

1 necessary funds for such payment by the City in each fiscal year during the term of
2 this Agreement. For the purposes of this Section, a fiscal year commences on
3 October 1 of the year and continues through September 30 of the following year. In
4 the event that the City Council of the City fails to appropriate the necessary funds
5 for any fiscal year, then, and in that event, the Agreement will terminate at no
6 additional cost or obligation to the City.

7 C. Consultant may select the time and place of performance for
8 these services; provided, however, that access to City documents, records and the
9 like, if needed by Consultant, shall be available only during City's normal business
10 hours and provided that milestones for performance, if any, are met.

11 D. Consultant has requested to receive regular payments. City
12 shall pay Consultant in due course of payments following receipt from Consultant
13 and approval by City of invoices showing the services or task performed, the time
14 expended (if billing is hourly), and the name of the Project. Consultant shall certify
15 on the invoices that Consultant has performed the services in full conformance with
16 this Agreement and is entitled to receive payment. Each invoice shall be
17 accompanied by a progress report indicating the progress to date of services
18 performed and covered by the invoice, including a brief statement of any Project
19 problems and potential causes of delay in performance, and listing those services
20 that are projected for performance by Consultant during the next invoice cycle.
21 Where billing is done and payment is made on an hourly basis, the parties
22 acknowledge that this arrangement is either customary practice for Consultant's
23 profession, industry or business, or is necessary to satisfy audit and legal
24 requirements which may arise due to the fact that City is a municipality.

25 E. Consultant represents that Consultant has obtained all
26 necessary information on conditions and circumstances that may affect its
27 performance and has conducted site visits, if necessary.

28 ///

1 F. CAUTION: Consultant shall not begin work until this
2 Agreement has been signed by both parties and until Consultant's evidence of
3 insurance has been delivered to and approved by City.

4 2. TERM. The term of this Agreement shall commence at midnight on
5 January 1, 2017, and shall terminate at 11:59 p.m. on December 31, 2019, unless sooner
6 terminated as provided in this Agreement, or unless the services or the Project is
7 completed sooner. The parties have the option to extend the term for two (2) additional
8 one-year periods at the discretion of the City Manager.

9 3. COORDINATION AND ORGANIZATION.

10 A. Consultant shall coordinate its performance with City's
11 representative, if any, named in Exhibit "C", attached to this Agreement and
12 incorporated by this reference. Consultant shall advise and inform City's
13 representative of the work in progress on the Project in sufficient detail so as to
14 assist City's representative in making presentations and in holding meetings on the
15 Project. City shall furnish to Consultant information or materials, if any, described
16 in Exhibit "D", attached to this Agreement and incorporated by this reference, and
17 shall perform any other tasks described in the Exhibit.

18 B. The parties acknowledge that a substantial inducement to City
19 for entering this Agreement was and is the reputation and skill of Consultant's key
20 employee, Paul Soltis. City shall have the right to approve any person proposed by
21 Consultant to replace that key employee.

22 4. INDEPENDENT CONTRACTOR. In performing its services,
23 Consultant is and shall act as an independent contractor and not an employee,
24 representative or agent of City. Consultant shall have control of Consultant's work and the
25 manner in which it is performed. Consultant shall be free to contract for similar services to
26 be performed for others during this Agreement; provided, however, that Consultant acts in
27 accordance with Section 9 and Section 11 of this Agreement. Consultant acknowledges
28 and agrees that (a) City will not withhold taxes of any kind from Consultant's compensation;

1 (b) City will not secure workers' compensation or pay unemployment insurance to, for or
2 on Consultant's behalf; and (c) City will not provide and Consultant is not entitled to any of
3 the usual and customary rights, benefits or privileges of City employees. Consultant
4 expressly warrants that neither Consultant nor any of Consultant's employees or agents
5 shall represent themselves to be employees or agents of City.

6 5. INSURANCE.

7 A. As a condition precedent to the effectiveness of this
8 Agreement, Consultant shall procure and maintain, at Consultant's expense for the
9 duration of this Agreement, from insurance companies that are admitted to write
10 insurance in California and have ratings of or equivalent to A:V by A.M. Best
11 Company or from authorized non-admitted insurance companies subject to Section
12 1763 of the California Insurance Code and that have ratings of or equivalent to A:VIII
13 by A.M. Best Company, the following insurance:

14 (a) Commercial general liability insurance (equivalent in scope to
15 ISO form CG 00 01 11 85 or CG 00 01 10 93) in an amount not less than
16 \$1,000,000 per each occurrence and \$2,000,000 general aggregate. This
17 coverage shall include but not be limited to broad form contractual liability,
18 cross liability, independent contractors liability, and products and completed
19 operations liability. City, its boards and commissions, and their officials,
20 employees and agents shall be named as additional insureds by
21 endorsement (on City's endorsement form or on an endorsement equivalent
22 in scope to ISO form CG 20 10 11 85 or CG 20 26 11 85 or both CG 20 10
23 07 04 and CG 20 37 07 04 or both CG 20 33 07 04 and CG 20 37 07 04),
24 and this insurance shall contain no special limitations on the scope of
25 protection given to City, its boards and commissions, and their officials,
26 employees and agents. This policy shall be endorsed to state that the
27 insurer waives its right of subrogation against City, its boards and
28 commissions, and their officials, employees and agents.

1 (b) Workers' Compensation insurance as required by the California
2 Labor Code and employer's liability insurance in an amount not less than
3 \$1,000,000. This policy shall be endorsed to state that the insurer waives
4 its right of subrogation against City, its boards and commissions, and their
5 officials, employees and agents.

6 (c) Professional liability or errors and omissions insurance in an
7 amount not less than \$1,000,000 per claim.

8 (d) Commercial automobile liability insurance (equivalent in scope
9 to ISO form CA 00 01 06 92), covering Auto Symbol 1 (Any Auto) in an
10 amount not less than \$500,000 combined single limit per accident.

11 B. Any self-insurance program, self-insured retention, or
12 deductible must be separately approved in writing by City's Risk Manager or
13 designee and shall protect City, its officials, employees and agents in the same
14 manner and to the same extent as they would have been protected had the policy
15 or policies not contained retention or deductible provisions.

16 C. Each insurance policy shall be endorsed to state that coverage
17 shall not be reduced, non-renewed or canceled except after thirty (30) days prior
18 written notice to City, shall be primary and not contributing to any other insurance
19 or self-insurance maintained by City, and shall be endorsed to state that coverage
20 maintained by City shall be excess to and shall not contribute to insurance or self-
21 insurance maintained by Consultant. Consultant shall notify City in writing within
22 five (5) days after any insurance has been voided by the insurer or cancelled by the
23 insured.

24 D. If this coverage is written on a "claims made" basis, it must
25 provide for an extended reporting period of not less than one hundred eighty (180)
26 days, commencing on the date this Agreement expires or is terminated, unless
27 Consultant guarantees that Consultant will provide to City evidence of uninterrupted,
28 continuing coverage for a period of not less than three (3) years, commencing on

1 the date this Agreement expires or is terminated.

2 E. Consultant shall require that all subconsultants or contractors
3 that Consultant uses in the performance of these services maintain insurance in
4 compliance with this Section unless otherwise agreed in writing by City's Risk
5 Manager or designee.

6 F. Prior to the start of performance, Consultant shall deliver to City
7 certificates of insurance and the endorsements for approval as to sufficiency and
8 form. In addition, Consultant shall, within thirty (30) days prior to expiration of the
9 insurance, furnish to City certificates of insurance and endorsements evidencing
10 renewal of the insurance. City reserves the right to require complete certified copies
11 of all policies of Consultant and Consultant's subconsultants and contractors, at any
12 time. Consultant shall make available to City's Risk Manager or designee all books,
13 records and other information relating to this insurance, during normal business
14 hours.

15 G. Any modification or waiver of these insurance requirements
16 shall only be made with the approval of City's Risk Manager or designee. Not more
17 frequently than once a year, City's Risk Manager or designee may require that
18 Consultant, Consultant's subconsultants and contractors change the amount, scope
19 or types of coverages required in this Section if, in his or her sole opinion, the
20 amount, scope or types of coverages are not adequate.

21 H. The procuring or existence of insurance shall not be construed
22 or deemed as a limitation on liability relating to Consultant's performance or as full
23 performance of or compliance with the indemnification provisions of this Agreement.

24 6. ASSIGNMENT AND SUBCONTRACTING. This Agreement
25 contemplates the personal services of Consultant and Consultant's employees, and the
26 parties acknowledge that a substantial inducement to City for entering this Agreement was
27 and is the professional reputation and competence of Consultant and Consultant's
28 employees. Consultant shall not assign its rights or delegate its duties under this

1 Agreement, or any interest in this Agreement, or any portion of it, without the prior approval
2 of City, except that Consultant may with the prior approval of the City Manager of City,
3 assign any moneys due or to become due Consultant under this Agreement. Any
4 attempted assignment or delegation shall be void, and any assignee or delegate shall
5 acquire no right or interest by reason of an attempted assignment or delegation.
6 Furthermore, Consultant shall not subcontract any portion of its performance without the
7 prior approval of the City Manager or designee, or substitute an approved subconsultant
8 or contractor without approval prior to the substitution. Nothing stated in this Section shall
9 prevent Consultant from employing as many employees as Consultant deems necessary
10 for performance of this Agreement.

11 7. CONFLICT OF INTEREST. Consultant, by executing this Agreement,
12 certifies that, at the time Consultant executes this Agreement and for its duration,
13 Consultant does not and will not perform services for any other client which would create
14 a conflict, whether monetary or otherwise, as between the interests of City and the interests
15 of that other client. And, Consultant shall obtain similar certifications from Consultant's
16 employees, subconsultants and contractors.

17 8. MATERIALS. Consultant shall furnish all labor and supervision,
18 supplies, materials, tools, machinery, equipment, appliances, transportation and services
19 necessary to or used in the performance of Consultant's obligations under this Agreement,
20 except as stated in Exhibit "D".

21 9. OWNERSHIP OF DATA. All materials, information and data
22 prepared, developed or assembled by Consultant or furnished to Consultant in connection
23 with this Agreement, including but not limited to documents, estimates, calculations,
24 studies, maps, graphs, charts, computer disks, computer source documentation, samples,
25 models, reports, summaries, drawings, designs, notes, plans, information, material and
26 memorandum ("Data") shall be the exclusive property of City. Data shall be given to City,
27 and City shall have the unrestricted right to use and disclose the Data in any manner and
28 for any purpose without payment of further compensation to Consultant. Copies of Data

1 may be retained by Consultant but Consultant warrants that Data shall not be made
2 available to any person or entity for use without the prior approval of City. This warranty
3 shall survive termination of this Agreement for five (5) years.

4 10. TERMINATION. Either party shall have the right to terminate this
5 Agreement for any reason or no reason at any time by giving fifteen (15) calendar days
6 prior written notice to the other party. In the event of termination under this Section, City
7 shall pay Consultant for services satisfactorily performed and costs incurred up to the
8 effective date of termination for which Consultant has not been previously paid. The
9 procedures for payment in Section 1.B. with regard to invoices shall apply. On the effective
10 date of termination, Consultant shall deliver to City all Data developed or accumulated in
11 the performance of this Agreement, whether in draft or final form, or in process. And,
12 Consultant acknowledges and agrees that City's obligation to make final payment is
13 conditioned on Consultant's delivery of the Data to City.

14 11. CONFIDENTIALITY. Consultant shall keep all Data confidential and
15 shall not disclose the Data or use the Data directly or indirectly, other than in the course of
16 performing its services, during the term of this Agreement and for five (5) years following
17 expiration or termination of this Agreement. In addition, Consultant shall keep confidential
18 all information, whether written, oral or visual, obtained by any means whatsoever in the
19 course of performing its services for the same period of time. Consultant shall not disclose
20 any or all of the Data to any third party, or use it for Consultant's own benefit or the benefit
21 of others except for the purpose of this Agreement.

22 12. BREACH OF CONFIDENTIALITY. Consultant shall not be liable for
23 a breach of confidentiality with respect to Data that: (a) Consultant demonstrates
24 Consultant knew prior to the time City disclosed it; or (b) is or becomes publicly available
25 without breach of this Agreement by Consultant; or (c) a third party who has a right to
26 disclose does so to Consultant without restrictions on further disclosure; or (d) must be
27 disclosed pursuant to subpoena or court order.

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1 13. ADDITIONAL COSTS AND REDESIGN.

2 A. Any costs incurred by City due to Consultant's failure to meet
3 the standards required by the scope of work or Consultant's failure to perform fully
4 the tasks described in the scope of work which, in either case, causes City to request
5 that Consultant perform again all or part of the Scope of Work shall be at the sole
6 cost of Consultant and City shall not pay any additional compensation to Consultant
7 for its re-performance.

8 B. If the Project involves construction and the scope of work
9 requires Consultant to prepare plans and specifications with an estimate of the cost
10 of construction, then Consultant may be required to modify the plans and
11 specifications, any construction documents relating to the plans and specifications,
12 and Consultant's estimate, at no cost to City, when the lowest bid for construction
13 received by City exceeds by more than ten percent (10%) Consultant's estimate.
14 This modification shall be submitted in a timely fashion to allow City to receive new
15 bids within four (4) months after the date on which the original plans and
16 specifications were submitted by Consultant.

17 14. AMENDMENT. This Agreement, including all Exhibits, shall not be
18 amended, nor any provision or breach waived, except in writing signed by the parties which
19 expressly refers to this Agreement.

20 15. LAW. This Agreement shall be construed in accordance with the laws
21 of the State of California, and the venue for any legal actions brought by any party with
22 respect to this Agreement shall be the County of Los Angeles, State of California for state
23 actions and the Central District of California for any federal actions. Consultant shall cause
24 all work performed in connection with construction of the Project to be performed in
25 compliance with (1) all applicable laws, ordinances, rules and regulations of federal, state,
26 county or municipal governments or agencies (including, without limitation, all applicable
27 federal and state labor standards, including the prevailing wage provisions of sections 1770
28 *et seq.* of the California Labor Code); and (2) all directions, rules and regulations of any

1 fire marshal, health officer, building inspector, or other officer of every governmental
2 agency now having or hereafter acquiring jurisdiction.

3 16. PREVAILING WAGES.

4 A. Consultant agrees that all public work (as defined in California
5 Labor Code section 1720) performed pursuant to this Agreement (the "Public
6 Work"), if any, shall comply with the requirements of California Labor Code sections
7 1770 *et seq.* City makes no representation or statement that the Project, or any
8 portion thereof, is or is not a "public work" as defined in California Labor Code
9 section 1720.

10 B. In all bid specifications, contracts and subcontracts for any
11 such Public Work, Consultant shall obtain the general prevailing rate of per diem
12 wages and the general prevailing rate for holiday and overtime work in this locality
13 for each craft, classification or type of worker needed to perform the Public Work,
14 and shall include such rates in the bid specifications, contract or subcontract. Such
15 bid specifications, contract or subcontract must contain the following provision: "It
16 shall be mandatory for the contractor to pay not less than the said prevailing rate of
17 wages to all workers employed by the contractor in the execution of this contract.
18 The contractor expressly agrees to comply with the penalty provisions of California
19 Labor Code section 1775 and the payroll record keeping requirements of California
20 Labor Code section 1771."

21 17. ENTIRE AGREEMENT. This Agreement, including all Exhibits,
22 constitutes the entire understanding between the parties and supersedes all other
23 agreements, oral or written, with respect to the subject matter in this Agreement.

24 18. INDEMNITY.

25 A. Consultant shall indemnify, protect and hold harmless City, its
26 Boards, Commissions, and their officials, employees and agents ("Indemnified
27 Parties"), from and against any and all liability, claims, demands, damage, loss,
28 obligations, causes of action, proceedings, awards, fines, judgments, penalties,

1 costs and expenses, arising or alleged to have arisen, in whole or in part, out of or
2 in connection with (1) Consultant's breach or failure to comply with any of its
3 obligations contained in this Agreement, including any obligations arising from the
4 Project's compliance with or failure to comply with applicable laws, including all
5 applicable federal and state labor requirements including, without limitation, the
6 requirements of California Labor Code section 1770 *et seq.* or (2) negligent or willful
7 acts, errors, omissions or misrepresentations committed by Consultant, its officers,
8 employees, agents, subcontractors, or anyone under Consultant's control, in the
9 performance of work or services under this Agreement (collectively "Claims" or
10 individually "Claim").

11 B. In addition to Consultant's duty to indemnify, Consultant shall
12 have a separate and wholly independent duty to defend Indemnified Parties at
13 Consultant's expense by legal counsel approved by City, from and against all
14 Claims, and shall continue this defense until the Claims are resolved, whether by
15 settlement, judgment or otherwise. No finding or judgment of negligence, fault,
16 breach, or the like on the part of Consultant shall be required for the duty to defend
17 to arise. City shall notify Consultant of any Claim, shall tender the defense of the
18 Claim to Consultant, and shall assist Consultant, as may be reasonably requested,
19 in the defense.

20 C. If a court of competent jurisdiction determines that a Claim was
21 caused by the sole negligence or willful misconduct of Indemnified Parties,
22 Consultant's costs of defense and indemnity shall be (1) reimbursed in full if the
23 court determines sole negligence by the Indemnified Parties, or (2) reduced by the
24 percentage of willful misconduct attributed by the court to the Indemnified Parties.

25 D. The provisions of this Section shall survive the expiration or
26 termination of this Agreement.

27 19. AMBIGUITY. In the event of any conflict or ambiguity between this
28 Agreement and any Exhibit, the provisions of this Agreement shall govern.

1 20. NONDISCRIMINATION.

2 A. In connection with performance of this Agreement and subject
3 to applicable rules and regulations, Consultant shall not discriminate against any
4 employee or applicant for employment because of race, religion, national origin,
5 color, age, sex, sexual orientation, gender identity, AIDS, HIV status, handicap or
6 disability. Consultant shall ensure that applicants are employed, and that
7 employees are treated during their employment, without regard to these bases.
8 These actions shall include, but not be limited to, the following: employment,
9 upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or
10 termination; rates of pay or other forms of compensation; and selection for training,
11 including apprenticeship.

12 B. It is the policy of City to encourage the participation of
13 Disadvantaged, Minority and Women-Owned Business Enterprises in City's
14 procurement process, and Consultant agrees to use its best efforts to carry out this
15 policy in its use of subconsultants and contractors to the fullest extent consistent
16 with the efficient performance of this Agreement. Consultant may rely on written
17 representations by subconsultants and contractors regarding their status.
18 Consultant shall report to City in May and in December or, in the case of short-term
19 agreements, prior to invoicing for final payment, the names of all subconsultants
20 and contractors hired by Consultant for this Project and information on whether or
21 not they are a Disadvantaged, Minority or Women-Owned Business Enterprise, as
22 defined in Section 8 of the Small Business Act (15 U.S.C. Sec. 637).

23 21. EQUAL BENEFITS ORDINANCE. Unless otherwise exempted in
24 accordance with the provisions of the Ordinance, this Agreement is subject to the
25 applicable provisions of the Equal Benefits Ordinance (EBO), section 2.73 et seq. of the
26 Long Beach Municipal Code, as amended from time to time.

27 A. During the performance of this Agreement, the Consultant
28 certifies and represents that the Consultant will comply with the EBO. The

1 Consultant agrees to post the following statement in conspicuous places at its place
2 of business available to employees and applicants for employment:

3 "During the performance of a contract with the City of Long Beach, the
4 Consultant will provide equal benefits to employees with spouses and its
5 employees with domestic partners. Additional information about the City of
6 Long Beach's Equal Benefits Ordinance may be obtained from the City of
7 Long Beach Business Services Division at 562-570-6200."

8 B. The failure of the Consultant to comply with the EBO will be
9 deemed to be a material breach of the Agreement by the City.

10 C. If the Consultant fails to comply with the EBO, the City may
11 cancel, terminate or suspend the Agreement, in whole or in part, and monies due or
12 to become due under the Agreement may be retained by the City. The City may
13 also pursue any and all other remedies at law or in equity for any breach.

14 D. Failure to comply with the EBO may be used as evidence
15 against the Consultant in actions taken pursuant to the provisions of Long Beach
16 Municipal Code 2.93 et seq., Contractor Responsibility.

17 E. If the City determines that the Consultant has set up or used its
18 contracting entity for the purpose of evading the intent of the EBO, the City may
19 terminate the Agreement on behalf of the City. Violation of this provision may be
20 used as evidence against the Consultant in actions taken pursuant to the provisions
21 of Long Beach Municipal Code Section 2.93 et seq., Contractor Responsibility.

22 22. NOTICES. Any notice or approval required by this Agreement shall
23 be in writing and personally delivered or deposited in the U.S. Postal Service, first class,
24 postage prepaid, addressed to Consultant at the address first stated above, and to City at
25 333 West Ocean Boulevard, Long Beach, California 90802, Attn: City Manager, with a copy
26 to the City Engineer at the same address. Notice of change of address shall be given in
27 the same manner as stated for other notices. Notice shall be deemed given on the date
28 deposited in the mail or on the date personal delivery is made, whichever occurs first.

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23. COPYRIGHTS AND PATENT RIGHTS.

A. Consultant shall place the following copyright protection on all Data: © City of Long Beach, California _____, inserting the appropriate year.

B. City reserves the exclusive right to seek and obtain a patent or copyright registration on any Data or other result arising from Consultant's performance of this Agreement. By executing this Agreement, Consultant assigns any ownership interest Consultant may have in the Data to City.

C. Consultant warrants that the Data does not violate or infringe any patent, copyright, trade secret or other proprietary right of any other party. Consultant agrees to and shall protect, defend, indemnify and hold City, its officials and employees harmless from any and all claims, demands, damages, loss, liability, causes of action, costs or expenses (including reasonable attorney's fees) whether or not reduced to judgment, arising from any breach or alleged breach of this warranty.

24. COVENANT AGAINST CONTINGENT FEES. Consultant warrants

that Consultant has not employed or retained any entity or person to solicit or obtain this Agreement and that Consultant has not paid or agreed to pay any entity or person any fee, commission or other monies based on or from the award of this Agreement. If Consultant breaches this warranty, City shall have the right to terminate this Agreement immediately notwithstanding the provisions of Section 10 or, in its discretion, to deduct from payments due under this Agreement or otherwise recover the full amount of the fee, commission or other monies.

25. WAIVER. The acceptance of any services or the payment of any

money by City shall not operate as a waiver of any provision of this Agreement or of any right to damages or indemnity stated in this Agreement. The waiver of any breach of this Agreement shall not constitute a waiver of any other or subsequent breach of this Agreement.

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1 26. CONTINUATION. Termination or expiration of this Agreement shall
2 not affect rights or liabilities of the parties which accrued pursuant to Sections 7, 10, 11,
3 17, 19, 22 and 28 prior to termination or expiration of this Agreement.

4 27. TAX REPORTING. As required by federal and state law, City is
5 obligated to and will report the payment of compensation to Consultant on Form 1099-
6 Misc. Consultant shall be solely responsible for payment of all federal and state taxes
7 resulting from payments under this Agreement. Consultant shall submit Consultant's
8 Employer Identification Number (EIN), or Consultant's Social Security Number if
9 Consultant does not have an EIN, in writing to City's Accounts Payable, Department of
10 Financial Management. Consultant acknowledges and agrees that City has no obligation
11 to pay Consultant until Consultant provides one of these numbers.

12 28. ADVERTISING. Consultant shall not use the name of City, its officials
13 or employees in any advertising or solicitation for business or as a reference, without the
14 prior approval of the City Manager or designee.

15 29. AUDIT. City shall have the right at all reasonable times during the
16 term of this Agreement and for a period of five (5) years after termination or expiration of
17 this Agreement to examine, audit, inspect, review, extract information from and copy all
18 books, records, accounts and other documents of Consultant relating to this Agreement.

19 30. THIRD PARTY BENEFICIARY. This Agreement is not intended or
20 designed to or entered for the purpose of creating any benefit or right for any person or
21 entity of any kind that is not a party to this Agreement.

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1 IN WITNESS WHEREOF, the parties have caused this document to be duly
2 executed with all formalities required by law as of the date first stated above.

3 TWINING, INC., a California corporation

4 January 11, 2017

By [Signature]
Name SEVEN SCHIFFER
Title vice President

6 Jan 11, 2017 2017

By [Signature]
Name Paul Sotis
Title vice President

9 "Consultant"

10 CITY OF LONG BEACH, a municipal
11 corporation

12 Jan. 23 2017

By [Signature]
City Manager
Assistant City Manager
"City"

EXECUTED PURSUANT
TO SECTION 301 OF
THE CITY CHARTER.

14 This Agreement is approved as to form on 1/18, 2017.

16 CHARLES PARKIN, City Attorney

By [Signature]
Deputy

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Lana Beach, CA 90802-4664

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EXHIBIT “A”

Scope of Work

SCOPE OF WORK PW RFQ16-138

BASIC SERVICES

The Construction Materials Testing and Inspection firm shall provide qualified personnel and shall coordinate its efforts with the on-site Construction Inspector, including scheduling of work, and coordination of the contractors and any other persons on the site of various Capital Improvement projects and other City projects. The Construction Materials Testing and Inspection firm shall serve as a point of contact on construction sites for City staff and project management teams. Responsibilities shall include, but are not limited to:

- Attending preconstruction meetings with the Contractor, Design Team, other consultants, and the City. Review project organization, lines of authority and communication, and project procedures.
- Concur with the Contractor's schedule for, fabrication, inspection, delivery and installation of equipment, materials, and fixtures.
- Testing and reporting on Contractor materials and methods of construction to ascertain compliance with contract requirements.
- Observing work in progress for conformance with plans, specifications, and schedules. Reporting defects and deficiencies to the City.
- Coordinating all daily site inspections performed with City staff and inspectors from other agencies to ensure that materials and their installation are in conformance with plans and specifications.
- Assisting in the selection of independent testing agencies and laboratories. Scheduling their work, reviewing their reports, and making recommendations regarding their findings.
- Maintaining a complete and current record including but not limited to project contracts, drawings and specifications, change orders, directives, project correspondence, revisions, progress photos, testing and inspection reports.
- Maintaining daily job site reports recording daily and weekly activities workmen, equipment in use, general activities completed and special occurrences.
- Monitoring delivery and review of shop drawings and submittals, and assisting in expediting approval of drawings and submittals. Maintaining submittal/approval logs and sets of all such documents, including but not limited to documentation of the submittal number, nature of the submittal, date the submittal was issued, date submittal was forwarded for review, individual reviewing the submittal, date the submittal was received back, and the date the submittal was returned to the Contractor.
- Attending designated progress meetings among Contractor, Design Team, Inspectors, Testing and Laboratory workers, and City representatives. Discussing job progress, tracking and recording key actions and decisions, and preparing and

SCOPE OF WORK PW RFQ16-138

reviewing meeting minutes as required.

- Preparing monthly reports addressing project progress and any quality, cost, and schedule issues.
- Collaborating on the review of and processing of RFI's, initiating and maintaining a log for the RFI's including, but not limited to documentation of the RFI number, nature of the RFI, date the RFI was issued, date RFI was forwarded for review, individual reviewing the RFI, date the RFI was received back, and the date the RFI was returned to the Contractor.
- Collaborating on the preparation, review, and processing of construction change orders.
- Collaborating with stakeholders to develop detailed schedule of close-out activities, including punch lists, testing, and inspections. Establishing dates of Substantial and Final Completion, coordinating final inspections and establishing final acceptance of work, and preparing notice of completion.
- At completion of project, submitting to the City one complete project binder containing all project related documentation, and one CD-ROM of all scanned materials.
- Providing Public Works inspection and deputy and/or special inspection as required by code or contract documents. Deputy inspections shall include, but are not limited to: grading, reinforced concrete, prestressed concrete, masonry, structural steel, steel moment and ductile frames, welding, pile driving, high strength bolts, epoxy anchors, fireproofing, and structural observation. Special inspectors shall be duly certified by the ICC and other applicable governing agencies, and licensed to perform special inspections in the City of Long Beach.
- Providing qualified, professional material laboratory testing and reporting as required by code and the City's Project Specifications.

CERTIFIED MATERIAL TESTING LABORATORY SERVICES

- The Material Testing Laboratory must be currently certified for material testing and reporting in accordance with AASHTO, Caltrans, Federal Highway Administration, and Federal Aviation Administration funding requirements, as well as qualified to meet all standards, licenses, reports analysis and recommendations. The consulting laboratory shall coordinate and dispatch qualified personnel to perform material testing and inspection at multiple sites the day following notification. It is desirable that the consulting firm have the ability to dispatch qualified personnel within four hours. The requested services are typically performed between the hours of 7:00 a.m. and 5:00 p.m. seven days a week, but may be required on a 24-hour basis.
- The Material Testing Laboratory services consist of material testing of specimen of concrete, masonry, aggregates, asphalt and asphalt plant inspection, soils, epoxies,

SCOPE OF WORK PW RFQ16-138

metal, steel reinforcement, welds, diamond bit coring of asphalt, concrete or masonry, environmental sampling and testing of soil and water, including ground water sampling and testing in accordance with Environmental Protection Agency (EPA) standards, road rating and profilograph testing of streets, and other general laboratory material testing per the City's Project Specifications.

- Certification of Compliance – Upon completion of the project the laboratory shall provide, under the appropriate profession registration, a letter certifying the project.

INSPECTION SERVICES

Inspection Services are classified in two areas of work as follows:

- Construction Inspection – Inspects projects in the public right-of-way and insures that the work and materials are in compliance with the approved project plans and specification, including all applicable laws and regulations.
- Special Inspections – Provides continuous or periodic deputy inspection services as required by code. Special inspections shall include but is not limited to grading, reinforced concrete, pre-stresses concrete, masonry, structural steel, steel moment and ductile frames, welding, pile driving, high strength bolts, epoxy anchors, fireproofing, and structural observations. Special inspectors shall be duly certified by ICC and other applicable governing agencies, and licensed to perform special inspections in the City of Long Beach.

EXHIBIT “B”

Rates or Charges



Schedule of Rates for Services for City of Long Beach
As Needed Construction Materials Testing and Inspection

January 1, 2017 to December 31, 2020

Personnel Rates: Per Hour Unless Otherwise Noted

Task Code	Engineering and Consulting Personnel	Rate
10026	Senior Principal Advisor/Consultant	\$ 280.00
10001	Principal Engineer/Geologist	\$ 185.00
10017	Metallurgical Engineer	\$ 180.00
70000	Registered Geotechnical Engineer	\$ 180.00
10010	Technical Advisor	\$ 180.00
10011	Material Scientist, Welding/NDT Consultant	\$ 190.00
70003	Registered Geologist/Certified Engineering Geologist	\$ 170.00
10003	Senior Engineer/Geologist	\$ 165.00
10009	Registered Civil Engineer	\$ 160.00
60003	Roofing/Waterproofing Consultant	\$ 185.00
10013	Project Engineer/Manager	\$ 150.00
30000	Quality Control Manager	\$ 140.00
10005	Senior Staff Engineer/Geologist	\$ 135.00
10007	Staff Engineer/Geologist	\$ 130.00
10015	Quality Control Administrator	\$ 120.00
10019	Metallurgical Technician	\$ 95.00
90001	CADD Operator/Draftsperson	\$ 85.00
70107	Field Supervisor	\$ 115.00
91030	Safety Supervisor	\$ 115.00
20000	Laboratory Manager	\$ 105.00
98000	Laboratory Technician	\$ 85.00
90005	Expert Witness Testimony	\$ 395.00
91010	Qualified SWPPP Developer	\$ 130.00
91000	Qualified SWPPP Practitioner	\$ 120.00



Task		
Code	Field Inspection Personnel	Rate
10101	Concrete/Reinforced Steel Inspector	\$ 106.50
10103	Prestressed/Post Tensioned Inspector	\$ 106.50
10105	Concrete ICC Inspector	\$ 106.50
10109	Drilled-In-Anchor Inspector	\$ 106.50
10111	Gunite/Shotcrete Inspector	\$ 106.50
10113	Masonry Inspector	\$ 106.50
10201	Structural Steel/Welding Inspector	\$ 106.50
10203	AWS Certified Welding Inspector	\$ 106.50
10207	Fireproofing Inspector	\$ 106.50
10501	Public Works Inspector / Special Inspector	\$ 111.50
70109	L.A. Deputy Grading Inspector	\$ 111.50
75001	Asphalt Field and Plant Inspector/Technician	\$ 107.50
70103	Pile Driving Inspector	\$ 107.50
70101	Soils Technician	\$ 106.50
10107	Concrete Quality Control (ACI/Caltrans Technician)	\$ 106.50
60001	Roofing/Waterproofing Inspector	\$ 112.50
10515	Mechanical Inspector	\$ 125.50
10519	Electrical Inspector	\$ 127.50
10521	Plumbing Inspector	\$ 127.50
10523	Building Inspector	\$ 127.50
50003	Field Engineering Technician	\$ 110.50
Task		
Code	Shop Inspection Personnel	Rate
10301	Structural Steel Fabrication Inspector	\$ 107.50
10309	Batch Plant Quality Control Technician/Inspector	\$ 107.50
10325	Glue-Laminated Fabrication Inspector	Quotation
10328	Pre-Cast Concrete/Pipe Fabrication Inspector	\$ 107.50



Task Code	Concrete Tests (Field Made Specimens)	Invoice Name	Rate
20201	6" x 12" or 4" x 8" Cylinder: Compression Strength (ASTM C39)	6x12 Or 4x8 Cylinders-Comp St (Astm C39)	\$ 32.00
20203	Density of Structural Lightweight Concrete Equilibrium or Oven Dry Method (ASTM C567)	Density Of Struc Lw Conc (Astm C567)	\$ 75.00
20205	Core Compression including Trimming (ASTM C42)	Compression - 2", 4", 6" Cores (C42)	\$ 55.00
20207	6" x 6" x 18" Flexural Beams Not Exceeding Referenced Size (ASTM C78, C293 or CTM 523)	6x6x18 Flex Beams (Astm C78,C293)	\$ 70.00
20208	6" x 6" x 30" Flexural Beams (CTM 523)	6x6x30 Flexural Beams	\$ 85.00
20209	Splitting Tensile Strength (ASTM C496)	6x12 Cyl/Core-Split Tensile (Astm C496)	\$ 85.00
20211	Modulus of Elasticity Test (ASTM C469)	Mod Of Elasticity Static 6x12(Astm C469)	\$ 140.00
80003	Rapid Chloride Permeability Test: Cylinders or Cores (ASTM C1202)	Chloride Permeability Test: Cyl/Core	\$ 450.00
80006	Density, Absorption, and Voids in Hardened Concrete (ASTM C642)	Den, Absorp, And Voids In Hard Conc.	\$ 350.00
40005	Flexural Toughness (ASTM C1609, Formerly ASTM C1018)	Flexural Toughness Astm C1609	\$ 700.00
40009	Coefficient of Thermal Expansion of Concrete (CRD 39, AASHTO T336)	Coefficient Of Therm. Exp. Of Concrete	\$ 500.00
Task Code	Concrete Specimen Preparation	Invoice Name	Rate
20151	Sawing of Specimens (Each)	Sawing Of Specimens (Each)	\$ 25.00
20157	Coring of Specimens in Lab (Each)	Coring Of Specimens In Lab (Each)	\$ 25.00



Task Code	Laboratory Trial Batch: Concrete, Cement and Mortar	Invoice Name	Rate
30217	Compression Test Cylinders Made and Tested in Laboratory (ASTM C192, C35)	6x12 Comp Test Cyl, Made/Test In Lab	\$ 45.00
30219	6" x 6" x 18" Flexural Beams Made and Tested in Laboratory (ASTM C192, C78)	6x6x18 Flex Beams, Made/Test In Lab	\$ 85.00
30221	6" x 6" x 30" Flexural Beams Made and Tested in Laboratory (ASTM C192, C293)	6x6x30 Flex Beams, Made/Test In Lab	\$ 95.00
30223	Splitting Tensile Strength Cylinders Made and Tested in Laboratory (ASTM C192, C496)	6x12 Split TnsI Strnth Cyl Made/Test Lab	\$ 100.00
30225	Modulus of Elasticity Test Cylinders Made and Tested in Laboratory (ASTM C192, C469)	Moe Cyl Made/Test In Lab Astm C192.C469	\$ 156.00
30227	Density of Structural Lightweight Concrete Made in the Laboratory, Equilibrium or Oven Dry Method (ASTM C567)	Density Struc Lw Conc Made In Lab	\$ 86.00
30201	Laboratory Trial Batch (ASTM C192)	Lab Trial Batch-Excl Prep & Test (C 192)	\$ 450.00
Task Code	Laboratory Trial Batch: Concrete, Cement and Mortar, continued	Invoice Name	Rate
30203	Laboratory Trial Batch: Packaged Dry Concrete Including Verification of Slump, Air Content, Plastic Unit Weight, Six Cylinders for Compressive Strength (ASTM C387 and C192)	Laboratory Trial Batch-Packaged Dry Conc	\$ 800.00
30205	Drying Shrinkage Up to 28 Days: Three 3" x 3" or 4" x 4" Bars, Five Readings up to 28 Dry Days (ASTM C157)	Drying Shrinkage Made & Tested In Lab	\$ 450.00
30230	Additional Reading, Per Set of Three Bars	Additional Reading, Per Set Of 3 Bars	\$ 45.00
30231	Storage over Ninety (90) Days, Per Set of Three Bars, Per Month	Storage Over Ninety (90) Days, Per Set	\$ 30.00
30207	Setting Time Up to 7 Hours (ASTM C403)	Setting Time - Up To 7 Hours (C403)	\$ 125.00
30209	Bleeding (ASTM C232)	Bleeding (C232)	\$ 125.00



Task Code	Laboratory Trial Batch: Concrete, Cement and Mortar, continued	Invoice Name	Rate
30229	Concrete Restrained Expansion (ASTM C878)	Concrete Restrained Expansion (Astm C878)	\$ 475.00
30211	Mix, Make and Test Mortar or Grout Specimens for Compressive Strength: Set of 6 (ASTM C109, C942)	Mix, Make & Test Mrtr Or Grt- Comp Strnth	\$ 400.00
20263	Non-Shrink Grout: Height Change after Final Set (ASTM C1090)	Non-Shrink Grt- Height Change Afr Final	\$ 450.00
20265	Non-Shrink Grout: Height Change at Early Age (ASTM C827)	Non-Shrink Grt- Height Change- Early Age	\$ 700.00
30232	Cracking Resistance, Set of Three Rings, Laboratory Trial Batching, Test Until Cracking or up to 28 Days (ASTM 1581)	Cracking Resistance, Set Of 3 Rings	\$ 4,000.00
30233	Evaluation of Pre-Packaged Masonry Mortars (ASTM C270)	Evaluation Of Pre-Packaged Masonry Morta	\$ 1,100.00
Task Code	Chemical Analysis and Petrographic Examination of Concrete	Invoice Name	Rate
80120	Chemical Analysis for Water Soluble Sulfates (ASTM C114) (includes sample prep)	Chem Analysis Water-Sol Sulf Incl Prep	\$ 130.00
Task Code	Soils and Aggregate Tests	Invoice Name	Rate
70319	Direct Shear Test: Undisturbed - Slow [CD] (ASTM D3080)	Direct Shear Test (Undisturbed-Slow) (Cd)	\$ 225.00
70321	Direct Shear Test: Undisturbed - Fast [CU] (ASTM D3080)	Direct Shear Test (Undisturbed-Fast)	\$ 195.00
70378	Durability Index: Per Method - A,B,C, or D (CTM 229, ASTM D3744)	Dur Index Per A,B,C,D Ctm 229,Astm D3744	\$ 210.00
70325	Expansion Index (ASTM D4829, UBC 18-2)	Expansion Index (Astm D4829, Ubc 18-2)	\$ 170.00
75004	Fine Aggregate Angularity (AASHTO T304, ASTM C1252, CTM 234)	Fine Aggreg Angularity(T304,C1252,Ct234)	\$ 185.00
30507	Flat and Elongated Particle (ASTM D4791)	Flat And Elongated Particles (Crd C119)	\$ 225.00
30508	Flat or Elongated Particle (ASTM D4791)	Flat Or Elongated Particle-Astm D4791	\$ 195.00
70331	Maximum Density: Methods A/B/C (ASTM D1557, D698, CTM 216)	Mx Density-Mthds A/B/C D1557,D698,Ctm216	\$ 190.00
70333	Maximum Density: Check Point (ASTM D1557, D698)	Max Density-Check Pt (D1557, D698)	\$ 65.00
70335	Maximum Density: AASHTO C [Modified] (AASHTO T-180)	Maximum Density - Aashto C (Modified)	\$ 195.00



Task Code	Soils and Aggregate Tests, continued	Invoice Name	Rate
70337	Moisture Content (ASTM D2216, CTM 226)	Moisture Content (Astm D2216, Ctm 226)	\$ 25.00
70339	Moisture and Density: Ring Sample (ASTM D2937)	Moisture And Density-Ring Sample	\$ 30.00
70341	Moisture and Density: Shelby Tube Sample (ASTM D2937)	Moisture And Density-Shelby Tube Sample	\$ 40.00
70340	Moisture-Density Relations of Soil-Cement Mixtures Premixed in the Field (ASTM D558)	Moist-Dens Relation Of Soil-Cement Field	\$ 275.00
70342	Moisture-Density Relations of Soil-Cement Mixtures Mixed in the Lab (ASTM D558)	Moist-Dens Relations Of Soil-Cem In Lab	\$ 350.00
30401	Organic Impurities (ASTM C40, CTM 213)	Organic Impurities (Astm C40, Ctm 213)	\$ 90.00
70343	Permeability (ASTM D5084)	Permeability (Astm D5084)	Quotation
80001	Potential Reactivity: Chemical Method (ASTM C289)	Potential Reactivity (Astm C289)	\$ 475.00
70394	Potential Reactivity: Mortar Bar Expansion Method, 14-Day Exposure (ASTM C1260)	Potential Reactivity: Mortar Bar Expansi	\$ 750.00
70391	Potential Reactivity: Mortar Bar Expansion Method, 28-Day Exposure (ASTM C1260)	Potential React. Mortar Bar ASTM C1260	\$ 800.00
70398	Potential Reactivity: Concrete Bar Expansion, Method (ASTM C1293), 12 month	Po React Concrete Expan 12mo Astm C1293	\$ 2,400.00
70399	Potential Reactivity: Concrete Bar Expansion, Method (ASTM C1293), 24 month	Po React Concrete Expan 24mo Astm C1293	\$ 2,600.00
70397	Potential Reactivity of Aggregate Combination, 14-Day Exposure, Mortar (ASTM C1567)	Potential React Of Agg Combo, Mortar 14d	\$ 900.00
70392	Potential Reactivity of Aggregate Combination, 28-Day Exposure, Mortar (ASTM C1567)	Potential React. Agg Combo ASTM C1567	\$ 950.00
70345	R-Value: Soil (ASTM 2844, CTM 301)	R-Value (Soil) (Astm 2844, Ctm 301)	\$ 375.00
70347	R-Value: Aggregate Base (ASTM D2844, CTM 301)	R-Value (Aggregate Base) (Astm D2844)	\$ 410.00
70349	Sand Equivalent (ASTM D2419, CTM 217)	Sand Equivalent (Astm D2419, Ctm 217)	\$ 125.00
70351	Sieve #200 Wash Only (ASTM D1140, CTM 202)	Sieve #200 Wash (Only) (Astm D422)	\$ 90.00



Task Code	Soils and Aggregate Tests, continued	Invoice Name	Rate
70353	Sieve with Hydrometer: 3/4" Gravel to Clay (ASTM D422, CTM 203)	Sieve W/Hydrometer (3/4" Gravel To Clay)	\$ 250.00
70355	Sieve with Hydrometer: Sand to Clay (ASTM D422, CTM 203)	Sieve With Hydrometer (Sand To Clay)	\$ 240.00
70357	Sieve Analysis Including Wash (ASTM C136, CTM 202)	Sieve Analysis (Including Wash)	\$ 150.00
70359	Sieve Analysis Without Wash (ASTM C136, CTM 202)	Sieve Analysis (Without Wash)(Astm C136)	\$ 120.00
70360	Sieve Analysis: Split Sieve (ASTM C136, CTM 202)	Sieve Analysis: Split Sieve (Astm C136)	\$ 240.00
70361	Sieve Analysis Without Wash: With Cobbles (ASTM C136, CTM 202)	Sieve Analysis With Cobbles (W/O Wash)	\$ 235.00
70363	Soundness: Sodium or Magnesium Sulfate, 5 Cycles (ASTM C88)	Soundness - Sodium/Mag Sulfate 5 Cycles	\$ 450.00
70365	Specific Gravity and Absorption: Coarse (ASTM C127, CTM 206)	Specific Gravity And Absorption, Coarse	\$ 100.00
70367	Specific Gravity and Absorption: Fine (ASTM C128, CTM 207)	Specific Gravity And Absorption, Fine	\$ 165.00
70369	Swell/Settlement Potential: One Dimensional (ASTM D4546)	Swell/Settlement Potential (One-Dimen.)	\$ 105.00
70371	Triaxial	Triaxial	Quotation
70373	Unconfined Compression (ASTM D2166, CTM 221)	Unconfined Compression (Astm D2166)	\$ 135.00



Task Code	Brick Masonry Tests, ASTM C67	Invoice Name	Rate
20301	Modulus of Rupture: Flexural (5 Required Per ASTM)	Modulus Of Rupture - Flexural (5 Read)	\$ 45.00
20303	Compression Strength (3 Required Per ASTM)	Compressive Strength (3 Required)	\$ 45.00
20305	Absorption: 5 Hour or 24 Hour (5 Required)	Absorption - 5 Or 24 Hour (5 Required)	\$ 50.00
20307	Absorption (Boil): 1, 2 or 5 Hours (5 Required)	Boil - 1, 2 Or 5 Hours (5 Required)	\$ 60.00
20309	Initial Rate of Absorption (5 Required)	Initial Rate Of Absorption (5 Required)	\$ 40.00
20311	Efflorescence (5 Required)	Efflorescence (5 Required)	\$ 60.00
20313	Cores: Compression	Cores, Compression	\$ 55.00
20315	Shear Test on Brick Cores: 2 Faces	Shear Test On Brick Cores (2 Faces)	\$ 80.00

Task Code	Concrete Block, ASTM C140	Invoice Name	Rate
20321	Compression (3 Required Per ASTM)	Compression (3 Required)	\$ 80.00
20323	Absorption/Moisture Content/Oven Dry Density (3 Required Per ASTM)	Absorption/Moisture Content/Oven Dry Den	\$ 80.00
20327	Linear Shrinkage (ASTM C426)	Linear Shrinkage (Astm C426)	\$ 200.00
20335	Web and Face Shell Measurements	Web & Face Shell Measurements	\$ 40.00
20329	Tension Test	Tension Test	\$ 150.00
20331	Core Compression	Compression, 4", 6", 8" Cores	\$ 55.00
20333	Shear Test of Masonry Cores: 2 Faces	Shear Test Of Masonry Cores (2 Faces)	\$ 75.00
20339	Efflorescence Tests (3 Required)	Efflorescence Tests (3 Required)	\$ 40.00

Task Code	Masonry Prisms, ASTM C1314	Invoice Name	Rate
20341	Compression Test: Composite Masonry Prisms Up To 8" x 16"	Comp Test, Compos Masnry Prisms, Up 8x16	\$ 185.00
20343	Compression Test: Composite Masonry Prisms Larger Than 8" x 16"	Comp Test, Comp Masnry Prisms, Lrq 8x16	\$ 245.00
20346	Prism Cord Modulus of Elasticity	Prism Chord Modulus Of Elasticity	\$ 525.00
20347	Prism Cord Modulus of Elasticity with Transverse Strain (for double-wythe specimen)	Prism Moe With Transverse Strain	\$ 630.00



Task Code	Mortar and Grout	Invoice Name	Rate
20351	Compression: 2" x 4" Mortar Cylinders (ASTM C780)	Comp 2x4 Mortar/Grout Cyl (Astm C780)	\$ 55.00
20353	Compression: 3" x 3" x 6" Grout Prisms, Includes Trimming (ASTM C119)	Comp 3x3x6 Grout Prisms (Astm C119)	\$ 32.00
20355	Compression: 2" Cubes (ASTM C109)	Compression, 2" Cubes (Astm C109)	\$ 55.00
20357	Compression: Cores (ASTM C42)	Compression, Cores (Astm C42)	\$ 55.00

Task Code	Masonry Specimen Preparation	Invoice Name	Rate
20155	Cutting of Cubes or Prisms	Cutting Of Cubes And Prisms	\$ 50.00

Task Code	Fireproofing Tests	Invoice Name	Rate
20401	Oven Dry Density (Per Sample) (ASTM E605)	Oven Dry Density (Per Sample) Astm E605	\$ 65.00

Task Code	Gunite and Shotcrete Tests	Invoice Name	Rate
20361	Core Compression Including Trimming (ASTM C42)	Compression, 2, 4, 6 Cores (Astm C42)	\$ 55.00
20363	Compression: 6" x 12" Cylinders	Compression, 6" X 12" Cylinders	\$ 32.00
20365	Compression: Cubes (Includes Saw Cutting)	Compression Cubes Includes Saw Cutting	\$ 74.00

Task Code	Machining and Preparation of Tensile and Bend Sample: Carbon Steel	Invoice Name	Rate
20751	Machinist: Initial Preparation from Mock-up, Etc. (Per Hour)	Machinist, Initial Prep From Mock-Up Per	\$ 90.00
20753	Sawcut to Overall Width (Per 0.5" Thickness or Fraction Thereof)	Sawcut To Overall Width (Per 0.5" Thick)	\$ 45.00
20755	Machine to Test Configuration: Milled Specimens (Per 0.5" Thickness or Fraction Thereof)	Mach. To Test Config, Milled Spec Per .5	\$ 60.00
20757	Machine to Test Configuration: Turned Specimens (Per 0.5" Thickness or Fraction Thereof)	Mach. To Test Config, Turned Spec (Per.5	\$ 120.00
20759	Prepare Subsize Specimens (Per 0.5" Thickness or Fraction Thereof)	Prepare Subsize Spec (Per 0.5" Thickness	\$ 75.00

Task Code	Charpy Impact	Invoice Name	Rate
20621	Charpy Impact Ambient Temperature, per sample (Average of 3 Samples Typically Required)	Charpy Impact Ambient Temp	\$ 85.00
20623	Charpy Impact Reduced Temperature, per sample (Average of 3 Samples Typically Required)	Charpy Impact Reduced Temp	\$ 105.00



TWINING

Task			
Code	Machining of Charpy Samples: Carbon Steel	Invoice Name	Rate
20780	Cutting and Milling (Per 0.5" or Fraction Thereafter) (Average of 3 Samples Typically Required)	Cutting & Milling (Per 0.5" Or Fraction	\$ 75.00
20783	Final Machining to Sample Configuration (Average of 3 Samples Typically Required)	Final Machining To Sample Configuration	\$ 85.00
Task			
Code	Prestressing Wires and Tendons, ASTM A416	Invoice Name	Rate
20701	Stress-Strain Analysis: Wire or Strands (Including Chart and Percent Offset)	Stress-Strain Analsis, Wire Or Strands	\$ 170.00
20703	Tensile Test Only	Tensile Test Only -W/O Moe	\$ 125.00
20705	Tendons	Tendons (Quote)	Quotation
Task			
Code	Non-Destructive Testing Personnel		Rate
10401	NDE Ultrasonic Testing Technician		\$ 111.50
10403	NDE Magnetic Particle Testing Technician		\$ 111.50
10405	NDE Dye Penetrant Testing Technician		\$ 111.50
10305	Combination NDE Technician/Welding Inspector		\$ 111.50
10409	Radiographic Testing (crew of 2)		\$ 289.00
10020	NDE Engineer		\$ 160.00
Task			
Code	Equipment Usage (Daily Unless Otherwise Noted)	Invoice Name	Rate
95318	Skidmore	Equip Usage - Skidmore	\$ 40.00
95309	Torque Wrench, Small	Equip Usage - Torque Wrench, Small	\$ 15.00
95312	Torque Wrench, Large	Equip Usage - Torque Wrench, Large	\$ 25.00
95315	Torque Multiplier	Equip Usage - Torque Multiplier	\$ 40.00
95321	Air Meter	Equip Usage - Air Meter/Unit Wt	\$ 20.00
95324	Brass Mold	Equip Usage - Brass Mold	\$ 20.00
95343	Nuclear Gauge (Per Hour)	Equip Usage - Nuclear Gauge (Hr)	\$ 9.00
95333	Pull Test Equipment	Equip Usage - Pull-Test	\$ 60.00
95327	Pachometer	Equip Usage - Pachometer	\$ 55.00
95336	Floor Flatness (Dipstick)	Equip Usage - Floor Flatness	\$ 45.00
95330	Schmidt Hammer	Equip Usage - Schmidt Hammer	\$ 20.00
95341	Vapor Emission Test Kits	Moisture Vapor Emission Test Kits	\$ 30.00
95342	Relative Humidity Probe	Relative Humidity Probe	\$ 45.00



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Task Code	Equipment Usage (Daily Unless Otherwise Noted), continued	Invoice Name	Rate
95339	UPV (Ultrasonic Pulse Velocity) Meter	Upv (Ultrasonic Pulse Velocity) Meter	\$ 280.00
95351	Fireproofing Adhesion/Cohesion (Per Test)	Equip Usage - Fireproofing Adhesion/Cohe	\$ 20.00
95300	A Scan Ultrasonic Equipment and Consumables	Equip Usage - A Scan Ultrasonic	\$ 65.00
95303	Magnetic Particle Equipment and Consumables	Equip Usage - Magnetic Particle	\$ 30.00
95306	Liquid Penetrant Consumables	Equip Usage - Liquid Penetrant Consumabl	\$ 25.00
95307	Phased Array Ultrasonic Equipment (Per Hour)	Equip Usage - Phased Array Ultrasonic	\$ 50.00
95347	Ground Penetrating Radar (Per Hour)	Equip Usage - Ground Penetrating Radar	\$ 50.00
95345	Impact Echo	Impact Echo	\$ 280.00
95359	California Pavement Profilograph (Per Hour)	Equip Usage - Calif Pavemnt	\$ 115.00
95349	Inertial Profiler (Per Hour)	Equip Usage - Inertial Profiler (Hr)	\$ 250.00
95357	Project Dedicated Vehicle	Equip Usage - Project Dedicated Vehicle	\$ 100.00

Task Code	Specimen Pick-Up	Invoice Name	Rate
20102	Standard Sample: Concrete Cylinders (Each)	Std Sample (Concrete Cylinders Each)	\$ 20.00
20101	Standard Sample: Mortar/Grout Cubes and Cores, Fireproofing, Rebar, and Epoxy Prisms (Each)	Std: Mrtr/Grt Cube,Core/Fire/Rebar/Epoxy	\$ 20.00
20103/ 20104	Oversize Sample: Masonry Prisms, Shotcrete Panels, Flexural Beams (Each)	Oversized (Conc.Flex Beams, Shot Panels)/Masonry Prisms Up To 8x16	\$ 47.00
20107	Technician for Specimen Pick-Up Not Listed Above (Per Hour, 2-Hour Minimum)	Technician For Specimen Pick-Up	\$ 85.00

Task Code	Specimen Pick-Up, continued	Invoice Name	Rate
20109	Technician for Specimen Pick-Up Before 5:00 a.m. or After 5:00 p.m. Monday thru Friday, or All Day Saturday (Per Hour, 2-Hour Minimum Plus Mileage)	Technician For Specimen Pick-Up	\$ 103.00

Task Code	Jobsite Trailer, Mobile or On-site Laboratory	Invoice Name	Rate
95360	Mobile laboratory for rapid set concrete (per shift not exceeding 12 hours)	Equip Usage - Jobsite Trailer	\$ 375.00



TWINING

Task Code	Chemical Analysis and Petrographic Examination of Concrete, continued	Invoice Name	Rate
80126	Chemical Analysis for Water Soluble Chlorides (ASTM C1218) (includes sample prep)	CHEM ANALYSIS WATER-SOL CI INCL PREP	\$ 130.00
80123	Chemical Analysis for Acid Soluble Chlorides (ASTM C1152) (includes sample prep)	CHEM ANALYSIS ACID-SOL CI INCL PREP	\$ 140.00
80193	Chloride Diffusion Coefficient of Cementitious Mixtures by Bulk Diffusion (ASTM C1556)	Chlor Diff Coef Cem Mix-Bulk Diffusion	\$ 2,000.00
80129	Petrographic Examination of Hardened Concrete (ASTM 856)	Petrographic Exam Of Hardened Conc.	Quotation
Task Code	Physical and Chemical Analysis of Cement	Invoice Name	Rate
80195	Physical Testing and Chemical Analysis of Portland Cement per Standard Requirements (ASTM C150)	Test/Analysis Portland Cement	\$ 1,000.00
80100	Chemical Analysis of Portland Cement per Standard Requirements (ASTM C150)	Chemical Analysis Of Portland Cement	\$ 550.00
80103	Physical Testing of Portland Cement per Standard Requirements (ASTM C150)	Physical Testing Of Portland Cement	\$ 550.00
80194	Physical Testing of Type K Cement, Mortar Expansion (ASTM C806)	Phys Test Type K Cem, Mrtr (Astm C806)	\$ 500.00
80106	Partial Analysis or Specific Physical Tests	Partial Analysis Or Spec. Physical Tests	Quotation
80110	Sulfates Resistance of Hydraulic Cement (ASTM C1012) - 6 months	Sulf Resist-Hydrlic Cmnt ASTM C1012 6 Mo	\$ 2,000.00
80111	Sulfates Resistance of Hydraulic Cement (ASTM C1012) - 12 months	Sulf Resist-Hydrlic Cmnt ASTM C1012 12 Mo	\$ 2,200.00
Task Code	Physical and Chemical Analysis of Fly Ash	Invoice Name	Rate
80140	Chemical Analysis of Fly Ash per Standard Requirements (ASTM C618)	Chemical Analysis of Fly Ash	\$ 550.00
80143	Physical Testing of Fly Ash per Standard Requirements (ASTM C618)	Physical Testing Of Fly Ash	\$ 530.00
80146	Partial Analysis or Specific Physical Tests	Partial Analysis Or Spec. Physical Tests	Quotation
80147	Chemical Analysis and Physical Testing of Fly Ash per Standard Requirements (ASTM C1618)	Chem Analysis & Phys Test Fly Ash-C1618	\$ 1,000.00
Task Code	Physical Testing of Chemical Admixtures for Concrete	Invoice Name	Rate
80196	Qualification of Admixture per ASTM C494	Qualf Admix Per Astm C 494	Quotation



Task Code	Soils and Aggregate Tests	Invoice Name	Rate
30503	Abrasion: LA Rattler (ASTM C131)	Abrasion (La Rattler) (C131)	\$ 185.00
30505	Abrasion: LA Rattler (ASTM C535)	Abrasion (La Rattler) (C535)	\$ 195.00
70301	Atterberg Limits/Plasticity Index (ASTM D4318, CTM204)	Atterberg Limits/Plasticity Index	\$ 150.00
70303	California Bearing Ratio Excluding Maximum Density (ASTM D1883): Soil	Calif Bearing Ratio (Excl Max Dens) Soil	\$ 550.00
70304	California Bearing Ratio Excluding Maximum Density (ASTM D1883): Cement-Treated Soil	Ca Bearing Ratio(Excl Max Dens)cmnt Soil	\$ 650.00
70344	Cement-Treated Soil/Base Mix Design: includes three trial cement contents with three unconfined compressive strength specimens per cement content	Cement-Treated Soil/Base Mix Design (3)	\$ 3,000.00
70305	Chloride and Sulfate Content (CTM 417, CTM 422)	Chloride And Sulfate Content (Astm C417)	\$ 130.00
30403	Clay Lumps and Friable Particles (ASTM C142)	Clay Lumps & Friable Particles (C142)	\$ 175.00
30321	Cleanness Value: 1" x #4 (CTM 227)	CLEANNES VALUE: 25mmX4.75mm (CAL 227)	\$ 175.00
30322	Cleanness Value: 1.5" x .75" (CTM 227)	CLEANNES VALUE: 1.5"x.75" (CTM 227)	\$ 275.00
70393	Collapse Potential/Index (ASTM D5333)	Collapse Potential/Index (Astm D5333)	\$ 175.00
70396	Compressive Strength of Molded Soil-Cement Cylinders (ASTM D1633)	Comp. Strength Of Molded Soil-Cement Cyl	\$ 105.00
70309	Consolidation Test: Full Cycle (ASTM 2435, CTM 219)	Consolidation Test - Full Cycle	\$ 195.00
70311	Consolidation Test: Time Rate per Load Increment (ASTM D2435, CTM 219)	Consol Test - Time Rate/Load Increment	\$ 45.00
70313	Corrosivity Series: Sulfate, Cl, pH, Resistivity (CTM 643, 417, and 422)	CORROSIVITY SERIES (SULFATE, Cl, pH, RES	\$ 245.00
70315	Crushed/Fractured Particles (ASTM D5821, CTM 205)	Crushed/Fractured Particles (Astm D5821)	\$ 175.00
70317	Direct Shear Test: Remolded and/or Residual (ASTM D3080)	Direct Shear Test (Remolded And/Or Resid	\$ 245.00
30317	Unit Weight Per Cubic Foot (ASTM C29, CTM 212)	Unit Wt Per Cubic Ft (Astm C29, Ctm 212)	\$ 125.00
30319	Voids in Aggregate with Known Specific Gravity (ASTM C29, CTM 212)	Voids In Aggregate (Astm C29, Ctm 212)	\$ 125.00

Task Code	Asphalt Concrete Tests	Invoice Name	Rate
75031	HMA Mixing and Preparation	Hma Mixing & Prep W/ Aggregate Treatment	\$ 125.00
75032	HMA Mixing and Preparation with Aggregate Treatment	Hma Mixing & Preparation	\$ 175.00
75033	Bulk Specific Gravity of Compacted Sample or Core: SSD (CTM 308C and ASTM D2726)	Bulk Spec Gravity-Compacted Sample/Core	\$ 50.00
75036	Bulk Specific Gravity of Compacted Sample or Core: Parafin Coated (CTM 308A and ASTM D1188)	Bulk Spec Gravity-Comp Sampl Parafin	\$ 75.00
75040	Emulsion Residue, Evaporation (ASTM D244)	Emulsion Residue, Evaporation Astm D244	\$ 150.00
75024	Extraction: % Bitumen (CTM 382, ASTM D6307)	Extraction, % Bitumen (Astm D6307)	\$ 160.00
75027	Extraction: % Bitumen and Gradation (CTM 382, CTM 202, ASTM D6307, ASTM D5444)	Extraction, % Bitumen & Gradation	\$ 205.00
75028	Extraction: % Bitumen, Correction Factor (CTM 382, ASTM D6307)	Extraction, % Bitumen Correction Factor	\$ 325.00
75030	Chemical Extraction: % Bitumen and Sieve Analysis (ASTM D2172 Method A or B, ASTM D5444)	Chem Extraction; % Bitumen & Sieve Ana	\$ 245.00
75042	Lab Tested Maximum Density: Hveem, 3 briquettes (CTM 304, CTM 308, ASTM D1561, ASTM D1188)	Lab Tested Max Den Hveem	\$ 205.00
75057	Hveem Stabilometer Test, Premixed, 3 briquettes (CTM 304, CTM 366, ASTM D1560, ASTM D1561)	Hveem Stabilmtr Test Premixed (Ct304)	\$ 205.00
75048	Lab Tested Maximum Density: Marshall,	Lab Tested Max Den Marshall	\$ 205.00
75049	Lab Tested Maximum Density: Marshall 6" Specimen, 3 briquettes (ASTM D5581, ASTM D2726)	Max Lab Den.- Marshall 6" Specimen	\$ 215.00
75050	Lab Tested Maximum Density: Superpave Gyratory Compacted Briquette, SSD, 1 briquette (ASTM D6925, ASTM D2726)	Lab Tested Maxden Superpave Gyratory Ssd	\$ 75.00
75052	Lab Tested Maximum Density: Superpave Gyratory Compacted Briquette, Parafin, 1 briquette (ASTM D6925, ASTM D1188)	Lab Tested Maxden Superpave Gyratory Pfn	\$ 85.00
75051	Maximum Theoretical Specific Gravity [RICE] (CTM 309, ASTM D2041)	Max Theoretical Specific Gravity (Rice)	\$ 155.00
75066	Marshall Stability and Flow, Cored Sample, each	Marshall Test-Cored Sampl	\$ 75.00
75069	Marshall Stability and Flow, Premixed, 3 briquettes (ASTM D6926, ASTM D6927)	Marshall Test-Premixd (Astm D6926,D6927)	\$ 205.00
75106	Marshall Stability and Flow, Gyratory Compacted Specimen Pre-Mixed, 3 briquettes (ASTM D6925, ASTM D5581)	Gyratory Comp. Specimen Premixed	\$ 225.00
75107	Marshall Stability and Flow 6" Specimen, Premixed, 3 briquettes (ASTM D5581)	6" Marshall Plastic Flow: Premixed	\$ 215.00
75063	Moisture Content (CTM 370)	Moisture Content (Ctm 370)	\$ 85.00
75005	Wet Track Abrasion Test (ASTM D3910)	Wet Track Abrasion Per D3910	\$ 150.00



Task Code	Asphalt Concrete Tests, continued	Invoice Name	Rate
75093	Hveem Mix Design (Excluding Aggregate Quality Tests)	Hveem Mix Design-Excl Agg Quality Tests	\$ 3,000.00
75096	Hveem Mix Design, with RAP (Excluding Aggregate Quality Tests, RAP Qualification)	Hveem Mix Design W/Rap (Exc. Agg.Tests)	\$ 3,300.00
75099	Hveem Mix Design, with Lime (Excluding Aggregate Quality Tests)	Hveem Mix Design W/Lime (Exc. Agg.Tests)	\$ 3,550.00
75094	Hveem Mix Design Caltrans Untreated Mix (Including Aggregate Quality Tests)	Hveem Mix Design Untreated	\$ 4,200.00
75095	Hveem Mix Design Caltrans Lime Treated Mix (Including Aggregate Quality Tests)	Hveem Mix Design Lime Treated	\$ 4,300.00
75084	Marshall Mix Design (Excluding Aggregate Quality Tests)	Marshall Mix Design-Exclude Agg Qualtest	\$ 3,000.00
75087	Marshall Mix Design with RAP (Excluding Aggregate Quality Tests)	Marshall Mix Design W/Rap-Exc Agg Qual	\$ 3,300.00
75090	Marshall Mix Design with Lime (Excluding Aggregate Quality Tests)	Marshall Mix Design W/Lime-Exc Agg Qual	\$ 3,550.00
75083	Open Grade Asphalt Concrete Mix Design (CTM 368, ASTM D7064)	Open Grade Asphalt Concrete Mix Design	\$ 1,350.00
75109	Superpave Mix Design (Excluding Aggregate Quality Tests)	Superpave Mix Design(Excl Agg Qual Test)	\$ 4,770.00
75113	Superpave Mix Design, with RAP (Excluding Aggregate Quality Tests)	Superpave Mix Design With Rap (Excl Agg)	\$ 6,090.00
75114	Superpave Mix Design, with Rubber (Excluding Aggregate Quality Tests)	Superpave Mix Design With Rubber	\$ 6,200.00
75115	Superpave Mix Design, with Additives (Excluding Aggregate Quality Tests)	Superpave Mix Design With Additives	\$ 5,590.00
75075	Effect of Moisture on Asphalt Paving Mixtures, Pre-Mixed (AASHTO T283, ASTM D4867)	Effec Moist Premx Ctm371,T283,Astm D4867	\$ 900.00
75111	Hamburg Wheel Track Test, 20,000 passes, 4 briquettes (AASHTO T324)	Hamburg Wheel; 20,000 Pass(Aashto T-324)	\$ 1,000.00
75039	Raveling Test of Cold Mixed Emulsified Asphalt (ASTM D7196)	Raveling Test, W/ Mixing-1 Replicate	\$ 200.00
75067	Marshall Stability, wet set, 3 replicates (AASHTO T 245)	Marshall Stability, Wet Set-3 Replicates	\$ 325.00
75068	Marshall Stability, dry set, 3 replicates (AASHTO T 245)	Marshall Stability, Dry Set-3 Replicates	\$ 275.00
75070	Cold Recycled Asphalt Mix Design: 2 gradings each, 3 emulsion content (Caltrans LP-8)	Cold Recycled Asphalt Mix Design Ct Lp-8	\$ 9,500.00



TWINING

Task Code	Concrete Roof Fill: Gypsum, Vermiculite, Perlite, Lightweight Insulating Concrete, Etc.	Invoice Name	Rate
20371	Compression Test (ASTM C495 and C472)	Compression Test (Astm C495, C472)	\$ 40.00
20373	Air Dry Density (ASTM C472)	Air Dry Density (Astm C472)	\$ 30.00
20379	Oven Dry Density (ASTM C495)	Oven Dry Density (C495)	\$ 55.00
Task Code	Reinforcing Steel, ASTM A615, A706	Invoice Name	Rate
20501	Tensile Test: # 11 or Smaller	Tensile Test, #11 Or Smaller	\$ 55.00
20503	Bend Test: # 11 or Smaller	Bend Test, #11 Or Smaller	\$ 50.00
20504	Bend Test #14 or #18	Bend Test #14 Or #18	\$ 300.00
20505	Tensile Test: # 14	Tensile Test, # 14	\$ 200.00
20507	Tensile Test: # 18	Tensile Test, # 18	\$ 300.00
Task Code	Reinforcing Steel - Welded or Coupled Specimens	Invoice Name	Rate
20521	Tensile Test: Welded/Coupled #11 and Smaller	Tensile Test, Welded/Coupled #11&Smaller	\$ 65.00
20523	Tensile Test: Welded/Coupled #14	Tensile Test, Welded/Coupled #14	\$ 225.00
20525	Tensile Test: Welded/Coupled #18	Tensile Test, Welded/Coupled #18	\$ 325.00
20529	Weld: Macroetch	Weld-Macroetch	\$ 70.00
20531	Slippage Test - Caltrans (CTM 670)	Slippage Test (Per Ct 52-1.08c) Ctm670	\$ 180.00
Task Code	Metal and Steel Testing	Invoice Name	Rate
20601	Tensile Strength: Up to 100K Pounds (Each)	Tensile Strength, Up To 100k Lbs	\$ 55.00
20603	Tensile Strength: Up to 200K Pounds (Each)	Tensile Strength, Up To 200k Lbs	\$ 65.00
20605	Tensile Strength: Up to 300K Pounds (Each)	Tensile Strength, Up To 300k Lbs	\$ 75.00
20607	Tensile Strength: Up to 400K Pounds (Each)	Tensile Strength, Up To 400k Lbs	\$ 125.00
20609	Tensile Strength: 400K to 600K Pounds (Each)	Tensile Strength, Up To 400k - 600k Lbs	\$ 300.00
20611	Tensile Strength: Stress-Strain Percent Offset	Tensile St,(Stress-Strain Percent Offset	\$ 150.00
20545	Weld: Macroetch	Weld-Macroetch	\$ 70.00
20547	Weld: Fracture	Weld-Fracture	\$ 30.00
20615	Bend Test	Bend Test	\$ 46.00
20617	Flattening Test	Flattening Test	\$ 55.00
20619	Brinell and Rockwell Hardness Test (ASTM E18) (Per Test)	Brinell & Rockwell Hardness Test - Sampl	\$ 75.00
20630	Bolt: Axial Tensile Test (Up to 7/8" diameter)	Bolt Axial Tensile Test(Up To 7/8")	\$ 40.00
20631	Bolt: Wedge Tensile Test (Up to 7/8" diameter)	Bolt Wedge Tensile Test (Up To 7/8")	\$ 55.00
20632	Bolt: Axial Tensile Test (Greater than 7/8" up to 1" diameter)	Bolt Axial Tensl(Grt Than 7/8" Up To 1")	\$ 60.00



Task Code	Metal and Steel Testing, continued	Invoice Name	Rate
20633	Bolt: Wedge Tensile Test (Greater than 7/8" up to 1" diameter)	Bolt Wedge Tnsl (Grt Than 7/8" Up To 1")	\$ 75.00
20634	Bolt: Axial Tensile Test (Greater than 1" diameter)	Bolt Axial Tensile (Grtr Than 1")	Quotation
20635	Bolt: Wedge Tensile Test (Greater than 1" diameter)	Bolt Wedge Tensile Test(Grt Than 1")	Quotation
20636	Bolt: Proof Load Test (Up to 7/8")	Bolt Proof Load Test (Up To 7/8")	\$ 65.00
20637	Bolt: Proof Load Test (Greater than 7/8" up to 1" diameter)	Bolt Proof Load (Grt Than 7/8" Up To 1")	\$ 85.00
20638	Bolt: Proof Load Test (Greater than 1")	Bolt Proof Load Test (Grt Than 1")	Quotation
20639	Nut: Proof Load Test (Up to 7/8")	Nut Proof Load Test (Up To 7/8")	\$ 45.00
20640	Nut: Proof Load Test (Greater than 7/8" up to 1" diameter)	Nut Proof Load (Grt Than 7/8" Up To 1")	\$ 65.00
20641	Nut: Proof Load Test (Greater than 1")	Nut Proof Load Test (Grt Than 1")	Quotation

Task Code	Chemical Testing of Metal and Steel	Invoice Name	Rate
80170	Steel Chemical Analysis	Steel Chemical Analysis	\$ 135.00
80173	Weight of Galvanized Coating (ASTM A90)	Wt Of Galvanized Coating (Astm A90)	\$ 75.00

Task Code	Calibration Services and Universal Machine Usage	Invoice Name	Rate
20801	Calibration/Verification Services	Calibration/Verification - Services	Quotation
20803	Universal Test Machine Usage (Per Hour)	Universal Test Equip Usage	\$ 275.00

Ceramic Tile Testing Division

The Ceramic Tile Institute of America (CTIOA) and Twining worked together to advance and develop technology designed to enhance the quality of materials and workmanship in the ceramic tile industry. A separate schedule of fees for these services is available upon request.

Cyclic and Fatigue Testing Programs on Special Products/Parts	Quotation
Engineering and Technical supports/Design of Prototypes and Special Test Set-Up	Quotation
Fastener/Coupling Full Testing Program Per New Regulations: Tension, Tension/Bend, Shear, Double Shear, 8 Compressions	Quotation
Fiberglass/Composite Materials Field Testing Program (ASTM D4065, D1143, D4923, D2584, D4476, D1242, D7901, D7921, and D732)	Quotation
Field Testing of Structures and Structural Elements	Quotation
In-Place Shear Testing	Quotation
Materials and/or Product Evaluation Per Specifications	Quotation
Structural Dynamic Testing and Durability Analysis	Quotation



Task Code	Polymer Matrix Composite Materials (Fiberwrap)	Invoice Name	Rate
20706	Tensile Strength – Set of 5 Specimens/batch/ direction (ASTM D3039)	Fiberwrap Tensile Strength Set Of 5	\$ 1,350.00
20707	Tensile Strength – Additional Specimens (ASTM D3039)	Fiberwrap Tensile Strength Addl Strength	\$ 250.00
20708	Heating Chamber Time – Per 24 hr period (ASTM D3039)	Fiberwrap Heat Chamber Time/24hr	\$ 85.00

General Conditions

NOTE: Field inspection work conditions are established by contract with Operating Engineers, Local 12.

NOTE: A minimum of 24 hours notice is required for testing and inspection services.

Administrative Fees

Administrative Fees are included in blended rates. Back up will be provided with invoices.

Minimum Charges (Inspection and Technician Personnel Only - Other Personnel Charged on Portal to Portal Basis)

2-Hour Minimum: Inspector arrives at jobsite, no work to perform.

4-Hour Minimum: 1 to 4 hours of inspection

8-Hour Minimum: Over 4 to 8 hours of inspection

Regular Time

The first 8 hours worked Monday through Friday between 5:00 a.m. and 5:00 p.m.

Time and One-Half (All Types of Inspection)

All overtime must be Preapproved by City Construction Officer

All shifts will be billed based on the time and date of their start. Any increment past 8 hours through 12 hours worked Monday through Friday and the first 12 hours on Saturday. Time and one-half will also be charged for any time before 5:00 a.m. and after 5:00 p.m.

Double Time (All Types of Inspection)

All overtime must be Preapproved by City Construction Officer

All shifts will be billed based on the time and date of their start. After the first 12 hours worked Monday through Saturday, all day Sunday, holidays, and the first Saturday following the first Friday in June and December.

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving, and Christmas Day.

Meal Period

When personnel are required by their duties to work more than five consecutive hours without a one-half hour uninterrupted meal period, one half hour at double time rate will be charged in addition to any applicable overtime for actual hours worked.

General Conditions, continued

Shift Differential (Applies to Regularly Scheduled Shifts Only)

A \$1.00 per hour shift differential premium will be charged for all inspection hours that fall outside of the 5:00 a.m. to 5:00 p.m. time period. Twining will require 48-hour notice prior to beginning a shift that will include hours falling outside this time period. Should this notice not be provided, all work performed on that shift will be billed at the overtime rate.

If three shifts per day are required, the first shift will be billed at the standard rate. The second shift shall be billed in accordance with the previous paragraph.

The third shift shall be billed at 8 hours for the first 6 1/2 hours worked and overtime for all hours thereafter.

Travel Time and Mileage

No mileage, transportation charges or per diem will be charged.

Saturday Sample Pick-Ups

In order to be in strict conformance with testing standards, it may be required that Saturday pick-ups be performed (e.g. concrete specimens cast on Friday must be picked up on Saturday in order to be in conformance with ASTM C31 requiring specimens to be moved to their final curing location within 48 hours of casting.)

Applicable charges for Saturday work will apply when this is required. Should these charges not be authorized then Twining will not be responsible for any negative consequences.

Reimbursable Expenses

There will no reimburseable expenses under this contract.

Project Specific Documents

Costs presented assume that client will provide project specific documents (plans, specifications, submittals, RFIs, etc.) for all inspection personnel. Should project specific documents be provided electronically through a for fee service, the client will be responsible for providing access and paying any fees for the service.

Project Site Facilities

Prices quoted assume that initial curing facilities for test samples that comply with relevant test standards and project requirements and desk space for inspection staff are provided by others. Additional costs will apply should Twining be required to provide such facilities.

Subsistence

Subsistence on remote jobs will be charged per quotation.

Laboratory Testing Hours

Please note that laboratory testing will be billed on an hourly basis for non-standard tests. If testing is required to be performed on Saturdays, Sundays, holidays, or before 5:30 a.m. or after 4:00 p.m. on weekdays, an additional hourly charge with a minimum of one hour will be applied for the laboratory technician. 1.5 x regular test rate will be charged for rush testing.



General Conditions, continued

Charges for Subcontracted Services

Material sent to outside laboratory for testing:	Cost
Material sent to outside fabricator or machine shop:	Cost
Glu-Lam beam inspection:	Cost
Other subcontractors:	Cost
Project exclusive equipment purchase:	Cost

Limit of Liability

Insurance will be kept current as with all coverage as specified in RFP WP16-138

Certified Payroll

Certified payroll will be provided, upon request, at an additional charge of \$100.00/month.

Final Reports Required by Jurisdiction

If a final report or affidavit is required, cost will be billed hourly.

Terms of Payment

Fees charged are for professional and technical services and are due within 30 days.

Specimen Disposal

Specimens will be discarded after testing unless Twining has been notified prior to testing that the customer wishes to retrieve the specimens or storage arrangements are made.

Oversize Specimens

An extra charge will be made when test specimens require more than one person to handle due to size or weight.

EXHIBIT “C”

City’s Representative:

Marc Wright, Construction Management

(562) 570-5791

EXHIBIT D

CITY FURNISHED SERVICES

The City will furnish to Consultant all the available records, master plan studies and reports, and any other available information that may be helpful to the Consultant in the performance of its assigned projects or assignments. Additionally, the City will provide:

1. Project management through an assigned Project Manager (PM) as designated by the City Engineer. The City's PM will act as the project focal point.
2. Or otherwise make available upon request, reports, drawings, documents, GIS land base maps, records and other data deemed useful for project development.