

RESOLUTION NO. 21-30

Resolution Of The City Council Of The City Of Emeryville Authorizing The City Manager To Enter Into A First Amendment To The Professional Services Contract with MNS Engineers, Inc., To Revise The Work Scope; And To Increase the Total Compensation Amount by \$75,475, For A Not To Exceed Amount of \$2,644,106, For Construction Management Services For The South Bayfront Bridge/Horton Landing Park Project, EPW 17-112 (CIP # 16475006 and 17237003)

WHEREAS, the City of Emeryville has desired to create a route over the Union Pacific Railroad right of way for Pedestrians and Bicyclists for many years; and

WHEREAS, the City identified a Project in the General Plan and the Capital Improvement Program that allocates financial resources to fund a project called the South Bayfront Pedestrian Bicycle Bridge Project, to transform the idea into physical improvements that can be used and be of great benefit to the Community, and

WHEREAS, in October of 2017 the City awarded a Professional Services Contract to S&C Engineers to provide Construction Management and Inspection Services after finding the firm most qualified based upon a review of seven proposals; and

WHEREAS, in April of 2018, S&C Engineers was acquired by MNS Engineers, Inc. while personnel assigned to active S&C Engineers projects continued to provide services under MNS Management, and

WHEREAS, Due to the delayed start of the project there is a need to adjust rate schedules to address Cost of Living changes; and

WHEREAS, Additional support services for both Electrical Inspection and services to address additional Railroad processing have been required and MNS has provided a detailed Scope of Work and fee proposal for an amount not to exceed \$75,475, for a total not to exceed amount of \$2,644,106; and

WHEREAS, The MNS Contract is to be funded as follows:

	Fund	Amount
Original Contract	472-16475006	\$2,568,631
1 st Amendment	475-16475006	\$ 75,475

Now, therefore, be it

RESOLVED, that the City Council of the City of Emeryville hereby authorizes the City Manager to enter into a First Amendment to Professional Services Agreement with MNS Engineers, Inc., in the form attached hereto as Exhibit A, to amend the scope of work, and to increase the budget by \$75,475.00 for a total amount not to exceed \$2,644,106.00 to provide Construction Management and Inspection Services for the South Bayfront Bridge Pedestrian Bicycle Bridge Project, EPW 17-112, CIP# 16475006 & CIP #17237003.

Resolution 21-30

S. Bayfront Bridge/Horton Landing Park, PSA 1st Amendment with MNS Engineers

Emeryville City Council | April 20, 2021

Page 2 of 2

ADOPTED, by the City Council of the City of Emeryville at a regular meeting held April 20, 2021.

AYES:	<u>5</u>	Mayor Martinez, Vice Mayor Donahue, and Council Members Bauters, Medina, and Patz
NOES:	<u>0</u>	
ABSTAIN:	<u>0</u>	
ABSENT:	<u>0</u>	

DocuSigned by:

Dianne Martinez

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MAYOR

ATTEST:

DocuSigned by:

Sheri Hartz

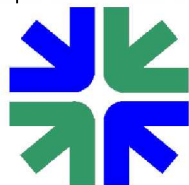
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CITY CLERK

APPROVED AS TO FORM:

Michael Quinn

CITY ATTORNEY



City of Emeryville
CALIFORNIA

PROFESSIONAL SERVICES CONTRACT

FIRST AMENDMENT

THIS FIRST AMENDMENT TO THE PROFESSIONAL SERVICES CONTRACT

("Amendment") is effective as of this _____ day of _____, 2021, by and between **THE CITY OF EMERYVILLE**, a municipal corporation, ("City") and **MNS ENGINEERS, INC.(FORMERLY S&C ENGINEERS, INC)** ("Contractor"), individually referred to as a "Party" and collectively as the "Parties".

WITNESSETH THAT

WHEREAS, the City and Contractor entered into a Professional Services Contract dated October 17, 2017 ("Contract") for the purpose of retaining the services of Contractor to provide Construction Management and Inspection Services related to the construction of the South Bayfront Pedestrian Bicycle Bridge Project; and

WHEREAS, City executed said Professional Services Contract with S & C Engineers, Inc. and effective April 1, 2018 S&C Engineers was acquired by MNS Engineers, Inc., and

WHEREAS, the City and Contractor desire to amend the Contract; and

WHEREAS, the public interest will be served by this Amendment.

NOW, THEREFORE, the Parties hereto do mutually agree as follows:

1. AMENDMENT

The Parties agree to amend the Contract as checked below:

1.1 Exhibits A and B

- ☒ Exhibit A of the Contract is hereby amended in its entirety and replaced with **Exhibit A-1**;

AND

- ☒ Exhibit B of the Contract is hereby amended in its entirety and replaced with **Exhibit B-1**.

FOR CITY USE ONLY

Contract No.		CIP No.	
Resolution No.		Project No.	

City of Emeryville | Professional Services Contract Amendment
REV 01/2020

1.2 Termination Date

- ☐ The Parties desire to extend the termination date. Section 1.3 of the Contract is hereby amended to extend the termination date to **NEW END DATE**.

1.3 Total Compensation Amount

- ☒ The Parties desire to increase the Total Compensation Amount as set forth in Section III.B of the Contract by **SEVENTY-FIVE THOUSAND FOUR HUNDRED SEVENTY-FIVE DOLLARS AND NO CENTS (\$75,475.00)**. The total amount paid under the Contract as compensation for Services performed and reimbursement for costs incurred shall not, in any case, exceed **TWO MILLION SIX HUNDRED FORTY FOUR THOUSAND ONE HUNDRED SIX DOLLARS AND NO CENTS (\$2,644,106.00)**.

2. CONTINUING EFFECT OF CONTRACT

Except as amended by this Amendment, all other provisions of the Contract remain in full force and effect and shall govern the actions of the Parties under this Amendment. From and after the date of this Amendment, whenever the term "Contract" appears in the Contract, it shall mean the Contract as amended by this Amendment.

3. ADEQUATE CONSIDERATION

The Parties hereto irrevocably stipulate and agree that they have each received adequate and independent consideration for the performance of the obligations they have undertaken pursuant to this Amendment.

4. SEVERABILITY

If any portion of this Amendment is declared invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions shall continue in full force and effect.

5. WAIVER

The City's failure to enforce any provision of this Amendment or the waiver in a particular instance shall not be construed as a general waiver of any future breach or default.

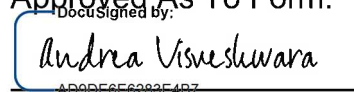
SIGNATURES ON FOLLOWING PAGE

City of Emeryville | Professional Services Contract Amendment
REV 01/2020

**6. SIGNATURE PAGE TO PROFESSIONAL SERVICES CONTRACT
FIRST AMENDMENT**

IN WITNESS WHEREOF the City and the Contractor have executed this Contract,
which shall become effective as of the date first written above.

Approved As To Form:

DocuSigned by:

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City Attorney

Dated:

_____, 2021


CITY OF EMERYVILLE

Christine S. Daniel, City Manager

Dated:

3/24/2021, 2021

MNS ENGINEERS, INC.

DocuSigned by:

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(Signature)
James A. Salvito, President and CEO

Exhibit A-1

Scope of Work

A. Description of Required Services Construction management personnel are required in support of the CITY project to construct the South Bayfront Pedestrian Bicycle Bridge. The CONTRACTOR is to provide qualified engineering personnel to perform construction project management, inspection and Quality Assurance services. The CONTRACTORS personnel will be assigned to the project during all hours of construction and/or as required by the CITY and will work under the direction of the CITY Project Manager.

Typical duties to be performed by the CONTRACTOR personnel will Include but not be limited to the following:

- 1) Performing the duties of a Resident Engineer/Structures Representative, including construction inspection, quality assurance, quantity calculations, preparation of contract change orders, materials sampling and control, and insuring compliance with project plans and specifications.
- 2) Perform engineering calculations and review falsework plans, shoring plans, and working drawings per Caltrans Standards.
- 3) Identify actual and potential problems associated with the construction project and recommend sound engineering solutions.
- 4) Preparing calculations, records, reports, and correspondence related to project activities.
- 5) Assisting in the review and oversight of the Contractor's final as-built plans during and at the completion of project.

B. Personnel and Performance Requirements CONTRACTOR personnel will remain on the CITY construction project on a full-time basis or as requested by the CITY until completion and acceptance of the construction project by the CITY.

C. Equipment and Materials to be Provided by the CONTRACTOR The CONTRACTOR shall provide the following:

- 1) All necessary computers, cell phones, internet access (provided by Construction Contractor as part of project trailer

facilities), instruments, tools, and safety equipment required of its personnel to perform their work accurately, efficiently and safely.

- 2) Caltrans manuals and Standards as listed in Section F., "Standards" below and forms and other policies and procedures to be followed by the Contractor's personnel in the performance of the work.

D. Materials to be Provided by the CITY The CITY will provide the CONTRACTOR with the following: 1) Approved project plans, special provisions, and applicable City administrative policies and procedures for the project.

E. Standards 1) Construction inspection and contract administration shall be in accordance with current Caltrans Construction Manual and its revisions, the Bridge Construction Records and Procedures Manual the Manual, the Manual of Test (3 Volumes), Manual of Traffic Controls for Construction and Maintenance Work Zones, the Caltrans Standard Specifications and Standard Plans, and the project plans and special provisions.

G. Work to be Performed by the CITY and Design Consultants The CITY will furnish a representative to perform the usual functions of a Project Manager. The Design Consultants will be responsible to respond to RFI's, Submittals, review and approve shop drawings and approve the erection procedure for the steel tied arch bridge span.

H. Project Progress To ensure an understanding of contract objectives, meetings between the CITY and the CONTRACTOR will be held as often as necessary.

All work objectives, the work schedules, the terms of the contract and any other related issues will be discussed, and any problems resolved.

Task 1 – Construction Management

1.1 Construction Management

CONTRACTOR shall furnish a CONSTRUCTION MANAGER to coordinate all CONTRACTOR operations with CITY, including but not limited to tracking progress of the work and administering subcontracts.

CONSTRUCTION MANAGER shall provide overall project management coordination, and supervision of project staff to facilitate the performance of the work in accordance with standards and requirements of the CITY and other applicable standards and requirements. CONSTRUCTION MANAGER shall prepare and submit weekly project progress reports to CIYY Project Manager.

Deliverables: • Weekly Progress Reports

1.2 Coordination and Meetings

CONSTRUCTION MANAGER shall conduct regular weekly meetings with CITY, and as required the Designer "Biggs-Cardosa Associates, and the environmental design consultant "EKI Water and Environmental", and AECOM, Archeological Services Consultant.

CONSTRUCTION MANAGER will conduct weekly progress meetings with the Contractor, City, the designer, EKI, and representatives of applicable adjacent properties, Union Pacific Railroad (UPRR), and other agencies. Construction Manager

shall be responsible for preparation of agendas and meeting minutes, communications and distribution to all applicable parties.

Deliverables: • Meeting notices, agendas, and minutes

1.3 Administration

CONSTRUCTION MANAGER shall provide weekly reports on the project status, including, but not limited to, schedule, contract budget, general progress on project tasks, and project issues and concerns including and not limited to review of RFI, construction submittals, progress payments, preparation of change order.

CONSTRUCTION MANAGER shall maintain project files using the Caltrans Uniform System in electronic format. CONSTRUCTION MANAGER will be responsible for adherence to all applicable City administrative policies and procedures to be provided by the City.

Deliverables: Project Files

1.4 Documentation

Ensure effective and consistent documentation of the CONSTRUCTION MANAGER and Contractor's activities on daily basis including conversations and meetings related to the project, changed conditions, change orders, work progress, weather, status of Contractor's major equipment, and all other items that may be necessary for reviewing progress payments, evaluating and processing change orders, and resolving issues that may lead to formal claims.

The appropriate level of documentation will include both written text and digital images. Video and still digital cameras indicating time and date are to be utilized. The documentation system shall make full use of contemporary computer hardware and software as the means of document creation, distribution, and control.

Deliverables: • Daily work diaries • Miscellaneous CM Reports • Negotiate and prepare contract change orders as needed • Prepare monthly quantity estimates for progress payments • Review and coordinate contractor submittals including: UPRR Submittals, Temporary shoring plans, Falsework drawings, Prestressing shop drawings, Pile placement Plans, Steel arch bridge erection plan, Concrete mix designs and aggregate gradings, Joint seal assembly shop drawings, Payment Requests, Keep a record of all changes to verify Contractor's redline markups for inclusion into final record drawings to be prepared by the Designer

Task 2 – Construction Phase Services

The Construction Manager/Resident Engineer/Inspectors provided by the CONTRACTOR shall monitor the operations of the Construction Contractor and Subcontractors for compliance with contract documents and document field construction

operations. Construction Management/Engineering services shall include the following activities:

2.1 Monitoring of Construction Operations for Contract Compliance

1. Bridge Construction 2. Earthwork (embankment, structure excavation and backfill) 3. Cast-in-Steel Shell Pile driving, rebar and concrete placement 4. Pre-cast concrete pile driving 5. Form construction and placement (abutments, columns, superstructure) 6. Reinforcing steel placement (abutments, columns, superstructure) 7. Concrete delivery, placement, and curing 8. Falsework construction and grade checking 9. Deck finishing 10. Railing installation 11. Concrete finishing 12. Joint seal assembly installation 13. Asphalt grading and placement 14. Arch steel bridge erection and construction 15. Landscaping and irrigation 16. Lighting 17. Excavation of contaminated material and backfilling

2.2 Materials Testing

1. Field technician services for QA observation, testing and documentation during earthwork, including embankment placement, structure backfill, trench backfill, and subgrade preparation.

2. Field technician services for QA sampling and testing during structural concrete placements, including testing for penetration (slump), air-content, unit weight, yield and temperature, and molding compressive strength specimens (cylinders). Samples will handled, cured, and tested in accordance with specified test methods.

3. Part-time batch plant QA inspection services during production of structural concrete including checking mix design, checking aggregate batch weights, checking water/cement ratio, visual inspection of aggregates and sampling aggregates if necessary.

4. Laboratory testing of the soil, aggregates, and Portland cement concrete materials, maximum density/optimum moisture, sieve analysis, sand equivalent, cleanness value, R-value and concrete compressive strength testing.

5. Preparation of QA field observation reports and test data sheets. Documents will be made available to City as requested.

6. QA offsite source inspection of fabrication of steel arch bridge

2.3 General

The Resident Engineer/Inspector shall be present at the project site on a full-time basis to provide a satisfactory level of monitoring the work.

2.4 Work to be Performed by Others

1. Construction Staking

A. Construction staking will be provided by the Contractor.

2. Miscellaneous

A. Biggs-Cardosa will perform City Building Department requirement for Special Inspection of modifications to the existing parking structure steel truss bridge.

B. EKI will provide inspection and air monitoring for soil remediation work.

C. AECOM will provide archeological monitoring.

2.5 UPRR Coordination

Provide SUBCONTRACTOR, "Zephyr UAS", to provide coordination with UPRR to facilitate the review and approval of the submittal of the Main Bridge Pick and Erection submittals.

Task 3 – POST-CONSTRUCTION PHASE SERVICES

3.1 Project Closeout

Following substantial completion of all work, conduct a final walk-through with the Contractor and all applicable project participants. Develop a final punchlist to be sent to the Contractor. The list will include repair of any outstanding property damage. Require the Contractor to obtain sign-off from outside agencies or owners confirming that restoration has been completed and permit requirements have been satisfied.

Completed contractor redline markups will be verified, additional information added from inspector markups and provide to Designer to develop final record drawings. After deductions for liens and uncompleted punchlist work, final payment will be recommended to the City. All project files will be delivered to the City after final payment has been processed.

Deliverable:

Redline drawings

Revision Date -March 18, 2021
Revision #2

CITY of EMERYVILLE - CM SERVICES FOR SOUTH BAYFRONT PEDESTRIAN BICYCLE BRIDGE PROJECT

MNS Engineers' Schedule & Cost Proposal

	2017			2018												2019												2020		
Constructibility Review		C. R.																												
Advertise/Bid/Award Support				Advertise - Bid - Review - Award																										
NTP - Construction						Construction																								
Closeout																														

Hours by Month
Position

*Principal-In-Charge (Mike Chan)
RE/Structures Repr. (Thom Loomis)
Asst. RE (Said Najafi)
OE & Field Inspection (Nathan Norwood)
Constructability Support (Andy Kleiber)
Scheduler (Bob Knickerbocker)

Total Estimated Hours by Month
Total Hrs By Quarter

2017			2018												2019												2020		
4th Qtr			1st Qtr			2nd Qtr			3rd Qtr			4th Qtr			1st Qtr			2nd Qtr			3rd Qtr			4th Qtr			1st Qtr		
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
8	8	8	8	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4							
40	40	40	40	40	200	160	160	160	100	160	160	200	160	200	160	160	200	160	160	160	200	160	100	80	100				
40	40	20	20	20	200	160	160	160	200	160	160	200	160	200	160	160	200	160	160	160	200	160	100	80	100				
					200	160	160	160	200	160	160	200	160	200	160	160	200	160	160	160	200	160	200	160	100				
40	40																												
					40	20	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
128	128	68	68	68	644	504	488	488	508	488	488	608	488	608	488	488	608	488	488	488	608	488	404	320	300	0	0	0	0
324				780			1480			1484			1704			1584		1464			1500			620			0		

Hours				Rates			Total		
Total	2017	2018	2019	2017	2018	2019	2017	2018	2019
112	24	56	32	\$ 254.46	\$ 267.18	\$ 280.54	\$ 6,107.04	\$ 14,962.25	\$ 8,977.35
3500	120	1740	1640	\$ 217.22	\$ 228.08	\$ 239.49	\$ 26,066.40	\$ 396,860.94	\$ 392,755.48
3540	100	1800	1640	\$ 227.89	\$ 227.89	\$ 239.28	\$ 22,789.00	\$ 410,202.00	\$ 392,426.58
3580	0	1760	1820	\$ 148.60	\$ 156.03	\$ 163.83	\$ -	\$ 274,612.80	\$ 298,173.33
80	80	0	0	\$ 218.22	\$ 229.13	\$ 240.59	\$ 17,457.60	\$ -	\$ -
128	0	92	36	\$ 177.12	\$ 185.98	\$ 195.27	\$ -	\$ 17,109.79	\$ 7,029.89
0	0	0	0				\$ -	\$ -	\$ -
10940	324	5448	5168				\$ 72,420.04	\$ 1,113,747.78	\$ 1,099,362.63

Additional Electrical Inspection = \$ 27,523.33
MNS CM Cost = \$ 2,285,530.45
Alta Vista Solutions (QA) = \$ 270,000.00
Zephyr UAS, Inc. = \$ 47,952.00
3% Markup on Subconsultants = \$ 9,538.56

ODC's = \$ 5,000.00
Total CM Cost = \$ 2,645,544.34

Notes:
Hrs proposed above assume the following: 18 months of construction per RFP. Advertise - Dec. 2017 for 60 days, Bid opening in late Jan. 2018, and Award - Feb. 2018. NTP in 2/20/18. Begin Construction March 2018 and complete by end of August of 2019. This time frame doesn't include any extensions for weather impacts or construction delays. Assume 3 months to close out project. Actual hours and cost will be dependent on the actual construction schedule as determined by the construction contractor.
Hrs are also based on contractor working normal 8 hour work shifts
Hrs for scheduler are for review of initial baseline construction schedule for project submitted by the contractor and monthly updates
Hrs do not include construction claim support for claims filed by Contractors after acceptance of contract.
Hrs do not include time extensions due to CCO's, Weather impacts, Right of Way delays or other delays.
The above estimate doesn't include any OT hrs. However, should OT hours be required due to contractor's schedule, non-exempt employees are subject to OT regulations (Time and half & double time). Premium portion will be added to straight time billing rate.
The above cost proposal has no costs for RE office as it assumes that the contract specifications will require the Contractor to provide a construction trailer for the RE as part of the construction bid.

Rates are based on the following:
OH = 132.52%
Fee = 10%
Annual Billing rate escalation - 5%

Exhibit B-1

Schedule of Rates

Updated: 12/30/20

MNS Engineers, Inc.

Loaded Hourly Rates

Personnel	2017	2018	2019	2020	2021
Michael Chan	\$ 254.46	\$ 267.18	\$ 280.54	\$ 280.54	\$ 294.57
Tom Loomis	\$ 217.22	\$ 228.08	\$ 239.49	\$ 239.49	\$ 251.46
Asst. RE	\$ 227.89	\$ 239.28	\$ 251.25	\$ 251.25	\$ 263.81
Scheduler	\$ 177.12	\$ 185.98	\$ 195.27	\$ 195.27	\$ 205.03
Office Engineer/Inspector	\$ 148.60	\$ 156.03	\$ 163.83	\$ 163.83	\$ 172.02
Inspector	\$ 148.60	\$ 156.03	\$ 163.83	\$ 163.83	\$ 172.02
Inspector OT @1.5XST	\$ 222.90	\$ 234.05	\$ 245.75	\$ 245.75	\$ 258.04
Electrical Inspector	N/A	N/A	N/A	N/A	\$ 172.02

Other Direct Costs	Unit	Unit Cost
Description	Actual	Actual
Postage, outside reproduction, etc.		

Alta Vista Solutions
COST PROPOSAL
 South Bayfront Pedestrian Bicycle Facility

Sub-Consultant: February 28, 2020

Fringe Benefit %	Overhead %	General Administration %	Combined %	+	0.00%	=	141.01%
NORMAL		0.00%	0.00%	+	0.00%		N/A FEE %
OVERTIME		0%	N/A		N/A		
10%							
BILLING INFORMATION				CALCULATION INFORMATION			
Name/Classification	Loaded Hourly Billing Rates		Effective Date of Hourly Rate		% Escalation Increase	Actual Hourly Rate and /or Hourly Rate	Hourly Range for Class
	Straight	Overtime	From	To			
Frank Cannizzaro PE Project Manager Exempt	201.48	N/A	7/1/2017	12/31/2017	N/A	\$76.00	N/A
	201.48	N/A	1/1/2018	12/31/2018	5.00%	\$76.00	
	211.56	N/A	1/1/2019	12/31/2019	5.00%	\$79.80	
	222.14	N/A	1/1/2020	12/31/2020	5.00%	\$83.79	
	233.24	N/A	1/1/2021	12/31/2021	5.00%	\$87.98	
Erin Mock Deputy Project Manager/Structure Material Representative Exempt	145.81	N/A	7/1/2017	12/31/2017	N/A	\$55.00	N/A
	145.81	N/A	1/1/2018	12/31/2018	5.00%	\$55.00	
	153.10	N/A	1/1/2019	12/31/2019	5.00%	\$57.75	
	160.76	N/A	1/1/2020	12/31/2020	5.00%	\$60.64	
	168.80	N/A	1/1/2021	12/31/2021	5.00%	\$63.67	
Jessica Forbes Assistant Material Representative/Project Engineer Exempt	119.30	N/A	7/1/2017	12/31/2017	N/A	\$45.00	N/A
	119.30	N/A	1/1/2018	12/31/2018	5.00%	\$45.00	
	125.26	N/A	1/1/2019	12/31/2019	5.00%	\$47.25	
	131.53	N/A	1/1/2020	12/31/2020	5.00%	\$49.61	
	138.10	N/A	1/1/2021	12/31/2021	5.00%	\$52.09	
Mike Foerder NDT Level III Technician Field Support Exempt	172.32	N/A	7/1/2017	12/31/2017	N/A	\$65.00	N/A
	172.32	N/A	1/1/2018	12/31/2018	5.00%	\$65.00	
	180.94	N/A	1/1/2019	12/31/2019	5.00%	\$68.25	
	189.99	N/A	1/1/2020	12/31/2020	5.00%	\$71.66	
	199.50	N/A	1/1/2021	12/31/2021	5.00%	\$75.25	
Steel Inspector (CWI, NDT Level II) Non-Exempt	137.86	N/A	10/1/2017	12/31/2017	N/A	\$52.00	N/A
	137.86	N/A	1/1/2018	12/31/2018	5.00%	\$52.00	
	144.75	N/A	1/1/2019	12/31/2019	5.00%	\$54.60	
	151.99	N/A	1/1/2020	12/31/2020	5.00%	\$57.33	
	159.60	N/A	1/1/2021	12/31/2021	5.00%	\$60.20	
Michael Bennett Paint Inspector (NACE Level II) Non-Exempt	148.46	N/A	10/1/2017	12/31/2017	N/A	\$56.00	N/A
	148.46	N/A	1/1/2018	12/31/2018	5.00%	\$56.00	
	155.89	N/A	1/1/2019	12/31/2019	5.00%	\$58.80	
	163.68	N/A	1/1/2020	12/31/2020	5.00%	\$61.74	
	171.87	N/A	1/1/2021	12/31/2021	5.00%	\$64.83	
Roadway Materials Inspector (CTM/ASSHTO Certified) Non-Exempt	124.60	N/A	10/1/2017	12/31/2017	N/A	\$47.00	N/A
	124.60	N/A	1/1/2018	12/31/2018	5.00%	\$47.00	
	130.83	N/A	1/1/2019	12/31/2019	5.00%	\$49.35	
	137.37	N/A	1/1/2020	12/31/2020	5.00%	\$51.82	
	144.25	N/A	1/1/2021	12/31/2021	5.00%	\$54.82	
Technical Expert (Concrete/Steel/Coatings) Exempt	251.86	N/A	10/1/2017	12/31/2017	N/A	\$95.00	N/A
	251.86	N/A	1/1/2018	12/31/2018	N/A	\$95.00	
	251.86	N/A	1/1/2019	12/31/2019	N/A	\$95.00	
	251.86	N/A	1/1/2020	12/31/2020	N/A	\$95.00	
	251.86	N/A	1/1/2021	12/31/2021	N/A	\$95.00	

BSK Associates - January 1, 2020 to December 31, 2021 Prevailing Wage Schedule of Fees

PERSONNEL RATES			
PROFESSIONAL STAFF		TECHNICAL STAFF (PREVAILING WAGE)	
Principal	\$ 236.00	Field Supervisor	\$ 163.00
Senior Professional	\$ 210.00	Group 1 - Special Inspector	\$ 146.00
Project Professional II	\$ 194.00	Group 2 - Special Inspector	\$ 138.00
Project Professional I	\$ 163.00	Group 3 - Engineering Technician	\$ 126.00
Staff Professional II	\$ 147.00	Group 4 - Technician	\$ 110.00
Staff Professional I	\$ 131.00	Ground Penetrating Radar Scanning Technician	\$ 275.00
Seismic GIS	\$ 184.00	Core Drilling Technician	\$ 200.00
GIS Specialist	\$ 131.00	Floor Flatness Testing Technician	\$ 180.00
Information Specialist II	\$ 147.00	Sample Pickup / Transportation / Delivery	\$ 103.00
Information Specialist I	\$ 131.00	Laboratory Technician	\$ 103.00
CAD	\$ 95.00	Administrative Assistant / Clerical	\$ 82.00
Project Administrator	\$ 90.00	Litigation support	1.5x standard rate
EQUIPMENT		BASIS OF CHARGES FOR FIELD TECHNICIAN SERVICES	
Nuclear Gauge (Day)	\$ 58.00	Field Work from 0 to 4 hours	Bill 4 hours
Ultrasonic Weld Equipment (Day)	\$ 58.00	Field Work from 4 to 8 hours	Bill 8 hours
Torque Wrench (Day)	\$ 58.00	Field Work over 8 hours / Saturdays	Bill time and a half
Proof Load Equipment (Day)	\$ 58.00	Sundays, holidays and over 12 hours	Bill double time
Rebar Locator / Pachometer	\$ 105.00	Swing shift (4:00pm to Midnight)	Add \$15.00 per hour
Hand Auger (Day)	\$ 210.00	Graveyard Shift	Add \$20.00 per hour
Water Meter (Day)	\$ 53.00	Show-up time (no work performed)	Bill 2 hours
Drilling Kit - Paint, stakes and lath - (Project)	\$ 26.00	Sampling or cylinder pickup, minimum charge	Bill 2 hours
Drilling Supplies - Reuse of tubes/caps (Project)	\$ 263.00		
Manometer (Day)	\$ 210.00		
Double Ring Infiltrometer (Day)	\$ 525.00		
ANALYSIS SOFTWARE USAGE FEES		DIR/PREVAILING WAGE ADMINISTRATION FEES (MONTHLY)	
gINT (Project)	\$ 53.00	Certified Payroll / DIR Upload	\$ 300.00
LPile (Project)	\$ 53.00	Non-Performance Certified Payroll / DIR Upload	\$ 100.00
APile (Project)	\$ 53.00	Subcontractor Management / Compliance Forms	\$ 100.00
SHAFT (Project)	\$ 53.00	Additional LCP Tracker or Other Compliance Software	\$ 200.00
GROUP (Project)	\$ 105.00	Additional Special Forms, as required	\$ 150.00
Clq (Project)	\$ 53.00		
LiquefyPro (Project)	\$ 53.00		
LiqIT (Project)	\$ 53.00		
NovoLIQ (Project)	\$ 53.00		
Slide (Project)	\$ 105.00		
Settle3D (Project)	\$ 105.00		
ArcGIS (Project)	\$ 53.00		
EZ-FRISK (Per Project Site / Site Class)	\$ 500.00		
REIMBURSABLES			
		Mileage (Portal to Portal)	\$ 0.88
		Per Diem (as required)	\$ 150.00
		Bridge Toll	Cost + 15%
		Parking Fees	Cost + 15%
		Subconsultant/Subcontractor Services, Vendors, and Expenses	Cost + 15%
		Project Administration Fees	7% of Invoice
		DIR Administration Fees	3% of Invoice
		Project Setup (Project)	\$500.00
MATERIALS LABORATORY TESTS			
SOILS		California Bearing Ratio (CBR)	
Moisture Density Curves		CBR at 100% (ASTM D1883 or AASHTO T-180)	\$ 530.00
Standard Proctor, 4" (ASTM/AASHTO)	\$ 244.00	CBR at 95% (ASTM D1883 or AASHTO T-180)	\$ 1,028.00
Modified Proctor, 4" Mold (ASTM/AASHTO)	\$ 244.00		
Modified Proctor, 6" mold (ASTM D1557)	\$ 259.00		
Caltrans Maximum Wet Density (CT 216)	\$ 222.00		
Check Point	\$ 141.00		
Particle Size Analysis		Permeability Tests	
Sieve Analysis w/ Wash (ASTM D422)	\$ 176.00	Rigid Wall Permeability (ASTM D2434)	\$ 292.00
Minus #200 Wash, Soil (ASTM D1140)	\$ 86.00	Flexible Wall Permeability (ASTM D5084)	\$ 455.00
Hydrometer Analysis (ASTM D422)	\$ 232.00	Remolded Flexwall Perm (ASTM D5084)	\$ 579.00
Double Hydrometer (ASTM D4221)	\$ 324.00		
Specific Gravity of Soil (ASTM D854)	\$ 166.00		
Visual Classification (ASTM D2488)	\$ 45.00		
Sand Equivalent (ASTM D2419)	\$ 130.00		
% Organics in Soil (ASTM D2974)	\$ 142.00		
Atterberg Limits / Swell Tests		Soil Corrosivity Tests	
Plasticity Index (ASTM D4318)	\$ 227.00	Minimum Resistivity of Soils (CT 643)	\$ 146.00
Shrinkage Limits of Soils (ASTM D427)	\$ 211.00	pH	\$ 68.00
Expansion Index of Soils (UBC No. 29)	\$ 244.00	Soluble Sulfate, Chloride and Sulfide	\$ 135.00
		Oxidation Reduction of Soil	\$ 58.00
Moisture Density Test		Soil Cement Tests	
Tube Density	\$ 51.00	Freeze Thaw Abrasion (ASTM D560)	\$ 649.00
Moisture Content of Soils (ASTM D2216)	\$ 45.00	Wetting-Drying Abrasion (ASTM D559)	\$ 616.00
		Preparation of Freeze-Thaw or Wetting-Drying Tests	\$ 779.00
		Soil Cement Compression (ASTM D1633)	\$ 249.00
		Cement Content Soil Cement (ASTM C1084)	\$ 249.00
"R" Value Determination		Other	
R-Value of Soils (CT 301)	\$ 411.00	Sample Preparation	\$ 68.00
R-Value of Treated Materials (CT 301))	\$ 455.00	Crumb Test Dispersion (ASTM D6572)	\$ 81.00
		Pinhole Dispersion Test (ASTM)	\$ 259.00
		Sand Density Calibration (ASTM D1566)	\$ 97.00
Consolidation Tests		Unconfined Compression	
Consolidation (ASTM D2435)	\$ 433.00	Unconfined Compression (ASTM D2166)	\$ 130.00
Consolidation , Extra Points (ASTM D2435)	\$ 58.00		
Collapse Potential of Soils (ASTM D2435)	\$ 211.00		
Remolded Consolidation (ASTM D2435)	\$ 368.00		
One-Dimen Swell of Soil (ASTM D4546)	\$ 135.00		
		Shear Tests	
		Direct Shear, Undisturbed (ASTM D3080)	\$ 227.00
		Direct Shear, Remolded (ASTM D3080)	\$ 271.00
		Triaxial Compression Testing	QUOTE

Escalation: The billing rates presented herein will be increased by 3% annually on July 1st of each year subsequent to the execution of an agreement.



APPLIED MATERIALS & ENGINEERING, INC.

980 41st Street
Oakland, CA 94608

Tel: (510) 420-8190
FAX: (510) 420-8186
e-mail: info@appmateng.com

2019 LABORATORY FEE SCHEDULE

<u>UNIT TEST COSTS</u>	<u>Per Set</u>
1 Cylinder Compression Test, per set 4	\$390.00
2 Flexural Strength, each	\$240.00
3 PT Concrete Cylinders, per set 6	\$360.00
4 PT Strand Tensile, each	\$350.00
5 Shotcrete cores for Nozzleman Qualifications, per set of 3, 6"Øx9" thick)	\$1,500.00
6 Shotcrete Cores, production, per set of 3 includes pick-up	\$280.00
7 Masonry Mortar, per set of 3	\$180.00
8 Masonry Grout, per set of 3	\$200.00
9 Masonry Composite Prisms, per set of 3	\$750.00
10 Masonry Block Compression, each	\$150.00
11 Masonry Block Absorption & Unit Weight, each	\$175.00
12 High Strength Grout, per set of 6	\$240.00
13 Reinforcing, tensile tests (up to # 10), each	\$110.00
14 Reinforcing, tensile tests (# 10-14), each	\$120.00
15 Reinforcing, bend tests, each	\$110.00
16 Mechanical or Welded Splice, each	\$400.00
17 High Strength Bolts, strength, per set of 3	\$375.00
18 High Strength Nuts, strength, per set of 3	\$375.00
19 High Strength Washers, hardness, per set of 3	\$375.00
20 Fireproofing Bond Strength, each	\$375.00
21 FRP Tensile Properties ASTM D3039, per set	\$650.00
22 FRP Bond Strength ASTM D7522, per set	\$750.00
23 Moisture Density Curve, Each	\$450.00
24 Fireproofing Density, each	\$110.00
25 Fireproofing Bond Strength, each	\$375.00
26 FRP Tensile Properties ASTM D3039, per set	\$650.00
27 FRP Bond Strength ASTM D7522, per set	\$750.00
28 Moisture Density Curve, Each	\$350.00
29 Sieve Analysis, each	\$300.00
30 Sand Equivalent, each	\$140.00
31 Soundness using Sodium or Magnesium Sulfate, each	\$2,000.00
32 Durability Index, each	\$230.00
33 Hveem Preparation, per set of 3	\$490.00
34 Cleanness Value, each	\$240.00
35 Moisture Content, each	\$65.00
36 Percent Crushed Particle, each	\$240.00

37 Flat & Elongated Particles, each	\$260.00
38 Plasticity Index of Soils, each	\$275.00
39 R-value, each	\$400.00
40 Amount Finer than #200, each	\$250.00
41 Unit Weight of Aggregate, each	\$180.00
42 Organic Impurities in Sand, each	\$160.00
43 Stabilometer Value, field sample, per set of 3	\$475.00
44 Theoretical Maximum Density, per two tests	\$460.00
45 Asphalt Content, each	\$260.00
46 Asphalt Content- Calibration Factor, each	\$360.00
47 HMA Air Voids, each	\$75.00
48 HMA Bulk Specific Gravity, per set of 3	\$225.00
49 Hamburg Wheel Tracker, each	\$1,600.00
50 HMA Tensile Strength Ratio, each	\$1,500.00
51 Gyratory Compaction, per ste of 3	\$950.00
52 LA Abrasion, each	\$700.00
53 Fine Angularity, each	\$250.00
54 Void in Mineral Aggregate, each	\$250.00
55 Dust Proportions, each	\$230.00
56 Uncompacted Void, each	\$220.00
57 Specific Gravity of Fine Aggregate, each	\$210.00
58 Specific Gravity of Coarse Aggregate, each	\$230.00
59 Superpave Production Testing, each	\$4,500.00
60 Superpave JMF Verification or Production Startup, each	\$7,500.00
61 Marshall Compaction, set of 3	\$750.00
62 Marshall Stability, set of 3	\$450.00
63 Dry Preparation of Disturbed Soil and Soil-Aggregate Samples for Testing	\$285.00
64 Particle Size Analysis of Soils	\$250.00
65 Calculations Pertaining to Gradings and Specific Gravities	\$160.00
66 Definitions of Terms Relating to SG	\$110.00
67 Soil and Aggregate Sample Preparation	\$110.00
68 Mechanical Analysis of Soils	\$250.00
69 Apparent Specific Gravity of Fine Aggregate	\$210.00
70 Specific Gravity of Soils	\$250.00
71 Field & Laboratory Resistivity & pH Measurements for Soil & Water	\$260.00
72 Reducing Samples of Aggregate to Testing Size	\$110.00
73 Minimum Laboratory Soil Resistivity	\$220.00
74 pH of Soil for Use in Corrosion Testing	\$110.00
75 Prep of Bituminous Mixes	\$490.00
76 Sieve Analysis of Mineral Filler for Hot Mix Asphalt (HMA)	\$240.00
77 Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using SSD Specimens	\$255.00
78 Bulk Specific Gravity of Compacted HMA Using Paraffin-Coated Specimens	\$270.00

End

Zephyr UAS, Inc. Rate Schedule

Position	Hourly Rate
Jacqueline Patterson	\$303.00
Marc Canas	\$303.00
Alfred Yalda	\$208.00
James Craft	\$208.00

Emeryville South Bayfront Ped/Bike Bridge Project
Scope of Work and Cost Proposal for Electrical Inspection
Date: 12/14/20

Scope of Work:
Provide inspection of electrical work as shown and specified in the project contract plans and specifications

	Hourly Rate	Hours	
electrical Inspector	\$172.02	160	\$27,523.33
		Total	\$27,523.33



July 24, 2020

Mr. Michael K. Chan, PE
Principal Construction Manager
MNS Engineers, Inc.

PROJECT DESCRIPTION: Railroad Coordination Services

Dear Mr. Chan:

It is our pleasure to provide you with a cost proposal to provide the following services to MNS Engineers, Inc. on behalf of City of Emeryville CA:

1. UPRR Railroad Coordination
2. Submittal Reviews / Permit Reviews

Zephyr UAS, Inc. (ZUI) is a small firm that aims to provide efficient and cost-effective rail engineering and construction management services. ZUI's team includes professionals with extensive experience with railroad projects. Our firm provides engineering services ranging from feasibility studies, requiring conceptual design and analysis to final design including preparation of PS&E packages, permit processing and construction management services.

SCOPE / FEE:

Item	Cost
Railroad Coordination	(see attached detail)
TOTAL:	\$47,952.00

Deliverables:

N/A

PAYMENT TERMS: Payment terms will be consistent with prime agreement.

SIGNATURES

Zephyr UAS, Inc.

Signature:

Jacqueline L. Patterson

By: Jacqueline L. Patterson, PE

Title: Vice President

Date: 07/24/2020

MNS Engineers, Inc.

Signature: _____

By: _____

Title: _____

Date: _____

725 Town & Country Road, Suite 550 | Orange, CA | 92868

www.zephyruas.com

Exhibit B

ORIGINAL**PROFESSIONAL SERVICES AGREEMENT**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is effective as of this 17th day of OCTOBER, 2017 by and between THE CITY OF EMERYVILLE, a municipal corporation, ("City") and S&C Engineers, Inc. ("Consultant"), collectively referred to as the "Parties."

WITNESSETH THAT:

WHEREAS, the City desires to **South Bayfront Bridge/Horton Landing Park PROJECT**; and

WHEREAS, the City finds that specialized knowledge, skills, and training are necessary to render the services necessary to do the work contemplated under this Agreement; and,

WHEREAS, the City has determined that the Consultant is qualified by training and experience to render such services; and,

WHEREAS, the Consultant desires to provide such services; and,

WHEREAS, the public interest will be served by this Agreement; and,

NOW, THEREFORE, the Parties hereto do mutually agree as follows:

I. SCOPE OF SERVICES AND TERMINATION DATE**A. Project Description**

Construction Management/Inspections service for the South Bayfront Pedestrian Bicycle Bridge.

B. Services

The services to be completed under this Agreement ("Services") are:

Project Approach as described in Exhibit A

C. Schedule and Completion Date:

The services to be provided by Consultant under this Agreement shall commence on **the date of the Fully Executed Agreement** and terminate on upon 90 days after issuance of Certificate of Completion or December 31, 2019 whichever is later

FOR CITY USE ONLY			
Contract #:	17060-0000-PW01	CIP #:	16475006
Reso. #:	17-161	EPW #:	

JANIBINU

II. WORK CHANGES

- A. The City reserves the right to order changes in the work to be performed under this Agreement by altering, adding to or deducting from the work. All such changes shall be incorporated in written change orders executed by the Consultant and the City. Such change orders shall specify the changes ordered and any necessary adjustment of compensation and completion time.
- B. Any work added to the scope of this Agreement by a change order shall be executed under all the applicable conditions of this Agreement. No claim for additional compensation or extension of time shall be recognized unless contained in a change order duly executed on behalf of the City and the Consultant.
- C. The City Manager has authority to execute without further action of the Emeryville City Council, any number of change orders so long as their total effect does not materially alter the terms of this Agreement or increase the total amount to be paid under this Agreement, as set forth in Section III.B below. Any such change orders materially altering the terms of this Agreement or increasing the total amount to be paid under this Agreement in excess of \$45,000 must be approved by resolution of the Emeryville City Council.

III. COMPENSATION AND METHOD OF PAYMENT

- A. City agrees to pay the Consultant for the services performed and costs incurred by Consultant upon certification by the City that the services were actually performed and costs actually incurred in accordance with the Agreement. Compensation for Services performed and reimbursement for costs incurred shall be paid to the Consultant upon receipt and approval by the City of invoices setting forth in detail the services performed and costs incurred. The City shall pay the Consultant within forty-five (45) days after approval of the invoice by City staff.
- B. The total amount paid under this Agreement as compensation for Services performed and reimbursement for costs incurred shall not, in any case, exceed **Two Million Five Hundred Sixty Eight Thousand Six Hundred Thirty and 45/100 Dollars (\$2,568,630.45)** except as outlined in Section II.C., above. The compensation for Services performed shall be computed based upon **rates as set forth in Exhibit B**. Reimbursement for costs incurred shall be limited as follows. Long distance telephone and telecommunications, facsimile transmission, normal postage and express mail charges, photocopying and microcomputer time shall be at cost. Supplies and outside services, transportation, lodging, meals and authorized subcontracts shall be at cost plus no more than a 10% administrative burden.

Automobile mileage shall be no more than the current deductible rate set by the Internal Revenue Service.

IV. COVENANTS OF CONSULTANT

A. Assignment of Agreement

The Consultant covenants and agrees not to assign or transfer any interest in, nor delegate any duties of this Agreement, without the prior express written consent of the City. As to any approved subcontractors, the Consultant shall be solely responsible for reimbursing them and the City shall have no obligation to them.

B. Responsibility of Consultant and Indemnification of City

It is the intent of the parties that the language of this Paragraph complies fully with the requirements of section 2782.8 of the California Civil Code as enacted by AB 573. To the fullest extent permitted by law, Consultant shall indemnify, defend, and hold harmless City and City's members, officers, agents, employees and volunteers, from and against any and all claims, losses, liabilities of every kind, nature and description, damages, injury (including without limitation injury to or death of an employee of Consultant or subconsultants as well as any claim by any employee, agent, Consultant or independent contractor hired or employed by Consultant that such persons or individuals are entitled to any benefit otherwise provided to employees of the City, including coverage under the California Public Employee Retirement System), costs and expenses of any kind, whether actual, alleged or threatened, including, without limitation, incidental and consequential damages, court costs, reasonable attorneys' fees, litigation expenses, and fees of expert consultants or expert witnesses incurred in connection therewith and the costs of investigation, to the extent arising out of, pertaining to, or relating to, directly or indirectly, in whole or in part, the negligence, recklessness, or willful misconduct of Consultant, any subconsultant, anyone directly or indirectly employed by them or anyone that they control, whether or not there is alleged to be concurrent negligence on the part of the City, but, to the extent required by law, excluding liability caused by the conduct of the City. This indemnification obligation is not limited in any way by any limitation on the amount or type of damages or compensation payable to or for Consultant. This obligation to indemnify and defend the City, its members, officers, agents, employees and volunteers shall survive termination of this Agreement for 10 years beyond the termination of the contract date.

C. Independent Contractor

The Consultant hereby covenants and declares that it is engaged in an independent business and agrees to perform the services as an independent contractor and not as the agent or employee of the City. The Consultant agrees to be solely responsible for its own matters relating to the time and place the services are performed; the instrumentalities, tools, supplies and/or materials necessary to complete the services; hiring of consultants, agents or employees to complete the services; and the payment of employees, including compliance with Social Security, withholding and all other regulations governing such matters. The Consultant agrees to be solely responsible for its own acts and those of its subordinates and employees during the life of this Agreement.

D. Insurance

1. Requirements: The Consultant shall have and maintain in full force and effect for the duration of this Agreement, insurance insuring against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work by the Consultant, its agents, representatives, employees or subcontractors. If requested, Consultant shall provide the City with copies of all insurance policies. These requirements are subject to amendment or waiver if so approved in writing by the City Manager.
2. Minimum Limits of Insurance: Consultant shall maintain limits no less than:
 - a. Commercial General Liability providing coverage at least as broad as ISO CGL Form 00 01 on an occurrence basis for bodily injury, including death, of one or more persons, property damage and personal injury with limits of not less than Two Million Dollars (\$2,000,000) per occurrence. The policy shall provide contractual liability and, if required by City, products and completed operations coverage for the term of the policy.
 - b. Comprehensive Automobile Liability (owned, non-owned, hired) providing coverage at least as broad as ISO Form CA 00 01 on an occurrence basis for bodily injury, including death, of one or more persons, property damage and personal injury, with limits of not less than One Million Dollars (\$1,000,000).
 - c. Professional Liability of One Million Dollars (\$1,000,000) providing coverage on a claims made basis for errors, omissions or malpractice. Professional liability insurance must

be continued for at least 5 years after termination or final payment under the Agreement, whichever is later.

- d. Workers' Compensation limits as required by the laws of the State of California and Employers Liability limits of not less than \$1,000,000 per accident.

No Workers' Compensation insurance shall be required if Consultant completes the following certification:

I certify that my business has no employees and that I do not employ anyone. I am exempt from the legal requirement to provide Workers' Compensation Insurance.

_____ (Consultant's initials)

- 3. Deductibles and Self-Insured Retentions: Any deductibles or self-insured retentions must be declared to and are subject to approval by the City.

- 4. Other Insurance Provisions: The policy is to contain, or be endorsed to contain, the following provisions:

- a. General Liability and Automobile Liability Coverage.

- i. Consultant shall name the City of Emeryville, its officials, employees, agents and volunteers as additional insureds in its Commercial General Liability and Automobile Liability policies. If Consultant submits the ACORD Insurance Certificate, the additional insured endorsement must be set forth on a CG 20 10 11 85 form (or more recent) and/or CA 20 48 – Designated Insured Form (for business auto insurance); The coverage shall contain no special limitations on the scope of protection afforded to the City, its officials, employees, agents or volunteers, except where limited by State laws.

When a certificate says, "certificate issued to" this does not mean the same as *additional insured* and is not acceptable.

- ii. Consultant's insurance coverage shall be primary noncontributing insurance as respects to any other insurance or self-insurance available to the City, its officials, employees, agents or volunteers. Any

insurance or self-insurance maintained by the City, its officials, employees or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

- iii. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officials, employees, agents or volunteers.
- iv. Coverage shall state that the Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- v. Coverage shall be provided on a "pay on behalf" basis, with defense costs payable in addition to policy limits. There shall be no cross liability exclusion.
- vi. The insurer agrees to waive all rights of subrogation against the City, its officials, employees, agents and volunteers for losses arising from work performed by the Consultant for the City.
- vii. All endorsements to policies shall be executed by an authorized representative of the insurer.

b. Workers' Compensation Coverage

The insurer will agree to waive all rights of subrogation against the City, its officials, employees, agents and volunteers for losses arising from work performed by the Consultant for the City.

c. All Coverages

- i. Each insurance policy required by this clause shall be endorsed to state that City will be provided thirty (30) days written notice of cancellation or material change in the policy language or terms.

5. Acceptability of Insurers: Insurance is to be placed with insurers with an A.M. Best's rating of no less than A:VII.

6. Verification of Coverage: Consultant shall furnish the City with certificates of insurance and endorsements to the policies evidencing coverage required by this Agreement prior to the start of work. The

certificates of insurance and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificate of insurance and endorsements shall be on a form utilized by Consultant's insurer in its normal course of business and shall be received and approved by the City prior to execution of this Agreement by the City. The City reserves the right to require complete, certified copies of all required insurance policies, at any time. The Consultant shall provide proof that any expiring coverage has been renewed or replaced at least two (2) weeks prior to the expiration of the coverage.

7. Subcontractors: Consultant shall either include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor demonstrating that subcontractors maintain insurance coverage that meets the minimum scope and limits of insurance coverage required by this Agreement, including but not limited to naming the City, its officials, employees, agents and volunteers as additional insureds.
8. Claims-Made Policies. Consultant shall extend any claims-made insurance policy for at least 5 years after termination or final payment under the Agreement, whichever is later.

E. Records, Reports and Audits

1. Records

- a. Records shall be established and maintained by the Consultant in accordance with requirements prescribed by the City with respect to all matters covered by this Agreement. Except as otherwise authorized, such records shall be maintained for a period of three years from the date that final payment is made under this Agreement. Furthermore, records that are the subject of audit findings shall be retained for three years or until such audit findings have been resolved, whichever is later.
- b. All costs shall be supported by properly executed payrolls, time records, invoices, contracts, or vouchers, or other official documentation evidencing in proper detail the nature and propriety of the charges. All checks, payrolls, invoices, contracts, vouchers, orders or other accounting documents pertaining in whole or in part to this Agreement shall be clearly identified and readily accessible.

2. Reports and Information: Upon request, the Consultant shall furnish to the City any and all statements, records, reports, data and information related to matters covered by this Agreement in the form requested by the City.
3. Audits and Inspections: At any time during normal business hours and as often as the City may deem necessary, there shall be made available to the City for examination all records with respect to all matters covered by this Agreement. The Consultant will permit the City to audit, examine, and make excerpts or transcripts from such records, and to audit all contracts, invoices, materials, payrolls, records of personnel, conditions of employment and or data relating to all matters covered by this Agreement.

F. Conflicts of Interest

The Consultant covenants and declares that, other than this Agreement, it has no holdings or interests within the City of Emeryville, nor business holdings or agreements with any official, employee or other representative of the City. For the duration of this Agreement, in the event the Consultant or its principals, agents or employees acquire such a holding, interest or agreement within the City of Emeryville or with any official, employee or representative of the City in the future, the Consultant will immediately notify the City of such holding, interest or agreement in writing.

G. Confidentiality

The Consultant agrees that such reports, information, opinions or conclusions shall not be made available to or discussed with any individual or organization, including the news media, without prior written approval of the City. The Consultant shall exercise reasonable precautions to prevent the unauthorized disclosure and use of City information whether deemed confidential or not.

H. Discrimination Prohibited

The Consultant covenants and agrees that in performing the services required under this Agreement, the Consultant shall not discriminate against any person on the basis of race, color, religion, sex, sexual orientation, gender identity, marital status, national origin or ancestry, age or disability.

I. Licenses, Certifications and Permits

The Consultant covenants and declares that it has obtained all diplomas, certificates, licenses, permits or the like required of the Consultant by any and all national, state, regional, county, city or local boards, agencies, commissions, committees or other regulatory bodies in order to perform the services contracted for under this Agreement. All work performed by Consultant under this Agreement shall be in accordance with applicable legal requirements and shall meet the standard of quality ordinarily expected of competent professionals.

J. Key Personnel

Michael K. Chan is necessary for the successful prosecution of the work due to his unique expertise and depth and breadth of experience. There shall be no change in Consultant's Project Manager or members of the project team without the consent of the City. Consultant recognizes that the composition of this team was instrumental in the City's decision to award the work to Consultant and that compelling reasons for substituting these individuals must be demonstrated for the City's consent to be granted. Any substitutes shall be persons of comparable or superior expertise and experience. Failure to comply with the provisions of this section shall constitute a material breach of Consultant's obligations under this Agreement and shall be grounds for termination.

K. Authority to Contract

The Consultant covenants and declares that it has obtained all necessary approvals of its board of directors, stockholders, general partners, limited partners or similar authorities to simultaneously execute and bind Consultant to the terms of this Agreement, if applicable.

L. Ownership of Work

All reports, designs, drawings, plans, specifications, schedules, work product and other materials prepared or in the process of being prepared for the services to be performed by the Consultant ("Materials") shall be and are the property of the City and the City shall be entitled to full access and copies of all such Materials. Any such Materials remaining in the hands of the Consultant or subcontractor upon completion or termination of the work shall be delivered immediately to the City. The Consultant assumes all risk of loss, damage or destruction of or to such Materials. If any Materials are lost, damaged or destroyed before final delivery to the City, the Consultant shall replace them at its own expense. Any and all copyrightable subject matter in all materials is hereby assigned to the City and the Consultant

agrees to execute any additional documents that may be necessary to evidence such assignment.

M. Living Wage

If this Agreement provides for compensation to Consultant of \$25,000 or more within a single fiscal year for providing services to the City, then Consultant shall comply with the requirements of the City's Living Wage Ordinance set forth in Chapter 31 of Title 5 of the Emeryville Municipal Code, unless (i) Consultant is a governmental entity, (ii) this Agreement is subject to a higher prevailing wage rate as defined in the California Labor Code, or (iii) this Agreement is subject to federal or state laws or regulations that would preclude the application of the City's laws.

Compliance with the Living Wage Ordinance, if applicable, shall be required during the term of the Agreement for all employees of Consultant who perform at least twenty-five percent (25%) of the work arising from this Agreement, unless said employees are otherwise exempt from the application of the Living Wage Ordinance pursuant to Section 5-31.08. Consultant shall promptly provide to the City documents and information verifying compliance with the requirements of the Living Wage Ordinance within ten (10) working days following a written request for such documentation and information from the City.

Failure to comply with the Living Wage Ordinance provides that a person claiming a violation thereof may bring an action against Consultant for back pay, reinstatement and compensatory damages, as well as a penalty up to three times the amount of damages for a willful violation, plus reasonable attorney's fees and costs. In addition, the City may terminate the Agreement and pursue any other remedies available to the City, including debarment, for violations of the Living Wage Ordinance.

Consultant shall notify each of its affected employees regarding wages that are required to be paid pursuant to this Agreement. "Living Wage" means no less than \$15.20 per hour (for firms with 56+ employees as of July 1, 2017, subject to increase annually on July 1st to reflect the twelve month average increase to the Consumer Price Index for all urban consumers in the San Francisco-Oakland-San Jose Metropolitan Statistical Area for the preceding year from March to February; not to exceed three percent (3%) in any one year) including wages and health benefits. If employer contributions for health benefits are not paid on an hourly basis, the employer must demonstrate to the City the hourly value of such benefits in order to receive credit for such payments to covered employees.

N. Prevailing Wages

To the extent the services to be provided by Consultant pursuant to this Agreement constitutes "public work" as defined in Labor Code Section 1720, Consultant shall pay and shall ensure that all subconsultants or subcontractors pay all persons providing labor to perform the work under this Agreement applicable prevailing wage rates for the work to be performed as determined in the General Prevailing Wage Determination ("Wage Determination") made by the Director of Industrial Relations pursuant to California Labor Code sections 1770, 1773, et. seq., and otherwise comply with all provisions of this Section IV.N. A copy of the applicable Wage Determination is on file in the offices of the City.

Consultant is required to comply with the following provisions and to insure that all subcontracts include the following provisions. If, for some reason, these provisions are not included in subcontracts, they shall nevertheless apply:

1. Hours of Labor: Eight hours labor constitutes a legal day's work. Consultant shall forfeit, as penalty, Twenty-Five Dollars (\$25) for each worker employed in the performance of the Agreement by Consultant or by any subconsultant under him for each calendar day during which such workman is required or permitted to work more than eight (8) hours in any one (1) day and forty (40) hours in any one (1) calendar week in violation of the provisions of the California Labor Code and in particular sections 1810 to 1815 thereof, inclusive, except that work performed by employees of Consultant in excess of eight (8) hours per day and forty (40) hours during any one (1) week shall be permitted under compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay, as provided in said section 1815.
2. Labor Non-Discrimination: Consultant shall not discriminate against any employee who is employed on the work because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, sexual orientation, gender identity, or age of such persons, except as provided in section 12940 of the Government Code.
3. Prevailing Wages: Consultant shall comply with California Labor Code sections 1770 to 1780, inclusive. In accordance with section 1775, Consultant shall forfeit as a penalty an amount determined by the Labor Commissioner, not to exceed Fifty Dollars (\$50), for each calendar day or portion thereof for each worker paid less than stipulated prevailing wage rates for such work or craft in which such

worker is employed for any work done under the Agreement by him or by any subconsultant under him in violation of the provisions of the Labor Code, and in particular, Labor Code sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by Consultant.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county in which the work is to be done have been determined by the Director of the California Department of Industrial Relations and can be obtained on-line at <http://www.dir.ca.gov>. It is mandatory for Consultant and any subcontractor to pay not less than the specified rates to laborers and workers employed by them in the execution of this Agreement.

Consultant shall comply with the provisions enacted by AB 854 that require Consultant and any subcontractor be registered with the State Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. This Agreement is subject to monitoring and enforcement by the DIR pursuant to Labor Code Section 1771.4. Consultant shall post job site notices, pursuant to Title 8 California Code of Regulations Section 16451.

Consultant shall make travel and subsistence payments to each worker needed to execute the work in accordance with the requirements of section 1773.8.

4. Payroll Records: Consultant shall be responsible for the compliance with Labor Code section 1776 by his subconsultants.
 - a. Each Consultant and subconsultant shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work.
 - b. The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of Consultant on the following basis:

- i. A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his or her authorized representative on request.
- ii. A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to the City, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.
- iii. A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the City, the Division of Apprenticeship Standards, or the division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (b), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by Consultant, subconsultant and the entity through which the request was made. The public shall not be given access to such records at the principal office of Consultant.
- c. The certified payroll records shall be on forms provided by the division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division.
- d. Each Consultant shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested such records within ten (10) days after receipt of a written request.
- e. Any copy of records made available for inspection as copies and furnished upon request to the public or City, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Consultant shall not be marked or obliterated.
- f. In the event of noncompliance with the requirement of this section, Consultant shall have ten (10) days in which to

comply subsequent to receipt of written notice specifying in what respects such Consultant must comply with this section. Should noncompliance still be evident after such ten (10) day period, Consultant shall, as a penalty to the State or City, forfeit Twenty-Five Dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.

The penalties specified in subdivision (g) of Labor Code section 1776 for noncompliance with the provisions of said section 1776 may be deducted from any monies due or which may become due to Consultant.

Consultant and each subconsultant shall preserve their payroll records for a period of three (3) years from the date of completion of the Agreement.

5. Apprentices: Consultant shall fully comply with the requirements of sections 1777.5 and 1777.6 of the California Labor Code and the regulations of the California Apprenticeship Council. In accordance with section 1777.5, Consultant shall secure the necessary certificates and shall contribute to the apprenticeship fund or funds, as provided for therein. Consultant shall require each subconsultant who will perform work or labor or render service to Consultant in or about the construction of the work to comply fully with sections 1777.5 and 1777.6 of the Labor Code. Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the State Division of Apprenticeship Standards and its branch offices.

6. Workers' Compensation: Pursuant to the requirements of section 1860 of the California Labor Code, Consultant will be required to secure the payment of workers' compensation to his employees in accordance with the provisions of section 3700 of the Labor Code. By signing this Agreement, Consultant certifies the following:

"I am aware of the provisions of section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

7. Event of Default: Failure by Consultant to comply with any provision of this Section shall constitute a default of this Agreement and shall be grounds for termination as provided in this Agreement.

V. TERMINATION

- A. The City shall have the right to terminate this Agreement for any reason whatsoever by providing written notice thereof at least five (5) calendar days in advance of the termination date.
- B. All termination notice periods triggered pursuant to written notice shall begin to run from the date of the United States Postal Service postmark.
- C. Upon termination, City shall provide for payment to the Consultant for services rendered and expenses incurred prior to the termination date.
- D. Upon receipt of a termination notice the Consultant shall: (1) promptly discontinue all services affected, unless the notice directs otherwise; and (2) promptly deliver to the City all data, drawings, reports, summaries, and such other information and materials as may have been generated or used by the Consultant in performing this Agreement, whether completed or in process, in the form specified by the City.
- E. The rights and remedies of the City and the Consultant provided in this Section are in addition to any other rights and remedies provided under this Agreement or at law or in equity.

VI. NO PERSONAL LIABILITY

No member, official or employee of the City shall be personally liable to the Consultant or any successor in interest in the event of any default or breach by the City or for any amount which may become due to the Consultant or successor or on any obligation under the terms of this Agreement.

VII. ENTIRE AGREEMENT

This Agreement constitutes the complete agreement between the parties and supersedes any and all other agreements, either oral or in writing, between the parties with respect to the subject matter of this Agreement. No other agreement, statement or promise relating to the subject matter of this Agreement not contained in this Agreement shall be valid or binding. This Agreement may be modified or amended only by a written document signed by representatives of both parties with appropriate authorization.

VIII. SUCCESSORS AND ASSIGNS

Subject to the provision of this Agreement regarding assignment, this Agreement shall be binding on the heirs, executors, administrators, successors and assigns of the respective parties.

IX. APPLICABLE LAW AND ATTORNEY'S FEES; VENUE

If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement, the rules, regulations, statutes and laws of the State of California will control. The prevailing party shall be entitled to reasonable attorney's fees in addition to any other relief to which said party may be entitled. The exclusive venue for any legal action taken pursuant to this Agreement shall be the State of California Superior Court for the County of Alameda or the United States District Court for the Northern District of California.

X. SEVERABILITY

The caption or headnote on articles or sections of this Agreement are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent thereof, or of this Agreement nor in any way affect this Agreement. Should any article(s) or section(s), or any part thereof, later be deemed unenforceable by a court of competent jurisdiction, the remainder of this Agreement shall remain in full force and effect to the extent possible.

XI. BUSINESS LICENSE

Prior to commencement of the services to be provided hereunder, Consultant shall apply to the City of Emeryville Finance Department for a business license, pay the applicable business license tax and maintain said business license during the term of this Agreement, as provided in Article 1 of Chapter 1 of Title 3 of the Emeryville Municipal Code.

XII. NOTICES

A. Communications Relating to Daily Activities

All communications relating to the day-to-day activities of the work shall be exchanged between **the Public Works Director or his designee** for the City and **Mike Chan** for the Consultant.

B. Official Notices

All other notices, writings or correspondence as required by this Agreement shall be directed to the City and the Consultant, respectively, as follows:

CITY

Andrew Clough, Acting Director of Public Works
1333 Park Avenue
Emeryville, California 94608
Phone No. (510) 596-4341
Fax No. (510) 596-4389
E-Mail aclough@emeryville.org

CONSULTANT


Michael K. Chan, P.E.
Vice President
S&C Engineers
401 Grand Ave., Suite 250
Oakland, CA 94610
Phone No. (510) 272-2970
Fax No. (510) 272-2972
E-Mail mike_chan@scengineers.com

XIII. WAIVER OF AGREEMENT

The City's failure to enforce any provision of this Agreement or the waiver in a particular instance shall not be construed as a general waiver of any future breach or default.

IN WITNESS WHEREOF the City and the Consultant have executed this Agreement, which shall become effective as of the date the City Manager executes this Agreement on behalf of the City.

Approved as to form:


Michael A. Guina, City Attorney

CITY OF EMERYVILLE

Dated: 10-31, 2017


Carolyn Lehr, City Manager

CONSULTANT

Dated: October 4, 2017



By: Michael K. Chan
Its: Vice President

Exhibit A – Project Approach

Exhibit A

Project Approach



Exhibit A – Project Approach**Project Approach and Project Challenges****Project Understanding and Approach**

This project involves the construction or modification of several elevated structures, utility relocation and at-grade improvements. The focal point of the Project is a steel tied arch bridge with a 227 foot span over the UPRR Right-of-Way. The bridge will span over nine (9) UPRR tracks. The track furthest to the east is a spur track. The next four (4) tracks to the west appear to be yard siding tracks, and the next four (4) tracks furthest to the west are mainline tracks.

The other elevated structures are as follows:

West Ramp – A cast-in-place prestressed concrete slab and precast P/S concrete voided slab with composite cast-in-place concrete deck.

West Ramp – A reinforced concrete slab structure located on the west side adjacent to the existing parking structure.

West Stair – A cast-in-place prestressed concrete slab structure located on the west side running parallel to Temescal Creek Channel along Ohlone Way.

East Ramp – A cast-in-place prestressed concrete slab structure located on the eastern side heading to the north toward Stanford Ave.

East Stair – A reinforced concrete slab structure located on the eastern side heading to the north toward Stanford Ave.

East Creek Bridge – A precast, prestressed voided slab structure with 6" composite cast-in-place concrete deck over Temescal Creek Channel.

Bay Street Garage Vehicular Bridge – Modifications to the existing truss to accommodate pedestrian access across the bridge to the East Stair.

Other work includes the relocation of sanitary sewer and storm drain lines, hazardous waste remediation of the project site east of the UPRR right-of-way, and the construction of the Horton Landing Park.

The Engineer's estimate for construction is on the order of \$15,400,000. The anticipated duration of construction is 18 months.

We understand there are many technical challenges associated with the steel tied arch bridge, the Caltrans type design concrete bridge structures located in very close proximity to an existing parking structure and the Temescal Creek drainage channel structure, and modifications to the existing garage existing steel truss bridge. However, some of the most challenging issues will be associated with constructing the various structures without significantly impacting the businesses and residents located in the Bay Street complex, and minimizing impacts to and interacting with the Union Pacific Railroad. Our team has many years of Caltrans and UPRR experience to identify and resolve these issues to deliver a successful project for the City.

Project Challenges

We have reviewed the plans and the project site and have identified the following areas where we foresee challenges.

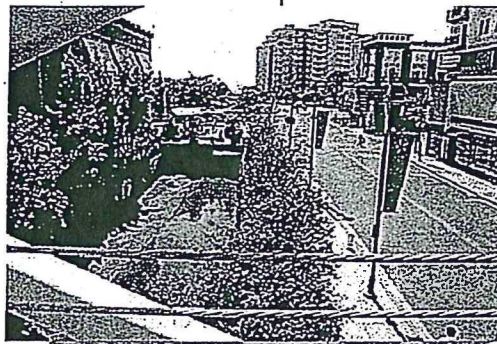
1. Construction of West Stair

Construction of the West Stair along Ohlone Drive will involve several challenges. First, the crane used for driving the piles for the foundations will need to be positioned on Ohlone



Exhibit A – Project Approach

Drive which will block access to the parking garage for the condos to the north and the Bay Street garage. It would be best if the street could be closed for construction. However, if this is not possible, this work will need to be performed at night in order to maintain access. However, this will result in obvious noise and vibration issues for the residents in the condos. It is highly recommended that Ohlone Drive be closed for a short period of time to construct the foundations of the West Stairs west of the garage bridge. If this is acceptable to the merchants in the shopping center, a milestone with liquidated damages could be developed to ensure that the contractor finishes the work in the area while minimizing the impacts of this closure:



Additionally, the piles will need to be driven very close to the footings of the culvert walls for Temescal Creek which may cause damage to the channel walls. This is also the case for the West Ramp which is located very close to the Bay Street garage.

The distance from the new foundations to the existing foundations of the garage will have to be verified, if possible, to ensure there are no conflicts. The plans show the distance between the face of the garage and the face of the ramp structure to be approximately 1'-6". The plans don't show the distance between the foundation of the new structure and the garage. There are no dimensions shown for the existing garage foundations or the new ramp structure.

The as-built dimensions of the garage foundation should be checked with the new ramp foundation to determine if any conflicts or constructability issues exist. Some shoring will

have to be installed for the installation of the piles and foundations. There needs to be enough room between the existing garage foundation and the new foundation to install the shoring.

The provided plan sheets don't show the capacity and depth of the piles. However, once we get this information from the Designer, we can determine the size of the crane and hammer required to install the piles and evaluate potential problems which may be caused by vibrations during pile driving. Since the soil in this area tends to be fairly soft, the force required to drive the piles

may be fairly minimal, and achieving the required design capacity may rely mostly on take-up in the cohesive soils typically encountered in this area.

On the Cypress Freeway Replacement Project, Mike Chan dealt with similar vibration concerns for adjacent existing structures during driving of the piles for the new bridge structures. We will provide recommendations to the Designer so the piles can be installed without causing damage to the Temescal Creek structure and the parking garage. We recommend that a vibration analysis be performed by an acoustical engineer prior to the construction contract being advertised to determine the potential for damage to the existing structures from pile driving.

Based on our experience on the Cypress project, a vibration monitoring plan may need to be required as part of the contract specifications to ensure that existing structures are protected from ground accelerations during pile driving which may exceed the thresholds of architectural and structural damage. If it is determined that vibrations from pile driving may lead to damage to existing structures or facilities, it may be



Exhibit A – Project Approach

possible to use a single steel pipe pile at each bent advanced into the ground by an oscillator rig. This would result in no vibrations. However, we would need to discuss these issues further with the Designer to develop an appropriate plan of action to address all potential issues with pile driving.

Access, in general, is very tight on the western side of the project. There is very little room for the large construction equipment that will be needed to construct the structures, even if Ohlone Drive can be closed. Cranes, pile drivers, concrete pumps, concrete trucks, and large semi trailers needed to deliver rebar and rebar column cages, column forms, and materials for falsework, will all need room. The only room on this side for any kind of storage of materials and equipment is on the UPRR right-of-way. Negotiations with UPRR will be needed to determine if some of the UPRR right-of-way can be used during construction.

2. Tied Arch Bridge Erection

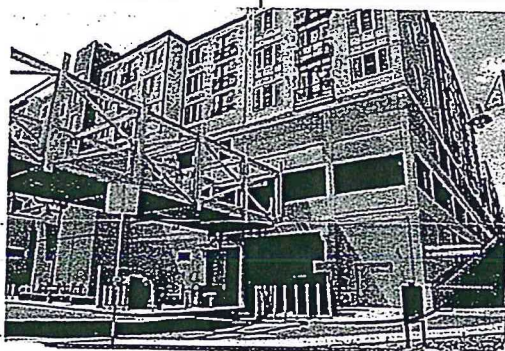
The tied arch bridge will be very challenging to erect. A common method of constructing this type of bridge is to support the deck on falsework until the hanger cables are tensioned, at which time the deck loads are transferred to the arch. However, there is no room for falsework for this bridge unless UPRR will allow a couple of their tracks to be placed out of service. It may be beneficial to discuss the potential to take some of the tracks out of service with the UPRR. Some of the tracks on the east side appear to be siding and spur tracks.

If it is not possible to construct falsework to support the bridge deck while the arch is being erected, the single arch design with the bridge

deck offset to one side of the arch at both ends will pose significant challenges with regard to maintaining stability of the bridge during the various erection stages. Temporary struts or external cable supports may be required to support the structure until it is completed. The stresses in the various bridge components must be carefully analyzed for all intermediate stages of construction to assure that the desired final geometry of the structure is achieved and that unaccounted for stresses are not locked into the structure. This will require a detailed erection plan to be developed by a qualified structural engineering firm and independently reviewed by the Designer. It is suggested that the specifications establish specific qualifications for the engineering firm to be engaged by the contractor to prepare the engineered erection plan. Additionally, it is suggested that any specific type of structural analysis and specific data to be submitted be established in the contract documents.

3. Existing Automotive Garage Bridge

The existing automotive garage bridge may need to be temporarily supported while the modifications are being made to minimize deflection of the structure when the existing cross braces are removed. The existing



longitudinal members are in tension and compression. However, the new members will not be in tension or compression when they are installed. Therefore, unless the middle of the bridge is slightly raised and temporarily supported to

take the tension and compression loads off of the longitudinal members while the new members are bolted into place, the new members will not be engaged until the stresses in the existing members are increased beyond their current stress levels. This would result in additional



Exhibit A – Project Approach

deflection of the bridge at midspan. If temporary support of the bridge is required, traffic on Ohlone Drive may be impacted. Due to this fact, it may be desirable to require the Contractor to perform the truss modifications prior to construction of the adjacent west ramp and stairs structures. Otherwise, the ramp and stairs structures may not fit the elevation of the modified truss.

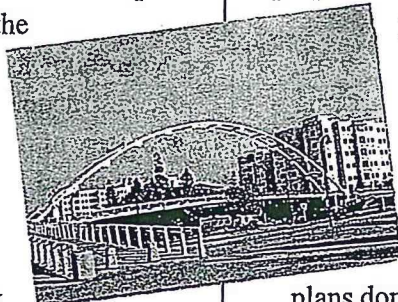
4. Main Span Superstructure

There is no detail on the plans provided in the RFP showing how the main span superstructure will connect to the bent caps. Our experience with the SDSU pedestrian bridge is to make sure the specifications and plans require the contractor to carefully set the anchor bolts at the bent caps correctly to avoid misalignment problems.

5. Structural Steel Paint

The arch and deck truss for the tied arch bridge will be painted structural steel. With ever increasing restrictions on VOCs, protective coatings have changed significantly over the past several years, and continue to change. As the protective coatings change, so do the proper application measures. Today's paint systems are highly complex and are very sensitive to surface preparation, ambient conditions and application methods. Failure to choose the correct paint system for the specific application and location and to apply protective coatings properly will result in premature failure of the paint system and significant costs to maintain and re-paint the structures.

Based upon our extensive experience with structural steel painting, many steel fabricators and painting contractors do not understand, and therefore, do not adhere to the new requirements for proper application of the recently developed paint systems.



We'll review the project specifications during our constructability review and will make recommendations on a paint system for the project and will assure that the paint is applied properly so that the premature failure of the paint system is avoided.

6. Location of Bridge Staging Area

The staging plans state the contractor is to erect the bridge at the staging area; however, the plans don't show where this staging area is located. The location of the staging area is critical as the bridge must be erected at the correct location in order for a crane to lift the bridge into place over the UPRR tracks. At its proposed location, the crane will not be able to extend to reach to either pick up or set the bridge. Therefore, we recommend that possible locations of the crane as well as the bridge be determined so at least one of the areas is available to the contractor. Negotiations with the UPRR or other private property owners may be required to procure the areas or at least to determine that the contractor can negotiate with the property owners for access and use of these areas. For example, the current parking south of Temescal Creek on the east side of the UPRR railroad appears to not be in use and may be needed for a staging area to construct and erect the bridge into place. We understand that the City is currently discussing the use of this area with the property owner.



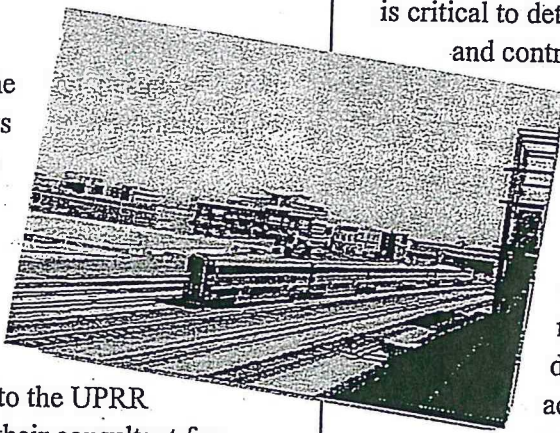
Exhibit A – Project Approach**7. UPRR Issues****7a. UPRR Reviews**

Based on experience from our Fremont, and Cypress projects, timely review of various submittals such as the erection plan by the UPRR will be critical to prevent delays to the project. We know that the UPRR utilizes consultants to perform many of these reviews. It is important to include realistic time frames in the contract documents to account for this process. The documents are submitted to the UPRR who then pass them onto their consultant for review. Once the consultant has completed their review, they provided their comments to the UPRR for review before being sent back to the City CM forces. However, sometimes, the time between the completion of the consultant review and completion of UPRR staff's review and forwarding back to the City can be several weeks depending on the workload of UPRR structures staff. On our Fremont project, we developed a good working relationship with the UPRR consultant and the UPRR structures engineer and were able to send cc copies of submittals directly to HDR, and get HDR to informally cc us with a copy of their comments back to the UP structures. We could then provide these informally back to the Contractor so they could begin working on responses to the comments. We found that this greatly help expedite the submittal and review process. We worked with the UPRR Bridge group in Omaha, Nebraska.

7b. Shoring Requirements

Based on the contract plans, it appears that shoring for the foundation excavations for bents will be far enough away from tracks that railroad

shoring may not be required. However, depending on the depth of the excavations for the various foundation, the influence line may possibly extend under the nearest track. If this occurs, then shoring must be designed to the UPRR's railroad E-80 loading requirements. It is critical to determine whether this is the case and contract specifications need to inform the Contractor which shoring will be required to be design in accordance with the UPRR's shoring requirements. Since the foundations are all outside of the UPRR right-of-way, one may easily assume that shoring doesn't have to be designed in accordance with railroad loading requirements.

**7c. Flagging**

Flagging will be required for all activities that may have the potential to foul the tracks. This includes the pile driving on both sides of the UPRR right-of-way depending the height of the pile driving rig and distance to the nearest active track. Based on previous experience, delays due to a lack of railroad flagman is very possible. Depending on the availability of UPRR Flagging resources, it may be required to request flagman a minimum of 2 to 3 weeks prior to needing flagging. Therefore, it is critical that discussions with UPRR be held as to a realistic minimum time frame for requesting flagman, which can outlined in the contract specifications.

7d. Existing Utilities within UPRR Right-of-Way

There are several fiber optics and fuel product lines located within the UPRR right-of-way. Based on experience from Fremont, Kinder Morgan, the fuel product line company, requires that any excavation or placement of excessive loads such as a crane within 50 feet of their facility requires prior notification of Kinder

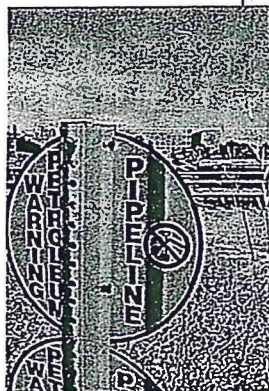


Exhibit A – Project Approach

Morgan. The various fiber optic companies located within the UPRR right-of-way (QWEST, Verizon Wireless (MCI), Sprint, Level3) all require notification whenever any excavation or placement of excess loads on or near their facilities. This normally is in the form of the USA notifications.

Depending on the operation, they may or may not require that their inspector be present. They may require certain protection requirements depending on the operations.

It is critical that the various possible activities within close proximity of their facilities be discussed with them ahead of time and any special requirements be addressed in the contract specifications.



We've noticed that Kinder Morgan and fiber optic facilities are located close to the UPRR fence on the west side. The excavation of the foundation for the main bridge on this side will be close to these lines. At a minimum, the utilities will have to be notified of any planned excavation and loading over their facilities.

8. Proposed Staged Construction Sequence for Main Bridge

Note 1 states that the construction sequence is included for information purposes only, not intended to be the complete step by step procedure, which is not a contract enforceable requirement. Though we want to avoid giving the Contractor too much detailed instruction for bridge erection, we should consider providing minimum criteria in the contract specifications to ensure that any requirements the City, designer, and UPRR may have for the erection of the Main Bridge are conveyed to the Contractor and included in the contract. For instance, the contractor will have only a small window of time to erect the partially-constructed

arch over the railroad yard, requiring careful planning and coordination with UPRR Operations. If the construction sequence is only for information only and we do not provide any minimum criteria or requirements to the contractor for developing their construction sequence plan, then contractually we do not have recourse to possibly reject a plan that we may find unsatisfactory unless there is a valid engineering reason.

Some suggested minimum criteria the construction erection sequence may need to address include:

- The timing of each operation during the sequenced erection along with a contingency plan to address delays and interruptions
- The positioning of all equipment during each erection sequence
- The temporary support and bracing requirements for maintaining the stability of the bridge
- The need for temporary platforms and falsework
- Temporary attachments required for positioning and erecting the arch
- Methods for aligning the arch horizontally and vertically in its final position
- Methods for analyzing the suspension cables for deflections and tension during each sequence of erection
- Methods for analyzing the arch and floor system axial loads, moments, stresses, deflections and cambers for each sequence of erection

As a result of the restricted time frame for the arch erection the Contractor's work plan will need to identify anticipated durations for each step in the erection process.

9. Utilities Relocation

We understand that certain existing utilities (sewer and storm drain facilities) are to be



Exhibit A – Project Approach

relocated as part of the project. Based on experience with the relocation of numerous utilities, early communication with the utilities involved is critical to ensuring that all requirements are included in the contract specifications. Our experience is that negotiation of any required relocation agreement with utilities can be lengthy. This is especially the case with fiber optic companies and Kinder Morgan. All utility companies have their own processes and take time.

10. Hazardous Materials

Remediation or removal of hazardous materials will occur during the construction. This will mainly be with dealing with the disposal of any material excavated from the various foundations. During the Cypress project, and the I-80 HOV Flyover project, we encountered hazardous material in our excavations. We know that this area in the past was a very industrious area being the home of former paint and steel plants.

11. Welding Issues

Tubular steel welding is specified under AWS D1.5. However, D1.5 Bridge welding code does not explicitly cover tube steel welding. This may require significant effort on the Contractor's part and add significant cost, as the joints may become non-standard. AVS team has extensive experience dealing with similar issues and we have provided realistic and effective recommendations to deal with similar situations on other projects. AVS team has played key role in development on Caltrans welding specification and we can custom develop a spec with the AWS D1.1 and D1.5 to cost effectively address the project needs.

12. Minimizing Impacts to Businesses and Residents

We understand that one of the challenges will be access on the west side of the project. Should Ohlone Drive be closed to allow for construction

of the west stair structure, access to both parking garages will be limited. Closures can be limited to night time hours to minimize impacts to businesses. However, construction pile driving at night would significantly impact residents. In order to minimize impacts to both residents and businesses, a closure period must be developed to allow construction to proceed while minimizing impacts to both businesses and residents. As there are alternate entrances and exists for the garages, closure of the road for a short period of time can be determined to allow



construction to occur. Obviously, this closure period cannot be during the critical holiday shopping time of the year. An interim milestone with liquidated damages can be developed to ensure the contractor finishes the work as quickly as possible. We helped develop similar specifications on our Fremont project to minimize impacts to the Irvington Business District and residents. Major roadway closures required during various stages were not allowed to occur during the holiday season between Thanksgiving and New Years. Major road closures had set time frames when they had to be completed with liquidated damages.

13. Jobsite Safety

The Contractor is responsible for jobsite safety.



S&G Engineers' Schedule & Cost Proposal

S&C CM Cost =	\$	2,285,530.45
Alia Vista Solutions (QA) =	\$	270,000.00
3% Markup on Subconsultants =	\$	8,100.00

ODCs = \$ 5,000.00
Total CM Cost = \$ 2,568,520.45

[illegible]

OH = 132.52%
Fee = 10%
Annual Billing rate escalation = 5%

Exhibit B

Rates

Exhibit B - Schedule of Rates

S&C Engineers, Inc.

Loaded Hourly Rates

Personnel	2017	2018	2019
Michael Chan	\$254.46	\$267.18	\$280.54
Tom Loomis	\$217.22	\$228.08	\$239.49
Andy Kleiber	\$218.22	\$229.13	\$240.59
Assistant RE	\$227.89	\$227.89	\$239.28
Scheduler	\$177.12	\$185.98	\$195.27
Office Engineer/Inspector	\$148.60	\$156.03	\$163.83
Inspector	\$148.60	\$156.03	\$163.83
Inspector OT @ 1.5XST	\$222.90	\$234.05	245.747

Other Direct Costs

Description	Unit	Unit Cost
Postage, outside reproduction, etc	Actual	Actual

NORMAL		Fringe Benefit %		Overhead %		General Administration %		Combined %	
OVERTIME		0.00%		0.00%		0.00%		141.01%	
		0%		N/A		N/A		N/A	
				FEE %					
				10%					
BILLING INFORMATION				CALCULATION INFORMATION					
Name/Classification		Loaded Hourly Billing Rates		Effective Date of Hourly Rate		% Escalation Increase	Actual Hourly Rate and /or Hourly Rate	Hourly Range for Class	
		Straight	Overtime	From	To				
Frank Cannizzaro, PE Project Manager		201.48	N/A	7/1/2017	12/31/2017	N/A	\$76.00	N/A	
		201.48	N/A	1/1/2018	12/31/2018	5.00%	\$76.00		
		211.56	N/A	1/1/2019	12/31/2019	5.00%	\$79.80		
Exempt		222.14	N/A	1/1/2020	12/31/2020	5.00%	\$83.79		
Chris McDermitt Deputy Project Manager/Structure Material Representative		145.81	N/A	7/1/2017	12/31/2017	N/A	\$55.00	N/A	
		145.81	N/A	1/1/2018	12/31/2018	5.00%	\$55.00		
		153.10	N/A	1/1/2019	12/31/2019	5.00%	\$57.75		
Exempt		160.76	N/A	1/1/2020	12/31/2020	5.00%	\$60.64		
Assistant Material Representative/Project Engineer		119.30	N/A	7/1/2017	12/31/2017	N/A	\$45.00	N/A	
		119.30	N/A	1/1/2018	12/31/2018	5.00%	\$45.00		
		125.26	N/A	1/1/2019	12/31/2019	5.00%	\$47.25		
Exempt		131.53	N/A	1/1/2020	12/31/2020	5.00%	\$49.61		
IDT Level III Technician Field Support		172.32	N/A	7/1/2017	12/31/2017	N/A	\$65.00	N/A	
		172.32	N/A	1/1/2018	12/31/2018	5.00%	\$65.00		
		180.94	N/A	1/1/2019	12/31/2019	5.00%	\$68.25		
Exempt		189.99	N/A	1/1/2020	12/31/2020	5.00%	\$71.66		
Steel Inspector (CWI, NDT Level II)		137.86	N/A	10/1/2017	12/31/2017	N/A	\$52.00	N/A	
		137.86	N/A	1/1/2018	12/31/2018	5.00%	\$52.00		
		144.75	N/A	1/1/2019	12/31/2019	5.00%	\$54.60		
on-Exempt		151.99	N/A	1/1/2020	12/31/2020	5.00%	\$57.33		
Paint Inspector (ACE Level II)		148.46	N/A	10/1/2017	12/31/2017	N/A	\$56.00	N/A	
		148.46	N/A	1/1/2018	12/31/2018	5.00%	\$56.00		
		155.89	N/A	1/1/2019	12/31/2019	5.00%	\$58.80		
on-Exempt		163.68	N/A	1/1/2020	12/31/2020	5.00%	\$61.74		
Roadway Materials Inspector (TM/ASSHTO Certified)		124.60	N/A	10/1/2017	12/31/2017	N/A	\$47.00	N/A	
		124.60	N/A	1/1/2018	12/31/2018	5.00%	\$47.00		
		130.83	N/A	1/1/2019	12/31/2019	5.00%	\$49.35		
on-Exempt		137.37	N/A	1/1/2020	12/31/2020	5.00%	\$51.82		
Technical Expert (Concrete/Steel/Coatings)		251.86	N/A	10/1/2017	12/31/2017	N/A	\$95.00	N/A	
		251.86	N/A	1/1/2018	12/31/2018	N/A	\$95.00		
		251.86	N/A	1/1/2019	12/31/2019	N/A	\$95.00		
Exempt		251.86	N/A	1/1/2020	12/31/2020	N/A	\$95.00		

NORMAL	Fringe Benefit %	0.00%	+	Overhead %	0.00%	+	General Administration %	0.00%	=	Combined %	141.01%
OVERTIME	0%			N/A			N/A			N/A	
				FEE %	10%						
BILLING INFORMATION				CALCULATION INFORMATION							
Name/Classification	Loaded Hourly Billing Rates		Effective Date of Hourly Rate		% Escalation Increase	Actual Hourly Rate and /or Hourly Rate		Hourly Range for Class			
	Straight	Overtime	From	To							
<p>1. Contract Manager's pre-approval is required for any addition of staff not listed on the cost proposal. The billing rates for these employees, including those that fall under general classifications, will be calculated and reimbursed based on their actual hourly rate on 10/02/2017. Future escalations, if any, will be calculated and reimbursed in accordance with the percentage escalations agreed to in this cost proposal.</p> <p>2. Hourly rates for new employees hired after the date of this cost proposal will not exceed (or shall be in line with) the rates of similar personnel listed on this cost proposal having similar experience.</p> <p>3. No charge for all in-house accounting and administrative support work, including invoice preparation.</p>											

SCHEDULE OF OTHER DIRECT COST ITEMS

Company Name

DESCRIPTION OF ITEMS	UNIT	COST	DESCRIPTION OF ITEMS	UNIT	COST
Special Tooling					
A. In house Reproduction			F. Specialized Equipment		
i. 8.5 X 11 B/W	Page	N/A	i. Equipment Rental	Each	Note 4
ii. 8.5x11 Color	Page	N/A	ii. Field Supplies	Each	Note 4
iii. 11x17 B/W	Page	N/A	iii. Consumables	Each	Note 4
iv. 11x17 Color	Page	N/A	iv. Vendor Services	Each	Note 4
B. Outside Reproduction	Each	Note 4	v. Weather Monitoring Services	Each	Note 4
C. Vehicle Expense			vi. Nuclear Gage		N/A
i. Rental Vehicle	Each	Note 5	Travel Expenses		
ii. Company Vehicle	Day	N/A	A. Airfare	Each	Note 5
D. Delivery Services			B. Lodging	Each	Note 5
i. Overnight Services	Each	Note 4	C. Meals and Incidentals	Each	Note 5
ii. Courier Services	Each	Note 4	D. Transportation Expenses	Each	Note 5
E. Communications		N/A	E. Business Expenses	Each	Note 5
i. Broadband Service for field staff (Max \$65 per month)	Each	N/A	F. Fuel for Rental Vehicles	Each	Note 5
			G. Personal Vehicle	Mile	Note 5

IMPORTANT NOTES:

1. List direct cost items with estimated costs. These costs should be competitive in their respective industries and supported with appropriate documentations.
2. Proposed should be consistently billed directly to all clients (commercial entities, Federal Government, State Government, and Local Government Agencies), and not just when the client will pay for them as a direct cost.
3. Items, when incurred for the same purpose in like circumstance, should not be included in any indirect cost pool or in the overhead rate.
4. Items, such as special tooling, will be reimbursed at actual cost with supporting documentation (Invoice).
5. Travel-related costs should be pre-approved by the contract manager, and are reimbursed in accordance to Caltrans Travel and Expense Claims Guidelines for Consultants.
6. If an item needs to be listed here as "tools of the trade," that is part of indirect cost and not applicable as a direct cost, note as Not Applicable (NA).



980 41st Street
Oakland, CA 94608

Tel: (510) 420-8190
FAX: (510) 420-8186
e-mail: info@appmateng.com

2017 FEE SCHEDULE

Service or Test

Hourly Rate

FIELD SAMPLING, TESTING & INSPECTION*

Field Inspector: Concrete Sampling, Testing, Placement or Batch Plant Inspection	\$105	hr
Field Inspector: Mortar or Grout Sampling, Placement or Batch Plant Inspection	\$105	hr
Field Inspector: Shotcrete Placement or Batch Plant Inspection	\$105	hr
Field Inspector: Soil Sampling or Compaction Inspection	\$105	hr
Field Inspector: Asphalt Concrete Testing, Placement or Batch Plant Inspection	\$105	hr
Field Inspector: Asphalt Concrete Coring- 2 men crew	\$196	hr
Project Manager or Professional Engineer	\$175	hr
Administrative Staff	\$65	hr

LABORATORY TESTING

Unit Rate

CONCRETE

Concrete Compression Tests	\$ 65	each
Shrinkage Test	\$ 250	each
Shotcrete Compression Tests	\$ 55	each
Shotcrete Panel Coring at our Laboratory- 4 cores	\$ 55	each
Grout Compression Test- 4"x4"x8" prism specimens	\$ 45	each
Mortar Compression Test- 2"x4" cylinder specimens	\$ 45	each
CMU Masonry Prism	\$ 250	each
Hold Specimens	Free	

SOIL

Compaction Curve or California Impact	\$ 350	each
Sieve Analysis	\$ 240	each
Rock Correction	\$ 150	each
Soil Classification	\$ 390	each
R-Value	\$ 400	each
Atterberg Limits	\$ 275	each
Sand Equivalent	\$ 130	each

AGGREGATE

Sieve Analysis	\$ 240	each
Durability Index	\$ 255	each
Cleanness Value	\$ 215	each
Moisture Content	\$ 55	each
Crushed Particle	\$ 195	each
LA Rattler	\$ 850	each
Percent of Crushed Particles	\$ 250	each
Flat & Elongated Particles	\$ 250	each

**2017 FEE SCHEDULE***(continued)*

Service or Test	Unit Rate
ASPHALT CONCRETE	
Stabilometer Value, field sample	\$ 450 each
Theoretical Maximum Density	\$ 215 each
Bitumen Content	\$ 220 each
Oven Calibration – One Mix	\$ 350 each
Sieve Analysis on Extracted Sampled	\$ 250 each
Air Voids	\$ 65 each
Maximum Density	\$ 490 each
Bulk Specific Gravity	\$ 95 each
Moisture Content	\$ 65 each
Hamburg Wheel Tracker	\$ 1500 each
Superpave Gyrotory Compaction	\$ 250 each
Tensile Strength Ratio	\$ 1200 each
AR Binder Viscosity	\$ 250 each
HMA Startup Tests or Verification	\$ 7500 each
HMA Production Tests	\$ 1500 each
OTHER	
Travel Time	Portal-to-Portal
Pickup	No Charge
Minimum Charge per Call-out	4 hours
Mileage	\$ 0.60 mile
Work over 8 hours per day, or on Saturday, per hour	Time & One Half
Work on Sundays & Holidays, per hour	Double Time
Night Work, per hour	Regular Time + 15%

NOTES

All of the field & laboratory testing in above schedule to be performed by Caltrans certified materials testers and per Caltrans QAP.

AME Caltrans certified laboratory ID #79

**Hourly rate yearly escalation: 3%*

MATERIALS LABORATORY TESTS**SOILS****Moisture Density Curves**

Standard Proctor, 4" (ASTM/AASHTO)	\$ 215.00
Modified Proctor, 4" Mold (ASTM/AASHTO)	\$ 215.00
Modified Proctor, 6" mold (ASTM D1557)	\$ 230.00
Caltrans Maximum Wet Density (CT 216)	\$ 195.00
Check Point	\$ 125.00

Particle Size Analysis

Sieve Analysis w/ Wash (ASTM D422)	\$ 155.00
Minus #200 Wash, Soil (ASTM D1140)	\$ 75.00
Hydrometer Analysis (ASTM D422)	\$ 205.00
Double Hydrometer (ASTM D4221)	\$ 285.00
Specific Gravity of Soil (ASTM D854)	\$ 145.00
Visual Classification (ASTM D2488)	\$ 40.00
Sand Equivalent (ASTM D2419)	\$ 115.00
% Organics in Soil (ASTM D2974)	\$ 125.00

Atterberg Limits

Plasticity Index (ASTM D4318)	\$ 200.00
Shrinkage Limits of Soils (ASTM D427)	\$ 185.00

Moisture Density Test

Tube Density	\$ 45.00
Moisture Content of Soils (ASTM D2216)	\$ 40.00

Swell Tests

Expansion Index of Soils (UBC No. 29)	\$ 215.00
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Shear Tests

Direct Shear, Undisturbed (ASTM D3080)	\$ 200.00
Direct Shear, Remolded (ASTM D3080)	\$ 235.00
Triaxial Compression Testing	QUOTE

Consolidation Tests

Consolidation (ASTM D2435)	\$ 380.00
Consolidation, Extra Points (ASTM D2435)	\$ 50.00
Collapse Potential of Soils (ASTM D2435)	\$ 185.00
Remolded Consolidation (ASTM D2435)	\$ 325.00
One-Dimen Swell of Soil (ASTM D4546)	\$ 120.00

Unconfined Compression

Unconfined Compression (ASTM D2166)	\$ 120.00
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"R" Value Determination

R-Value of Soils (CT 301)	\$ 360.00
R-Value of Treated Materials (CT 301)	\$ 400.00

California Bearing Ratio (CBR)

CBR at 100% (ASTM D1883 or AASHTO T-180)	\$ 465.00
CBR at 95% (ASTM D1883 or AASHTO T-180)	\$ 905.00

Permeability Tests

Rigid Wall Permeability (ASTM D2434)	\$ 260.00
Flexible Wall Permeability (ASTM D5084)	\$ 400.00
Remolded Flexwall Perm (ASTM D5084)	\$ 510.00

Soil Corrosivity Tests

Minimum Resistivity of Soils (CT 643)	\$ 130.00
pH	\$ 60.00
Soluble Sulfate, Chloride and Sulfide	\$ 120.00
Oxidation Reduction of Soil	\$ 50.00

Soil Cement Tests

Freeze Thaw Abrasion (ASTM D560)	\$ 570.00
Wetting-Drying Abrasion (ASTM D559)	\$ 545.00
Preparation of Freeze-Thaw or Wetting-Drying Tests	\$ 685.00
Soil Cement Compression (ASTM D1633)	\$ 220.00
Cement Content Soil Cement (ASTM C1084)	\$ 220.00

Other

Sample Preparation	\$ 60.00
Crumb Test Disperstion (ASTM D6572)	\$ 70.00
Pinhole Dispersion Test (ASTM)	\$ 230.00
Sand Density Calibration (ASTM D1566)	\$ 70.00

GALVANIZED COATINGS

Wt. of Galvanized Coating (ASTM A 90)	\$ 90.00
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WOOD PRODUCTS**Lumber**

Specific Gravity and Shrinkage (ASTM D143)	\$ 105.00
Moisture Content, Oven Dry (ASTM D2016, Method A)	\$ 45.00
Moisture Content, Meter (ASTM D2016, Method B)	\$ 30.00

Plywood

Plywood Glue Shear Test (ASTM D805)	QUOTE
Moisture Absorption of Plywood (ASTM D805)	\$ 70.00

Glue-Laminated Timbers

Finger Joint Tension Test (AITC Test 106)	\$ 50.00
Bending Test for End Joints (AITC Test 105)	\$ 50.00
Adhesive Spread Measurment (AITC Test 102)	\$ 50.00
Moisture Content and Specific Gravity (AITC Test 111)	\$ 70.00

MATERIALS LABORATORY TESTS**AGGREGATES**

Sieve Analysis Coarse or Fine (ASTM C136)	\$ 75.00
Sieve Analysis w/ Fineness Modulus	\$ 80.00
Minus 200 Wash, Aggregates (ASTM C117)	\$ 75.00
Specific Gravity/Absorption (ASTM C127)	\$ 145.00
Specific Gravity/Absorption (ASTM C128)	\$ 145.00
Organic Impurities (ASTM C40)	\$ 75.00
% Lumps/Friable Particles (ASTM C142)	\$ 75.00
% Flat and Elongated (ASTM D4791)	\$ 115.00
Moisture Content (ASTM D2216)	\$ 40.00
Aggregate Wt., pcf Compacted (ASTM C29)	\$ 70.00
Aggregate Wt., pcf Loose (ASTM C29)	\$ 60.00
Abrasion by LA Rattler, Small Size (ASTM C131)	\$ 215.00
Abrasion by LA Rattler, Large Size (ASTM C131)	\$ 260.00
Sodium Sulfate Soundness, Per Sieve (ASTM C88)	\$ 100.00
Sodium Sulfate Soundness, Min. Charge (ASTM C88)	\$ 320.00
Relative Mortar Strength of Sand (ASTM C87)	\$ 390.00
Sand Equivalent (ASTM D2419 OR CT 217-I)	\$ 115.00
Durability Index (CT 229)	\$ 230.00
Potential Reactivity of Aggregates	QUOTE
Cleanliness Value of Aggregate (CT 227)	\$ 165.00
Hydrometer (ASTM D422 OR CT 205-E)	\$ 205.00
% Crushed particles (CT 205)	\$ 150.00
Lightweight Pieces (ASTM 123)	\$ 200.00

HOT MIX ASPHALT

Mix Design, HVEEM	\$ 2,830.00
Mix Design, Marshall	\$ 3,350.00
AC Content by Centrifuge (ASTM D2172)	\$ 260.00
AC Ash Correction (ASTM D2172)	\$ 260.00
AC Content-Ignition ASTM D6307 or CT382	\$ 205.00
Moisture Content of Asphalt (CT 370)	\$ 60.00
Gradation/Extraction Aggregate (ASTM D5444)	\$ 125.00
Film Stripping	\$ 80.00
Compaction/Preparation of HMA Briquette (CT 304)	\$ 200.00
Stabilometer Value (CT 366)	\$ 160.00
AC Core Specific Gravity (ASTM D2726)	\$ 50.00
AC Max Density Rice Method (ASTM D2041)	\$ 230.00
Moisture Vapor Susceptibility (CT 307)	\$ 185.00
AC Surface Abrasion (CT 360)	\$ 455.00
Index Retained Strength (ASTM D1074-D1075)	\$ 410.00
AC Hveem Maximum Density (CT 375)	\$ 410.00
Marshall Stability and Flow (ASTM D6927)	\$ 230.00
Calculated AC Maximum Density (CT 367)	\$ 90.00
Marshall Maximum Density, 50 Blows (ASTM D6926)	\$ 265.00
Examination of AC Cores	\$ 30.00
Thickness Determination of AC Cores	\$ 20.00
AC Tensile-Strength Premixed ASTM D4867	\$ 590.00
AC Tensile-Strength Lab Mixed ASTM D4867	\$ 695.00

REINFORCING STEEL

Tensile & Bend of Rebar, #3 - #8	\$ 135.00
Tensile & Bend of Rebar, #9 - #11	\$ 135.00
Bend Test of Rebar	\$ 50.00
Slip and Tensile Rebar Couplers (CT 670)	\$ 195.00
Tension Test of Welded Wire Fabric	QUOTE
Bend Test of Welded Wire Fabric	QUOTE
Weld Shear Test, Welded Wire Fabric	QUOTE
PT Cable Tensile and Elongation (ASTM A416 or A421)	\$ 260.00
PT Cable Preparation	QUOTE

CALIBRATION

Torque Wrench	\$ 160.00
Hydraulic Jack	\$ 150.00

CONCRETE

Cement Content Concrete (ASTM C1084)	\$ 345.00
Chemical Test (ASTM C150)	QUOTE
Set Times Cement-Vicat Needle (ASTM C191)	\$ 285.00
Specific Gravity of Hydraulic Cement (ASTM C191)	\$ 140.00
Lineal Shrinkage Set of 3 (ASTM C157)	\$ 360.00
Compression Test of Concrete - 1 (ASTM C39)	\$ 30.00
Compression Test of Concrete - 4 (ASTM C39)	\$ 125.00
Compression Test of Core (ASTM C42)	\$ 55.00
Preparation of Specimens, Sawing	\$ 60.00
Compressive Strength of Shotcrete Panel	\$ 290.00
Proportion of Cement in Concrete (ASTM C85)	\$ 335.00
Flexural Test Per Beam (ASTM C78)	\$ 80.00
Splitting Tensile Strength of Concrete (ASTM C496)	\$ 80.00
Unit Weight Lt Wt Concrete (ASTM C567)	\$ 50.00
"AZ" Test-Reinforced Concrete Pipe "Life Factor"	\$ 70.00
9 Pt Core Measurements, Each (ASTM C174)	\$ 30.00
Compressive Strength of Gunite	\$ 55.00
Concrete Trial Batches	QUOTE
Unit Weight & Abs Concrete (ASTM D642)	\$ 115.00
Accelerated Curing of Concrete (ASTM C684)	\$ 230.00
Cylinder Molds (each)	\$ 6.00
Storage of Concrete Cylinders for more than 45 Days	\$ 55.00
RH Probe	\$ 55.00
Calcium Chloride Kit	\$ 35.00
Mixing Water (pH, elec. conductance, chloride, sulfate)	\$ 90.00
Contact Soil (pH, elec. conductance, chloride, sulfate)	\$ 110.00

MASONRY

Concrete Masonry Units Testing (ASTM C90)	
Compression Test Pavers, Single	\$ 70.00
Compression Test Composit CMU Prism	\$ 150.00
Specific Gravity and Unit Weight	\$ 105.00
Moisture Content	\$ 50.00
Compression Test, Masonry Units (ASTM C140)	\$ 95.00
Absorption / Moisture Content (ASTM C140)	\$ 95.00
Linear Shrinkage (ASTM C426)	\$ 375.00
Masonry Core Shear Test (Title 24)	\$ 100.00
Masonry Core Compression/Shear Test (Title 24)	\$ 170.00
Compression Test Brick, Each (ASTM C67)	\$ 70.00
Absorption/ Unit Wt. of Brick (ASTM C67)	\$ 70.00
Compression Test Grout (Set of 3 or 4)	\$ 110.00
Compression Test Mortar (Set of 3 or 4)	\$ 105.00

WELDING AND STRUCTURAL STEEL

Welder Qualification Testing	
Welder / Procedure Welder Qualification Testing	QUOTE
Face Bend of Steel	\$ 55.00
Root Bend of Weld Coupon	\$ 55.00
Side Bend of Weld Coupon	\$ 55.00
Tensile Test of Steel Coupon	\$ 75.00
Bend Test of Steel Coupon	\$ 65.00
Machining Charges (Per Coupon)	QUOTE
Brinell Hardness of Steel (ASTM E10)	\$ 90.00
Rockwell Hardness of Steel (ASTM E18)	\$ 90.00
Bolt Ultimate Load	\$ 130.00
Bolt Hardness (set of 3)	\$ 90.00
Nut Hardness (set of 3)	\$ 90.00
Washer Hardness (set of 3)	\$ 90.00
Proof Loading, bolt or nut	\$ 130.00

FIREPROOFING

Cohesion/Adhesion Fireproofing Materials	\$ 115.00
Dry Density Fireproofing (ASTM E605)	\$ 85.00

