Root Cause	Interpretation of EIR compliance and interpretation of the Preliminary Engineering (PE) final documents may preclude use of additional open access points at street level.					
Status Update	100% construction documents dated 2/15/2012 show street closures to allow installation of roof beams from wall to wall.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to perform work with improved efficiency.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update			Task Status	
20.03.03.01	Perform Constructability Review.			Constructability Assessment Technical Memorandum		Wang	8/1/2011	12/19/2011	Constructability Review conducted in August 2011.			Complete	
20.03.03.02	Develop cost reduction options and perform a ROM Cost Comparison Analysis between options.			Sketches of Cost-Savings Options (for estimating) and QTO of significant cost driver elements.		Wang	12/19/2011	2/15/2012	No cost reduction options were generated from the constructability review. Contractor is not precluded from open access at street level provided that a 14-foot emergency lane is provided through the construction site.			Complete	
20.03.03.03	Implement selected cost-saving option.			Updated Contract Drawings and Specifications; General Requirements and Special Provisions.		Wang	2/19/2012	8/1/2012	TR drawings and specifications allow the contractor to work with open access along Stockton Street provided that an emergency lane is provided through the construction site.			Complete	
20.03.03.04	Impact (Cost Benefit)												
20.03.03.05	Excavation Support	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.06	Excavation	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.07	Structure	Bottoms-up method will be less sensitive to traffic and on-site restrictions for cost improvement.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.08	Architecture	Improved efficiency and sequencing of work including supply of material and equipment to site.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate			Complete	
20.03.03.09	MEP	Improved efficiency and sequencing of work including supply of material and large equipment to site by improved access.		Cost Estimate Update		Berry	12/19/2011	4/20/2012	Incorporated into 100% cost estimate			Complete	

Primary Mitigation ID	UMS 40.08.01	Risk Owner	Wang	CP Affected	1253	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed utilizing street or lane closures with approval from Permit issuing authority, and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding street and/or lane closures. Use convincing evidence that short term disruptions outweigh cost and schedule impacts.				Root Cause	Regulations for Working San Francisco Streets stipulates maintaining minimum through traffic lanes during normal and moratorium time periods.					
Status Update	Union Square Garage will be used as an access and staging area. 100% TR drawings and specifications allows limited closure of Stockton Street to perform the work.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain Special Traffic Permit to conduct work with street and/or lane closures at the project site							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
40.08.01.01	Research and document traffic requirements governing construction in the ROW and for street/lane closures.			Copy of applicable traffic stipulation which apply to street and lanes closures.		Wang	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book"				Complete
40.08.01.02	Work with Traffic Engineer to overcome project constraints.			Traffic routing plans will delineate appropriate lane closures.		Wang	7/26/2011	2/19/2012	100% Final Design TR plans, dated 2/19/12 and Specification section 01 55 26 delineate lane closures				Complete
40.08.01.03	Obtain concurrences from SFFD.			Documentation showing acceptance from SFFD.		Wang	12/19/2011	2/15/2012	Approval from SFFD for traffic closure on Stockton Street received 2/10/12.				Complete
40.08.01.04	Coordinate design documents with approvals for agreed-upon street/lane closures for the project area.			Update traffic plans, construction sequence drawings, general requirements and special provisions.		Wang	7/26/2011	2/15/2012	100% plans updated to include lane closures on Stockton Street.				Complete
40.08.01.05	Perform Public Outreach for notification (CAG).			Public relations campaign.		Wang	2/19/2012	2/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
40.08.01.06	Obtain concurrences from community.			Documentation showing acceptance from BID, Hoteliers & Merchants, Dept. Rec & Park, BART		Wang	2/19/2012	2/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
40.08.01.07	Coordinate revised design approach with the construction schedule.			Addendum to Contract Documents and updated project documents.		Wang	2/19/2012	8/1/2012	Addendum related to public comment is not anticipated at this time.				Complete
40.08.01.08	Impact (Schedule Benefit)												
40.08.01.09	Project Management & Field Supervision			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete
40.08.01.10	Project Expenses			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete
40.08.01.11	Traffic Control			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete

Primary Mitigation ID	UMS 40.08.02	Risk Owner	Wang	CP Affected	1253	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work outside normal work hours with approval from Permit issuing authority and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding work hours. Use convincing evidence that short-term disruptions outweigh cost and schedule impacts.				Root Cause	Noise Control Ordinance stipulates maintaining certain noise levels for work outside of normal working hours.					
Status Update	FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain permit to perform work outside of normal work hours.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
20.03.02.01	Research, identify and confirm applicability of city codes, local ordinances and EIR for work outside of normal working hours.			Documentation of applicable city codes, rules, regulations (SF Blue Book), local ordinances (Noise Control) & EIR which apply to work		Wang	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book" SF Police Code - Section 2908				Complete
20.03.02.02	Describe expected noise level from construction activities.			Expected noise levels generated during construction.		Benson	7/26/2011	4/2/2012					In Process
20.03.02.03	Obtain concurrence with City Agencies prior to bid opening.			Concurrence establishing the agreement on the work hours with DPW & DBI		Wang	7/26/2011	6/1/2012	Program feels that contract is sufficiently clear in contract documents on contractor's ability to obtain a night noise permit without obtaining concurrence from City Agencies prior to construction.				Complete
20.03.02.04	Implement and coordinate Contract Documents and project documentation based on agreed-upon work hours.			100% Construction Documents		Wang	7/26/2011	2/15/2012	Contract documents allow night work per SF Police Code Section 2908.				Complete
20.03.02.05	Perform Public Outreach for notification prior to construction.			Public Relations Campaign (BID, Hoteliers & Merchants, Dept. Rec & Park, BART, BOS SFPD, OES).		Norris	2/19/2012	2/15/2012	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.02.06	Coordinate and update revised construction sequencing and plans to the construction schedule.			Addendum to Contract Documents and updated project documents.		Wang	2/19/2012	8/1/2012	No addendum is anticipated at this time.				Complete
20.03.02.07	Impact (Schedule Benefit)												
20.03.02.08	Project Management & Field Supervision			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete
20.03.02.09	Project Expenses			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete
20.03.02.10	Traffic Control			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete

Primary Mitigation ID	UMS 40.08.03	Risk Owner	Wang	CP Affected	1253	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed with open access at street level with approval from Permit issuing authority and all effected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding open access for the excavation and construction of the station box. Use convincing evidence that some surface disruptions outweigh cost and schedule impacts.				Root Cause	Interpretation of EIR compliance and interpretation of the Preliminary Engineering (PE) final documents may preclude use of additional open access points at street level.					
Status Update	100% construction documents dated 2/15/2012 show street closures to allow installation of roof beams from wall to wall.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to perform work with improved efficiency.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
40.08.03.01	Perform Constructability Review.			Constructability Assessment Technical Memorandum		Wang	8/1/2011	12/19/2011	Constructability Review conducted in August 2011.				Complete
40.08.03.02	Develop cost reduction options and perform a ROM Cost Comparison Analysis between options.			Sketches of Cost-Savings Options (for estimating) and QTO of significant cost driver elements.		Wang	12/19/2011	2/15/2012	No cost reduction options were generated from the constructability review. Contractor is not precluded from open access at street level provided that a 14-foot emergency lane is provided through the construction site.				Complete
40.08.03.03	Implement selected cost-saving option.			Addendum to Contract Documents and updated project documents.		Wang	2/19/2012	8/1/2012	TR drawings and specifications allow the contractor to work with open access along Stockton Street provided that an emergency lane is provided through the construction site.				Complete
40.08.03.04	Impact (Schedule Benefit)												
40.08.03.05	Project Management & Field Supervision			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete
40.08.03.06	Project Expenses			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete
40.08.03.07	Traffic Control			Construction Schedule Update		Berry	12/19/2011	4/20/2012	Incorporated into MPS				Complete

CTS Station — 20.03.01

Primary Mitigation ID	CTS 20.03.01	Risk Owner	Chin	CP Affected	1254	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed utilizing street or lane closures with approval from Permit issuing authority and all affected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding street and/or lane closures. Use convincing evidence that short term disruptions outweigh cost and schedule impacts.				Root Cause	Regulations for Working San Francisco Streets stipulates maintaining minimum through traffic lanes during normal and moratorium time periods.					
Status Update	Washington Street will be closed to allow construction of the headhouse roof in Washington Street. Traffic will be detoured away from headhouse on Washington.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain Special Traffic Permit to conduct work with street and/or lane closures at the project site.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date					Task Status
20.03.01.01	Research and document traffic requirements governing construction in the ROW and for street/lane closures.			Copy of applicable traffic stipulation which apply to street and lanes closures.		Chin	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book"				Complete
20.03.01.02	Work with Traffic Engineer to overcome project constraints.			Traffic routing plans will delineate appropriate lane closures.		Chin	7/26/2011	10/14/2011	100% Final Design TR plans, dated 2/19/12 and Specification section 01 55 26 delineate lane closures				Complete
20.03.01.03	Obtain concurrences from SFFD & SFPD.			Documentation showing acceptance from SFFD & SFPD.		Chin	10/14/2011	3/19/2012					In Process
20.03.01.04	Coordinate design documents with approvals for agreed-upon street/lane closures for the project area.			Update traffic plans, construction sequence drawings, general requirements and special provisions.		Chin	7/26/2011	12/14/2011	100% plans updated to include parking lane closures on Stockton Street.				Complete
20.03.01.05	Perform Public Outreach for notification (CAG).			Public relations campaign.		Norris	12/14/2011	12/14/2011	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.01.06	Obtain concurrences from community			Documentation showing acceptance from Local Constituents: Churches, Schools, Merchants and Businesses		Norris	12/14/2011	12/14/2011	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.01.07	Coordinate revised design approach with the construction schedule.			Addendum to Contract Documents and updated project documents.		Chin	12/14/2011	6/1/2012	Addendum related to public comment is not anticipated at this time.				Complete
20.03.01.08	Impact (Cost Benefit)												
20.03.01.09	Excavation Support	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate				Complete
20.03.01.10	Excavation	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate				Complete
20.03.01.11	Structure	Improved efficiency and use of multiple shifts for restocking the job and servicing of equipment.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate				Complete

Primary Mitigation ID	CTS 20.03.02	Risk Owner	Chin	CP Affected	1254	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work outside normal work hours with approval from Permit issuing authority and all affected stakeholders.									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding work hours. Use convincing evidence that short-term disruptions outweigh cost and schedule impacts.				Root Cause	Noise Control Ordinance stipulates maintaining certain noise levels for work outside of normal working hours.					
Status Update	FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain permit to perform work outside of normal work hours.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update			Task Status	
20.03.02.01	Research, identify and confirm applicability of city codes, local ordinances and EIR for work outside of normal working hours.			Documentation of applicable city codes, rules, regulations (SF Blue Book), local ordinances (Noise Control) & EIR which apply to work outside normal hours.		Wang	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book" SF Police Code - Section 2908			Complete	
20.03.02.02	Describe expected noise level from construction activities.			Expected noise levels generated during construction.		Benson	7/26/2011	3/2/2012				In Process	
20.03.02.03	Obtain concurrence with City Agencies prior to bid opening.			Concurrence establishing the agreement on the work hours with DPW & DBI		Wang	7/26/2011	4/1/2012	Program feels that contract is sufficiently clear in contract documents on contractor's ability to obtain a night noise permit without obtaining concurrence from City Agencies prior to construction.			Complete	
20.03.02.04	Implement and coordinate Contract Documents and project documentation based on agreed-upon work hours.			100% Construction Documents		Wang	7/26/2011	12/14/2011	Contract documents allow night work per SF Police Code Section 2908.			Complete	
20.03.02.05	Perform Public Outreach for notification prior to construction.			Public Relations Campaign (Churches, Schools, Merchants and Businesses, BOS, SFPD, OES).		Norris	12/19/2012	12/14/2011	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.			Complete	
20.03.02.06	Coordinate and update revised construction sequencing and plans to the construction schedule.			Addendum to Contract Documents and updated project documents.		Wang	2/19/2012	6/1/2012	No addendum is anticipated at this time.			Complete	
20.03.02.07	Impact (Cost Benefit)												
20.03.02.08	Excavation Support	Improved efficiency (minimizing startup/shutdown times per shift cycle) for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.02.09	Excavation	Improved efficiency (minimizing startup/shutdown times per shift cycle) for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.02.10	Structure	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.02.11	Architecture	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.02.12	MEP	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	

CTS Station – 20.03.03

Primary Mitigation ID	CTS 20.03.03	Risk Owner	Chin	CP Affected	1254	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed with open access at street level with approval from Permit issuing authority and all effected stakeholders.									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding open access for the excavation and construction of the station box. Use convincing evidence that some surface disruptions outweigh cost and schedule impacts.				Root Cause	Interpretation of EIR compliance and interpretation of the Preliminary Engineering (PE) final documents may preclude use of additional open access points at street level.					
Status Update	100% construction documents provide access to the headhouse and caverns mainly from the headhouse site.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to perform work with improved efficiency.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update			Task Status	
20.03.03.01	Perform Constructability Review.			Constructability Assessment Technical Memorandum		Chin	1/15/2011	1/15/2011	Constructability Review conducted in January 2011.			Complete	
20.03.03.02	Develop cost reduction options and perform a ROM Cost Comparison Analysis between options.			Sketches of Cost-Savings Options (for estimating) and QTO of significant cost driver elements.		Chin	7/26/2011	12/14/2011	Construction methodology did not change as a result of the constructability review.			Complete	
20.03.03.03	Implement selected cost-saving option.			Updated Contract Drawings and Specifications; General Requirements and Special Provisions.		Chin	7/26/2011	12/16/2011	No cost-saving options for access were implemented.			Complete	
20.03.03.04	Impact (Cost Benefit)												
20.03.03.05	Excavation Support	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.03.06	Excavation	Improved efficiency for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.03.07	Structure	Bottoms-up method will be less sensitive to traffic and on-site restrictions for cost improvement.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.03.08	Architecture	Improved efficiency and sequencing of work including supply of material and equipment to site.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	
20.03.03.09	MEP	Improved efficiency and sequencing of work including supply of material and large equipment to site by improved access.		Cost Estimate Update		Berry	10/14/2011	11/14/2011	Incorporated into 100% cost estimate			Complete	

Primary Mitigation ID	CTS 40.08.01	Risk Owner	Chin	CP Affected	1254	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed utilizing street or lane closures with approval from Permit issuing authority and all affected stakeholders.									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at concensus regarding street and/or lane closures. Use convincing evidence that short term disruptions outweigh cost and schedule impacts.				Root Cause	Regulations for Working San Francisco Streets stipulates maintaining minimum through traffic lanes during normal and moratorium time periods.					
Status Update	Washington Street will be closed to allow construction of the headhouse roof in Washington St. Traffic will be detoured away from headhouse on Washington.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain Special Traffic Permit to conduct work with street and/or lane closures at the project site.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update			Task Status	
40.08.01.01	Research and document traffic requirements governing construction in the ROW and for street/lane closures.			Copy of applicable traffic stipulation which apply to street and lanes closures.		Chin	6/8/2011	7/26/2011	Regualtions for Working in SF Streets - "Blue Book"			Complete	
40.08.01.02	Work with Traffic Engineer to overcome project constraints.			Traffic routing plans will delineate appropriate lane closures.		Chin	7/26/2011	10/14/2011	100% Final Design TR plans, dated 12/19/11 Drawing TR-021 shows complete closure of Stockton Street Specification section 01 55 26 delineate lane closures			Complete	
40.08.01.03	Obtain concurrences from SFFD & SFPD.			Documentation showing acceptance from SFFD & SFPD.		Chin	10/14/2011	12/14/2011	Initial meeting held with SFFD.			Complete	
40.08.01.04	Coordinate design documents with approvals for agreed-upon street/lane closures for the project area.			Update traffic plans, construction sequence drawings, general requirements and special provisions.		Chin	7/26/2011	12/14/2011	100% plans updated to include parking lane closures on Stockton Street.			Complete	
40.08.01.05	Perform Public Outreach for notification (CAG).			Public relations campaign.		Norris	12/14/2011	12/14/2011	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.			Complete	
40.08.01.06	Obtain concurrences from community.			Documentation showing acceptance from Local Constituents: Churches, Schools, Merchants and Businesses		Norris	12/14/2011	12/14/2011	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.			Complete	
40.08.01.07	Coordinate revised design approach with the construction schedule.			Addendum to Contract Documents and updated project documents.		Chin	2/19/2012	4/26/2012	Addendum related to public comment is not anticipated at this time.			Complete	
40.08.01.08	Impact (Schedule Benefit)												
40.08.01.09	Project Management & Field Supervision			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS			Complete	
40.08.01.10	Project Expenses			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS			Complete	
40.08.01.11	Traffic Control			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS			Complete	

CTS Station — 40.08.02

Primary Mitigation ID	CTS 40.08.02	Risk Owner	Chin	CP Affected	1254	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work outside normal work hours with approval from Permit issuing authority and all affected stakeholders.									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding work hours. Use convincing evidence that short-term disruptions outweigh cost and schedule impacts.				Root Cause	Noise Control Ordinance stipulates maintaining certain noise levels for work outside of normal working hours.					
Status Update	FEIR contains expected noise levels. BIH Noise & Vibration Control Plan will provide additional information on noise.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to obtain permit to perform work outside of normal work hours.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
20.03.02.01	Research, identify and confirm applicability of city codes, local ordinances and EIR for work outside of normal working hours.			Documentation of applicable city codes, rules, regulations (SF Blue Book), local ordinances (Noise Control) & EIR which apply to work during construction.		Wang	6/8/2011	7/26/2011	Regulations for Working in SF Streets - "Blue Book" SF Police Code - Section 2908				Complete
20.03.02.02	Describe expected noise level from construction activities.			Expected noise levels generated during construction.		Benson	7/26/2011	1/2/2012					In Process
20.03.02.03	Obtain concurrence with City Agencies prior to bid opening.			Concurrence establishing the agreement on the work hours with DPW & DBI		Wang	7/26/2011	4/1/2012	Program feels that contract is sufficiently clear in contract documents on contractor's ability to obtain a night noise permit without obtaining concurrence from City Agencies prior to construction.				Complete
20.03.02.04	Implement and coordinate Contract Documents and project documentation based on agreed-upon work hours.			100% Construction Documents		Wang	7/26/2011	12/14/2011	Contract documents allow night work per SF Police Code Section 2908.				Complete
20.03.02.05	Perform Public Outreach for notification prior to construction.			Public Relations Campaign (Churches, Schools, Merchants and Businesses, BOS, SFPD, OES).		Norris	12/19/2012	12/14/2011	Public outreach will be performed after contract award once contractor's schedule and work plans submittals become available. Contract documents require contractor to participate in Public Outreach.				Complete
20.03.02.06	Coordinate and update revised construction sequencing and plans to the construction schedule.			Addendum to Contract Documents and updated project documents.		Wang	2/19/2012	6/1/2012	No addendum is anticipated at this time.				Complete
20.03.02.07	Impact (Schedule Benefit)												
20.03.02.08	Project Management & Field Supervision			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS				Complete
20.03.02.09	Project Expenses			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS				Complete
20.03.02.10	Traffic Control			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS				Complete

CTS Station — 40.08.03

Primary Mitigation ID	CTS 40.08.03	Risk Owner	Chin	CP Affected	1254	Risk Type	Risk	Origination Date	6/8/2011	Last Update	5/10/2012	Date of Next Handling Step	
Mitigation Title	Work performed with open access at street level with approval from Permit issuing authority and all effected stakeholders									CSP Risk Category	Stations	FTA Risk Category	Construction
Handling Approach	Mitigate	Handling Approach Strategy	Work with City Agencies and stakeholders to arrive at consensus regarding open access for the excavation and construction of the station box. Use convincing evidence that some surface disruptions outweigh cost and schedule impacts.				Root Cause	Interpretation of EIR compliance and interpretation of the Preliminary Engineering (PE) final documents may preclude use of additional open access points at street level.					
Status Update	Access to the headhouse and caverns is planned to occur mainly from the headhouse site.												
Retirement Date		Risk Expiration Deadline	Prior to Contact Bid	Retirement Rationale	Provide evidence of ability for contractor to perform work with improved efficiency.							Current Risk Level	
Handling Activity	Description of Activity to complete the Handling Activity			Expected Deliverable		Task Owner	Start Date	Finish Date	Update				Task Status
40.08.03.01	Perform Constructability Review.			Constructability Assessment Technical Memorandum		Chin	1/15/2011	1/15/2011	Constructability Review conducted in January 2011.				Complete
40.08.03.02	Develop cost reduction options and perform a ROM Cost Comparison Analysis between options.			Sketches of Cost-Savings Options (for estimating) and QTO of significant cost driver elements.		Chin	7/26/2011	12/14/2011	Construction methodology did not change as a result of the constructability review.				Complete
40.08.03.03	Implement selected cost-saving option.			Updated Contract Drawings and Specifications; General Requirements and Special Provisions.		Chin	7/26/2011	12/16/2011	No cost-saving options for access were implemented.				Complete
40.08.03.04	Impact (Schedule Benefit)												
40.08.03.05	Project Management & Field Supervision			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS				Complete
40.08.03.06	Project Expenses			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS				Complete
40.08.03.07	Traffic Control			Construction Schedule Update		Berry	10/14/2011	11/14/2011	Incorporated into MPS				Complete