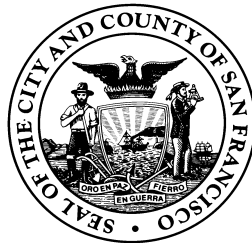


# CONTRACT FOR CENTRAL SUBWAY

## FINAL DESIGN PACKAGE # 3

### SURFACE, TRACK, AND SYSTEMS, QUALITY CONTROL AND DESIGN INTEGRATION

## **SIXTH AMENDMENT**



**Sixth Amendment to Agreement between the City and County of San Francisco  
and  
HNTB B&C JV  
for Architectural and Engineering Services  
for the Final Design and Construction of the  
the San Francisco Municipal Transportation Agency  
Central Subway Project  
(Third Street Light Rail Project, Phase 2)**

**Contract No. CS-155-3  
Design Package #3**

WHEREAS, The City and County of San Francisco ("City"), by and through its Municipal Transportation Agency ("SFMTA") and HNTB-B&C JV ("Consultant" or "Designer"), a joint venture between HNTB Corporation and B&C Transit, Inc., entered into Contract CS-155-3 ("the Agreement") for the final design of Surface, Track and Systems for the SFMTA's Central Subway Project; and

WHEREAS, As provided in Section 8.2 of the Agreement, Consultant requested that the Agreement be modified to describe and include and provide additional compensation for certain Additional Work (identified herein) that was not part of the original Scope of Work of the Agreement; and

WHEREAS, Consultant and SFMTA subsequently negotiated this Sixth Amendment to the Agreement; ("Sixth Amendment");

NOW THEREFORE, the Consultant and the SFMTA agree to modify the Agreement, as set out below:

**A. CONSTRUCTION OF SIXTH AMENDMENT**

1. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this Sixth Amendment.
2. The amounts stated in this Sixth Amendment as compensation for the Additional Work described herein is full compensation for said Additional Work, payment of which by City to Consultant shall be an accord and satisfaction of any and all obligations by City to Consultant for said Additional Work.
3. Except as specifically provided in this Sixth Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this Sixth Amendment shall amend any agreement or contract other than the "Agreement between the City and County of San Francisco and HNTB-B&C JV for Architectural and Engineering Services for the Final Design and Construction of

the San Francisco Municipal Transportation Agency Central Subway Project" (Third Street Light Rail Project, Phase 2), SFMTA Contract No. CS-155-3. This Sixth Amendment is dated for convenience as March 7, 2014.

4. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this Sixth Amendment shall be in full accord and satisfaction of all current and prospective costs incurred in connection with Consultant's performance of said Additional Work, without limitation. Consultant releases SFMTA from all claims arising from or related to said Additional Work, for which full accord and satisfaction is hereby made, as set forth above. If this modification involves the granting of an extension of time, with or without cost, Consultant hereby releases SFMTA from all claims and costs associated with such extension of time. Such costs may include, but are not limited to, costs for labor, materials, equipment, and disruption, lost productivity, escalation, delay, extended overhead, administration and extended performance time.
5. In signing this Sixth Amendment, the signatories certify that each is authorized to execute this Sixth Amendment and thereby bind the party he or she represents.

## **B. ADDITIONAL DESIGN SERVICES:**

Appendix A, Part A is amended as follows for the Central Subway Construction Support Services:

### **Task A-16.5.1 Tunnel Lowering**

#### **1. Trackway**

##### **A. Additional Work:**

Consultant shall perform the following:

1. Review the revised profile "PCC12 – Attachment A" provided by SFMTA as attachment to Letter 2021 for conformance with Central Subway design criteria
2. Review CCO issued to 1252 for verification of vertical clearances (1252 CCO was not previously provided to 1256 designers for review or comment.)
3. Incorporate the revised profile into track master files and track profile sheets.
4. Update contract documents for Contract 1300 (1256-STC, 1255-MOS, 1253-UMS packages) and Contract 1252 tunnel package. (18 sheets total as listed in attached cost estimate.)
5. Update track profile and clearance calculations to reflect revised profile.

6. Prepare and submit QA/QC documentation with revised sheets and calculations.

## **B. Assumptions**

The following assumptions apply to Consultant's review of the Trackway documents listed above:

1. Revised profile has been accepted by the Central Subway Project and MUNI operations
2. The revised profile conforms to the 1252 tunnel contract within the project tolerances
3. The June 26, 2013 technical memo "Rationale Supporting Revised Alignment of the Central Subway Tunnels" by PB regarding superelevation is accepted by the Central Subway Project and MUNI operations and the recommendations will be incorporated into the design as described in the tech memo.
4. The following services are excluded from this contract modification: variances or updates to the track design criteria, preparation of an Engineering Change Proposal, presentations to Change Management Board

## **C. Deliverables**

Consultant shall produce the following Design Documents:

1. Updated Track Profile and Clearance Calculations
2. Updated Track Plan and Profile Sheets for Contract 1300 (11 Total)  
1255-TC-111, 1253-TC-108, 1256-TC-108, 1256-TC-109, 1256-TC-110, 1256-TC-111, 1255-TC-136, 1253-TC-134, 1256-TC-134, 1256-TC-135, 1256-TC-136
3. Updated Track Plan and Profile Sheets for Contract 1252 (7 Total)  
1252-TC-108, 1252-TC-109, 1252-TC-110, 1252-TC-111, 1252-TC-134, 1252-TC-135, 1252-TC-136

Consultant shall update quantity calculations, including QA/QC documentation for the 1256 package.

## **D. Schedule**

Consultant shall complete the Additional Work under this Sixth Amendment within six weeks from NTP and receipt of 1252 CCO.

## **2. SES/Ventilation Analyses**

### **A. Additional Work:**

Consultant shall perform the following analyses of the impacts to the SES/Ventilation Systems caused by changes in tunnel design and elevation:

1. Update Fire safety push/pull SES simulations reflecting revised profile, including:
  - Piston relief SES simulations
  - System wide push/pull schemes will need to be rechecked SES
  - SES will need to be modified to include slight additional length
2. Revise SES report, issuance of SES Rev 3
3. Meet with SFFD, as needed.
4. Confirm piston relief conditions are within acceptable parameters given additional tunnel length.

#### **B. Assumptions:**

The following assumptions apply to Consultant's SES/Ventilation impacts analyses:

1. Revisions to design are related only to elevation changes in the tunnel. Critical velocity criteria for push/pull ventilation operations will increase with the increase in grade No revisions to tunnel bore area or utility installations are needed and tunnel effective tunnel friction factor remains the same
2. No revisions in train speed profile are indicated. Small changes in aggregate tunnel bore flow conditions present for station smoke control operations are not expected to revise station CFD analysis.
3. Revisions to UMS or MOS CFD models and report will be estimated separately if required.

#### **C. Schedule:**

Consultant shall complete the SES/Ventilation impacts analyses described in this Sixth Amendment within six weeks from NTP and receipt of 1252 CCO.

#### **D. Exclusions:**

The Additional Work does not include the following:

1. Assessment of impacts to City–designed systems, management and incorporation of revised profile into City designs (i.e. OCS, plumbing, CCTV, traction power)
2. Conveyance of changes to track profile to Thales for ATCS design
3. Revisions to the tunnel air replenishment system design are not included
4. Check of CCTV coverage area
5. Required revisions to OCS profile and verification of OCS clearances
6. Changes to mechanical design due to lowering of tunnel low point, update to pump station calculations including sump fill rate, pump design and verification of discharge connection details.
7. Check of changes to traction power loads

Appendix A, Part B is amended as follows for the Integrated System Replacement (ISR) and Transportation Management Center (TMC) Construction Support Services:

### **Task B1-16 Integrated Systems Replacement Construction Support**

Provide extended construction support services for specialized communication systems and audio/visual systems procurement and installation. Support SFMTA through extended construction phase to review contractor's submittals and progress towards meeting contract requirement including contract close out.

### **Task B3 -16 Transportation Management Center Construction Support**

#### **16.30 – Business Process Review and Start-up Support**

Provide extended construction support services for Central Control facilities including TMC staff move in Phase 2 planning and implementation. Consultant shall provide:

1. TMC operation start-up Supports
2. Prepare TMC organization chart and command structure refinement document
3. Prepare business unit definition and work flow documents
4. Prepare move in “playbook” updates, cutover plan for transit operations
5. Perform job analysis and create job classification documents
6. Review, revise and produce Standard Operating Procedures (SOP) for TMC
7. Prepare new Transportation Controller staff evaluation plan and guidelines, and prepare training materials
8. Provide engineering and construction supports for central control systems relocation and implementation

#### **16.35 – Integrated Human Machine Interface (IHMI) Phase 2**

Develop an Integrated Human Machine Interface (IHMI) for a video management system for TMC, metro subway and related SFMTA facilities. HNTB-B&C shall design and configuration the IHMI system to incorporate all subway CCTV cameras, CCTV analytical alarm interfaces, subway basemaps, User Graphic Interfaces (GUI) for the subway stations.

This will be completed in phases to provide the TMC with enhanced interfacing and data sharing capabilities for more effective transportation operations. The functions to be provided as described herein will be the phase II of development (IHMI P2) and will include providing an open platform for integrating SFMTA CCTV systems that is also capable of adding other SFMTA systems in the future.

The system will provide the ability for sharing of data throughout the TMC and SFMTA network, center to center communications with other City, County, and State

agencies, and to the public.

## **DELIVERABLES**

Consultant shall provide the following Deliverables:

1. Site Survey Results
2. Needs assessment to identify software and system upgrade requirements per SFMTA user inputs
3. Demonstrations and Mockups
4. Test Plans and results
5. Software and Licenses for the undated IHMI system
6. Manuals for Users and Maintenance
7. Development guides and tools
8. User and system administrator training materials

## **C. PREVIOUSLY EXERCISED OPTIONS AND AMENDMENTS ISSUED**

By letters (referenced in the following table), the SFMTA has exercised Options under the Contract, which have increased the Base Amount of the Contract Sum and decreased the remaining value of Option Work by an equivalent amount. The SFMTA's exercise of options and the Consultant's performance of the Optional Work has not increased the Contract Sum, Contract Time, or Project schedule. SFMTA has also issued five previous contract Amendments. The following table summarizes the Options exercised and Amendments issued:

Letter No.	Base Amount	Base Fee	Total Options or Mod	Total Base Contract	Option Amount	Option Fee	Total Option Exercise	Total Optional Contract
	\$22,558,394	\$2,366,458		\$24,924,852	\$6,652,093	\$717,374		\$7,369,467
C3 B0001	\$31,002	\$3,410	\$34,412	\$24,959,264	(\$31,002)	(\$3,410)	(\$34,412)	\$7,335,055
C3 B0002	\$346,484	\$38,113	\$384,597	\$25,343,861	(\$346,484)	(\$38,113)	(\$384,597)	\$6,950,458
#0933	\$665,574	\$73,213	\$738,787	\$26,082,649	(\$665,574)	(\$73,213)	(\$738,787)	\$6,211,670
#1213	\$209,819	\$23,080	\$232,899	\$26,315,548	(\$209,819)	(\$23,080)	(\$232,899)	\$5,978,771
	\$140,082	\$12,800	\$152,882	\$26,468,430				\$5,978,771
#1381	\$49,290	\$5,422	\$54,712	\$26,523,142	(\$49,290)	(\$5,422)	(\$54,712)	\$5,924,059
	\$34,657	\$3,723	\$38,380	\$26,561,522				\$5,924,059
	\$274,460	\$30,191	\$304,651	\$26,866,172				\$5,924,059
#1630	\$145,686	\$16,026	\$161,712	\$27,027,884	(\$145,686)	(\$16,026)	(\$161,712)	\$5,762,347
#1658	\$182,990	\$20,129	\$203,119	\$27,231,003	(\$182,990)	(\$20,129)	(\$203,119)	\$5,559,228
#1688	\$99,287	\$10,922	\$110,209	\$27,341,212	(\$99,287)	(\$10,922)	(\$110,209)	\$5,449,020
#120720	\$299,801	\$32,978	\$332,779	\$27,673,991				\$5,449,020
#130424	\$163,019	\$17,932	\$180,951	\$27,854,942				\$5,449,020
	\$25,200,545	\$2,654,396	\$2,930,090	\$27,854,942	\$4,921,960	\$527,059	(\$1,920,447)	\$5,449,020

Previous  
Contract Total \$33,303,962

Letter No.	Base Amount	Base Fee	Total Options or Mod	Total Base Contract	Option Amount	Option Fee	Total Option Exercise	Total Optional Contract
	1,143,668	\$125,804	\$1,269,472					
	\$26,344,214	\$2,780,200	\$4,199,562	<b>\$29,124,414</b>	\$4,921,960	\$527,059	<b>(\$1,920,447)</b>	\$5,449,020

New Contract  
Total \$34,573,434

## D. ADJUSTMENT OF CONTRACT AMOUNT

### 1. Section 13.3.1 ("Total Amount") of the Agreement is modified as follows:

**13.3.1** The total amount of compensation under this Agreement for all Work performed by Consultant, shall not exceed ~~Twenty Seven Million, Eight Hundred Fifty-Four Thousand, Nine Hundred Forty-Two Dollars (\$27,854,942)~~ **Twenty Nine Million, One Hundred Twenty Four Thousand, Four Hundred Fourteen Dollars (\$29,124,414) for Basic Services** and an additional **Five Million, Four Hundred Forty-Nine Thousand, Twenty Dollars (\$5,449,020) for Optional Services.**

### 2. Section 13.4.1 ("Fixed Fee") of the Agreement is modified as follows:

**13.4.1** For all of the Consultant's Basic Services, which are all services provided by Consultant except for those tasks and work specifically identified as Additional Work, the Agency shall pay the Consultant a Fixed Fee, which is Consultant's profit for performing the Basic Services under this Agreement. The Fixed Fee shall not exceed a sum total of ~~Two Million, Six Hundred Fifty-Four Thousand, Three Hundred Ninety-Six Dollars (\$2,654,396)~~ **Two Million, Seven Hundred Eighty Thousand, Two Hundred Dollars (\$2,780,200) for Basic Services** and an additional **Five Hundred Twenty-Seven Thousand, Fifty-Nine Dollars (\$527,059) for Optional Services.** The Fixed Fee, which is profit, is included in the Total Price set forth above. The SFMTA will pay Consultant the Fixed Fee proportionate to the completion of the design.

### 3. Summary of Sixth Amendment:

Total Amount of this Sixth Amendment: Increase:	\$1,269,472
Previous Total Contract Amount:	\$33,303,962
New Revised Total Contract Amount:	\$34,573,434

Total Contract Time added by this Contract Modification:	None
Previous Task Order Completion Date:	April 2020
New Revised Task Order Completion Date:	April 2020



In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

CITY	CONSULTANT
Approved:	Approved:
By: _____ Edward D. Reiskin Director of Transportation SFMTA	By: <u><i>Darlene K. Gee</i></u> Darlene Gee HNTB Corporation HNTB-B&C JV
Dated: _____	Dated: <u>6/01/18</u>
SFMTA Board of Directors	
Resolution No. _____	
Dated: _____	
Attest:	
_____ Roberta Boomer, Secretary SFMTA Board of Directors	
Approved as to form:	
Dennis J. Herrera City Attorney	
By: _____ Robert K. Stone Deputy City Attorney	
Dated: _____	