

central subway

Connecting people. Connecting communities.

TBM Launch Box In Progress

Mom Chung being lowered into the Launch Box



Progress Report



April 2013



SFMTA
Municipal Transportation Agency

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Cover: A section of the first of the two tunnel boring machines is lowered by a gantry crane into the southern end of the launch box at 4th Street . Delivery and assembly of the TBD segments is on-going during two shifts each working day. See TBM installation photos on pages 3 - 5 and construction monthly progress photos of tunnel work along the alignment on pages 33 to 35.

For up to date construction location information, see the Central Subway Blog, <http://www.centralsubwayblog.com/blog/>.



The first “ring” of the shield portion of tunnel boring machine Mom Chung arrived at the launch box work site in late April. Workers first had to bring the ring upright, before lowering it into the launch box onto a temporary steel cradle.

Executive Summary

Work continues to be on hold at the Retrieval Shaft on Columbus Ave in North Beach while staff implements the option of changing the Retrieval Shaft location to the Pagoda Palace Theater site which was approved at the February Board Meeting.

CN 1252-Tunnel Contract construction continues putting the finishing touches on the Launch Box and receiving and assembling the first of two tunnel boring machines (TBMs). Headwall construction for Yerba Buena/Moscone Station (YBM) on 4th Street between Howard and Folsom continues to be on hold most of the month for relocation of two large water mains. Work on Headwalls did resume toward the end of the month. Headwall construction for Union Square Market Street Station (UMS) continues together with Ellis Street shaft work and Jet Grouting activities.

Contract 1300 - Bids were opened on April 18th, the apparent low bid of \$840,067,000 was submitted by Tutor Perini Corporation. Bid evaluation began immediately thereafter with an anticipated award in May.

Current Cost estimate for the program remains unchanged and on target at \$1.578 billion. Costs to date are approximately \$331.46 million with total committed funding of \$643.6 million. Total cost contingency is at \$92.8 million, an unfavorable level below the current minimum required of \$160 million. Cost contingency recovery efforts are being evaluated and developed for review and approval by FTA.

Schedule for Revenue Service Date remains unchanged and on target for December 26, 2018. Buffer Float decreased to 4.7 months, an unfavorable level below the current minimum of 10 months. Schedule Contingency recovery efforts are being evaluated and developed for review and approval by FTA.

The Program’s Safety and Security activities includes Project 1252 Safety statistics thru April 2013.

Progress Photos



Above - vertical shaft at Ellis and Stockton in early April and after excavation in late April below.



Concrete pour for Union Square/Market Street station headwall pile, south of O'Farrell.

Upcoming Milestones

MILESTONE	DATE EXPECTED
General	
Revenue Service	December 2018
Contract 1252 Tunnel	
TBM Launch	June 2013
Milestone 1—Complete Cross Passages 1 & 2	May 27, 2014
Milestone 2—Complete Cross Passages 3 & 4	July 30, 2014
Substantial Completion	April 6, 2015
CN 1300 - Work Package (WP) 1253 Union Square/Market Street Station (UMS)	
Bid Opening	April 18, 2013
Notice to Proceed	June 2013
Substantial Completion	October 2017
CN 1300 - WP 1254 Chinatown Station (CTS)	
Bid Opening	April 18, 2013
Notice to Proceed	June 2013
Substantial Completion	October 2017
CN 1300 - WP 12535 YBM	
Bid Opening	April 18, 2013
Notice to Proceed	June 2013
Substantial Completion	July 2017
CN 1300 - WP 1256 Systems and Track	
Bid Opening	April 18, 2013
Notice to Proceed	June 2013
Substantial Completion	January 2018

Costs (See Appendix A for Details)

The Current Cost Estimate (CCE) for the Central Subway Project is **\$1.5783 billion** in year of expenditure dollars (\$YOE) and is the basis of the total project cost as presented in the 2011 New Starts Report submittal. This capital cost projection incorporates allocated and unallocated contingencies to cover the various risks associated with completion of the project.

Total net incurred costs for the project are \$331.46 million. This figure reflects expenditures through FAMIS 786 Report (\$306.92 million) plus the pay requests approved and currently being processed (\$9.11 million) and estimates of outstanding pay requests (\$15.43 million). This incurred amount equals 21.01% of the total project budget of \$1.5783 billion.

The current funding level to date is \$643,635 million. This represents 41% of the total project budget. The funding increased from the previous month with the receipt of funds.

The current Total Project Contingency is **\$67.231 million**, which is a \$92.8 million unfavorable balance against the current Minimum Contingency level of \$160 million. The Cost Contingency Drawdown Curve is attached in the Summary Cost Reports and Graphics section in Appendix A of this report to illustrate the full scope of the contingency drawdown over the life of the project. This month represents a change to the total project contingency when including the anticipated awarding of the apparent low bid for Contract 1300. Contingency transfers were made to account for the anticipated award of Contract 1300. The reduced total contingency is due to the low bid being higher than the Program budget for Contract 1300.



Segments of the forward "shield" portion of tunnel boring machine Mom Chung have arrived at the 4th Street launch box site. These "rings" are being lowered into the site one at a time, before being re-assembled.

Summary Cost Report Table

(\$ in millions)

Category	SCC Codes	Current Cost Estimate ¹ Previous Month vs Current Month			Commitments ²		Incurred (Expenditures + Approved for Payment)		Current Forecast	
		Previous Month	Transfer/Changes	April 2013	To Date	April 2013	To Date	April 2013	Current	Change from Last Period
Construction	10 - 50	\$1,080.6	+70.34	\$1,150.9	\$272.1	+0.34	\$144.58	+12.17	\$1,150.9	+70.34
Real Estate	60	\$37.4	-0-	\$37.4	\$36.4	-0-	\$16.72	+0.22	\$37.4	-0-
Vehicles	70	\$26.4	-0-	\$26.4	\$0.0	-0-	\$0.0	-0-	\$26.4	-0-
Professional Services³										
Preliminary Engineering	80.01	\$46.2	-0-	\$46.2	\$46.2	-0-	\$46.2	-0-	\$46.2	-0-
Final Design	80.02	\$82.0	-0-	\$82.0	\$83.4	-0-	\$61.6	+0.11	\$82.0	-0-
Project Management	80.03-80.04	\$208.6	-0.77	\$207.8	\$74.7	-0-	\$53.8	+1.67	\$207.8	-0.77
Other ⁴	80.05-80.08	\$22.9	-0-	\$22.9	\$11.3	-0-	\$8.55	+0.01	\$22.9	-0-
Finance Charges	100	\$0.0	-0-	\$0.0	\$0.0	-0-	\$0.0	-0-	\$0.0	-0-
Unallocated Contingency	90	\$74.2	-69.58	\$4.7	\$0.0	—			\$4.7	-69.58
Grand Totals		\$1,578.3	-0-	\$1,578.3	\$524.0	0.34	\$331.46	+14.18	\$1,578.3	-0-

1 - Current Cost Estimate (CCE): These columns reflect the project budget based on the approved transfers/changes from the previous month.

2 - Commitments: This includes awarded contract/MOU values, programmed real estate values and programmed agency/labor other direct costs (ODCs).

3 - Professional Services includes SFMTA, City/County, consultant charges and associated ODCs.

4 - Other includes legal, permits, review fees by other agencies, surveys, testing, investigation, inspection and startup.

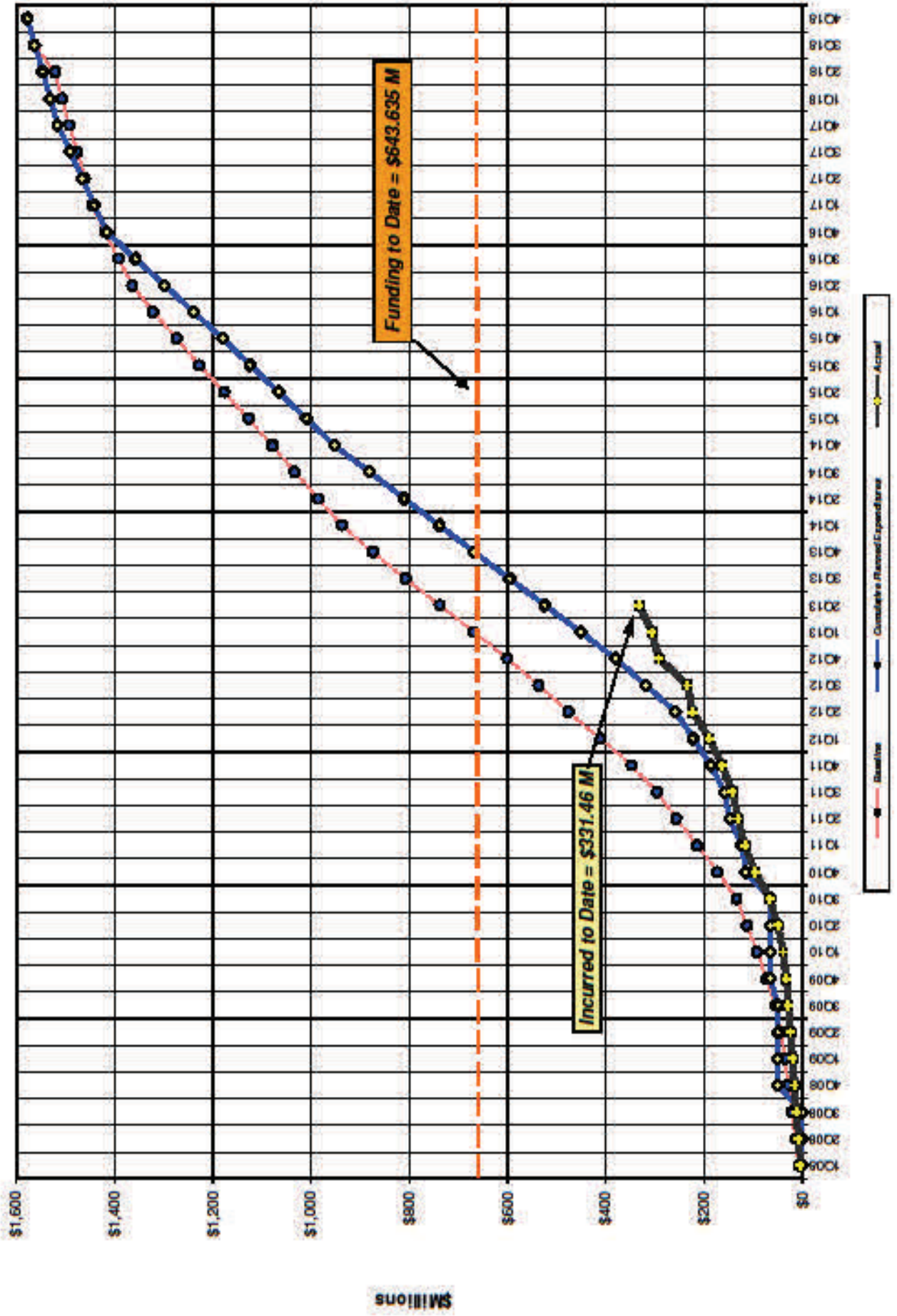
Note: This chart is generated from the Summary - Grouped by Project, SCC Summary and SCC Code Report. See **Appendix A** for more information.

Incurred costs and commitments for construction include Form B amounts.



Steel lifting brackets must be removed before each shield ring are lowered into place, so they can fit properly onto the temporary cradle.

CENTRAL SUBWAY PROJECT
Cash Flow Curve



Funding, Expenditures & Available Cash

The Funding/Expenditure Summary Table below, organized by federal, state, and regional/local funding sources, reports the grant funds received and expended and the cash balance by source. Appendix C details the sources and amounts now committed to implement the Project.

Total funds available in April, now booked in project accounts and available for current billing, is \$116.2 million (Column F). The total cash now available and not yet booked to specific cost accounts, is **\$195.9** million. Total cash and funding levels are projected to be sufficient for the scheduled contract partial certifications, and other Program costs during the next 90 days.

Note: The March report total Encumbrance contained a math error resulting in a \$147,000 overstatement. The total below is correct and should have been used in March.

	Funding		Expenditures		Available Cash on Hand		
	Committed Funding Sources	Total Awarded Funds to Date	Encumbrances to Date	Expenditures Billed to Date	Available for Billing Budgeted Expenses	Percent of Awarded Funds Allocated	Available for 2013 Additional Expenditures
A	B	C	D	E	F	G	H
<i>This row provides explanations and source of values</i>	<i>CS/Grants Inputs Baseline Budget</i>	<i>CS/Grants Inputs from Grants Records</i>	<i>Amounts in the Project's Approved Expenditures Authorizations/Budget Revisions</i>	<i>Monthly SFMTA Accounting</i>	<i>D - E</i>	<i>D / C</i>	<i>C - D</i>
Federal							
Sect. 5309-NS	942,200	177,415	\$128,396	\$121,398	\$6,999	72.37%	\$49,019
CMAQ	\$41,025	\$41,025	\$41,025	\$41,025	\$0	100.00%	\$0
Federal Subtotal	\$983,225	\$218,440	\$169,421	\$162,423	\$6,999	\$0.00	\$49,019
State							
TCRP	\$14,000	\$14,000	\$14,000	\$14,000	\$0	100.00%	\$0
State RIP	\$88,000	\$0	\$0	\$0	\$0	\$0.00	\$0
Prop. 1B (I-Bond) PTIMSE	\$307,792	\$225,912	\$100,765	\$56,108	\$44,657	44.60%	\$125,147
Prop. 1A (HSR-Bond)	\$61,308	\$61,308	\$61,308	\$0	\$61,308	\$0.00	\$0
State Subtotal	\$471,100	\$301,220	\$176,073	\$70,108	\$105,965	\$0.00	\$125,147
Local							
Prop. K	\$123,975	\$123,975	\$102,203	\$98,931	\$3,271	82.44%	\$21,772
Local Subtotal	\$123,975	\$123,975	\$102,203	\$98,931	\$3,271	\$0.00	\$21,772
Project Total	\$1,578,300	\$643,635	\$447,696	\$331,462	\$116,234	69.56%	\$195,939

Schedule

The summary Master Project Schedule (MPS) shown on page 11 includes progress through April 30, 2013. The expected dates of future major project milestones are shown in the chart on page 4. See Appendix B for schedule detail.

Schedule Revisions

The April 2013 Update of the Master Project Schedule (MPS) continues to forecast the Revenue Service Date (RSD) of December 26, 2018.

The Schedule Contingency is 4.7 months on the critical path of the MPS, which is below the Minimum Schedule Contingency level of 10 months. The Minimum Schedule Contingency Hold Points were updated this month to reflect the dates in the MPS (See Appendix B - Schedule Contingency Drawdown).

Schedule contingency has been below the minimum level since September 2012 when changes to the procurement of the remaining four contracts were incorporated into the MPS. Incorporating Contract 1300, which combined the stations and systems contracts, reduced schedule contingency levels from 14.4 to 5.2 months. Schedule changes to Contract 1300 in November 2012 resulted in an increase of schedule contingency from 5.2 to 5.8. However, in February 2013 it decreased from 5.8 to 5.2 followed by a reduction to 4.7 in March due to the slip in the bid opening of Contract 1300.

The primary reason that the Schedule Contingency has fallen below minimum levels is that the NTP dates pushed out important construction progress and removed interfaces associated with buffer float off the critical path. CTS and UMS had been planned to NTP in the summer and fall of 2012 respectively but were changed with the combination of Contract 1300 to NTP on May 1, 2013. Since then, Contract 1300 NTP has moved to its current date of June 21, 2013.

Tunnels 1252:

On February 19, 2013 the SFMTA Board approved measures to proceed with construction of the Retrieval Shaft at the Pagoda Palace Theater Site location. The originally intended Columbus Street Retrieval Shaft location has been suspended indefinitely.

Since the March 2013 Update a new sequence and activities for moving the retrieval to the Pagoda Palace Theater location has been added to the schedule. Two tunneling activities have been added to the schedule as place holders for the extra time it could take to tunnel to the new location. This timing adds a total of two weeks to the critical path of Project 1252. Once approved if any extra tunneling time is required the milestone will be adjusted accordingly. In the interim, the Substantial and Completion Milestones of 1252 have been adjusted for the extra tunneling place holders.

This month's update includes a revised schedule at UMS which re-sequenced the work for both headwalls to be built concurrent and recognized new production rates based upon actual progress. The completion date of the headwalls currently overlaps with Contract 1300 milestones

Schedule Revisions - Continued

by one day. This interface will continue to be closely monitored.

BIH's milestones gained time this month due to a new schedule at the UMS Headwalls and progress at the launch box which both show up on the April 1252 Schedule critical path. As mentioned above the required Substantial Completion date has temporarily been adjusted two weeks to account for the extra time it may take to tunnel to the Pagoda Place Theater location. In the interim the corresponding tunnel buffer float to station activities have been adjusted accordingly.

BIH's Contract Milestones Progress.

Milestones	Required Finish	March Finish	April Finish	Ahead/ Behind Requirement
1 - Complete Cross Passages 1&2 (CTS)	27-May-14	10-Jun-14	3-Jun-14	-7 Day
2 - Complete Cross Passages 3&4 (UMS)	30-Jul-14	12-Aug-14	5-Aug-14	-6 Days
CN 1252 Tunnel Substantial Completion	12-April-15*	29-Apr-15*	23-Apr-15*	-11 Days*

* Include timing for tunneling to Pagoda Palace Theater location.

The southbound TBM shipped in March on two separate vessels. The southbound TBM shield arrived onsite April 25, 2013 and the trailing gear has arrived in the Oakland port and will be brought onsite as needed for assembly. The Factory Acceptance Test of the northbound TBM is scheduled for May 2013 and is expected to arrive on site June 15, 2103.

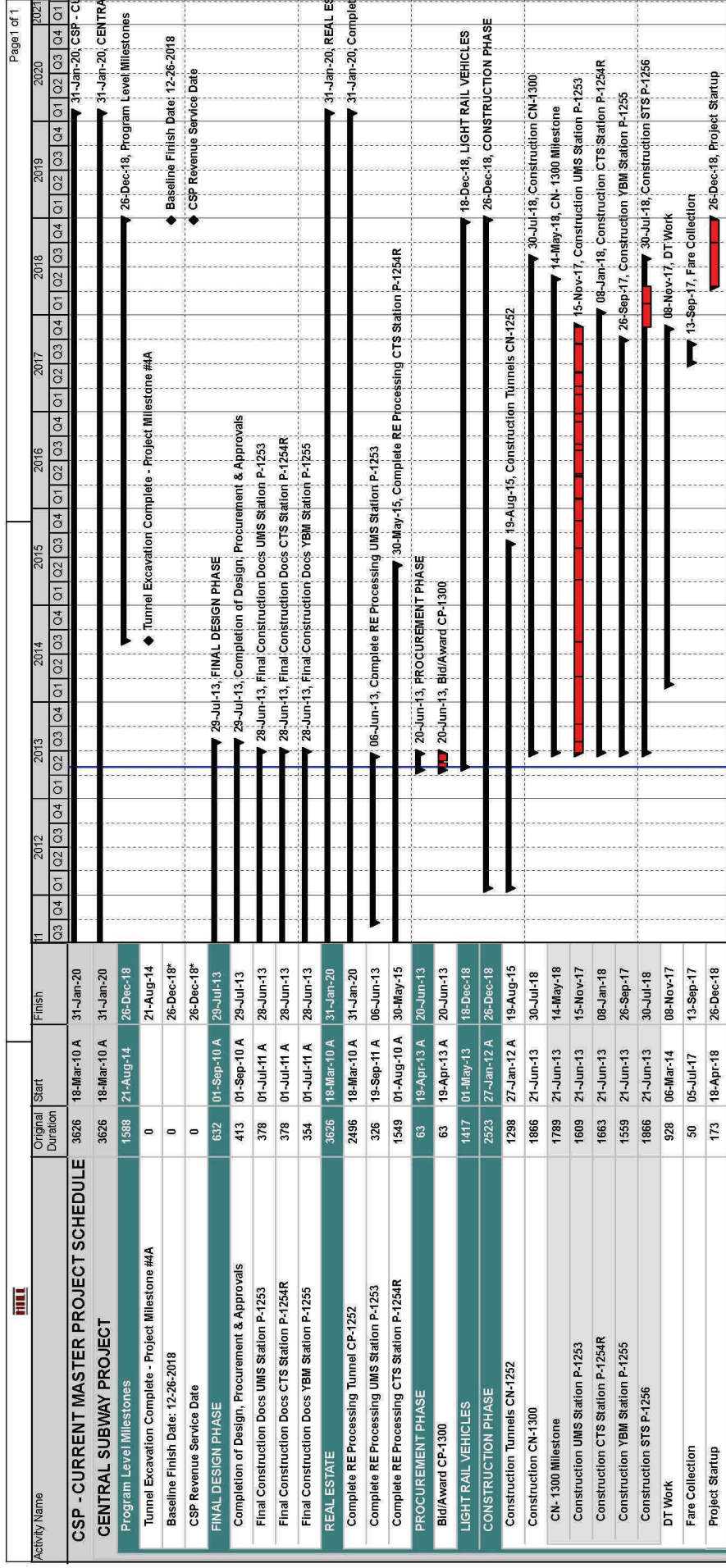
Lack of progress on receiving a BART permit to install contract and additional instrumentation for BART has started to have an adverse effect on the intermediate milestone and is only a few days off the critical path.

Contract 1300- UMS (1253)/ CTS (1254R)/ YBM (1255)/ STS (1256):

Bid Opening for Contract 1300 happened on April 18, 2013. The planned date for SFMTA Board Award is May 21, 2013.

Contract 1300 specifies that the Contractor shall schedule its Work based on the assumption that the UMS headwalls will be complete 90 calendar days after NTP. With the current progress on CN1252 and the planned NTP of CN1300 this interface is showing at 91 calendar days.

Master Project Schedule



Program Components

Program and Design Support During Construction

·Program Management/Construction Management CS-149

- Monthly meeting with PMOC - April 2
- Conducted CMB meetings - April 3, 10, 17, 24 & Risk Meeting — April 11th
- Contract 1300 Addendum 8 – April 5; Addendum 9 April 12
- Thales Negotiations/Contract – April 3
- Monitored SYSTRA work in progress on Rail Simulation of 2018 and 2030 Service Plan – Cont'd
- Continued PM/CM and Design Overhead Rate Desk Reviews – STILL ONGOING
- Design Desk Review Group 2 in Progress

Contract No.	CS-149 Central Subway Partnership	
Contract Description:	Project management and construction management.	
Status:	On-going.	
As of 4/30/13	Base Contract Value	\$85,139,092
	Approved Change Orders	-0-
	Current Contract Value	\$85,139,092
	Expended to Date (est.)	\$32,513,126
	% Expended	38.19%
	DBE Participation	37.65%

Project Controls Contract CS-156

- **Reporting:** Provided cost and schedule data for Monthly Report; input data and provided analysis within Monthly Report. Prepare Monthly Report and supporting Appendix A & B material.
- **Support:** Provided document control support for all contracts, utilizing EDMS and contract manager. Provide Estimating support for Construction Change orders
- **Cost/schedule support:** PCC10—Pagoda Theater Option—Prepare detailed estimate and hold scoping and negotiation meetings with 1252 Contractor.
- Contract No. 1252 change orders, schedule and submittal review; contract modification task force meeting; specialty estimates and schedule impacts; Small Business Enterprise participation.

Contract No.	CS 156 Project Controls To Date	
Contract Description:	Project Controls Cost and Schedule Project Consultant Support	
Status:	Ongoing	
As of 4/30/13	Base Contract Value	\$17,112,873
	Approved Change Orders	-0-
	Current Contract Value	\$17,112,873
	Expended to Date (est.)	\$5,431,012
	% Expended	31.7%
	DBE Participation	22.15%

Program and Design Support During Construction (Cont.)

Tunnel Design CS-155-1. Design support this month focuses on the following tunnel activity:

- Received 10 RFI's from the Contractor; RFI's 00246-00257 mostly related to Instrumentation, TBM construction, UMS Headwall construction, Compensation Grout installation, and Launch Box construction.
- Responded to 10 RFI's; 00152.1, 00244-248, 00250, 00252, 00253, and 00256 and a total of 6 RFI's are currently in review.
- Received 27 Submittals from the Contractor with an emphasis on Instrumentation, TBM construction, Jet Grout, Compensation Grout, UMS Headwalls, and Launch Box construction.
- Responded to 30 Submittals, and a total of 17 Submittals are currently in review.

Contract No.	CS-155-1 PB/ Telemon (Unexercised options not included in figures)	
Contract Description:	Design Package 1 for contracts 1250, 1251 and 1252.	
Status:	Design is complete. Construction support ongoing	
As of 4/30/13	Base Contract Value	\$5,795,000 (includes exercised options)
	Approved Change Orders (5)	\$ 642,886
	Current Contract Value	\$6,967,838
	Expended to Date (est.)	\$6,764,371
	% Expended	97.08%
	DBE Participation	32.75%

Subway Station Design CS-155-2: The current focus is design support with project integration, permits and bidding during construction.

- Participated in meetings with DBI and SFFD
- Finalized Title 24 documentation for each of the stations
- Revised drawings and specifications to reflect existing conditions at UMS and YBM based on issues encountered during construction of CN 1251 and CN 1252
- Prepared responses to Bidders' Questions
- Began preparation of conformed documents
- Prepared response to RFI Nos. 248, 250, 253, 257. Reviewed submittals related to UMS Headwalls (Submittal Nos. 31 32 13.36-011, 31 62 13.15-010, 31 62 13.15-013)

Contract No.	CS-155-2 Central Subway Design Group (Unexercised options not included in figures)	
Contract Description:	Design Package 2 for 1253 UMS, 1254 CTS, 1255 YBM Stations.	
Status:	Design contract complete. Bid support for Contract 1300 is underway.	
As of 4/30/13	Base Contract Value	\$35,059,252 (includes exercised options)
	Approved Change Orders (1)	\$ 1,010,600
	Current Contract Value	\$36,069,852
	Expended to Date (est.)	\$26,358,611
	% Expended	73.08%
	DBE Participation	41.8%

Program and Design Support During Construction (Cont.)

Surface, Trackwork and Systems Design CS-155-3 Final Design and the overall design integration and quality control is 92.0 percent complete.

- Provided bid support for SFMTA. Submitted responses to bidders inquiries for Contract 1300
- Addendums #8 and 9 including updates to track details, and systems. Bid opening took place April 18, 2013.
- Supported SFMTA in Thales train control sole source procurement negotiations.
- Supported SFMTA coordination for private utilities including PG&E, AT&T/TCG, and Level 3, including evaluation of plans and responses to inquiries.
- Prepared Final Notices of Intent for private utilities.
- Provided drawings to Oversight Manager for DT coordination.

Contract No.	CS-155-3 HNTB-B&C (Unexercised options not included in figures)	
Contract Description:	Design Package 3 for Systems, Track work, and Surface station.	
Status:	Design is complete. Bid support in progress.	
As of 4/30/13	Base Contract Value	\$16,822,238
	Approved Change Orders (4)	\$ 312,814
	Current Contract Value	\$17,135,052
	Expended to Date (est.)	\$11,432,601
	% Expended	66.72%
	SBE Participation	30.2%

Real Estate and Relocation

The Project possesses all fee acquisitions and subsurface easements required to construct the stations and tunnels.

The Memorandum of Understanding between the MTA and the Recreation and Parks Department for partial acquisition of the Union Square Garage was finalized for approval by the MTA Board of Directors and the Recreation and Parks Commission in May.

The City Attorney's office continues to prepare for Trial in May to determine the final purchase price for 266 Fourth St, the future site of the Yerba Buena / Moscone Station.

All project commercial and residential relocations are complete. The project continues to manage the remaining relocation and goodwill payments.

Third-Party Agreements

The Project team has concluded negotiations and obtained signed temporary construction license agreements for 19 of the required 27 properties affected by construction of the Central Subway Stations. These temporary license agreements will allow the MTA to install compensation grouting tubes and settlement monitoring equipment at sensitive buildings adjacent to the project.

During April, the team concluded negotiations and received signed agreements from the owners of 1, 39, and 212 Stockton Street. Negotiations continue for all outstanding temporary licenses required for the tunnel, the Chinatown, Union Square/ Market Street and the Yerba Buena/ Moscone stations. In anticipation that timely agreement would not be reached with a small number of property owners, the Project team requested and received approval from the San Francisco Board of Supervisors for Resolutions of Necessity on December 11, 2012. If agreement is not reached in a timely manner, the Resolutions of Necessity allow the Project to condemn the remaining licenses through the courts in order to maintain the project schedule.

The Project filed for condemnation of the temporary license at 1455 Stockton St on April 4th 2013, a hearing date will be confirmed in May.

The Project is preparing documents to respond to a pretrial discovery request received from the owner of 19 Stockton Street. The Project filed for condemnation of the license at this property on February 2nd, 2013.

The Project team, with the City Attorney's office is preparing condemnation documentation for the remaining properties along Stockton and 4th Streets.



Above - Crews use a large steel bucket to remove spoils excavated from the large-diameter shaft currently being excavated at Ellis and Stockton.

Below - A worker monitors the lowering of ring 1 of the TBM Mom Chung. Precision is paramount, and final distances were measured in millimeters.



Risk Management

Risk Mitigation Meeting No. 44 was conducted on April 11, 2013. Discussions focused on new risks associated with tunnel construction and updating risks associated with changing the location of the Retrieval shaft and for the contracting strategy for one large contract. Risk Register Rev 20 was published, incorporating actions taken during the preceding month.

The next Risk Mitigation Meeting (No.45) is scheduled for May 10, 2013. The Risk Assessment Committee focuses on managing and mitigation of all outstanding risks, and mitigating new risks to the construction and implementation program..

Quality Assurance

The Quality Assurance team provides oversight, surveillance, audits, proactive feedback and QA records with the construction management, resident engineers, contractors and subcontractors.

Yerba Buena/ Moscone Station Portal Utilities Relocation Contract CN1250 Close Out

Quality Assurance staff is reviewing and monitoring the close out process underway since July 2012 when the Resident Engineer submitted the last Completeness Determination Forms with the final punch list to the PUC for review. In August through October, to advance the close out process, the Designer, Contractor's Superintendent and the Resident Engineer continued with correcting/completing the CADD versions of the final as-builts. The last requests for clarification of as-built information previously provided to the designers of the AWSS and Sewer have been provided which will allow the completion of all CADD work for these as-builts. The Utility Contractor and Resident Engineer will then perform a final review and the as-builts will then be signed off. These items will also be submitted to the PUC for distribution.

When the final punch list and as-builts are combined with the last Completeness Determination Forms, the PUC will review the set and sign off. The sign off will confirm the PUC's acceptance of the utility installations.

UMS Utilities Relocation Contract CN1251 – Remains Near Close Out

The punch lists required by the 01 45 00 Specification Section are virtually complete – the Contractor's dedicated "close-out" crews have completed all but some very minor items (SFMTA and Sewer) to complete which includes the final walk-throughs with the associated Utility inspectors/engineers. The final Punch list documentation is estimated to be complete by May.

The remaining issues are the RE's review, with assistance by QA Staff and acceptance of the Contractor's Quality Documentation and the completion of as-built CADD work and review and sign-off by the Contractor and RE. The Contractor completed the process of attaching all associated test and inspection test reports to the associated Daily Inspection Report (DIR) which includes items such as pull tests and mandrel reports from their Subcontractor. Remaining as-built work includes final review by the RE of the Contractor's as-builts of the most recently completed Field Work, Utilities will then complete their CADD work, the Contractor and RE will then perform their final reviews for sign-off of the completed as-builts. As-builts are expected to be completed by the end of June 2013.

Quality Assurance - Continued

Tunnel Contract CN1252 – On Going

Quality Assurance staff are assisting implementation of the Contractor's Quality Control Program for Jet and Compensation Grouting, Launch Box and MOS Slurry Walls and Excavation Support, Ellis Street Shaft, UMS Secant Piles, preparation of RE and Contractor Tunnel Advance Inspection Reports and precast segment tunnel liners.

Meetings attended: Weekly Progress, Preparatory and Initial Phase, Instrumentation. as

Document comment and review: Contractor submittals and RFIs for concrete mixes, welding procedures, welder qualifications, Superintendent qualifications, material test reports, laboratory test reports and Quality Control Plans.

RE's Daily Inspection Reports: Monthly review and validation was carried out of verification of location/position of installed members and assurance that installations are performed to the requirements of the Contract Documents.

Testing: Continued review of the precast tunnel segments that are currently being produced by BIH's supplier, Precast Management Corporation. BIH is reminded at each weekly progress meeting of the Engineer's shipment Hold Point (no segments are to be shipped without the release of this Hold Point). Issues have been identified by PMC's Quality Staff regarding the acceptance of the segment liners associated with production issues concerning gaskets, spalling of concrete adjacent to the gasket and defects at some corners of the segments.

Testing Resolution: PMC is currently developing resolution of the productions issues with both the gasket and form suppliers. Additionally, PMC has developed repair procedures and generated Non Conformance Reports that are currently under review, which must be approved by PMC's Designer, BIH and SFMTA's Engineer.

Other Program QA Practices Implemented

Close-out of Corrective Action Requests: Close outs continued from Quality Assurance staff's Audits, Surveillances and PMOC Quarterly Reviews. The status is tracked in the Corrective Action Log that is provided to the project team and the FTA PMOC.

QA support this month focused on:

Oversight and Design Managers for the 1300-Union Market Street Station, Chinatown Station, Moscone Station and Surface, Track and Systems contracts.

QA staff published Quality Assurance Audit QAA024. This audit consists of the verification of the 1252 Resident Engineer's compliance with Construction Management Procedures associated with changes to the contract. Corrective Action Requests (CAR) numbers 199 and 200 were generated as a result of the Audit. Responses to the CARs are due early May 2013 with close-out of the Audit by the end of May 2013.

Technical Capacity

The Program welcomed Vivian M. Chow, as the SFMTA Project Controls Manager. Recruitment continues for project controls staff, estimating and field staff to fill Resident Engineers, Assistance Resident Engineers and Office Engineers. Additional hires are planned in May.

Community Outreach

Outreach Events/Public Activities/Presentations for the month of April

Union Square Bid Meeting	April 3, 2013
SPUR-Phase 2 Planning	April 13, 2013
City of Seattle Executive Visit	April 17, 2013
North Beach Meeting	April 17, 2013
Whole Foods Event	April 26, 2013

Outreach efforts continued to businesses, residents and community groups. A meeting was held with the Union Square Business Improvement District about upcoming construction and holiday moratorium.

Notices were handed out to businesses in North Beach inform them of soil boring investigation and the April 17 Community meeting.

In collaboration with Whole Foods, members of the outreach team staffed an informational table inside Whole Foods on 4th and Harrison Street. Staff handed out project collaterals along with answering questions from the public — see photo below.

Assisted contractor BIH to outreach to property owners and schedule for pre con site visits, and visit to some sites when necessary; also assist Alex in completing the licensing agreement with hard to reach property owners;

Member of the outreach team participated in the Chinatown TOD planning process and also participated in the artist selection panel of the Chinatown Station cross cavern process

Members assisted in coordination of print media: SF Chronicle, Examiner, SF Bay, Sing Tao, World Journal, and China Press, and local news interview (KGO, KTVU, ABC, CBS).

Team member took photos of Mom Chung TBM shield and cutter head being lowered into the launch box as part of the Project photo history record.



The Central Subway partnered with Whole Foods to celebrate the arrival of TBM Mom Chung. Two special sandwiches were created for the event, named after the two TBMs that will soon be working near the store.

Outreach - Continued

Outreach in Support of Mitigation and Monitoring

Weekly construction emails and frequent social media updates continued. The email list receiving these updates has grown to over 500 email addresses, ensuring construction impact information is reaching a significant number of people and organizations along the project alignment.

The outreach team continues to assist the Tunnel Contractor in obtaining permission for installation of the monitoring devices.

Team member and the Tunnel Contractor reached out to businesses regarding construction of the covered walk-way and construction of the gantry crane.

Media Coverage

Central Subway Media Coverage			
Date	Title with link to article	Source	Reporter/Writer
4/2/2013	Dramatic Roxy Paine Sculpture Coming To 4th Street Central Subway Station	Sfist	Brock Keeling
4/3/2013	SF Subway Project Shifts into High Gear	American Society of Civil Engineers	Lynn R. Novelli
4/23/2013	Central Subway Project's first Tunnel Boring Machine Arrives at Port of San Francisco's Pier 80	Maritime Executive	



At the Central Subway TBM event partnered with Whole Foods. Everyone who participated in turning the wheel won a prize.

Staffing

The table below shows Planned and Actual full-time equivalent staff (FTEs) working on the Project by location and organization. Updated Staffing plans generated this month to reflect the new contracting strategy and timing of construction provide explanation for the drop in planned staffing levels.

Central Subway Staffing

Locations	February 2013 FTEs		March 2013 FTEs		April 2013 FTEs	
	Planned	Actual	Planned	Actual	Planned	Actual
Project Office 821 Howard						
SFMTA (Admin/PM)	11.8	5	5.85	9.5	8.9	11
PMCM (CS149)	17.08	17	17.08	17.41	16.08	16.03
PCC (CS156)	7.00	5.25	7.00	5.25	7	5.25
DPW (CM)	2	2	2	2	2	2
Subtotal	37.9	29.3	37.9	34.2	37.9	34.3
1252 Construction Field Office						
SFMTA (PM/Design)	5.85	1	7.85	1	4	1
PMCM (CS149)	9.00	9.63	9.00	9.06	10.89	8.74
PCC (CS156)	2.00	2.00	2.00	2.00	2	2
PBT (CS155-1)	0.0	0.0	0.0	0.0	0	0
CSDG (CS155-2)	0.0	0.0	0.0	0.0	0	0
HNTB-B&C (CS155-3)	0.0	0.0	0.0	0.0	0	0
Subtotal	16.9	12.6	18.9	12.1	18.9	11.7
Other						
SFMTA (R.E, Contracts, Admin)	1.0	1.0	1.0	1.0	1.2	1
SFMTA + DPT (Design)	0.78	1.0	0.78	1.0	0.17	1
CC of San Francisco	0.0	0.0	0.0	0.0	0	0
PMCM (CS149)	6.75	8.39	8.75	8.00	8.75	9.04
DPW (Design)	2.0	1.74	2.0	1.74	2	1.74
PBT (CS155-1)	3.50	1.50	1.30	1.50	1.19	1.5
CSDG (CS155-2)	3.82	5.70	3.00	2.0	1	2
HNTB-B&C (CS155-3)	4.00	4.20	3.82	3.0	0	2.2
Subtotal	21.9	23.2	20.7	18.2	20.7	19.3
Total	76.6	65.1	77.4	64.5	77.4	65.3

Safety & Security

The San Francisco Municipal Transportation Agency (SFMTA) is committed to the highest practical level of safety and security standards and practices in the public transit industry and has developed a Safety and Security Management Plan (SSMP) expressly for the purpose of carrying out the FTA intentions for the Central Subway Project. This commitment is consistent with the SFMTA's:

The project-specific SSMP, prepared by an SFMTA Project team in concert with the FTA, is the road map to integrate safety and security into the Phase 2 Project, achieve SFMTA's safety and security commitment and implement all FTA and California Public Utilities Commission (CPUC) requirements.

Several of the important components of the plan namely; the Safety & Security Committee (SSCC); the Fire Life Safety & Security Committee (FLSSC); and the Construction Conformance Verification and Documentation have been reported in previous MPR; outlining their purpose and actions to date. More information and details on any activities associate with these important components will be provided as appropriate for the particular phase of the project.

Contractor Safety and Security

The purpose of the construction safety and security program will be to outline the minimum health, safety and security requirements to which all participating SFMTA employees and Central Subway Project construction contractors and subcontractors shall adhere to for preventing job-related injuries, illnesses, and providing protection during construction activities at the Project.

Project Safety Record - Contract 1252

Through Month End - April 2013

SAFETY RATES

OSHA Recordable Accidents, 3.2
Lost Time Cases, .80

JOB TO DATE	BIH	Subs	Total Project	Rate*
OSHA Recordable Accidents	2	2	4	3.20
Job Transfer or Restricted Duty Cases	0	0	0	0.00
Lost Time Cases	0	1	1	0.80
Total Project Incidents	2	3	5	4.00
Man Hours Worked Through ME - April 30, 2013	86,222	163,763	249,985	

YEAR TO DATE (Month, Day, Year to Month, Day, Year)	BIH	Subs	Total Project	Rate*
OSHA Recordable Accidents	1	0	1	2.05
Job Transfer or Restricted Duty Cases	0	0	0	0.00
Lost Time Cases	0	1	1	2.05
Total Project Incidents	1	1	2	4.11
Man Hours Worked Through ME - April 30, 2013	43,286	54,118	97,404	

* Rate calculation: Number of incidents divided by total number of labor hours worked multiplied by 200,000 labor hours.

The 2008 OSHA Recordable Accidents Construction Industry Rate for Highway, Street, and Bridge Construction is 3.9.



A view of the temporary wall going up in the Powell Street subway station.

Contracts & Construction

Current Status

Contract 1250 - Moscone Station and Portal Utilities Relocation:

- Continue administrative closeout

Contract 1251 - Union Square/Market Street Station Utility Relocation:

- Final Completion October 15, 2012
- Prepare for project final acceptance by the SFMTA Board of Directors
- Continue punch list work

Contract 1252 - Central Subway Tunneling:

- Began assembly of the first TBM; prepared shipment for second TBM.
- Completed pre-condition for compensation grouting at the Launch Box.
- Began slurry panel installation at the Northeast corner of 4th Street for the Y/MOS headwalls.

Contract 1300 - Work Package 1253 - Union Square/Market Street Station:

- Bid opening completed April 18, 2013. Tutor - Perini is apparent low bidder.

Contract 1300 - Work Package 1254 - Chinatown Station:

- Bid opening completed April 18, 2013

Contract 1300 - Work Package 1255 - Yerba Buena/Moscone Station:

- Bid opening completed April 18, 2013

Contract 1300 - Work Package 1256 - Systems, Trackwork and Surface Station:

- Bid opening completed April 18, 2013

Construction Contracts at a Glance

Awarded Contracts

Contract 1250: Moscone Station and Portal Utilities Relocation

- Contractor: Synergy Project Management
- Amount: \$11.97 million
- Contract Status: Completed



Contract 1251: Union Square/Market Street Station Utility Relocation

- Contractor: Synergy Project Management
- Amount: \$20.79 million
- Contract Status: Completed



Contract 1252: Central Subway Tunneling

- Contractor: Barnard Impregilo Healy JV
- Amount: \$233.58 million
- Contract Status: In progress

Upcoming Contract

Contract 1300 - Combined WPs 1253, 1254, 1255, 1256

- Advertise Date: October 22, 2012
- Bid opening completed April 18, 2013
- Tutor - Perini is apparent low bidder
- Notice to Proceed: June 2013



Work Package 1253: Union Square/Market Street Station

Work Package 1254: Chinatown Station

Work Package 1255: Yerba Buena/Moscone Station

Work Package 1256: Systems, Trackwork and Station



Moscone Station and Portal Utility Relocation

Contract 1250

Contractor: Synergy Project Management, Inc.

PROJECT COMPLETE—UNDER BUDGET

Description

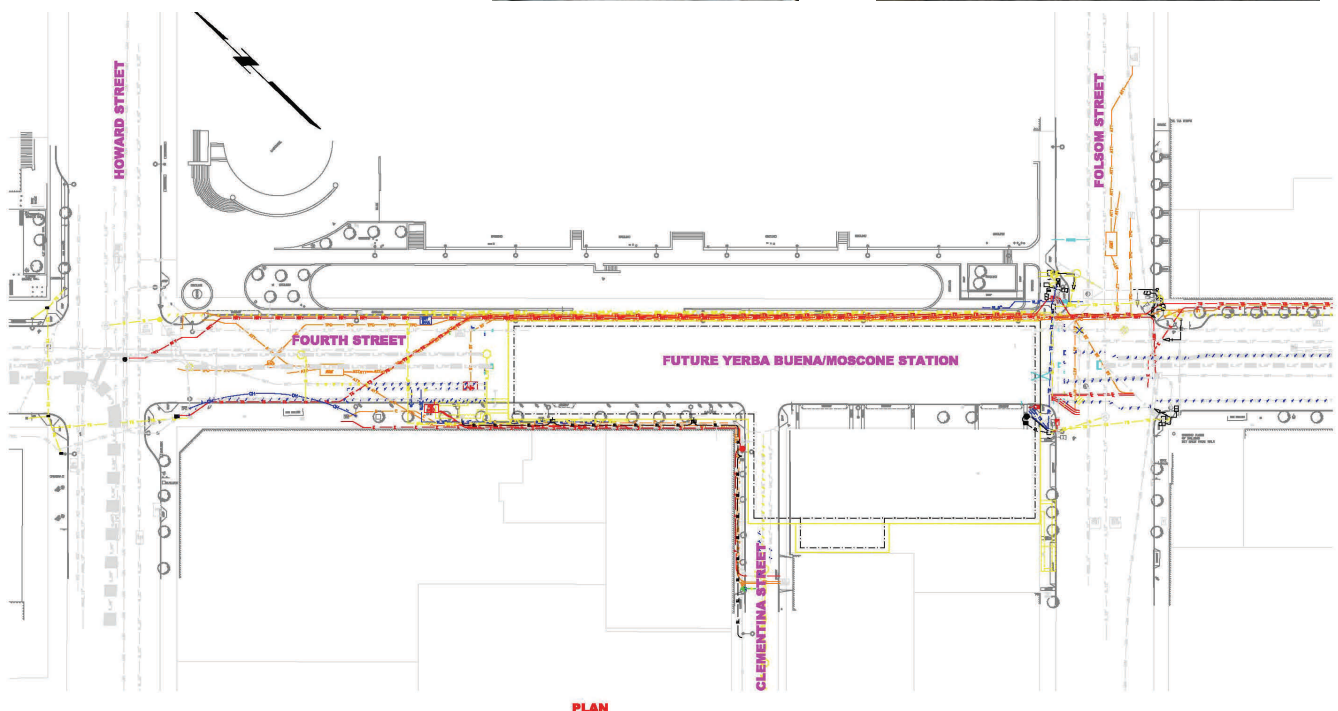
This project relocates utilities within the footprint of the proposed Yerba Buena/Moscone Station and the 4th Street Portal where the tunnel boring machines will descend underground. Also included is installation of building protections and monitoring of buildings adjacent to utility trenches.

Status

- Work complete
- Project closeout administration and documentation
- Final Completion Date: June 23, 2011

Contract Details	
Contract Awarded:	November 17, 2009
Notice to Proceed:	January 4, 2010
Substantial Completion:	June 23, 2011
Contract Award Value:	\$ 9,273,939
Modifications Final :	\$ 2,694,211
Final Contract Value:	\$11,968,150

Budget/Expenditures	
Category	Amount
Original Budget	\$11,227,316
Expenditures Final	\$11,968,150
Utility Reimbursements	(\$2,275,419)
Final Program Cost	\$9,692,731
Budget Impact (Underrun)	(\$1,534,585)



Union Square/Market Street Station Utility Relocation

Contract 1251

Contractor: Synergy Project Management, Inc.
PROJECT COMPLETE - UNDER BUDGET

Contract Details	
Contract Awarded:	December 7, 2010
Notice to Proceed:	January 12, 2011
Substantial Completion:	August 16, 2012
Contract Award Value:	\$16,832,550
Modifications Final:	\$ 3,962,031
Final Contract Value:	\$20,794,581

Budget/Expenditures	
Category	Amount
Original Budget	\$22,199,847
Expenditures Final	\$20,794,581
Utility Reimbursements	\$7,618,412
Final Program Costs	\$13,176,169
Budget Impact (Underrun)	\$9,023,678

Description

This project relocates utilities for the Union Square/Market Street Station and temporarily reroutes existing trolley coach lines around the construction.

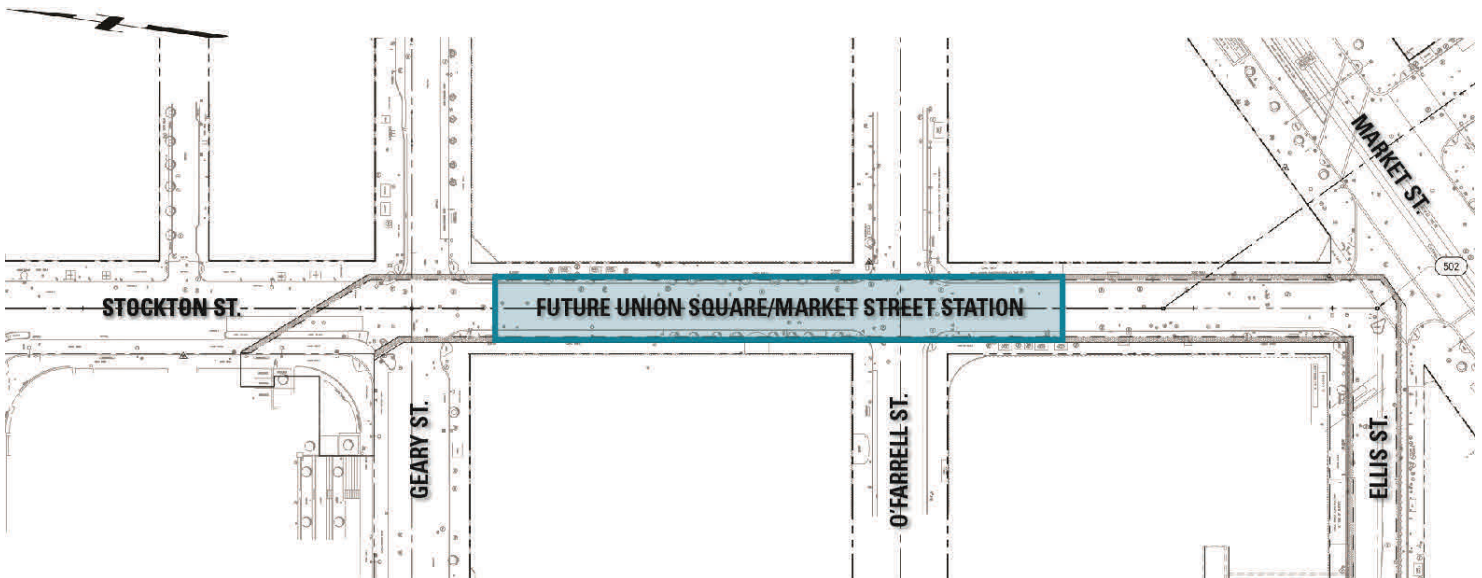
Status

Project is substantially complete.

- Final completion date is October 15, 2012.
- Continue punch list work

Work Expected Next Month

- Prepare for Project Final Acceptance by the SFMTA Board of Directors
- Complete punch list work



Central Subway Tunneling

Contract 1252

Contractor: Barnard Impregilo Healy Joint Venture

Contract Details

Contract Awarded: August 8, 2011
Notice to Proceed 1: January 27, 2012
Notice to Proceed 2: March 14, 2012
Partial NTP 3: April 13, 2012
Notice to Proceed 3: October 15, 2012
Substantial Completion: March 29, 2015
Total Contract Days = 1,150
Contract Award Value: \$233,584,015
Modifications to Date: (\$2,705,521)
Current Contract Value: \$230,878,493

Budget/Expenditures

Category	Amount
Current Budget	\$267,242,479
Expenditures to Date	\$104,930,021

Description

1.7-mile twin bore tunnels from Hwy I-80 to North Beach using two tunnel boring machines (TBMs) simultaneously; advanced procurement of TBMs by Contractor; settlement monitoring and protection of existing utilities, buildings and BART tunnels; TBM launch box and retrieval shaft excavation support; Yerba Buena/Moscone Station and Union Square/Market Street Station end walls; tunnel excavation and lining (one-pass precast segmental lining), 4th Street portal and cross passage.

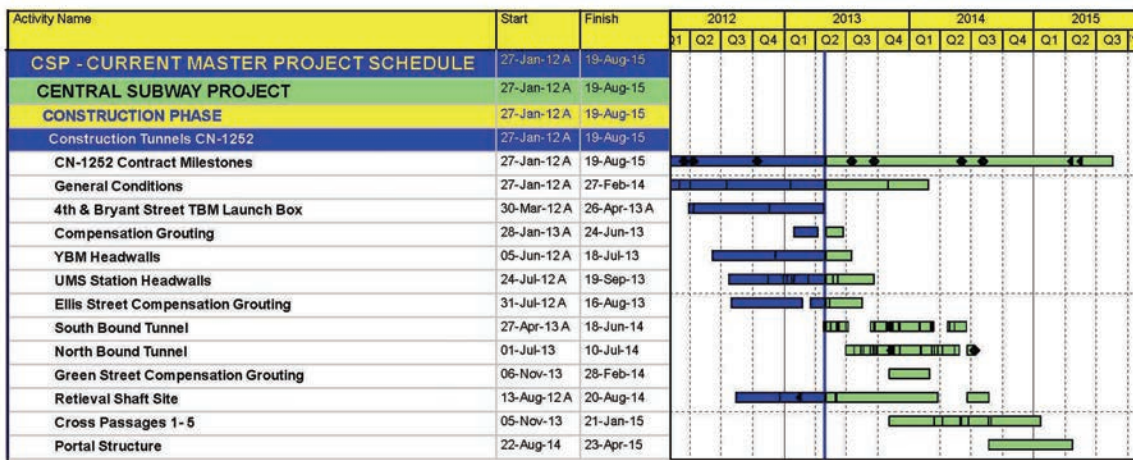
Status

- TBM - Arrived on site. Started assembly of the first TBM.
- Launch Box—Finished installation of the base slab. Finished pre-conditioning for compensation grouting on 4th street at Harrison street.
- Moscone— Finished installation of utilities and SFWD tie-ins. Finished North guide walls and started the slurry panel on the NE side of 4th street.
- UMS— Continued installing pile at the South headwall. Resumed jet grouting at the North Headwall.
- Ellis Shaft— Continued excavation of the shaft.

Work Expected Next Month

- TBM Procurement—The factory acceptance testing of the second TBM.
- Launch Box— Complete assembly of the first TBM.
- Moscone— Finish the South guide walls and the slurry panel on the North side of 4th street. Begin Jet grouting.
- 4th & Market—Start installation of pre-conditioning for compensation grouting.
- UMS—Continue installing piles at the South headwall. Continue jet grouting at the North Headwall.
- Retrieval Shaft—Original scope is permanently suspended while negotiations continue and SFMTA explores alternative contract options.

Schedule



Chinatown Station

Contract 1300 - Work Package 1254



Contract Details	
Advertise Date:	October 22,2012
Scheduled NTP:	2nd Quarter 2013
Duration:	52 months
Length:	200 feet
Extended Cavern:	340 feet
Depth:	115 feet
Estimated Cost:	\$235,000,000

Description

Station finishes, AC and DC traction power substations, elevators, escalators, lighting, emergency ventilation fans, HVAC fire alarm/ suppression/ protection, slurry or secant pile and SEM excavation, settlement monitoring, building protection, PA, CCTV, signage, installation of fare collection equipment, station start-up and commissioning.

Budget/Expenditures	
Category	Amount
Current Budget	\$251,115,794
Expenditures to Date	\$0

Status

Work package included in Combined Contract 1300 advertised October 22, 2012. The bid opening was April 18, 2013.

Schedule

Activity Name	Start	Finish	2013		2014				2015				2016				2017				18
			Q	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
CSP - CURRENT MASTER PROJECT SCHEDULE																					
CENTRAL SUBWAY PROJECT	21-Jun-13	08-Jan-18																			
CONSTRUCTION PHASE	21-Jun-13	08-Jan-18																			
Construction CN-1300	21-Jun-13	08-Jan-18																			
Construction CTS Station P-1254R	21-Jun-13	08-Jan-18																			
CTS Contract Milestones	21-Jun-13	07-Nov-17																			
Headhouse / Cross Cut	21-Jun-13	08-Jan-18																			
Platform Cavern	05-Aug-15	20-Apr-17																			
Crossover Cavern	18-Dec-15	26-Aug-16																			
Emergency Egress Shaft	19-Nov-15	12-Jul-17																			

Yerba Buena/Moscone Station

Contract 1300 - Work Package 1255



Contract Details	
Advertise Date:	October 22, 2012
Scheduled NTP:	2nd quarter 2013
Duration:	50 months
Length:	200 feet
Depth:	50 feet
Estimated Cost:	\$132,000,000

Budget/Expenditures	
Category	Amount
Current Budget	\$136,754,973
Expenditures to Date	\$0

Description

Station finishes, AC and DC Traction Power substations elevators, escalators, lighting, emergency ventilation fans, HVAC fire alarm/suppression/ protection, slurry wall top-down construction, settlement monitoring, building protection, PA, CCTV, signage, installation of fare collection equipment and station start-up and commissioning.

Status

Work package included in Combined Contract 1300 advertised October 22, 2012. The bid opening was April 18, 2013.

Schedule

Activity Name	Start	Finish	2013		2014				2015				2016				2017				18
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
CSP - CURRENT MASTER PROJECT SCHEDULE	21-Jun-13	26-Sep-17																			
CENTRAL SUBWAY PROJECT	21-Jun-13	26-Sep-17																			
CONSTRUCTION PHASE	21-Jun-13	26-Sep-17																			
Construction CN-1300	21-Jun-13	26-Sep-17																			
Construction YBM Station P-1255	21-Jun-13	26-Sep-17																			
YBM Milestones	21-Jun-13	26-Sep-17	◆						◆				◆						◆	◆	
Surface Level	21-Jun-13	26-Sep-17	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Mezzanine Level	13-Jan-15	02-Jun-17							■	■	■	■	■	■	■	■	■	■	■	■	
Concourse Level	03-Mar-15	18-May-17							■	■	■	■	■	■	■	■	■	■	■	■	
Platform Level	23-Jul-15	30-Mar-17																			

Systems, Trackwork, & Station

Contract 1300 - Work Package 1256



Contract Details	
Advertise Date:	October 22, 2012
Scheduled NTP:	2nd quarter 2013
Duration:	63 months
Estimated Cost:	\$143,000,000

Description

Testing, safety and security project certification and enabling the SFMTA to satisfactorily operate and maintain the project, including but not limited to construction of tunnel invert concrete, track emergency walkways, lighting, wet standpipes, undercar deluge, radio repeater stations and antennae, overhead contact system, traction power feeders and detection system, switch machines, CCTV, SCADA, communications system, ticket vending machines, advanced train control system, train destination audible and visual announcement displays and other passenger information systems, systems monitoring/control centers and signage.

Budget/Expenditures	
Category	Amount
Current Budget	\$154,999,985
Expenditures to Date	\$0

Status

Work package included in Combined Contract 1300 advertised October 22, 2012. The bid opening was April 18, 2013.

Schedule

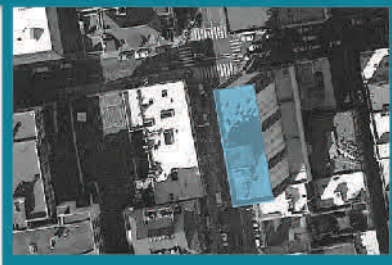
Activity Name	Start	Finish	2013		2014		2015		2016		2017		2018	
			Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
CSP - CURRENT MASTER PROJECT SCHEDULE	21-Jun-13	30-Jul-18												
CENTRAL SUBWAY PROJECT	21-Jun-13	30-Jul-18												
CONSTRUCTION PHASE	21-Jun-13	30-Jul-18												
Construction CN-1300	21-Jun-13	30-Jul-18												
Construction STS P-1256	21-Jun-13	30-Jul-18												
STS Milestones	21-Jun-13	13-Feb-18												
General	21-Jun-13	30-Jul-18												
4th & King Street	19-Aug-13	04-Oct-16												
Surface	19-Aug-13	25-Jul-14												
NB & SB Tunnel	29-Sep-15	13-Nov-17												
YBM	05-Jun-17	26-Sep-17												
UMS	07-Jul-17	27-Oct-17												
CTS	10-Jul-17	13-Nov-17												

central **T** subway

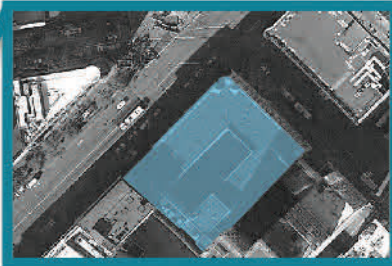
Monthly Progress Construction Activity

1

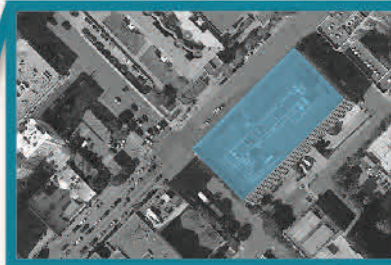
Chinatown Station



Union Square/Market Street Station



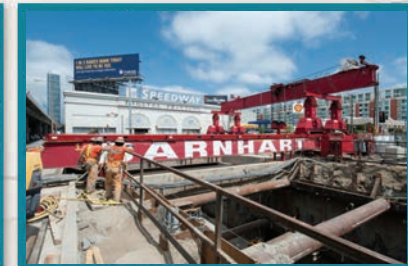
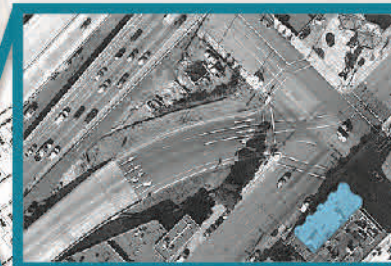
Yerba Buena/Moscone Station



Tunnel Launch Box North



Tunnel Launch Box South



3

4a

4b

1N

2



Looking north up Stockton Street, toward O'Farrell. Crews are excavating interlocking, subsurface shafts that will form the headwalls of the future Union Square/Market Street Station.

2



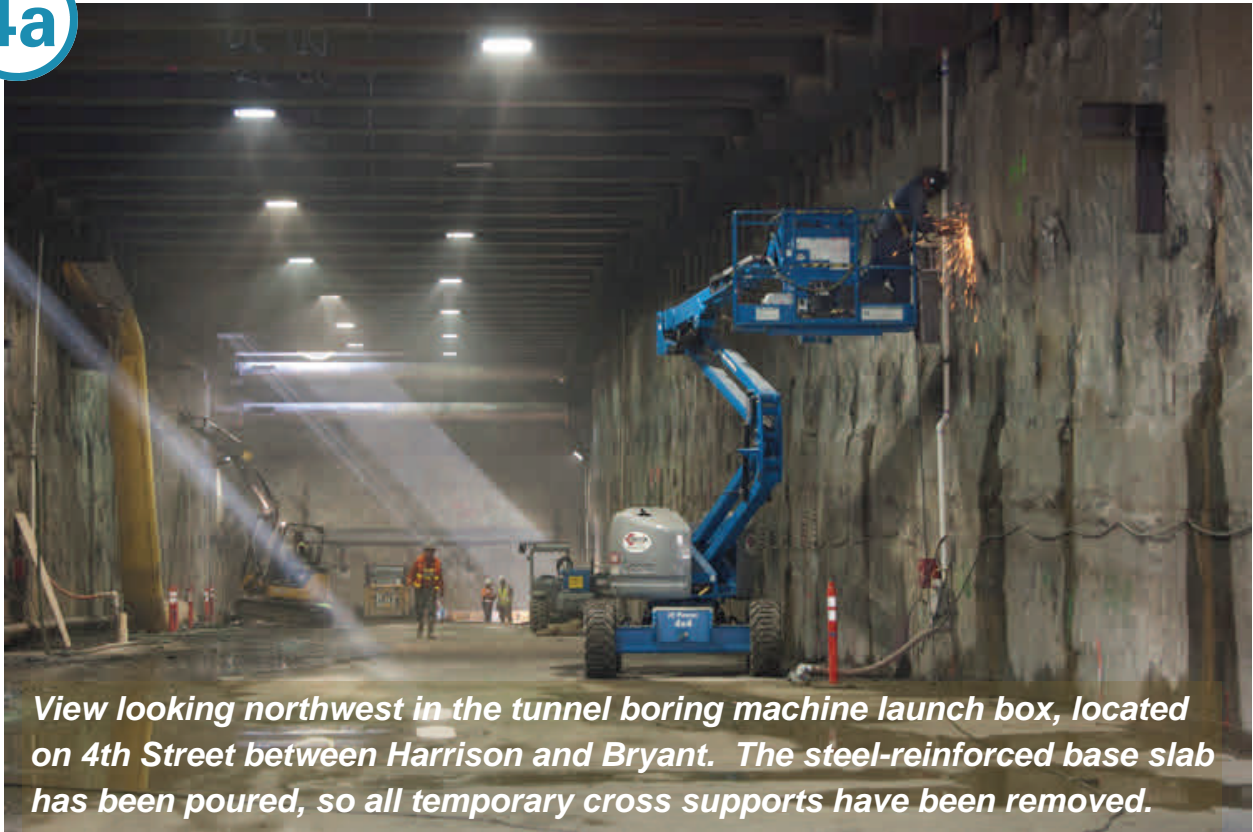
4th Street between Market and Stevenson, preparations for compensation grouting.

3



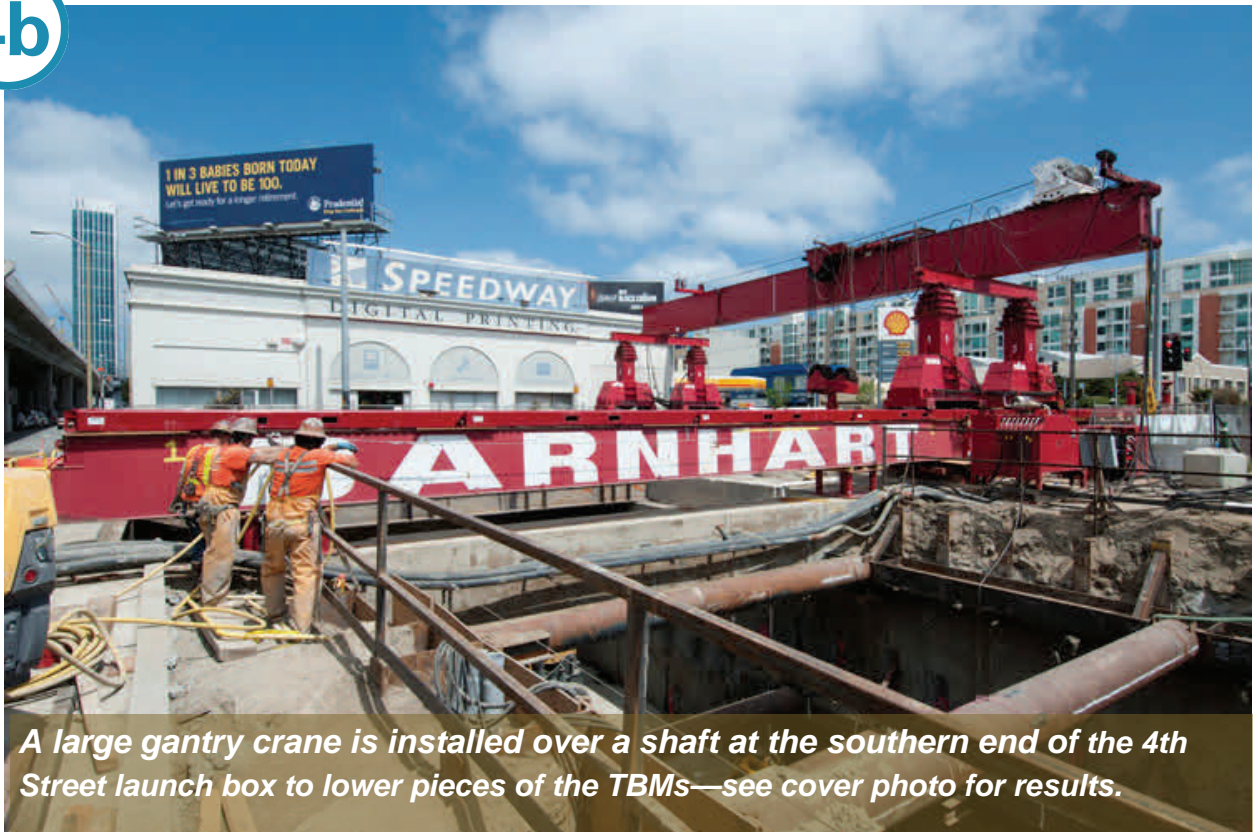
Headwall construction at the Yerba Buena/Moscone Station site.

4a



View looking northwest in the tunnel boring machine launch box, located on 4th Street between Harrison and Bryant. The steel-reinforced base slab has been poured, so all temporary cross supports have been removed.

4b



A large gantry crane is installed over a shaft at the southern end of the 4th Street launch box to lower pieces of the TBMs—see cover photo for results.

central subway

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SFMTA
Municipal Transportation Agency



Workers monitor progress the TBM Mom Chung is lowered into place at the launch box ramp.



Work is near an interim completion stage on 4th Street between Folsom and Harrison, installing subsurface piping used in compensation grouting.