


## Memorandum

CS Memorandum No. 1358

**To:** Distribution

**From:** Beverly Ward, CMB/Risk Management Assistant 

**Date:** February 15, 2013

**Reference:** Project No. M544.1, Contract No. CS-149  
Task No. 1-8.02, Change Control

**Subject:** Configuration Management Board Meeting No. 113

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Attached please find minutes for Configuration Management Board Meeting No. 113 held on February 13, 2013.

Attachments: CMB Meeting No. 113 Rev. 0 Minutes with attachments

**Cc:** David Kuehn, STV (w/attachments) [david.kuehn@stvinc.com](mailto:david.kuehn@stvinc.com)  
Shahnam Farhangi, SFMTA (w/attachments)  
Arthur Wong, SFMTA (w/attachments)  
Mark Latch, CSP (w/attachments)  
Jane Wang, SFMTA (w/attachments)  
Aileen Read, CSDG (w/attachments)  
CS File No. M544.1.5.0890

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**Distribution:**

Brad Lebovitz, STV [bradley.lebovitz@stvinc.com](mailto:bradley.lebovitz@stvinc.com)  
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John Funghi, SFMTA  
Albert Hoe, SFMTA  
Joon Park, SFMTA  
Roger Nguyen, SFMTA  
Richard Redmond, CSP  
Ross Edwards, CSP  
Eric Stassevitch, CSP  
Mark Benson, CSP  
Beverly Ward, CSP  
Sarah Wilson, CSP  
Mun Leong, CSP  
Ken Barnhart, CSP

## CMB Meeting Minutes #113

DATE: February 14, 2013

MEETING DATE: **February 13, 2013**

LOCATION: 821 Howard St, Main Conference Room

TIME: 3:00 PM

ATTENDEES: J Funghi (JF), A. Hoe (AH), J. Park (JP), R. Nguyen (RN), R. Edwards (RE), M. Benson (MB), R. Redmond (RR), E. Stassevitch (ES), B. Ward (BW), S. Wilson (SW), K. Barnhart (KB), M. Leong (ML), L. Zurinaga (LZ), B. Lebovitz (BL)

COPIES TO: Attendees: S. Farhangi (SF), A. Wong (AW), M. Latch (ML), J. Wang (JW), A. Read (AR), D. Kuehn (DK)  
File No. M544.1.5.0890

REFERENCE: Project No. M544.1, Contract No. 149 Task 1-8.02  
Final Design

SUBJECT: Configuration Management Board Meeting # 113 – Rev. No. 0

### RECORD OF MEETING *(Italicized text indicates status update of open items)*

ITEM #	DISCUSSION	ACTION BY DUE DATE
1- 12/19/12	1251 – M. Acosta presented a Final Contract Value for CMods 1 through 12 and the remaining contract modification 13 thru 30 for a total value of \$21,107,191. A final Bid Item Analysis determined there are 40 each (\$299,008K) in unused bid items. The RE calculated the General Condition rate of 19.69% costs/credits from under/over usage. In addition the CMB directed the RE to use 15% General Conditions rate instead of the 19.69%. This item will be brought back to the CMB with the revised final contract cost. 01/02: The Construction Manager reported the SFMTA Contract Administrator did not agree with the over/under usage for General Condition's rate of 15% and is not prepared to sign off unless evidence of an actual analysis is presented. The CMB directed the RE to write a paragraph of introduction stating that a thorough analysis of CN1250 was done and as in CN1251 the same Contractor same staff and equipment were used and based on that a calculation rate of 18% was reach, so a rate of 15% for general condition over/under will be used in CN1251. Status: 02/13 <i>The final closeout Contract Modification #30 for 1251 was presented reconciling the quantities with no adjustments to the bid items as agreed to by the Contract Administrator. The final contract value is under budget at \$20,794,581.48.</i> <b>CLOSED</b>	
1- 01/23/13	1251 – M. Benson presented for information Form B Analysis - Final Form B. The Analysis is based on initial Form B estimate established in October 2010. The final Form B established in December 2012 shows the actual cost paid to the Contractor for the scope of Form B work. The differences shown between the Engineers estimate and the final in the Form B are due to an overestimate of the initial Form B amount. The CMB requested that the analysis be revised to show the delta difference in the executive summary, and using the final progress payment the amount paid to date (what we received). 01/23: A revised Form B analysis was presented along with a comparison sheet by bid item discipline of the	

ITEM #	DISCUSSION	ACTION BY DUE DATE
	<p>Engineer Estimate, Award, Original, Final Form B and Close Out Modification. The Estimator contends that the original Form B calculation was incorrect. Confirmation of the estimators' calculation method was verified by the 1251 Utility Coordinator. The spreadsheet also includes as a separate line item for the contract modifications at 100% on the Final Form B. The CMB requested the Estimator take a look at adding to the Final Form B a percentage for 1) Pavement Restoration - Repaving the street for the Moratorium and putting the sidewalk back twice, 2) Structural – Walls built so we could build the joint trench, 3) Traffic Control, and 4 Archeologist to look at the joint trench. This item will be brought back to the CMB at a later date. 01/30: A revised analysis was presented showing adjustments to each bid item incorporating the additional cost into the Final Form B columns. The methodology for distributing costs was questioned and direction was given to the Estimator to use a different methodology for assigning the allocated cost of items common to the work items and bring back to CMB for approval. Status: 02/13 <i>An additional analysis was submitted by R. Edwards and K. Barnhart as a sanity check to show a different methodology of demonstrating the final Form B distribution as calculated is in line with the final form B amount calculations presented previously by the Program's Estimator (see attached).</i> <b>CLOSED</b></p>	
<p>1- 01/30/13</p>	<p>1252 – S. Wilson presented Evaluation of Merit of, <b>COR 030</b> – LB – Class 1 Hazardous Material Haul off – Increase allowance amount for Excavation and disposal of the Hazardous Material spoils to allow payment to the Contractor. Site development of the Caltrans lease area and trenching to install the temporary electrical substation for TBM power generated spoils that were deemed hazardous. Following procedures outlined in contract the Contractor took spoils from the excavation work of the Caltrans yard, stockpiled the material, tested and pre classified it as required by the potential disposal facilities test levels. A total of 4,065.70 tons of hazardous materials (lead being the primary contaminant) was encountered and disposed of at Class 1 facilities. The <b>CMB did not agree with merit</b> requesting the RE look into how pre classified material was segregated and tested, if independent testing (validation) was performed on test indicating high level of contaminants and how decisions were made related to Contractor's means and methods versus contract work. Status: 02/13 <i>The RE presented additional information in an effort to support the position of merit that excavated material that was generated by Contractor's means and methods of site development and determined to be Hazardous Material should be the Owner's responsibility. The CMB did not agree with merit for the work as presented. SFMTA is not obligated to pay for items resulting from the Contractor's means and methods (see attached).</i></p>	
<p>4- 01/30/13</p>	<p>1252 – R. Redmond presented for information an issue escalation write up as discussed between the Contractor (BIH) and SFMTA regarding the unresolved issue of payment of indirect costs for Time related changes. Using COR 008 TIA of 7days related to (COR 001, 002 and 003) as an approach for setting precedence where time is involved the proposed Joint Resolution: SFMTA agrees to review and payment of "Time Related/variable Indirect Cost Only and OH cost as outline in the General Provision – Article 6.04B and 6.04C that are time related cost. BIH will revise their submittal of indirect costs to align with recent discussions at the RE level regarding acceptable categories of costs. The concept as laid out (see attached) will go forward provided the indirects can be substantiated. A review of the Contractor's revised categories will be reviewed by the SFMTA Contract Administrator prior to approval given to the Contractor. In addition the SFMTA's Contract Administrator suggested the language in the "Joint Resolution" section be revised to be more consistent "SFMTA agrees; SFMTA disagrees..." This item will be brought back to the CMB at a later date. Status: 02/13 <i>Informational material was submitted outlining the categories considered for agreement for the Contractor's indirect costs related to impacts/delays. The RE has agreed to the categories but agreement to components of those categories is still pending. The CMB directed the RE to meet with the Contractor to obtain a final agreement on indirects for compensable delays and bring back to the CMB the final unit cost</i></p>	

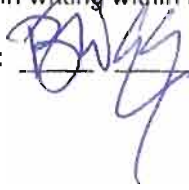
ITEM #	DISCUSSION	ACTION BY DUE DATE
	<i>information of the change following the guidelines presented.</i>	
1-	1251 – M. Benson presented for approval Contract Modification #24 - Additional Work Related to PG&E Facilities. Trends #05 Additional work to work around and shift existing PG&E conduits on Geary Blvd. at 2 locations, #46 Additional cost for enlarging PG&E Vault No. 584 on O'Farrell east of Stockton, #51 Intercept existing PG&E duct bank and terminate into Vault No. 5464 at Market/Ellis, #55 Install Swiveloc lids on 7EA PG&E vaults, #61 Excavate for PG&E service cut-over at 177 Stillman, #63 Excavation and restoration for PG&E gas tie-in and kill holes (Part II) , #66 Intercept PG&E conduits at Vault No. 573 at Geary east of Stockton, #69 Removal of abandoned PG&E gas valve (8EA) and installation of anodes, #79 Additional work related to the installation of PG&E Vault Nos. 467, 571, 573, 586 and 594 (including joint trench leading to these vaults) and, Trend #81 Use of regular concrete instead of CDF to cover PG&E electrical ductbanks. PG&E is in agreement with the cost and has agreed to compensate SFMTA for the modification amount of \$333,214. <b>AGREE – CMB 0107.</b>	
2-	1252 - R. Redmond presented a draft letter of response to the Contractor's Value Engineering Change Proposal (VCEP) to perform an alternate method of ground treatment at Cross Passage (CP) No.5 to support the excavation and construction instead of the method designed in the Contract Documents. The Contractor proposes implementing a "ground freezing" methodology at no cost or schedule risk to SFMTA with the warrant of maintaining the integrity of the surrounding structures. In general the CMB agreed with the change and contents of the response letter. The letter requires revisions to reflect items discussed and will be sent after further review of schedule and submittal comments. The Designer has reviewed the submittal proposal and believes the process is feasible but notes that the DSC clause should be addressed.	
3-	The Program Trend/Change Control Log version 02/13/13 was viewed at this week's meeting demonstrating the linkage of the Program's Trend/Change Log and Contract 1252 Trend log; linking specific cells to ensure the current information at the Project level is accurately reflected in the Program's log.	

**ACTION ITEMS**

ITEM #	MTG DATE	MTG ACTION DATE	DESCRIPTION	BIC	DUE DATE	STATUS
5	08/08/12	08/29/12	1252 – PCC 1252-02 UMS Headwalls	MB	10/10/12	Open
1	11/07/12	11/07/12	1300 – WP 1254 – SF Planning Request	RE	11/28/12	Open
3	11/14/12	11/14/12	1252 – COR 033 – Retrieval Shaft – 20" Water Line	SW	11/21/12	Open
2	12/12/12	12/12/12	1252 – Validation 1300 docs include as built information regarding Asbestos Pipes	RE	01/09/13	Open
1	12/19/12	12/19/12	1251 – Revised final contract cost	MB	01/16/13	<b>Closed</b>
1	01/23/13	01/23/13	1251 - Form B Comparison – Additional shared percentages	KB/MB	02/06/13	<b>Closed</b>
1	01/30/13	01/30/13	1251 - Form B Allocated Methodology	KB	02/06/13	<b>Closed</b>
5	01/30/13	01/30/13	1252 – Micropiles – As built condition explanation	ML/MB	01/31/13	Open

Meeting adjourned at 6:10pm

These meeting minutes have been prepared by B. Ward and reviewed by, E. Stassevitch and are the preparer's interpretation of discussions that took place. If the reader's interpretation differs, please contact the author in writing within four (4) days of receipt of these minutes.

Signed:  [initials of preparer & reviewer] Date: 15 Feb 13 [Date review completed]

## Meeting Agenda

**Project No. M544.1, Contract No. CS-149**  
**Program/Construction Management**  
**Configuration Management Board (CMB) Meeting No. 113**  
**February 13, 2013**  
**3:00pm – 5:00pm**  
 Central Subway Project Office  
 821 Howard St. 2<sup>nd</sup> Floor  
 Main Conference Room

**Attendees:**

Mark Benson	Albert Hoe	Matt Lee	Beverly Ward
Ross Edwards	Jim Kelly	Roger Nguyen	Sarah Wilson
Shahnam Farhangi	David Kuehn	Joon Park	Arthur Wong
John Funghi	Mark Latch	Richard Redmond	Luis Zurinaga
John Haley	Brad Lebovitz	Eric Stassevitch	

1. **1251** – Form B - True Up - *Follow up*
  - CMod No. 24 - PG&E Changes II - *Follow up; Cost (PG&E Form B agreement)*
  - CMod No. 30 - Final Bid Item Reconciliation/Credit for Damaged Utilities - *Follow up (Removal of Bid Item Unit Price adjustments)*
  
2. **1252** – COR 030 - Class 1 Hazardous Material Haul off - *Follow up*
  - COR 008 - TIA - Associated w/ COR 001, COR 002, and COR 003 - *Follow up*
  - Cross Passage #5 – VE Proposal
  
3. **Trend/Change Log** – 02/13/13
  
4. **Other Business** – CMod Task Force
  - Action Items – *Update*

## Meeting Attendance Sheet

Project No. M544.1, Contract No. 149  
 Program/Construction Management  
 Configuration Management Board Meeting No. 113  
 February 13, 2013  
 3:00 p.m. – 5:00 p.m.  
 Central Subway Project Office  
 821 Howard, 2<sup>nd</sup> Floor  
 Main Conference Room

*Deliver Meeting Attendance Sheet with original signatures/Initials to Document Control.*

NAME	AFFILIATION	PHONE	E-MAIL (for minutes)	INITIALS
Please enter initials if your name is listed below. Please enter name, affiliation, phone number and email address if your name is not listed below.				
Benson, Mark	CSP	(415) 701-4295	Mark.Benson@sfmta.com	<i>MCB</i>
Edwards, Ross	CSP	(415) 701-5296	Ross.Edwards@sfmta.com	<i>RE</i>
Farhangi, Shahnam	SFMTA	(415) 554-0721	Shahnam.Farhangi@sfmta.com	
Funghi, John	SFMTA	(415) 701-4299	John.Funghi@sfmta.com	<i>EF</i>
Haley, John	SFMTA		John.Haley@sfmta.com	
Hoe, Albert	SFMTA	(415) 701-4289	Albert.Hoe@sfmta.com	<i>AH</i>
Kelly, Jim	SFMTA		Jim.Kelly@sfmta.com	
Kuehn, David	STV/PMOC	(510) 464-8053	David.kuehn@stvinc.com	
Latch, Mark	CSP	(415) 701-5294	Mark.Latch@sfmta.com	
Lebovitz, Brad	STV/PMOC	(510) 464-8052	Bradley.lebovitz@stvinc.com	<i>BL</i>
Lee, Matt	SFCTA	(415) 522-4813	matt@sfcta.org	
Nguyen, Roger	SFMTA	(415) 701-4312	Roger.Nguyen@sfmta.com	<i>PN</i>

central **T** subway

NAME	AFFILIATION	PHONE	E-MAIL (for minutes)	INITIALS
Park, Joon	SFMTA	(415) 701-4742	Joon.Park@sfmta.com	J.P.
Redmond, Richard	CSP	(415) 701-4288	Richard.Redmond@sfmta.com	RR
Stassevitch, Eric	CSP	(415) 701-4426	Eric.Stassevitch@sfmta.com	ES
Ward, Beverly	CSP	(415) 701-5291	Beverly.Ward@sfmta.com	BW
Wilson, Sarah	CSP	(415) 243-0950	Sarah.Wilson@sfmta.com	SW
Wong, Arthur	SFMTA	(415) 701-4305	Arthur.Wong@sfmta.com	
Zurinaga, Luis	SFCTA	(415) 716-6956	Luis.zurinaga@sfcta.org	LZ
Ken Barnhart	PCC	7-5274	Kenneth.Barnhart@sfcta	KB
MUN LEONG	SFMTA	(415) 531-9476	MUN.LEONG@SFMTA.COM	ML



		Unrelated to JT	Shared by JT / Unrelated	JT Exclusive	JT Portion	Rough Form B Amount
GE	\$ 3,240,080.00		\$ 3,240,080.00		51%	\$ 1,648,470.74
SP	\$ 70,000.00			\$ 70,000.00	100%	\$ 70,000.00
TR	\$ 826,725.00		\$ 826,725.00		51%	\$ 420,616.77
UD	\$ 318,750.00		\$ 318,750.00		51%	\$ 162,171.94
SD	\$ 637,159.00			\$ 637,159.00	51%	\$ 324,170.38
WP	\$ 350,000.00			\$ 350,000.00	100%	\$ 350,000.00
JT	\$ 1,606,649.00			\$ 1,606,649.00	100%	\$ 1,606,649.00
JT	\$ 511,250.00			\$ 511,250.00	100%	\$ 511,250.00
JT	\$ 1,031,712.00			\$ 1,031,712.00	100%	\$ 1,031,712.00
SW	\$ 1,726,740.00	\$ 1,726,740.00			0%	\$ -
WD	\$ 526,810.00	\$ 526,810.00			0%	\$ -
AW	\$ 1,013,050.00	\$ 1,013,050.00			0%	\$ -
RP	\$ 893,450.00		\$ 893,450.00		51%	\$ 454,564.76
ET	\$ 133,000.00	\$ 133,000.00			0%	\$ -
SR	\$ 1,539,100.00			\$ 1,539,100.00	100%	\$ 1,539,100.00
MP	\$ 200,000.00		\$ 200,000.00		51%	\$ 101,754.94
EL	\$ 150,000.00	\$ 150,000.00			0%	\$ -
TP	\$ 156,200.00	\$ 156,200.00			0%	\$ -
OV	\$ 1,769,375.00	\$ 1,769,375.00			0%	\$ -
SO	\$ 72,500.00	\$ 72,500.00			0%	\$ -
	<b>\$ 16,772,550.00</b>	<b>\$ 5,547,675.00</b>	<b>\$ 5,479,005.00</b>	<b>\$ 5,745,870.00</b>		<b>\$ 8,220,460.52</b>
		A	B	C		

$C / (A+C) = 51\% = \text{JT Share of "Shared by JT / Unrelated"}$
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SCHEDULE OF BID PRICES  
 CONTRACT NO. 1251  
 CENTRAL SUBWAY  
 UNION SQUARE/MARKET STREET UTILITY RELOCATION

SCHEDULE OF BID PRICES

Name of Bidder: \_\_\_\_\_

**San Francisco Transportation Agency - Third St. Light Rail Program Phase 2 - Central Subway Project**

Contract 1251 - Union Square/Market Street Station Utility Relocation

Bid Item No.	Item Description	Total Amount (Engineer's Estimate)		Award (SPM)		Original Form B		Final Form B		Close Out Modification	
		Unit Price	Total Amount	Unit Price	Total Amount				Total Amount		Total Amount
<b>BASE BID ITEMS</b>											
<b>GENERAL - GE</b>											
GE-1	MOBILIZATION AND DEMOBILIZATION		\$550,000		2,500,000.00		373,436.00		1,039,682.81		2,500,000.00
GE-2	CURRENT SCHEDULES		\$14,482		20,000.00				8,317.46		20,000.00
GE-3	ALLOWANCE FOR REIMBURSABLE EXPENSES		\$50,000		50,000.00						40,601.94
GE-4	ALLOWANCE FOR DIFFERING SITE CONDITIONS		\$570,000		570,000.00						570,000.00
GE-5	TRENCH BOTTOM STABILIZATION	\$217	\$24,330	90.00	10,080.00						5,760.00
GE-6	838 MARKET STREET PLUMBING ALLOWANCE		\$90,000		90,000.00						0.00
	<b>Total</b>		<b>\$1,298,811</b>		<b>\$3,240,080</b>		<b>\$373,436</b>		<b>\$1,048,000</b>		<b>\$3,136,362</b>
<b>SPECIAL PROVISIONS - SP</b>											
SP-7A	CUSTOM BARRICADES	\$116	\$115,855	40.00	40,000.00						40,000.00
SP-7B	GRAPHIC PANELS	\$29	\$57,928	15.00	30,000.00						30,000.00
	<b>Total</b>		<b>\$173,783</b>		<b>\$70,000</b>		<b>\$0</b>		<b>\$0</b>		<b>\$70,000</b>
<b>TEMPORARY TRAFFIC ROUTING - TR</b>											
TR-1	TRAFFIC REGULATION		\$362,047		500,000.00		330,358.00		207,936.56		500,000.00
TR-2	TRAFFIC WATER FILLED BARRIER	\$1,448	\$72,409	300.00	15,000.00				6,238.10		15,000.00
TR-3	CHANGEABLE MESSAGE SIGNS	\$21,723	\$108,614	13,000.00	65,000.00		330,358.00		27,031.75		65,000.00
TR-4	CONSTRUCTION AREA AND SPECIAL TRAFFIC SIGNS	\$290	\$8,689	100.00	3,000.00				1,247.62		3,000.00
TR-5	TEMPORARY PAVEMENT MARKING, DELINEATION TAPE AND OVERLAY RAISED MARKERS AFTER FINAL PAVING		\$36,205		5,600.00		150,000.00		2,328.89		5,600.00
TR-6	TRAFFIC SUPERVISORS PROVIDED BY TRAFFIC SUB-CONTRACTOR	\$80	\$125,449	75.00	118,125.00				72,840.70		175,151.25
TR-7	ALLOWANCE FOR MANUAL TRAFFIC CONTROL		\$120,000		120,000.00				49,904.77		120,000.00
	<b>Total</b>		<b>\$833,414</b>		<b>\$826,725</b>		<b>\$810,716</b>		<b>\$367,528</b>		<b>\$883,751</b>
<b>DEMOLITION - UD</b>											
UD-1	RELOCATE THREE TREES IN PLANTER BOXES		\$3,085		2,000.00				2,000.00		2,000.00
UD-2	RELOCATE FOURTEEN TREES IN PLANTER BOXES		\$14,394		3,500.00				2,498.95		2,498.95
UD-3	HANDLING AND DISPOSAL OF STREET TREES		\$1,542		3,000.00				1,247.62		3,000.00
UD-4A	PARTIAL DEMOLITION OF PG&E VAULT 1857		\$12,858		7,000.00						0.00
UD-4B	PARTIAL DEMOLITION OF PG&E VAULT 5464		\$12,858		7,000.00						0.00
UD-5	HANDLING AND DISPOSAL OF CALIFORNIA CLASS 1 (NON-RCRA) HAZARDOUS WASTE	\$71	\$354,806	15.00	75,000.00						0.00
UD-6	TRANSPORTATION OF CALIFORNIA CLASS 1 (NON-RCRA) HAZARDOUS WASTE	\$51	\$253,433	17.00	85,000.00						0.00
UD-7	HANDLING AND DISPOSAL OF CALIFORNIA CLASS 2 (NON-HAZARDOUS) EXCAVATED MATERIAL	\$22	\$21,723	15.00	15,000.00				37,428.58		90,000.00
UD-8	TRANSPORTATION OF CALIFORNIA CLASS 2 (NON-HAZARDOUS) EXCAVATED MATERIAL	\$29	\$28,964	15.00	15,000.00				37,428.58		90,000.00
UD-9	ADDITIONAL EXPLORATORY HOLES	\$1,448	\$72,409	55.00	2,750.00						0.00
UD-10	PRE-EXCAVATION ENVIRONMENTAL SOIL PROFILING		\$36,205		14,000.00				5,822.22		14,000.00
UD-11	REMOVE AND REINSTALL STREETLIGHT POLE ON NEW FOUNDATION		\$5,758		6,000.00				6,000.00		6,000.00
UD-12	RELOCATE THREE FLOWER STANDS		\$21,723		13,500.00				13,500.00		13,500.00
UD-13	ALL DEMOLITION WORK WHICH IS OTHERWISE NOT PAID FOR		\$81,387		50,000.00				20,793.66		50,000.00
UD-14	ALLOWANCE OF UTILITY SERVICES FOR THREE FLOWER STANDS		\$20,000		20,000.00				8,140.68		19,574.91
	<b>Total</b>		<b>\$941,145</b>		<b>\$318,750</b>		<b>\$0</b>		<b>\$134,860</b>		<b>\$290,574</b>
<b>STRUCTURAL DEMOLITION - SD</b>											
SD-1	REMOVE ELEVATOR PIT AND HATCH	\$32,270	\$64,540	6,000.00	12,000.00				12,000.00		12,000.00
SD-2	REMOVE SEWER EJECTOR SUMP PIT	\$14,482	\$72,409	2,000.00	10,000.00				10,000.00		10,000.00
SD-3	REMOVE GAS VAULT AND HATCH		\$1,232		4,000.00				4,000.00		4,000.00
SD-4	REMOVE FUEL TANK AND FOUNDATION		\$108,614		15,000.00				15,000.00		15,000.00

SCHEDULE OF BID PRICES  
 CONTRACT NO. 1251  
 CENTRAL SUBWAY  
 UNION SQUARE/MARKET STREET UTILITY RELOCATION

SCHEDULE OF BID PRICES

Name of Bidder: \_\_\_\_\_

Contract 1251 - Union Square/Market Street Station Utility Relocation		Total Amount (Engineer's Estimate)		Award (SPM)		Original Form B		Final Form B		Close Out Modification	
		Bid Item No.	Item Description	Unit Price	Total Amount	Unit Price	Total Amount			Total Amount	Total Amount
SD-5	REMOVE AT&T VAULT AND HATCH		\$6,162		4,000.00				4,000.00		4,000.00
SD-6	REMOVE INTERIOR BASEMENT WALLS	\$41	\$281,306	20.00	137,360.00				104,835.00		104,835.00
SD-7	REMOVE EXTERIOR BASEMENT WALLS	\$45	\$81,859	30.00	54,450.00				44,565.00		44,565.00
SD-8	REMOVE BASMENT SLAB ON GRADE	\$19	\$134,002	17.00	119,799.00				149,345.00		149,345.00
SD-9	REMOVE ELEVATED STRUCTURAL SLABS AND STRUCTURAL SIDEWALKS	\$19	\$331,933	10.00	174,550.00				147,320.00		147,320.00
SD-10	REMOVE RAISED CONCRETE PLATFORM		\$72,409		6,000.00				6,000.00		6,000.00
SD-11	ALLOWANCE FOR STRUCTURAL DEMOLITION ITEMS NOT SPECIFIED		\$100,000		100,000.00				34,822.47		83,733.40
	<b>Total</b>		<b>\$1,254,468</b>		<b>\$637,159</b>			<b>\$0</b>	<b>\$531,887</b>		<b>\$580,798</b>
	<b>WATERPROOFING - WP</b>										
WP-1	BUILDING WATERPROOFING		\$315,614		\$350,000			\$0	\$350,000		\$350,000
	<b>JOINT TRENCH - JT</b>										
JT-1	FURNISH AND INSTALL JT IN SUBSIDEWALK BASEMENT		\$727,694		225,000.00				225,000.00		225,000.00
JT-2	FURNISH AND INSTALL CDF BACKFILL IN SUBSIDEWALK BASEMENT	\$185	\$1,323,725	82.00	587,202.00						619,122.14
JT-3	FURNISH AND INSTALL SAND BACKFILL IN SUBSIDEWALK BASEMENT	\$77	\$35,152	50.00	22,850.00				10,900.00		10,900.00
	<b>JOINT UTILITY TRENCH: DEPTH ≤ 5-FT</b>										
JT-4	WIDTH ≤ 3- FEET	\$232	\$461,396	170.00	338,300.00				134,470.00		148,070.00
JT-5	WIDTH > 3- FEET	\$350	\$87,591	315.00	78,750.00		2,621,925.00		340,200.00		302,400.00
	<b>JOINT UTILITY TRENCH: 5-FT &lt; DEPTH ≤ 10-FT</b>										
JT-6	WIDTH ≤ 3- FEET	\$452	\$82,243	234.00	42,588.00				66,924.00		84,240.00
JT-7	WIDTH > 3- FEET	\$574	\$591,301	241.00	248,471.00				396,445.00		423,919.00
	<b>JOINT UTILITY TRENCH: DEPTH &gt; 10-FT</b>										
JT-8	ALL WIDTHS	\$927	\$237,336	248.00	63,488.00				74,896.00		77,376.00
	<b>Total</b>		<b>\$3,546,438</b>		<b>\$1,606,649</b>		<b>\$2,621,925</b>		<b>\$1,248,835</b>		<b>\$1,891,027</b>
	<b>JOINT TRENCH UTILITY VAULTS</b>										
9	JT-9	INTERCEPT UTILITY VAULTS TYPE PTS69 - 6 x 19 x 9	\$87,727	\$175,454	35,000.00	70,000.00			70,000.00		70,000.00
10	JT-10	INTERCEPT UTILITY VAULTS TYPE PTS69 - 6 x 14 x 9	\$71,080	\$71,080	30,000.00	30,000.00			30,000.00		30,000.00
11	JT-11	INTERCEPT UTILITY VAULTS TYPE PTS69 - 6 x 9 x 9	\$53,133	\$159,399	20,000.00	60,000.00			60,000.00		60,000.00
12	JT-12	UTILITY VAULTS T4	\$5,733	\$11,467	4,000.00	8,000.00					0.00
13	JT-13	PGE VAULT 10 x 10 x 10	\$149,347	\$149,347	25,000.00	25,000.00			25,000.00		25,000.00
14	JT-14	PGE VAULT 10 x 5.5 x 10	\$60,507	\$60,507	25,000.00	25,000.00			25,000.00		25,000.00
15	JT-15	PGE VAULT 8 x 12 x 10	\$79,075	\$79,075	25,000.00	25,000.00			50,000.00		50,000.00
16	JT-16	PGE VAULT 7 x 12 x 10	\$73,736	\$147,472	25,000.00	50,000.00			25,000.00		25,000.00
17	JT-17	PGE VAULT 7 x 10 x 10	\$65,736	\$65,736	25,000.00	25,000.00			25,000.00		25,000.00
18	JT-18	PGE VAULT 4.5 x 8.5 x 7.5	\$38,343	\$191,713	15,000.00	75,000.00			45,000.00		45,000.00
19	JT-19	UTILITY VAULT T3	\$3,229	\$9,688	3,000.00	9,000.00			3,000.00		3,000.00
20	JT-20	UTILITY VAULT TYPE 4 x 4 x 4	\$17,218	\$17,218	4,000.00	4,000.00					0.00
21	JT-21	UTILITY VAULT TYPE 3 x 5 x 4	\$13,880	\$83,278	5,000.00	30,000.00			30,000.00		30,000.00
22	JT-22	UTILITY VAULT TYPE I	\$1,938	\$1,938	325.00	325.00			2,600.00		2,600.00
23	JT-23	UTILITY VAULTS TYPE I-TR	\$1,938	\$13,564	325.00	2,275.00			325.00		325.00
24	JT-24	UTILITY VAULTS TYPE II	\$2,325	\$13,950	400.00	2,400.00			800.00		800.00
25	JT-25	UTILITY VAULTS TYPE II-TR	\$2,326	\$2,326	400.00	400.00					0.00
26	JT-26	UTILITY VAULTS TYPE III	\$2,325	\$9,300	600.00	2,400.00					0.00
27	JT-27	UTILITY VAULTS TYPE III-TR	\$2,326	\$2,326	600.00	600.00					0.00
28	JT-28	UTILITY VAULTS TYPE III-X	\$2,584	\$12,918	825.00	4,125.00			4,950.00		4,950.00
29	JT-29	UTILITY VAULTS TYPE III-X-TR	\$1,722	\$5,167	825.00	2,475.00			3,300.00		3,300.00
30	JT-30	UTILITY VAULTS TYPE IV-X	\$13,047	\$13,047	1,000.00	1,000.00			6,000.00		6,000.00
31	JT-31	UTILITY VAULTS TYPE IV-X-TR	\$13,047	\$26,093	1,000.00	2,000.00		948,072.00			0.00

SCHEDULE OF BID PRICES  
 CONTRACT NO. 1251  
 CENTRAL SUBWAY  
 UNION SQUARE/MARKET STREET UTILITY RELOCATION

SCHEDULE OF BID PRICES

Name of Bidder: \_\_\_\_\_

Contract 1251 - Union Square/Market Street Station Utility Relocation		Total Amount (Engineer's Estimate)		Award (SPM)		Original Form B		Final Form B		Close Out Modification	
		Unit Price	Total Amount	Unit Price	Total Amount				Total Amount		Total Amount
32	JT-32	UTILITY VAULTS TYPE MUNI 38-687	\$37,562	\$112,686	12,000.00	36,000.00				24,000.00	24,000.00
33	JT-33	UTILITY VAULTS TYPE MUNI 38-687 INTERCEPT	\$37,562	\$37,562	18,000.00	18,000.00				18,000.00	18,000.00
34	JT-34	UTILITY VAULT TYPE Christy N9	\$1,744	\$17,439	325.00	3,250.00				2,925.00	2,925.00
<b>Total</b>				<b>\$1,489,750</b>		<b>\$511,250</b>		<b>\$948,072</b>		<b>\$450,900</b>	<b>\$450,900</b>
<b>JOINT TRENCH UTILITY CONDUITS</b>											
	JT-35	FURNISH AND INSTALL 2-INCH HDPE CONDUIT	\$8	\$9,027	10.00	10,960.00				26,870.00	26,870.00
	JT-36	FURNISH AND INSTALL 4-INCH HDPE CONDUIT	\$19	\$30,842	15.00	24,750.00				25,500.00	25,500.00
	JT-37	FURNISH AND INSTALL 5-INCH HDPE CONDUIT	\$28	\$126,851	18.00	82,548.00				52,272.00	52,272.00
	JT-38	FURNISH AND INSTALL 2-INCH PVC CONDUIT	\$28	\$165,231	6.00	35,076.00				31,836.00	31,836.00
	JT-39	FURNISH AND INSTALL 3-INCH PVC CONDUIT	\$10	\$10,496	6.00	6,474.00				5,970.00	5,970.00
	JT-40	FURNISH AND INSTALL 4-INCH PVC CONDUIT	\$22	\$922,564	8.20	337,052.80				366,294.00	366,294.00
	JT-41	FURNISH AND INSTALL 5-INCH PVC CONDUIT	\$39	\$38,296	16.00	15,760.00				1,776.00	1,776.00
	JT-42	FURNISH AND INSTALL 6-INCH PVC CONDUIT	\$45	\$910,771	11.00	224,818.00	3,125,362.00			169,312.00	169,312.00
	JT-43	FURNISH AND INSTALL 1-1/2-INCH QUADLOCK	\$54	\$377,091	19.00	133,912.00				135,052.00	135,052.00
	JT-44	FURNISH AND INSTALL 1-1/2-INCH GRS CONDUIT	\$16	\$24,611	16.00	24,176.00				13,808.00	13,808.00
	JT-45	FURNISH AND INSTALL 2-INCH GRS CONDUIT	\$30	\$67,736	20.00	45,720.00				7,620.00	7,620.00
	JT-46	FURNISH AND INSTALL 4-INCH GRS CONDUIT	\$63	\$20,945	33.00	10,890.00				10,890.00	10,890.00
	JT-47	FURNISH AND INSTALL 6-INCH GRS CONDUIT	\$163	\$32,583	49.00	9,800.00				33,516.00	33,516.00
	JT-48	FURNISH AND INSTALL 2-INCH GAS PE CONDUIT	\$23	\$20,398	20.00	18,020.00				4,040.00	4,040.00
	JT-49	FURNISH AND INSTALL 6-INCH GAS PE CONDUIT	\$92	\$86,859	55.00	51,755.00				33,165.00	33,165.00
<b>Total</b>				<b>\$2,844,301</b>		<b>\$1,031,712</b>		<b>\$3,125,362</b>		<b>\$917,921</b>	<b>\$917,921</b>
<b>SEWER WORK -SW</b>											
	SW-1	TRENCH AND EXCAVATION SUPPORT WORK		\$2,547,683		1,000,000.00					1,000,000.00
	SW-2	DEMOLITION, REMOVALS, AND ABANDONMENT WORK		\$258,625		100,000.00					100,000.00
	SW-3	12-INCH DIAMETER VCP SEWER ON CRUSHED ROCK BEDDING	\$125	\$19,493	170.00	26,520.00					16,490.00
	SW-4	8-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	\$172	\$32,232	150.00	28,050.00					26,400.00
	SW-5	10-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	\$190	\$30,370	180.00	28,800.00					27,000.00
	SW-6	14-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	\$226	\$93,744	200.00	83,000.00					103,200.00
	SW-7	16-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	\$220	\$20,015	225.00	20,475.00					21,375.00
	SW-8	18-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	\$220	\$58,065	250.00	66,000.00					70,000.00
	SW-9	18-INCH DIAMETER FLUSH BELL RCP CLASS IV SEWER ON CRUSHED ROCK BEDDING INCLUDING CASING INSULATOR	\$235	\$9,419	275.00	11,000.00					9,900.00
	SW-10	CONCRETE MANHOLE FOR PIPE SIZE 12-INCH TO 24-INCH DIAMETER WITH NEW FRAME AND COVER (PER SFDPW STD. PLAN 87,181)	\$9,829	\$127,778	4,500.00	58,500.00					63,000.00
	SW-11	MODIFIED BOX MANHOLE FOR CONNECTION TO 3'X5' BRICK SEWER WITH NEW FRAME AND COVER (IN ACCORDANCE WITH SFDPW STD. PLAN 87,184)	\$9,829	\$58,975	20,000.00	120,000.00					120,000.00
	SW-12	SEWER MAIN CLEANOUT (IN ACCORDANCE WITH DETAIL ON DWG SW-2)	\$290	\$869	500.00	1,500.00					2,500.00
	SW-13	CONCRETE CATCH BASIN WITH NEW FRAME, GRATING, AND CAST IRON TRAP (IN ACCORDANCE WITH SFDPW STD. PLAN 87,188 AND AS SHOWN ON DWG SW-2)	\$2,906	\$26,154	5,000.00	45,000.00					25,000.00
	SW-14	10-INCH DIAMETER VCP CULVERT	\$120	\$15,335	150.00	19,200.00					7,200.00
	SW-15	10-INCH DIAMETER DIP CULVERT	\$95	\$15,552	180.00	29,520.00					21,600.00
	SW-16	CAST IRON WATER TRAP FOR CATCH BASIN INCLUDING CLEANOUT CAP (IN ACCORDANCE WITH SFDPW STD. PLAN 87,194)	\$246	\$1,231	300.00	1,500.00					1,500.00
	SW-17	TELEVISION INSPECTION OF 6, 8, 10, OR 12-INCH DIAMETER SIDE SEWER OR 10-INCH DIAMETER CULVERT	\$2,172	\$69,513	150.00	4,800.00					0.00
	SW-18	6 OR 8-INCH DIAMETER SIDE SEWER CONNECTION TO VCP	\$724	\$18,826	300.00	7,800.00					8,100.00
	SW-19	6 OR 8-INCH DIAMETER SIDE SEWER	\$125	\$44,303	125.00	44,375.00					40,250.00
	SW-20	SIDE SEWER AIR VENT ASSEMBLY	\$1,729	\$12,100	1,500.00	10,500.00					7,500.00

SCHEDULE OF BID PRICES  
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SCHEDULE OF BID PRICES

Name of Bidder: \_\_\_\_\_

Contract 1251 - Union Square/Market Street Station Utility Relocation

Bid Item No.	Item Description	Total Amount (Engineer's Estimate)		Award (SPM)		Original Form B		Final Form B		Close Out Modification	
		Unit Price	Total Amount	Unit Price	Total Amount				Total Amount		Total Amount
SW-21	POST CONSTRUCTION TELEVISION INSPECTION OF NEWLY CONSTRUCTED MAIN SEWERS		\$55,495		20,000.00						20,000.00
SW-22	EXPLORATORY HOLES OR POTLHOLES (CONDITIONAL BID ITEM)	\$1,448	\$2,896	100.00	200.00						0.00
	<b>Total</b>		<b>\$3,518,674</b>		<b>\$1,726,740</b>		<b>\$0</b>		<b>\$0</b>		<b>\$1,691,015</b>
	<b>WATER DISTRIBUTION WORK - WD</b>										
WD-1	METER BOX REMOVAL	\$317	\$951	300.00	900.00						0.00
WD-2	WATER PIPE REMOVAL AND ABANDONMENT		\$375,492		50,000.00						50,000.00
WD-3A	INSTALLATION 6-INCH DIP WITH POLYETHYLENE ENCASEMENT	\$243	\$20,873	120.00	10,320.00						21,120.00
WD-3B	INSTALLATION 8-INCH DIP WITH POLYETHYLENE ENCASEMENT	\$459	\$663,159	150.00	216,600.00						195,450.00
WD-3C	INSTALLATION 12-INCH DIP WITH POLYETHYLENE ENCASEMENT	\$255	\$31,165	200.00	24,400.00						30,000.00
WD-4	INSTALLATION OF SCREW TAPS	\$2,612	\$26,118	200.00	2,000.00						1,600.00
WD-5A	INSTALLATION OF 1-INCH SERVICE PIPE	\$23	\$2,342	125.00	12,625.00						0.00
WD-5B	INSTALLATION OF 2-INCH SERVICE PIPE	\$23	\$1,793	150.00	11,850.00						0.00
WD-6A	INSTALLATION OF 4-INCH SERVICE PIPE	\$215	\$20,834	120.00	11,640.00						1,320.00
WD-6B	INSTALLATION OF 6-INCH SERVICE PIPE	\$451	\$41,899	150.00	13,950.00						4,500.00
WD-6C	INSTALLATION OF 8" SERVICE PIPE	\$1,754	\$52,605	170.00	5,100.00						1,700.00
WD-7	TRENCH EXCAVATION AND BACKFILL FOR PIPE INSTALLED BY SFWD	\$898	\$54,768	175.00	10,675.00						0.00
WD-8	INSTALLATION OF STRUCTURAL SUB-SIDEWALK BASEMENT AREA-WAY SETTING FOR LOW PRESSURE FIRE HYDRANTS	\$4,508	\$9,016	10,000.00	20,000.00						0.00
WD-9	INSTALLATION OF 8-INCH DUCTILE IRON STRUCTURALLY SUPPORTED PIPES WITH POLYETHYLENE ENCASEMENT	\$134	\$19,627	250.00	36,750.00						0.00
WD-10	ALLOWANCE FOR ADDITIONAL EXCAVATION AND BACKFILL		\$100,000		100,000.00						100,000.00
	<b>Total</b>		<b>\$1,420,642</b>		<b>\$526,810</b>		<b>\$0</b>		<b>\$0</b>		<b>\$405,690</b>
	<b>AUXILLIARY WATER SUPPLY SYSTEM (AWSS) - AW</b>										
AW-1	TRENCH SHORING AND BRACING OR EQUIVALENT METHOD CONFORMING TO APPLICABLE SAFETY ORDERS		\$269,947		100,000.00						100,000.00
AW-2	LOCATIONS 1A AND 1B-GEARY STREET - AWSS MAIN AND HYDRANT LATERAL WORK		\$337,497		400,000.00						384,757.14
AW-3	LOCATIONS 1A AND 1B-O'FARRELL STREET - AWSS MAIN AND HYDRANT LATERAL WORK		\$422,426		400,000.00						387,842.92
AW-4	LOCATION 2 - AWSS HYDRANT LATERAL WORK		\$50,773		100,000.00						76,945.46
AW-5	AWSS HYDRANT LATERAL OFFSET (DELETABLE BID ITEM)		\$28,448	1,250.00	6,250.00						7,500.00
AW-6	10-INCH DIAMETER AWSS PIPING REPLACEMENT-10 FOOT LAY LENGTH (DELETABLE BID ITEM)		\$1,599	1,000.00	2,000.00						0.00
AW-7	12-INCH DIAMETER AWSS PIPING REPLACEMENT-10 FOOT LAY LENGTH (DELETABLE BID ITEM)		\$4,614	1,200.00	4,800.00						0.00
	<b>Total</b>		<b>\$1,115,305</b>		<b>\$1,013,050</b>		<b>\$0</b>		<b>\$0</b>		<b>\$957,046</b>
	<b>PAVEMENT RESTORATION - RP</b>										
RP-1	ASPAHLT CONCRETE (TYPE A, 1/2-INCH MAXIMUM WITH MEDIUM GRADING)	\$204	\$91,876	175.00	78,750.00			82,176.50			82,176.50
RP-2	FULL DEPTH PLANING PER 2-INCH DEPTH OF CUT	\$7	\$221,337	2.00	62,000.00			58,046.00			58,046.00
RP-3	8-INCH THICK CONCRETE BASE	\$12	\$66,916	9.00	50,400.00			27,234.00			27,234.00
RP-4	8-INCH THICK CONCRETE PAVEMENT	\$14	\$27,164	10.00	20,000.00			5,460.00			5,460.00
RP-5	10-INCH THICK CONCRETE PAVEMENT	\$16	\$18,018	12.00	13,200.00			0.00			0.00
RP-6	6-INCH WIDE CONCRETE CURB	\$26	\$150,633	32.00	184,000.00			10,304.00			10,304.00
RP-7	2-FOOT WIDE CONCRETE GUTTER	\$37	\$20,848	35.00	19,600.00			14,140.00			14,140.00
RP-8	3-1/2-INCH THICK CONCRETE SIDEWALK	\$13	\$336,631	15.00	378,000.00			261,052.50			261,052.50
RP-9	CONCRETE CURB RAMP	\$1,662	\$41,540	2,500.00	62,500.00			42,500.00			42,500.00
RP-10	CAST-IN PLACE DETECTABLE SURFACE TILE	\$72	\$21,739	50.00	15,000.00			0.00			0.00
RP-11	ALLOWANCE FOR EXCAVATION PERMIT FEE ASSESSED BY BSM ACCORDING TO ARTICLE 2.4 OF THE PUBLIC WORKS CODE		\$10,000		10,000.00			0.00			0.00
	<b>Total</b>		<b>\$1,006,703</b>		<b>\$893,450</b>		<b>\$0</b>	<b>\$500,913</b>			<b>\$500,913</b>

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SCHEDULE OF BID PRICES

Name of Bidder: \_\_\_\_\_

Contract 1251 - Union Square/Market Street Station Utility Relocation

Bid Item No.	Item Description	Total Amount (Engineer's Estimate)		Award (SPM)		Original Form B		Final Form B		Close Out Modification	
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<b>TRAFFIC SIGNALS- ET</b>											
ET-1	TRAFFIC SIGNALS		\$720		50,000.00				20,793.66		50,000.00
ET-2	TEMPORARY TROLLEY RE-ROUTE - TRAFFIC SIGNALS		\$136,739		83,000.00						83,000.00
	<b>Total</b>		<b>\$137,459</b>		<b>\$133,000</b>		<b>\$0</b>		<b>\$20,794</b>		<b>\$133,000</b>
<b>STRUCTURAL - SR</b>											
SR-1	CAST-IN-PLACE & PNEUMATICALLY PLACED CONCRETE AND ACCESSORIES (6,000 PSI)	\$896	\$682,117	600.00	456,600.00				391,200.00		391,200.00
SR-2	STEEL REINFORCEMENTS	\$4,293	\$437,931	2,700.00	275,400.00				330,912.00		330,912.00
SR-3	195 KIPS COMPRESSION MICROPILES	\$6,874	\$178,712	10,000.00	260,000.00				260,000.00		260,000.00
SR-4	240 KIPS COMPRESSION MICROPILES	\$23,074	\$346,117	4,400.00	66,000.00				66,000.00		66,000.00
SR-5	300 KIPS COMPRESSION MICROPILES	\$17,562	\$140,493	6,000.00	48,000.00				48,000.00		48,000.00
SR-6	150 KIPS TENSION MICROPILES	\$9,485	\$237,116	6,500.00	162,500.00				162,500.00		162,500.00
SR-7	90 KIPS TENSION MICROPILES	\$6,252	\$81,281	3,400.00	44,200.00				44,200.00		44,200.00
SR-8	115 KIPS TENSION MICROPILES	\$7,609	\$197,821	2,400.00	62,400.00				62,400.00		62,400.00
SR-9	SEGMENTAL UNDERPINNING	\$2,172	\$86,891	2,900.00	116,000.00				58,000.00		58,000.00
SR-10	260 KIPS COMPRESSION MICROPILES	\$15,409	\$123,268	6,000.00	48,000.00				48,000.00		48,000.00
	<b>Total</b>		<b>\$2,511,748</b>		<b>\$1,539,100</b>		<b>\$0</b>		<b>\$1,471,212</b>		<b>\$1,471,212</b>
<b>MECHANICAL (PLUMBING) - MP</b>											
MP-01	PLUMBING SYSTEM		\$139,391		\$200,000						\$200,000
<b>ELECTRICAL LIGHTING - EL</b>											
EL-1	TEMPORARY TROLLEY RE-ROUTE - STREET LIGHTING		\$119,620		60,000.00						60,000.00
EL-2	TEMPORARY TROLLEY RE-ROUTE - TROLLEY POLE GROUNDING		\$18,755		15,000.00						15,000.00
EL-3	STREET LIGHTING		\$59,040		75,000.00				31,190.48		75,000.00
	<b>Total</b>		<b>\$197,416</b>		<b>\$150,000</b>		<b>\$0</b>		<b>\$31,190</b>		<b>\$150,000</b>
<b>TRACTION POWER - TP</b>											
TP-1	TRACTION POWER SYSTEM		\$188,263		125,000.00						37,500.00
TP-2	HI-SPEED DC TRIP UNIT	\$9,075	\$36,302	7,800.00	31,200.00						31,200.00
	<b>Total</b>		<b>\$224,565</b>		<b>\$156,200</b>		<b>\$0</b>		<b>\$0</b>		<b>\$68,700</b>
<b>OVERHEAD - OV</b>											
OV-1	OVERHEAD SPECIAL WORK AT STOCKTON AND SUTTER STREETS		\$201,298		200,000.00						200,000.00
OV-2	OVERHEAD SPECIAL WORK AT SUTTER AND MASON STREETS		\$186,816		200,000.00						200,000.00
OV-3	OVERHEAD SPECIAL WORK AT MASON AND EDDY STREETS		\$175,231		50,000.00						50,000.00
OV-4	OVERHEAD SPECIAL WORK AT MARKET AND TURK STREETS		\$186,816		220,000.00						220,000.00
OV-5	OVERHEAD SPECIAL WORK AT MARKET AND FIFTH STREETS		\$186,816		50,000.00						50,000.00
OV-6	OVERHEAD SPECIAL WORK AT FIFTH AND HARRISON STREETS		\$176,679		80,000.00						80,000.00
OV-7	PROVIDE 2/0 TROLLEYWIRE	\$38	\$414,182	29.00	319,000.00						304,152.00
OV-8	PROVIDE TANGENT OR INVERTED SPAN	\$11,586	\$162,197	3,500.00	49,000.00						31,500.00
OV-9	PROVIDE BRACKET ARM AND SPAN	\$10,282	\$308,464	5,000.00	150,000.00						170,000.00
OV-10	PROVIDE DIFFERENTIAL DEAD-END	\$14,482	\$14,482	5,500.00	5,500.00						5,500.00
OV-11	PROVIDE SECTION INSULATOR	\$21,723	\$152,060	5,000.00	35,000.00						25,000.00
OV-12	PROVIDE TROLLEYWIRE CROSSOVER	\$14,482	\$57,928	25,000.00	100,000.00						100,000.00
OV-13	PROVIDE TYPE 761N TROLLEY POLE	\$72	\$2,245	3,400.00	105,400.00						119,000.00
OV-14	PROVIDE TYPE 765N TROLLEY POLE	\$17,089	\$85,443	3,400.00	17,000.00						17,000.00

SCHEDULE OF BID PRICES  
 CONTRACT NO. 1251  
 CENTRAL SUBWAY  
 UNION SQUARE/MARKET STREET UTILITY RELOCATION

SCHEDULE OF BID PRICES

Name of Bidder: \_\_\_\_\_

Contract 1251 - Union Square/Market Street Station Utility Relocation

Bid Item No.	Item Description	Total Amount (Engineer's Estimate)		Award (SPM)		Original Form B		Final Form B		Close Out Modification	
		Unit Price	Total Amount	Unit Price	Total Amount				Total Amount		Total Amount
OV-15	PROVIDE TYPE 770 TROLLEY POLE	\$32,295	\$96,884	6,000.00	18,000.00						18,000.00
OV-16	PROVIDE TROLLEY POLE FOUNDATION FOR TYPE 761N POLE	\$8,399	\$235,186	4,200.00	117,600.00						134,400.00
OV-17	PROVIDE TROLLEY POLE FOUNDATION FOR TYPE 765N POLE	\$9,268	\$46,342	4,200.00	21,000.00						16,800.00
OV-18	PROVIDE TROLLEY POLE FOUNDATION FOR TYPE 770 POLE	\$12,020	\$36,060	5,500.00	16,500.00						16,500.00
OV-19	REMOVE AND SALVAGE OR DISPOSE OF EXISTING TROLLEY POLE AND DISPOSE OF FOUNDATION 3 FEET BELOW FINISH GRADE	\$5,069	\$15,206	800.00	2,400.00						2,400.00
OV-20	PROSPECT HOLE FOR DEPTH UP TO 3 FEET	\$1,448	\$23,171	450.00	7,200.00						4,050.00
OV-21	PROSPECT HOLE FOR DEPTH GREATER THAN 3 FEET	\$2,896	\$14,482	675.00	3,375.00						0.00
OV-22	PAINT TROLLEY POLE	\$2,896	\$8,689	800.00	2,400.00						0.00
	<b>Total</b>		<b>\$2,786,677</b>		<b>\$1,769,375</b>		<b>\$0</b>		<b>\$0</b>		<b>\$1,764,302</b>
<b>STRUCTURAL OVERHEAD - SO</b>											
SO-1	PROVIDE SUBSIDEWALK BASEMENT FOUNDATION	\$21,723	\$65,168	12,000.00	36,000.00						60,000.00
SO-2	PROVIDE EYEBOLT	\$6,372	\$101,952	2,000.00	32,000.00						22,000.00
SO-3	TESTING OF EXISTING EYEBOLTS	\$1,448	\$8,689	750.00	4,500.00						6,750.00
	<b>Total</b>		<b>\$175,810</b>		<b>\$72,500</b>		<b>\$0</b>		<b>\$0</b>		<b>\$88,750</b>
<b>Subtotal Base Bid Item Work</b>			<b>\$25,932,113</b>		<b>\$16,772,550</b>		<b>\$7,879,511</b>		<b>\$7,074,042</b>		<b>\$16,001,961</b>
<b>OPTIONAL BID ITEM - OP</b>											
SP-OP11	OPTION FOR UTILITY RELOCATION AND CLOSURE WALL FOR VACATING BASEMENT FOR 17-19 STOCKTON STREET		\$1,185,000		60,000.00						
<b>Subtotal Optional Bid Item Work</b>			<b>\$1,185,000</b>		<b>\$60,000</b>						
<b>Contract Modifications</b>										\$1,279,825.09	\$4,904,365.16
<b>Allowances</b>										\$1,575,902.00	
<b>Site Management 5%</b>										\$315,181.00	\$417,693.33
<b>Escalation</b>										\$322,432.00	
<b>BID RECAPITULATION</b>											
Reduction to meet Form B agreement amounts										(\$419,956.00)	
<b>A</b>	<b>Subtotal Base Bid Item Work (from Page 4.7)</b>		\$25,932,113		\$16,772,549.80						
<b>B</b>	<b>Subtotal Optional Bid Item Work (from above)</b>		\$1,185,000		\$60,000.00						
<b>Grand Total</b>			<b>\$27,117,113</b>		<b>\$16,832,549.80</b>		<b>\$9,673,070.00</b>		<b>\$8,771,559.99</b>		<b>\$20,906,326.27</b>
Anticipated reimbursement ( City Portion Removed )								<b>\$7,378,641.00</b>		<b>\$7,614,812.76</b>	

JOINT TRENCH CONSTRUCTION COST AGREEMENT  
Central Subway Contract 1251

Trenching, Backfill, Pavement Demo/Restoration																				
Trench Section	Type	QTY	Unit Price [\$/UNIT]	Total	PG&E Electric		PG&E Gas		AT&T		Qwest		TCG		UCCO		CITY			
					%	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL		
1	JT-5	67 LF		\$315.00	\$21,105.00		\$0.00		\$0.00	100%	\$21,105.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
2	JT-4	20 LF		\$170.00	\$3,400.00		\$0.00		\$0.00	100%	\$3,400.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
3	JT-5	122 LF		\$315.00	\$38,430.00		\$0.00		\$0.00	100%	\$38,430.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
4	JT-4	10 LF		\$170.00	\$1,700.00		\$0.00		\$0.00	100%	\$1,700.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
5	JT-4	107 LF		\$170.00	\$18,190.00	100%	\$18,190.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
6	JT-5	87 LF		\$315.00	\$27,405.00	100%	\$27,405.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
7	JT-4	20 LF		\$170.00	\$3,400.00		\$0.00		\$0.00	100%	\$3,400.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
8	JT-4	20 LF		\$170.00	\$3,400.00		\$0.00		\$0.00	100%	\$3,400.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
9	JT-5	110 LF		\$315.00	\$34,650.00		\$0.00		\$0.00	100%	\$34,650.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
10	JT-5	25 LF		\$315.00	\$7,875.00		\$0.00		\$0.00	58%	\$4,566.50		\$0.00		\$0.00		\$0.00	42%	\$3,308.50	100%
11	JT-8	70 LF		\$248.00	\$17,360.00	91%	\$15,853.13		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	9%	\$1,506.87	100%
12	JT-6	26 LF		\$234.00	\$6,084.00	100%	\$6,084.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
13	JT-7	30 LF		\$241.00	\$7,230.00		\$0.00		\$0.00	100%	\$7,230.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
14	JT-6	26 LF		\$234.00	\$6,084.00		\$0.00		\$0.00	100%	\$6,084.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
15	JT-4	44 LF		\$170.00	\$7,480.00		\$0.00		\$0.00		\$0.00	38%	\$2,818.23	22%	\$1,625.90	22%	\$1,625.90	19%	\$1,409.96	100%
16	JT-7	26 LF		\$241.00	\$6,266.00	92%	\$5,755.16		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	8%	\$510.84	100%
17	JT-8	37 LF		\$248.00	\$9,176.00	17%	\$1,586.36	42%	\$3,857.69	24%	\$2,216.66	5%	\$441.63	3%	\$254.79	3%	\$254.79	6%	\$564.09	100%
18	JT-8	15 LF		\$248.00	\$3,720.00	28%	\$1,033.22	55%	\$2,027.75		\$0.00	6%	\$232.14	4%	\$133.93	4%	\$133.93	4%	\$159.04	100%
19	JT-8	20 LF		\$248.00	\$4,960.00	47%	\$2,325.62		\$0.00	20%	\$989.74		\$0.00		\$0.00		\$0.00	33%	\$1,644.65	100%
20	JT-4	15 LF		\$170.00	\$2,550.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%	\$2,550.00	100%
21	JT-4	75 LF		\$170.00	\$12,750.00	100%	\$12,750.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
22	JT-7	42 LF		\$241.00	\$10,122.00		\$0.00		\$0.00	60%	\$6,096.19		\$0.00		\$0.00		\$0.00	40%	\$4,025.81	100%
23	JT-7	12 LF		\$241.00	\$2,892.00	28%	\$814.80		\$0.00	43%	\$1,251.04		\$0.00		\$0.00		\$0.00	29%	\$826.16	100%
24	JT-4	18 LF		\$170.00	\$3,060.00	100%	\$3,060.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
25	JT-7	16 LF		\$241.00	\$3,856.00		\$0.00		\$0.00	100%	\$3,856.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
26	JT-7	40 LF		\$241.00	\$9,640.00	100%	\$9,640.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
27	JT-8	90 LF		\$248.00	\$22,320.00	17%	\$3,858.70	42%	\$9,383.56	24%	\$5,391.87	5%	\$1,074.24	3%	\$619.76	3%	\$619.76	6%	\$1,372.11	100%
28	JT-7	14 LF		\$241.00	\$3,374.00	17%	\$583.30	42%	\$1,418.46	24%	\$815.06	5%	\$162.39	3%	\$93.69	3%	\$93.69	6%	\$207.42	100%
29	JT-7	16 LF		\$241.00	\$3,856.00	18%	\$710.00	45%	\$1,726.57	19%	\$741.23	5%	\$197.66	3%	\$114.03	3%	\$114.03	7%	\$252.47	100%
30	JT-7	105 LF		\$241.00	\$25,305.00	16%	\$3,927.63	43%	\$10,865.75	25%	\$6,243.55	5%	\$1,243.93	3%	\$717.65	3%	\$717.65	6%	\$1,588.85	100%
31	JT-7	95 LF		\$241.00	\$22,895.00		\$0.00		\$0.00	64%	\$14,731.42		\$0.00		\$0.00		\$0.00	36%	\$8,163.58	100%
32	JT-7	90 LF		\$241.00	\$21,690.00		\$0.00		\$0.00	54%	\$11,802.89		\$0.00		\$0.00		\$0.00	46%	\$9,887.11	100%
33	JT-7	40 LF		\$241.00	\$9,640.00		\$0.00		\$0.00	62%	\$5,969.56		\$0.00		\$0.00		\$0.00	38%	\$3,670.44	100%
34	JT-7	30 LF		\$241.00	\$7,230.00		\$0.00		\$0.00	100%	\$7,230.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
35	JT-7	30 LF		\$241.00	\$7,230.00	100%	\$7,230.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%
36	JT-7	33 LF		\$241.00	\$7,953.00	40%	\$3,151.56	40%	\$3,196.87	12%	\$955.88		\$0.00		\$0.00		\$0.00	8%	\$648.69	100%
37	JT-7	77 LF		\$241.00	\$18,557.00	44%	\$8,226.09	35%	\$6,511.98	10%	\$1,947.11		\$0.00		\$0.00		\$0.00	10%	\$1,871.82	100%
38	JT-7	25 LF		\$241.00	\$6,025.00	48%	\$2,891.27	38%	\$2,288.80	7%	\$394.83		\$0.00		\$0.00		\$0.00	7%	\$450.10	100%
39	JT-7	8 LF		\$241.00	\$1,928.00	39%	\$746.06	41%	\$790.24	12%	\$236.29		\$0.00		\$0.00		\$0.00	8%	\$155.40	100%
40	JT-7	28 LF		\$241.00	\$6,748.00	17%	\$1,117.06	46%	\$3,090.35	20%	\$1,326.70	5%	\$353.79	3%	\$204.11	3%	\$204.11	7%	\$451.89	100%
41	JT-7	112 LF		\$241.00	\$26,992.00	18%	\$4,970.00	45%	\$12,086.02	19%	\$5,188.59	5%	\$1,383.62	3%	\$798.24	3%	\$798.24	7%	\$1,767.28	100%
42	JT-7	45 LF		\$241.00	\$10,845.00	15%	\$1,615.58		\$0.00	52%	\$5,686.76		\$0.00		\$0.00		\$0.00	33%	\$3,542.66	100%
43	JT-6	33 LF		\$234.00	\$7,722.00	89%	\$6,902.24		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	11%	\$819.76	100%
44	JT-7	40 LF		\$241.00	\$9,640.00	18%	\$1,717.39	34%	\$3,243.68	27%	\$2,636.85		\$0.00		\$0.00		\$0.00	21%	\$2,042.08	100%
45	JT-7	56 LF		\$241.00	\$13,496.00	15%	\$2,085.28	43%	\$5,768.89	25%	\$3,314.85	5%	\$660.43	3%	\$381.02	3%	\$381.02	7%	\$904.52	100%
46	JT-8	30 LF		\$248.00	\$7,440.00	16%	\$1,196.49	44%	\$3,310.07	19%	\$1,421.03	9%	\$639.46	5%	\$378.94	5%	\$378.94	2%	\$115.06	100%
47	JT-7	130 LF		\$241.00	\$31,330.00	17%	\$5,186.37	46%	\$14,348.03	20%	\$6,159.68	5%	\$1,642.58	3%	\$947.64	3%	\$947.64	7%	\$2,098.04	100%
48	JT-7	30 LF		\$241.00	\$7,230.00	16%	\$1,156.71	44%	\$3,200.02	22%	\$1,606.27	5%	\$366.34	3%	\$211.35	3%	\$211.35	7%	\$477.96	100%
49	JT-7	4 LF		\$241.00	\$964.00	41%	\$396.48	42%	\$402.18	12%	\$120.25		\$0.00		\$0.00		\$0.00	5%	\$45.09	100%
50	JT-7	7 LF		\$241.00	\$1,687.00	42%	\$706.20	42%	\$716.35	7%	\$123.57		\$0.00		\$0.00		\$0.00	8%	\$140.87	100%
51	JT-7	7 LF		\$241.00	\$1,687.00	47%	\$797.37	41%	\$692.52	7%	\$119.46		\$0.00		\$0.00		\$0.00	5%	\$77.65	100%
52	JT-7	30 LF		\$241.00	\$7,230.00	41%	\$2,950.74	43%	\$3,125.47	7%	\$539.15		\$0.00		\$0.00		\$0.00	9%	\$614.63	100%
53	JT-7	30 LF		\$241.00	\$7,230.00	72%	\$5,197.64		\$0.00	13%	\$949.70		\$0.00		\$0.00		\$0.00	15%	\$1,082.66	100%
54	JT-7	56 LF		\$241.00	\$13,496.00	83%	\$11,169.43		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	17%	\$2,326.57	100%
55	JT-5	45 LF		\$315.00	\$14,175.00	100%	\$14,175.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	100%



JOINT TRENCH CONSTRUCTION COST AGREEMENT  
Central Subway Contract 1251

2/15/2013

56	JT-6	11 LF	\$234.00	\$2,574.00	46%	\$1,189.04	\$0.00	44%	\$1,133.15	\$0.00	\$0.00	\$0.00	\$0.00	10%	\$251.81	100%		
57	JT-6	15 LF	\$234.00	\$3,510.00	51%	\$1,797.24	\$0.00	49%	\$1,712.76	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
58	JT-6	30 LF	\$234.00	\$7,020.00	44%	\$3,080.56	\$0.00	42%	\$2,935.76	\$0.00	\$0.00	\$0.00	\$0.00	14%	\$1,003.68	100%		
59	JT-6	40 LF	\$234.00	\$9,360.00	80%	\$7,521.95	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	20%	\$1,838.05	100%		
60	JT-4	39 LF	\$170.00	\$6,630.00		\$0.00	100%	\$6,630.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
61	JT-5	20 LF	\$315.00	\$6,300.00	100%	\$6,300.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
62	JT-5	10 LF	\$315.00	\$3,150.00		\$0.00		\$0.00	\$0.00	41%	\$1,278.44	23%	\$737.56	23%	\$737.56	100%		
63	JT-7	50 LF	\$241.00	\$12,050.00		\$0.00		\$0.00	100%	\$12,050.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
64	JT-5	143 LF	\$315.00	\$45,045.00		\$0.00		\$0.00	100%	\$45,045.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
65	JT-4	25 LF	\$170.00	\$4,250.00		\$0.00		\$0.00	54%	\$2,288.92	\$0.00	\$0.00	\$0.00	46%	\$1,961.08	100%		
66	JT-4	23 LF	\$170.00	\$3,910.00		\$0.00		\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	100%	\$3,910.00	100%		
67	JT-4	82 LF	\$170.00	\$13,940.00		\$0.00	100%	\$13,940.00	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00	100%		
68	JT-5	28 LF	\$315.00	\$8,820.00		\$0.00		\$0.00	78%	\$6,895.64	\$0.00	\$0.00	\$0.00	22%	\$1,924.36	100%		
69	JT-4	35 LF	\$170.00	\$5,950.00		\$0.00	90%	\$5,350.11	\$0.00		\$0.00	\$0.00	\$0.00	10%	\$599.89	100%		
70	JT-5	5 LF	\$315.00	\$1,575.00		\$0.00		\$0.00	78%	\$1,231.36	\$0.00	\$0.00	\$0.00	22%	\$343.64	100%		
71	JT-7	90 LF	\$241.00	\$21,690.00	43%	\$9,284.12	\$0.00	41%	\$8,847.72	\$0.00	\$0.00	\$0.00	\$0.00	16%	\$3,558.15	100%		
72	JT-7	25 LF	\$241.00	\$6,025.00	85%	\$5,143.09	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	15%	\$881.91	100%		
73	JT-7	15 LF	\$241.00	\$3,615.00	85%	\$3,085.85	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	15%	\$529.15	100%		
74	JT-5	150 LF	\$315.00	\$47,250.00		\$0.00		\$0.00	100%	\$47,250.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
75	JT-4	25 LF	\$170.00	\$4,250.00		\$0.00		\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	100%	\$4,250.00	100%		
76	JT-7	28 LF	\$241.00	\$6,748.00	100%	\$6,748.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
77	JT-6	25 LF	\$234.00	\$5,850.00	100%	\$5,850.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
78	JT-7	7 LF	\$241.00	\$1,687.00		\$0.00		\$0.00	100%	\$1,687.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
79	JT-6	25 LF	\$234.00	\$5,850.00	100%	\$5,850.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
80	JT-5	23 LF	\$315.00	\$7,245.00		\$0.00		\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	100%	\$7,245.00	100%		
81	JT-4	19 LF	\$170.00	\$3,230.00		\$0.00		\$0.00	38%	\$1,216.96	22%	\$702.09	22%	\$702.09	19%	\$608.85	100%	
82	JT-7	7 LF	\$241.00	\$1,687.00	89%	\$1,507.91	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	11%	\$179.09	100%		
83	JT-6	30 LF	\$234.00	\$7,020.00	100%	\$7,020.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
84	JT-4	67 LF	\$170.00	\$11,390.00		\$0.00	100%	\$11,390.00	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00	100%		
85	JT-5	35 LF	\$315.00	\$11,025.00	89%	\$9,854.60	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	11%	\$1,170.40	100%		
86	JT-7	7 LF	\$241.00	\$1,687.00		\$0.00		\$0.00	100%	\$1,687.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
87	JT-7	27 LF	\$241.00	\$6,507.00	100%	\$6,507.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
88	JT-6	15 LF	\$234.00	\$3,510.00	100%	\$3,510.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
89	JT-7	35 LF	\$241.00	\$8,435.00		\$0.00		\$0.00	42%	\$3,566.42	25%	\$2,113.43	25%	\$2,113.43	8%	\$641.71	100%	
90	JT-6	10 LF	\$234.00	\$2,340.00		\$0.00		\$0.00	100%	\$2,340.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
91	JT-8	40 LF	\$248.00	\$9,920.00	100%	\$9,920.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
92	JT-5	12 LF	\$315.00	\$3,780.00							100%	\$3,780.00			\$0.00	100%		
93	JT-5	12 LF	\$315.00	\$3,780.00								77%	\$2,899.58	23%	\$880.42	100%		
94	JT-5	12 LF	\$315.00	\$3,780.00					100%	\$3,780.00						100%		
95	JT-7	50 LF	\$241.00	\$12,050.00	61%	\$7,370.57	\$0.00		\$0.00	18%	\$2,213.12	11%	\$1,311.48	6%	\$756.62	3%	\$398.21	100%
96	JT-4	15 LF	\$170.00	\$2,550.00										100%	\$2,550.00	100%		
97	JT-4	57 LF	\$170.00	\$9,690.00										100%	\$9,690.00	100%		
98	JT-4	40 LF	\$170.00	\$6,800.00										100%	\$6,800.00	100%		
99	JT-5	40 LF	\$315.00	\$12,600.00										100%	\$12,600.00	100%		
100	JT-5	40 LF	\$315.00	\$12,600.00										100%	\$12,600.00	100%		
101	JT-5	28 LF	\$315.00	\$8,820.00										100%	\$8,820.00	100%		
102	JT-5	66 LF	\$315.00	\$20,790.00										100%	\$20,790.00	100%		
103	JT-4	35 LF	\$170.00	\$5,950.00										100%	\$5,950.00	100%		
104	JT-1	10 LF	\$26,470.59	\$26,470.59		\$0.00			100%	\$26,470.59					\$0.00	100%		
105	JT-1	50 LF	\$132,352.94	\$132,352.94	50%	\$66,176.47			50%	\$66,176.47					\$0.00	100%		
106	JT-1	20 LF	\$52,941.18	\$52,941.18	50%	\$26,470.59			50%	\$26,470.59					\$0.00	100%		
107	JT-1	5 LF	\$13,235.29	\$13,235.29										100%	\$13,235.29	100%		
N/A	JT-3	218 CY	\$50.00	\$10,900.00		\$0.00	100%	\$10,900.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	100%		
<b>Total</b>				\$1,248,835.00		\$391,348.89		\$140,261.37	\$478,249.63	\$23,271.39	\$15,125.61	\$13,690.34	\$186,887.77					

Vaults and Pull boxes																		
Vault Size	Type	QTY	Unit Price [\$/F]	Total	PG&E Electric TOTAL	PG&E Gas TOTAL	AT&T TOTAL	Qwest TOTAL	TCG TOTAL	UCCO TOTAL	CITY TOTAL	% TOTAL						
Christy N9	JT-34	3	\$325.00	\$975.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$975.00	100%			
Christy N9	JT-34	4	\$325.00	\$1,300.00	0%	\$0.00	100%	\$1,300.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
Christy N9	JT-34	2	\$325.00	\$650.00	100%	\$650.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
6x19x9	JT-9	2	\$35,000.00	\$70,000.00	0%	\$0.00	100%	\$70,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
6x14x9	JT-10	1	\$30,000.00	\$30,000.00	0%	\$0.00	100%	\$30,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
6x9x9	JT-11	3	\$20,000.00	\$60,000.00	0%	\$0.00	100%	\$60,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
10x10x10	JT-13	1	\$25,000.00	\$25,000.00	100%	\$25,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
10x5.5x10	JT-14	1	\$25,000.00	\$25,000.00	100%	\$25,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
8x12x10	JT-15	2	\$25,000.00	\$50,000.00	100%	\$50,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
7x12x10	JT-16	1	\$25,000.00	\$25,000.00	100%	\$25,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
7x10x10	JT-17	1	\$25,000.00	\$25,000.00	100%	\$25,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
4.5x8.5x7.5	JT-18	3	\$15,000.00	\$45,000.00	100%	\$45,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
T3	JT-19	1	\$3,000.00	\$3,000.00	100%	\$3,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%			
3x5x4	JT-21	2	\$5,000.00	\$10,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$10,000.00	0%	\$0.00	100%			
3x5x4	JT-21	2	\$5,000.00	\$10,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$10,000.00	0%	\$0.00	100%			
3x5x4	JT-21	2	\$5,000.00	\$10,000.00	0%	\$0.00	0%	\$0.00	100%	\$10,000.00	0%	\$0.00	0%	\$0.00	100%			
IV-X	JT-30	6	\$1,000.00	\$6,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$6,000.00	100%			
III-X	JT-28	6	\$825.00	\$4,950.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$4,950.00	100%			
III-X-TR	JT-29	4	\$825.00	\$3,300.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$3,300.00	100%			
I	JT-22	8	\$325.00	\$2,600.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$2,600.00	100%			
I-TR	JT-23	1	\$325.00	\$325.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$325.00	100%			
II	JT-24	2	\$400.00	\$800.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$800.00	100%			
Muni	JT-32	2	\$12,000.00	\$24,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$24,000.00	100%			
Muni	JT-33	1	\$18,000.00	\$18,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$18,000.00	100%			
	SD-3	1	\$4,000.00	\$4,000.00			100%	\$4,000.00		\$0.00					100%			
	SD-5	1	\$4,000.00	\$4,000.00			0%	\$0.00	100%	\$4,000.00					100%			
<b>Total</b>				\$458,900.00	\$198,650.00	\$4,000.00	\$165,300.00	\$10,000.00	\$10,000.00	\$10,000.00	\$60,950.00							

Conduit and other materials																	
Material	Type	QTY	Unit Price [\$/F]	Total	PG&E Electric TOTAL	PG&E Gas TOTAL	AT&T TOTAL	Qwest TOTAL	TCG TOTAL	UCCO TOTAL	CITY TOTAL	% TOTAL					
5" HDPE	MRY	2724 LF	\$18.00	\$49,032.00	0%	\$0.00	0%	\$0.00			100%	\$49,032.00	100%				
2" HDPE	MRY	1372 LF	\$10.00	\$13,720.00	0%	\$0.00	0%	\$0.00			100%	\$13,720.00	100%				
5" HDPE	MRY	180 LF	\$18.00	\$3,240.00	0%	\$0.00	0%	\$0.00			100%	\$3,240.00	100%				
2" HDPE	MRY	60 LF	\$10.00	\$600.00	0%	\$0.00	0%	\$0.00			100%	\$600.00	100%				
1-1/2" GRS	SFPUC SL	863 LF	\$16.00	\$13,808.00	0%	\$0.00	0%	\$0.00			100%	\$13,808.00	100%				
4" HDPE	SFDT	1700 LF	\$15.00	\$25,500.00	0%	\$0.00	0%	\$0.00			100%	\$25,500.00	100%				
2" PVC	SFDPT	4332 LF	\$6.00	\$25,992.00	0%	\$0.00	0%	\$0.00			100%	\$25,992.00	100%				
6" PVC	PG&E	708 LF	\$11.00	\$7,788.00	100%	\$7,788.00	0%	\$0.00				\$0.00	100%				
6" PVC	PG&E	680 LF	\$11.00	\$7,480.00	100%	\$7,480.00	0%	\$0.00				\$0.00	100%				
6" PVC	PG&E	14004 LF	\$11.00	\$154,044.00	100%	\$154,044.00	0%	\$0.00				\$0.00	100%				
5" PVC	PG&E	111 LF	\$16.00	\$1,776.00	100%	\$1,776.00	0%	\$0.00				\$0.00	100%				
4" PVC	PG&E	2776 LF	\$8.20	\$22,763.20	100%	\$22,763.20	0%	\$0.00				\$0.00	100%				
4" PVC	PG&E	123 LF	\$8.20	\$1,008.60	100%	\$1,008.60	0%	\$0.00				\$0.00	100%				
4" PVC	AT&T	2880 LF	\$8.20	\$23,616.00	0%	\$0.00	100%	\$23,616.00				\$0.00	100%				
4" PVC	AT&T	13076 LF	\$8.20	\$107,223.20	0%	\$0.00	100%	\$107,223.20				\$0.00	100%				
4" PVC	AT&T	720 LF	\$8.20	\$5,904.00	0%	\$0.00	100%	\$5,904.00				\$0.00	100%				
4" PVC	AT&T	13993 LF	\$8.20	\$114,742.60	0%	\$0.00	100%	\$114,742.60				\$0.00	100%				
4" PVC	AT&T	5140 LF	\$8.20	\$42,148.00	0%	\$0.00	100%	\$42,148.00				\$0.00	100%				
4" PVC	AT&T	4396 LF	\$8.20	\$36,047.20	0%	\$0.00	100%	\$36,047.20				\$0.00	100%				
4" PVC	AT&T	0 LF	\$8.20	\$0.00	0%	\$0.00	100%	\$0.00				\$0.00	100%				
1-1/2" QLOCK	QWEST	3452 LF	\$19.00	\$65,588.00	0%	\$0.00	0%	\$0.00	100%	\$65,588.00		\$0.00	100%				
1-1/2" QLOCK	TCG	1842 LF	\$19.00	\$34,998.00	0%	\$0.00	0%	\$0.00	100%	\$34,998.00		\$0.00	100%				
2" HDPE	MRY	360 LF	\$10.00	\$3,600.00	0%	\$0.00	0%	\$0.00			100%	\$3,600.00	100%				
5" PVC	PG&E	0 LF	\$16.00	\$0.00	100%	\$0.00	0%	\$0.00				\$0.00	100%				
1-1/2" QLOCK	UCCO	1814 LF	\$19.00	\$34,466.00	0%	\$0.00	0%	\$0.00		100%	\$34,466.00	\$0.00	100%				
4" PVC	AT&T	726 LF	\$8.20	\$5,953.20	0%	\$0.00	100%	\$5,953.20				\$0.00	100%				
4" PVC	AT&T	840 LF	\$8.20	\$6,888.00	0%	\$0.00	100%	\$6,888.00				\$0.00	100%				
2" HDPE	SFDT	895 LF	\$10.00	\$8,950.00	0%	\$0.00	0%	\$0.00			100%	\$8,950.00	100%				
3" PVC	MTA	432 LF	\$6.00	\$2,592.00	0%	\$0.00	0%	\$0.00			100%	\$2,592.00	100%				
6" PVC	PG&E	0 LF	\$11.00	\$0.00	100%	\$0.00	0%	\$0.00				\$0.00	100%				
4" PVC	PG&E	0 LF	\$8.20	\$0.00	100%	\$0.00	0%	\$0.00				\$0.00	100%				
4" HDPE	MRY	0 LF	\$15.00	\$0.00	0%	\$0.00	0%	\$0.00			100%	\$0.00	100%				
2" PVC	AT&T	235 LF	\$6.00	\$1,410.00	0%	\$0.00	100%	\$1,410.00				\$0.00	100%				
3" PVC	PG&E	563 LF	\$6.00	\$3,378.00	100%	\$3,378.00	0%	\$0.00				\$0.00	100%				
2" HDPE	MRY	0 LF	\$10.00	\$0.00	0%	\$0.00	0%	\$0.00			100%	\$0.00	100%				
6" GRS	PG&E	684 LF	\$49.00	\$33,516.00	100%	\$33,516.00	0%	\$0.00				\$0.00	100%				
3" GRS	PG&E	40 LF	\$33.00	\$1,320.00	100%	\$1,320.00	0%	\$0.00				\$0.00	100%				
2" GRS	SFDT	22 LF	\$20.00	\$440.00	0%	\$0.00	0%	\$0.00			100%	\$440.00	100%				
2" PVC	PG&E	718 LF	\$6.00	\$4,308.00	100%	\$4,308.00	0%	\$0.00				\$0.00	100%				
2" GRS	MRY	356 LF	\$20.00	\$7,120.00	0%	\$0.00	0%	\$0.00			100%	\$7,120.00	100%				
2" PVC	MTA	21 LF	\$6.00	\$126.00	0%	\$0.00	0%	\$0.00			100%	\$126.00	100%				
2" GRS	MTA	3 LF	\$20.00	\$60.00	0%	\$0.00	0%	\$0.00			100%	\$60.00	100%				
4" GRS	PG&E	170 LF	\$33.00	\$5,610.00	100%	\$5,610.00	0%	\$0.00				\$0.00	100%				
4" GRS	AT&T	120 LF	\$33.00	\$3,960.00	0%	\$0.00	100%	\$3,960.00				\$0.00	100%				
2-INCH GAS	PG&E G	202 LF	\$20.00	\$4,040.00	0%	\$0.00	100%	\$4,040.00				\$0.00	100%				
6-INCH GAS	PG&E G	603 LF	\$55.00	\$33,165.00	0%	\$0.00	100%	\$33,165.00				\$0.00	100%				
<b>Total</b>				<b>\$917,921.00</b>		<b>\$242,991.80</b>		<b>\$347,892.20</b>		<b>\$65,588.00</b>		<b>\$34,998.00</b>		<b>\$34,466.00</b>		<b>\$154,780.00</b>	

Additional work																	
Change ID	Total	%	PG&E Electric TOTAL	%	PG&E Gas TOTAL	%	AT&T TOTAL	%	Qwest TOTAL	%	TCG TOTAL	%	UCCO TOTAL	%	CITY TOTAL	% TOTAL	
FA 2386	\$6,354.28								47%	\$2,990.25	24%	\$1,495.12	21%	\$1,308.23	9%	\$560.67	100%
FA 2396	\$6,454.78								47%	\$3,037.54	24%	\$1,518.77	21%	\$1,328.93	9%	\$569.54	100%
FA 2397	\$4,966.45								47%	\$2,337.15	24%	\$1,168.58	21%	\$1,022.50	9%	\$438.22	100%
FA 2515	\$271.09								100%	\$271.09							100%
FA 2523	\$1,338.03								100%	\$1,338.03							100%
PEC QWT	\$12,533.42								100%	\$12,533.42							100%
FA 2529	\$414.22										100%	\$414.22					100%
FA 2530	\$643.55										100%	\$643.55					100%
PEC TCG	\$5,236.55										100%	\$5,236.55					100%
																	0%
PGE Trend 001	\$66,084.09	100%	\$66,084.09														100%
PGE Trend 005	\$204,609.63				100%	\$204,609.63											100%
PGE Trend 007	\$46,366.21	100%	\$46,366.21														100%
PGE Trend 008	\$17,193.17	100%	\$17,193.17														100%
PGE Trend 009	\$98,439.15				100%	\$98,439.15											100%
PGE Trend 010	\$80,000.00	100%	\$80,000.00														100%
PGE Trend 011	\$61,544.14	100%	\$61,544.14														100%
PGE Trend 022	\$7,424.14	100%	\$7,424.14														100%
PGE Trend 023	\$23,633.17	100%	\$23,633.17														100%
PGE Trend 025	\$6,465.79	100%	\$6,465.79														100%
PGE Trend 026	\$55,231.06				100%	\$55,231.06											100%
PGE Trend 027	\$4,562.17				100%	\$4,562.17											100%
PGE Trend 028	\$44,530.20	100%	\$44,530.20														100%
PGE Trend 031	\$43,881.81	100%	\$43,881.81														100%
PGE Trend 032	(\$30,706.00)	100%	(\$30,706.00)														100%
																	0%
SFMTA CM #7	\$56,000.00						100%	\$56,000.00									100%
SFMTA CM #11	\$188,000.00						100%	\$188,000.00									100%
SFMTA CM #14	\$100,228.23						100%	\$100,228.23									100%
GE-4	\$69,708.10						100%	\$69,708.10									100%
Trend 43	\$52,606.96						100%	\$52,606.96									100%
Trend 72	\$15,020.04						100%	\$15,020.04									100%
Trend 80	\$54,604.26						100%	\$54,604.26									100%
DAMAGED Cond.	(\$23,813.60)						100%	(\$23,813.60)									100%
																	0%
<b>Total</b>	\$1,279,825.09		\$366,416.72		\$362,842.01		\$512,353.99		\$22,507.49		\$10,476.79		\$3,659.66		\$1,568.43		

Percentage breakdown															
Note: Total excludes additional work															
	13.2%	\$832,990.69	2.9%	\$181,466.37	15.7%	\$991,441.83	1.6%	\$98,859.39	1.0%	\$60,123.61	0.9%	\$58,156.34	6.4%	\$402,617.77	

Ancillary Work																	
	Type	Price	%	PG&E Electric TOTAL	%	PG&E Gas TOTAL	%	AT&T TOTAL	%	Qwest TOTAL	%	TCG TOTAL	%	UCCO TOTAL	%	CITY TOTAL	% TOTAL
GE-1	MOBILIZATION AND DEMOBILIZATION	\$2,500,000.00	13.19%	\$329,839.90	2.87%	\$71,855.36	15.70%	\$392,581.90	1.57%	\$39,145.42	0.95%	\$23,807.19	0.92%	\$23,028.21	6.38%	\$159,424.83	42%
GE-2	CURRENT SCHEDULES	\$20,000.00	13.19%	\$2,638.72	2.87%	\$574.84	15.70%	\$3,140.66	1.57%	\$313.16	0.95%	\$190.46	0.92%	\$184.23	6.38%	\$1,275.40	42%
TR-1	TRAFFIC REGULATION	\$500,000.00	13.19%	\$65,967.98	2.87%	\$14,371.07	15.70%	\$78,516.38	1.57%	\$7,829.08	0.95%	\$4,761.44	0.92%	\$4,605.64	6.38%	\$31,884.97	42%
TR-2	TRAFFIC WATER FILLED BARRIER	\$15,000.00	13.19%	\$1,979.04	2.87%	\$431.13	15.70%	\$2,355.49	1.57%	\$234.87	0.95%	\$142.84	0.92%	\$138.17	6.38%	\$956.55	42%
TR-3	CHANGEABLE MESSAGE SIGNS	\$65,000.00	13.19%	\$8,575.84	2.87%	\$1,868.24	15.70%	\$10,207.13	1.57%	\$1,017.78	0.95%	\$618.99	0.92%	\$598.73	6.38%	\$4,145.05	42%
TR-4	CONSTRUCTION AREA AND SPECIAL TRAFFIC SIGNS	\$3,000.00	13.19%	\$395.81	2.87%	\$86.23	15.70%	\$471.10	1.57%	\$46.97	0.95%	\$28.57	0.92%	\$27.63	6.38%	\$191.31	42%
TR-5	TEMPORARY PAVEMENT MARKING, DELINEATION TAPE AND OVERLAY RAISED MARKERS AFTER FINAL PAVING TRAFFIC SUPERVISORS PROVIDED BY TRAFFIC SUB-CONTRACTOR	\$5,600.00	13.19%	\$738.84	2.87%	\$160.96	15.70%	\$879.38	1.57%	\$87.69	0.95%	\$53.33	0.92%	\$51.58	6.38%	\$357.11	42%
TR-6	ALLOWANCE FOR MANUAL TRAFFIC CONTROL	\$175,151.25	13.19%	\$23,108.75	2.87%	\$5,034.22	15.70%	\$27,504.48	1.57%	\$2,742.55	0.95%	\$1,667.94	0.92%	\$1,613.37	6.38%	\$11,169.38	42%
TR-7	RELOCATE THREE TREES IN PLANTER BOXES	\$120,000.00	13.19%	\$15,832.32	2.87%	\$3,449.06	15.70%	\$18,843.93	1.57%	\$1,878.98	0.95%	\$1,142.75	0.92%	\$1,105.35	6.38%	\$7,652.39	42%
UD-1	RELOCATE FOURTEEN TREES IN PLANTER BOXES	\$2,000.00	21.37%	\$427.33	29.10%	\$581.99	28.10%	\$562.01	2.63%	\$52.67	1.52%	\$30.45	1.52%	\$30.45	15.75%	\$315.10	100%
UD-2	HANDLING AND DISPOSAL OF CALIFORNIA CLASS 2 (NON-HAZARDOUS) EXCAVATED MATERIAL	\$2,498.95	21.37%	\$533.93	29.10%	\$727.19	28.10%	\$702.21	2.63%	\$65.81	1.52%	\$38.05	1.52%	\$38.05	15.75%	\$393.71	100%
UD-3	HANDLING AND DISPOSAL OF STREET TREES	\$3,000.00	13.19%	\$395.81	2.87%	\$86.23	15.70%	\$471.10	1.57%	\$46.97	0.95%	\$28.57	0.92%	\$27.63	6.38%	\$191.31	42%
UD-7	HANDLING AND DISPOSAL OF CALIFORNIA CLASS 2 (NON-HAZARDOUS) EXCAVATED MATERIAL	\$90,000.00	13.19%	\$11,874.24	2.87%	\$2,586.79	15.70%	\$14,132.95	1.57%	\$1,409.24	0.95%	\$857.06	0.92%	\$829.02	6.38%	\$5,739.29	42%
UD-8	TRANSPORTATION OF CALIFORNIA CLASS 2 (NON-HAZARDOUS) EXCAVATED MATERIAL	\$90,000.00	13.19%	\$11,874.24	2.87%	\$2,586.79	15.70%	\$14,132.95	1.57%	\$1,409.24	0.95%	\$857.06	0.92%	\$829.02	6.38%	\$5,739.29	42%
UD-10	PRE-EXCAVATION ENVIRONMENTAL SOIL PROFILING	\$14,000.00	13.19%	\$1,847.10	2.87%	\$402.39	15.70%	\$2,198.46	1.57%	\$219.21	0.95%	\$133.32	0.92%	\$128.96	6.38%	\$892.78	42%
UD-11	REMOVE AND REINSTALL STREETLIGHT POLE ON NEW FOUNDATION	\$6,000.00	11.11%	\$666.67	11.11%	\$666.67	11.11%	\$666.67	11.11%	\$666.67	11.11%	\$666.67	11.11%	\$666.67	33.33%	\$2,000.00	100%
UD-12	RELOCATE THREE FLOWER STANDS	\$13,500.00	11.11%	\$1,500.00	11.11%	\$1,500.00	11.11%	\$1,500.00	11.11%	\$1,500.00	11.11%	\$1,500.00	11.11%	\$1,500.00	33.33%	\$4,500.00	100%
UD-13	ALL DEMOLITION WORK WHICH IS OTHERWISE NOT PAID FOR	\$50,000.00	13.19%	\$6,596.80	2.87%	\$1,437.11	15.70%	\$7,851.64	1.57%	\$782.91	0.95%	\$476.14	0.92%	\$460.56	6.38%	\$3,188.50	42%
UD-14	ALLOWANCE OF UTILITY SERVICES FOR THREE FLOWER STANDS	\$19,574.91	13.19%	\$2,582.63	2.87%	\$562.62	15.70%	\$3,073.90	1.57%	\$306.51	0.95%	\$186.41	0.92%	\$180.31	6.38%	\$1,248.29	42%
SD-1	REMOVE ELEVATOR PIT AND HATCH	\$12,000.00	21.37%	\$2,563.95	29.10%	\$3,491.96	28.10%	\$3,372.03	2.63%	\$316.04	1.52%	\$182.71	1.52%	\$182.71	15.75%	\$1,890.59	100%
SD-2	REMOVE SEWER EJECTOR SUMP PIT	\$10,000.00	21.37%	\$2,136.63	29.10%	\$2,909.97	28.10%	\$2,810.03	2.63%	\$263.36	1.52%	\$152.26	1.52%	\$152.26	15.75%	\$1,575.50	100%
SD-4	REMOVE FUEL TANK AND FOUNDATION	\$15,000.00	21.37%	\$3,204.94	29.10%	\$4,364.95	28.10%	\$4,215.04	2.63%	\$395.05	1.52%	\$228.39	1.52%	\$228.39	15.75%	\$2,363.24	100%
SD-6	REMOVE INTERIOR BASEMENT WALLS	\$104,835.00	21.37%	\$22,399.35	29.10%	\$30,506.66	28.10%	\$29,458.91	2.63%	\$2,760.99	1.52%	\$1,596.19	1.52%	\$1,596.19	15.75%	\$16,516.70	100%
SD-7	REMOVE EXTERIOR BASEMENT WALLS	\$44,565.00	21.37%	\$9,521.89	29.10%	\$12,968.28	28.10%	\$12,522.88	2.63%	\$1,173.69	1.52%	\$678.54	1.52%	\$678.54	15.75%	\$7,021.19	100%
SD-8	REMOVE BASMENT SLAB ON GRADE	\$149,345.00	21.37%	\$31,909.49	29.10%	\$43,458.93	28.10%	\$41,966.34	2.63%	\$3,933.22	1.52%	\$2,273.89	1.52%	\$2,273.89	15.75%	\$23,529.23	100%
SD-9	REMOVE ELEVATED STRUCTURAL SLABS AND STRUCTURAL SIDEWALKS	\$147,320.00	21.37%	\$31,476.82	29.10%	\$42,869.66	28.10%	\$41,397.31	2.63%	\$3,879.89	1.52%	\$2,243.06	1.52%	\$2,243.06	15.75%	\$23,210.20	100%
SD-10	REMOVE RAISED CONCRETE PLATFORM	\$6,000.00	21.37%	\$1,281.98	29.10%	\$1,745.98	28.10%	\$1,686.02	2.63%	\$158.02	1.52%	\$91.35	1.52%	\$91.35	15.75%	\$945.30	100%
SD-11	ALLOWANCE FOR STRUCTURAL DEMOLITION ITEMS NOT SPECIFIED	\$83,733.40	13.19%	\$11,047.45	2.87%	\$2,406.68	15.70%	\$13,148.89	1.57%	\$1,311.11	0.95%	\$797.38	0.92%	\$771.29	6.38%	\$5,339.67	42%
WP-1	BUILDING WATERPROOFING	\$350,000.00	21.37%	\$74,782.01	29.10%	\$101,848.92	28.10%	\$98,350.92	2.63%	\$9,217.77	1.52%	\$5,329.02	1.52%	\$5,329.02	15.75%	\$55,142.33	100%
RP-1	ASPAHLT CONCRETE (TYPE A, 1/2-INCH MAXIMUM WITH MEDIUM GRADING)	\$82,176.50	21.37%	\$17,558.07	29.10%	\$23,913.11	28.10%	\$23,091.81	2.63%	\$2,164.24	1.52%	\$1,251.20	1.52%	\$1,251.20	15.75%	\$12,946.87	100%
RP-2	FULL DEPTH PLANING PER 2-INCH DEPTH OF CUT	\$58,046.00	21.37%	\$12,402.28	29.10%	\$16,891.21	28.10%	\$16,311.08	2.63%	\$1,528.73	1.52%	\$883.80	1.52%	\$883.80	15.75%	\$9,145.12	100%
RP-3	8-INCH THICK CONCRETE BASE	\$27,234.00	21.37%	\$5,818.90	29.10%	\$7,925.01	28.10%	\$7,652.83	2.63%	\$717.25	1.52%	\$414.66	1.52%	\$414.66	15.75%	\$4,290.70	100%
RP-4	8-INCH THICK CONCRETE PAVEMENT	\$5,460.00	21.37%	\$1,166.60	29.10%	\$1,588.84	28.10%	\$1,534.27	2.63%	\$143.80	1.52%	\$83.13	1.52%	\$83.13	15.75%	\$860.22	100%
RP-6	6-INCH WIDE CONCRETE CURB	\$10,304.00	21.37%	\$2,201.58	29.10%	\$2,998.43	28.10%	\$2,895.45	2.63%	\$271.37	1.52%	\$156.89	1.52%	\$156.89	15.75%	\$1,623.39	100%
RP-7	2-FOOT WIDE CONCRETE GUTTER	\$14,140.00	21.37%	\$3,021.19	29.10%	\$4,114.70	28.10%	\$3,973.38	2.63%	\$372.40	1.52%	\$215.29	1.52%	\$215.29	15.75%	\$2,227.75	100%
RP-8	3-1/2-INCH THICK CONCRETE SIDEWALK	\$261,052.50	21.37%	\$55,777.23	29.10%	\$75,965.47	28.10%	\$73,356.44	2.63%	\$6,875.21	1.52%	\$3,974.73	1.52%	\$3,974.73	15.75%	\$41,128.70	100%
RP-9	CONCRETE CURB RAMP	\$42,500.00	21.37%	\$9,080.67	29.10%	\$12,367.37	28.10%	\$11,942.61	2.63%	\$1,119.30	1.52%	\$647.10	1.52%	\$647.10	15.75%	\$6,695.85	100%
ET-1	TRAFFIC SIGNALS	\$50,000.00	13.19%	\$6,596.80	2.87%	\$1,437.11	15.70%	\$7,851.64	1.57%	\$782.91	0.95%	\$476.14	0.92%	\$460.56	6.38%	\$3,188.50	42%
SR-1	CAST-IN-PLACE & PNEUMATICALLY PLACED CONCRETE AND ACCESSORIES (6,000 PSI)	\$391,200.00	21.37%	\$83,584.93	29.10%	\$113,837.99	28.10%	\$109,928.23	2.63%	\$10,302.84	1.52%	\$5,956.32	1.52%	\$5,956.32	15.75%	\$61,633.38	100%
SR-2	STEEL REINFORCEMENTS	\$330,912.00	21.37%	\$70,703.62	29.10%	\$96,294.37	28.10%	\$92,987.14	2.63%	\$8,715.06	1.52%	\$5,038.39	1.52%	\$5,038.39	15.75%	\$52,135.03	100%
SR-3	195 KIPS COMPRESSION MICROPILES	\$260,000.00	21.37%	\$55,552.35	29.10%	\$75,659.20	28.10%	\$73,060.69	2.63%	\$6,847.49	1.52%	\$3,958.70	1.52%	\$3,958.70	15.75%	\$40,962.88	100%
SR-4	240 KIPS COMPRESSION MICROPILES	\$66,000.00	21.37%	\$14,101.75	29.10%	\$19,205.80	28.10%	\$18,546.17	2.63%	\$1,738.21	1.52%	\$1,004.90	1.52%	\$1,004.90	15.75%	\$10,398.27	100%
SR-5	300 KIPS COMPRESSION MICROPILES	\$48,000.00	21.37%	\$10,255.82	29.10%	\$13,967.85	28.10%	\$13,488.13	2.63%	\$1,264.15	1.52%	\$730.84	1.52%	\$730.84	15.75%	\$7,562.38	100%
SR-6	150 KIPS TENSION MICROPILES	\$162,500.00	21.37%	\$34,720.22	29.10%	\$47,287.00	28.10%	\$45,662.93	2.63%	\$4,279.68	1.52%	\$2,474.19	1.52%	\$2,474.19	15.75%	\$25,601.80	100%
SR-7	90 KIPS TENSION MICROPILES	\$44,200.00	21.37%	\$9,443.90	29.10%	\$12,862.06	28.10%	\$12,420.32	2.63%	\$1,164.07	1.52%	\$672.98	1.52%	\$672.98	15.75%	\$6,963.69	100%
SR-8	115 KIPS TENSION MICROPILES	\$62,400.00	21.37%	\$13,332.56	29.10%	\$18,158.21	28.10%	\$17,534.56	2.63%	\$1,643.40	1.52%	\$950.09	1.52%	\$950.09	15.75%	\$9,831.09	100%
SR-9	SEGMENTAL UNDERPINNING	\$58,000.00	21.37%	\$12,392.45	29.10%	\$16,877.82	28.10%	\$16,298.15	2.63%	\$1,527.52	1.52%	\$883.09	1.52%	\$883.09	15.75%	\$9,137.87	100%
SR-10	260 KIPS COMPRESSION MICROPILES	\$48,000.00	21.37%	\$10,255.82	29.10%	\$13,967.85	28.10%	\$13,488.13	2.63%	\$1,264.15	1.52%	\$730.84	1.52%	\$730.84	15.75%	\$7,562.38	100%
EL-3	STREET LIGHTING	\$75,000.00	13.19%	\$9,895.20	2.87%	\$2,155.66	15.70%	\$11,777.46	1.57%	\$1,174.36	0.95%	\$714.22	0.92%	\$690.85	6.38%	\$4,782.75	42%
<b>Total</b>				\$1,115,562.37		\$933,015.93		\$1,402,522.12		\$137,061.00		\$81,977.50		\$80,768.81		\$697,477.83	

Summary										
		PG&E Electric	PG&E Gas	AT&T	Qwest	TCG	UCCO	CITY		
		TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	% TOTAL
		%	%	%	%	%	%	%	%	%
Trenching, Backfill, Pavement Demo/Restoration	\$1,248,835.00	\$391,348.89	\$140,261.37	\$478,249.63	\$23,271.39	\$15,125.61	\$13,690.34	\$186,887.77		
Vaults and Pull boxes	\$458,900.00	\$198,650.00	\$4,000.00	\$165,300.00	\$10,000.00	\$10,000.00	\$10,000.00	\$60,950.00		
Conduit and other materials	\$917,921.00	\$242,991.80	\$37,205.00	\$347,892.20	\$65,588.00	\$34,998.00	\$34,466.00	\$154,780.00		
Additional work	\$1,279,825.09	\$366,416.72	\$362,842.01	\$512,353.99	\$22,507.49	\$10,476.79	\$3,659.66	\$1,568.43		
Ancillary Work	\$4,448,385.57	\$1,115,562.37	\$933,015.93	\$1,402,522.12	\$137,061.00	\$81,977.50	\$80,768.81	\$697,477.83		
Site Management - 5%	\$417,693.33	\$115,748.49	\$73,866.22	\$145,315.90	\$12,921.39	\$7,628.90	\$7,129.24	\$55,083.20		
<b>Grand Total</b>		<b>\$2,430,718.27</b>	<b>\$1,551,190.52</b>	<b>\$3,051,633.83</b>	<b>\$271,349.27</b>	<b>\$160,206.80</b>	<b>\$149,714.06</b>	<b>\$1,156,747.23</b>		

Initial Invoice	\$1,438,119.50	\$431,478.00	\$1,508,764.00	\$264,262.00	\$97,724.00	\$81,104.00
Interim Invoice	\$1,438,119.50	\$431,478.00				
CN 1250 overpayment	\$204,901.48					
<b>Remaining Amount</b>	<b>(\$650,422.21)</b>	<b>\$688,234.52</b>	<b>\$1,542,869.83</b>	<b>\$7,087.27</b>	<b>\$62,482.80</b>	<b>\$68,610.06</b>

## CONTRACT MODIFICATION NO. 30

Final Contract Bid Item Adjustment/Credits for Damages Facilities

**SFMTA Contract No. 1251**  
UNION SQUARE/MARKET STREET STATION  
UTILITIES RELOCATION

**Contractor:** Synergy Project Management Inc.  
150 Executive Park Blvd., Suite 4750  
San Francisco, Ca 94134

### \*\*\*UPDATE\*\*\*

## SUPPLEMENTAL CHANGE ANALYSIS (FOR CMB APPROVAL)

### SCOPE OF WORK:

Adjust the estimated Contract Bid Item quantities to match the actual quantities and amounts of work provided and installed by the Contractor, as listed on the attached Contract Bid Item Reconciliation.

A new Bid Item will be established for this work.

Additionally, this Contract Modification establishes two new Bid Items which credit the SFMTA for estimated costs to repair privately owned utility infrastructure damaged by the Contractor during the execution of Contract work.

### REASON FOR CHANGE:

The Final Bid Item Adjustment contained within this Contract Modification is required in order to allow for final Contract closeout.

During the execution of Contract work, the Contractor inadvertently damaged AT&T and PG&E infrastructure at multiple locations within the project limits. Due to time constraints it was decided that, in lieu of repairing the damaged facilities himself, the Contractor would credit the SFMTA with the estimated repair costs. These funds would be used by the SFMTA at a later date to repair these damaged utilities or install replacements.

### TOTAL MODIFICATION VALUE:

	\$(454,441.68)	Bid Item Reconciliation
	\$(23,813.60)	Estimated Credit for Damaged AT&T Conduits at 3 Locations
+	\$(30,706.00)	Estimated Credit for Damaged PG&E Electrical Cable at PG&E MH 783
	<b>\$(508,961.28)</b>	<b>Total Contract Modification No. 30 Value</b>

### FINAL CONTRACT VALUE:

	<b>\$16,832,549.80</b>	Original Contract Amount
	\$2,109,385.74	Executed Contract Modifications (1 through 12)
+	<u>\$1,852,645.94</u>	<u>Remaining Contract Modifications (13 through 30)</u>
	<b>\$20,794,581.48</b>	<b>FINAL CONTRACT VALUE</b>

### COST ANALYSIS:

At the conclusion of Contract work, the SFMTA Resident Engineer analyzed all Contract Bid Item usage and produced a Final Bid Item Analysis. It was determined that the final Bid Item reconciliation (including Contract Modifications No. 01 through No. 29) resulted in a credit of \$(454,441.68).

Each of the utility credits contained herein is based off the SFMTA Resident Engineer's estimated repair cost.

### SCHEDULE ANALYSIS:

There is no time extension associated with this Contract Modification.

## FINAL BID ITEM ANALYSIS

SFMTA CONTRACT 1251 - Phase 2 Central Subway

UNION SQUARE/MARKET STREET STATION UTILITIES RELOCATION

Report Date: 1/16/2013

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
GE-1	MOBILIZATION AND DEMOBILIZATION	LS	\$2,500,000.00	1	\$2,500,000.00	1.00	\$2,500,000.00
GE-2	CURRENT SCHEDULE	LS	\$20,000.00	1	\$20,000.00	1.00	\$20,000.00
GE-3	ALLOWANCE FOR REIMBURSABLE EXPENSE	AL	\$50,000.00	1	\$50,000.00	0.81	\$40,601.94
GE-4	ALLOWANCE FOR DIFFERING SITE CONDITION	AL	\$570,000.00	1	\$570,000.00	1.00	\$570,000.00
GE-5	TRENCH BOTTOM STABILIZATION	CY	\$90.00	112	\$10,080.00	64.00	\$5,760.00
GE-6	838 MARKET STREET PLUMBING ALLOWANCE	AL	\$90,000.00	1	\$90,000.00	0.00	\$0.00
SP-7A	CUSTOM BARRICADES	LF	\$40.00	1,000	\$40,000.00	1000.00	\$40,000.00
SP-7B	GRAPHIC PANELS	SF	\$15.00	2,000	\$30,000.00	2000.00	\$30,000.00
TR-1	TRAFFIC REGULATION	LS	\$500,000.00	1	\$500,000.00	100%	\$500,000.00
TR-2	TRAFFIC WATER FILLED BARRIER	EA	\$300.00	50	\$15,000.00	50.00	\$15,000.00
TR-3	CHANGEABLE MESSAGE SIGN	EA	\$13,000.00	5	\$65,000.00	5.00	\$65,000.00
TR-4	CONSTRUCTION AREA & SPECIAL TRAFFIC SIGNS	EA	\$100.00	30	\$3,000.00	30.00	\$3,000.00
TR-5	TEMP. PAVEMENT MARKING, DELINEATION TAPE AND OVERLAY RAISED MARKERS AFTER FINAL PAVING	LS	\$5,600.00	1	\$5,600.00	100%	\$5,600.00
TR-6	TRAFFIC SUPERVISOR PROVIDED BY TRAFFIC SUB	HR	\$75.00	1,575	\$118,125.00	2335.35	\$175,151.25
TR-7	ALLOWANCE FOR MANUAL TRAFFIC CONTROL	AL	\$120,000.00	1	\$120,000.00	100%	\$120,000.00
UD-1	RELOCATE 3 TREES IN PLANTER BOXES	LS	\$2,000.00	1	\$2,000.00	100%	\$2,000.00
UD-2	RELOCATE 14 TREES IN PLANTER BOXES	LS	\$3,500.00	1	\$3,500.00	71%	\$2,498.95
UD-3	HANDLING AND DISPOSAL OF STREET TREES	LS	\$3,000.00	1	\$3,000.00	100%	\$3,000.00
UD-4A	PARTIAL DEMOLITION OF PGE VAULT 1857	LS	\$7,000.00	1	\$7,000.00	0%	\$0.00
UD-4B	PARTIAL DEMOLITION OF PGE VAULT 5464	LS	\$7,000.00	1	\$7,000.00	0%	\$0.00
UD-5	HANDLING AND DISPOSAL OF CLASS 1 (NON-RCRA)	TON	\$15.00	5,000	\$75,000.00	0.00	\$0.00
UD-6	TRANSPORTATION OF CLASS 1 (NON RCRA)	TON	\$17.00	5,000	\$85,000.00	0.00	\$0.00
UD-7	HANDLING AND DISPOSAL OF CLASS 2 (NON-RCRA)	TON	\$15.00	1,000	\$15,000.00	6000.00	\$90,000.00
UD-8	TRANSPORTATION OF CLASS 2 (NON RCRA)	TON	\$15.00	1,000	\$15,000.00	6000.00	\$90,000.00
UD-9	ADDITIONAL EXPLORATORY HOLES	EA	\$55.00	50	\$2,750.00	0.00	\$0.00
UD-10	PRE-EXCAVATION ENVIRONMENTAL SOIL PROFILING	LS	\$14,000.00	1	\$14,000.00	1.00	\$14,000.00
UD-11	REMOVE AND REINSTALL STREETLIGHT POLE ON NEW FOUNDATION	LS	\$6,000.00	1	\$6,000.00	1.00	\$6,000.00
UD-12	RELOCATE THREE FLOWER STANDS	LS	\$13,500.00	1	\$13,500.00	1.00	\$13,500.00
UD-13	ALL DEMOLITION WORK WHICH IS OTHERWISE NOT PAID FOR	LS	\$50,000.00	1	\$50,000.00	1.00	\$50,000.00
UD-14	ALLOWANCE OF UTILITY SERVICES FOR 3 FLOWER STANDS	AL	\$20,000.00	1	\$20,000.00	0.98	\$19,574.91
SD-1	REMOVE ELEVATOR PIT AND HATCH	EA	\$6,000.00	2	\$12,000.00	2.00	\$12,000.00
SD-2	REMOVE SEWER EJECTOR SUMP PIT	EA	\$2,000.00	5	\$10,000.00	5.00	\$10,000.00
SD-3	REMOVE GAS VAULT AND HATCH	LS	\$4,000.00	1	\$4,000.00	1.00	\$4,000.00
SD-4	REMOVE FUEL TANK AND FOUNDATION	LS	\$15,000.00	1	\$15,000.00	1.00	\$15,000.00
SD-5	REMOVE AT&T VAULT AND HATCH	LS	\$4,000.00	1	\$4,000.00	1.00	\$4,000.00
SD-6	REMOVE INTERIOR BASEMENT WALLS	SF	\$20.00	6,868	\$137,360.00	5241.75	\$104,835.00
SD-7	REMOVE EXTERIOR BASEMENT WALLS	SF	\$30.00	1,815	\$54,450.00	1485.50	\$44,565.00



ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
SD-8	REMOVE BASEMENT SLAB ON GRADE	SF	\$17.00	7,047	\$119,799.00	8785.00	\$149,345.00
SD-9	REMOVE ELEVATED STRUCTURAL SLABS AND STRUCTURAL SIDEWALKS	SF	\$10.00	17,455	\$174,550.00	14732.00	\$147,320.00
SD-10	REMOVE RAISED CONCRETE PLATFORM	LS	\$6,000.00	1	\$6,000.00	1.00	\$6,000.00
SD-11	ALLOWANCE FOR STRUCTURAL DEMOLITION ITEMS NOT SPECIFIED	AL	\$100,000.00	1	\$100,000.00	0.84	\$83,733.40
WP-1	BUILDING WATERPROOFING	LS	\$350,000.00	1	\$350,000.00	1.00	\$350,000.00
JT-1	FURNISH AND INSTALL JT IN SUB SIDEWALK BASEMENT	LS	\$225,000.00	1	\$225,000.00	1.00	\$225,000.00
JT-2	FURNISH AND INSTALL CDF BACKFILL IN SUB SIDEWALK BASEMENT	CY	\$82.00	7,161	\$587,202.00	7550.27	\$619,122.14
JT-3	FURNISH AND INSTALL SAND BACKFILL IN SUB SIDEWALK BASEMENT	CY	\$50.00	457	\$22,850.00	218.00	\$10,900.00
JT-4	WIDTH LESS THAN OR = 3-FEET: DEPTH LESS THAN OR = 5 FEET	LF	\$170.00	1,990	\$338,300.00	871.00	\$148,070.00
JT-5	WIDTH GREATER THAN 3-FEET: DEPTH LESS THAN OR = 5 FEET	LF	\$315.00	250	\$78,750.00	960.00	\$302,400.00
JT-6	WIDTH LESS THAN OR = 3-FEET: DEPTH BETWEEN 5' TO 10'	LF	\$234.00	182	\$42,588.00	360.00	\$84,240.00
JT-7	WIDTH GREATER THAN 3-FEET: DEPTH BETWEEN 5' TO 10'	LF	\$241.00	1,031	\$248,471.00	1759.00	\$423,919.00
JT-8	JOINT TRENCH ALL WIDTHS GREATER THAN 10'	LF	\$248.00	256	\$63,488.00	312.00	\$77,376.00
JT-9	INTERCEPT UTILITY VAULT TYPE PTS69 - 6 X 19 X 9	EA	\$35,000.00	2	\$70,000.00	2.00	\$70,000.00
JT-10	INTERCEPT UTILITY VAULT TYPE PTS69 - 6 X 14 X 9	EA	\$30,000.00	1	\$30,000.00	1.00	\$30,000.00
JT-11	INTERCEPT UTILITY VAULT TYPE PTS69 - 6 X 9 X 9	EA	\$20,000.00	3	\$60,000.00	3.00	\$60,000.00
JT-12	UTILITY VAULTS T4	EA	\$4,000.00	2	\$8,000.00	0.00	\$0.00
JT-13	PGE VAULT 10 X 10 X 10	EA	\$25,000.00	1	\$25,000.00	1.00	\$25,000.00
JT-14	PGE VAULT 10 X 5.5 X 10	EA	\$25,000.00	1	\$25,000.00	1.00	\$25,000.00
JT-15	PGE VAULT 8 X 12 X 10	EA	\$25,000.00	1	\$25,000.00	2.00	\$50,000.00
JT-16	PGE VAULT 7 X 12 X 10	EA	\$25,000.00	2	\$50,000.00	1.00	\$25,000.00
JT-17	PGE VAULT 7 X 10 X 10	EA	\$25,000.00	1	\$25,000.00	1.00	\$25,000.00
JT-18	PGE VAULT 4.5 X 8.5 X 7.5	EA	\$15,000.00	5	\$75,000.00	3.00	\$45,000.00
JT-19	UTILITY VAULT T3	EA	\$3,000.00	3	\$9,000.00	1.00	\$3,000.00
JT-20	UTILITY VAULT TYPE 4 X 4 X 4	EA	\$4,000.00	1	\$4,000.00	0.00	\$0.00
JT-21	UTILITY VAULT TYPE 3 X 5 X 4	EA	\$5,000.00	6	\$30,000.00	6.00	\$30,000.00
JT-22	UTILITY VAULT TYPE I	EA	\$325.00	1	\$325.00	8.00	\$2,600.00
JT-23	UTILITY VAULT TYPE I-TR	EA	\$325.00	7	\$2,275.00	1.00	\$325.00
JT-24	UTILITY VAULT TYPE II	EA	\$400.00	6	\$2,400.00	2.00	\$800.00
JT-25	UTILITY VAULT TYPE II-TR	EA	\$400.00	1	\$400.00	0.00	\$0.00
JT-26	UTILITY VAULT TYPE III	EA	\$600.00	4	\$2,400.00	0.00	\$0.00
JT-27	UTILITY VAULT TYPE III-TR	EA	\$600.00	1	\$600.00	0.00	\$0.00
JT-28	UTILITY VAULT TYPE III-X	EA	\$825.00	5	\$4,125.00	6.00	\$4,950.00
JT-29	UTILITY VAULT TYPE III-X-TR	EA	\$825.00	3	\$2,475.00	4.00	\$3,300.00
JT-30	UTILITY VAULT TYPE IV-X	EA	\$1,000.00	1	\$1,000.00	6.00	\$6,000.00
JT-31	UTILITY VAULT TYPE IV-X-TR	EA	\$1,000.00	2	\$2,000.00	0.00	\$0.00
JT-32	UTILITY VAULTS TYPE MUNI 38-687	EA	\$12,000.00	3	\$36,000.00	2.00	\$24,000.00
JT-33	UTILITY VAULTS TYPE MUNI 38-687 INTERCEPT	EA	\$18,000.00	1	\$18,000.00	1.00	\$18,000.00
JT-34	UTILITY VAULT TYPE Christy N9	EA	\$325.00	10	\$3,250.00	9.00	\$2,925.00
JT-35	FURNISH AND INSTALL 2-INCH HDPE CONDUIT	LF	\$10.00	1,096	\$10,960.00	2687.00	\$26,870.00
JT-36	FURNISH AND INSTALL 4-INCH HDPE CONDUIT	LF	\$15.00	1,650	\$24,750.00	1700.00	\$25,500.00

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
JT-37	FURNISH AND INSTALL 5-INCH HOPE CONDUIT	LF	\$18.00	4,586	\$82,548.00	2904.00	\$52,272.00
JT-38	FURNISH AND INSTALL 2-INCH PVC CONDUIT	LF	\$6.00	5,846	\$35,076.00	5306.00	\$31,836.00
JT-39	FURNISH AND INSTALL 3-INCH PVC CONDUIT	LF	\$6.00	1,079	\$6,474.00	995.00	\$5,970.00
JT-40	FURNISH AND INSTALL 4-INCH PVC CONDUIT	LF	\$8.20	41,104	\$337,052.80	44670.00	\$366,294.00
JT-41	FURNISH AND INSTALL 5-INCH PVC CONDUIT	LF	\$16.00	985	\$15,760.00	111.00	\$1,776.00
JT-42	FURNISH AND INSTALL 6-INCH PVC CONDUIT	LF	\$11.00	20,438	\$224,818.00	15392.00	\$169,312.00
JT-43	FURNISH AND INSTALL 1-1/2-INCH QUAD LOCK	LF	\$19.00	7,048	\$133,912.00	7108.00	\$135,052.00
JT-44	FURNISH AND INSTALL 1-1/2-INCH GRS CONDUIT	LF	\$16.00	1,511	\$24,176.00	863.00	\$13,808.00
JT-45	FURNISH AND INSTALL 2-INCH GRS CONDUIT	LF	\$20.00	2,286	\$45,720.00	381.00	\$7,620.00
JT-46	FURNISH AND INSTALL 4-INCH GRS CONDUIT	LF	\$33.00	330	\$10,890.00	330.00	\$10,890.00
JT-47	FURNISH AND INSTALL 6-INCH GRS CONDUIT	LF	\$49.00	200	\$9,800.00	684.00	\$33,516.00
JT-48	FURNISH AND INSTALL 2-INCH GAS PE CONDUIT'	LF	\$20.00	901	\$18,020.00	202.00	\$4,040.00
JT-49	FURNISH AND INSTALL 6-INCH GAS PE CONDUIT	LF	\$55.00	941	\$51,755.00	603.00	\$33,165.00
SW-1	TRENCH AND EXCAVATION SUPPORT WORK	LS	\$1,000,000.00	1	\$1,000,000.00	1.00	\$1,000,000.00
SW-2	DEMOLITION, REMOVALS, AND ABANDONMENT WORK	LS	\$100,000.00	1	\$100,000.00	1	\$100,000.00
SW-3	12-INCH DIAMETER VCP SEWER ON CRUSHED ROCK BEDDING	LF	\$170.00	156	\$26,520.00	97.00	\$16,490.00
SW-4	8-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	LF	\$150.00	187	\$28,050.00	176.00	\$26,400.00
SW-5	10-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	LF	\$180.00	160	\$28,800.00	150.00	\$27,000.00
SW-6	14-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	LF	\$200.00	415	\$83,000.00	516.00	\$103,200.00
SW-7	16-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	LF	\$225.00	91	\$20,475.00	95.00	\$21,375.00
SW-8	18-INCH DIAMETER HDPE SEWER ENCASED IN CRUSHED ROCK	LF	\$250.00	264	\$66,000.00	280.00	\$70,000.00
SW-9	18-INCH DIAMETER FLUSH BELL RCP CLASS IV SEWER ON CRUSHED ROCK BEDDING INCLUDING CASING INSULATOR	LF	\$275.00	40	\$11,000.00	36.00	\$9,900.00
SW-10	CONCRETE MANHOLE FOR PIPE SIZE 12" TO 24" WITH NEW FRAME AND COVER (PER SFDPW STD PLAN 87,181)	EA	\$4,500.00	13	\$58,500.00	14.00	\$63,000.00
SW-11	MODIFIED BOX MANHOLE FOR CONNECTION TO 3' x 5' BRICK SEWER WITH NEW FRAME AND COVER (IN ACCORDANCE WITH SFDPW STD. PLAN 87,184.	EA	\$20,000.00	6	\$120,000.00	6.00	\$120,000.00
SW-12	SEWER MAIN CLEANOUT (IN ACCORDANCE WITH DETAIL ON DWG SW-2)	EA	\$500.00	3	\$1,500.00	5.00	\$2,500.00
SW-13	CONCRETE CATCH BASIN WITH NEW FRAME, GRATING, AND CAST IRON TRAP (SFDPW 87,188 SHOWN ON DWG SW-2)	EA	\$5,000.00	9	\$45,000.00	5.00	\$25,000.00
SW-14	10-INCH DIAMETER VCP CULVERT	LF	\$150.00	128	\$19,200.00	48.00	\$7,200.00
SW-15	10-INCH DIAMETER DIP CULVERT	LF	\$180.00	164	\$29,520.00	120.00	\$21,600.00
SW-16	CAST IRON WATER TRAP FOR CATCH BASIN INCLUDING CLEANOUT CAP (SFDPW 87,194)	EA	\$300.00	5	\$1,500.00	5.00	\$1,500.00
SW 17	TELEVISION INSPECTION OF 6, 8, 10, 12 INCH SIDE SEWER OR 10" CULVERT	EA	\$150.00	32	\$4,800.00	0.00	\$0.00
SW-18	6 OR 8-INCH DIAMETER SIDE SEWER CONNECTION TO VCP	EA	\$300.00	26	\$7,800.00	27.00	\$8,100.00
SW-19	6 OR 8-INCH DIAMETER SIDE SEWER	LF	\$125.00	355	\$44,375.00	322.00	\$40,250.00
SW-20	SIDE SEWER AIR VENT ASSEMBLY	EA	\$1,500.00	7	\$10,500.00	5.00	\$7,500.00

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
SW-21	POST CONSTRUCTION TELEVISION INSPECTION OF NEWLY CONSTRUCTED MAIN SEWER	LS	\$20,000.00	1	\$20,000.00	1.00	\$20,000.00
SW-22	EXPLORATORY HOLES OR POTHoles (CONDITIONAL BID ITEM)	EA	\$100.00	2	\$200.00	0.00	\$0.00
WD-1	METER BOX REMOVAL	EA	\$300.00	3	\$900.00	0.00	\$0.00
WD-2	WATER PIPE REMOVAL AND ABANDONMENT	LS	\$50,000.00	1	\$50,000.00	1.00	\$50,000.00
WD-3A	INSTALLATION 6-INCH DIP WITH POLYETHYLENE ENCASEMENT	LF	\$120.00	86	\$10,320.00	176.00	\$21,120.00
WD-3B	INSTALLATION 8-INCH DIP WITH POLYETHYLENE ENCASEMENT	LF	\$150.00	1,444	\$216,600.00	1303.00	\$195,450.00
WD-3C	INSTALLATION 12-INCH DIP WITH POLYETHYLENE ENCASEMENT	LF	\$200.00	122	\$24,400.00	150.00	\$30,000.00
WD-4	INSTALLATION OF SCREW TAPS	EA	\$200.00	10	\$2,000.00	8.00	\$1,600.00
WD-5A	INSTALLATION OF 1-INCH SERVICE PIPS.	LF	\$125.00	101	\$12,625.00	0.00	\$0.00
WD-5B	INSTALLATION OF 2-INCH SERVICE PIPE	LF	\$150.00	79	\$11,850.00	0.00	\$0.00
WD-6A	INSTALLATION OF 4-INCH SERVICE PIPE	LF	\$120.00	97	\$11,640.00	11.00	\$1,320.00
WD-6B	INSTALLATION OF 6-INCH SERVICE PIPE	LF	\$150.00	93	\$13,950.00	30.00	\$4,500.00
WD-6C	INSTALLATION OF 8" SERVICE PIPE	LF	\$170.00	30	\$5,100.00	10.00	\$1,700.00
WD-7	TRENCH EXCAVATION AND BACKFILL FOR PIPE INSTALLED BY SFWD	LF	\$175.00	61	\$10,675.00	0.00	\$0.00
WD-8	INSTALLATION OF STRUCTURAL SUB-SIDEWALK BASEMENT AREA-WAY SETTING FOR LOW PRESSURE FIRE HYDRANT'S	EA	\$10,000.00	2	\$20,000.00	0.00	\$0.00
WD-9	INSTALLATION OF 8" DUCTILE IRON STRUCTURALLY SUPPORTED PIPE WITH POLYETHYLENE ENCASEMENT	LF	\$250.00	147	\$36,750.00	0.00	\$0.00
WD-10	ALLOWANCE. FOR ADDITIONAL EXCAVATION AND BACKFILL	AL	\$100,000.00	1	\$100,000.00	1.00	\$100,000.00
AW-1	TRENCH SHORING AND BRACING OR EQUIVALENT METHOD CONFORMING TO SAFETY	LS	\$100,000.00	1	\$100,000.00	1.00	\$100,000.00
AW-2	LOCATIONS 1A & 1B GEARY STREET MAIN & HYDRANT LATERAL WORK	LS	\$400,000.00	1	\$400,000.00	0.96	\$384,757.14
AW-3	LOCATIONS 1A & 1B O'FARRELL STREET MAIN & HYDRANT LATERAL WORK	LS	\$400,000.00	1	\$400,000.00	0.97	\$387,842.92
AW-4	LOCATION 2 - HYDRANT & LATERAL	LS	\$100,000.00	1	\$100,000.00	0.77	\$76,945.46
AW-5	AWSS HYDRANT LATERAL OFFSET (DELETABLE BID ITEM)	EA	\$1,250.00	5	\$6,250.00	6.00	\$7,500.00
AW-6	10" AWSS PIPING REPLACEMENT - 10 FOOT LAY LENGTH (DELETABLE BID ITEM)	EA	\$1,000.00	2	\$2,000.00	0.00	\$0.00
AW-7	12" AWSS PIPING REPLACEMENT - 10 FOOT LAY LENGTH (DELETABLE BID ITEM)	EA	\$1,200.00	4	\$4,800.00	0.00	\$0.00
RP-1	ASPHALT CONCRETE (TYPE A, 1/2" MAX MED. GRADING)	TON	\$175.00	450	\$78,750.00	469.58	\$82,176.50
RP-2	FULL DEPTH PLANING PER 2-INCH DEPTH OF CUT	SF	\$2.00	31,000	\$62,000.00	29023.00	\$58,046.00
RP-3	8-INCH THICK CONCRETE BASE	SF	\$9.00	5,600	\$50,400.00	3026.00	\$27,234.00
RP-4	8-INCH THICK CONCRETE PAVEMENT	SF	\$10.00	2,000	\$20,000.00	546.00	\$5,460.00
RP-5	10-INCH THICK CONCRETE PAVEMENT	SF	\$12.00	1,100	\$13,200.00	0.00	\$0.00
RP-6	6-INCH WIDE CONCRETE CURB	LF	\$32.00	5,750	\$184,000.00	322.00	\$10,304.00
RP-7	2-FOOT WIDE CONCRETE GUTTER	LF	\$35.00	560	\$19,600.00	404.00	\$14,140.00
RP-8	3-1/2-INCH THICK CONCRETE SIDEWALK	SF	\$15.00	25,200	\$378,000.00	17403.50	\$261,052.50
RP-9	CONCRETE CURB RAMP	EA	\$2,500.00	25	\$62,500.00	17.00	\$42,500.00
RP-10	CAST-IN PLACE DETEC TABLE SURFACE TILE	SF	\$50.00	300	\$15,000.00	0.00	\$0.00

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
RP-11	ALLOWANCE FOR EXCAVATION PERMIT FEE ASSESSED BY BSM ACCORDING TO ARTICLE 2.4 OF THE PUBLIC WORK CODE	AL	\$10,000.00	1	\$10,000.00	0.00	\$0.00
ET-1	TRAFFIC SIGNALS	LS	\$50,000.00	1	\$50,000.00	1.00	\$50,000.00
ET-2	TEMPORARY TROLLEY RE-ROUTE - TRAFFIC SIGNALS	LS	\$83,000.00	1	\$83,000.00	1.00	\$83,000.00
SR-1	CAST IN PLACE & PNEUMATICALLY PLACED CONCRETE AND ACCESSORIES (6,000 PSI)	CY	\$600.00	761	\$456,600.00	652.00	\$391,200.00
SR-2	STEEL REINFORCEMENTS	TON	\$2,700.00	102	\$275,400.00	122.56	\$330,912.00
SR-3	195 KIPS COMPRESSION MICRO PILES	EA	\$10,000.00	26	\$260,000.00	26.00	\$260,000.00
SR-4	240 KIPS COMPRESSION MICRO PILES	EA	\$4,400.00	15	\$66,000.00	15.00	\$66,000.00
SR-5	300 KIPS COMPRESSION MICRO PILES	EA	\$6,000.00	8	\$48,000.00	8.00	\$48,000.00
SR-6	150 KIPS TENSION MICRO PILES	EA	\$6,500.00	25	\$162,500.00	25.00	\$162,500.00
SR-7	90 KIPS TENSION MICRO PILES	EA	\$3,400.00	13	\$44,200.00	13.00	\$44,200.00
SR-8	115 KIPS TENSION MICRO PILES	EA	\$2,400.00	26	\$62,400.00	26.00	\$62,400.00
SR-9	SEGMENT UNDERPINNING	LF	\$2,900.00	40	\$116,000.00	20.00	\$58,000.00
SR-10	260 Kips Compression Micro piles	EA	\$6,000.00	8	\$48,000.00	8.00	\$48,000.00
MP-01	PLUMBING SYSTEM	LS	\$200,000.00	1	\$200,000.00	1.00	\$200,000.00
EL-1	TEMPORARY TROLLEY RE-ROUTE - STREET LIGHTING	LS	\$60,000.00	1	\$60,000.00	1.00	\$60,000.00
EL-2	TEMPORARY TROLLEY RE-ROUTE - TROLLEY POLE GROUNDING	LS	\$15,000.00	1	\$15,000.00	1.00	\$15,000.00
EL-3	STREET LIGHTING	LS	\$75,000.00	1	\$75,000.00	1.00	\$75,000.00
TP-1	TRACTION POWER SYSTEM	LS	\$125,000.00	1	\$125,000.00	0.30	\$37,500.00
TP-2	HI-SPEED DC TRIP UNIT	EA	\$7,800.00	4	\$31,200.00	4.00	\$31,200.00
OV-1	OVERHEAD SPECIAL WORK AT STOCKTON AND SUTTER STREETS	LS	\$200,000.00	1	\$200,000.00	1.00	\$200,000.00
OV-2	OVERHEAD SPECIAL WORK AT SUTTER AND MASON STREETS	LS	\$200,000.00	1	\$200,000.00	1.00	\$200,000.00
OV-3	OVERHEAD SPECIAL. WORK AT MASON AND EDDY STREETS	LS	\$50,000.00	1	\$50,000.00	1.00	\$50,000.00
OV-4	OVERHEAD SPECIAL WORK AT MARKET AND TURK STREETS	LS	\$220,000.00	1	\$220,000.00	1.00	\$220,000.00
OV-5	OVERHEAD SPECIAL WORK AT MARKET AND FIFTH STREETS	LS	\$50,000.00	1	\$50,000.00	1.00	\$50,000.00
OV-6	OVERHEAD SPECIAL WORK AT FIFTH AND HARRISON STREETS	LS	\$80,000.00	1	\$80,000.00	1.00	\$80,000.00
OV-7	PROVIDE 2/0 TROLLEY WIRE	LF	\$29.00	11,000	\$319,000.00	10488.00	\$304,152.00
OV-8	PROVIDE TANGENT OR INVERTED SPAN	EA	\$3,500.00	14	\$49,000.00	9.00	\$31,500.00
OV-9	PROVIDE BRACKET ARM AND SPAN	EA	\$5,000.00	30	\$150,000.00	34.00	\$170,000.00
OV-10	PROVIDE DIFFERENTIAL DEAD-END	EA	\$5,500.00	1	\$5,500.00	1.00	\$5,500.00
OV-11	PROVIDE SECTION INSULATOR	EA	\$5,000.00	7	\$35,000.00	5.00	\$25,000.00
OV-12	PROVIDE TROLLEY WIRE CROSSOVER	EA	\$25,000.00	4	\$100,000.00	4.00	\$100,000.00
OV-13	PROVIDE TYPE 761N TROLLEY POLE	EA	\$3,400.00	31	\$105,400.00	35.00	\$119,000.00
OV-14	PROVIDE TYPE 765N TROLLEY POLE	EA	\$3,400.00	5	\$17,000.00	5.00	\$17,000.00
OV-15	PROVIDE TYPE 770 TROLLEY POLE	EA	\$6,000.00	3	\$18,000.00	3.00	\$18,000.00
OV-16	PROVIDE TROLLEY POLE FOUNDATION FOR TYPE 76IN POLE	EA	\$4,200.00	28	\$117,600.00	32.00	\$134,400.00
OV-17	PROVIDE TROLLEY POLE FOUNDATION FOR TYPE 765N POLE	EA	\$4,200.00	5	\$21,000.00	4.00	\$16,800.00
OV-18	PROVIDE TROLLEY POLE FOUNDATION FOR TYPE 770 POLE	EA	\$5,500.00	3	\$16,500.00	3.00	\$16,500.00
OV-19	REMOVE AND SALVAGE OR DISPOSE OF EXISTING TROLLEY POLE AND DISPOSE OF FOUNDATION 3 FEET BELOW FINISH GRADE	EA	\$800.00	3	\$2,400.00	3.00	\$2,400.00

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
OV-20	PROSPECT HOLE FOR DEPTH UP TO 3 FEET	EA	\$450.00	16	\$7,200.00	9.00	\$4,050.00
OV-21	PROSPECT HOLE FOR DEPTH GREATER THAN 3 FEET	EA	\$675.00	5	\$3,375.00	0.00	\$0.00
OV-22	PAINT TROLLEY POLE	EA	\$800.00	3	\$2,400.00	0.00	\$0.00
SO-1	PROVIDE SUB SIDEWALK BASEMENT FOUNDATION	EA	\$12,000.00	3	\$36,000.00	5.00	\$60,000.00
SO-2	PROVIDE EYEBOLT	EA	\$2,000.00	16	\$32,000.00	11.00	\$22,000.00
SO-3	TESTING OF EXISTING EYEBOLTS	EA	\$750.00	6	\$4,500.00	9.00	\$6,750.00
SP-OP11	OPTION FOR UTILITY RELOCATION AND CLOSURE WALL FOR VACATING BASEMENT FOR 17-19 STOCKTON STREET	LS	\$60,000.00	1	\$60,000.00	0.00	\$0.00
<b>TOTAL BASE CONTRACT:</b>					<b>\$16,832,549.80</b>	<b>\$16,001,961.11</b>	

CM	CONTRACT MODIFICATIONS						
1	Sewer Changes on Geary and O'farrell Streets	LS	\$148,918.72	1	\$148,918.72	1	\$148,918.72
2	Installation of Reinforced Slab underneath Joint Trench (O'Farrell)	LS	\$67,633.79	1	\$67,633.79	1	\$67,633.79
3	Additional Work for Secondary Basement Closure Wall at 150 Stockton Street (Neiman Marcus), accelerate work at 48 Stockton (Barneys) and 101 Stockton (Macys West).	LS	\$216,993.24	1	\$216,993.24	1	\$216,993.24
4	Adjustment to TR-7 Bid Item Allowance	LS	\$261,584.33	1	\$261,584.33	1	\$261,584.33
5	UMS Station Footprint Change (Lump Sum Changes)	LS	\$421,880.06	1	\$421,880.06	1.00	\$421,880.06
	Bid Item Quantity Adjustment (JT-1)	LS	(\$10,231.00)	1	(\$10,231.00)	1	(\$10,231.00)
	Bid Item Quantity Adjustment (JT-2)	CY	\$82.00	(491)	(\$40,262.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-4)	LF	\$170.00	(58)	(\$9,860.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-5)	LF	\$315.00	290	\$91,350.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-7)	LF	\$241.00	(155)	(\$37,355.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-12)	EA	\$1,000.00	(1)	(\$1,000.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-19)	EA	\$3,000.00	(2)	(\$6,000.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-28)	EA	\$825.00	2	\$1,650.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-31)	EA	\$1,000.00	1	\$1,000.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-34)	EA	\$325.00	1	\$325.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-36)	LF	\$15.00	725	\$10,875.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-38)	LF	\$6.00	180	\$1,080.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-39)	LF	\$6.00	(640)	(\$3,840.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-40)	LF	\$8.20	(1,836)	(\$15,055.20)	0	\$0.00
	Bid Item Quantity Adjustment (JT-42)	LF	\$11.00	10	\$110.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-43)	LF	\$19.00	410	\$7,790.00	0	\$0.00
	Bid Item Quantity Adjustment (JT-48)	LF	\$20.00	(220)	(\$4,400.00)	0	\$0.00
	Bid Item Quantity Adjustment (JT-49)	LF	\$55.00	(110)	(\$6,050.00)	0	\$0.00
	Bid Item Quantity Adjustment (RP-8)	SF	\$15.00	(840)	(\$12,600.00)	0	\$0.00
Bid Item Quantity Adjustment (SD-8)	SF	\$17.00	(840)	(\$14,280.00)	0	\$0.00	
Bid Item Quantity Adjustment (SD-9)	SF	\$10.00	(840)	(\$8,400.00)	0	\$0.00	
Bid Item Quantity Adjustment (SR-1)	CY	\$600.00	(70)	(\$42,000.00)	0	\$0.00	
Bid Item Quantity Adjustment (SR-2)	TON	\$2,700.00	(7)	(\$18,900.00)	0	\$0.00	

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
	Bid Item Quantity Adjustment (SR-4)	EA	\$4,400.00	(8)	(\$35,200.00)	0	\$0.00
	Bid Item Quantity Adjustment (SR-6)	EA	\$6,500.00	(8)	(\$52,000.00)	0	\$0.00
	Bid Item Quantity Adjustment (SW-8)	LF	\$250.00	(10)	(\$2,500.00)	0	\$0.00
	Bid Item Quantity Adjustment (SW-10)	EA	\$4,500.00	2	\$9,000.00	0	\$0.00
	Bid Item Quantity Adjustment (SW-14)	LF	\$150.00	18	\$2,700.00	0	\$0.00
	Bid Item Quantity Adjustment (SW-18)	EA	\$300.00	(7)	(\$2,100.00)	0	\$0.00
	Bid Item Quantity Adjustment (SW-19)	LF	\$125.00	(480)	(\$60,000.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-10)	AL	\$100,000.00	(1)	(\$140,000.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-3A)	LF	\$120.00	105	\$12,600.00	0	\$0.00
	Bid Item Quantity Adjustment (WD-3B)	LF	\$150.00	(190)	(\$28,500.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-5A)	LF	\$125.00	(70)	(\$8,750.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-5B)	LF	\$150.00	(70)	(\$10,500.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-6A)	LF	\$120.00	(70)	(\$8,400.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-6B)	LF	\$150.00	(60)	(\$9,000.00)	0	\$0.00
	Bid Item Quantity Adjustment (WD-6C)	LF	\$170.00	30	\$5,100.00	0	\$0.00
	Bid Item Quantity Adjustment (WP-1)	LS	(\$14,609.30)	1	(\$14,609.30)	1	(\$14,609.30)
6	AWSS Alignment Change on O'Farrell Street	LS	\$278,350.98	1	\$278,350.98	1	\$278,350.98
7	Furnish and Install AT&T Manholes 5829 & 5830	LS	\$56,000.00	1	\$56,000.00	1	\$56,000.00
8	Additional Traffic Signal Work requested by DPT	LS	\$49,583.99	1	\$49,583.99	1	\$49,583.99
9	Increase of WD-10 "Allowance for Additional Excavation and Backfill" 21 Locations	LS	\$191,778.62	1	\$191,778.62	0.70	\$134,553.43
10	ATT Acceleration and Installation of Manholes 133, 5828, 5829, 5830, 5831, 5832 and 5833	LS	\$281,435.00	1	\$281,435.00	1	\$281,435.00
11	Furnish and Install AT&T Manholes 5828, 5831, 113, 5832 and 5403	LS	\$188,000.00	1	\$188,000.00	1	\$188,000.00
12	Installation of Additional OCS on Folsom Street	LS	\$405,439.51	1	\$405,439.51	1	\$405,439.51
13	Install Secondary Closure Wall at 1 Stockton - Non Bid Item Changes	LS	\$85,698.86	1	\$85,698.86	1	\$85,698.86
	Time Related Overhead for 39 EA Calendar Days	LS	\$143,852.27	1	\$143,852.27	1	\$143,852.27
	Bid Item Quantity Adjustment (UD-7)	TON	\$15.00	60	\$906.60	60	\$906.60
	Bid Item Quantity Adjustment (UD-8)	TON	\$15.00	60	\$906.60	60	\$906.60
	Bid Item Quantity Adjustment (SD-8)	SF	\$17.00	357	\$6,069.00	357	\$6,069.00
	Bid Item Quantity Adjustment (WP-1)	LS	\$350,000.00	0.05	\$17,500.00	0.05	\$17,500.00
	Bid Item Quantity Adjustment (JT-2)	CY	\$82.00	39	\$3,206.20	39	\$3,206.20
	Bid Item Quantity Adjustment (SR-1)	CY	\$600.00	60	\$36,000.00	60	\$36,000.00
	Bid Item Quantity Adjustment (SR-2)	TON	\$2,700.00	8	\$21,060.00	8	\$21,060.00
	Bid Item Quantity Adjustment (SR-6)	EA	\$6,500.00	7	\$45,500.00	7	\$45,500.00
Bid Item Quantity Adjustment (SR-10)	EA	\$6,000.00	8	\$48,000.00	8	\$48,000.00	
14	AT&T Trenching and Manhole 133	LS	\$100,228.23	1	\$100,228.23	1	\$100,228.23
15	Extra work for sewer facilities	LS	\$45,155.74	1	\$45,155.74	1	\$45,155.74
16	Extra work for SFWD/NRG facilities	LS	\$39,598.55	1	\$39,598.55	1	\$39,598.55
17	Live utilities temp support at 17-25 Stockton	LS	\$337,547.82	1	\$337,547.82	1	\$337,547.82
18	Additional sewer work at Macys West, UMS Garage and Gucci Building	LS	\$69,126.30	1	\$69,126.30	1	\$69,126.30

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	CONTRACT		FINAL EARNED	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT
19	PG&E Gas concrete separation wall and tie-in/kill support	LS	\$293,702.41	1	\$293,702.41	1	\$293,702.41
20	Modification to OCS, additional pole and feeder installation, and differing conditions at Folsom OCS bypass	LS	\$110,044.43	1	\$110,044.43	1	\$110,044.43
21	PG&E field changes at O'Farrell, conduit substitution and installation of PG&E Vault 873	LS	\$83,096.08	1	\$83,096.08	1	\$83,096.08
22	Removal of JCDecaux kiosks, install Muni benches, waterproofing at FIDM, Crate and Barrell and Macys Mens, and relocation of Flower Stand	LS	\$84,915.62	1	\$84,915.62	1	\$84,915.62
23	Demo of AT&T vault 113, additional trench at Geary, and differing conditions at various vaults	LS	\$133,405.98	1	\$133,405.98	1	\$133,405.98
24	Install PG&E vault 584, gas tie-in/kill support, intercept conduit at vault 573, remove gas valve and install anodes, PGE-AWSS interference at Geary, differing conditions at various vaults, and red concrete substitution	LS	\$333,214.10	1	\$333,214.10	1	\$333,214.10
25	Differing conditions related to Qwest, TCG and UCCO facilities	LS	\$37,181.38	1	\$37,181.38	1	\$37,181.38
26	Modification to MUNI vault 900A at Stockton north, streetlight conduit at 5th/Harrison, adjustment to OCS along Mason, and differing conditions during OCS pole installations on Mason	LS	\$75,743.74	1	\$75,743.74	1	\$75,743.74
27	Accelerate contract work at 17-19 Stockton and Barney's, accelerate contract work related to AT&T and PG&E facilities, and modification of wall footing at One Stockton	LS	\$41,300.87	1	\$41,300.87	1	\$41,300.87
28	Reroute waterline on Geary east, differing conditions related to AWSS on Ellis, and core drilling and plumbing at Disney and Armani	LS	\$61,679.42	1	\$61,679.42	1	\$61,679.42
29	Extended overhead from July 19, 2012 through August 16, 2012.	LS	\$106,967.02	1	\$106,967.02	1	\$106,967.02
<b>SUBTOTAL CONTRACT MODIFICATIONS (1-29):</b>					<b>\$4,470,992.96</b>	<b>\$4,847,139.97</b>	
30	Bid Item Adjustment Total	LS	(\$454,441.68)	1	(\$454,441.68)	1	(\$454,441.68)
	AT&T credit (NCR #10)	LS	(\$23,813.60)	1	(\$23,813.60)	1	(\$23,813.60)
	PG&E credit for damaged cable	LS	(\$30,706.00)	1	(\$30,706.00)	1	(\$30,706.00)
<b>SUBTOTAL CONTRACT MODIFICATION 30:</b>					<b>(\$508,961.28)</b>	<b>(\$508,961.28)</b>	
<b>TOTAL BASE CONTRACT:</b>						<b>\$16,832,549.80</b>	
<b>TOTAL CONTRACT MODIFICATIONS (1-30):</b>						<b>\$3,962,031.68</b>	
<b>FINAL CONTRACT AMOUNT</b>						<b>\$20,794,581.48</b>	

CMB Change No.: **CMB – 0107**

Initial Implementing Change Control Procedure No.: **1251 – CMod Trend #05, 46, 51, 61, 63, 66, 69, 79, and 81**

**GENERAL**

Proposed Change Sponsor: M. Acosta Received by CMB: 02/06/2013  
(Date)

Affected Disciplines: Utilities



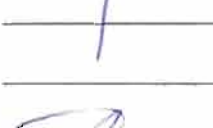

- Impacts of Change
1. Trend 05 – Additional work to work around and shift existing PG&E conduits on Gary Blvd. at two locations
  2. Trend 46 – Additional cost for enlarging PG&E Vault No. 584 on O'Farrell east of Stockton
  3. Trend 51 – Intercept existing PG&E ductbank and terminate into Vault No. 5464 Market/Ellis
  4. Trend 61 – Excavate for PG&E service cut-over at 177 Stillman
  5. Trend 63 – Excavation and restoration for PG&E gas tie-in and kill holes (Pt.2)
  6. Trend 66 – Intercept PG&E conduits at Vault No. 573 at Geary east of Stockton
  7. Trend 69 – Removal of abandoned PG&E gas valve (8EA and installation of anodes
  8. Trend 79 – Additional work related to the installation of PG&E Vault Nos. 467, 571, 573, 586 and 594 (including joint trench leading to these vaults).
  9. Trend 81 – Use of regular concrete as opposed to cover PG&E electrical ductbanks.

Contract(s) Directly Affected by this Proposed Change:

1250	1251	1252	1253	1254	1255	1256
1 <input type="checkbox"/>	2 <input checked="" type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
(CP01)	(CP02)	(CP03)	(CP04)	(CP05)	(CP06)	(CP07)

**CONFIGURATION MANAGEMENT BOARD APPROVALS**

*Signatures*

	Agree with the Change	Disagree with the Change	Date
Senior Program Manager:			2-13-13
Deputy Program Manager:			13 FEB 13
PM Project Services:			
PM Project Development/Delivery:			
SFMTA O & M Manager:			
SFMTA Safety and Security			13 FEB 13
SFCTA PMO			

Comments



## TREND NUMBERS 5, 46, 51, 55, 61, 63, 66, 69, 79 AND 81

**SFMTA Contract No. 1251**  
UNION SQUARE/MARKET STREET STATION  
UTILITIES RELOCATION

**Contractor:** Synergy Project Management Inc.  
30 Grant Street, Suite 300  
San Francisco, CA 94108

### **\*\*\*UPDATE\*\*\***

## **SUPPLEMENTAL CHANGE ANALYSIS (FOR CMB APPROVAL)**

### **SCOPE OF WORK:**

Trend 05: Additional work to work around and shift existing PG&E conduits on Geary Blvd. at 2 locations (east and west of Stockton Street) during installation of AWSS.

Trend 46: Additional cost for enlarging PG&E Vault No. 584 on O'Farrell east of Stockton.

Trend 51: Intercept existing PG&E ductbank and terminate into Vault No. 5464 at Market/Ellis.

Trend 61: Excavate for PG&E service cut-over at 177 Stillman.

Trend 63: Excavation and restoration for PG&E gas tie-in and kill holes (Part II).

Trend 66: Intercept PG&E conduits at Vault No. 573 at Geary east of Stockton.

Trend 69: Removal of abandoned PG&E gas valve (8EA) and installation of anodes.

Trend 79: Additional work related to the installation of PG&E Vault Nos. 467, 571, 573, 586 and 594 (including joint trench leading to these vaults).

Trend 81: Use of regular concrete as opposed to CDF to cover PG&E electrical ductbanks

### **REASON FOR CHANGE:**

Trend 05: Contract Plans AW-501.1, 501.2, 501.4 and 501.5 show the existing AWSS to be replaced in place. However, existing PG&E conduits were found to be on top of and parallel to the existing AWSS (whereas Contract Plans JT-308 and 309 showed the existing electrical and AWSS to be in separate trenches). See attached sketch.

Trend 46: The 2 existing PG&E ductbanks that were supposed to be intercepted by vault 584 were further apart than shown on Contract Plans. It was therefore necessary to enlarge Vault No. 584 to capture the 2 ductbanks.

Trend 51: PG&E requested that the Contractor reroute an existing ductbank running north out of Manhole 1803 at 4th/Pioneer Place into Manhole 5464 at Market/Ellis.

Trend 61: PG&E requested that the Contractor excavate for service cut-over at 177 Stillman Street.

Trend 63: PG&E originally intended to self-perform the excavation and restoration work at all gas tie-in/kill holes. However, due to a lack of available crews, PG&E instructed that the Contractor to finish excavation and restoration work for the last remaining tie-in/kill holes.

Trend 66: During installation of intercept Vault No. 573, PG&E had incorrectly identified the conduits to be intercepted. This error was discovered during cut-over process by PG&E.

Trend 69: PG&E instructed that the Contractor remove all abandoned gas valves (8EA)

Trend 79: Unforeseen conditions were encountered during installation of select PG&E vaults including joint trenches leading to these vaults.

Trend 81: Due to heat dissipation problems associated with CDF covering of PG&E ductbanks, PG&E representatives requested that the Contractor use regular concrete as a substitute.

**COST SUMMARY TABLE:**

<b>Trend Number:</b>	<b>Description of Additional Work Performed:</b>	<b>Contractor's Cost Proposal</b>	<b>Modification Amount</b>	<b>PG&amp;E Form B Agreement</b>
05	AWSS/PG&E Conflict on Geary Blvd.	\$250,605.02	\$66,084.09	Agreed
46	PG&E Vault No. 584 Enlargement	\$115,660.47	\$80,000.00	Agreed
51	Rerouting of Existing PG&E Ductbank at Vault No. 5464	\$33,531.01	\$23,633.17	Agreed
61	Excavation for Cut-Over at 177 Stillman	\$15,000.00	\$7,424.14	Agreed
63	Excavation and Restoration for Gas Kill/Tie-In Holes (Part II)	\$88,539.87	\$56,457.57	Agreed
66	Intercept Conduits at Vault No. 573	\$7,269.84	\$6,465.79	Agreed
69	Removal of Abandoned Gas Valves	\$8,611.56	\$4,737.33	Agreed
79	Unforeseen Conditions Encountered During Vault Installation	\$120,872.36	\$44,530.20	Agreed
81	Use of Regular Concrete Substitute for CDF	\$99,751.11	\$43,881.81	Agreed
<b>TOTAL</b>		<b>\$769,096.09</b>	<b>\$333,214.10</b>	

**COST ANALYSIS:**

Each of the FARs, CORs and/or invoices submitted by the Contractor was thoroughly reviewed by the SFMTA Resident Engineer. After this comprehensive review it was determined that the final compensation value of these items will be \$333,214.10 as shown in the Cost Summary Table.

PG&E has reviewed all costs contained herein and has subsequently agreed to compensate the SFMTA in full for the \$333,214.10 cost for the nine items of work listed above. An email confirming this agreement is attached for reference.

**SCHEDULE ANALYSIS:**

This work does not impact the Substantial Completion Date. There is no time adjustment associated with this Contract Modification.

## Acosta, Michael

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**From:** Lightstone, Michael <MxLd@pge.com>  
**Sent:** Monday, January 14, 2013 9:14 AM  
**To:** Acosta, Michael  
**Cc:** Benson, Mark; 'Tom Reimer (reimer.rhf@gmail.com)'  
**Subject:** RE: CN 1251 PG&E Trend Nos. 1 and 31 - Update

Mike A:

I concur with your and Mark's thinking to fund two additional weeks of plat rental & maintenance.

I will need a couple more days to review the red concrete question.

Thanks.

Michael

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**From:** Acosta, Michael [<mailto:Michael.Acosta@sfmta.com>]  
**Sent:** Friday, January 11, 2013 11:33 AM  
**To:** Lightstone, Michael  
**Cc:** Benson, Mark; 'Tom Reimer (reimer.rhf@gmail.com)'  
**Subject:** RE: CN 1251 PG&E Trend Nos. 1 and 31 - Update

Michael,

Have you had a chance to review these 2 change orders?

Thanks

Mike Acosta, P.E.  
Resident Engineer  
SFMTA/Central Subway  
Tel.: 415-701-5282  
Mobile: 415-678-8068  
Fax: 415-701-5222  
E-mail: [Michael.acosta@sfmta.com](mailto:Michael.acosta@sfmta.com)

**From:** Acosta, Michael  
**Sent:** Monday, January 07, 2013 11:42 AM  
**To:** Lightstone, Michael ([MxLd@pge.com](mailto:MxLd@pge.com))  
**Cc:** Benson, Mark; Tom Reimer ([reimer.rhf@gmail.com](mailto:reimer.rhf@gmail.com))  
**Subject:** CN 1251 PG&E Trend Nos. 1 and 31 - Update

Michael,

From our last meeting, there were 2 items that I needed to finalize and provide update: they are the AWSS/PG&E conflict (Trend #1) and PG&E Red concrete (Trend #31).

Trend #1: I've updated the spreadsheet to reflect our preliminary agreement total of about \$61k. However, Mark and I thought that it would not be fair to the contractor to expect him to re-mobilize immediately after the conduits have

## Acosta, Michael

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**From:** Lightstone, Michael <MxLd@pge.com>  
**Sent:** Monday, January 28, 2013 8:30 AM  
**To:** Acosta, Michael  
**Cc:** Benson, Mark; 'Tom Reimer (reimer.rhf@gmail.com)'  
**Subject:** FW: CN 1251 PG&E Trend Nos. 1 and 31 - Update  
**Attachments:** PG&E AWSS Conflict - COR 68 sent to PGE 010713.xls; COR # 21 PGE Red Concrete vs Cell Crete rev1.xls; 1251 - RFI #59 PG&E Concrete.pdf; 1251 - Submittal #98 Red Concrete.pdf

Mike A:

PG&E accepts the proposed cost for Trend #31 of \$43,881.81 as you list below.

Thanks.

Michael

**From:** Acosta, Michael [<mailto:Michael.Acosta@sfmta.com>]  
**Sent:** Monday, January 07, 2013 11:42 AM  
**To:** Lightstone, Michael  
**Cc:** Benson, Mark; Tom Reimer ([reimer.rhf@gmail.com](mailto:reimer.rhf@gmail.com))  
**Subject:** CN 1251 PG&E Trend Nos. 1 and 31 - Update

Michael,

From our last meeting, there were 2 items that I needed to finalize and provide update: they are the AWSS/PG&E conflict (Trend #1) and PG&E Red concrete (Trend #31).

**Trend #1:** I've updated the spreadsheet to reflect our preliminary agreement total of about \$61k. However, Mark and I thought that it would not be fair to the contractor to expect him to re-mobilize immediately after the conduits have been made clear. Hence, I've added 2 weeks worth of rental and maintenance costs. The total cost that we'd like PG&E to approve is \$66,084.09. See attached spreadsheet.

**Trend #31:** Please see attached RFI and submittal for the documentations of a request for change from PG&E. I have done the cost analysis of this change and determined the total to be \$43,881.81 (see attached spreadsheet). This cost only includes the difference in price for the material (concrete vs. cdf). I denied Synergy's request for additional labor cost. Needless to say, Synergy is not in agreement with my determination but SFMTA is proceeding with a unilateral change order.

Please review the spreadsheets and let me know if you concur with my determination of the final costs for the 2 subject trends.

Thank you

Mike Acosta, P.E.  
Assistant Engineer  
SFMTA/Central Subway  
Tel.: 415-701-5282  
Mobile: 415-678-8068



# BARNARD IMPREGILO HEALY JOINT VENTURE

420 Fourth Street San Francisco, CA 94107, PH (415) 546-0799, FX (415) 546-3822

Third Street Lightrail Program Phase 2 - Central Subway Project  
CONTRACT 1252

2/6/2013

COR 008: TIA (COR #001, COR #002, COR #003)

## TIA Summary

Cost Impacts	Unit Cost (daily)	Total Cost
<b>Contractor</b>		
Indirect Labor (BIH)	\$ 10,324.88	\$ 72,274.16
Labor Markup at Specified 15%	<del>\$ 1,548.73</del>	<del>\$ 10,841.12</del>
Direct Equipment (BIH)	\$ 2,541.69	\$ 17,791.86
Equipment Markup at Specified 15%	<del>\$ 381.25</del>	<del>\$ 2,668.78</del>
Indirect Material costs (BIH)	\$ 1,111.06	\$ 7,777.45
Materials Markup at Specified 15%	<del>\$ 166.66</del>	<del>\$ 1,166.62</del>
Other Items And Expenditures	\$ -	\$ -
Other Items And Expenditures Markup at Specified 15%		
<b>Subtotal Contractor Costs</b>	<b>\$16,074.29</b>	<b>\$ 112,520.00</b>
<b>Subcontractors</b>		
Labor - Daily Field (Synergy)	\$ 1,474.38	\$ 10,320.63
Labor Markup at Specified 15%	\$ 221.16	\$ 1,548.10
Equipment (Synergy)	\$ 7,427.28	\$ 51,990.94
Equipment Markup at Specified 15%	\$ 1,114.09	\$ 7,798.64
Material costs (Synergy)	\$ 944.31	\$ 6,610.19
Material Markup at Specified 15%	\$ 141.65	\$ 991.53
Other Items And Expenditures	\$ -	\$ -
Other Items And Expenditures Markup at Specified 15%		
<b>Contractors Markup at Specified 5%</b>		<b>\$ 3,963.00</b>
<b>Subtotal Subcontractor costs</b>		<b>\$ 83,223.03</b>
Additional Time (TIA) calendar days		<b>7.00</b>
Total Amount		<b>\$ 195,743.03</b>

## Indirect Material Costs

ITEMS	DESCRIPTION	COST TYPE	INCLUDES
1	YARD RENT & MAINT	M, S	Job specific yard rent, maintenance of yard(s), yard/fence materials, changehouse rental & expenses
2	OFFICE EXPENSES	M, S	Contractor office: rent, office supplies & expenses, mail services, copier services, office cleaning services
3	SAFETY COSTS	M, S	Safety supplies & expenses necessary to satisfy contract general requirements. (i.e. First Aid kits, Drinking water & ice, PPE, etc.)
4	TRAVEL	E, M	Periodic executive travel expenses. (i.e. Operations Manager = 1 trip/3 weeks, Safety Director = 1 trip/8 weeks).
5	UTILITIES & COMMUNICATION	M	Electrical power, water, phone, internet, fax, sanitary facilities, garbage services
6	DIESEL	M	Diesel fuel for on-site generators required to provide power at locations where permanent power is not available.
7	SMALL TOOLS - PURCHASE & RENT	M	Supplies necessary to maintain contract general requirements. (i.e. Access ladders, locks, anti-graffiti paint, green screen netting, hand rails)
8	SECURITY	M, S	Job specific security guard costs
9	OWNER OFFICE	M	Owner office: rent, office supplies & expenses, mail services, copier services, office cleaning services

### Indirect Labor Costs

ITEMS	DESCRIPTION	COST TYPE	INCLUDES
1	PROJECT STAFF	L	PM, Superintendents, Engineers, Safety staff, QC manager, Administrative, Trucking Coordinator

Direct Labor Costs

ITEMS	DESCRIPTION	COST TYPE	INCLUDES
1	FIELD STAFF	L	Craft labor necessary to maintain Contract General Requirements. (i.e. SWPP, Street Sweeping, Traffic Control, etc.)



### Direct Equipment Costs

ITEMS	DESCRIPTION	COST TYPE	INCLUDES
1	ACTIVE EQUIPMENT	E	Equipment necessary to maintain Contract General Requirements. (i.e. Yard Maintenance, SWPPP, Street Sweeping, Traffic Control, etc.)
2	INACTIVE EQUIPMENT	E	Any equipment that remained idle during the time of delay

## BIH EQUIPMENT COSTS - CONTRACT 1252

EQUIPMENT COSTS

DELAY PER TIA	DAYS	HOURS
	7.00	56.0

DESCRIPTION	QTY	SUBMITTED STANDBY RATE	HOURLY SUBTOTAL	EXTENDED DELAY HOURS	EXTENDED DELAY COSTS
CAT SKIDSTEER 299C	1	\$ 23.25	\$ 23.25	56.0	\$ 1,302.00
JUMPING JACK COMPACTOR - Wacker Nueson Rammer B570-21	1	\$ 1.59	\$ 1.59	56.0	\$ 88.91
SUBMERSIBLE PUMP - 5hp Tsurumi	2	\$ 1.83	\$ 3.67	112.0	\$ 205.41
SUBMERSIBLE PUMP - 15hp Tsurumi	2	\$ 7.91	\$ 15.83	112.0	\$ 886.31
CUTOFF SAW - Stihl (5hp)	2	\$ 3.27	\$ 6.53	112.0	\$ 365.91
CAT TELEHANDLER - TL1255	1	\$ 41.20	\$ 41.20	56.0	\$ 2,307.20
CAT LOADER - 966H (5.5 CY bucket & 8' Forks)	1	\$ 20.96	\$ 20.96	56.0	\$ 1,173.58
WET SWEEPER - Tymco 600 Air Sweeper	1	\$ 20.32	\$ 20.32	56.0	\$ 1,137.66
WHEEL WASH - Neptune (w/ scraper option in settling tank)	1	\$ 39.77	\$ 39.77	56.0	\$ 2,227.27
GENERATOR - 25 KW	1	\$ 1.57	\$ 1.57	56.0	\$ 87.72
PORTABLE WELDER - Miller XMT 350	1	\$ 2.14	\$ 2.14	56.0	\$ 119.65
CONNEX BOXES - 20'L	6	\$ 0.61	\$ 3.66	336.0	\$ 204.96
PICKUP (WORK) TRUCKS	10	\$ 8.20	\$ 81.97	560.0	\$ 4,590.43
CAT EXCAVATOR - 328	1	\$ 23.99	\$ 23.99	56.0	\$ 1,343.26
WATER TRUCK	1	\$ 19.63	\$ 19.63	56.0	\$ 1,099.32
AERIAL LIFT (GENIE) - telescopic	1	\$ 11.65	\$ 11.65	56.0	\$ 652.27
TOTAL DELAY COST					\$ 17,791.86
TOTAL DAILY COST					\$ 2,541.69

## BIH INDIRECT COSTS - CONTRACT 1252

### INDIRECT LABOR COSTS

DESCRIPTION	NOTES	HOURLY COSTS	EXTENDED COSTS (per cal day)
Project Manager	Ben Campbell	\$ 142.40	\$ 1,139.20
Project Manager	Alessandro Tricamo	\$ 142.40	\$ 1,139.20
Project Superintendent	Mike Hanley	\$ 142.40	\$ 1,139.20
Project Superintendent	Andy Granger	\$ 142.40	\$ 1,139.20
QC Representative	Antonio Prado	\$ 95.66	\$ 765.28
Safety Representative	Boodie Hurd	\$ 95.66	\$ 765.28
Project Engineer	Beau Blume	\$ 75.67	\$ 605.36
Project Engineer	Glenn Strid	\$ 75.67	\$ 605.36
Project Engineer	Jack Sucilsky	\$ 75.67	\$ 605.36
Project Engineer	Matthew Paulisich	\$ 75.67	\$ 605.36
Project Engineer	Tom Albert	\$ 75.67	\$ 605.36
Project Engineer	Sam Evanovich	\$ 75.67	\$ 605.36
Field Engineer	Vik Sehdev	\$ 75.67	\$ 605.36
Subtotal Daily Indirect Labor costs			\$ 10,324.88

### INDIRECT MATERIAL COSTS

DESCRIPTION	TOTAL COST: (3 month average)
YARD RENT & MAINTENANCE	\$ 81.68
OFFICE EXPENSES	\$ 22,260.84
SAFETY COSTS	\$ 3,731.26
TRAVEL	\$ 2,890.67
UTILITIES & COMMUNICATION	\$ 33,161.61
DIESEL - GENERATOR FUEL	\$ 8,403.34
SMALL TOOLS-PURCHASE - RENT	\$ 6,637.51
SECURITY	\$ 14,300.00
OWNER OFFICE	\$ 8,528.91
Subtotal Indirect Material costs: (April, May, June 2012)	
	\$ 99,995.82
TOTAL COSTS: (3 month sum / 90)	
	\$ 1,111.06

DESCRIPTION	COST TYPE	POSTED DATE	ACTUAL COST DATE	ITEM DESCRIPTION	COST
<b>Phase : 1- 7- - YARD RENT &amp; MAINT</b>					
YARD RENT & MAINTENANCE	MAT	04/14/12	03/27/12	FENCE 4/15-5/15/73/ 102-CALIFORNIA SITE SERV /#18/1 /Ref# 34040	\$ 81.68
<b>YARD RENT &amp; MAINTENANCE SUBTOTAL</b>					<b>\$ 81.68</b>
<b>Phase : 1- 16- - OFFICE EXPENSES</b>					
OFFICE EXPENSES	MAT	04/07/12	03/31/12	SHIPPING WE 03/31/12/73/ 14711-UPS /#110/1 /Ref# 4R19A3132	\$ 96.02
OFFICE EXPENSES	MAT	04/07/12	03/09/12	BUG BOMBS-LOWES/73/ 6-VIKAS SEHDEV /#127/1 /Ref# 4/2/12	\$ 21.63
OFFICE EXPENSES	MAT	04/07/12	03/16/12	TOWELS-GRAINGER/73/ 6-VIKAS SEHDEV /#131/1 /Ref# 4/2/12	\$ 99.55
OFFICE EXPENSES	MAT	04/07/12	03/21/12	KEYS-UPS STORE/73/ 6-VIKAS SEHDEV /#134/1 /Ref# 4/2/12	\$ 5.67
OFFICE EXPENSES	MAT	04/07/12	03/20/12	LOWES-TRAILER SET UP/CABLES/73/ 6-VIKAS SEHDEV /#135/1 /Ref# 4/2/12	\$ 37.83
OFFICE EXPENSES	MAT	04/07/12	03/16/12	KEYS-UPS STORE/73/ 6-VIKAS SEHDEV /#137/1 /Ref# 4/2/12	\$ 5.67
OFFICE EXPENSES	MAT	04/07/12	03/29/12	OFC DEPOT-LABELS/73/ 6-VIKAS SEHDEV /#140/1 /Ref# 4/2/12	\$ 8.45
OFFICE EXPENSES	MAT	04/07/12	03/24/12	WE 03/24/12 221 /1/ 29959-UNITED PARCEL SERVICE /#1263/1 /Ref# 0553KU	\$ 96.73
OFFICE EXPENSES	MAT	04/07/12	03/31/12	WE 03/31/12 221 /1/ 29959-UNITED PARCEL SERVICE /#1264/1 /Ref# 0553KU	\$ 116.92
OFFICE EXPENSES	MAT	04/07/12	04/07/12	WE 04/07/12 /1/ 29959-UNITED PARCEL SERVICE /#74/10 /Ref# 0553KU	\$ 53.08
OFFICE EXPENSES	MAT	04/14/12	04/07/12	SHIPPING WE 04/07/12/73/ 14711-UPS /#9/1 /Ref# 4R19A3142	\$ 146.34
OFFICE EXPENSES	MAT	04/14/12	03/22/12	XEROX COPIES/3 HOLE/73/ 100-SPEEDWAY DIGITAL PRI /#20/1 /Ref# 31498552	\$ 13.90
OFFICE EXPENSES	MAT	04/14/12	03/13/12	XEROX COPIES/3 HOLE/73/ 100-SPEEDWAY DIGITAL PRI /#21/1 /Ref# 31498459	\$ 65.24
OFFICE EXPENSES	MAT	04/14/12	03/21/12	COLOR COPIES/73/ 100-SPEEDWAY DIGITAL PRI /#23/1 /Ref# 31498527	\$ 68.13
OFFICE EXPENSES	MAT	04/14/12	03/05/12	XEROX COPIES/73/ 100-SPEEDWAY DIGITAL PRI /#24/1 /Ref# 31498386	\$ 59.57
OFFICE EXPENSES	MAT	04/14/12	04/10/12	BC-250 BOODIE/ANTONIO/73/ 100-SPEEDWAY DIGITAL PRI /#25/1 /Ref# 31498681	\$ 136.98
OFFICE EXPENSES	MAT	04/14/12	04/03/12	LABELER/73/ 104-OFFICE DEPOT /#27/1 /Ref# 603897976001	\$ 54.24
OFFICE EXPENSES	MAT	04/14/12	04/02/12	SANDISK BACKUP/73/ 104-OFFICE DEPOT /#28/1 /Ref# 603897975001	\$ 64.99
OFFICE EXPENSES	MAT	04/14/12	04/04/12	SHIPPING-MCMMASTER CARR/73/ 119-FEDEX FREIGHT /#35/1 /Ref# 2560741326	\$ 86.27
OFFICE EXPENSES	MAT	04/14/12	04/14/12	WE 04/14/12 221 /1/ 29959-UNITED PARCEL SERVICE /#255/1 /Ref# 0553KU	\$ 89.69
OFFICE EXPENSES	MAT	04/21/12	03/03/12	SHIPPING WE 03/03/12/73/ 14711-UPS /#66/1 /Ref# 4R19A3092	\$ 15.22
OFFICE EXPENSES	MAT	04/25/12	04/11/12	4/14-5/13 MODULAR OFC 221/73/ 21761-MODULAR SPACE CORP /#73/1 /Ref# 106121458	\$ 1,261.16
OFFICE EXPENSES	MAT	04/28/12	04/21/12	WE 04/21/12 9003/73/ 29959-UNITED PARCEL SERVICE /#91/1 /Ref# 0553KU	\$ 22.19
OFFICE EXPENSES	MAT	04/28/12	04/21/12	WE 04/21/12 221 /1/ 29959-UNITED PARCEL SERVICE /#1213/1 /Ref# 0553KU	\$ 40.41
OFFICE EXPENSES	MAT	04/28/12	04/14/12	SHIPPING WE 04/14/12/73/ 14711-UPS /#96/1 /Ref# 4R19A3152	\$ 165.16
OFFICE EXPENSES	MAT	04/28/12	04/18/12	MODULAR OFC 4/20-5/19/73/ 21761-MODULAR SPACE CORP /#98/1 /Ref# 106128785	\$ 1,356.04
OFFICE EXPENSES	MAT	04/28/12	04/21/12	SHIPPING WE 04/21/12/73/ 14711-UPS /#104/1 /Ref# 4R19A3162	\$ 166.84
OFFICE EXPENSES	MAT	04/28/12	04/10/12	TABS/73/ 104-OFFICE DEPOT /#106/1 /Ref# 604901830001	\$ 97.11
OFFICE EXPENSES	MAT	04/28/12	04/25/12	ASSEMBLY MANUAL/73/ 100-SPEEDWAY DIGITAL PRI /#109/1 /Ref# 31498801	\$ 81.66
OFFICE EXPENSES	MAT	04/28/12	04/27/12	3 DY PUBLIC NOTICE/73/ 100-SPEEDWAY DIGITAL PRI /#110/1 /Ref# 31498825	\$ 130.20
OFFICE EXPENSES	MAT	04/28/12	04/12/12	OFC SUPPLIES-COSTCO/73/ 2-SAM EVANOVICH /#124/1 /Ref# 04-23-12	\$ 170.58
OFFICE EXPENSES	MAT	04/28/12	04/13/12	CERTIFIED MAILINGS/73/ 2-SAM EVANOVICH /#125/1 /Ref# 04-23-12	\$ 23.00
OFFICE EXPENSES	MAT	04/28/12	04/23/12	CERTIFIED MAILINGS/73/ 2-SAM EVANOVICH /#126/1 /Ref# 04-23-12	\$ 17.25
OFFICE EXPENSES	MAT	04/28/12	04/17/12	CERT MAIL-1ST Q IMPRG EST TX/73/ 48-ZINA TROTTER /#128/1 /Ref# 5/2/12	\$ 5.75
OFFICE EXPENSES	MAT	05/05/12	04/28/12	WE 04/28/12 221 /1/ 29959-UNITED PARCEL SERVICE /#1486/1 /Ref# 0553KU	\$ 137.30
OFFICE EXPENSES	MAT	05/05/12	04/28/12	P/E 04/28/12 221 /1/ 29845-FEDEX GROUND, INC. /#1654/8 /Ref# 786694815	\$ 111.95
OFFICE EXPENSES	MAT	05/09/12	05/03/12	WORK FORMS/73/ 100-SPEEDWAY DIGITAL PRI /#148/1 /Ref# 31498869	\$ 100.36
OFFICE EXPENSES	MAT	05/09/12	04/28/12	SHIPPING WE 04/28/12/73/ 14711-UPS /#150/1 /Ref# 4R19A3172	\$ 22.44
OFFICE EXPENSES	MAT	05/09/12	04/09/12	PHONE REPR-SHORETL MAIN TRAILR/73/ 109-SYNERTEL, INC /#152/1 /Ref# 52531	\$ 616.00
OFFICE EXPENSES	MAT	05/09/12	04/08/12	PHONE REPAIR/911-DISCONNECT LI/73/ 109-SYNERTEL, INC /#153/1 /Ref# 52537	\$ 431.02
OFFICE EXPENSES	MAT	05/10/12	04/30/12	CALC PAPER/STAPLES/73/ 104-OFFICE DEPOT /#155/1 /Ref# 606719316001	\$ 12.62
OFFICE EXPENSES	MAT	05/10/12	04/25/12	3 DAY PUBLIC NOTICE MAILING/73/ 100-SPEEDWAY DIGITAL PRI /#157/1 /Ref# 31498828	\$ 350.95
OFFICE EXPENSES	MAT	05/10/12	04/20/12	APRIL JANITORIAL SVC-TRAILERS/73/ 107-KARLA'S MAIDS /#165/1 /Ref# 446	\$ 1,180.00
OFFICE EXPENSES	MAT	05/10/12	04/01/12	LOWES-KEYS/SUPPLIES/73/ 6-VIKAS SEHDEV /#172/1 /Ref# 4/30/12	\$ 37.45
OFFICE EXPENSES	MAT	05/10/12	04/13/12	UPS-KEYS/73/ 6-VIKAS SEHDEV /#175/1 /Ref# 4/30/12	\$ 8.50
OFFICE EXPENSES	MAT	05/12/12	03/23/12	PDF-XCHANGE VIEWER /1/ 37413-AMERICAN EXPRESS 6-1 /#1973/1 /Ref# 41017	\$ 37.50
OFFICE EXPENSES	MAT	05/12/12	03/27/12	RENTAL COPIER 3/22-4/22/12-CYC /1/ 37413-AMERICAN EXPRESS 6-1 /#1974/1 /Ref# 41017	\$ 1,220.27
OFFICE EXPENSES	MAT	05/12/12	03/27/12	PDF-XCHANGE VIEWER /1/ 37413-AMERICAN EXPRESS 6-1 /#1975/1 /Ref# 41017	\$ 14.25
OFFICE EXPENSES	MAT	05/12/12	03/29/12	PDF-XCHANGE VIEWER /1/ 37413-AMERICAN EXPRESS 6-1 /#1978/1 /Ref# 41017	\$ 14.25
OFFICE EXPENSES	MAT	05/12/12	05/12/12	WE 05/12/12 221 /1/ 29959-UNITED PARCEL SERVICE /#228/1 /Ref# 0553KU	\$ 73.31
OFFICE EXPENSES	MAT	05/18/12	05/07/12	XEROX COPIES/73/ 100-SPEEDWAY DIGITAL PRI /#21/1 /Ref# 31498882	\$ 170.41
OFFICE EXPENSES	MAT	05/18/12	05/09/12	XEROX COPIES/BINDER/73/ 100-SPEEDWAY DIGITAL PRI /#22/1 /Ref# 31498915	\$ 102.22
OFFICE EXPENSES	MAT	05/19/12	05/09/12	MAY OFC WATER/73/ 38071-ALHAMBRA /#32/1 /Ref# 11156838050912	\$ 55.12
OFFICE EXPENSES	MAT	05/19/12	05/12/12	SHIPPING WE 05/12/12/73/ 14711-UPS /#33/1 /Ref# 4R19A3192	\$ 176.56
OFFICE EXPENSES	MAT	05/19/12	04/24/12	HANGING LEGL FOLDERS/73/ 104-OFFICE DEPOT /#34/1 /Ref# 606479089001	\$ 35.77
OFFICE EXPENSES	MAT	05/19/12	04/27/12	COLOR PRINTS-SPEEDWAY/73/ 4-JACK W SUCILSKY /#49/1 /Ref# 5/15/12012	\$ 31.66
OFFICE EXPENSES	MAT	05/19/12	05/15/12	COLOR PRINTS-SPEEDWAY/73/ 4-JACK W SUCILSKY /#50/1 /Ref# 5/15/12012	\$ 5.03
OFFICE EXPENSES	MAT	05/26/12	05/19/12	5/14-6/13 MODULAR OFC 221/73/ 21761-MODULAR SPACE CORP /#57/1 /Ref# 106151370	\$ 1,261.16
OFFICE EXPENSES	MAT	05/26/12	05/17/12	MANILLA FOLDERS-LGL/73/ 104-OFFICE DEPOT /#62/1 /Ref# 610506635001	\$ 120.61
OFFICE EXPENSES	MAT	05/26/12	05/15/12	CD-R/73/ 104-OFFICE DEPOT /#63/1 /Ref# 609739091001	\$ 27.07
OFFICE EXPENSES	MAT	05/26/12	05/16/12	HANG FOLDR/LABEL/ORGANZR/73/ 104-OFFICE DEPOT /#65/1 /Ref# 61097252001	\$ 265.59
OFFICE EXPENSES	MAT	05/26/12	05/17/12	PENCILS/73/ 104-OFFICE DEPOT /#66/1 /Ref# 610287230001	\$ 28.17
OFFICE EXPENSES	MAT	05/26/12	05/17/12	TAPE DISPENSER PACK/73/ 104-OFFICE DEPOT /#67/1 /Ref# 610231943001	\$ 18.43
OFFICE EXPENSES	MAT	05/26/12	05/26/12	MODULAR OFC 5/20-6/19/73/ 21761-MODULAR SPACE CORP /#68/1 /Ref# 106158423	\$ 1,356.04
OFFICE EXPENSES	MAT	05/26/12	05/21/12	MAY JANITORIAL SVC/73/ 107-KARLA'S MAIDS /#73/2 /Ref# 516	\$ 1,180.00
OFFICE EXPENSES	MAT	05/26/12	05/19/12	SHIPPING WE 05/19/12/73/ 14711-UPS /#76/1 /Ref# 4R19A3202	\$ 28.65
OFFICE EXPENSES	MAT	05/26/12	05/09/12	AP/MAY WATR-4TH TRAILER/73/ 38071-ALHAMBRA /#78/1 /Ref# 11578704050912	\$ 86.88
OFFICE EXPENSES	MAT	05/26/12	05/26/12	SHIPPING WE 05/26/12/73/ 14711-UPS /#115/1 /Ref# 4R19A3212	\$ 41.34
OFFICE EXPENSES	MAT	05/31/12	05/14/12	COPY PAPER/DVD STORAGE CASES/73/ 104-OFFICE DEPOT /#116/1 /Ref# 609738995001	\$ 242.99
OFFICE EXPENSES	MAT	05/31/12	04/23/12	KEYBOARD-AMAZON/73/ 5-BEAU BLUME /#135/1 /Ref# 5/31/12	\$ 35.77
OFFICE EXPENSES	MAT	05/31/12	05/31/12	OFC SUPPLIES/73/ 104-OFFICE DEPOT /#135/1 /Ref# 61861635-001	\$ 385.06
OFFICE EXPENSES	MAT	05/31/12	03/31/12	T. Wren - 3/13/12 - Postage/250/ 620519-TIM WREN /#1/0 /Ref# EXP RPT 3/13/12	\$ 11.99
OFFICE EXPENSES	MAT	06/02/12	05/26/12	WE 05/26/12 - 221 /1/ 29959-UNITED PARCEL SERVICE /#974/8 /Ref# 0553KU	\$ 67.28
OFFICE EXPENSES	MAT	06/02/12	04/27/12	4/22-5/7/12 COPIER RENT-CYCON /1/ 37413-AMERICAN EXPRESS 6-1 /#984/1 /Ref# 41047	\$ 1,060.79
OFFICE EXPENSES	MAT	06/02/12	05/08/12	COPIER OVERAGE-CYCON /1/ 37413-AMERICAN EXPRESS 6-1 /#985/1 /Ref# 41047	\$ 30.01
OFFICE EXPENSES	MAT	06/06/12	06/06/12	POSTAGE-10 DY NOTICE PM WORK/73/ 100-SPEEDWAY DIGITAL PRI /#2/1 /Ref# 31499134	\$ 436.65
OFFICE EXPENSES	MAT	06/09/12	06/02/12	WE 06/02/12 - 221 /1/ 29959-UNITED PARCEL SERVICE /#1421/6 /Ref# 0553KU	\$ 88.69
OFFICE EXPENSES	MAT	06/09/12	05/23/12	P/E 05/23/12 - 221 /1/ 29845-FEDEX GROUND, INC. /#1536/1 /Ref# 789756065	\$ 17.03
OFFICE EXPENSES	MAT	06/09/12	06/09/12	WE 6/9/12 - 221 /1/ 29959-UNITED PARCEL SERVICE /#1800/6 /Ref# 0553KU	\$ 76.74
OFFICE EXPENSES	MAT	06/13/12	06/02/12	SHIPPING WE 06/02/12/73/ 14711-UPS /#9/1 /Ref# 4R19A3222	\$ 16.03
OFFICE EXPENSES	MAT	06/15/12	06/01/12	XEROX COPIES/3 HOLE/73/ 100-SPEEDWAY DIGITAL PRI /#49/1 /Ref# 31499096	\$ 180.76
OFFICE EXPENSES	MAT	06/15/12	05/28/12	XEROX COPIES/73/ 100-SPEEDWAY DIGITAL PRI /#50/1 /Ref# 31499030	\$ 148.43
OFFICE EXPENSES	MAT	06/15/12	05/15/12	10 DY NOTICE/73/ 100-SPEEDWAY DIGITAL PRI /#51/1 /Ref# 31498960	\$ 596.10
OFFICE EXPENSES	MAT	06/16/12	06/02/12	5/4-5/22-COPIER SVC/73/ 141-XEROX CORPORATION /#61/1 /Ref# 62118734	\$ 200.96
OFFICE EXPENSES	MAT	06/16/12	06/06/12	JUNE WATER/73/ 38071-ALHAMBRA /#74/1 /Ref# 11156838060612	\$ 93.77
OFFICE EXPENSES	MAT	06/16/12	06/09/12	SHIPPING WE 06/09/12/73/ 14711-UPS /#78/1 /Ref# 4R19A3232	\$ 25.31
OFFICE EXPENSES	MAT	06/16/12	06/19/12	POSTAGE/73/ 100-SPEEDWAY DIGITAL PRI /#81/1 /Ref# 31499233	\$ 436.65
OFFICE EXPENSES	MAT	06/16/12	06/16/12	WE 06/16/12 - 221 /1/ 29959-UNITED PARCEL SERVICE /#488/9 /Ref# 0553KU	\$ 31.80
OFFICE EXPENSES	MAT	06/23/12	06/26/12	POSTAGE-10 DY NOTICE/ N BEACH/73/ 100-SPEEDWAY DIGITAL PRI /#83/1 /Ref# 31499276	\$ 226.59
OFFICE EXPENSES	MAT	06/23/12	06/13/12	6/14-7/13 MODULAR OFC 221/73/ 21761-MODULAR SPACE CORP /#88/1 /Ref# 106188000	\$ 1,261.16
OFFICE EXPENSES	MAT	06/23/12	06/16/12	SHIPPING WE 06/16/12/73/ 14711-UPS /#92/1 /Ref# 4R19A3242	\$ 99.36
OFFICE EXPENSES	MAT	06/23/12	06/21/12	JUNE JANITORIAL SVC/73/ 107-KARLA'S MAIDS /#94/2 /Ref# 566	\$ 1,180.00
OFFICE EXPENSES	MAT	06/23/12	06/11/12	COPIES/73/ 100-SPEEDWAY DIGITAL PRI /#106/1 /Ref# 31499168	\$ 180.76
OFFICE EXPENSES	MAT	06/23/12	06/06/12	MAILING/73/ 100-SPEEDWAY DIGITAL PRI /#107/1 /Ref# 31499130	\$ 548.53
OFFICE EXPENSES	MAT	06/23/12	06/14/12	COPY PAPER/73/ 104-OFFICE DEPOT /#111/1 /Ref# 614284467001	\$ 182.24
OFFICE EXPENSES	MAT	06/23/12	06/12/12	OFC/KITCHEN SUPPLIES/73/ 104-OFFICE DEPOT /#112/1 /Ref# 613960806001	\$ 55.49
OFFICE EXPENSES	MAT	06/27/12	05/09/12	SPARE KEYS-UPS STORE/73/ 2-SAM EVANOVICH /#128/1 /Ref# 06/20/12	\$ 5.67
OFFICE EXPENSES	MAT	06/27/12	05/15/12	COPY FEES-SF ASSESSOR OFC/73/ 2-SAM EVANOVICH /#129/1 /Ref# 06/20/12	\$ 6.00
OFFICE EXPENSES	MAT	06/29/12	05/08/12	DELIV CHARGE-BOOKCASE/73/ 104-OFFICE DEPOT /#141/1 /Ref# 609215590001	\$ 24.90
OFFICE EXPENSES	MAT	06/30/12	06/27/12	PE 06/27/12 221 /1/ 29845-FEDEX GROUND, INC. /#1693/2 /Ref# 793417372	\$ 19.30
OFFICE EXPENSES	MAT	06/30/12	06/30/12	WE 06/30/12 221 /1/ 29959-UNITED PARCEL SERVICE /#1694/8 /Ref# 0553KU	\$ 50.09
<b>OFFICE EXPENSES SUBTOTAL</b>					<b>\$ 22,260.84</b>

<b>Phase : 1-32- - SAFETY COSTS</b>						
SAFETY COSTS	MAT	04/25/12	03/27/12	FIRE EXT/FIRST AID KIT/73/ 37994-K & K CONSTRUCTION S /#74/1 /Ref# 16727	\$	489.67
SAFETY COSTS	MAT	04/28/12	04/16/12	EAR PLUG/SFTY GLASSES/HARD HAT/73/ 125-ABATIX CORP /#113/1 /Ref# 6855904	\$	70.30
SAFETY COSTS	MAT	05/26/12	05/15/12	SIGNS-STOP/SLOW, BRACKETS/73/ 140-HAWKINS TRAFFIC SAFE /#82/1 /Ref# 15711	\$	91.60
SAFETY COSTS	MAT	05/31/12	05/07/12	BANANA OIL FIT TEST KIT/73/ 125-ABATIX CORP /#120/1 /Ref# 6862568	\$	70.35
SAFETY COSTS	MAT	05/31/12	05/03/12	HALF MASKS/WIPES/LENS TOWELS/73/ 125-ABATIX CORP /#121/1 /Ref# 6861612	\$	434.11
SAFETY COSTS	MAT	06/16/12	05/31/12	PFT TESTNG-CASEY/JUAN/LANCE/RO/73/ 151-ST FRANCIS OCCUPATIO /#64/1 /Ref# 88328	\$	200.00
SAFETY COSTS	MAT	06/16/12	05/31/12	SIGNS/HAND CLEANER/73/ 38082-HDS WHITE CAP CONST /#75/1 /Ref# 17443838	\$	155.97
SAFETY COSTS	MAT	06/23/12	06/04/12	RAIN SUITS/FLOTATION VESTS/73/ 35547-AIRGAS SAFETY, INC /#98/1 /Ref# 9006244078	\$	553.98
SAFETY COSTS	MAT	06/23/12	06/05/12	NEOPRENE BOOTS/73/ 35547-AIRGAS SAFETY, INC /#99/1 /Ref# 9006244079	\$	159.00
SAFETY COSTS	MAT	06/23/12	06/12/12	NEOPRENE BOOTS/73/ 35547-AIRGAS SAFETY, INC /#101/1 /Ref# 9006395007	\$	159.00
SAFETY COSTS	MAT	06/23/12	06/11/12	FIRST AID KITS/EYE WASH/73/ 35547-AIRGAS SAFETY, INC /#102/1 /Ref# 9006365110	\$	443.04
SAFETY COSTS	MAT	06/23/12	06/11/12	RESPIRATOR/GLASSES/GLOVES/73/ 125-ABATIX CORP /#109/1 /Ref# 6873229	\$	365.67
SAFETY COSTS	MAT	06/23/12	06/12/12	GLOVES/73/ 125-ABATIX CORP /#110/1 /Ref# 6873578	\$	28.57
SAFETY COSTS	MAT	06/29/12	06/11/12	RECHARGE/PILL PINS/73/ 157-BAY HILL FIRE PROTEC /#142/1 /Ref# 4030	\$	510.00
<b>SAFETY EXPENSES SUBTOTAL</b>						<b>\$ 3,731.26</b>

<b>Phase : 1-46- - TRAVEL</b>						
TRAVEL	MAT	04/14/12	03/25/12	KENSINGTON PARK 3/19-24 /1/ 38067-TIMOTHY GOOD /#1670/1 /Ref# 41002	\$	1,139.30
TRAVEL	MAT	04/14/12	03/24/12	KENSINGTON/LAUNDRY /1/ 38067-TIMOTHY GOOD /#1678/1 /Ref# 41002	\$	3.00
TRAVEL	MAT	04/14/12	03/20/12	PORTSMOUTH SQ GARAGE/PARKG /1/ 38067-TIMOTHY GOOD /#1682/1 /Ref# 41002	\$	3.00
TRAVEL	MAT	04/14/12	03/25/12	DELTA-BAGGAGE /1/ 38067-TIMOTHY GOOD /#1688/1 /Ref# 41002	\$	25.00
TRAVEL	MAT	04/14/12	03/24/12	KENSINGTON/LAUNDRY /1/ 38067-TIMOTHY GOOD /#1689/1 /Ref# 41002	\$	9.00
TRAVEL	MAT	04/28/12	04/30/12	Jim McDonald - 04/20/2012 - Travel/250/ 624384-JIM MCDONALD /Ref# EXP RPT 4/20/12	\$	467.60
TRAVEL	MAT	05/05/12	04/20/12	AIR-GOOD 3/23/12 /1/ 30884-AMERICAN EXPRESS 810 /#14277/ /Ref# 41019	\$	180.00
TRAVEL	MAT	05/26/12	05/17/12	ENTERPRISE CAR RENTL/73/ 47-DOUGLAS A MARTIN /#97/1 /Ref# 5/18/12	\$	121.31
TRAVEL	MAT	05/26/12	05/17/12	GALLATIN FIELD PARK/73/ 47-DOUGLAS A MARTIN /#99/1 /Ref# 5/18/12	\$	21.00
TRAVEL	MAT	05/26/12	05/16/12	BRIDGE TOLLS- 2 @ \$6 EA/73/ 47-DOUGLAS A MARTIN /#100/1 /Ref# 5/18/12	\$	12.00
TRAVEL	MAT	05/26/12	05/17/12	HILTON 5/15-16/73/ 47-DOUGLAS A MARTIN /#101/1 /Ref# 5/18/12	\$	376.16
TRAVEL	MAT	06/16/12	05/21/12	AIR-DOUG MARTIN 5/15/12 /1/ 30884-AMERICAN EXPRESS 810 /#125/1 /Ref# 41050	\$	498.20
TRAVEL	MAT	06/27/12	06/12/12	GREEN CAB-PARTNERING DINNER/73/ 4-JACK W SUCILSKY /#125/1 /Ref# 6/19/2012	\$	13.00
TRAVEL	MAT	06/30/12	05/31/12	J. MCDONALD APR 12 BIHJV - TRAVEL/250/ 624384-JIM MCDONALD /#10/ /Ref# EXP RPT 5/31/12	\$	22.10
<b>TRAVEL SUBTOTAL</b>						<b>\$ 2,890.67</b>

<b>Phase : 1-48- - UTILITIES &amp; COMMUNICATION</b>						
UTILITIES & COMMUNICATION	MAT	04/07/12	03/15/12	GENERATOR RENTL 2/6-3/4/73/ 38014-POWER PLUS /#108/1 /Ref# G56967-6	\$	2,723.84
UTILITIES & COMMUNICATION	MAT	04/07/12	03/31/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#109/1 /Ref# 102367	\$	430.00
UTILITIES & COMMUNICATION	MAT	04/07/12	03/13/12	RESTROOM SERVICE 3/13-4/9/73/ 38013-UNITED SITE SERVICES /#119/1 /Ref# 114-489191	\$	95.00
UTILITIES & COMMUNICATION	MAT	04/11/12	03/25/12	CELL 2/26-3/25/73/ 6-VIKAS SEHDEV /#149/1 /Ref# 4/2/12	\$	101.58
UTILITIES & COMMUNICATION	MAT	04/14/12	03/27/12	INTERNET 3/28-4/27/73/ 37984-AT&T U-VERSE /#131/ /Ref# 117459028	\$	216.17
UTILITIES & COMMUNICATION	MAT	04/14/12	04/09/12	ELECTRIC 2/29-4/5/73/ 5546-P G & E /#17/1 /Ref# 2870195569-3	\$	547.36
UTILITIES & COMMUNICATION	MAT	04/14/12	04/04/12	CELL 3/5-4/4-VERIZON/73/ 5-BEAU BLUME /#53/1 /Ref# 4-10-12	\$	50.00
UTILITIES & COMMUNICATION	MAT	04/21/12	04/06/12	CELL SVC 4/7-5/6/12 221 /1/ 21823-VERIZON WIRELESS /#369/5 /Ref# 1072559112	\$	167.73
UTILITIES & COMMUNICATION	MAT	04/25/12	04/11/12	APRIL OFC WATER/73/ 38071-ALHAMBRA /#77/1 /Ref# 11156838041112	\$	37.09
UTILITIES & COMMUNICATION	MAT	04/25/12	04/09/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#80/1 /Ref# 102780	\$	430.00
UTILITIES & COMMUNICATION	MAT	04/26/12	04/10/12	APR PHONE SERVICE/73/ 37796-AT&T /#75/1 /Ref# 415-546-0577	\$	416.50
UTILITIES & COMMUNICATION	MAT	04/28/12	04/16/12	CELL 3/17-4/16/73/ 11-MICHAEL HANLEY /#144/1 /Ref# 4/21/2012	\$	100.00
UTILITIES & COMMUNICATION	MAT	04/28/12	04/10/12	GENERATOR RENTL 3/6-4/2/73/ 38014-POWER PLUS /#94/1 /Ref# G59577-1	\$	4,263.68
UTILITIES & COMMUNICATION	MAT	04/28/12	04/10/12	GENERATOR RENTL 3/5-4/1/73/ 38014-POWER PLUS /#95/1 /Ref# G56967-7	\$	2,723.84
UTILITIES & COMMUNICATION	MAT	04/28/12	04/10/12	RESTROOM SERVICE 4/10-5/7/73/ 38013-UNITED SITE SERVICES /#97/1 /Ref# 114-537711	\$	95.00
UTILITIES & COMMUNICATION	MAT	04/28/12	04/23/12	WATR SVC 2/24-3/30/73/ 105-SF - WATER /#99/1 /Ref# 4654357107	\$	129.83
UTILITIES & COMMUNICATION	MAT	04/28/12	04/20/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#103/1 /Ref# 103418	\$	450.00
UTILITIES & COMMUNICATION	MAT	04/28/12	04/03/12	BELT FOR GENERATOR-NAPA/73/ 11-MICHAEL HANLEY /#130/1 /Ref# 4/21/2012	\$	19.52
UTILITIES & COMMUNICATION	MAT	05/09/12	04/26/12	APR GARBAGE/RECY SVC/73/ 38035-RECOLOGY GOLDEN GATE /#149/1 /Ref# 42765917	\$	150.57
UTILITIES & COMMUNICATION	MAT	05/10/12	04/23/12	GENERATOR RENTL 4/2-4/17/73/ 38014-POWER PLUS /#158/1 /Ref# G56967-8	\$	2,990.40
UTILITIES & COMMUNICATION	MAT	05/10/12	04/27/12	INTERNET 3/28-4/27/73/ 37984-AT&T U-VERSE /#161/1 /Ref# 117459028	\$	92.68
UTILITIES & COMMUNICATION	MAT	05/10/12	02/14/12	RESTROOM SERVICE 2/14-3/12/73/ 38013-UNITED SITE SERVICES /#164/1 /Ref# 114-444477	\$	513.20
UTILITIES & COMMUNICATION	MAT	05/10/12	04/25/12	CELL 3/26-4/25/73/ 6-VIKAS SEHDEV /#183/1 /Ref# 4/30/12	\$	143.11
UTILITIES & COMMUNICATION	MAT	05/12/12	03/28/12	MONTHLY INTERNET-AT&T /1/ 37413-AMERICAN EXPRESS 6-1 /#1976/1 /Ref# 41017	\$	70.00
UTILITIES & COMMUNICATION	MAT	05/18/12	05/08/12	ELECTRIC 4/6-5/8/73/ 5546-P G & E /#12/1 /Ref# 2870195569-3	\$	611.92
UTILITIES & COMMUNICATION	MAT	05/18/12	04/26/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#161/ /Ref# 103825	\$	687.50
UTILITIES & COMMUNICATION	MAT	05/18/12	05/05/12	SHIPPING WE 05/05/12/73/ 14711-UPS /#17/1 /Ref# 4R19A3182	\$	64.32
UTILITIES & COMMUNICATION	MAT	05/18/12	05/03/12	GENERATOR RENTL 4/3-4/30/73/ 38014-POWER PLUS /#23/1 /Ref# G59577-2	\$	4,038.12
UTILITIES & COMMUNICATION	MAT	05/19/12	05/16/12	CELL 4/17-5/16/73/ 4-JACK W SUCILSKY /#56/1 /Ref# 5/15/2012	\$	50.00
UTILITIES & COMMUNICATION	MAT	05/26/12	05/10/12	MAY PHONE SERVICE/73/ 37796-AT&T /#60/1 /Ref# 415-546-0577	\$	494.00
UTILITIES & COMMUNICATION	MAT	05/26/12	05/14/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#74/1 /Ref# 104621	\$	450.00
UTILITIES & COMMUNICATION	MAT	05/26/12	05/08/12	RESTROOM SERVICE 5/8-6/4/73/ 38013-UNITED SITE SERVICES /#77/1 /Ref# 114-588582	\$	95.00
UTILITIES & COMMUNICATION	MAT	05/31/12	05/31/12	MAY GARBAGE/RECY SVC/73/ 38035-RECOLOGY GOLDEN GATE /#126/1 /Ref# 42884528	\$	150.57
UTILITIES & COMMUNICATION	MAT	05/31/12	05/04/12	CELL 4/5-5/4/73/ 5-BEAU BLUME /#146/1 /Ref# 5/31/12	\$	50.00
UTILITIES & COMMUNICATION	MAT	06/02/12	04/27/12	5/4-6/3/12 INTRNT 30434-ATT /1/ 37413-AMERICAN EXPRESS 6-1 /#983/1 /Ref# 41047	\$	70.00
UTILITIES & COMMUNICATION	MAT	06/02/12	05/08/12	2 MO INTRNT - 26916-ATT /1/ 37413-AMERICAN EXPRESS 6-1 /#988/1 /Ref# 41047	\$	145.00
UTILITIES & COMMUNICATION	MAT	06/02/12	06/04/12	CELL 5/5-6/4/73/ 5-BEAU BLUME /#5/1 /Ref# 5/31/12	\$	50.00
UTILITIES & COMMUNICATION	MAT	06/04/12	06/04/12	CELL 5/5-6/4/73/ 5-BEAU BLUME /#5/1 /Ref# 5/31/12	\$	50.00
UTILITIES & COMMUNICATION	MAT	06/13/12	07/03/12	MAY INTERNET/73/ 37796-AT&T /#6/1 /Ref# 113126916	\$	70.00
UTILITIES & COMMUNICATION	MAT	06/13/12	07/03/12	JUNE INTERNET/73/ 37796-AT&T /#6/2 /Ref# 113126916	\$	70.00
UTILITIES & COMMUNICATION	MAT	06/13/12	05/27/12	INTERNET 4/28-5/27/73/ 37796-AT&T /#8/1 /Ref# 117459028	\$	55.00
UTILITIES & COMMUNICATION	MAT	06/13/12	06/01/12	WATR SVC 3/31-5/31/73/ 105-SF - WATER /#10/1 /Ref# 4654357107	\$	284.01
UTILITIES & COMMUNICATION	MAT	06/13/12	05/25/12	CELL 4/26-5/25/73/ 6-VIKAS SEHDEV /#29/1 /Ref# 5/30/12	\$	143.11
UTILITIES & COMMUNICATION	MAT	06/15/12	05/30/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#44/1 /Ref# 105591	\$	550.00
UTILITIES & COMMUNICATION	MAT	06/15/12	05/25/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#46/1 /Ref# 105385	\$	485.00
UTILITIES & COMMUNICATION	MAT	06/16/12	06/07/12	ELECTRIC 5/9-6/6/73/ 5546-P G & E /#71/1 /Ref# 2870195569-3	\$	668.23
UTILITIES & COMMUNICATION	MAT	06/16/12	06/12/12	FIRE SUP FOR MECH RM 6/12/73/ 105-SF - WATER /#73/1 /Ref# 6469612905	\$	50.00
UTILITIES & COMMUNICATION	MAT	06/16/12	05/31/12	GENERATOR RENTL 5/1-5/28/73/ 38014-POWER PLUS /#76/1 /Ref# G59577-3	\$	3,619.91
UTILITIES & COMMUNICATION	MAT	06/23/12	06/06/12	CELL SVC 6/7-7/6/12 221 /1/ 21823-VERIZON WIRELESS /#611/5 /Ref# 1090307054	\$	80.35
UTILITIES & COMMUNICATION	MAT	06/23/12	05/06/12	CELL SVC 5/7-6/6/12 221 /1/ 21823-VERIZON WIRELESS /#636/1 /Ref# 1081432387	\$	96.68
UTILITIES & COMMUNICATION	MAT	06/23/12	06/10/12	JUNE PHONE SERVICE/73/ 37796-AT&T /#84/1 /Ref# 415-546-0577	\$	424.61
UTILITIES & COMMUNICATION	MAT	06/23/12	06/12/12	DEBRIS HAUL/73/ 108-PACIFIC SANITATION /#95/1 /Ref# 106231	\$	1,433.50
UTILITIES & COMMUNICATION	MAT	06/27/12	04/16/12	CELL 4/9-4/16 PRO-RATED/73/ 4-JACK W SUCILSKY /#126/1 /Ref# 6/19/2012	\$	13.50
UTILITIES & COMMUNICATION	MAT	06/29/12	06/05/12	RESTROOM SERVICE 6/5-7/2/73/ 38013-UNITED SITE SERVICES /#143/1 /Ref# 114-639191	\$	95.00
UTILITIES & COMMUNICATION	MAT	06/30/12	05/31/12	INV. X04022012 AT&T MOBILITY 3/24/12 BIHJV/250/ 621328-AT&T MOBILITY /#10/ /Ref# RCLS ATT MAR 12	\$	413.65
UTILITIES & COMMUNICATION	MAT	06/30/12	05/31/12	INV. X05022012 AT&T MOBILITY 4/24/12 BIHJV/250/ 621328-AT&T MOBILITY /#10/ /Ref# RCLS ATT APR 12	\$	379.96
UTILITIES & COMMUNICATION	MAT	06/30/12	05/31/12	INV X06022012 AT&T MOBILITY 5/24/12 BIHJV/250/ 621328-AT&T MOBILITY /#10/ /Ref# RCLS ATT MAY 12	\$	295.57
<b>UTILITIES &amp; COMMUNICATION SUBTOTAL</b>						<b>\$ 33,161.61</b>

<b>Phase : 1-70- - DIESEL</b>						
DIESEL	MAT	04/14/12	02/16/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#15/1 /Ref# 12-699678	\$	59.66
DIESEL	MAT	04/14/12	04/05/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#34/1 /Ref# 12-715870	\$	572.49
DIESEL	MAT	04/25/12	04/12/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#76/1 /Ref# 12-717603	\$	563.55
DIESEL	MAT	04/28/12	04/19/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#93/1 /Ref# 12-719946	\$	702.88
DIESEL	MAT	05/10/12	05/01/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#2/1 /Ref# 412-724027	\$	1,350.26
DIESEL	MAT	05/31/12	05/15/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#124/1 /Ref# 12-728874	\$	1,621.15
DIESEL	MAT	05/31/12	05/24/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#127/1 /Ref# 12-731752	\$	1,724.65
DIESEL	MAT	06/15/12	05/31/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#48/1 /Ref# 12-734131	\$	1,663.84
DIESEL	MAT	06/29/12	04/26/12	DYED DIESEL/73/ 38040-FLYERS ENERGY LLC /#144/1 /Ref# 12-722409	\$	144.86
<b>DIESEL SUBTOTAL</b>						<b>\$ 8,403.34</b>

**Phase : 1- 85- - SMALL TOOLS**

SMALL TOOLS	MAT	04/07/12	03/16/12	PAINT-GRAINER/73/ 6-VIKAS SEHDEV /#130/1 /Ref# 4/2/12	\$ 26.52
SMALL TOOLS	MAT	04/07/12	03/16/12	LOWES-COMBO LOCK/P WASHR,DOLLY/73/ 6-VIKAS SEHDEV /#133/1 /Ref# 4/2/12	\$ 265.65
SMALL TOOLS	MAT	04/07/12	03/22/12	PWR STRIPS/HAND TRK/JACK-LOWES/73/ 6-VIKAS SEHDEV /#138/1 /Ref# 4/2/12	\$ 339.95
SMALL TOOLS	MAT	04/28/12	04/10/12	TAPES- 100, 300/73/ 111-PROFESSIONAL CONTRAC /#112/1 /Ref# 5096093-02	\$ 99.42
SMALL TOOLS	MAT	04/28/12	03/31/12	BATT/SHELF/ELEC SCREW DR/LEVEL/73/ 11-MICHAEL HANLEY /#133/1 /Ref# 4/21/2012	\$ 113.44
SMALL TOOLS	MAT	05/10/12	04/27/12	LOWES-BOLT CUTTR/RESET COMBINA/73/ 6-VIKAS SEHDEV /#173/1 /Ref# 4/30/12	\$ 140.76
SMALL TOOLS	MAT	05/10/12	04/06/12	LOWES-KEYS/SUPPLIES/73/ 6-VIKAS SEHDEV /#174/1 /Ref# 4/30/12	\$ 297.78
SMALL TOOLS	MAT	05/10/12	04/15/12	HOME DEPOT-BUCKETS/73/ 6-VIKAS SEHDEV /#181/1 /Ref# 4/30/12	\$ 36.61
SMALL TOOLS	MAT	05/10/12	04/20/12	SLINGS-ROUND/WEB/73/ 130-CARPENTER RIGGING & /#194/1 /Ref# 35345-01	\$ 472.39
SMALL TOOLS	MAT	05/19/12	05/10/12	LOCTITE/73/ 38082-HDS WHITE CAP CONST /#43/1 /Ref# 17437879-01	\$ 258.99
SMALL TOOLS	MAT	05/31/12	05/21/12	SHIPPING-MCMMASTER CARR/73/ 119-FEDEX FREIGHT /#109/1 /Ref# 2633358932	\$ 132.43
SMALL TOOLS	MAT	05/31/12	05/11/12	SAFETY CABINETS/73/ 114-MCMMASTER-CARR /#130/1 /Ref# 26242070	\$ 806.10
SMALL TOOLS	MAT	05/31/12	05/24/12	SPUDS/BALL VALVE/ADTR/73/ 146-MOSS RUBBER AND EQUI /#132/1 /Ref# 455251-001	\$ 271.29
SMALL TOOLS	MAT	06/15/12	05/24/12	LADDER/73/ 38082-HDS WHITE CAP CONST /#53/1 /Ref# 17441989	\$ 140.12
SMALL TOOLS	MAT	06/16/12	05/25/12	GRINDR/WHEELS/RAGS/SPRAYR/GREA/73/ 38082-HDS WHITE CAP CONST /#69/1 /Ref# 17442399	\$ 1,529.27
SMALL TOOLS	MAT	06/16/12	05/25/12	EXT CORDS/73/ 38082-HDS WHITE CAP CONST /#72/1 /Ref# 17442624	\$ 138.14
SMALL TOOLS	MAT	06/16/12	05/31/12	MISC SML TOOLS/73/ 38082-HDS WHITE CAP CONST /#75/2 /Ref# 17443838	\$ 1,410.33
SMALL TOOLS	MAT	06/23/12	06/04/12	KEY CABINET/73/ 114-MCMMASTER-CARR /#97/1 /Ref# 28200850	\$ 158.32
<b>SMALL TOOLS SUBTOTAL</b>					<b>\$ 6,637.51</b>

**Phase : 1- 90- - SECURITY**

SECURITY	SUB	5/12/2012	4/14/2012	Security - (4/1/12 - 4/7/12)	\$ 1,100.00
SECURITY	SUB	5/19/2012	4/21/2012	Security - (4/8/12 - 4/14/12)	\$ 1,100.00
SECURITY	SUB	5/26/2012	4/28/2012	Security - (4/15/12 - 4/21/12)	\$ 1,100.00
SECURITY	SUB	6/2/2012	5/5/2012	Security - (4/22/12 - 4/28/12)	\$ 1,100.00
SECURITY	SUB	6/9/2012	5/12/2012	Security - (4/29/12 - 5/5/12)	\$ 1,100.00
SECURITY	SUB	6/16/2012	5/19/2012	Security - (5/6/12 - 5/12/12)	\$ 1,100.00
SECURITY	SUB	6/23/2012	5/26/2012	Security - (5/13/12 - 5/19/12)	\$ 1,100.00
SECURITY	SUB	6/30/2012	6/2/2012	Security - (5/20/12 - 5/26/12)	\$ 1,100.00
SECURITY	SUB	7/7/2012	6/9/2012	Security - (5/27/12 - 6/2/12)	\$ 1,100.00
SECURITY	SUB	7/14/2012	6/16/2012	Security - (6/3/12 - 6/9/12)	\$ 1,100.00
SECURITY	SUB	7/21/2012	6/23/2012	Security - (6/10/12 - 6/16/12)	\$ 1,100.00
SECURITY	SUB	7/28/2012	6/30/2012	Security - (6/17/12 - 6/23/12)	\$ 1,100.00
SECURITY	SUB	8/4/2012	7/7/2012	Security - (6/24/12 - 6/30/12)	\$ 1,100.00
<b>SECURITY SUBTOTAL</b>					<b>\$ 14,300.00</b>

**Phase : 1- 91- - OWNER OFFICE**

OWNER OFFICE	MAT	04/14/12	03/27/12	OWNR INTERNET 3/28-4/27/73/ 37984-AT&T U-VERSE /#14/1 /Ref# 117457450	\$ 216.17
OWNER OFFICE	MAT	04/14/12	04/05/12	4/5-5/4 INTERSTATE/OWNR/73/ 37796-AT&T /#16/1 /Ref# 721735566452	\$ 481.68
OWNER OFFICE	MAT	05/09/12	04/13/12	PHONE REPAIR/MOD SPACE-\$252/73/ 109-SYNERTEL, INC /#151/1 /Ref# 52532	\$ 1,132.66
OWNER OFFICE	MAT	05/10/12	04/06/12	SHIPPING-MCMMASTER CARR/73/ 119-FEDEX FREIGHT /#156/1 /Ref# 2560919454	\$ 122.03
OWNER OFFICE	MAT	05/10/12	04/27/12	OWNR INTERNET 3/28-4/27/73/ 37984-AT&T U-VERSE /#160/1 /Ref# 117457450	\$ 231.35
OWNER OFFICE	MAT	05/10/12	04/20/12	APR PHONE SVC/73/ 37796-AT&T /#162/1 /Ref# 415-243-0949	\$ 636.30
OWNER OFFICE	MAT	05/10/12	04/20/12	APRIL JANITORIAL SVC-OWNR/73/ 107-KARLA'S MAIDS /#165/2 /Ref# 446	\$ 155.00
OWNER OFFICE	MAT	05/10/12	04/27/12	BOOT BRUSH ASSY/73/ 38082-HDS WHITE CAP CONST /#166/1 /Ref# 17434044	\$ 145.80
OWNER OFFICE	MAT	05/10/12	04/13/12	BEST BUY-2 GB SECURE DIGITAL/4/73/ 6-VIKAS SEHDEV /#185/1 /Ref# 4/30/12	\$ 43.36
OWNER OFFICE	MAT	05/10/12	05/05/12	OWNR TRAILER 4/26-5/25/73/ 21761-MODULAR SPACE CORPOR /#4/1 /Ref# 106137048	\$ 1,372.32
OWNER OFFICE	MAT	05/18/12	05/05/12	5/5-6/4 INTERSTATE/OWNR/73/ 37796-AT&T /#13/1 /Ref# 721735566452	\$ 385.66
OWNER OFFICE	MAT	05/26/12	05/14/12	COPY PAPER/73/ 104-OFFICE DEPOT /#64/1 /Ref# 609804383001	\$ 43.39
OWNER OFFICE	MAT	05/26/12	05/21/12	MAY JANITORIAL SVC/73/ 107-KARLA'S MAIDS /#73/1 /Ref# 516	\$ 620.00
OWNER OFFICE	MAT	05/31/12	05/20/12	MAY PHONE SVC-OWNR TRAILER/73/ 37796-AT&T /#114/1 /Ref# 415-243-0949	\$ 375.97
OWNER OFFICE	MAT	05/31/12	05/15/12	COPY PAPER-OWNR OFC/73/ 104-OFFICE DEPOT /#117/1 /Ref# 609804383002	\$ 54.24
OWNER OFFICE	MAT	05/31/12	05/23/12	OWNR TRAILER 5/26-6/25/73/ 21761-MODULAR SPACE CORPOR /#128/1 /Ref# 106165547	\$ 1,372.32
OWNER OFFICE	MAT	06/13/12	05/27/12	OWNR INTERNET 4/28-5/27/73/ 37796-AT&T /#71/1 /Ref# 117457450	\$ 135.00
OWNER OFFICE	MAT	06/16/12	06/05/12	6/5-7/4 INTERSTATE/OWNR/73/ 37796-AT&T /#77/1 /Ref# 721735566452	\$ 385.66
OWNER OFFICE	MAT	06/23/12	06/21/12	JUNE JANITORIAL SVC/73/ 107-KARLA'S MAIDS /#94/1 /Ref# 566	\$ 620.00
<b>SMALL TOOLS SUBTOTAL</b>					<b>\$ 8,528.91</b>

SFMTA Contract No. 1252

Contractor:

Barnard Impregilo Healy JV (BIH)

## EVALUATION OF MERIT

### COR 030

**Recommendation:** Confirm justification of Merit for COR 030, Phase 1 Costs – Hazardous Waste Allowance. There is no time extension requested or recommended for this work.

**Facts:** Spoils from excavations in the Caltrans yard (bounded by Fourth Street, Fifth Street, Harrison Street, and Bryant Street) have been rejected by Class 2 facilities. Excavation and disposal of the spoils was required in order for BIH to install the temporary electrical substation required for TBM power and site power, install site utilities, install best management practices for stormwater pollution prevention (including the installation of the wheel wash required by contract), and construct jet grout spoils and muck disposal pits.

Prior to the off-haul of excavated spoils from the Cal-trans/Contractor's staging yard, the Contractor pre-classified the soil in order to determine landfill acceptance. The contract and the Contractor's disposal facility require testing of all material prior to off-haul. SFDPW-SAR (Site Assessment and Remediation) provided guidance to the Contractor regarding soil sampling and testing protocols. After pre-classification, all excavated materials were placed in separated stockpiles in the Contractor's temporary Materials Classification Area (MCA) in accordance with the contract specifications.

The Contractor employed a 3rd party testing agency to perform soil sampling at various locations within the Caltrans/Contractor's staging yard at known excavation locations. The soil samples were then sent to a lab where analytical reports were generated for each sample. The analytical reports stated the chemical content of the majority of soil samples taken were found to be hazardous.

The additional cost for disposal of the material at the Class 1 facility was significant. The Contractor took the following steps to control cost:

- Reused excavated materials as backfill as much as possible.
- Sampled the soil at depths of 2-feet, 4-feet, 6-feet, and 8-feet in an attempt to isolate an elevation below which clean fill could be found.
- Provided test results consistent with Class 2 to facilities for possible acceptance.

The additional testing to pre-classify the soils in the area significantly reduced the amount of material disposed at the Class 1 facility. Soils in the launch box ramp and in the northeast portion of the site tested as Class 3 or Class 2 (nonhazardous).

The soils at the muck disposal area and the wheel wash area were tested as either Class 2 or Class 1 material. Lead was the pre-dominant element that led to the Class 1 result. The Class 2 disposal facility would not accept any material excavated near the Class 1 areas due to the proximity of Class 1 and Class 2 soils and possibility of cross-contamination. The Class 2 facility responded with the following:

**SFMTA Contract No. 1252**

**Contractor:**

Barnard Impregilo Healy JV (BIH)

- “All material represented by samples 11/8/12-01, 02, 03 cannot be accepted by BSP. The level of contamination and proximity of material to this contamination represents a condition whereby BSP cannot accept the material.” See Figure 8 of COR package.
- “... we will not be able to accept any soil from the area represented by samples 11/8/12 – 01, 02 and 03 at our bay area landfills. Based on the sample results and the proximity of the two types of wastes we do not think that we can be guaranteed of only receiving the non-hazardous soils. The excavation area is too small to be able to separate the non-hazardous soil from the California hazardous soil.” See Figure 10 of COR package.

The Contractor elected to utilize Waste Solutions Group as a disposal company to transfer, transport and dispose of the Class 1 hazardous material due to the fact that Baylands Soil Processing (BSP) and Republic Services (RS) landfills would not accept the excavated materials.

BIH performed far more tests that would typically be performed, with testing at 1 test per 108 cyd. The suggested testing frequency from BPS was equal to 1 test every 1000 cyd. Approximately 20 tests were performed for 2,151 cyd (4,065.7 tons) of hazardous material encountered and disposed of at Class 1 facilities.

Supplemental information: The Contractor also retained an industrial hygienist following the receipt of the analytical results for the soil to determine whether special personal protective equipment would be required to protect workers against airborne contaminants. The industrial hygienist determined no additional equipment to be required. The cost for the industrial hygienist is incidental to the work and is not being reimbursed under this allowance.

**Justification:** The Contractor followed the proper procedures and protocols and legally disposed of the excavated materials. The soil in the Caltrans yard is simply too contaminated to be accepted at Class 2 facilities and therefore must be transported and disposed of as Class 1 hazardous waste. The City Attorney is currently investigating whether the provisions of the lease of the Caltrans Yard provide for reimbursement of cost for disposal of hazardous waste.

The cost is allowed to be paid by bid Item ES-8 – Additional Costs of Hazardous Waste Allowance. As set forth in Specification Section 01 20 00, Price and Payment Procedures, “Estimates for progress payment purposes will be based on the following:

1. The additional cost is defined as  $(A+B) - (C+D)$  where:
  - a. A is the cost to haul material found to contain hazardous material from the Materials Classification Area (MCA) to a landfill certified to receive such material.
  - b. B is the dump fee charged for material found to contain hazardous materials.



**SFMTA Contract No. 1252**

**Contractor:**

Barnard Impregilo Healy JV (BIH)

- c. C is the cost to haul uncontaminated material from the MCA to the Contractor’s regular dump site.
- d. D is any fee for uncontaminated material charged by the Contractor’s regular disposal site.”

$$(A+B) - (C+D): (\$387,633.11 - \$0) - (\$83,500 - \$0) = \$304,133.11$$

Note: Cost of Dump Fees (B) is included in the cost of (A) incurred for Waste Solutions Group to haul and dispose of the hazardous materials. (C) is the number of loads used multiplied by \$500/load as quoted by Economy Trucking to haul and dispose of the non-hazardous materials (See Figure 15 of the COR package). Cost of Dump Fees (D) is included in the cost of (C).

The additional costs for this change are \$304,133.11. In order to keep from exceeding the ES-8 bid item amount of \$200,000 Phase 1 additional costs for encountering hazardous materials were made equal to \$195,000.00 (\$198,276.00 with Contractor Payment & Performance Bonds & Builder’s Risk Insurance). Phase 2 additional costs for encountering hazardous materials are equal to the balance of the additional costs not included in this COR or \$109,133.11 (\$304,133.11 - \$195,000).

Phase 3 will be submitted under a future COR and is estimated to total \$150,000.

An advantage of using the hazardous waste allowance to capture these costs is that no separate payment is to be made for handling, segregating, temporary stockpiling and storage, implementation of best management practices related to temporary stockpiling and storage, or sampling and testing.

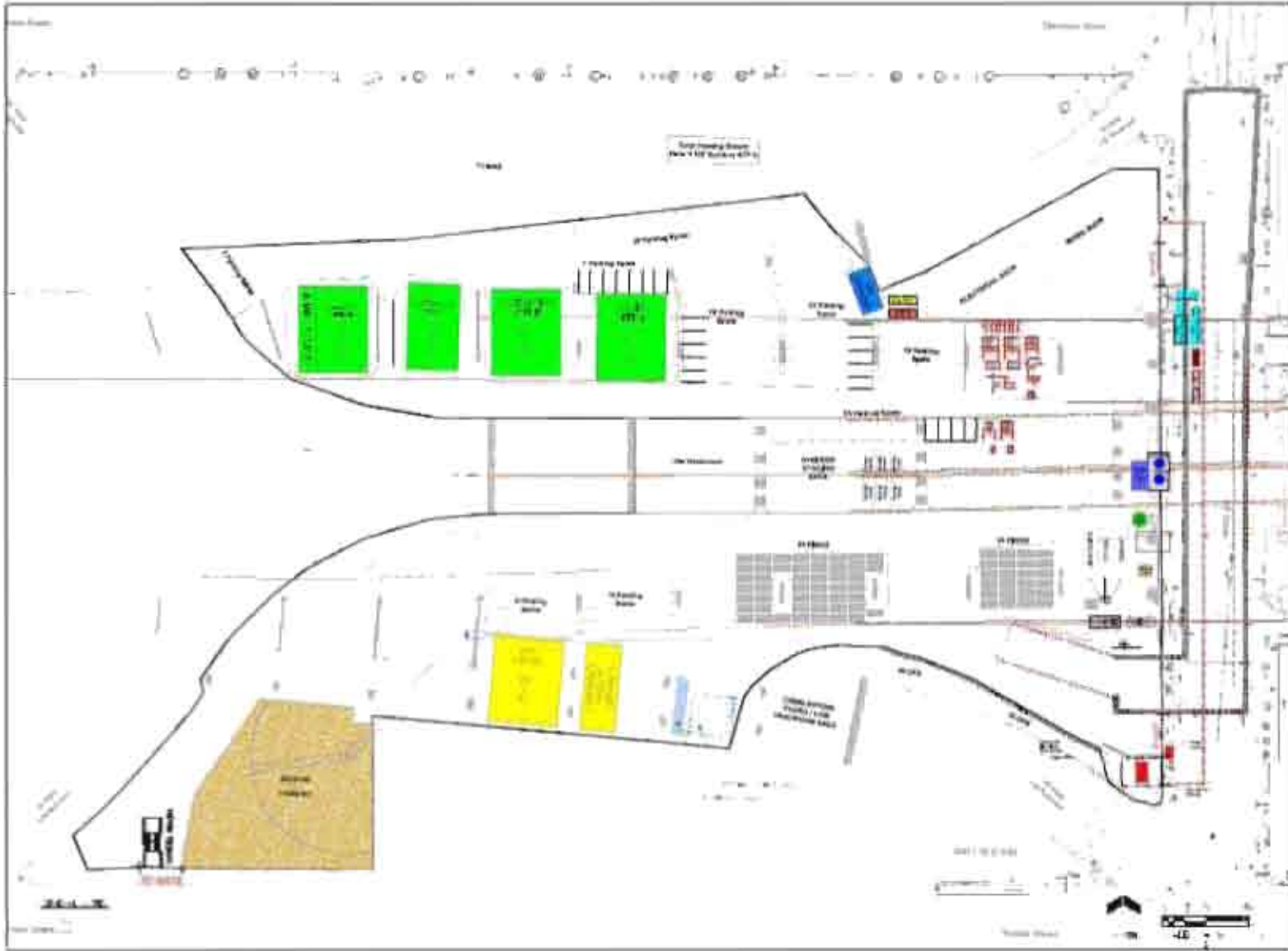
The Launch box and Moscone Station locations have been similarly pre-classified and have been classified as Class 3 so they are not expected to generate additional cost. The UMS Station/Ellis Shaft, Retrieval Shaft, and Tunnel Spoils have not been pre-classified, but based on the investigation conducted for the UMS station contract and the Geotechnical Baseline Report for this contract the excavation of the top ten feet of UMS station may generate additional cost but the other locations are not expected to generate additional cost.

**Change Type:** Bid Item ES-8 - Additional Costs of Hazardous Waste Allowance.

By: \_\_\_\_\_ Date \_\_\_\_\_  
 Sarah Wilson  
 Resident Engineer

\_\_\_\_\_ Date \_\_\_\_\_  
 Configuration Management Board  
 Approval





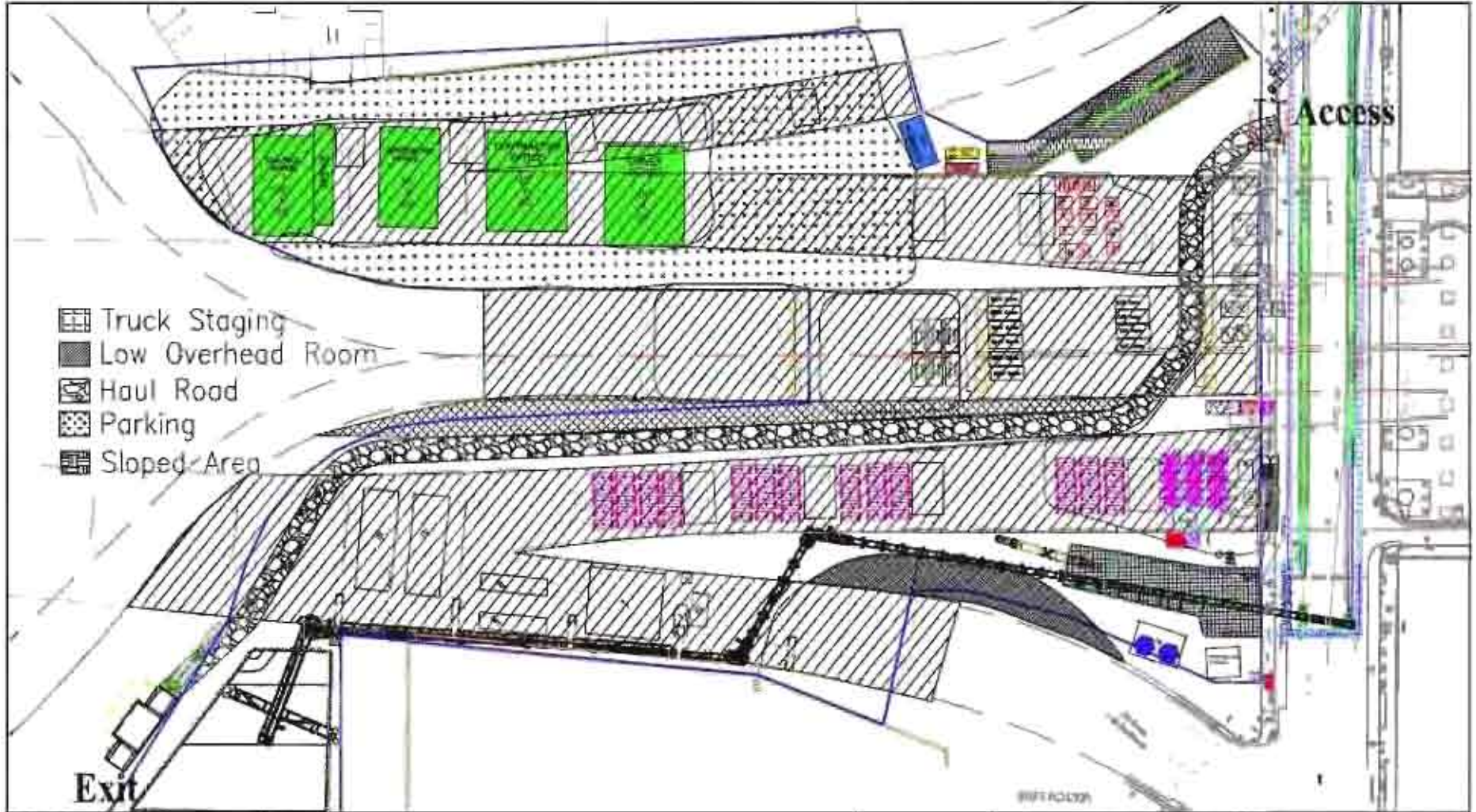

CONTRACT 422  
CENTRAL SUBWAY TUNNELS






PHASE 3  
Post NTP's  
Tunneling



4th St Yard  
Site Layout  
Phase 3

PH-3



-  Truck Staging
-  Low Overhead Room
-  Haul Road
-  Parking
-  Sloped Area



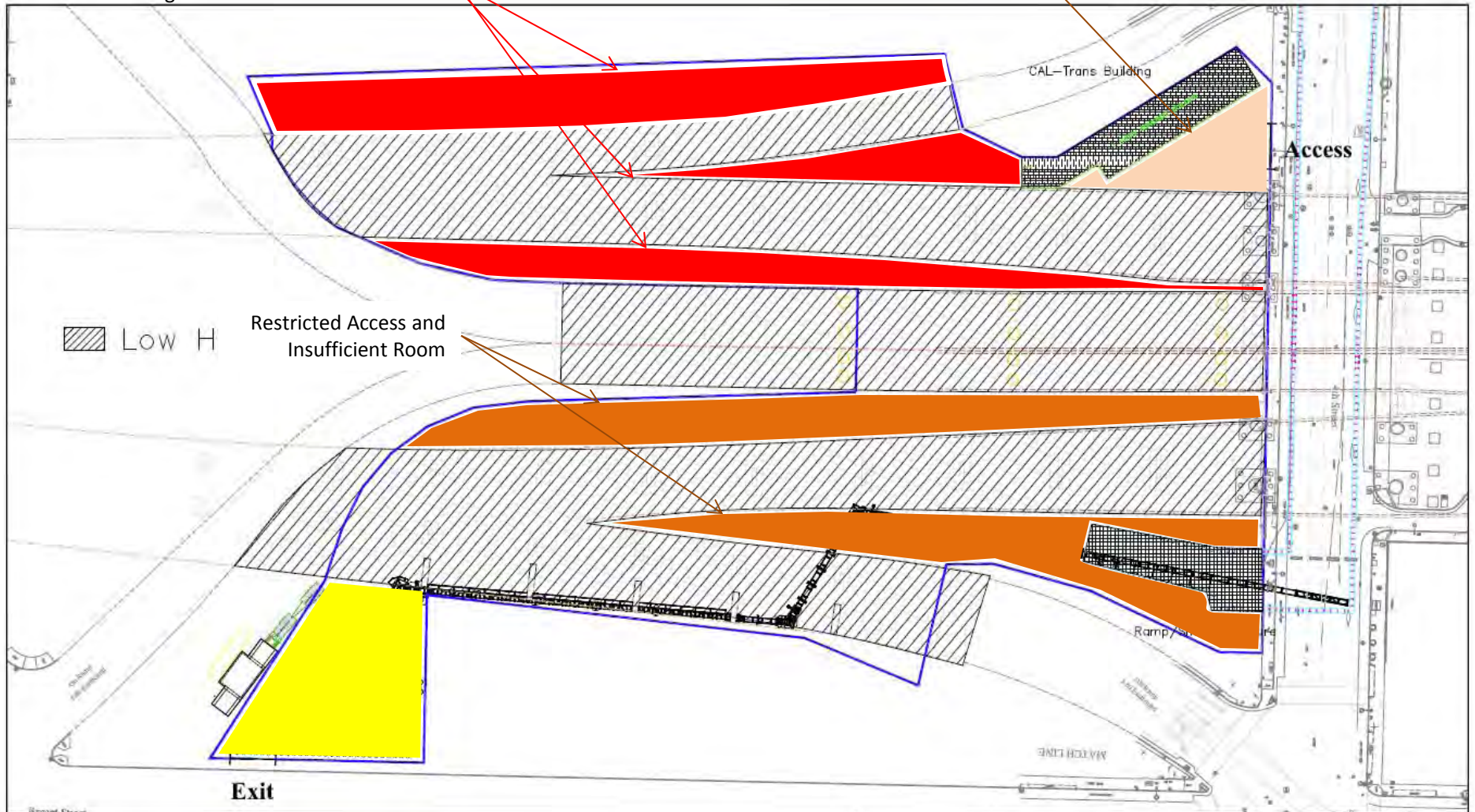

Central Railway Tunnels Project

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Per Caltrans Agreement,  
Designated as Maintenance Area

Insufficient Room



Low H

Restricted Access and  
Insufficient Room

CAL-Trans Building

Access

Ramp

Exit

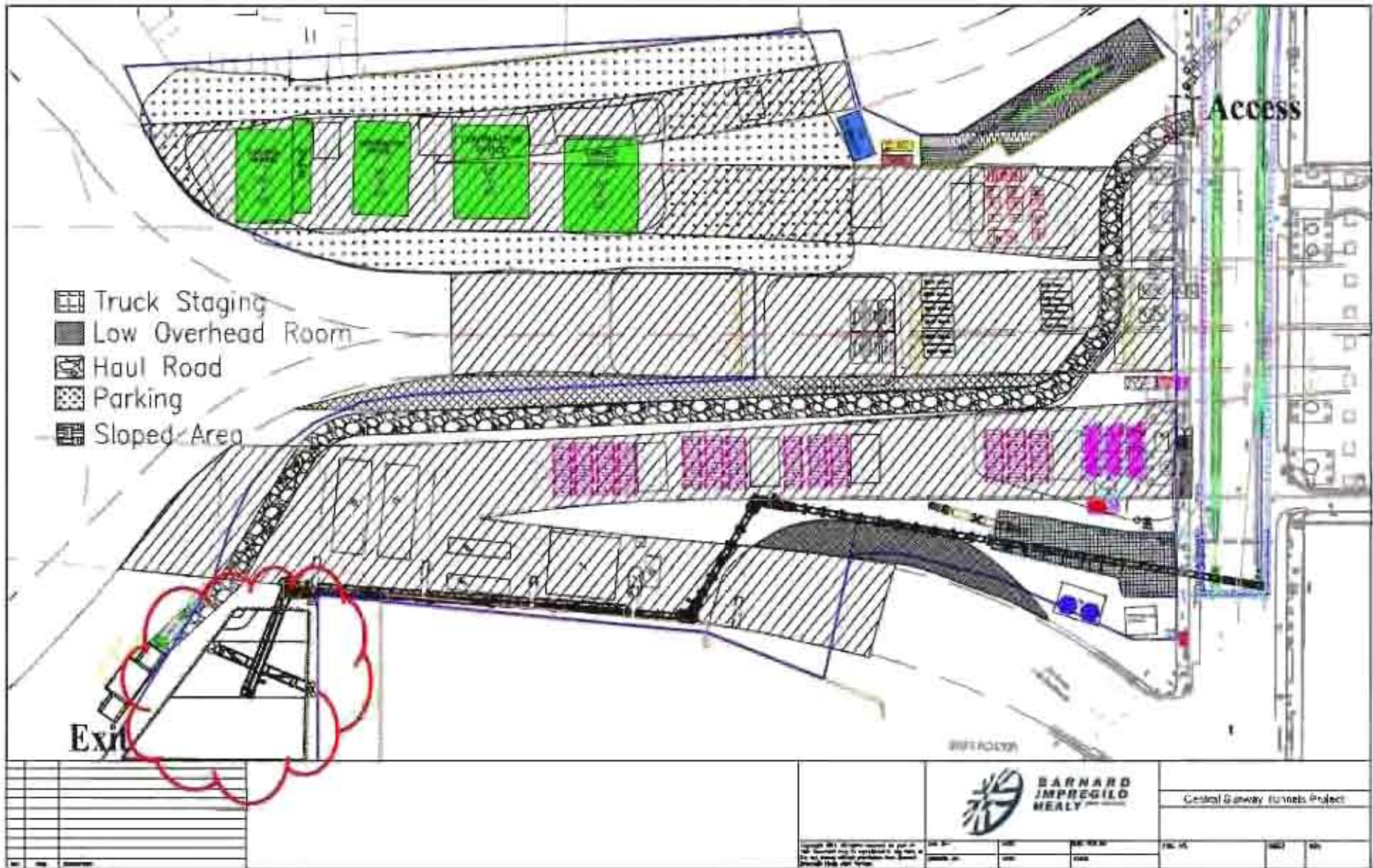
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


NO.	DATE	DESCRIPTION



Central Subway Tunnels Project  
0221 Site Low Headroom Areas

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-  Truck Staging
-  Low Overhead Room
-  Haul Road
-  Parking
-  Sloped Area

Exit

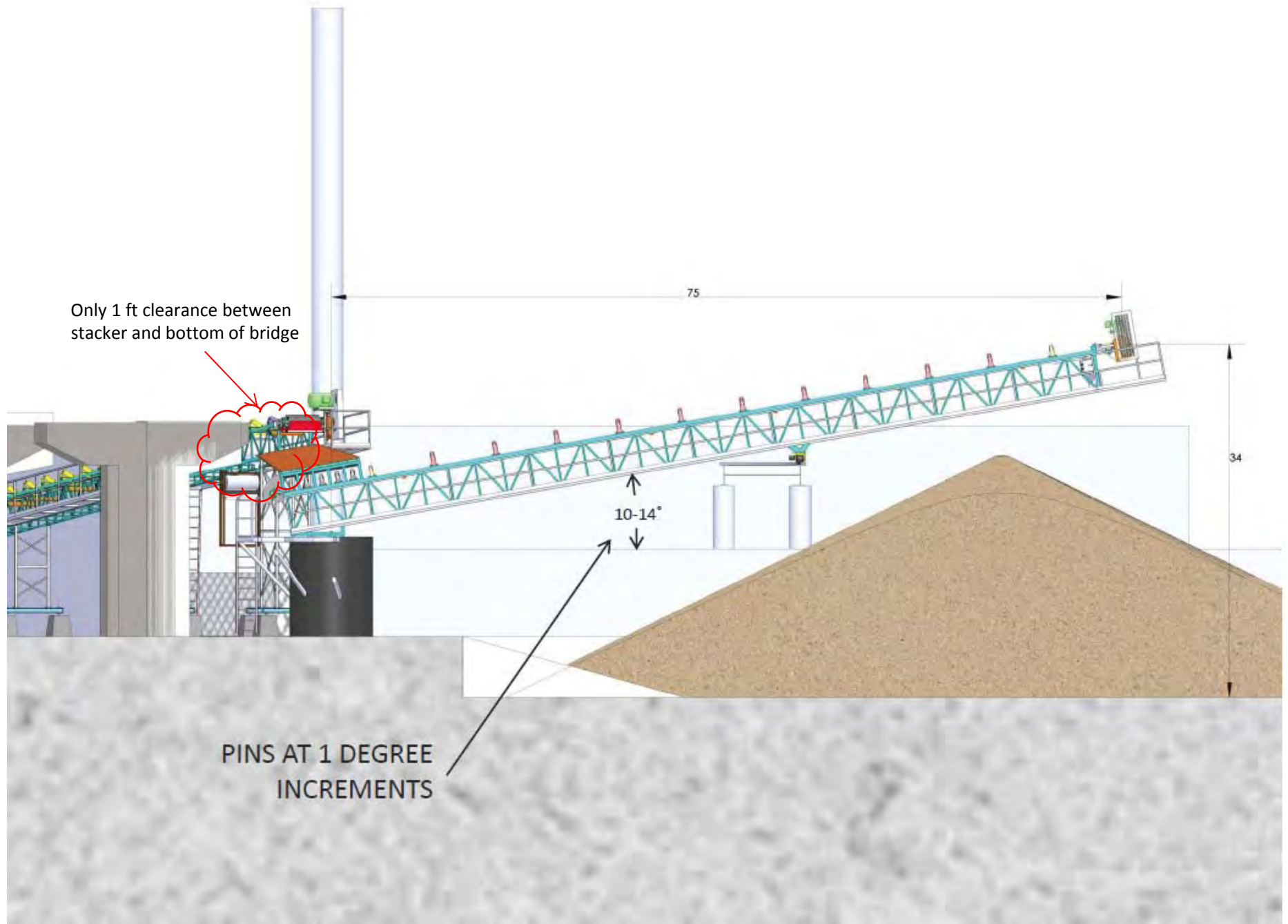
Access

8/17/2019

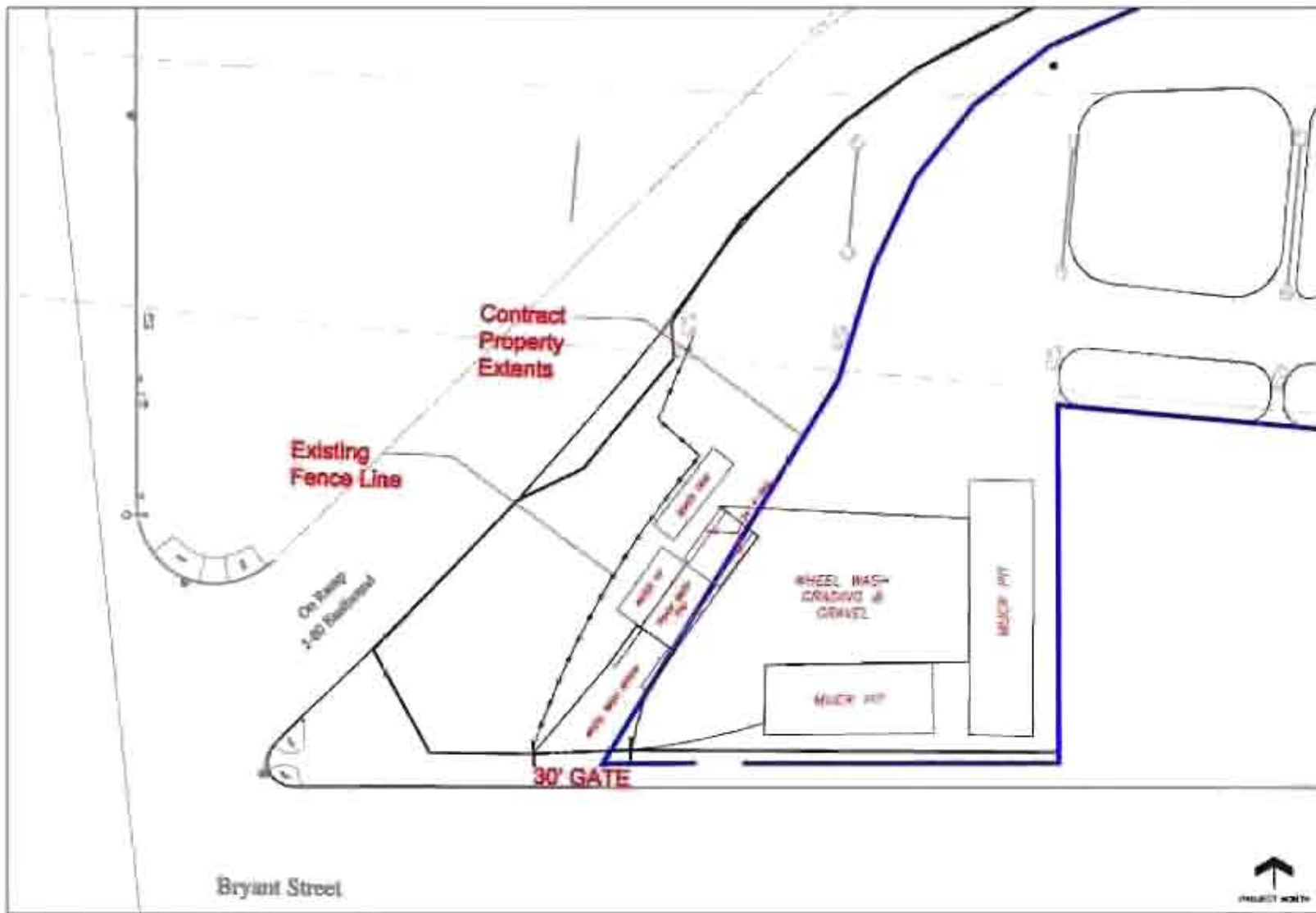


Central Gateway tunnels Project

DATE	BY	DESCRIPTION	SCALE	NO.	REV.








CONTRACT 122  
CENTRAL SUBWAY TUNNELS

PROPERTY LINE  
COMPARISON



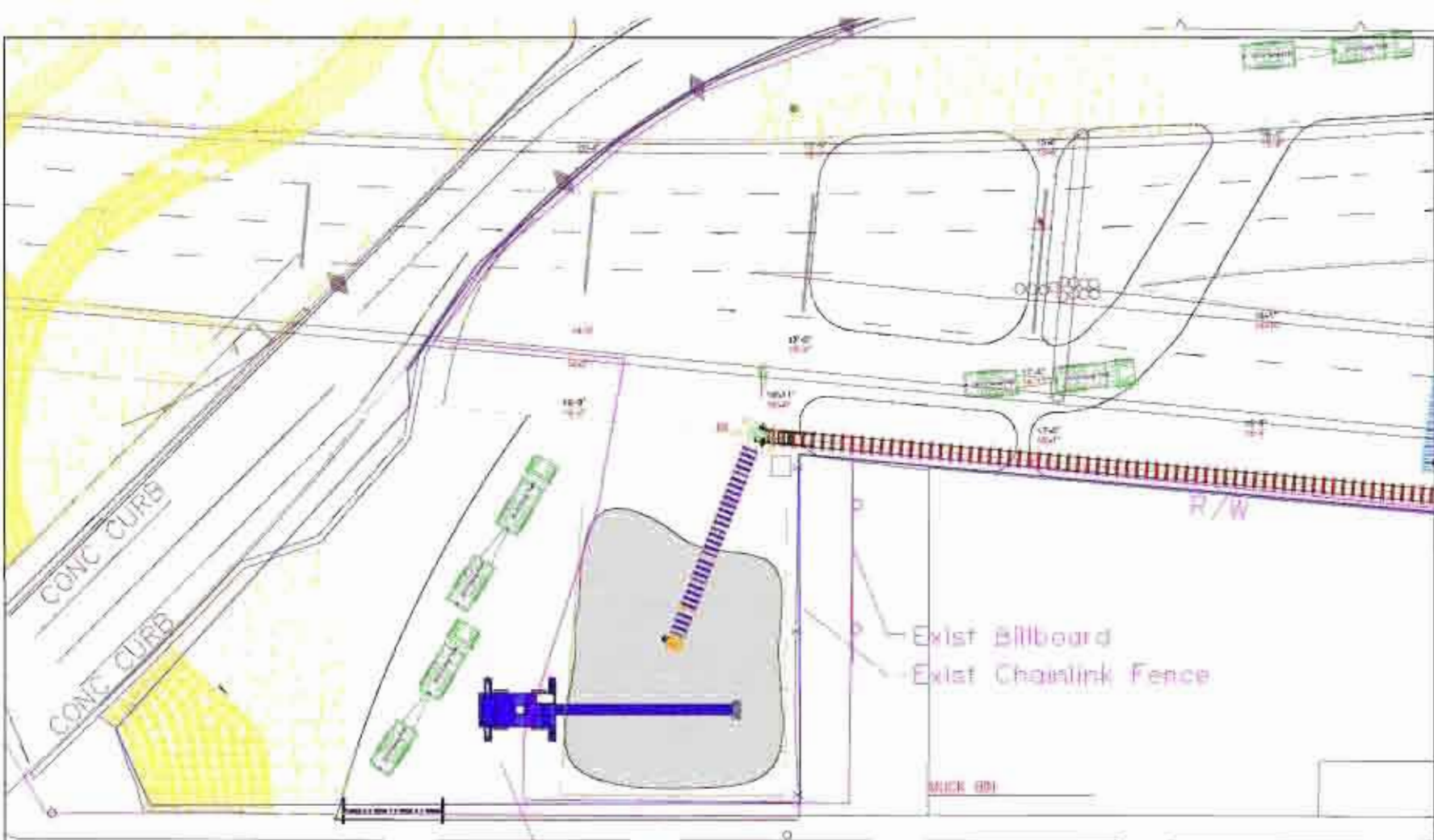
4th St Yard  
Property  
Line  
Comparison


**COR 030 - FREQUENCY OF SOIL SAMPLING VS. HAZARDOUS WASTE DISPOSAL**

<b>BIH SOIL SAMPLE TEST QTY</b>	<b>BIH SOIL SAMPLE TEST DESCRIPTION</b>	<b>WASTE SOLUTIONS INVOICE</b>	<b>WASTE HAUL-OFF QTY (TONS)</b>	<b>WASTE HAUL-OFF QTY (CY)</b>	<b>TESTING FREQUENCY (1 Test per 108 CY)</b>
1	02-15-02 (site 01) @ 2' depth	Invoice No. 2012 - 394	3,744	1,981	<b>108</b>
2	02-15-02 (site 02) @ 4' depth				
3	02-15-02 (site 03) @ 4' depth				
4	02-15-02 (site 04) @ 4' depth				
5	11-08-12 (site 01-02) @ 2' depth				
6	11-08-12 (site 01-04) @ 4' depth				
7	11-08-12 (site 01-06) @ 6' depth				
8	11-08-12 (site 01-08) @ 8' depth				
9	11-08-12 (site 02-02) @ 2' depth	Invoice No. 2012-429	321	170	
10	11-08-12 (site 02-04) @ 4' depth				
11	11-08-12 (site 02-06) @ 6' depth				
12	11-08-12 (site 02-08) @ 8' depth				
13	11-08-12 (site 03-02) @ 2' depth				
14	11-08-12 (site 03-04) @ 4' depth				
15	11-08-12 (site 03-06) @ 6' depth				
16	11-08-12 (site 03-08) @ 8' depth				
17	11-08-12 (site 04-02) @ 2' depth				
18	11-08-12 (site 04-04) @ 4' depth				
19	11-08-12 (site 04-06) @ 6' depth				
20	11-08-12 (site 04-08) @ 8' depth				
<b>TOTAL</b>			<b>4,066</b>	<b>2,151</b>	<b>20 Test</b>

# Considerations

- There is no other feasible location for placement of the muck bin due to overhead clearance restrictions, limited access points, and shaft access structure.
- A good day of tunneling would generate approximately 2800 cy.
  - Considering 200' of advance and 15% swell
- Capacity of muck bin is estimated at 1800 cy.
- Disposal facility hours are 6 am – 4 pm. Anticipated tunneling hours are 6 am – 2 am
  - ½ of the muck generated (~1400 cy) could need to be stockpiled in the muck facility daily.
  - There is insufficient space to have a separate location to store and test muck on site.
  - Testing frequency greatly exceeded that which was necessary to dispose of material (almost 10X).
- The wheel wash is required per our specifications 01 57 19 1.07 and environmental documents. Locating the wheel wash within the original site location would have required additional excavation to achieve required depth of the muck bin to maintain required capacity to avoid being muck bound.
- Temporary facilities are part of the Work, and the payment provisions for excavating, handling and disposing of excavated material found to contain hazardous material applies to this aspect of the Work just as does other provisions covering the Work (ie. general provisions, environmental controls, etc.)
- Similar reasoning applies to jet grout spoils handling facilities. Trucks dump liquid spoil return into temporary pits to set-up/cure (8 hrs). Spoils are then loaded into trucks off-hauled for disposal. Only have capacity for one day of jet grouting.



NO.	DATE	DESCRIPTION

**BARNARD  
IMPREGILO  
HEALY**

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DATE	BY	SCALE
02/21/11	SM	AS SHOWN

CITY AND COUNTY OF SAN FRANCISCO		
MTA		
Central Gateway Tunnels 1252		
ENC. NO.	SHEET	REV.
9221-001	1	0

On Jan 28,2013 , BIH provided a submittal regarding their proposed Ground Freezing for Cross Passage 5

**SFMTA needs its own cost estimate and review of the BIH requested Contract Changes to move forward**

### **MAJOR TOPIC RECAP SUMMARY**

Key Provisions for discussion are indicated below ( Items 1 thru 3 )

#### **1. COST OF V E C P**

BIHJV's cost evaluation revealed that estimated costs for the alternative ground treatment method were actually higher than anticipated credits for deletion of the jet grouting. These results were true when considering estimated costs both with and without the contingency allowance. Notwithstanding, BIHJV believes there is opportunity to refine design details, sharpen up subcontractors' scope and pricing, and improve schedule sequencing in order to perform the alternate ground treatment method at equal cost. In consideration of the benefits, BIHJV believes it is in the best interest of the project to proceed with the alternative ground treatment method and is willing to implement these measures at no additional cost.

It is critical to note that BIHJV's cost analysis considered full compensation for the unit price bid item for ground treatment at CP5. BIHJV would require the same total compensation for performing the alternate ground treatment, even though the total ground treatment volume may decrease.

Accordingly, Bid Item ES-5 of the Schedule of Bid Prices would need to be modified to LS amount equal to its current total price.

### **Cost Proposal**

# BARNARD IMPREGILO HEALY JOINT VENTURE

420 Fourth Street San Francisco, CA 94107, PH (415) 546-0799, FX (415) 546-3822

Third Street Lightrail Program Phase 2 - Central Subway Project  
CONTRACT 1252

1/25/2013

VECP No. 01 - Cross Passage No. 5 Ground Improvement Alternative

## VECP ESTIMATE

### CREDIT for Jet Grouting Costs:

<b>1 Jet Grout Deletion Credit</b>	<b>-\$3,010,000.00</b>
<i>Mob / Demob, F&amp;I Jet Grout, Handling &amp; Transport Spoils, Work Area General Conditions</i>	
<b>2 Jet Grout Off-haul &amp; Disposal Credit</b>	<b>-\$65,000.00</b>
<i>Spoils Trucking/Hauling, Disposal Fees</i>	
<b>3 OCS Relocation Credit</b>	<b>-\$85,000.00</b>
<i>Estimated Relocation</i>	
<b>4 Traffic Control Credit</b>	<b>-\$45,000.00</b>
<i>Setup/takedown, supplemental flagging</i>	
<b>5 Demo &amp; Temporary Restoration Credit</b>	<b>-\$35,000.00</b>
<i>AC/Base Demo and Temporary Restoration</i>	
<b>Total Credit Amount</b>	<b>-\$3,240,000.00</b>

### ESTIMATED COST for Ground Freezing Alternative:

<b>1 Design</b>	<b>\$95,000.00</b>
<i>Design, Review, Modifications</i>	
<b>2 Drill &amp; Install Freeze and Temperature Pipes</b>	<b>\$1,810,000.00</b>
<i>Mob/Demob, F&amp;I Freeze/Temp Pipes, BOPs, Lining Mods/Demo, Grouting, Testing, Spoils Handling</i>	
<b>3 Install Freeze Plant, Equipment and Appurtenances</b>	<b>\$950,000.00</b>
<i>Mob/Demob, F&amp;I Freeze Plant &amp; Equipment, F&amp;I Distribution Valves/Piping, Distribution System Insulation, P&amp;E Electrical/Control Hookup, F&amp;I Instrumentation</i>	
<b>4 Commission, Operate &amp; Maintain Freeze Plant</b>	<b>\$100,000.00</b>
<i>Startup, Operation, Maintenance, Instrument Monitoring</i>	
<b>5 Subcontractor Assistance (Exclusions), Access, Support Services</b>	<b>\$325,000.00</b>
<i>Survey, Access &amp; Equipment, Tunnel Support Services (Facility Operations), Tunnel Reinforcement &amp; Insulation, Tunnel Equipment &amp; Utility Modifications, Utility Services, Haul-off/Disposal, Sub Excluded Items, Freeze Plant &amp; Equipment Support Infrastructure, P&amp;E Removal &amp; Demob Service</i>	
<b>6 Abandonment &amp; Restoration</b>	<b>\$35,000.00</b>
<i>Grout &amp; Abandon Freeze / Temp Pipes, Segment Lining Repairs</i>	
<b>Total Estimated Cost</b>	<b>\$3,315,000.00</b>
<b>7 Schedule, Sequence and Design Risk Provision</b>	<b>\$331,500.00</b>
<i>10% Considered for Final Design Changes, Subcontractor Constraints/Premiums (Weekend Work), Freeze Development Time Risk, CPM Re-sequencing/Scheduling Risk, O&amp;M Schedule Risk</i>	
<b>Total Estimated Cost w/ Risk Contingency</b>	<b>\$3,646,500.00</b>

## 2. SCHEDULE IMPACT

The early start for ground freeze installation activities are currently considered as immediately following the passage of the Northbound TBM through the CP5 location.

Additionally, BIHJV believes there are sufficient alternate scheduling sequences that are available to mitigate unforeseen difficulties or scheduling challenges, although such actions may pose some financial risk to BIHJV through inefficiencies, premiums and impacts to other activities. In consideration of the benefits, BIHJV believes it is in the best interest of the project to proceed with the alternative ground treatment method and is willing to implement these measures at no additional time.

### 3. REQUIRED CONTRACT CHANGES

BIHJV has identified the following Contract items that must be changed with acceptance of this VECP;

- Specification Section 01 11 00 – Summary of Work, 1.03A.15 must be modified to delete the reference to jet grouting at CP5.
- Bid Item ES-5 of the Schedule of Bid Prices must be changed to a LS item with the same total amount as included in the Contract.
- Specification Section 01 20 00 – Price and Payment Procedures, 1.04B.5.c must be changed to “Estimates for progress payment purposes will be made based on the Contractor’s approved schedule of values”.
- Modification to any other Contract Documents or references that may be interpreted to require jet grouting at CP5, to specifically allow for the use of ground freezing as an alternate ground treatment method.
- Notes 1 and 6 on Contract Drawing No. ES-144 must be deleted.

#### Notes on Dwg ES-144

1. ALL GROUTING SHOWN SHALL BE PERFORMED AND COMPLETED BEFORE START OF TBM TUNNEL EXCAVATION AT CROSS PASSAGE. SEE SPECIFICATION.
2. LOCATE ALL UTILITIES AND UNDERGROUND STRUCTURES WITHIN LIMITS OF GROUTING WORK PRIOR TO DRILLING FOR GROUTING. PROTECT UTILITIES, UNDERGROUND STRUCTURES, AND ADJACENT SURFACE STRUCTURES AGAINST DAMAGE DURING DRILLING AND GROUTING OPERATIONS.
3. MAINTAIN AND PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC AT ALL TIMES DURING DRILLING AND GROUTING.
4. IMPLEMENT ENVIRONMENTAL CONTROL TO CONTAIN DRILLING AND GROUT SPOILS AND PROTECT AGAINST SPOIL ENTRY INTO SEWERS, ROADS, WATERCOURSES AND WATERWAYS.
5. STAGE WORK TO MINIMIZE ROAD CLOSURES.
6. GROUT TO BE DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL DEVELOP THE PROPOSED GROUTING PLANS BASED ON THE CONDITIONS AT THE CROSS PASSAGE AND THE REQUIREMENTS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL SUBMIT THE PROPOSED GROUTING PLANS TO THE ENGINEER FOR REVIEW AND APPROVAL.
7. CENTERLINES AND SPRINGLINES SHOWN FOR PROPOSED TUNNELS AND CROSS PASSAGES ARE THE PLANNED OR DESIGN LOCATIONS.
8. FOR RISER PIPE AND MANHOLE LOCATION SEE SW-4.



**BARNARD  
IMPREGILO  
HEALY** JOINT VENTURE

**Cross Passage No. 5  
Value Engineering Change Proposal  
(FINAL)**

Rev.0

Date 01/28/2013

**PRELUDE**

Barnard Impregilo Healy JV (“BIHJV”) submitted a Conceptual Value Engineering Change Proposal (“VECP”) for the ground treatment methodology and procedure to be implemented for the excavation and construction of the Cross Passage No. 5 (“CP5”) on October 1, 2012 and SFMTA conditionally approved the conceptual proposal on October 24, 2012.

**INTRODUCTION**

In accordance with the Contract Specification 01 24 13 - 1.02C, BIHJV herein submits this Final Value Engineering Change Proposal (VECP) for modifying the ground treatment methodology to support excavation and construction of CP5.

The purpose of this VECP is to modify the ground treatment approach for the CP5 excavation in an effort to reduce public impacts otherwise caused by the current ground treatment methods, which are designed to be performed from street level. By utilizing a ground treatment technology that may be performed from within the tunnel, BIHJV could eliminate the need to occupy multiple lanes of 4<sup>th</sup> Street between Market and Mission Streets for a period that is currently estimated to extend up to 6 months. In addition to greatly reducing impacts to the community, this VECP also reduces other cost and schedule risks as further described below.

**LOCATION OF GROUND TREATMENT OF CROSS PASSAGE NO.5**


The construction area for the ground treatment at CP5 is located along 4<sup>th</sup> Street in front of the San Francisco Marriott Marquis Hotel. The construction area extends approximately 400 feet along 4<sup>th</sup> Street from just south of Market Street to just south of Jessie Street, and reduces the roadway from 4-lanes with parking, to 2-lanes without parking. Please refer to Contract Drawing TR-010 included as Attachment A.

**CROSS PASSAGE NO.5 GROUND TREATMENT – ORIGINAL APPROACH**

As indicated in Contract Drawing No. ES-144, ground treatment for the excavation of CP5 is planned to be performed using jet grouting methods.

The cross sections of both tunnels and adjoining soil pillar are designed to be completely encapsulated in a volume of treated ground to facilitate the excavation of CP5. Please refer to the preliminary jet grout column layout included in Attachment B for an illustration of the anticipated ground treatment through jet grouting. BIHJV has estimated a duration of 44 weeks for this operation, as was shown in the CPM Baseline Schedule. This estimated duration includes time for relocating the Overhead Contact



 <b>BARNARD IMPREGILO HEALY</b> JOINT VENTURE	<b>Cross Passage No. 5 Value Engineering Change Proposal (FINAL)</b>	
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System (OCS), implementing necessary traffic control, mobilizing, setup and commissioning of the jet grout plant and equipment, and performance of the jet grouting activities.

The activities comprising the original ground treatment approach are all performed from the surface level on 4<sup>th</sup> Street, in front of the San Francisco Marriott Marquis Hotel.

**CROSS PASSAGE NO.5 GROUND TREATMENT – ALTERNATIVE APPROACH**

BIHJV has evaluated the feasibility of performing ground freezing from within the tunnels as an alternative ground treatment methodology. BIHJV will perform the final design for this alternate methodology as part of this VECP. Generally, the alternative approach includes installing temporary freeze pipes from within the tunnel, installing, operating and maintaining a freeze plant within the tunnel, and developing a mass of frozen ground which allows for the excavation of CP5. The activities necessary for this alternative ground treatment approach are all performed from within the tunnels, thereby avoiding the need to disrupt and impact the public by occupying 4<sup>th</sup> Street for an extended period.

While this alternative approach may create some operational and financial challenges, BIHJV’s believes that such difficulties can be overcome and that the advantages outweigh the risks. Accordingly, BIHJV has commenced the final design efforts for this approach. Please refer to Attachment C for the draft Engineering Design Report prepared by SoilFreeze.

In its feasibility evaluation, BIHJV developed the following list of advantages and potential risks/disadvantages of the alternative ground treatment method;

**Advantages:**

- Eliminate prolonged disruptions to SFMTA operations created by modifications to the OCS and implementation of traffic control on 4<sup>th</sup> Street.
- Eliminate extended disruption to vehicular traffic and pedestrians on 4<sup>th</sup> Street caused by the establishment of a jet grouting work zone in 4<sup>th</sup> Street.
- Eliminate disruption to vehicular and pedestrians on 4<sup>th</sup> Street caused by continuous jet grout spoil hauling and cement delivery trucking operations.
- Avoid impacts to the public caused by the elimination of street parking required to implement traffic control and establish the jet grouting work zone.
- Avoid impacts to business caused by the elimination of taxi staging for the San Francisco Marriott Marquis Hotel required to implement traffic control and establish the jet grouting work zone.
- Eliminate impacts to the residents, businesses, travelers and the general public by eliminating construction noise generated by multiple shift jet grouting operations.



**Cross Passage No. 5  
Value Engineering Change Proposal  
(FINAL)**

Rev.0

Date 01/28/2013


- Eliminate impacts to the residents, businesses, travelers and the general public by eliminating dust and vibration generated by multiple shift jet grouting operations
- Eliminate quantity over-run cost risks associated with the unit price bid item for ground treatment. Ground treatment unit price bid items at other locations have already experienced such over-runs.
- Avoid potential additional costs and schedule delays due to unknown utilities in 4<sup>th</sup> Street and/or differing site conditions as hve been experienced in other areas on the project.
- Avoid potential additional costs and schedule delays caused by utility owners, agencies, or other 3<sup>rd</sup> party entities.
- Improve public relations with local residents, the general public, the San Francisco Marriott Marquis Hotel and its guests, and other local businesses by minimizing construction operations that impact the area.
- Eliminates risk of jet grout intrusion and property damage through unknown utilities.
- Reduces jet grout production schedule risk to critical path tunneling operations.

**Potential Risks/Disadvantages:**

- Risk of additional costs caused by re-sequencing and inefficiencies should tunnel or freeze pipe installation activities take longer than anticipated.
- Risk of additional costs caused by re-sequencing, mitigation efforts and inefficiencies should ground freeze development take longer than anticipated.
- Risk of additional costs caused by finalized ground freeze design requiring more work than the conceptual design which was considered in analysis.

**COSTS OF VECP**

BIHJV has evaluated the estimated costs of the proposed alternative ground treatment method and the originally contemplated jet grouting method. A summary of this evaluation is included in Attachment D. In its analysis, BIHJV first developed the anticipated credits associated with the deletion of jet grouting operations along with credits for those activities necessary to facilitate such work. This development of anticipated credits was performed both internally, and in consultation with BIHJV's specialized subcontractors. Next, BIHJV prepared a cost estimate for the work necessary to implement the ground freeze alternative. The cost estimate was based upon a conceptual design prepared by our potential ground freeze subcontractor. BIHJV prepared both internal cost estimates and solicited potential subcontractors for cost estimates to perform various aspects of the work. It is critical to note that BIHJV's cost estimate was prepared from conceptual design, and that many variable conditions had to be assumed in its pricing. Such variable considerations include sequencing of activities, schedule, shift work, subcontractor exclusions, productions rates, freeze development time, impacts to other activities,

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availability of shared resources, and inefficiencies and impacts to other activities. Such considerations are highly likely to change, but must be assumed in order to develop a conceptual estimate. BIHJV also addressed some risk items with a simple contingency allowance, as pricing of such items is impractical because of the amount of variability inherent with them.

BIHJV’s cost evaluation revealed that estimated costs for the alternative ground treatment method were actually higher than anticipated credits for deletion of the jet grouting. These results were true when considering estimated costs both with and without the contingency allowance. Notwithstanding, BIHJV believes there is opportunity to refine design details, sharpen up subcontractors’ scope and pricing, and improve schedule sequencing in order to perform the alternate ground treatment method at equal cost. In consideration of the benefits, BIHJV believes it is in the best interest of the project to proceed with the alternative ground treatment method and is willing to implement these measures at no additional cost.

It is critical to note that BIHJV’s cost analysis considered full compensation for the unit price bid item for ground treatment at CP5. BIHJV would require the same total compensation for performing the alternate ground treatment, even though the total ground treatment volume may decrease. Accordingly, Bid Item ES-5 of the Schedule of Bid Prices would need to be modified to LS amount equal to its current total price.

**SCHEDULE IMPACT**

Unlike CP’s 1 through 4 which are governed by Milestones 1 & 2, the construction of CP5 is governed only by Substantial Completion and its successor relationships leading to such milestone. BIHJV has identified several sequences in which it can execute the alternate ground treatment methodology given these constraints on CP5. In an effort to minimize schedule and production impacts to other activities, and to provide additional time available for the development of the ground freeze, BIHJV considered a special weekend calendar for installation of the ground freeze system. Please refer to Attachment E. In the approach evaluated, BIHJV has considered working up to two (2) ten-hour shifts on the special weekend calendar. The early start for ground freeze installation activities are currently considered as immediately following the passage of the Northbound TBM through the CP5 location. More likely however, this will be adjusted to account for updated remaining tunnel durations, finalized ground freeze system design and specifications, refined subcontract scopes and durations, and other relevant factors.

The considered schedule approach provides for up to three (3) months of activity free-float that may be used for installation production delays, additional freeze development time, or sequencing difficulties. BIHJV is comfortable in being able to perform the work in consideration of this activity free-float. Additionally, BIHJV believes there are sufficient alternate scheduling sequences that are available to



mitigate unforeseen difficulties or scheduling challenges, although such actions may pose some financial risk to BIHJV through inefficiencies, premiums and impacts to other activities. In consideration of the benefits, BIHJV believes it is in the best interest of the project to proceed with the alternative ground treatment method and is willing to implement these measures at no additional time.

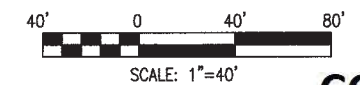
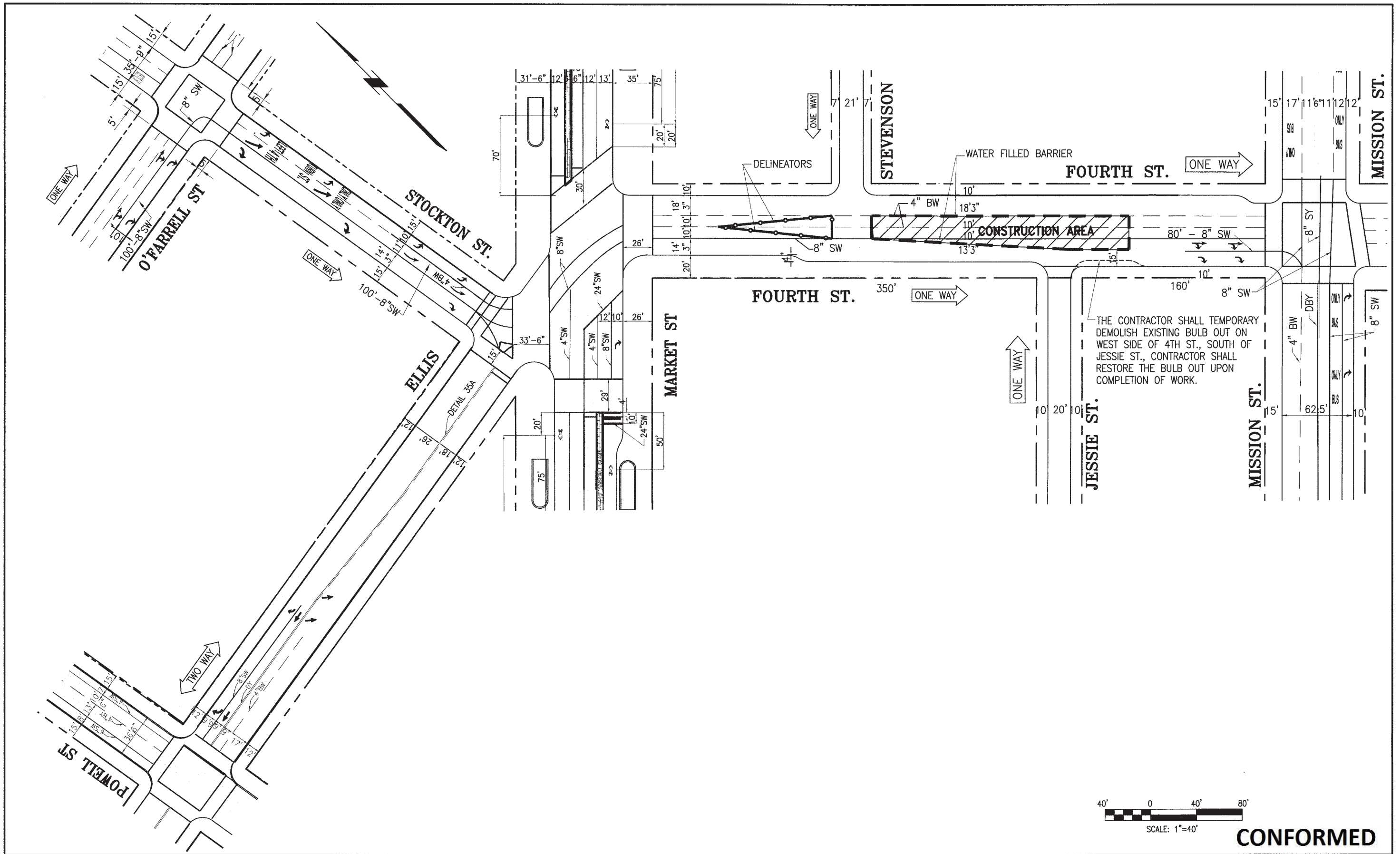
**REQUIRED CONTRACT CHANGES**

BIHJV has identified the following Contract items that must be changed with acceptance of this VECP;

- Notes 1 and 6 on Contract Drawing No. ES-144 must be deleted.
- Specification Section 01 11 00 – Summary of Work, 1.03A.15 must be modified to delete the reference to jet grouting at CP5.
- Bid Item ES-5 of the Schedule of Bid Prices must be changed to a LS item with the same total amount as included in the Contract.
- Specification Section 01 20 00 – Price and Payment Procedures, 1.04B.5.c must be changed to “Estimates for progress payment purposes will be made based on the Contractor’s approved schedule of values”.
- Modification to any other Contract Documents or references that may be interpreted to require jet grouting at CP5, to specifically allow for the use of ground freezing as an alternate ground treatment method.

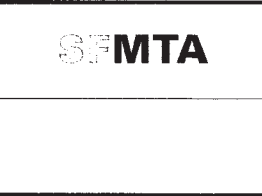
# Attachment A

C:\\_CAD&field works\Central Subway M544 CP2-CP6\NCSm554.1 (latest dwgs & muni project folder)\M544-1252 CP3 TR\_dwgs\M544 CP3 TR-009 to 010 4th st area compen grout& passage.dwg awong3

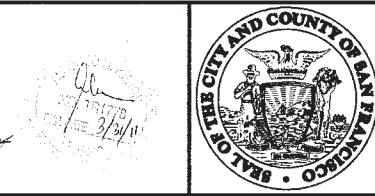


**CONFORMED**

DATE	DESCRIPTION	REV. NO.	BY	CHECKED	APPROVED
1/21/2011	ISSUED FOR BID	0			



DESIGNED	C.H.
DRAWN	A.W.
CHECKED	A.H.
REVIEWED	A.K.W.
RECOMMENDED	M.F.
APPROVED	R.E.
DATE	JAN 21 2011



CITY AND COUNTY OF SAN FRANCISCO  
**MUNICIPAL TRANSPORTATION AGENCY**

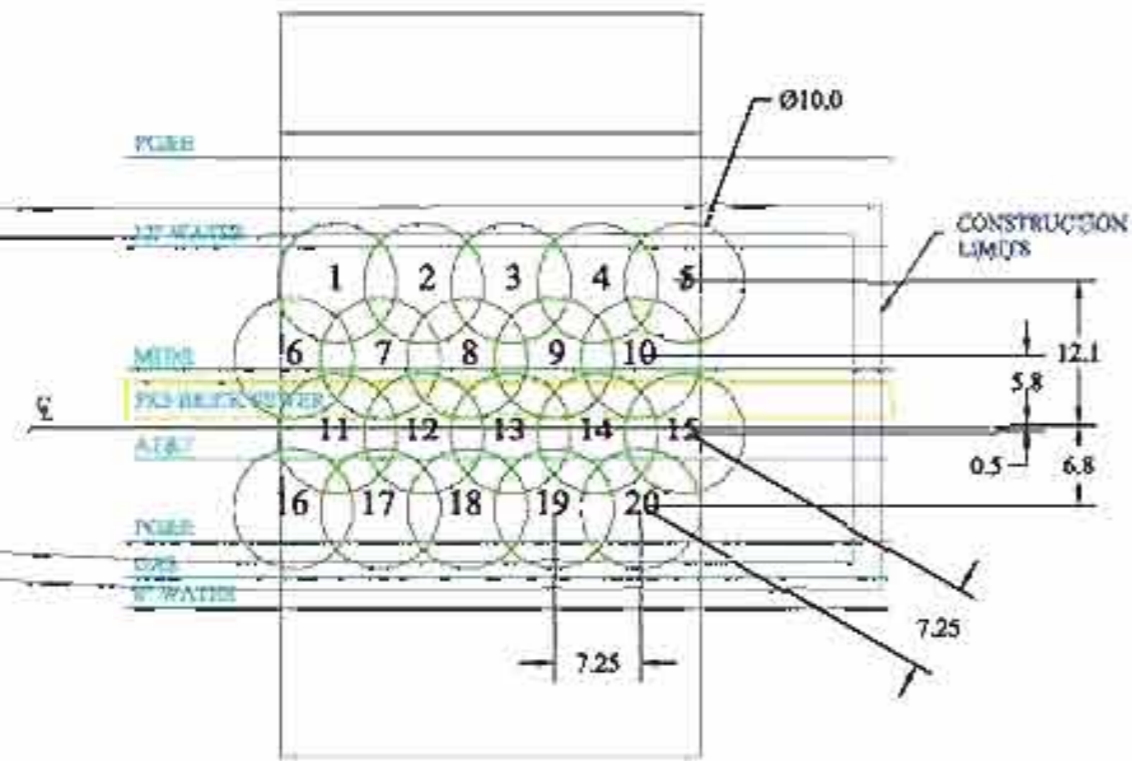
APPROVED  
*[Signature]*  
 FOR  
 EXECUTIVE DIRECTOR/CEO

THIRD STREET LIGHT RAIL PROGRAM  
 PHASE 2 - CENTRAL SUBWAY TUNNELS

**TEMPORARY TRAFFIC ROUTING  
 CROSS PASSAGE/GROUND TREATMENT  
 FOURTH ST. AREA**

CONTRACT NO.	1252
SFMTA CONTROL NO.	
DRAWING NO.	TR-010
SHEET NO.	30
REVISION	0

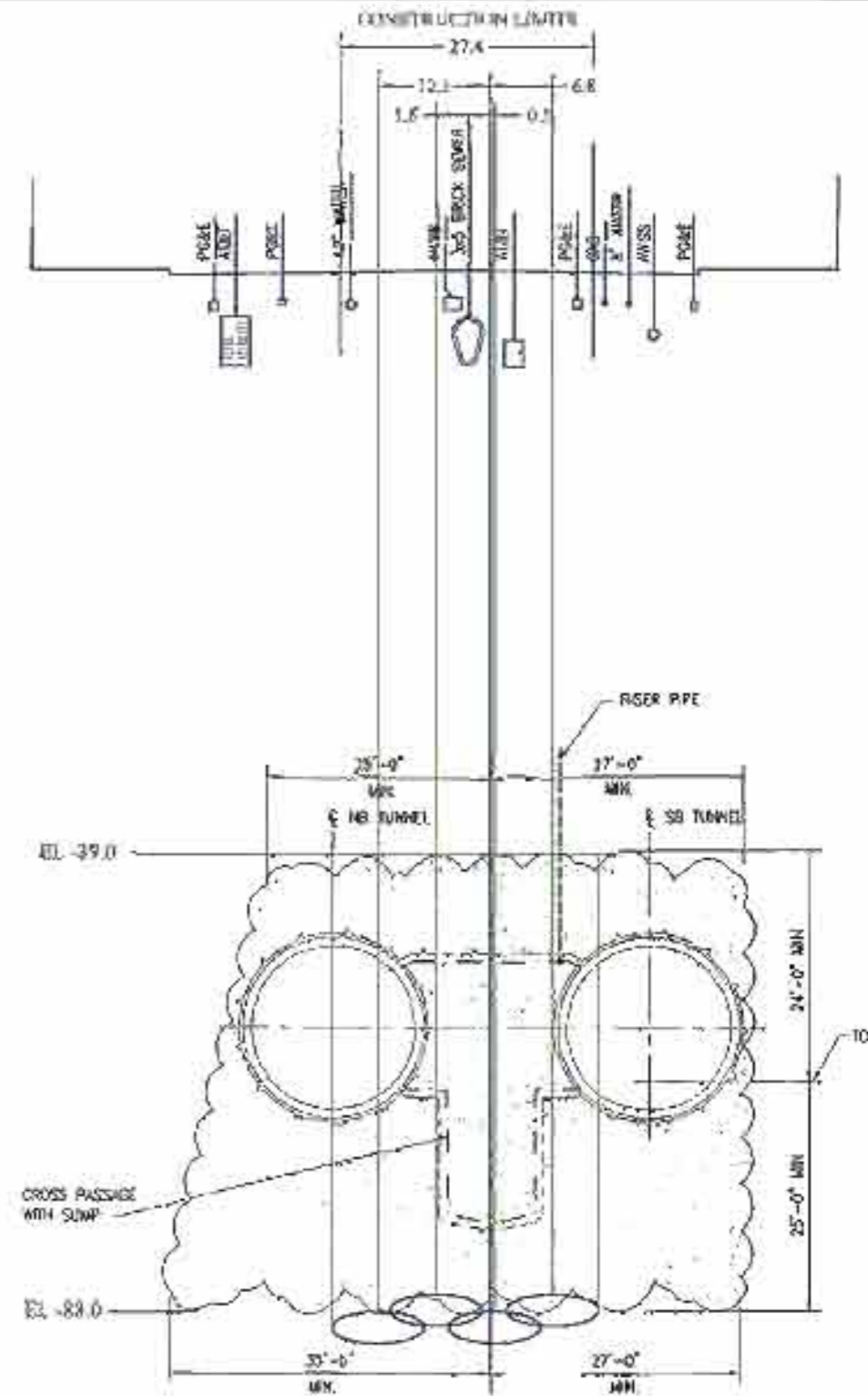
# Attachment B



VERTICAL HOLE LAYOUT

**NOTES:**

1. TEST SECTION LOCATION TO BE DETERMINED BASED ON FIELD CONDITIONS
2. FINAL LAYOUT TO BE DETERMINED BY TEST SECTION RESULTS
3. CORING LOCATIONS TO BE DETERMINED BY ENGINEER



SECTION VIEW - LOOKING SOUTH

REV	DESCRIPTION	BY	CHK	DATE	APPROVED

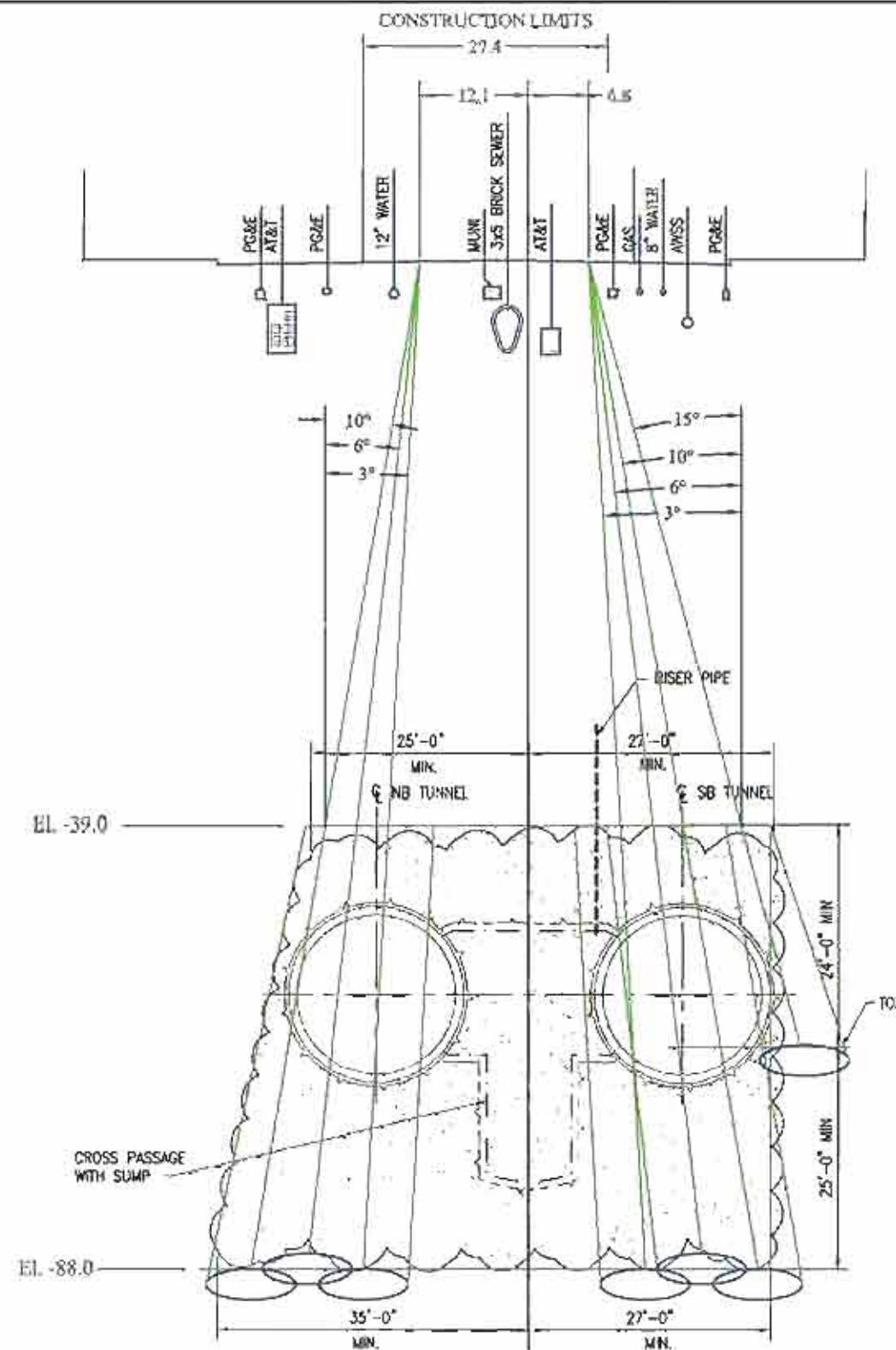
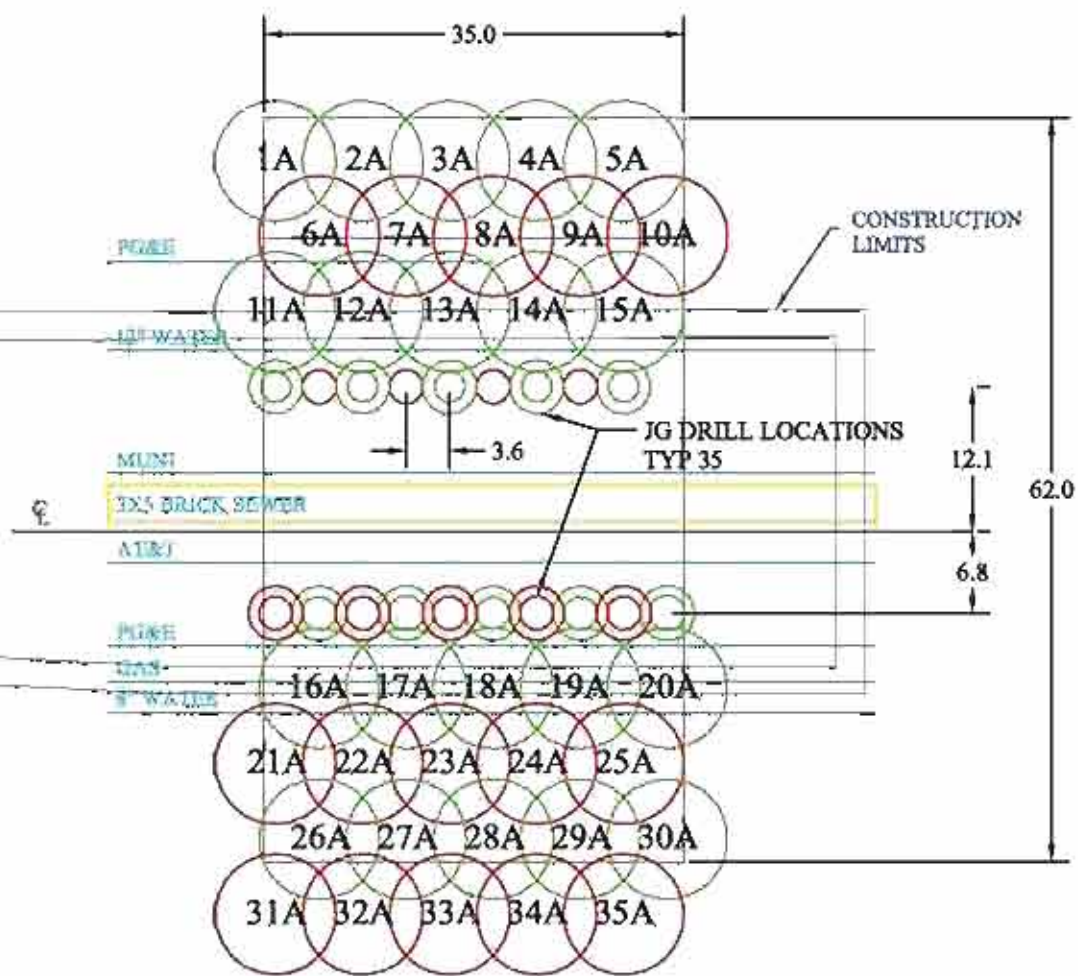
VERTICAL LAYOUT SCALE: 1"=16'  
SECTION VIEW SCALE: NTS



PHASE 2 - CENTRAL SUBWAY TUNNELS  
CP-5  
JET GROUT VERTICAL LAYOUT AND PROFILE

1252





SECTION VIEW - LOOKING SOUTH

**NOTES:**

- JG LOCATIONS 11A-20A = 3 DEGREE BATTER
- 6A-10A, 21A-25A = 6 DEGREE BATTER
- 1A-5A, 26A-30A = 10 DEGREE BATTER
- 31A-35A = 15 DEGREE BATTER

DATE	DESCRIPTION	BY	BY	CHECKED	APPROVED
6/1/18	JET GROUT ANGLED HOLE LAYOUT & PROFILE	DBA	DBA	DBA	DBA

ANGLED LAYOUT SCALE: 1"=16'  
 ANGLED PROFILE SCALE: 1"=16'



Gordon Johnson & Associates, Inc. - Nicholson Construction Company Joint Venture (GJA-NCC JV)



PHASE 2 - CENTRAL SUBWAY TUNNELS  
 CP-5  
 JET GROUT ANGLED HOLE LAYOUT AND PROFILE

1252	
SHEET CONTROL, ILL.	
DESIGN NO.	REVISION
DRAWING NO.	

# Attachment C



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January 25, 2013

Job No. 1301

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Re: Engineering Design Report – Draft Final  
Frozen Soil Shoring – Cross Passage #5  
3<sup>rd</sup> Street Light Rail Project  
San Francisco Municipal Transportation Agency  
San Francisco, California

## INTRODUCTION

This draft final report summarizes the engineering analyses and design for a temporary frozen soil shoring during construction of Cross Passage #5 (CP-5) as part of the 3<sup>rd</sup> Street Light Rail Project for the City of San Francisco. The light rail project involves completing a pair of parallel 20-foot-diameter automobile tunnels through downtown San Francisco with a number of smaller cross passageways between the two main tunnels. CP-5, one of those cross passageways, is located directly beneath 4<sup>th</sup> Street near the intersection with Jesse Street. A vicinity map and site plan is shown on Figure 1. CP-5 was originally designed using jet grout shoring installed prior to tunnel construction from street level, within the busy right-of-way of 4<sup>th</sup> Street. After extensive review of the benefits and to eliminate disruption to traffic and street utilities, the project team has decided to shore CP-5 using ground freezing via freeze pipes installed from inside one of the new tunnels. The frozen soil shoring will be constructed after the two tunnels are installed.

The engineering analysis and frozen soil shoring design presented in this report are based on information provided to us by Barnard-Impregilo-Healy JV (BIH-JV), who is the general contractor for this project. This information includes relevant portions of the project drawings and a geotechnical baseline report dated June 8, 2011. Two boring near the cross passage site considered to be representative of site conditions were also included in the information transmitted to us.

## PROJECT UNDERSTANDING

CP-5 will be a permanent concrete structure that will extend between and connect the Northbound (NB) and Southbound (SB) tunnels. CP-5 will be semi-circular in shape and will measure approximately 13 to 15 feet OD and 15 feet in length (minimum distance between the parallel tunnels). The depth of the passageway at the springline of the horizontal section is 82 feet below street level (~ El. -57 feet). The cross passage will be constructed after the frozen soil shoring is fully formed. At this time, we understand that BIH-JV plans to mine horizontally within the frozen soil shoring going from the SB tunnel toward the NB tunnel using equipment capable of excavating frozen soil. This particular cross passageway also requires construction of a sump beneath the horizontal cross passage structure. The sump will be constructed within the frozen soil shoring after



the horizontal section is completed. The frozen soil shoring design for CP-5 is presented in Figures 2 and 3.

The frozen soil shoring is designed to resist soil and groundwater pressures throughout all stages of the CP-5 construction, including excavation, liner placement and sump construction. Details of the frozen soil shoring design and construction are present in the remainder of this report. A discussion regarding how freezing works is presented in the “Frozen Soil Shoring Construction” section. Frozen soil shoring formation and performance will be verified in the field by extensive instrumentation, discussed in the “Instrumentation” section.

## **OVERALL FROZEN SOIL SHORING CONCEPT**

The frozen soil shoring will be formed by chilling the ground via a series of 3-inch diameter freeze pipes at approximate locations shown in Figures 2 and 3. All freeze pipes and temperature pipes (discussed later) will be installed at various angles relative to horizontal from inside the newly completed NB tunnel. The freeze zone between the two tunnels will extend at least 6 feet beyond all parts of the CP-5 and sump construction area. The entire excavation zone will be frozen, requiring excavation equipment to cut through the strong frozen material. Because of the tight constraints for drilling holes for freeze pipe installation (NB tunnel ID ~18 feet), the angle of many of the freeze pipes above and below the cross passageway require for complete freezing around CP-5 will be steep. The steep freeze pipe angles will extend the frozen zone to more than 20 feet above and below the horizontal cross passage excavation zone in some areas (see Figure 2). Extensive engineering analyses (discussed later) were completed to verify that the frozen soil shoring will provide complete groundwater cutoff and will be structurally competent to safely shore the CP-5 excavation with little ground movement.

The design calls for a total of 68 freeze pipes to create a continuous block of frozen soil around all portions of the planned CP-5 excavation areas. Many of the interior freeze pipes are within the excavation limits and will need to be decommissioned (i.e., turned off and brine removed) and cut during the excavation. To maintain the block of frozen soil shoring throughout the construction process the perimeter freeze pipes will remain in operation for the entire CP-5 construction period. These include all freeze pipes along rows 1 and 12 and columns A and F (see Figures 2 and 3 for freeze pipe locations).

One of the more critical freeze areas is around the top and bottom of the cross passage entrance at the SB tunnel. The interior freeze pipes along rows 4 and 7 (a total of 8 pipes along columns B, C, D and E) are closest to the NB tunnel and provide most of the freezing capability in these two areas. Near the start of excavation, these 8 freeze pipes will be the first freeze pipes to be deactivated and cut at the excavation face. To maintain chilling capacity in the areas above and below the cross passageway entrance, we plan to re-active the end portions (nearest the tunnel liner) of these 8 freeze pipes after the excavation has proceeded. Several methods are available to do this and these are discussed in a subsequent section “Construction.”

The primary method to evaluate the frozen soil formation is temperature measurements at various points in the ground. We do this by installing temperature sensors in steel sealed pipes located throughout the frozen soil area. The design calls for a total of 12 temperature pipes each holding

multiple temperature monitoring nodes (thermocouples) at locations shown on Figures 3 and 4 (see “Instrumentation” section for details).

A summary of the freeze pipe and temperature pipe lengths and angles is presented in Figure 5. The design analyses completed to obtain the design shown in Figures 2 through 5 are discussed in the following sections.

## SOIL AND GROUNDWATER CONDITIONS

Our understanding of soil and groundwater conditions at the site is based on:

- Portions of the Geotechnical Baseline Report for the project, dated June 7, 2011
- Log of borings CS-30(P) and TB-5 completed near the CP-5 site
- Laboratory test data on samples from CS-30(P).

The information in TB-5 was evaluated and compared with those in CS-30(P); the soil conditions shown on the two logs was found to be similar. However, boring CS-30(P) is fairly recent (2010) and was located about 30 feet from the site while TB-5 was drilled in 1971 and was located about 140 from the site. Therefore, CS-30(P) is considered to be more representative of soil and groundwater conditions at the CP-5 site and was the primary geotechnical information used in our analyses. We have attached a copy of the log of CS-30(P) as Figure 6. The primary zone of ground that impacts the thermal and structural analyses for this project is between about 50 and 120 feet below ground surface; however, all soil to a depth of 125 feet was characterized for the analyses. Based on this available information, we have grouped the soils in the upper 125 feet into three general soil types, as follows:

No.	Depth	Generalized Soil Unit Description
1	0' – 71'	Med. dense to dense <b>sand with silt</b> w/sand & clayey sand (fill/recent alluvium)
2	71' – 91'	Very dense <b>silty/clayey sand</b> (old bay deposits)
3	91' – 125'	Very stiff <b>clay/silt</b> (old bay deposits)

Soil properties required, either directly or indirectly, for thermal analyses include moisture content, dry density, saturation, volumetric moisture content (porosity), grain size, initial soil temperature, thermal conductivity, heat capacity and latent heat. The index properties (moisture content, density, saturation, etc.) were obtained by evaluating actual laboratory test results from CP-30(P) and geotechnical baseline values. A summary of the soil properties used in our thermal analyses is presented in Figure 7.

Key soil properties required, either directly or indirectly, for structural/deformation analyses include bulk density, modulus, poisson ratio, cohesion, and tension – for both frozen and unfrozen conditions. The summary of these values is presented in Figure 8. We obtained most of the unfrozen soil parameter such as density, friction, cohesion and modulus from laboratory test results report on the log from boring CS-30(P). As with the thermal properties, we evaluated these test results and as well as recommended values in the geotechnical baseline report and developed appropriate input values shown on this table for our structural/deformation analyses.

Frozen strength and modulus values are highly dependent on the average temperature of the frozen soil. We have developed a large data base of frozen soil strength values as a function of temperature and soil type from both the literature and from actual triaxial test results on frozen soil samples for some of our projects where the soils are more unusual. Typically, we do not complete tests on frozen soil since these are highly specialized, expensive, and can only be done in a controlled cold room facility specially equipped for such tests. Only a few labs in North America have such capability, therefore undisturbed samples must be obtained, packaged and shipped to one of these facilities. For this project, we do not feel that such specialized tests are needed. This is because, in our analyses, we used conservative values of frozen strength obtained from the trends developed from our data base. With this, and other conservatisms, it is our opinion that the frozen soil strength values that we used are appropriate.

The values for cohesion and modulus of frozen soil shown in Figure 8 were determined from our data base of frozen soil strength values at various ground temperatures determined from the TEMP/W analyses, discussed in the subsequent “Thermal Analysis” section. We used the warmer average soil temperatures in the frozen soil shoring zone 6 weeks after excavation has started to obtain moderately conservative frozen soil strength and modulus. Also, under certain conditions, frozen soil strength can reduce to some degree over time due to creep of the ice particulates in the soil pores. Reductions in frozen soil cohesion are typically in the range of 25% to 50%, depending on the rate of loading, the duration that a load is applied, the actual amount of stress in the soil and the amount of ice in the pores. For this project, we expect relatively little soil creep because of the 3D effects of the frozen soil mass around CP-5. Also, the soils are generally very dense (sands) or stiff (clay and silt) with relatively low moisture contents. These types of soil typically exhibit low creep behavior. Regardless, the frozen strength values shown in Figure 8 are somewhat reduced to account for possible creep action.

Groundwater is expected to be about 28 feet below the ground surface, based on the readings in the piezometer in CS-30(P). Minor fluctuations of groundwater level on the order of 5 feet or less can be expected over time; however, these will not appreciably change the results of our analyses.

## **ENGINEERING ANALYSES**

### **GENERAL**

The design of frozen soil wall requires two types of analysis. The first is thermal analyses where the freeze pipe spacing, extent of frozen soil with time, and frozen soil temperatures within the frozen soil shoring are determined. This information is then used to estimate frozen soil geometry and strengths for structural analysis (the second type) of the frozen soil shoring. A summary of these analyses is described in the following report sections.

Groundwater flow analyses to evaluate expected groundwater infiltration into the excavation area were not completed for this project. This is because the frozen soil shoring, which is essentially impermeable, is designed to cut off all groundwater flow in the excavation area.

### **THERMAL ANALYSIS**

#### **Overview**

We completed several thermal analyses to evaluate various aspects of freezing at this site. For these analyses, we used the 2D computer program TEMP/W developed by Geo-Slope International (Version 7.17 included as part of GeoStudio 2007 software package). TEMP/W is a finite element model that accurately evaluates thermal changes in the ground, including frost growth around a

chilled freeze pipe resulting from below-freezing temperatures in nearly all soil types. The primary purpose of these analyses is to evaluate the expected growth of the frozen soil shoring with time to ensure that an adequate mass of frozen soil is formed completely around the excavation area in order to cut off groundwater. In addition, the resulting soil temperatures within the frozen shoring mass are used for evaluation of frozen soil strength and modulus in stability analyses (summarized in a subsequent section). Thermal input parameters to TEMP/W are summarized in Figure 7 as previously described. The results for the thermal analyses are presented in Appendix A and discussed below.

### **Thermal Modeling Approach Using TEMP/W 2D**

Unlike a frozen soil wall, the evaluation of the formation of a frozen soil mass around the CP-5 excavation area is a 3D analysis: frozen soil growth extends outward from each of the 68 freeze pipes in all directions. However, the TEMP/W program can only analyze frozen soil growth in two dimensions. To properly evaluate frozen soil formation for this project we utilized a programming method termed ‘psuedo 3D’ to account for the three dimensional aspects of freezing. The following is a brief summary of how this method works:

1. Analyze the frozen soil formation over time with a vertical section cut through the columns and rows of freeze pipes. This section is roughly perpendicular to the cross passage alignment. Because of the size of the frozen mass and the various numbers of pipe angles, two separate sections were evaluated for this phase: one section above CP-5 and one section below CP-5. The locations of these two sections are shown on Figure A-1. A typical TEMP/W mesh for each section is shown in Figures A-2 and A-3. The mesh represents a thin slice of ground and freeze pipes. These figures show the approximate location of the array of freeze pipe points in each section as small black squares overlain by blue triangles. For the 2D finite element analysis, these conditions are assumed to be constant indefinitely into and out of the page (i.e., plane-strain).
2. Average the output soil temperatures along each row of freeze pipes for each week of freezing calculated by TEMP/W. These average temperature values include the very cold freeze pipe temperatures and the warmer soil temperatures in between the freeze pipes along each row.
3. Input the average freeze pipe row temperatures from step 2 into a second type of thermal analysis: a section along the cross passage centerline. This section is parallel to the cross passage alignment. The average freeze pipe row temperature versus time plot is now used as a freezing boundary condition in the thermal model that represents the expected average frezedown rate along that row. The mesh for this second TEMP/W analysis is shown in Figure A-4. This figure shows a section view of a 1-foot thick vertical cut through the frozen soil zone along the centerline of the cross passage excavation.
4. Analyze the frozen soil formation over time for the parallel cross section along CP-5 centerline. This analysis model takes into account the end effects of the warm unfrozen ground around the freeze pipe tips, as well as the warming effects of the two tunnels (assumed to be 65°F).

We also evaluated the warming effects that will occur within the frozen soil mass as the excavation proceeds – both during horizontal section excavation and sump excavation. We assumed the air temperature in the excavation will be 50°F, which is conservatively warmer than expected based on previous projects.

For the excavation phase, we only activated the perimeter freeze pipes that will not be impacted by the excavation. For the second, parallel cross section analysis, we activated the ends of the freeze pipe

rows 4 and 7 that are closest to the SB tunnel (see discussion in “Overall Frozen Soil Shoring Concept” section) after two weeks of excavation.

### **TEMP/W Results – Part 1 (Sections Perpendicular to CP-5)**

Results from the first part of thermal analysis for a section perpendicular to the cross passage are shown in Figures A-5 and A-8. The titles on these figures include a “1” to designate the first set of thermal analyses. The first two of these plots (Figures A-5 and A-6) show the expected extent and soil temperature after 6 weeks of freezing. The small dark triangles represent the freeze pipes. The colored shading represents the various ground temperatures: blue is coldest and red is warmest. The dashed blue line represents the extent of the frozen soil at 6 weeks. As seen from these two figures the frozen soil shoring is expected to extend at least 5 feet out from the edges of the excavation limits and will be very cold (-10°F to -15°F) in the excavation area.

Figures A-7 and A-8 are plots of the ground in the two vertical perpendicular sections during the excavation phase. These plots represent thermal soil conditions after the interior freeze pipes (now absent from the plots) have been off for 4 weeks. The frozen soil mass outside the excavation area warms up slightly during the excavation phase but is still very cold (-5°F to +20°F) and extends more than 6 feet beyond the excavation limits.

### **TEMP/W Results – Part 2 (Section Parallel to CP-5)**

The second part of thermal analyses is for the section parallel to the cross passage alignment (along CP-5 centerline), which best represents ground thermal conditions expected in the freeze zone during construction. The results are presented in Figures A-9 through A-13. The titles on these figures include a “2” to designate the second set of thermal analyses. As discussed previously, these analyses are based on freezing temperatures along temperature pipe rows that are an average of freeze pipe and ground temperatures along that row. The expected extent and temperature variation of frozen soil after 6 weeks of freezing is shown in Figure A-9. The frozen soil extends well beyond the cross passage entrance at the SB tunnel and more than 20 feet above and below the excavation lines for the horizontal portion of CP-5. Ground temperatures range from -10°F in the excavation zone to +5°F in the frozen zones above and below CP-5.

The change in frozen soil temperature and extent after the first two weeks of excavation is shown in Figure A-10. During this period the interior freeze pipes are all off, including those along rows 4 and 7. The frozen soil has warmed slightly, as expected, but is still fully formed and relatively cold (between about 5°F and 25°F). The freeze zone is still connected to the upper and lower parts of the SB tunnel liner, primarily because the insulation placed inside the tunnel liner prior to the start of freezing (see “Freeze System Construction” section) helps reduce heat flow from this tunnel to the frozen soil.

After the end sections of interior freeze pipes along rows 4 and 7 have been reconnected, they will maintain a solid frozen soil connection to the outside of the SB tunnel liner indefinitely. Figure A-11 shows the plot of ground temperatures from TEMP/W after 4 weeks of the re-activation of freeze pipes along rows 4 and 7. For this phase of analyses, the air temperatures inside the horizontal section of CP-5 were conservatively assumed to average 65°F continuously. The results in Figure A-11 indicate that the frozen soil temperatures above and below CP-5 will be in the range of 0°F to 15°F after 4 weeks.

The final set of thermal analyses was for the sump excavation phase, which is scheduled to be completed after the horizontal section liner is in place. Figure A-12 shows the plot of ground temperatures around CP-5 and the sump 4 weeks after the start of this excavation. The perimeter freeze pipes along rows 1 and 12 and columns A and F remain on this entire time, maintaining the frozen



condition of the shoring. Also, the end sections of the interior freeze pipes along rows 4 and 7 will remain on until the sump excavation is completed. The results in Figure A-12 indicate that the frozen soil remains frozen around the entire sump excavation with a wall thickness of 8 feet or more.

Average temperatures of the zone of frozen soil above and below CP-5 were obtained from the thermal analyses along the CP-5 centerline. Plots of average temperature vs. time are presented in Figure A-13 for the frozen zone above and below CP-5. This information is used to calculate the average frozen soil strength for the structural analyses, discussed in the following section. The coldest average soil temperatures occur after 6 weeks of freezing, just prior to the start of excavation. However, as noted in the “Structural Analysis” section, we used the warmer average soil temperatures that correspond to 6 weeks after the start of excavation (week 12 on Figure 13) to estimate frozen soil strength and modulus.

## **STRUCTURAL ANALYSIS**

We completed a series of structural analyses to verify that the frozen soil will adequately retain soil and groundwater during excavation and installation of the concrete liner for CP-5. For these analyses we used primarily PLAXIS 3D, a finite element program. PLAXIS 3D allows a three dimensional analysis of both stability and deformations for complex soil geometry under static (gravity) loading. Soil-structure interaction between the ground, water and structural elements such as tunnel liners can be modeled efficiently with the 3D program. We also completed a limited number of two dimensional finite element analyses using PLAXIS 2D to check the 3D results. The results from these analyses are presented in Appendix B and discussed below.

### **Overview**

The soils are modeled as elasto-plastic materials using the Mohr-Coloumb failure criteria for determining the factor of safety for the frozen wall. With the inclusion of appropriate modulus values in the program we can also estimate the amount of inward wall movement and strain in the ground at the end of excavation of each analysis section. Structural properties for the three generalized soil units used in the PLAXIS structural analyses are summarized in Figure 8.

It is not possible to show details of the 3D mesh and internal structures such as the tunnel liners, frozen soil shoring and cross passage excavations on one plot. Therefore, we present the mesh and model geometry in three plots in Figures B-1, B-2 and B-3. Figure B-1 shows the perimeter of the 3D mesh. The triangular-shapes represent individual 3D soil elements, each with assigned soil properties (e.g., friction, cohesion, density, etc.). The three soil layers are indicated by the brown, yellow and green colors. The NB and SB tunnels are evident within the yellow silty/clayey sand layer. We modeled the two tunnel liners as concrete structures with a 12” wall thickness. Groundwater table is shown at 27 feet in depth. Figure B-2 shows one aspect of the interior portion of the mesh with the frozen soil mass (geometry obtained from the thermal modeling) in between the two tunnels. The cross passage excavation is not seen because it is embedded within the frozen soil shoring in this plot. The cross passage excavation with the frozen soil shoring is seen in Figure B-3. One of the tunnels is removed from the plot in order to observe the cross passage opening.

### **PLAXIS Results**

The results from PLAXIS 3D in terms of horizontal and vertical ground movement are plotted on Figures B-4 and B-5. Figure B-4 shows the calculated ground deflection around the CP-5 excavation. As expected, the maximum ground movement is generally in the vertical direction and occurs at the

excavation face and diminishes with distance from the top and bottom of excavation. The maximum calculated ground movement within the frozen soil shoring is about 0.3 inches. This results in very small soil strains – less than 0.2% as seen in the plot in Figure B-5. The ground deformations from the 3D analyses were checked with PLAXIS 2D. The results are shown in Figure B-6. The 2D analysis is an evaluation of the ground behavior after the excavation for CP-5 is completed for a thin 2D slice of ground in between the two tunnels. The results from the 2D analyses confirms that ground movements on the order of 0.3 inches should be expected at the end of excavation.

We also completed stability analyses using PLAXIS 3D and 2D. The results indicate that the frozen soil shoring has a factor of safety of about 9 for the 3D analysis and 6 for the 2D analysis. Two dimensional stability analyses typically calculate lower factors of safety since they do not include the beneficial end effects that are incorporated in the 3D analysis.

## **FREEZE SYSTEM CONSTRUCTION**

### **HOW FREEZING WORKS FOR THIS PROJECT**

Ground freezing involves the creation of frozen soil by circulating cold brine (typically to -20°F) through a series of steel freeze pipes installed in the ground. For this project, the freeze pipes are arranged in a block geometry in order to create a large mass of frozen soil around the complex cross passage/sump excavation area. Freeze pipes consist of 3-inch (3.5-inch O.D.) Schedule 40 steel ( $f_y = 36$  ksi) sections that are welded together, in this case inside the tunnel. The first section will have a steel plated pre-welded to the bottom so that the final freeze pipe is fully enclosed such that no brine leaks out into the ground. All pipes and welds are tested for leaks under 80 psi air pressure before the pipes are installed in the ground. A smaller diameter HDPE pipe is then installed inside the 3-inch steel pipe and a freeze head is attached to the top and connected to brine hose to allow the brine to be circulated down the annulus between the HDPE and steel pipes and up the inside of the HDPE pipe. The hoses are connected to all freeze pipes in a special arrangement that allows the brine flows to be the same at all locations. These brine hoses are then connected to a larger manifold line where the brine is circulated via an in-line pump through one or more chillers where it is cooled and returned back to the freeze pipes in the ground to remove more heat from the ground (i.e., freezing).

As the brine gets colder over time (typically from +60°F to -20°F over a number of weeks) the soil around each freeze pipe starts to freeze. The frozen zone grows around each freeze pipe until the entire mass of soil in the matrix is completely frozen. The freezing process continues until the frozen soil shoring mass is solidly frozen at temperatures below approximately +10°F. Once frozen, the frozen mass will remain frozen many weeks without any brine circulation and indefinitely with moderate brine circulation in specific freeze pipes.

Excavation can begin after SoilFreeze has determined that the ground is sufficiently frozen based on temperature readings (see “Instrumentation” section below). We estimate this time to be about 6 weeks as discussed in the previous “Thermal Analysis” report section. However, the time for freedown could be more or less than 6 weeks depending on specific soil properties, groundwater, tunnel temperature, and other factors beyond our control. SoilFreeze will issue a written memo stating that the site is ready for excavation after the appropriate ground temperatures in the wall are achieved.

### **FREEZE PIPE INSTALLATION**

The freeze pipes will be installed by a specialty drilling contractor subcontracted to HIB JV. This drilling contractor needs to be experienced with explorations from inside tunnels. In particular, with

70 feet or so of hydrostatic pressure, each drill hole for each freeze pipe needs to be secured to the NB tunnel liner to prevent water intrusion during drilling and during freeze pipe installation (e.g., packers). With the high density of the soils at the CP-5 level, it will not be possible to drive the steel pipes. Therefore, the freeze pipes will be installed in drill holes that area on the order of 5 to 8 inches in diameters. It is critical that the annulus between the 3.5-inch O.D. freeze pipe and the drilled hole be completely filled with some type of grout (e.g., cement or bentonite cement) so that soil freezing is efficient. Any voids in this annulus will impede frost growth around the pipe. SoilFreeze will work with BIH-JV and their selected drilling contractor to ensure that the optimum pipe installation method is used.

## **INSULATION**

Insulation will be required along the inside face of both tunnel liners to reduce the heat transmission from the warm tunnels to the freezing ground. About 4 to 6-inches of insulation will be placed over the entire excavation area and 6 to 8 feet beyond in both tunnels. This would be done after all of the freeze pipes are installed, the brine lines are connected and filled with brine, and the temperature sensors are installed and operating.

## **EXCAVATION**

After frezedown, the excavation for the horizontal section of CP-5 will start from the SB tunnel and progress toward the NB tunnel. The first step of this operation will be to remove appropriate sections of the SB tunnel concrete liner within the planned excavation zone. Before removing this liner section, we recommend that BIH-JV check for the presence of water pressure outside the tunnel line via one or more shallow horizontal piezometers installed through the liner prior to the start of freezing. The piezometer should be equipped with a pressure gage and a valve.

The soil within the planned excavation zone is expected to be completely frozen at the start of excavation, based on the results from our thermal analyses. We understand that BIH-JV plans to excavate this material with hand held chipping equipment or possibly small motorized road-headers. The frozen soil will be on the order of 1,000 psi.

As the excavation encounters the first row of freeze pipes (rows 4 and 7 in Figure 2), SoilFreeze will decommission these pipes and drain them of most of the calcium chloride brine. BIH-JV can then cut the pipes and proceed on with the excavation. As the excavation progresses and encountered other freeze pipes, SoilFreeze will continue to decommission and drain the pipes until BIH-JV reaches the NB tunnel. During the entire excavation time, we will keep brine circulation in the perimeter freeze pipes to maintain the frozen soil shoring, as discussed in the “Thermal Analysis” section.

The first set of interior freeze pipes encountered by the excavation (rows 4 and 7) will be reconnected by SoilFreeze in one of two ways. One is to wait until the horizontal excavation is completed to the NB tunnel, at which time SoilFreeze would extend a pair of 1.5-inch diameter brine hoses from the NB tunnel manifold system. The brine lines would then be connected to the ends of the freeze pipes along rows 4 and 7 to allow brine circulation in these short pipe sections to keep the ground on top and bottom of the cross passage entrance hard frozen.

Another method would be to install an extra freeze pipe from the NB tunnel to a point very near the SB tunnel during the initial freeze pipe installation phase. When the excavation progresses to the first set of freeze pipes (rows 4 and 7) the excavation would be temporarily halted and BIH-JV would excavate frozen soil to expose the nearby extra freeze pipe. This pipe would be cut and used as a delivery casing

for brine lines to the end sections of internal freeze pipes along rows 4 and 7. Cold brine would then be circulated through these eight short pipe sections to keep the ground around the passageway entrance hard frozen. The excavation could commence after the reconnection is completed (~ one day).

The sump excavation will commence after the horizontal section is completed. All of the interior freeze pipes that may be encountered for the sump excavation will have been decommissioned by SoilFreeze prior to the start of this excavation. The perimeter freeze pipes (i.e., row 12 and columns A and F) will remain in operation to maintain the frozen state of the shoring in this area.

## **INSTRUMENTATION**

### **Ground Temperatures**

The growth and temperature of the frozen soil wall will be monitored using thermocouples installed in pipes at a minimum of ten locations within the frozen soil mass. Tentative temperature pipe locations are show in Figures 3 and 4. The temperature pipes are typically installed between freeze pipes to monitor the warmest (most conservative) location in the wall. Temperature pipes are identical to the freeze pipes, previously described (3-inch Schedule 40 steel pipe, welded sections, with a steel plate welded to the bottom). Once the steel pipes casings are installed by BIH-JV drillers, SoilFreeze will install the thermocouple strings. These consist of a series of thermocouple wires and sensors located at about 3 foot intervals. The wires will be connected to a lap top computer in the NB tunnel and then to an internet cable in the tunnel provided by BIH-JV. This will allow us to store and transmit temperature and other key data to our office in Seattle where our engineers can remotely observe the progress of freezing.

We also plan to install a number of short thermocouple probes (~6-inch) in small (1/4-inch) holes drilled into the NB and SB liner. These would be located mostly around the perimeter of the planned excavation zone to evaluate the extent of freeze temperatures into the concrete tunnel liners. The short probes in the NB tunnel would be connected to the internet cable system while the probes in the SB would most likely be read by hand.

The temperatures will be measured and recorded at regular intervals during the freedown and excavation periods (typ. 3 to 4 times per day). This data will be used to evaluate the rate of frozen ground propagation relative to the estimates from our thermal analyses.

### **Shoring Wall Movement**

We recommend that ground movements within the horizontal excavation be monitored by BIH-JV at a minimum of eight points around the excavation. The survey can consist of measuring the change in distance between survey nails embedded in opposite sides of the frozen soil as the excavation progresses. To be meaningful, an initial survey should be done as soon as the excavation is completed at one location, with subsequent surveys done daily thereafter.

Name: Alessandro Tricamo -Barnard Impregilo Healy JV – Draft Final Design Report

Date: January 25, 2013

Page 11 of 11

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We trust the information in this letter meets the current project needs. Please call if you have any questions about this work plan.

Sincerely,  
SoilFreeze, Inc.



Aaron K. McCain, PE  
Frozen Shoring Design Engineer

Daniel W. Mageau, PE  
Vice President and Chief Engineer

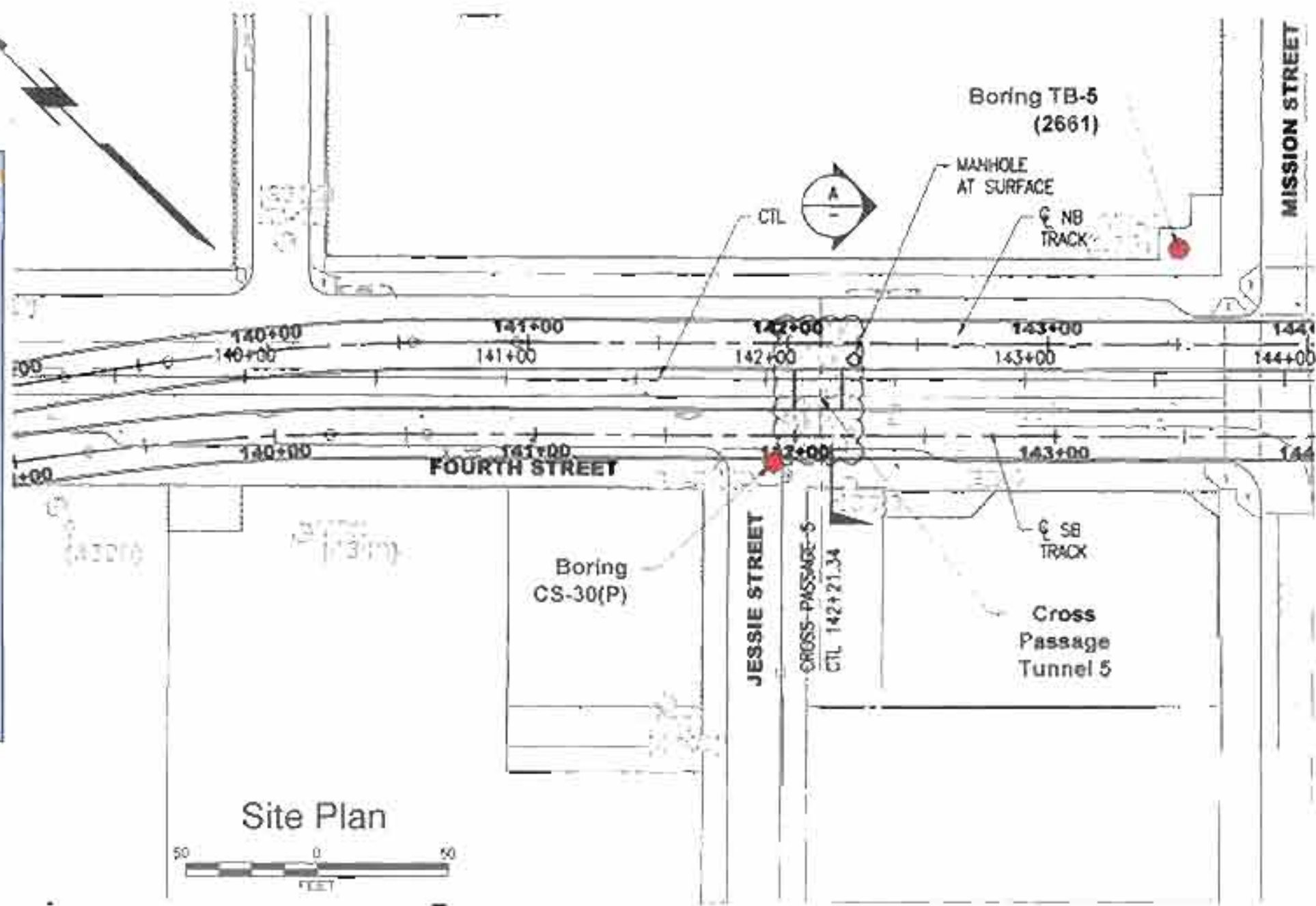
Attachments: Figure 1 - Vicinity Map/Site Plan  
Figure 2 – Freeze Layout – Section Views  
Figure 3 – Freeze/Temperature Pipe Layout – Plan View  
Figure 4 – Temperature Pipe Layout – Section Views  
Figure 5 – Summary of Pipe Lengths and Quantities  
Figure 6 – Log of Boring CP-30(P) – 4 sheets  
Figure 7 – TEMP/W Soil Input Parameters  
Figure 8 – PLAXIS Soil Input Parameters

Appendix A – Thermal Analysis Results (TEMP/W)

Appendix B – Structural Analysis Results (PLAXIS)



Vicinity Map



Site Plan

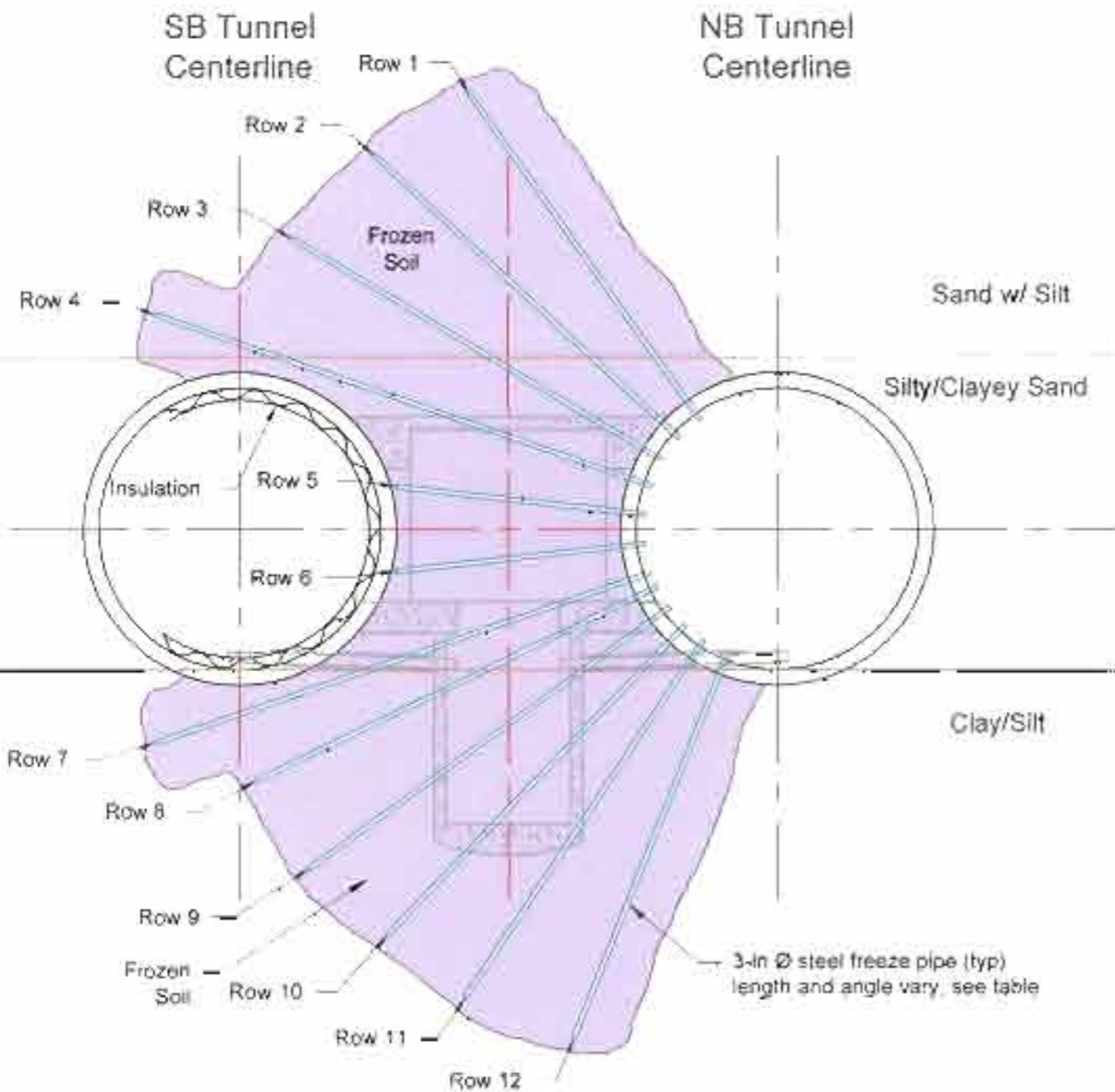
Note

- 1 Site plan taken from Drawing No. ES-144, Sheet No. 288 for the Third Street Light Rail Program, Phase 2 - Central Subway Tunnels which were provided by Barnard Impregio-Healy JV
- 2 Vicinity Map provided by Google Maps in accordance with the rules and guidelines for professional documents

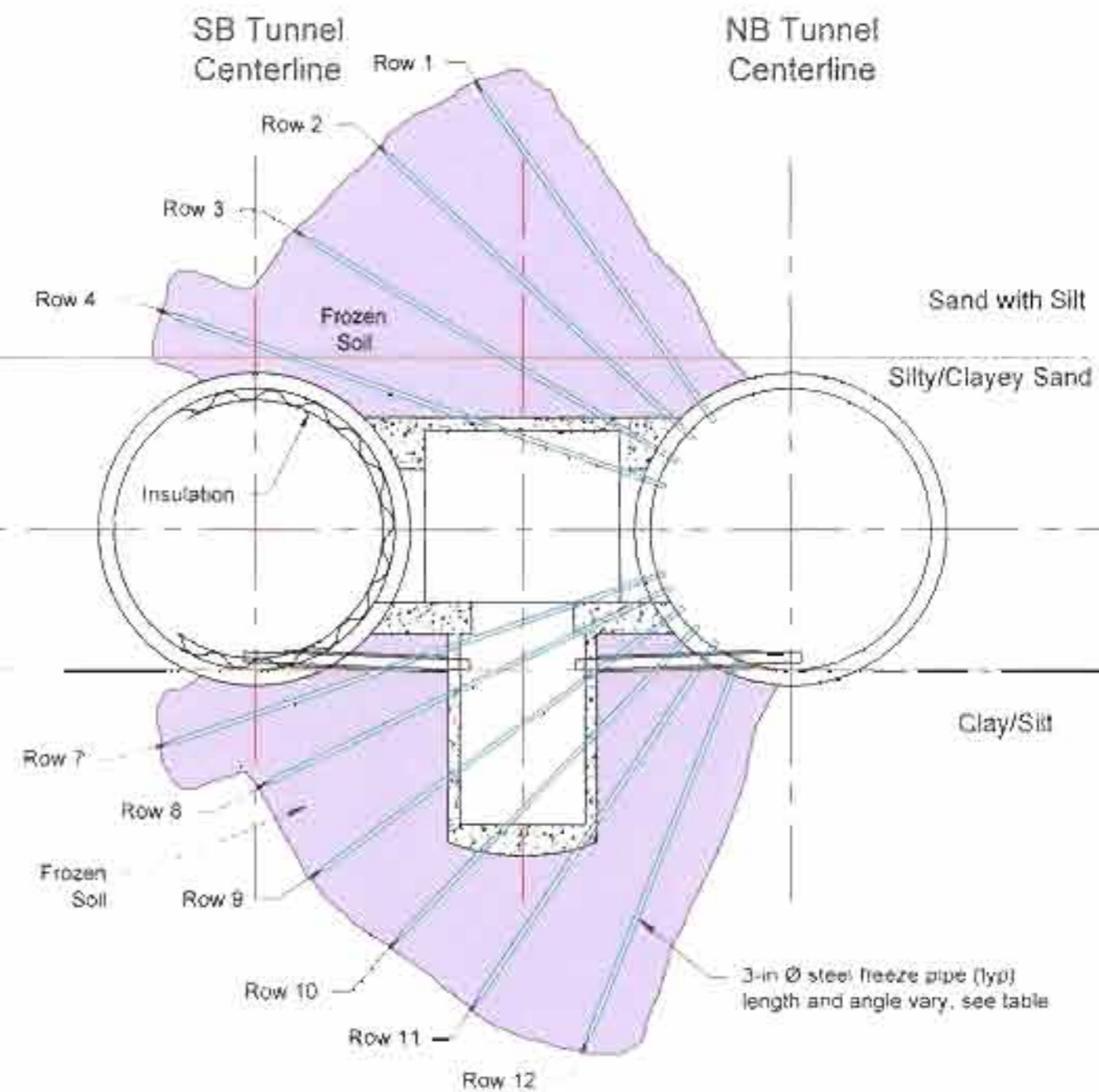
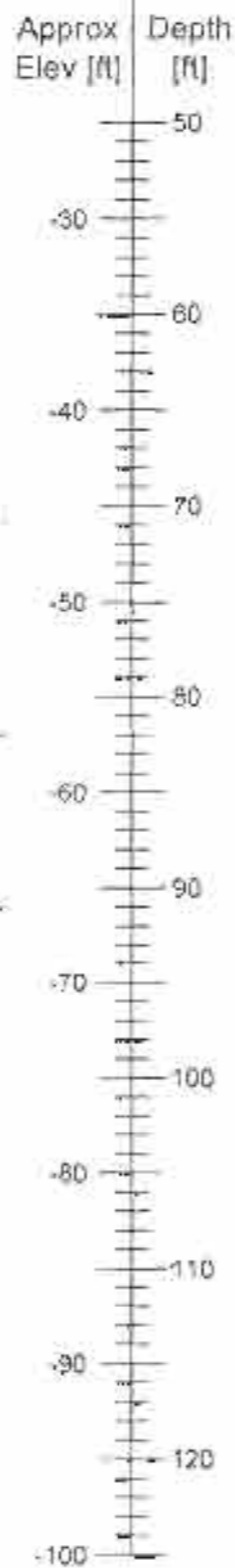
0	Conceptual Layout	5/21/12	AKM
1	Final Layout	10/2/13	DWM
2	Design Layout - Revised	10/2/13	DWM
3			
NO.	REVISION	DATE	BY

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DESIGNER	AKM	PROJECT	3rd St. Light Rail Cross Passage Tunnel #5 Frozen Soil Shoring	SF PROJECT NO.	1301
CHECKED	DWM	DRAWING	Vicinity Map and Site Plan	REVISION NO.	2
DATE	1/25/13				<b>Fig. 1</b>



Section View for  
Freeze Pipe Columns A, B, E, & F



Section View for  
Freeze Pipe Columns C & D

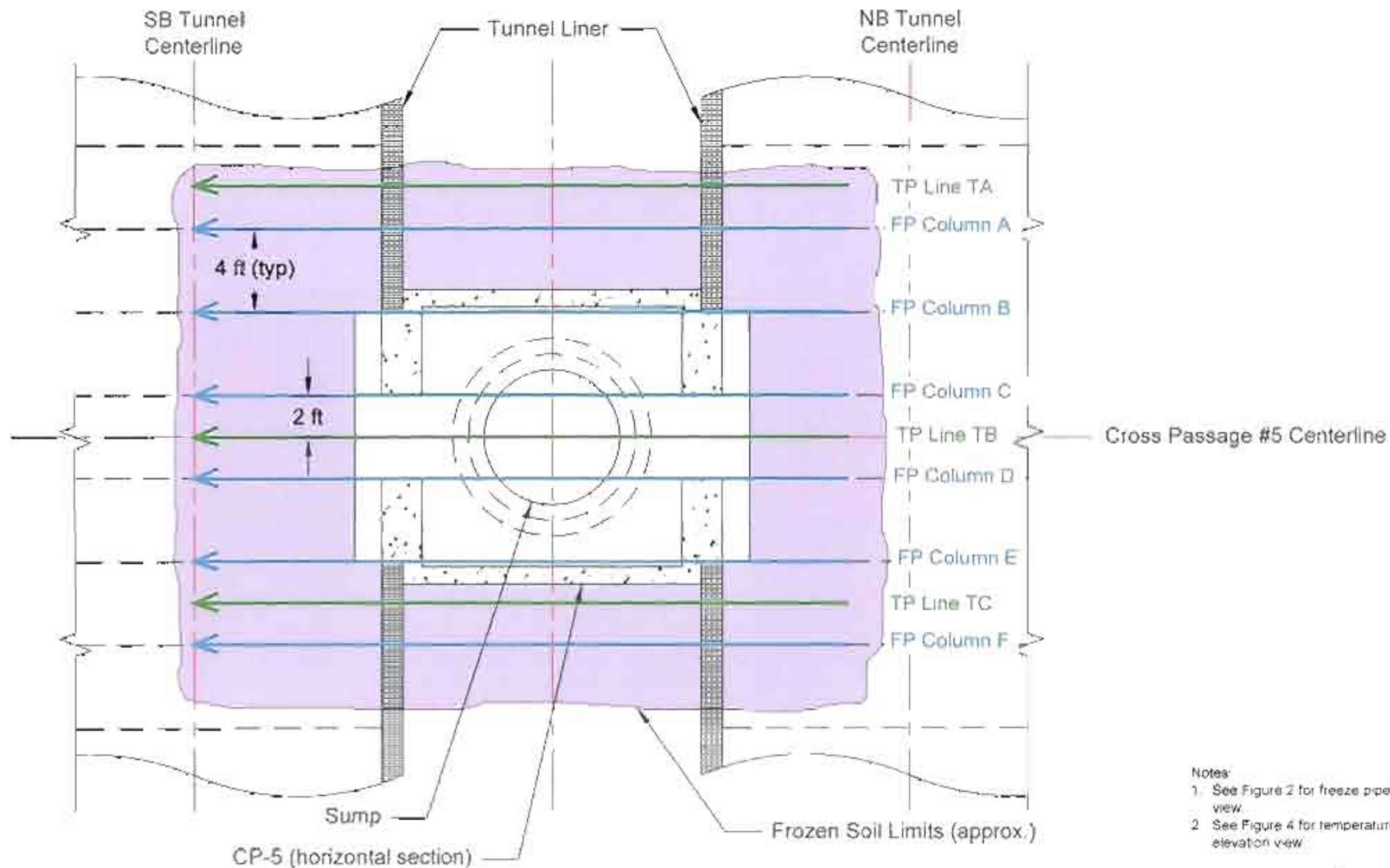


NO	REVISION	DATE	BY
0	Conceptual Layout	8/29/12	AKM
1	Draft Layout	1/22/13	AKM
2	Design Layout - Revised	1/29/13	AKM
3			



DRAFTER	AKM	PROJECT	3rd St. Lightrail Cross Passage Tunnel #5	SF PROJECT NO.	1301
DESIGNER	DWM		Frozen Soil Shoring	REVISION NO.	2
CHECKED	DWM	DRAWING	Freeze Pipe Layout		
DATE	1/25/13		Section Views		

Fig. 2



- Notes
1. See Figure 2 for freeze pipe locations in elevation view.
  2. See Figure 4 for temperature pipe locations in elevation view.

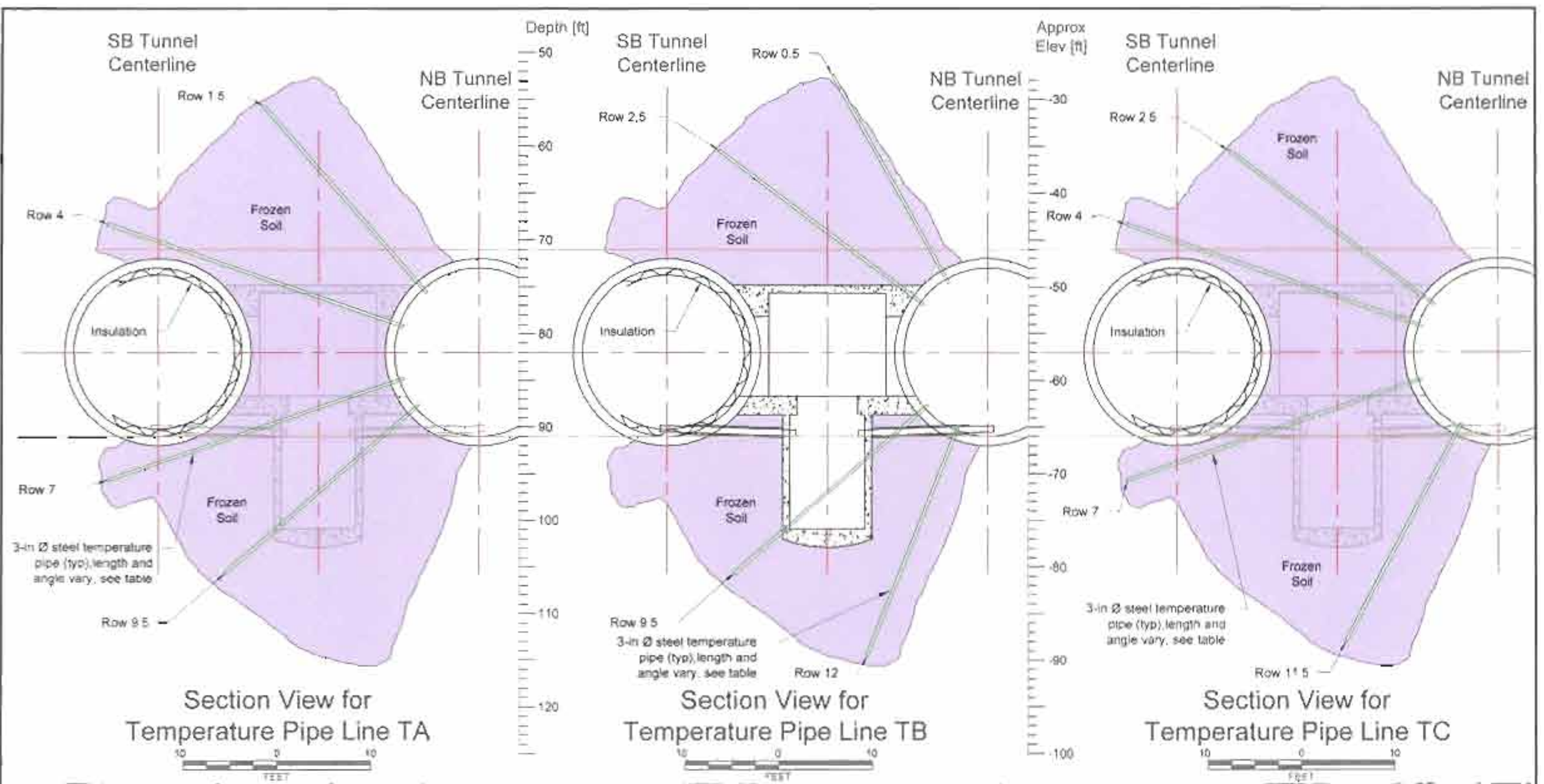


0	Conceptual Layout	8/28/12	AKM
1	Detail Layout	1/22/13	AKM
1	Design Update - Revised	1/25/13	AKM
2			
REV	REVISION	DATE	BY

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DRAFTER	AKM	PROJECT	3rd St. Lightrail Cross Passage Tunnel #5	SF PROJECT NO.	1301
DESIGNER	DWM		Frozen Soil Shoring	REVISION NO.	2
CHECKED	DWM	DRAWN	Freeze/Temperature Pipe Layout		Fig. 3
DATE	1/25/13		Plan View		





- Notes
1. Thermocouples will be installed at about 3ft intervals in each temperature pipe
  2. Temperatures will be recorded every 6 to 8 hours and transmitted remotely to SoilFreeze Seattle office for review at least twice per week

0	Conceptual Layout	6/26/12	AKM
1	Drift Layout	1/22/13	DWM
2	Design Layout (Revised)	1/23/13	AKM
3			
NO	REVISION	DATE	BY

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CHARTER	AKM	PROJECT	3rd St. Lightrail Cross Passage Tunnel #5 Frozen Soil Shoring	SF PROJECT NO	1301
DESIGNER	DWM			REVISION NO	2
CHECKER	DWM	DRAWING	Temperature Pipe Layout Section Views		
DATE	1/25/13				

**Fig. 4**

# SAN FRANCISCO 3<sup>rd</sup> STREET LIGHTRAIL - CROSS PASSAGE 5 FREEZING

## SUMMARY OF FREEZE PIPE AND TEMPERATURE PIPE QUANTITIES

1/25/2013

Row	Length*	Angle**	Freeze Pipe Columns							
			A	B	C	D	E	F		
1	25	+55	25	25	25	25	25	25	25	25
2	26	+43	26	26	26	26	26	26	26	26
3	27	+31	27	27	27	27	27	27	27	27
4	33	+19	33	33	33	33	33	33	33	33
5	16	+6.5	16	16	no pipe	no pipe	16	16	16	16
6	16	-6.5	16	16	no pipe	no pipe	16	16	16	16
7	33	-19	33	33	33	33	33	33	33	33
8	28	-26	28	28	28	28	28	28	28	28
9	28	-36	28	28	28	28	28	28	28	28
10	27	-46	27	27	27	27	27	27	27	27
11	27	-56	27	27	27	27	27	27	27	27
12	26	-67	26	26	26	26	26	26	26	26
Ave. L	26.0									

Σ Length	312	312	280	280	312	312
# of pipe	12	12	10	10	12	12

Total Freeze Pipe Length: 1808 feet No: 68  
 Total Temperature Pipe Length: 343 feet No: 12  
 Total Pipe Length: 2151 feet No: 80

\* Pipe length is measured from inside face of NB tunnel to end of freeze pipe

\*\* Pipe angle is measured relative to horizontal starting from center of NB tunnel

Row	Length*	Angle**	Temperature Pipe Lines			
			TA	TB	TC	TD
0.5	25	+61		25		
1.5	26	+49	26			
2.5	27	+37		27	27	27
4	33	+19	33			33
7	33	-19	33			33
9.5	27	-41		27		
11.5	26	-61.5				26
12	26	-67				26

Σ Length	119	105	119
# of pipe	4	4	4



indicates information about freeze pipe

indicates information about permanent temperature pipe

indicates information about temperature pipe that will be removed during excavation

### 3<sup>rd</sup> Street Lightrail CP-5 Freezing

### Summary of Pipe Lengths and Quantities

Figure 5



**SOIL FREEZE**  
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PROJECT: SFMTA CENTRAL SUBWAY  
San Francisco, California

# Log of Boring CS-30(P)

PAGE 1 OF 5

Boring location: See Site Plan

Logged by: G. Harris

Date started: 3/15/10

Date finished: 3/16/10

Drilling method: Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic

## LABORATORY TEST DATA

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Fitcher Tube (FT)

DEPTH (feet)	SAMPLES			LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs./Sq Ft	Shear Strength Lbs./Sq Ft	Flines %	Natural Moisture Content, %	Dry Density Lbs./Cu Ft
	Sampler Type	Sample	Blow/ft SPT N-Value								
Approximate Ground Surface Elevation: 25 feet <sup>2</sup>											
1					SAND (SP) yellowish-brown (10YR 5/6), medium dense, moist, medium grained sand.						
2											
3											
4											
5											
6	SPT		5 5 5	12							
7											
8					SP						
9											
10	SPT		5 6 9	18	gravel subangular, 1/2" diameter						
11											
12											
13											
14											
15	SPT		6 8 12	24							
16											
17											
18					SAND (SP) yellowish-brown (10YR 5/6), dense, wet, fine to medium grained sand						
19											
20	SPT		17 17 24	49							
21											
22											
23											
24											
25	SPT		4 6 4	11	CLAYEY SAND (SC) yellowish-brown (10YR 5/8) to brown (10YR 4/3), medium dense, wet, fine-grained sand						
26											
27					SC						
28											
29											
30	S&H		8	18	with trace organics LL = 23, PI = 10					29.7	

Treadwell & Rollo



**SOIL FREEZE**  
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3<sup>rd</sup> Street Lightrail CP-5 Freezing

Log of Boring CS-30(P)

Figure 6(a)

PROJECT:

SFMTA CENTRAL SUBWAY  
San Francisco, California

## Log of Boring CS-30(P)

PAGE 2 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA								
	Sampler Type	Sample	Blow 6" SPT N-Value				Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft			
31	S&H		14	18	SC	CLAYEY SAND (SC) (continued)									
32															
33					SP-SC	SAND with CLAY (SP-SC) yellowish-brown (10YR 5/6), very dense, wet, fine to coarse-grained sand Direct Shear: $\phi = 38^\circ$ , $C = 550$ psf									
34	S&H		18	50											
35			28	44											
36					SP-SM	SAND with SILT (SP-SM) yellowish-brown (10YR 5/6), very dense, wet									
37															
38															
39					SP-SM	yellowish-brown (10YR 5/6) with gray (10YR 5/1) mottling, very dense, wet, fine-grained sand									
40	SPT		11	72						9.4	19.8	105			
41			25	35											
42					SP-SM	seam of light gray (10YR 7/1) sandy clay at 48' to 49'									
43															
44															
45	SPT		27	77									18.7	103	
46			30	34											
47					SP-SM	SAND with SILT (SP-SM) yellowish-brown (10YR 5/6) and reddish-brown (5YR 4/4), very dense, wet									
48															
49															
50	S&H		34	74									9.0	19.3	106
51			14	62											
52					SP-SM	SAND with SILT (SP-SM) olive (5Y 5/4) with red-brown mottling, very dense, wet, fine-grained									
53															
54															
55	SPT		33	62									6.9	18.9	107
56			28	24											
57					SP-SM	SAND with SILT (SP-SM) olive (5Y 5/4) with red-brown mottling, very dense, wet, fine-grained									
58															
59	SPT			71											
60			15										17.8	103	

Treadwell &amp; Rolo

3<sup>rd</sup> Street Lightrail CP-5 Freezing

Log of Boring CS-30(P)

Figure 6(b)


**SOIL FREEZE**  
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PROJECT:

SFMTA CENTRAL SUBWAY  
San Francisco, California

Log of Boring CS-30(P)

PAGE 3 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA				
	Sampler Type	Sample	Bloves/ 6"	SPT N-value			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %
61	SPT		27 32	71		SAND with SILT (SP-SM) (continued)					
62											
63											
64	SPT		21 32	101		dark yellowish-brown (10YR 3/4)			8.9	17.1	104
65			52		SP-SM						
66											
67											
68											
69	PT										
70											
71											
72						SILTY SAND (SM) olive gray (5Y 5/2), very dense, wet, fine-grained sand					
73											
74	SPT		15 21	59						18.4	109
75			28		SM						
76											
77											
78											
79	SPT		15 19	66						12.1	19.4
80			28								
81											
82											
83						CLAYEY SAND (SC) gray (2.5YR 6/1), hard, wet					
84											
85	SPT		10 14	35		LL = 25, PI = 8				26.9	19.9
86			15		SC						
87											
88											
89	SPT			30		lower sand content, with trace fine gravel					23.5
90			7								103

Treadwell & Rollo



**SOIL FREEZE**  
shoring • groundwater cutoff • environmental

3<sup>rd</sup> Street Lightrail CP-5 Freezing

Log of Boring CS-30(P)

Figure 6(c)

PROJECT:

SFMTA CENTRAL SUBWAY  
San Francisco, California

# Log of Boring CS-30(P)

PAGE 4 OF 5

DEPTH (feet)	SAMPLES			LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/ft			SPT N-Value	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
91	SPT		9	30	SC								
92	S&H		16	26		CLAY (CL) gray (2.5 YR 6/1), very stiff, wet, white clay; nodules in tip, with organics LL = 47, PI = 23	TxUU	6,800	2,448		29.4	94	
93			8										
94			16										
95	S&H		21	35		bluish gray (GLEYS 2.5/1 10B), hard, with shells LL = 25, PI = 9					24.0	96	
96			22										
97			28										
98													
99													
100	SPT		6	18	CL	olive gray (5YR 5/2), very stiff, wet, no shells observed in sample					41.4	79	
101			7										
102			8										
103	S&H		4	10		gray (2.5Y 6/1), stiff	TxUU	8,000	1,670		46.4	75	
104			6										
105			6										
106													
107													
108													
109													
110	S&H		5	13		SILT (MH) gray (2.5 YR 6/1), stiff, wet LL = 84, PI = 42					96.3	65	
111			1										
112			10										
113													
114													
115	S&H		5	17		very stiff, with wood fragments					49.5	71	
116			9										
117			15										
118													
119													
120	S&H			35		SANDY CLAY (CL) greenish gray (GLEYS 1.5/1 5G), hard, wet, fine-grained sand, with wood fragments					22.7	103	

OLD BAY DEPOSITS (OO)



**SOIL FREEZE**  
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3rd Street Lightrail CP-5 Freezing

Log of Boring CS-30(P)

Figure 6(d)

Soil Parameter		Sand with Silt	Silty/Clayey Sand	Clay /Silt
Depth Interval (ft)		0-71 ft	71-91 ft	>91 ft
Coarse or Fine		Coarse	Coarse	Fine
Dry Density (pcf)		104	105	80
Moisture Content (%)		17	19	41
Saturation (%)		75	83	98
Volumetric w/c		0.26	0.32	0.53
Unfrozen w/c class		Sand	Silty Sand	Silt
Activation Temp. (°F)		65	65	65
Conductivity	$k_f$ (Btu/ft/hr/°F)	1.8	2.0	1.3
	$k_u$ (Btu/ft/hr/°F)	1.2	1.2	0.7
Heat Capacity	$c_f$ (Btu/°F-ft <sup>3</sup> )	26	28	30
	$c_u$ (Btu/°F-ft <sup>3</sup> )	36	38	48
Latent Heat (Btu/ft <sup>3</sup> )		2600	3000	4700



**3<sup>rd</sup> Street Lightrail CP-5 Freezing**

**Temp/W Soil Input Parameters**

**Figure 7**

Soil Parameter		Sand with Silt	Silty/Clayey Sand	Clay/Silt
General Information	Layer Depth [ft]	0-71	71-91	>91
	Unified Soil Classification	SP-SM	SM/SC	CL/ML
	Average $N_{60}$	33	65	22
	Average Moisture Content (%)	20	19	48
	Average Dry Density (pcf)	109	107	73
	Average Plasticity Index (%)	n/a	n/a	25
	Drainage	Drained	Drained	Undrained C
Unfrozen Parameters	Unfrozen Bulk Density (kcf), $\gamma_{unsat}$	0.128	0.127	0.108
	Unfrozen Sat. Bulk Density (kcf), $\gamma_{sat}$	0.131	0.127	0.108
	E (ksf) @ 1% Strain	2500	2000	1800
	Poisson ratio, $\nu$	0.35	0.35	0.35
	Average Cohesion (ksf)	0.2	0.2	2.0
	Friction ( $\phi$ )	36	36	0
	Dilatancy Angle ( $\psi$ )	5	5	0
	Tension Cutoff (ksf)	0	0	0.2
	Interface, $R_{inter}$	0.75	0.75	0.75
Frozen Parameters	Frozen Sat. Bulk Density (kcf), $\gamma_{sat}$	0.117	0.117	0.099
	Ave Frozen Temp (F)	18	18	14
	Frozen E (ksf) @ 1% Strain	9000	9000	3000
	Frozen Cohesion (ksf)	27	27	22
	Friction ( $\phi$ )	33	33	0
	Dilatancy Angle ( $\psi$ )	5	5	0
	Tension Cutoff (ksf)	2.7	2.7	2.2
	Interface, $R_{inter}$	1	1	1



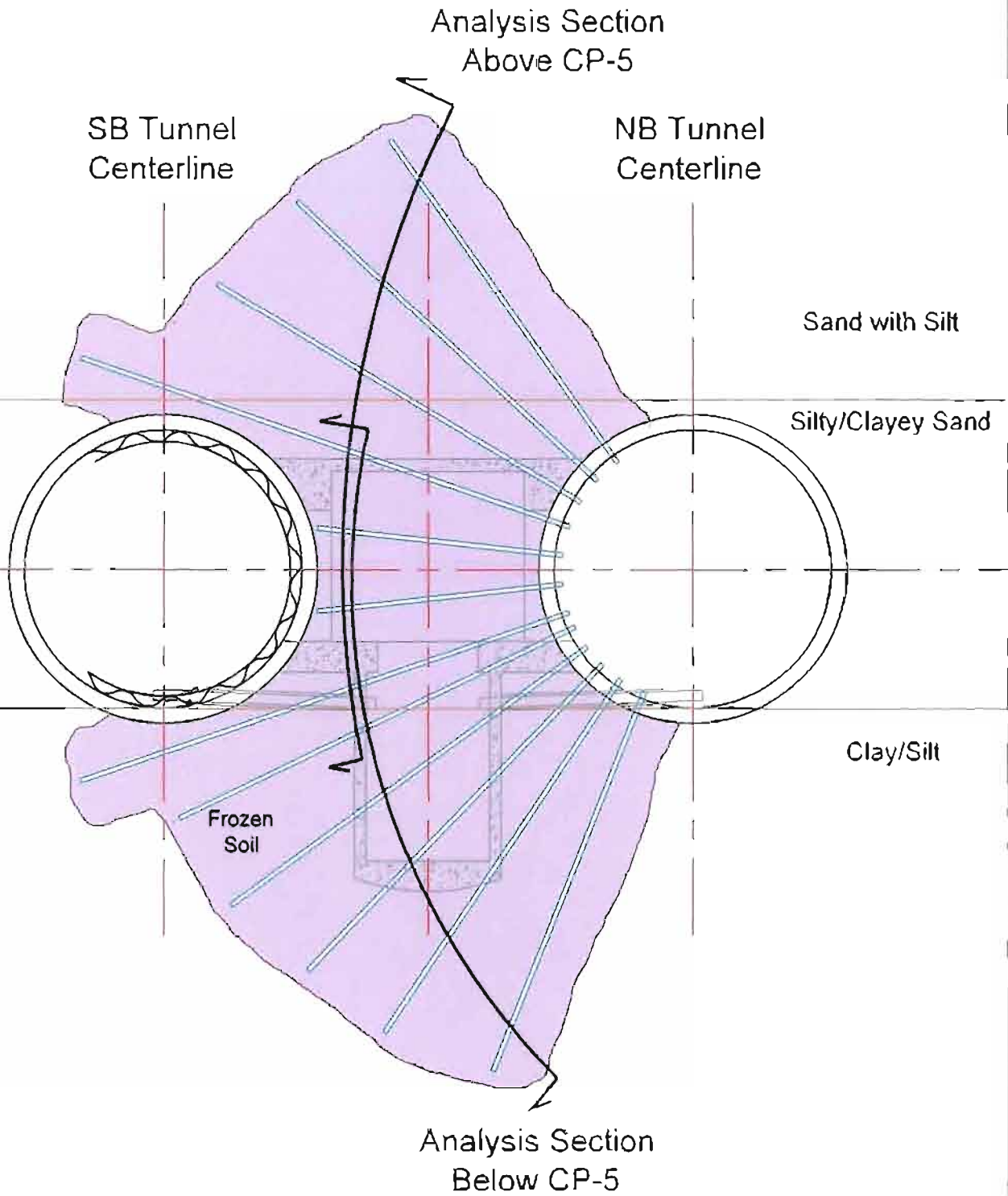
3<sup>rd</sup> Street Lightrail CP-5 Freezing

Plaxis Soil Input Parameters

Figure 8



**APPENDIX A**  
**THERMAL ANALYSIS RESULTS**  
**(TEMP/W)**



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1165 Eastlake Ave E #400 • Seattle, WA 98109  
(206) 420-2759 • www.soilfreeze.com

3rd Street Lightrail CP-5 Freezing

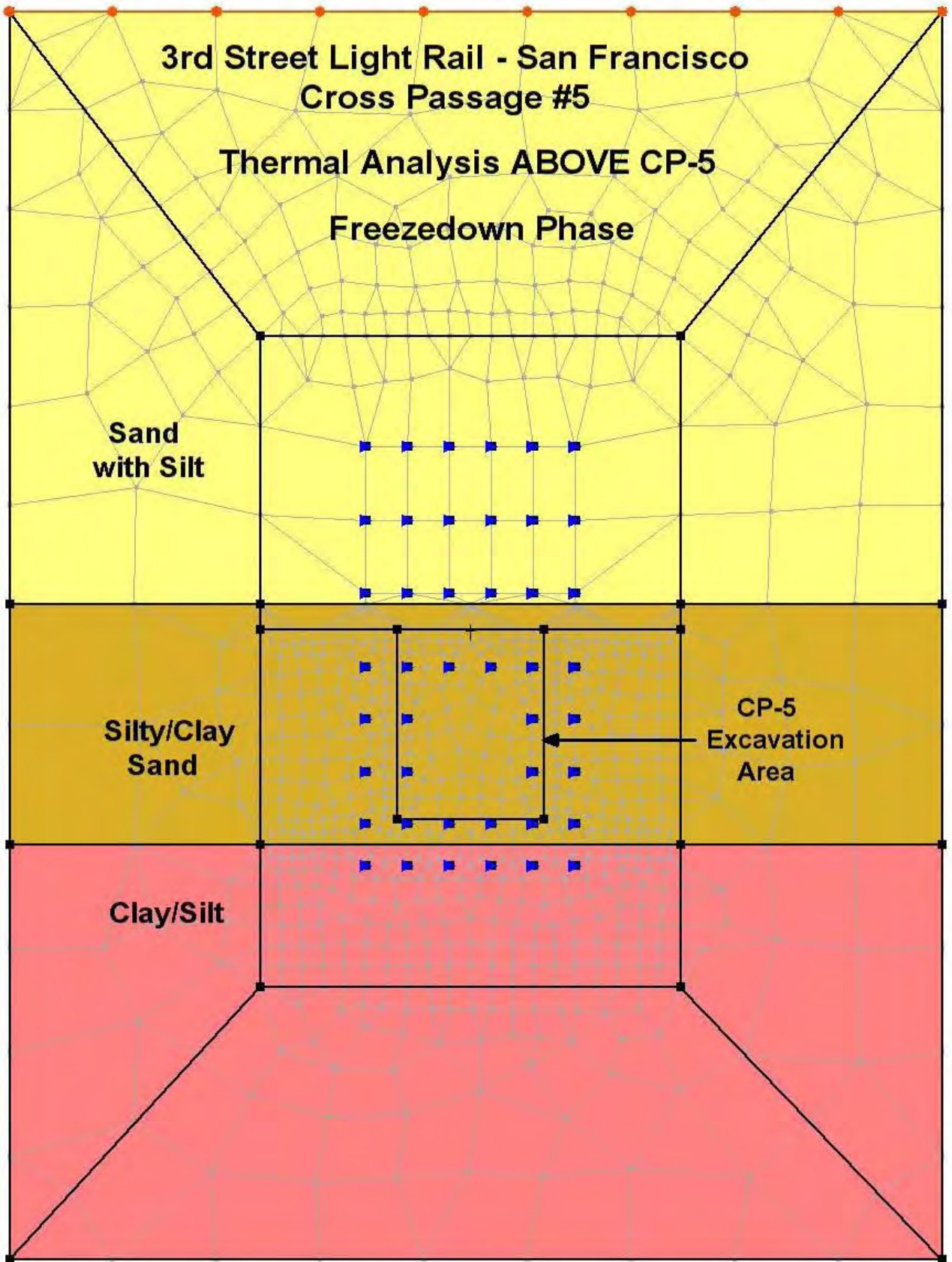
Temp/W Analysis Sections

Figure A-1

**3rd Street Light Rail - San Francisco  
Cross Passage #5**

**Thermal Analysis ABOVE CP-5**

**Freezedown Phase**



Sand  
with Silt

Silty/Clay  
Sand

Clay/Silt

CP-5  
Excavation  
Area

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis BELOW CP-5

Freezedown Phase

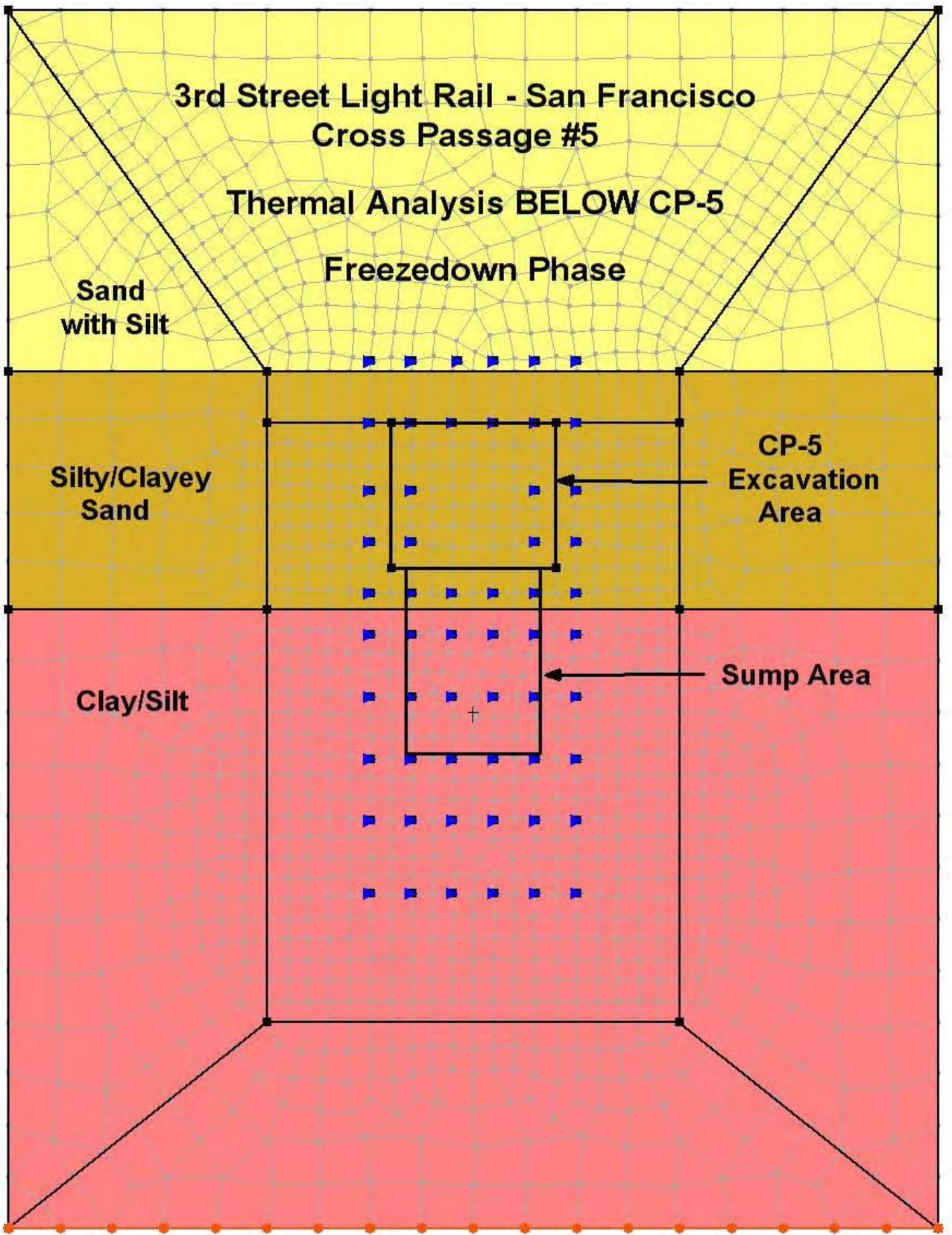
Sand  
with Silt

Silty/Clayey  
Sand

Clay/Silt

CP-5  
Excavation  
Area

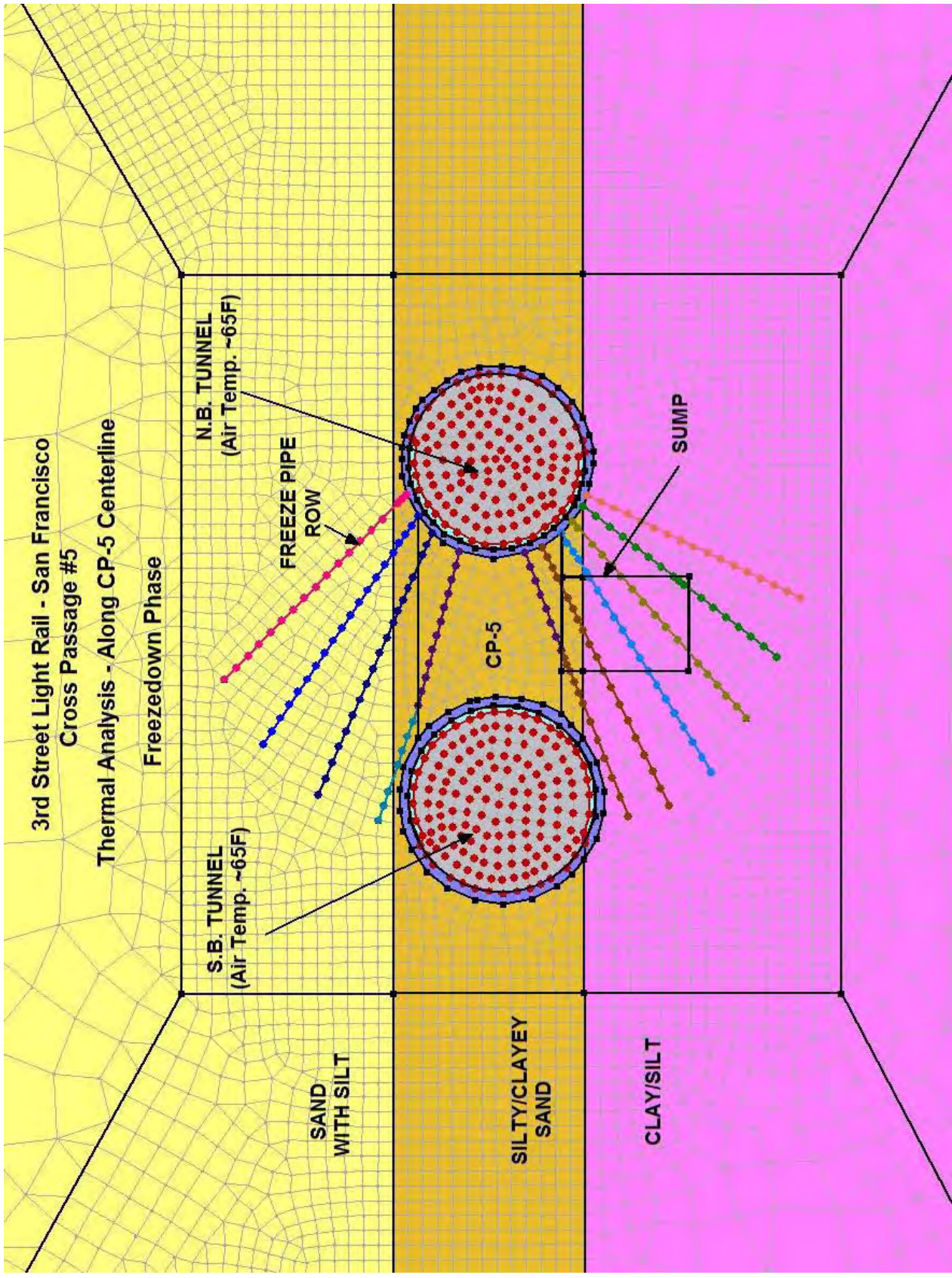
Sump Area



3rd Street Lightrail CP-5 Freezing

Temp/W Mesh – Below CP-5

Figure A-3



3rd Street Lightrail CP-5 Freezing

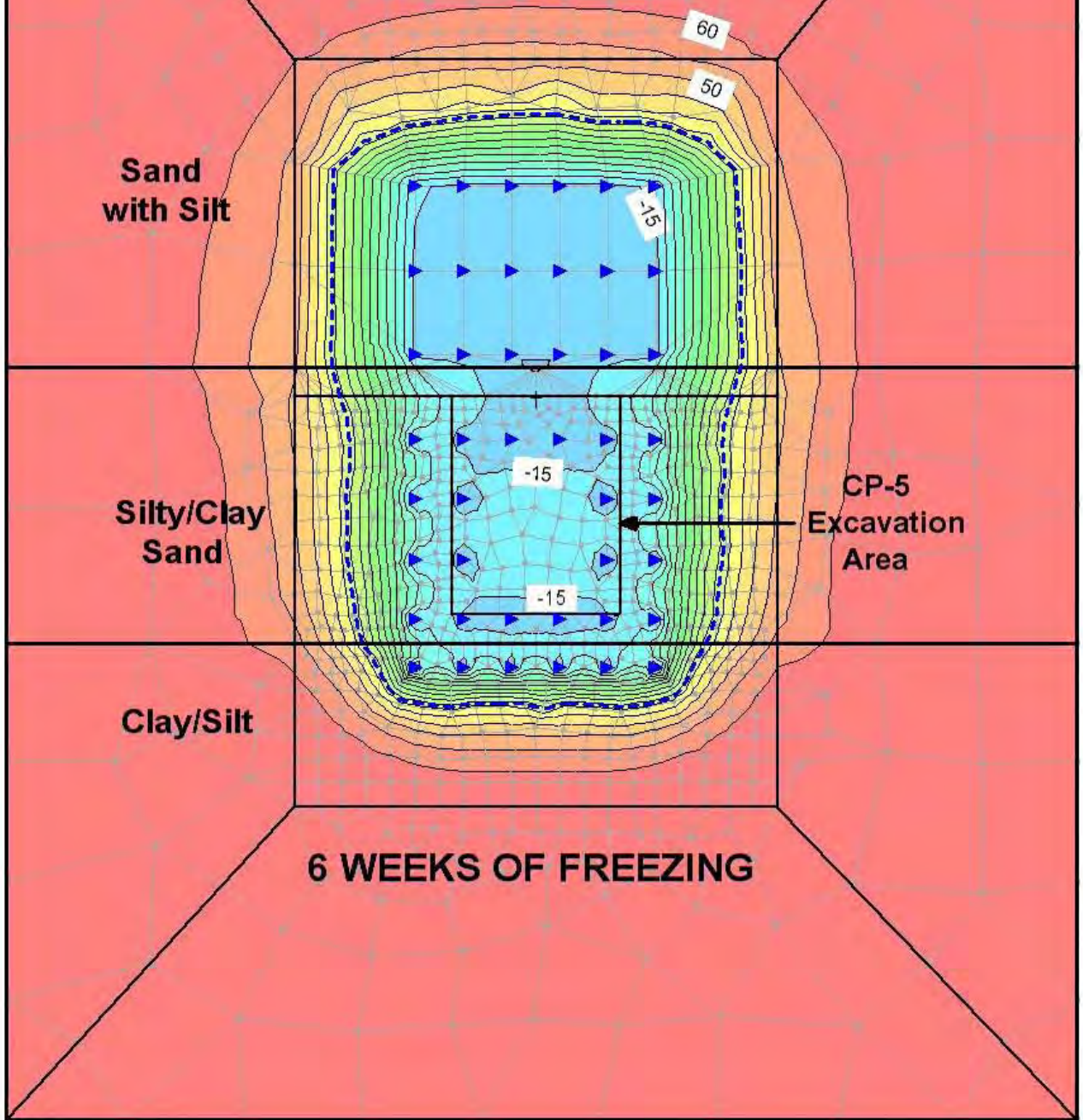
Temp/W Mesh – Along CP-5

Figure A-4

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis ABOVE CP-5

Freezedown Phase



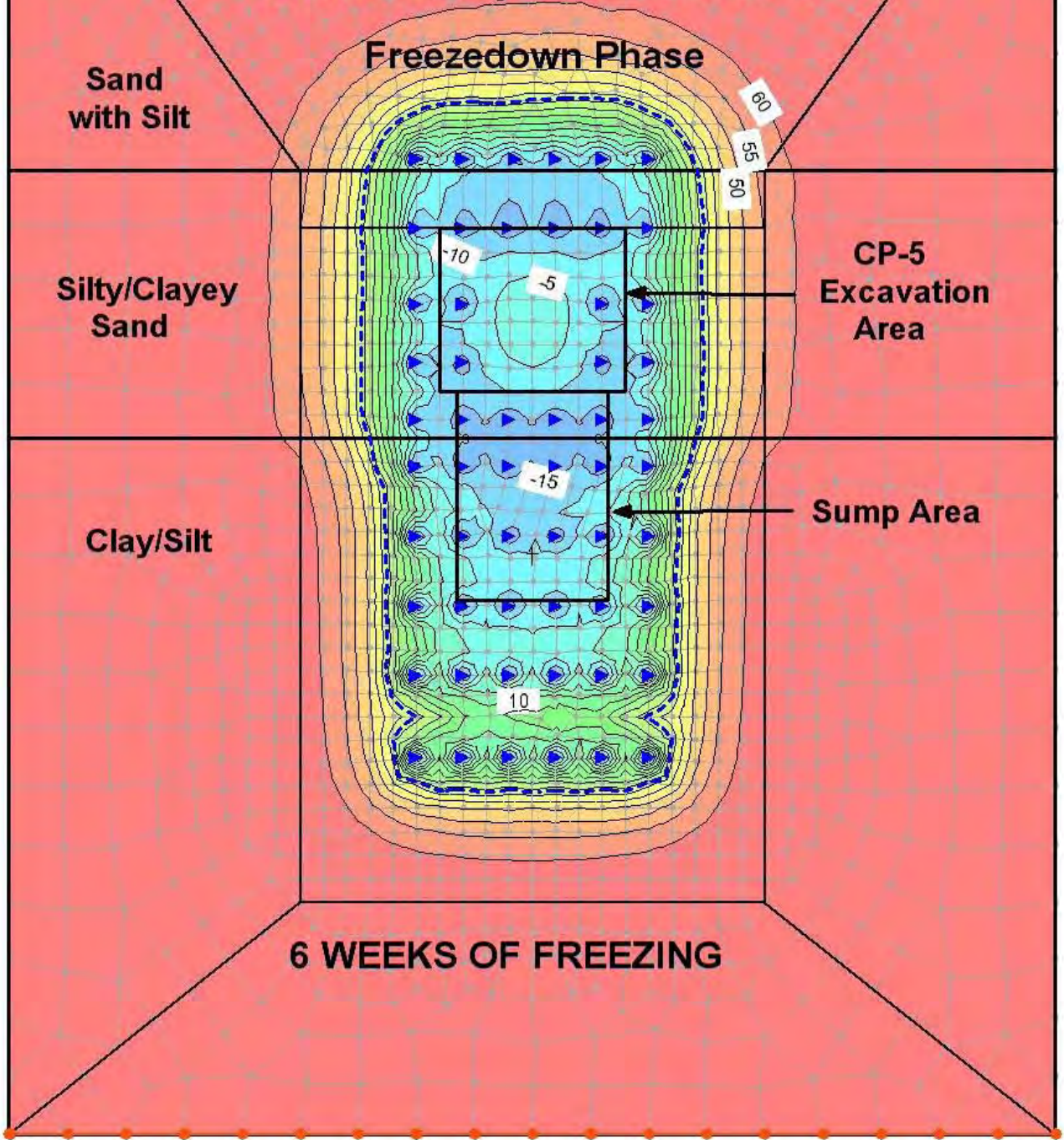
3rd Street Lightrail CP-5 Freezing

1. Freezedown Above CP-5

Figure A-5

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis BELOW CP-5



3rd Street Lightrail CP-5 Freezing

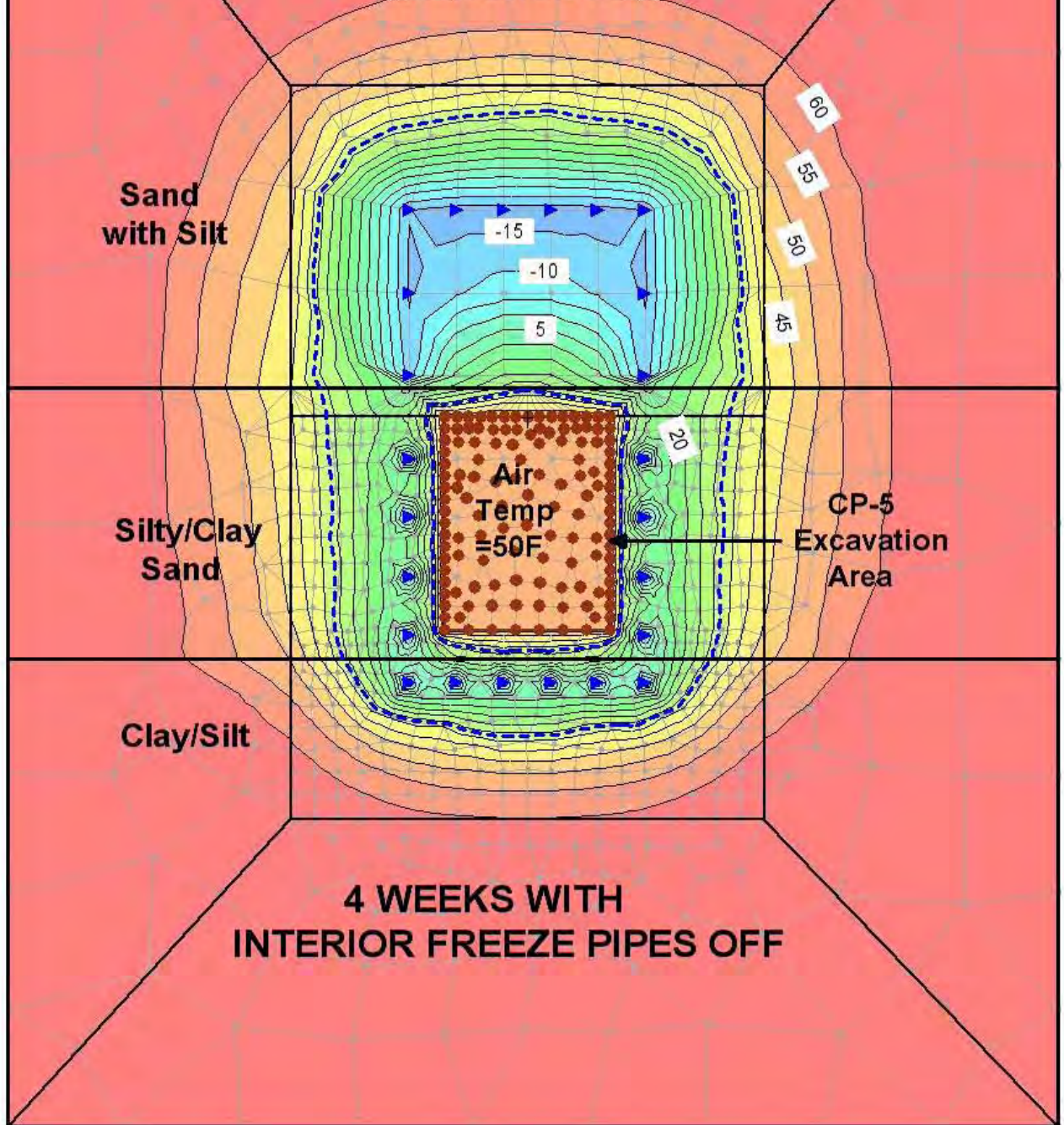
1. Freezedown Below CP-5

Figure A-6

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis ABOVE CP-5

Excavation Phase



3rd Street Lightrail CP-5 Freezing

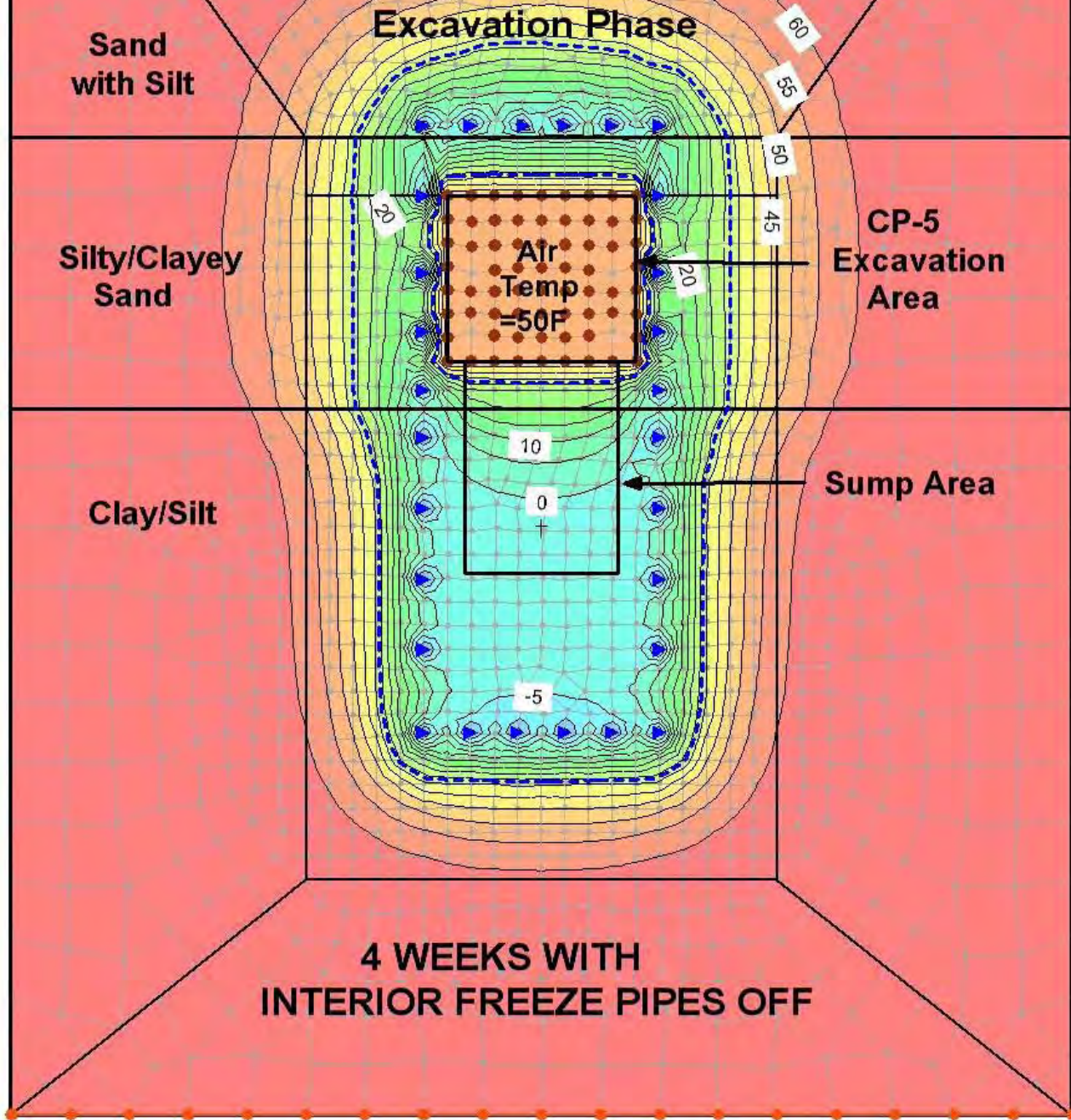
1. Excavation – Freeze Pipe off Above CP-5

Figure A-7



3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis BELOW CP-5



3rd Street Lightrail CP-5 Freezing  
1. Excavation – Freeze Pipe off Below CP-5  
Figure A-8

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis - Along CP-5 Centerline

Freezedown Phase

N.B. TUNNEL  
(Air Temp. ~65F)

S.B. TUNNEL  
(Air Temp. ~65F)

FREEZE PIPE  
ROW

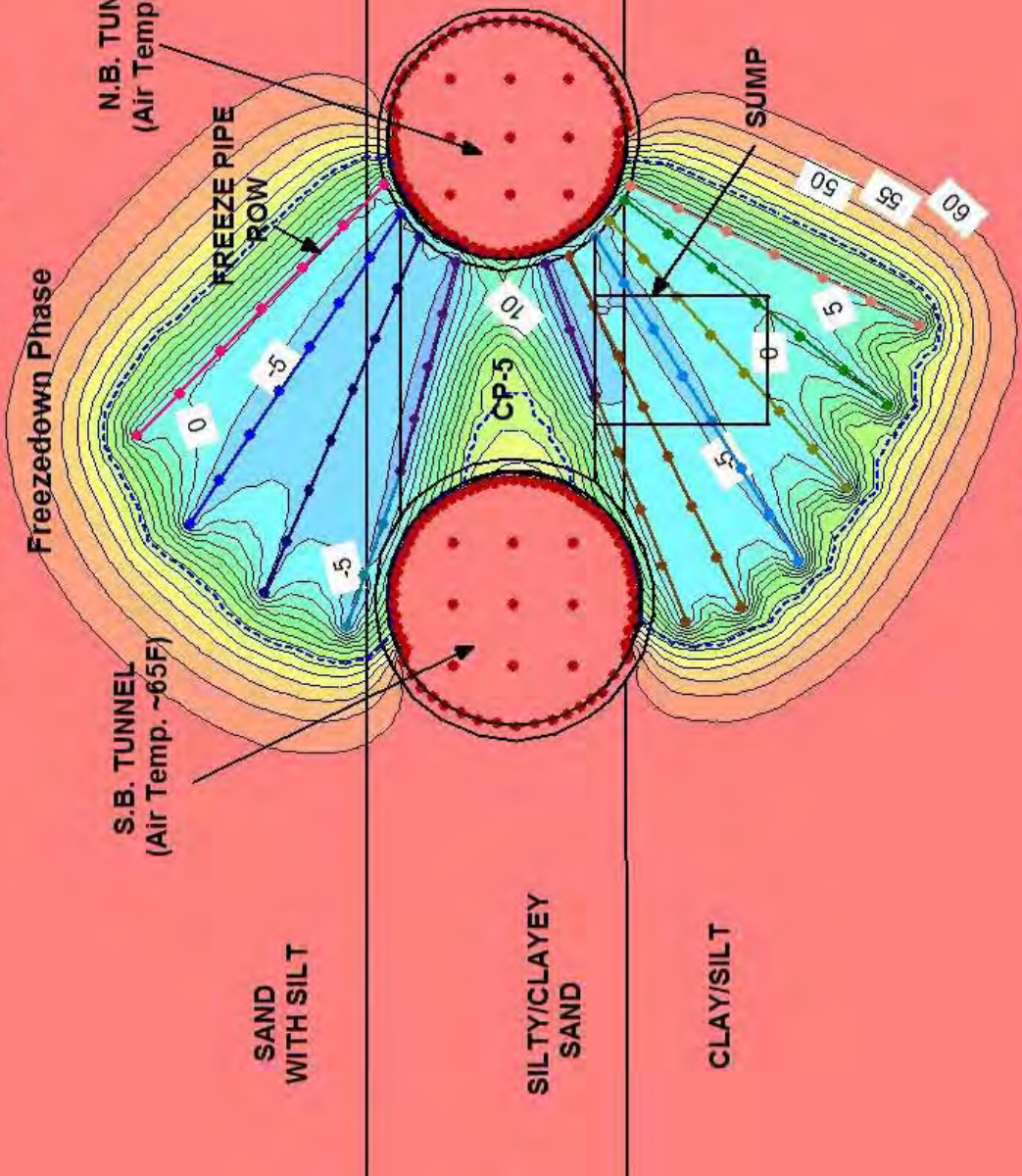
SUMP

SAND  
WITH SILT

SILTY/CLAYEY  
SAND

CLAY/SILT

6 WEEKS OF FREEZING



3<sup>rd</sup> Street Lightrail CP-5 Freezing

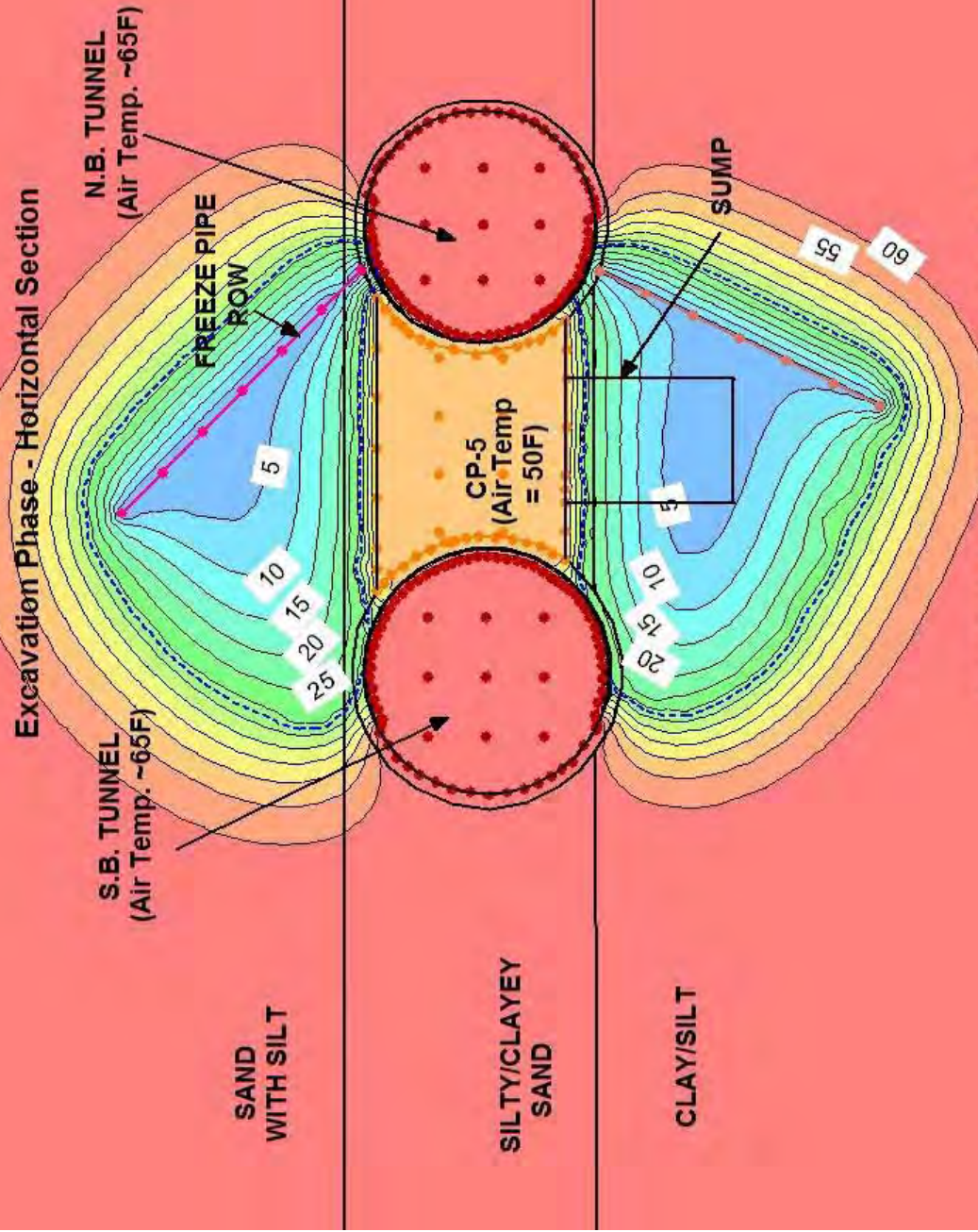
2. Freezedown Along CP-5

Figure A-9

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis - Along CP-5 Centerline

Excavation Phase - Horizontal Section



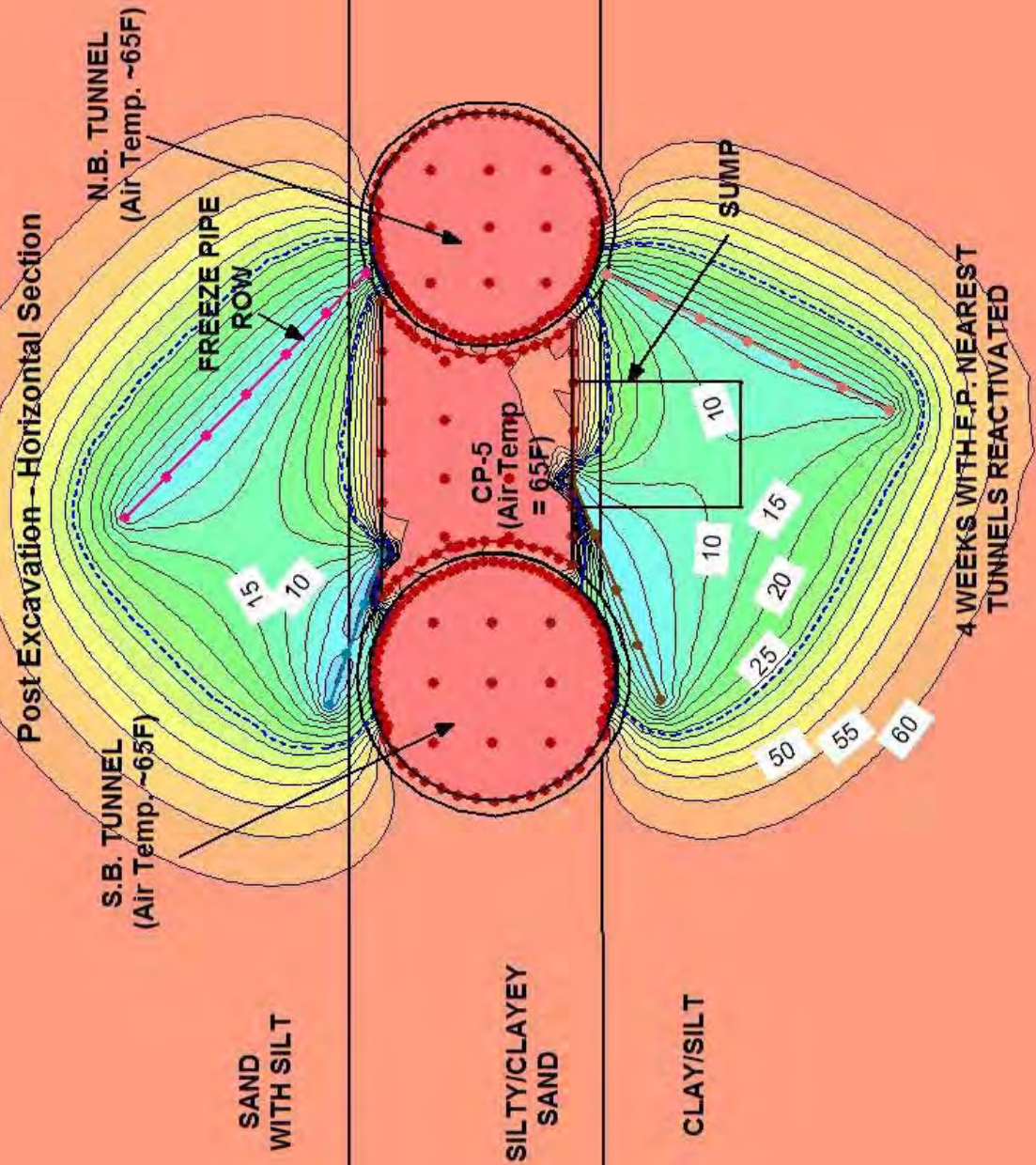
3rd Street Lightrail CP-5 Freezing

2. Excavation – Horizontal Section

Figure A-10

3rd Street Light Rail - San Francisco  
Cross Passage #5

Thermal Analysis - Along CP-5 Centerline  
Post Excavation - Horizontal Section

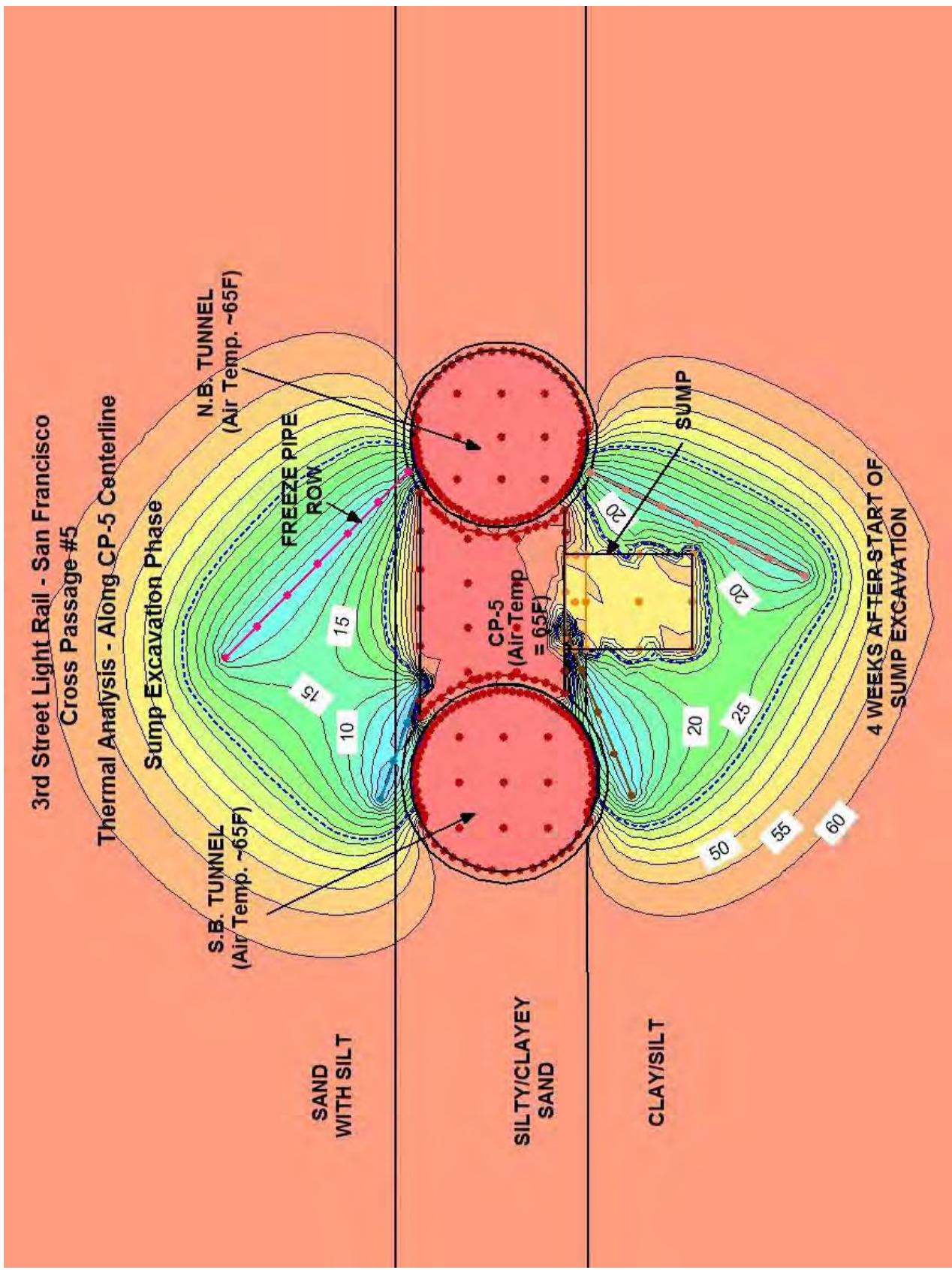


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3rd Street Lightrail CP-5 Freezing

2. Post-Excavation: Rows 4 and 7 On

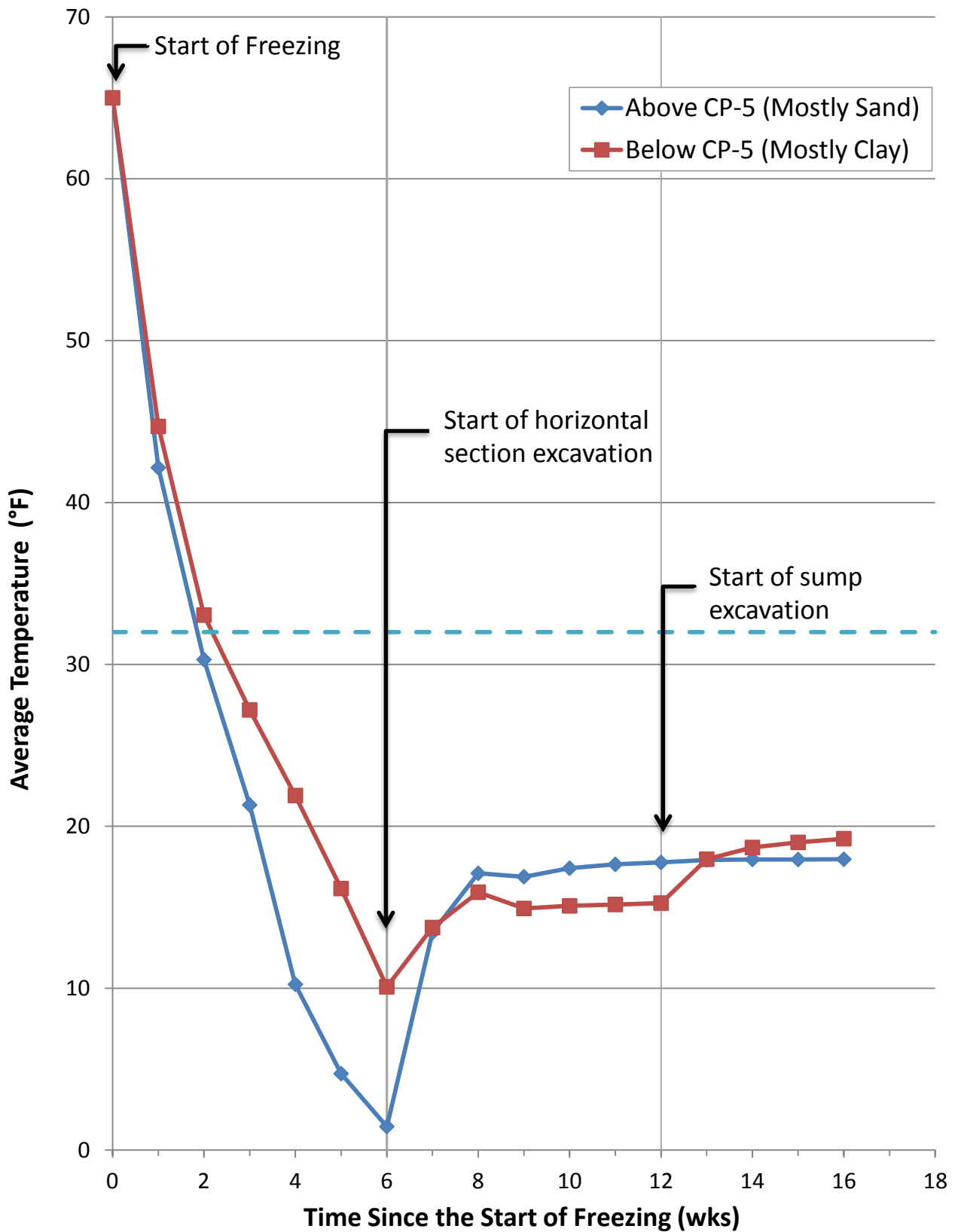
Figure A-11



3rd Street Lightrail CP-5 Freezing

2. Sump Excavation

Figure A-12

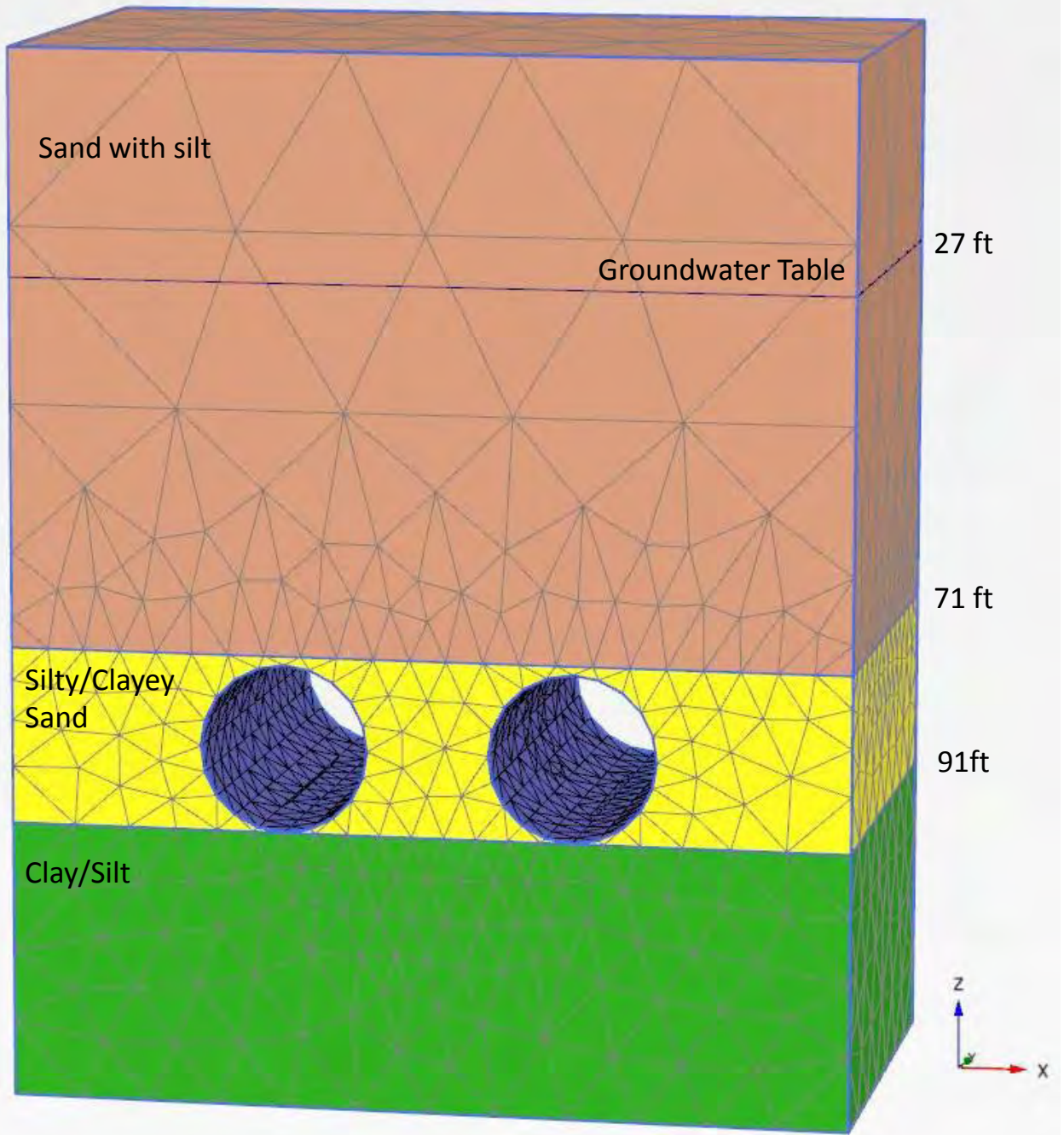


**3<sup>rd</sup> Street Lightrail CP-5 Freezing**

**Ave. Frozen Soil Temperature vs. Time**

**Figure A-13**

**APPENDIX B**  
**STRUCTURAL ANALYSIS RESULTS**  
**(PLAXIS)**

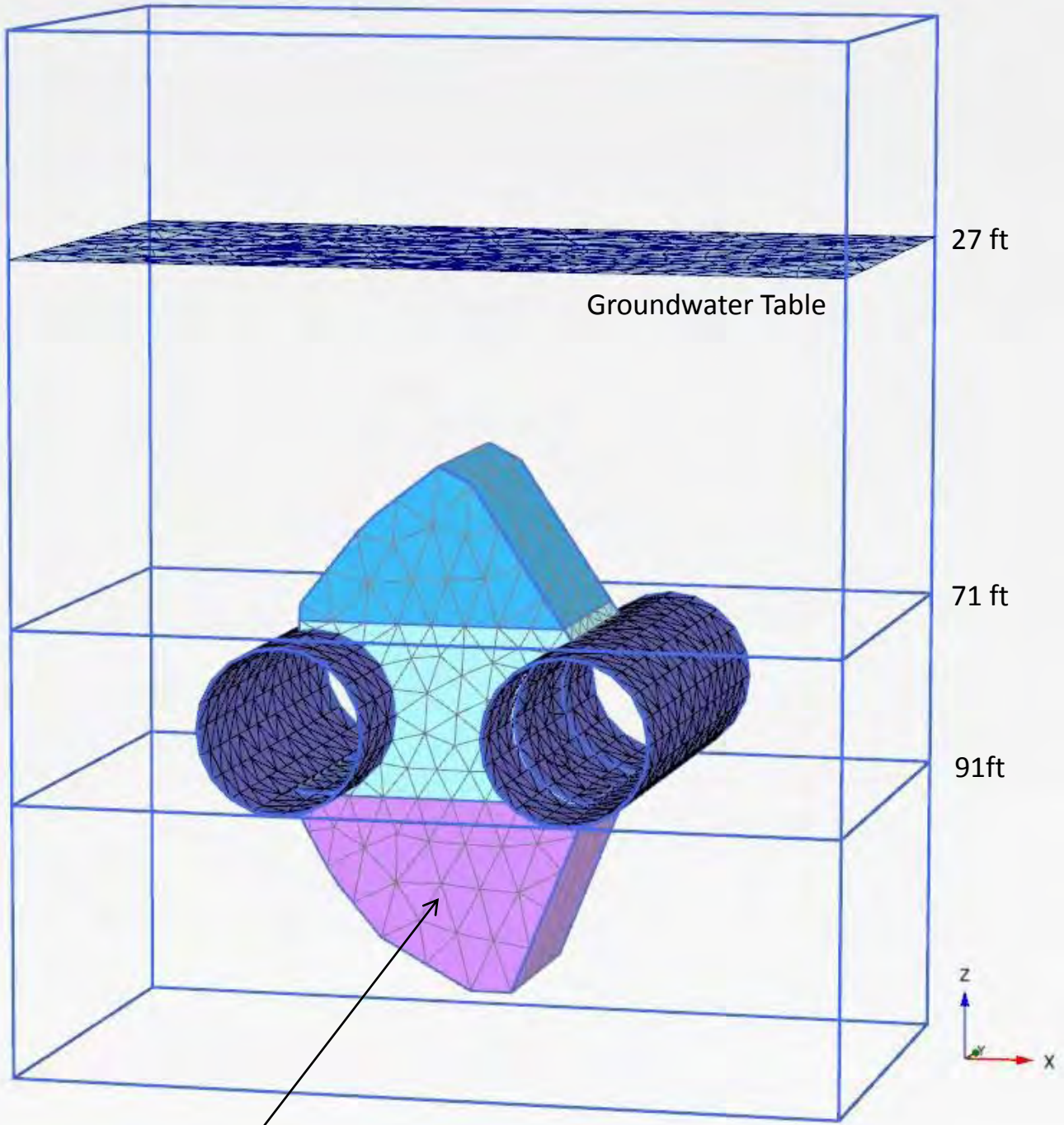


3<sup>rd</sup> Street Lightrail CP-5 Freezing

Plaxis 3D Mesh – Initial Conditions

Figure B-1





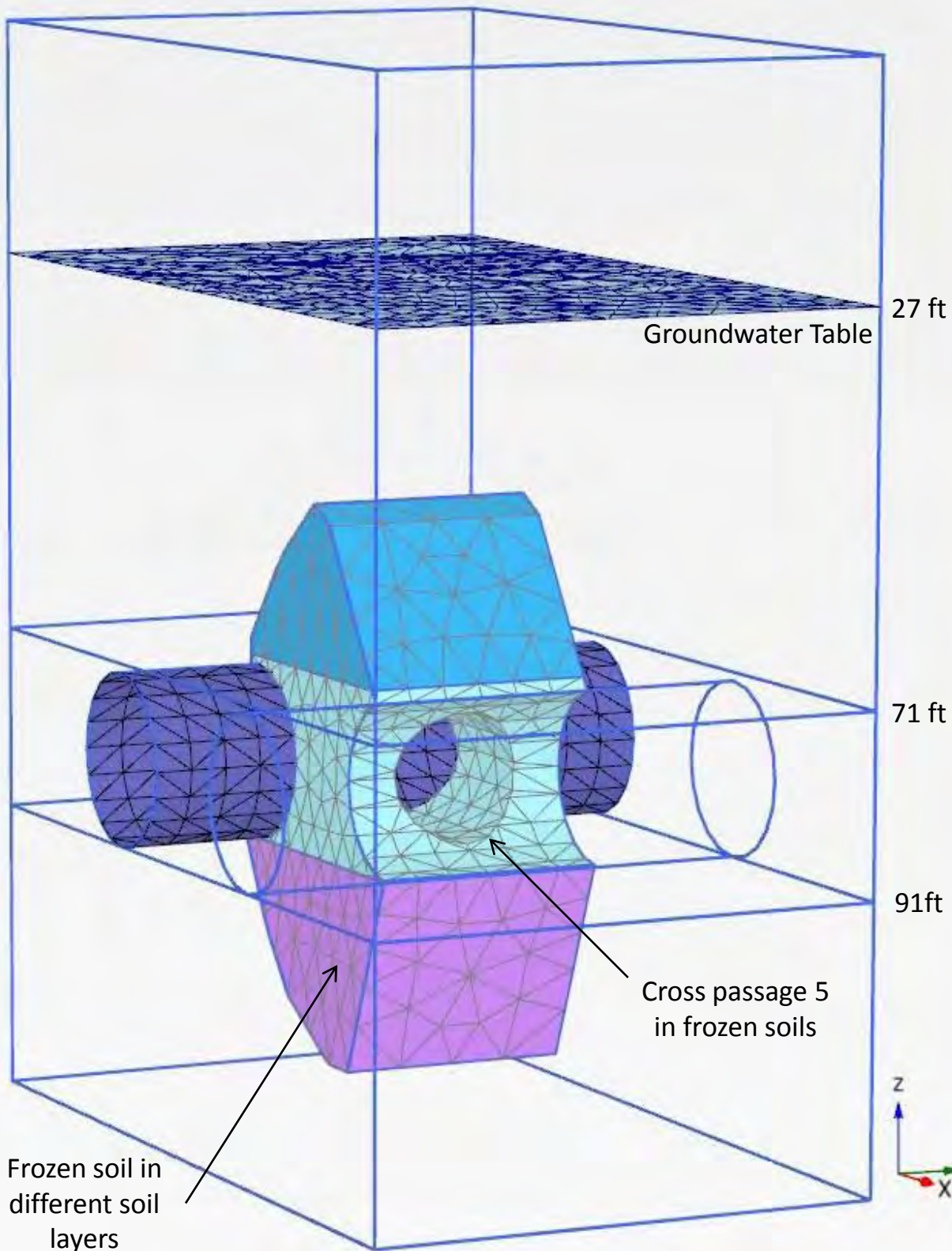
Frozen soil in  
different soil  
layers

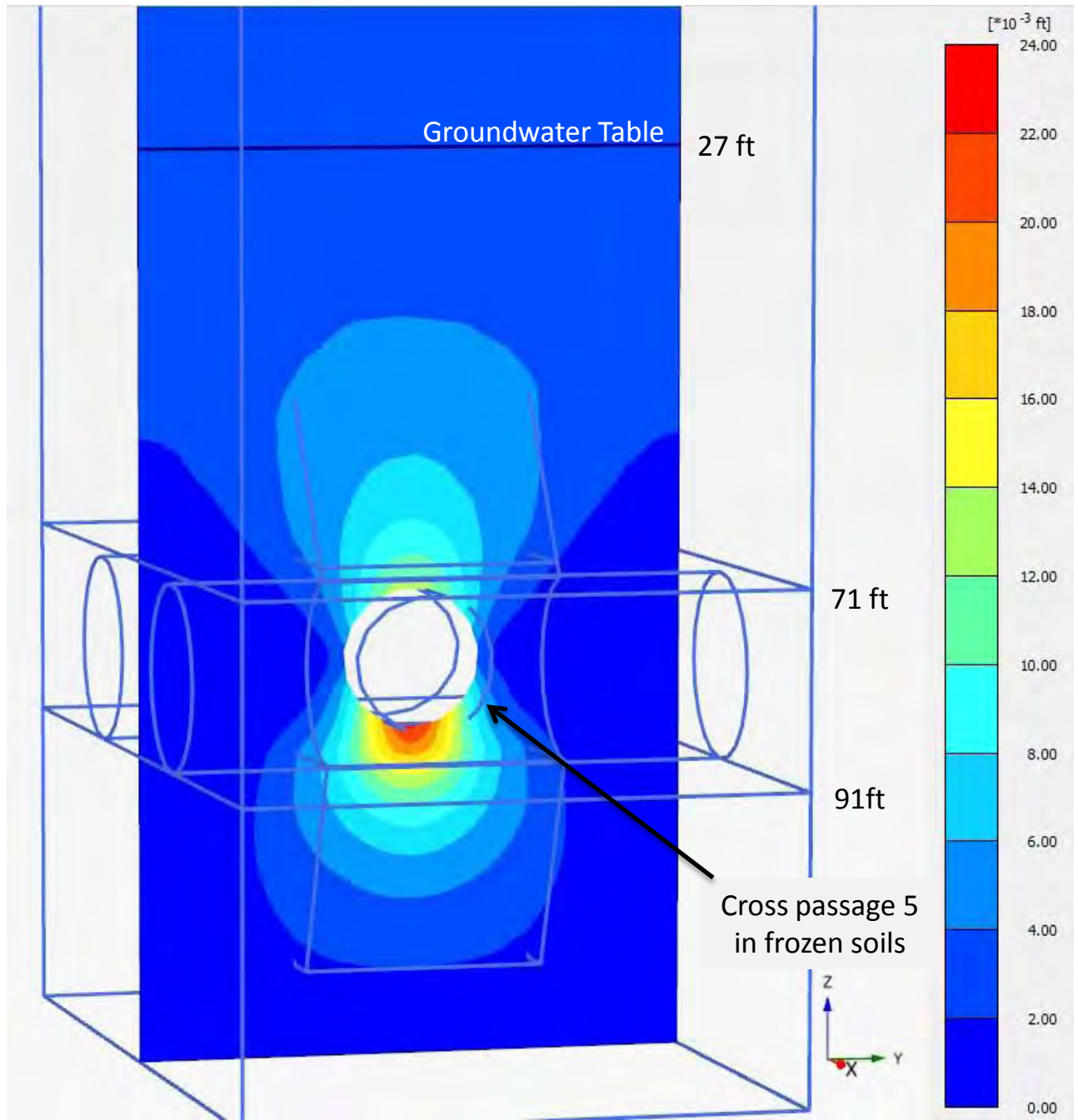


3<sup>rd</sup> Street Lightrail CP-5 Freezing

Plaxis 3D Mesh – Frozen Soil

Figure B-2





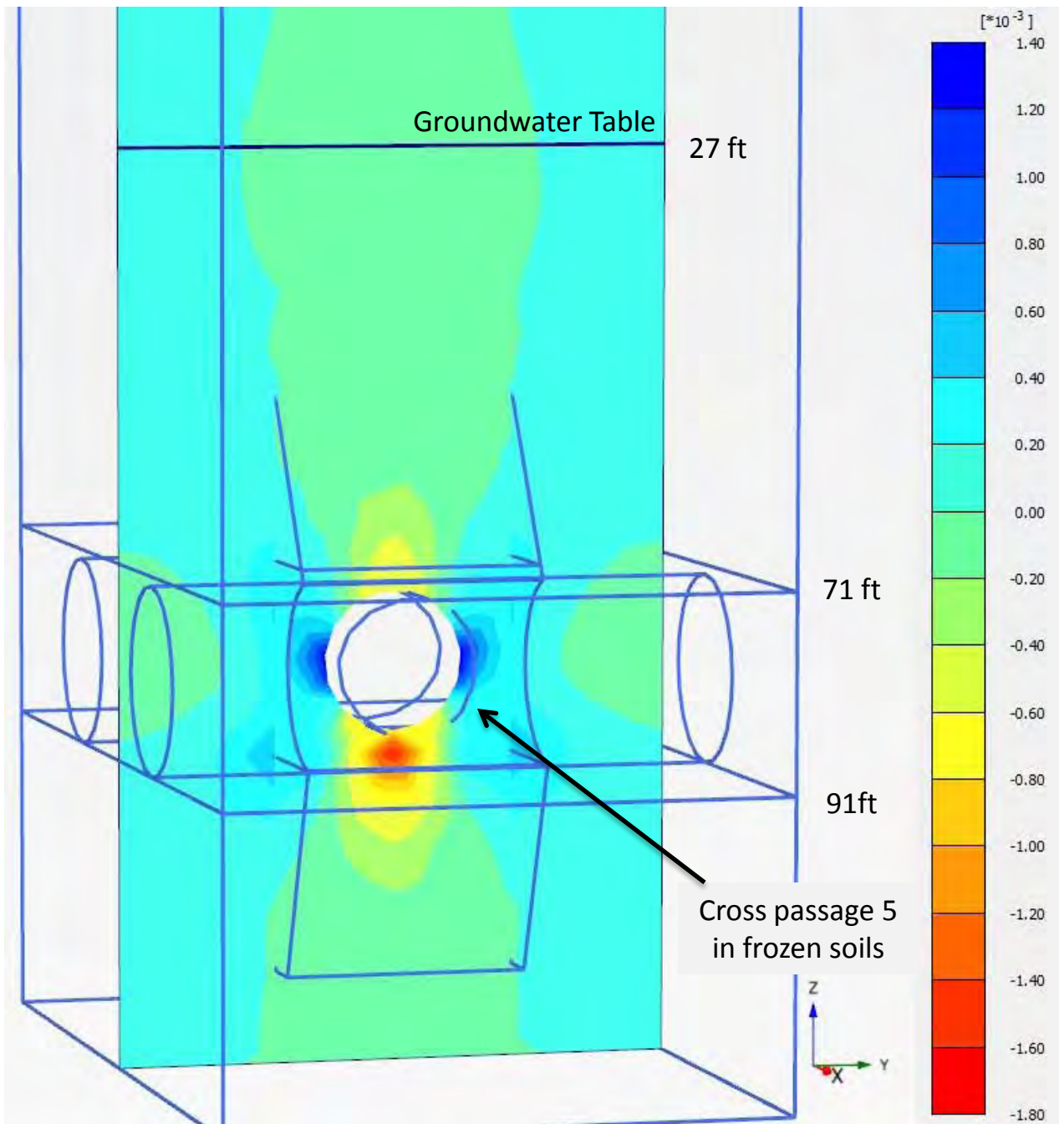
Maximum Ground Deflection = 0.3 inches



3<sup>rd</sup> Street Lightrail CP-5 Freezing

Plaxis 3D Results –Ground Deflection

Figure B-4



Maximum Strain =  $1.37 \times 10^{-3}$

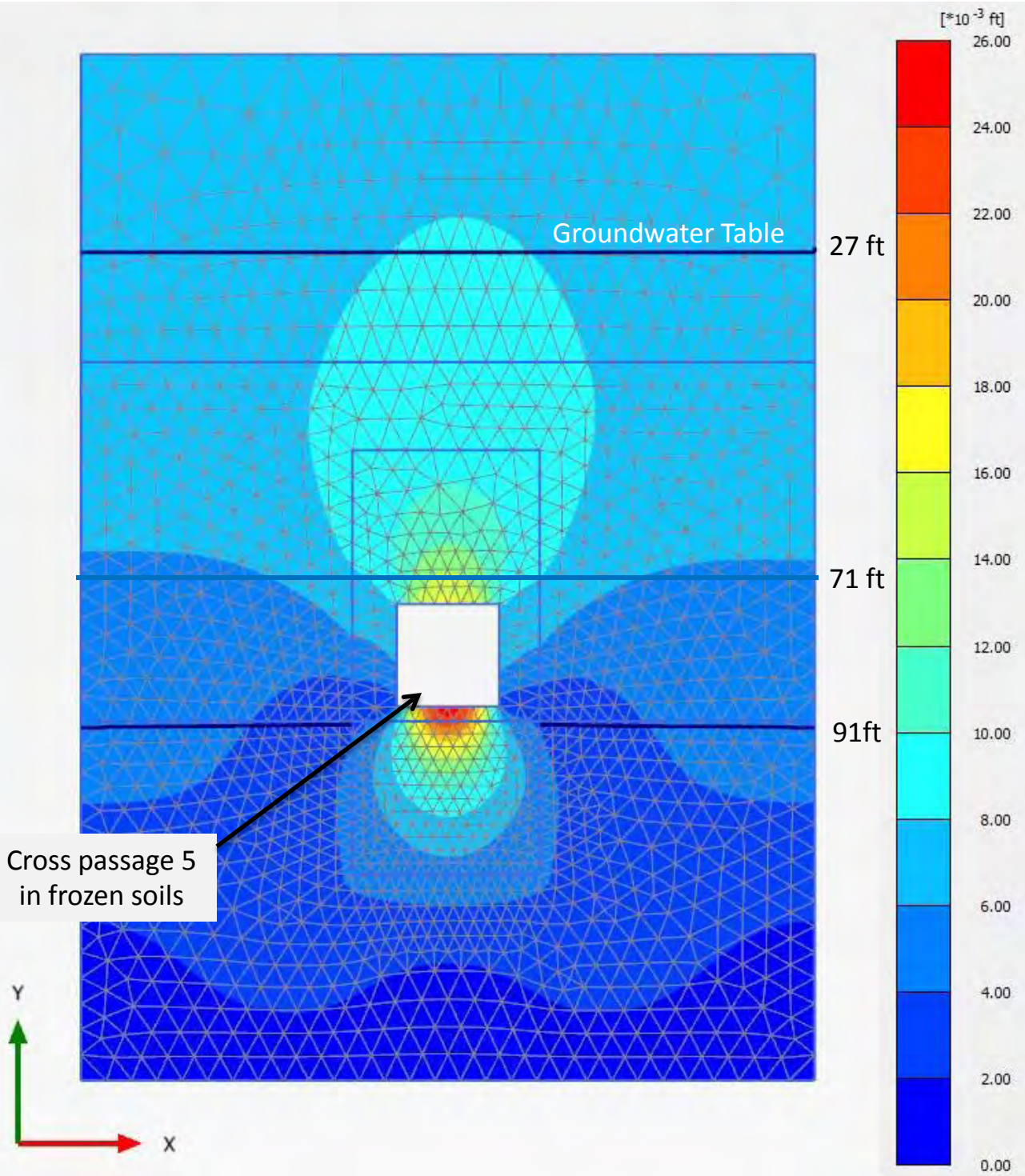
Minimum Strain =  $-1.63 \times 10^{-3}$



3<sup>rd</sup> Street Lightrail CP-5 Freezing

Plaxis 3D Results – Cartesian Strain,  $\epsilon_{yy}$

Figure B-5



Maximum Ground Deflection = 0.3 inches



**3<sup>rd</sup> Street Lightrail CP-5 Freezing**

**Plaxis 2D Results – Ground Deflection**

**Figure B-6**

# Attachment D



# BARNARD IMPREGILO HEALY JOINT VENTURE

420 Fourth Street San Francisco, CA 94107, PH (415) 546-0799, FX (415) 546-3822

**Third Street Lightrail Program Phase 2 - Central Subway Project**  
**CONTRACT 1252**

**1/25/2013**

**VECP No. 01 - Cross Passage No. 5 Ground Improvement Alternative**

**VECP ESTIMATE**

**CREDIT for Jet Grouting Costs:**

<b>1 Jet Grout Deletion Credit</b>	<b>-\$3,010,000.00</b>
<i>Mob / Demob, F&amp;I Jet Grout, Handling &amp; Transport Spoils, Work Area General Conditions</i>	
<b>2 Jet Grout Off-haul &amp; Disposal Credit</b>	<b>-\$65,000.00</b>
<i>Spoils Trucking/Hauling, Disposal Fees</i>	
<b>3 OCS Relocation Credit</b>	<b>-\$85,000.00</b>
<i>Estimated Relocation</i>	
<b>4 Traffic Control Credit</b>	<b>-\$45,000.00</b>
<i>Setup/takedown, supplemental flagging</i>	
<b>5 Demo &amp; Temporary Restoration Credit</b>	<b>-\$35,000.00</b>
<i>AC/Base Demo and Temporary Restoration</i>	
<b>Total Credit Amount</b>	<b>-\$3,240,000.00</b>

**ESTIMATED COST for Ground Freezing Alternative:**

<b>1 Design</b>	<b>\$95,000.00</b>
<i>Design, Review, Modifications</i>	
<b>2 Drill &amp; Install Freeze and Temperature Pipes</b>	<b>\$1,810,000.00</b>
<i>Mob/Demob, F&amp;I Freeze/Temp Pipes, BOPs, Lining Mods/Demo, Grouting, Testing, Spoils Handling</i>	
<b>3 Install Freeze Plant, Equipment and Appurtenances</b>	<b>\$950,000.00</b>
<i>Mob/Demob, F&amp;I Freeze Plant &amp; Equipment, F&amp;I Distribution Valves/Piping, Distribution System Insulation, P&amp;E Electrical/Control Hookup, F&amp;I Instrumentation</i>	
<b>4 Commission, Operate &amp; Maintain Freeze Plant</b>	<b>\$100,000.00</b>
<i>Startup, Operation, Maintenance, Instrument Monitoring</i>	
<b>5 Subcontractor Assistance (Exclusions), Access, Support Services</b>	<b>\$325,000.00</b>
<i>Survey, Access &amp; Equipment, Tunnel Support Services (Facility Operations), Tunnel Reinforcement &amp; Insulation, Tunnel Equipment &amp; Utility Modifications, Utility Services, Haul-off/Disposal, Sub Excluded Items, Freeze Plant &amp; Equipment Support Infrastructure, P&amp;E Removal &amp; Demob Service</i>	
<b>6 Abandonment &amp; Restoration</b>	<b>\$35,000.00</b>
<i>Grout &amp; Abandon Freeze / Temp Pipes, Segment Lining Repairs</i>	
<b>Total Estimated Cost</b>	<b>\$3,315,000.00</b>
<b>7 Schedule, Sequence and Design Risk Provision</b>	<b>\$331,500.00</b>
<i>10% Considered for Final Design Changes, Subcontractor Constraints/Premiums (Weekend Work), Freeze Development Time Risk, CPM Re-sequencing/Scheduling Risk, O&amp;M Schedule Risk</i>	
<b>Total Estimated Cost w/ Risk Contingency</b>	<b>\$3,646,500.00</b>

# Attachment E



Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Total Float	Calendar	2011												2012												2013												2014												2015																
							J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D										
<b>CSP-1252-UD11 Construction Tunnels Update 11 - CP 5</b>							1235	08-Jun-11 A	04-May-15	-6	Calendar																																																												
<b>CP-1252 Contract Milestones</b>							1427	08-Jun-11 A	04-May-15	-7	Calendar																																																												
TUN-01-1000	Bid Date	0	08-Jun-11 A			Calendar	▶ TUN-01-1000																																																																
TUN-01-1010	Award	0	08-Aug-11 A			Calendar	◆ TUN-01-1010																																																																
TUN-01-1020	NTP 1 - Engineering & Equipment Procurement	0	27-Jan-12 A			Calendar	◆ TUN-01-1020																																																																
TUN-01-1030	NTP 2 - Launch Box & Tunnel Prep Construction	0	14-Mar-12 A			Calendar	◆ TUN-01-1030																																																																
TUN-01-1090	Release of Work Under Disputed Authorization (No. 1)	0	13-Apr-12 A			Calendar	◆ TUN-01-1090																																																																
TUN-01-1100	Release of Work Under Disputed Authorization (No. 2)	0	15-Oct-12 A			Calendar	◆ TUN-01-1100																																																																
TUN-01-1110	Release of Work Under Disputed Authorization (No. 3)	0	15-Oct-12 A			Calendar	◆ TUN-01-1110																																																																
TUN-01-1040	NTP 3 - Tunnel & Retrieval Shaft Construction	0	15-Oct-12 A			Calendar	◆ TUN-01-1040																																																																
TUN-01-1120	Release of Work Under Disputed Authorization (No. 4)	0	15-Oct-12 A			Calendar	◆ TUN-01-1120																																																																
TUN-01-1050	Milestone 1 - Complete Cross Passages 1&2 (req'd May 27, 20...	0		21-May-14*	6	Calendar	◆ TUN-01-1050																																																																
TUN-01-1080	Milestone 2 - Complete Cross Passages 3&4 (req'd July 30, 20...	0		24-Jul-14*	6	Calendar	◆ TUN-01-1080																																																																
TUN-01-1060	Substantial Completion (req'd March 29, 2015) - 1157 days	0		06-Apr-15*	-8	Calendar	◆ TUN-01-1060																																																																
TUN-01-1070	Final Completion (req'd April 28, 2015) - 1187 days	0		04-May-15*	-7	Calendar	◆ TUN-01-1070																																																																
<b>General Conditions</b>							1169	01-Aug-11 A	04-May-15	-6	Calendar	[Bar chart showing activity progress]																																																											
<b>4th &amp; Bryant Street TBM Launch Box Construction</b>							430	30-Mar-12 A	20-Sep-13	478	Calendar	[Bar chart showing activity progress]																																																											
<b>Moscone Station Headwalls</b>							352	14-May-12 A	24-Jun-13	555	Calendar	[Bar chart showing activity progress]																																																											
<b>UMS Station Headwalls</b>							414	24-Jul-12 A	18-Nov-13	426	Calendar	[Bar chart showing activity progress]																																																											
<b>Southbound Tunneling</b>							255	16-Apr-13	17-Apr-14	194	5 d w/ Holiday	[Bar chart showing activity progress]																																																											
TUN-07-1000	Tunneling - Assemble Southbound TBM & Launch Frame	30	16-Apr-13	28-May-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1010	Tunneling - Test and Commission Southbound TBM	5	29-May-13	04-Jun-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1020	Tunneling - Launch Southbound TBM (163+52 - 160+00)	15	05-Jun-13	25-Jun-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1040	Tunneling - Install Conveyors & Facilities for Southbound TBM	5	26-Jun-13	02-Jul-13	40	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1050	Tunneling - Tunnel Southbound (160+00 - 156+50)	6	09-Sep-13	16-Sep-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1060	Tunneling - Tunnel Southbound (156+50 - 142+30)	23	17-Sep-13	17-Oct-13	1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1070	Tunneling - Tunnel Southbound (142+30 - 140+50)	3	18-Oct-13	22-Oct-13	1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1080	Tunneling - Tunnel Southbound (140+50 - 135+00)	9	23-Oct-13	04-Nov-13	1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1190	Tunneling - Tunnel Under Existing Bart Tunnels	0	29-Oct-13*		1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1160	Tunneling - Tunnel Southbound (135+00 - 128+00)	11	05-Nov-13	19-Nov-13	1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1170	Tunneling - Tunnel Southbound (128+00 - 103+00)	41	20-Nov-13	21-Jan-14	1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1180	Tunneling - Tunnel Southbound (103+00 - 89+00)	23	22-Jan-14	24-Feb-14	1	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1100	Tunneling - Tunnel Southbound (89+00 - 85+50)	4	25-Feb-14	28-Feb-14	15	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1110	Tunneling - Tunnel Southbound (85+50 - 81+20)	7	05-Mar-14	13-Mar-14	13	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1130	Tunneling - Clean Southbound Tunnel & Remove Utilities	25	14-Mar-14	17-Apr-14	55	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-0-1110	Tunneling - Disassemble Southbound TBM & Extract Trailing G...	25	14-Mar-14	17-Apr-14	194	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
<b>Northbound Tunneling</b>							281	26-Jun-13	15-May-14	273	Calendar	[Bar chart showing activity progress]																																																											
TUN-06-1000	Tunneling - Assemble Northbound TBM & Launch Frame	30	26-Jun-13	07-Aug-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-06-1010	Tunneling - Test and Commission Northbound TBM	5	08-Aug-13	14-Aug-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-06-1020	Tunneling - Launch Northbound TBM (163+52 - 160+00)	15	15-Aug-13	05-Sep-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-07-1030	Tunneling - Install Tunnel Ventilation Ducts	1	06-Sep-13	06-Sep-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-06-1030	Tunneling - Install Conveyors & Facilities for Northbound TBM	5	06-Sep-13	12-Sep-13	-4	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-06-1040	Tunneling - Tunnel Northbound (160+00 - 156+50)	6	17-Sep-13	24-Sep-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-06-1050	Tunneling - Tunnel Northbound (156+50 - 142+30)	23	25-Sep-13	25-Oct-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																
TUN-06-1060	Tunneling - Tunnel Northbound (142+30 - 140+50)	3	28-Oct-13	30-Oct-13	-6	5 d w/ Holiday	[Bar chart showing activity progress]																																																																

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining Work  
 Primary Baseline   
  Remaining Work   
 ◆ Milestone





**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

**Trend Log**

Initial Cost Estimate and Allocated Contingencies											
Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact		Comments	Contract Modification Number
						Approval Action	Approval Date	+Exposure/(Benefit)	Potential Change		
<b>CONSTRUCTION TRENDS</b>											
<b>Utilities Relocation #1 (Portal &amp; MOS)</b>											
1250-0001	04/15/10	081-0001	Delete Option MF-OPT1 "Fire Protection Sprinkler System"	1	N/A			(50,000)		Status of ROCA? Cleared City Attorney's Office; to Shahnam for execution. [In "Current Forecast" - Sep2010 Cost Report.] <b>COMPLETE, NO FURTHER ACTION; CMOD #1</b>	CMOD #1 Approved
1250-0002	05/07/10	081-0002	Changes to Sewer on 4th between Howard and Folsom	2	CMB-0001	Agree	07/12/10	+107,174		Differing conditions as AWSS is directly over existing sewer; unable to install sewer manhole per plan. [In "Current Forecast" - Sep2010 Cost Report.] No reimbursement from SFPUC Sewer. <b>COR #2-\$34,135; COR #5-\$73,039</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #2</b>	CMOD #2 Approved
1250-0003	05/28/10	081-0003	Quantity Adjustment for JT-6 and JT-7	4	CMB-0002	Agree	08/04/10	+192,420		In April 2010 pay app, JT-6 bid qty exceeded by 344% (230 vs 1021) and JT-7 bid qty exceeded by 112% (500 vs. 1060) [In "Current Forecast" - Sep2010 Cost Report.] <b>COMPLETE, NO FURTHER ACTION; CMOD #3</b>	CMOD #3 Approved
1250-0004	07/02/10	081-0004	Demolition of existing brick and concrete footing on 4th between Howard and Folsom	2	CMB-0003	Agree	07/12/10	+170,000		Unforeseen bricks and concrete footing discovered on east side of 4th Street between Folsom and Howard. [In "Current Forecast" - Sep2010 Cost Report.] <b>COR #3-RFI #76</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #4</b>	CMOD #4 Approved
1250-0005	04/20/10	081-0005	Modify AWSS at 4th/Bryant and 4th/Harrison	3	CMB-0004	Agree	08/04/10	+586,000		At 4th/Bryant, AWSS conflict with new 48" sewer and AT&T duct bank. At 4th/Harrison, AWSS conflict with 18" sewer. [In "Current Forecast" - Sep2010 Cost Report.] No reimbursement from SFPUC AWSS. <b>PCC #2: RFI #s 34, 49 &amp; 51</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #5</b>	CMOD #5 Approved
1250-0006	04/29/10	081-0006	Install four additional piles and reinforce existing foundation at 401 4th Street	2	CMB-0005	Agree	08/25/10	+130,000		Existing foundation was discovered to be part brick and part concrete, which is different from plan. Also, foundation was unstable and required additional reinforcement. Refer to RFIs #85R1, 86.1, 100, 101, 102 <b>COMPLETE, NO FURTHER ACTION; CMOD #6</b>	CMOD #6 Approved
1250-0007	10/06/10	081-0007	Additional work to install 48" sewer due to various utility conflicts at 4th/Bryant	2	N/A			+32,964		48" RCP sewer in conflict with existing AT&T duct bank that needs to remain in service until new joint trench is installed to enable switchover. This conflict forced contractor into a more expensive means to install sewer. Also, 48" RCP sewer in conflict with existing 30" force main and 24" steel pipes. No reimbursement from SFPUC Sewer. <b>COMPLETE, NO FURTHER ACTION; CMOD #9</b>	CMOD #9 Approved
1250-0008	10/06/10	081-0008	Relocate TPC vault on 4th Street between Howard and Folsom	6	N/A			+19,500		Contractor uncovered existing TPC conduits on top of AT&T duct bank on 4th near Howard, a differing site condition. An AT&T intercept vault is to be installed, however, TPC conduits can not reside inside AT&T intercept vault. Joint Trench utilities participation cost TBD. Executed on 10/14/2010. Refer to RFI #62 (\$19,500) Expected Reimbursement from TPC. RE has provided documentation of notification to TPC, July-August '10. See final 1250 Form B actual costs <b>COMPLETE, NO FURTHER ACTION; CMOD #8</b>	CMOD #8 Approved
1250-0009	10/06/10	081-0009	Install additional sewer and provide temporary connections at 4th/Stillman	3	N/A			+47,000		Location of existing sewer to be intercepted differs from where it's shown in the plan, hence additional sewer to be installed. Also, due to optional sewer MH not buildable until (E) AT&T DB is removed, additional sewer is necessary to tie into (E) main as interim. New sewer is supposed to tie into optional MH. No reimbursement from SFPUC Sewer. RFI #91 <b>COMPLETE, NO FURTHER ACTION; CMOD #7</b>	CMOD #7 Approved
1250-0010	10/06/10	081-0010	Perform AT&T wye cast connection and chipping of existing duct bank at various locations	6	N/A			+48,181		AT&T was supposed to tie-in its own facility. However, AT&T's contractor, who is hired to install vaults, stated it is not in their scope of work. Refer to RFI #82.1. AT&T intercept vault at 4th/Harrison can not be installed at design location due to utility conflicts. AT&T vault to be shifted a few feet instead of vault being on top of existing duct bank. This will cause additional excavation, joint trench and modification to existing duct bank. Joint Trench utilities participation cost TBD. SFMTA and AT&T are negotiating with Contractor. (\$48,181) Expected Reimbursement from AT&T. RE has provided documentation of notification to AT&T, Sept-Oct '10. See final 1250 Form B actual costs. <b>COMPLETE, NO FURTHER ACTION; CMOD #10</b>	CMOD #10 Approved
1250-0011	10/06/10	081-0011	Remove existing piles and shoring at 801 Howard	2				-0		This change order has been incorporated in CMOD #16 (Trend #30) <b>COMPLETE, NO FURTHER ACTION; CMOD #16</b>	CMOD #16 Approved
1250-0012	10/06/10	081-0012	Additional work related to AT&T facilities due to unforeseen conditions.	6	CMB-0047	Agree	08/03/11	+67,798		This is the total of all force account work related to AT&T facility. SFMTA to seek reimbursement from AT&T through the Form B process. <b>COMPLETE, NO FURTHER ACTION; CMOD #21</b>	CMOD #21
1250-0013	10/06/10	081-0013	Additional work related to PG&E facilities due to unforeseen conditions.	6	CMB-0047	Agree	08/03/11	+30,547		This is the total of all force account work related to PG&E facility. SFMTA to seek reimbursement from PG&E through the Form B process. <b>COMPLETE, NO FURTHER ACTION; CMOD #21</b>	CMOD #21

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
						Approval Action	Approval Date	Actual/Forecast	Potential Change		
1250-0014	10/06/10	081-0014	Remove brick wall at sewer sta 152+94 (west side) on 4th between Howard and Folsom.	2				-0-		This change order has been incorporated in CMOD #16 (Trend #30) <b>COMPLETE, NO FURTHER ACTION; CMOD #16</b>	CMOD #16 Approved
1250-0015	10/06/10	081-0015	Archaeological Findings - Charges for rental of steel plates, triton barriers, shoring and labor for maintenance.	2				+290,703		Midden deposits were discovered on 4th Street between Howard and Folsom. Contractor stopped work. Contractor requesting payment for rental charges of trench plates, barricades, and shoring, and cost of maintenance. Total cost exposure is projected through end of November 2010. The \$290,703.00 is expected to be the final estimate for the rental of trench plates, barriers and shoring. <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20
1250-0016	10/06/10	081-0016	Additional AWSS modification at 4th/Harrison	1	CMB-0016	Agree	11/10/10	+156,418		New alignment is proposed by Design team. CM awaiting cost proposal from Contractor. <b>No reimbursement from SFPUC AWSS.</b> COR #33 Supplemental <b>COMPLETE, NO FURTHER ACTION; CMOD #12</b>	CMOD #12 Approved
1250-0017	10/06/10	081-0017	Protection Work at PG&E Vault 1611	6				+6,400		CM reviewing COR for merit. Expected Reimbursement from PG&E or work to be deferred \$6,400. RE has notified PG&E via email dated 10/29/10 that SFMTA expects full reimbursement for this work if implemented. Follow-up pending. Work was not performed and will need to be addressed in a future contract.	
1250-0018	10/06/10	081-0018	Demolition and Support Work at PG&E Vault 1611	6				+25,000		CM reviewing COR for merit. Expected Reimbursement from PG&E or work to be deferred \$25,000. RE has notified PG&E via email dated 10/29/10 that SFMTA expects full reimbursement for this work if implemented. Follow-up pending. Work was not performed and will need to be addressed in a future contract.	
1250-0019	10/06/10	081-0019	Extended overhead delay claim due to Archaeological discoveries	2				-0-		Old Note: Potential delay claim if issue extends project duration. Amount is estimated at \$3,000.00 per day for 60 days (\$180K). New Note: By exercising all option work, additional 84 calendar days is added to the contract time. In addition, midden mitigation will start on 10/7/10. As a result, the potential for extended overhead cost is averted. <b>This trend has been superseded by Trend #37.</b> <b>COMPLETE, NO FURTHER ACTION</b>	
1250-0020	10/06/10	081-0020	Sewer modification under I-80 freeway at 2 locations	3				+39,062		Inverts of existing sewer where new sewer will tie into are found to be different than shown in plan and would create a reverse slope. Additional pipe and manhole are required to fix slope. <b>Refer to RFI Nos. 2S01 and 147.</b> <b>No reimbursement from SFPUC Sewer.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #11</b>	CMOD #11 Approved
1250-0021	10/06/10	081-0021	Install new AWSS lateral including hydrant at NW 4th/Harrison	2				+100,000		Existing AWSS lateral at SW 4th/Harrison is in conflict with new 18" sewer. Instead of modifying the lateral to avoid the sewer, a new lateral at NW corner is a preferred solution. CM awaiting design revision from Design team. <b>Trend No. 21 is combined with Trend No. 22.</b>	
1250-0022	10/06/10	081-0022	Install additional 30 feet of DIP and new AWSS at 4th/Harrison	2	CMB-0026	Agree	01/12/11	+160,908		AWSS Point of connection on 4th Street was found to be cast iron instead of ductile iron as shown in DPW as-built. Due to this differing condition, additional length of pipe needs to be replaced and lead joint to be installed in order to install a ductile iron tee. Also, existing AWSS hydrant lateral is in conflict with new 18" sewer. The preferred solution was to install a new ductile iron lateral at a different location rather than installing vertical offsets on an existing cast iron lateral. <b>No reimbursement from SFPUC AWSS.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #15</b>	CMOD #15 Approved
1250-0023	10/06/10	081-0023	Steel plates and shoring standby for 2 months due to PG&E delay at Clementina	3				+24,981		Sewer at Clementina was delayed by 2 months due to PG&E vault conflict. PG&E will not pay cost of steel plates and shoring standby because PG&E drawings were sent to MTA during design phase and PG&E was not made aware of the conflict then. <b>COMPLETE, NO FURTHER ACTION; CMOD #13</b>	CMOD #13 Approved
1250-0024	10/06/10	081-0024	Utility support and work around for AT&T facilities	6	CMB-0048	Agree	08/24/11	+95,311		Contract specs specified AT&T to compensate contractor directly for workarounds & support. AT&T refused to pay Synergy. Synergy considers AT&T's refusal as a changed condition to CN 1250 contract. (\$95,311) Reimbursement from AT&T. See Final 1250 Form B actual costs. <b>COMPLETE, NO FURTHER ACTION; CMOD #19</b>	CMOD #19
1250-0025	10/06/10	081-0025	Utility support and work around for PG&E facilities	6				+182,980		Contract specs specified PG&E to compensate contractor directly for workarounds & support. PG&E negotiated \$100,000 directly with Synergy and will pay synergy directly as well.	
1250-0026	10/06/10	081-0026	Utility support and work around for SFWD facilities	3	CMB-0028	Agree	02/09/11	+66,510		Total cost known to date (10/5/10) of all SFWD support and workarounds. See COR #12, 20, 32 and 35. Agreed amount is total of COR #12, 20 and 32. Total exposure is equal to agreed amount plus COR #35. <b>No reimbursement from SFWD.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #14</b>	CMOD #14 Approved
1250-0027	10/06/10	081-0027	Trucking and labor support for Archaeological mitigation	2				+115,789		Synergy is asked to provide trucking for delivery of midden soil to Sonoma State University lab. Other support work includes traffic control, piling, loading and unloading of midden soil. The amount shown are charges up to end of November 2010 only. <b>Additional charges are expected which will be tracked as Trend No. 28.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20
1250-0028	12/08/10	081-0028	Trucking and labor support for Archaeological mitigation, Part II	2				+50,000		Synergy is asked to provide trucking for delivery of midden soil to Sonoma State University lab. Other support work includes traffic control, piling, loading and unloading of midden soil. The amount shown are expected charges beyond November 2010. <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
						Approval Action	Approval Date	Actual/Forecast	Potential Change		
1250-0029	12/08/10	081-0029	Cost overrun for bid item UD-10 "Additional excavation and backfill"	4	CMB-0036	Agree	05/04/11	+112,500		Bid item UD-10 is to pay for excavation of connection hole and kill hole for SFWD line. Contract only included 200 cubic yard for this work. The size of excavations is dictated by field conditions and per the direction of SFWD inspector. RE's estimate of the total volume of dirt to be excavated is 630 cy. Examples of differing conditions encountered are: location of existing water line is different than where it's shown in the plan, existing waterline where shown in the plan to be connected to is inactive, differing condition at 5th/Clementina, connection holes and kill holes need to be expanded due to other utilities in the way. <b>COMPLETE, NO FURTHER ACTION; CMOD #17</b>	CMOD #17 Approved
1250-0030	12/08/10	081-0030	Supplement bid item GE-4 "Allowance for differing site conditions" related to the installation of publicly owned facilities only (sewer, water, AWSS, joint trench)	4	CMB-0030	Agree	04/13/11	+235,595		This change order is to supplement GE-4 for cost overrun related to the installation of publicly owned infrastructure only. GE-4 cost overrun for installation of privately owned infrastructure is being tracked separately and a separate change order will be issued. <b>COMPLETE, NO FURTHER ACTION; CMOD #16</b>	CMOD #16 Approved
1250-0031	12/08/10	081-0031	Unused allowance for bid item GE-8 "Allowance for cast-in-place utility vaults"	4					(38,048)	Bid item GE-8 is an allowance to pay contractor for designing and constructing cast-in-place manholes as required for installation of new systems. Only one CIP vault was installed. <b>Credit amount included in Trend #43</b>	
1250-0032	12/08/10	081-0032	Unused allowance for bid item UD-5 "Handling and disposal of Class I Hazardous Waste"	4					(50,807)	Bid item UD-5 is an allowance to pay contractor for handling and disposal of Class I Hazardous Waste. No class I hazardous waste was off hauled away from the job site. Class I soil found under the I-80 freeway was put back in the trench as backfill. This bid item is expected to remain unused. However, contractor is claiming to recover "General Conditions" cost. <b>Credit amount included in Trend #43</b>	
1250-0033	12/08/10	081-0033	Unused allowance for bid item UD-6 "Transportation of Class I Hazardous Waste"	4					(76,210)	Bid item UD-6 is an allowance to pay contractor for transporting of Class I Hazardous Waste. No class I hazardous waste was off hauled away from the job site. Class I soil found under the I-80 freeway was put back in the trench as backfill. This bid item is expected to remain unused. However, contractor is claiming to recover "General Conditions" cost. <b>Credit amount included in Trend #43</b>	
1250-0034	12/08/10	081-0034	Cost overrun for bid item TR-6 "Allowance for manual traffic control"	4	CMB-0037	Agree	05/04/11	+68,820		Bid item TR-6 is an allowance to pay for off-duty police officers and parking control officers. Contract allowance amount is \$50,000.00. Contract specs calls for police officers at 4 intersections (4th/Howard, 4th/Folsom, 4th/Harrison and 4th/Bryant). The average cost of 1 police officer is about \$800.00 per day (\$100.00 per hour). The \$50,000.00 allowance is only good for 60 days for 1 police officer. Hence, additional money was needed for traffic control support. Final amount paid police officers is \$87,500.00. Additional billings for parking control officers (from Al Herce of DPT) is forthcoming; RE estimated this bill to be about \$60,000.00. <b>COMPLETE, NO FURTHER ACTION; CMOD #18</b>	CMOD #18 Approved
1250-0035	12/08/10	081-0035	Premium cost for requesting contractor to accelerate work on 4th Street between Howard and Folsom	2					+35,000	Due to archaeological discoveries, many trenches remained open and the project would not have enough time to complete installation of underground utilities and restore the roadway before the Holiday season. Without accelerating the work, the project would have had to pay rentals for the barriers, street plates and shoring for the unfinished trenches that would have remained. By accelerating the work and DPT allowing the contractor to work through the beginning of the Holiday Moratorium, the project avoided these rental costs, which is estimated to be greater than the premium cost of accelerating the work. <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20
1250-0036	12/08/10	081-0036	Rental/Maintenance costs for support of Archeological Trenches (Part 1 of 4) \$255,840; Support Work During Archeologist Mitigation Efforts (Part 2 of 4) \$199,741; Mobilization and Equipment Standby Costs (Part 3 of 4) \$67,728; Additional Overhead/Indirect Costs During Archeological Delay Period (Part 4 of 4) \$124,186	2	CMB-0041	Agree	07/13/11 02/15/12 07/25/12 09/12/12	+450,867		Due to archaeological discoveries, contractor may potentially claim for compensation for his equipment that were idle for the duration of the waiting period. RE's estimate is based on Caltrans rate for equipment standby for 5 months (May to October). RE has not received any change order request related to this item. RE to verify if his equipment were indeed idle during this time period. 2/15: Rental/Maintenance Costs for Support (Part 2 of 4); Add Work as Result of Archeological Shutdown (3 of 4). 07/25: Revised mod - compensation for 1 of 3) Rental/Maintenance, 2 of 3) Addl Work result of Archeological support, 3 of 3) Add OH/Indirect cost. RE to add Equipment Standby time to revised mod. 09/12: RE to Prepare Modification 10/29: CMod 20 is being issued as a unilaterally change, by the SFMTA that represents the SFMTA's estimate of a fair and reasonable final compensation amount for the additional work. <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20
1250-0037	12/08/10	081-0037	Compensation for loss of production, inefficiency and disruption of work due to archaeological discovery	2					+100,000	Due to archaeological discoveries, contractor may potentially claim for compensation for loss of production, inefficiency and disruption of work. RE has not received any change order request related to this item. Amount shown is a ROM cost by the RE. RE expects a COR from the contractor but change justification is very unlikely. Initial draft COR was \$898,453. RE has adjusted to \$661,659 removing the month of October and option work. This was then revised to 800,000. There has been no official submittal from Synergy. SFMTA has directed Synergy to submit anything related to the Architectural delays through the claims process. This will be carried in the Potential Claim Log. <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20
1250-0038	03/18/11	081-0038	Project Delay due to archaeological discovery and PG&E Issues.	2					-0	Due to archaeological discoveries compounded with PG&E's ability to perform service switchover to Olivet University and de-energize a live duct bank in conflict with 48" sewer. The project will realize an estimated 6 weeks of non-compensable delay to the substantial completion date of 4/6/11. 47 days estimated by RE. Contractor submitted COR 51 in the amount of \$1,144,776.74 on September 1st, 2011. RE responded requesting additional backup on October 19th, 2011. Subsequently, no additional information has been provided by the contractor, therefore, SFMTA has directed Synergy to submit anything related to the Architectural delays through the claims process. <b>This will be carried in the Potential Claim Log.</b>	

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Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number	
						Approval Action	Approval Date	Actual/Forecast	Potential Change			
1250-0039	05/18/11	081-0039	Remove BP-4 (Waterproofing) from Contract	4						-0	Bid item was not used. Contractor requesting compensation to recover for General Conditions cost. Bid item amount total is \$40,000. <b>NO FURTHER ACTION; Superseded by COR #58. (See 1250-0043 below)</b>	N/A
1250-0040	05/18/11	081-0040	Delete SW-8 (24" Sewer) from Contract	4						-0	Bid item was not used. Contractor requesting compensation to recover for General Conditions cost. Bid item amount total is \$73,117. <b>NO FURTHER ACTION; Superseded by COR #58. (See 1250-0043 below)</b>	N/A
1250-0041	05/18/11	081-0041	Delete UD-5 and UD-6 (Class I Off haul and Handling) from Contract	4						-0	Bid items were not used. Contractor requesting compensation to recover for General Conditions cost. Bid items total amount is \$150,000. <b>NO FURTHER ACTION; Superseded by COR #58. (See 1250-0043 below)</b>	N/A
1250-0042	05/25/11	081-0042	Delete GE-6 (Hazmat) from Contract	4						-0	Bid item was not used. Contractor requesting compensation to recover for General Conditions cost. Bid item amount total is \$100,000. <b>NO FURTHER ACTION; Superseded by COR #58. (See 1250-0043 below)</b>	N/A
1250-9001	10/06/10	081-9001	<del>Utility Companies refusal to contribute to utility support costs and work-around. (Voided. Recorded individually in TR-0059-TR-0061.)</del>	7								VOIDED
1250-0043	08/03/11	081-0043	Unit Rate Adjustment for Entire 1250 Bid Items	4				(203,548)	(203,548)		Pursuant to General Provision GP-11, COR is to adjust contract value to account for fix overhead costs for bid items not performed or where the bid item performed varied by 25%. <b>COMPLETE, NO FURTHER ACTION; CMOD #22</b>	CMOD #22
<b>Contract 1250 Totals</b>								<b>+3,180,500</b>	<b>(54,233)</b>	<b>Of the total cost exposure shown, changes have been absorbed by allocated contingency in the amount of \$2,860,848. Final Contract Closeout Total \$11,968,150</b>		
<b>- Utilities Relocation #2 (UMS)</b>												
1251-0001	03/18/11	082-0001	Modify traffic control plan by establishing a single travel lane on Stockton St. in lieu of time-based multiple lane requirements as stipulated in contract plans TR-001 to 004.	7						-0	After discussions with the Contractor and the Union Square Business Improvement District (BID), the SFMTA determined that modifying the lane requirements along Stockton St. and implementing the alternate pedestrian walkway design would be beneficial to the execution of CN 1251 in the following ways: increased public safety, increase construction production, and create a more pleasing environment to the public and merchant. COR #1 <b>COMPLETE, NO FURTHER ACTION; CMOD #4</b>	CMOD #4 Approved
1251-0002	03/18/11	082-0002	Installation of reinforced concrete slab underneath Joint Trench along Stockton at O'Farrell (East Side). CTL 133+66.37 (27.08 LEFT) to CTL 134+00.87 (27.08 LEFT)	1&3	CMB-0035	Agree	04/20/11	+67,634			Pursuant to a commitment between Barney's and SFMTA, Emergency Stair #4 (to be constructed in CN 1253) must avoid existing subsided basement. It was determined that moving the conflicting stairs would require the Joint Trench to be constructed in a manner that would enable it to span the excavated area. The addition of the invert slab allowed for the needed span thereby allowing for a relocation of Emergency Stair #4. COR #4; PCC #1 <b>COMPLETE, NO FURTHER ACTION; CMOD #2</b>	CMOD #2 Approved
1251-0003	03/18/11	082-0003	Adjust placement of 3EA manholes along Geary Street and O'Farrell Street. The modified manhole locations require the installation of approximately 265LF of additional HDPE pipe inside the existing 3'x5' brick sewer.	1	CMB-0029	Agree	02/23/11	+148,919			During future station construction, the design team anticipates that excavation related settlement may cause damage to the brick sewers along Geary and O'Farrell Streets. This proposed modification will replace the vulnerable brick sewer within the influence zone with HDPE pipe that will not be as susceptible to settlement-induced damage. COR #9, PCC #2 <b>COMPLETE, NO FURTHER ACTION; CMOD #1</b>	CMOD #1 Approved
1251-0004	04/06/11	082-0004	Changes to Neiman Marcus secondary enclosure wall due to various differing site conditions.	2	CMB-0031	Agree	04/13/11	+189,584			Due to various, differing site conditions as described in RFIs 15, 37, 38 and 44, changes to the secondary enclosure wall are required. The existing footing were found to be inconsistent, i.e. missing footing in one area, footing sticks out beyond existing wall, overpour on existing footing, existing wall to be 6" into private property. Contract plan SR-302 shows a consistent footing. COR #8 <b>COMPLETE, NO FURTHER ACTION; CMOD #3</b>	CMOD #3 Approved
1251-0005	04/06/11	082-0005	Existing PG&E conduits were found on top and parallel to existing AWSS on Geary Blvd. at 2 locations (east and west of Stockton)	6						+66,084	Contract plans AW-501.1, 501.2, 501.4 and 501.4 show the existing AWSS to be replaced in place. However, existing PG&E conduits were found to be on top and parallel to the existing AWSS resulting in extra work in working around and/or shifting the existing electrical conduits. Contract plans JT-308 and 309 showed the existing electrical and AWSS to be separate. Estimate includes \$77,892.53 (Synergy FA Request) + \$25,000 (first digging west side) + \$10,000 (temp backfill during moratorium) + \$15,000 (plate rental west side at \$5k per month). Estimate does not include Synergy's cost to sequence his work. Updated projected cost impact from \$50,000 to \$127,893 based on compilation of force accounts received. RE negotiating <b>COMPLETE, NO FURTHER ACTION</b>	CMOD #24
1251-0006	04/20/11	082-0006	Design changes to utilities on Stockton street between Post and Geary	1	CMB-0039	Agree	06/08/11	+398,624			Due to changes to the limits of the UMS Station on Stockton Street between Post and Geary, the original utility design has changed. COR #24, PCC #4 <b>COMPLETE, NO FURTHER ACTION; CMOD #5</b>	CMOD #5 Approved

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1251-0007	04/20/11	082-0007	Design changes to utilities on Ellis Street	1	CMB-0049	Agree	08/24/11	(434,957)		Due to changes to the limits of the UMS Station on Ellis street, the original utility design has changed. RE has not determined cost impact. PCC #5 <b>COMPLETE, NO FURTHER ACTION; CMOD #5</b>	CMOD #5 Approved
1251-0008	04/20/11	082-0008	Elimination of underpinning at 150 Stockton	1						Based on field verification, it was determined that underpinning is no longer needed. Contract bid item SR-9 is for a total amount of \$116,000 measured by LF. However, CM team does not anticipate to recover the full amount because contractor may be entitled to retain general conditions cost and some excavation cost that was already performed but encumbered in Bid Item SR-9. Agreed credit of (\$58,000) to be included in Trend #60. <b>CLOSED, NO FURTHER ACTION</b>	
1251-0009	04/20/11	082-0009	Additional cost for police officers and/or Parking Control Officers for traffic control.	4	CMB-0038	Agree	06/01/11	+261,584		Contract bid item TR-7 for manual traffic control in the amount of \$120,000 is insufficient to control traffic for the duration of the contract. The \$120,000 allowance only equates to one police officer for a duration of 7.5 months. At a minimum, it is anticipated that one police officer or PCO will be needed at Stockton/Post for the entire contract duration of 16 months. Additionally, one PCO is required for each intersection at Geary/Stockton and O'Farrell/Stockton. <b>COMPLETE, NO FURTHER ACTION; CMOD #4</b>	CMOD #4 Approved
1251-0010	05/25/11	082-0010	Accelerate Stockton east between O'Farrell and Market	1				+27,409		Contractor needed to rent additional excavators to work concurrently with the other block on Stockton between O'Farrell and Market. Amount: \$27,409; COR #25 <b>COMPLETE, NO FURTHER ACTION; CMOD #3</b>	CMOD #3 Approved
1251-0011	06/22/11	082-0011	Potholing at 4th/Howard for PUC sewer design	1						Request from MOS utility design team to pothole for the intercept of a 36" force main sewer and 96" sewer. PUC requested that this be done in order to ensure that we have accurate utility information to avoid costly change orders during construction. Per direction from CMB on January 18, 2012, this request is denied. COR #50, PCC #6 <b>CLOSED, NO FURTHER ACTION: Per direction from CMB on January 18, 2012, this request is denied.</b>	
1251-0012	07/06/11	082-0012	Additional cost to lower the AWSS at O'Farrell, east of Stockton, due to numerous existing utility conflicts.	2	CMB-0042, CMB-0050	Agree	8/3/2011, 9/21/2011	+278,351		The AWSS is in conflict with AT&T, PG&E and several other utilities and needs to be installed under all these utilities at about 11' deep (instead of 6' depth as noted in Plan AW-501.4, sheet note #5). During negotiations with the Contractor several items of work were found to be missing for the original cost estimates which increase the amount to \$278,351. RFI #76, COR #31 <b>COMPLETE, NO FURTHER ACTION; CMOD #6</b>	CMOD #6 Approved
1251-0013	07/06/11	082-0013	Accelerate start of construction in front of Macys West by trenchless construction method	7				-0-		Micropile installation on Stockton east between O'Farrell and Market has proven to be much slower than anticipated. To mitigate this potential delay, contractor requested to start construction in front of Macys West. COR 32 <b>COMPLETE, NO FURTHER ACTION; CMOD #3</b>	CMOD #3 Approved
1251-0014	07/21/11	082-0014	Increase in Bid Item WD-10, Allowance for Additional Excavation and Backfill.	3	CMB-0055	Agree	09/14/11	+191,779		This allowance is for the contractor to perform additional excavation, backfilling and restoration associated with the water tie-ins and capping for the distribution piping system. The contractor has performed two water service tie-ins at an average cost of \$14,000 per tie-in. The current number of tie-ins and capping is 35 separate points. This amounts to a total cost of \$490,000. The current contract allowance amount is \$100,000, therefore an additional \$390,000 will be needed to augment it bid item. CMB made a partial approve of up to \$200K. The initial Contract Modification to supplement this allowance is in the amount of \$191,778.62. <b>RE's cost analysis of this trend confirms that the initial CMod amount of \$191,778.62 is sufficient to cover for all water tie-in/capping work.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #9</b>	CMOD #9 Approved
1251-0015	08/03/11	082-0015	Additional traffic signal work at Post/Stockton	1				+17,530		Modification of the traffic signal at Post/Stockton is required to implement the detour shown in contract plan TR-010. There are no bid item to bill this work. COR #19 <b>COMPLETE, NO FURTHER ACTION; CMOD #8</b>	CMOD #8 Approved
1251-0016	08/03/11	082-0016	Additional traffic signal work at Sutter/Mason	2				+32,054		Existing conduits shown in Plan ET-101 differs from what is actually in the field. City's response to RFI 73 directs contractor to install new conduits and conductors. RFI #73, COR #33 <b>COMPLETE, NO FURTHER ACTION; CMOD #8</b>	CMOD #8 Approved
1251-0017	08/03/11	082-0017	Furnish and install AT&T Manhole 5830 on O'Farrell Street	6	CMB-0051	Agree	09/21/11	+25,000		AT&T was supposed to hire its own subcontractor to furnish and install all AT&T vaults in CN 1251. AT&T requested SFMTA for Synergy to perform this work as change order to CN 1251. <b>AT&amp;T agreed to reimburse SFMTA through the Form B process.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #7</b>	CMOD #7 Approved
1251-0018	08/03/11	082-0018	Furnish and install AT&T Manhole 5829 on Geary Blvd.	6	CMB-0051	Agree	09/21/11	+31,000		AT&T was supposed to hire its own subcontractor to furnish and install all AT&T vaults in CN 1251. AT&T requested SFMTA for Synergy to perform this work as change order to CN 1251. <b>AT&amp;T agreed to reimburse SFMTA through the Form B process.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #7</b>	CMOD #7 Approved

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1251-0019	08/03/11	082-0019	Extend joint trench and modify existing AT&T Manhole 403 on Ellis Street.	6	CMB-0057	Agree	10/26/11	+31,000		AT&T was supposed to furnish and install AT&T vault #5833 on Ellis Street. The current design was to intercept the existing AT&T conduit in the middle of Ellis Street. It was discovered that the existing AT&T conduit actually run adjacent to the southern curb line along Ellis Street. Therefore, AT&T requested SFMTA for Synergy to extend the joint trench approximately 200 feet to the West and tie into their existing AT&T vault #403. This work will also require Synergy to enlarge vault #403 to accept the additional conduit. <b>This additional work for AT&amp;T will need to be reimbursed to SFMTA through the Form B process.</b> Note: The agreed amount (\$31,000.00) is for enlargement of vault #403 only; the additional 200 feet of trench to be captured in the JT bid items. (See Trend 60) COR #43 <b>COMPLETE, NO FURTHER ACTION; CMOD #11</b>	CMOD #11 Approved
1251-0020	09/07/11	082-0020	Change PG&E conduit material from PVC to GRS on west side of Stockton between Geary and Post	6	CMB-0058	Agree	11/02/11		+19,537	PG&E requested to use GRS material in lieu of PVC in areas where PG&E conduits were expected to be exposed and temporary supported during future UMS station construction. <b>PG&amp;E agreed to reimburse SFMTA through the Form B process.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #21</b>	CMOD #21
1251-0021	09/07/11	082-0021	Revise PG&E service points and layout of primary lines at various locations, and delete Muni Vault 1850 A at Stockton/Ellis.	6						PG&E made changes to the locations of the service points and layout of some of the primary lines. In addition, due to changes to the limits of the UMS Station on Ellis Street, it was determined that Muni Vault 1850A is no longer needed. Cost for this trend in captured in Trend #31 or CMod #12. <b>CLOSED; NO FURTHER ACTION. Cost for this trend is captured in Trend #31/CMOD #12</b>	
1251-0022	09/07/11	082-0022	Change OCS supports at SF Hilton Hotel on Mason Street from embedded eyebolts to poles w/foundations.	7						During the design phase the representatives of the Hilton Hotel agreed to and signed a license agreement with the SFMTA to allow embedded eyebolt supports. Hilton's Dir of Property Ops now wants to have OCS poles rather than the embedded building eyebolt supports. However, the OCS designer was able to revise the OCS design to eliminate the need for either eyebolts or poles in front of Hilton Hotel, resulting in a \$2,000 credit. <b>CLOSED; NO FURTHER ACTION. Applicable bid items to be adjusted accordingly. See Trend #60.</b>	
1251-0023	09/07/11	082-0023	4th Street & Folsom Trolley Bypass	1	CMB-0065	Agree	1/25/2012, 2/29/12	+405,440		SFMTA Operations has requested a bypass be installed at 4th Street and Folsom Street. \$242,619 in labor costs for OCS installation has not been negotiated yet. 1/25: Condition agreed upon verification material from Contractor to be procured is available. (Verified 02/01/12). 02/29: CMod negotiated cost has been revised to incorporate original three items and the add'l OCS work on Folsom St. COR #52; PCC #7 <b>Updated projected cost impact from \$490,000 to \$405,440. CMod #12 (Formally CMod #15)</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #12</b>	CMOD #12 Approved
1251-0024	09/07/11	082-0024	Install a 5" slurry wall between the gas line and wet utilities if the separation is less than 3 feet	6	CMB-0059	Agree	11/16/2011, 05/02/12		+201,410	As a new requirement, PG&E had requested that a 5" slurry wall be installed between the gas line and wet utilities where the separation between the 2 utilities is less than 3 feet. <b>PG&amp;E agreed to reimburse SFMTA through the Form B process.</b> COR #69; Engineer's Estimate \$146,018 <b>COMPLETE, NO FURTHER ACTION; CMOD #19</b>	CMOD #19
1251-0025	09/07/11	082-0025	Additional PG&E conduit crossings at Geary and O'Farrell to minimize service interruption during future UMS Station construction	6						PG&E requested to install additional conduits crossing Stockton Street at Geary and O'Farrell to minimize service interruption during future UMS Station construction. PG&E agreed to reimburse SFMTA through the Form B process. This item is captured under applicable JT Bid item, see Trend 60. <b>CLOSED; NO FURTHER ACTION. Item is captured under applicable JT Bid item, See Trend 60.</b>	
1251-0026	09/14/11	082-0026	Install cantilever footing in lieu of regular OCS foundation at 2 locations on Mason Street between Geary and O'Farrell	2						The sub-basement in the public parking garage at O'Farrell/Mason extends beyond the property line up to the curb line. Therefore, regular foundations as per original design could not be installed. <b>CLOSED; NO FURTHER ACTION. Item is captured under applicable OCS Bid item, See Trend 60.</b>	
1251-0027	09/20/11	082-0027	Accelerate installation of AT&T facilities in order for AT&T to start cut-over sooner	1	CMB-0056	Agree	11/30/11	+281,435		Acceleration is necessary to avoid potential delay impacts to Central Subway follow-on contracts. COR #40 <b>COMPLETE, NO FURTHER ACTION; CMOD #10</b>	CMOD #10 Approved
1251-0028	10/18/11	082-0028	Furnish and install AT&T Manholes 5828 (Stockton), 5831 (Geary), 5832 (O'Farrell) and 113 (O'Farrell)	6	CMB-0057	Agree	10/26/11	+157,000		AT&T was supposed to hire its own subcontractor to furnish and install all AT&T vaults in CN 1251. AT&T requested SFMTA for Synergy to perform this work as change order to CN 1251. <b>AT&amp;T agreed to reimburse SFMTA through the Form B process.</b> COR #43 <b>COMPLETE, NO FURTHER ACTION; CMOD #11</b>	CMOD #11 Approved
1251-0029	10/26/11	082-0029	Rebuild existing AT&T vault 133 at Post/Stockton and demolish existing AT&T vaults 403 (Ellis) and 113 (O'Farrell)	6						Vault 133 rebuild is superseded by Trend 40. Demolition of existing vaults 403 and 113 is superseded by Trend 43 <b>CLOSED; NO FURTHER ACTION. Demo of existing vaults 403 and 113 are superseded by Trend 43. (See CMOD #23)</b>	
1251-0030	10/26/11	082-0030	Enlarge existing PG&E vault 873 at SW Geary/Stockton	6	CMB-0058	Agree	11/02/11		+46,366	PG&E asked SFMTA to enlarge vault 873. <b>PG&amp;E agreed to reimburse SFMTA through the Form B process.</b> CMB approved a NTE amount of \$40K <b>COMPLETE, NO FURTHER ACTION; CMOD #21</b>	CMOD #21

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1251-0031	10/26/11	082-0031	Additional PG&E conduits crossing O'Farrell on east side of Stockton (Task Order #32)	6	CMB-0058	Agree	11/02/11		+17,193	PG&E asked SFMTA to install additional conduits. PG&E agreed to reimburse SFMTA through the Form B process. COMPLETE, NO FURTHER ACTION; CMOD #21	CMOD #21
1251-0032	11/08/11	082-0032	Excavation and restoration cost for PG&E gas tie-in and kill holes.	6	CMB-0059	Agree	11/16/2011, 05/02/12		+92,292	PG&E gas drawings were not included in the bid package and there was no bid item to capture this work. Gas drawings was issued by PG&E in June 2011. PG&E agreed to reimburse SFMTA through the Form B process. Updated projected cost impact from \$202,400 to \$169,087 due to reduction in number of kill holes from 18 to 15. 04/11: Discovery of actual number of Kill/Tie locations being 25 instead of 15 will require confirmation from PG&E of the locations and the new cost of scope of work. COMPLETE, NO FURTHER ACTION; CMOD #19	CMOD #19
1251-0033	11/23/11	082-0033	Install secondary enclosure wall at One Stockton (Apple Store)	1	CMB-0068	Agree	03/07/12	+408,700		Additional enclosure wall is design initiated change. COR #47, PCC #9 Updated projected cost impact from \$262,484 to \$408,700. 39 Calendar Day Time Extension COMPLETE, NO FURTHER ACTION; CMOD #13 (formally CMOD #14)	CMOD #13
1251-0034	01/10/12	082-0034	Install temporary support as required to protect existing live utilities that are encroaching into the City right-of-way in front of 17-25 Stockton Street.	2	CMB-0069	Agree	04/04/12		+337,548	Existing utilities that are in active service were discovered in the City public right-of-way and are obstructing the performance of Contract work. Worst case scenario - "Not to Exceed" value) CM team will report actual amount value at a later date COR #71 CMB agreed to a Not-to-Exceed amount of \$346,456 on 4/4/12. All physical work was scheduled to complete by 4/13/12 COMPLETE, NO FURTHER ACTION; CMOD #17	CMOD #17
1251-0035	01/11/12	082-0035	Potholing on Stockton between Post and Geary for UMS Station design	1						UMS Design Team requested 1251 to pothole (6'Wx12'Lx8'D) on Stockton between Post and Geary to locate existing piles and tie-backs at Union Square. Cost for this scope of work from the Contractor is \$19,870.73. Per direction from the CMB on Jan 18th this request is denied and the DP2 designer will cover this potential future obstruction with a note on the drawings. COR #53 CLOSED; NO FURTHER ACTION. Per direction of CMB on 1/18/12, this request is denied and DP2 Designer will cover this potential future obstruction with a note on the drawings.	
1251-0036	01/11/12	082-0036	Install three 6" PG&E conduits from vault 5800 to PG&E "A" pullbox at 4th/Bryant.	6						CN 1252 Contract is requesting 1251 to install PG&E conduits in order to bring power in advance of the tunnel equipment arrival. The scope of work, which involves trenching at the busy 4th/Bryant intersection, was part of the 1252 contract, hence, a credit of same amount (\$54,892.07) to be due back to 1252. Based upon a field meeting and discussions with BIH on Jan 17th this work will be done under CN 1252 as originally planned. COR #55 CLOSED; NO FURTHER ACTION. Based on field meeting with BIH on 1/17/12; this work will be completed under CN 1252 as planned.	
1251-0037	01/17/12	082-0037	Install sewer lateral from the Gucci building (240 Stockton) to the main sewer on Maiden Lane. Work will involve plumbing modification inside building to raise invert.	3	CMB-0078	Agree	09/12/12		+27,428	After field investigation, the existing sewer lateral was found to connect to the Stockton main near Geary. However, the location where the lateral is connected to the main is inside the footprint of the UMS station, in which the main is shown in the contract plan to be slurry filled. The contract plan shows the lateral to be connected to the main on Maiden Lane but is not possible due to invert problem. At the CMB meeting on 1/18/12, Albert Hoe reported that he had instructed the design team during the design phase to investigate this lateral and make the connection to the sewer main at Maiden Lane. RE was asked to investigate if this could be a possible error and omission by the sewer design. (See Trends #44 and 45) COMPLETE, NO FURTHER ACTION; CMOD #18	CMOD #18
1251-0038	01/04/12	082-0038	Reimburse Synergy for JCDecaux work to remove kiosks	1	CMB-0064, CMB 0080	Agree	1/04/2012, 10/24/12		+29,272	JCDecaux refused to remove the remaining (2EA) kiosks without being paid for work already completed. The CMB approved on 1/04/12 Task Order No. 35 (Removal of 3EA sidewalk kiosks) as requested for the work already completed. On 10/24/12 the CMB approved Trend #38 removal of the remaining 2EA kiosks; work already completed and paid for as part of the approved CMB 0064 dated 01/04/12 for a total of 5EA kiosks removed. Total work priced at \$29,268. COMPLETE, NO FURTHER ACTION; CMOD #22	
1251-0039	01/17/12	082-0039	Furnish and install 2ea benches along 5th Street	1					+4,751	Requested by Muni Operation. COMPLETE, NO FURTHER ACTION; CMOD #22	
1251-0040	02/15/12	082-0040	Furnish and install AT&T Manholes 133 at Post/Stockton	6	CMB-0070	Agree	04/11/12	+45,000		AT&T requested SFMTA for Synergy to rebuild manhole 133 at Post/Stockton. COR #64 AT&T agreed to reimburse SFMTA through the Form B process. COMPLETE, NO FURTHER ACTION; CMOD #14	CMOD #14
1251-0041	02/15/12	082-0041	Install additional 55 LF of AT&T trench to extend conduits from vault 5832 to vault 113 on O'Farrell Street	6	CMB-0070	Agree	04/11/12	+23,704		AT&T requested SFMTA for Synergy to extend their conduit from vault to vault instead of wye-casting into existing duct bank. COR #63 AT&T agreed to reimburse SFMTA through the Form B process. COMPLETE, NO FURTHER ACTION; CMOD #14	CMOD #14

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1251-0042	02/15/12	082-0042	Install additional 95 LF of AT&T trench to extend conduits from vault 5831 to vault 129 on Geary Blvd.	6	CMB-0070	Agree	04/11/12	+31,525		AT&T requested SFMTA for Synergy to extend their conduit from vault to vault instead of wye-casting into exiting duct bank. AT&T agreed to reimburse SFMTA through the Form B process. COR #62 COMPLETE, NO FURTHER ACTION; CMOD #14	CMOD #14
1251-0043	02/15/12	082-0043	Force account work for demolition of existing AT&T vaults 113 (Post/Stockton) and 403 (Ellis)	6	CMB-0076	Agree Conditionally	10/03/12	+52,607		Agreed cost shown in Trends 29 and 40 is for installing vaults only. Cost to demo existing vaults is tracked on force account (estimated cost at \$15k each vault). AT&T agreed to reimburse SFMTA through the Form B process. CMB Agreed contingent on receipt of confirmation letter from AT&T for costs associated with these three trends (CMB 0076 approval - see Trend CN12511 #'s 72 & 80) COMPLETE, NO FURTHER ACTION; CMOD #23	CMOD #23
1251-0044	02/15/12	082-0044	Install new sewer lateral from Macys West on O'Farrell including plumbing modification inside Macy's building.	3	CMB-0078	Agree	09/12/12	+11,438		Contract plan SW-4 shows an existing lateral to be connected to new main. However, the 8" lateral is too big to be connected directly to the new 14" main necessitating a new connection to the manhole. However, numerous existing utilities were in the way and required installation of a new lateral at a higher elevation. Due to the raised lateral invert, modification to the building is also needed. COMPLETE, NO FURTHER ACTION; CMOD #18	CMOD #18
1251-0045	02/15/12	082-0045	Install new 2 each sewer laterals on Stockton between Post and Geary	3	CMB-0078	Agree	09/12/12	+30,260		Contract plan SW-3 shows 2 each existing laterals coming from the Union Square garage to be connected to the new main at approximate sta 128+55. However, the laterals were found to be connected to the downstream end of the existing main (toward Geary), which is called for to be abandoned in 1251 to make room for the future station. (See Trends #37 and 44) COMPLETE, NO FURTHER ACTION; CMOD #18	CMOD #18
1251-0046	03/06/12	082-0046	Additional cost for enlarging PG&E vault 584 on O'Farrell east of Stockton	6				+80,000		The two (2) existing PG&E duct banks that were supposed to be intercepted by vault 584 were wider than shown on plan. Vault 584 was needed to be enlarged in order to capture the two (2) ductbanks. PG&E agreed to reimburse SFMTA through the Form B process. COMPLETE, NO FURTHER ACTION; CMOD #24	CMOD #24
1251-0047	04/10/12	082-0047	Enlarge Muni Vault 900A on Stockton between Post and Geary	2	CMB-0082	Agree	10/31/12	+15,358		Contract plan JT-301 calls for an intercept vault to capture 2 (E) Muni ductbanks (DB). These DBs were found to be farther apart than shown on plan. The intercept vault needs to be widened. RE awaiting COR (CMB 0082 approval - see Trend CN1251#'s 47, 58 & 78) COMPLETE, NO FURTHER ACTION; CMOD #26	CMOD #26
1251-0048	04/10/12	082-0048	Additional cost and time for stuck auger during micropile drilling	2						Contractor's hollow stem auger got stuck during drilling of micropile #27C in front of 17 Stockton. Contractor claims differing condition as cause for the stuck auger. Contractor is asking for 1 day compensable time extension. SFMTA is reviewing claim for entitlement. COR #67 RE Denied COR (City Letter 26); however Contractor will most likely send rebuttal. CLOSED; NO FURTHER ACTION.	
1251-0049	04/10/12	082-0049	Additional cost and time for added rebar and coordination with 17-19 Stockton Owner's contractor	2	CMB-0083	Agree	11/07/12	+9,058		Existing footing of One Stockton was found to be recessed from property line. City's response to RFI 171 called for additional rebar to compensate for the gap between back of new enclosure wall and existing footing. Also, the Owner's contractor of 17-19 Stockton asked that Synergy clear his work area so he can pour the primary wall and bring in his new switchgear. Synergy is asking 2 days compensable time extension. (CMB 0083 approval - see Trend CN1251#'s 53, 59, and 64) COMPLETE, NO FURTHER ACTION	
1251-0050	04/10/12	082-0050	Additional cost to install a Type 770 pole foundation at a different location, install 2 each DPT mast arms and demo existing wall in conflict with OCS footing	2	CMB-0074	Agree	08/15/12	+48,898		Type 770 pole foundation at SW 5th/Folsom could not be installed per plan due to a conflict with a cistern. Only solution is to remove an existing pole foundation (recently installed in 1251 as contract work) to make room for the 770 pole foundation. At 5th/Folsom, 2 DPT mast arms (not shown in original plan) need to be installed. At Pole #811, an existing concrete wall is in conflict with pole foundation. RE preparing modification (CMB 0074 approval - see Trend CN1251 #'s 67, 74 & 75) COMPLETE, NO FURTHER ACTION; CMOD #20	CMOD #20
1251-0051	04/10/12	082-0051	Intercept existing PG&E duct bank and terminate into vault 5464 at Market/Ellis	6				+23,633		PG&E requested to reroute existing duct bank running north out of MH 1803 at 4th/Pioneer Place into MH 5464 at Market/Ellis COMPLETE, NO FURTHER ACTION; CMOD #24	CMOD #24
1251-0052	04/10/12	082-0052	Reroute unforeseen existing waterline on Geary east of Stockton	2	CMB-079	Agree	10/10/12	+27,233		An unforeseen existing waterline was found to be in conflict with PG&E vault 573 and needs to be rerouted per City's response to RFI #182. RE awaiting COR (CMB 0079 approval - see Trend CN1251 #'s 65 & 70). This is potentially E&O issue due to unforeseen existing waterline on discovered along Geary Street (east of Stockton Street) not shown in the contract drawings. COMPLETE, NO FURTHER ACTION; CMOD #28	CMOD #28
1251-0053	04/10/12	082-0053	Additional cost for premium to accelerate contract work	1	CMB-083	Agree	11/07/12	+10,590		SFMTA directed Synergy to accelerate work to advance PG&E and AT&T cut-over and allow CN 1252 Contractor to start work at UMS COR #74 PG&E agreed to reimburse SFMTA through the Form B process. 11/07/12 (CMB 0083 approval - see Trend CN1251#'s 49, 59, and 64) COMPLETE, NO FURTHER ACTION; CMOD #27	CMOD #27

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**CENTRAL SUBWAY PROJECT**  
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Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
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1251-0054	04/17/12	082-0054	Additional waterproofing at FIDM and north end of Crate & Barrel	2					+8,151	Sidewalk in front of FIDM and north end of Crate & Barrel did not have a sub-sidewalk basement, hence the original plan did not call for waterproofing of the primary wall. While excavating for the joint trench, contractor found the existing waterproofing to be spalling and peeling off from the primary wall. COR #72 <b>COMPLETE, NO FURTHER ACTION; CMOD #22</b>	CMOD #22
1251-0055	04/17/12	082-0055	Install Swiveloc lids on all PG&E vaults	6					-0	PG&E requested SFMTA to add this scope to the 1251 contract for safety reason. COR #72 SFMTA decided to defer this work to the 1252 contract. <b>COMPLETE, NO FURTHER ACTION; CMOD #24</b>	CMOD #24
1251-0056	05/31/12	082-0056	Additional work on force account related to sewer installation	2					+45,156	Additional work due to unforeseen and differing conditions during installation of sewer. <b>COMPLETE, NO FURTHER ACTION; CMOD #15</b>	CMOD #15
1251-0057	05/31/12	082-0057	Additional work on force account related to water installation and NRG vault demolition	2					+39,599	Additional work due to unforeseen and differing conditions during installation of water and demolish existing NRG vaults that are in conflict with utility installation. <b>COMPLETE, NO FURTHER ACTION; CMOD #16</b>	CMOD #16
1251-0058	05/31/12	082-0058	Additional streetlight conduit on 5th Street between Harrison and Bryant	2	CMB-0083	Agree	10/31/12		+17,754	The existing streetlight pullboxes new cables were supposed to be connected to per contract plan did not have power. New conduit needs to be install from the power source. COR #75 RE to review COR CMB 0082 approval - see Trend CN1251 #'s 47, 76 & 78) <b>COMPLETE, NO FURTHER ACTION; CMOD #25</b>	CMOD #25
1251-0059	06/26/12	082-0059	Accelerate contract work at Barney's front	1	CMB-0083	Agree	11/07/12		+16,948	As a result of numerous meetings and complaints by Barneys, it was decided to accelerate contract work in order to restore Barneys sidewalk earlier CMB 0083 approval - see Trend CN1251#'s 53, 49, and 64) <b>COMPLETE, NO FURTHER ACTION; CMOD #27</b>	CMOD #27
1251-0060	06/26/12	082-0060	Final Bid Item Reconciliation	4					(508,961)	Bid item analysis for entire contract as of 6/12/12.	
1251-0061	06/26/12	082-0061	Excavate for PG&E cutover at 177 Stillman	6					+7,424	PG&E requested Synergy to excavate for PG&E cutover at 177 Stillman. Reference document: Email from Michael Lightstone dated 12/9/11 PG&E agreed to reimburse SFMTA through the Form B process. <b>COMPLETE, NO FURTHER ACTION; CMOD #24</b>	CMOD #24
1251-0062		082-0062	Additional waterproofing at Macys Men's wall	2					+24,774	Contract did not call for waterproofing at Macys Men's wall. However, when contractor dug for the joint trench, it was found that the existing waterproofing has deteriorated and needed to be replaced. COR# 20 <b>COMPLETE, NO FURTHER ACTION; CMOD #22</b>	CMOD #22
1251-0063		082-0063	Excavation and restoration cost for PG&E gas tie-in and kill holes. Part II	6					+56,458	After completion of Part I (see trend 32), PG&E had offered to self-perform the excavation and restoration of the gas tie-in/kill holes because PG&E had crews available to perform the work. However, PG&E no longer have available crews, hence Synergy had to continue and finish excavating and restoring the last tie-in/kill holes. PG&E agreed to reimburse SFMTA through the Form B process. <b>COMPLETE, NO FURTHER ACTION; CMOD #24</b>	CMOD #24
1251-0064		082-0064	Accelerate finish and detail work of AT&T and PG&E vaults	1	CMB-0083	Agree	11/07/12		+4,704	In order to expedite turn-over of AT&T and PG&E vaults, SFMTA directed Synergy to accelerate the detailing and finish work of these vaults. SFMTA will pay Synergy premium cost for OT hours. 11/07/12 (CMB 0083 approval - see Trend CN1251#'s 53, 59, and 49) <b>COMPLETE, NO FURTHER ACTION; CMod #27</b>	CMOD #27
1251-0065		082-0065	Additional fittings for AWSS lateral and chipping of pole foundation at Market/Ellis	2	CMB-0079	Agree	10/10/12		+20,412	An existing Muni pole foundation is in the way of the AWSS lateral. Additional fittings are required to complete contract work. RE awaiting COR CMB 0079 approval - see Trend CN1251 #'s 52 & 70) <b>This is potentially an E &amp; O issue due to an existing Muni pole foundation is in the way of the AWSS lateral.</b> <b>COMPLETE, NO FURTHER ACTION; CMOD #28</b>	CMOD #28
1251-0066		082-0066	Intercept PG&E conduits at Vault 573 at Geary east of Stockton	6					+6,466	During installation of PG&E intercept vault 573, PG&E had incorrectly identified the conduits to be intercepted. This error was discovered during cut-over process by PG&E. PG&E agreed to reimburse SFMTA through the Form B process. <b>COMPLETE, NO FURTHER ACTION; CMOD #24</b>	CMOD #24
1251-0067		082-0067	Additional feeder span, no-bo insulator and adjustment of guywire for the Folsom OCS bypass	3	CMB-0074	Agree	08/15/12		+32,149	power the new OCS necessitating installation of feeder spans. Also, adjustments to the guywire are necessary to mitigate conflict with new signal mast arms. COR #76 RE presented COR to CMB 7/25; direction given to develop one CMod with all remaining items to be purchased for the new OCS bypass. RE to prepare modification (CMB 0074 approval - see Trend CN1251 #'s 50, 74 & 75) <b>COMPLETE, NO FURTHER ACTION; CMOD #20</b>	CMOD #20

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

2/15/2013

Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
						Approval Action	Approval Date	Actual/Forecast	Potential Change		
1251-0068		082-0068	Extended Overhead cost from July 19, 2012 to August 16, 2012	1	CMB-0075	Agree Conditionally	10/03/12		+106,967	Contract is expected to be extended beyond the approved July 18, 2012 completion due to the following reasons: contractor was slowed due to accommodation of AT&T and PG&E cut-over, for example, contractor has to provide windows of time for AT&T to occupy its work space to provide continuity and efficiency for AT&T cut-over, contractor has to advance cleaning and detailing of vaults to turnover to AT&T and PG&E, these work are typically done as punchlist, contractor now has to sequence work and reallocate resources; SFWD cut-over is taking longer than expected; PG&E gas cut-over was delayed due to inability to access Armani building, this delay held up completion of sewer MH, SFWD connection and restoration on O'Farrell east; added change order work, i.e. additional PG&E conduit at vault 573 and additional excavation for AT&T cut-over at 240 Stockton. CMB Agreed contingent on receipt of letter confirming e-mail as presented in the meeting and content viewed related to agreement and remaining actions and release of funds. COMPLETE, NO FURTHER ACTION; CMOD #24	CMOD #24
1251-0069		082-0069	Removal of abandoned PG&E gas valve (8each) and install anodes	6					+4,737	PG&E asked Synergy to remove all abandoned gas valves (8each) PG&E agreed to reimburse SFMTA through the Form B process. COMPLETE, NO FURTHER ACTION; CMOD #24	CMOD #24
1251-0070		082-0070	Core drill primary wall and install interior plumbing at Armani and Disney for the fire service water cutover	2	CMB-0079	Agree	10/10/12		+14,033	Existing fire service inside the building is a thin-wall steel pipe that extends out to the previously existing sidewalk basement. However, 1251 had backfilled the sidewalk basement per contract, which now made the steel pipe susceptible to corrosion. SFWD does not want to tie-in to the steel pipe due to corrosion issue plus the fact that the pipe is thin walled, which makes welding almost impossible. A ductile iron pipe needs to be installed from the main and into the building. COR #77  (CMB 0079 approval - see Trend CN1251 #'s 52 & 65) COMPLETE, NO FURTHER ACTION; CMOD #28	CMOD #28
1251-0071		082-0071	Install a new 8" backflow preventer for the fire service inside Macys Men's building	6					-0	The new water main (installed in the 1251 Contract) is closer to the property line than the existing backflow preventer. State law stipulates that a backflow preventer be installed in between the property's fire suppression system and the water main. The SFWD refuses to make this connection until a proper backflow preventer is installed. SFMTA will insist on Macys to install its own backflow preventer. CLOSED; NO FURTHER ACTION.	
1251-0072	08/08/12	082-0072	Additional AT&T trench from new vault 5829 to existing vault 127 on Geary east of Stockton	6	CMB-0076	Agree Conditionally	10/03/12		+23,993	AT&T requested new conduits to maintain continuity between the 2 vaults. AT&T agreed to reimburse SFMTA through the Form B process. RE Tracking work on FAR CMB Agreed contingent on receipt of confirmation letter from AT&T for costs associated with these three trends RE to prepare modification (CMB 0076 approval - see Trend CN1251 #'s 43 & 80) COMPLETE, NO FURTHER ACTION; CMOD #14	CMOD #14
1251-0073	08/08/12	082-0073	Additional work to install water and electrical utilities for Flower Stand on Geary west of Stockton	1					+17,966	Contract bid allowance for providing utility services for flower stands (UD-14) had been exhausted during relocation of 2 flower stands. A third and final flower stand is still needed to be relocated. RE to prepare mod COMPLETE, NO FURTHER ACTION; CMOD #22	CMOD #22
1251-0074	08/08/12	082-0074	Traffic Signal modification at 5th/Folsom	1	CMB-0074	Agree	08/15/12		+16,429	Due to installation of OCS bypass on Folsom between 4th and 5th Streets, a left turn signal is required at 5th/Folsom. Additional signal heads and modification to the existing traffic signal is necessary. RE Tracking work on FAR RE to prepare modification (CMB 0074 approval - see Trend CN1251 #'s 50, 67, & 75 also). COMPLETE, NO FURTHER ACTION; CMOD #20	CMOD #20
1251-0075	08/08/12	082-0075	Unforeseen conditions related to pole foundation installation for the Folsom OCS Bypass	2	CMB-0074	Agree	08/15/12		+12,568	Contractor encountered unforeseen concrete and brick substructures and abandoned utility lines. RE Tracking work on FAR RE to prepare modification (CMB 0082 approval - see Trend CN1251#'s 47, 58 & 78) COMPLETE, NO FURTHER ACTION; CMOD #20	CMOD #20
1251-0076	08/08/12	082-0076	Adjustment to OCS on Mason Street	2/3	CMB-0082	Agree	10/31/12		+14,987	Modify bracket arm at existing Pole #511 to alleviate tension load and bending of pole. Realign trolley wire on Mason between Geary and Eddy to smoothen transition when shifting from right lane to left lane. Also, add intermediate guywires to prevent excessive sagging of bracket arms at various locations. RE Tracking work on FAR (CMB 0082 approval - see Trend CN1251#'s 47, 58 & 78) COMPLETE, NO FURTHER ACTION; CMOD #26	CMOD #26

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1251-0077	09/12/12	082-0077	Additional work related to Qwest, TCG and UCCO facilities	2	CMB-0081	Agree Conditionally	10/31/12		+37,161	Qwest, TCG and UCCO requested Synergy to tie-in their existing conduits into the new vaults that Synergy installed per contract. The utility companies are responsible for connecting existing conduits into new vaults, therefore, this request is considered extra work. Private Utilities companies agreed to reimburse SFMTA through the Form B process. RE Tracking work on FAR CMB agreement contingent upon CMod package to include evidence from all utilities that cost are reimbursable to SFMTA through the Form B process. COMPLETE, NO FURTHER ACTION; CMOD #25	CMOD #25	
1251-0078	09/12/12	082-0078	Unforeseen conditions encountered during excavation and installation of OCS poles along Mason and 5th Streets.	2	CMB-0082	Agree	10/31/12		+27,644	Several obstructions, i.e. buried concrete, boulders, brick, abandoned utilities were discovered during excavation and installation of OCS poles along Mason and 5th Street. RE Tracking work on FAR (CMB 0082 approval - see Trend CN1251 #'s 47, 58 & 76) COMPLETE, NO FURTHER ACTION; CMOD #26	CMOD #26	
1251-0079	09/12/12	082-0079	Additional work related to installation of PG&E Vaults 467, 571, 573, 586 and 594 including joint trench leading to these vaults	2					+44,530	Unforeseen conditions were encountered during installation of select PG&E vaults including joint trenches leading to these vaults. PG&E agreed to reimburse SFMTA through the Form B process. RE Tracking work on FAR COMPLETE, NO FURTHER ACTION; CMOD #24	CMOD #24	
1251-0080	09/12/12	082-0080	Additional work related to installation of AT&T Vaults 5828, 5829, 5830, 5831, 5832 and 5833 including joint trench leading to these vaults	2	CMB-0076	Agree Conditionally	10/03/12		+56,805	Unforeseen conditions were encountered during installation of select AT&T vaults including joint trenches leading to these vaults. CMB Agreed contingent on receipt of confirmation letter from AT&T for costs associated with these three trends AT&T agreed to reimburse SFMTA through the Form B process. RE to prepare modification (CMB 0076 approval - see Trend CN1251 #'s 43 & 72) COMPLETE, NO FURTHER ACTION; CMOD #23	CMOD #23	
1251-0081	09/13/12	082-0081	PG&E concrete cover versus CDF on electrical duct bank	6					+43,881	Contract Plan JT-014 calls for CDF cover on PG&E duct bank. However, PG&E requested to use regular concrete due to heat dissipation problem with CDF. 12/19/12 - Presented to CMB, direction given to finalize cost and obtain a Form B agreement with PG&E COMPLETE, NO FURTHER ACTION		
<b>Contract 1251 Totals</b>									<b>+2,703,068</b>	<b>+1,258,954</b>	<b>cludes credits provided through Utility Reimbursement. Final Contract Closeout Total \$21,003,607</b>	
<b>Contract 1252</b>		<b>COR No.</b>	<b>PCC No.</b>	<b>1252 Change Description</b>	<b>Change Type</b>	<b>CMB Change No.</b>	<b>Configuration Management Board Agree/Disagree</b>	<b>Decision Date</b>	<b>Projected Cost Impact</b>	<b>Comments</b>	<b>Contract Modification No.</b>	
1252-0001	04/23/12	1		AWSS Conflict w/ Low Pressure Water	6	CMB-0091	Agree to Merit Agree to Cost	10/10/12 01/16/13	+16,907	AWSS contract work was made more difficult by the proximity of a water line which was closer than indicated on UT-501. See COR 008 for TIA request. 10/10/12 - Merit info presented to CMB - Agreed 01/16/13 - CMB - NOT TO EXCEED Amount \$16,900	12x	
1252-0002	04/23/12	2		AWSS Add. Tie-Rods 4th-Harrison	6	CMB-0086	Agree to Merit Agree to Cost	10/10/12 12/19/12	+58,000	The AWSS line must be restrained a certain distance beyond the 90 degree elbow we are installing under contract 1252. The 1252 contract work includes excavating on both sides of this 12-foot portion of pipe. Additional work scope (per Michael Smith @ DPW): Station 162+80 to 162+90 - Restrain the existing 12-inch tee to the existing pipe north of the tee. Restrain any other joints that are not restrained on the existing pipe up to the new pipe to be installed. 12/19/12 - CMB - NOT TO EXCEED Amount \$58,000	12x	
1252-0003	04/23/12	3		AT&T Vault Conflict-4th & Harrison	6	CMB-0092	Agree to Merit Agree to Cost	10/10/12 01/16/13	+21,089	After excavation of the roadway surface and subgrade at Fourth and Harrison streets an AT&T vault was discovered to be in conflict with the current alignment of the 42" RCP sewer main. Verbal authorization was given by an AT&T representative to make modifications to the vault. COR 003 has been submitted by BIH in response to this issue. Work is to be charged via SFMTA Form B agreement to AT&T. 10/10/12 - Merit info presented to CMB - Agreed 01/16/13 - CMB - NOT TO EXCEED Amount \$21,089	12x	
1252-0004	05/18/12	6		PG&E live electrical delays	6	CMB-0088	Agree to Merit Agree to Cost	11/28/12 1/9/2013	+7,402	PG&E lines indicated on contract drawing UD-502 thru 504 were to be abandoned yet were not yet abandoned when BIH started work. They were abandoned on 5/21. 11/28/12 - Merit info presented to CMB - Agreed 01/09/13 - CMB - NOT TO EXCEED Amount \$7,600	10	
1252-0005	06/06/12	7		Oil filled pipe @ Launch Box	2	CMB-0093	Agree to Merit Agree to Cost	1/16/13 1/16/13	+9,960	Synergy Demo Crew exposed an existing 6" steel line which had oil in it on the West side of 4th St between Harrison and Bryant. 01/16/13 - - CMB - NOT TO EXCEED Amount \$10,000	5	

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1252-0006	04/23/12	8	TIA - Associated w/ COR 001, COR 002, and COR 003	6	Agree to Merit	10/10/12		-0-	TIA and Overhead Costs related to COR 001, 002 and 003. 10/10/12 - Merit info associated w/COR's 001, 002 & 003 presented to CMB - Agreed	12x
1252-0007	06/12/12	9	MOS - Live Utilities: PGE, AT&T, and SFWD 8" Water Line extra kill hole location	2	Agree to Merit	11/14/12		-0-	Live PG&E Electrical Lines Conflict: BIH was notified that PG&E had live electrical lines running through each headwall work zone @ Moscone station. 8 inch Low Pressure Water Line Conflict: Contract drawings show this utility to be abandoned and capped prior to work. Synergy struck and damaged the water line. SFWD directed Synergy to excavate a kill hole so they could properly abandon the line. 11/04/12 COR Evaluation for merit presented to CMB.	
1252-0008	06/19/12	10	MOS - Demo PGE duct bank / SF City 911 fiber optic line	2	Agree to Merit Agree to Cost	10/10/12 01/16/13		+4,920	Upon excavation of the MOS north headwall, BIH's subcontractor Synergy Project Management (SPM) uncovered a PG&E duct bank that contained a live San Francisco 911 fiber optic line. 11/14/12 - Presented to CMB. The narrative will be rewritten CMB agrees with partial merit labor work involved in supporting the utility agencies. This item will be brought back to the CMB for approval. 01/09/13 -CMB - NOT TO EXCEED Amount 4,919.54	3
1252-0009	07/02/12	11	MOS - Traffic Signal line re-route south headwall	6	Agree to Merit Agree to Cost	1/16/13		+37,500	After potholing Synergy discovered several traffic lines which were in the proposed location of the south MOS headwall. Traffic Lines re-routed. 01/16/13 -CMB - NOT TO EXCEED Amount \$37,500	13x
1252-0010	-	12	MOS - Archaeological Standby North Headwall	2	Agree to Merit Agree to Cost	12/11/12 01/16/13		+16,892	Upon excavation of the MOS north headwall, BIH's subcontractor Synergy Project Management (SPM) uncovered a layer of "Midden" or Native American debris. 12/11/12 - Merit info presented to CMB - Agreed 01/16/13 -CMB - NOT TO EXCEED Amount \$7,600	6
1252-0011	07/06/12	13	MOS - SL conduit from PG&E vault @ north headwall	6	Agree to Merit	11/28/12		+10,903	Permanent power is required to supply an existing Street Light box north of the MOS N headwall. 11/28/12 - Merit info presented to CMB - Agreed	
1252-0012	06/26/12	15	LB - Pre-Excavation for Slurry Walls	2	Agree to Merit Agree to Cost	11/28/12 12/19/12		+96,000	Pre-excavation of slurry wall panels due to CDF encased sewer line. The concrete encasement was found by the Contractor to extend to a depth of 9'-11' below the top of guide wall or street surface. The 8" VCP sewer main and concrete encasement was incorrectly shown in the contract drawings to be approximately 4'-5' below the street surface. 11/28/12 - Merit info presented to CMB - Agreed 12/19/12 - - CMB - NOT TO EXCEED Amount \$96,000	17x
1252-0013	07/02/12	17	MOS - Standby Time @ south headwall due to live TS lines	6	Agree to Merit	11/21/12		-0-	Standby delays related to the discovery of traffic lines within the proposed location of the south MOS headwall. 11/14/12 - COR presented to CMB. CMB requested additional revisions to the evaluation. CMB agrees with partial merit. The COR will be brought back to the CMB for approval. 11/21/12 - COR revisited at mtg for clarification the issue is related to CMB action from item 3 -7/25/12 (Mtg #88) specifically acted on 08/01/12 (CMB Mtg. 89) referred originally as Trend #15.	13x
1252-0014	NA	19	UMS - Grant street 2 way conversion (e- & striping)	7				-0-	In order to implement a full street closure for Stockton Street at the UMS location the DPT recommended that Grant Street be converted from an existing one-way street to a two way street for vehicular traffic. Closed - Work is done. 07/18/12 - This potential change was brought before the CMB. Board's decision to have DPT perform the work. CLOSED; NO FUTHER ACTION	0
1252-0015	06/22/12	20	PROJECT WIDE - Utility Demo limit reduction credit	5				-0-	BIH's subcontractor Synergy Project Management (SPM) would like to minimize the limits of utility demo at the Launch Box, Moscone station, UMS station and TBM Retrieval Shaft locations. Closed - SFMTA to BIH/SPM "Build per Plan".	
1252-0016	NA	21	UMS - Reduced Duration	5	Agree Cost (Conditionally)	08/01/12		-0-	No cost change for acceleration of utility relocation, ground improvements (jet grouting), and headwall construction at Union Square/Market Street Station. 08/01/12 - CMB approval condition upon incorporating correctness to backup documentation as required by & documented in CMB mtg. RE to prepare modification.	8
1252-0017	07/10/12	22	MOS - Asbestos Pipe at north headwall	2	Agree to Merit Agree to Cost	12/12/12 01/09/13		+5,705	Upon excavation of the MOS north headwall, BIH's subcontractor Synergy Project Management (SPM) uncovered friable asbestos-laden transit pipe. 12/12/12 - Merit info presented to CMB - Agreed 01/09/13 - CMB - NOT TO EXCEED Amount \$6,000	5
1252-0018	07/10/12	23	MOS - Brick Wall #2 discovered @ north headwall	2	Agree to Merit	12/06/12		-0-	Upon excavation of the MOS north headwall, BIH's subcontractor Synergy Project Management (SPM) uncovered a buried wall. 11/14/12 COR presented to CMB. Evaluation for merit will be rewritten and brought back to CMB for approval. 11/21/12 - Merit info presented to CMB - Agreed	

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1252-0019	08/10/12	26	MOS - Asbestos Pipe at south headwall	2	CMB-0085	Agree to Merit Agree to Cost	12/12/12 01/09/13		+30,000	Transite pipe was discovered during MOS south headwall excavation. 12/12/12 - Merit info presented to CMB - Agreed 01/09/13 CMB - NOT TO EXCEED Amount \$30,000	16x
1252-0020	08/10/12	27	MOS - Oil filled pipe at south headwall	2	CMB-0089	Agree to Merit Agree to Cost	12/12/12 01/09/13		+8,226	A pipe containing oil was discovered during MOS south headwall excavation. 12/12/12 - Merit info presented to CMB - Agreed 01/09/13 CMB - NOT TO EXCEED Amount \$8,600	5
1252-0021	?	29	MOS - Todco scaffolding reimbursement	2	CMB-0097	Agree to Merit Agree to Cost	12/12/12 01/16/13		+1,718	1252 contract work requires the removal of scaffolding erected by Fine Line Construction, the contractor performing renovations on the Woolf House. 12/12/12 - Merit info presented to CMB - Agreed 01/09/13 CMB - NOT TO EXCEED Amount \$1,717	3
1252-0022	NA	closed	Disputed Work Items - NTP2 vs. NTP3	7					-0-	BIH interpretation of Special Provisions SP-3 NTP2 description includes activities that SFMTA interprets to be within NTP3. These activities include: Ellis Street and Green Street shafts and associated compensation grouting, MOS headwalls and jet grouting, jet grouting at crosspassage 5, UMS head walls and jet grouting, OCS removal along Stockton Street from Geary to Ellis, and the TBM retrieval shaft. On April 13, SFMTA released the MOS headwalls and jet grouting, jet grouting at crosspassage 5, UMS jet grouting, OCS removal along Stockton Street from Geary to Ellis, and preparatory and utility work necessary for the construction of the retrieval shaft.	0
1252-0023	05/30/12	4	Manhole in east guideway footprint	2					-0-	While performing excavation for the east side guideways at the TBM Launch Box, BIH's subcontractor CJA/NCC encountered a manhole near the bottom of the excavation which was unexpected. BIH has stated that removal of the manhole prior to the installation of the guideways was necessary to ensure the successful installation of the slurry walls.	0
1252-0024	NA	closed	2" gas line inside 16" casing	2					-0-	While performing excavation for the Sewer and AWSS trench at the intersection of Fourth and Harrison streets, BIHJV's subcontractor Synergy encountered what was identified to be a 16" depressurized gas main. This gas main contained a 2" gas line which is shown on contract drawing UD-502 to be abandoned/removed.	0
1252-0025	04/23/12	5	CDF Encasement on 42" RCP	2					+140,596	While performing excavation for the east side guideways at the TBM Launch Box, BIH's subcontractor CJA/NCC encountered a CDF backfill at the existing 42" RCP sewer which reportedly had a significantly higher compressive strength than the 50-150 psi. which was anticipated. BIH claims that the CDF conflicted with the construction of the guideways and it could not be excavated by conventional means.	0
1252-0026	NA	closed	Damage to Live LPW main at 4th and Folsom	2					-0-	Synergy Demo Crew hit a blow-off valve on the 8" water line at the Southwest corner of the MOS headwalls. SFWD is to install a permanent cap per contract drawing WD-404.	0
1252-0027	NA	14	MOS - 76 Gas Station fencing	1					-0-	SFMTA requested BIH to install fencing around the perimeter of the 76 gas station at 4th and Folsom St. Issue closed, cost of fence paid by BIH in return for use of gas station lot. CMB - Temporary use of 800 Folsom Street site for construction staging. Use of this site would be a tradeoff between SFMTA and BIH. The Contractor would maintain the sites security and up-keep in exchange for not billing	0
1252-0028	NA	16	LB - SPTC delays due to concrete encased 8" sewer	2					-0-	Closed. Combined with COR 015. 07/25/12 - Verbal information presented to CMB as a potential change.	0
1252-0029	08/06/12	18	MOS - South Headwall re-design	1					-0-	Costs related to leave end stops in place and a "T-Section" at the Moscone headwalls return walls. 11/14/12 - Presented to CMB. RE is recommending a possible compensation value of \$135K. CMB agrees with partial merit for labor and material cost of this COR. RE will proceed with scoping the work.	0
1252-0030	08/02/12	24	Ellis - Utility demolition	3		Agree to Merit	12/06/12		+38,678	BIH says that no utilities were shown at Ellis; however, Reference Drawing UE-126 shows utilities. 12/06/12 - Merit info presented to CMB - Agreed	0
1252-0031	NA	25	Crack Gauges	4					-0-	BIH disagrees with SFMTA on the total number of crack gauges to be installed on the project. Per the contract drawings a total of 926 crack gauges are to be installed. BIH claims that a total of 50 are to be installed.	0
1252-0032	08/07/12	28	Ellis asbestos abatement	2		Agree to Merit	12/06/12		+35,386	A steam line containing asbestos was discovered during potholing at the Ellis Street Shaft. 12/06/12 - Merit info presented to CMB - Agreed	16x
1252-0033	-	30	LB - Class 1 Hazardous Material Hauloff	2					+198,276	BIH trucking costs for Class 1 haul off. Also see COR 054 regarding Class 1 Haz material haul off for Phase 2. Cost to be reimbursed by "ES-8". Additional costs hazardous waste allowances.	0
1252-0034	NA	70	LB - Jet Grout Quantity Overrun	4					+812,497	The contract drawings call for the contractor to determine the extent of jet grouting at the launch box. BIH's jet grout quantities are projected to overrun the prescribed bid quantity by up to 40 percent.	0

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1252-0035	NA	unsubmitted	Utility Removal UD-304 and UD-503	6						TBD RFI 00134 asks whether certain utilities indicated on drawings UD-304 (On Stockton inside limits of future RFI Station) and on UD-503 (On Fourth and Stillman Streets outside limits of Launch Box) may be left in place. Answer: "Confirmed, the utilities in question can be abandoned in place and are not required to be removed. The Engineer will seek an adjustment to Bid Item GB-3 for the elimination of this work."	0
1252-0036	05/17/12	35	Additional Road Base on Fourth Street	2						BIH's subcontractor Synergy Project Management (SPM) discovered what they believe to be an additional layer of road base under the existing asphalt and road base layer while performing roadway demo work along the west side of Fourth street between Harrison and Bryant St. The additional layer is estimated by BIH/SPM to be approximately 8" - 12" thick.  12/06/12 - Evaluation of merit presented to CMB - Agreed No Merit for this change.	0
1252-0037	NA	unsubmitted	DPW permitting potential impacts	7						DPW Permitting issue to cause potential impacts. DPW is not issuing BIH permits for excavating the MOS headwalls, jet grouting at the LB, and excavating support at the LB, as they claim to have not been able to conduct a thorough review of the project's design documents and were not included in the design process. BIH may be required to re-sequence and stand many other potential impacts w/o said permits.	0
1252-0038	05/30/12	38	Manhole in West Guideway Footprint	3	CMB-0101	Agree to Merit Agree to Cost	12/05/12 01/23/13		+3,821	While performing excavation for the west side guidewalls at the TBM Launch Box, BIH's subcontractor CJA-NCC unexpectedly encountered a manhole foundation within the excavation at approximate station 165+70. It was necessary to chip away a portion of the existing manhole to gain the necessary clearance to construct the west slurry wall.  12/05/12 - CMB agreed with Evaluation of Merit 01/23/13 CMB - NOT TO EXCEED Amount \$4,052.17	21x
1252-0039	NA	unsubmitted	Panel W-33 Obstruction	2						While performing excavation for the slurry walls at the TBM Launch Box, BIH's subcontractor CJA-NCC unexpectedly encountered buried (wood pile?) debris located approximately 12 feet below the guide wall within Launch Box Diaphragm Wall Panel W-33. This trend is being tracked separately from Trend 20 because we believe it may be a different structure. BIH has not provided adequate information substantiating the merging of the two trends.  12/06/12 - Evaluation of merit presented to CMB - Agreed No Merit for this change.	0
1252-0040	08/23/12	1	PCC No.1 - Revisions to Moscone North Headwall Elevation (Top)	1	CMB-0099	Agree to Cost	1/16/2013		+20,358	SFMTA initiated change to revise headwall elevations to facilitate a change in the roof elevation of MOS station.  01/16/13 CMB - NOT TO EXCEED Amount \$20,500.	7
1252-0041	08/23/12	2	PCC No. 2 - Revisions to UMS Headwall Concrete and Reinforcement Limits	1						SFMTA initiated change to revise UMS headwall concrete and reinforcement limits to provide a cost savings.	0
1252-0042	08/24/12	31	Retrieval Shaft - Unmarked 12" Steel Pipe	2		Agree to Merit	01/02/13		+6,007	While performing excavation for the joint trench at the retrieval shaft BIH's subcontractor Synergy Project Management (SPM) discovered an abandoned 12" dia. steel pipe which appears to run continuously under Columbus Ave.  01/02/13 - Merit info presented to CMB - Agreed	18x
1252-0043	08/31/12	32	LB - Panel W29 Wood Pile	2		Agree to Merit	11/28/12		+81,000	While performing excavation for the slurry walls at the TBM Launch Box, BIH's subcontractor CJA-NCC unexpectedly encountered what appeared to be a wood pile within Launch Box Diaphragm Wall Panel W-29.  11/28/12 - Merit info presented to CMB - Agreed	14x
1252-0044	09/04/12	33	Ret Shaft - 20" Water Line Conflict	2		Agree to Merit	11/14/12		+67,000	During excavation for the joint trench at the retrieval shaft SPM discovered that the MRY Duct Bank is directly above an active 20" low pressure waterline. As a result the work at the Retrieval Shaft must reportedly be altered.  11/14/12 - Presented to CMB, the CMB agrees with the merit of this COR. RE will proceed with scoping the work.	0
1252-0045	09/11/12	34	LB - Panel W28 Wood Pile	2					+81,000	While performing excavation for the slurry walls at the TBM Launch Box, BIH's subcontractor CJA-NCC unexpectedly encountered what appeared to be a wood pile within Launch Box Diaphragm Wall Panel W-28.	14x
1252-0046	?	36	MOS - Catch Basin @ south headwall	3					-0	A catch basin on the NW corner of 4th and Folsom interfered with the construction of the MOS Headwalls. Removal of the catch basin was needed in order for the headwalls to be built. BIH claims the catch basin was not shown in the contract drawings. Closed due to improper notification.	0
1252-0047	?	37	UMS - 12" steel pipe removal	3					-0	A 12" steel pipe at the north UMS headwall location interfered with the demolition of other existing UMS utilities. BIH claims the steel pipe was not shown in the contract drawings. Closed due to improper notification.	0
1252-0048	09/07/12	39	MOS - 16" Steel Pipe removal @ northeast headwall	3	CMB-0102	Agree to Cost	01/23/13		+2,952	SPM removed an unmarked 16" steel pipe from the excavation of the NE MOS Headwall. Construction of the MOS headwall could not commence without this utility being removed. BIH claims the 16" steel pipe was not shown in the contract drawings.	19x

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1252-0049	?	40	MOS - Extra Road Base @ northeast headwall	2						BIH's subcontractor Synergy Project Management (SPM) discovered what they believe to be an additional layer of road base under the existing asphalt at the NE MOS headwall location. The road base in this location was approx. 20" thick on a patch that was roughly 25' x 25'. Closed due to improper notification.	0
1252-0050	05/18/12	41	LB - Impacts due to live PG&E electrical lines (Synergy)	6	CMB-0098	Agree to Merit Agree to Cost	01/16/13		+1,217	Based on direction from the SFMTA, Synergy provided a full time flagger for one night shift of work @ the intersection of I-80 off-ramp near 4th/Bryant streets in order to assist PGE while they performed the abandoning of the existing live PGE electrical at the Launch Box location which was shown to be dead in the contract drawings. 01/13/13 - CMB agreed with Evaluation of Merit 01/23/13 - Not to Exceed \$1,245	10
1252-0051	01/00/00	executed	Contract Amendment No. 2	1					(3,040,713) 0		2 Approved
1252-0052	08/17/12	42	LB - Panel W25 Wood Pile	2		Agree to Merit	11/28/12		+116,785	While performing excavation for the slurry walls at the TBM Launch Box, BIH's subcontractor CJA-NCC unexpectedly encountered an obstruction within Launch Box Diaphragm Wall Panel W-25. 11/28/12 - CMB agreed with Evaluation of Merit	14x
1252-0053	08/22/12	43	LB - Panel W30 Wood Pile	2		Agree to Merit	11/28/12		+47,185	While performing excavation for the slurry walls at the TBM Launch Box, BIH's subcontractor CJA-NCC unexpectedly encountered an obstruction within Launch Box Diaphragm Wall Panel W-30. 11/28/12 - CMB agreed with Evaluation of Merit	14x
1252-0054	09/19/12	44	MOS - 16" steel pipe removal @ southeast headwall	3		Agree to Merit	12/06/12		+1,933	SPM removed an unmarked 16" steel pipe from the excavation of the NE MOS Headwall. Construction of the MOS headwall could not commence without this utility being removed. BIH claims the 16" steel pipe was not shown in the contract drawings. 12/06/12 - CMB agreed with Evaluation of Merit	19x
1252-0055	?	45	Ret Shaft - Credit for reduced AT&T conduits	6					(331)	Credit to install 2 less conduits in the AT&T infrastructure at the Retrieval Shaft Joint Trench. The conduit notes on page JT-701 of the contract documents require 8 EA 4" conduits as laid out on the AT&T line. The reduced materials would result in 6 EA 4" conduits as a result.	0
1252-0056	09/25/12	46	UMS - Unmarked steel pipes (6", 12", 14") / Duct Bank	6	CMB-0103	Agree to Merit Agree to Cost	12/06/12 1/23/2013		+7,461	While performing excavation for the utility demolition at the south UMS headwall BIH/Synergy discovered a 6" dia. steel pipe, 16" dia. steel pipe, 18" dia. steel pipe, and a concrete duct bank. BIH claims the utilities were not shown in the contract drawings. 12/06/12 - CMB agreed with Evaluation of Merit 01/23/13 - CMB - NOT TO EXCEED Amount \$7461.	20x
1252-0057	09/25/12	47	Ret Shaft - Credit for reduced AT&T conduits	6	CMB-0104	Agree to Merit Agree to Cost	12/06/12 01/23/13		+2,108	Synergy Project Management (SPM), discovered an abandoned duct bank and 10" steel pipe which traveled underneath Columbus Avenue between Powell and Union Streets. Removal of the duct bank was necessary to complete the construction of the 36" RCP sewer main relocation work in this area. The status of the removal of the steel pipe is uncertain and may have not been necessary for the sewer main relocation. 12/06/12 - CMB agreed with Evaluation of Merit 01/23/13 - Not to Exceed \$2,201.	18x
1252-0058	09/28/12	48	UMS - Unmarked steel pipes (6", 12", 14") / Duct Bank	6		Agree to Merit	12/06/12		+15,115	Synergy Project Management (SPM), discovered a brick sewer within the utility demolition limits at the UMS South headwall. The sewer encountered was larger than the 12" pipe which was shown in the contract drawings. Removal and disposal of the sewer commenced on September 26th and was completed by September 28th. Removal of the sewer was necessary for headwall construction. 12/06/12 - CMB agreed with Evaluation of Merit	20x
1252-0059	?	49	Ret Shaft - unmarked 10" steel pipe/duct bank	7					+1,500	Synergy Project Management (SPM), was requested by the SFMTA to remove and dispose of debris near the Northeast corner of Columbus Avenue and Union Street. The debris resulted from tree trimming activities performed by MUNI operations.	0
1252-0060	10/10/12	50	UMS - 3'x5' brick sewer at south headwall	6		Agree to Merit	12/12/12		+2,848	BIH/SFMTA to finalize labor rates 12/12/12 - CMB agreed with Evaluation of Merit	18x
1252-0061	10/11/12	51	Ret Shaft - Tree trimming debris haul off	3					-26,000		0
1252-0062	09/07/12	53	Ret Shaft - 12" steel pipe removal at Union/Columbus	7					-0	Closed.	0
1252-0063	-	54	Ret Shaft - Elevation design conflict (30" low psi water / sewer)	2					+115,915	Cost to be reimbursed by "ES-8". Additional costs hazardous waste allowances.	0
1252-0064	10/10/12	4	PCC No. 4 - Ret shaft sewer pipe material change	1					+153,740	Change approximately 65 ft. of pipe for sewer bypass around the TBM Retrieval Shaft from 3' X 5' oval glass fiber reinforced pipe to a 48-inch (OD) HDPE SD-17 pipe with casing insulator placed inside a 54-inch diameter, 1/2-inch thick steel casing pipe. In addition, delete permanent sheet pile wall that was to have been placed along the west side of the trench to facilitate future maintenance access to the sewer along the shaft.	0

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1252-0065	12/18/12	57	8	UMS - Tree Removal	1				+13,346	SFMTA is directing removal of a tree at at the northeast corner of Stockton and O'Farrell St.	0
1252-0066	10/10/12	59	5	PCC No. 5 - Ret Shaft Water Dist. Pipe Material Change	1				(31,012)	Change material type of approximately 188 linear feet of 20-inch water line and approximately 125 linear feet of 30-inch water line from Welded Steel Pipe (WSP) to Ductile Iron Pipe (DIP) with TR-Flex joints. Install 6-inch thick concrete cap over 20-inch water line where cover is less than 24 inches.	0
1252-0067	10/26/12	58		Ret Shaft - Additional 10" steel pipe removal	6	Agree to Merit	12/12/12		+851	Work is a continuation of work performed in COR 047. 12/12/12 - CMB agreed with Evaluation of Merit	18x
1252-0068	10/10/12		3	PCC No. 3 - General Detour Signage	1				+22,181	10/03/12 - PCC presented to CMB. CMB directed the RE to get a price quote from DPT do the work as a price comparison. This item will be brought back to the CMB at a later date. 11/14/12 - PCC presented to CMB. The CMB did not agree that Central Subway needed to take the lead on implementing detour signage, but suggested that the RE study the traffic activity and at the end of November report findings.	0
1252-0069	11/08/12		6	PCC No. 6 - Supplemental instrumentation of BART tunnel lining.	1				+657,884	Implement additional instrumentation of BART tunnel lining: (A) Existing bolt preload force – Determine the actual load in 12 bolts. (B) Bolt force sensor – Install 12 bolt force sensors at bolts for a total of 24 bolts. (C) Rail movement under dynamic train loading – Install dynamic strain gauges (2 per rail, 8 per tunnel).	0
1252-0070	NA	unsubmitted		Full Closure of 4th Street	1				TBD	SFMTA allowed full closure of 4th Street in order to facilitate construction of Launch Box Slurry Wall Construction Week Ending 11/04/12 - 11/11/12.	0
1252-0071	11/07/12	61		LB - Panel P-17 Buried Obstruction	2	Agree to Merit	01/02/13		+1,473	CJA-NCC discovered an unmarked buried water main at Panel P-17, approximately 6' below the guideway at CTL Station 165+52, while performing slurry diaphragm wall excavation. 01/02/13 - CMB agreed with Evaluation of Merit	15x
1252-0072	11/14/12	62		LB - Panel P-9 Buried Obstruction	2	Agree to Merit	01/23/13		+150,000	CJA-NCC discovered a buried obstruction while excavating slurry diaphragm wall panel P-9 at the Launch Box location. 01/02/13 - Presented to CMB for merit, CMB did not agree. CMB suggested inspector's daily tags as backup or reference the tag numbers in the write-up when force account work is involved. 01/23/13 - Revised write up presented CMB agreed with Evaluation of Merit	15x
1252-0073	11/08/12	63		UMS - 48" Steel Pipe @ southwest headwall	2	Agree to Merit	11/28/12		-0	BIH/Synergy encountered a buried 48" Diameter steel pipe during work at the UMS S. Headwall. The pipe is located 6 feet from the south UMS headwall and 5 feet from the face of the curb. 01/02/13 - Presented to CMB for merit, CMB did not agree. CMB suggested inspector's daily tags as backup or reference the tag numbers in the write-up when force account work is involved. 01/23/13 - Revised write up presented CMB agreed with Evaluation of Merit	0
1252-0074	11/16/12	65		LB - Panel P-12 Buried Obstruction	2	Agree to Merit	01/23/13		+150,000	CJA-NCC discovered a buried obstruction (water main) while excavating slurry diaphragm wall panel P-12 at the Launch Box location. 01/02/13 - Presented to CMB for merit, CMB did not agree. CMB suggested inspector's daily tags as backup or reference the tag numbers in the write-up when force account work is involved.	15x
1252-0075	11/19/12	66		Retrieval Shaft - Unmarked 12" Steel Pipe	2	Agree to Merit	01/23/13		+4,251	While performing excavation for the joint trench at the retrieval shaft BIH's subcontractor Synergy Project Management (SPM) discovered an abandoned 12" dia. steel pipe which appears to be a Low Pressure Water Main.	18x
1252-0076	11/19/12	67		LB - Panel P-10 Buried Obstruction	2	Agree to Merit	01/23/13		+18,000	CJA-NCC discovered a buried obstruction or concrete encased clay sewer pipe, approximately 7' below the top of the guide wall while excavating slurry diaphragm wall panel P-10 at the Launch Box location. 01/02/13 - Presented to CMB for merit, CMB did not agree. CMB suggested inspector's daily tags as backup or reference the tag numbers in the write-up when force account work is involved. 01/23/13 - Merit info presented to CMB - Agreed	15x
1252-0077	12/21/12		7		1	Agree to Merit Agree to Cost	1/30/2013		+15,380	SFMTA is requesting Contractor construct temporary wall for Bart Annex for SFMTA use. 01/30/13 - CMB - NOT TO EXCEED Amount \$15,380	
1252-0078	12/28/12		PCC 9, FA CO 1	UMS Headwall - Unknown Buried Pipe	1	Agree to Merit Agree to Cost	1/16/2013 1/16/2013		+75,000	Related to COR 063. SFMTA instructed BIH to perform investigation into the 48" diameter steel pipe as it is a Differing Site Condition. 01/30/13 01/16/13 - CMB - NOT TO EXCEED Amount \$75,00	4
1252-0079	01/09/10		10	Relocation of TBM Retrieval Shaft	1			1/0/1900	-0	Modify Bid Item ST -4 Construction of Base Bid Permanent Retrieval Shaft to relocate the TBM retrieval Shaft to 1731-1741 Powell Street	0

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1252-0080	12/19/12	NA	Segment Measuring Frequency	7						TBD	RFI 203.1 - In light of gauging frequency, and the difficulties of erecting a ring with cast in gaskets, BIH JV alternately proposes to assemble a ring on the Master ring at an interval of every 500th ring cast. The assembled ring would be comprised of randomly selected segments, or segments chosen by the Engineer.	
1252-0081	09/09/12	NA	F21 and Old Navy Instrumentation Proposal	7						TBD	Wang Technology is proposing instrumentation changes to the Liquid Level Sensors and Tilt Beams in the basements of Old Navy and Forever 21.	
1252-0082	01/14/13	68	UMS – AT&T Vault Walkway @ N Headwall	2		Agree to Merit	01/16/13		+8,000		SPM discovered an walkway at the UMS north headwall. This walkway is located at the UMS north headwall and connects the south AT&T vault, located within the utility demolition limits, to an north AT&T, located outside of the utility demolition limits. SPM proposes to construct 3'x5' wall to the extents necessary, inside this walkway. The wall will be constructed of plywood and necessary reinforcement in order to create a bulkhead that will isolate the walkway and north vault from the south vault.  01/16/13 - CMB recommendation Contractor/Sub-contractor proceed on Force Account with a "Not to Exceed Amount" \$2K.	
1252-0083	11/08/12	69	UMS – Cap and Remove 48" Steel pipe	2					-0		Closed	
1252-0084	01/24/13		PCC 11, FA CO 2 UMS – Cap and Remove 48" Steel pipe	1	CMB-0105	Agree to Cost	01/23/13		+150,000		BIH/Synergy encountered a buried 48" Diameter steel pipe during work at the UMS S. Headwall. The pipe is located 6 feet from the south UMS headwall and 5 feet from the face of the curb. This PCC is to complete removal of pipe @ S.Headwall and Investigate and remove pipe if necessary @ the North headwall.  01/30/13 - CMB - NOT TO EXCEED Amount \$150,000	
1252-0085	01/24/13	71	LB – Ramp Excavation Wood Piles Obstruction	2					+8,000		BIHJV encountered numerous groups of wood piles while performing excavation of the Launch Box ramp. The wood piles are approximately 16" in diameter and are located along the north and south perimeter walls of the Launch Box ramp excavation area	
1252-0086	02/08/13	72	Ellis Shaft Jet Grout Obstruction	2					+54,000		On February 6th, 2013, CJA/NCC was drilling column R3 of the Ellis Shaft and reported hitting an obstruction 52ft below existing grade. The obstruction reportedly caused the jet grout monitor to shear off. At this time it is not known what the obstruction is or if it caused the monitor to be sheared off.	
Contract 1252 Totals									-0-	+560,926		
0, #1251 & #1252 Trending Log and CMod) - SUBTOTALS:									+5,883,568	+298,498		
<b>DESIGN TRENDS</b>												
FD-001	07/31/10		084-0001	Narrowing of Platform at UMS	1	CMB-0006	Agree	08/04/10	(800,000)	(800,000)	[In "Current Forecast" - Sep2010 Cost Report.]	
FD-002	07/12/10		084-0002	Redux of Station Emergency Ventilation Fans (UMS)	1	CMB-0009	Agree (Conditionally)	08/25/10	(2,000,000)	(2,000,000)	Further actions: Designer required to receive Fire/Life/Safety approval before proceeding with this change. Designer to allocate cost impacts by Station (Current figures are "place-holders.". [In "Current Forecast" - Sep2010 Cost Report.]	
FD-002	07/12/10		085-0001	Redux of Station Emergency Ventilation Fans (CTS)	1	CMB-0009	Agree (Conditionally)	08/25/10	(500,000)	(500,000)	Further actions: Designer required to receive Fire/Life/Safety approval before proceeding with this change. Designer to allocate cost impacts by Station (Current figures are "place-holders.". [In "Current Forecast" - Sep2010 Cost Report.]	
FD-002	07/12/10		086-0001	Redux of Station Emergency Ventilation Fans (MOS)	1	CMB-0009	Agree (Conditionally)	08/25/10	(500,000)	(500,000)	Further actions: Designer required to receive Fire/Life/Safety approval before proceeding with this change. Designer to allocate cost impacts by Station (Current figures are "place-holders.". [In "Current Forecast" - Sep2010 Cost Report.]	
FD-003	07/31/10		085-0002	Lowering of CTS	1	To be verified	Info Only	08/25/10	+7,000,000	+7,000,000	Presented to CMB for information/consideration.	
FD-004	07/29/10		084-0003	UMS Structural Configuration	1	CMB-0007	Agree	08/18/10	(8,000,000)	(8,000,000)	[In "Current Forecast" - Sep2010 Cost Report.]	
FD-005	08/22/10		084-0004	UMS Alternate Station Access/Vent Shaft @ Union Square	1	CMB-0010	Agree	12/29/10	(22,500,000)	(22,500,000)	Documentation to be filed.	
FD-006	08/03/10		084-0005	Station Headwalls - UMS	1	CMB-0008	Agree	08/18/10	-0-	-0-		

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

2/15/2013

Item #	Date Initiated	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
					Approval Action	Approval Date	Actual/Forecast	Potential Change		
FD-006	08/03/10	Station Headwalls - MOS	1	CMB-0008	Agree	08/18/10	-0-	-0-		
FD-007	08/03/10	Cross-passages	1	CMB-0018	Agree	09/15/10	-0-	-0-		
FD-008	07/30/10	Trolley Re-route @ Columbus & Powell	1	CMB-0017	Agree	09/15/10	-0-	+2,000,000		
FD-009	10/06/10	ECP to Modify Sidewalk Vault Demolition and Construction Sequence to Facilitate Construction of Joint Utilities Trench and Future UMS Station	1	CMB-0019	Agree	12/15/10		+3,000,000		
FD-010	10/06/10	Redesign Stockton Street Sanitary Sewer to conform to SFPUC Sewer Criteria that preclude placement of relocated sanitary sewer under sidewalks	1	CMB-0020	Agree	11/17/10		+2,000,000		
FD-011	10/06/10	Reconfigure Routing of Water, Sewer and Gas laterals from buildings on north side of Ellis Street	1	CMB-0021	Agree	11/17/10		+500,000		
FD-012	10/06/10	Recognize cost transfers from design allowances allocated to contingency to explicit line items in final design estimates	1	CMB-0022	Disagree	11/17/10		-0-		
FD-013	10/06/10	Increase Extent of Sub-sidewalks Vault Secondary Closure Walls and Waterproofing	1	CMB-0023	Agree	11/17/10		+4,100,000		
FD-014	10/06/10	Include OCS system for rerouting trolley buses to Fifth Street	1	CMB-0024	Agree	12/15/10		+3,100,000		
FD-015	10/06/10	Subsidewalk Vault Secondary Closure Walls for Buildings at 800 Market and 838 Market	1	CMB-0025	Agree	11/17/10				
FD-016	10/06/10	Underpinning of Mandarin Tower	1	CMB-0011	over taken by FD-021	01/19/11		+5,000,000	Additional Information Pending.	
FD-017	10/06/10	CTS Ground Improvement	1	CMB-0012	over taken by FD-021	01/19/11		+10,300,000	Additional Information Pending.	
FD-018	10/06/10	UMS Apple Store Entrance	1	CMB-0013	Disagree	11/10/10		-0-	Additional Information Pending.	
FD-019	10/06/10	MOS TOD Configuration	1	CMB-0014	Agree	11/10/10		TBD		
FD-020	10/06/10	UMS Emergency Stair #4 Relocation	1	CMB-0015	Agree	11/10/10		TBD		
FD-021	01/14/11	CTS Lowering and Stations Reconfiguration	1	CMB-0027	Agree	01/19/11	(18,000,000.00)	(18,000,000)	Agreement with changes to project configuration only. Additional Information required related to cost and schedule impacts. No agreement on Design cost impact. Design costs directly related to this change to be tracked separately	
FD-022	02/16/11	Sewer Replacement along Geary & O'Farrell	1	CMB-0029	Agree	02/23/11		(134,000)	This trend has both an EPC number as well as a Construction Trend Number. See also Construction Trend No. 1251-0003	
FD-023	11/17/10	Emergency walkways through crossover cavern changed from outside the main tracks to between the main tracks.	1	CMB-0032	Agree	07/27/11				
FD-024	11/17/10	Diamond crossover on surface segment to a tandem (universal) crossover.	1	CMB-0033	Agree	08/24/11		(350,000)		
FD-025	04/13/11	Bid Option for TBM Retrieval Shaft		CMB-0034	Agree	04/13/11		(10,000,000)	Will require changes to Bid Schedule to incorporate Traffic, Utilities and Pavement Demo/Restoration as incidental costs to the Bid Option. Estimated DP1 cost impact is approx. 80-100 hrs. of engineering time.	
FD-026	05/31/11	Air Replenishment System for Stations	1	CMB-0040	Agree	07/13/11		+1,245,000	Install air replenishment system at MOS, CTS and UMS to address the requirements of the SFFD Bulletin 5.07. The air replenishment system will be used to fill firefighter's self-contained breathing apparatus during firefighting operations in the three subway stations.	
FD-027	07/21/11	1 Stockton street (Apple Store) Secondary Closure Wall		CMB-0043	Agree	08/03/11		+500,000	1) Add secondary closure wall to supplement recently completed primary closure wall built by owner to isolate the sub-sidewalk basement of 1 Stockton Street (Apple Store) 2) Modify position of joint trench (and all associated conduits, ducts etc.) for secondary closure wall to be constructed.	
FD-028	08/03/11	MOS Revisions to Emergency Ventilation Requirements		CMB-0052	Agree	09/07/11		+500,000	Changes will extend the date of the 90% (pre-final) submittal by 20 working days and the 100% (final) submittal by 40 working days. CMB did not approve a time extension for 90% or 100% submittal delivery. <b>Project Controls estimated \$321,645.</b>	
FD-029	08/08/11	CTS Revisions to Emergency Ventilation Requirements		CMB-0053	Agree	09/07/11		+1,000,000	Changes will extend the date of the 90% (pre-final) submittal by 20 working days and the 100% (final) submittal by 40 working days. CMB did not approve a time extension for 90% or 100% submittal delivery. <b>Project Controls estimated \$411,895.</b>	
FD-030	08/08/11	UMS Revisions to Emergency Ventilation Requirements		CMB-0054	Agree	09/07/11		+1,000,000	Changes will extend the date of the 90% (pre-final) submittal by 20 working days and the 100% (final) submittal by 40 working days. CMB did not approve a time extension for 90% or 100% submittal delivery. <b>Project Controls estimated 733,420.</b>	
FD-031	10/31/11	Accessibility Improvements at the SE corner of Union Square (UMS)								
FD-032	10/31/11	Union Square Entrance Reconfiguration (UMS)								
FD-033	10/31/11	Additional Compensation Grouting due to Tunnel Settlement Alert and Trigger Levels (All Stations)						+21,040,000	ECP dated 11/17/11. ECP being routed for approval.	

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
						Approval Action	Approval Date	Actual/Forecast	Potential Change		
FD-034	12/09/11		Operational Performance and Safety Enhancement at 4th and King		CMB-0062	Agree	12/14/11		+450,000	SFMTA Operations requested that the design of the 4th & King tie-in work be expanded to include a number of improvements at the junction involving the turn-back area extending to the scissors crossover at 6th & King. SFMTA Ops confirmed that the requested changes result in an arrangement that is consistent with standard operation practices and therefore does not involve new or unacceptable risks. CS 1553 Memorandum No. 0081. Conditionally agreed upon verification/resolution of Buy America issue for the switches. 3/14/12: "Buy America" issue no longer applicable. Revised ECP element - remove H&K switch machines and replace with hydraulic/120V switch machines such as Nortrak or equal.	
FD-035	06/26/12		Tunnel Air Replenishment System		CMB-0071	Agree	07/11/12		+1,215,000	Design and construct a fire fighter air replenishment system for Central Subway tunnel as described in SF Fire Code 511.2, Bulletin 5.07 except as noted in the Central Subway Request for Approval of Variance for the ARS to SFFD on March 5, 2012, and subsequently approved by SFFD. Design Impact: ROM - \$215K Construction Impact: ROM - \$1M	
FD-036	06/26/12		Surface Segment Sewers - 4th St.		CMB-0072	Agree	07/18/12		+2,200,000	Replace current unreinforced brick crown from 1906 as it may not be able to withstand loading for construction of the CS trackway section. Reconstruct manholes between Brannan and King Streets as existing are in conflict with proposed rail. Replace service laterals and provide sleeves for future replacement. Additional potential scope option of \$1.5M-Sewer and \$2.3M-Force Main may be requested. If so, it will be Cost to SFPUC	
FD-037	08/27/12		Platform Display System Signs		CMB-0077	Agree (Conditionally)	08/29/12		+500,000	Modify Stations (Contracts 1253, 1254 and 1255) and Surface, Track and Systems (Contract 1256) technical specifications and drawings for the Platform Display System (PDS) to match the changes made to the PDS units being supplied under the Integrated Systems Replacement (ISR) Project, Contract No.1260. 08/29/12: CMB agreement condition upon follow up action to evaluate procurement by CN1260	
FD-038	11/07/12		Elongated Sidewalk Bulb-out at Chinatown Station						TBD	CTS Sidewalk Bulb out (Southwest corner Stockton/Washington To bring the Central Subway Project - Chinatown Station in closer conformance with the City's General Plan, SF Planning Department in its May, 2012 GPR Letter (recommends) making design changes specifically the extension of the sidewalk bulb-out at Stockton Street to help create a "station plaza". This elongated bulbout on the southwest corner (SWC) of Stockton and Washington Streets in front of the station headhouse would also include bike racks, benches, trees and other landscape features. Design Impact: ROM - \$TBD Construction Impact: ROM - \$TBD	
<b>DS (Based on All ECPs) - SUBTOTALS</b>									<b>+3,866,000</b>	<b>Incorporated budget increases have been absorbed by allocated and unallocated funds and the program budget to date remains \$1,578,300,000.</b>	
<b>OTHER TRENDS</b>											
X51-001	07/31/10		#REF! 1251 Revised estimate, escalation impact and contingency.	7					+9,532,314	Cost Transfer #0033 (Base \$\$), 0033a (Allocated Contingency), 0036 (Base \$\$ Escalation), 0036a (Allocated Contingency Escalation). [Sep2010 Cost Report]	BT-0033, BT-0033-A, BT0036, BT-0036-A
X51-002	07/31/10		#REF! Form B Credit for 1251 Utilities	7					(7,967,949)	Reserve and Contingencies removed as per communications with PG&E. This is consistent with the 1250 utility agreement. [ Cost Transfer #0034 - Aug2010 Cost Report].	BT-0034
X52-001	07/31/10		#REF! 1252-(TUN) Revised estimate, escalation impact and contingency	7					(2,165,462)	Cost Transfer #0035 (Base \$\$), 0035a (Allocated Contingency), 0037 (Base \$\$ Escalation), 0037a (Allocated Contingency Escalation). [Sep2010 Cost Report]	BT-0037, BT-0037-A
X03-001	08/31/10		003-0001 OEWD's Pilot Training Program	7					+75,000	Workforce training pilot program in conjunction with the City/County's Office of Economic and Workforce Development (OEWD). Provides specialized training to SF residents to perform tunneling work. Central Subway financial responsibility being investigated. Requires further clarification	
X53-001	07/18/11		084-0001 CS 155-2 (DP2) CBP4 - Construction Budget Adjustment YOY	7	CMB-0044	Agree	07/27/11			Adjust construction budget in Section 6 of Contract No. CS 155-2 to Year of Expenditure	
X53-002	10/25/11		Change UMS Advertise Date to April 4th, 2012							DP2 Designer's new proposed dates for Pre-Final and Final Design have pushed out Advertise Dates.	
X53-003	04/11/12		084-0002 CN1253 (UMS) Construction Budget Adjustment 90%						+55,720,600	CMB is currently vetting the 90% estimate of \$221,534,723 which represents a \$XX increase from the 65% base amount in 2010\$. Increase would deplete current YOY dollars and require use of unallocated contingency.	
X53-004	06/26/12		084-0002 Approve/Execute/Certify durations change for UMS Contract							Shortened the duration for Approve/Execute/Certify - UMS Contract from 40 to 24days to reflect an optimistic but doable duration for contractor submittals.	
X54-001	07/13/11		085-0001 CS 155-2 (DP2) CBP5 - Construction Budget Adjustment YOY	7	CMB-0045	Agree	07/27/11			Adjust construction budget in Section 6 of Contract No. CS 155-2 to Year of Expenditure	
X54-002	10/25/11		Change CTS Advertise Date to May 23rd, 2012		CMB-0061	Agree	12/28/11			DP2 Designer's new proposed dates for Pre-Final and Final Design have pushed out Advertise Dates.	

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2/15/2013

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						Approval Action	Approval Date	Actual/Forecast	Potential Change			
X54-003	11/02/11		Change CTS Advertise Date to February 8th, 2012							Change CTS Advertise Date from May 23, 2012 to February 8, 2012 (-74 working days)		
X54-005	12/06/11		Revisions to CTS Construction Schedule		CMB-0060	Agree	12/28/11					
X54-006	12/07/11	085-0002	CS 155-2 (DP2) CBP4 - Construction Budget Adjustment - allowed	7								
X55-001	07/18/11	086-0001	CS 155-2 (DP2) CBP6 - Construction Budget Adjustment YOY	7	CMB-0046	Agree	07/27/11			Adjust construction budget in Section 6 of Contract No. CS 155-2 to Year of Expenditure		
X55-002	10/25/11		Change MOS Advertise Date to June 25th, 2012							DP2 Designer's new proposed dates for Pre-Final and Final Design have pushed out Advertise Dates.		
X55-003	11/02/11		Change MOS Advertise Date to May 23rd, 2012							Change MOS Advertise Date from June 25, 2012 to May 23, 2012 (-22 working days)		
X55-004	06/26/12		Change MOS Advertise Date to Aug 20, 2012							Change MOS to August 20, 2012		
X56-001	10/25/11		Change STS Advertise Date to July 27th, 2012							DP2 Designer's new proposed dates for Pre-Final and Final Design have pushed out the Station's Advertise Dates. STS Advertise Date is staggered from Station's Advertise Dates.		
X56-002	12/14/11		STS Construction Schedule Revision for Equipment Procurement									
X56-003	06/26/12		Change STS Advertise Date to October 1, 2012							Change STS Advertise Date to October 1, 2012		
X40-001	10/19/11	028-0001	SFPUC CDD Updated Budgets	7		Authorized			+505,127	1250 SFPUC CDD Monthly Service Report Final & 1251 SFPUC CDD Estimate	BT-0172, BT-0177	
X80-001	10/19/11	071-0001	DP1: CS 155-1 Modifications No. 2 & 3	see Prof. Serv		Authorized			+560,585	Modification No. 2: \$395,584.59, Modification No. 3: \$165,000. Individual details listed in Professional Services. See trend 1551-0002,1551-0005 - 1551-0009	BT-0170, BT-0171, BT-0173	
X80-002		071-0002	DP1: CS 155-1 Modification No. 4	7		Authorized			+135,898	Modification No. 4: \$135,898 Individual details listed in Professional Services. See trends 1551-0010 - 1551-0014.	BT-0187	
X80-003	10/27/11	029-0001	Increase City Auditor Budget	7		Authorized			+50,220	Reduce unallocated Contingency to increase City Auditor budget as authorized in Budget Authorization #51.	BR#51, BT-0181	
X80-004	10/27/11	232-0001	Increase SFCTA Budget	7		Authorized			+20,000	Increase SFCTA budget per per Budget Authorization #51 to conduct travel forecast (TEP CEQA Modeling) to satisfy PMO review and SFMTA Fleet Plan light rail vehicle.	BR #51, BT-0182	
X80-005	7/1/10, 11/2/10, 3/24/11	072-0001	DP2: CS 155-2 Modification No. 1	7		Authorized			+1,010,000	Modification No. 1: \$1,010,600 Individual details listed in Professional Services. See trends 1552-0002, 1552-0003 and 1552-0005.	BT-0194, BR#53	
X80-006	5/6/10, 7/25/11, 9/22/11	072-0002	DP2: CS 155-2 Exercised Options	see Prof. Serv		Authorized			+366,771	Individual details listed in Professional Services. See trends 1552-0001, 1552-0007 and 1552-0014.	BT-0023, BT-0194	
X80-007	11/08/11	151-0001	Operations SFMTA Transit Services			Authorized			+50,000	CSP request services to support and test OCS for 30/45 trolley reroute. Authorized per Budget Revision #53	BR #53, BT-0189	
X80-008	09/01/11	081-0001	SFMTA Safety, Training, Security & Enforcement Div PCOs	7		Authorized			+60,000	CSP request PCOs to support 1251 and 1252 construction for one year. Authorized \$60,000 per Budget Revision #45.	BR #45, BT-0190	
X80-009	11/30/11	016-0001	SFMTA Sustainable Streets 30 and 45 re-route	7		Authorized			-0-	CSP request services to support 30/45 trolley reroute. \$162,600 was reduced from DPT staffing plan budget.	BT-0188	
X80-010	11/09/11	073-0001	DP3: CS 155-3 Modification No. 1	7		Authorized			+152,882	Modification No. 1: \$152,882 Individual details listed in Professional Services. See trends 1553-0012 and 1553-0013.	BT-0203	
X80-011	8/9/11, 9/22/11, 10/11/11, 11/9/11	073-0002	DP3: CS 155-3 Exercised Options	see Prof. Serv		Authorized			+1,026,398	Individual details listed in Professional Services. See trends 1553-0001 - 1553-0004, 1553-0006, 1553-0009 - 1553-0011, 1553-0014. Updated from \$971,686 to include Trend 1553-0014.	BT-0203	
X80-012		151-0002	OCS materials procured directly for work in reference to CN1251 CMOD#12.		CMB-0065	Agree	1/25/2012, 2/29/12		+126,149	See also Trend 1251-0023		
X80-013	05/30/12	073-0003	DP3: Provide Vibration Impact Analysis and Extend PC Support Technical and CSP Quality Manager	1					+133,906	Amend #2: Vibration Impact Analysis \$38,380 Amend #3: PC Support Tech \$34,483; Quality Manager - \$61,043	TBD	
X80-014	12/17/12		For combining the stations and track and systems into Contract 1300 (SSTS)	1						Stations and track and systems into Contract 1300 (SSTS)		
X80-015	12/17/12		Changing the Bid Opening date and condensing the Contract Duration for Contract 1300	1						Changing the Bid Opening date and condensing the Contract Duration for Contract 1300		
<b>DS (Based on Various Trends)</b>									<b>+59,258,533</b>	<b>Current Forecast reflects a net +3,537,933 unfavorable impact for all Other Trends.</b>		

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<b>GRAND TOTALS</b>										
Current Forecast reflects an estimated net +\$6,751,620 unfavorable exposure to the project to date. Incorporated budget increases have been absorbed by allocated and unallocated funds and the program budget to date remains \$1,578,300,000.										
<b>PROFESSIONAL SERVICES TRENDS: The following trends are listed for administrative purposes. The dollar amounts are reflected in the "Other Trends" section of this log in the form of cost (budget) transfers - ie CCOP's. The total values indicated for each professional contract are for tracking all potential cost exposures and may or may not be approved.</b>										
<b>Contract CS-155-1</b>										
1551-0001	07/30/10	071-0001	Conform Contract Terms per Negotiations from 10/2/09 to 11/6/09	7				-0-	To be addressed in Amendment 1.	Amendment 1 Pending
1551-0002	02/18/11	071-0002	Project Office Delay (Adjustments for OH Rate and Team Productivity Impact)	7	Authorized	07/29/11	+101,411		Amendment Signed by ED/CEO 7/29/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #2</b>	Amendment 2 Approved
1551-0003	02/18/11	071-0003	Additional Construction Support for CP-1	7				-0-		
1551-0004	02/18/11	071-0004	Redesign Required by Barney's and PUC for CP-2	7				-0-		
1551-0005	02/18/11	071-0005	Archeological Monitoring 16.20.C1 (total)	7	Authorized	07/29/11	+197,173		Amendment Signed by ED/CEO 7/29/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #2</b>	Amendment 2 Approved
1551-0006	02/18/11	071-0006	Eyebolts	7	Authorized	07/29/11	+50,000		Amendment Signed by ED/CEO 7/29/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #2</b>	Amendment 2 Approved
1551-0007		071-0007	Secondary Closure Walls 800/838 Market	1	Authorized	07/29/11	+47,400		Amendment Signed by ED/CEO 7/29/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #2</b>	Amendment 2 Approved
1551-0008		071-0008	Delete Optional Tasks - Tasks 1-14	1				-0-	Deleted Options in the amount of (\$529,952) in Amendment has been reversed through Budget Authorization #50. <b>COMPLETE, NO FURTHER ACTION; Amendment #2</b>	Amendment 2 Approved
1551-0009		071-0009	CTS Lowering	1	Authorized	12/08/11	+165,000		Amendment Signed by ED/CEO 12/8/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #3</b>	Amendment 3 Approved
1551-0010		071-0010	Modify Sidewalk Vault Demo ECP-FD009	7	Authorized	12/08/11	+39,311		Amendment Signed by ED/CEO 12/8/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #4</b>	Amendment 4 Approved
1551-0011		071-0011	Modify Stockton St. Sewer ECP-FD010	7	Authorized	12/08/11	+4,112		Amendment Signed by ED/CEO 12/8/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #4</b>	Amendment 4 Approved
1551-0012		071-0012	Reconfigure Utilities N. Side Ellis ECP-FD011	7	Authorized	12/08/11	+2,448		Amendment Signed by ED/CEO 12/8/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #4</b>	Amendment 4 Approved
1551-0013		071-0013	Extend SubSidewalk Closure Wall ECP-FD013	7	Authorized	12/08/11	+85,233		Amendment Signed by ED/CEO 12/8/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #4</b>	Amendment 4 Approved
1551-0014		071-0014	Reroute OCS to Fifth St. ECP-FD014	7	Authorized	12/08/11	+4,794		Amendment Signed by ED/CEO 12/8/11 <b>COMPLETE, NO FURTHER ACTION; Amendment #4</b>	Amendment 4 Approved
1551-0015		071-0015	Retrieval Shaft Redesign - Sewer By Pass	7				+56,000	Awaiting documentation from Designer	
1551-0016		071-0016	Design Measures for Settlement Protection	7				+99,000	Awaiting documentation from Designer	
1551-0017		071-0017	Incorporate Headwalls MOS/UMS	1	Disagree at this time	11/01/11		+42,000	In letter dated November 1, 2011 DPM responded that until concurrence with DP2 on cost transfer or additional documentation, the requested change is denied.	
1551-0018		071-0018	Prepare Utility Composite	-	Disagree	11/01/11		+50,000	DPM responded that Program does not agree in letter dated November 1, 2011.	
1551-0019		071-0019	Incorporate Cross Passages	1	Disagree at this time	11/01/11		+43,000	In letter dated November 1, 2011 DPM responded that until concurrence with DP2 on cost transfer or additional documentation, the requested change is denied.	
<b>Contract CS-155-1 Total</b>								<b>+696,882</b>	<b>+290,000</b>	<b>Of the total cost exposure shown, Contract Modifications and Authorized Option dollars have been absorbed by DP1 allocated contingency in the amount of \$696,483 of a total budget of \$705,000. Additional potential exposure is +\$391,411. Currently, overall contract value remains unchanged in the amount of \$6,500,000.</b>
<b>Contract CS-155-2</b>										
1552-0001	05/06/10	072-0001	Optional Task 2.50 and Task 12.07	1	Authorized	05/06/10		+274,775	CS Letter 0473 from ED/CEO Optional Task 2.50 to support art enhancement activities NTE \$164,383 and Optional Task 12.07 to support design structures for Public Art NTE \$110,392.	
1552-0002	07/01/10	072-0002	Expanded Hydraulic Testing at CTS	7	Authorized	07/01/10		+26,100	Estimated cost breakdown is included in the 7/1/10 letter from CSDG and includes signed approval by SFMTA. Amendment No. 1 authorized by ED/CEO on 12/21/11. <b>COMPLETE, NO FURTHER ACTION; Amendment #1</b>	Amendment 1 Approved
1552-0003	10/11/10	072-0003	Additional Soil Borings at UMS Station - Task No. 3.10 Supplemental Investigations	7	Authorized	11/02/10		+34,500	Estimated cost breakdown is included in the 10/11/10 letter from CSDG and includes signed approval by SFMTA. Amendment No. 1 authorized by ED/CEO on 12/21/11. <b>COMPLETE, NO FURTHER ACTION; Amendment #1</b>	Amendment 1 Approved
1552-0004	02/11/11	072-0004	MOS TOD White Paper Proposal	1				+33,847	Conceptual study will assess a potential high rise building at the Moscone station headhouse. Estimated cost breakdown is included in the 2/11/2011 letter from CSDG - <b>On Hold</b> .	
1552-0005	03/24/11	072-0005	CTS - Alternate 5	7	Authorized	03/24/11		+950,000	CS Letter from DED dated 3/24/11 has agreed to a modification of \$950,000 for performing additional work. Amendment No. 1 authorized by ED/CEO on 12/21/11. <b>COMPLETE, NO FURTHER ACTION; Amendment #1</b>	Amendment 1 Approved

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number	
						Approval Action	Approval Date	Actual/Forecast	Potential Change			
1552-0006	06/28/11	072-0006	Audited Overhead Rate Adjustment for Year 2010 - Request for Amendment	7					-0.	Estimated cost of \$406,320 is included in the 6/28/11 letter from CSDG. See 1552-0006 Rev. 1 for most current estimate		
1552-0007	07/25/11	072-0007	REVIT and CAD Support (to City Staff) Option to DP2 Contract (Optional Services Task 12.12)	1		Authorized	07/25/11		+79,200	CS Letter No. 0768 from ED/CEO dated 7/25/11 has authorized Optional Task 12.12 NTE \$79,200.		
1552-0008	08/03/11	072-0008	MOS Revisions to Emergency Ventilation Requirements	-		Provide further Justification	09/07/11		-0.	CMB did not approve a \$60,000 proposed increase. Document References ECP FD028, CSDG letter dated 8/8/11. DPM responded that program does not agree in letter dated 10/17/11.		
1552-0009	08/03/11	072-0009	CTS Revisions to Emergency Ventilation Requirements	-		Provide further Justification	09/07/11		-0.	CMB did not approve an \$80,000 proposed increase. Document References ECP FD029, CSDG letter dated 8/8/11. DPM responded that program does not agree in letter dated 10/17/11.		
1552-0010	08/03/11	072-0010	UMS Revisions to Emergency Ventilation Requirements	-		Provide further Justification	09/07/11		-0.	CMB did not approve a \$100,000 proposed increase. Document References ECP FD030, CSDG letter dated 8/8/11. DPM responded that program does not agree in letter dated 10/17/11.		
1552-0011	08/17/11	072-0011	Audited Overhead Rate Adjustment for Year 2010 - Request for Amendment - Rev. 1	7					+426,322	Estimated cost breakdown is included in the 8/17/11 letter from CSDG. This is a revision to the 6/28/11 letter and cost breakdown.		
1552-0012	08/23/11	072-0012	Station Air Replenishment System	-		Disagree	10/17/11		+36,240	Estimated cost breakdown is included in the 8/23/11 letter from CSDG. DPM responded that program does not agree in letter dated 10/17/11.		
1552-0013	09/01/11	072-0013	COR for Additional Services Related to MOS Constructability Review and Assessment of Alternatives	-					-0.	Cost charged to Task 2.70- part of base work		
1552-0014	09/22/11	072-0014	Proposal for Additional Work to provide Structural Engineering Support (Optional Services)	1		Authorized Optional Task 12.01.C5 only	11/04/11		+35,724	Estimated cost breakdown is included in the 9/22/11 letter from CSDG. Referenced Optional Work Tasks 12.01.C5 and 12.07.C5 - Effort re-evaluated - proposed cost to be resubmitted. CS Letter No. 1232 dated 11/4/11 from Director of Transportation has authorized Optional Task 12.01.C5 for the amount of \$12,796.	Option	
<b>Contract CS-155-2 Total</b>									<b>+1,046,324</b>	<b>+850,384</b>	<b>Of the total cost exposure shown, Contract Modifications and Authorized Option dollars have been absorbed by DP2 allocated contingency in the amount of \$1,046,324 of a total budget of \$4,890,707. Overall contract value remains unchanged in the amount of \$39,949,959.</b>	
<b>Contract CS-155-3</b>												
1553-0001	08/09/11	073-0001	Authorization to commence optional tasks 9.20J Technical Specifications Item J Facility SCADA.	1		Authorized	08/01/11		+259,305	SFMTA letter 0933 from ED/CEO dated 8/9/11 authorizing \$738,787 in optional tasks. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0002	08/09/11	073-0002	Authorization to commence optional tasks 12.05 Architectural Plans	1		Authorized	08/01/11		+257,129	SFMTA letter 0933 from ED/CEO dated 8/9/11 authorizing \$738,787 in optional tasks. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0003	08/09/11	073-0003	Authorization to commence optional tasks 12.13J Facility SCADA Design	1		Authorized	08/01/11		+169,553	SFMTA letter 0933 from ED/CEO dated 8/9/11 authorizing \$738,787 in optional tasks. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0004	08/09/11	073-0004	Authorization to commence optional tasks 12.12E traction power cables for CAD production	1		Authorized	08/01/11		+52,800	SFMTA letter 0933 from ED/CEO dated 8/9/11 authorizing \$738,787 in optional tasks. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0005	09/19/11	073-0005	Proposal to hire Wilson Irling to support Acoustics, Noise and Vibration tasks.	7		Authorized	03/08/12		+38,380	Signed by Director of Transportation 3/8/2012. COMPLETE, NO FURTHER ACTION ; Amendment 2	Amendment 2 Approved	
1553-0006	09/22/11	073-0006	Proposal to exercise optional task 12.07 Public Art.	1		Authorized	11/04/11		+10,285	Letter dated 9/22/11 to DOM. PMCM response pending. Priced level of Effort assumed for this task. SFMTA Letter 1213 from Director of Transportation dated 11/4/11 authorizing optional task.		
1553-0007	09/27/11	073-0007	Proposal to exercise optional sub-task 12.12 structural design of the OCS attachments.	7					+59,460	Letter dated 9/27/11 to DOM. NOT FOLLOWING CONTRACT REQUIREMENTS FOR PROPER NOTIFICATION OF CHANGE. PMCM has responded to clarify scope in stations and Tunnel Design. Awaiting resubmit of request by DP3		
1553-0008	10/05/11	073-0008	Scope Clarification - Add Emergency and Location Signage.	7		Disagree A.12.08- Signage	11/09/11			Letter dated 10/5/11 to DOM. NOT FOLLOWING CONTRACT REQUIREMENTS FOR PROPER NOTIFICATION OF CHANGE. CS Memo No. 0882 from DOM to DP3 PM considers A.12.08 Signage as part of the work necessary to complete the trackway elements of the scope. The work in question is considered part of the base scope of services.		
1553-0009	10/11/11	073-0009	Proposal to exercise mechanical optional task A.12.11 to design a water line on the FBS station platform.	1		Authorized	11/04/11		+33,000	SFMTA Letter 1213 from Director of Transportation dated 11/4/11 authorizing optional task. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0010		073-0010	Proposal to exercise Task 12.01 Surface Segment site Drainage	1		Authorized	11/04/11		+108,240	SFMTA Letter 1213 from Director of Transportation dated 11/4/11 authorizing optional task. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0011		073-0011	Proposal to exercise Task 12.02 Sewer Relocation and Analysis Report.	1		Authorized	11/04/11		+81,374	SFMTA Letter 1213 from Director of Transportation dated 11/4/11 authorizing optional task. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0012	11/09/11	073-0012	CTS - Alternate 5	7		Authorized	01/18/12		+88,855	Contract Modification No. 1 authorized by ED/CEO on 1/18/12. COMPLETE, NO FURTHER ACTION; Amendment #1	Amendment 1 Approved	
1553-0013	11/09/11	073-0013	Proposal for Geotechnical Services	7		Authorized	01/18/12		+64,027	Letter dated October 7, 2011 to DOM. PM/CM response pending. Contract Modification No. 1 authorized by ED/CEO on 1/18/12. COMPLETE, NO FURTHER ACTION; Amendment #1	Amendment 1 Approved	
1553-0014	02/06/12	073-0014	Authorization to commence optional tasks 12.12E traction power cables for CAD production, Optional task 2.50 Coordination with Art	1		Authorized	02/06/12		+54,712	SFMTA Letter 1381 from Director of Transportation dated 2/06/12 authorizing optional tasks 12.12E in the amount of \$41,280 and 2.50 for \$13,432. COMPLETE, NO FURTHER ACTION; OPTION	Option	
1553-0015	03/20/12	073-0015	Proposal for additional services in Response to Approved (ECP) FD-034 Operation Performance and Safety Enhancements to 4th and King and 6th and King.	1					+26,026	FD-034 was updated by CMB on 3/14/12. Proposal transmitted via letter CS1553 No. 0012 dated 3/20/12 to DOM. Amendment #4 PENDING	Option	

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**CENTRAL SUBWAY PROJECT**  
**Project Trend/Change Control Log**

2/15/2013

Item #	Date Initiated	CMB No.	Change Description	Change Type	CMB No.	Change Status		Projected Cost Impact +Exposure/(Benefit)		Comments	Contract Modification Number
						Approval Action	Approval Date	Actual/Forecast	Potential Change		
1553-0016	03/23/12	073-0016	Proposal for additional work - Tunnel Air Replenishment System (Exercise Optional Service)	7		Authorized	04/26/12	+173,119		SFMTA letter 1658 from Director of Transportation dated 4/26/2012 authorizing \$173,119 in optional tasks. Included in FD-035 to be presented to CMB on 6/26/12	Option
1553-0017	05/14/12	073-0017	Extension of PC Support Technician	1		Authorized	05/04/12	+34,483		Signed by Director of Transportation 5/14/12 <b>COMPLETE, NO FURTHER ACTION; Amendment #3</b>	Amendment 3 Approved
1553-0018	05/14/12	073-0018	Extension of CSP Quality Manager	1		Authorized	05/04/12	+61,043		Signed by Director of Transportation 5/14/12 <b>COMPLETE, NO FURTHER ACTION; Amendment #3</b>	Amendment 3 Approved
1553-0019	04/09/12	073-0019	Authorization to commence optional task 12.02 Utility Plans for design of repositioned and reconstructed manholes for the 78 inch diameter sewer on 4th St.	1		Authorized	04/09/12	+52,712		SFMTA Letter 1630 from the Director of Transportation dated 4/9/2012 authorizing optional task 12.02 in the amount of \$52,712 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0020	04/09/12	073-0020	Authorization to commence optional task 12.12 civil and structural support for traction power duct banks	1		Authorized	04/09/12	+109,000		SFMTA Letter 1630 from the Director of Transportation dated 4/9/2012 authorizing optional task 12.12 in the amount of \$109,000 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0021	04/26/12	073-0021	Authorization to commence optional task 12.11 design of the tunnel based Air Replenishment System including fill panels, feeder pipes, gauges, valves, fire proofing, anchors, supports, low level alarms, wiring, signage, connections to SCADA and monitoring devices, equipment placement, and impact protection	1		Authorized	04/26/12	+173,119		SFMTA Letter 1658 from the Director of Transportation dated 4/26/2012 authorizing optional task 12.11 in the amount of \$173,119 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0022	04/26/12	073-0022	Increased authorization for optional task 12.12.e CAD production support	1		Authorized	04/26/12	+30,000		SFMTA Letter 1658 from the Director of Transportation dated 4/26/2012 authorizing the increase in optional task 12.12e in the amount of \$30,000 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0023	05/21/12	073-0023	Authorization to commence option task 12.11 structural design support for Fire Protection and Plumbing designs	1		Authorized	05/21/12	+39,204		SFMTA Letter 1688 from the Director of Transportation dated 5/21/2012 authorizing the increase in optional task 12.11 in the amount of \$39,204 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0024	05/21/12	073-0024	Authorization to commence optional task 12.12 structural design support for Traction Power and Power/Lighting designs	1		Authorized	05/21/12	+43,638		SFMTA Letter 1688 from the Director of Transportation dated 5/21/2012 authorizing the increase in optional task 12.12 in the amount of \$43,638 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0025	05/21/12	073-0025	Authorization to commence optional task 12.13 structural design support for Telephone and CCTV designs	1		Authorized	05/21/12	+24,328		SFMTA Letter 1688 from the Director of Transportation dated 5/21/2012 authorizing the increase in optional task 12.13 in the amount of \$24,328 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
1553-0026	05/21/12	073-0026	Authorization to commence optional task 9.20 Technical Specifications for structural design support for above designs	1		Authorized	05/21/12	-3,039		SFMTA Letter 1688 from the Director of Transportation dated 5/21/2012 authorizing the increase in optional task 9.20 in the amount of \$3,039 <b>COMPLETE, NO FURTHER ACTION; OPTION</b>	Option
<b>tract CS-155-3 Total</b>								<b>+1,961,345</b>	<b>+85,486</b>	<b>Of the total cost exposure shown, Contract Modifications and Authorized Option dollars have been absorbed by DP3 allocated contingency in the amount of \$1,168,995 of a total budget of \$4,598,725. Overall contract value remains unchanged in the amount of \$19,919,526.</b>	

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