

File No. 180603

Committee Item No. 9

Board Item No. _____

COMMITTEE/BOARD OF SUPERVISORS

AGENDA PACKET CONTENTS LIST

Committee: Government Audit and Oversight

Date: June 20, 2018

Board of Supervisors Meeting:

Date: _____

Cmte Board

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| <input type="checkbox"/> | <input type="checkbox"/> | Ordinance |
| <input type="checkbox"/> | <input type="checkbox"/> | Legislative Digest |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Budget and Legislative Analyst Report |
| <input type="checkbox"/> | <input type="checkbox"/> | Youth Commission Report |
| <input type="checkbox"/> | <input type="checkbox"/> | Introduction Form |
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OTHER

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>SFMTA Reso No. 180605-089</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>SFMTA Reso No. 16-044</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>SFMTA Reso No. 14-120</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>SFMTA Reso No. 08-150</u> |
| <input type="checkbox"/> | <input type="checkbox"/> | _____ |

Prepared by: John Carroll

Date: June 15, 2018

Prepared by: John Carroll

Date: _____

1 [Contract Amendment No. 6 - HNTB-B&C JV - Central Subway Project - Not to Exceed
2 \$34,930,020]

3 **Resolution retroactively approving Amendment No. 6 to Contract CS-155-3 Architectural**
4 **and Engineering Services for the Final Design and Construction of the Central Subway**
5 **Project with HNTB-B&C JV to increase the contract amount by \$1,269,472 to redesign**
6 **the trackway alignment and analyze impacts to ventilation systems; and provide design**
7 **and construction support for specialized communication and video systems, with no**
8 **change to the length of the 10-year term to expire April 27, 2020, for a total contract**
9 **amount not to exceed \$34,930,020.**

10
11 WHEREAS, Design and construction of the 1.75-mile Central Subway (Central Subway
12 Project) is Phase 2 of the Third Street Light Rail Transit Project; and

13 WHEREAS, On February 26, 2010, the SFMTA Board of Directors awarded Contract
14 CS-155-3 (Contract) to HNTB-B&C JV (Designer), a joint venture between HNTB Engineering
15 and B&C Transit (now called Transit Systems Engineering, Inc.), to design the trackway and
16 control systems for the Central Subway Project, for an amount not to exceed \$32,294,319 for
17 a ten-year term with option to extend the term two years; and

18 WHEREAS, On April 22, 2010, the Board of Supervisors approved the award of the
19 Contract to the Designer; and

20 WHEREAS, The Contract has been modified seven times to compensate the Designer
21 for additional work required to address unexpected site conditions and design changes
22 required by the City; the seven amendments increased the total contract amount
23 by \$2,635,701, for a total amended contract amount not to exceed \$34,930,020; and

24 WHEREAS, The Amendment No. 6 to the Contract, dated June 11, 2014, increased
25 the contract amount by \$1,269,472 to compensate for additional work to redesign the

1 construction support for specialized communication and video systems, for a total amended
2 contract amount not to exceed \$34,930,020; and

3 WHEREAS, The Amendment No. 6 requires the Board of Supervisors' approval under
4 Charter, Section 9.118(b); Amendments No. 1 through No. 5 and No. 7 were approved by the
5 Director of Transportation under his contract delegation authority; and

6 WHEREAS, Due to staff misunderstanding as to the Director of Transportation's
7 authority to approve contracts, Amendment No. 6 was not presented to the SFMTA Board of
8 Directors for approval, nor to the Board of Supervisors for approval; and

9 WHEREAS, With the approval of Amendment No. 6 to the Contract, the revised base
10 and optional amounts for the Contract shall not exceed \$29,124,414 and \$5,449,020,
11 respectively, which the sum of both amounts is within the Central Subway Project's current
12 budget; and

13 WHEREAS, The Central Subway Final Supplemental Environmental Impact
14 Statement / Supplemental Environmental Impact Report (Central Subway SEIS/SEIR)
15 evaluated the environmental impacts of the Central Subway Project, including construction of
16 the subway tunnels; and

17 WHEREAS, On August 7, 2008, the San Francisco Planning Commission certified the
18 Final SEIR (Case No. 1996.281E); on August 19, 2008 the SFMTA Board of Directors
19 approved Resolution 08-150 adopting Central Subway Project Alternative 3B as the Locally
20 Preferred Alternative, the CEQA Findings, Statement of Overriding Considerations, and the
21 Mitigation Monitoring and Reporting Plan; and

22 WHEREAS, As constructed, the northbound and southbound tunnels were lowered by
23 approximately 10 feet from the depths described in the SEIS/SEIR, to avoid existing
24 underground micropiles discovered after construction began; the constructed depth of the
25

1 tunnels as constructed is consistent with the analysis of impacts and mitigations addressed in
2 the SEIS/SEIR; and

3 WHEREAS, On July 15, 2014, when the SFMTA Board of Directors adopted
4 Resolution No. 14-120, the Board found, based on its review of the Final SEIS/SEIR, that no
5 additional environmental review was required under Public Resources Code, Section 21166;
6 on April 5, 2016, when the SFMTA Board of Directors adopted Resolution No. 16-044, the
7 Board further reviewed and considered the Central Subway Project Final SEIS/SEIR and the
8 record as a whole, finding that there were no substantial project changes and no substantial
9 changes in project circumstances that would require major revisions to the Central Subway
10 Project Final SEIS/SEIR due to the involvement of new significant environmental effects or an
11 increase in the severity of previously identified significant impacts, and there was no new
12 information of substantial importance that would change the conclusions set forth in the
13 Central Subway Project Final SEIS/SEIR; and

14 WHEREAS, The environmental review determination is on file with the SFMTA Board
15 of Directors, and may be found in the records of the Planning Department at 1650 Mission
16 Street in San Francisco, and is incorporated herein by reference; and

17 WHEREAS, On June 5, 2018, the SFMTA Board of Directors adopted Resolution
18 No. 180605-089, which approved, subject to approval by the Board of Supervisors,
19 Amendment No. 6 to Contract CS-155-3 with HNTB-B&C JV to increase the contract amount
20 by \$1,269,472 to redesign the trackway alignment and analyze impacts to ventilation systems;
21 and provide design and construction support for specialized communication and video
22 systems, for a total contract amount not to exceed \$34,930,020; now, therefore, be it

23 RESOLVED, That the Board of Supervisors retroactively approves Amendment No. 6
24 to Contract CS-155-3 with HNTB-B&C JV to increase the contract amount by \$1,269,472 to
25 redesign the trackway alignment and analyze impacts to ventilation systems; and provide

1 design and construction support for specialized communication and video systems, for a total
2 contract amount not to exceed \$34,930,020; and, be it

3 FURTHER RESOLVED, That within 30 days of Amendment No. 6 to Contract No.
4 CS-155-3 being fully executed by all parties, the final documents shall be provided to the
5 Clerk of the Board for inclusion in the official file.

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CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS
BUDGET AND LEGISLATIVE ANALYST

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June 15, 2018


TO: Government Audit and Oversight Committee
FROM: Budget and Legislative Analyst 
SUBJECT: June 20, 2018 Government Audit and Oversight Committee Meeting

TABLE OF CONTENTS

Item	File	Page
1, 2, 3, 4, 5 & 6	18-0529 Grant Agreement - Arendt House, L.P. - Local Operating Subsidy Program Contract - Zygmunt Arendt House, 850 Broderick Street - Not to Exceed \$11,787,548	
	18-0530 Grant Agreement - Parkview Terrace Partners. L.P. - Local Operating Subsidy Program Contract - Parkview Terraces, 871 Turk Street - Not to Exceed \$4,580,619	
	18-0531 Grant Agreement - 455 Fell, L.P. - Local Operating Subsidy Program Contract - 455 Fell Street - Not to Exceed \$10,077,324	
	18-0532 Grant Agreement - Mercy Housing California XIV, L.P. - Local Operating Subsidy Program Contract - 10th & Mission Family Housing, 1390 Mission Street - Not to Exceed \$9,741,171	
	18-0533 Grant Agreement - The Salvation Army Turk Street, L.P. - Local Operating Subsidy Program Contract - Railton Place, 242 Turk Street - Not to Exceed \$5,561,543	
	18-0536 Grant Agreement - Housing Services Affiliate of the Bernal Heights Neighborhood Center - Local Operating Subsidy Program Contract - Monterey Boulevard Apartments, 403 Monterey Street - Not to Exceed \$1,662,342.....	1
7	18-0380 Contract Agreement - Conduent, Inc. - Citation and Permit Processing Services - Not to Exceed \$77,200,000	13

8	18-0562	Contract Amendment - New Flyer of America Inc. - Purchase of Low Floor Diesel-Hybrid Buses - Not to Exceed \$428,654,904.....	17
9	18-0603	Contract Amendment No. 6 - HNTB-B&C JV - Central Subway Project - Not to Exceed \$34,930,020.....	22
10	18-0604	Contract Amendments - Central Subway Design Group - Central Subway Project - Not to Exceed \$47,900,606.....	29
11	18-0495	Professional Services Agreement - Arcadis U.S., Inc. - Construction Management Staff Augmentation Services for the Biosolids Digester Facilities Project - Not to Exceed \$42,000,000.....	36
12	18-0496	Memorandum of Agreement Modification - United States Department of the Interior, National Park Service - Not to Exceed \$27,004,364.....	41
13	18-0548	Contract Amendment - Tides Center - Supportive Housing Property Management Services - Department of Homelessness and Supportive Housing - Not to Exceed \$47,734,035.....	45
15	18-0477	Lease Amendment - 617 Mission Street - MacLean Properties LLC and Conner Children's Trust No. 2 - Child Support Services - \$1,903,887.96 Initial Annual Rent.....	50
16	18-0564	Renewal Agreement - Data Center Space and Services - 3101 Gold Center Drive, Rancho Cordova, California - \$756,840 Annual Base Rent - Not to Exceed \$2,385,938.10.....	54
17	18-0416	Contract Agreement - Crestwood Behavioral Health - Long-Term Mental Health Services - Not to Exceed \$77,280,000.....	59
22	17-0205	Administrative Code - Citywide Project Labor Agreement for Public Work or Improvement Projects.....	63

<p>Item 9 File 18-0603</p>	<p>Department: San Francisco Municipal Transportation Agency (SFMTA)</p>
<p>EXECUTIVE SUMMARY</p>	
<p style="text-align: center;">Legislative Objectives</p> <ul style="list-style-type: none"> • The proposed resolution retroactively approves Amendment No. 6 to Contract CS-155-3 Architectural and Engineering Services for the Final Design and Construction of the Central Subway Project with HNTB-B&C JV to increase the contract amount by \$1,269,472 to redesign the trackway alignment and analyze impacts to the ventilation systems and provide design and construction support for specialized communication and video systems with no change to the term expiring April 27, 2020, for a total contract amount not to exceed \$34,930,020. <p style="text-align: center;">Key Points</p> <ul style="list-style-type: none"> • SFMTA’s Central Subway Project will provide direct transit connection from Chinatown to the Caltrain Terminal, with three underground subway stations and one surface station. • On April 13, 2010, the Board of Supervisors approved a design contract with HNTB-B&C Transit, to design the control systems and trackway integration for the Central Subway Project and several other SFMTA projects for a not-to-exceed \$32,294,319. • To date, the SFMTA Director of Transportation has approved seven amendments to this contract for a total not to exceed \$34,930,020. <p style="text-align: center;">Fiscal Impact</p> <ul style="list-style-type: none"> • Amendment No. 6, approved by the Director on June 11, 2014, increased the contract by \$1,269,472. However, this Amendment was subject to approval by the Board of Supervisors, as required by the City’s Charter, which did not occur. The work under Amendment No. 6 has now been substantially completed by HNTB-B&C. <p style="text-align: center;">Policy Consideration</p> <ul style="list-style-type: none"> • Amendment No. 6 to the HNTB-B&C contract for \$1,269,472 was not submitted for approval by the Board of Supervisors prior to June 2014, due to the Central Subway staff’s misunderstanding of SFMTA’s Charter authority. <p style="text-align: center;">Recommendation</p> <ul style="list-style-type: none"> • Retroactive approval of Amendment No. 6 is a policy matter for the Board of Supervisors. 	

MANDATE STATEMENT

City Charter Section 9.118(b) states that agreements entered into by a department, board, or commission having (a) a term of more than 10 years; (b) anticipated expenditures of \$10 million or more; or (c) modifications to these agreements of more than \$500,000, require Board of Supervisors approval.

BACKGROUND**Central Subway Project**

The SFMTA's proposed Central Subway Project will provide a new underground and surface transit connection between Chinatown (Washington Street and Stockton Street) and the Caltrain Terminal/Muni T-Line (King Street and Fourth Street). The Central Subway Project will have three underground subway stations: (1) Yerba Buena/Moscone Station (YBM), (2) Union Square/Market Street Station (UMS), and (3) Chinatown Station (CTS). The Project also includes one surface station at Fourth/Brannan Street Station (FBS).

Final design work for the Central Subway Project began in January 2010, with completion of construction originally scheduled for February 2018. Construction is now anticipated to be completed in May 2019, with transit operations commencing in December 2019. Various certifications, start up and testing of all equipment and training of staff will occur between May and December 2019. The estimated total cost for the Central Subway Project is \$1.578 billion.

Professional Design Services

Because of the scope and expertise required, the professional design services for the Central Subway Project were divided into three design packages: (1) Utilities Relocation and Tunnel Design¹, (2) Subway Stations Design (subject of File 16-0604 in this report), and (3) System and Trackway Integration Design (subject of this File 18-0603). In April of 2009, the SFMTA issued a Request for Proposals (RFP) for Central Subway Professional Final Design Services for all three design contracts. On July 21, 2009, the SFMTA received five design proposals, including two proposals for the design of the system and trackway integration.

Design of the System and Trackway Integration

On April 13, 2010, the Board of Supervisors approved a design contract with HNTB-B&C Transit, a joint venture between HNTB Corporation and B&C Transit Inc. (now called Transit Systems Engineering Inc.), to design the control systems and trackway integration, including the surface station at the Fourth and Brannan Streets, for the Central Subway Project (File No. 10-0331; Resolution No. 143-10). This HNTB-B&C contract also included several SFMTA projects not directly related to the Central Subway Project. The original total contract amount was a not-to-exceed \$32,294,319 for a ten-year base term from April 28, 2010 through April 27, 2020, with a two-year option to extend through April 27, 2022.

¹ The Utilities Relocation and Tunnel Design services contract was originally awarded to PB/Telamon in 2009 for \$6,500,000. Seven amendments were approved by SFMTA, for a total amended contract amount of \$7,940,159. These design services were completed in December 2015. This contract was not subject to Board of Supervisors approval because the contract was under \$10 million and ten years.

Under this contract, HNTB-B&C was required to: design the trackway infrastructure, trackway (rails and ties), crossovers, switch systems, specialty trackwork, train control system, computer aided dispatch system, radio and band data communication systems, and ventilation system, fire detection, alarm and suppression systems, public information signs, and other utility and control systems and assist in design of the surface station at Fourth and Brannan Streets necessary for the functioning of the Central Subway and the integration of the Central Subway system with existing MUNI systems, including all updates and reviews as needed.

Original Contract and Amendments

Table 1 below shows the dates and amounts of the original contract and the seven amendments SFMTA approved to date, with descriptions of the work performed under each amendment. The sixth amendment to the HNTB-B&C contract for \$1,269,472 is highlighted in Table 1 below, which is the subject of the proposed resolution. The original contract was approved by the Board of Supervisors. Amendments Nos. 1-7 were approved by the SFMTA Director of Transportation.

Table 1: HNTB-B&C Contract and Amendments for System and Trackway Integration Design

CSDG Original Contract and Contract Amendments	Not to Exceed Contract Amount
April 13, 2010: Original Contract Amount	\$32,294,319
January 16, 2012: Amendment No. 1 Review impact of lowering Chinatown Station, modifying tunnel & trackway designs for lowered Station & perform geotechnical for Fourth/Brannan Station.	152,882
March 19, 2012: Amendment No. 2 Perform vibration impact analysis for 570 4 th Street property.	38,380
May 4, 2012: Amendment No. 3 Provide additional design technology support, quality control services & business process review.	304,651
July 11, 2012: Amendment No. 4 Perform additional design work to incorporate replacing track switches & switch machines & integrate Central Subway systems to SFMTA's Transit Management Center.	332,779
April 24, 2013: Amendment No. 5 Perform additional design work to integrate Central Subway systems to SFMTA's Transit Center Management Center.	180,951
June 11, 2014: Amendment No. 6 Perform additional work to redesign trackway alignment & evaluate impacts to the ventilation systems & provide design & construction support for specialized communication & video systems.	1,269,472
April 20, 2015: Amendment No. 7 Perform construction support for integrated systems Replacement Project & Emergency Blue Light Telephone Replacement Project.	356,586
Total Contract Not to Exceed Amount	\$34,930,020

DETAILS OF PROPOSED LEGISLATION

The proposed resolution retroactively approves Amendment No. 6 to Contract CS-155-3, Architectural and Engineering Services for the Final Design and Construction of the Central Subway Project between HNTB-B&C JV and the SFMTA to increase the contract amount by \$1,269,472 to redesign the trackway alignment and analyze impacts to the ventilation systems and provide design and construction support for specialized communication and video systems, with no change to the term expiring April 27, 2020, for a total amended contract amount not to exceed \$34,930,020.

Amendment No. 6

Given that the original HNTB-B&C contract was greater than \$10 million, which was approved by the Board of Supervisors, Amendment No. 6 which is greater than \$500,000 is also subject to Board of Supervisors approval, in accordance with Charter Section 9.118(b). However, SFMTA did not previously request Board of Supervisors approval for Amendment No. 6. Therefore, this resolution is requesting the Board of Supervisors to retroactively approve Amendment No. 6 back to June 11, 2014, to increase the contract by \$1,269,472.

Amendment No. 6 was used to compensate HNTB-B&C for additional design work required to redesign the alignment of the trackway, analyze additional impacts on the ventilation systems and provide additional design and support on the specialized communication and video systems. According to Mr. Albert Hoe, Acting Program Director for the Central Subway Project, the alignment of the trackway required redesign due to micropile obstructions that were discovered in the original tunnel alignment. In changing the alignment, the ventilation design required reevaluation to ensure that there was sufficient ventilation in case of an emergency. In addition, because the construction duration was extended for other SFMTA projects, additional daily construction support was required for the communication and video systems.

FISCAL IMPACT

As shown in Table 1 above, the original contract plus the seven amendments results in an amended contract amount not to exceed \$34,930,020. According to SFMTA, through December 2017, SFMTA incurred \$26,701,517 of expenditures on this HNTB-B&C contract, resulting in a remaining balance of \$8,228,503. Table 2 below shows Amendment No. 6 tasks and costs.

Table 2: Amendment No. 6 for HNTB-B&C System and Trackway Integration Design

Tasks in Amendment No. 6	Not to Exceed Contract Amount
Central Subway Project: Redesign trackway alignment & evaluate impacts to ventilation systems due to lowering tunnel profile	\$55,188
Two Other Project Tasks:	
1. <u>Integrated Systems Replacement:</u> extended support for procurement & installation of specialized communication & audio/visual systems.	\$538,288
2. <u>Transportation Management Center:</u>	675,996
a. <u>Construction Support:</u> extended support for Central Control facilities through relocation and implementation.	
b. <u>Integrated Human Machine Interface:</u> develop, design and configure system for Transportation Management Center Integrated Systems.	
Total	\$1,269,472

Regarding the requested Amendment No. 6, HNTB-B&C completed the trackway realignment in 2014 and been paid for this work by the SFMTA. In addition, HNTB-B&C has now substantially completed the remainder of the other project tasks related to Amendment No. 6. According to Mr. Hoe, a portion of this work has already been paid by the SFMTA.

The total budget for the Central Subject Project is \$1,578,300,000 is summarized in Table 3 below. The costs for the HNTB-B&C contract that are related to the Central Subject Project are included in Table 3 below under the Final Design and Design & Construction Project Management cost categories.

Table 3: Central Subway Project Budget, Expenditures and Balances Through April 2018

Cost Categories	Total Budget	Costs Through April, 2018	Remaining Balance
Guideway & Track Elements	\$284,261,449	\$268,356,898	\$15,904,551
Stations, Stops, Terminals, Intermodal	554,774,462	394,953,133	159,821,329
Sitework & Special Conditions	213,778,742	204,494,652	9,284,090
Systems	95,341,827	33,649,217	61,692,610
ROW, Land, Existing Improvements	32,246,321	30,648,969	1,597,352
Vehicles	13,309,000	10,598,347	2,710,653
Preliminary Engineering	46,202,674	46,202,674	0
Final Design	61,318,331	61,199,308	119,023
Design & Construction Project Management	89,012,545	70,356,422	18,656,123
Construction Management	91,096,881	74,176,900	16,919,981
Insurances	6,800,000	6,340,196	459,804
Legal, Permits and Review Fees	8,212,604	4,497,714	3,714,890
Surveys, Testing, Investigation & Inspection	933,100	857,829	75,271
Start-up	6,941,902	0	6,941,902
Contingencies	74,070,161	0	74,070,161
Total	\$1,578,300,000	\$1,206,332,254	\$371,967,741

Table 3 above also shows an estimated \$74,070,161 of contingency funds available for the Central Subway Project, including approximately \$49 million of immediately available contingency funds. Mr. Hoe advises that such contingency funds would be used to pay for the additional costs of the subject HNTB-B&C contract related to the Central Subway project. The other SFMTA projects under the subject HNTB-B&C contract were already funded with other revenues as this work has been completed.

As shown in Table 4 below, the Central Subway Project is funded with various sources, including Federal Transit Administration (FTA) New Starts, Federal Congestion Management & Air Quality (CMAQ), State Transportation Bond Proposition 1A and 1B, State Regional Improvement Program (RIP), State Transportation Congestion Relief Program (TCRP), and Proposition K Half-Cent Local Sales Tax funds.

Table 4: Central Subway Project Funding Sources

Sources	Total
FTA 5309 New Starts	\$942,200,000
Federal CMAQ3	41,025,000
Proposition 1A High Speed Rail Connectivity	61,308,000
State Proposition 1B- MTA	87,895,815
State Proposition 1B-SFMTA	219,896,185
RIP-SF/Other	74,248,000
State TCRP	14,000,000
Local Proposition K	137,727,000
TOTAL	\$1,578,300,000

POLICY CONSIDERATION

Amendment No. 6 was only approved by the SFMTA Director of Transportation. Amendment No. 6 which increased the contract by \$1,269,472 should have been approved by the Board of Supervisors prior to June of 2014, as required by City Charter Section 9.118(b).

Mr. Hoe advises that Amendment No. 6 to the HNTB-B&C contract for \$1,269,472 was not submitted for approval by the Board of Supervisors prior to June 2014, due to the Central Subway staff’s misunderstanding of SFMTA’s Charter authority. In addition, Mr. Robert Stone of the City Attorney’s Office reports that this error was not caught by SFMTA contract administration staff or by City Attorney staff. Mr. Stone advises that the City Attorney and SFMTA identified this mistake when the SFMTA staff was preparing Amendment No. 4 to the CSDG contract (File 18-0604), which required approval by the Board of Supervisors.

After realizing this mistake, the SFMTA staff then reviewed other contracts and amendments, which identified this Amendment No. 6 to the HNTB-B&C contract for \$1,269,472, which also required Board of Supervisors approval, which was not previously obtained by SFMTA.

Mr. Stone advises that the Director of Transportation directed SFMTA contract administration staff to review all existing contracts to determine if additional amendments require Board of

Supervisors approval. This review is currently ongoing. SFMTA administration staff will clarify the application of Charter Section 9.118(b) to staff and will modify SFMTA's contract amendment process to identify contract amendments that are subject to Charter Section 9.118 to ensure that such contracts are brought before the Board of Supervisors as required.

RECOMMENDATION

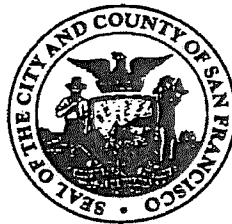
Retroactive approval of Amendment No. 6 is a policy matter for the Board of Supervisors.

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3

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

SEVENTH AMENDMENT



**Seventh 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, Consultant and SFMTA subsequently negotiated this Seventh Amendment to the Agreement ("Seventh Amendment") to describe Additional Work to be performed by the Consultant and to provide additional compensation for the performance of said Additional Work;

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

A. CONSTRUCTION OF SEVENTH AMENDMENT

1. Where a new section is added in its entirety or a section has been deleted and replaced in its entirety, the text so indicates.
2. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this Seventh Amendment.
3. The amounts stated in this Seventh 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.
4. Except as specifically provided in this Seventh Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this Seventh 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 Seventh Amendment is dated for convenience as March 6, 2015.

5. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this Seventh 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 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.
6. In signing this Seventh Amendment, the signatories certify that each is authorized to execute this Seventh Amendment and thereby bind the party he or she represents.

B. Additional Design Services:

Appendix A, Part B is amended with the addition of the following Additional Work:

Task B1-16 Integrated Systems Replacement Construction Support

Consultant shall perform the following Additional Work for the Integrated Systems Replacement (ISR) Contract:

1. Review of new and outstanding submittals associated to electrical shop drawings, Platform Display Signs, Public Address Systems, Facilities SCADA, testing plans, and cutover and integration plans.
2. Witness Factory Acceptance Testing for the Passenger Audio/Visual System.
3. Witness Site Acceptance Testing for the Passenger Audio/Visual System and Facilities SCADA.
4. Review of Change Order Requests (COR) with cost estimating associated to Public Address speaker re-zoning, Platform Display Sign mounting and additional Passenger Audio/Visual features.
5. Review of Proposed Contract Changes (PCC) associated to voice upgrades, Platform Display Sign relocation, IP addressable keyboard video mouse (KVM), Public Address speaker re-zoning and relocation of fiber cabinet racks at Van Ness Station.
6. Provide value engineering for the Public Address speaker re-zoning.
7. Review of As-Builts related to the Fiber Broadband Network, Passenger Audio/Visual System, Facilities SCADA, Motive Power SCADA, HVAC and Uninterrupted Power Supply System.
8. Review of Operations & Maintenance manuals associated to the Fiber Broadband Network, Passenger Audio/Visual System, Facilities SCADA, Motive Power SCADA, HVAC and Uninterrupted Power Supply System.
9. Perform coordination for client review and training associated to Operations & Maintenance manuals.

City shall compensate Consultant in accordance with the compensation provisions of the Contract an amount not to exceed One Hundred Eighty-One Thousand, Forty-Six Dollars (\$181,046) in full satisfaction and accord for the Additional Work described in this section B1-16 of the Seventh Amendment.

Task B2 -16 Emergency Blue Light Telephone Replacement Construction Support

1. Review of new and outstanding submittals associated to electrical shop drawings, Blue Light telephones, testing plans, cutover and integration plans (e.g. Facilities SCADA, building PBX).
2. Witness Site Acceptance Testing for the Blue Light telephone system.
3. Provide support and coordination via weekly progress meetings between the Contractor and Construction Management representatives.
4. Witness Factory Acceptance Testing for the Blue Light system.
5. Perform site inspections based on unforeseen site conditions.
6. Review of Change Order Requests (COR) from the contractor associated to the Blue Light system, and tunnel access and protocols.
7. Review of Proposed Contract Changes (PCC) associated to changes from BART property owners at station mezzanines, modification of initial Contractor means and methods for sequencing and scheduling work, and impacts related to work performed by other projects and their impacts to Blue Light infrastructure installations.
8. Provide value engineering for system wiring and maintenance optimization.

City shall compensate Consultant in accordance with the compensation provisions of the Contract an amount not to exceed One Hundred Seventy-Five Thousand, Five Hundred Forty Dollars (\$175,540) in full satisfaction and accord for the Additional Work described in this section B2-16.

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 equivalent amounts. 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 six 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
Amend 1	\$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
Amend 2	\$34,657	\$3,723	\$38,380	\$26,561,522				\$5,924,059
Amend 3	\$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 Amend 4	\$299,801	\$32,978	\$332,779	\$27,673,991				\$5,449,020
#130424 Amend 5	\$163,019	\$17,932	\$180,951	\$27,854,942				\$5,449,020
#140623 Amend 6	\$1,143,668	\$125,804	\$1,269,472	\$29,124,414				\$5,449,020
Subtotal	\$25,200,545	\$2,780,200	\$2,930,090	\$29,124,414	\$4,921,960	\$527,059	(\$1,920,447)	\$5,449,020

Previous Contract Total \$34,573,434

Amend 7	\$ 321,249	\$ 35,337	\$ 356,586					
Total with Amend 7	\$ 25,521,794	\$2,815,537	\$ 3,286,676	\$ 29,481,000	\$4,921,960	\$527,059	\$ (1,920,447)	\$ 5,449,020

New Contract Total \$ 34,930,020

D. ADJUSTMENT OF CONTRACT AMOUNT

1. **Section 13.3.1 ("Total Amount") of the Agreement is deleted in its entirety and replaced with the following:**

13.3.1 The total amount of compensation under this Agreement for all Work performed by Consultant, shall not exceed **Twenty Nine Million, Four Hundred Eighty One Thousand Dollars (\$29,481,000)** 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 deleted in its entirety and replaced with the following:**

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, Eight Hundred Fifteen Thousand, Five Hundred Thirty Seven Dollars (\$2,815,537)** 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 Seventh Amendment:**

Total Amount of this Seventh Amendment: Increase:	\$356,586
Previous Total Contract Amount:	\$34,573,434
New Revised Total Contract Amount:	\$34,930,020

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

The remainder of this page has been intentionally left blank.

In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this 20th day of April, 2015.

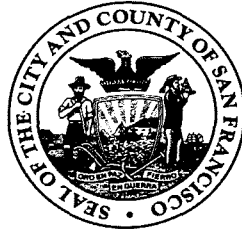
CITY	CONSULTANT
Approved:	Approved:
By:  Edward D. Reiskin Director of Transportation SFMTA	By:  Darlene Gee HNTB Corporation HNTB-B&C JV
Dated: <u>4-20-15</u>	Dated: <u>4/15/15</u>
Approved as to form:	
Dennis J. Herrera City Attorney	
By:  Robert K. Stone Deputy City Attorney	
Dated: <u>4/17/2015</u>	

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	\$29,124,414	\$4,921,960	\$527,059	(\$1,920,447)	\$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
<p>Approved: _____</p> <p>By: _____ Edward D. Reiskin Director of Transportation SFMTA</p> <p>Dated: _____</p> <p>SFMTA Board of Directors Resolution No. _____ Dated: _____ Attest:</p> <p>_____ Roberta Boomer, Secretary SFMTA Board of Directors</p> <p>Approved as to form:</p> <p>Dennis J. Herrera City Attorney</p> <p>By: _____ Robert K. Stone Deputy City Attorney</p> <p>Dated: _____</p>	<p>Approved: _____</p> <p>By: <u>Darlene F. Gee</u> Darlene Gee HNTB Corporation HNTB-B&C JV</p> <p>Dated: <u>6/01/18</u></p>

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3

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

FIFTH AMENDMENT



**Fifth 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 described as part of the original Scope of Work of the Agreement; and

WHEREAS, for system safety, compatibility, and consistency in system operations, additional services are required to complete the design of the Blue Light Telephone system in the Sunset Tunnel to be identical and compatible to the rest of the Muni Metro system currently being designed by the Consultant, and

The Consultant and SFMTA subsequently negotiated this Fifth Amendment to the Agreement; ("Fifth Amendment");

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

A. CONSTRUCTION OF FIFTH AMENDMENT

1. Where Additional Work or additional terms to the Agreement are set out in existing text, the new or added text is indicated by underlining text, and deleted text is lined-through. Where a new section is added in its entirety, the text so indicates.
2. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this Fifth Amendment.
3. The amounts stated in this Fifth 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.

4. Except as specifically provided in this Fifth Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this Fifth 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" (Fourth Street Light Rail Project, Phase 2), SFMTA Contract No. CS-155-3. This Fifth Amendment is dated for convenience as March 5, 2013.
5. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this Fifth 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 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.
6. In signing this Fifth Amendment, the signatories certify that each is authorized to execute this Fifth Amendment and thereby bind the party he or she represents.

B. Additional design services for the C3 Integrated Systems Replacement Contract

Appendix A, Part B is amended as follows:

Consultant shall perform the following services for the Integrated Systems Replacement (ISR), Blue Light Telephone Replacement Contract for issuance of contract addenda to bidders:

1. Site survey of Sunset Tunnel and Carl Traction Power Substation
2. Interface and coordinate with Contract 1270: Sunset Trackway Refurbishment Project
3. Design Blue Light Telephone electrical and communications systems for Sunset Tunnel.
4. Design structural attachments and wall penetrations for conduit, wireway, and Blue Light Telephones in tunnels, and on structures and retaining wall
5. Issue the revised drawings and spec pages as supplemental submittals and with final package
6. Provide construction scheduling support and cost estimating for the additional work.
7. Provide additional construction and bid support for the additional areas of design

1. Task B12.01 Civil

Services:

- a. Issue new and revised drawings and specifications

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
B12.01	Drawings and specifications	Pre-Final and Final

2. Task B12.04 Structural

Services:

- a. Design structural attachments and wall penetrations for conduit, wireway, and Blue Light Telephones in tunnels, and on structures and retaining walls
- b. Issue new and revised drawings and specifications as a supplemental submittal and final package

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
B12.04	Drawings and specifications	Pre-Final and Final

3. Task B12.12 Electrical

Services:

- a. Issue new and revised drawings and specifications

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
B12.12	Drawings and specifications	Pre-Final and Final

4. Task B12.13 Systems

Services:

- a. Issue new and revised drawings and specifications

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
B12.13	Drawings and specifications	Pre-Final and Final

4. Task B13.20 Construction Schedule

Services:

- a. Issue updated construction schedule

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
B13.20	Construction Schedule	Final

5. Task B15.10 Bid Support

Services:

- a. As-Needed Bid Support including cost estimating

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
B15.10	Bid Support	As directed by SFMTA

Additional Compensation:

City shall pay Consultant One hundred eighty thousand, nine hundred fifty-one dollars (\$180,951) in full satisfaction and accord for the Additional Work described in this Section B of this Fifth Amendment.

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 the 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 four previous contract Amendments. The following table summarizes the Options exercised and Amendments issued:

Executed Contract Options and Amendments:

Option Exercised Or Contract Amendment	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
Task B2.93f	C3 B0001	\$31,002	\$3,410	\$34,412	\$24,959,264	(\$31,002)	(\$3,410)	(\$34,412)	\$7,335,055
Task B12.05	C3 B0002	\$346,484	\$38,113	\$384,597	\$25,343,861	(\$346,484)	(\$38,113)	(\$384,597)	\$6,950,458
Tasks A-9.2, 12.05, 12.12E, 12.13F	#0933	\$665,574	\$73,213	\$738,787	\$26,082,649	(\$665,574)	(\$73,213)	(\$738,787)	\$6,211,670
Tasks A12.01, 12.02, 12.07, 12.11	#1213	\$209,819	\$23,080	\$232,899	\$26,315,548	(\$209,819)	(\$23,080)	(\$232,899)	\$5,978,771
Amend 1		\$140,082	\$12,800	\$152,882	\$26,468,430				\$5,978,771
Tasks A2.50, A12.12E	#1381	\$49,290	\$5,422	\$54,712	\$26,523,142	(\$49,290)	(\$5,422)	(\$54,712)	\$5,924,059
Amend 2		\$34,657	\$3,723	\$38,380	\$26,561,522				\$5,924,059
Amend 3		\$274,460	\$30,191	\$304,651	\$26,866,172				\$5,924,059
Task 12.02, 12.12	#1630	\$145,686	\$16,026	\$161,712	\$27,027,884	(\$145,686)	(\$16,026)	(\$161,712)	\$5,762,347
Task 12.11, 12.12E	#1658	\$182,990	\$20,129	\$203,119	\$27,231,003	(\$182,990)	(\$20,129)	(\$203,119)	\$5,559,228
Tasks 12.11, 12.12, 12.13, 9.2	#1688	\$99,287	\$10,922	\$110,209	\$27,341,212	(\$99,287)	(\$10,922)	(\$110,209)	\$5,449,020
Amend 4		\$299,801	\$32,978	\$332,779	\$27,673,991				
Subtotal		\$25,037,526	\$2,636,464	\$2,749,139	\$27,673,991	\$4,921,960	\$527,059	(\$1,920,447)	\$5,449,020

Previous Contract
Total \$33,123,011

Amend 5		\$163,019	\$17,932	\$180,951					
Total w/ Amend 5		\$25,200,545	\$2,654,396	\$2,930,090	\$27,854,942	\$4,921,960	\$527,059	(\$1,920,447)	\$5,449,020

New Contract
Total \$33,303,962

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, Six Hundred Seventy Three Thousand Nine Hundred Ninety-one Dollars (\$27,673,991)~~ **Twenty Seven Million, Eight Hundred Fifty-Four Thousand, Nine Hundred Forty-Two Dollars (\$27,854,942)** 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 Thirty Six Thousand, Four Hundred Sixty Four Dollars (\$2,636,464)~~ **Two Million, Six Hundred Fifty-Four Thousand, Three Hundred Ninety-Six Dollars (\$2,654,396)** 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.


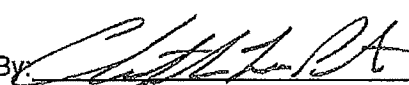

3. Summary of Fifth Amendment:

Total Amount of this Fifth Amendment:	Increase:	\$180,951
Previous Total Contract Amount:		\$33,123,011
New Revised Total Contract Amount:		\$33,303,962

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

The remainder of this page has been intentionally left blank.

In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this 24th day of April, 2013.

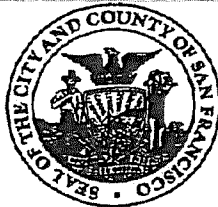
CITY	CONSULTANT
<p>Approved:</p> <p>By: <u></u> Edward D. Reiskin Director of Transportation SFMTA</p> <p>Dated: <u>4.24.13</u></p>	<p>Approved:</p> <p>By: <u></u> Chris Peters HNTB Corporation HNTB-B&C JV</p> <p>Dated: <u>4/17/2013</u></p>
<p>Approved as to form:</p> <p>Dennis J. Herrera City Attorney</p> <p>By: <u></u> Robert K. Stone Deputy City Attorney</p> <p>Dated: <u>4-18-13</u></p>	

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3

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

FOURTH AMENDMENT



**Fourth 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 Fourth Amendment to the Agreement; ("Fourth Amendment");

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

A. CONSTRUCTION OF FOURTH AMENDMENT

1. Where Additional Work or additional terms to the Agreement are set out in existing text, the new or added text is indicated by underlining text, and deleted text is lined-through. Where a new section is added in its entirety, the text so indicates.
2. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this Fourth Amendment.
3. The amounts stated in this Fourth 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.
4. Except as specifically provided in this Fourth Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this Fourth

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" (Fourth Street Light Rail Project, Phase 2), SFMTA Contract No. CS-155-3. This Fourth Amendment is dated for convenience as May 10, 2012.

5. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this Fourth 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 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.
6. In signing this Fourth Amendment, the signatories certify that each is authorized to execute this Fourth Amendment and thereby bind the party he or she represents.

B. Additional Design Work for incorporation of approved ECP FD-034

Appendix A, Part A is amended as follows:

1. Task 12.01 Civil Plans

Services:

Extend the limits of the Central Subway construction to include replacement of two existing track switches and switch machines on King Street north of 4th Street. Detail new turnout SP-8 and revise pre-final alignment sheets and alignment plan and data sheets accordingly.

Deliverables:

Subtask	Deliverables	When Due
12.01	Updated Alignment Plan and Data Sheet	100%
12.01	Updated Plan and Profile Sheet	100%
12.01	New Detail Sheet for turnout SP-8	100%

2. Task 12.13 Systems

Services:

Update design criteria Section 18, specifically 18.4.2.1 to revise language: *Track switch operators shall be series T3 600v dc solenoid driven as manufactured by Irwin Transportation Products (IMPulse NC, Inc) to a performance based requirement for hydraulically operated, 120 V switch machines, such as Nortrak or approved equal.*

Revise pre-final train control plans, specifications and indication circuits for Nortak-style switch machines.

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
<u>12.13</u>	<u>Updated Design Criteria Section 18</u>	<u>100%</u>
<u>12.13</u>	<u>Updated Train Control Plans and Specifications</u>	<u>100%</u>

City shall pay Consultant Twenty-Six Thousand and Twenty Six Dollars (\$26,026) in full satisfaction and accord for the Additional Work described in this Section B of this Fourth Amendment.

C. Additional design services for the C3 Integrated Systems Replacement Contract

Appendix A, Part B is amended as follows:

Consultant shall perform the following services for the Integrated Systems Replacement (ISR) Contract for issuance of contract addenda to bidders:

1. Increase the size and reduce the pitch of the PDS signs
2. Evaluate the structural implications of the larger signs for platform placements
3. Add PDS signs to the mezzanine (2 double-sided signs per fare-gate and two signs for elevator lobby for Embarcadero, Montgomery and Powell stations), including electrical and structural designs
4. Revise the PDS spec to include the new requirements, including graphic layouts, additional prediction data and language support
5. Issue the revised drawings and spec pages as an addendum
6. Provide Graphic Design Support for PDS sign layout, alternative analysis and presentation
7. Provide Public Outreach Support for public feedback on PDS signs
8. Provide bid support for additional 3 month period
9. Evaluate and provide as needed, 3rd display sign at platform boarding area for inbound and outbound direction.

1. Task B12.04 Structural

Services:

3. Evaluate the structural implications of larger PDS signs for platform placements and provide revised attachment details
4. Issue the revised drawings and spec pages as an addendum
5. Structural design for additional signs at mezzanines

Deliverables:

Subtask	Deliverables	When Due
B12.04	Addendum drawings and specifications	As directed by SFMTA

3. Task B12.12 Electrical

Services:

4. Issue the revised drawings and spec pages as an addendum
5. Electrical design for additional signs at mezzanines

Deliverables:

Subtask	Deliverables	When Due
B12.12	Addendum drawings and specifications	As directed by SFMTA

6. Task B12.13 Systems

Services:

3. Increase the height and reduce the pitch of the PDS signs
4. Revise the PDS spec to include the new requirements, including graphic layouts
5. Issue the revised drawings and spec pages as an addendum

Deliverables:

Subtask	Deliverables	When Due
B12.13	Addendum drawings and specifications	As directed by SFMTA

7. Task B14.10 Graphic Support for Outreach

Services:

3. Provide Graphic Design Support for PDS sign layout, alternative analysis and presentation
4. Provide staffing for public outreach support in Market Street stations

Deliverables:

<u>Subtask</u>	<u>Deliverables</u>	<u>When Due</u>
<u>B14.10</u>	<u>Revised sign layouts, Powerpoint presentation slides and presentation materials</u>	<u>As directed by SFMTA</u>

Additional Compensation:

City shall pay Consultant Three hundred and six thousand, seven hundred fifty-three dollars (\$306,753) in full satisfaction and accord for the Additional Work described in this Section C of this Fourth Amendment.

D. 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 the equivalent amount. The SFMTA's exercise of options and the Consultant's performance of the Optional Work has not increased the Contract Sum or Contract Time or to the Project schedule. SFMTA has also issued three previous contract Amendments. The following table summarizes the Options exercised and Amendments issued:

Executed Contract Options and Amendments:

Option Exercised Or Contract Amendment	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
Task B2.93f	C3 B0001	\$31,002	\$3,410	\$34,412	\$24,959,264	(\$31,002)	(\$3,410)	(\$34,412)	\$7,335,055
Task B12.05	C3 B0002	\$346,484	\$38,113	\$384,597	\$25,343,861	(\$346,484)	(\$38,113)	(\$384,597)	\$6,950,458
Tasks A-9.2, 12.05, 12.12E, 12.13F	#0933	\$665,574	\$73,213	\$738,787	\$26,082,649	(\$665,574)	(\$73,213)	(\$738,787)	\$6,211,670
Tasks A12.01, 12.02, 12.07, 12.11	#1213	\$209,819	\$23,080	\$232,899	\$26,315,548	(\$209,819)	(\$23,080)	(\$232,899)	\$5,978,771
Amend 1		\$140,082	\$12,800	\$152,882	\$26,468,430				\$5,978,771
Tasks A2.50, A12.12E	#1381	\$49,290	\$5,422	\$54,712	\$26,523,142	(\$49,290)	(\$5,422)	(\$54,712)	\$5,924,059
Amend 2		\$34,657	\$3,723	\$38,380	\$26,561,522				\$5,924,059
Amend 3		\$274,460	\$30,191	\$304,651	\$26,866,172				\$5,924,059
Task 12.02, 12.12	#1630	\$145,686	\$16,026	\$161,712	\$27,027,884	(\$145,686)	(\$16,026)	(\$161,712)	\$5,762,347
Task 12.11, 12.12E	#1658	\$182,990	\$20,129	\$203,119	\$27,231,003	(\$182,990)	(\$20,129)	(\$203,119)	\$5,559,228
Tasks 12.11, 12.12, 12.13, 9.2	#1688	\$99,287	\$10,922	\$110,209	\$27,341,212	(\$99,287)	(\$10,922)	(\$110,209)	\$5,449,020
Subtotal		\$24,737,726	\$2,603,486	\$2,416,360	\$27,341,212	\$4,921,960	\$527,059	(\$1,920,447)	\$5,449,020

Previous Contract
Total \$32,790,232

Amend 4		\$299,801	\$32,978	\$332,779					
Total with Amend 4		\$25,037,526	\$2,636,464	\$2,749,139	\$27,673,991	\$4,921,960	\$527,059	(\$1,920,447)	\$5,449,020

New Contract Total \$33,123,011

E. 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 Six Million, Eight Hundred Sixty Six Thousand, One Hundred Seventy Two Dollars (\$26,866,172) for Basic Services,~~ **Twenty Seven Million, Six Hundred Seventy Three Thousand Nine Hundred Ninety-One Dollars (\$27,673,991)** and an additional ~~Five Million, Nine Hundred Twenty-Four Thousand, Fifty Nine Dollars (\$5,924,059)~~ **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, Five Hundred Fifty Six Thousand, Four Hundred Eleven Dollars (\$2,556,411)~~ **Two Million Six Hundred Thirty Six Thousand, Four Hundred Forty Three Dollars (\$2,636,464)** for Basic Services and an additional ~~Five Hundred Seventy Four Thousand, One Hundred Thirty Five Dollars~~ **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.

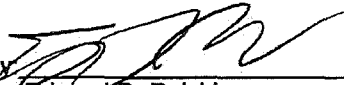


3. Summary of Fourth Amendment:

Total Amount of this Fourth Amendment:	Increase:	\$332,779.00
Previous Total Contract Amount:		\$32,790,232.00
New Revised Total Contract Amount:		\$33,123,011.00

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

The remainder of this page has been intentionally left blank.

In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this 11th day of July, 2012.

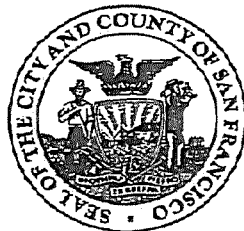
CITY	CONSULTANT
<p>Approved:</p> <p>By:  Edward D. Reiskin Director of Transportation SFMTA</p>	<p>Approved:</p> <p>By:  Anthony Marra HNTB-B&C Principal Central Subway Design Group</p>
<p>Dated: <u>7-11-12</u></p>	<p>Dated: <u>5/25/2012</u></p>
<p>Approved as to form:</p>	
<p>Dennis J. Herrera City Attorney</p>	
<p>By:  Robert K. Stone Deputy City Attorney</p>	
<p>Dated: <u>6-4-2012</u></p>	

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3

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

THIRD AMENDMENT



**Third 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 Third Amendment to the Agreement; ("Third Amendment");

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

A. CONSTRUCTION OF THIRD AMENDMENT

1. Where Additional Work or additional terms to the Agreement are set out in existing text, the new or added text is indicated by underlining text, and deleted text is lined-through. Where a new section is added in its entirety, the text so indicates.
2. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this Third Amendment.
3. The amounts stated in this Third 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.
4. Except as specifically provided in this Third Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this Third 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 Third Amendment is dated for convenience as February 3, 2012.

5. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this Third 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 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.
6. In signing this Third Amendment, the signatories certify that each is authorized to execute this Third Amendment and thereby bind the party he or she represents.

B. Additional Design Work for C3 TMC

Appendix A, Part B Task 12.14, "Control Center Facilities" is amended as follows:

1. 12.14 Control Center Facilities

Task description in Part A is superseded and the following task description applies.

Services:

Prepare detailed design for the following:

1. Facility Amenities and Furnishings and systems outside of the landlord-provided Tenant Improvements at 1455 Market St. as determined in task B2.92, and outside the scope of sub-task B12.05.
2. Prepare detailed design of new systems and system extensions for the Interim Primary OCC beyond Landlord-provided Tenant Improvements as determined in task B2.92 and as further refined at the completion of the Landlord's Tenant Improvement Design. The Work includes modifications of existing systems at Lenox OCC, SFMTA Metro and any other affected sites to the extent required for implementation of the Interim Primary OCC. This Work includes but is not limited to the integrated Audio/Visual management system and integration of the new radio system. At the completion of the Landlord's Tenant Improvement Design, elements that cannot be included in the Landlord's scope due to budget and other constraints will be added to the scope of these services. These services are limited to two areas: furniture and fixtures and the video wall installation including software licenses and display units.
3. Design for the above central control work will include any required additional system equipment and software and database modifications to the existing systems to provide the necessary central control functions.

Deliverables		When Due
B12.14a	Detailed design of Facility and Furnishings outside of Tenant Improvements at 1455 Market St.	65%, Pre-Final and 100%
B12.14b	Detailed design of new systems and extension of existing systems to 1455 Market St.	65%, Pre-Final and 100%

Task Leader

Dave Coury

Assumptions and Exceptions –

1. The number and scope of construction contract packages for the implementation of the OCC Project will be defined in Task B13.0, Construction Packaging and Schedules.
2. Scope of work outside of Tenant Improvements will be defined in the Implementation Plan for 1455 Market St and as determined by the 100% Tenant Improvement Construction Drawings prepared by the Landlord.
3. The Landlord's Tenant Improvement Construction Drawings will be complete by April 30, 2012.

2. B12.20 CADD Manager

The same task description in Part A applies. CADD Management for CSP is expanded to cover C3 Program. CADD Management for C3 will extend to facilitate the completion of the Landlord's Tenant Improvement Designs.

Assumptions and Exceptions –

1. CADD Management for Landlords Tenant Improvement Designs will be extended for one month.

Task Leader

Alan Schroder

Additional Compensation:

City shall pay Consultant One Hundred Seventy-Eight Thousand, Seven Hundred Sixty-Three Dollars (\$178,763.00) in full satisfaction and accord for the Additional Work described in this Section B of this Third Amendment.

C. Follow-up Business Process Review

Consultant shall perform the following Additional Work under Task B2.93:

B2.93 Business Process Review (BPR)

Services:

5. As a follow-up study to the BPR, facilitate and assist SFMTA in developing the new business procedures for the TMC and the examination of several critical processes and procedures that are currently in place and will need to change once the move into the new operations center occurs.
6. Hold a working session to solidify the unified TMC concept and achieve cooperative buy-in from the key stakeholders.
7. Work with stakeholders to seek out value engineering opportunities to improve how the agency does business and to consolidate those opportunities into a new comprehensive policy and procedure manual.

Deliverables	When Due
B2.93g	<u>A brief report to review ideas, issues and lessons learned from visioning session</u> <u>April 2012</u>
B2.93h	<u>Concepts of Operations Report</u> <u>April 2012</u>
B2.93i	<u>A brief/short report outlining the labor classification impacted and suggested changes/modifications that would be needed in a new operations environment</u> <u>May 2012</u>
B2.93j	<u>flow chart showing the existing SOPs and their linkages and a short recommendation document noting those that should be changed</u> <u>July 2012</u>
B2.93k	<u>Draft framework of Operations Manual – including revisions to SOP</u> <u>Oct 2012</u>
B2.93l	<u>Develop an "Operations Playbook" Framework</u> <u>Oct 2012</u>

Additional Compensation:

City shall pay Consultant Thirty Thousand Three Hundred and Sixty-Two Dollars (\$30,362.00) in full satisfaction and accord for the Additional Work described in this Section C of this Third Amendment.

D. Extension of PC Support Technician

Appendix A, Part A Task 12.30, "PC Support Technician" is amended as follows:

A12.30 PC Support Technician

Services:

Provide a dedicated PC Support Technician who will be responsible for providing setup and support of Central Subway Project Personal Computers and general business software under the direction of SFMTA IT.

Assumptions and Exceptions

1. Budget for this task will be ~~24 months~~ 26.5 months.
2. May be First Source Hire
3. This task budgeted under 12.20

Additional Compensation:

City shall pay Consultant Thirty-Five Thousand Dollars (\$34,483.00) in full satisfaction and accord for the Additional Work described in this Section D of this Third Amendment.

E. Extension of CSP Quality Manager

Appendix A, Part A Task 11.0, "Quality Control Management" is amended as follows:

11.0 Quality Control Management

Quality control and quality assurance are essential elements to the success of the Central Subway Project. Consultant's team is committed to SFMTA to deliver DP1, DP2 and DP3 Design documents in full compliance with the review and documentation standards and procedures contained in the CSP Design Control Procedures.

Services

1. Consultant shall assign CSP Quality Manager to assure the quality of the Work of the DP3 design and who will have oversight of and participate in the quality control activities of the DP1 and DP2 Design Packages.
2. Consultant will submit a draft DP3 Quality Control and Implementation Plan within 30 days and a final Plan within 60 days after NTP. The Plan will be in compliance with CSP Quality Control Plan and will clearly spell out Consultant's approach for implementing the DP3 design control procedures across all design disciplines.
3. Consultant will assist CSP Quality Assurance Manager and others with Audit and Surveillance of DP1, DP2 and DP3.
4. Consultant will review DP1 and DP2 construction contract packages for consistency and quality across all design disciplines to ensure all design work meets or exceeds Quality Standards set out in the CSP Design Quality Control Plan.

Deliverables

When Due

<u>Deliverables</u>	<u>When Due</u>
11.10 Review and Comment on CSP QC Plan	[30 days after NTP]
11.30 QC review documentation including verifications of resolution and incorporation for CP7 package	[65, Pre-Final and 100%]
Review of QC documentation for each DP1 & DP2 design submittal	Within 15 days of the receipt of the QC documentation

Task Leader

To be determined Denise McDonald

Assumptions and Exceptions

1. SFMTA is responsible for implementation of overall Project Quality Program

2. CSP Quality Control Plan will be provided to the consultant for review and comment at NTP.
3. SFMTA will provide Quality Control Procedures and training to Consultant following NTP.
4. Persons performing Quality Control Management will be in the direct employment of the Consultant.
5. DP1 and DP2 will perform quality control review for their own work. DP3 review for consistency and quality across all disciplines is limited to ensuring that DP1 and DP2 quality control reviews have been performed in accordance with the Project Quality Plan. DP3 quality review is not expected to duplicate the quality review effort performed by DP1 and DP2 Consultants.
6. CSP Quality Manager position will be extended by three months to provide continued audits and surveillance. Position will be full time for one month and half time for two months.

Additional Compensation:

City shall pay Consultant Sixty-One Thousand Forty-Three Dollars (\$61,043.00) in full satisfaction and accord for the Additional Work described in this Section E of this Third Amendment

F. PREVIOUSLY EXERCISED OPTIONS

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 the equivalent amount. The SFMTA's exercise and the Consultant's performance of the Optional Work has not increased the Contract Sum or Contract Time or to the Project schedule. The following table summarizes the Options exercised:

Executed Contract Options:

Option Exercised	Letter No.	Base Amount	Base Fee	Option Amount	Option Fee
		\$22,558,394	\$2,366,458	\$6,652,093	\$717,374
Task B2.93f	C3 B0001	\$31,002	\$3,410	(\$31,002)	(\$3,410)
Task B12.05	C3 B0002	\$346,484	\$38,113	(\$346,484)	(\$38,113)
Tasks A9.2, A12.05, A12.12E, A12.13F	#0933	\$665,574	\$73,213	(\$665,574)	(\$73,213)
Tasks A12.01, A12.02, A12.07, A12.11	#1213	\$209,819	\$23,080	(\$209,819)	(\$23,080)
Tasks A2.50, A12.12E	#1318	\$49,290	\$5,422	(\$49,290)	(\$5,422)

G. 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 Six Million, Five Hundred Sixty One Thousand, Five Hundred and Twenty Two Dollars (\$26,561,522)~~ Twenty Six Million, Eight Hundred Sixty-Six Thousand, One Hundred Seventy-Two Dollars (\$26,866,172) for Basic Services, and an additional Five Million, Nine Hundred Twenty-Four Thousand, Fifty-Nine Dollars (\$5,924,059) 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, Five Hundred Twenty Six Thousand, and Two Hundred Twenty Dollars (\$2,526,220)~~ Two Million, Five Hundred Fifty-Six Thousand, Four Hundred Eleven Dollars (\$2,556,411) for Basic Services and an additional Five Hundred Seventy-Four Thousand, One Hundred Thirty-Five Dollars 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.


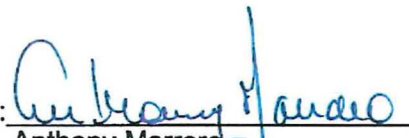
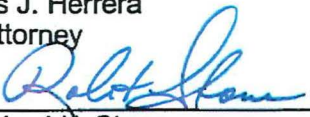
3. Summary of Third Amendment:

Total Amount of this Third Amendment:	Increase:	\$304,651.00
Previous Total Contract Amount:		\$32,485,581.00
New Revised Total Contract Amount:		\$32,790,232.00

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

The remainder of this page has been intentionally left blank.

In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this 4th day of May, 2012.

CITY	CONSULTANT
<p>Approved:</p> <p>By:  Edward D. Reiskin Director of Transportation SFMTA</p> <p>Dated: <u>5-4-12</u></p>	<p>Approved:</p> <p>By:  Anthony Marraro HNTB-B&C Principal Central Subway Design Group</p> <p>Dated: <u>4/16/2012</u></p>
<p>Approved as to form:</p> <p>Dennis J. Herrera City Attorney</p> <p>By:  Robert K. Stone Deputy City Attorney</p> <p>Dated: <u>4-24-2012</u></p>	

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3

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

SECOND AMENDMENT



**Second 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 Second Amendment to the Agreement; ("Second Amendment");

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

A. CONSTRUCTION OF SECOND AMENDMENT

1. Where Additional Work or additional terms to the Agreement are set out in existing text, the new or added text is indicated by underlining text, and deleted text is lined-through. Where a new section is added in its entirety, the text so indicates.
2. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this Second Amendment.
3. The amounts stated in this Second 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.
4. Except as specifically provided in this Second Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this Second

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 Second Amendment is dated for convenience as February 13, 2012.

5. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this Second 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 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.
6. In signing this Second Amendment, the signatories certify that each is authorized to execute this Second Amendment and thereby bind the party he or she represents.

B. Vibration Impact Analysis for 570 4th Street

Appendix A, Task 12.10, "Acoustics, Noise and Vibration" is amended as follows:

Task 12.10 Acoustics, Noise and Vibration

Services

Acoustically design jet fans (if required) to comply with City noise ordinance and FTA guidelines (i.e. DB levels for required testing and maintenance).

Provide vibration impact analysis for 570 4th Street.

Assumptions and Exceptions –

Acoustical requirements for jet fans will be shown in mechanical drawings and specified in the Mechanical technical specifications

Consultant shall produce the following Deliverables under Task 12.10:

- Vibration Impact Analysis Memorandum for 570 4th Street [Draft at NTP+ 5 weeks]
[Final at 14 days after draft]

Additional Compensation:

City shall pay Consultant Thirty-Eight Thousand Three Hundred Eighty Dollars (\$38,380.00) in full satisfaction and accord for the Additional Work described in this Section B of this Second Amendment.

C. PREVIOUSLY EXERCISED OPTIONS

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 the equivalent amount. The SFMTA's exercise and the Consultant's performance of the Optional Work has not increased the Contract Sum or Contract Time or to the Project schedule. The following table summarizes the Options exercised:

Executed Contract Options:

Option Exercised	Letter No.	Base Amount	Base Fee	Option Amount	Option Fee
		\$22,558,394	\$2,366,458	\$6,652,093	\$717,374
Task B2.93f	C3 B0001	\$31,002	\$3,410	(\$31,002)	(\$3,410)
Task B12.05	C3 B0002	\$346,484	\$38,113	(\$346,484)	(\$38,113)
Tasks A9.2, A12.05, A12.12E, A12.13F	#0933	\$665,574	\$73,213	(\$665,574)	(\$73,213)
Tasks A12.01, A12.02, A12.07, A12.11	#1213	\$209,819	\$23,080	(\$209,819)	(\$23,080)
Tasks A2.50, A12.12E	#1318	\$49,290	\$5,422	(\$49,290)	(\$5,422)

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 Six Million, Four Hundred Sixty-Eight Thousand, Four Hundred and Thirty Dollars (\$26,468,430)~~ Twenty Six Million, Five Hundred Sixty-One Thousand, Five Hundred and Twenty-Two Dollars (\$26,561,522) for Basic Services, and an additional ~~Five Million Nine Hundred Seventy-Eight Thousand Seven Hundred Seventy One Dollars (\$5,978,771)~~ Five Million, Nine Hundred Twenty-Four Thousand, Fifty-Nine Dollars (\$5,924,059) 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, Five Hundred Seventeen Thousand, and Seventy-Five Dollars~~

~~(\$2,517,075)~~ **Two Million, Five Hundred Twenty-Six Thousand, and Two Hundred Twenty Dollars (\$2,526,220)** for Basic Services and an additional ~~Five Hundred Seventy-Nine Thousand Five Hundred Fifty-Seven Dollars (\$579,557)~~ **Five Hundred Seventy-Four Thousand, One Hundred Thirty-Five Dollars** 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.


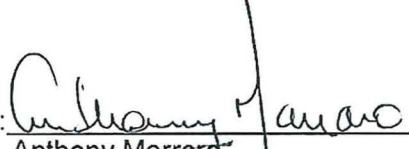
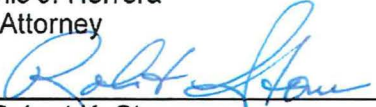
3. Summary of Second Amendment:

Total Amount of this Second Amendment:	Increase:	\$38,380.00
Previous Total Contract Amount:		\$32,447,201.00
New Revised Total Contract Amount:		\$32,485,581.00

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

The remainder of this page has been intentionally left blank.

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

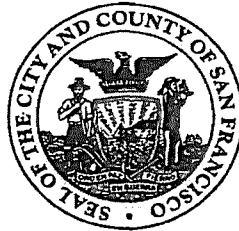
CITY	CONSULTANT
<p>Approved:</p> <p>By:  _____ Edward D. Reiskin Director of Transportation SFMTA</p> <p>Dated: <u>3-9-2012</u></p>	<p>Approved:</p> <p>By:  _____ Anthony Marraro HNTB-B&C Principal Central Subway Design Group</p> <p>Dated: <u>2/17/2012</u></p>
<p>Approved as to form:</p>	
<p>Dennis J. Herrera City Attorney</p> <p>By:  _____ Robert K. Stone Deputy City Attorney</p> <p>Dated: <u>3/6/2012</u></p>	

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3

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

FIRST AMENDMENT



**First 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 First Amendment to the Agreement; ("First Amendment");

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

A. CONSTRUCTION OF FIRST AMENDMENT

1. Where Additional Work or additional terms to the Agreement are set out in existing text, the new or added text is indicated by underlining text, and deleted text is lined-through. Where a new section is added in its entirety, the text so indicates.
2. Unless otherwise specifically stated, the Consultant is the party responsible for performing the Work described in this First Amendment.
3. The amounts stated in this First 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.
4. Except as specifically provided in this First Amendment, all other terms and conditions of the Agreement remain unchanged. No provision of this First 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 First Amendment is dated for convenience as December 20, 2011.

5. Consultant hereby acknowledges and agrees that the amounts agreed for the Additional Work described in this First 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 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.
6. In signing this First Amendment, the signatories certify that each is authorized to execute this First Amendment and thereby bind the party he or she represents.

B. CHINATOWN STATION LOWERING

All of the work described in this Section B is Additional Work under the Tasks listed herein:

Summary:

The Parties have agreed that the Chinatown Station (CTS) must be constructed approximately 25 feet lower (deeper in the ground) than originally designed under Preliminary Engineering.

As a result of the lowering and reconfiguration of CTS, revisions to the track alignment, structures, train control, radio, and ventilation design are required.

1. Task 2.10 Design Interfacing and Integration Management

Consultant shall perform the following Additional Work under Task 2.10:

- Review designs related to the lowering and reconfiguration of Chinatown station as approved under ECP FD-012 to ensure consistency and integration.

2. Task 2.40 Systems Design Coordination

Consultant shall perform the following Additional Work under Task 2.40:

- Modify CFD and SES ventilation models to reflect changes in Chinatown station configuration as approved under ECP FD-021. Tasks include updating the CTS CFD report to reflect new station cavern size, updating the SES report, and updating boundary conditions for all 3 stations CFD reports.

3. Task 12.01 Civil Plans

Consultant shall perform the following Additional Work under Task 12.01:

- Modify 65% design documents to reflect the lowering and reconfiguration of Chinatown station as approved under ECP FD-021. Tasks include modification of contract drawings and specifications.

4. Task 12.04 Structural

Consultant shall perform the following Additional Work under Task 12.04:

- Modify 65% design documents to reflect the lowering and reconfiguration of Chinatown station as approved under ECP FD-021. Tasks include modification of contract drawings and specifications.

5. Task 12.13 Systems

Consultant shall perform the following Additional Work under Task 12.13:

- Modify 65% design documents for Train Control and Radio to reflect the lowering and reconfiguration of Chinatown station as approved under ECP FD-021. Tasks include modification of contract drawings and specifications.

6. Additional Compensation:

City shall pay Consultant Eighty-Eight Thousand Eight Hundred Fifty-Five Dollars (\$88,855) in full satisfaction and accord for the Additional Work described in this Section B of this First Amendment.

C. GEOTECHNICAL INVESTIGATIONS FOR FOURTH/BRANNAN STATION

Appendix A, Task 3.10, "Supplemental Geotechnical Investigations" is amended as follows:

Task 3.10 Supplemental Geotechnical Investigations

Services

~~Services, if required, will be performed by others.~~

Provide geotechnical analysis and borings for the Fourth/Brannan Station.

Tasks include:

- Project Management
- Geotechnical borings
- Geotechnical analysis for:
 - Site surface conditions;
 - Subsurface conditions;
 - Groundwater level condition at the time of drilling;

- Assessment of geological hazards and development of the CBC2010 seismic design criteria;
- Shallow and deep foundation design recommendations for Fourth/Brannan Street surface station (with a 42" sewer under the proposed station) and marquee pole for artwork;
- Settlement Analysis for both shallow and deep foundation systems;
- Corrosivity Analysis for foundation system; and
- Geotechnical engineering recommendations for grading during excavation and backfill against the foundation.

Consultant shall produce the following Deliverables under Task 3.10:

- Geotechnical Report for Fourth/Brannan Station [Draft at NTP+12 weeks]
[Final at 14 days after draft]

Additional Compensation:

City shall pay Consultant Sixty-Four Thousand Twenty-Seven Dollars (\$64,027.00) in full satisfaction and accord for the Additional Work described in this Section C of this First Amendment.

D. PREVIOUSLY EXERCISED OPTIONS

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 the equivalent amount. The SFMTA's exercise and the Consultant's performance of the Optional Work has not increased the Contract Sum or Contract Time or amended the Project schedule. The following table summarizes the Options exercised:

Executed Contract Options:

Option Exercised	Letter No.	Base Amount	Base Fee	Option Amount	Option Fee
		\$22,558,394	\$2,366,458	\$6,652,093	\$717,374
Task B2.93f	C3 B0001	\$31,002	\$3,410	(\$31,002)	(\$3,410)
Task B12.05	C3 B0002	\$346,484	\$38,113	(\$346,484)	(\$38,113)
Tasks A-9.2, 12.05, 12.12E, 12.13F	#0933	\$665,574	\$73,213	(\$665,574)	(\$73,213)
Tasks A12.01, 12.02, 12.07, 12.11	#1213	\$209,819	\$23,080	(\$209,819)	(\$23,080)

E. 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 Four Million Nine Hundred Twenty Four Thousand Eight Hundred and Fifty Two Dollars (\$24,924,852)~~ Twenty Six Million, Four Hundred Sixty-Eight Thousand, Four Hundred and Thirty Dollars (\$26,468,430) for Basic Services, and an additional ~~Seven Million Three Hundred Sixty-Nine Thousand Four Hundred Sixty Seven Dollars (\$7,369,467)~~ Five Million Nine Hundred Seventy-Eight Thousand Seven Hundred Seventy One Dollars (\$5,978,771) for Optional Services.

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


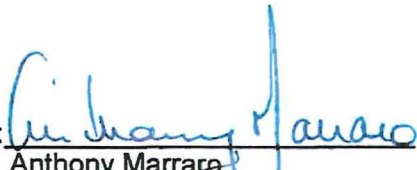

13.4.1 For all of the Consultant's Basic Services, which are all services provided by Consultant except for those tasks and work specifically identified as Additional Work, the Agency shall pay the Consultant a Fixed Fee, which is Consultant's profit for performing the Basic Services under this Agreement. The Fixed Fee shall not exceed a sum total of ~~Two Million Three Hundred Sixty-Six Thousand Four Hundred Fifty-Eight Dollars (\$2,366,458)~~ Two Million, Five Hundred Seventeen Thousand, and Seventy-Five Dollars (\$2,517,075) for Basic Services and an additional ~~Seven Hundred Seventeen Thousand Three Hundred Seventy-Four Dollars (\$717,374)~~ Five Hundred Seventy-Nine Thousand Five Hundred Fifty-Seven Dollars (\$579,557) 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 First Amendment:

Total Amount of this First Amendment:	Increase:	\$152,882.00
Previous Total Contract Amount:		\$32,294,319.00
New Revised Total Contract Amount:		\$32,447,201.00
Total Contract Time added by this Contract Modification:		None
Previous Task Order Completion Date:		April 2020
New Revised Task Order Completion Date:		April 2020

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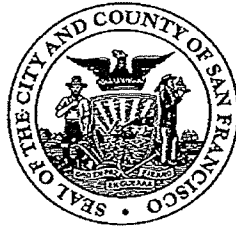
In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this 17th day of January, 2012.

CITY	CONSULTANT
<p>Approved:</p> <p>By: </p> <p>Edward D. Reiskin Director of Transportation SFMTA</p> <p>Dated: <u>1.10.12</u></p>	<p>Approved:</p> <p>By: </p> <p>Anthony Marraro HNTB-B&C Principal Central Subway Design Group</p> <p>Dated: <u>12/19/11</u></p>
<p>Approved as to form:</p>	
<p>Dennis J. Herrera City Attorney</p>	
<p>By: </p> <p>Robert K. Stone Deputy City Attorney</p>	
<p>Dated: <u>1-12-12</u></p>	

CONTRACT FOR CENTRAL SUBWAY

FINAL DESIGN PACKAGE # 3:

SURFACE SEGMENT, TRACKWAYS, SYSTEMS,
QUALITY CONTROL AND DESIGN INTEGRATION



**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:
Surface Segment, Trackways, Systems,
Quality Control and Design Integration**

TABLE OF CONTENTS

	<u>Page</u>
1. THE PROJECT	13
1.1. General Description	13
1.2. Primary Responsibilities and Design Integration	13
1.3. Term	13
2. DEFINITIONS	13
3. CONSULTANT'S BASIC SERVICES	20
3.1. Inclusive Services	20
3.2. Subconsultants	21
3.3. Quality Control	21
3.4. Code Compliance	21
3.5. Coordination of Design Team	22
3.6. Reliance on Data	22
3.7. Reports	22
3.8. Coordination with City Departments and Personnel, Other Public Agencies	22
3.9. Open Design	23
3.10. Correction of Errors	23
3.11. Furnishings, Furniture, and Equipment Not Affixed	24
3.12. Information and Data	24
3.13. Use Of Computer Technology For Design and Coordination of Drawings	24
3.14. Authorization for Bid and Construction Support Services	24
3.15. Bid Support Services	24
3.16. Construction Support Services	25
3.17. Warranty Services	29

3.18.	Operations Control Center Design	30
3.19.	Project Office	30
4.	DESIGN RESPONSIBILITY AND STANDARDS	30
4.1.	Responsibility for Design	30
4.2.	Standard of Performance.....	30
4.3.	No Waiver.....	30
4.4.	Expertise.....	30
4.5.	Qualified Personnel	31
5.	PROGRAM DIRECTION	31
5.1.	SFMTA Direction	31
5.2.	SFMTA Program Manager.....	31
5.3.	Evaluation of Consultant's Performance	31
6.	PROGRAM BUDGET AND COST CONTROLS	32
6.1.	Construction Budget	32
6.2.	Cost Estimating.....	35
6.3.	City Cost Change Control Procedure	35
6.4.	Task Budgets.....	36
6.5.	Retention	36
6.6.	Accounting of Retention.....	37
6.7.	Letter of Credit in Lieu of Retention.....	37
6.8.	Escrow Account.....	37
7.	PROGRAM SCHEDULE	37
7.1.	Schedule of Services	37
7.2.	Time is of the Essence.....	37
7.3.	Force Majeur	37

7.4.	Extension of Time	38
7.5.	Construction Support Services.....	38
7.6.	Commencement and Completion of Project Work.....	38
7.7.	Design Plans	38
8.	CHANGES IN SCOPE	38
8.1.	Work Revised at SFMTA Request	38
8.2.	Proposal for Additional Work.....	39
8.3.	Proposal Review.....	39
8.4.	Request for Additional Work	40
8.5.	Approvals Required	40
8.6.	Consultant at Risk.....	40
8.7.	Changes to Design Plan	40
8.8.	Decrease in Scope	40
8.9.	Change Due to Fault Of Consultant	40
9.	SUBCONTRACTING.....	41
9.1.	Assignment of Work.....	41
9.2.	Responsibility	41
9.3.	Substitutions of Subconsultants	41
9.4.	Prompt Payment of Subconsultants	41
9.5.	Interest on Unpaid Amounts.....	41
9.6.	Retention	42
9.7.	Substitutions of SBE Firms	42
9.8.	Addition of Subconsultants	42
9.9.	Subcontracts.....	42
9.10.	Progress Reports.....	42

10.	SMALL BUSINESS ENTERPRISE PROGRAM.....	42
10.1.	General.....	42
10.2.	Compliance with SBE Program.....	42
10.3.	SBE Goal.....	43
10.4.	Non-Discrimination in Hiring.....	43
11.	WORK PRODUCT, DELIVERABLES AND SUBMITTALS	43
11.1.	Construction Documents Requirements.....	43
11.2.	Transmittal of Work Product.....	43
11.3.	Reproduction of Work Product.....	44
11.4.	Agency's Responsibilities Regarding Submittals.....	44
12.	CONSULTANT PERSONNEL	44
12.1.	Consultant's Project Manager.....	44
12.2.	Key Personnel	44
12.3.	Departure Notice and Corrective Action Plan.....	45
12.4.	Substitutions of Key Team Members	45
12.5.	Liquidated Damages.....	45
13.	COMPENSATION	46
13.1.	Certification of Funds; Budget and Fiscal Provisions; Termination in the Event of Non-Appropriation.....	46
13.2.	Guaranteed Maximum Costs	46
13.3.	Total Amount	47
13.4.	Fixed Fee.....	47
13.5.	Change in Scope of Services.....	48
13.6.	Calculation of Compensation	48
13.7.	Redesign Due to Consultant's Error.....	48
13.8.	Cost Plus Fixed Fee Payment.....	48

13.9.	Additional Work.....	49
13.10.	Salary Rates.....	49
13.11.	Overhead Rates - Provisional Rates and Annual Audit.....	49
13.12.	Transfer of Unused Funds.....	50
13.13.	Non-Reimbursable Expenses.....	50
13.14.	Prepayment.....	50
13.15.	Refunds, Rebates and Credits.....	51
13.16.	Payment of Invoices.....	51
13.17.	No Interest on Late Payments.....	51
13.18.	Payment Limitations.....	51
13.19.	Invoices.....	51
13.20.	Documentation for Payment.....	52
13.21.	Submitting False Claims; Monetary Penalties.....	52
13.22.	Disallowance and Disputed Amounts.....	53
13.23.	Payment Does Not Imply Acceptance of Work.....	53
13.24.	Project Suspension or Termination.....	53
13.25.	Final Payment.....	54
14.	TAXES, INDEPENDENT CONTRACTOR.....	54
14.1.	Obligation of Consultant.....	54
14.2.	Possessory Interest.....	54
14.3.	Independent Contractor.....	55
14.4.	Payment of Employment Taxes and Other Expenses.....	55
15.	INSURANCE REQUIREMENTS.....	56
15.1.	Workers Compensation.....	56
15.2.	General Liability.....	56

15.3.	Automobile.....	56
15.4.	Valuable Papers	56
15.5.	Professional Liability	56
15.6.	Notice	58
15.7.	Claims-Made Form	58
15.8.	General Annual Aggregate Limit.....	59
15.9.	Lapse of Insurance	59
15.10.	Proof of Insurance	59
15.11.	No Decrease of Liability	59
15.12.	Subconsultant Insurance	59
16.	INDEMNITY, LIABILITY, AND REMEDIES.....	59
16.1.	Indemnification	59
16.2.	Limitations	59
16.3.	Intellectual Property Infringement	60
16.4.	Joint Venture Partners	60
16.5.	Liability of City	60
16.6.	Default; Remedies	60
16.7.	Remedies	61
16.8.	No Preclusion of Remedies	61
17.	EQUIPMENT.....	61
17.1.	Responsibility for Equipment.....	61
17.2.	Ownership of Equipment.....	62
18.	CITY'S RESPONSIBILITIES	62
18.1.	Approvals.....	62
18.2.	Deficiencies	62

18.3.	Fees	62
18.4.	Hazardous Substances.....	62
18.5.	Nonaffixed Furniture and Equipment.....	62
18.6.	Project Data.....	62
18.7.	Program Manager.....	62
18.8.	Respond to Submittals.....	63
18.9.	Tests and Inspections.....	63
18.10.	Construction Cost Estimates.....	63
19.	TERMINATION OF CONTRACT	63
19.1.	Termination for Cause	63
19.2.	Termination for Convenience	63
19.3.	Rights and Duties Upon Termination or Expiration.....	65
20.	CONFLICT OF INTEREST.....	65
20.1.	Applicable Authority.....	65
20.2.	Other Bids Prohibited.....	65
20.3.	No Financial Interest in the Project	65
20.4.	Conflicts of Interest.....	66
20.5.	Other Agreements between the City and the Consultant.....	66
20.6.	Lobbyists and Gratuities	66
20.7.	Collusion in Contracting.....	67
20.8.	Remedies	67
21.	CONFIDENTIALITY, PRIVACY AND SECURITY OF INFORMATION	67
21.1.	Proprietary, Confidential and Security Sensitive Information.....	67
21.2.	Project Security.....	67
21.3.	Protection of Private Information.....	68

22.	WORK PRODUCT, WORKS FOR HIRE, AND INTELLECTUAL PROPERTY.....	68
22.1.	Ownership	68
22.2.	Assignment.....	68
22.3.	Moral Rights	68
22.4.	Assistance	69
22.5.	Delivery of Work Product	69
22.6.	Representations and Warranties.....	69
22.7.	License of Consultant's Proprietary Software, Information and Processes.....	69
22.8.	Notations	70
22.9.	Reuse	70
22.10.	Artists Rights	70
22.11.	Subcontracts.....	70
23.	AUDIT AND INSPECTION OF RECORDS.....	70
23.1.	Access to Records.....	70
23.2.	Maintenance of Records	71
23.3.	Audit of Subconsultants	71
23.4.	Audit	71
23.5.	Rights of State or Federal Agencies.....	71
24.	NONDISCRIMINATION; PENALTIES	71
24.1.	Consultant Shall Not Discriminate.....	71
24.2.	Subcontracts.....	72
24.3.	Nondiscrimination in Benefits.....	72
24.4.	Condition to Contract	72
24.5.	Incorporation of Administrative Code Provisions by Reference	72
24.6.	Compliance with Americans with Disabilities Act.....	72

25.	GENERAL CONTRACT REQUIREMENTS	72
25.1.	Compliance with All Laws and Regulations.....	72
25.2.	MacBride Principles - Northern Ireland	73
25.3.	Use of Public Transportation.....	73
25.4.	Earned Income Credit (EIC) Forms.....	73
25.5.	Sunshine Ordinance	74
25.6.	Public Access to Meetings and Records	74
25.7.	Limitations on Contributions.....	74
25.8.	Requiring Minimum Compensation for Covered Employees	74
25.9.	Requiring Health Benefits for Covered Employees	76
25.10.	First Source Hiring Program.....	77
25.11.	Prohibition of Political Activity with City Funds	80
25.12.	Services Provided by Attorneys	81
26.	CONTRACT ADMINISTRATION AND CONSTRUCTION	81
26.1.	Notices to the Parties.....	81
26.2.	Assignment.....	82
26.3.	Successors and Assigns.....	82
26.4.	Non-Waiver of Rights.....	82
26.5.	Modification of Agreement	82
26.6.	Agreement Made in California; Venue	82
26.7.	Construction of Agreement	82
26.8.	Entire Agreement.....	83
26.9.	Compliance with Laws	83
26.10.	Disputes and Resolution.....	83
26.11.	Mutual Agreement	84

26.12.	Severability	84
26.13.	No Third Party Beneficiary	84
26.14.	Signatories Authorized	84
27.	ENVIRONMENTAL REQUIREMENTS	84
27.1.	Resource Efficiency and Conservation	84
27.2.	Preservative-Treated Wood Containing Arsenic.....	84
27.3.	Graffiti Removal.....	85
27.4.	Food Service Waste Reduction Requirements.....	85
27.5.	Tropical Hardwood and Virgin Redwood Ban.....	86
27.6.	Recycled Products.....	86
28.	FEDERAL REQUIREMENTS	86
28.1.	Federal Contract Requirements and Applicable Law	86
28.2.	Incorporation of Federal Transit Administration (FTA) Terms.....	86
28.3.	Applicability of Federal Grant Contract.....	86
28.4.	Federal Funding Limitation	87
28.5.	No Federal Government Obligation to Third Parties.....	87
28.6.	Federal Lobbying Restrictions.....	87
28.7.	Lobbying Certification and Disclosure	88
28.8.	Certification Regarding Debarment, Suspension And Other Responsibility Matters	88
28.9.	Exclusionary Or Discriminatory Specifications	89
28.10.	Conservation	89
28.11.	Clean Water.....	89
28.12.	Clean Air.....	89
28.13.	Fly America.....	89
28.14.	Seismic Safety.....	90

28.15. National Intelligent Transportation Systems Consultanture and Standards	90
28.16. Electronic and Information Technology	90
28.17. Nondiscrimination	90
28.18. Title VI Compliance.....	91
28.19. Requirements of Americans with Disabilities Act.....	92
28.20. Recycled Products.....	93
28.21. Privacy.....	93
28.22. False or Fraudulent Statements and Claims	93
28.23. Drug-Free Workplace Policy	94
28.24. Approval by Counterparts	94
29. INCLUDED APPENDICES	94

Agreement between the City and County of San Francisco
and
HNTB-B&C JV, a Joint Venture between HNTB Corporation and B&C Transit , Inc.
for Architectural and Engineering the Final Design and Construction of
the San Francisco Municipal Transportation Agency
Central Subway Project (Third Street Light Rail Project, Phase 2)
Trackways, Signals, Controls, Traction Power and Design Integration

This Agreement, dated for convenience as February 16 , 2010, in the City and County of San Francisco, State of California, by and between: HNTB-B&C JV ("Consultant"), a joint venture between HNTB Corporation, a corporation with its principal place of business in Kansas City, Missouri (hereinafter HNTB), and B&C Transit, Inc., (hereinafter "B&C"), a corporation with its principal place of business in San Leandro, California, and the City and County of San Francisco, a municipal corporation , acting by and through its Municipal Transportation Agency (hereinafter "SFMTA" or "City").

RECITALS

- A. The SFMTA desires that the Consultant renders professional architectural and engineering and related services in connection with the design and construction of the Central Subway Project, Phase 2 of the SFMTA Third Street Light Rail Project.
- B. A Request for Proposals was issued on March 27, 2009 ("the RFP"), and the SFMTA selected Consultant as the highest qualified proposer pursuant to the RFP.
- C. Consultant represents and warrants that it is qualified to perform and that it possesses the requisite experience and resources to render the services required by the SFMTA as set forth under this Contract.
- D. The City and Consultant intend that this Agreement comply with the regulations of the Federal Transit Administration of the United States Department of Transportation ("FTA").
- E. On February 26, 2010 the SFMTA Board of Directors adopted Resolution No. 10-030 authorizing the SFMTA's Executive Director/CEO to execute this Agreement.
- F. On April 22, 2010, 2010 the Board of Supervisors for the City and County of San Francisco adopted Resolution No. 143-10 approving this Agreement.
- G. Approval for said Agreement was obtained from a Civil Service Commission Notice of Action for Contract Number No. PSC 4115-09/10 on April 5, 2010.

NOW, THEREFORE, the City and the Consultant agree as follows:

1. THE PROJECT.

1.1. General Description. The City does hereby engage the Consultant to perform, under the terms and conditions in this Agreement, professional services to complete the design for the Surface Segment, Trackways and Systems (collectively "Systems") and Quality Control and Design Integration and related engineering, architectural, and construction support work for the Final Design of and related bid support and Construction Support Services for the Central Subway Project (the "Project"), Phase Two of the Third Street Light Rail Transit Project. The Project and the work that Consultant may perform under this Agreement are fully described in the Request for Proposals ("RFP") dated March 27, 2009, the documents referenced therein and referenced in Appendix 10 of the RFP, and Addendums 1 through 6 to the RFP, the Consultant's Proposal, and this Agreement. It is the responsibility of the Consultant to request, review and incorporate requirements for the Systems design for the Project that may be established in such referenced documents. As directed by the SFMTA, Consultant shall perform as Basic Services, Optional Services, and Additional Services all work reasonably related and necessary to the final design and support the construction of the Systems for the Project and to support the construction of the Project, as determined by the SFMTA and as that work is described in this Agreement and in the RFP.

1.2. Primary Responsibilities and Design Integration. Consultant's primary responsibilities shall be to perform and provide final design, bid support and construction support design services for the Systems and Quality Control and Design Integration for the Project. Consultant shall lead the design firms assigned to Contract Package #1 and Contract Package #2 managing Quality Control of and Integrating the final design of the CSP.

1.3. Term. This Agreement shall be in effect upon final approval by the Parties and shall continue for a period of Ten (10) Years from the date that the SFMTA first issues Notice to Proceed ("NTP") to the Consultant. Upon approval by the Consultant and the SFMTA, the Agreement may be extended for up to an additional two (2) years.

2. DEFINITIONS.

For all purposes of this Agreement, the terms listed below shall be given the meaning provided. The terms and abbreviations listed in the RFP are incorporated by reference as if fully out here.

2.1. Additional Services or Additional Work means work or services requested by the SFMTA that are outside the Scope of Services set out in this Agreement.

2.2. Agreement or Contract means this Agreement for Final Design Architectural and Engineering Services and all referenced Appendices to this Agreement and approved modifications to this Agreement.

2.3. Appendix means a document or set of documents appended to and incorporated by reference into this Agreement.

2.4. Architectural and Engineering Services means the design services necessary to produce Construction Drawings, Work Product and other design deliverables necessary for the construction of the Project or otherwise deemed necessary by the SFMTA.

2.5. Award means authorization by resolution of the SFMTA Board of Directors for its staff to execute the Contract with the selected proposer, and approval of the Contract by the San Francisco Board of Supervisors.

2.6. B&C means B&C Transit, Inc., a Florida corporation with its principal place of business at 14500 Doolittle Drive, San Leandro, California.

2.7. Bid Alternate means Work that has been designed in two or more alternative ways, which are included in construction bid documents and that call for line-item construction bids for each Bid Alternate, and which the SFMTA will select to bring the construction contract(s) to be designed under this Agreement within the Project construction budget for that work.

2.8. Bid Option means Work that may be incidental or ancillary to the CSP that is packaged in the construction bid documents for which a separate or line-item bid is sought and that would be constructed only if the SFMTA's exercises its option to do so.

2.9. Basic Services means the creation, design and provision of Work Product and work and services incidental thereto that are described or listed in this Agreement.

2.10. City means the City and County of San Francisco.

2.11. Central Subway Project (CSP) or Project means the planning, design and construction of the Central Subway Project, Phase 2 of the SFMTA Third Street Light Rail Project.

2.12. Communications means electronic data transferred between two elements including but not limited to SCADA, Radio, Video, and other electronic, electrical, mechanical, and software elements of the CSP necessary to communicate the speed, acceleration, deceleration, braking, headway, and location of a rail vehicles operating in the Central Subway.

2.13. Configuration Management System means a system that manages the physical configurations and their supporting processes through documents, records and data. Such a system accommodates changes and perpetually documents how a physical system is configured. It also ensures that documents, records, and data remain concise and valid.

2.14. Construction Support Services means the services described in Section 3.16 of this Agreement and other services commonly provided in the construction industry in the San Francisco Bay Area to assist the owner and construction contractor in interpreting and implementing the design for the construction of the intended Project.

2.15. Contract Documents or Construction Documents mean the Work Product produced by the Consultant necessary for the SFMTA to issue a call for competitive bids to construct the CSP; which shall include but is not limited to designs, working drawings, specifications, general conditions and special and/or supplementary general conditions, information for bidders, accepted bid proposals and addenda developed to set forth in detail all aspects of the design, function, and construction of the Project.

2.16. Contract Bid Package ("CBP") means a set of Construction Documents for construction of a portion of the Project, as those portions are listed in Section 6.1.1 of this Agreement.

2.17. Construction Management means the daily management of the construction and quality control of the Project, including but not limited to oversight and coordination of contractors to ensure that the Project is constructed in conformance with design specifications and requirements.

2.18. Construction Support Services means the services Consultant shall provide to support the Project after the Design Phase is completed (that is, after a contractor has been certified by the Controller to construct the Work).

2.19. Consultant (or Contractor) means HNTB B&C Joint Venture, the joint venture between HNTB Corporation and B&C Transit, Inc., located at 1330 Broadway, Suite 1630 Oakland, CA 94612

2.20. Contract Compliance Office (CCO) means the SFMTA office that administers compliance with federal regulations governing Disadvantaged Business Enterprises/Equal Employment and Non-Discrimination Programs, in addition to the Small Business Enterprise Program, and the City's Human Rights Commission's Local Business Enterprise/Non-Discrimination Program. The Contract Compliance reference number for this RFP is CCO No. 08-993.

2.21. Controller means the Controller for the City and County of San Francisco.

2.22. Controls means an operating system element that provides local, remote, manual or automatic control to a set of electrical or mechanical equipment and devices.

2.23. Cost-plus-Fixed-Fee means a method compensating Consultant for Work performed under the Agreement by which the SFMTA reimburses Consultant its costs for performing the Work and also pays a Fixed Fee as compensation for having performed the Work.

2.24. Days mean calendar days (unless otherwise indicated). The use of the terms "working days" or "business days" shall be synonymous with business days of the City and County of San Francisco.

2.25. Design Package(s) ("DP") means the engineering and architectural service agreements for the final design of the Central Subway Project. Design Package #1 covers design of the Tunnels and Utilities Relocation and will be responsible for the Construction Bid Packages for contracts 1 and 2 (Utilities Relocation) and 3 (Tunnels). Design Package #2 covers design for the three subway Stations and is responsible for the construction bid Packages 4, 5, and 6. Design Package #3 covers design for the Trackway and Systems and also includes Design Integration of the three Design Packages and Quality Control. Design Package #3 is is responsible for construction bid Package 7 (Systems and Trackway)

2.26. Design Integration means the processes and work performed to ensure uniformity, consistency, comprehensiveness and quality of work performed by different engineering disciplines or groups within a particular project organizational structure. Work will specifically include the engineering activities necessary to combine the designs performed by the City's CSP consultants, subconsultants and City staff and ensure that they are not in conflict with one another, are constructible, and will correctly function as intended..

2.27. Design Phase means the period that Consultant shall provide services commencing at NTP and continuing until a construction contract is awarded for the Work. Bid support services are included in the Design Phase.

2.28. Design Plan means a plan approved by the Parties for advancing the Work under the Agreement as described in Section 7.7 of the Agreement.

2.29. Discipline means the area of primary technical capabilities of Key Personnel, as evidenced by academic degrees, professional registration, certification, and/or extensive experience.

2.30. Engineer's Estimate is the final cost estimate for construction jointly prepared by the SFMTA and the Consultant.

2.31. Executive Director means the Executive Director/CEO of the SFMTA, also known as the City's Director of Transportation.

2.32. Effective Date means the date that the SFMTA informs Consultant in writing that the Agency has received all necessary approvals for this Agreement and the Controller has certified funds for this Agreement.

2.33. Federal Transit Administration (FTA) means an operating agency of the U.S. Department of Transportation, which is a funding agency of the CSP.

2.34. Final Design means the architectural and engineering services, bid support and construction support services and related Work to be performed by Consultant under this Agreement incorporating design products prepared by City personnel and the Project Management/Construction Management consultant.

2.35. Fixed Fee means the fee paid to Consultant that is Consultant's profits and shall also cover any costs or expenses borne by Consultant that are not otherwise compensable under this Agreement.

2.36. HNTB means HNTB Corporation, a Delaware corporation, located at 1330 Broadway, Suite 1630, Oakland, CA 94612.

2.37. Home Office Overhead Rate means the audited rate of compensation that the City shall pay Consultant as a multiplier of salary costs to compensate Consultant for administrative support of its employees who work out of offices supplied by the Consultant.

2.38. Key Team Members or Key Personnel means those participants on the Project who are instrumental to the success of Project or otherwise contribute in a substantive, measurable way to the Project's development. Key Team Members may be Consultant personnel or City personnel. Consultant's Key Team Members are listed in Section 12.2.

2.39. Lump Sum means a method of compensating Consultant for Work under the Agreement that is a payment of an all-inclusive prefixed amount of compensation agreed by the Parties for discrete tasks or other Work specified in a Task Order or Design Plan.

2.40. Milestone(s) means a description of Work to be accomplished by date(s) certain, set out in a Task Order or Design Plan.

2.41. Monthly Progress Report means the monthly report submitted by Consultant to the SFMTA addressing Consultant's progress on Design Plans and Task Orders, the status of the CSP, an update of the Project schedule, and report on current CSP funding and budget status and issues.

2.42. Notice to Proceed (NTP) means a letter from the SFMTA advising the Consultant of the day when Work is to commence on the Project or a phase of the Project.

2.43. OCC means the SFMTA Operations Control Center.

2.44. Optional Services means services designated to be performed by the City, but which the City at its option may assign to the Consultant.

2.45. Overhead means the costs incurred by Consultant in supporting its Work on the Project, as that term is used in applicable provisions of the FAR, cited in this Agreement, and as commonly used in the construction industry for federally funded public works projects.

2.46. Party means an entity bound by this Agreement.

2.47. Parties mean all entities bound by this Agreement.

2.48. PM/CM Consultant means the Project Management/Construction Management consultant, Central Subway Partners, a joint venture of AECOM and EPC Consultants that is responsible for Program Management for the Project

2.49. Program or Project means the Central Subway portion of the Third Street Light Rail Project, Phase 2, Central Subway.

2.50. Project Construction Budget means the construction cost values as described in Section 6 of this Agreement.

2.51. Program Management means the daily management of the CSP by the PM/CM Consultant, including but not limited to coordination of design consultants, quality controls, financial management, funding coordination, budget and cost controls, scheduling, safety management, quality assurance management, and interagency coordination, and other related duties as may be assigned by the SFMTA.

2.52. Program Officer (PO) means the SFMTA Director of Capital Programs and Construction (or other such executive as may be appointed by the Executive Director) who is responsible for the executive oversight of the CSP, the administration of the Contract, and all contractual actions and Contract interpretation.

2.53. Project Office Overhead Rate means the audited rate of compensation that the City shall pay Consultant as a multiplier of salary costs to compensate Consultant for administrative support of its employees who work out of offices supplied by the SFMTA.

2.54. Project Office means the office space, furniture and equipment provided by the City for Consultant's use to perform Work for the CSP.

2.55. Program Manager (PM) means the SFMTA Manager responsible for overseeing daily management of the CSP, administration of this Agreement, and monitoring of the Consultant in its performance of the Agreement, including review and approval of Work Product and invoices, review and approval of all contractual actions and Contract interpretation.

2.56. Progress Payment Form means the form stating Work performed that Consultant shall submit with a request for payment or other invoice.

2.57. Proposal means the Consultant's written response to the RFP submitted to the SFMTA on or about July 21, 2009.

2.58. Quality Control ("QC") means the review, provision of critical comments and suggestions for improvement, confirmation of code and regulatory compliance, check for conflicts within and across designs (with particular attention to Design Package interface points) of design work performed by the Consultant and by others, as required by this Agreement.

2.59. Quantity Take-Off means the quantities a materials necessary to construct the design or relevant portion of the design under this Agreement, which are then multiplied by the material prices to arrive at a total estimated construction cost, as further described in Section 6.

2.60. Reimbursable Expense means an expenditure by the Consultant that the City shall reimburse to the extent that such expenditure is necessary for the Project and meets all applicable requirements of this Agreement.

2.61. Request for Proposals (RFP) means the Request for Proposals for Final Design Architectural and Engineering and Construction Support Services, issued by the SFMTA on or about April 7, 2009 and the RFP Addendums 1 through 6.

2.62. Request for Services means a request from the SFMTA to Consultant to perform Additional Work.

2.63. Salary Burden means the full cost of payroll taxes and employee benefits, such as health and dental care insurance, vacation, leave, retirement and pension that are provided to employees in addition to wages.

2.64. San Francisco Bay Area means the area within the nine Bay Area counties as currently defined by the Association of Bay Area Governments ("ABAG"), which are Alameda County, Contra Costa County, Marin County, Napa County, San Francisco County, San Mateo County, Santa Clara County, Solano County, and Sonoma County.

2.65. San Francisco Municipal Transportation Agency ("SFMTA" or "Agency") means the agency of the City that is created by Section 8A of the Charter of the City and County of San Francisco that operates the City's public transit service, the Municipal Railway ("Muni").

2.66. Scope of Services or Work means the services, tasks, and deliverables that the Consultant will provide to the SFMTA under this Agreement, including Base Contract Services and Optional Services, pursuant to Design Plan(s) and/or Task Order(s).

2.67. Small Business Enterprise or SBE means a for-profit, small business concern with a three (3) year average gross revenue not exceeding Twelve Million Dollars (\$12,000,000) and is certified under any of the following programs: the State of California's Small Business

Program ("State Program"), the City and County of San Francisco's LBE Program ("City Program"), or the California Unified Certification Program ("Federal DBE Program").

2.68. Stations means the stations of the CSP: Moscone Station (MOS); Union Square/Market Street Station (UMS); and Chinatown Station (CTS).

2.69. Subprime Consultant means a second tier subconsultant firm under contract to the Consultant to provide services to the CSP.

2.70. Subconsultant means a subconsultant firm under contract with a Subprime Consultant (a third tier subcontractor) to provide services to the CSP. When not capitalized, the term subconsultant refers to any tier of subconsultant below the Consultant.

2.71. Surface Segment means the transit stop to be located at Brannon and Fourth Streets in San Francisco, and the Trackway, Traction Power, signals, roadway, drainage and sidewalks in the above-ground portion of the Project.

2.72. System means the plans, designs, specifications, design, construction, and installation activities, materials and equipment necessary to achieve a particular functionality necessary for the full and certified functioning of the CSP in revenue service. For purposes of this Agreement, the term "Systems" encompasses Signals, Controls, Trackways, Traction Power, and Communications.

2.73. Systems Integration means an element of work performed to ensure the successful interoperability between system elements that interface the electronic, electrical, mechanical, and software elements of the CSP Systems and cause those elements to correctly operate and interact with one another as part of an overall integrated system to command, control, monitor, communicate the operations of wayside equipment and rail vehicles in the Central Subway.

2.74. Task Order means a written directive from the SFMTA to perform specified Additional Work.

2.75. Trackways means the plans, designs, specifications, design, construction, and installation activities, materials and equipment necessary provide fixed rail guideways for the CSP, including the invert, rails, ties, switches and all associated trackwork.

2.76. Traction Power System means the operating system element in a transit system that supplies motive power to transit vehicles. The system comprises electrical substation conversion and switching equipment to convert utility power to vehicle utilization voltage, and associated DC feeder cables connecting the substation equipment to the overhead contact system.

2.77. Tunnel(s) means the twin bore tunnel to be designed under this Agreement to service the new Central Subway as that Tunnel is described in the RFP, the Project EIR documents, and the Project preliminary design documents prepared by PB Wong.

2.78. Utilities Relocation means the work necessary to remove and reinstall public and private utilities from the public right of way and other areas that would conflict with or otherwise impede the construction of the Project or any portion of the Project.

2.79. Work see Scope of Services.

2.80. Work Product means all designs, drawings, schematics, specifications, reports, studies, presentations, data, specifications, design criteria, graphs, schedules, photographs, videos, recordings, pictures, memoranda, letters, computer-generated data, calculations, estimates, summaries and such other information and materials as may have been created, prepared, developed, accumulated, generated or kept by the Consultant, the Subprime Consultants or Subconsultants, in connection with the Work performed under this Agreement, whether approved, completed or in process. Work Product does not include any records or documents pertaining solely to the operation of Consultant's business that are not otherwise subject to audit under this Agreement or the computer software (object code and source code) tools, systems, know-how methodologies, equipment or processes and intellectual property, used by Consultant in performance of the Work under this Agreement.

2.81. Work Proposal means a detailed description of Work to be included in a Design Plan or Task Order prepared by the Consultant in response to a Request for Services from the SFMTA.

2.82. Year of Expenditure (YOE) means the required budgeting metric in which project costs are estimated based on the year in which the funds will be expended (adjusting for inflation calculated from the date of the estimate to the date of expenditure).

3. CONSULTANT'S BASIC SERVICES.

3.1. Inclusive Services. Consultant shall perform as Basic Services all customary and necessary architectural, engineering and other consulting services necessary to complete the design of the Systems for the Project, produce the Construction Documents for Systems, support the bidding process, and support the construction of those portions of the Project. Tasks and subtasks that are reasonably related to the tasks included within the Work described in Appendix A are Basic Services. Consultant's Basic Services are further described in the Scope of Services set out in Appendix A to this Agreement. Basic Services includes the following:

3.1.1. Review of the environmental, conceptual and preliminary design documents referenced in Appendix 10 of the RFP. Consultant may reasonably rely upon these documents, using the standard of care specified herein, for the design work and shall incorporate and build upon that work in its own Work Product.

3.1.2. All work required to comply with local, State and federal codes, regulations and standards, as interpreted by local, State or federal agencies, as such codes, regulations and standards may be amended during the Term of this Agreement.

3.1.3. All work related to addressing review comments and/or incorporating appropriate review comments into deliverable documents.

3.1.4. Consult with authorized employees, agents and/or representatives and consultants of the City relative to the programming, design, bidding, award and construction of the Project.

3.1.5. Provide consultation and advice to the City as to the necessity and manner of providing or obtaining services necessary to complete the design and construction of the Project.

3.1.6. Review program requirements and existing design documents and advise the SFMTA whether such design documents are sufficient for purposes of Final Design and whether additional data is necessary before the Consultant can proceed.

3.1.7. Meet and consult with other engineers and architects working on the CSP, including City staff, PM/CM Consultant, and the design firms engaged for final design of the Tunnels, Utilities Relocation, and the Stations, review the work product of those firms and City staff, and ensure that the Systems designs for the CSP are integrated.

3.1.8. Contract for or employ the Consultant's employees and subconsultants as may be necessary or required including, but not limited to, mechanical, civil, electrical, plumbing, structural, signal and control systems engineers; cost estimators; landscape, Consultant; and other special designers, engineers, consultants and services as may be necessary for fire protection, life safety, acoustical, audio/visual, lighting, specifications, signaling, control, communications, tunneling, dewatering, Traction Power, security, computer infrastructure, parking and traffic control studies for designated impacted areas, and disabled access; and others as may be necessary for complete design of the Project; all parties shall be licensed by the State of California if so required by Law. The Consultant shall submit for approval by the City any changes in the subconsultants listed in Attachment B. The addition of subconsultants for unforeseen specialty services shall require a modification under this Agreement.

3.1.9. Subconsultants. Consultant shall engage at its sole expense all engineers, architects, cost estimators, experts and other subconsultants of every tier as may be required for the proper performance of the Agreement, as provided in Section 9 (Subcontracting). The City's formal communications with subconsultants (that is, communications beyond collaborative design meetings) shall be through the Consultant.

3.2. Quality Control. The Consultant shall be responsible for Quality Control and oversight of its Subprime Consultants and Subconsultants.

3.3. Code Compliance.

3.3.1. The Consultant shall comply with requirements of all applicable codes, regulations, and current written interpretation thereof published and in effect during the Consultant's services.

3.3.2. The Consultant shall be deemed to have had notice of any applicable law or regulation announced or enacted at the time of the Effective Date, even though such law or regulation did not take effect or become operative until some date after the Effective Date. In the event of changes in such codes, regulations or interpretations during the course of the Project that were not and could not have been reasonably anticipated by the Consultant and which result in a substantive change to the Construction Documents, the Consultant shall not be held responsible for the resulting additional costs, fees or time to the Project, and shall be entitled to reasonable additional compensation for the time and expense of responding to such changes. The Consultant shall be responsible, however, to identify, analyze and report to the SFMTA pending changes to codes and regulations that would reasonably be expected to affect the design of the Project, including pending changes to the California building codes and San Francisco Building Code and other amendments.

3.3.3. The Consultant shall, immediately upon becoming aware of any such imposition or change of requirement, provide SFMTA with full and detailed particulars of the

changes required in the equipment and of costs involved therein, or shall be deemed to have waived any rights under this Section. In the event any governmental requirements are removed, relaxed or changed in any way after the Effective Date so as to make the Consultant's performance of unperformed work less expensive or less difficult, then SFMTA shall have the option either to require the Consultant to perform pursuant to the more rigorous requirements or to receive a reduction in the price affected for all savings in direct costs which may be realized by the Consultant by reason of such change and appropriate adjustments in deductions for overhead and profit made so as to reflect actual savings made by the Consultant. SFMTA shall give the Consultant notice of SFMTA's determination, and anticipated savings.

3.4. Coordination of Design Team. The Consultant shall integrate its work and design activities with the work and design activities of all of its Subprime Consultants and Subconsultants and that of City personnel to produce comprehensive, complete, coordinated, and accurate drawings and specifications for all elements of the Project covered under this Agreement.

3.5. Reliance on Data. Consultant shall commence Basic Services by reviewing the environmental, conceptual, and preliminary design documents referenced in Appendix 10 of the RFP. Consultant may reasonably rely on those documents and shall incorporate and build said documents into its own Work Product, to the extent that such reliance and incorporation accords with the professional standard of care referenced in Section 4.2. The parties understand and agree that the level of review of said documents has been negotiated and priced as provided in Section 1.1 of Appendix A, and in Appendix C (and related spread sheets) to the Agreement. Consultant shall use its own discretion and professional expertise in determining the level of effort necessary to identify and review critical preliminary and conceptual design data. Consultant shall immediately notify the City if it discovers or suspects errors or omissions in said data or documents that require review beyond the level of effort set out in Section 1.1 of Appendix A and in Appendix C (and related spread sheets) to the Agreement. Consultant shall only be responsible for correcting at its own expense those errors, deficiencies or omissions caused by its own negligence.

3.6. Reports. Consultant shall submit written reports as requested by the SFMTA. Format for the content of such reports shall be determined by the SFMTA. The timely submission of all reports is a necessary and material term and condition of this Agreement. The reports, including any copies, shall be submitted electronically or on recycled paper and printed on double-sided pages to the maximum extent possible.

3.7. Coordination with City Departments and Personnel, Other Public Agencies.

3.7.1. SFMTA and Project Consultants. The Consultant shall coordinate, meet regularly and work with the SFMTA, Program Manager, and other assigned City staff or consultants, to keep the design progressing in accordance with the Design Plan.

3.7.2. City Agencies. As directed by the SFMTA, the Consultant shall coordinate, meet and work with and make presentations to other City agencies and personnel. Such departments include, but are not limited to the Art Commission, the Department of Planning, the Department of Public Works, the San Francisco Public Utilities Commission, the Department of Building Inspection, the Fire Department, and the Department of Recreation and Parks, and City Administrator's Office (S.F. Convention Facilities) for the purposes of providing said agencies information about the Project and assisting the SFMTA in obtaining permits, licenses and other approvals required for the Project.

3.7.3. Other Agencies. As directed by the SFMTA, the Consultant shall coordinate, meet, work with and make presentations to outside agencies and personnel necessary to determine relevant requirements, develop designs that conform to those requirements, and assist the SFMTA to obtain required review and approvals of the designs. Such agencies include the California Public Utilities Commission, the Bay Area Rapid Transit Authority, the State Fire Marshall, and any other State or federal agency that has regulatory authority over the Project or that has a proprietary interest.

3.7.4. Funding Agencies. As directed by the SFMTA, the Consultant shall cooperate, meet with and assist the SFMTA to make presentations to the FTA, the FTA's Project Management Oversight consultant, the San Francisco County Transportation Authority, and the Metropolitan Transportation Commission ("MTC").

3.7.5. Community Representatives and Property Owners. As directed by the SFMTA, Consultant shall meet with and make presentations to representatives of communities and property owners along the alignment that may be affected by the Project.

3.7.6. Art Commission: The Consultant shall coordinate, meet and work with City departments and personnel necessary to determine relevant City requirements, develop designs, incorporate artwork under the San Francisco Public Art Program, and review and assist the SFMTA to obtain required City approvals of the designs. Artwork commissioned by the City that is to be incorporated in the Project as an integral building or site element may require coordination with the design and structure of the building or site. Involvement by the Consultant to assist in the selection of artwork by the San Francisco Art Commission and services by the Consultant to coordinate the design and structure of the building or site to accommodate the installation of such artwork shall be a part of Basic Services. As directed by the City, the Consultant shall coordinate and work with any representatives the City may designate in the selection of artists for the Project to incorporate requirements for the chosen artwork into the design for the Project. The Consultant shall make presentations to and/or attend meetings as necessary for the Civic Design Committee and the Visual Arts Committee of the San Francisco Art Commission. Substantial design changes required of the Consultant to incorporate requirements for the chosen artwork into the Project after the completion and acceptance of the Design Development documents shall be Additional Services under this Agreement.

3.8. Open Design. In the performance of this Agreement, the Consultant shall, to the extent practicable, provide for maximum use of structures, machines, products, materials, construction methods, and equipment that are readily available through competitive procurement, or through standard or proven production techniques, methods, and processes. Unless Consultant presents evidence justifying the use of a sole source and seeks prior written approval from the SFMTA, Consultant shall not produce a design or specification for the Project that would require the use of structures, forms, machines, products, materials, construction methods, equipment, or processes that the Consultant knows to be patented or that would be restrictive or written in such a manner as to contain proprietary, exclusionary, or discriminatory requirements other than those based upon performance, unless such requirements are necessary to test or demonstrate a specific thing, or to provide for necessary interchangeability of parts and equipment. When one or more brand names or trade names of comparable quality or utility are listed, they must be followed by the words "or approved equal."

3.9. Correction of Errors. Upon notice from SFMTA, the Consultant shall, without additional compensation, correct or revise any errors, omissions, or other

deficiencies in its Work Product or services provided. In the event any deficiencies in such Work Product or services result from the Consultant's professional negligence or from the professional negligence of the Consultant, Subprime Consultants and Subconsultants, whether or not said deficiencies have been brought to the attention of SFMTA, the Consultant shall indemnify and reimburse SFMTA for the cost of the corrective remedial work (including, without limitation, design, demolition, and construction) necessary to correct any such deficiencies and the consequences of such deficiencies caused by said professional negligence.

3.10. Furnishings, Furniture, and Equipment Not Affixed. In addition to the design Project elements specifically described herein as included in the Construction Bid Packages, the Consultant shall provide design and coordination services to accommodate furnishings, furniture, and equipment not affixed ("FF+E"), as appropriate to the Project. Services associated with the actual procurement and installation of FF+E shall be Additional Services.

3.11. Information and Data. The Consultant shall request in writing any information and data it will require from the Agency for its Work. The Consultant shall identify the timing and priority for which this information and data will be required in its request for that information. Consultant shall plan its Work to allow adequate time for the City to provide the requested information.

3.12. Use Of Computer Technology For Design and Coordination of Drawings. Consultant shall be responsible for identification and resolution of conflicts among the designs created under DP1, DP2, and DP3. The Consultant may use CADD or similar technology in developing the design for the Project. The cost of any clerical work, or services related to CADD support shall be included in Basic Services. Additionally, the SFMTA and the Consultant will employ multidimensional design tools compatible with Building Information Modeling ("BIM") system, the scope and extent of which shall be determined jointly by the SFMTA and the Consultant as provided in the scope of services set out in Appendix A. Consultant shall be responsible for entering applicable preliminary design documents and Consultant's Work Product into the BIM or a similar BIM-compatible clash detection tool. Services associated with the development and population of a BIM system for modeling and clash detection during design shall be included in Basic Services. If the SFMTA elects to further refine the BIM system as a facilities management tool beyond design and construction of the Project, such work would be considered an Additional Service.

3.13. Authorization for Bid and Construction Support Services. The services described below as Bid Support Services in Section 3.15 and Construction Support Services in Section 3.16 are to be performed only on the written authorization of the SFMTA Program Manager. While the SFMTA intends to authorize the Consultant to provide those services, the SFMTA shall do so only when (a) sufficient funds for such services have been appropriated in accordance with the budget and fiscal provisions of the City, and (b) the SFMTA in its sole discretion, without waiving any rights, has found that the Consultant has adequately performed its prior Work under this Agreement.

3.14. Bid Support Services. To support solicitation of bids by the City, the Consultant shall:

3.14.1. Prepare the bid forms to be filled in by contractors bidding on the Work.

- 3.14.2.** Participate in and assist the City with pre-bid conferences.
- 3.14.3.** Prepare responses to bidders' questions, interpret Construction Documents, evaluate requests for substitutions and prepare addenda for approved substitutions and clarifications, and assist the City as required in responding to bidders' questions.
- 3.14.4.** Provide the City with originals of all addenda to be issued.
- 3.14.5.** Assist the SFMTA in preparing bid packages and determining the order of preference for Bid Alternates and Bid Options.
- 3.14.6.** Assist the City with review and evaluation of bids submitted, and recommendation for award of construction contract.
- 3.14.7.** Perform necessary redesign services as may be required under Section 6 (Program Budget and Cost Controls).
- 3.14.8.** Upon award of a construction contract consolidate a set of Construction Documents with all addenda, accepted alternates, incorporated into appropriate specification sections or drawing sheets. From this set, provide the City with a conformed "for construction" Drawing Set and Project Manual including specifications.
- 3.15. Construction Support Services** Upon award of a construction contract to a general contractor ("Contractor") by the City for any of the Construction Packages, and upon written NTP from the City to the Consultant to proceed with Construction Support Services, the Consultant shall provide said services as set forth below:
- 3.15.1.** Provide an updated color schedule, samples of textures and finishes of all materials to be used in the Project for review and approval by the City and used to verify constructed finishes.
- 3.15.2.** Review checklists of all special inspection and testing, equipment startups, submittals, warranties, guarantees, maintenance and operation manuals, spare parts and all other close-out documents that will be required of the Consultant's Project Manager or Contractor. As requested, advise the SFMTA and the PM/CM Consultant as to the acceptability of constructed products during the course of construction.
- 3.15.3.** Interpret the Contract Documents and furnish original and one copy of all documents in CADD-produced reproducible form of all clarification drawings and other documentation prepared by the Consultant for issue by the City.
- 3.15.4.** Review requests for information (RFIs), submittals, mock-ups, substitutions, and change requests properly prepared by and received from the Contractor via the City within the time specified in the Contract Documents, and make appropriate recommendations with supporting documentation and data to the City. Any proposed substitutions or revisions shall consider priority of need to keep the construction work on schedule and minimize construction work progress delay. The construction specifications will be prepared to require the construction Contractor to prepare all necessary design documentation to support its substitutions or value engineering proposals.

3.15.5. If deemed appropriate by the City, the Consultant shall on the City's behalf prepare, reproduce and distribute supplementary drawings and specifications in response to RFIs, or as otherwise required to clarify the design intent of the Construction Documents, or to document construction change directives by the City.

3.15.6. In preparing a response to a RFI, Consultant will obtain the input of Consultant's or subconsultant's personnel who prepared or were responsible for overseeing the preparation of the design document or specification that is the subject of the RFI. Consultant and subconsultant personnel still employed but reassigned to other projects must be available within 48 hours to respond to a RFI.

3.15.7. The Consultant will assist the Program Manager with preparation of drawings, specifications and other documents that may be necessary for the Program Manager to prepare change orders and construction change directives for City approval and execution in accordance with the Contract Documents. The City will prepare and effect any required contract modifications and change orders.

3.15.8. The Program Manager will categorize all RFIs and change orders by cause to track the amount and percentage of additional costs incurred that are attributable to Owner requests, Consultant errors, Consultant omissions, hidden obstructions, unforeseen conditions, Contractor errors, other Contractor-generated conditions, and new regulatory mandates. The Consultant shall indicate in writing its concurrence or objection with the Program Manager's categorization and shall recommend for City consideration any change to the category assigned.

3.15.9. Make all revisions and changes to the Contract Documents and prepare additional appropriate documents as directed by the City to correct the Consultant's errors, deficiencies or omissions at no additional cost to the City.

3.15.10. The Consultant and its subconsultants shall make visits to the Project construction site as appropriate to the stage of construction or as otherwise agreed by the City and the Consultant to (a) become generally familiar with the portion of the work completed; (b) to endeavor to guard the City against defects and deficiencies in the construction work; and, (c) to determine in general if the constructed work is being performed in a manner indicating that the work when fully completed, will be in accordance with the Contract Documents. These visits are not to be construed to require supervision or inspection, and the Consultant shall not be required to make exhaustive or continuous on-site observations of the work. The Consultant shall prepare a written report of each and every site visit, and shall advise and report to the City in writing of any deviations from the Contract Documents, non-conforming items or issues of concern observed during such visits.

3.15.11. The Consultant shall attend Project meetings throughout the construction phase as requested by the City. The Consultant shall require that its subconsultants make such visits and attend Project meetings when appropriate to observe the progress of work designed or specified by them. It is understood that the City Program Manager will be responsible for providing day-to-day field inspection services and shall cooperate and coordinate with the Consultant in matters pertaining to the Consultant's work. The Consultant and its subconsultants shall coordinate and cooperate with the Program Manager to time its visits jointly to observe and discuss the Contractor's fieldwork and installation to reduce duplication of work by both the Program Manager and Consultant.

3.15.12. Additionally, the Consultant, as part of Basic Services, will assign at least one senior responsible member of its design team to be available as needed at the site for the duration of construction until substantial completion, unless otherwise authorized or directed by the City. This staff member shall be authorized to represent and render decisions on behalf of the Consultant in all design and construction coordination matters, and shall be charged with representing the design team in responding to questions and clarifications needed on site to minimize disruption to construction. When assigned member(s) are temporarily unavailable for any reason (such as vacations or extended illness), the Consultant shall advise the City and assign an alternate, similarly capable and authorized individual. If the stage of construction requires additional full- or part-time employees on site, then the Consultant shall provide the same with no increase to the Fixed Fee unless the work is considered Additional Work. If other consultants representing specialty services are required to perform similar on-site services for periods agreed-to between the Consultant and the City, it is the Consultant's responsibility to coordinate the availability of other consultants and schedule such on-site services as necessary for the timely progress of the work.

3.15.13. The Consultant shall provide Construction Support Services, which include but are not limited to interpretation of the Contract Documents and advising the City and the PM/CM Consultant of all decisions rendered. Interpretations by the Consultant shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in written or graphic form. Consultant's personnel who performed the design work about which a Contractor issues a Request For Information ("RFI") shall respond to the RFI.

3.15.14. The Consultant acknowledges that one or more construction and procurement contracts will be awarded based on the lowest responsive bid by a responsible bidder for the manufacture, procurement, installation, and construction of the designs created under this Agreement ; that there is no certainty that the successful bidder will cooperate willingly with the Consultant ; and that the level of administrative difficulties faced by the Consultant during the construction phase may vary substantially. Accordingly, the Consultant agrees that it shall not seek additional compensation for administrative difficulties the Consultant may encounter with the Contractor on the Project, unless the City determines that Contractor refused to communicate with Consultant or otherwise acted unreasonably, and that the Contractor's action forced the Consultant to expend undue and otherwise unavoidable additional professional labor hours.

3.15.15. The Consultant shall review and advise the City when requested on claims, disputes and other matters in question between Contractor and the City relating to the interpretation of the construction Contract Documents or proposed changes to the same.

3.15.16. Except as may otherwise be provided in the Contract Documents or when direct communications have been specifically authorized, the Consultant shall only communicate with the Contractor through the City. In no event shall the Consultant make any directive or communication to the construction contractor that will affect the means or methods, time, cost or quality of construction. The City's communications with subconsultants shall be through the Consultant.

3.15.17. If requested by the City, the Consultant shall review with the Program Manager the Baseline schedule of values prepared by the construction contractor to seek sufficient detail, such as by specification section, floor and space segmentation, to evaluate effectively progress payment requests from the construction contractor and provide recommendations to the City.

3.15.18. Upon request by the SFMTA or where it appears necessary from Consultant's own observations, the Consultant shall consult with the PM/CM Consultant and the Program Manager as to the Contractor's level or percentage of completion of work, quality of work, and Contractor's adherence to the design and specifications.

3.15.19. The Consultant shall advise the City to reject work that the Consultant believes in good faith does not conform to the Contract Documents. Whenever the Consultant considers it necessary or advisable to implement the intent of the Contract Documents, the Consultant will advise the City to require additional inspection or testing of the work in accordance with the provisions of the Contract Documents, whether or not such work is fabricated, installed or completed.

3.15.20. The Consultant shall review proposed procedures and results of testing and special inspection procedures that are required by the construction Contract Documents, and report comments to the City. Review and advise the City on special testing and/or inspection that may arise due to field conditions or as requested by appropriate authorities. Separate contracts for testing and special inspection consultants, laboratories or agencies may be arranged by the City. When requested by the City, Consultant shall as Additional Services attend inspections with appropriate consultants.

3.15.21. The Consultant shall review and advise the City as to suitability of substitutions proposed by the construction contractor, including whether the substitutions will require substantial revision to the Contract Documents.

3.15.22. The Consultant shall review shop drawings, laboratory reports, samples, wiring and control diagrams, schedules and lists of materials and equipment, and other descriptive data pertaining to specified materials, equipment and storage thereof.

3.15.23. The Consultant shall review submittals from contractors for conformance with the applicable designs and specifications. The Consultant shall note on the submittals its exceptions to the submittals, necessary corrections, and resubmittals required, and shall return the notated submissions to the construction contractor, as directed by the City. In its agreement with the construction contractor, the City will include a provision (such as clause 4.2.7 for AIA Document A201, 1987 edition) specifying that the Consultant's review of the construction contractor's submittals shall not alter the construction contractor's responsibility for errors and omissions in such submittals; it is the Consultant's responsibility to check the Contract Documents prior to advertisement for Bids to confirm that said provision is included.

3.15.24. After compilation of the final punchlist by the construction contractor, the Consultant, in conjunction with the Program Manager will verify the final punchlist, recommend changes, participate in site visits to determine and track the status of the acceptability of all punchlist items, participate in the final review of the Project and advise the City as to the approval of work performed by construction contractor.

3.15.25. Assist the Program Manager and a commissioning agent, if retained by the City, in arranging for building and or facility commissioning, start-up and testing, adjusting and balancing and the coordination of operational testing and proper functioning of all installed equipment, Submit a statement to the City as to the proper functioning of all items of equipment prior to the release of final payment to the construction contractor.

3.15.26. The Consultant shall at all times have access to the construction sites and the work performed thereon.

3.15.27. Whenever interpreting or making decisions concerning an integrated artwork commissioned by the City, the Consultant must obtain City approval prior to making any such interpretation or decision. The Consultant shall be responsible for any additional construction costs arising out of any aesthetic change initiated by the Consultant after the commencement of construction, unless payment to the construction contractor for and notice to the Consultant to implement such changes have been specifically approved in writing by the City in advance of the Consultant making the changes to the construction documents.

3.15.28. The Consultant shall not have control or charge of and shall not be responsible for construction means, methods, techniques, scheduling, sequences or procedures, safety precautions and programs in connection with construction of the Project; acts or omissions of the construction contractor, its subcontractors or any other persons performing any of the work on the Project (unless directly employed or retained by the Consultant); or for the failure of any of them to carry out the work on the Project in accordance with the Contract Documents.

3.15.29. The Consultant shall coordinate with all artists in the installation of artwork, either by the artists, contractors or separate installers that are to be incorporated in the Project as an integral building or site element as a part of Additional Services.

3.15.30. The Consultant shall not have the authority to stop the work unless the City has granted specific authorization in writing.

3.15.31. All design-build systems recommended by the Consultant and submitted by the construction contractor shall be reviewed and approved by the Consultant in a timely manner for conformance with the intent of the design drawings and specifications.

3.15.32. The Consultant shall prepare record drawings showing changes and relations in the work made during construction based on marked-up prints, drawings and other data furnished by the construction contractor to the Consultant. The Consultant shall be responsible for any inaccuracies, errors, omissions, ambiguities, or conflicts that may be introduced into the record drawings to the extent due to the fault of the Consultant.

3.16. Warranty Services. The Consultant shall assist the City's maintenance and operation personnel in conducting warranty inspections during the warranty period following Final Completion as set forth below:

3.16.1. At the SFMTA's request, the Consultant shall observe and review the condition of completed work, and provide assistance to the City to develop a list of Corrective Warranty work and for completion for systems, components, equipment, and finishes that have failed to meet the specified performance criteria or the terms of specific product warranties during the warranty period following Final Completion.

3.16.2. The Final Warranty Inspection shall take place no earlier than the eleventh (11th) month following Final Completion and no later than the twelfth (12th) month following Final Completion.

3.16.3. In the event that systems, components, equipment, and finishes fail to meet the specified performance criteria or the terms of specific product warranties at any time prior to

the Final Warranty Inspection, the Consultant shall provide assistance to the City to develop a list of Corrective Warranty work and a schedule for completion.

3.17. Operations Control Center Design Consultant shall perform as Base Services feasibility studies, conceptual and preliminary design engineering services, and any required environmental studies for the OCC equal to 35 percent completion of design of the OCC, as provided in Part B of Appendix A, If directed by the SFMTA, Consultant shall provide the final design of the OCC as Additional Services.

3.18. Project Office. The SFMTA will pay for and provide Consultant a Project Office furnished with furniture, computers, facsimile and telecommunication equipment. The Consultant shall use this Project Office for administrative and professional activities related to the performance of the Project. SFMTA and other City personnel assigned to perform work on the Project will also work in the Project Office.

4. DESIGN RESPONSIBILITY AND STANDARDS.

4.1. Responsibility for Design. In all work performed by Consultant, Subprime Consultants, and Subconsultants, the Consultant shall be responsible for the professional quality, technical adequacy and accuracy, timely completion and coordination of all design for the Project, including but not limited to Work Product. Consultant shall be responsible for the performance of the work of all architects, engineers, cost estimators, experts and subconsultants engaged by the Consultant, including maintenance of schedules, correlation and coordination of designs, and resolution of differences between them. As directed by the SFMTA, Consultant shall be responsible for reviewing, responding with comments (where Consultant finds defects or deficiencies), and recommending whether to construct the designs drafted by engineers and architects employed by the City. Consultant shall be responsible for coordinating and integrating work on the Project performed by engineers and architects employed by the City with Consultant's work, and incorporating the work of Consultant and City into the applicable Work Product or Construction Documents. Parties producing the Construction Documents will be responsible for stamping, signing and sealing those Documents. Consultant shall be responsible for the design of integrated Systems, Controls, and Interfaces between and among discrete systems.

4.2. Standard of Performance. The Consultant shall perform its work to conform to the professional standards of care, skill and diligence applicable to the type of services and work provided hereunder, as measured by the professional engineering standards applicable in the San Francisco Bay Area for projects of similar complexity and risk. The remedies herein are nonexclusive, cumulative and in addition to any other remedy available to SFMTA under this Agreement or otherwise provided by law or in equity.

4.3. No Waiver. SFMTA's approval of any of the Work Product or services shall not in any way relieve the Consultant of responsibility for the technical adequacy or accuracy thereof. Neither SFMTA's review, approval, acceptance of, nor payment for any of the services or Work Product shall be construed to operate as a waiver of any rights under this Agreement.

4.4. Expertise. Consultant represents that it, its employees, and its Subprime Consultants and Subconsultants possess the professional and technical expertise and experience necessary to perform the work required under this Agreement.

4.5. Qualified Personnel. Work under this Agreement shall be performed only by competent personnel under the supervision of and in the employment of Consultant, Subprime Consultants or Subconsultants. Consultant's personnel and subconsultants shall comply with the licensing requirements of the State of California in their respective Disciplines. Consultant shall comply with City's reasonable requests regarding assignment or reassignment of personnel, but Consultant must supervise all personnel, including those assigned or reassigned at City's request. The Consultant shall submit for SFMTA approval for each employee working on the Project: employee's resume, direct hourly rate, overhead rate, task number, and description of employee's proposed work effort with estimated duration of effort.

5. PROGRAM DIRECTION.

5.1. SFMTA Direction. Consultant shall perform all work under this Agreement under the direction of and to the satisfaction of the SFMTA's Program Officer and Program Manager. The work to be performed by Consultant under this Agreement shall be subject to the Program Direction of the SFMTA. As used in this Agreement, the term "Program Direction" shall include but not be limited to the following:

5.1.1. Directions to Consultant, which shift work emphasis between tasks, require pursuit, redirection, modification or termination of certain activities, or otherwise provide information and program guidance to Consultant.

5.1.2. Review and, where required, approve, disapprove, accept or refuse submittals or other product prepared by Consultant in the performance of its services in accordance with the Design Schedule (described at Section 7.1, *infra*).

5.1.3. Assign or reassign staff to perform particular tasks.

5.1.4. Attend meetings at regular frequencies as determined by the Program Manager or as requested by Consultant to manage the day-to-day progress and requirements of the Project.

5.2. SFMTA Program Manager. Consultant shall direct any request for clarification or other communication concerning Program Direction first to the SFMTA's Central Subway Program Manager. In performing the services provided for in this Agreement, the SFMTA CSP Program Manager identified below shall be the Consultant's liaison with the SFMTA.

John Funghi
Central Subway Program Manager
San Francisco Municipal Transportation Agency
821 Howard Street
San Francisco, CA 94103
tel: 415-701-4299
fax: 415-701-5222

5.3. Evaluation of Consultant's Performance. The Consultant shall meet with SFMTA no less than quarterly to evaluate Consultant's performance under the Contract with respect to the following:

5.3.1. Consultant's adherence to this Agreement

- 5.3.2. Quality of performance of Key Team Members and other staff assigned to the Project
- 5.3.3. Quality of performance of Subprime Consultants and Subconsultants
- 5.3.4. Management of authorized budget for each Task
- 5.3.5. Adherence to agreed schedule
- 5.3.6. Quality of deliverables
- 5.3.7. Monitoring, reporting and updating of progress of assigned work
- 5.3.8. Timeliness in resolving issues, including issues arising from performance evaluations
- 5.3.9. Working relationship between Consultant's team and other agencies

Should the SFMTA be dissatisfied with more than two of the above categories of Consultant performance in the same evaluation, SFMTA will render a negative evaluation on the Consultant's performance for that quarter. In such cases, the Consultant shall be required to formulate and deliver to the SFMTA within five (5) working days a corrective action and schedule plan to be followed by the Consultant with results reported to SFMTA monthly until the problem areas have been resolved or otherwise improved to the SFMTA's satisfaction.

6. PROGRAM BUDGET AND COST CONTROLS.

6.1. Construction Budget. The "Construction Budget ", as set out below, represents the budget for bid and award of the construction contracts listed below. The Construction Budget may not be changed unless such changes are documented and effected through the Project's Design Control Procedures as set out in the Project Management Plan.

6.1.1. The 2009 Base Year Cost as of the Effective Date of this Agreement for each of the Construction Bid Packages are as follows:

- **Surface Segment, Trackway, Systems,
Quality Control and Design Integration \$94,600,000**
- **Optional New Primary OCC Contract Elements TBD @ 35%
Conceptual Engineering Report**

The Construction Budget includes all construction costs. The Base Year Cost excludes construction contingencies, year of expenditure escalation and alternates, either additive or deductive, the cost of furniture, operating and office equipment, telephones and business networks, and the cost of artwork that is to be incorporated in the Project as an integral building or site element. The Construction Budget shall be reviewed and amended upon completion of 65 percent and 90 percent or pre-final and 100 percent design completion of the Systems. The Construction Budget for the Optional New

Primary OCC Contract Elements shall be established upon completion of the 35 percent design submittal of the OCC facility.

6.1.2. Amendments to the Construction Budget shall be determined as follows:

(a) The City shall prepare detailed cost estimates. Consultant shall provide quantity takeoffs for the Project elements covered under this Agreement using the Work Breakdown System ("WBS") provided by the City. Consultant shall review the construction cost estimates provided by the City and shall provide comments.

(b) If the Consultant disagrees with the City's estimate of the Construction Budget and the disagreement cannot be resolved by conferring with the City's Program Manager, the Consultant shall request that the City cause to be prepared a third party cost estimate by a reputable estimator acceptable to the Consultant and the City. The cost of this third party estimate shall be shared equally by the City and the Consultant. Said third party cost estimate shall not be binding on any party, but will provide a basis and measure for further mediation of the dispute.

(c) The process for reviewing and amending the Construction Budget is summarized in the following table:

[Construction Budget] =	[Σ2009 Base Year Cost]	+ [ΣAgreed Adjustments]
<p>Construction Budget for each Construction Contract Package will be recalculated after each of the submittals leading up to bid.</p>	<p>Base Year Cost will be the sum of the direct capital construction costs in 2009 base year dollars for each of the Project elements that make up the Construction Contract Packages. Base year costs as defined by FTA do not include allocated contingency and do not include escalation to year of expenditure. Project elements included in each Construction Contract will be identified using the FTA Standard Cost Classification (SCC) categories to be provided by the City. The reference cost estimate is: "<i>Central Subway Project, 2009 Capital Cost Estimate</i>" Rev 0, August 31, 2009.</p>	<p>All allowed adjustments to the above base year Construction Budgets require approval of the Central Subway Configuration Management Board (CMB). Adjustments will be requested to reflect:</p> <ul style="list-style-type: none"> o Changes in Project Configuration and design development. o Adjustments to Year of Expenditure (YOE) o Materials cost escalation as determined using published ENR construction cost indexes o Adjustments due to unforeseen conditions at time of bid (e.g., excessive escalation of indirect costs such as fuel and availability of labor) o Allocated contingencies

		<ul style="list-style-type: none"> o Adjustments to cost components shall be documented by originator and reviewed by other contributors (SFMTA and it's Consultants and Stakeholders)
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6.1.3. The Consultant is responsible for designing a comprehensive and complete Project that does not exceed One Hundred Five Percent (105%) of the Construction Budget of each of the Construction Bid Packages.

(a) In the event that cost estimates at One Hundred Percent (100%) design completion indicate that the Construction Cost will exceed One Hundred Five Percent (105%) of the Construction Budget, Consultant shall, at the request of the City and at no additional cost to the City (i.e., for no further reimbursement, Fixed Fee or other compensation), revise the design and Construction Documents, plans and specifications until the construction cost is within One Hundred Five Percent (105%) of the Construction Budget, subject to the conditions listed in Section 6.1.2.

(b) In the event that the City receives a responsive lowest bid from a responsible bidder that exceeds One Hundred Five Percent (105%) of any Construction Budget, the Consultant shall, at the request of the City and at additional cost but no additional Fixed Fee to the City: (a) revise the design and Construction Documents, plans and specifications and (b) assist the City with re-bidding of the Project, until the construction cost is within One Hundred Five Percent (105%) of the Construction Budget, subject to the conditions listed in this Section 6.

6.1.4. The City, in its sole discretion, may modify the Construction Budget, or may apply additive or deductive alternates to the lowest responsive bid to meet the Construction Budget Limit. The Consultant and the City will confer on the design of any alternates. The Consultant shall design additive and deductive alternates with final determination by the City as to the scope of such alternates, which alternates shall be a part of the bid package, and the order in which the City would accept such alternates. The alternates shall be set out in the Construction Documents and clearly identified as optional work to be separately set out in contractors' bids.

6.1.5. In the event that redesign services are necessary after the City has received bids for construction of the Project, the City shall cooperate with the Consultant in approving design changes, including, if necessary, changes which reasonably affect the size and quality of the Project. The final decision as to what elements of the Project are redesigned shall rest solely with the City. The Consultant must complete any redesign within two (2) months of notification by the City of its intent to redesign or other time agreed by the parties.

6.1.6. In the event that redesign services are performed after the Consultant has received notification by the City to redesign and modify the Contract Documents, preparation of modified Construction Documents and preparation of a Final Consultant's Estimate of Construction Cost, and obtaining City approval of the final Construction Documents, shall be the limit of the Consultant's strict responsibility arising out of the establishment of the Construction Budget. This, however, shall in no way limit the Consultant's responsibility or the City's remedies

in the event that the reason that the Construction Budget was exceeded was the result of the Consultant's negligent acts, errors or omissions.

6.1.7. Should the City accept a bid for a Construction Bid Package which exceeds the Construction Budget for that portion of the Project or for the overall Construction Budget for the Project, Consultant shall not receive a proportional increase in the Fixed Fee. Construction Budget may be adjusted in the SFMTA's sole discretion based on changes in market conditions and rates as documented by changes in relevant indexes published in the Engineering News Record (ENR). Construction Budget Limits also may be adjusted based on changes in Project scope, as quantified by the Central Subway Design Change Control Process.

6.2. Cost Estimating.

6.2.1. Within 60 days of the SFMTA's issuing NTP to Consultant, the Consultant shall review the existing conceptual and preliminary design documents for the Project and shall also review the Construction Budget for Contract Bid Package 7 (Surface Segment, Trackways, and Systems) as listed in Section 6.1.1. Within 90 days of NTP, Consultant shall then prepare quantity takeoffs and provide cost estimates for specialty equipment and systems to be used by the PM/CM Consultant to prepare an update to the Project Construction Cost ("Cost Estimate") for SFMTA approval. The quantity take-offs and estimated units and costs shall be consistent with the level of design completion and be accompanied with a statement of assumptions regarding design contingencies and exclusions.

6.2.2. The SFMTA will provide or cause to be provided updated unit pricing for common CSP construction elements, and the Consultant will provide the construction quantities and specialty and systems cost estimates necessary to create the CSP Cost Estimates at 65 percent, 90 percent, and 100 percent (total) completion of Construction Documents for Systems. The Consultant will be provided a copy of the resulting completed Cost Estimates for review and comment. The Consultant will provide the Cost Estimates at 35 percent, 65 percent, 90 percent, and 100 percent (total) completion of completion of Construction Documents for the new OCC.

6.2.3. With each update to the Cost Estimate, Consultant shall consider all changes to estimated costs as cost trends, and the Consultant shall analyze such information to determine the cause of the cost change, reconcile its cost estimate variances with the contemporaneous cost estimates by the City and/or another consultant for the Project, and present the reconciled Cost Estimate to the City for approval according to the City configuration management procedure.

6.2.4. The Consultant shall accept the Engineer's Estimate of Construction Cost based on the complete (100 percent) Construction Documents issued for bidding.

6.2.5. Where in the opinion of the Program Manager, it is in the best interest of the Project that Consultant perform estimates. Consultant shall provide both unit price estimates and quantity take-offs for Systems, as specified in Appendix A.

6.3. City Cost Change Control Procedure.

6.3.1. The Consultant shall assist and cooperate with the City to control design or scope changes that would affect the cost of the Project during the Project design and

construction. The Consultant shall comply with any cost change control procedure as may be established by the City or another consultant for the Project. The purposes of the procedure are:

- (a) To assure that the City requirements for the Project are met;
- (b) To assure that estimated construction costs are understood as the design is developed, and remain within the Project Construction Budget ;
- (c) To assure that all proposed changes to the design properly analyze cost effects;
- (d) To avoid unnecessary re-design work by the Consultant; and
- (e) To avoid unnecessary additional costs to the City.

6.3.2. The Consultant shall fully inform the City of any proposed changes to the design recommended by the Consultant, or to the scope of the Project requested by the City or other stakeholders, that would affect the estimated (added or decreased) construction cost for the Project. The Consultant shall support the PMCM in reviewing with the City the benefits as well as costs of the proposed changes, including the potential effect to City operating costs for the Project. The Consultant shall complete a Change Request Form provided by the City providing a summary of any proposed change, and attach such other analyses as may be appropriate for City consideration. Should the recommended change increase the estimated cost of the Project, the Consultant shall cooperate with the City to identify other changes to the Project that could reduce cost and offset the recommended increased cost, for approval by the City.

6.3.3. No change shall be incorporated into the design documents unless it has been first approved by the City by written approval of the Change Request Form.

6.3.4. City approval of any change in the design shall not entitle the Consultant to a change in the Consultant's Fixed Fee, unless the scope of the Project changes and the SFMTA approves additional cost in writing.

6.4. Task Budgets. During performance under this Agreement, the Consultant shall manage its work and that of its Subprime Consultants and Subconsultants so that all services are provided and performed in a cost-effective and efficient manner. Within each Design Plan, a task budget shall be established for each task. The Consultant shall complete its work and services within said task budgets. The SFMTA will control the budget at the sub-task level. Sub-task budgets may be modified only upon authorization of the SFMTA's Program Manager. Sub-task budgets shall not be increased because of any unwarranted delays, conduct or costs attributable to the Consultant, but will be increased by SFMTA in the event of Additional Work within or affecting a task, because of unavoidable delay by any governmental action, or other conditions beyond the control of the Consultant that could not be reasonably anticipated.

6.5. Retention. The SFMTA shall retain Five Percent (5%) of every payment to Consultant as security of the faithful performance by the Consultant of all the conditions, covenants and requirements specified or provided in this Agreement. The City shall release amounts retained to Consultant as follows:

6.5.1. Upon SFMTA's acceptance of Consultant's design work for Systems, SFMTA will release one-half of amounts retained from payments for said Work. The SFMTA will

release the remaining amounts held in retention for Systems design work within 30 days of the SFMTA's acceptance of the constructed Work as substantially completed.

6.5.2. Upon SFMTA's acceptance of OCC design work, SFMTA will release all amounts retained from payments for said design work.

6.5.3. City shall release all remaining amounts held in retention within 30 days of the City's acceptance of Consultant's Work.

6.6. Accounting of Retention. Consultant shall track its work and invoices so that retention held for Systems and OCC design, respectively, may be separately accounted. Consultant shall provide back-up documentation showing such accounting with any request for release of retention.

6.7. Letter of Credit in Lieu of Retention. Consultant, in lieu of retention, may submit to the City an irrevocable letter of credit drawn from a bank and on a form acceptable to the City for the value of the retention for which Consultant seeks release.

6.8. Escrow Account. At Consultant's direction, the City shall deposit amounts held in retention in an interest bearing escrow account for the benefit of the Consultant.

7. PROGRAM SCHEDULE.

7.1. Schedule of Services. Attached to this Agreement as Attachment M is a preliminary Design Schedule indicating the times and sequences assumed for the completion of all services required under this Agreement. Within fifteen (15) working days after the SFMTA issues NTP to the Consultant, the Consultant shall submit a proposed Schedule for the Final Design for City approval. The progress Design Schedule shall be in the form of a progress Gantt (schedule bar) chart indicating phases, tasks, durations and times, and sequences of key activities and tasks, including City and other required reviews and approvals as related to the services in this Agreement, but excluding detailed construction schedules. Upon the SFMTA's approval of the Design Schedule, the Consultant shall adopt the Design Schedule as a baseline schedule, and on a monthly basis submit a progress schedule update to the Design Schedule indicating actual progress compared to the baseline schedule.

7.2. Time is of the Essence. Consultant agrees that time is of the essence with respect to the performance of all provisions of this Agreement and with respect to all Project schedules in which a definite time for performance by Consultant and Consultant's subconsultants is specified; provided, however, that the foregoing shall not be construed to limit or deprive a Party of the benefits of any grace period provided for in this Agreement. The Parties acknowledge that delay is one of the greatest causes of waste and increased expense in any construction project. Consultant shall act diligently in anticipating and performing its required tasks in a manner so as to not delay the prosecution of any services or work with respect to the Project.

7.3. Force Majeure. Notwithstanding anything in this Agreement, Consultant, including Consultant's subconsultants, shall not be responsible hereunder for any delay, default or non-performance of this Agreement, if and to the extent that such delay, default or nonperformance is due to an act of God, natural disaster, strike, national emergency,

government action or other action or reason rendering Consultant's timely performance beyond its reasonable control. To the extent that Consultant becomes aware of such uncontrollable forces that could or will impact the SFMTA, Consultant shall use all reasonable effort to mitigate the harm or damages that the CSP might incur by such uncontrollable forces.

7.4. Extension of Time. If the Consultant has been delayed through no fault of its own, and as a result will be unable, in the opinion of the SFMTA, to complete performance fully and satisfactorily within the time provided in the Design Schedule, the Consultant, upon submission of evidence of the causes of the delay and an amended Design Schedule, may at the discretion of the SFMTA, be granted an extension of time for performance equal to the period the Consultant was actually and necessarily delayed.

7.5. Construction Support Services. The Parties estimate that the SFMTA will require and that Consultant shall provide Construction Support Services for the remainder of the Ten (10) year Term of this Agreement following completion of the Construction Documents. Should the Consultant be required to perform Construction Support Services for a period beyond said Term, due to no fault of the Consultant, the Consultant shall be entitled to additional compensation, conditional upon Consultant's providing to the SFMTA complete and accurate documentation of all actual increased cost of performance of its services for that additional period. In the event that the construction is delayed beyond the scheduled completion date due to the fault of the Consultant, as determined by the City in its sole discretion, then the Consultant shall continue to provide Construction Support Services in accordance with this Agreement for the additional time delay attributed to the Consultant at no additional charge to the City. In such event, the City reserves all rights as against the Consultant. The Consultant may submit any disputed amounts as a claim.

7.6. Commencement and Completion of Project Work. After execution of this Agreement by SFMTA and the Consultant and the contract is certified by the City Controller's Office, SFMTA will issue a written Notice to Proceed on the Project or specific tasks thereof. Such notices to proceed will be provided for specific tasks identified as necessary to produce specified Work Product and shall set forth the date of commencement of the work, a description of the work to be performed, the schedule for the work authorized, and the budgets for such tasks.

7.7. Design Plans. The Parties will meet no later than 10 working days after the SFMTA issues NTP to the Consultant to agree on a Design Plan consistent with the Project milestone dates, which shall include a description of the work and Work Products that the Consultant shall complete, applicable Milestones and appropriate compensation for said Milestones.

8. CHANGES IN SCOPE.

8.1. Work Revised at SFMTA Request. SFMTA may, at any time, by written order direct the Consultant to revise portions of the Work Product previously completed in a satisfactory manner, delete portions of the Project, or make other changes within the general scope of the services or work to be performed under this Agreement. If such changes cause an increase or decrease in the Consultant's cost of, or time required for, performance of any services under this Agreement, an equitable cost and/or completion time adjustment shall be made and this Agreement shall be modified or a Task Order issued in writing accordingly. The Consultant must assert any claim for adjustment under this Section in writing within thirty (30) days from the date of receipt by the Consultant of the notification of change or such claim shall

be waived. The Consultant shall not perform any work or make any revisions to the Project Services or Scope of Work until SFMTA has provided the necessary written direction.

8.2. Proposal for Additional Work. SFMTA may, at any time, request that the Consultant perform Additional Work beyond the scope of the Scope of Work set out in this Agreement. If the SFMTA desires the Consultant to perform Additional Work, the SFMTA will submit to Consultant a request for services, to which the Consultant will respond within 30 days with a Proposal for Additional Work, as described below, which the parties will then negotiate. If the Consultant discovers any work to be otherwise out-of-scope and necessary to the Project, the Consultant shall submit to the SFMTA a proposal for the Additional Work. A proposal for Additional Work shall include:

8.2.1. A detailed description by task and subtask of the Additional Work to be performed and the means and methods that will be used to perform it;

8.2.2. Milestones for completion for each subtask and deliverables at each milestone for the Additional Work;

8.2.3. Personnel and the subconsultants to be assigned to each part of the Additional Work along with a brief justification as to why such personnel are qualified to perform the Additional Work;

8.2.4. A detailed cost estimate for each subtask of the Additional Work showing:

(a) Breakdown of estimated hours and direct salaries by individual for each activity required to complete all tasks and subtasks;

(b) Overhead, including Salary Burden costs;

(c) Estimated out-of-pocket expenses;

(d) Proposed additional Fixed Fee.

8.3. Proposal Review.

8.3.1. The SFMTA will review the proposal and determine whether the proposed work is Additional Work, and if so, then negotiate a final written description of services, staff assignments, deliverables, schedule requirements, and budget for all tasks and subtasks included in the Design Plan or Task Order.

8.3.2. Upon completion of negotiation, the City will direct the Consultant in writing to proceed with the Additional Work after obtaining appropriate City approvals, memorialized in a Task Order.

8.3.3. In the event that City and Consultant cannot reach agreement on the terms of any Task Order for Additional Work, City may either cancel the Task Order and have the work accomplished through other available sources, or City may direct the Consultant to proceed with the task under such conditions as City may require to assure quality and timeliness of the task performance. Under no circumstances may the Consultant refuse to undertake a City-ordered task that the Consultant is qualified to perform. The City and the Consultant shall continue to negotiate any outstanding terms under provisions of Section 26.12 (Resolution of Disputes) of this

Agreement while the additional Task Order is being performed. The City shall not deny the Consultant reasonable compensation for Additional Work performed under an approved Task Order.

8.4. Request for Additional Work. If the Consultant considers any work or services to be outside the Scope of Services as established by this Agreement, the RFP and the Proposal, the Consultant shall notify the SFMTA's Program Manager, with copies to parties identified in Section 26.1(Notices to the Parties), in writing within five (5) working days of discovering such extra work or services to request authorization to perform the Additional Work. Neither Consultant nor any Subprime Consultant or Subconsultant shall be reimbursed for out-of-scope work performed without first obtaining approval of Program Manager in accordance with the procedures set forth below.

8.5. Approvals Required.

8.5.1. No services for which additional compensation will be charged under this Section or any other section of this Agreement by the Consultant shall be furnished without the prior written authorization of SFMTA specifying the changes to be made and the price to be charged per said change.

8.5.2. Before beginning Work on any task under a Design Plan or Task Order, the Design Plan or Task Order, including the scope of services, schedule requirements, and budget must be signed by both Parties' authorized representatives and the Program Manager must issue authorization to the Consultant to begin work.

8.6. Consultant at Risk. If the Consultant proceeds to do work that it perceives to be Additional Work without first obtaining City's written approval in accordance with the above procedures, regardless of the amount or value of the work, the City shall have no obligation to reimburse Consultant for the work thus performed. Eagerness to respond to the City's comments or concerns, expediency, schedule constraints will not be acceptable reasons to proceed with Additional Work without City's prior written approval.

8.7. Changes to Design Plan. The SFMTA may direct Consultant to make changes in the Design Plan at any time in its sole discretion. The SFMTA, acting through the Program Manager, shall have the authority to direct Consultant to discontinue, perform further, or provide additional resources to the performance of any task or subtask included in a Design Plan or Task Order and to direct Consultant to amend a Design Plan to those ends.

8.8. Decrease in Scope. The SFMTA may reduce the Scope of Work of the Consultant at any time and for any reason upon written notice to the Consultant specifying the nature and extent of such reduction. In such event, the Consultant shall be duly compensated for work already performed, including the payment of all necessary costs due and payable under this Agreement prior to receipt of written notification of such reduction in scope. The SFMTA shall compensate Consultant for the Consultant's Revision of Work Product and other documents necessitated by the SFMTA's reduction of Consultant's Scope of Work.

8.9. Change Due to Fault Of Consultant.

8.9.1. In the event that any change is required in the Work Product, the Construction Bid Packages and any other plans, specifications, drawings or other documents because of a defect of design or non-constructability of design, or non-workability of details, or

because of any other fault or error of the Consultant, no additional compensation shall be paid to the Consultant for making such changes.

8.9.2. In the event the SFMTA is required to pay to a construction contractor additional compensation or any compensation for additional work of said contractor as a result of an error or omission by the Consultant, the SFMTA may charge to the Consultant against any amount owing to Consultant any reasonable and immittigable cost or expense that the SFMTA would not have sustained but for Consultant's error or omission, except to the extent of any betterment realized by SFMTA. Nothing herein shall be construed as placing responsibility on Consultant for that which the SFMTA would have been responsible.

9. SUBCONTRACTING.

9.1. Assignment of Work. Consultant is permitted to subcontract portions of the services it shall perform under this Agreement as provided in its Proposal and as approved by the SFMTA. Consultant may reassign work assigned to Subprime Consultants and Subconsultants as provided in its Proposal only with the prior written approval by the SFMTA. Consultant shall perform the work of a Subprime Consultant and of a Subconsultant for at least one Construction Bid Package, as provided in the Organization Chart attached to this Agreement as Attachment E. Execution of this Agreement shall constitute approval of the firms and individuals listed in Attachment B (Directory of Subconsultants), to this Agreement as subconsultants on this Project.

9.2. Responsibility. The Consultant shall be responsible for the professional standards, performance, and actions of all persons and firms performing subcontract work under this Agreement at any and all tiers, including but not limited to the Subprime Consultant and Subconsultant levels.

9.3. Substitutions of Subconsultants. Substitutions may be made for any subconsultants listed in Attachment B, "Directory of Subconsultants," for: (a) failure to perform to a reasonable level of professional competence; (b) inability to provide sufficient staff to meet the Project requirements and schedules; or (c) unwillingness to negotiate reasonable contract terms or compensation. Consultant may only substitute subconsultants with the prior written approval of the SFMTA Program Officer.

9.4. Prompt Payment of Subconsultants. Progress Payments. In accordance with SFMTA's SBE Program, no later than three (3) working days from the date of Consultant's receipt of progress payments by the City, the Consultant shall pay any subconsultants for work that has been satisfactorily performed by said subconsultants, unless the Consultant notifies the CCO in writing within (10) working days prior to receiving payment from the City that there is a bona fide dispute between the Consultant and the subconsultant. Within ten (10) working days following receipt of payment from the City, Consultant shall provide City with a declaration under penalty of perjury that it has promptly paid such subconsultants for the work they have performed and stating the amounts paid. Failure to provide such evidence shall be cause for City to suspend future progress payments to Consultants.

9.5. Interest on Unpaid Amounts. If the Consultant does not pay its subconsultant as required under the above paragraphs, it shall pay interest to the subconsultant at the legal rate set forth in subdivision (a) of Section 685.010 of the California Code of Civil Procedure. This Section shall not impair or limit any remedies otherwise available to the Consultant or a

subconsultant in the event of a dispute involving late payment or nonpayment by the Consultant or deficient subconsultant performance or nonperformance by the Consultant.

9.6. Retention. Consultant may withhold retention from subconsultants if City withholds retention from Consultant. Should retention be withheld from Consultant, within thirty (30) days of City's payment of retention to Consultant for satisfactory completion of all work required of a subconsultant, Consultant shall release any retention withheld to the subconsultant. Satisfactory completion shall mean when all the tasks called for in the subcontract with subconsultant have been accomplished and documented as required by City.

9.7. Substitutions of SBE Firms. If Consultant wishes to substitute a Subprime Consultant or Subconsultant that is a SBE, the Consultant must make good faith efforts to use another SBE as a substitute. The Consultant shall notify SFMTA in writing of any request to substitute a SBE subconsultant (or supplier) and provide the SFMTA's CCO with any documentation requested to support the substitution. The CCO must approve the request in writing for the substitution to be valid.

9.8. Addition of Subconsultants. The City reserves the right to require Consultant to retain a subconsultant or subconsultants that possess specific expertise to provide services under this Agreement, if the City determines that the Consultant does not have specific expertise necessary for the timely and successful completion of the Project.

9.9. Subcontracts. Consultant shall fully inform all Subprime Consultants, and shall require each of its Subprime Consultants to warrant that it has fully informed each of its respective Subconsultants, of the terms and conditions of this Agreement. Consultant shall ensure that all services performed, material furnished, and the manner by which those services and materials are provided shall conform to the requirements of this Agreement. The terms and conditions of Consultant's subcontracts shall conform to the requirements of this Agreement. Each of Consultant's Subprime Consultant contracts and a cost summary of each of those agreements shall be subject to review by the SFMTA prior to the Subprime Consultant proceeding with the work. Upon request, Consultant shall provide the SFMTA copies of any written agreements between a Subprime Consultant and a Subconsultant.

9.10. Progress Reports. The Consultant shall submit monthly reports with its monthly invoices for payment, describing all work completed by Consultant, Subprime Consultants and Subconsultants during the preceding month and copies of all invoices relating thereto.

10. SMALL BUSINESS ENTERPRISE PROGRAM.

10.1. General. The SFMTA is committed to a Small Business Enterprise Program ("SBE Program") for the participation of SBEs in contracting opportunities. In addition, the Consultant must comply with all applicable federal regulations regarding Disadvantaged Business Enterprise (DBE) participation, as set out in Title 49, Part 26 of the Code of Federal Regulations (49 C.F.R. Part 26), with respect to DBEs performing work under this Agreement. More information on federal DBE requirements can be found on the internet at: <http://www.fta.dot.gov/library/admin/BPPM/ch7.html>.

10.2. Compliance with SBE Program. Consultant shall comply with the SBE provisions contained in the attached Attachment G, which are incorporated by reference as though fully set forth herein, including, but not limited to, achieving and maintaining the SBE

goal set for the total dollar amount awarded for the services to be performed under this Agreement. Failure of Consultant to comply with any of these requirements shall be deemed a material breach of this Agreement.

10.3. SBE Goal. The goal for SBE participation is Thirty Percent (30%) of the total dollar amount awarded for the services to be performed under this Agreement.

10.4. Non-Discrimination in Hiring. Pursuant to City and SFMTA policy, Consultant is encouraged to recruit actively minorities and women for its workforce and take other steps within the law, such as on-the-job training and education, to ensure non-discrimination in Consultant's employment practices.

11. WORK PRODUCT, DELIVERABLES AND SUBMITTALS.

11.1. Construction Documents Requirements.

Work Product shall be created and maintained as follows:

- 11.1.1.** CADD drawings shall be provided in AutoCAD R2010 or more recent version, and corresponding pen files and image files, or other computer drawing and drafting software approved by the City.
- 11.1.2.** Written documents, spread sheets and cost estimates on Microsoft Office Suite 2007 (Word and Excel) or more recent version.
- 11.1.3.** Critical Path Method Schedules in Primavera Project Planner P6 Scheduling Software.
- 11.1.4.** Audiovisual presentations in Microsoft PowerPoint 2007 or more recent version.
- 11.1.5.** Image files in JPG, GIF, PIC, TIF and BMP formats. These images shall be made available on any storage format selected by the City.
- 11.1.6.** Renderings in Adobe Photoshop 7.0 and 3D Studio VIZ, or other software approved by the City.
- 11.1.7.** Presentation boards, mounted on 3/8-inch or 1/4-inch Gatorboard.
- 11.1.8.** Architectural models shall be composed of painted Plexiglas, wood or other materials as requested as a part of Additional Services and as approved by the City and mounted on wooden base with optically clear Plexiglas panel covering suitable for public display.

11.2. Transmittal of Work Product. As directed by the SFMTA, and after completion of each task and subtask, the Consultant shall transmit to Agency all Work Product, including but not limited to originals, produced or accumulated in the course of its and the Subprime Consultants' and Subconsultants' work under this Agreement. The Consultant's Project Manager and Key Team Members shall thoroughly review and approve all Work Product in writing prior to transmitting the Work Product to the SFMTA. Consultant shall retain a copy of all

Work Product for its records. Upon the termination of this Agreement, or prior to final payment, upon demand by the SFMTA, the Consultant shall surrender to the SFMTA all Work Product prepared, developed or kept by Consultant in connection with or as part of the Project Unfinished Work Products furnished to the City following termination of the Agreement may be utilized at users risk and Consultant shall bear no responsibility for said use. Any use of the Work Product by a party other than the City and its contractors and consultants is at the sole risk of the user.

11.3. Reproduction of Work Product. The Consultant shall arrange and provide for printing (or other required reproduction) of three master copies of all final designs; Consultant shall also deliver all Work Product in electronic format as determined by SFMTA.

11.4. Agency's Responsibilities Regarding Submittals. The SFMTA will review and comment on Consultant's submittals within 15 working days of receipt (unless the complexity of the submittal require additional time) or or such other time as agreed by the SFMTA in the Design Schedule (described in Section 7.1, supra). The Agency and Consultant will establish a timetable of submittals and reviews during initial Project coordination meetings, which the Consultant shall include in the Design Plan. The Agency's review and comments of Consultant submittals shall in no way relieve the Consultant of its independent responsibility to perform its own quality checks and review, nor shall any comment or review by the Agency relieve the Consultant of its independent responsibility to provide submittals and deliverables in full compliance with local, State and federal codes, regulations and standards.

12. CONSULTANT PERSONNEL.

12.1. Consultant's Project Manager. The Consultant agrees to commit and assign a senior Consultant or engineer as the Project Manager to direct Consultant's Work and to serve as the official contact and spokesperson on behalf of the Consultant in matters related to the Project for the Term of this Agreement. The Consultant's Principals, Anthony Marroro of HNTB and Alberto Fernandez of B&C shall have signature authority to bind Consultant. The Consultant's Project Manager must work in the Project office in San Francisco for Term of the Agreement. The Consultant has identified Chuck Morganson , PE, as the Consultant's Project Manager.

12.2. Key Personnel. The Consultant agrees that Key Team Members shall be committed and assigned to work on the Project to the level required by SFMTA for the Term of the Agreement, and shall work at the Project office in San Francisco. The following persons are Key Team Members who have been committed and assigned by the Consultant to work on the Project to the level required by SFMTA for the Term of the Agreement:

- Tomi Tolentino – Package Manager
- Chuck Morganson – Project Manager
- Jerry Furman – Systems Integration Manager
- Ria Almeida – Train Control Lead
- David Coury – OCC Lead
- Denise McDonald – Quality Assurance/Control Manager

12.2.1. If one of the Key Personnel listed above is not assigned to serve as lead for Construction Support Services, then Consultant shall propose for the Program Manager's review and consideration an engineer or architect with the requisite experience and expertise to serve in that role. Said candidate must be acceptable to the SFMTA and upon appointment shall also be Key Personnel.

12.2.2. Consultant shall assign for the period necessary and for the level of effort necessary for the Project (as that period and level of effort shall be reasonably determined by the SFMTA) the persons identified above as Key Personnel. The CSP shall be the sole assignment of Key Personnel for the period and level of effort required by the SFMTA. Consultant may request that particular Key Personnel be allowed to work on other projects, which approval the SFMTA shall not arbitrarily withhold, as long as the Project is not thereby delayed or otherwise harmed, the determination of which shall be in the SFMTA's sole discretion. All Key Team Members shall be available through completion of construction to respond to RFI's and otherwise provide Construction Support for the Project, as required.

12.3. Departure Notice and Corrective Action Plan. Consultant shall advise SFMTA immediately any time a Key Team Member severs employment or otherwise deviates from his or her committed role or time on the Project. SFMTA will require Consultant to provide a corrective action plan to replace that Key Team Member. All candidates to replace a departing Key Team Member must have equivalent experience and expertise to the Key Team Member he or she would replace.

12.4. Substitutions of Key Team Members.

12.4.1. Substitutions of Key Team Members will not be allowed except for extenuating circumstances, such as death, illness or departure from the firm, or with the City's prior approval, which approval will not be arbitrarily withheld as long as such substitution will not delay or otherwise harm the Project, which shall be determined by the SFMTA in its sole discretion. If it is necessary to substitute a Key Team Member, the Consultant shall propose a replacement in writing to the Program Officer for approval.

12.4.2. The Consultant shall replace any Key Team Member departing from the Project or departing from his/her assigned role in the Project with an individual of comparable experience on a non-temporary basis within thirty (30) calendar days of the departure of the Key Team Member, unless the SFMTA's Program Manager grants an extension to that time limit in writing. Consultant's failure to replace a Key Team Member shall be cause for the City to suspend invoice payments.

12.4.3. Consultant shall not be relieved of its obligation for full performance of the Scope of Services as a result of any unfilled position. The Consultant shall be held fully responsible for any inefficiencies, schedule delays or cost overruns resulting in whole or in part from any Key Team Member departing from the Project or departing from his/her assigned role in the Project before the end of the committed duration.

12.4.4. Consultant shall bear any additional costs incurred in substituting personnel. Such costs include relocation expenses, expenses related to recruiting and hiring, training and learning on the job.

12.5. Liquidated Damages. Consultant acknowledges that the SFMTA's selection of Consultant and the negotiated amount of Consultant's Fixed Fee were based, in part, on the

expertise and experience Consultant's proposed Key Team Members as submitted in the Proposal. The Consultant acknowledges and agrees that the replacement of Key Team Members during the course of the Project would be extremely disruptive and damaging to the City; the cost of which is difficult, if not impossible, to calculate. The Consultant, therefore, shall pay to the City a charge of Two Hundred Thousand Dollars (\$200,000) for the first Key Team Member whom the Consultant replaces without written approval by the City. For each additional Key Team Member whom the Consultant replaces without written approval by the City, the Consultant shall pay to the City a charge of Three Hundred Thousand Dollars (\$300,000). Said charges shall not be considered or act as a penalty, but shall be liquidated damages to the City to compensate the City for the additional costs and inefficiencies to the Central Subway Project that the Parties agree will necessarily arise from the unauthorized departure of a Key Team Member of the Consultant. The SFMTA reserves the right to require Consultant to replace or reassign any personnel assigned by Consultant to the Project, including but not limited to Key Team Members. Should the City require Consultant to replace or reassign any of its personnel so that said persons are no longer working on the Project, the liquidated damages provisions of this Section 12.5 shall not apply.

13. COMPENSATION.

13.1. Certification of Funds; Budget and Fiscal Provisions; Termination in the Event of Non-Appropriation. This Agreement is subject to the budget and fiscal provisions of the City's Charter. Charges will accrue only after prior written authorization certified by the City Controller, and the amount of City's obligation hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization.

Notwithstanding any other provision of this Agreement, this Agreement will terminate without penalty, liability or expense of any kind to City at the end of any fiscal year if funds are not appropriated for the next succeeding fiscal year. If funds are appropriated for a portion of the fiscal year, this Agreement will terminate, without penalty, liability or expense of any kind at the end of the term for which funds are appropriated. City has no obligation to make appropriations for this Agreement in lieu of appropriations for new or other agreements. City budget decisions are subject to the discretion of the Mayor and the Board of Supervisors. Consultant's assumption of risk of possible non-appropriation is part of the consideration for this Agreement. The SFMTA shall promptly inform the Consultant if the SFMTA learns of a threat to Project funding, and shall work with Consultant to minimize financial impacts .

THE BUDGET AND FUNDS CERTIFICATION REQUIREMENTS OF THIS SECTION 13.1 CONTROL AGAINST ANY AND ALL OTHER PROVISIONS OF THIS AGREEMENT.

13.2. Guaranteed Maximum Costs

13.2.1. The City's obligation hereunder shall not at any time exceed the amount certified by the City Controller for the purpose and period stated in such certification.

13.2.2. Except as may be provided by laws governing emergency procedures, officers and employees of the City are not authorized to request, and the City is not required to reimburse the Consultant for, Commodities or Services beyond the agreed upon contract scope unless the changed scope is authorized by amendment and approved as required by law.

13.2.3. Officers and employees of the City are not authorized to offer or promise, nor is the City required to honor, any offered or promised additional funding in excess of the maximum amount of funding for which the contract is certified without certification of the additional amount by the City Controller.

13.2.4. The City Controller is not authorized to make payments on any contract for which funds have not been certified as available in the budget or by supplemental appropriation.

13.3. Total Amount.

13.3.1. The total amount of compensation under this Agreement for all Work performed by Consultant, shall not exceed **Twenty Four Million Nine Hundred Twenty Four Thousand Eight Hundred and Fifty-Two Dollars (\$24,924,852)** for Basic Services, and an additional **Seven Million Three Hundred Sixty-Nine Thousand Four Hundred Sixty Seven Dollars (\$7,369,467)** for Optional Services.

13.3.2. The prices listed above for Basic Services and Optional Services are inclusive of all direct labor costs, other direct costs, indirect costs and Fixed Fee for all Work performed under this Agreement subject only to authorized adjustments as specifically provided in this Agreement. Said amounts shall include all Work provided on a Cost-plus-Fixed-Fee basis or on a negotiated Lump Sum Price basis. In the event the Consultant incurs costs in excess of the Total Price, adjusted as provided herein, the Consultant shall pay such excess from its own funds and SFMTA shall not be required to pay any part of such excess and the Consultant shall have no claim against SFMTA on account thereof.

13.4. Fixed Fee.

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 Three Hundred Sixty-Six Thousand Four Hundred Fifty-Eight Dollars (\$2,366,458)** for Basic Services and an additional **Seven Hundred Seventeen Thousand Three Hundred Seventy-Four Dollars (\$717,374)** 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.

13.4.2. Payment of the full Fixed Fee is not guaranteed; to receive the full Fixed Fee Consultant shall fully perform all Work described in this Agreement in compliance with the standards of performance described herein.

13.4.3. It is understood and agreed that the Fixed Fee is a fixed amount that cannot be exceeded because of any differences between the Total Price and actual costs of performing the work required by this Agreement, and in no event shall payments to the Consultant exceed said Total Price, adjusted as provided herein. The Fixed Fee is based on earned value to the Project, and bears no relation to value of costs incurred by Consultant or reimbursed by the SFMTA. The SFMTA may approve an increase in Fixed Fee only if such increase is required due to an increase in the Basic Services scope of work or to "Additional Work" that increases the scope of work. The Fixed Fee shall not be increased for Consultant's additional level of effort to complete Basic Services. It is further understood and agreed that the fixed fee is only due and

payable for Project work for which SFMTA has given notice to proceed and for which the Consultant has satisfactorily completed.

13.4.4. The Fixed Fee will be prorated and paid monthly in proportion to the Project work satisfactorily completed. The proportion of work completed shall be documented by invoices and shall be determined by a ratio of the total costs to date compared to the Total Price, less profit. A payment for an individual month shall include that approved portion of the fixed fee allocable to the Project work satisfactorily completed during said month and not previously paid. Any portion of the fixed fee not previously paid in the monthly payments shall be included in the final payment. The method of proration may be adjusted by SFMTA to reflect deletions or amendments in the Project work that are approved as herein described.

13.5. Change in Scope of Services. If the Scope of Services of any Phase or other portion of the Project is reduced, that reduction shall be memorialized in an amendment to the relevant Task Order(s) or Design Plan, and the Fixed Fee for that Work shall be reduced, as negotiated by the Parties, but such reduction shall not be less than the proportional value of the reduced Work, as measured by the value of that Work set out in Attachment C (Summary of Fees) to this Agreement or other agreed document setting out the relative value of tasks. If the Scope of Services is increased, then the Parties will negotiate an appropriate Fixed Fee for the Additional Services. Any negotiations for changes in the scope of services shall be subject to the agreement of the SFMTA's Program Officer and the Consultant. The Consultant shall do no work in addition to or beyond the scope of the services set forth and contemplated by this Agreement unless and until it is authorized to do so by the issuance to it of a "Modification of Contract," duly executed and approved.

13.6. Calculation of Compensation. Consultant acknowledges and agrees that the Agency shall compensate Consultant for its Work under the Agreement either by: (a) by Cost-plus-Fixed-Fee, in which the SFMTA shall reimburse Consultant Reimbursable Expenses to compensate Consultant its costs and applicable Overhead and pay a Fixed Fee proportionate to the value of the Work ("Cost-plus-Fixed-Fee") within a stated amount (amount not to exceed); or (b) Lump Sum, negotiated for specific tasks approved as Additional Work, identified in an approved Task Order or Design Plan.

13.7. Redesign Due to Consultant's Error If during the course of construction, the City determines at its sole discretion that modifications to Construction Documents or Contract Documents are required due to errors or omissions on the part of the Consultant or its subconsultants in the final Construction Documents working drawings and specifications, the Consultant shall not be entitled to additional compensation for the cost of developing, preparing or reproducing the necessary revised drawings and specifications to correct said errors or omissions nor shall the Consultant be compensated in its fee for the cost of extra design work made necessary by errors or omissions of the Consultant or its subconsultants.

13.8. Cost Plus Fixed Fee Payment. For all Work that the City does not designate as Lump Sum Additional Work, the City will reimburse Consultant for Reimbursable Expenses (allowable costs) and will pay the Consultant a Fixed Fee proportionate to the value of the Work. The City will reimburse Consultant for only those expenses that are allowed under the principles set out in the Office of Management and Budget Circular A-87, "Cost Principles for State, Local, and Indian Tribal Governments" and as specifically authorized therein and as allowed under the compensability standards set out in 48 C.F.R. parts 31.105, 31.2, 31.6 and the Cost Accounting Standards set out in 48 C.F.R. part 9904 et seq. Compensation for Cost-plus-Fixed-Fee Work will be computed as follows:

13.8.1. Actual direct salaries paid by Consultant and subconsultants as shown in Attachment C; Overhead of Consultant and subconsultants as shown in Attachment C (Summary of Fees), and as described herein.

13.8.2. Actual costs or prices of approved Reimbursable Expenses for the Consultant and subconsultants at any tier, net of any discounts, rebates, refunds, or other items of value received by Consultant or any of its subconsultants that have the effect of reducing the cost or price actually incurred. Compensation for materials and expenses shall be at direct cost, without any mark-ups.

13.8.3. Consultant shall not "mark-up" or request additional compensation for work performed by subconsultants.

13.8.4. Costs for which Consultant seeks compensation must be (a) necessary in order to accomplish the work under an accepted Design Plan or Task Order, and (b) be reasonable for the services performed.

13.8.5. A Fixed Fee invoiced as a proportionate share of the total Fixed Fee for the task.

13.8.6. All compensation due to Consultant for all Work performed under this Agreement shall be computed in conformance with Attachment C attached hereto.

13.9. Additional Work. Where the City designates Additional Work to be performed, the Parties shall negotiate a reasonable Cost-plus-Fixed Fee amount or a Lump Sum amount as compensation for the Additional Work. The SFMTA shall in its sole authority determine which pricing method shall be used for specified Additional Work. The City shall make monthly progress payments for Lump Sum Work based on agreed Milestones or proportionate to the percentage of tasks completed, as provided an approved Task Order, where the time to complete all Lump Sum Work under the relevant Task Order exceeds one month.

13.10. Salary Rates. Compensation under this Agreement will be based on the overhead and direct salary rates as shown on the Schedule of Rates attached as Attachment C. The direct salary rates in Attachment C may be adjusted at twelve (12) month intervals, but each increase shall be no more than the Consumer Price Index (CPI). The CPI shall be defined as the Consumer Price Index for San Francisco-Oakland-San Jose, All Items, [1982-84=100] for All Urban Consumers. Consultant shall not make any individual salary adjustments above Consumer Price Index for which the SFMTA would incur additional costs unless approved by the SFMTA's Program Manager in writing and in advance. The Consultant shall not submit requests to the SFMTA asking for salary adjustments for the same individual more than once within any 12-month period. Rate increases requiring SFMTA approval shall apply only to Work performed after the SFMTA's approval of the increased rates.

13.11. Overhead Rates - Provisional Rates and Annual Audit. The overhead rates applicable to Consultant and its subconsultants are listed in Appendix H, which is incorporated by reference as if fully set out here. Project Office Overhead rates are applicable to all Consultant and subconsultant personnel who have worked full time at the Project Field Office for more than six months annually. Said employees are not working out of their home offices, and are therefore not receiving home office support in their day-to-day activities, so the hours they bill do not qualify for the Home Office Overhead rate. The Field Overhead rate is a reduced rate as consideration for the support those personnel receive from SFMTA. The

purpose of the Field Office Overhead Rate is to reimburse the Consultant for the Salary Burden and home office support provided to the field employees. Composite Home Office Overhead rates are applicable to all other personnel who provide non-continuous or part time services to the Project.

The rates set out in Appendix H are provisional and shall apply only for one year following NTP. Commencing within 90 days after the first anniversary of NTP, the City may audit Consultant's and subconsultants' books and records to determine the actual rates of compensation due. The Federal Acquisition Regulations (FAR) shall be used for the purposes of this audit to provide guidance as to the calculations of the Overhead rates and Reimbursable Expenses to the extent the FAR does not conflict with standards set out in this Agreement. Based on the audited rates, the City shall then pay to Consultant or Consultant shall refund to the SFMTA any difference between amounts paid and amounts actually owed. The audited rates shall then be used as provisional rates for one the following year, until again reset by the City's audit of Consultant's books and records, which will commence each year within 90 days of the anniversary of NTP.

13.12. Transfer of Unused Funds. Consultant may request City's approval to transfer unused funds from one subtask to another subtask within the same main task to cover the unexpected shortfall of another subtask provided that the need for additional funds to complete the subtask is not due to Consultant's poor management or planning. Consultant may request City's approval to transfer unused funds from one task(s) to other tasks to cover the unexpected shortfall of the other Tasks, provided that if in the opinion of the Program Manager the funds are no longer necessary for the original task(s) for which the funds were allotted and the main reason for the task(s) requiring additional funds is not due to Consultant's poor management or planning. Such request must be made in writing to the Program Manager at least 15 calendar days in advance of the need to transfer funds across subtasks. City's approval of subtask or task amount changes will not be unreasonably withheld. City's approval shall be by the SFMTA Program Manager.

13.13. Non-Reimbursable Expenses. Consultant shall be compensated only for those Reimbursable Expenses authorized in Attachment C and that are allowed under Office of Management and Budget Circular A-87, "Cost Principles for State, Local, and Indian Tribal Governments," and under the compensability standards set out in 48 C.F.R. parts 31.105, 31.2, 31.6 and the Cost Accounting Standards set out in 48 C.F.R. part 9904 et seq. If an expense is not a Reimbursable Expense or Overhead, the City shall have no obligation to compensate Consultant for it. Notwithstanding any other provision of this Agreement, computer usage, facsimile and telecommunication expenses shall be considered Overhead and will not be accounted as Reimbursable Expenses. Consultant and subconsultant personnel entertainment or personal expenses of any kind shall not be considered Overhead or a Reimbursable Expense under this Contract. Office and field supplies/equipment expenses are not reimbursable expenses unless said supplies and equipment can be demonstrated to be out of the ordinary and used exclusively for this Project. Vehicle expenses that are beyond those calculated on a cost-per-mile or lease basis as listed in Attachment C are not reimbursable.

13.14. Prepayment. Unless the Program Manager gives specific written authorization, Consultant shall not submit invoices and the City shall not pay or otherwise reimburse Consultant for costs of any kind that the Consultant has not actually incurred and paid prior to date of invoice.

13.15. Refunds, Rebates and Credits. Consultant shall assign to the City any refunds, rebates or credits accruing the Consultant that are allocable to costs for which the Consultant has paid or has otherwise reimbursed the Consultant or for which the Consultant will submit an invoice.

13.16. Payment of Invoices. Compensation shall be made in monthly payments on or before the last day of each month for Work, as set forth in a Design Plan or Task Order, that the Executive Director/CEO of the SFMTA or his designee concludes has been performed as of the last day of the immediately preceding month in accordance with the Scope of Services attached to this Agreement as Attachment A and applicable Design Plans and Task Orders. The City shall endeavor to issue payments of undisputed amounts to the Consultant within thirty (30) days following the receipt of complete and accurate invoices. City shall make payment to Consultant at the address specified in Section 26.1 (Notices to the Parties). All amounts paid by City to Consultant shall be subject to audit by City. If Consultant so requests, the City will make payment to Consultant by electronic funds transfer.

13.17. No Interest on Late Payments. In no event shall City be liable for interest or late charges for any late payments.

13.18. Payment Limitations.

13.18.1. No charges shall be incurred under this Agreement nor shall any payments become due to Consultant until all Work Product and other services required under this Agreement are received from Consultant and approved by the SFMTA as being in accordance with this Agreement.

13.18.2. The City may reasonably withhold payment to the Consultant pending resolution, in an amount equal to questioned, disputed, or disapproved amounts, or for work not satisfactorily completed or delivered as required by this Agreement or for amounts incurred by the City in connection with the Consultant's negligent errors or omissions. Payments for undisputed amounts due on the same or other invoice shall not be unreasonably withheld or delayed.

13.18.3. If the evidence of production, the quality of the work, or the costs expended are not consistent with the budget and the schedule for an assigned task, the Consultant shall justify to the SFMTA's Program Manager the costs and Fixed Fee invoiced. The Program Manager will review the justification offered and adjust the monthly payment as deemed necessary. These requirements shall also apply to Work by subconsultants. No invoice shall be rendered if the total Work done under this Agreement since the last invoice amounts to less than Fifteen Hundred Dollars (\$1,500), except that an invoice may be submitted if three (3) months have elapsed since the last invoice was submitted. No more than one invoice shall be submitted in a month.

13.19. Invoices.

Form of Invoice. Invoices furnished by Consultant under this Agreement must be in a form acceptable to the City Controller. The Consultant shall submit invoices in quadruplicate for all allowable charges incurred in the performance of the Agreement. Each invoice must contain the following information:

1. Contract Number

2. Design Plan or Task Order Number
3. Name, position, hourly rate and hours worked of employee(s) whose labor is invoiced
4. Description of the work performed or services rendered
5. Cost by employee (per hour or other agreed increment of measure) and other direct costs
6. Subconsultant costs supported by invoice itemization in the same format as described here
7. Fixed-Fee for current invoice period and amount of Fixed Fee paid as of date of invoice
8. Total costs
9. SBE utilization report (MTA Form 6)
10. Certified payroll records substantiating all labor charges for Consultant and all subconsultants shown on the invoice

13.20. Documentation for Payment. Invoices shall be submitted together with the Monthly Progress Reports, Monthly Cost Control Report and Monthly Update Schedule, the contents of which are defined herein, and shall be submitted by the 21st day of each month for work performed in the preceding month. The Monthly Cost Control Report shall include the current completed percentages for each task and subtask, the current estimated labor hours and cost for each Discipline to complete each of the tasks, an itemized breakdown of dollars and hours by employee and by subtask for all Consultant and subconsultant charges for the month being invoiced (accounting for a minimum of 28 calendar days of the month), and an itemized breakdown of out-of-pocket expenses by task incurred since the previous billing, along with copies of bills of materials and expenses incurred, and certified payroll records. Consultant shall submit weekly time sheets for its staff for approval by the Program Manager or his/her designee. Failure to submit a complete Monthly Cost Control Report, Monthly Updated Schedule and Monthly Progress Report by the due date shall constitute cause for suspension of invoice payments. In addition to the above, the SFMTA's Program Manager may, prior to authorization for payment of invoices, require delivery of either a complete or partial set of current work products as evidence of the status of the Consultant's work.

13.21. Submitting False Claims; Monetary Penalties. Pursuant to San Francisco Administrative Code Sections 6.80 to 6.83 and Section 21.35, and pursuant to applicable federal law, any Consultant or subconsultant who submits a false claim shall be liable to the City for three times the amount of damages which the City sustains because of the false claim. A Consultant or subconsultant who submits a false claim shall also be liable to the City for the costs, including attorneys' fees, of a civil action brought to recover any of those penalties or damages, and may be liable to the City for a civil penalty of up to \$10,000 for each false claim. A Consultant or subconsultant will be deemed to have submitted a false claim to the City if the Consultant or subconsultant: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or

approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim. Consultant agrees that said remedies are cumulative and in addition to the remedies and penalties provided for false claims under federal law.

13.22. Disallowance and Disputed Amounts. If Consultant claims or receives payment from City for a service, reimbursement for which is later disallowed by the City, the State of California or United States Government, Consultant shall promptly refund the disallowed amount to City upon City's request. At its option, City may offset the amount disallowed from any payment due or to become due to Consultant under this Agreement or any other Agreement. Any Compensation or reimbursement received by Consultant under this Agreement does not constitute a final decision or waiver of decision by the City as to whether said payment meets the terms and requirements of this Agreement. If following audit or other review, the City determines that the Consultant and/or subconsultants are not entitled to certain compensation requested or received, the City shall notify the Consultant stating the reasons therefore. Completion of the CSP or any portion of Consultant's Work will not alter Consultant's or a subconsultant's obligations to return any funds due the SFMTA as a result of later refunds, corrections, or other transactions, nor alter the SFMTA or its funding agencies' rights to disallow or otherwise not recognize costs on the basis of a later audit or other review. The City may reasonably withhold payment to the Consultant pending resolution, in an amount equal to questioned, disputed or disapproved amounts, or for work not satisfactorily completed or delivered as required by this Agreement or for amounts incurred by the City in connection with the Consultant's negligent errors or omissions. Payments for other amounts due on the same or other invoice shall not be unreasonably withheld or delayed.

13.23. Payment Does Not Imply Acceptance of Work. The issuance of any progress payment or final payment by the City or the receipt thereof by the Consultant shall in no way lessen the liability of the Consultant to correct unsatisfactory work although the unsatisfactory nature of such work may or may not have been apparent or detected at the time such payment was made. Work that does not conform to the requirements of this Agreement may be rejected by City and in such case must be replaced or performed again by Consultant without delay.

13.24. Project Suspension or Termination

13.24.1. If the Project is suspended for more than one hundred eighty (180) days or abandoned in whole or in part, the Consultant shall be compensated for services satisfactorily performed prior to receipt of written notice from the City of such suspension or abandonment. If the Project is resumed after being suspended for more than one hundred eighty (180) days, the Consultant's documented and reasonable remobilization costs and compensation for the remainder of the services to be provided for the Project shall be equitably adjusted based on the Consultant's demonstrated increased costs.

13.24.2. In the event that the City terminates the Agreement for fault, the City may reduce any amount earned or otherwise due the Consultant by the sum of any additional costs the City has or will incur as a result of the Consultant's default.

13.25. Final Payment. Final payment of any balance earned by the Consultant for Project work will be made within sixty (60) days after all of the following:

1. Satisfactory completion of all work required by this Agreement;
2. Receipt by SFMTA of the Work Product not previously delivered;
3. Delivery of all equipment/materials purchased specifically for the Project ;
4. Receipt by SFMTA of a fully executed final statement of amounts paid to and owed to each SBE under this Agreement;
5. Such audit and verification as SFMTA may deem necessary, provided such audit is not unreasonably delayed beyond the completion of the Project; and,
6. Execution and delivery by the Consultant of a release of all claims against SFMTA arising under or by virtue of this Agreement, other than such claims, if any, as may be specifically exempted by the Consultant from the operation of the release in stated amounts to be set forth therein.

14. TAXES; INDEPENDENT CONTRACTOR.

14.1. Obligation of Consultant. Payment of any taxes, including possessory interest taxes and California sales and use taxes, levied upon or as a result of this Agreement, or the services delivered pursuant hereto, shall be the obligation of Consultant.

14.2. Possessory Interest. Consultant recognizes and understands that this Agreement may create a "possessory interest" for property tax purposes. Generally, such a possessory interest is not created unless the Agreement entitles the Consultant to possession, occupancy, or use of City property for private gain. If such a possessory interest is created, then the following shall apply:

14.2.1. Consultant, on behalf of itself and any permitted successors and assigns, recognizes and understands that Consultant, and any permitted successors and assigns, may be subject to real property tax assessments on the possessory interest;

14.2.2. Consultant, on behalf of itself and any permitted successors and assigns, recognizes and understands that the creation, extension, renewal, or assignment of this Agreement may result in a "change in ownership" for purposes of real property taxes, and therefore may result in a revaluation of any possessory interest created by this Agreement. Consultant accordingly agrees on behalf of itself and its permitted successors and assigns to report on behalf of the City to the County Assessor the information required by Revenue and Taxation Code Section 480.5, as amended from time to time, and any successor provision.

14.2.3. Consultant, on behalf of itself and any permitted successors and assigns, recognizes and understands that other events also may cause a change of ownership of the

possessory interest and result in the revaluation of the possessory interest. (see, e.g., Rev. & Tax. Code Section 64, as amended from time to time). Consultant accordingly agrees on behalf of it and its permitted successors and assigns to report any change in ownership to the County Assessor, the State Board of Equalization or other public agency as required by law.

14.2.4. Consultant further agrees to provide such other information as may be requested by the City to enable the City to comply with any reporting requirements for possessory interests that are imposed by applicable law.

14.2.5. Consultant shall provide a San Francisco Business Tax Registration to the SFMTA for the City to certify this Agreement.

14.3. Independent Contractor.

14.3.1. Independent Consultant. Consultant or any employee of Consultant shall be deemed at all times to be an independent contractor and is wholly responsible for the manner in which it performs the services and work requested by City under this Agreement. Consultant or any of its subconsultants, employees of Consultant, or employees of its subconsultants shall not have employee status with City, nor be entitled to participate in any plans, arrangements, or distributions by City pertaining to or in connection with any retirement, health or other benefits that City may offer its employees. Consultant and its subconsultants are respectively liable for the acts and omissions of themselves and their employees. Consultant and its subconsultants respectively shall be responsible for all obligations and payments, whether imposed by federal, state or local law, including, but not limited to, FICA, income tax withholdings, unemployment compensation, insurance, and other similar responsibilities related to their performing services and work. Nothing in this Agreement shall be construed as creating an employment or agency relationship between City and Consultant or any subconsultant or between the City and any employee of Consultant or employee of any subconsultant.

14.3.2. Any terms in this Agreement referring to direction from City shall be construed as providing for direction as to policy and the result of Consultant's Work only, and not as to the means by which such a result is obtained. City does not retain the right to control the means or the method by which Consultant performs Work under this Agreement.

14.3.3. Any claim by any agent, Subconsultant or employee of Consultant, Subprime Consultant or Subconsultant that alleges or seeks to establish employment status with the City shall come under the defense and indemnification provisions of this Agreement.

14.4. Payment of Employment Taxes and Other Expenses.

14.4.1. Should City, in its discretion, or a relevant taxing authority such as the Internal Revenue Service or the State Employment Development Division, or both, determine that Consultant is an employee for purposes of collection of any employment taxes, the amounts payable under this Agreement shall be reduced by amounts equal to both the employee and employer portions of the tax due (and offsetting any credits for amounts already paid by Consultant which can be applied against this liability). City shall then forward those amounts to the relevant taxing authority.

14.4.2. Should a relevant taxing authority determine a liability for past services performed by Consultant for City, upon notification of such fact by City, Consultant shall promptly remit such amount due or arrange with City to have the amount due withheld from future

payments to Consultant under this Agreement (again, offsetting any amounts already paid by Consultant which can be applied as a credit against such liability).

14.4.3. A determination of employment status pursuant to the preceding two paragraphs shall be solely for the purposes of the particular tax in question, and for all other purposes of this Agreement, Consultant shall not be considered an employee of City. Notwithstanding the foregoing, should any court, arbitrator, or administrative authority determine that Consultant is an employee for any other purpose, then Consultant agrees to a reduction in City's financial liability so that City's total expenses under this Agreement are not greater than they would have been had the court, arbitrator, or administrative authority determined that Consultant was not an employee.

15. INSURANCE REQUIREMENTS.

HNTB and B&C shall maintain in force for as long as the City faces exposure to liability from Consultant's activities performed pursuant to this Agreement, insurance in the following amounts and coverages set out below.

15.1. Workers Compensation. HNTB and B&C shall each maintain Workers' Compensation Insurance, in statutory amounts, with Employers' Liability Limits not less than \$1,000,000 each accident injury or illness; and

15.2. General Liability. HNTB and B&C shall each maintain Commercial General Liability Insurance with limits not less than \$2,000,000 each occurrence Combined Single Limit for Bodily Injury and Property Damage, including Contractual Liability, Personal Injury, Products and Completed Operations; and

15.3. Automobile. HNTB and B&C shall each maintain Commercial Automobile Liability Insurance with limits not less than \$1,000,000 each occurrence Combined Single Limit for Bodily Injury and Property Damage, including Owned, Non-Owned and Hired auto coverage, as applicable.

15.4. Valuable Papers. HNTB shall maintain "All Risk" general insurance on Valuable Papers and Records for cost to repair or replace with like kind and quality including the costs of gathering and/or assembling information, subject to a minimum limit of Five Million Dollars (\$5,000,000). B&C shall maintain "All Risk" general insurance on Valuable Papers and Records for cost to repair or replace with like kind and quality including the costs of gathering and/or assembling information, subject to a minimum limit of One Million Dollars (\$1,000,000).

15.5. Professional Liability.

15.5.1. HNTB. From the effective date of this Agreement, HNTB shall maintain professional liability insurance practice coverage with limits of Twenty Million Dollars (\$20,000,000) each claim/annual aggregate with respect to negligent acts, errors or omissions in connection with professional services to be provided under this Agreement. Any deductible for said policy shall not exceed Two Hundred Fifty Thousand Dollars (\$250,000). HNTB shall be responsible for the payment of all claim expenses and loss payments within the deductible. At no time shall HNTB allow the aggregate value of professional liability insurance available to the City for this Project to drop below Twenty Million Dollars (\$20,000,000). If said policy limits are eroded

by claims not arising from the Project, then HNTB shall immediately obtain additional insurance coverage to meet the requirements of this Agreement.

15.5.2. B&C. From the effective date of this Agreement, B&C shall maintain professional liability insurance practice coverage with limits of Five Million Dollars (\$5,000,000) each claim/annual aggregate with respect to negligent acts, errors or omissions in connection with professional services to be provided under this Agreement. But at no time shall B&C allow the aggregate value of professional liability insurance available to the City for this Project to drop below Five Million Dollars (\$5,000,000). If said policy limits are eroded by claims not arising from the Project, then B&C shall immediately obtain additional insurance coverage to meet the requirements of this Agreement. Any deductible for said policy shall not exceed Twenty Thousand Dollars (\$20,000). B&C shall be responsible for the payment of all claim expenses and loss payments within the deductible. If required by the SFMTA, Consultant shall provide said professional liability insurance under an insurance policy specific to the Project.

15.5.3. Excess Professional Liability Insurance. The City will in good faith endeavor to obtain excess professional liability insurance coverage on behalf of Consultant (to protect against Consultant's errors and omissions in excess of Professional Liability Insurance) for commercially reasonable terms and cost that conform to the terms and conditions of this Agreement. If the City is successful in obtaining that coverage, the City will: (a) limit HNTB's joint and several liability for professional liability errors and omissions committed by B&C to the value of B&C's professional liability insurance; (b) limit B&C's joint and several liability for professional liability errors and omissions committed by HNTB to the value of B&C's professional liability insurance; and, (c) waive subrogation of claims by the City's excess insurance against Consultant. If the City is unable to obtain said excess professional liability insurance, the SFMTA and Consultant shall meet to revisit and renegotiate the professional liability provisions of this Agreement to provide adequate insurance coverage to the City at reasonable cost to the City in light of the risks of the Project.

15.5.4. Consultant shall maintain all professional liability policies for a claim reporting period not less than four (4) years following completion of services under this Agreement.

15.5.5. All professional liability policies shall protect against any negligent act, error or omission arising out of the Consultant's design or engineering activities or with respect to the Project, including coverage for acts by Subprime Consultants and Subconsultants for whose work the Consultant is responsible under this Agreement. Professional liability policies shall be endorsed to require the insurer to provide the City with no less than 30 days notice of policy expiration or cancellation.

15.5.6. Consultant shall notify the SFMTA of any claims against its professional liability policy or policies that are not specific to the Project within 30 days of receipt. If the SFMTA determines, in its sole discretion, that said claims jeopardize the protection against errors and omissions required by this Section 15, Contractor shall at its expense procure additional professional liability insurance in an amount sufficient to replenish coverage lost by said claim(s) to meet the requirements set out in Sections 15.5.1 and 15.5.2, above.

15.5.7. Each partner of the HNTB-B&C joint venture partnership shall ensure and does warrant for itself that its Professional Liability (Errors and Omissions) Insurance policy does not contain any provision that excludes coverage for its services performed as part of the joint venture partnership. All insurance policies and certificates shall carry such endorsements, which

shall be provided to the City. Consultant may be relieved of the obligations of this Section 15.5.8 only if the City is able to obtain excess professional liability insurance (see Section 15.5.3, above).

15.5.8. Requirements of Insurance Policies. Valuable Papers, Commercial General Liability and Commercial Automobile Liability Insurance policies must provide the following:

(a) Name as Additional Insured the City and County of San Francisco, its Officers and Employees.

(b) That such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that insurance applies separately to each insured against whom claim is made or suit is brought.

(c) All rights of subrogation against the City shall be waived.

15.5.9. Workers Compensation insurance policies must provide the following:

(a) That such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that insurance applies separately to each insured against whom claim is made or suit is brought.

(b) All rights of subrogation against the City shall be waived.

15.6. Notice. All insurance policies shall be endorsed to provide thirty (30) days' advance written notice to City of reduction or nonrenewal of coverages or cancellation of coverages for any reason. Notices shall be sent via courier or U.S. Mail, first class, to the following persons:

Carter R. Rohan, R.A.
Central Subway Program Officer
Director, Capital Programs and Construction
San Francisco Municipal Transportation Agency
1 South Van Ness, 7th floor
San Francisco, CA 94103

Shahnam Farhangi
Division Deputy, Construction Administration and Quality Management
San Francisco Municipal Transportation Agency
1 South Van Ness, 3rd floor
San Francisco, CA 94103

15.7. Claims-Made Form. Should any of the required insurance be provided under a claims-made form, Consultant shall maintain such coverage continuously throughout the term of this Agreement and, without lapse, for a period of four years beyond the expiration of this Agreement, to the effect that, should occurrences during the contract term give rise to claims made after expiration of the Agreement, such claims shall be covered by such claims-made policies.

15.8. General Annual Aggregate Limit. Should any of the required general liability insurance be provided under a form of coverage that includes a general annual aggregate limit or provides that claims investigation or legal defense costs are included in such general annual aggregate limit, such general annual aggregate limit shall be double the occurrence or claims limits specified above.

15.9. Lapse of Insurance. Should any required insurance lapse during the term of this Agreement, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this Agreement, effective as of the lapse date. If insurance is not reinstated, the City may, at its sole option, terminate this Agreement effective on the date of such lapse of insurance.

15.10. Proof of Insurance. Before commencing any operations under this Agreement, Consultant shall furnish to City certificates of insurance and additional insured policy endorsements with insurers with ratings comparable to A-, VIII or higher, that are authorized or approved to do business in the State of California, and that are satisfactory to City, in form evidencing all coverages set forth above. Failure to maintain insurance shall constitute a material breach of this Agreement.

15.11. No Decrease of Liability. Approval of the insurance by City shall not relieve or decrease the liability of Consultant hereunder.

15.12. Subconsultant Insurance. If a subconsultant will be used to complete any portion of this agreement, the Consultant shall ensure that the subconsultant shall provide all necessary insurance (as determined by Consultant) and shall name the City and County of San Francisco, its officers, and employees and the Consultant listed as additional insureds.

16. INDEMNITY, LIABILITY, AND REMEDIES,

16.1. Indemnification. To the fullest extent permitted by law, the Consultant shall assume the defense of (with legal counsel subject to approval of the City), indemnify and save harmless the City, its boards, commissions, officers, and employees (collectively "Indemnitees"), from and against any and all claim, loss, cost, damage, injury (including, without limitation, injury to or death of an employee of the Consultant or its subconsultants), expense and liability of every kind, nature, and description (including, without limitation, court costs, attorneys' fees, litigation expenses, fees of expert consultants or witnesses in litigation, and costs of investigation), that arise out of, pertain to, or relate to, the negligence, recklessness, or willful misconduct of the Consultant, any subconsultant, anyone employed by them, or anyone that they control (collectively, "Liabilities").

16.2. Limitations.

16.2.1. No insurance policy covering the Consultant's performance under this Agreement shall operate to limit the Consultant's Liabilities under this provision. Nor shall the amount of insurance coverage operate to limit the extent of such Liabilities.

16.2.2. The Consultant assumes no liability for the sole negligence, active negligence, or willful misconduct of any Indemnitee.

16.3. Intellectual Property Infringement. Notwithstanding any other provision of this Agreement, Consultant shall also indemnify, defend and hold harmless all Indemnitees from all suits or claims for infringement of the patent rights, copyright, trade secret, trade name, trademark, service mark, or any other proprietary rights of any person or persons in consequence of the use by the City, or any of its boards, commissions, officers, or employees of articles or services to be supplied in the performance of Consultant's services under this Agreement. Infringement of patent rights, copyrights, or other proprietary rights in the performance of this Agreement, shall be considered a material breach of contract, if not the basis for indemnification under the law.

16.4. Joint Venture Partners.

16.4.1. Notwithstanding the joint venture status of Consultant or other separate legal status of the Consultant from its owner partners, each of the joint venture partners, HNTB and B&C, as the owners of the Consultant, shall remain jointly and severally liable for the performance, errors and omissions of Consultant, as limited by Section 15.5.3 of this Agreement.

16.4.2. Any notice, order, direction, request or any communication required to be or that may be given by the SFMTA to the Consultant as set forth in Section 26.1 (Notices to the Parties) of this Agreement, shall be deemed to have been well and sufficiently given to and shall bind the Consultant, its individual joint venture members, and all persons acting on behalf of the Consultant. Any notice, request or other communications given by the Consultant to the SFMTA as indicated in Section 26.1 (Notices to the Parties) of this Agreement, shall be deemed to have been given by and shall bind the Consultant, its individual joint venture members, and all persons acting on behalf of the Consultant.

16.4.3. In the event of a dissolution of the joint venture, the SFMTA shall have the unqualified right to select which joint venture member, if any, shall continue the work under this Agreement and such selected member shall assume all liabilities, obligations, rights, and benefits of the Consultant under this Agreement. Such dissolution of the joint venture shall not be effected without prior consultation with the SFMTA. In the event of failure or inability of any one of the joint venture members to continue performance under this Agreement, the other joint venture member(s) shall perform all services and work and assume all liabilities, obligations, rights and benefits of the Consultant under this Agreement. Such determination of failure or inability to continue performance shall not be effected without prior consultation with SFMTA. Nothing in this Section shall be construed or interpreted to limit SFMTA's rights under this Agreement or bylaw to determine whether the Consultant or any one of the joint venture members has performed within the terms of this Agreement.

16.5. Liability of City. City's payment obligations under this Agreement shall be limited to the payment of the compensation for Work actually performed for the City in accordance with the payment provisions set out in Section 13 of this Agreement and the Appendices to this Agreement referenced therein. Notwithstanding any other provision of this Agreement, in no event shall City be liable to any individual or business entity related to Consultant, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits, arising out of or in connection with this Agreement or the services performed in connection with this Agreement.

16.6. Default; Remedies. Each of the following shall constitute an event of default ("Event of Default") under this Agreement:

16.6.1. Consultant fails or refuses to perform or observe any term, covenant or condition contained in any of the following Subsections of this Agreement:

(a) Consultant (a) is generally not paying its debts as they become due, (b) files, or consents by answer or otherwise to the filing against it of, a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors' relief law of any jurisdiction, (c) makes an assignment for the benefit of its creditors, (d) consents to the appointment of a custodian, receiver, trustee or other officer with similar powers of Consultant or of any substantial part of Consultant's property, or (e) takes action for the purpose of any of the foregoing.

(b) A court or government authority enters an order (a) appointing a custodian, receiver, trustee or other officer with similar powers with respect to Consultant or with respect to any substantial part of Consultant's property, (b) constituting an order for relief or approving a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors' relief law of any jurisdiction, or (c) ordering the dissolution, winding-up or liquidation of Consultant.

16.6.2. Consultant fails or refuses to perform or observe any other term, covenant or condition contained in this Agreement, and such default continues for a period of ten working days after written notice thereof from City to Consultant.

16.7. Remedies. On and after any Event of Default, City shall have the right to exercise its legal and equitable remedies, including, without limitation, the right to terminate this Agreement or to seek specific performance of all or any part of this Agreement. In addition, City shall have the right (but no obligation) to cure (or cause to be cured) on behalf of Consultant any Event of Default; Consultant shall pay to City on demand all costs and expenses incurred by City in effecting such cure to the maximum extent provided by law. City shall have the right to offset from any amounts due to Consultant under this Agreement or any other agreement between City and Consultant all damages, losses, costs or expenses incurred by City as a result of such Event of Default and any liquidated damages due from Consultant pursuant to the terms of this Agreement or any other agreement.

16.8. No Preclusion of Remedies. All remedies provided for in this Agreement may be exercised individually or in combination with any other remedy available hereunder or under applicable laws, rules and regulations. The exercise of any remedy shall not preclude or in any way be deemed to waive any other remedy.

17. EQUIPMENT

17.1. Responsibility for Equipment. City shall not be responsible for any damage to persons or property as a result of the use, misuse or failure of any equipment used by Consultant, or by any of its employees, even though such equipment be furnished, rented or loaned to Consultant by City. The acceptance or use of such equipment by Consultant or any of its employees shall be construed to mean that Consultant accepts full responsibility for and

agrees to exonerate, indemnify, defend and save harmless the City from and against any and all claims for any damage or injury of any type arising from the use, misuse or failure of such equipment, whether such damage be to Consultant, its employees, the City's employees, or third parties, or to property belonging to any of the above.

17.2. Ownership of Equipment. Any equipment, vehicles, computer programs (software licenses and media), and the like, purchased by the Consultant or its subconsultants in connection with services to be performed under this Agreement shall become property of and will be transmitted to the SFMTA at the conclusion of the Consultant's services under the Agreement.

18. CITY'S RESPONSIBILITIES

The City's responsibilities for design of the Project are expressly set out in this Agreement and the RFP. The Consultant shall be responsible for all aspects of the Systems design except for those tasks, duties, or areas of design that are expressly assigned or reserved to the City in this Agreement. In addition to those tasks, duties, or areas of design that are expressly assigned to the City elsewhere in the Agreement or RFP, the City shall perform the following:

18.1. Approvals. Obtain approvals from Appropriate Authorities, as defined herein, with the assistance of the Consultant, and promptly render decisions, when within its power to do so, pertaining thereto to avoid unreasonable delays in the progress of the Project.

18.2. Deficiencies. Promptly notify the Consultant in writing of apparent deficiencies in Consultant's designs.

18.3. Fees. Pay all fees required to secure necessary permits.

18.4. Hazardous Substances. Acknowledge that the discovery, presence, handling or removal of asbestos, asbestos products, polychlorinated biphenyl (PCB) or other hazardous substances, which may presently exist at the job site, is outside of the Consultant's expertise and is not included in the scope of work the Consultant is to perform nor included in the Consultant's insurance. The City therefore agrees to hire one or more expert consultants in this field to deal with these problems if the Project involves such materials. Even though the Contract Documents may incorporate the work of such other consultants, the Consultant shall not be responsible for the discovery, presence, handling or removal of such materials.

18.5. Nonaffixed Furniture and Equipment. Be responsible for purchase and coordination with successful vendors for delivery, assembly, storage and placement of loose furniture, furnishings and equipment not included within the Construction Documents prepared by the Consultant.

18.6. Project Data. Furnish the documents and data developed for the Project under conceptual and preliminary design, which are listed in the RFP in Appendix 10.

18.7. Program Manager. Designate a Program Manager who shall coordinate his or her duties with the Consultant as provided herein.

18.8. Respond to Submittals. Review and respond in writing within 15 working days of a submittal by the Consultant to all aspects of the documents unless otherwise indicated.

18.9. Tests and Inspections. Furnish tests and inspections as required during the construction phase for structural, mechanical, chemical and other laboratory tests, inspections, special inspections and reports specified by the Consultant in the Construction Documents.

18.10. Construction Cost Estimates. SFMTA shall cooperate with Consultant to bring construction cost estimates within agreed acceptable limits of Construction Budget.

19. TERMINATION OF CONTRACT.

19.1. Termination for Cause. Either party may terminate this Agreement, in whole or in part, in writing, if the other party substantially fails to fulfill its obligations under this Agreement through no fault of the terminating party. However, such termination may not be effected unless the other party is given (a) not fewer than ten (10) calendar days written notice (delivery by certified mail) of its intent to terminate; and (b) an opportunity for consultation and to rectify failures of obligations (to cure the alleged breach or default of Agreement) within thirty (30) days of consultation with the terminating party before termination becomes effective.

19.2. Termination for Convenience.

19.2.1. Exercise of Option to Terminate for Convenience. Notwithstanding any other provision of this Agreement, the City shall have the option, in its sole discretion, to terminate this Agreement, at any time during the term hereof, for convenience and without cause. City shall exercise this option by giving Consultant no less than fourteen (14) calendar days written notice of termination. The notice shall specify the date on which termination shall become effective. Consultant does not have the right to terminate this Agreement for convenience.

19.2.2. Duties of Consultant Upon Notice of Termination. Upon receipt of the notice, Consultant shall commence and perform, with diligence, all actions necessary on the part of Consultant to effect the termination of this Agreement on the date specified by City and to minimize the liability of Consultant and City to third parties as a result of termination. All such actions shall be subject to the prior approval of City. Such actions shall include, without limitation:

- a. Halting the performance of all services and other work under this Agreement on the date(s) and in the manner specified by City.
- b. Not placing any further orders or subcontracts for materials, services, equipment or other items.
- c. Terminating all existing orders and subcontracts.
- d. At City's direction, assigning to City any or all of Consultant's right, title, and interest under the orders and subcontracts terminated. Upon such assignment, City shall have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts. Subject to City's

approval, settling all outstanding liabilities and all claims arising out of the termination of orders and subcontracts, as allowed under the principles set out in 48 CFR Subparts 49.2 and 49.3 to the extent that those principles are in accord with the cost principles for local governments set out in the Office of Management and Budget Circular A-97.

- e. Completing performance of any services or work that City designates to be completed prior to the date of termination specified by City.
- f. Taking such action as may be necessary, or as the City may direct, for the protection and preservation of any property related to this Agreement which is in the possession of Consultant and in which City has or may acquire an interest.

19.2.3. Final Invoice for Services Performed. Within 30 days after the specified termination date, Consultant shall submit to City an invoice, which shall set forth each of the following as a separate line item:

- a. A reasonable allowance for profit on the cost of the services and other work described necessary to effect termination.
- b. The reasonable cost to Consultant of handling Work Products, material or equipment returned to the vendor, delivered to the City or otherwise disposed of as directed by the City.
- c. A deduction for the cost of materials to be retained by Consultant, amounts realized from the sale of materials and not otherwise recovered by or credited to City, and any other appropriate credits to City against the cost of the services or other work.
- d. Expenses directly attributable to termination which the Consultant is not otherwise compensated, such as the cost to dispose of, or buy out commitments for, trailers, office space, computers, motor vehicles, cell phones and blackberry-like devices.

19.2.4. Non-Recoverable Costs. In no event shall City be liable for costs incurred by Consultant or any of its subconsultants after the termination date specified by City, except for those costs specifically enumerated and described in the immediately preceding Subsection 19.2.3. Such non-recoverable costs include, but are not limited to, anticipated profits on this Agreement, post-termination employee salaries, post-termination administrative expenses, post-termination overhead or unabsorbed overhead, attorneys' fees, or other costs relating to the prosecution of a claim or lawsuit, prejudgment interest, or any other expense which is not reasonable or authorized under such Subsection 19.2.3.

19.2.5. Deductions. In arriving at the amount due to Consultant under this Section 19, City may deduct: (a) all payments previously made by City for work or other services covered by Consultant's final invoice; (b) any claim which City may have against Consultant in connection with this Agreement; (c) any invoiced costs or expenses excluded pursuant to the immediately preceding Subsection 19.2.4; and (d) the reasonable costs to the City to remedy or replace defective or rejected services or other work that does not comply with the requirements of this Agreement.

19.2.6. Survival of Payment Obligation. City's payment obligation for Work performed in accordance with this Agreement shall survive termination of this Agreement.

19.3. Rights and Duties Upon Termination or Expiration.

19.3.1. Survival of Provisions. This Section and the following Sections of this Agreement shall survive termination or expiration of this Agreement: 13.22 (Submitting False Claims; Monetary Penalties), 13.23 (Disallowance and Disputed Amounts), 13.24 (Payment Does Not Imply Acceptance of Work), 14 (Taxes, Independent Contractor), 15 (Insurance Requirements), 16.1 (Indemnification), 16.5 (Liability of City), 17 (Equipment), 19.1 (Termination for Cause), 19.2 (Termination for Convenience), 21.3 (Protection of Private Information), 22 (Work Product and Works for Hire), 23 (Audit and Inspection of Records), 26 (Contract Administration and Construction).

19.3.2. Duties Upon Termination. Subject to the immediately preceding Subsection 19.3.1, upon termination of this Agreement prior to expiration of the term of this Agreement specified in Section 1.3, this Agreement shall terminate and be of no further force or effect. Consultant shall transfer title to City, and deliver in the manner, at the times, and to the extent, if any, directed by City, any work in progress, completed work, supplies, equipment, and other materials produced as a part of, or acquired in connection with the performance of this Agreement, and any completed or partially completed work which, if this Agreement had been completed, would have been required to be furnished to City. This Subsection shall survive termination of this Agreement.

20. CONFLICT OF INTEREST.

20.1. Applicable Authority. Through its execution of this Agreement, Consultant acknowledges that it is familiar with Article I, Chapter I and Article III, Chapter 2 of City's Campaign and Governmental Conduct Code, and Section 87100 et seq. and Section 1090 et seq. of the California Government Code, and certifies that it does not know of any facts which constitute a violation of said provisions and agrees that it will immediately notify the City if it becomes aware of any such fact during the term of this Agreement. Consultant further acknowledges that it is aware of the requirements concerning the filing of Statements of Economic Interest, California Fair Political Practices Commission Form 700, under the requirements of California Government Code Section 87300 et seq. and the San Francisco Campaign and Governmental Code Section 3.1-102, and that Consultant shall ensure that its employees and subconsultants are aware of those requirements and comply with them.

20.2. Other Bids Prohibited. Consultant agrees that neither it nor any corporation, joint venture or partnership in which it has a financial interest shall submit a proposal for Agency Capital Program Controls System RFP or bid for construction work on the Central Subway Project. Consultant further agrees that except as may be specifically authorized by the SFMTA Consultant shall not consult with or otherwise provide advice or information concerning the Central Subway Project to any potential proposers for the Program Controls System RFP or to potential bidders for construction contracts for the Central Subway Project.

20.3. No Financial Interest in the Project. By submission of its Proposal, the Consultant covenants that it has no direct or indirect financial interest and that it shall not acquire any financial interest that creates or would create a conflict of interest with respect to

any of the work, services or materials required to be performed or provided under this Agreement. Furthermore, the Consultant shall not employ any person or agent having any such conflict of interest. In the event that the Consultant or its agents, employees or representatives hereafter acquires such a conflict of interest, it shall immediately disclose such interest to SFMTA and take action immediately to eliminate the conflict or to withdraw from this Agreement, as SFMTA requests. The Consultant shall not employ any consultant who is concurrently employed by SFMTA or by another consultant to the SFMTA (including, but not limited to, surveyors, engineers, Consultants, and testing laboratories), without first obtaining SFMTA's approval in writing.

20.4. Conflicts of Interest. By submission of its Proposal, the Consultant covenants that it has no direct or indirect pecuniary or proprietary interest and that it shall not acquire any interest that conflicts in any manner or degree with the work, services or materials required to be performed or provided under this Agreement. Furthermore, the Consultant shall not employ any person or agent having any such conflict of interest. In the event that the Consultant or its agents, employees or representatives hereafter acquires such a conflict of interest, it shall immediately disclose such interest to SFMTA and take action immediately to eliminate the conflict or to withdraw from this Agreement, as SFMTA requests. The Consultant shall not employ any consultant who is concurrently employed by SFMTA or by another consultant to the SFMTA (including, but not limited to, surveyors, engineers, Consultants, and testing laboratories), without first obtaining SFMTA's approval in writing.

20.5. Other Agreements between the City and the Consultant. Through its execution of this Agreement, the Consultant certifies that neither it nor any of its employees has any undisclosed financial interest, however remote, in any other Agreement with the City, whether or not such Agreement is with Consultant's respective firms, affiliate firms or through separate employment, except as expressly itemized below. The Consultant understands and agrees that failure to disclose such information may result in termination of this Agreement for cause.

20.6. Lobbyists and Gratuities.

20.6.1. Contingency Fees Prohibited. The Consultant warrants and covenants that it has not employed or retained any person or persons to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees. For breach of violation of this warranty SFMTA shall have the right to annul this Agreement without liability or in its discretion to deduct from the Total Price or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

20.6.2. No Gratuities to City Employees. The Consultant warrants and covenants that no gratuities, in the form of entertainment, gifts, or otherwise, have been or will be offered or given by the Consultant or any of its agents, employees, or representatives to any official or employee of the City and County of San Francisco in an attempt to secure a contract or favorable treatment in awarding, amending, or making any determination related to the performance of this Agreement. Consultant acknowledges that it is familiar with San Francisco Campaign and Governmental Conduct Code Section 3.216 and the regulations adopted thereunder, and understands that Consultant is a "restricted source" for all SFMTA employees and officers, as the term is defined in that Section. Contractor agrees that it will make no gifts to any SFMTA employee or officer the acceptance of which would violate Section 3.216. (See also federal lobbying restrictions discussed at Section 28.6, below.)

20.7. Collusion in Contracting. Consultant warrants and covenants that it has not imposed on any Subprime Consultant or Subconsultant as a condition for receiving a subcontract under this Agreement a requirement that said subconsultant not participate in or be listed on in any other Proposal for this Contract. This restriction provision shall not apply between a Proposer and a Subprime Consultant listed in the Proposal to whom the Consultant provided proprietary or confidential financial information such that the participation of the Subprime Consultant in another Proposer's Proposal would provide an unfair advantage to a Proposer. Consultant further warrants that it informed its Subprime Consultants that Subconsultants cannot be restricted from being listed or otherwise participating in a Proposal from another consultant for this Contract, and that to Consultant's knowledge its Subprime Consultants have complied with these requirements.

20.8. Remedies. If the Executive Director/CEO has reason to believe that the Consultant has breached the covenants set forth in this Section 20, he shall so notify the Consultant in writing. The Consultant shall respond to said notice within ten (10) working days of receipt with a detailed written explanation or answer to any facts, allegations, or questions contained or referenced in said notice. The Consultant may request a hearing on the matter by Executive Director/CEO or his designee that shall be conducted within fifteen (15) working days of the receipt by the Executive Director/CEO of the request unless a later date is concurred in by SFMTA and the Consultant. The decision of the Executive Director/CEO shall be a prerequisite to appeal thereof to SFMTA Board of Directors or to Superior Court in the County of San Francisco, State of California. If, after consideration of the Consultant's response and any hearing, the Executive Director/CEO determines that the covenants have been breached, the Executive Director/CEO shall have the discretion to exercise those remedies provided by any applicable federal or state laws or regulations or by this Agreement in the event of said breach and/or prohibited conflicts of interest.

21. CONFIDENTIALITY, PRIVACY AND SECURITY OF INFORMATION.

21.1. Proprietary, Confidential and Security Sensitive Information. Consultant understands and agrees that, in the performance of the work or services under this Agreement or in contemplation thereof, Consultant may have access to private or confidential information which may be owned, controlled by, or licensed to the City and that such information may contain proprietary or confidential details, or it may constitute Sensitive Security Information, the disclosure of which to third parties may be contrary to law, harmful to public safety, and/or damaging to City. Consultant agrees that all information disclosed by City to Consultant shall be held in the strictest confidence and used only in performance of the Agreement. Consultant agrees that all Work Product, reports, studies, analyses, specifications, work schedules and recommendations prepared by the Consultant for use in connection with the work under this Agreement or furnished to the Consultant by the City are confidential, and that Consultant will not publish, circulate or use any of the foregoing except in the performance of this Agreement without first obtaining the SFMTA's written approval to do so.

21.2. Project Security. Consultant shall consider and treat all Work Product as Sensitive Security Information as defined by FTA Circular 42.20.1(f) and other applicable regulation and authority. Consultant shall at all times guard and keep secure and confidential all such information and documents. Consultant's failure to guard and keep safe and confidential said documents shall be a material breach of this Agreement. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate the Contract, bring

a false claim action against the Consultant pursuant to Chapter 6 or Chapter 21 of the Administrative Code, or debar the Consultant.

21.3. Protection of Private Information. Consultant has read and agrees to the terms set forth in San Francisco Administrative Code Sections 12M.2, "Nondisclosure of Private Information," and 12M.3, "Enforcement" of Administrative Code Chapter 12M, "Protection of Private Information," which are incorporated herein as if fully set forth. Consultant agrees that any failure of Contractor to comply with the requirements of Section 12M.2 of this Chapter shall be a material breach of the Contract. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate the Contract, bring a false claim action against the Consultant pursuant to Chapter 6 or Chapter 21 of the San Francisco Administrative Code, or debar the Consultant.

22. WORK PRODUCT, WORKS FOR HIRE, AND INTELLECTUAL PROPERTY .

22.1. Ownership. All Work Product, except as specifically provided in Section 22.7, below, including but not limited to documents, electronic, written, graphic, or three dimensional models, including drawing sets, CADD files, BIM files, schematics, system designs, blue prints, specifications, presentation drawings, models, films and videos, simulations or other presentation materials and other documents, models or computer files prepared by the Consultant are works for hire as defined under Title 17 of the United States Code commissioned by the SFMTA, and all such works shall be made and remain the property of the City, including all intellectual property rights to all documents; provided, however, that the Consultant shall be entitled to retain one reproducible copy thereof and CADD files, made at the Consultant's expense. The Consultant shall provide technical specifications for any computer hardware required to use the provided software and files. Work developed entirely at City's expense and stamped documents shall be transferred to the City. Configuration of Consultant's existing proprietary software for use on the CSP is proprietary to Consultant (see Section 22.7.1).

22.2. Assignment. To the extent that the Work Product does not qualify as a work made for hire under applicable law, and to the extent that the Work Product includes material subject to copyright, patent, trade secret, mask work, or other proprietary right protection, the Consultant hereby assigns to SFMTA, its successors and assigns, all right, title and interest in and to the Work Product, including but not limited to (1) all copyrights in the same, and in all renewals and extensions of the copyrights that may be secured under applicable laws; and (2) all rights in and to any inventions and designs embodied in the Work Product or developed in the course of the Consultant's creation of the Work Product. The foregoing assignment includes a license under any current and future patents owned, patents applied for or licensable by the Consultant to the extent necessary to exercise any rights of ownership in the Work Product. Any reuse of the Work Product except for the specific purpose intended will be at the users' sole risk without liability or legal exposure to the Consultant.

22.3. Moral Rights. To the extent that the Consultant may have any moral rights to the Work Product, the Consultant hereby forever waives any and all such rights. Neither the Work Product nor anything constructed from the plans, designs, drawings and specifications in the Work Product shall be considered art or a work of art. To the extent that the Work Product, any part of the Work Product, or anything constructed from the plans, designs, drawings and specifications in the Work Product are considered art or works of art, any rights of the Consultant or obligations of the City under applicable law, including but not limited to Visual

Artists Rights Act of 1990, 17 U.S.C. §§ 101 et seq., and the California Art Preservation Act, Civil Code sec. 987, are hereby forever waived.

22.4. Assistance. At SFMTA's expense, the Consultant shall execute and deliver such instruments and take such other action as may be requested by SFMTA to perfect or protect SFMTA's rights in the Work Product and to perfect the assignments contemplated by this Section.

22.5. Delivery of Work Product. The Consultant agrees to deliver all aspects of the Work Product, including without limitation all plans, drawings, designs, specifications, technical reports, operating manuals, notes, data, documentation, and computer software (in source code and object code form), in accordance with the delivery schedule set forth in this Agreement. In the event of early termination of this Agreement, the Consultant shall deliver all aspects of the Work Product immediately upon such early termination at the then-existing stage of completion, and all aspects of the Work Product shall become the property of SFMTA.

22.6. Representations and Warranties. The Consultant hereby represents and warrants that:

22.6.1. It has full power to enter into this Agreement and make the assignments set forth herein;

22.6.2. It has not previously and will not grant any rights in the Work Product, such as a work for hire or exclusive license or transfer of ownership, to any third party that are inconsistent with the rights granted to SFMTA herein;

22.6.3. Except as relates to any materials or documents provided by the City, the Work Product does not infringe or violate any copyright, trade secret, trademark, patent or other proprietary or personal right held by any third party; and

22.6.4. The Work Product has been or will be created solely by the Consultant or employees of the Consultant within the scope of their employment and under obligation to assign rights in the Work Product to SFMTA as provided in this Agreement, provisions of this Agreement, or by independent subconsultants, approved by SFMTA in advance, under written obligations to (a) assign all rights to use the Work Product to SFMTA and (b) maintain the confidentiality of any SFMTA confidential information disclosed to the subconsultant.

22.7. License of Consultant's Proprietary Software, Information and Processes .

22.7.1. Consultant understands and agrees that the SFMTA intends that it must be able to utilize its own staff to every extent practicable to operate, maintain, and configure the Systems to be designed by Consultant under this Agreement. To that end, Consultant shall provide the SFMTA with all necessary schematics, specifications, protocols, and software (including object code, compilers, source code, and other programming tools, as necessary) to enable SFMTA staff to operate, maintain, and configure said Systems. Contractor shall clearly communicate to the SFMTA in writing directed to the Program Manager if any software or other Work Product is safety sensitive, such that should SFMTA attempt to maintain or configure such Work Product, the SFMTA might compromise the operational safety of the CSP.

22.7.2. The City agrees that in performance of the Work, Consultant may use software, systems, techniques, design information, engineering processes, and business

processes that are proprietary to Consultant and constitute Consultant's intellectual property (hereinafter "Consultant's IP"). Consultant's IP is not Work Product. To the extent that the City may need to access, rely upon or otherwise utilize Consultant's IP at anytime, Consultant hereby grants to the City an irrevocable, perpetual, nonexclusive, nontransferable, and limited license to use the Consultant's IP for the SFMTA's own operational and business purposes.

22.7.3. City agrees not to release said proprietary design tools to third parties without the Consultant's written consent. Prior to transferring any software program, diagram, schematic, specification, process or other product that Consultant considers to be Consultant's IP, Consultant shall clearly mark said product with the following: "Confidential and Proprietary Intellectual Property Provided to the SFMTA Under License."

22.7.4. The indemnity and defense requirements set out in Section 16.3 of this Agreement shall apply to Consultant's Work Product and the tools used by Consultant to produce it, without limitation.

22.8. Notations. All Work Product furnished by the Consultant, other than documents exclusively for the internal use by SFMTA, shall carry such notations on the front cover or a title page (or in the case of maps, in the name block) as may be determined by SFMTA. The Consultant shall also place its endorsement on all Work Products. All such notations and endorsements shall be subject to prior approval by SFMTA prior to delivery. All such notations and/or endorsements placed on the Work Product(s) by the Consultant shall be for intellectual property purposes only and shall not be for professional engineering services.

22.9. Reuse. Should the City or any other person, firm or legal entity under the authority and control of the City, without the Consultant's participation, use, re-use, or modify the Consultant's drawings, specifications or other documents prepared under this Agreement, the City agrees to notify the Consultant of said intended use. The Consultant shall not be responsible for any loss, costs or expenses incurred by any party arising out of such use, re-use or modification of the Consultant's drawings, specifications, and other documents.

22.10. Artists Rights. If Consultant contracts for any art or work of art to be included in the Project, prior to executing such contract, Consultant shall obtain from the artist(s) who produced or will produce the art a written and signed agreement stipulating that such works are works for hire for commercial use and forever waiving any and all rights of the artist(s) and any and all obligations of the City under applicable law requiring preservation of said art or works of art, including but not limited to Visual Artists Rights Act of 1990, 17 U.S.C. §§ 101 et seq., and the California Art Preservation Act, Civil Code § 987 et sec.

22.11. Subcontracts. Consultant shall include the provisions of this Section in all contracts with Subprime Consultants and shall further require that Subprime Consultants include said provision in their respective contracts with Subconsultants.

23. AUDIT AND INSPECTION OF RECORDS.

23.1. Access to Records. Consultant agrees to maintain and make available to the City accurate books and accounting records relative to its activities under this Agreement, irrespective of whether such services were funded in whole or in part by this Agreement. Consultant will permit the City to audit, examine, reproduce, and make excerpts and transcripts from such books and records and to make audits of all invoices, materials, payrolls, records or

personnel and other data necessary to determine or audit allowable expenses, overhead, including costs and overhead incurred as work performed as Additional Services,.

23.2. Maintenance of Records. Consultant shall maintain such data and records in an accessible location and condition for a period of not less than five (5) years after final payment under this Agreement or until after final audit has been resolved, whichever is later. The period of access and examination for records that relate to (1) litigation or the settlement of claims arising out of the performance of this Agreement, or (2) costs and expenses of this Agreement as to which exception has been taken by the Comptroller General of the United States or the U.S. Department of Transportation, or any of their duly authorized representatives, shall continue until such litigation, claims, or exceptions have been finally resolved. Consultant shall require its subconsultants to also comply with the provisions of this Section, and shall include the provisions of the Section in each of its subcontracts.

23.3. Audit of Subconsultants. Consultant shall include the provisions of this Section in all agreements between Consultant and its Subprime Consultants and subconsultants of every tier giving the City the same rights against the Subprime Consultants. Consultant shall require that the Subprime Consultants include the provisions of this Section in their respective contracts with Subconsultants. Cancelled checks of payments to Subprime Consultants and Subconsultants must be maintained by Consultant and Subprime Consultants, respectively, and made available to the City upon request.

23.4. Audit. The City may initiate an audit under this Agreement by written notice, upon not fewer than seven (7) calendar days.

23.5. Rights of State or Federal Agencies. Consultant shall comply with reporting requirements of the U.S. Department of Transportation grant management rules, and any other reports required by the Federal Government. The State of California or any federal agency having an interest in the subject matter of this Agreement shall at a minimum have the same rights conferred upon City by this Section 23.

24. NONDISCRIMINATION; PENALTIES.

24.1. Consultant Shall Not Discriminate. In the performance of this Agreement, Consultant agrees not to discriminate against any employee, City and County employee working with such Consultant or subconsultant, applicant for employment with such Consultant or subconsultant, or against any person seeking accommodations, advantages, facilities, privileges, services, or membership in all business, social, or other establishments or organizations, on the basis of the fact or perception of a person's race, color, creed, religion, national origin, ancestry, age, height, weight, sex, sexual orientation, gender identity, domestic partner status, marital status, disability or Acquired Immune Deficiency Syndrome or HIV status (AIDS/HIV status), or association with members of such protected classes, or in retaliation for opposition to discrimination against such classes. The Consultant shall carry out applicable requirements of 49 C.F.R. Part 26 in the award and administration of DOT-assisted contracts. Failure by the Consultant to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the City deems appropriate.

24.2. Subcontracts. Consultant shall incorporate by reference in all subcontracts the provisions of §§12B.2(a), 12B.2(c)-(k), and 12C.3 of the San Francisco Administrative Code (copies of which are available from the SFMTA) and shall require all subconsultants to comply with such provisions. Consultant's failure to comply with the obligations in this Subsection shall constitute a material breach of this Agreement.

24.3. Nondiscrimination in Benefits. Consultant does not as of the date of this Agreement and will not during the term of this Agreement, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits or travel benefits, as well as any benefits other than the benefits specified above, between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of such employees, where the domestic partnership has been registered with a governmental entity pursuant to state or local law authorizing such registration, subject to the conditions set forth in §12B.2(b) of the San Francisco Administrative Code.

24.4. Condition to Contract. As a condition to this Agreement, Consultant shall execute the "Chapter 12B Declaration: Nondiscrimination in Contracts and Benefits" form (form HRC-12B-101) with supporting documentation and secure the approval of the form by the San Francisco Human Rights Commission.

24.5. Incorporation of Administrative Code Provisions by Reference. The provisions of Chapters 12B and 12C of the San Francisco Administrative Code are incorporated in this Section by reference and made a part of this Agreement as though fully set forth herein. Consultant shall comply fully with and be bound by all of the provisions that apply to this Agreement under such Chapters, including but not limited to the remedies provided in such Chapters. Without limiting the foregoing, Consultant understands that pursuant to §12B.2(h) of the San Francisco Administrative Code, a penalty of \$50 for each person for each calendar day during which such person was discriminated against in violation of the provisions of this Agreement may be assessed against Consultant and/or deducted from any payments due Consultant.

24.6. Compliance with Americans with Disabilities Act. Consultant acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a Consultant, must be accessible to the disabled public. Consultant's design of the Project under this Agreement shall comply with the ADA and any and all other applicable federal, state and local disability rights and/or access legislation. Said requirements shall apply both to the manner and process by which the Consultant provides the services, and the content of all deliverables under this Agreement. Consultant agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of Consultant, its employees, agents or assigns will constitute a material breach of this Agreement.

25. GENERAL CONTRACT REQUIREMENTS.

25.1. Compliance with All Laws and Regulations.

25.1.1. The Consultant shall keep itself fully informed of the City's Charter, codes, ordinances and regulations of the City and of all state and federal laws in any manner affecting the performance of this Agreement, and must at all times comply with such local codes, ordinances, and regulations and all applicable laws as they may be amended from time to time

25.1.2. The Consultant shall comply with all federal, state, and local licensing, registration, filing and/or certifications standards, all applicable accrediting standards, and any other standards or criteria established by any agency of the State of California or of the federal government applicable to the Consultant's operation.

25.2. MacBride Principles - Northern Ireland. Pursuant to San Francisco Administrative Code §12F.5, the City and County of San Francisco urges companies doing business in Northern Ireland to move towards resolving employment inequities, and encourages such companies to abide by the MacBride Principles. The City and County of San Francisco urges San Francisco companies to do business with corporations that abide by the MacBride Principles. By signing below, the person executing this agreement on behalf of Consultant acknowledges and agrees that he or she has read and understood this Section.

25.3. Use of Public Transportation. San Francisco is a transit-first city, and the SFMTA encourages Consultant and subconsultants to use public transit in the performance of its services to the maximum extent possible. The SFMTA will closely review the Consultant's requests for reimbursement of travel expenses. Travel from and to airports must be by public transit to the maximum extent possible. Taxicabs, and hired vans and cars are not considered public transit. The City reserves the right to refuse to reimburse travel expenses that are not in accord with these policies.

25.4. Earned Income Credit (EIC) Forms. Administrative Code Section 12O requires that employers provide their employees with IRS Form W-5 (The Earned Income Credit Advance Payment Certificate) and the IRS EIC Schedule, as set forth below. Employers can locate these forms at the IRS Office, on the Internet, or anywhere that Federal Tax Forms can be found.

25.4.1. Provision of Forms to Eligible Employees. Consultant shall provide EIC Forms to each Eligible Employee at each of the following times: (a) within thirty days following the date on which this Agreement becomes effective (unless Consultant has already provided such EIC Forms at least once during the calendar year in which such effective date falls); (b) promptly after any Eligible Employee is hired by Consultant; and (c) annually between January 1 and January 31 of each calendar year during the term of this Agreement.

25.4.2. Failure to Comply. Failure to comply with any requirement contained in this Section shall constitute a material breach by Consultant of the terms of this Agreement. If, within 30 days after Consultant receives written notice of such a breach, Consultant fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, Consultant fails to commence efforts to cure within such period or thereafter fails to diligently pursue such cure to completion, the City may pursue any rights or remedies available under this Agreement or under applicable law.

25.4.3. Application to Subconsultants. Any subcontract entered into by Consultant shall require the subconsultant to comply, as to the subconsultant's Eligible Employees, with each of the terms of this Section.

25.4.4. Terms. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Section 12O of the San Francisco Administrative Code.

25.5. Sunshine Ordinance. In accordance with San Francisco Administrative Code §67.24(e), contracts, Consultants' bids, responses to solicitations and all other records of communications between City and persons or firms seeking contracts, shall be open to inspection immediately after a contract has been awarded. Nothing in this provision requires the disclosure of a private person or organization's net worth or other proprietary financial data submitted for qualification for a contract or other benefit until and unless that person or organization is awarded the contract or benefit. Information provided which is covered by Section 67.24(e) will be made available to the public upon request.

25.6. Public Access to Meetings and Records. If the Consultant receives a cumulative total per year of at least \$250,000 in City funds or City-administered funds and is a non-profit organization as defined in Chapter 12L of the San Francisco Administrative Code, Consultant shall comply with and be bound by all the applicable provisions of that Chapter. By executing this Agreement, the Consultant agrees to open its meetings and records to the public in the manner set forth in §§12L.4 and 12L.5 of the Administrative Code. Consultant further agrees to make-good faith efforts to promote community membership on its Board of Directors in the manner set forth in §12L.6 of the Administrative Code. The Consultant acknowledges that its material failure to comply with any of the provisions of this paragraph shall constitute a material breach of this Agreement. The Consultant further acknowledges that such material breach of the Agreement shall be grounds for the City to terminate and/or not renew the Agreement, partially or in its entirety.

25.7. Limitations on Contributions. Through execution of this Agreement, Consultant acknowledges that it is familiar with Section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, or for a grant, loan or loan guarantee, from making any campaign contribution to (A) an individual holding a City elective office if the contract must be approved by the individual, a board on which that individual serves, or a board on which an appointee of that individual serves, (B) a candidate for the office held by such individual, or (C) a committee controlled by such individual, at any time from the commencement of negotiations for the contract until the later of either the termination of negotiations for such contract or six months after the date the contract is approved. Consultant acknowledges that the foregoing restriction applies only if the contract or a combination or series of contracts approved by the same individual or board in a fiscal year have a total anticipated or actual value of \$50,000 or more. Consultant further acknowledges that the prohibition on contributions applies to each prospective party to the contract; each member of Consultant's board of directors; Consultant's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 20 percent in Consultant; any Subprime Consultant or Subconsultant listed in the bid or contract; and any committee that is sponsored or controlled by Consultant. Additionally, Consultant acknowledges that Consultant must inform each of the persons described in the preceding sentence of the prohibitions contained in Section 1.126.

25.8. Requiring Minimum Compensation for Covered Employees.

25.8.1. Consultant agrees to comply fully with and be bound by all of the provisions of the Minimum Compensation Ordinance (MCO), as set forth in San Francisco Administrative

Code Chapter 12P (Chapter 12P), including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 12P are incorporated herein by reference and made a part of this Agreement as though fully set forth. The text of the MCO is available on the web at www.sfgov.org/olse/mco. A partial listing of some of Consultant's obligations under the MCO is set forth in this Section. Consultant is required to comply with all the provisions of the MCO, irrespective of the listing of obligations in this Section.

25.8.2. The MCO requires Consultant to pay Consultant's employees a minimum hourly gross compensation wage rate and to provide minimum compensated and uncompensated time off. The minimum wage rate may change from year to year and Consultant is obligated to keep informed of the then-current requirements. Any subcontract entered into by Consultant shall require the subconsultant to comply with the requirements of the MCO and shall contain contractual obligations substantially the same as those set forth in this Section. It is Consultant's obligation to ensure that any subconsultants of any tier under this Agreement comply with the requirements of the MCO. If any subconsultant under this Agreement fails to comply, City may pursue any of the remedies set forth in this Section against Consultant.

25.8.3. Consultant shall not take adverse action or otherwise discriminate against an employee or other person for the exercise or attempted exercise of rights under the MCO. Such actions, if taken within 90 days of the exercise or attempted exercise of such rights, will be rebuttably presumed to be retaliation prohibited by the MCO.

25.8.4. Consultant shall maintain employee and payroll records as required by the MCO. If Consultant fails to do so, it shall be presumed that the Consultant paid no more than the minimum wage required under State law.

25.8.5. The City is authorized to inspect Consultant's job sites and conduct interviews with employees and conduct audits of Consultant

25.8.6. Consultant's commitment to provide the Minimum Compensation is a material element of the City's consideration for this Agreement. The City in its sole discretion shall determine whether such a breach has occurred. The City and the public will suffer actual damage that will be impractical or extremely difficult to determine if the Consultant fails to comply with these requirements. Consultant agrees that the sums set forth in Section 12P.6.1 of the MCO as liquidated damages are not a penalty, but are reasonable estimates of the loss that the City and the public will incur for Consultant's noncompliance. The procedures governing the assessment of liquidated damages shall be those set forth in Section 12P.6.2 of Chapter 12P.

25.8.7. Consultant understands and agrees that if it fails to comply with the requirements of the MCO, the City shall have the right to pursue any rights or remedies available under Chapter 12P (including liquidated damages), under the terms of the contract, and under applicable law. If, within 30 days after receiving written notice of a breach of this Agreement for violating the MCO, Consultant fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, Consultant fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, the City shall have the right to pursue any rights or remedies available under applicable law, including those set forth in Section 12P.6(c) of Chapter 12P. Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to the City.

25.8.8. Consultant represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the MCO.

25.8.9. If Consultant is exempt from the MCO when this Agreement is executed because the cumulative amount of agreements with this department for the fiscal year is less than \$25,000, but Consultant later enters into an agreement or agreements that cause Consultant to exceed that amount in a fiscal year, Consultant shall thereafter be required to comply with the MCO under this Agreement. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between the Consultant and this department to exceed \$25,000 in the fiscal year.

25.9. Requiring Health Benefits for Covered Employees. Consultant agrees to comply fully with and be bound by all of the provisions of the Health Care Accountability Ordinance (HCAO), as set forth in San Francisco Administrative Code Chapter 12Q, including the remedies provided, and implementing regulations, as the same may be amended from time to time. The provisions of Chapter 12Q are incorporated by reference and made a part of this Agreement as though fully set forth herein. The text of the HCAO is available on the web at www.sfgov.org/olse. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 12Q.

25.9.1. For each Covered Employee, Consultant shall provide the appropriate health benefit set forth in Section 12Q.3 of the HCAO. If Consultant chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission.

25.9.2. Notwithstanding the above, if the Consultant is a small business as defined in Section 12Q.3(e) of the HCAO, it shall have no obligation to comply with Subsection 25.9.1 above.

25.9.3. Consultant's failure to comply with the HCAO shall constitute a material breach of this agreement. City shall notify Consultant if such a breach has occurred. If, within 30 days after receiving City's written notice of a breach of this Agreement for violating the HCAO, Consultant fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, Consultant fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, City shall have the right to pursue the remedies set forth in 12Q.5.1 and 12Q.5(f)(1-6). Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to City.

25.9.4. Any Subcontract entered into by Consultant shall require the Subconsultant to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this Section. Consultant shall notify City's Office of Contract Administration when it enters into such a Subcontract and shall certify to the Office of Contract Administration that it has notified the Subconsultant of the obligations under the HCAO and has imposed the requirements of the HCAO on Subconsultant through the Subcontract. Each Consultant shall be responsible for its Subconsultants' compliance with this Chapter. If a Subconsultant fails to comply, the City may pursue the remedies set forth in this Section against Consultant based on the Subconsultant's failure to comply, provided that City has first provided Consultant with notice and an opportunity to obtain a cure of the violation.

25.9.5. Consultant shall not discharge, reduce in compensation, or otherwise discriminate against any employee for notifying City with regard to Consultant's noncompliance or anticipated noncompliance with the requirements of the HCAO, for opposing any practice proscribed by the HCAO, for participating in proceedings related to the HCAO, or for seeking to assert or enforce any rights under the HCAO by any lawful means.

25.9.6. Consultant represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the HCAO.

25.9.7. Consultant shall maintain employee and payroll records in compliance with the California Labor Code and Industrial Welfare Commission orders, including the number of hours each employee has worked on the City Contract.

25.9.8. Consultant shall keep itself informed of the current requirements of the HCAO.

25.9.9. Consultant shall provide reports to the City in accordance with any reporting standards promulgated by the City under the HCAO, including reports on Subconsultants and Subtenants, as applicable.

25.9.10. Consultant shall provide City with access to records pertaining to compliance with HCAO after receiving a written request from City to do so and being provided at least ten business days to respond.

25.9.11. Consultant shall allow City to inspect Consultant's job sites and have access to Consultant's employees in order to monitor and determine compliance with HCAO.

25.9.12. City may conduct random audits of Consultant to ascertain its compliance with HCAO. Consultant agrees to cooperate with City when it conducts such audits.

25.9.13. If Consultant is exempt from the HCAO when this Agreement is executed because its amount is less than \$25,000 (\$50,000 for nonprofits), but Consultant later enters into an agreement or agreements that cause Consultant's aggregate amount of all agreements with City to reach \$75,000, all the agreements shall be thereafter subject to the HCAO. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between Consultant and the City to be equal to or greater than \$75,000 in the fiscal year.

25.10. First Source Hiring Program.

25.10.1. Incorporation of Administrative Code Provisions by Reference. The provisions of Chapter 83 of the San Francisco Administrative Code are incorporated in this Section by reference and made a part of this Agreement as though fully set forth herein. Consultant shall comply fully with, and be bound by, all of the provisions that apply to this Agreement under such Chapter, including but not limited to the remedies provided therein. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 83.

25.10.2. First Source Hiring Agreement. As an essential term of, and consideration for, any contract or property contract with the City, not exempted by the FSHA, the Consultant shall enter into a first source hiring agreement ("agreement") with the City, on or before the effective date of the contract or property contract. Consultants shall also enter into an agreement with the City for any other work that it performs in the City. Such agreement shall:

(a) Set appropriate hiring and retention goals for entry level positions. The employer shall agree to achieve these hiring and retention goals, or, if unable to achieve these goals, to establish good faith efforts as to its attempts to do so, as set forth in the agreement. The agreement shall take into

consideration the employer's participation in existing job training, referral and/or brokerage programs. Within the discretion of the FSHA, subject to appropriate modifications, participation in such programs may be certified as meeting the requirements of this Chapter. Failure either to achieve the specified goal, or to establish good faith efforts will constitute noncompliance and will subject the employer to the provisions of San Francisco Administrative Code section 83.10.

(b) Set first source interviewing, recruitment and hiring requirements, which will provide the San Francisco Workforce Development System with the first opportunity to provide qualified economically disadvantaged individuals for consideration for employment for entry level positions. Employers shall consider all applications of qualified economically disadvantaged individuals referred by the System for employment; provided however, if the employer utilizes nondiscriminatory screening criteria, the employer shall have the sole discretion to interview and/or hire individuals referred or certified by the San Francisco Workforce Development System as being qualified economically disadvantaged individuals. The duration of the first source interviewing requirement shall be determined by the FSHA and shall be set forth in each agreement, but shall not exceed 10 days. During that period, the employer may publicize the entry level positions in accordance with the agreement. A need for urgent or temporary hires must be evaluated, and appropriate provisions for such a situation must be made in the agreement.

(c) Set appropriate requirements for providing notification of available entry level positions to the San Francisco Workforce Development System so that the System may train and refer an adequate pool of qualified economically disadvantaged individuals to participating employers. Notification should include such information as employment needs by occupational title, skills, and/or experience required, the hours required, wage scale and duration of employment, identification of entry level and training positions, identification of English language proficiency requirements, or absence thereof, and the projected schedule and procedures for hiring for each occupation. Employers should provide both long-term job need projections and notice before initiating the interviewing and hiring process. These notification requirements will take into consideration any need to protect the employer's proprietary information.

(d) Set appropriate record keeping and monitoring requirements. The First Source Hiring Administration shall develop easy-to-use forms and record keeping requirements for documenting compliance with the agreement. To the greatest extent possible, these requirements shall utilize the employer's existing record keeping systems, be nonduplicative, and facilitate a coordinated flow of information and referrals.

(e) Establish guidelines for employer good faith efforts to comply with the first source hiring requirements of this Chapter. The FSHA will work with City departments to develop employer good faith effort requirements appropriate to the types of contracts and property contracts handled by each department. Employers shall appoint a liaison for dealing with the development and implementation of the employer's agreement. In the event that the FSHA finds that the employer under a City contract or property contract has taken actions primarily for the purpose of circumventing the requirements of this Chapter 83 of

the San Francisco Administrative Code, that employer shall be subject to the sanctions set forth in that Chapter.

(f) Set the term of the requirements.

(g) Set appropriate enforcement and sanctioning standards consistent with this Chapter.

(h) Set forth the City's obligations to develop training programs, job applicant referrals, technical assistance, and information systems that assist the employer in complying with this Chapter.

(i) Require the developer to include notice of the requirements of this Chapter in leases, subleases, and other occupancy contracts.

25.10.3. Hiring Decisions. Consultant shall make the final determination of whether an Economically Disadvantaged Individual referred by the System is "qualified" for the position.

25.10.4. Exceptions. Upon application by Employer, the First Source Hiring Administration may grant an exception to any or all of the requirements of Chapter 83 in any situation where it concludes that compliance with this Chapter would cause economic hardship.

25.10.5. Liquidated Damages. Violation of the requirements of Chapter 83 is subject to an assessment of liquidated damages in the amount of \$5,000 for every new hire for an Entry Level Position improperly withheld from the first source hiring process. The assessment of liquidated damages and the evaluation of any defenses or mitigating factors shall be made by the FSHA. Consultant agrees:

(a) To be liable to the City for liquidated damages as provided in this Section;

(b) To be subject to the procedures governing enforcement of breaches of contracts based on violations of contract provisions required by this Chapter as set forth in this Section;

(c) That the Consultant's commitment to comply with this Chapter is a material element of the City's consideration for this contract; that the failure of the Consultant to comply with the contract provisions required by this Chapter will cause harm to the City and the public which is significant and substantial but extremely difficult to quantify; that the harm to the City includes not only the financial cost of funding public assistance programs but also the insidious but impossible to quantify harm that this community and its families suffer as a result of unemployment; and that the assessment of liquidated damages of up to \$5,000 for every notice of a new hire for an entry level position improperly withheld by the Consultant from the first source hiring process, as determined by the FSHA during its first investigation of a Consultant, does not exceed a fair estimate of the financial and other damages that the City suffers as a result of the Consultant's failure to comply with its first source referral contractual obligations.

(d) That the continued failure by a Consultant to comply with its first source referral contractual obligations will cause further significant and substantial harm to the City and the public, and that a second assessment of liquidated damages of up to \$10,000 for each entry level position improperly withheld from the FSHA, from the time of the conclusion of the first investigation forward, does not exceed the financial and other damages that the City suffers as a result of the Consultant's continued failure to comply with its first source referral contractual obligations;

(e) That in addition to the cost of investigating alleged violations under this Section, the computation of liquidated damages for purposes of this Section is based on the following data:

- The average length of stay on public assistance in San Francisco's County Adult Assistance Program is approximately 41 months at an average monthly grant of \$348 per month, totaling approximately \$14,379; and
- In 2004, the retention rate of adults placed in employment programs funded under the Workforce Investment Act for at least the first six months of employment was 84.4%. Since qualified individuals under the First Source program face far fewer barriers to employment than their counterparts in programs funded by the Workforce Investment Act, it is reasonable to conclude that the average length of employment for an individual whom the First Source Program refers to an employer and who is hired in an entry level position is at least one year;

(f) That the failure of Consultants to comply with this Chapter, except property Consultants, may be subject to the debarment and monetary penalties set forth in Sections 6.80 et seq. of the San Francisco Administrative Code, as well as any other remedies available under the contract or at law; and

(g) That in the event the City is the prevailing party in a civil action to recover liquidated damages for breach of a contract provision required by this Chapter, the Consultant will be liable for the City's costs and reasonable attorneys fees.

25.10.6. Subcontracts. Any subcontract entered into by Consultant shall require the subconsultant to comply with the requirements of Chapter 83 of the San Francisco Administrative Code and shall contain contractual obligations substantially the same as those set forth in this Section.

25.11. Prohibition of Political Activity with City Funds. No funds appropriated by the City for any contract, grant agreement or loan agreement may be expended for participating in, supporting, or attempting to influence a political campaign for any candidate or measure. Recipients of City funds will cooperate in audits conducted by the Chief Financial Officer to verify that no City funds were used for political purposes.

In accordance with San Francisco Administrative Code Chapter 12.G, Consultant may not participate in, support, or attempt to influence any political campaign for a candidate or for a ballot measure (collectively, "Political Activity") in the performance of the services provided under this Agreement. Consultant agrees to comply with San Francisco Administrative Code Chapter 12.G and any implementing rules and regulations promulgated by the City's Controller. The terms and provisions of Chapter 12.G are incorporated herein by this reference. In the event Consultant violates the provisions of this Section, the City may, in addition to any other rights or remedies available hereunder, (A) terminate this Agreement, and (B) prohibit Consultant from bidding on or receiving any new City contract for a period of two (2) years. The Controller will not consider Consultant's use of profit as a violation of this Section.

25.12. Services Provided by Attorneys. Any services to be provided as part of Consultant's services under this Agreement that are provided by a law firm or attorney retained by the Consultant must be reviewed and approved in writing in advance by the San Francisco City Attorney. No invoices for services provided by law firms or attorneys, including, without limitation, as subconsultants of Consultant, will be paid unless the provider received advance written approval from the City Attorney.

26. CONTRACT ADMINISTRATION AND CONSTRUCTION.

26.1. Notices to the Parties. Unless otherwise indicated elsewhere in this Agreement, all written communications sent by the parties may be by U.S. mail, e-mail or by fax, and shall be addressed as follows:

To SFMTA: Carter R. Rohan, R.A.
Central Subway Program Officer
Director, Capital Programs and Construction
San Francisco Municipal Transportation Agency
1 South Van Ness, 7th floor
San Francisco, CA 94103
Tel: 415-701-4282
Fax: 415-701-4300
carter.rohan@SFMTA.com

Shahnam Farhangi
Division Deputy, Contract Administration
and Quality Management
San Francisco Municipal Transportation Agency
1 South Van Ness, 3rd floor
San Francisco, CA 94103
Tel: 415-701-4284
Fax: 415-701-4300
shahnam.farhangi@SFMTA.com

To Consultant: Anthony Marraro
Principal-in-Charge HNTB - B&C JV
1330 Broadway, Suite 1630
Oakland, CA 94612
Tel: 510-587-8709
Fax: 510-208-4595

Any notice of default must be sent by registered mail.

26.2. Assignment. The services to be performed by Consultant are personal in character and neither this Agreement nor any duties or obligations hereunder may be assigned or delegated by the Consultant unless first approved by City by written instrument executed and approved as required by SFMTA policy and City law. Consultant and the partners of any joint venture or association that constitute the Consultant or any of the Consultant's subconsultants may incorporate or change their business names, and such actions shall not be considered an assignment for purposes of this Agreement provided such incorporation or name change does not decrease that entity's obligation or liability under this Agreement.

26.3. Successors and Assigns. This Agreement shall be binding upon the City and the Consultant and their respective successors and assigns. Neither the performance of this Agreement nor any part thereof, nor any funds due or to become due there under may be assigned by the Consultant without the prior written consent and approval of the City.

26.4. Non-Waiver of Rights. The omission by either party at any time to enforce any default or right reserved to it, or to require performance of any of the terms, covenants, or provisions hereof by the other party at the time designated, shall not be a waiver of any such default or right to which the party is entitled, nor shall it in any way affect the right of the party to enforce such provisions thereafter.

26.5. Modification of Agreement. This Agreement may not be modified, nor may compliance with any of its terms be waived, except by written instrument executed and approved as required by the terms of this Agreement or as otherwise required by law.

26.6. Agreement Made in California; Venue. The formation, interpretation and performance of this Agreement shall be governed by the laws of the State of California. Venue for all litigation relative to the formation, interpretation and performance of this Agreement shall be in San Francisco or as provided by Code of Civil Procedure Section 394; the venue for litigation in a county other than San Francisco pursuant to Section 394 will be Alameda County.

26.7. Construction of Agreement.

26.7.1. All article or section titles and paragraph captions are for reference only and shall not be considered in construing this Agreement. This Agreement is the result of and memorializes a negotiated contract between the Parties, each of which is experienced and knowledgeable in professional services contracting for public works architectural and engineering design, construction support and related services, and each of which was represented by and had the assistance of legal counsel of its choosing. No rule of construction in which an ambiguity in a contract is construed against the drafter shall be applied to interpret this Agreement or the Parties' intentions thereto.

26.7.2. The Agreement is comprised of this document, the documents incorporated by reference hereto, the Included Appendices, and to the extent necessary to clarify an ambiguity, the RFP. In case of conflict between any of said documents, this document shall have precedence. In the case of any ambiguity or conflict as to a requirement or specification set out in Appendix A or other document determining a deliverable, task or deadline, the SFMTA Program Manager shall make the final and binding determination.

26.7.3. For avoidance of doubt, in any part of this Agreement where the Party responsible for performing a task or the Party that has an affirmative duty to progress the Work is not clearly identified, the Party responsible for performing said task or that has such an affirmative duty shall be presumed to be the Consultant. The City shall be presumed to be recipient and/or beneficiary of the performance of such tasks and meeting of such duties. The City shall have be responsible for performing a task or meeting an obligation only where: (a) the operative language of the Agreement so specifies that the City is the responsible actor; (b) only the City has the authority to take the required action and such authority cannot be delegated to the Consultant; and (c) the task or portion of the work at issue is not at all addressed in the Agreement and cannot by reasonable construction of the Agreement be a responsibility implied or arising from a specified task or duty.

26.8. Entire Agreement. This Agreement and its listed Attachments and other documents incorporated by reference constitute an integrated document that sets forth the entire agreement between the parties as to the matters addressed therein, and the provisions of this Agreement and its listed Attachments supersede all other oral or written provisions, drafts of the Agreement. This contract may be modified only as provided in Section 8.

26.9. Compliance with Laws. Consultant shall keep itself fully informed of the City's Charter, codes, ordinances and regulations of the City and of all state, and federal laws in any manner affecting the performance of this Agreement, and must at all times comply with such local codes, ordinances, and regulations and all applicable laws as they may be amended from time to time.

26.10. Disputes and Resolution.

26.10.1. Notice of Dispute. For any dispute involving a question of fact that does not involve a claim for additional compensation, the aggrieved Party shall furnish the other Party with a notice of dispute within fifteen (15) working days of the determination of the dispute. The Party receiving a notice of dispute shall submit a written reply with fourteen (14) working days of delivery of the notice. The notice and response shall contain the following: (a) a statement of the Party's position and a summary of the arguments supporting that position, and (b) any evidence supporting the Party's position.

26.10.2. Resolution of Disputes. Disputes arising in the performance of this Agreement that are not resolved by negotiation between the SFMTA Program Manager and Consultant's Project Manager shall be decided in writing by the SFMTA Senior Manager of Contract and Quality Management. The decision shall be administratively final and conclusive unless within ten (10) days from the date of such decision, the Consultant mails or otherwise furnishes a written appeal to the SFMTA Program Officer, or his/her designee. In connection with such an appeal, the Consultant shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the SFMTA Program Officer shall be administratively final and conclusive. This Section applies to all disputes unless a specific provision of this Agreement provides that the SFMTA Program Manager's decision as to a particular dispute is final.

26.10.3. No Cessation of Work. Pending final resolution of a dispute hereunder, the Consultant shall proceed diligently with the performance of its obligations under this Agreement in accordance with the written directions of the SFMTA Program Manager.

26.10.4. Alternative Dispute Resolution. If agreed to by both Parties, disputes may be resolved by a mutually agreed to alternative dispute resolution process.

26.10.5. Claims for Additional Compensation. For disputes involving a claim for additional compensation, parties involved shall attempt to resolve such disputes expediently and in good faith so as not to impact the performance or schedule of the Project. Under no circumstances shall the Consultant or its sub-consultants stop work due to an unresolved dispute.

26.10.6. Disputes among Consultant Partners. If Consultant is a joint venture partnership, the resolution of any contractual disputes related to Consultant's joint venture or association partners (if any) shall be the sole responsibility of the Consultant, and Consultant shall not allow any such dispute to impact Consultant's performance of the Contract or otherwise delay the Project. Any such disputes that impact the Project shall be cause for the City to withhold and/or reduce invoice payments to the Consultant's Joint Venture or Association firms until the dispute is resolved.

26.11. Mutual Agreement. This Agreement is the product of negotiations between the Parties. Each Party represents that it is a sophisticated and experienced participant in contracting for public works. Each Party has been represented by legal counsel of their choosing. Each Party represents that it has read and understands this Agreement, and enters into this Agreement of its own free-will and without coercion of any kind. The Parties agree that this Agreement shall not be subject to any rule of contract construction that may hold or would result in any ambiguity of any provision of this Agreement being held against the drafter of said provision.

26.12. Severability. Should the application of any provision of this Agreement to any particular facts or circumstances be found by a court of competent jurisdiction to be invalid or unenforceable, then (a) the validity of other provisions of this Agreement shall not be affected or impaired thereby, and (b) such provision shall be enforced to the maximum extent possible so as to effect the intent of the parties and shall be reformed without further action by the parties to the extent necessary to make such provision valid and enforceable.

26.13. No Third Party Beneficiary. This Agreement is intended for the sole benefit of the City and the Consultant, and is not intended to create any third-party rights or benefits.

26.14. Signatories Authorized. By signing below, each signatory warrants that he or she is authorized to execute this Agreement and thereby bind the Party he or she represents.

27. ENVIRONMENTAL REQUIREMENTS.

27.1. Resource Efficiency and Conservation. Consultant shall adhere to the extent practicable to all requirements of Chapter 82 Resource Efficiency Requirements for City-owned Facilities (Green Building Ordinance), attached hereto as Attachment J. Chapter 5 of the San Francisco Environment Code ("Resource Conservation") is incorporated herein by reference. Failure by Consultant to comply with any of the applicable requirements of Chapter 5 specifically required by the SFMTA may be deemed a material breach of contract.

27.2. Preservative-Treated Wood Containing Arsenic. Consultant shall not purchase preservative-treated wood products containing arsenic in the performance of this Agreement unless an exemption from the requirements of Chapter 13 of the San Francisco

Environment Code is obtained from the Department of the Environment under Section 1304 of the Code. The term "preservative-treated wood containing arsenic" shall mean wood treated with a preservative that contains arsenic, elemental arsenic, or an arsenic copper combination, including, but not limited to, chromated copper arsenate preservative, ammoniacal copper zinc arsenate preservative, or ammoniacal copper arsenate preservative. Consultant may purchase preservative-treated wood products on the list of environmentally preferable alternatives prepared and adopted by the Department of the Environment. This provision does not preclude Consultant from purchasing preservative-treated wood containing arsenic for saltwater immersion. The term "saltwater immersion" shall mean a pressure-treated wood that is used for construction purposes or facilities that are partially or totally immersed in saltwater.

27.3. Graffiti Removal. Graffiti is detrimental to the health, safety and welfare of the community in that it promotes a perception in the community that the laws protecting public and private property can be disregarded with impunity. This perception fosters a sense of disrespect of the law that results in an increase in crime; degrades the community and leads to urban blight; is detrimental to property values, business opportunities and the enjoyment of life; is inconsistent with the City's property maintenance goals and aesthetic standards; and results in additional graffiti and in other properties becoming the target of graffiti unless it is quickly removed from public and private property. Graffiti results in visual pollution and is a public nuisance. Graffiti must be abated as quickly as possible to avoid detrimental impacts on the City and County and its residents, and to prevent the further spread of graffiti.

Consultant shall remove all graffiti from any real property owned or leased by Consultant in the City and County of San Francisco within forty eight (48) hours of the earlier of Consultant's (a) discovery or notification of the graffiti or (b) receipt of notification of the graffiti from the Department of Public Works. This Section is not intended to require a Consultant to breach any lease or other agreement that it may have concerning its use of the real property. The term "graffiti" means any inscription, word, figure, marking or design that is affixed, marked, etched, scratched, drawn or painted on any building, structure, fixture or other improvement, whether permanent or temporary, including by way of example only and without limitation, signs, banners, billboards and fencing surrounding construction sites, whether public or private, without the consent of the owner of the property or the owner's authorized agent, and which is visible from the public right-of-way. "Graffiti" shall not include: (1) any sign or banner that is authorized by, and in compliance with, the applicable requirements of the San Francisco Public Works Code, the San Francisco Planning Code or the San Francisco Building Code; or (2) any mural or other painting or marking on the property that is protected as a work of fine art under the California Art Preservation Act (California Civil Code Sections 987 et seq.) or as a work of visual art under the Federal Visual Artists Rights Act of 1990 (17 U.S.C. §§ 101 et seq.).

Any failure of Consultant to comply with this Section of this Agreement shall constitute an Event of Default of this Agreement.

27.4. Food Service Waste Reduction Requirements. Consultant agrees to comply fully with and be bound by all of the provisions of the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 16 are incorporated herein by reference and made a part of this Agreement as though fully set forth. This provision is a material term of this Agreement. By entering into this Agreement, Consultant agrees that if it breaches this provision, City will suffer actual damages that will be impractical or extremely difficult to determine; further, Consultant agrees that the sum of one hundred dollars (\$100) liquidated damages for the first breach, two hundred dollars (\$200) liquidated damages for the

second breach in the same year, and five hundred dollars (\$500) liquidated damages for subsequent breaches in the same year is reasonable estimate of the damage that City will incur based on the violation, established in light of the circumstances existing at the time this Agreement was made. Such amount shall not be considered a penalty, but rather agreed monetary damages sustained by City because of Consultant's failure to comply with this provision.

27.5. Tropical Hardwood and Virgin Redwood Ban. Pursuant to §804(b) of the San Francisco Environment Code, the City and County of San Francisco urges its contractors and consultants not to import, purchase, obtain, or use for any purpose, any tropical hardwood, tropical hardwood wood product, virgin redwood or virgin redwood wood product.

27.6. Recycled Products. Consultant shall use recycled products, as set out in Sections 28.10 and 28.19, below.

28. FEDERAL REQUIREMENTS.

28.1. Federal Contract Requirements and Applicable Law. The provisions set out this Section 28 are required by federal law. If there is any conflict between said provisions or any federal law, regulation or requirement, including such limitations and requirements as the FTA may impose, such federal requirements, terms and conditions shall take precedence over any terms and conditions set out in this Agreement. The City and County of San Francisco is a chartered City and County with home rule powers under the Constitution of the State of California. The terms of this Agreement are governed by California Law and the ordinances and Charter of the City and County of San Francisco. Except as expressly provided for in this Agreement, the Federal Acquisition Regulations (FAR) shall not apply to this Agreement, except as to provide guidance as to accounting and auditing standards, including but not limited to calculation of compensable costs and overhead.

28.2. Incorporation of Federal Transit Administration (FTA) Terms.

28.2.1. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F, (http://www.fta.dot.gov/laws/circulars/leg_reg_8641.html), as amended and the Master Grant Agreement (<http://www.fta.dot.gov/documents/15-Master.pdf>), are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Consultant shall not perform any act, fail to perform any act, or refuse to comply with any SFMTA request that would cause SFMTA to be in violation of the FTA terms and conditions.

28.2.2. The FTA Master Agreement obligates SFMTA to incorporate certain provisions into this Agreement and any lower tier subcontracts at any level and to take appropriate measures to ensure that Consultant and its lower tier subconsultants at any level comply with certain applicable requirements set forth in the Master Agreement. The FTA Master Agreement is hereby incorporated by reference into this Agreement, and Consultant shall comply with all such requirements.

28.2.3. Copies of the FTA Master Agreement are available from SFMTA.

28.3. Applicability of Federal Grant Contract.

28.3.1. This procurement may be subject to one or more financial assistance contracts between SFMTA and the U.S. Department of Transportation, which incorporate the current FTA Master Agreement and Circular 4220.1F as amended. U.S. Department of Transportation's level of financial assistance may be between zero and eighty percent (0-80%). The Consultant is required to comply with all terms and conditions prescribed for third party contracts in these documents.

28.3.2. Federal laws, regulations, policies and administrative practices may be modified or codified after the date this Agreement is established and may apply to this Agreement. To assure compliance with changing federal requirements, Contract Award indicates that the Consultant agrees to accept all changed requirements that apply to this Agreement.

28.4. Federal Funding Limitation. Consultant understands that funds to pay for Consultant's performance under this Agreement are anticipated to be made available from the United States Department of Transportation through the Federal Transit Administration (FTA). All funds must be approved and administered by FTA. SFMTA's obligation hereunder is payable from funds that are appropriated and allocated by FTA for the performance of this Agreement. If funds are not allocated, or ultimately are disapproved by FTA, SFMTA may terminate or suspend Consultant's services without penalty or obligation other than those specifically provided for in Section 19.2 of this Agreement as a termination for convenience. SFMTA shall notify Consultant promptly in writing of the non-allocation, delay, or disapproval of funding.

28.5. No Federal Government Obligation to Third Parties. Consultant agrees that, absent the Federal Government's express written consent, the Federal Government shall not be subject to any obligations or liabilities to any subrecipient, any third party contractor, or any other person not a party to the Grant Agreement in connection with this Project. Notwithstanding any concurrence provided by the Federal Government in or approval of any solicitation, subagreement, or third party contract, the Federal Government continues to have no obligations or liabilities to any party, including a subrecipient or third party contractor.

28.6. Federal Lobbying Restrictions.

28.6.1. This Agreement is subject to Section 319, Public Law 101-121 (31 U.S.C. §1352) and U.S. DOT regulations "New Restrictions on Lobbying," 49 C.F.R. Part 20, which prohibits Federal funds from being expended to influence or to attempt to influence an officer or employee of any agency, members of Congress, an office or employee of Congress or an employee of any Member of Congress in connection with the awarding of any federally funded contract, the making of any Federal grant or loan, or entering into any cooperative agreement and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. Consultants and Subconsultants at any time who apply or bid for an award of \$100,000 or more shall file the certification required by 49 C.F.R. Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or any employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient. The Consultant shall submit the "Certification Regarding Lobbying" included in this document.

The Consultant's signature on this certification shall certify that: a) it has not engaged in the prohibited activity and b) the language of the certification shall be included in all lower tier subcontracts, which exceed \$100,000, and that all such subconsultants shall certify and disclose accordingly. SFMTA is responsible for keeping the certification form of the Consultant, who is in turn responsible for keeping the certification forms of subconsultants. Further, by executing the Agreement, the Consultant agrees to comply with these laws and regulations.

28.6.2. If the Consultant has engaged in any lobbying activities to influence or attempt to influence the awarding of this Agreement, the Consultant must disclose these activities. In such a case, the Consultant shall complete Standard Form SF-LLL, "Disclosure of Lobbying Activities". SFMTA must also receive all disclosure forms.

28.6.3. The Consultant and any subconsultants shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of a previously filed disclosure form. An event that materially affects the accuracy of the information reported includes:

(a) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence this federally funded Agreement; or

(b) A change in the person(s) influencing or attempting to influence this federally funded Agreement; or

(c) A change in the officer(s), employee(s) or member contracted to influence or attempt to influence this federally funded Agreement.

28.7. Lobbying Certification and Disclosure. Pursuant to 49 C.F.R. Part 20 (which is by this reference incorporated herein), the Consultant shall execute and return the Certification Regarding Lobbying by Consultant form set forth in Attachment H with the execution of this agreement.

28.8. Certification Regarding Debarment, Suspension And Other Responsibility Matters.

28.8.1. Pursuant to Executive Order 12549 and 12689, "Debarment and Suspension," 31 USC § 6101 and federal regulations in 49 C.F.R. 29, entities and individuals who are debarred or suspended by the federal government are excluded from obtaining federal assistance funds under this Contract. To assure that such entities and individuals are not involved as participants on this FTA-financed contract, if the contract exceeds \$25,000 each Consultant shall complete and submit, as part of its Proposal, the certification form, contained in these documents. The inability of a Consultant to provide a certification will not necessarily result in denial of consideration for contract award. A Consultant that is unable to provide a certification must submit a complete explanation attached to the certification form. Failure to submit a certification or explanation may disqualify the Consultant from participation under this Contract. SFMTA, in conjunction with FTA, will consider the certification or explanation in determining contract award. No contract will be awarded to a potential third-party contractor submitting a conditioned debarment or suspension certification, unless approved by the FTA.

28.8.2. The certification is a material representation of fact upon which reliance is placed in determination of award of contract. If at any time the Consultant learns that its

certification was erroneous when submitted or has become erroneous by reason of changed circumstances, it shall immediately provide written notice to SFMTA. If it is later determined that the Consultant knowingly rendered an erroneous certification, or failed to notify SFMTA immediately of circumstances which made the original certification no longer valid, SFMTA may disqualify the Consultant. If it is later determined that the Consultant knowingly rendered an erroneous certification, or failed to notify SFMTA immediately of circumstances which made the original certification no longer valid, SFMTA may terminate the contract, in addition to other remedies available including FTA suspension and/or debarment.

28.8.3. Further, the Consultant shall not knowingly enter into any subcontract with an entity or person who is proposed for debarment under 48 C.F.R. Part 9, Subpart 9.4, debarred, suspended, or who has been declared ineligible from obtaining federal assistance funds. As such, the Consultant shall require all subconsultants seeking subcontracts to complete and submit the same certification form contained in these documents before entering into any agreement with said subconsultant.

28.9. Exclusionary Or Discriminatory Specifications. Apart from inconsistent requirements imposed by Federal statute or regulations, the Consultant agrees that it will comply with the requirement of 49 U.S.C. § 5323(h)(2) by refraining from using any Federal assistance awarded by FTA to support procurements using exclusionary or discriminatory specifications.

28.10. Conservation. The Consultant shall recognize mandatory standards and policies relating to energy efficiency that are contained in the State Energy Action plan issued in compliance with the Energy Policy and Conservation Act (42 USC Section 6321 et seq.).

28.11. Clean Water. The Consultant agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Consultant agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. The Consultant also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

28.12. Clean Air. The Consultant agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. The Consultant agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. The Consultant also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

28.13. Fly America. International air transportation of any persons involved in or property acquired for the Project must be provided by U.S. flag air carriers to the extent service by these carriers is available, as required by the International Air Transportation Fair Competitive Practices Act of 1974, as amended, 49 U.S.C. 40118, in accordance with U.S. GAO regulations, "Uniform Standards and Procedures for Transportation Transactions," 4 C.F.R. Part 52; and U.S. GAO Guidelines for Implementation of the "Fly America Act" B-138942, 1981 U.S. Comp. Gen. LEXIS 2166. March 31, 1981.

28.14. Seismic Safety. The Consultant agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 C.F.R. Part 41 and will certify to compliance to the extent required by the regulation. The Consultant also agrees to ensure that all work performed under this Contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the Project.

28.15. National Intelligent Transportation Systems Consultanture and Standards. The Consultant agrees to conform, to the extent applicable, to the National Intelligent Transportation Systems (ITS) Consultanture and Standards as required by Section 5206(e) of TEA-21, 23 U.S.C. § 502-, and with FTA Notice, "Federal Transit Administration National ITS Consultanture Policy on Transit Projects" 66 Fed. Reg. 1455 et seq., January 8, 2001, and other subsequent Federal directives that may be issued.

28.16. Electronic and Information Technology. When providing reports or other information to the SFMTA, or to the Federal Transit Administration (FTA), among others, on behalf of the SFMTA, the Consultant agrees to prepare such reports or information using electronic or information technology capable of assuring that the reports or information delivered will meet the applicable accessibility standards of Section 508 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794d, and U.S. ATBCB regulations, "Electronic and Information Technology Accessibility Standards," 36 C.F.R. Part 1194.

28.17. Nondiscrimination. In addition to the provisions prohibiting discrimination set out in Sections 10.4 and 24.1, above, the Consultant shall ensure compliance by it and its subconsultants with all requirements imposed by Title VI of the Civil Rights Act of 1964 (42 USC 2000d), federal Executive Order No. 11246, regulations of the U. S. Department of Labor issued thereunder, the regulations of the federal Department of Transportation issued thereunder, and the Americans with Disabilities Act, as they may be amended from time to time. Accordingly, during the performance of this Agreement, the Consultant, for itself, its assignees, and successors in interest (hereinafter referred to as the "Consultant"), agrees as follows:

28.17.1. The Consultant shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation (hereinafter "DOT"), Title 49, Code of Federal Regulations, Part 21 ("Nondiscrimination in Federally-Assisted Programs of the Dept. of Transportation"), as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.

28.17.2. In all solicitations either by competitive bidding or negotiation made by the Consultant for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subconsultant or supplier shall be notified by the Consultant of the Consultant's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, religion, creed, sex, sexual orientation, disability, age, or nationality.

28.17.3. The Consultant shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by SFMTA or FTA to be pertinent to ascertain compliance with such regulations, orders, and instructions. Where any information is required of a contractor or subconsultant that is in the exclusive possession of

another who fails or refuses to furnish this information, the Consultant shall so certify to SFMTA, or FTA, as appropriate, and shall set forth what efforts it has made to obtain the information.

28.17.4. In the event of the Consultant's noncompliance with the nondiscrimination provisions of this Agreement, SFMTA shall impose such contract sanctions as it or FTA may determine to be appropriate, including, but not limited to:

- (a) Requiring the Consultant to take remedial action to bring the Consultant into compliance;
- (b) Withholding of payments to the Consultant under the Agreement until the Consultant complies; and/or
- (c) Cancellation, termination, or suspension of the Agreement, in whole or in part.

28.17.5. The Consultant shall include the provisions of these Subsections 28.17.1 to 28.17.4 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Consultant shall take such action with respect to any subcontract or procurement as SFMTA or FTA may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that, in the event the Consultant becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, the Consultant may request SFMTA to enter into such litigation to protect the interests of SFMTA and, in addition, the Consultant may request the United States to enter into such litigation to protect the interest of the United States.

28.18. Title VI Compliance. During the performance of this Agreement, Consultant, for itself, its assignees, and its successors in interest agrees as follows:

28.18.1. Compliance with Regulations: Consultant shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.

28.18.2. Nondiscrimination: Consultant, with regard to the work performed by it during the Agreement, shall not discriminate on the grounds of race, religion, color, sex, age, or national origin in the selection and retention of subconsultants, including procurement of materials and leases of equipment. Consultant shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Agreement covers a program set forth in Appendix B of the Regulations.

28.18.3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by Consultant for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subconsultant or supplier shall be notified by Consultant of Consultant's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, religion, color, sex, age, or national origin.

28.18.4. Information and Reports: Consultant shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access

to its books, records, accounts, other sources of information, and its facilities as may be determined by SFMTA or the FTA to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of Consultant is in the exclusive possession of another who fails or refuses to furnish this information, Consultant shall so certify to SFMTA, or the FTA as appropriate, and shall set forth what efforts it has made to obtain the information.

28.18.5. Sanctions for Noncompliance: In the event of Consultant's noncompliance with the nondiscrimination provisions of this Agreement, SFMTA shall impose such contract sanctions as it or the FTA may determine to be appropriate, including, but not limited to:

(a) Withholding of payments to Consultant under the Agreement until Consultant complies, and/or,

(b) Cancellation, termination or suspension of the Agreement, in whole or in part.

28.18.6. Incorporation of Provisions: Consultant shall include the provisions of Subsection 28.18.1 through 28.18.5 of this Section in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. Consultant shall take such action with respect to any subcontract or procurement as SFMTA or the FTA may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that, in the event Consultant becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, Consultant may request SFMTA to enter into such litigation to protect the interests of SFMTA, and, in addition, Consultant may request the United States to enter into such litigation to protect the interests of the United States.

28.19. Requirements of Americans with Disabilities Act. The Consultant is required to comply with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA), 42 USC §§ 12101, et seq.; Section 504 of the Rehabilitation Act of 1973, as amended, 29 USC § 794; and 49 USC § 5301(d), and the following regulations and any amendments thereto:

28.19.1. U.S. Department of Transportation regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 C.F.R. Part 37;

28.19.2. U.S. Department of Transportation regulations, "Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance," 49 C.F.R. Part 27;

28.19.3. U.S. Department of Justice (DOJ) regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;

28.19.4. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;

28.19.5. U.S. General Services Administration regulations, "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19;

28.19.6. U.S. Equal Employment Opportunity Commission (EEOC) "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630;

28.19.7. U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for Persons with Disabilities," 47 C.F.R. Part 64, Subpart F; and

28.19.8. FTA regulations, "Transportation for Elderly and Handicapped Persons," 49 C.F.R. Part 609.

28.19.9. Any implementing requirements that the FTA may issue.

28.20. Recycled Products. To the extent practicable and economically feasible, the Consultant agrees to provide a competitive preference for recycled products to be used in the Project pursuant to the U.S. Environmental Protection Agency Guidelines at 40 C.F.R. Parts 247, implementing Section 6002 of the Resource Conservation and Recovery Act, as amended, 42 USC § 6962. If possible, the Consultant shall use both sides of paper sheets for copying and printing and shall use recycled/recyclable products wherever practical at the fulfillment of this Agreement.

28.21. Privacy.

28.21.1. Should the Consultant, or any of its subconsultants, or their employees administer any system of records on behalf of the federal government, the Privacy Act of 1974, 5 USC § 552a, imposes restrictions on the party administering the system of records.

28.21.2. For purposes of the Privacy Act, when the Agreement involves the operation of a system of records on individuals to accomplish a government function, SFMTA and any Consultants, third-party contractors, subcontractors, and their employees involved therein are considered to be government employees with respect to the government function. The requirements of the Act, including the civil and criminal penalties for violations of the Act, apply to those individuals involved. Failure to comply with the terms of the Act or this provision of this Agreement will make this Agreement subject to termination.

28.21.3. The Consultant agrees to include this clause in all subcontracts awarded under this Agreement that require the design, development, or operation of a system of records on individuals subject to the Act.

28.22. False or Fraudulent Statements and Claims.

28.22.1. The Consultant recognizes that the requirements of the Program Fraud Civil Remedies Act of 1986, as amended, 49 U.S.C. §§ 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Accordingly, by signing this Agreement, the Consultant certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may make pertaining to the covered Grant Agreement, Cooperative agreement, Contract or Project. In addition to other penalties that may be applicable, the Consultant acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, on the Consultant, to the extent the Federal Government deems appropriate.

28.22.2. The Consultant also acknowledges that it if makes a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government in connection with an urbanized area formula project financed with Federal assistance authorized by 49 U.S.C. § 5307, the Government reserves the right to impose on the Consultant the penalties of 18 U.S.C. § 1001, 31 USC §§ 3801, et seq., and 49 U.S.C. § 5307(n)(1), to the extent the Federal Government deems appropriate.

28.22.3. The Consultant agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subconsultant who will be subject to the provisions.

28.23. Drug-Free Workplace Policy. Consultant acknowledges that pursuant to the Federal Drug-Free Workplace Act of 1989, 41 U.S.C. 702, the unlawful manufacture, distribution, dispensation; possession, or use of a controlled substance is prohibited on City premises. Consultant agrees that any violation of this prohibition by Consultant, its employees, agents or assigns will be deemed a material breach of this Agreement.

28.24. Approval by Counterparts. This Agreement may be approved by counterparts signed by parties' respective authorized representatives which shall be considered a single document. Counter parts may be delivered by facsimile, PDF email, or courier.

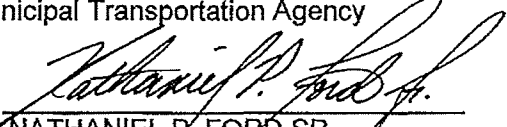
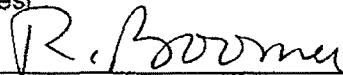

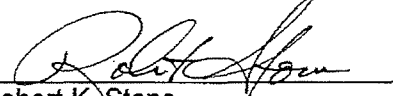

29. INCLUDED APPENDICES.

The following documents included as Appendices to this Agreement are incorporated by reference as if fully set out herein.

- A. Scope of Services/Scope of Work
- B. Directory of Subconsultants
- C. Summary of Fees - Cost Breakdown/Schedule of Charges
- D. Other Direct Costs
- E. Organization Chart
- F. SBE Forms
- G. Small Business Enterprise (SBE) Program
- H. Overhead Rates for Field and Home Office Personnel
- I. Central Subway Design Control Procedures
- J. Central Subway Master Project Schedule
- K. Surface, Trackway and Systems Construction Contract Package (CP-7) Description

The remainder of this page is intentionally left blank.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day first mentioned above.

CITY	CONSULTANT
City and County of San Francisco Municipal Transportation Agency	By signing this Agreement, Consultants each certifies that it complies with the requirements of the Minimum Compensation Ordinance, which entitle Covered Employees to certain minimum hourly wages and compensated and uncompensated time off.
By  NATHANIEL P. FORD SR. Executive Director/CEO	Each Consultant has read and understands paragraph 35, the City's statement urging companies doing business in Northern Ireland to move towards resolving employment inequities, encouraging compliance with the MacBride Principles, and urging San Francisco companies to do business with corporations that abide by the MacBride Principles.
SFMTA Board of Directors Resolution No. _____ Adopted: _____ Attest:  Roberta Boomer, Secretary SFMTA Board of Directors	 Anthony Marjaro Vice President HNTB Corporation, a Partner of HNTB-B&C Joint Venture Partnership Federal Employer ID No. 43-1623092
Approved as to Form: Dennis J. Herrera City Attorney By  Robert K. Stone Deputy City Attorney	 Alberto Fernandez President B&C Transit, Inc. a Partner of HNTB-B&C Joint Venture Partnership Federal Employer ID No. 65-0307428

APPENDIX A

SIGNED SCOPE OF SERVICES / SCOPE OF WORK

Central Subway Project – Design Package #3

Contract No. CS-155-3

Appendix A
Scope of Services
Design Package 3 (DP3)

Table of Contents

General Overview.....	1
Submittals	2
PART A– CENTRAL SUBWAY PROJECT (CSP) SCOPE OF WORK	5
1.0 Project Management and Control	5
1.10 Final Design Strategic Execution Plan / Baseline Schedule.....	5
1.20 Project Control Reporting.....	8
1.30 Invoicing.....	8
1.40 Compliance Support	9
1.50 Project Management.....	9
2.0 Design and Project Integration	11
2.10 Design Interfacing and Integration Management	11
2.20 Third Party Coordination	12
2.30 Coordination of Design Performed by City Staff.....	13
2.40 Systems Design Coordination.....	14
2.50 Coordination with Art for Transit (Optional Service)	16
2.60 Community Outreach	16
2.70 Other Coordination Activities.....	17
2.80 Safety and Security	18
2.90 Sustainability.....	19
3.10 Supplemental Geotechnical Investigations	21
3.20 Geotechnical Data Report.....	21
3.30 Geotechnical Characterization Report	21
3.40 Geotechnical Baseline Reports (GBR).....	21
4.0 Surveying and Right-Of-Way.....	21
4.10 Surveying	21
5.0 Traffic Engineering (Optional Services).....	22
5.10 Traffic Engineering Report (Optional Services).....	22
5.20 Traffic Plans (Optional Services).....	22
6.0 Utility Design Coordination	23
6.10 Utility Location and Owner Coordination.....	23
6.20 Settlement Impacts on Utilities.....	24
7.0 Drainage (Optional Services)	24
7.10 Drainage Design Report (Optional Services)	24
8.0 Permits	25
8.10 Code Analyses and Permit Compliance.....	25
9.0 Contract Specifications.....	26

9.10 Special Provision and General Requirements Specification Reviews.....	26
9.20 Technical Specifications.....	27
10.0 Cost Estimate and Scheduling	27
10.10 Cost Estimate & Schedule Review During Design	28
10.20 Design Change Estimates.....	29
10.30 Construction Quantity and Cost Estimates.....	29
11.0 Quality Control Management.....	30
12.0 Drawings and Documents	32
12.01 Civil Plans	32
12.02 Utility Plans	33
12.03 Traffic Plans (Optional Services).....	34
12.04 Structural.....	34
12.05 Architectural Plans (Optional Services).....	35
12.06 Urban Design	35
12.07 Public Art (Optional Services)	35
12.08 Signage.....	36
12.09 Elevators and Escalators (Not applicable to DP3)	37
12.10 Acoustics, Noise and Vibration	37
12.11 Mechanical.....	37
12.12 Electrical	38
12.13 Systems	39
12.14 Control Center Facilities -.....	41
12.15 Verification / Validation Report.....	43
12.16 Design Transmittal	43
12.17 Historic Architectural Services	43
12.18 Safety and Security.....	44
12.19 Other Tasks (Optional Services)	44
12.20 CADD Manager.....	44
12.30 PC Support Technician	45
13.0 Construction Packaging and Schedules.....	45
13.10 Construction Contracting Strategy Review and Comment.....	45
13.20 Construction Schedule Review	46
14.0 Outreach Support.....	46
14.10 Graphics Support for Outreach	46
15.0 Bid Support Services.....	47
15.10 Bid Support	47
16.0 Design Services During Construction.....	48
16.10 Construction Support Strategic Execution Plan	49
16.20 Design Team Support.....	49
16.30 Shop Drawings Review, Technical Support and Consultation during construction.....	49
16.40 Field Visits / Meetings	50
16.50 Change Proposals / Value Engineering	51
16.60 Conformed Contract Documents.....	51

16.70 Operations and Maintenance Manuals.....	52
16.80 Warranty Services (Optional Services)	52
PART B – OPERATIONS CONTROL CENTER SYSTEMS REPLACEMENT	
PROGRAM SCOPE OF WORK.....	53
B1.0 Project Management and Control	59
B1.10 Design Strategic Execution Plan / Baseline Schedule.....	60
B1.20 Project Control Reporting	61
B1.30 Invoicing	62
B1.40 Compliance Support.....	62
B1.50 Project Management.....	62
B2.0 Design and Project Integration.....	63
B2.10 Design Interfacing and Integration Management.....	63
B2.20 Third Party Coordination.....	65
B2.30 Coordination of Design Performed by City Staff (Not Applicable).....	65
B2.40 Systems Design Coordination (Not Applicable).....	65
B2.50 Coordination with Art for Transit (Not Applicable).....	65
B2.60 Community Outreach (Not Applicable)	65
B2.70 Other Coordination Activities.....	66
B2.80 Safety and Security.....	66
B2.90 Sustainability, LEED	67
B2.91 Integrated Systems Replacement Conceptual Engineering Report (CER)	67
B2.92 Interim Primary OCC Implementation.....	70
B2.93 Business Process Review (BPR).....	77
B2.94 New Primary OCC Design (Optional Services).....	79
B2.95 Improvements to the Secondary OCC at Lenox Ave. (Optional Services)	80
B3.0 Geotechnical Investigations (Not Applicable).....	81
B4.0 Surveying and Right-Of-Way (Not Applicable).....	82
B5.0 Traffic Engineering (Not Applicable)	82
B6.0 Utility Design Coordination (Not Applicable)	82
B7.0 Drainage (Not Applicable).....	82
B8.0 Permits.....	82
B8.10 Code Analyses and Permit Compliance	82
B9.0 Contract Specifications	83
B9.10 Special Provision and General Requirements Specification.....	83
B9.20 Technical Specifications	84
B10.0 Cost Estimation.....	86
B10.10 Cost Estimate and Schedule Review During Design (Not Applicable)..	86
B10.20 Design Change Estimates	86
B10.30 Construction Cost Estimates	87
B11.0 Quality Control Management	87

B12.0 Drawings and Documents.....	88
B12.01 Civil Plans (Not Applicable)	88
B12.02 Utility Plans (Not Applicable).....	88
B12.03 Traffic Plans (Not Applicable)	88
B12.04 Structural	88
B12.05 Architectural Plans (Optional Services)	89
B12.06 Urban Design (Not Applicable)	91
B12.07 Public Art (Not Applicable).....	91
B12.08 Signage (Not Applicable).....	91
B12.09 Elevators and Escalators (Not applicable)	91
B12.10 Acoustics, Noise and Vibration (Not Applicable).....	91
B12.11 Mechanical	91
B12.12 Electrical	91
B12.13 Systems.....	92
B12.14 Control Center Facilities	93
B12.15 Verification / Validation Report (Not Applicable).....	94
B12.16 Design Transmittal.....	94
B12.17 Historic Architectural Services (Not Applicable).....	94
B12.18 Safety and Security.....	95
B12.19 Other Tasks (Optional Services).....	95
B12.20 CADD Manager	96
B13.0 Construction Packaging and Schedules	96
B13.10 Definition of Construction Contracting Strategy	96
B13.20 Construction Schedule.....	97
B14.0 Outreach Support.....	98
B14.10 Graphics Support for Outreach.....	98
B15.0 Bid Support Services	98
B15.10 Bid Support.....	98
B16.0 Design Services During Construction	99
B16.10 Construction Support Strategic Execution Plan.....	99
B16.20 Design Team Support.....	99
B16.30 Shop Drawings Review, Technical Support and Consultation during construction.....	99
B16.40 Field Visits / Meetings.....	100
B16.50 Change Proposals / Value Engineering	101
B16.60 As-Built Contract Documents.....	101
B16.70 Operations and Maintenance Manuals	102
B16.80 Warranty Services (Optional Services).....	102
Attachments.....	102
Attachment 1 -- Deliverable Matrix.....	102

General Overview

This document defines the scope of Consultant's Work for Design Package 3 for the Central Subway Project. The scope is classified and presented herein in two parts, described below as Part A and Part B. Management of both Part A and Part B will be under the Design Package 3 Project Management staff. The division of the Work here is only for to describe work scope tracking and work breakdown structure. The scope of Work for each Part is described within the 16 work tasks described in the RFP. The two Parts of the Work and their presentation in this document are as follows:

Part A

The Work described in Part A covers the design work for Construction Package 7 of the Central Subway Project (CSP), which includes the Surface Segment of the alignment from the Tunnel Portal south to the interface with the T-Line at 4th and King Streets. Part A also includes Systems and completion of other related work necessary to make Central Subway operational. Part A also includes the integration of the designs performed under Design Package 1 (Tunnel and Utilities Relocation, Construction Bid Packages 1, 2 and 3) and Design Package 2 (Stations, Construction Bid Packages 4, 5 and 6).

Part A of the Work will cover the final design of the Central Subway Project and involves the advancing of the design performed during the Preliminary Engineering phase of the Project. Consultant shall commence the Work by verifying, validating and adopting the Preliminary Engineering work ("Early Work") performed by PB Wong, and advancing that design through the preparation and completion of milestone submittals. The Work also covers design support services during the subsequent during bid review and construction contract award, Project construction, and Project testing, commissioning, and warranty periods.

Part B

The Work described in Part B covers the performance of the conceptual and preliminary design work for the Central Control and Communications ("OCC Program") portion of the CSP, and includes the implementation of a primary and secondary Operations Control Center (OCC) and upgrades to the existing legacy Systems in the OCC, including the ATCS and Tunnel radio systems.

Part B portion of the Work starts with the preparation of an Integrated Systems Conceptual Engineering Report and an Interim OCC Implementation Plan, which will describe the ultimate configuration of the integrated communication systems and Operations Control Centers, and their associated implementation plans. Once accepted by SFMTA, the Work will continue in advancing the design through Consultant's completion of milestone submittals. The Work also includes engineering support any portion the Project that involves the construction contract bid solicitation and review, construction contract award, construction, purchasing,

installation, cutover, testing and commissioning, and warranty periods of the OCC(s) facilities and equipment designed under this Agreement.

Integration of Design

A key component in both Parts A and B is the task of Integration. The overall objective of Integration is to ensure the delivery of fully integrated and operational Central Subway Project and Central Control and Communications Project. Consultant shall review and ensure that the designs in each of the CSP Design Packages are integrated. Consultant shall ensure that its designs are integrated with the designs of DP1 and DP2. Consultant shall integrate the designs for those portions of the C3 Program described herein. Finally, Consultant shall integrate the designs of City personnel into the design for DP3.

Task Budgeting and Level of Effort

Tasks identified herein that Consultant shall perform as "Level of Effort" or "Priced Level of Effort" have been assigned a set price value against which the Consultant shall bill at the agreed hourly rates. The number of hours needed to complete said tasks are estimates negotiated by the Parties. The Consultant shall in good faith make its best efforts to complete the tasks identified as "Level of Effort" within the agreed time limits and budgets. However, the Consultant does not guarantee that it will complete said tasks within the agreed time limits and budgets. When the approved budget for a task is expended, the scope of services for such task shall be considered complete unless the SFMTA increases the budget for the task and authorizes the Consultant to continue to work that task.

Optional Services

Services designated in the title or body of a Task description as "Optional Services" may be performed by the City or by the Consultant at the direction of and to the extent required by the SFMTA.

Schedule

The time requirements for deliverables and completion of tasks are set out herein. Unless otherwise indicated, the time requirements are measured from NTP. The period in which a Party has to review a document or design commences one day from receipt if delivery is by telephone facsimile, courier or in person from City staff, or three days from mailing if delivery is by U.S. Mail,

Submittals

Submittal levels defined herein will apply to both the Part A and Part B of the Work OCC, and days and durations are in calendar days, unless otherwise stated. Submittals of Work Products from Consultant to be incorporated into DP2 contract package submittals shall be provided to the applicable DP2 Contract Package

manager seven (7) days prior to the completion of the respective DP2 contract package submittal as determined by that DP2 Contract Package manager.

Early Work(Applicable only to Central Subway Project): Upon notice to proceed, the Consultant shall familiarize itself with and review the design developed during the Preliminary Engineering Phase. The Consultant shall prepare review comments and shall provide a matrix of proposed changes from the Preliminary Engineering concepts. Within 60 days of Notice to Proceed (NTP) Consultant shall prepare a Quantity Take-Off estimate by organizing the Preliminary Engineering design Quantity Take-Offs into the CPS Work Breakdown Structure ("WBS") and prepare systems cost estimates. The WBS is the FTA mandated work plan adopted by the SFMTA. This Work includes validating the Tunnel track alignment required for the DP1 design consultant to progress Tunnel design and providing emergency ventilation requirements to the DP2 design consultant based on the Consultant's SES analysis.

65% Submittal: 65% complete means Consultant's Work is sufficiently complete to illustrate the entire scope of the work under design so that reviewers can comment on the overall scope of the Contract Bid Package. Consultant must place particular effort on producing timely emphasize the information and input that the DP1 And DP2 teams need to incorporate or provide allowances for in their respective designs. To minimize potential impacts and changes to DP3 System designs that depend upon DP1 and DP2 designs, the Consultant shall limit mobilization of its staff during 65% design to those persons needed to provide integration, Quality Control, and input and information as requested by the DP1 and DP2 teams, including CFD analysis of the Stations, and to develop and progress OCC designs. That is, Consultant shall plan and progress its Work in DP3 Work to minimize changes in its design made necessary by design developments in DP1 and DP2. Consultant shall note that during 65% design, City staff's availability to perform DP3 Work or support that Work will be limited, as the SFMTA's first priority will be supporting the consultants for DP1 and DP2. The intent for 65% design is to avoid the appearance in the Pre-Final Submittal of new, significant items or problems. At 65% design completion, Consultant shall have identified and addressed all previous comments from earlier stages of design. Consultant shall also have independently checked the Tunnel track alignment and items of significance in the Stations at 65% design completion, in accordance with the provisions for the QC Plan, including items on drawings, in the specifications and construction quantity and system cost estimates.

Consultant's 65% submittal shall include reports, drawings, and technical specifications sections covering the general description of the Work and products requirements, and quantity and specialty systems cost estimates for the Construction Bid Package(s) for review. The submittal shall include in the transmittal letter a summary discussion of the design, by discipline, to give the reviewer an understanding of why the design progressed in the particular manner it did. It shall reference documentation of design decisions made in the course of the

work. Include outstanding issues and/or conflicts that need resolution and recommendations to resolve such issues. Consultant shall provide a matrix of changes from the 35% design completion documents and a matrix of review comments received after the 35% design completion submittal, with a description of the changes and resolution of the comments. An electronic copy and one hard copy of the submittal materials will be provided.

Pre-Final Submittal: Except for Systems, at Pre-Final Submittal, all design work shall be near completion. The Consultant shall plan its work to minimize the potential for changes in either system technology or Site conditions (i.e., third party utility or site work) that may require either require design changes or alter the design documents. The Consultant shall use the Pre-Final work to review the DP2 Pre-Final and Final submittals to verify that the space, conduit, cabling and wiring, environmental conditioning and other provisions that the Consultant requested the DP2 team provide are satisfactory. All calculations shall be completed; major items shall be independently checked. Drawings shall be nearly complete for purposes of the Construction Bid Package(s); and all comments made during the 65% design review and other reviews shall have been incorporated into the design documents or resolved. All previous comments shall have been identified and addressed. Reports and studies shall be submitted as final, unless otherwise agreed. Consultant's list of proposed contract bid items shall be submitted.

The Pre-Final Submittal shall include final reports, drawings, general requirements and technical specifications, and updated construction quantity and system cost estimates. The submittal letter shall include a summary updated discussion of the design, by discipline, to give a reviewer an understanding of why the design progressed in the particular manner it did from the 65% design completion submittal. The Pre-Final Submittal shall reference documentation of design decisions made in the course of the Work since the 65% submittal. Include outstanding issues and/or conflicts that need resolution, if any remain, and recommendations to resolve such issues. Provide a matrix of changes from the 65% design documents and a matrix of review comments received after the 65% submittal with a description of the changes and resolution of the comments. An electronic copy and one hard copy of the submittal materials will be provided. Reimbursement of additional reproduction costs may be requested as part of the Optional Services. Pre-final submittals are expected to be complete except for updates required to address comments made on the Pre-Final Submittal and changes in systems technology. All items in the submittal shall be independently checked in accordance with the provisions for the QC Plan.

Final Submittal/Contract Documents (100%): Consultant shall complete all outstanding Work, Work Product, and documentation and shall update the Construction Bid Documents to reflect the most current proven technology. While the time allocated for the Final Submittal in the Master Project Schedule ("MPS") is lengthy, Consultant shall mobilize as late in the task as needed to complete the Final Submittal. Consultant's Final design submittal shall include original and

electronic files of the complete drawings, special provisions, general requirements and technical specifications, bid item list and final engineer's construction quantities and system cost estimates ready for bidding of the work. The submittal letter shall include a summary updated discussion of the design, by discipline, to give the reviewer an understanding of why the design progressed in the particular manner it did since the Pre-Final Submittal. It shall reference documentation of design decisions made in the course of the work since the Pre-Final submittal. Include outstanding issues and/or conflicts that need resolution, if any remain, and recommendations to resolve such issues. Provide a matrix of changes from the Pre-Final documents and a matrix of review comments received after the Pre-Final submittal with a description of the changes and resolution of the comments. Drawings shall be sealed and signed by the appropriate architect, engineer or other professional licensed by the State of California. Final signed and sealed check prints of drawings, specifications, calculations, cost estimates and other documents as applicable shall be provided to SFMTA. All documents shall be properly indexed and complete with back up.

PART A – CENTRAL SUBWAY PROJECT (CSP) SCOPE OF WORK

1.0 Project Management and Control

Project Management is the daily management by Consultant of its scope, staff, and Work Product. It includes coordination of the design effort among disciplines and among construction packages. It also includes management of the contract schedule and budget, and implementation of cost and schedule control measures and corrective actions.

Interfacing and coordination among the teams will be done through weekly progress meetings. Similarly coordination and interfacing with other Design Packages (DP-1 and DP-2) will be done on a regular basis, weekly or bi-weekly as determined by the SFMTA. Furthermore Consultant shall provide support for open dialogue with building owners, utility companies, and Project Stakeholder, as indicated herein.

Task Leader

Chuck Morganson (Project Manager)

1.10 Final Design Strategic Execution Plan / Baseline Schedule

Services

1. The Consultant shall ensure that it is thoroughly familiar with Preliminary Engineering design documents. The Consultant shall visit the Project Site to observe and determine general Site conditions, utility locations, existing facilities, existing surface geologic conditions, and other pertinent information affecting DP3 work.
2. Consultant shall verify and validate the existing Preliminary Engineering designs, including design criteria, applicable regulatory and code requirements, including ADA compliance, and other relevant requirements

with respect to DP3 work. The Consultant shall identify remaining outstanding issues not resolved by the Preliminary Engineering documents work product and shall identify steps and schedule/timeline necessary for resolution of those issues with respect to the Work.

3. Within 21 days of NTP, the Consultant shall prepare an overall Final Design Strategic Execution Plan to cover all Final Design, irrespective of whether the Consultant or others will perform the design. The Plan shall include: Final Design Work Plan, Design Schedule, Management and Coordination Plan of Consultant and City personnel, Communication Protocols, Design Task Control spreadsheet, and Project Design Integration and Quality Control Plans.

The Final Design Strategic Execution Plan will drive the entire DP3 design process. The plan will be the blueprint for performing the Project and will develop a framework for:

1. Resolution of issues remaining from Preliminary Engineering
2. Monitoring Project performance
3. Disseminating information to all Project participants
4. Ensuring consistency across the construction contract package
5. Controlling CSP Quality, and DP3 Schedule and Cost
6. Identifying interfacing milestones both within Design Package 3 and with the other Design Packages as shown on the CSP Master Project Schedule (MPS).
7. Identifying responsibilities and relationships within the Consultant Team and with SFMTA and other Project participants and Stakeholder
8. Identifying key findings from environmental documents to be incorporated into final design to minimize adverse environmental impacts.

The Strategic Execution Plan shall include a baseline Task Control spreadsheet covering all subtasks. Subtasks shall be defined by discipline and deliverables (3rd or 4th level) to identify Work Product in accordance with the CPS Work Breakdown structure (WBS). The Task Control Log shall be a spreadsheet showing subtask number, subtask title, discipline, budgeted hours and cost, and number of sheets or drawings (if appropriate). This spreadsheet shall be used for monthly reporting.

Consultant will proactively monitor its activities to anticipate and resolve problems before they impact the CSP's critical path schedule.

Consultant will develop a detailed schedule based on the CSP Master Project Schedule ("MPS"). The Baseline Schedule will include the activities based on the tasks and subtasks. The schedule will show the activity, description, duration, start, finish and logical relationships between activities, sub-activities and milestones. Deliverables, design reviews, incorporation of review comments, interfaces with other designers, and interfaces with third parties will be shown. This schedule will serve as the design baseline for reporting progress, as described in Task 1.20 below.

Deliverables described as “Early Work” throughout this Appendix A will be Paid under this subtask.

<u>Deliverables</u>	<u>When Due</u>
1.10 DP3 Final Design Strategic Execution Plan	Draft 21 days after NTP, Final 60 days after NTP
1.15 DP3 Final Design schedule	Draft 21 days after NTP
Verification/Validation report and Issues / Concerns with Preliminary Engineering documents	30 days after NTP
List of potential cost impact measures as described in Task 10.20	90 days after NTP
Provide Quantity Takeoff & Cost Estimates of systems and equipment as described in Task 10.30	60 Days after NTP
Review Comments on Preliminary Engineering documents	45 Days after NTP
Review and Comment on CSP QC Plan as described in Task 11.0	30 days after NTP
Construction Contracting Strategy Plan Observations and Recommendations Report (Task 13.10)	60 Days after NTP

Chuck Morganson (Project Manager)

Assumptions and Exceptions –

1. The City will provide the MPS to DP3 Consultant upon NTP
2. The design schedule will be based on the MPS. The DP3 design schedule will be incorporated into the MPS by others.
3. In the CPS Execution Plan the Consultant shall focus their efforts during the Early Work and 65% CPS design on the work necessary to support the DP1 (Tunnels) and DP2 (Stations) teams and defining the ATCS and Radio systems. The Plan and Design schedule shall assume that City staff availability to the DP3 team will be limited prior to the 65% review shown on the MPS, as City staff will focus on providing support to the DP1 and DP2 teams. The MPS must provide adequate time during CS 155-3 Pre-Final and Final (100%) design tasks for City staff to complete their work.
4. The Design Schedule will be cost loaded at the task and subtask levels.
5. SFMTA will support the Consultant by providing CSP schedule updates based on the Consultant's updates of the Task Control spreadsheet.

6. Consultant must complete all Work on this task within 90 days from NTP.
7. Consultant will not review traffic engineering plans under this Task.

1.20 Project Control Reporting

Services

Consultant shall submit Project Control Reports: – to be submitted by the 10th of each month. Each report shall include:

1. Task Control Update– Update the Task Control spreadsheet to reflect hours and cost expended to date, estimated remaining hours and cost to complete, and progress as an estimate of the percent complete. Current issues relating to the budget, proposed mitigations to address issues, and proposed and pending changes to the budget.
2. Update the DP3 schedule monthly to indicate progress, actual start and finish dates, remaining duration, percent complete, and estimated dates to complete. Submit the schedule update to the CSP Project Controls Manager electronically. The Consultant shall describe changes in logic, current issues relating to the schedule, proposed mitigations to address issues, and proposed and pending changes to the schedule.

Deliverables		When Due
1.20 a	Project Control Report 1. Updated Task control spreadsheet. Description of Task Control issues and resolution. DP3 schedule status. Description of schedule issues and resolution.	10th day of each 21 st day of each month

Task Leader

To Be Determined

Assumptions and Exceptions –

In order to provide the Project control reports on the 10th of the next month, portions will be assumed. The work will be reconciled in cumulative basis.

1.30 Invoicing

Services

Consultant shall provide services as necessary to assist the SFMTA in reviewing invoices related to this Agreement, including contract administration and contract compliance support to ensure compliance with Contract requirements, FTA procurement and contracting policies and procedures (including compliance with SBE requirements), and Employment and Labor provisions.

Consultant shall no more often than monthly submit an Invoice for Payment with the monthly progress reports by the 25th day of the month, in a format approved by SFMTA and which will contain up to date information for the following items:

1. Monthly progress on the Work. Current issues and problems relating to interfaces, change control and other Project management issues, and proposed resolutions to mitigate the issues and problems.
2. Labor information. Tables showing 1) the budgeted and actual average labor rates to date and for the month for each firm and 2) the budgeted and actual labor cost to date and for the month for each firm, 3) cumulative cost incurred to date,
3. Employee name, rate and firm for whom reimbursement is being requested.
4. Receipts, logs and invoices for other direct costs for which reimbursement is being requested by firm.
5. SBE, EEO and First Source Hiring participation, utilization and goal attainment.

<u>Deliverables</u>	<u>When Due</u>
1.30 Invoicing 1. Monthly Report and invoice 2. Labor information 3. Expenditure details by firm 4. Monthly SBE and EEO and First Source Hiring compliance reports	[Monthly (25 th)]

Task Leader

To be determined (Project Control Manager)

Assumptions and Exceptions –

SFMTA will provide the invoice format upon NTP conforming to the above description of reporting.

1.40 Compliance Support

Assumptions and Exceptions –

This work has been included in subtask 1.30 and 1.50 and is limited to reporting SBE, EEO and First Source Hiring participation, utilization and goal attainment, and actively working to ensure all goals are properly attained.

1.50 Project Management

Services

Consultant shall provide the following Project Management services. Project Management means the daily management and administration by Consultant to

coordinate design and support of construction, control quality, budget, cost, schedule, scope, safety and security, and other related duties as required.

1. Hold internal coordination meetings on a weekly basis with internal DP3 staff. The primary purpose of these meetings is to interface the designs between the various construction contract packages and various design disciplines and subconsultants. Central Subway Program Management Staff will attend relevant coordination meetings.
2. After each weekly internal coordination meeting, prepare an Action Item Log that identifies required actions, due dates, and responsible parties.
3. Participate in Central Subway Senior Management Weekly Meetings.
4. Participate in coordination, interface and other meetings as needed. The primary purpose of these meetings is to progress, manage and control the CSP and interface the work among the various contract packages and for Project integration. It is assumed that for meetings not requested by the DP3 Consultant that others will lead the meetings and prepare the minutes of these meetings.
5. Perform other Contract and design management activities of DP3, including active contract compliance activities.
6. Will lead bi-weekly design coordination meeting with package managers, integration manager, and Quality Control between DP1, DP2 and DP3.

Deliverables	When Due
1.50 Project coordination meetings 1. Action item log 2. Brief progress reports(as needed) 3. Meeting minutes (as required)	[As needed]

Task Leader

Chuck Morganson (Project Manager)

Assumptions and Exceptions

1. Project management activities for DP3 will be performed under this task
2. Project Integration/Interfacing meetings will be led and documented by DP3 Consultant
3. Senior Management Weekly Meeting will be led and documented by others.
4. Program management, CSP overall financial management, ROW acquisition support, risk management, CSP overall Project administration, and CSP overall document control will be done by others. Consultant's role will be to implement CSP procedures and to participate in risk management workshops and other meetings and implement measures to manage risks, scope, schedule, and budget.

5. Overall Project Document Control will be prepared and managed by others; Consultant shall adhere to and implement CSP document control procedures.
6. Work will be as-needed after 24 months.

2.0 Design and Project Integration

The success of the Central Subway Project will be largely determined by the degree to which the consultants responsible for each of the three Design Packages implement the integration and coordination roles defined under Task 2. Design Package 3 (DP3) is responsible for integration between DP1, DP2 & DP3. Consultant will coordinate/integrate design among its Subprime Consultants and its Subconsultants, across disciplines and within the Integrated Team. Consultant will develop and implement the CSP overall Interfacing and Integration Management Plan which will form the basis for the systems integration coordination effort between DP1, DP2 and DP3.

Task Leader

Jerry Furman (Systems Integration Manager)

2.10 Design Interfacing and Integration Management

Services

1. Develop the CSP Integration Management Plan, a comprehensive, systematic, documented, verifiable, and continuous integration plan. The Plan will describe the Interface Management System in organizing information, tracking progress, and in providing a permanent record of integration activities. The Plan will serve as framework for interface coordination and integration activities by DP1, DP2, DP3 and other Stakeholder.
2. Develop a CSP Interfacing and Coordination Database to identify the interfaces between design elements, construction contract packages, and design team members including sub-primes, subconsultants and City staff. It also will identify the individual responsible for ensuring that the requirements at each interface boundary are met in the design.
3. Once interfaces among various Design Packages and contract packages are identified and recorded in the Database, Consultant will present Database to DP1 and DP2 to facilitate understanding and manage, monitor and track progress of each interface throughout the Project.
4. Conduct regular Interface Coordination Meetings to discuss design requirements and resolve issues related to each interface. Consultant will organize, schedule, invite appropriate designers, and record minutes of meetings.
5. Perform Interdisciplinary review of CSP construction contract packages to confirm satisfaction of interface requirements or identify and address conflicts.

6. Review each CP-3 thru CP-7 design submittal to ensure consistency and integration.

Deliverables		When Due
2.10	CSP Integration Management Plan	[21 days after NTP]
	Interdisciplinary coordination check prints	[within 21 days after each 65% and Pre-Final DP1, DP2 & DP3 design submittal]
	Comments on Drawings and Technical Specifications for CP-3 thru CP-7	[within 15 days after each DP1, DP2 & DP3 design submittal]

Task Leader

Jerry Furman

Assumptions and Exceptions

1. Design Package 3 Consultant will lead the preparation of the Project wide integration plan and will manage interfaces among DP1, DP2 & DP3. DP1 and DP2 are expected to recognize the leadership role of DP3 in the interface and integration management and will provide all the necessary cooperation and support for a successful Project Integration Program.
2. DP2 will lead the interface and integration coordination activities between DP1 and DP2 with oversight by DP3.
3. SFMTA has as Integration Management Plan which the Consultant will review for possible adoption for the CSP.
4. Work under this Task will provided on an as-needed basis after 24 months from NTP.

2.20 Third Party Coordination

Services

Assist SFMTA with coordination and in obtaining concurrence from third parties and approving agencies (such as FTA, SFCTA, City and State departments and agencies DPW and its bureaus, SFFD, MCAC, SFCTA, Mayors Office of Accessibility, Mayor's Office, Civic Design Committee, , Department of Building Inspection, Caltrans, TJPA, CPUC, Building owners and other involved Stakeholder) including providing necessary documents, drawings, and information.

Task Leaders

To be determined

Deliverables		When Due
2.20	Participation and providing supporting documentation for Third party coordination and approvals	As required by SFMTA

Assumptions and Exceptions

1. Utilities coordination is under subtask 6.10
2. Community Outreach is under subtask 2.60
3. Permit applications is under task 8.0.
4. Graphics support will be under task 14.
5. Design work is Task 12.
6. Caltrain and BART coordination is by others
7. Level of Effort is assumed for this task based on assumptions of a number of meetings and a number of supporting documentation.

2.30 Coordination of Design Performed by City Staff

Services

Consultant will coordinate, integrate and incorporate as applicable City staff and the design work performed by City and SFMTA in DP3 team.

Scope of the work assumed to be performed by City and SFMTA staff in general is as follows. This work is identified as part of Optional Services in Consultant Contract.

1. Roadways, sidewalks, ADA ramps, and all civil work required within the public right of way.
2. All traffic engineering, truck routes, and maintenance and protection of traffic. All temporary and permanent relocation and restoration of traffic signals, signs, streetlights, OCS, etc.
3. All drainage work on Surface Segment.
4. Emergency Telephones/Blue Light Stations (ET/BLS).
5. Communications network & SCADA
6. Traction Power SCADA
7. Fire Telephone System and Mayor's Emergency Telephone System (METS)
8. Tunnel and Surface Segment electrical system.
9. Traffic control and signal
10. Overhead contact system (OCS) including parallel feeders.
11. Wet standpipe in Tunnel and undercar deluge in Stations.
12. Tunnel sump pumps and associated electrical and mechanical equipment.
13. Next Muni Signs

<u>Deliverables</u>		<u>When Due</u>
2.30	Coordination/ integration of City staff and their work product in DP3	Continuous and on-going through Project

Task Leader

Tom Tolentino (CP-7 Contract Manager)

Assumptions and Exceptions

1. It is assumed that the City staff working on the Project will co-locate in the Project Office and the work will be done in the Project office to have full interfacing and integration with the Project staff.
2. City staff will be integrated in the Project team and will adhere to the Project work plan and design schedule. City staff availability to the DP3 team will be limited prior to the 65% review shown on the Master Project Schedule, as City staff will be focusing on providing support to the DP1 and DP2 teams. The Master Project Schedule provides adequate time during CS 155-3 Pre-Final and Final (100%) design tasks for City staff to complete the above work.
3. The City staff will follow all CSP procedures, guidelines, and criteria, as the rest of the Project team.
4. As part of the Integrated DP3 Team, the design work identified above will be provided by City staff.
5. City design efforts will result in complete plans, technical specifications, calculations and quantity takeoffs, signed and sealed by a Registered Professional Engineer in the appropriate discipline. Consultant will not be required to sign and seal City Designer's work product.
6. Optional Services after initial two weeks will be exercised as Priced Level of Effort.

2.40 Systems Design Coordination

Services

1. Consultant will develop system design Work Product for incorporation by DP1 and DP2 consultants into their design or influence their design of Project elements within their construction contract packages. Specifically, these work product are as follows:
2. Stray current control and possible cathodic protection requirements.
3. Subway Environmental Simulation (SES) and Computational Fluid Dynamics (CFD) analysis considering normal and high load conditions for the emergency ventilation systems.. The SFMTA is currently conducting tests to define heat release rates and Consultant will update the SES and CFD analyses performed during the Preliminary Engineering phase to take into account impact of heat release rates determined during tests. The analyses will also define the local and remote control schemes for use as basis in the SCADA system design.
4. Equipment space, equipment support, concrete embedments, and other provisions for equipment installation required by DP3 in the Tunnel cross

passages and in the Stations will be defined and provided to DP1 and DP2, respectively, for incorporation in their design. Consultant will also specify to DP2 the electrical power distribution equipment required in the Stations to supply power to Tunnel electrical and communications systems.

5. Consultant will review work product prepared by DP1 and DP2 Consultants to ensure their consistency with DP3 work, incorporation of systems integration requirements and to verify that the space, conduit, cabling and wiring, environmental conditioning and other provisions requested by the Consultant is satisfactory.

Deliverables	When Due
2.40 Systems Design Coordination Stray current control and cathodic protection requirements. SES analysis report. CFD analysis report. Design requirements for incorporation in DP1 and DP2 Design Packages	[As required by SFMTA] [60 days after NTP] [30 days after receipt of 65% drawings of each Station] [30 days after NTP]
Comments on Drawings and Technical Specifications for CP-3 through CP-6	[within 15 days after each design submittal]

Assumptions and Exceptions

1. Consultant will be responsible for overall Project Systems Integration as those services are described in this Agreement.
2. Electrical power requirements for equipment provided by CP7 in the Tunnel will be supplied from the power distribution system in the Stations designed by DP2 and included in CBP4, CBP5 and CBP6.
3. Design requirements specified by DP3 will be incorporated by DP1 and DP2 in their design development of their respective construction contract packages. Consultant will review DP1 and DP2 designs to ensure that requirements are incorporated. This review is only to verify that DP3 requirements are adequately incorporated into the DP1 and DP2 designs and Contract Documents.
4. Systems listed in 2.30 above will be designed by City staff and Consultant will incorporate these designs in CP7.
5. Consultant shall finalize all design and infrastructure requirements to be incorporated into DP2 work product with DP3 review comments on each DP2 65% submittal.

6. Work will be as-needed after 24 months
7. SFMTA to provide results of the Fire Design Analysis at NTP.
8. Input files for initial Subway Environmental Simulation and Computation of Fluid Dynamics analysis will be provided by SFMTA.

2.50 Coordination with Art for Transit (Optional Service)

Services

Coordinate with San Francisco Arts Commission and make presentations to the Art Commission with regard to the incorporation of Art into the surface Station. Consultant will include the Arts Commissions staff and selected artists in design team meetings as applicable and provide architectural and engineering advice of feasibility and constructability of artist proposals.

Deliverables	When Due
2.50 Arts Commission and Artist Coordination Meeting minutes with Art Commission staff and with selected artists Coordination and integration of Public Art in design documents.	[As required by SFMTA]

Task Leader

To be determined

Assumptions and Exceptions

1. Surface and subsurface preparatory work and utilities needed for the art work are reasonable, within the parameters of the preliminary design, and will not significantly impact the design concepts, elements, or progress of DP3 after the 65% documents and before Pre-Final submittal..
2. Design work to support installation of Art work is in Subtask 12.07.
3. Civic Design Approvals are in Subtask 2.20.
4. Priced Level of Effort is assumed.

2.60 Community Outreach

Services

1. Services to support Public Outreach that is managed by others and will include the following:
2. Participate in meetings with the public and respond to questions and issues from the public to foster good communications and general understanding and support of the design. Includes providing necessary documents, drawings, and information.
3. Assist with public meetings, provide coordination and follow up on issues raised by the public related to the design elements of DP3.

<u>Deliverables</u>		<u>When Due</u>
2.60	Community/Public Outreach Support	[As requested]

Task Leader

To be determined

Assumptions and Exceptions

1. Public Outreach master plan/schedule is by others.
2. Provision of public outreach staff is by others.
3. Conduction and recording of public meetings will be done by others.
4. Retaining of community advocacy organizations and their management will be done by others.
5. Graphics support will be under task 14.
6. Priced Level of Effort is assumed.

2.70 Other Coordination Activities

Consultant's management, architecture, and engineering staff shall participate in formal and informal review meetings as directed by the SFMTA.

Services

1. Support constructability reviews.
2. Support Peer Reviews
3. Support Stakeholder Reviews.
4. Review, log, address, and respond to review comments on each review

<u>Deliverables</u>		<u>When Due</u>
2.70	Other Coordination records (minutes/action items/issue resolution) 1. Stakeholder Reviews (65% and Pre-Final) 2. Peer Reviews (65% and Pre-Final) 3. Constructability Reviews (65% and Pre-Final) 4. FTA Workshops 5. Provide a matrix of review comments received for each submittal showing how the comments have been resolved.	[As required by SFMTA]

Task Leader

To be determined

Assumptions and Exceptions

1. Program management, financial management, ROW acquisition support, risk management, contract administration, and document control will be done by others.
2. Consultant's role will be to implement CSP procedures and to participate in risk management workshops and implement measures in the design to manage risks provided such measures will not significantly alter the design concepts of DP3.
3. Constructability, VE and peer reviews, will be conducted and led by others. Implementation of recommendations from these reviews after the Pre-final review will not significantly alter design concepts of DP3.
4. Drawings and graphics support are under task 12 and 14, respectively.
5. A Priced Level of Effort is assumed.

2.80 Safety and Security

Services

1. Review checklists covering design, testing and training for Safety and Security Certification requirements developed during Preliminary Engineering for Construction Contract Package No. 7 and update as necessary. Checklists will be reviewed for safety and security critical requirements from the Design Criteria and all items identified by hazard analyses.
2. Update PHA and other analyses prepared during Preliminary Engineering that includes safety and security measures and mitigation. Implement such measures and mitigation in DP3 designs.
3. Update Design Criteria and implement safety and security design criteria and measures in DP3 designs.
4. Verify DP3 design conformance and complete Safety and Security Certification checklist.
5. Review checklists for Safety and Security Certification developed by the design firms for DP1 and DP2 for their respective Contract Packages to ensure a comprehensive overall Project certification process.

Deliverables

When Due

2.80	Updated Safety and Security Certification checklist for Construction Contract Package 7 Completed Safety and Security Certification checklist for CP7	within 21 days of 65%, Pre-Final and 100% submittals

Task Leader

Chris Shorter

Assumptions and Exceptions

1. CSP Safety and Security Design Criteria will be provided at NTP.
2. Additional Threat and Vulnerability Analysis (TVA) will be done by others.
3. Blast analyses and structural hardening design are Additional Services.
4. Scope or Work of this Task does not include analyses not specifically identified. Additional analyses will be Additional Work.

2.90 Sustainability

Using a practical and collaborative approach to sustainability consulting, Consultant will work closely with the integrated team to develop goals and implement strategies on sustainability for the Central Subway Project. A multi-disciplinary team approach and involvement of key players is fundamental in achieving a Project that enhances and preserves the environment and that minimizes potential negative impacts during construction and operation of the line.

Services

1. Provide ongoing and intensive support and management for team members to incorporate sustainable design practices strategies.
2. Conduct a sustainability work shop for the Project team to identify the Project's sustainability goals and ensure that these adhere to SFMTA's sustainability goals.
3. Prepare a sustainability narrative summarizing the outcomes of the workshop and recommending sustainable design guidelines and strategies.
4. Conduct a specifications and drawing review at 65% and Pre-Final for sustainable design practices.
5. Assist DP2 Design Manager with specifications for Contractor provided agent for Advanced Commissioning of Stations.
6. Provide input to Operations and Maintenance manuals to assist SFMTA to sustainably maintain Stations.

Deliverables

When Due

<u>Deliverables</u>		<u>When Due</u>
2.90a	Sustainability Narrative	45 days from NTP
2.90b	Sustainability Review Comments	Within 14 days of the receipt of each 65% and Pre-Final submittal for

		CP-4 to CP-6
	Advanced commissioning technical specifications for CP-4 thru CP-6	21 days prior to the completion of the first DP2 Pre-Final and Final submittal as determined by that DP2 Design Manager.
	Operations and Maintenance manual input to assist SFMTA to sustainably maintain Stations.	Commissioning & Startup of Stations

Task Leader

Anko Chen

Assumptions and Exceptions

1. The DP2 team will review and incorporate applicable DP3 sustainability recommendations into the DP2 design work.
2. Minimize certification requirements in construction contracts.
3. LEED certification is not required.
4. Following 24 months from NTP, work on this Task will be on an as-needed basis. During construction, work on this Task will be paid as Construction Support Services.

3.0 Geotechnical Investigations

Geotechnical investigations were performed during Preliminary Engineering to characterize the preferred Tunnel alignment.

Services

1. Review Preliminary Engineering Geotechnical design reports for relevant data required to complete CP-7. (Paid as Early Work Paid in Task 1.1)
2. Incorporate findings from Preliminary Engineering Geotechnical design into CP-7 final design as appropriate. (Paid as Early Work Paid in Task 1.1)
3. Consultant will evaluate Geotechnical reports and will submit supplemental survey requests to SFMTA for Geotechnical services to be provided by others, if needed to complete final design of CP-.

Assumptions and Exceptions -

1. Sufficient geotechnical evaluations for the DP3/CP-7 design were performed during Preliminary Engineering.
2. If it is determined that additional geotechnical services are needed to complete the DP3 scope of services, those services will be provided by others.

3.10 Supplemental Geotechnical Investigations

Services

Services, if required, will be performed by others

3.20 Geotechnical Data Report

Services

Services, if required, will be performed by others.

3.30 Geotechnical Characterization Report

Services

Services, if required, will be performed by others.

3.40 Geotechnical Baseline Reports (GBR)

Services

Services, if required, will be performed by others.

4.0 Surveying and Right-Of-Way

The survey work will be done by the Consultant or others as described below.

4.10 Surveying

Services

1. Consultant will evaluate available survey data and submit supplemental survey requests to SFMTA for additional field surveys to be provided by others.
2. Consultant will develop master topographic CAD files and 3D Digital Terrain Model (.dtm) based on survey points provided by SFMTA.

Assumptions and Exceptions

1. SFMTA estimates that the survey from Preliminary Engineering is approximately 80% complete for final design.
2. Survey maps will be provided in hard copy and CADD Files using the Project coordinate system.
3. Supplemental survey information will be provided in a timely manner by PM/CM as requested by DP3.

4. Right of Way survey and mapping is by SFMTA.

5.0 Traffic Engineering (Optional Services)

The tasks described in this Section 5 are is Optional Services.

The focus of this task is working with the SFMTA Division of Traffic Engineering to provide a traffic engineering report that addresses construction impacts on street traffic and identifies necessary mitigation actions.

5.10 Traffic Engineering Report (Optional Services)

Services

The report will include analysis of staging area and construction site access, truck haul routes and maintenance of traffic for the Surface Segment south of the Portal. The analysis will also include a determination of allowable hours of operation and restrictions to construction traffic activities during special events. The report will also identify the Project's to traffic both during construction and during revenue service, and necessary temporary or permanent traffic signal and signing modifications arising from the Project. If requested by the City, Consultant will assist the City as required or will perform these services as Optional Services.

<u>Deliverables</u>		<u>When Due</u>
5.10	A Construction Traffic Report (by City Staff) covering the Surface Segment work south of the Portal to 4 th and King Streets.	[Pre-final and 100%]

Task Leader

To be determined.

Assumptions and Exceptions -

1. It is assumed that traffic counts have been done during Preliminary Engineering phase and will be made available to Consultant following NTP.

5.20 Traffic Plans (Optional Services)

Services

Maintenance and protection of traffic plans for the Surface Segment south of the Portal will be prepared by City staff. This includes maintaining current one-way traffic patterns along 4th Street and the transition to the final two-way traffic plan at a logical point in the construction staging. If requested by the City, Consultant will assist the City as required or will perform these services as Optional Services.

<u>Deliverables</u>		<u>When Due</u>
5.20	Maintenance and Protection of Traffic ("MPT") Plans for Surface Segment	[Pre-final and 100%]

Task Leader

To be determined

Assumptions and Exceptions –

1. Support and cooperation with San Francisco Department of Parking and Traffic will be provided in a timely manner.
2. Maintenance and Protection of Traffic Plans (MPT) concepts as developed during the Preliminary Engineering phase will not be rejected or significantly altered by SFMTA Division of Traffic Engineering .
3. MPT construction Contract Documents will be prepared by City staff and will be included in Task 12.

6.0 Utility Design Coordination

Supplemental utility investigations will be undertaken where necessary along the Surface Segment. Existing sewer and AWSS (fire suppression) mapping and relocation design will be done by City staff. Domestic (SFPUC) water line mapping and relocation design will be by Consultant,

SMFTA will facilitate any formal agreements required with utility owners

6.10 Utility Location and Owner Coordination

Services

1. Provide updated composite utility drawings showing type of utility, size, material, owner and other pertinent information along with preliminary utility relocation plans for SFPUC domestic water and joint trench. Add preliminary utility relocation plans for sewer and AWSS (fire suppression) as Optional Services.
2. Evaluate available potholing data and submit supplemental pothole request for pothole services to be provided by others.
3. Prepare Utility Technical Memorandum ("UTM") for Surface Segment south of the Portal. UTM will identify impacted utilities and will develop a strategy to protect, support, or relocate them.
4. Coordinate with utility owners and building owners (utility users) to address how to protect or relocate utilities serving properties adjacent to the alignment or otherwise impacted by the Project.

<u>Deliverables</u>		<u>When Due</u>
6.10	Plans for utilities are included under Task 12 Utility Composite Drawings & Utility Technical	[65%, Pre-Final]

	Memorandum for CP7	and 100%]
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Task Leader

Steve Bertolucci

Assumptions and Exceptions

1. The City will provide Consultant the existing composite utility drawings that were prepared during Preliminary Engineering .
2. No allowance was made for potholing (early utility location and identification.
3. It is assumed that any sub-sidewalk basement vacations will be addressed by City or others.

6.20 Settlement Impacts on Utilities

Services

None

Assumptions and Exceptions

Any services related to settlement impact on utilities will be performed by others or as Additional Services.

7.0 Drainage (Optional Services)

Drainage and handling of water for the DP3 design will be focused on surface runoff for the Surface Segment south of the Portal. The DP1 team will provide the drainage report and drainage system design within the Tunnel including any flow calculations required for sump pumps. If requested by the City, Consultant will assist the City as required or will perform the services described in Part 7.0 as Optional Services.

7.10 Drainage Design Report (Optional Services)

Services

Produce a Drainage Design Report to identify and quantify all anticipated sources of and disposal discharge points for waters collected at the Surface Segment south of the Portal.

Deliverables

When Due

7.10	Surface Drainage Report	[Draft report due at Pre-final; Final report due at Final Completion]
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Task Leader

To be determined

Assumptions and Exceptions –

1. The preparation of drainage drawings will be done in Task 12.11.
2. DP1 will perform drainage analysis of the Tunnel including seepage and emergency firefighting flow calculations, including full calculations and report.
3. All drainage reports (Surface Segment, Tunnel and Stations) that may impact Trackways design will be completed and provided in a timely manner in order to not negatively impact completion of the Trackways design.

8.0 Permits

1. Consultant will review environmental and Preliminary Engineering plans and reports to identify likely impacts and associated permit requirements. (Paid as early work in Task 1.1) Permits will be obtained by others.
2. Consultant will assist SFMTA in developing permitting strategy and minimizing environmental impacts from the Project.
3. Consultant will assist in preparing permit applications and assist SFMTA to file required permits for construction. Once permits are obtained, Consultant will incorporate permit requirements into Contract Documents.
4. Consultant will support SFMTA, PM/CM staff and Construction Contractors in preparing applications and obtaining permits for CP7. It is anticipated that the permits required for the work in CP-7 include, but may not be limited to: surface mounted facilities, tree permits, encroachment and street space permits for temporary construction elements; and street improvement permits.

8.10 Code Analyses and Permit Compliance

Services

1. Support SFMTA and PM/CM Consultant in obtaining permits (Building Permit, Demolition Permit, sidewalk encroachment, and Tree Removal Permit).
2. Consultant will be responsible for providing specific design information on or attached to permit applications and assuring that the design(s) presented are in conformance with permit requirements.
3. Consultant will prepare code compliance summaries to be submitted with each of the milestone submittals (65%, Pre-Final and 100%) for each Station.
4. Consultant will prepare permit drawings and specifications for CP-7 for SFMTA to include in the permit applications.

Deliverables

When Due

8.10a	Support of Permit Applications Support of Permit Applications and Permit Compliance -- CP 7	[65, Pre-Final and 100%]
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8.10b	Code compliance checklist Code Compliance checklist for CP7	[65, Pre-Final and 100%]
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Task Leader

To be determined

Assumptions and Exceptions

1. The permitting process and obtaining permits will be done by others. Consultant's role will be limited to providing supporting documentation for permit applications including, reports, drawings, and other design documents.
2. Priced Level of Effort is assumed.

9.0 Contract Specifications

The Central Subway Project requires a unified approach to the preparation of general conditions, special provisions and technical specifications for use with each of the seven planned Construction Bid Packages.

9.10 Special Provision and General Requirements Specification Reviews

Services

The SFMTA will lead the preparation of Special Provisions and General Requirements (Division 1 Specifications). Consultant will review the Special Provisions and General Requirements and will provide comments, suggested changes, information to be incorporated by SFMTA. Consultant will assist and support the SFMTA in the development of general contract requirements, including such items as minimum bidders qualifications, Bid Advertisement, Information to Bidders; and Instruction to Bidders and other bidding requirements. Consultant will develop Bid Forms and Bid Item Descriptions for CP-7.

Deliverables

When Due

9.10	Review comments and input to Special Provisions and General Requirements, and Bid Forms and Bid Item Description.	Pre-final and 100%
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Task Leader

(To be determined)

Assumptions and Exceptions

General Provisions and Special Provisions will be prepared and provided by SFMTA in a timely manner to allow Consultant's input by the related submittal date.

9.20 Technical Specifications

Services

1. Development of a complete set of Contract Specifications (Division 1 and all other applicable Specifications Divisions) for CP-7 – with each specification section receiving a fully documented chain of reviews.
2. Update Contract Specifications Division 1, General Requirements, provided by SFMTA to incorporate specific requirements for CP-7.
3. Consultant will integrate and check for consistency between and among the technical specifications and the Contract Documents . The Consultant will be responsible for the preparation of the specifications, verification of the reference documents, compiling product data and materials and equipment specification sheets, file management, and cross checking and final production of the specifications.
4. Specify advanced commissioning and startup requirements. Specify testing and training programs, requirements for O&M manuals and spare parts, including material, component, subsystem, system, overall Project system integration testing of operating systems provided within CP-7.

Deliverables

9.20	Technical Specifications – Const. Cont. Pkg 7	[65, Pre-Final and 100%]
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Task Leader

(To be determined)

Assumptions and Exceptions -

1. SFMTA is responsible for compiling the documents that will comprise the Construction Bid Packages, including the Contract Specifications provided by Consultant and the required contract forms and standard documents prepared by SFMTA, the instructions to bidders, the contract General Provisions, contract Supplementary or Special Provisions and required contract forms.
2. Consultant will deliver camera-ready Contract Specifications, and SFMTA is responsible for the reproduction of Bidding Documents.
3. Development of technical requirements for input to the Technical Specifications will be part of other Task 12 (Drawings and Documents).
4. Sub-Task 9.2.14 assumes that the NTP for the base work for C3 communication task (B1) and 1455 Market task (B3) packages is issued.

10.0 Cost Estimate and Scheduling

Consultant's understanding of Task 10 as defined in the RFP is that others will prepare the cost and schedule estimate for each construction contract based on

Consultant's Work Product. The SFMTA will prepare the budget estimate for each construction contract using the approach outlined in Section 6 of the Terms and Conditions. Consultant will provide Quantity Takeoffs and cost estimates of systems and equipment 60 days after NTP, and again with the 65%, Pre-Final and Final submittal of the Construction Documents and review and comment on construction cost estimates and schedules. SFMTA will support cost estimating for common construction elements during design development by providing estimates of options and alternates.

10.10 Cost Estimate & Schedule Review During Design Services

1. Consultant will provide written observations/comments regarding cost estimates to SFMTA within 45 days of receipt of the Preliminary Engineering cost estimate. (Paid as early work in Task 1.10)
2. Consultant will provide written observations/comments regarding the Project's construction schedule to SFMTA within 45 days of receipt of the schedule. Consultant shall review the schedule for CP7) and provide comments of the detailed construction schedules for CP-7. Consultant's role will be to support and advise SFMTA of issues, concerns, and strategies related to the construction schedule of CP-7 construction package.

<u>Deliverables</u>		<u>When Due</u>
10.10	Schedule Review Comments– Const. Cont. Pkg 7	45 days after receipt of MPS at the 65 and Pre-Final submittals

Task Leader

To be determined

Assumptions and Exceptions

1. Consultant's responsibility with respect to cost estimates, construction budgets and schedules is limited to reviewing them and providing comments on the estimates and schedules.
2. An allocated design contingency will be assigned at each submittal level suitable to the level of design at each stage. An allocated design contingency of at least 5% will be assigned at the 100% submittal.
3. Take-off Quantities and construction cost estimate reviews of others design work by others will be done by the respective party responsible for that work.
4. Integrated Project schedule will be created and maintained by others.

10.20 Design Change Estimates

Services

Deviations between construction budgets and the construction estimate (prepared by SFMTA) will be addressed and resolved as provided in the Agreement under Section 6, and modifications to the design to address any differences will be implemented. Quantity changes and other documentation for design changes will be provided as required to evaluate Change Proposals in accordance with Configuration Management Procedures.

1. Consultant shall provide Quantity Takeoffs during the design process for:
 - (a) SFMTA proposed changes to the Project Configuration
 - (b) Value Engineering Proposals
2. List of potential cost impact measures will be provided 90 days after NTP and with 65%, and Pre-Final Submittals.

Deliverables

When Due

10.20	Information for Engineering Change Proposals Cost Saving Elements List 1. Cost Saving List for CP7 2. Track changes register for CP7	[As Needed] [90 days after NTP, and with 65% and Pre-Final design submittals]
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Task Leader

To be determined

Assumptions and Exceptions –

1. Configuration management plan will done by SFMTA. Consultant's role in the configuration management is to actively provide input and data.
2. Discretionary design changes that will impact Project baseline estimates, budgets, and schedules require approval in accordance with Design Control Procedures prior to implementation.
3. Implementation of discretionary design changes is not part of this task.

10.30 Construction Quantity and Cost Estimates

Services

1. Submittal of construction Quantity Takeoff
 - (a) 60 days after NTP
 - (b) 65% design submittal
 - (c) Pre-Final design submittal
 - (d) Final Contract Document (100%) submittal
2. Quantity Takeoff by Consultant and Cost Estimates of systems and equipment by Consultant and of common construction elements by others

will be developed in a timely manner to support decision making during the design process.

3. Submittals will contain reconciliation with the previous submittal.
4. Consultant will prepare cost estimates for specialty items including but not limited to ATCS, passenger display and annunciation system, Tunnel radio system, control center facilities work described in Task 12.14.
5. Prepare cost estimates for specialty items including but not limited to Surface Segment train control system, vehicle tagging, emergency telephone/blue light stations, facility SCADA, traction power SCADA, and fire telephone system, and other Systems as may be identified by the SFMTA. (Optional Services)

<u>Deliverables</u>		<u>When Due</u>
10.30a	Construction Quantity Takeoff s for Const. Cont. Pkg 7 Cost Estimates for Specialty Items	[(60 days after NTP) (65%, Pre-Final and 100%)]
10.30b	Quantity and Cost Reconciliation for CP7	[65%, Pre-Final, and 100%]

Task Leader

To be determined

Assumptions and Exceptions

1. Cost estimates will be prepared by others except for identified specialty items.
2. Format template for quantity takeoff and cost estimates will be provided by SFMTA.
3. Construction Contracting Strategy Plan will be developed by SFMTA.
4. Cost estimates and budgets will be based on the Construction Contracting Strategy Plan and the construction schedules duration and sequence. Changes to the Construction schedule or the Construction Contracting Strategy Plan will impact the cost estimates and budgets.

11.0 Quality Control Management

Quality control and quality assurance are essential elements to the success of the Central Subway Project. Consultant's team is committed to SFMTA to deliver DP1, DP and DP Design documents in full compliance with the review and documentation standards and procedures contained in the CSP Design Control Procedures.

Services

1. Consultant shall assign CSP Quality Manager to assure the quality of the Work of the DP3 design and who will have oversight of and participate in the quality control activities of the DP1 and DP2 Design Packages.
2. Consultant will submit a draft DP3 Quality Control and Implementation Plan within 30 days and a final Plan within 60 days after NTP. The Plan will be in compliance with CSP Quality Control Plan and will clearly spell out Consultant's approach for implementing the DP3 design control procedures across all design disciplines.
3. Consultant will assist CSP Quality Assurance Manager and others with Audit and Surveillance of DP1, DP2 and DP3.
4. Consultant will review DP1 and DP2 construction contract packages for consistency and quality across all design disciplines to ensure all design work meets or exceed Quality Standards set out in the CSP Design Quality Control Plan.

<u>Deliverables</u>		<u>When Due</u>
11.10	Review and Comment on CSP QC Plan	[30 days after NTP]
11.30	QC review documentation including verifications of resolution and incorporation for CP7 package	[65, Pre-Final and 100%]
	Review of QC documentation for each DP1 & DP2 design submittal	Within 15 days of the receipt of the QC documentation

Task Leader

To be determined

Assumptions and Exceptions

1. SFMTA is responsible for implementation of overall Project Quality Program
2. CSP Quality Control Plan will be provided to the consultant for review and comment at NTP.
3. SFMTA will provide Quality Control Procedures and training to Consultant following NTP.
4. Persons performing Quality Control Management will be in the direct employment of the Consultant.
5. DP1 and DP2 will perform quality control review for their own work. DP3 review for consistency and quality across all disciplines is limited to ensuring that DP1 and DP2 quality control reviews have been performed in accordance with the Project Quality Plan. DP3 quality review is not expected to duplicate the quality review effort performed by DP1 and DP2 Consultants.

12.0 Drawings and Documents

This section describes the development and production of the drawings for the Contract Documents, technical specification input, reports, and supporting calculations and documentation for Design Package 3.

12.01 Civil Plans

Services

1. Prepare civil drawings. The drawings will cover work items identified here as Base Work (to be performed by Consultant) or Optional Services (that may be performed by Consultant or by City Staff).
2. Trackways (alignment plan, profile, details, typical sections including walkway and railing, crossovers, evaluation of Preliminary Engineering Initial Operating Segment interface at 4th and King Streets, connection options and final design of selected option)
3. Site plans

If requested by City, Consultant shall prepare the following plans as Optional Services:

1. Surface Segment site drainage and storm water management plans (Optional Services)
2. Tunnel drainage and connections to sewers plans (Optional Services)
3. Street and sidewalk restoration (Optional Services)

In preparing the Civil drawings, Consultant will compile the design elements listed above into a 3D CAD environment for Surface Segment. The 3D evaluation will include track, utilities and street surfaces for the purposes of design, design integration and conflict resolution. This will initially be developed from Preliminary Engineering design and updated throughout design development.

Deliverables

When Due

<u>Deliverables</u>	<u>When Due</u>
12.01 Civil Contract Plans – Const .Cont. Pkg 7	Pre-Final and 100%
Tunnel Track Horizontal & Vertical Alignment	60 days
Tunnel Track Plans & Details	65%

Task Leader

Chuck Morganson

Assumptions and Exceptions

1. Presentation modeling and simulation is done under other tasks.

2. Consultant will provide InRoads Enterprise software license to Project Office for Consultant and City's use. Consultant will assure that InRoads will be compatible with other AutoCAD products used by SFMTA.
3. SFMTA will lead the effort to perform the rail simulation of the CS Operating Plan. Consultant will design the selected option selected by the SFMTA for connection to IOS.
4. Demolition plans, staging areas, site access, temporary fencing and noise barrier are not included as part of this Scope of Work.

12.02 Utility Plans

Services

1. Provide updated composite utility drawings showing type of utility, size, material, owner, and other pertinent information for existing facilities.
2. Prepare utility relocation and support and protection drawings. The drawings will cover identification and locating existing public and private utilities, relocation and or protection of utilities during construction. House connections will be protected during construction or new connections will be made from data provided by others. Utility relocations designed by Consultant (SFPUC domestic water) and City (sewer and AWSS fire suppression) will be shown together on the composite relocation drawings.
3. Prepare details for the protection and relocation of existing SFPUC domestic water.
4. Prepare details for the protection and relocation of existing sewer and AWSS (fire suppression) (Optional Services)
5. Incorporation of additional utility information (derived from potholing and utility relocation work) for any utilities or utility service lines not shown on the composite utility drawings in the Preliminary Engineering package.

Deliverables

12.02	Utilities Contract Plans for CP7	65, Pre-Final and 100%
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Task Leader

Steve Bertolucci

Assumptions and Exceptions –

1. SFMTA will lead the coordination, agreements and approvals by public and private utilities, and building owners.
2. SFWD design will be done similarly as done in Utility Relocation Contract #1 (SFMTA Contract No. 1250). Profile drawings will not be needed.

12.03 Traffic Plans (Optional Services)

Services

Prepare maintenance and protection of traffic plans (traffic handling plans) for the Surface Segment south of the Portal (Optional Services).

1. Truck routes,(Optional Services)
2. Roadway signing and striping (Optional Services I)

Deliverables

12.03	Traffic Drawings -- CP 7	Pre-final and 100%
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Task Leader

To be determined

Assumptions and Exceptions

12.04 Structural

Services

The work includes the preparation of structural plans for the Tunnel invert. Structural design will conform to the Trackway requirements of the Tunnel invert from as determined during Preliminary Engineering , and will also support construction staging. Consultant shall coordinate structural calculations with the DP1 designer to ensure design conformance with the Project structural design criteria.

The Work will include the preparation of the following plans:

1. Tunnel invert including walkway and plinth
2. Platform plans / details including signs
3. Art foundations (as Optional Services)
4. Mounting details for jet fans, if required.

Deliverables

12.04	Structural Contract Documents and Plans for CP7	65, Pre-Final and 100%
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Task Leaders

To be determined

Assumptions and Exceptions

1. SFMTA will make available all Preliminary Engineering drawings, reports and design documents upon NTP.
2. Any additional geotechnical investigations required will be performed under DP1.
3. Calculations and CAD files from T-Line stations will be provided by SFMTA for designer review
4. Design documents and calculations for Stations and Tunnel structural supports will be provided by the DP1 and DP2 designers or others.
5. Does not include structural plan view drawings.

12.05 Architectural Plans (Optional Services)

Services

If requested by the City, Consultant will assist the City as required or will perform these services as Optional Services.

Provide the Fourth and Brannon Surface Station final architectural drawings and specifications typical of the T-Line.

Additional simulations (renderings) and models may be requested under task 14.

Deliverables

12.05	Architectural CP 7 (Optional Services)	Pre-final and 100%
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Task Leader

Robin Chiang

Assumptions and Exceptions –

None

12.06 Urban Design

Services

Service if required will be provided by others.

12.07 Public Art (Optional Services)

Services

If requested by the City, Consultant will assist the City as required or will perform these services as Optional Services.

Prepare drawings showing the preparation and infrastructure required for the support of standalone art work, including structural and electrical support.

Deliverables

12.07	Public Art – Fourth and Brannan Surface Station	Pre-Final and 100%
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Task Leader

To be determined

Assumptions and Exceptions –

1. See assumptions in Task 2.50 “Coordination with Art for Transit” above.
2. It is anticipated that most of the artwork will be integrated into the facilities design drawings and the work is included in other subtasks.
3. A Priced Level of Effort is assumed for this task.

12.08 Signage

Services

1. Implementation of system-wide SFMTA signage standards.
2. Integration (includes coordination of the overall extent and information contained on signs and the detailed placement and attachment to facilities or foundations)
3. Signage attachment details.

Deliverables

12.08	Signage Drawings—Fourth and Brannon Surface Station	Pre-Final and 100%
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Task Leader

To be determined

Assumptions and Exceptions –

1. Electrical connections for signs and required code signage will be provided under other subtasks (electrical, mechanical, architecture, etc.)
2. Does not include accessibility wayfinding beyond code requirements.

12.09 Elevators and Escalators (Not applicable to DP3)

12.10 Acoustics, Noise and Vibration

Services

Acoustically design jet fans (if required) to comply with City noise ordinance and FTA guidelines (i.e. DB levels for required testing and maintenance).

Assumptions and Exceptions –

Acoustical requirements for jet fans will be shown in mechanical drawings and specified in the Mechanical technical specifications

12.11 Mechanical

Services

1. Design of jet fans in Portal, if required.
If requested by the City, Consultant will assist the City as required or will perform these services as Optional Services.
2. Coordination of the design among various elements including plumbing and fire protection for the Tunnel. (Optional Services)
3. Design of sump pumps with mechanical control at the Tunnel. (Optional service).
4. Fire suppression system design (Optional Services)

Deliverables

12.11	Mechanical Plumbing-- Const. Cont. Pkg 7	Pre-final and 100%
	Jet Fans	65, Pre-Final and 100%

Task Leader

To be determined

Assumptions and Exceptions –

1. Plumbing and Fire Protection system design will be performed by City staff and will be coordinated and incorporated into CP7 Contract Documents by Consultant.
2. Fire testing and analysis of materials used in a typical SFMTA LRV and the establishment of the fire heat release and growth rates will be done by others
3. SES and CFD analyses will be done by the Consultant under Task 2.40.
4. Design of jet fans will not proceed unless SES analysis shows that the fans are required.
5. Does not require Civil Design for support of jet fans.

12.12 Electrical

Services

The electrical design will include local control panels including PLC for jet fans at Tunnel Portal designed to provide both emergency and maintenance modes

If requested by the City, Consultant will assist the City as required or will perform the following services as Optional Services.

- a. Traction power sectionalizing switches (Optional Services)
- b. Power and lighting systems for Fourth and Brannan St. surface Station (Optional Services)
- c. Power and lighting systems for the Tunnel including jet fans (Optional Services)
- d. Overhead contact system (Optional Services)
- e. DC traction power feeder cables (Optional Services)

Deliverables

12.12	a. Local Control Panel and PLC for Jet fans. If requested by the City, Consultant will assist the City as required or will perform these services as Optional Services.	65, Pre-Final and 100%
	b. Traction power sectionalizing switches (Optional Services)	Pre-final and 100%
	c. Power and Lighting – Fourth/Brannan Station (Optional Services)	Pre-final and 100%
	d. Tunnel Power and Lighting – (Optional Services)	Pre-final and 100%
	e. Overhead Contact System – (Optional Services)	Pre-final and 100%
	f. DC Traction Power Feeder Cables – (Optional Services)	Pre-final and 100%
	Next Muni Signs (Optional Services)	Pre-final and 100%

Task Leader

Tom Tolentino

Assumptions and Exceptions

1. Design of power and lighting systems for the underground Stations and associated ventilation structures will be by DP2. This will include the associated primary power feed from the utility.
2. Design of traction power substations will be by DP2 Consultant.
3. Surface segment ductbank for wayside communication systems by the City.

12.13 Systems

Services: Design of the following Systems:

1. Train Control System – Prepare plans for a complete design of the Advanced Train Control System (ATCS) and provide space, conduit, environmental and other Station infrastructure requirements to the DP2 design team for incorporation in CP4, CP5 and CP6. Perform the following tasks as necessary to support Systems design and specifications.
 - a. Define interlocking requirements.
 - b. Establish operational and maintenance reliability requirements.
 - c. Verify that design can achieve Operations Criteria
 - d. Design and coordinate between SFMTA and Thales during design and procurement phases
 - e. Define Portal entry, exit and Portal design requirements
 - f. Consultant shall assist the SFMTA in contracting with the ATCS vendor to be identified by the SFMTA.
2. System-wide Fiber Network (Optional Services)
3. Passenger Destination Display System. Prepare plans for a complete design of the Passenger Destination Display System and provide typical sign detail drawings and conduit and other Station infrastructure requirements for incorporation in CP4, CP5 and CP6. Provide drawings and technical requirements 21 days prior to the completion of each DP2 submittal as determined by that DP2 Design Manager.
4. Tunnel Radio System. – Design Tunnel radio system. Provide space, conduit, environmental and other Station infrastructure requirements to the DP2 design team for incorporation in CP4, CP5 and CP6.
5. Intrusion Detection at Tunnel Portal integrated with ATCS
6. Access Control System for jet fan controls
7. CCTV at Brannan Street Station, Tunnel Portal and tail track at CTS (Optional Services)
8. Surface Segment Train Control and Vehicle Tagging System
9. Emergency Telephone at Brannan Street Station (Optional Services)
10. Traffic Control and Signals (Optional Services)
11. Emergency Telephone/Blue Light Stations (Optional Services)
12. Facility SCADA (Optional Services)
13. Traction Power SCADA (Optional Services)
14. Fire Telephone System (Optional Services)
15. Next Muni Signs (Optional Services)

<u>Deliverables</u>	<u>When Due</u>
12.13 a. Advanced Train Control System b. Access Control for jet fan controls c. Passenger Destination Display System d. Surface Segment Train Control and Vehicle Tagging System e. Tunnel Radio System f. Tunnel Portal Intrusion Detection g. Traffic Control and Signals (Optional Services) h. Emergency Telephone/Blue Light Stations (Optional Services) i. CCTV System (Optional Services) j. Emergency Telephone at Brannan Station (Optional Services) k. System-wide Fiber Network (Optional Services) l. Facility SCADA (Optional Services) m. Traction Power SCADA (Optional Services) n. Fire Telephone System (Optional Services)	65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100%
o. Next Muni Signs (Optional Services)	Pre-final and 100%

Task Leader

Tom Tolentino

Assumptions and Exceptions

1. Elements listed below will be by DP2
 - a. Station communications system including PA, CCTV and Telephone
 - b. Station Local Area Network (LAN)
 - c. Fire Command Center in Stations
2. Tunnel radio system is assumed to be an extension of the currently ongoing Radio System Expansion Project
3. Design of Access Control System for the jet fan controls will be coordinated with and similar to system provided by DP2 in the Stations to ensure consistency.

4. For Automatic Train Control and Tunnel Radio systems, equipment, design and requirements for input to technical specifications will be prepared on a performance level and to define equipment performance for procurement purposes, and will form the basis for equipment manufacturer's detailed design.
5. Specifications will be prepared assuming that Thales (Manufacturer of the MSS ATCS) will be designated as the supplier of major components of the CSP ATCS. Discuss with SFMTA the feasibility of procuring the ATCS system in a contract separate from CP-7.
6. The System wide Cable Network will extend from the existing Powell St Station to the Central Subway and technology to be used in the network shall be as defined in the Preliminary Engineering documents
7. Traction Power SCADA will connect and adopt the same technology as the Traction Power SCADA system planned by SFMTA at time of the Pre-Final submittal
8. CCTV cameras at Portal and tailtrack will be connected to the CCTV system in the adjacent Station, designed by others
9. Intrusion Detection System at the Portal is assumed to be a part of the ATCS

12.14 Control Center Facilities -

Services:

1. Design Operation Central Control Functions for the following subsystems
 - a. PA System
 - b. Telephone System (Emergency Phone) (Optional Services)
 - c. CCTV
 - d. Facility SCADA (Optional Services)
 - e. IDS, ACS, Fan Control and Indication, Fire Alarm, Elevator & Escalator Alarm, Sump Pump Alarm, Agent Booth Emergency Alarm, and Catenary Status
 - f. Advanced Train Control System and
 - g. Passenger Destination Visual and Audible Annunciation System
2. Design Power Central Control Functions for the following subsystems (Optional Services)
Traction Power SCADA and mimic board modification
3. Design Security Central Control Functions for the following subsystems
CCTV System including display board

4. Design 700 Penn Notification for the following
 Escalator and Elevator Alarms

Deliverables

12.14	a. Operations Central Control Functions PA System Alarm and Status Displays and Fan Controls CCTV Advanced Train Control and Platform Destination System for Underground Stations Telephone System (Optional Services) Facility SCADA (Optional Services) b. Power Control Functions (Optional Services) c. Security Control Functions d. 700 Penn Notification Function	65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100% Pre-final and 100% Pre-final and 100% Pre-final and 100% 65, Pre-Final and 100% 65, Pre-Final and 100%
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Task Leader

To be determined

Assumptions and Exceptions –

1. Design of equipment in Stations and other remote locations that are monitored from the different control locations is by others.
2. Scope of design may change as a result of decisions and progress on the Central Control and Communications Project (OCC)
3. Consultant will develop performance specifications and requirements for C3 systems and equipment.
4. All functions shall be integrated with on-going radio, telephone and other facilities currently being designed by others. Displays, controls and layout of equipment shall be designed in enough detail to enable Muni Operations and Maintenance to review and approve the physical displays and configuration.
5. Design for the above control center facilities includes any required designs and specification for additional system equipment and software and database

- modifications to the existing systems so that they integrate with new C3 Systems.
6. Disruption to SFMTA Operations from Consultant's design work will be limited to hours when the transit system is not in revenue operations.
 7. Consultant is not responsible for performing design for Tenant Improvements Building (Architecture, Mechanical, and Electrical) and space planning services .
 8. Sub-Task 9.2.14 assumes that the NTP for the base work for OCC communication task (B1) and 1455 Market task (B3) packages is issued.

12.15 Verification / Validation Report

Services

Assumptions and Exceptions

This work is included in other subtasks above.

12.16 Design Transmittal

Services

Consultant will prepare a transmittal accompanying the 65%, Pre-Final and the 100% submittals for each Construction Contract Package. The Transmittal will describe the level of completion, decisions made, incorporation of comments, and changes from previous submittal.

Deliverables

12.16	Design Transmittal	65, Pre-Final and 100%
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Task Leader

To be determined

Assumptions and Exceptions –

This Work is included in other subtasks above.

12.17 Historic Architectural Services

This section has been intentionally left blank.

12.18 Safety and Security

Services

This Work is included in other tasks above.

12.19 Other Tasks (Optional Services)

Additional Services and deliverables requested by SFMTA needed to obtain approval or complete construction documents and not included in other subtasks.

Assumptions and Exceptions

A Priced Level of Effort is assumed for this task.

Deliverables

	To be determined	

12.20 CADD Manager

Services

1. Provide a dedicated CAD Manager who will be responsible for the administration of the Central Subway Project final design CAD program
2. Evaluate and recommend collaboration and CAD file maintenance technology such as "Vault" or "Projectwise" for the maintenance of electronic drawing files and to provide integrated DP1, DP2 and DP3 access to all files with appropriate read-only or read/write privileges
3. Oversee set up and implementation technology and transfer of drawing files from Preliminary Engineering phase to final design
4. Coordinate training of design staff for CAD manual and technology application
5. Update and ensure all designers abide by and designs comport with requirements set out in the SFMTA CSP CAD Manual for the final design of DP1, DP2, and DP3
6. Audit DP1, DP2 and DP3 milestone submittals for compliance with Project CAD standards and issue review comments
7. Oversee maintenance of master drawing log for DP1, DP2 and DP3
8. Provide guidance and assistance to City designers to complete designs by City staff to the required Project standards
9. Assist City staff with work load and meeting milestone submittal by assigning Consultant CAD resources to assist City designers upon request

Deliverable

When Due

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12.20	Updates to the SFMTA CAD Manual Audit Reports for DP1, DP2, DP3 drawing submittals Training of CAD manual and technology Master Drawing Log	As needed At Milestone Submittals At Milestone Submittals
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Task Leader

To be determined

Assumptions and Exceptions

This task will convert to as-needed only after 24 months.

12.30 PC Support Technician

Services

Provide a dedicated PC Support Technician who will be responsible for providing setup and support of Central Subway Project Personal Computers and general business software under the direction of SFMTA IT.

Assumptions and Exceptions

1. Budget for this task will be 24 months.
2. May be First Source Hire
3. This task budgeted under 12.20

13.0 Construction Packaging and Schedules

The current contract packaging strategy is the result of prior studies and scheduling efforts conducted by SFMTA and documented in the Construction Contracting Strategy Plan documented in the RFP.

13.10 Construction Contracting Strategy Review and Comment

Services

During the Early Work phase, Consultant shall review the Master Project Schedule and contracting strategy plan to ensure each is adequate and appropriate to the proposed construction methods, staging and sequencing plans, contract interfaces, market conditions, and risk management issues and prepare a report documenting its observations and recommendations. Evaluate risk as part of Contract Package Implementation. The review will also take the following into consideration:

1. Alternative strategies to provide consistency of similar systems equipment supplied under different construction contracts within CSP and with the existing system.

2. Possibility of combining procurement of specialty systems equipment into existing or planned SFMTA procurement contracts (example: fare collection equipment).
3. Possibility of having separate procurement contracts for specialty systems such as ATCS.

<u>Deliverables</u>	<u>When Due</u>	
13.10	Construction Contracting Strategy Plan Observations and Recommendations Report	2 Months after NTP

Task Leader

To be determined

Assumptions and Exceptions –

1. It is assumed that Contract packaging, Project Master Schedule, and contract interfacing will be done by others. Consultant's role is limited to reviewing and providing comments.
2. This work will be combined in Subtasks 1.10

13.20 Construction Schedule Review

Services

Review the Project Master Schedule (and applicable subschedules contained therein) prepared by SFMTA and provide comments on logic and duration of activities and evaluate possible improvements to the Critical Path for the Project

Assumptions and Exceptions-

This work has been combined with subtask 10.10

14.0 Outreach Support

Managing Stakeholder expectations requires clear explanations of planned construction methods, equipment and sequence. Consultant shall provide support to the SFMTA's outreach program.

14.10 Graphics Support for Outreach

Services

Consultant shall be available when requested on a work order basis to prepare models, figures, simulations, renderings and other materials needed for community presentations and to assist in the presentations to Stakeholders and community groups..

Deliverables

14.10	Graphics Support – Const. Cont. Pkg 7	At SFMTA Discretion
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Task Leader

To be determined

Assumptions and Exceptions

1. Effort is limited to providing presentation materials for community and Stakeholder outreach.
2. A Priced Level of Effort is assumed for this task.
3. Participation in meetings and responding to questions from Stakeholders is included in Subtasks 2.60 and 2.70.
4. Budget does not assume physical modeling or animations (Fly through or walk through).

15.0 Bid Support Services

15.10 Bid Support

Services

After bids are advertised , Consultant shall provide during the pre-bid period preparing responses to bidder questions and RFIs and clarifying design documents. Consultant shall also provide support to the SFMTA during bid evaluation and award. These services may include preparation of addenda to Construction Bid Documents, responding to questions from bidders, providing engineering support (including modifications to drawings and specifications), participating in pre-award conferences, and conforming Contract Documents to reflect pre-award changes.

Assist SFMTA to evaluate bid results

Deliverables

When Due

15.10a	Bid Support – Const. Cont. Pkg 7	[As needed]
15.10b	Conformed Contract drawings and specs – Const. Cont. Pkg 7	[As needed]

Task Leader

To be determined

Assumptions and Exceptions –

1. A Priced Level of Effort is assumed for this service.
2. Consultant will participate in the review of the bids on the Construction Packages.

16.0 Design Services During Construction

Consultant will support SFMTA throughout construction on as needed basis. A Priced Level of Effort is assumed for these services. Services provided for every one of the construction packages include:

1. Prepare and submit for approval a Construction Support Strategic Execution Plan that details Consultant's roles and procedures in supporting SFMTA and the PM/CM.
2. Review shop drawings, contractor working drawings, catalog cuts, etc.
3. Respond to RFIs, technical submittals and contractor-proposed changes.
4. Maintain logs and track progress of received RFIs, submittals and proposed changes.
5. Post site visit reports to document design discipline leads involvement in design verification or issue resolution.
6. Prepare conformed DP3 drawings and specifications
7. Compile and organize O&M manuals for systems included in respective construction contracts and prepare an introductory section to describe O&M manual organization.
8. Revise and reissue contract drawings and specifications to reflect contract changes
9. Provide quantity estimates for proposed changes in the work.
10. Return reviewed product data and catalog cut submittals within 5 working days of availability of the submittal to the Consultant. Additional time will be provided if the submittal package is large.
11. Respond to RFIs within 5 working days of availability of the RFI to the Consultant. Additional time may be allowed if the RFI requires substantial research, the subject is complex, or additional design is required.
12. Return reviewed submitted shop drawings, calculations, and samples within 10 working days of availability of the submittal to the Consultant. Additional time will be provided if the submittal package is large or complex, as determined by the SFMTA..
13. Return reviewed substitutions and contractor requested changes within 15 working days of availability of the substitution or change to the Consultant. Additional time will be provided if the substitutions and contractor requested changes are numerous and/or complex as determined by the SFMTA.

Assumptions and Exceptions –

A Priced Level of Effort is assumed for these services

16.10 Construction Support Strategic Execution Plan

Services

Prepare a strategic execution plan to delineate the roles and responsibilities, procedures, and management approach for the Consultant's services during construction

Deliverables		When Due
16.10	Const. Support Strategic Exec. Plan for CP7	As-needed

Task Leader

To be determined

Assumptions and Exceptions –

Consultant will be provided with Contractor's schedule of submittals for review and comment.

16.20 Design Team Support

Services

Consultant will provide a as-needed design team representative in the field during the construction period for CP7. The representative will act as a liaison between the Consultant design staff, the the SFMTA's CM/PM Consultant, and the SFMTA.

Deliverables		When Due
16.20	Design Team Representative – Const.Cont.Pkg 7	As needed

Task Leader

(To be determined)

Assumptions and Exceptions

A Priced Level of Effort budget is assumed for this task.

16.30 Shop Drawings Review, Technical Support and Consultation during construction

Services

1. Review shop drawings, Contractor working drawings, catalog cuts, etc.
2. Respond to RFIs, technical submittals and contractor-proposed changes.
3. Maintain logs and track progress of received RFIs, submittals and proposed changes

4. Prepare and complete construction conformance checklist and support SFMTA in completing safety and security certification process.
5. Prepare test procedures for systems integration across construction contracts.
6. Support SFMTA and CM in witnessing factory and field testing.

Deliverables		When Due
16.30	Shop Drawings Reviews and RFI – Const. Cont. Pkg 7	As needed

Task Leader

To be determined

Assumptions and Exceptions –

A Priced Level of Effort budget is assumed for this task.

16.40 Field Visits / Meetings

Services

Conduct site visits by Consultant staff and prepare site visit reports to document observations and verification of or issue resolution. Implement the Project Safety requirements and access controls for visitors and other consultants

Deliverables		When Due
16.40	Log of visitors, meeting notes and safety compliance notes for Field Visits / Meetings – Const. Cont. Pkg 7	

Task Leader

To be determined

Assumptions and Exceptions –

A Priced Level of Effort budget is assumed for this task.

All site visits will be coordinated with the Resident Engineer.

16.50 Change Proposals / Value Engineering

Services

Prepare revised drawings, specifications, and/or quantity estimates for SFMTA and other requested changes. Support SFMTA in reviewing change proposals.

<u>Deliverables</u>		<u>When due</u>
16.50	Change Proposals / Value Engineering – Const. Cont. Pkg 7 Review comments on cost and schedule resulting from proposed change	30 days after substantial completion

Task Leader

To be determined

Assumptions and Exceptions

A Priced Level of Effort budget is assumed for this task.

16.60 Conformed Contract Documents

Services

Prepare conformed drawings and specifications based on contractor (or CM) prepared redlined drawings. Identify contractor provided drawings to be retained by SFMTA for O&M.

<u>Deliverables</u>		<u>When Due</u>
16.60	Conformed Contract Documents – Const. Cont. Pkg 7	

Task Leader

To be determined

Assumptions and Exceptions

1. SMTA will provide the redlined drawings and the conformed drawings will be prepared based on these redlined drawings. No field verification to their accuracy will be made.
2. DP1 and DP2 design teams will provide conformed drawings for their respective construction packages.
3. A Priced Level of Effort budget is assumed for this task.

16.70 Operations and Maintenance Manuals

Services

1. Provide integrated O&M manuals to enable SFMTA to operate and maintain the operating system elements furnished and installed in CP7. Include advanced commissioning data and results of testing and startup.
2. Develop a training outline and assist in the development of training programs for facility operators before activation.

Deliverables		When Due
16.70	O&M Manuals – CP7	No later than 30 days after substantial completion.

Task Leader

To be determined

Assumptions and Exceptions

1. Contractor provided O&M manuals will form the core of the integrated O&M manuals.
2. O&M Manuals will cover all DP3 scope including architectural finishes and fixtures and mechanical and electrical systems, system wide communications, train control, OCS, traction power, and all other operating system elements furnished and supplied under CP7.
3. A Priced Level of Effort budget is assumed for this task.

16.80 Warranty Services (Optional Services)

Services

1. In the event that systems, components, equipment, or finishes fail to meet the specified performance criteria prior to the Final Warranty Inspection, the Consultant shall review the condition of work, and provide recommendations to the City for Corrective Warranty work.
2. The Consultant shall assist the City personnel in conducting the Final Warranty Inspections at the end of the two year warranty period following Final Completion of construction package No.7.
3. A Priced Level of Effort budget is assumed for this task.

Deliverables

When Due

As needed on call consultation, reports and corrected drawings, and corrected O&M manuals

As needed

PART B – OPERATIONS CONTROL CENTER SYSTEMS REPLACEMENT PROGRAM SCOPE OF WORK

Overview of the C3 Program

The Operations Control Center Systems Replacement Program ("C3 Program") consists of three main components:

- a. Modernization of the existing Operation Control Center (OCC) at Lenox and conversion of that facility to a secondary (backup) OCC.
- b. Creation of a new Interim Primary OCC at 1455 Market Street or at another location to be determined.
- c. Provision of an integrated, uniform, and expandable communication systems for the existing OCC, new interim primary OCC, existing Metro subway, and Central Subway.

Design Submittals

Consultant shall provide the SFMTA with design and other documents, as described below, that constitute design submittals of 35 percent, 65 percent, Pre-Final and Final Design (100% Complete) Design Documents.

35% Submittal: The 35% submittal represents the equivalent of Preliminary Engineering Phase for the C3 Program and involves the preparation of documents that will form the basis for subsequent detailed design and development of Contract Documents. The submittal documents will address site investigation, design validation, functional and operational requirements, design criteria, alternatives analyses, scope of work, testing and start-up plan, training requirements, construction cost estimates, baseline schedule, and plans for implementation, contracting strategy, and cutover. The C3 Program consists of work classifications as described in Part B of this scope document, and each work classification contributes to the overall 35% design with corresponding submittal schedules. These submittals are discussed as follows:

- a. Integrated Systems Replacements Conceptual Engineering Report – covers the replacement of existing legacy systems, audio/visual systems, and fiber optic communications backbone that will define the overall vision and configuration of systems at the primary and secondary OCC's. The CER is prepared to the SFMTA CER standard. The scope of the report is discussed in detail in Task B2.91.
- b. Interim Primary OCC Implementation Plan – covers the plan for the implementation of a new Interim Primary OCC at 1455 Market St and modifications to existing communication systems and supporting infrastructure at the Lenox Avenue OCC and any other affected sites to

the extent necessary to accommodate the new Interim Primary OCC work. The plan scope and content are discussed in detail in Task B2.92

- c. Business Process Re-Engineering (BPR) Study– covers the investigation of current SFMTA business processes and preparation of a plan that will include recommendations for combining control functions currently dispersed across different locations in the city. The scope of the BPR is discussed in detail in Task B2.93.
- d. New Primary OCC Design (Optional Services) – covers the development of operational requirements and conceptual design for the SFMTA OCC at the Transbay Terminal. The scope is discussed in detail in Task B2.94.
- e. Operational Concept Document and CER for the Secondary OCC at Lenox Ave. (Optional Services) – covers the development of an Operational Concept Document followed by a Conceptual Engineering Report to the 35% design level for the implementation of the Secondary OCC at Lenox Ave. The scope of the concept document is discussed in detail in Task B2.95.

65% Submittal: 65% complete shall be defined as being sufficiently complete to illustrate the entire scope of the work under design so that reviewers can comment on the overall scope of the contract package. The intent is to avoid new, never before seen items of significance appearing for the first time in the Pre-Final submittal. All previous comments shall have been identified and addressed. The work also needs to be sufficiently complete to support the Consultant's 65% construction cost estimate submittal. Items of significance shall also have been independently checked at this point, in accordance with the provisions for the QC Plan, including items on drawings, in the specifications and construction cost estimate.

Submittal shall include reports, drawings, and technical specifications sections to include the general description and products requirements, and cost estimate for the contract package for review. The submittal shall include in the transmittal letter a summary discussion of the design, by discipline, to give the reviewer an understanding of why the design progressed in the particular manner it did. It shall reference documentation of design decisions made in the course of the work. Include outstanding issues and/or conflicts that need resolution and recommendations to resolve such issues. Provide a matrix of changes from the 35% documents and a matrix of review comments received after the 35% submittal with a description of the changes and resolution of the comments. An electronic copy and one hard copy of the submittal materials will be provided.

Pre-Final Submittal: All design work shall be essentially complete with only minor (insignificant) items needing detailing or checking. All calculations shall be completed; major items shall be independently checked. Drawings shall be nearly complete for bidding purposes; approximately 90% complete and all comments made during the 65% design review and other reviews shall have incorporated or resolved. All previous comments shall have been identified and addressed. Reports and studies shall be submitted as final, unless otherwise agreed. Consultant's final list of proposed contract bid items and quantities shall be submitted.

Submittal shall include final reports, drawings, special provisions, general requirements and technical specifications, and updated construction cost estimate. The submittal letter shall include a summary updated discussion of the design, by discipline, to give the reviewer an understanding of why the design progressed in the particular manner it did since the 65% submittal. It shall reference documentation of design decisions made in the course of the work since the 65% submittal. Include outstanding issues and/or conflicts that need resolution, if any remain, and recommendations to resolve such issues. Provide a matrix of changes from the 65% documents and a matrix of review comments received after the 65% submittal with a description of the changes and resolution of the comments. An electronic copy and one hard copy of the submittal materials will be provided. Additional reproduction cost may be requested as part of the Optional Services. Pre-final submittals are expected to be complete except for updates required to address comments made on the Pre-Final submittal. All items in the submittal shall be independently checked in accordance with the provisions for the QC Plan.

Final Submittal/Contract Document (100%): Consultant's Final design submittal shall include original and electronic files of the complete drawings, special provisions, general requirements and technical specifications, bid item list and final engineer's construction cost estimate ready for bidding of the work. The submittal letter shall include a summary updated discussion of the design, by discipline, to give the reviewer an understanding of why the design progressed in the particular manner it did since the Pre-Final submittal. It shall reference documentation of design decisions made in the course of the work since the Pre-Final submittal. Include outstanding issues and/or conflicts that need resolution, if any remain, and recommendations to resolve such issues. Provide a matrix of changes from the Pre-Final documents and a matrix of review comments received after the Pre-Final submittal with a description of the changes and resolution of the comments. Drawings shall be sealed and signed by the appropriate architect, engineer or other professional licensed by the State of California. Final signed and sealed check prints of drawings, specifications, calculations, cost estimates and other documents as applicable shall be provided to SFMTA. All documents shall be properly indexed and complete with back up.

Design Review

Consultant will receive from the SFMTA design review comments within four weeks of each submittal to SFMTA reviewers and within eight weeks of each submittal to outside agencies or third party Stakeholder. SFMTA will provide the comments to Consultant who will compile them and identify any conflicting comments for joint resolution within two weeks. The Within three weeks of receipt of each comment, Consultant shall address the comments and include them in a matrix listing each comment and the Consultant's response or resolution of the each comment .

Integrated System Design

A major focus of the C3 Program is to provide SFMTA operations an integrated, uniform, and expandable communication systems for the existing OCC, new interim primary OCC, existing Metro subway, and Central Subway.

As part of the OCC modernization work, some of the existing communication systems in the current OCC and existing Metro subway will be upgraded and/or replaced. Consultant shall be responsible for design deliverables as detailed below for these replacement systems which include: Public Address (PA) system, Platform Display System (PDS), Blue-light Emergency Telephone (ET) System, and SCADA system. The Motive Power SCADA system will have central control systems upgraded and additional system client terminals will be added to the existing OCC and new OCC. A new Integrated Audio/Visual Management System will be designed for both OCCs for integrating all user interfaces from various systems, i.e.: SCADA, CCTV, ATCS/SMC, Radio, CAD/AVL, Trapeze schedule, Motive Power SCADA, SFgo, SFpark, telephones, etc., into one unified interface on user terminals and OCC screen walls. Modifications to existing systems and supporting infrastructure shall be designed as required to accommodate the integrated Audio/Visual implementation. A new Fiber Broadband Network will be designed for connecting all existing underground infrastructure in Stations and/or equipment rooms to both interim primary and Lenox OCCs.

Contract Packaging

The contract packaging for systems replacements is anticipated to be split into two sequential design and construction packages. The composition of those construction packages 1 and 2 may be restructured based on available resources to support construction.

Design and Implementation of Systems and Tenant Improvements for an Interim OCC at 1455 Market Street

- a. The City of San Francisco is currently negotiating with Bank of America (BoFA) a lease-purchase agreement of the BoFA's data center at 1455 Market

Street. The agreement is expected to be finalized by the end of March 2010. There is a vacant control room on the 7th floor of 1455 Market Street, with adjacent areas for conference rooms, offices and office amenities. The vacant space is approximately 33,000 sq ft. The SFMTA plans to establish a new interim primary Operations Control Center (OCC) in this space, while retaining the existing OCC at 131 Lenox Avenue as a Secondary OCC. In the event the City's plan to lease-purchase the building at 1455 Market Street fails to be executed, all tasks which reference the Interim Primary OCC and 1455 Market Street will apply to a different location, which will be determined by the SFMTA.

- b. The Primary OCC will combine SFMTA control functions currently dispersed across the City, including: MUNI transit OCC (from 131 Lenox), DPT's SFgo Traffic Management Center (from 25 Van Ness Avenue), Muni's Interim Line Management Center (from One So. Van Ness Avenue), MUNI's Power Control (from 1455 Division Street), Parking Control Officer (PCO) and towing dispatch (from 505 7th Street), and SFMTA Security Dispatch (from 875 Stevenson). The Primary OCC will also have room for new SFMTA control functions, such as Taxi dispatch and SFpark. The preliminary estimate for space requirements is 30,000 sq ft.
- c. The long-term SFMTA plan is to implement an OCC at the Transbay Terminal. However, due to funding and schedule issues, an OCC at the Transbay Terminal is in the early conceptual planning stages. In the interim, the SFMTA needs to consolidate all of the SFMTA's real-time command and control functions at the earliest opportunity at a new facility. The OCC at 1455 Market Street is considered an "interim" primary OCC. When and if the OCC at the Transbay Terminal is constructed, part of that planning process will be to disposition the OCC at 1455 Market Street.
- d. The upgraded communication systems (including audio/visual systems, fiber optic communications, and voice data recorders) at the existing Lenox Avenue OCC shall be integrated so that they operate simultaneously with the systems at the new Interim Primary OCC. Consultant shall provide design and associated support services for as described at sections 2.9.1 – 2.9.4, 9, 12, and 16.
- e. In conjunction with development of the Interim Primary OCC implementation plan, the Consultant shall assist the SFMTA in negotiating a Tenant Improvement contract with BofA. The Consultant will then proceed to detail design and prepare construction/procurement contract(s) for any remaining work necessary for implementing a new Interim OCC but not included in the BofA Tenant Improvements

Business Process Review

As discussed under the work classification for the design and implementation of systems and tenant improvements for the Interim Primary OCC, the SFMTA plans to combine control functions currently dispersed across the City at a new OCC, including Muni's transit OCC (from 131 Lenox), DPT's SFgo Traffic Management Center (from 25 Van Ness Avenue), Muni's Power Control (from 1455 Division Street), SFMTA's Security Dispatch (from 875 Stevenson and 505 7th Street), and Muni's interim Line Management Center (LMC). This plan represents a significant divergence from existing SFMTA Operating and Security business processes. After the completion of the Interim Primary OCC, the existing OCC at Lenox will function as a secondary OCC. To best utilize this opportunity for improvement and to ensure responsible and accountable implementation of process changes, the SFMTA recognizes the need for a Business Process Review.

New Primary OCC Design (Optional Services)

The SFMTA's long-term strategy includes developing full OCC capabilities at the new Transbay Terminal planned to be constructed at 1st and Mission Streets. The new Transbay Transit Center is a project of the Transbay Joint Powers Authority (TJPA). The current conceptual plan for the SFMTA's OCC at the Transbay Terminal is to develop a secure 30,000 sq ft split between lower concourse and train platform levels.

- a. The SFMTA is planning to implement both a primary and secondary OCC. The Primary OCC would be the site where OCC activities take place in the normal course of events. The Secondary OCC would provide a back-up OCC in case the primary OCC were unavailable for whatever reason. SFMTA's immediate plan is to establish an "Interim" Primary OCC at the new 1455 Market Street site and retain the existing OCC on Lenox Avenue as a secondary. The determination has not yet been made whether the SFMTA's future OCC at Transbay will function as the primary or secondary OCC.

Improvements to Existing OCC at Lenox Ave as a Secondary OCC (Optional Services)

The SFMTA is planning to implement both a primary and secondary OCC. The Primary OCC would be the site where OCC activities take place in the normal course of events. The Secondary OCC would provide a back-up OCC in the event the primary OCC was unavailable for whatever reason. SFMTA's immediate plan is to establish an "Interim" Primary OCC at the new 1455 Market Street site, and make

improvements to the existing OCC on Lenox Avenue as a secondary OCC for transit operations.

The scheduled due date of all deliverables in the C3 Program shall be according to and match the overall Project schedule provided by SFMTA.

Consultant's Work Product - Tasks

The Work that Consultant will perform and Work Product that it will deliver for the C3 Program is set out below and follows the same 16 task divisions that used in the description of the Central Subway Project portion of the Work, set out in Part A of this document. The description of Work on the C3 Program is to be read as follows:

- 1.1 Identical Scope – Where the CSP and C3 scope are identical or the C3 Work is an extension of CSP Work, this will be noted as “Task X.X – The same task description in Part A applies.” Additional notes may be made where necessary.
- 1.2 Scope Not Applicable – Where the description of the scope of work in CSP does not apply to C3, this will be noted as “Task X.X – Not Applicable”
- 1.3 Scope Superseded – Where the C3 has a different scope of work from the CSP, this will be noted as “Task X.X – Task description in Part A is superseded and the following task description applies.”
- 1.4 Modified Scope – Where the CSP scope of work requires modification to cover C3 scope, this will be noted as “Task X.X – The same task description in Part A applies except with the following modifications.”
- 1.5 Unique Scope – Where the scope is unique to C3 and does not have a corresponding task description in CSP, this will be noted as “Task X.X – This task description is unique to C3.”

Consultant will submit Work Product to the SFMTA as described below with specified submittals (e.g., at 35% design, at 65% design, Pre-Final and Final Design), or as otherwise noted below.

B1.0 Project Management and Control

The Task description in Part A is superseded and the following task description applies.

Project Management is the daily management by Consultant of its Scope of Work, its staff, and Work Product. It includes coordination of the design effort among disciplines and among construction packages. It also includes management of the Contract schedule and budget, and implementation of cost and schedule control measures and corrective actions.

Interfacing and coordination among Stakeholders will be done through regular integration meetings, for which the Consultant shall provide support. Furthermore,

Consultant will provide support for dialogue among Stakeholders, building owners, and project teams for related projects.

B1.10 Design Strategic Execution Plan / Baseline Schedule

Task description in Part A is superseded and the following task description applies.

Services

The Consultant shall visit work sites to observe and determine general site conditions, utility locations, existing facilities and other pertinent information. Within 21 days, the Consultant shall prepare an overall Design Strategic Execution Plan to cover all phases of design. The Plan shall include: Design Work Plan, Design Schedule, Management and Coordination Plan, Communication Protocols, Consultant Design Budget and Schedule Control Plan, Drawing standards, and Quality Control.

The Design Strategic Execution Plan will drive the entire C3 design process. The plan will be the blueprint for performing the C3 Program and will develop a framework for:

Monitoring project performance

1. Disseminating information to all project participants
2. Ensuring consistency across construction contract packages
3. Controlling Quality, Schedule and Cost
4. Identifying interfacing milestones both within Design Package 3 and with the other Design Packages as shown on the C3 Master Project Schedule (MPS).
5. Identifying responsibilities and relationships within the Consultant Team and with SFMTA and other project participants and Stakeholder

The Strategic Execution Plan shall include a baseline Task Control spreadsheet covering all subtasks. Subtasks shall be defined by discipline and deliverables (3rd or 4th level) to identify Work Product in accordance with the Work Breakdown structure (WBS). The Task Control Log shall be a spreadsheet showing subtask number, subtask title, discipline, budgeted hours and cost, and number of sheets or drawings (if appropriate). This spreadsheet shall be used for monthly reporting.

Consultant shall proactively monitor its activities to anticipate problems and devise ways to avoid them before they turn into issues. Consultant shall respond to changing conditions while maintaining focus on 'schedule busters'.

Consultant shall develop a detailed Critical Path Method (CPM) design schedule based on the milestones contained in the C3 Master Project Schedule (see section B13.20, below). The Design Schedule will include the Consultant activities integrated with SFMTA and Third-party Stakeholder activities based on the tasks and subtasks and will show the activity, description, duration, start, finish and logical

relationships between activities, sub-activities and milestones. Deliverables, design reviews, incorporation of review comments, interfaces with other designers, and interfaces with third parties will be shown. This schedule will serve as the design baseline for reporting progress as described in Task 1.20 below.

<u>Deliverables</u>	<u>When Due</u>
B1.10 Design Strategic Execution Plan including initial Design Schedule, work plan and comprehensive definition of each deliverable	Draft 21 days after NTP, Final 42 days after NTP.
B1.15 OCC Integrated Design CPM schedule	Draft 21 days after NTP,

Task Leader

Tom Tolentino

Assumptions and Exceptions –

SFMTA will provide Agency Strategic Plan for input into Design Strategic Execution Plan.

B1.20 Project Control Reporting

The same task description in Part A applies with the following modifications. Project Management for CSP will be expanded to cover C3 Program with the following additional services:

Services

1. Project Control Reports – to be submitted by quarterly. The report shall include:
2. Task Control Update– Update the Task Control spreadsheet to reflect hours and cost expended to date, estimated remaining hours and cost to complete, and progress as an estimate of the percent complete. Current issues relating to the budget, proposed mitigations to address issues, and proposed and pending changes to the budget.
3. Update the C3 schedule quarterly to indicate progress, actual start and finish dates, remaining duration, percent complete, and estimated dates to complete. The Consultant shall describe changes in logic, current issues relating to the schedule, proposed mitigations to address issues, and proposed and pending changes to the schedule.

<u>Deliverables</u>	<u>When Due</u>
B1.20 Project Control Report 1. Updated Task control spreadsheet. Description of Task Control issues and resolution. C3 design schedule status. Description of schedule issues and resolution.	[Quarterly (10 th of the following month)]

		[Quarterly 21 st of the following month]
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Task Leader

Tom Tolentino

Assumptions and Exceptions –

Provide sample SFMTA quarterly report

B1.30 Invoicing

The same task description in Part A applies. Invoicing for CSP will be expanded to prepare separate invoices and labor reports for C3 Project

Task Leader

Tom Tolentino

B1.40 Compliance Support

Assumptions and Exceptions

This work has been included in subtask 1.30 & 1.50 and is limited to reporting SBE, EEO and First Source Hiring participation, utilization and goal attainment.

Task Leader

Tom Tolentino

B1.50 Project Management

The same task description in Part A applies with the following modifications. Project Management for CSP will be expanded to cover C3 Project with the following additional services

Services:

Prepare meeting minutes for C3 meetings as requested by SFMTA

Deliverables	When Due
B1.50 Project coordination meetings 1. Action item log 2. Brief progress reports(as needed) 3. Meeting minutes (as required)	[As needed]

Task Leader

Tom Tolentino

B2.0 Design and Project Integration

B2.10 Design Interfacing and Integration Management

The same task description in Part A applies, except with the following modifications:

1. Propagate CSP Interface Management database to include C3 elements.
2. C3 systems integration effort will cover interface coordination and cutover among the following:
 - a. Interim OCC at 1455 Market Street
 - b. Secondary OCC at Lenox Ave.
 - c. SFMTA Metro
 - d. Existing and new Systems
 - e. Audio/Visual Management System
 - f. Existing legacy Advanced Train Control System (ATCS) including the System
 - g. Management Center (SMC) subsystem
 - h. Central Subway Systems
 - i. Radio System
3. The Consultant shall coordinate with the Radio System contractor for integration and cutover of a new voice-data radio system into the 1455 Market Street and the Lenox OCCs
4. The Consultant's design shall integrate the Market St. Subway systems, and new OCC systems into the interim OCC at 1455 Market Street. This Work shall include:
 - a. Coordinate implementation and cutover strategies developed for the C3 Program for migrating existing OCC systems to a new suite of integrated systems.
 - b. Define a standard communications protocol and open system architecture platform for the integrated systems and other system integration work for ease of integration, expansion, operation, and maintenance.
 - c. Define in the Interface Control Document all interfaces of systems included in the scope of the of all system that being worked on in the C3 Program (see section B2.10.d).
 - d. Review vendor/contractor design and implementation for compliance with integration standard.
 - e. Validate as-built system in compliance to integration standard and document as-built in the Interface Control Document.

- f. Prepare requirements and design for extending existing systems and operational functionality from the various existing sites to 1455 Market, if necessary as determined by strategies and schedules prepared for C3. This subtask includes:
- (1) Analysis of existing software protocols and configurations as necessary
 - (2) Designing protocol converters if necessary to duplicate existing functions.
 - (3) Designing architecture that allows switching without disruption of functions
 - (4) Analysis of mechanical and electrical interfaces
 - (5) Definition of new or replacement systems as required to provide the functionality at the new interim OCC which is equivalent or better to functionality at the existing sites

Task Leader

Jerry Furman

Deliverables

When Due:

<u>Deliverables</u>	<u>When Due:</u>	
B2.10a	Requirements of replacement systems for the design and implementation of the interface to related OCC systems	2 months after NTP
B2.10b	Requirements for interface design and implementation of migration of existing systems and functionality to the interim primary OCC	2 months after NTP
B2.10c	C3 Strategic Plan Integration Management Plan	60 days after NTP
B2.10d	Interface Control Document template	To be included in the Conceptual Engineering Report described in Task 2.91

Assumptions and Exceptions:

Consultant shall use the template for Interface Control Documentation provided by the SFMTA, The radio system is currently being procured under a separate contract with installation of radio systems into the Primary OCC location anticipated to start some time after August 2011.

B2.20 Third Party Coordination

The same task description in Part A applies, except with the following modifications:

Consultant shall provide support of SFMTA outreach and coordination with the Stakeholders listed below and other third parties:

- Bank of America
- City Real Estate Department (RED)
- Transbay Joint Powers Board
- Mayor's office of Accessibility
- SF County Transportation Authority
- SFMTA Citizen's Advisory Committee
- California Public Utilities Commission
- BART
- Department of Homeland Security
- SF Department of Public Works
- SF Department of Building Inspection
- San Francisco Department of Emergency Management
- San Francisco Police Department
- San Francisco Fire Department (for coordination of fire/life-safety subway systems)
- Metropolitan Transportation Commission
- Federal Transportation Agency

Task Leader

Jerry Furman

B2.30 Coordination of Design Performed by City Staff (Not Applicable)

B2.40 Systems Design Coordination (Not Applicable)

B2.50 Coordination with Art for Transit (Not Applicable)

B2.60 Community Outreach (Not Applicable)

B2.70 Other Coordination Activities

The same task description in Part A applies, except with the following modifications:

1. References to FTA Workshops do not apply.
2. Deliver design presentations to Stakeholder at draft submittal and final submittal stages.

Task Leader

Jerry Furman

B2.80 Safety and Security

Task description in Part A is superseded and the following task description applies.

Services

1. Prepare checklists covering design, testing and training for the Safety and Security Certification of the C3 Project. Checklists will include safety and security critical requirements from the Design Criteria.
2. Verify C3 design conformance and complete Safety and Security Certification checklist.
3. Performance of Threat and Vulnerability Analysis (TVA)
4. Define appropriate analyses required for safety and security certification.

Deliverables

B2.80a	Safety and Security Certification checklist for C3 Construction Packages Complete Safety and Security Certification checklist	within 21 days of CER, Preliminary Plan, 65%, Pre-Final and 100% submittals
B2.80b	Threat and Vulnerability Analysis (TVA)	Within 21 days of 65%

Task Leader

Chris Shorter

Assumptions and Exceptions

1. Blast analyses and structural hardening design are not included as part of the Basic Services or Optional Services.
2. Safety and Security Certification checklist for construction will be prepared as part of DSDC.

B2.90 Sustainability, LEED

The LEED design requirements will be defined and applied to 1455 Market Street, Lenox and Transbay facilities. Assist in obtaining LEED certification and any waiver(s) as necessary.

Task Leader

Dave Coury

Assumptions and Exceptions

1. Hours for LEED support services are included in Sub-tasks B2.92, B2.94, B2.95, B12.05 and B16.30.
2. For the Interim Primary OCC, LEED certification is obtained by the Landlord's designer.

B2.91 Integrated Systems Replacement Conceptual Engineering Report (CER)

This task description is unique to C3.

Services:

1. Prepare an Integrated Systems Conceptual Engineering Report (CER) to a 35% design submittal level for replacement of existing legacy systems, including upgrade of the Motive Power SCADA system, provision of new integrated audio/visual systems for OCC dispatchers, and a fiber-optic communications backbone. These replacement systems shall include Public Address (PA) system, Platform Display System (PDS), Blue-light Emergency Telephone (ET) System, and SCADA systems. The Motive Power SCADA system design shall include upgrading of the centralized control components as well as adding system client terminals to both the existing OCC and new interim primary OCC. A new Integrated Audio/Visual Management System shall be provided for both OCCs for integrating all user interfaces from various systems, i.e.: SCADA, CCTV, ATCS/SMC, Radio, CAD/AVL, Trapeze schedule, Motive Power SCADA, SFgo, SFpark, telephones, etc., into one unified interface on user terminals and

OCC screen walls. And a new Fiber Broadband Network shall be designed for connecting all underground Stations and equipment rooms to both interim primary and Lenox OCCs. Design of modifications to existing systems and facilities shall be performed as required to accommodate the work described above.

The CER shall define the integrated design and configuration of systems at the SFMTA OCCs, and in the Metro subway and other affected sites as applicable. The CER will summarize the initial work performed by the Consultant and shall include:

2. Perform site investigations, initial review of documentation, and interviews of Stakeholder as required to form a conceptual basis for design. Work will include:
 - a. Review existing as-built documentation to understand the current configuration, functionality, operations and on-going projects external to this contract, including but not limited to NextBus AVLS, Radio Replacement Project, ATCS, HVAC, and traction power upgrades. Perform site validation of as-built documentation and existing facilities as required to create a conceptual design baseline,
 - b. Review of existing OCC as-built documentation to understand the current configuration, functionality and operations and on-going projects external to this contract. Perform site validation of as-built documentation and existing facilities as required to create a conceptual design baseline.
 - c. Review documentation provided by SFMTA, and elicit needs and requests from users, to define requirements.
 - d. Explore available technologies for all sub-systems to determine if the new specification should exclude any old technologies.
 - e. Participate in meetings with Stakeholders.
 - f. Interview Stakeholder.
 - g. Perform Stakeholder needs survey to gather functional and operational needs.
3. Perform the following analyses:
 - a. Stakeholder needs assessment.
 - b. Analysis of communication backbone requirements with consideration for ongoing upgrade projects including such items as radio replacement and ATCS,
 - c. Analyze capacity requirements of existing communication systems to be upgraded or replaced,
 - d. Analyze interfaces with existing equipment that will remain. This work should include mechanical, electrical, and software interfaces.

- e. Alternatives Analysis where appropriate to identify best functional and cost effective design and construction approaches.
- f. Assemble criteria for systems Availability and Maintainability
- 4. Prepare a complete list of Project scope of work; Project work scope shall also include other works that are associated with the integrated systems work, i.e.: electrical, mechanical, and structural works that support integrated systems.
- 5. Prepare C3 Program design criteria using CSP design criteria as an input; design criteria shall also address electrical, mechanical and structural work associated with the integrated systems.
- 6. Develop conceptual contracting and implementation strategy with consideration for funding and the migration paths of the existing legacy system in the Market St. Subway and the Central Subway,
- 7. Prepare 35%-level design drawings,
- 8. Develop conceptual cost estimates for the C3 Program with recommended contingencies suitable for setting the program budget,
- 9. Develop outline for a test, start-up and cutover plan,
- 10. Develop general training requirements,
- 11. Develop Baseline Project schedule,
- 12. Develop conceptual approach for Systems implementation and cutover,
- 13. Include approach for Systems integration
- 14. Perform Alternatives Analyses of different Systems designs and implementations
- 15. The CER format shall conform to the standard SFMTA CER format.
- 16. The CER shall also include the conceptual design for the new Audio/Visual Management System that will integrate visual and audio presentation of the following:
 - a. The existing communication systems installed in the secondary and interim primary OCC,
 - b. The new communications systems in either the secondary or interim primary OCC,
 - c. Expansion and configurability to accommodate potential future inputs.

Deliverables

When Due:

<u>Deliverables</u>	<u>When Due:</u>
B2.91a Summary and inventory of the existing systems and facilities, as-built, systems and physical configuration, functionalities, and current operational practice of the systems to	1-1/2 months after NTP

	be replaced	
B2.91b	Draft Integrated Systems Conceptual Engineering Report (CER)	Draft, 3-1/2 months after NTP
B2.91c	Final Integrated Systems Conceptual Engineering Report at 35% design level (CER)	Final 5 months after NTP

Task Leader

Dave Coury

Assumptions and Exceptions:

1. Implementation of Systems replacements will entail modifications to existing SFMTA infrastructure at all affected sites, to the extent necessary for OCC Systems integration.
2. Existing Metro Subway includes existing OCC, Metro Subway from Ferry Portal to West Portal, Duboce Portal and Eureka Portal, including the Muni Metro Turnaround (MMT) and Muni Metro Extension (MMX) segments of the SFMTA rail system.
3. As part of the Conceptual Engineering Report, system design criteria for Central Subway will be used as a basis for creating specific design criteria for the integrated systems which meet the OCCs and existing Metro Subway needs, and that comply with the latest code and regulation requirements.
4. Replacement of legacy communication systems at the existing Lenox Avenue OCC and Metro subway shall be scaled to be operable at both the new Interim Primary OCC and the Lenox Avenue OCC, and extendible to the Central Subway. New systems provided to the Interim Primary OCC, i.e.: Audio/Visual systems and fiber-optic communications backbone, shall be designed to be operable at both Interim Primary OCC and Secondary OCC.
5. The implementation of the Audio/Visual system at the Lenox OCC is limited to the replaced/upgraded systems in Task B2.91 and existing systems at Lenox. No architectural and structural design work for physical reconfiguration of the operating theater layout at Lenox is included.

B2.92 Interim Primary OCC Implementation

This task description is unique to C3.

The Interim Primary OCC Implementation Plan, assumed to apply to the 1455 Market Street location, shall be equivalent to a 35% design submittal level and involves the preparation of documents that will form the basis for subsequent detailed design and development of Contract Documents. The submittal documents shall address site investigation validation, functional and operational requirements, project design criteria, alternative analysis, scope of work, test and start-up plan, training requirements, construction cost estimate, baseline project schedule, and plans for implementation, contracting strategy, and cutover.

Services:

Perform design and planning for implementation of a new interim Primary OCC at 1455 Market St. Consultant to provide the following professional services:

1. The Consultant will work with SFMTA staff and other Stakeholder (as referenced in section B2.20) to define the design requirements for the interim primary OCC at 1455 Market Street. Modifications to existing systems and supporting infrastructure at Lenox Avenue OCC , SFMTA Metro and other affected sites for supporting the work for the interim primary OCC at 1455 Market Street shall also be include in the scope of work. This Work will include:
 - a. Coordinate with BofA Architects and staff, as well as with City Real Estate Department, SFMTA staff and other City Agencies for building access, planning, design, and code compliance.
 - b. Perform design analysis of the following design elements to be addressed in Tenant Improvement design in 1455 Market St. This study shall be included as a section of the Implementation Plan.
 - (1) Assess required illumination levels, types of light fixtures in various work areas, and lighting configurations;
 - (2) Assessment of applicability of critical facility standards;
 - (3) Open architecture and interface control criteria;
 - (4) System / equipment redundancy criteria.
 - (5) Communications backbone and wiring requirements
 - (6) ADA compliance
 - (7) Security and Access Control
 - (8) Fire suppression systems
 - (9) System and facility design elements including: communications, electrical, mechanical, structural, acoustic, ergonomic and architectural
 - (10) Communications connectivity from City's existing systems and utilities to the interim primary OCC

- c. Prepare a functional layout and partitioning of the approximately 30,000 square-foot space to include known existing functions plus expansion capabilities for new functions. Perform an ergonomic analysis and industrial design that includes room sizes, ceiling heights, floor and cable tray requirements, lighting requirements, etc.
 - d. Prepare design criteria for the interim OCC at 1455 Market Street, and related works at the Lenox Avenue OCC, SFMTA Metro, and other affected sites, to the extent necessary for implementation of the Interim Primary OCC, including:
 - e Interview Stakeholder and assess Stakeholder needs and requirements
 - f. Survey and study the existing conditions, including but not limited to: systems, facilities, as-builts, facility and system configurations, operational and maintenance practice, and user needs
 - g. Determine power requirements and determination of existing building systems to serve as basis for Tenant Improvement design at 1455 Market St for the OCC area (UPS, emergency and normal power)
 - h. Specify requirements for power distribution to serve as basis for Tenant Improvement design at 1455 Market St including necessary cable trays, conduit runs, convenience outlets, and other infrastructure.
 - i. Prepare a report of SFMTA User Requirements for 1455 Market
 - j. Alternatives analyses
 - k. Construction and procurement cost estimates for Tenant Improvements and other non-Landlord-provided work
 - l. Project and construction scheduling
 - m. Assist SFMTA in negotiating Tenant Improvement scope, cost and schedule with the Landlord
 - n. Using the BPR (task B2.93) as an input, perform planning for staffing, training, cutover and move-in
2. The Consultant will work with SFMTA staff and BofA Architects and staff to facilitate implementation of the move of SFMTA staff and systems to the new primary OCC at 1455 Market Street and system modifications to the extent necessary at Lenox OCC, SFMTA Metro and other affected sites. This work will include:
- a. Develop a comprehensive contract Implementation Plan, as a 35% design submittal level, that incorporates the design criteria, functional room layout, user requirements, 35%-level design drawings, and staff move-in phasing for the implementation of the Interim Primary OCC at 1455 Market Street, and to the extent necessary, modifications to the

Lenox OCC, SFMTA Metro, and other affected sites. The Plan will also identify Tenant Improvements to be performed by the Landlord and additional improvements to be performed by construction/procurement contract(s) and/or by City work order required to support the Tenant Improvements, additional improvements, and extensions of OCC systems to the 1455 Market site. The Implementation Plan will also include cost estimate and work schedule for construction work, incorporating estimates for work performed as Tenant Improvements.

- b. Define SFMTA requirements for Tenant Improvements: Define the SFMTA's requirements specific to the design and implementation of tenant improvements to be performed by the BofA's designers.
- c. Assist City in developing City work orders for additional improvements to be performed in parallel with the Implementation Plan.
- d. Review designs prepared by others (including but not limited to City personnel, designers for the Radio, ATCS, traction power, and Landlord retained designers), in parallel with and related to the Implementation Plan.

TASK LEADER:

Dave Coury

Deliverables

When Due:

B2.92a	Summary and study of the existing systems and facilities, as-built, systems and physical configuration, functionalities, and current operational practice at the affected sites	1-1/2 months after NTP
B2.92b	Design Criteria for the OCC at 1455 Market St, and communications systems modifications and expansion	Draft, 2 months after NTP Final 4 months after NTP
B2.92c	Functional Layout	Draft 2 months after NTP Final with reports submitted under section 2.92f
B2.92d	Conceptual Space Plan	Draft 2 months after NTP Final with reports submitted under section 2.92f

B2.92e	Report of SFMTA User Requirements for 1455 Market and communication systems.	Draft 3 months after NTP Final with reports submitted under section 2.92f
B2.92f	Implementation Plan including Deliverables for B2.92c through B2.92e provided as attachments to Implementation Plan for SFMTA sign-off. (This represents 35% submittal)	Draft 4 months after NTP FINAL 5 months after NTP
B2.92g	Detailed Requirements for Tenant Improvements, to the 35%-level design	Draft, 4 months Final 5 months
B2.92h	35%-level design of improvements and communication systems beyond Landlord-provided Tenant Improvements	Draft, 4 months Final 5 months

Assumptions and Exceptions:

1. Interim primary OCC is assumed to be at 1455 Market St. In the event that the site changes to a different location, these tasks shall apply to that location to the extent applicable.
2. Implementation of the 1455 Market Street Interim OCC may require modifications and expansion of existing communication systems at Lenox OCC, SFMTA Metro, and other affected client sites.
3. Cost estimates for Implementation Plan will be prepared as part of task B2.92.
4. A preliminary to-scale layout of available space has been provided to Consultant so that planning with the SFMTA clients can start immediately. SFMTA will gain access to the site and to detailed plans and specifications when the Lease/Purchase agreement is finalized, anticipated by mid-March, 2010. BofA Architects may not be available for detailed work on the OCC until June 2010, if other tenant move-ins take priority. Tenant improvement work, from start of design to turnover to SFMTA when SFMTA-work can begin, is estimated to take approximately 18 months. The estimated target for turnover to SFMTA and initial start-up as the interim OCC is 1st Quarter 2012, if it can be achieved.
5. Radio Project will provide scheduling for implementation of radio cut-over.

6. Other head-end equipment for OCC systems (such as Advanced Train Control) installed at the existing MUNI OCC at 131 Lenox will remain in place and shall be extended functionally to 1455 Market Street.
7. The “core” functions (bathrooms, stairs, elevators) are pre-existing and not part of the OCC planning.
8. The kitchen and break room area already exist and should require minor enhancements and outfitting.
9. The building structure at 1455 Market Street is seismically sound and structural retrofits for seismic stability are not required.
10. Existing furnishings and furniture are included in the lease/purchase agreement.
11. Equipment and Server Room space is available in the building with power and HVAC systems already installed.
12. Power and HVAC are required to operate independently of Bank of America systems.
13. OCC planning is to consider flexibility of implementation for configurability of the operating theater for future needs as staffing requirements and technology evolve.
14. The schedule for the Business Process Review task shall not delay work defined under this task.
15. The Business Process Review task may proceed in parallel with tenant improvements and space planning
16. The following new OCC Systems will be installed in 1455 Market Street and must be integrated with existing systems.:
 - a. Display Screen Wall(s) and Audio/Visual Management System
 - b. Any workstations identified by user requirements
 - c. Voice-Data Recorder(s)
17. Consultant shall include in its designs the extension of the following existing OCC systems to the Interim Preliminary OCC:
 - a. Voice-Data Recorder from the Lenox OCC, if practical
 - b. Existing versions of Systems (including but not limited to SCADA, PA/PDS, Blue-light phone)
 - c. High-speed Connectivity to existing Fiber Network Backbone
 - d. Fire Alarm Annunciation
 - e. Fire Phone
 - f. Mayor’s Emergency Phone System (METS)
 - g. Phone network
 - h. CCTV – Operations Network
 - i. CCTV – Security Network
 - j. Muni/Mutual Aid Radio

- k. DEM's 800 MHz Radio Console
 - l. Cable Car Monitoring Terminal
 - m. Power Control SCADA
 - n. ATCS
 - o. SFgo
18. Facility amenities and furnishings to be designed include but are not limited to:
- a. Architectural & Tenant Improvements: review of existing floor plan, recommended layout, reconfiguration of walls (if any), modification (if any) to existing raised floor, modification to existing dropped ceiling for operating theater (if any), office areas, conference rooms, and staff "rest" or gilley areas
 - b. Wiring/rewiring
 - c. Space planning specific to computer room(s)
 - d. Power & UPS
 - e. Lighting
 - f. CCO Consoles
 - g. Monitors/displays
 - h. HVAC
 - i. Fire Suppression
 - j. Access security and control
 - k. Communications
 - l. Cable TV service, over-the-air TV services, and/or satellite TV
 - m. World radio
 - n. Cell-phone signal repeaters
 - o. Carpeting & flooring
 - p. Painting and wall-finishing
 - q. Other furnishings: chairs, tables, desks, storage
 - r. Outfitting of rest and recreation/lounge area(s), changing areas with showers (if possible), exercise area
 - s. Outfitting of kitchen area
 - t. Server and Equipment Rooms
19. Some modifications of and extensions to existing communications and systems from the existing Lenox Avenue OCC, and other SFMTA facilities, may be required to ensure they are operable at both the 1455 Market Street

Interim Primary OCC and at their original sites. New OCC Systems provided to the 1455 Market Street interim OCC, i.e.: Fiber-optic communications backbone shall be designed to be interoperable at both OCCs. The Audio-visual systems shall be designed to operate at both OCCs with the same design architecture and communications protocols. Integrated systems design under Task B2.91 will proceed as an activity independent of the interim primary OCC. Schedules of Task B2.91 and B2.92 cannot be assumed to be interdependent.

20. Agency review and comment period for draft and Pre-Final submittals constrained to 2 weeks or better; Consultant to provide a consolidated response to the Design Team
21. LEED consultant and associated coordination and documentation services are not included in this task; Ref Sub-task B2.90.

B2.93 Business Process Review (BPR)

This task description is unique to OCC.

Services:

This task will review business process for both the Primary OCC and Lenox OCC as a secondary OCC and recommend to SFMTA new and/updated business processes for both OCCs.

1. Perform a BPR study to investigate current SFMTA business processes and prepare a plan that will include recommendations for combining control functions currently dispersed across the San Francisco at a new OCC, including Muni's transit OCC (from 131 Lenox), DPT's SFgo Traffic Management Center (from 25 Van Ness Avenue), Muni's Power Control (from 1455 Division Street), SFMTA's Security Dispatch (from 875 Stevenson) and PCO and tow-desk dispatch from 505 7th Street, Muni's Interim Line Management Center (LMC, at One So. Van Ness), and the new Project: SF Park.
2. Specifically the BPR must address the following:
 - a. The configuration of the new SFMTA OCC, including consideration of future SFMTA OCC control functions such as SFpark and Taxi Dispatch. The Consultant will work with the SFMTA to conduct an in-depth inventory of staff, systems and processes to address:
 - b. How should each functional unit operate in relationship to the others?

- c. What needs are there for interaction, consolidation and/or separation of functions at the new SFMTA OCC?
 - d. The inclusion of both the new Primary and Secondary OCC into SFMTA business practices.
 - e. The impacts of relocating the Muni transit OCC away from Muni Digital Maintenance.
 - f. The increase in operating complexity from the opening of Central Subway to revenue service and future service expansions such as a Bus Rapid Transit (BRT) system network.
 - g. Full utilization of added functionality from the new Radio AVL System.
 - h. Staffing constraints and changes.
 - i. New technology and functionality as brought about by system upgrades.
 - j. Other issues as identified by SFMTA and/or the consultant.
 - k. The BPR procedure shall be guided by the Methodology for Business Transformation (MBT) Toolkit produced by the U.S. Department of the Interior. The Consultant shall be responsible for completing Tasks 1, 2, 3, and 4 as outlined in Step 8 [Conduct Business Process Reengineering] of the MBT Toolkit available at: www.doi.gov/ocio/architecture/mbt Alternatively, the Consultant may propose an alternate methodology for conducting the BPR, subject to SFMTA approval.
 - l. Peer Review (Optional Services)
3. Consultant to conduct a peer review of SFMTA's current business process and review Consultant's proposal. Prepare peer review report with summarized recommendations.
 4. Prepare for and document each BPR task and Stakeholder meeting, Stakeholder interviews and BPR presentation.

Task Leader:

Brian Burkhard

<u>Deliverables</u>		<u>When Due:</u>
B2.93a	BPR Project Plan	2 weeks
B2.93b	Preliminary Recommendations and Findings for Process Improvement Document	60 days
B2.93c	Recommendations and Findings Presentation (including documented process improvements and expected ROI for implementation)	90 days

B2.93d	BPR Study Final Report.	
B2.93e	BPR Meeting and interview minutes and materials	As required
B2.93e	Peer review report (Optional Services)	

Assumptions:

1. The scope of the BPR shall be limited to organizational functions that are:
 - a. currently at the existing MUNI transit OCC and other SFMTA sites,
 - b. potentially co-locating at the SFMTA Interim Primary OCC
 - c. portions of organizational functions that interact with the SFMTA OCC in a frequent and meaningful way.
2. Integrated systems design including the preparation of a Conceptual Engineering Report (as defined elsewhere in this scope document) will proceed as an independent activity, in parallel with or in advance of the BPR and systems functional design as developed shall be an input to the BPR.
3. BPR activity may or may not precede the design of 1455 Market tenant improvements (as defined elsewhere in this scope document).
4. Submittals for any and all additional Work Products produced under this task order process shall be in digital format only, no hard-copy. Files must be in native format. Tables, images and other items embedded in documents shall be also submitted as standalone files in their native format.

B2.94 New Primary OCC Design (Optional Services)

This task description is unique to C3.

Services:

1. Work with the TJPA team and SFMTA staff to develop scope and requirements for the TJPA design of the Transbay Terminal's OCC space, including the basic operational layout of the OCC Operating Theater.
2. Work with SFMTA staff in developing an architectural schematic design and operational requirements for the Transbay OCC.
3. Prepare conceptual engineering design for the SFMTA OCC at the Transbay Terminal per SFMTA standard. Conceptual design shall address electrical, system, mechanical, architectural, and structural components of the facility.

4. System and facility modification design at other existing SFMTA and City facilities to accommodate the implementation of the OCC at Transbay.

Task Leader:

Dave Coury

Deliverables

When Due:

B2.94a	SFMTA Operational, Maintenance and Facility requirements, architectural schematic design and functional layout for the SFMTA's OCC at the Transbay Terminal	To be determined
B2.94b	Conceptual engineering design report for the SFMTA OCC at the Transbay Terminal	To be determined

Assumptions:

1. The Transbay Project will build the basic OCC shell, permanent walls and access areas, stairs, equipment rooms, and elevator shaft(s). The OCC Project would provide additional backup power systems and HVAC, wiring, ceiling and floor finishes, access security, systems, communications, finishes, furnishings and fittings. The exact scope of each portion of that work remains to be detailed.
2. The Transbay Terminal building is targeted for completion in 2015; after which SFMTA build-out construction of the OCC area could begin.
3. Scope can be further defined as necessary after more information is available from TJPA team and Project funding is available (allowance based on Priced Level of Effort)
4. LEED consultant and associated coordination and documentation services are not included

B2.95 Improvements to the Secondary OCC at Lenox Ave. (Optional Services)

This task description is unique to OCC.

Services:

1. Prepare an Operational Concept Document for the Secondary OCC at Lenox Avenue that will include the following work:

- a. Work with SFMTA staff in determining what priority functions from the Primary OCC would need to be active as the Secondary OCC.
 - b. Work with SFMTA staff in determining what facility and systems upgrades would be necessary and/or recommended at the Lenox OCC.
2. Prepare a Conceptual Engineering Design to the 35% design submittal level, to include a operations cutover and staging plan, for improvements at the Lenox Avenue OCC to function as a Secondary OCC. The CER would be to the equivalent level of detail as the CER defined in Task B2.92. Conceptual design shall address electrical, system, mechanical, architectural, and structural components of the facility.
 3. System and facility modification design at other existing SFMTA and City facilities to the extent required to accommodate the implementation of improvement work at the Lenox OCC
 4. Scope can be further defined as necessary after completion of Interim Primary OCC design and funding is available.

Task Leader:

Dave Coury

Deliverables

When Due:

<u>Deliverables</u>	<u>When Due:</u>
B2.95a Summary and study of the existing systems and facilities, as-built, systems and physical configuration, functionalities, and current operational practice of the systems to be replaced	2 months after NTP
B2.95b Operational Concept Document	Draft due 3 months after NTP;
B2.95c Conceptual Engineering Design Report for Lenox Ave. as Secondary OCC to the 35% design level	Draft due 3 months after NTP; Final due 5 months after NTP

Assumptions:

Agency review and comment period for draft and Pre-Final submittals within two weeks of receipt ; Consultant to provide a consolidated response to the Design Team

B3.0 Geotechnical Investigations (Not Applicable)

B4.0 Surveying and Right-Of-Way (Not Applicable)

B5.0 Traffic Engineering (Not Applicable)

B6.0 Utility Design Coordination (Not Applicable)

B7.0 Drainage (Not Applicable)

B8.0 Permits

The Task description in Part A is superseded and the following task description applies.

Consultant will assist SFMTA in developing a permitting strategy and minimizing construction impacts to the public and to SFMTA operations. Consultant will assist in preparing permit applications and assist SFMTA to file required permits for construction. Once permits are obtained, Consultant will incorporate permit requirements into Contract Documents.

Consultant will support SFMTA staff and Construction Contractors in preparing applications and obtaining permits for C3. Required permits envisioned for the work in C3 include: street use permits, BART work permits, building occupancy permits, building construction permits.

B8.10 Code Analyses and Permit Compliance.

Services

1. Support SFMTA and construction contractors in obtaining permits (including street use permits, BART work permits, building occupancy permits, building construction permits).
2. Consultant will be responsible for providing specific design information on or attached to permit applications and assuring that the design(s) presented are in conformance with permit requirements.
3. Consultant will prepare code compliance summaries and will be submitted with each of the milestone submittals (65%, Pre-Final and 100%) for each site. They will serve as the formal screening tool.
4. Consultant will prepare permit drawings and specifications for OCC for SFMTA to include in the permit applications.
5. Other support as needed for permit processes.

6. Work with and assist SFMTA in obtaining approval from local Authority Having Jurisdiction (AHJ) for all the engineering design involving systems governed by applicable codes/General Orders/Law for all OCC work. These systems shall include but are not limited to emergency phone, PA, PDS, fire detection and alarm, fire suppression, and emergency power supply. (The costs for this task shall be included in Tasks 2.91, 2.92, 2.94, 2.95, 9.0, and 12.0.)

Deliverables	When Due
B8.10a Support of Permit Applications Support of Permit Applications and Permit Compliance -- Construction contracts	[65% and Pre-Final]
B8.10b Code compliance checklist Code Compliance checklist for OCC	[65%, Pre-Final and 100%]

Task Leader

Dave Coury

Assumptions and Exceptions

The permitting process and obtaining permits will be done by others. Consultant's role will be limited to providing supporting design documents, reports, drawings, and attending meetings.

B9.0 Contract Specifications

Systems Replacements designed under Task B2.91 are anticipated to be split into two sequential design and construction packages. The anticipated composition of packages 1 and 2 is described in Task B12.13. The composition of construction packages 1 and 2 may be restructured based on available resources to support construction (i.e., availability of funding and personnel and transit operations restrictions and requirements).

B9.10 Special Provision and General Requirements Specification

The same task description in Part A applies, except with the following modifications:

Services

1. As directed by SFMTA, the Consultant will prepare or assist SFMTA in preparing Special Provisions and General Requirements for OCC construction contracts with SFMTA providing input.

2. The Special Provisions shall also address contractor work hour limitation, shut down, cutover, work staging, coordination with SFMTA operations and maintenance Divisions, subway work clearance, liquidated damage, etc.

Deliverables

B9.10	Special Provisions and General Requirements specifications for each Construction Contract	65%, Pre-final and 100%
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Task Leader

Tom Tolentino

Assumptions and Exceptions

1. General Provisions will be prepared and provided by SFMTA in a timely manner to allow Consultant's input by the related submittal date.
2. The number and scope of construction contract packages for the implementation of the OCC Project will be defined in Task B13.0, Construction Packaging and Schedules.
3. The same contract format will be used for CSP and OCC Contract Documents.

B9.20 Technical Specifications

The same task description in Part A applies, except with the following additions and modifications:

Services

1. Prepare complete set of construction contract specifications (Division 1 and all other applicable specifications division) for each OCC Construction Contract Package covering the following work:
 - a. Replacement and upgrading of existing legacy systems. Scope of Work will cover the following systems but limited to available funding as determined by SFMTA:
 - (1) Fiber Broadband Network
 - (2) Integrated PA/PDS System Replacement
 - (3) SCADA System Replacement
 - (4) Blue-light Emergency Telephone (ET) System Replacement
 - (5) Motive Power SCADA System Upgrade and Expansion
 - b. Facility, systems and furnishings work to be performed outside of the landlord-contracted Tenant Improvements at 1455 Market St.

- c. Work identified by the Implementation Plan (ref deliverable B2.92), for new systems, and extension of existing OCC systems to 1455 Market Street. This Work will include the Integrated Audio/Visual Management System, new voice-data recorder, and integration of the new radio system.
- d. Modifications of existing communication systems and related infrastructure at Lenox OCC and SFMTA Metro and other affected SFMTA sites.
- e. New Integrated Audio/Visual Management System at interim primary OCC and Lenox OCC.

<u>Deliverables</u>	<u>When Due</u>
B9.20	Technical Specifications for each Construction Contract Package covering the following work: Replacement of the existing legacy systems Work outside of landlord-contracted Tenant Improvements at 1455 Market St. New systems and extension of new systems at 1455 Market St and Lenox OCC. Modifications to existing communication systems and related infrastructure at Lenox OCC, SFMTA Metro, and other affected sites, associated with 1455 Market Street Interim OCC work
	To be submitted with each of the 65%, Pre-Final and Final 100% Submissions

Task Leader

Dave Coury

Assumptions and Exceptions -

1. The number and scope of construction contract packages for the implementation of the OCC Program will be defined in Task B13.0, Construction Packaging and Schedules.
2. Technical Specifications for each contract will include any appendices if required to show existing SFMTA equipment, processes and software that require interfacing. Include a full definition of requirements, which can be used as a requirements traceability matrix.
3. Systems Replacements designed under Task B2.91 are anticipated to be split into two sequential design and construction packages. The anticipated composition of packages 1 and 2 is described in Task B12.13. The composition of construction packages 1 and 2 may be restructured based on available resources to support construction (i.e., availability of funding and personnel and SFMTA operations requirements and restrictions).

B10.0 Cost Estimation

B10.10 Cost Estimate and Schedule Review During Design (Not Applicable)

B10.20 Design Change Estimates

Task description in Part A is superseded and the following task description applies.

Services

Construction budgets will be established during the initial tasks for each work classification as described in Tasks B2.91 through B2.95. Deviations between these construction budgets and the construction estimate prepared during the 65% and Pre-Final submittals will be addressed and resolved and modifications to the design to address any differences will be implemented. Quantity changes and other documentation for design changes will be provided as required to evaluate Change Proposals in accordance with Design Control Procedures.

1. Development of cost estimates during the design process for
 - a. SFMTA proposed changes to the Project Configuration
 - b. Value Engineering Proposals
2. List of potential cost impact measures will be provided with 65%, and Pre-Final Design Submittals.

Deliverables

B10.20	Information for Engineering Change Proposals Cost Saving Elements List 1. Cost Saving List for each OCC contract package 2. Track changes register for each OCC contract package	[As Needed] [With 65% and Pre-Final Design Submittals]
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Task Leader

Jeff Steele

Assumptions and Exceptions –

1. Configuration Management Plan will be created and maintained by the SFMTA. Consultant's role in Configuration Management is to actively provide input and data.

2. Discretionary design changes that will impact the baseline estimates, budgets, and schedules require approval in accordance with Design Control Procedures prior to implementation.
3. Implementation of discretionary design changes is not part of this task.

B10.30 Construction Cost Estimates

Task description in Part A is superseded and the following task description applies.

Services

1. Prepare conceptual cost estimates for the Conceptual Engineering Report and for the Implementation Plan for the Systems Replacements and Implementation of the Interim Primary OCC
2. Prepare Quantity Take-Offs and cost estimates for each OCC construction package to be submitted with the 65%, Pre-Final, and 100% submittals.

Deliverables

When Due

B10.30a	Conceptual Cost Estimates	With CER and Implementation Plan submittal (ref B2.91, B2.92, B2.94 and B2.95).
B10.30b	Quantity Takeoff and Cost Estimates for each Construction Package	[65%, Pre-Final, and 100% with design submittals]

Task Leader

Jeff Steele

Assumptions and Exceptions

1. Format template for quantity takeoff and cost estimates will be recommended by Consultant.
2. Construction Contracting Strategy Plan will be developed in Task B13.10.
3. Cost estimate shall take into consideration limitations of work site access, work hours, and procedures governing working in 1455 Market, Lenox OCC, SFMTA Metro, and other affected sites.

B11.0 Quality Control Management

The same task description in Part A applies. Quality Control Management for CSP will be expanded to cover OCC Project

Task Leader

Denise McDonald

B12.0 Drawings and Documents

Task description in Part A is superseded and the following task description applies.

For the interim primary OCC engineering design work only, Task 12.0 and all subtasks shall also include engineering support to the 1455 Market Street Landlord's design team's detail design effort. The responsibilities shall include clarification of the conceptual design, participation in coordination meetings, and review and oversight of Landlord-supplied design documents.

This task covers the detailed design work for the integrated systems replacements and non-Landlord supplied tenant-improvement work for the interim primary OCC implementation.

This task also covers assisting the City in developing City work orders identified in the Interim Primary OCC Implementation Plan.

Submittals for subtasks of B12.0 will be submitted with the deliverables under B9.0, and other related tasks.

B12.01 Civil Plans (Not Applicable)

B12.02 Utility Plans (Not Applicable)

B12.03 Traffic Plans (Not Applicable)

B12.04 Structural

Task description in Part A is superseded and the following task description applies.

Services

1. Provide the following structural detailed design services for integrated systems replacements and 1455 Market St. beyond Tenant Improvements
2. Develop design for equipment, floor and ceiling bracing for compliance with seismic codes and requirements for an emergency services facility

Deliverables

When Due

<u>Deliverables</u>	<u>When Due</u>
B12.04a Structural design for integrated systems replacement	65%, Pre-Final and 100%
B12.04b Structural design for interim primary OCC	65%, Pre-Final and 100%

Task Leader

Dave Coury

Assumptions and Exceptions

1. This task does not include structural modification to primary structural components of the existing building or Market Street Subway.
2. As-Builts will be provided as necessary.
3. Tenant Improvements at 1455 Market Street will not include modifications to primary structural components of the existing building such as shear walls, columns, beams, girders, and floor diaphragms. Localized strengthening may be required for equipment anchoring
4. As-built drawings will be provided on an as-needed basis.

B12.05 Architectural Plans (Optional Services)

Task description in Part A is superseded and the following task description applies.

Services

Prepare detailed design and specifications for that work beyond Landlord-provided tenant improvements. Prepare or assist in the advancement of the 35% design developed under Task B2.92 to achieve a detailed architectural design at 1455 Market Street, to include:

1. Functional layout and partition of the approximately 30,000 square foot space to include known existing functions plus expansion capabilities for new functions.
2. Ergonomic and accessibility analysis and industrial design that includes room sizes, ceiling heights, flooring, etc.
3. Define space planning, functional and detailed layout.
4. Interior OCC signage
5. Design and specifications for furnishings and finishes

Deliverables

B12.05a	Refined studies of furniture and equipment layouts (Offices, Operation Theater configurations); Incorporates Landlord's Building Architect input	To be determined
B12.05b	65% Submittals: Preparation of architectural design documents for selected plan (floor plan, signage plan, furniture and equipment	

	plan and schedules, finish schedules, and custom casework; Incorporates Landlord's Building Architect input as applicable	
B12.05c	Pre-Final Submittal: Further development of documents included in 65% Submittal	
B12.05d	Final Submittal: Further development of documents included in Pre-final Submittal; final permit and bid package development and coordination	
B12.05e	Project specifications, cut sheets, and LEED compliance information for applicable scope of work	65%, Pre-Final and 100%

Task Leader

Dave Coury

Assumptions and Exceptions

1. Bid and Award support services excluded
2. Agency review and comment period for draft and Pre-Final submittals within three weeks of receipt ; Consultant to provide a consolidated response to the Design Team
3. Detailed design development and documentation of walls, floors, ceilings, openings, general building system modifications, accessibility upgrades, code required signage, toilet room and floor lobby modifications will be performed by the Landlord's Building Architect
4. LEED consultant and associated coordination and documentation services are not included; Design solution will only provide required data relating to architectural scope of work
5. Design solution will utilize existing systems furniture on an as-is basis
6. Alterations to the raised floor or overhead ceiling systems to optimize Operation Theater video wall, if approved under Task B2.92, will be developed in detail and documented by the Landlord's Building Architect

B12.06 Urban Design (Not Applicable)

B12.07 Public Art (Not Applicable)

B12.08 Signage (Not Applicable)

B12.09 Elevators and Escalators (Not applicable)

B12.10 Acoustics, Noise and Vibration (Not Applicable)

B12.11 Mechanical

Task description in Part A is superseded and the following task description applies.

Services

1. Detailed design of mechanical systems, as required beyond Landlord-designed Tenant Improvements at 1455 Market St.
2. Review of Landlord's designs of mechanical systems.

<u>Deliverables</u>		<u>When Due</u>
B12.11a	Mechanical systems design for 1455 Market Street beyond Tenant Improvements	65%, Pre-Final and 100%
B12.11c	Review comments of Landlord's design	As Needed

Task Leader

Dave Coury

Assumptions and Exceptions –

Design scope includes areas in the server and equipment rooms and other operational and office areas.

B12.12 Electrical

Task description in Part A is superseded and the following task description applies.

Services

1. Detailed design of necessary improvements to Metro subway electrical systems, including subway, Stations, equipment rooms, existing OCC, and any other affected sites for systems replacement defined in sub-task B2.91.

2. Detailed design of electrical systems, as required beyond Landlord-designed Tenant Improvements at the Interim Primary OCC implementation.
3. Review of Landlord's designs of electrical systems at the Interim Primary OCC.

<u>Deliverables</u>		<u>When due</u>
B12.12a	Electrical systems design for integrated systems replacements	65%, Pre-Final and 100%
B12.12b	Electrical systems design for 1455 Market Street beyond Tenant Improvements	65%, Pre-Final and 100%
B12.12c	Review comments of Landlord's design	As Needed

Task Leader

Dave Coury

Assumptions and Exceptions

Design scope includes areas in the server and equipment rooms and other operational and office areas.

B12.13 Systems

Task description in Part A is superseded and the following task description applies.

Services:

1. Detailed design for the upgrading and/or replacement of existing legacy OCC-subway systems as defined in sub-task B2.91, for CP 1. Scope will cover the following systems, but is limited to available funding as determined by SFMTA.
 - a. Fiber Broadband Network - Existing Metro Subway with expansion capability, and new and existing OCCs
 - b. Integrated PA/PDS System Replacement - Existing Metro Subway, with expansion capability
 - c. SCADA System Replacement - Existing Metro Subway with expansion capability
 - d. Motive Power SCADA System Upgrade and Expansion – Existing Motive Power system at Motive Power Control Center, and at New and existing OCCs
 - e. Integrated Audio/Visual Management System at the Lenox OCC

2. Prepare detailed design for the upgrading and/or replacement of existing legacy OCC-subway systems as defined in sub-task B2.91 for construction package 2. Scope will cover the following systems but limited to available funding as determined by SFMTA.
 - a. Blue-light Emergency Telephone (ET) System Replacement - Existing Metro Subway with expansion capability

<u>Deliverables</u>		<u>When Due</u>
B12.13a	Design for Upgrading and/or Replacement of Existing Legacy Systems in Construction Package 1	65%, Pre-Final and 100%
B12.13b	Design for Upgrading and/or Replacement of Existing Legacy Systems in Construction Package 2	65%, Pre-Final and 100%

Task Leader

Dave Coury

Assumptions and Exceptions

The composition of construction packages 1 and 2 may be restructured based on available resources to support construction.

B12.14 Control Center Facilities

Task description in Part A is superseded and the following task description applies.

Services:

Prepare detailed design for the following:

1. Facility Amenities and Furnishings and systems outside of the landlord-provided Tenant Improvements at 1455 Market St. as determined in task B2.92, and outside the scope of sub-task B12.05.
2. Prepare detailed design of new systems and system extensions for the Interim Primary OCC beyond Landlord-provided Tenant Improvements as determined in task B2.92. The Work includes modifications of existing systems at Lenox OCC, SFMTA Metro and any other affected sites to the extent required for implementation of the Interim Primary OCC. This Work includes but is not limited to the integrated Audio/Visual management system and integration of the new radio system.

3. Design for the above central control work will include any required additional system equipment and software and database modifications to the existing systems to provide the necessary central control functions.

<u>Deliverables</u>		<u>When Due</u>
B12.14a	Detailed design of Facility and Furnishings outside of Tenant Improvements at 1455 Market St.	65%, Pre-Final and 100%
B12.14b	Detailed design of new systems and extension of existing systems to 1455 Market St.	65%, Pre-Final and 100%

Task Leader

Dave Coury

Assumptions and Exceptions –

1. The number and scope of construction contract packages for the implementation of the OCC Project will be defined in Task B13.0, Construction Packaging and Schedules.
2. Scope of work outside of Tenant Improvements will be defined in the Implementation Plan for 1455 Market St.

B12.15 Verification / Validation Report (Not Applicable)

B12.16 Design Transmittal

The same task description in Part A applies with additional tasks:

Transmittals for Draft CER, CER, Draft 1455 Market Street implementation plan, and final 1455 Market Street implementation plan, and all construction Contract Documents.

Task Leader

Tom Tolentino

B12.17 Historic Architectural Services (Not Applicable)

B12.18 Safety and Security

Services

This work is included in other tasks above.

B12.19 Other Tasks (Optional Services)

Additional work, if necessary, will be defined later.

Deliverables

	Presentation material.	

B12.20 CADD Manager

The same task description in Part A applies. CADD Management for CSP is expanded to cover C3 Program.

Task Leader

Alan Schroder

B13.0 Construction Packaging and Schedules

B13.10 Definition of Construction Contracting Strategy

Task description in Part A is superseded and the following task description applies.

Costs and deliverables for this subtask shall be included in Tasks 2.91, 2.92, 2.94, and 2.95.

Services

1. Consultant will develop a contract packaging plan that will define the number and scope of construction contracts to implement the overall C3 work, as follows:
 - a. Upgrading and/or replacement of existing legacy systems
 - b. Work on facility amenities and furnishings outside of landlord-provided Tenant Improvements at 1455 Market St.
 - c. New and extension of existing systems at 1455 Market St.
 - d. System installation and modification works at Lenox OCC and SFMTA Metro to the extent required to support the implementation of the Interim Primary OCC.
 - e. Lenox Avenue OCC improvements as a Secondary OCC (Optional Services)
2. Scope of contract packages will be defined taking into account the following work considerations:
 - a. Optimal partitioning and phasing of the work
 - b. Construction timing and duration
 - c. Specialty work items and trade classifications
 - d. Work to be performed by City or specialty Consultants
 - e. Consistency of equipment with existing system.
 - f. Possibly combining with existing SFMTA contracts.

<u>Deliverables</u>		<u>When Due</u>
B13.10	Contract Implementation Plan	With 35% Submission

Task Leader

Tom Tolentino

Assumptions and Exceptions

The number of construction contract packages for the replacement of legacy systems is assumed to be two.

B13.20 Construction Schedule

Task description in Part A is superseded and the following task description applies.

Services

1. Consultant will develop and maintain a Master Project Schedule incorporating the summary design schedule, and showing the construction schedule and the relationship of the different contract packages defined in Task B13.10 above,
2. Prepare construction schedule for all construction packages and Bank of America tenant improvement work.

<u>Deliverables</u>		<u>When Due</u>
B13.20a	Master Project Schedule	With Pre-Final Submission
B13.20b	Construction Schedule for each of the construction package and BofA tenant improvement work	

Task Leader

Paul Van Der Wel

Assumptions and Exceptions

- 1 Communications systems for the existing Metro Subway and new and existing OCCs will be contracted for construction in the earliest opportunity and will be independent of the Central Subway Project schedule.

2. Major renovations at Lenox would be scheduled to follow cutover of Muni OCC functions to the Interim Primary OCC at 1455 Market Street.
3. Consultant to work with SFMTA and BofA in preparation of the construction schedules. Limitation factors for each work site shall be included in the consideration.

B14.0 Outreach Support

B14.10 Graphics Support for Outreach

Task description in Part A is superseded and the following task description applies.

Services

1. To support Stakeholder outreach, Consultant will use state-of-the-art software to develop graphics, simulations, presentation material, and information pamphlets to help inform Stakeholder and elicit input and obtain concurrence as final design
2. Attend meetings as requested by SFMTA

<u>Deliverables</u>		<u>When Due</u>
B14.10	Graphics, simulations, presentation material, and information pamphlets	As-needed, at SFMTA direction

Task Leader

Dave Coury

B15.0 Bid Support Services

B15.10 Bid Support

The same task description in Part A applies.

<u>Deliverables</u>		<u>When Due</u>
B15.10a	Bid support	[As needed]
B15.10b	Confirmed Contract drawings and specs – C3 Systems Contract Package 1	[As needed]
B15.10c	Confirmed Contract drawings and specs – C3 Systems Contract Package 2	[As needed]

B15.10d	Conformed Contract drawings and specs – C3 contracts for implementation of 1455 Market St	[As needed]
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Task Leader

Dave Coury

Bid support services are Priced Level of Effort.

B16.0 Design Services During Construction

The same task description in Part A applies.

For the interim primary OCC construction work only, Task 16.0 and all subtasks shall also include engineering support to the 1145 Market Street Landlord-provided Tenant Improvement construction work. The responsibilities shall include participation in construction and coordination meetings, review of submittal documents, and participation in field inspections and testing.

B16.10 Construction Support Strategic Execution Plan

The same task description in Part A applies.

Deliverables

When Due

B16.10	Const. Support Strategic Exec. Plan for the OCC program.	As-needed at SFMTA's direction
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Design support services during construction are Priced Level of Effort.

B16.20 Design Team Support

The same task description in Part A applies except for the provision of a liaison as described in Part A, 16.20, which is not required for OCC.

Task Leader

Dave Coury

B16.30 Shop Drawings Review, Technical Support and Consultation during construction

The same task description in Part A applies with the following additions.

Services

1. Assist SFMTA in developing a plan for implementation and cutover for each OCC construction contract to identify any work that is not included in the Contract Documents
2. Assist SFMTA in developing operation staffing and start up plan. Assist in pre-operation drill and the operational cutover.
3. Prepare a staging plan for move-in to 1455 Market Street. Provide support as requested by SFMTA.
4. Respond to Requests for Information (RFI)
5. Perform Submittal Review as requested
6. Review Contractor's product substitution request(s)
7. Provide cost estimates for change-order work
8. Support services for Construction Management functions as requested by SFMTA, such as:
9. Review Contractor's CPM schedule
10. Prepare and/or review and process change-order requests with associated supporting technical documentation
11. Technical services in support of extending legacy systems to the Interim Primary OCC at 1455 Market St.
12. Validate as-built products in compliance with safety and security plan.

Deliverables

When Due

B16.30a	Implementation and cutover plans per OCC contract	
B16.30b	Technical documentation in support of construction management activities	As-needed

Task Leader

Dave Coury

Assumptions and Exceptions –

This sub-task is priced on the basis of Priced Level of Effort.

B16.40 Field Visits / Meetings

The same task description in Part A applies except with the following modification:

Services

Participate in construction meetings as requested by SFMTA

<u>Deliverables</u>		<u>When Due</u>
B16.40	Site visit reports and meeting notes	As needed

Task Leader

Dave Coury

Assumptions and Exceptions –

This sub-task is priced on the basis of Priced Level of Effort.

B16.50 Change Proposals / Value Engineering

Task description in Part A is superseded and the following task description applies.

Services

Evaluate contractor-initiated change proposals./ value engineering proposal and make recommendations.

Prepare cost estimate and schedule impact for all change orders.

Deliverables

B16.50a	Contractor Change Proposals / Value Engineering Proposal – Recommendations	As-needed
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Task Leader

Dave Coury

B16.60 As-Built Contract Documents

The same task description in Part A applies with the following modification:

Services

Prepare as-built drawings and specifications based on contractor (and/or CM) prepared redlined drawings and design changes during construction. Identify contractor provided drawings to be retained by SFMTA for O&M Deliverables

<u>Deliverable:</u>		<u>When Due:</u>
B16.60	As-built Contract Documents – OCC Contract packages	As Needed

Task Leader

Dave Coury

B16.70 Operations and Maintenance Manuals

The same task description in Part A applies.

<u>Deliverables</u>		<u>When Due</u>
B16.70	O&M Manuals – for C3 Contracts	Final Completion

Task Leader

Dave Coury

B16.80 Warranty Services (Optional Services)

The same task description in Part A applies with the exception that services apply to OCC contracts.

Task Leader

Dave Coury

ATTACHMENTS

Attachment 1 -- Deliverable Matrix

APPENDIX B
DIRECTORY OF SUBCONSULTANTS

Central Subway Project – Design Package #3

Contract No. CS-155-3

DESIGN PACKAGE 3 (DP3)
Appendix B - Directory of Subconsultants

Subconsultant	Base Services	Optional Services	SBE
1 Abtahi Engineering	X		X
2 AGS	X	X	X
3 Atlantic Consultants	X		X
4 Auriga	X	X	X
5 BDI	X		X
6 Chaudhrey	X		X
7 Chaves	X	X	X
8 Chiang Architects	X	X	X
9 Davis & Associates	X	X	X
10 KwanHenmi	X	X	X
11 MSE Group		X	X
12 QEI	X		X
13 Simon & Associates	X		X
14 Stantec		X	
15 Structus	X	X	X
16 TBD Consultants	X		X
17 Value Mgmt Strat.	X		X
18 Wilson Ihrig		X	X
19 Wilson-Engineering		X	X
20 YEI	X	X	X

APPENDIX C
SUMMARY OF FEES -
COST BREAKDOWN/SCHEDULE OF CHARGES

Central Subway Project – Design Package #3

Contract No. CS-155-3

DESIGN PACKAGE 3 (DP3)
APPENDIX C - SUMMARY OF FEES / COST BREAKDOWN

Date: 01-20-2010

PART A: CENTRAL SUBWAY PROJECT

A1 - DESIGN PHASE

	BASE		OPTIONAL		Totals
	Hours	Subtotal	Hours	Subtotal	
Task 1	14,329	\$ 1,776,498	0	\$ -	\$ 1,776,498
Task 2	11,495	\$ 1,839,469	604	\$ 102,380	\$ 1,941,849
Task 3	0	\$ -	0	\$ -	\$ -
Task 4	483	\$ 91,832	0	\$ -	\$ 91,832
Task 5	0	\$ -	934	\$ 172,743	\$ 172,743
Task 6	869	\$ 133,179	0	\$ -	\$ 133,179
Task 7	0	\$ -	628	\$ 94,390	\$ 94,390
Task 8	716	\$ 146,269	0	\$ -	\$ 146,269
Task 9	8,219	\$ 1,021,939	3,204	\$ 536,590	\$ 1,558,529
Task 10	3,212	\$ 525,981	1,554	\$ 199,959	\$ 725,940
Task 11	2,214	\$ 387,920	0	\$ -	\$ 387,920
Task 12	26,090	\$ 3,302,153	20,624	\$ 2,778,060	\$ 6,080,212
Task 13	0	\$ -	0	\$ -	\$ -
Task 14	435	\$ 64,778	0	\$ -	\$ 64,778
Task 15	1,208	\$ 178,732	0	\$ -	\$ 178,732
Subtotal	69,270	\$ 9,468,749	27,547	\$ 3,884,121	\$ 13,352,870
+Fee		\$ 1,041,562		\$ 427,253	\$ 1,468,816
+ ODCs		\$ 211,310		\$ 58,262	\$ 269,572
Part A Total Design		\$ 10,721,621		\$ 4,369,636	\$ 15,091,257

A2: DESIGN SERVICES DURING CONSTRUCTION

Task 16 DSDC	25,422	\$ 3,987,354	1,127	\$ 204,543	\$ 4,191,898
Subtotal		\$ 3,987,354		\$ 204,543	\$ 4,191,898
+Fee		\$ 398,735		\$ 20,454	\$ 419,190
+ ODCs		\$ 213,090		\$ 4,091	\$ 217,181
Part A Total DSDC		\$ 4,599,180		\$ 229,089	\$ 4,828,269

Part A Totals		\$ 15,320,801		\$ 4,598,725	Total Part A \$ 19,919,526
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PART B: CENTRAL CONTROL AND COMMUNICATION PROJECT (C3)

B(1) Comm Pk1	26,613	\$ 3,575,353	242	\$ 37,046	\$ 3,612,399
B(2) Comm Pk2	7,881	\$ 1,081,132	121	\$ 19,231	\$ 1,100,364
B(3) 1455 Market	25,720	\$ 3,763,164	3,687	\$ 566,960	\$ 4,330,125
B(4) Transbay	0		5,297	\$ 794,762	\$ 794,762
B(5) OCC Lenox	0	\$ -	6,545	\$ 1,033,522	\$ 1,033,522
Subtotals	60,214	\$ 8,419,650	15,891	\$ 2,451,522	\$ 10,871,171
Fee		\$ 926,161		\$ 269,667	\$ 1,195,829
ODCs		\$ 258,240		\$ 49,553	\$ 307,793
Part B Total		\$ 9,604,051		\$ 2,770,742	\$ 12,374,793

Total Part B \$ 12,374,793

Total DP3 \$ 32,294,319

Subconsultant Total (30%) \$ 9,688,110

APPENDIX D
OTHER DIRECT COSTS

Central Subway Project – Design Package #3

Contract No. CS-155-3

DESIGN PACKAGE 3 (DP3) SUMMARY OF ODCS

DESCRIPTION	Design Period				DSDC			
	MONTHS	NO	RATE / Month	AMOUNT	MONTHS	NO	RATE / Month	AMOUNT
Part A Base								
Travel HNTB	12	1	\$3,000	\$36,000	6	1	\$4,000	\$24,000
Per Diem	12	1	\$4,000	\$48,000	6	1	\$5,500	\$33,000
Local Transit	31	10	\$120	\$37,200	66	8	\$120	\$63,360
Office Supplies	31	1	\$50	\$1,550	66	1	\$125	\$8,250
Reproduction	3	1	\$1,000	\$3,000	66	1	\$150	\$9,900
Courier	31	4	\$65	\$8,060	66	2	\$65	\$8,580
Misc	31	1	\$2,500	\$77,500	66	1	\$1,000	\$66,000
Total Part A Base ODCs				\$211,310				\$213,090
Part A Option								
Travel HNTB	3	1	\$3,000	\$9,000	0	1	\$4,000	\$0
Per Diem	3	1	\$4,000	\$12,000	0	1	\$5,500	\$0
Local Transit	15	10	\$120	\$18,000	1	8	\$120	\$960
Office Supplies	9	1	\$50	\$450	6	1	\$125	\$750
Reproduction	5	1	\$1,000	\$5,000	5	1	\$150	\$750
Courier	5	4	\$65	\$1,300	5	2	\$65	\$650
Misc	5	1	\$2,500	\$12,500	1	1	\$1,000	\$1,000
Total Part A Option ODCs				\$58,250				\$4,110

Part A Total: \$486,760

DESCRIPTION	MONTHS	NO	RATE / Month	AMOUNT
Part B Base				
Travel HNTB	6	2	\$5,000	\$60,000
Per Diem	6	2	\$3,500	\$42,000
Office Supplies	24	1	\$50	\$1,200
Reproduction	24	1	\$500	\$12,000
Courier	24	4	\$65	\$6,240
Local Transit	24	10	\$120.00	\$28,800
Misc	24	1	\$2,000	\$48,000
Travel-BPR Peer Review Panel	1	8	\$2,500.00	\$20,000
Per Diem-BPR Peer Review Panel	1	8	\$5,000.00	\$40,000
Total Part B Base ODCs				\$258,240
Part B Option				
Travel HNTB	1	2	\$5,000	\$10,000
Per Diem	1	2	\$3,500	\$7,000
Office Supplies	29	1	\$50	\$1,450
Reproduction	9	1	\$500	\$4,500
Courier	10	4	\$65	\$2,600
Local Transit	10	10	\$120.00	\$12,000
Misc	6	1	\$2,000	\$12,000
Total Part B Option ODCs				\$49,550

Part B Total: \$307,790

Total ODCs DP3: \$794,550

APPENDIX E
ORGANIZATION CHART

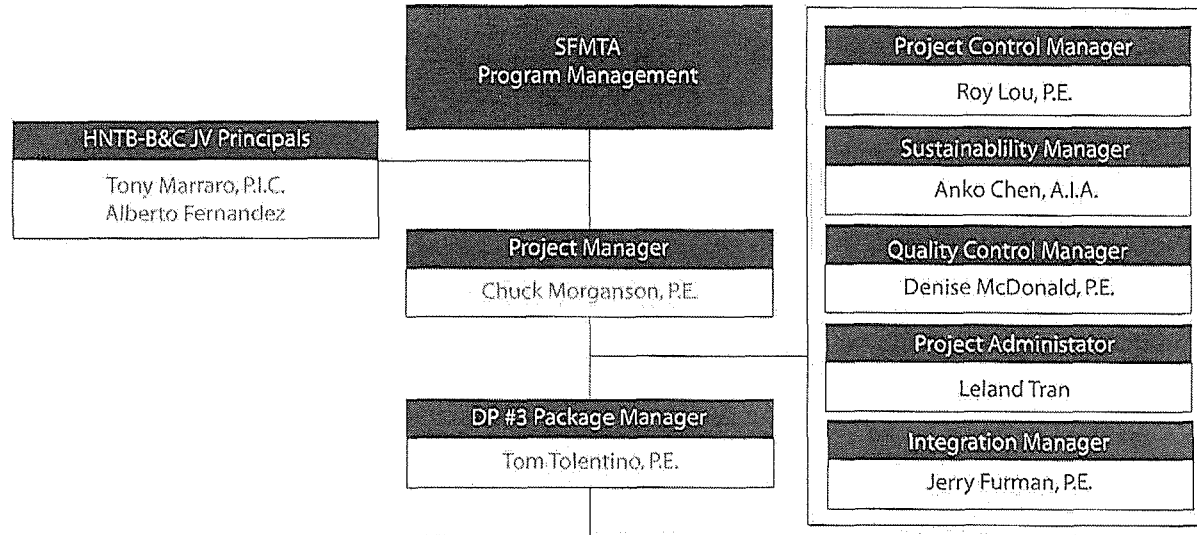
Central Subway Project – Design Package #3

Contract No. CS-155-3



HNTB-B&C JOINT VENTURE
 PEOPLE | INTEGRATION | DESIGN

Design Package #3



TASK LEADS		
Surface Segment/Civil Lead Chuck Morganson, P.E.	CSP Systems Design Lead Tom Tolentino, P.E.	C3 Manager Dave Coury, P.E.
Subconsultants		
Abtahi Engineering (SBE) AGS (SBE) Atlantic Consultants (SBE) Auriga (SBE) BDI (SBE)	Chaudhrey (SBE) Chaves (SBE) Chiang Architects (SBE) Davis & Associates (SBE) KwanHenmi (SBE)	MSE Group (SBE) QEI (SBE) Simon & Associates (SBE) Stantec Structus (SBE)
TBD Consultants (SBE) Value Management Strategies (SBE) Wilson Ihrig (SBE) Wilson-Engineering (SBE) YEI (SBE)		

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. 180605-089

WHEREAS, Design and construction of the 1.75-mile Central Subway (Central Subway Project) is Phase 2 of the Third Street Light Rail Transit Project; and,

WHEREAS, On April 22, 2010, the City awarded Contract CS-155-3 (Contract) to HNTB-B&C JV (Designer), a joint venture between HNTB Engineering and B&C Transit (now called Transit Systems Engineering, Inc.), to design the trackway and control systems for the Central Subway Project, for an amount not to exceed \$32,294,319, for a ten-year term with option to extend the term two years; and,

WHEREAS, The Contract has been modified six times to compensate the Designer for additional work required to address unexpected site conditions and design changes required by the City. The six amendments increased the total contract amount by \$2,279,115, for a total amended contract amount not to exceed \$34,573,434; and,

WHEREAS, The Amendment No. 6 to the Contract, dated June 11, 2014, increased the contract amount by \$1,269,472 to compensate for additional work to: 1) redesign the trackway alignment and evaluate impacts on ventilation systems; and, 2) provide design and construction support for specialized communication and video systems, for a total amended contract amount not to exceed \$34,573,434; and,

WHEREAS, The Amendment No. 6 requires the Board of Supervisors' approval under Charter Section 9.118(b); and,

WHEREAS, Due to staff misunderstanding of the Director of Transportation's authority to approve contracts, Amendment No. 6 was not timely presented to the SFMTA Board of Directors for approval, and was not timely presented to the Board of Supervisors for approval; and,

WHEREAS, The Central Subway Final Supplemental Environmental Impact Statement / Supplemental Environmental Impact Report (Central Subway SEIS/SEIR) evaluated the environmental impacts of the Central Subway Project, including construction of the subway tunnels; and,

WHEREAS, On August 7, 2008, the San Francisco Planning Commission certified the Final SEIR (Case No. 1996.281E). On August 19, 2008 the SFMTA Board of Directors approved Resolution 08-150 adopting Central Subway Project Alternative 3B as the Locally Preferred Alternative, the CEQA Findings, Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan; and,

WHEREAS, On July 15, 2014, when the SFMTA Board of Directors adopted Resolution No. 14-120, the Board found, based on its review of the Final SEIS/SEIR, that no additional environmental review was required under Public Resources Code section 21166; On April 5, 2016, when the SFMTA Board of Directors adopted Resolution No. 16-044, the Board further reviewed and considered the Central Subway Project Final SEIS/SEIR and the record as a whole, finding that there were no substantial project changes and no substantial changes in project circumstances that would require major revisions to the Central Subway Project Final SEIS/SEIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there was no new information of substantial importance that would change the conclusions set forth in the Central Subway Project Final SEIS/SEIR; and,

WHEREAS, The environmental review determination is on file with the SFMTA Board of Directors, and may be found in the records of the Planning Department at 1650 Mission Street in San Francisco, and is incorporated herein by reference; and,

RESOLVED, The SFMTA Board of Directors retroactively approves Amendment No. 6 to Contract CS-155-3 Professional Architectural and Engineering Services with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to: 1) approve an increase in the contract amount by \$1,269,472 to redesign the trackway alignment and analyze impacts to ventilation systems; and, 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434; and be it further

RESOLVED, The SFMTA Board of Directors requests the Board of Supervisors' retroactively approve Amendment No. 6 to Contract CS-155.3 Professional Architectural and Engineering Services with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to: 1) approve an increase in the contract amount by \$1,269,472 to redesign the trackway alignment and analyze impacts to ventilation systems; and, 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of June 5, 2018.



Secretary to the Board of Directors
San Francisco Municipal Transportation Agency

THIS PRINT COVERS CALENDAR ITEM NO. :

**SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY**

DIVISION: Central Subway

BRIEF DESCRIPTION:

Retroactively approving Amendment No. 6 to Contract CS-155-3 Professional Architectural and Engineering Services with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to approve an increase in the contract amount by \$1,269,472 to: 1) redesign the trackway alignment and analyze impacts to ventilation systems; and 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434; and requesting the Board of Supervisors' retroactive approval of Amendment No. 6.

SUMMARY:

- On April 22, 2010, the City awarded Contract CS-155-3 (Contract) to HNTB B&C JV (Designer) to design the trackway and control systems for the Central Subway Project, for an amount not to exceed \$32,294,319, for a ten-year term with option to extend the term two years.
- The Contract has been modified six times to compensate the Designer to address unexpected site conditions and design changes required by the City. The six amendments increased the total contract amount by \$2,279,115.
- Amendment No. 6 increases the contract amount \$1,269,472 to compensate for additional design work for: 1) to redesign the alignment of the trackway to accommodate changes to the tunnel alignment, which were required to avoid underground obstacles; and 2) provide design support to integrate Central Subway control systems to the SFMTA's Transportation Management Center, and to support the construction of specialized communication and video systems.
- The amendment requires the Board of Supervisors' approval under Charter Section 9.118(b).

ENCLOSURES:

1. SFMTAB Resolution
2. CS-155-3 Contract, Amendment No. 6
3. <https://www.sfmta.com/about-sfmta/reports/central-subway-final-seisseir> (Central Subway Final SEIS/SEIR and Mitigation Monitoring and Reporting Program)

APPROVALS:

DATE

DIRECTOR _____

SECRETARY _____

ASSIGNED SFMTAB CALENDAR DATE: June 5, 2018

PAGE 2.

PURPOSE

Approving Amendment No. 6 to Contract CS-155-3 Professional Architectural and Engineering Services with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to approve an increase in the contract amount by \$1,269,472 to: 1) redesign the trackway alignment and analyze impacts to ventilations systems; and, 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434; and requesting the Board of Supervisors' retroactive approval of Amendment No. 6.

STRATEGIC GOALS AND TRANSIT FIRST POLICY PRINCIPLES

This action supports the following SFMTA Strategic Plan Goal and Objectives:

Strategic Plan Goal 3 – Improve the environment and quality of life in San Francisco

Objective 3.1: Reduce the Agency's and the transportation system's resource consumption, emissions, waste and noise.

Objective 3.2: Increase the transportation system's positive impact to the economy.

Objective 3.3: Allocate capital resources effectively.

Objective 3.4: Deliver services efficiently.

Objective 3.5: Reduce capital and operating structural deficits.

This item will support the following Transit First Policy Principles:

1. Improves the safe and efficient movement of people and goods.
2. Improves public transit as an attractive alternative to travel by private automobile.
8. Allocates transit investments to meet the demand for public transit generated by new public and private commercial and residential developments.
9. Promotes the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.

DESCRIPTION

Contract and Contracted Services

On February 26, 2010, the SFMTA Board of Directors awarded Contract CS-155-3 (Contract) to HNTB-B&C (Designer) a joint venture between HNTB, Inc. and B&C Transit, Inc. (now called Transit Systems Engineering, Inc.), to design the trackway and control systems for the Central Subway Project, for an amount not to exceed \$32,294,319, for a ten-year base term, and an option to extend the term an additional two years. On April 22, 2010, the Board of Supervisors approved the SFMTA's award of the Contract to the Designer.

Under the Contract, the Designer provides the following services:

1. Design the trackway infrastructure, trackway (rails and ties), crossovers, switch systems, specialty trackwork, train control system, computer aided dispatch system, radio and band data communication systems, and ventilation system, fire detection, alarm and suppression systems, public information signs, and other utility and control systems

PAGE 3.

necessary for the functioning of the Central Subway and the integration of Central Subway systems into existing MUNI systems.

2. Validate preliminary (conceptual) designs and complete final designs for each of the systems listed above
3. Prepare bid documents (construction designs and specifications) and provide bid support services including conforming contract drawings and specifications
4. Verify construction costs and schedules
5. Review contract change order requests
6. Review and respond to contractor submittals, requests for information (RFIs), requests for substitution, and contract claims
7. Conduct site visits and observations to verify design compliance and/or assist in resolving issues
8. Update design drawings and specifications as needed to memorialize approved project changes
9. Witness and approve factory testing of manufactured equipment and materials
10. Provide on-going geotechnical investigation and engineering services
11. Provide site surveying
12. Perform (and review others') cost estimates and scheduling
13. Coordinate designs and specifications for the construction of the tunnels and stations by others (under Contracts CS-155-1 and CS-155-2).
14. Prepare systems operations and maintenance manuals specifications
15. Prepare prepare as-built contract specifications and design documents when construction is complete.

The Contract is structured on a cost reimbursement model, as are most engineering services contracts for complex projects. The parties estimated the number of hours the Designer would need to spend on various categories of work, with contract costs estimated by multiplying those hours by the hourly rates of the personnel assigned to perform the work and by an audited rate for overhead. The parties also negotiated a separate fixed fee that covers the Designer's profit and costs not covered as allowed overhead; the fixed fee is paid pro rata to hours worked with each progress payment.

The costs of redesigning the trackway alignment was not included in the design services negotiated for the base contract, as the lowering of the tunnels (and therefore the redesign of the trackway alignment) was an accommodation of underground and as-built conditions that neither the SFMTA nor the Designer could have been anticipated prior to the execution of the Contract. The additional work to redesign trackway alignment and perform related ventilation system analyses added approximately 306 hours and \$55,188.00 to the Contract. The additional work required to support the integration of Central Subway control systems to the SFMTA's Transportation Management Center (TMC), and to support the construction of specialized communication and video systems added approximately 11,733 hours and \$1,214,284 to the Contract for a total of approximately 12,039 hours and \$1,269,472 to the Contract. The SFMTA could not have anticipated the need for that additional work when it negotiated the original contract, as the TMC had not at that time been completed and the scope of integrating the Central Subway control systems to the TMC was unknown.

PAGE 4.

Prior Amendments of the Contract

The Contract has been modified six times to address unexpected site conditions and design changes required by the City. The six amendments increased the total contract amount by \$2,279,115, for a total amended contract amount not to exceed \$34,573,434.

Amendment No. 1

On January 16, 2012, the Director of Transportation approved Amendment No. 1 to the Contract for \$152,882 to compensate the Designer for review of impact of lowering Chinatown station 25 feet deeper and modifying tunnel and trackway designs for lowered station and performing geotechnical investigation for Fourth/Brannan Station.

Amendment No. 2

On March 9, 2012, the Director of Transportation approved Amendment No. 2 to the Contract for \$38,380 to compensate the Designer for performing vibration impact analysis for 570-4th Street property.

Amendment No. 3

On May 4, 2012, the Director of Transportation approved Amendment No. 3 to the Contract for \$304,651 to compensate the Designer for providing additional design technology support, quality control services, and business process review.

Amendment No. 4

On July 11, 2012, the Director of Transportation approved Amendment No. 4 to the Contract for \$332,779 to compensate the Designer for performing additional design work for incorporating replacement of track switches and switch machines and for performing additional design services to integrate Central Subway systems to the SFMTA's Transit Management Center.

Amendment No. 5

On April 24, 2013, the Director of Transportation approved Amendment No. 5 to the Contract for \$180,951 to compensate the Designer for performing additional design services to integrate Central Subway systems to the SFMTA's Transit Management Center.

Amendment No. 6

On June 11, 2014, the Director of Transportation approved Amendment No. 6 to the Contract for \$1,269,472.00 to compensate the Designer for performing additional work to redesign the trackway alignment and evaluate impacts to the ventilation systems, and provide design and construction support for specialized communication and video systems, for a total amended contract amount not to exceed \$34,573,434. Amendment No. 6 should have been presented to the SFMTA Board and then to the Board of Supervisors for their approval, but was not due to staff misunderstanding of the Director of Transportation's contract approval authority.

PAGE 5.

The SFMTA’s Contract Compliance Office has determined that the Designer has met the 30% Small Business Enterprise participation goal that the SFMTA established for the Contract.

STAKEHOLDER ENGAGEMENT

The contract amendment extends the level of design and construction support services, and increasing the scope does not have any negative impact to the community; hence, no community outreach was performed.

ALTERNATIVES CONSIDERED

Disapproval of this amendment retroactively by the Board would render Amendment No. 6 to the Contract void, which could negatively impact the Designer's willingness to continue to provide services to the Central Subway Project. It is important that the Designer, as the engineer of record for the trackway and control systems, continue to provide design services during construction. Loss of the Designers's services would likely cause significant delays to the completion of the Central Subway Program, as the SFMTA would not otherwise have the expertise necessary to perform the Designer's work.

FUNDING IMPACT

The Central Subway project is funded with Federal Transit Administration (FTA) New Starts, Federal Congestion Management & Air Quality (CMAQ), State Transportation Bond Proposition 1A and 1B, State Regional Improvement Program, State Transportation Congestion Relief Program (TCRP), and Prop K Half-Cent Local Sales Tax funds. Contract CS-155-2 Modification #4 will not increase the total project cost of \$1.578B. Existing funds will be used to pay for the additional cost. The breakdown of the funding sources and their amounts is as follows:

Source	TOTAL
5309 New Starts	\$942,200,000
CMAQ3	\$41,025,000
Prop 1A High Speed Rail Connectivity	\$61,308,000
Prop 1B- MTC	\$87,895,815
Prop 1B-SFMTA	\$219,896,185
RIP-SF/Other	\$74,248,000
TCRP	\$14,000,000
Prop K	\$137,727,000
	\$1,578,300,000

ENVIRONMENTAL REVIEW

The Central Subway Final Supplemental Environmental Impact Statement / Supplemental Environmental Impact Report (Central Subway SEIS/SEIR) evaluated the environmental impacts of the Central Subway project, including construction of the subway stations. On August 7, 2008,

PAGE 6.

the San Francisco Planning Commission certified the Final SEIR (Case No. 1996.281E). On August 19, 2008, the SFMTA Board of Directors approved Resolution 08-150 adopting Central Subway Project Alternative 3B as the Locally Preferred Alternative, the CEQA Findings, Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan.

As constructed, the northbound and southbound tunnels were lowered by approximately 10 feet maximum from the depths described in the SEIS/SEIR, to avoid existing underground micropiles discovered after construction was initiated. The change in vertical profile occurred over a length of approximately 1,750 feet of tunnels, between south of Union Square-Market Street Station and north of Yerba Buena-Moscone Station. The tunnel horizontal alignment (for northbound and southbound) did not change. The constructed depth of the tunnels as constructed is consistent with the analysis of impacts and mitigations in the SEIS/SEIR. All impacts associated with tunnel depth were analyzed in the SEIS/SEIR, which considered potential impacts due to subsurface conditions in locations affected by the tunnels and in the surrounding vicinity. The SEIS/SEIR contains extensive analysis of archeological resources and impacts in Sections 4.4 and 6.7.1. Information contained therein regarding known archeological resources, and mitigation measures required to avoid both known and unknown archeological resources, adequately account for construction of the tunnels 10 feet lower than initially analyzed.

On July 15, 2014, when the SFMTA Board of Directors adopted Resolution No. 14-120, the Board found, based on its review of the Final SEIS/SEIR, that no additional environmental review was required under Public Resources Code section 21166. On April 5, 2016, when the SFMTA Board of Directors adopted Resolution No. 16-044, the Board further reviewed and considered the Central Subway Project Final SEIS/SEIR and the record as a whole, finding that there were no substantial project changes and no substantial changes in project circumstances that would require major revisions to the Central Subway Project Final SEIS/SEIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there was no new information of substantial importance that would change the conclusions set forth in the Central Subway Project Final SEIS/SEIR.

The environmental review determination is on file with the SFMTA Board of Directors, may be found in the records of the Planning Department at 1650 Mission Street in San Francisco, and is incorporated herein by reference.

OTHER APPROVALS RECEIVED OR STILL REQUIRED

Amendment No. 6 to the Contract requires approval by the Board of Supervisors under Charter Section 9.118(b), as the original contract was subject to the Board of Supervisors approval and the value of the amendment exceeds \$500,000.

The City Attorney's Office has reviewed this calendar item.

RECOMMENDATION

SFMTA staff recommends that the SFMTA Board of Directors retroactively approve Amendment No. 6 to Contract CS-155-3 Professional Architectural and Engineering Services

PAGE 7.

with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to retroactively approve an increase in the contract amount by \$1,269,472 to: 1) redesign the trackway alignment and analyze impacts to ventilations systems; and, 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434; and requesting the Board of Supervisors' retroactive approval of Amendment No. 6.

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. _____

WHEREAS, Design and construction of the 1.75-mile Central Subway (Central Subway Project) is Phase 2 of the Third Street Light Rail Transit Project; and,

WHEREAS, On April 22, 2010, the City awarded Contract CS-155-3 (Contract) to HNTB-B&C JV (Designer), a joint venture between HNTB Engineering and B&C Transit (now called Transit Systems Engineering, Inc.), to design the trackway and control systems for the Central Subway Project, for an amount not to exceed \$32,294,319, for a ten-year term with option to extend the term two years; and,

WHEREAS, The Contract has been modified six times to compensate the Designer for additional work required to address unexpected site conditions and design changes required by the City. The six amendments increased the total contract amount by \$2,279,115, for a total amended contract amount not to exceed \$34,573,434; and,

WHEREAS, The Amendment No. 6 to the Contract, dated June 11, 2014, increased the contract amount by \$1,269,472 to compensate for additional work to: 1) redesign the trackway alignment and evaluate impacts on ventilation systems; and, 2) provide design and construction support for specialized communication and video systems, for a total amended contract amount not to exceed \$34,573,434; and,

WHEREAS, The Amendment No. 6 requires the Board of Supervisors' approval under Charter Section 9.118(b); and,

WHEREAS, Due to staff misunderstanding of the Director of Transportation's authority to approve contracts, Amendment No. 6 was not timely presented to the SFMTA Board of Directors for approval, and was not timely presented to the Board of Supervisors for approval; and,

WHEREAS, The Central Subway Final Supplemental Environmental Impact Statement / Supplemental Environmental Impact Report (Central Subway SEIS/SEIR) evaluated the environmental impacts of the Central Subway Project, including construction of the subway tunnels; and,

WHEREAS, On August 7, 2008, the San Francisco Planning Commission certified the Final SEIR (Case No. 1996.281E). On August 19, 2008 the SFMTA Board of Directors approved Resolution 08-150 adopting Central Subway Project Alternative 3B as the Locally Preferred Alternative, the CEQA Findings, Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan; and,

WHEREAS, On July 15, 2014, when the SFMTA Board of Directors adopted Resolution No. 14-120, the Board found, based on its review of the Final SEIS/SEIR, that no additional environmental review was required under Public Resources Code section 21166; On April 5, 2016, when the SFMTA Board of Directors adopted Resolution No. 16-044, the Board further reviewed and considered the Central Subway Project Final SEIS/SEIR and the record as a whole, finding that there were no substantial project changes and no substantial changes in project circumstances that would require major revisions to the Central Subway Project Final SEIS/SEIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there was no new information of substantial importance that would change the conclusions set forth in the Central Subway Project Final SEIS/SEIR; and,

WHEREAS, The environmental review determination is on file with the SFMTA Board of Directors, and may be found in the records of the Planning Department at 1650 Mission Street in San Francisco, and is incorporated herein by reference; and,

RESOLVED, The SFMTA Board of Directors retroactively approves Amendment No. 6 to Contract CS-155-3 Professional Architectural and Engineering Services with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to: 1) approve an increase in the contract amount by \$1,269,472 to redesign the trackway alignment and analyze impacts to ventilation systems; and, 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434; and be it further

RESOLVED, The SFMTA Board of Directors requests the Board of Supervisors' retroactively approve Amendment No. 6 to Contract CS-155.3 Professional Architectural and Engineering Services with HNTB-B&C JV for the Final Design and Construction Support of the Central Subway Project Trackway and Control Systems, to: 1) approve an increase in the contract amount by \$1,269,472 to redesign the trackway alignment and analyze impacts to ventilation systems; and, 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,573,434.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of June 5, 2018.

Secretary to the Board of Directors
San Francisco Municipal Transportation Agency

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	\$29,124,414	\$4,921,960	\$527,059	(\$1,920,447)	\$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: _____	By: _____
Edward D. Reiskin Director of Transportation SFMTA	Darlene Gee HNTB Corporation HNTB-B&C JV
Dated: _____	Dated: _____
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: _____	

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS
RESOLUTION No. 16-044

WHEREAS, Pursuant to Section 8A.102(b)(13) of the Charter (the Charter) and Chapter 43 of the Administrative Code of the City and County of San Francisco (the City), the San Francisco Municipal Transportation Agency (the SFMTA) may issue revenue bonds and other debt instruments, with the concurrence of the Board of Supervisors of the City (the Board) and without voter approval, such bonds to be issued in accordance with state law and any procedure provided for by ordinance; and,

WHEREAS, The SFMTA desires to finance the costs of certain transportation projects, including, but not limited to, the following SFMTA capital improvement programs: Muni Transit Safety and Spot Improvements, Street Capital Improvements, Facility Improvements, Transit Fixed Guideway, including the Van Ness Transit Improvement Project (Van Ness BRT), Pedestrian Safety and Traffic Signal Improvements, and Muni Light Rail Vehicle Procurement (LRV procurement) (collectively, the Project); and,

WHEREAS, To fund a portion of the Project related to the transportation capital improvements associated with the proposed Mixed Use Development at Mission Bay Blocks 29-32 at a cost estimated not to exceed \$45,000,000 (Mission Bay Component), the City, through its Mission Bay Transportation Improvement Fund or through other sources, has agreed to reimburse the SFMTA for debt service for the Bonds and any other costs that are related to financing these improvements; and,

WHEREAS, The City's obligation to reimburse the SFMTA for all financing-related costs associated with the Mission Bay Component long will be set forth in a memorandum of understanding or similar agreement between the Controller and the SFMTA prior to the issuance of any Bonds for this purpose; and,

WHEREAS, The SFMTA desires to issue its revenue bonds in an aggregate amount not to exceed \$207,000,000 (Bonds), composed of not to exceed \$162,000,000 for various SFMTA transportation capital improvements and various financing costs; and \$45,000,000 for the Mission Bay Component in one or more series on one or more dates to fund the Project; and,

WHEREAS, The SFMTA desires to enter into a Bond Purchase Contract in connection with the Bonds (Purchase Contract) with an underwriter or underwriters named therein, or alternatively, to issue an Official Notice of Sale in connection with the Bonds (Official Notice of Sale) and cause the publication of a Notice of Intention to Sell Bonds in The Bond Buyer or another financial publication generally circulated throughout the State of California (Notice of Intention to Sell Bonds); and,

WHEREAS, The SFMTA has been presented with the form of certain documents related to the revenue bonds, including the Fourth Supplement to Indenture of Trust, the Purchase Contract, the Preliminary Official Statement (defined below), and the Continuing Disclosure Certificate (defined below); and,

WHEREAS, The SFMTA intends to fund the Project with proceeds from the Bonds in an amount not to exceed \$207,000,000, the interest upon which is excluded from gross income for federal income tax purposes; and,

WHEREAS, The SFMTA has determined that the moneys advanced and to be advanced to pay certain expenditures of the Project (Expenditures) are or will be available only for a temporary period, and it is necessary to reimburse all such Expenditures made no earlier than 60 days prior to the date of this Resolution from proceeds of the Bonds; and,

WHEREAS, Section 1.150-2 of the Treasury Regulations requires the SFMTA to declare its reasonable official intent to reimburse prior expenditures for the Project with proceeds of the Bonds; and,

WHEREAS, The Department of City Planning of the City and County of San Francisco has determined that the replacement and expansion vehicle portions of the LRV procurement are statutorily exempt under Section 21080(b)(11) of the California Resources Code and Section 15275(a) of the implementing California Environmental Quality Act (CEQA) Guidelines because those portions of the LRV procurement involve an increase of service on rail lines already in use; and,

WHEREAS, The LRVs for the Central Subway Project were reviewed as part of the Central Subway Final Supplemental EIS/EIR, certified by the Planning Commission on August 7, 2008, and on August 19, 2008, the SFMTA Board of Directors, in Resolution No. 08-150, adopted the findings and conclusions with respect to Central Subway Final Supplemental EIS/EIR; and,

WHEREAS, On July 15, 2014, the SFMTA Board of Directors adopted Resolution No. 14-12 to approve the agreement to procure the LRVs; at that time, based on its review of the Final Supplemental EIS/EIR, the SFMTA Board found that no additional environmental review was required under Public Resources Code section 21166; and,

WHEREAS, On May 15, 2012, the SFMTA Board of Directors adopted Resolution No. 12-070, which identified and endorsed the Locally Approved Alternative (LPA) for the Van Ness BRT Project, "*The Center-running BRT with Right Side Boarding Platforms Single Median and Limited Left Turns,*" for further analysis in the Final Environmental Impact Statement/Environmental Impact Report (Van Ness BRT Final EIS/EIR); and,

WHEREAS, On September 10, 2013, the San Francisco County Transportation Authority (Authority) Board certified the Van Ness BRT Final EIS/EIR, including an amendment to include the Vallejo Northbound Station Variant as adequate, accurate and objective and reflecting the independent judgment of the Authority; and,

WHEREAS, On September 17, 2013, the SFMTA Board of Directors adopted Resolution No. 13-214, approving the Van Ness BRT Project, analyzed as the Locally Preferred Alternative in the Van Ness BRT Final EIS/EIR for the Project, including an amendment to include the Vallejo Northbound Station Variant in the approval of the LPA, and adopted the CEQA Findings and Statement of Overriding Considerations for the Van Ness BRT Final EIS/EIR; and,

WHEREAS, The Project files, including the Final EIS/EIR and SFMTA Resolution No. 13-214, have been made available for review by the SFMTA and the public, and those files are part of the record before this Board; and,

WHEREAS, Since the adoption of the CEQA Findings and the approval of the Van Ness BRT Project, the SFCTA has prepared a memo to file dated July 15, 2014, titled "*Van Ness Avenue Bus Rapid Transit Project – Environmental Compliance for the Proposed Parking Removal from Conceptual Engineering Report*" (Memo to File), which concludes that the removal of eleven parking spaces more than assumed in the Van Ness BRT Final EIS/EIR, as proposed by the SFMTA in its Conceptual Engineering Report, will not result in a new significant environmental impact due to parking loss; further, on March 4, 2016, the SFCTA issued an "*Addendum to Environmental Impact Report*" for the Van Ness BRT Project (the Addendum), which concludes that removal and replacement of various trees along the Van Ness corridor not previously identified in the Van Ness BRT Project Final EIS/EIR would not result in a new significant environmental impact; and,

WHEREAS, Based on its review and consideration of the information contained in the Van Ness BRT Final EIS/EIR, the SFMTA Board found, on July 7, 2015, under Resolution No. 15-108, that the proposed actions to remove parking spaces are within the scope of the Van Ness BRT Project Final EIS/EIR and that no additional environmental review is required under Public Resources Code section 21166; and,

WHEREAS, Based on its review of the Addendum, the SFMTA Board finds that proposed actions to remove and replace trees, as outlined in the Addendum, are within the scope of the Van Ness BRT Project Final EIS/EIR and that no additional environmental review is required under Public Resources Code section 21166; and

WHEREAS, Hereinafter, the Van Ness BRT Project Final EIS/EIR, including the memo to File and Addendum, shall be collectively referred to as the "Van Ness BRT Project Final EIS/EIR"; and

WHEREAS, On November 3, 2015, the San Francisco Commission on Community Investment and Infrastructure (CCII), the successor agency to the former Redevelopment Agency, reviewed and considered the Final Subsequent Environmental Impact Report (FSEIR) for the Golden State Warriors (GSW) Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (GSW Project), a proposed multi-purpose event center and mixed-use project being proposed by GSW Arena, an affiliate of Golden State Warriors LLC, and, by CCII Resolution No. 69-2015, certified the FSEIR in compliance with CEQA; the CCII also approved the GSW Project by the adoption of Resolutions No. 70-2015 (adopting CEQA Findings), No. 71-2015 (approving amendments to the Mission Bay South Design for Development), and No.72-2015 (conditionally approving the Major Phase and Basic Concept/Schematic Design applications for the Project); and,

WHEREAS, On November 3, 2015, under Resolution No. 15-154, the SFMTA Board took various actions in regard to the Project, including, but not limited to, adopting the GSW Project's CEQA findings for the Project as applicable to the SFMTA, and recommending legislation to the Board of Supervisors for the establishment of a fund to help pay for City services and the Mission Bay Component; and,

WHEREAS, On December 8, 2015, in response to an appeal of the FSEIR from the Mission Bay Alliance, the Board of Supervisors approved Motion M15-178, affirming the CCII's certification of the Project FSEIR (Board of Supervisors File No. 150991); and,

WHEREAS, In order to continue to plan, design, conduct additional outreach, and construct the capital improvements associated with the Mission Bay Component, including the center platform variant for the T-Line, as selected by the Director of Transportation, the Agency plans to use funds from the Bonds; now, therefore, be it

RESOLVED, That all of the recitals herein are true and correct and constitute findings of this Board; and be it

FURTHER RESOLVED, That the SFMTA Board of Directors has reviewed and considered the Central Subway Project Final Supplemental EIS/EIR and record as a whole, finds that the Central Subway Project Final Supplemental EIS/EIR is adequate for the Board's use as the decision-making body for the actions taken herein relative to possible funding of the LRV procurement project by the Bonds, incorporates the CEQA findings contained in SFMTA Board Resolution No. 08-150, by this reference as though set forth in this Resolution; and be it

FURTHER RESOLVED, That the SFMTA Board further finds that since the Central Subway Project Final Supplemental EIS/EIR was finalized, there have been no substantial project changes and no substantial changes in project circumstances that would require major revisions to the Central Subway Project Final Supplemental EIS/EIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there is no new information of substantial importance that would change the conclusions set forth in the Central Subway Project Final Supplemental EIS/EIR; and be it

FURTHER RESOLVED, That the SFMTA Board has reviewed and considered the Van Ness BRT FEIR and record as a whole, finds that the Van Ness BRT FEIR is adequate for the Board's use as the decision-making body for the actions taken herein relative to possible funding of the Van Ness BRT Project by the Bonds, and incorporates the CEQA findings contained in SFMTA Board Resolution No. 13-214 and No. 15-108 (with respect to deletion of parking spaces) by this reference as though set forth in this Resolution; and be it

FURTHER RESOLVED, That the SFMTA Board further finds that since the Van Ness BRT FEIR was finalized, there have been no substantial project changes and no substantial changes in project circumstances that would require major revisions to the Van Ness BRT FEIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there is no new information of substantial importance that would change the conclusions set forth in the Van Ness BRT FEIR; and be it further

FURTHER RESOLVED, That the SFMTA Board has reviewed and considered the Golden State Warriors Final Supplemental Environmental Impact Report (GSW FSEIR) and record as a whole, finds that the GSW FSEIR is adequate for its use as the decision-making body for the actions taken herein relative to the possible funding of the Mission Bay Component by the Bonds, and incorporates the CEQA findings contained in SFMTA Board

Resolution No. 15-154 by this reference as though set forth in this Resolution; and be it

FURTHER RESOLVED, That the SFMTA Board further finds that since the GSW FSEIR was certified, there have been no substantial project changes and no substantial changes in project circumstances that would require major revisions to the GSW FSEIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there is no new information of substantial importance that would change the conclusions set forth in the GSW FSEIR; and be it

FURTHER RESOLVED, That except as to the specific projects mentioned above, the issuance of the Bonds by the SFMTA is not subject to CEQA because the establishment of a government financing mechanism that does not identify individual specific projects to be constructed with the funds is not a project as defined by CEQA and the CEQA Guidelines; the SFMTA shall consult with the City Attorney as to necessary CEQA findings and determinations with respect to any project prior to the expenditure of Bond proceeds; and be it

FURTHER RESOLVED, As to other projects that may be funded with Bond funds, the SFMTA will not proceed with any project until it is fully compliant with the California Environmental Quality Act (CEQA); if any of the projects are found to cause significant adverse impacts, the SFMTA retains absolute discretion to: (1) modify the project to mitigate significant adverse environmental impacts, (2) select feasible alternatives which avoid significant adverse impacts of the project, (3) require the implementation of specific measures to mitigate the significant adverse environmental impacts of the project, as identified upon environmental evaluation in compliance with CEQA and the Chapter 31, (4) reject the project as proposed if the economic and social benefits of the project do not outweigh otherwise unavoidable significant adverse impacts of the project, or (5) approve the project upon a finding that the economic and social benefits of the project outweigh otherwise unavoidable significant adverse impacts; and be it

FURTHER RESOLVED, That the SFMTA Board of Directors approves the issuance in one or more series of San Francisco Municipal Transportation Agency Revenue Bonds in an amount not to exceed \$207,000,000, which includes up to \$45,000,000 for the Mission Bay Component, and up to \$162,000,000 for other projects, such as the light rail vehicle procurement, the Van Ness Transit Improvement Project and for various financing costs, which shall be issued and delivered in accordance with the Indenture (defined below) and the form of Fourth Supplement (defined below), as the same is finally executed and delivered. The proceeds of the Bonds shall be used to (i) fund the Project; (ii) fund a reserve fund, if any; (iii) fund capitalized interest, if any; and (iv) pay costs of issuance of the Bonds. The Bonds may be issued in one or more series on one or more dates. The Trustee (defined below) is authorized to cause the registration and authentication of the Bonds in accordance with the Indenture. The Bonds shall be subject to prepayment as set forth in the Indenture and the Fourth Supplement. The Director of Transportation of the SFMTA is authorized and directed to determine the aggregate principal amount of Bonds to be issued from time to time (subject to the maximum amount and further limitations and conditions set forth herein) and to determine the various titles and series designations of the Bonds. The Bonds shall bear interest rates not to exceed 12 percent per annum, and shall mature no later than 30 years from their date of issuance. The form of the Bonds, in substantially the form set forth in the Fourth Supplement

presented to this meeting, is approved. The Director of Transportation is authorized and directed to approve and to execute the Bonds, by manual or facsimile signature, and the Secretary of the Board of Directors is authorized and directed to attest, by manual or facsimile signature, with such changes, additions, amendments or modifications thereto which they may approve, with the advice of the City Attorney, such approval to be conclusively evidenced by the issuance of the Bonds; and be it

FURTHER RESOLVED, That the form of a fourth supplement to indenture of trust (Fourth Supplement), supplementing that certain Indenture of Trust dated July 1, 2012 (the Indenture), by and between the SFMTA and U.S. Bank National Association, as successor trustee (Trustee), or such other trustee selected by the Director of Transportation, by and between the SFMTA and the Trustee, as presented to the Board of Directors, is approved. Subject to Board of Supervisors concurrence, the Director of Transportation shall return to this Board with final versions of the Fourth Supplement showing such final changes, additions and modifications as the Director of Transportation may make or approve in accordance with this Resolution prior to the sale of the Bonds; and be it

FURTHER RESOLVED, That, subject to the execution of a memorandum of understanding between the SFMTA and the City Controller (MOU) to ensure that the SFMTA receives timely and adequate payments from the City to cover debt service payments and any other financing-related expenditures for the Mission Bay Component, the Director of Transportation is authorized and directed to cause a sale of the bonds by means of a negotiated sale with an underwriter selected in accordance with City contracting procedures. The form of a bond purchase contract, as presented to the Board of Directors, a copy of which is on file with the Secretary of the Board of Directors, is approved. The Director of Transportation is authorized to make such changes, additions and modifications to the Purchase Contract as the Director of Transportation may make or approve in accordance with this Resolution; provided, however, that the Underwriters' discount under the Purchase Contract shall not exceed 0.50% of the principal amount of the Bonds and the Director of Transportation presents such Purchase Contract to this Board for approval showing final changes, additions or modifications prior to the sale of the Bonds; and be it

FURTHER RESOLVED, That as an alternative to conducting a negotiated sale, and subject to execution of the MOU referenced above, the Director of Transportation is authorized and directed to cause a sale of the bonds by means of a competitive sale, if the Director of Transportation deems a competitive sale to be necessary or advisable. The forms of an official notice of sale and a notice of intention to sell, each as presented to the Board of Directors, copies of which are each on file with the Secretary of the Board of Directors, are approved. The Director of Transportation is authorized to issue the official notice of sale and notice of intention to sell, with such changes, additions, and modifications as the Director of Transportation may make or approve in accordance with this Resolution, and the Director of Transportation is authorized to cause there to be published once in *The Bond Buyer* or another financial publication generally circulated throughout the State of California the notice of intention to sell; and be it

FURTHER RESOLVED, That the form of the continuing disclosure certificate of the City (Continuing Disclosure Certificate), as presented to the Board of Directors, a copy of which is on file with the Secretary of the Board of Directors, is approved. The Director of Transportation or his

designee is authorized to execute the Continuing Disclosure Certificate, with such changes, additions, and modifications as he may make or approve in accordance with this Resolution; and be it

FURTHER RESOLVED, That the Board of Directors authorizes the expenditure of a portion of the proceeds of the Bonds for the payment of Mission Bay Component and related financing costs incurred in connection with the issuance of the Bonds; and be it

FURTHER RESOLVED, That the form of an official statement relating to the Bonds (Official Statement), as presented to the Board of Directors, a preliminary copy of which is on file with the Secretary of the Board of Directors, is approved. The Director of Transportation is authorized to make changes, additions, modifications, or deletions to the Preliminary Official Statement as the Director of Transportation may approve upon consultation with the City Attorney, such approval to be conclusively evidenced by final approval of the Preliminary Official Statement by this Board prior to its distribution to potential purchasers of the Bonds; and be it

FURTHER RESOLVED, That the Controller of the City, the Treasurer of the City, the Director of Transportation, the City Attorney, and all other appropriate officers, employees, representatives, and agents of the City are authorized and directed to do everything necessary or desirable to provide for the issuance of the Bonds, including, but not limited to, executing and delivering such certificates and other documents as they may deem necessary or advisable, including, without limitation, any custody agreements required by the Trustee; provided, however, the Director of Transportation shall return to this Board for final approval of the Financing Documents (as defined below) prior to the issuance of the Bonds; and be it

FURTHER RESOLVED, That the Director of Transportation is authorized to approve and make such modifications, changes, or additions to the Fourth Supplement, the Purchase Contract, the Continuing Disclosure Certificate, or the Official Statement, upon consultation with the City Attorney, as may be necessary or desirable in the interests of the SFMTA, and which changes are within the parameters of this Resolution. The Director of Transportation's approval of such modifications, changes, additions, or deletions shall be conclusively evidenced by (i) final approval by this Board, and thereafter (ii) the execution and delivery by the Director of Transportation of the Fourth Supplement, the Purchase Contract (as applicable), the Official Statement, or the Continuing Disclosure Certificate (Financing Documents); and be it

FURTHER RESOLVED, That the Director of Transportation is authorized and directed to cause a resolution to be prepared and submitted to the Board of Supervisors seeking their concurrence with respect to the issuance of Bonds by the SFMTA in accordance with Charter Section 8A.102(b)(13); and be it

FURTHER RESOLVED, That the Board of Directors adopts this Resolution for purposes of establishing compliance with the requirements of Section 1.150-2 of the Treasury Regulations. This Resolution does not bind the SFMTA to make any expenditure, incur any indebtedness, or proceed with the Project; and be it

FURTHER RESOLVED, That the SFMTA declares its official intent, pursuant to Section 1.150-2 of the Treasury Regulations, to use proceeds of the Bonds to reimburse the Expenditures incurred in connection with the Project; and be it

FURTHER RESOLVED, That the SFMTA reasonably expects that the maximum principal amount of the Bonds expected to be issued for the Project is \$207,000,000; and be it

FURTHER RESOLVED, That this Resolution is being adopted no later than 60 days after the date SFMTA will expend moneys for the construction of a portion of the Project costs expected to be reimbursed with Bond proceeds. Each Expenditure will be either (a) of a type properly chargeable to a capital account under general federal income tax principles (determined in each case as of the date of the Expenditure), (b) a cost of issuance with respect to the Bonds, (c) a nonrecurring item that is not customarily payable from current revenues, or (d) a grant to a party that is not related to or an agent of the SFMTA so long as such grant does not impose any obligation or condition (directly or indirectly) to repay any amount to or for the benefit of the SFMTA; and be it

FURTHER RESOLVED, That, notwithstanding anything to the contrary in this resolution, the Director of Transportation, with the advice of the financial advisors to the SFMTA, may modify the financial covenants set forth in the Financing Documents, to the extent such revisions are deemed necessary or desirable by the Director of Transportation for the issuance of the Bonds based on advice from the SFMTA's financial advisors; provided, however, that any such modifications or revisions shall not materially increase the financial or operational risks to the SFMTA and shall otherwise be subject to the terms hereof; and be it

FURTHER RESOLVED, That if any section, subsection, sentence, clause, phrase, or word of this resolution, or any application thereof to any person or circumstance, is held to be invalid or unconstitutional by a decision of a court of competent jurisdiction, such decision shall not affect the remaining portions or applications of this resolution; the Board of Directors declares that it would have passed this resolution and each and every section, subsection, sentence, clause, phrase, or word of this resolution not declared invalid or unconstitutional without regard to whether any other portion of this resolution or application thereof without regard to whether any other portion of this resolution or application thereof would be subsequently declared invalid or unconstitutional; and be it

FURTHER RESOLVED, That the documents presented to the Board of Directors are on file with the Secretary of the Board of Directors.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of April 5, 2016.



Secretary to the Board of Directors
San Francisco Municipal Transportation Agency

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. 14-120

WHEREAS, The San Francisco Municipal Transportation Agency (“SFMTA”) currently operates a fleet of 151 light rail vehicles (LRVs), which are scheduled for retirement starting in 2021; and,

WHEREAS, The start of revenue service for the Central Subway Extension will require an additional 24 light rail vehicles to be delivered by 2018; and,

WHEREAS, Ridership projections and planned service expansions indicate a need for an additional 85 light rail vehicles over the next ten years; including 40 light rail vehicles needed between 2018 and 2021; and,

WHEREAS, In order to procure new LRVs to meet these anticipated needs, the SFMTA issued a Request for Qualifications in March 2013 seeking Statements of Qualification (SOQs) from LRV car builders; and,

WHEREAS, The SFMTA received SOQs from four car builders, and after evaluating the SOQs, found all four car builders eligible to continue on to the Request for Proposals (RFP) phase of the procurement; and,

WHEREAS, In September 2013, the SFMTA issued an RFP for the procurement of up to 260 LRVs, with a scope of work that includes the design, manufacture, delivery and test of LRVs, together with associated services, spare parts, special tools, training and documentation; and,

WHEREAS, In February 2014, the SFMTA received proposals from two car builders; after reviewing the proposals, the selection panel determined Siemens Industry, Inc. to be the highest-ranked proposer; and,

WHEREAS, The SFMTA has negotiated a final agreement with Siemens Industry, Inc., to procure up to 260 LRVs, associated services, spare parts, special tools, training and documentation, for an amount not to exceed \$1,192,651,577, and a term not to exceed 15 years; and,

WHEREAS, The base portion of the contract for 175 LRVs will be funded with federal, state and local funds; and

WHEREAS, The Department of City Planning has determined that the replacement and expansion vehicle portions of the procurement are statutorily exempt under Section 21080(b)(11) of the California Resources Code and Section 15275(a) of the implementing CEQA Guidelines because those portions of the procurement involve an increase of service on rail lines already in use; and

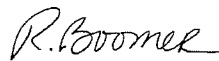
WHEREAS, The vehicles for the Central Subway Project were reviewed as part of the Central Subway Final Supplemental EIS/EIR, certified by the Planning Commission on August 7, 2008, and on August 19, 2008 this Commission, in Resolution No. 08-150 adopted the findings and conclusions with respect to Central Subway Final Supplemental EIS/EIR; and based upon this Commission's review of the Final Supplemental EIS/EIR, the Commission finds that no additional environmental review is required under Public Resources Code section 21166; now, therefore, be it,

RESOLVED, That the SFMTA Board of Directors authorizes the Director of Transportation to execute SFMTA Contract No. 2013-19: Procurement of New Light Rail Vehicles (LRV4), with Siemens Industry, Inc., to procure up to 260 LRVs, associated services, spare parts, special tools, training and documentation, in an amount not to exceed \$1,192,651,577, and for a term not to exceed 15 years; subject to FTA's resolution of the protest submitted to them by CAF USA; and be it further

RESOLVED, That the SFMTA Board of Directors authorizes the Director of Transportation to enter into negotiations with Siemens Industry, Inc. to provide financing for approximately 40 Option vehicles to be delivered between 2018 and 2021 should SFMTA determine that such financing is feasible and advantageous to the Agency, with any final financing agreement to be approved by this Board; and be it further

RESOLVED, That the SFMTA Board of Directors urges the Board of Supervisors to approve this Agreement.

I certify that the foregoing resolution was adopted by the Municipal Transportation Agency Board of Directors at its meeting of July 15, 2014.



Secretary to the Board of Directors
San Francisco Municipal Transportation Agency

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS
CITY AND COUNTY OF SAN FRANCISCO

RESOLUTION NO. 08-150

WHEREAS, The Third Street Light Rail Project Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR) was certified in November 1998; and,

WHEREAS, On January 19, 1999, the Public Transportation Commission approved Resolution No. 99-009, which adopted the environmental findings for the Third Street Light Rail Project, including mitigation measures set forth in the 1998 FEIS/FEIR and Mitigation Monitoring Report; and,

WHEREAS, The Federal Transit Administration issued a Record of Decision on the 1998 FEIS/FEIR for the IOS on March 16, 1999; and,

WHEREAS, The Central Subway is the second phase of the Third Street Light Rail Project; and,

WHEREAS, Studies undertaken subsequent to the Final EIS/EIR certification identified a new Fourth/Stockton Alignment to be evaluated for the Central Subway Project; and,

WHEREAS, On June 7, 2005, the San Francisco Municipal Transportation Agency (SFMTA) Board of Directors adopted Resolution 05-087, selecting the Fourth/Stockton Alternative (Alternative 3A) as the Locally Preferred Alternative (LPA) to be carried through the Supplemental EIS/EIR (SEIS/SEIR) and the federal New Starts process; and,

WHEREAS, Alternative 3B, Fourth/Stockton Alignment, was developed as a modified LPA in response to comments received through the public scoping process for the SEIS/SEIR initiated in June 2005 and also as a result of preliminary cost estimates identifying the need for Project cost savings; and,

WHEREAS, On October 17, 2007, SFMTA released for public comment a Draft SEIS/SEIR for the Central Subway Project, which evaluated a reasonable range of alternatives including: No Build/TSM (Alternative 1); Enhanced EIS/EIR Alternative (Alternative 2); Fourth/Stockton Alignment, LPA (Alternative 3A); and Fourth/Stockton Alignment, Modified LPA (Alternative 3B) with semi-exclusive surface right-of-way and mixed-flow surface operation options; and,

WHEREAS, The semi-exclusive surface right-of-way option for Alternative 3B, Fourth/Stockton Alignment, Modified LPA, would improve surface rail operations on Fourth

Street and reduce travel times for Central Subway patrons when compared to the mixed-flow option; and,

WHEREAS, The majority of comments received during the public comment period that concluded on December 10, 2007 supported construction of the Central Subway Project, and support was greater for Alternative 3B as the LPA; and,

WHEREAS, The SEIS/SEIR concluded that Alternative 3B will have significant unavoidable environmental impacts to traffic, historic resources and socioeconomics; and,

WHEREAS, The SEIS/SEIR identified Alternative 3B as the environmentally superior Build Alternative and the only fully funded alternative; and,

WHEREAS, The three other alternatives analyzed in the SEIS/SEIR, including a No Project/TSM Alternative, an Enhanced EIS/EIR Alignment (Alternative 2) and a Fourth/Stockton Alignment (Alternative 3A), are addressed, and found to be infeasible, in the CEQA Findings attached as Enclosure 3, which are incorporated herein by reference as though fully set forth. The CEQA Findings also set forth the benefits of the project that override its unavoidable significant impacts to traffic, historic resources and socioeconomics; and,

WHEREAS, The Final SEIS/SEIR was prepared to respond to comments on the Draft SEIS/SEIR and was distributed on July 11, 2008; and,

WHEREAS, the San Francisco Planning Commission certified the SEIS/SEIR as adequate, accurate and objective and reflecting the independent judgment of the Commission on August 7, 2008; and,

WHEREAS, The SFMTA Board has reviewed and considered the information contained in the SEIS/SEIR; and,

WHEREAS, the Central Subway project will assist SFMTA in meeting the objectives of Strategic Plan Goal No. 1 to provide safe, accessible, clean, environmentally sustainable service and encourage the use of auto-alternative modes through the Transit First policy; Goal No. 2 to improve transit reliability; Goal No. 3 to improve economic vitality through improved regional transportation; and Goal No. 4 to ensure the efficient and effective use of resources; now, therefore, be it

RESOLVED, That the San Francisco Municipal Transportation Agency Board of Directors adopts the Central Subway Project Alternative 3B, Fourth/Stockton Alignment with semi-exclusive surface rail operations on Fourth Street and a construction variant to extend the tunnel another 2,000 feet north of Jackson Street to extract the Tunnel Boring Machine in a temporary shaft on Columbus Avenue near Union Street; and be it further

RESOLVED, That the San Francisco Municipal Transportation Agency Board of

Directors adopts the CEQA Findings and Statement of Overriding Considerations for the SEIS/SEIR attached as Enclosure 3, and adopts the Mitigation Monitoring and Reporting Plan attached as Enclosure 4; and be it further

RESOLVED, That the San Francisco Municipal Transportation Agency Board of Directors authorizes the Executive Director/CEO to direct staff to continue with otherwise necessary approvals and to carry out the actions to implement the project.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of AUG 19 2008.

R. Boomer

Secretary, San Francisco Municipal Transportation Agency Board



Mark Farrell, Mayor

Cheryl Brinkman, Chairman
Malcolm Heinicke, Vice Chairman
Gwyneth Borden, Director
Lee Hsu, Director

Cristina Rubke, Director
Art Torres, Director

Edward D. Reiskin, Director of Transportation

June 4, 2018

**The Honorable Members of the Board of Supervisors
City and County of San Francisco
1 Dr. Carlton Goodlett Place, Room 244
San Francisco, CA 94102**

***Subject: Request for Approval – Amendment No. 6 to Contract CS-155-3 with
HNTB-B&C JV to increase the contract amount***

Honorable Members of the Board of Supervisors:

The San Francisco Municipal Transportation Agency (SFMTA) requests that the San Francisco Board of Supervisors approve Amendment No. 6 retroactively to Contract CS 155-3 with HNTB-B&C JV. The purpose of this Amendment is to increase the contract amount by \$1,269,472 to: 1) redesign the trackway alignment and analyze impacts to ventilation systems, and 2) provide design and construction support for specialized communication and video systems, for a total contract amount not to exceed \$34,930,020.

Background

On February 26, 2010, the SFMTA Board of Directors awarded Contract CS-155-3 (Contract) to HNTB-B&C JV (Designer), a joint venture between HNTB Engineering and B&C Transit (now called Transit Systems Engineering, Inc.), to design the trackway and control systems for the Central Subway Project, for an amount not to exceed \$32,294,319, for a ten-year term with option to extend the term two years. On April 22, 2010, the Board of Supervisors approved the award of the Contract to the Designer.

Under the Contract, the Designer provides the following services:

1. Design the trackway infrastructure, trackway (rails and ties), crossovers, switch systems, specialty trackwork, train control system, computer aided dispatch system, radio and band data communication systems, and ventilation system, fire detection, alarm and suppression systems, public information signs, and other utility and control systems necessary for the functioning of the Central Subway and the integration of Central Subway systems into existing MUNI systems
2. Validate preliminary (conceptual) designs and complete final designs for each of the systems listed above
3. Prepare bid documents (construction designs and specifications) and provide bid support services including conforming contract drawings and specifications
4. Verify construction costs and schedules

5. Review contract change order requests
6. Review and respond to contractor submittals, requests for information (RFIs), requests for substitution, and contract claims
7. Conduct site visits and observations to verify design compliance and/or assist in resolving issues
8. Update design drawings and specifications as needed to memorialize approved project changes
9. Witness and approve factory testing of manufactured equipment and materials
10. Provide on-going geotechnical investigation and engineering services
11. Provide site surveying
12. Perform (and review others') cost estimates and scheduling
13. Coordinate designs and specifications for the construction of the tunnels and stations by others (under Contracts CS-155-1 and CS-155-2).
14. Prepare systems operations and maintenance manuals specifications
15. Prepare as-built contract specifications and design documents when construction is complete.

Items 1 through 3 described above have been completed. The Designer will continue to provide the engineering services described in Items 4 through 15, through the completion of the Central Subway Project's trackway and systems construction. In addition, the Designer will assemble operations and maintenance manuals, and will prepare as-built contract specifications and design documents when construction is complete.

Charter Section 9.118 and Retroactive Approval of Amendment No. 6

The Contract has been modified seven times to compensate the Designer for additional work required to address unexpected site conditions and design changes required by the City. The seven amendments increased the total contract amount by \$2,635,701, for a total amended contract amount not to exceed \$34,930,020.

Board of Supervisors' approval is required for Amendment No. 6 under Charter section 9.118(b), because the value of the Contract exceeds \$10,000,000, and the value of the contract amendment is greater than \$500,000.

Amendment No. 6 was not presented to the SFMTA Board nor the Board of Supervisors due to staff misunderstanding, which the City Attorney also did not discover until reviewing an amendment on another Central Subway Project design contract. We regret the oversight, and have taken steps to prevent it from occurring again.

Alternatives Considered

Disapproval of Amendment No. 6 would render that amendment void, which would likely negatively impact the Designer’s willingness to continue to provide construction support engineering services to the Central Subway Project, which are necessary for the successful completion of the Project.

Funding Impact/Budget

The total cost of the Central Subway project is \$1.578 billion. Contract CS-155-3 Amendment No. 6 will not increase the total project budget. Existing funds will be used to pay for the additional cost.

Total Project Cost Summary	Cost
Base Contract Amount, including Options	\$32,294,319
Amendment No. 1 Amount	\$152,882
Amendment No. 2 Amount	\$38,380
Amendment No. 3 Amount	\$304,651
Amendment No. 4 Amount	\$332,779
Amendment No. 5 Amount	\$180,951
Amendment No. 6 Amount	\$1,269,472
Amendment No. 7 Amount	\$356,586
Total Project Cost Amount	\$34,930,020

Funding Sources

The Central Subway project is funded with Federal Transit Administration (FTA) New Starts, Federal Congestion Management & Air Quality (CMAQ), State Transportation Bond Proposition 1A and 1B, State Regional Improvement Program, State Transportation Congestion Relief Program (TCRP), and Prop K Half-Cent Local Sales Tax funds. The breakdown of the funding sources and their amounts is as follows:

Source	Total
5309 New Starts	\$942,200,000
CMAQ3	\$41,025,000
Prop 1A High Speed Rail Connectivity	\$61,308,000
Prop 1B-MTC	\$87,895,815
Prop 1B -SFMTA	\$219,896,185
RIP-SF/Other	\$74,248,000
TCRP	\$14,000,000
Prop K	\$137,727,000
	\$1,578,300,000

SFMTA Board Action

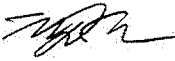
On June 5, 2018, the SFMTA Board of Directors approved Resolution No. _____ authorizing the Director of Transportation to execute Amendment No. 6, subject to approval by the Board of Supervisors (see attached).

Recommendation

The SFMTA recommends that the San Francisco Board of Supervisors adopt the Resolution approving Amendment No. 6 retroactively to Contract CS-155-3 with HNTB-B&C JV.

Thank you for your consideration of this proposed amendment. Should you have any questions or require more information, please do not hesitate to contact me at any time.

Sincerely,



Edward D. Reiskin
Director of Transportation



RECEIVED
BOARD OF SUPERVISORS
SAN FRANCISCO

2018 JUN -4 AM 9:01

BY AB

Mark Farrell, Mayor

Cheryl Brinkman, Chairman
Malcom Heinicke, Vice Chairman
Gwyneth Borden, Director
Lee Hsu, Director

Joél Ramos, Director
Cristina Rubke, Director
Art Torres, Director

Edward D. Reiskin, Director of Transportation

June 1, 2018

Angela Calvillo, Clerk of the Board
Board of Supervisors
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco CA 94102-4689

Dear Ms. Calvillo:

Attached are an original and two copies of the proposed resolution for Board of Supervisors approval, authorizing the Director of Transportation to amend Contract CS-155-3 with HNT-B&C JV to increase the contract amount.

The following is a list of accompanying documents:

- Briefing letter
- Resolution
- Amendment No. 6 to Contract CS-155-3 with HNTB-B&C JV
- Original Contract and all prior contract amendments (Amendments No. 1 to 5, No. 7)
- SFEC forms (Board of Supervisors and Mayor)
- SFMTA Board Resolution (signed copy sent under separate cover)

If you require further information, please contact SFMTA's Local Government Affairs Liaison, Janet Martinsen at janet.martinsen@sfmta.com or 415-994-3143.

Sincerely,

Edward D. Reiskin
Director of Transportation

FORM SFEC-126:
NOTIFICATION OF CONTRACT APPROVAL
(S.F. Campaign and Governmental Conduct Code § 1.126)

City Elective Officer Information <i>(Please print clearly.)</i>	
Name of City elective officer(s): Members, SF Board of Supervisors	City elective office(s) held: Members, SF Board of Supervisors

Contractor Information <i>(Please print clearly.)</i>	
Name of contractor: HNTB-TSE JV formerly: HNTB-B&C JV	
Please list the names of (1) members of the contractor's board of directors; JV Management Committee: Darlene K. Gee (Chairman), Jeff Watson, Paul Van Der Wel, David Coury (2) the contractor's chief executive officer, chief financial officer and chief operating officer; N/A for JV (3) any person who has an ownership of 20 percent or more in the contractor; None (4) any subcontractor listed in the bid or contract; Auriga Corporation YEI Engineering Robin Chiang Structus, Inc. Chaves & Associates Simon & Associates Simon/Thornton Tomasetti TBD Consultants Wilson Ihrig & Associates Kwan Hemni Architecture/Planning and (5) any political committee sponsored or controlled by the contractor. None	
Contractor address: 1111 Broadway, 9th Floor Oakland, CA 94607	
Date that contract was approved: April 22, 2010	Amount of contract: Not to Exceed: \$34,930,020
Describe the nature of the contract that was approved: SFMTA: Contract CS-155-3, Central Subway, Final Design Package #3, Surface, Track, and Systems, Quality Control and Design Integration, Sixth Amendment	
Comments:	

This contract was approved by (check applicable):

the City elective officer(s) identified on this form

a board on which the City elective officer(s) serves San Francisco Board of Supervisors

Print Name of Board

the board of a state agency (Health Authority, Housing Authority Commission, Industrial Development Authority Board, Parking Authority, Redevelopment Agency Commission, Relocation Appeals Board, Treasure Island Development Authority) on which an appointee of the City elective officer(s) identified on this form sits

Print Name of Board

Filer Information <i>(Please print clearly.)</i>	
Name of filer: Clerk of the Board	Contact telephone number: 415-554-5184
Address: City Hall, Room 244	E-mail: Board.of.supervisors@sfgov.org

Signature of City Elective Officer (if submitted by City elective officer)

Date Signed

Signature of Board Secretary or Clerk (if submitted by Board Secretary or Clerk)

Date Signed