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AGREEMENT

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THIS AGREEMENT is made and entered, in duplicate, as of February 8, 2011, for reference purposes only, pursuant to a minute order adopted by the City Council of the City of Long Beach at its meeting on January 4, 2011, by and between TWINING, INC., a California corporation ("Consultant"), with a place of business at 2883 East Spring Street, Suite 300, Long Beach, California 90806, and the CITY OF LONG BEACH, a municipal corporation ("City").

WHEREAS, City requires specialized services requiring unique skills to be performed in connection with As-Needed Certified Materials Testing and Inspection, and Construction Management Services ("Project"); and

WHEREAS, City has selected Consultant in accordance with City's administrative procedures and City has determined that Consultant and its employees are qualified, licensed, if so required, and experienced in performing these specialized services; and

WHEREAS, City desires to have Consultant perform these specialized services, and Consultant is willing and able to do so on the terms and conditions in this Agreement;

NOW, THEREFORE, in consideration of the mutual terms, covenants, and conditions in this Agreement, the parties agree as follows:

1. SCOPE OF WORK OR SERVICES.

A. Consultant shall furnish specialized services more particularly described in Exhibit "A", attached to this Agreement and incorporated by this reference, in accordance with the standards of the profession, and City shall pay for these services in the manner described below, not to exceed One Million Dollars (\$1,000,000), at the rates or charges shown in Exhibit "B".

B. Consultant may select the time and place of performance for these services; provided, however, that access to City documents, records and the

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

1 like, if needed by Consultant, shall be available only during City's normal business
2 hours and provided that milestones for performance, if any, are met.

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

17 D. Consultant represents that Consultant has obtained all
18 necessary information on conditions and circumstances that may affect its
19 performance and has conducted site visits, if necessary.

20 E. CAUTION: Consultant shall not begin work until this
21 Agreement has been signed by both parties and until Consultant's evidence of
22 insurance has been delivered to and approved by City.

23 2. TERM. The term of this Agreement shall commence at midnight on
24 January 31, 2011, and shall terminate at 11:59 p.m. on January 31, 2014, unless sooner
25 terminated as provided in this Agreement, or unless the services or the Project is
26 completed sooner.

27 3. COORDINATION AND ORGANIZATION.

28 A. Consultant shall coordinate its performance with City's

1 representative, if any, named in Exhibit "C", attached to this Agreement and
2 incorporated by this reference. Consultant shall advise and inform City's
3 representative of the work in progress on the Project in sufficient detail so as to
4 assist City's representative in making presentations and in holding meetings on
5 the Project. City shall furnish to Consultant information or materials, if any,
6 described in Exhibit "D", attached to this Agreement and incorporated by this
7 reference, and shall perform any other tasks described in the Exhibit.

8 B. The parties acknowledge that a substantial inducement to City
9 for entering this Agreement was and is the reputation and skill of Consultant's key
10 employee, Ed Twining. City shall have the right to approve any person proposed
11 by Consultant to replace that key employee.

12 4. INDEPENDENT CONTRACTOR. In performing its services,
13 Consultant is and shall act as an independent contractor and not an employee,
14 representative or agent of City. Consultant shall have control of Consultant's work and
15 the manner in which it is performed. Consultant shall be free to contract for similar
16 services to be performed for others during this Agreement; provided, however, that
17 Consultant acts in accordance with Section 9 and Section 11 of this Agreement.
18 Consultant acknowledges and agrees that (a) City will not withhold taxes of any kind from
19 Consultant's compensation; (b) City will not secure workers' compensation or pay
20 unemployment insurance to, for or on Consultant's behalf; and (c) City will not provide
21 and Consultant is not entitled to any of the usual and customary rights, benefits or
22 privileges of City employees. Consultant expressly warrants that neither Consultant nor
23 any of Consultant's employees or agents shall represent themselves to be employees or
24 agents of City.

25 5. INSURANCE.

26 A. As a condition precedent to the effectiveness of this
27 Agreement, Consultant shall procure and maintain, at Consultant's expense for the
28 duration of this Agreement, from insurance companies that are admitted to write

1 insurance in California and have ratings of or equivalent to A:V by A.M. Best
2 Company or from authorized non-admitted insurance companies subject to
3 Section 1763 of the California Insurance Code and that have ratings of or
4 equivalent to A:VIII by A.M. Best Company, the following insurance:

5 (a) Commercial general liability insurance (equivalent in scope to
6 ISO form CG 00 01 11 85 or CG 00 01 10 93) in an amount not less than
7 \$1,000,000 per each occurrence and \$2,000,000 general aggregate. This
8 coverage shall include but not be limited to broad form contractual liability,
9 cross liability, independent contractors liability, and products and
10 completed operations liability. City, its boards and commissions, and their
11 officials, employees and agents shall be named as additional insureds by
12 endorsement (on City's endorsement form or on an endorsement
13 equivalent in scope to ISO form CG 20 10 11 85 or CG 20 26 11 85 or
14 both CG 20 10 07 04 and CG 20 37 07 04 or both CG 20 33 07 04 and
15 CG 20 37 07 04), and this insurance shall contain no special limitations on
16 the scope of protection given to City, its boards and commissions, and
17 their officials, employees and agents. This policy shall be endorsed to
18 state that the insurer waives its right of subrogation against City, its boards
19 and commissions, and their officials, employees and agents.

20 (b) Workers' Compensation insurance as required by the California
21 Labor Code and employer's liability insurance in an amount not less than
22 \$1,000,000. This policy shall be endorsed to state that the insurer waives
23 its right of subrogation against City, its boards and commissions, and their
24 officials, employees and agents.

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

27 (d) Commercial automobile liability insurance (equivalent in scope
28 to ISO form CA 00 01 06 92), covering Auto Symbol 1 (Any Auto) in an

1 amount not less than \$500,000 combined single limit per accident.

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

7 C. Each insurance policy shall be endorsed to state that
8 coverage shall not be reduced, non-renewed or canceled except after thirty (30)
9 days prior written notice to City, shall be primary and not contributing to any other
10 insurance or self-insurance maintained by City, and shall be endorsed to state that
11 coverage maintained by City shall be excess to and shall not contribute to
12 insurance or self-insurance maintained by Consultant. Consultant shall notify City
13 in writing within five (5) days after any insurance has been voided by the insurer or
14 cancelled by the insured.

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

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

25 F. Prior to the start of performance, Consultant shall deliver to
26 City certificates of insurance and the endorsements for approval as to sufficiency
27 and form. In addition, Consultant shall, within thirty (30) days prior to expiration of
28 the insurance, furnish to City certificates of insurance and endorsements

1 evidencing renewal of the insurance. City reserves the right to require complete
2 certified copies of all policies of Consultant and Consultant's subconsultants and
3 contractors, at any time. Consultant shall make available to City's Risk Manager
4 or designee all books, records and other information relating to this insurance,
5 during normal business hours.

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

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

16 6. ASSIGNMENT AND SUBCONTRACTING. This Agreement
17 contemplates the personal services of Consultant and Consultant's employees, and the
18 parties acknowledge that a substantial inducement to City for entering this Agreement
19 was and is the professional reputation and competence of Consultant and Consultant's
20 employees. Consultant shall not assign its rights or delegate its duties under this
21 Agreement, or any interest in this Agreement, or any portion of it, without the prior
22 approval of City, except that Consultant may with the prior approval of the City Manager
23 of City, assign any moneys due or to become due Consultant under this Agreement. Any
24 attempted assignment or delegation shall be void, and any assignee or delegate shall
25 acquire no right or interest by reason of an attempted assignment or delegation.
26 Furthermore, Consultant shall not subcontract any portion of its performance without the
27 prior approval of the City Manager or designee, or substitute an approved subconsultant
28 or contractor without approval prior to the substitution. Nothing stated in this Section

1 shall prevent Consultant from employing as many employees as Consultant deems
2 necessary for performance of this Agreement.

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

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

13 9. OWNERSHIP OF DATA. All materials, information and data
14 prepared, developed or assembled by Consultant or furnished to Consultant in
15 connection with this Agreement, including but not limited to documents, estimates,
16 calculations, studies, maps, graphs, charts, computer disks, computer source
17 documentation, samples, models, reports, summaries, drawings, designs, notes, plans,
18 information, material and memorandum ("Data") shall be the exclusive property of City.
19 Data shall be given to City, and City shall have the unrestricted right to use and disclose
20 the Data in any manner and for any purpose without payment of further compensation to
21 Consultant. Copies of Data may be retained by Consultant but Consultant warrants that
22 Data shall not be made available to any person or entity for use without the prior approval
23 of City. This warranty shall survive termination of this Agreement for five (5) years.

24 10. TERMINATION. Either party shall have the right to terminate this
25 Agreement for any reason or no reason at any time by giving fifteen (15) calendar days
26 prior notice to the other party. In the event of termination under this Section, City shall
27 pay Consultant for services satisfactorily performed and costs incurred up to the effective
28 date of termination for which Consultant has not been previously paid. The procedures

1 for payment in Section 1.B. with regard to invoices shall apply. On the effective date of
2 termination, Consultant shall deliver to City all Data developed or accumulated in the
3 performance of this Agreement, whether in draft or final form, or in process. And,
4 Consultant acknowledges and agrees that City's obligation to make final payment is
5 conditioned on Consultant's delivery of the Data to City.

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

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

21 13. ADDITIONAL COSTS AND REDESIGN.

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

28 B. If the Project involves construction and the scope of work

1 requires Consultant to prepare plans and specifications with an estimate of the
2 cost of construction, then Consultant may be required to modify the plans and
3 specifications, any construction documents relating to the plans and specifications,
4 and Consultant's estimate, at no cost to City, when the lowest bid for construction
5 received by City exceeds by more than ten percent (10%) Consultant's estimate.
6 This modification shall be submitted in a timely fashion to allow City to receive new
7 bids within four (4) months after the date on which the original plans and
8 specifications were submitted by Consultant.

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

12 15. LAW. This Agreement shall be governed by and construed pursuant
13 to the laws of the State of California (except those provisions of California law pertaining
14 to conflicts of laws). Consultant shall comply with all laws, ordinances, rules and
15 regulations of and obtain all permits, licenses and certificates required by all federal, state
16 and local governmental authorities.

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

20 17. INDEMNITY.

21 A. Consultant shall indemnify, protect and hold harmless City, its
22 Boards, Commissions, and their officials, employees and agents ("Indemnified
23 Parties"), from and against any and all liability, claims, demands, damage, loss,
24 obligations, causes of action, proceedings, awards, fines, judgments, penalties,
25 costs and expenses, including attorneys' fees, court costs, expert and witness
26 fees, and other costs and fees of litigation, arising or alleged to have arisen, in
27 whole or in part, out of or in connection with (1) Consultant's breach or failure to
28 comply with any of its obligations contained in this Agreement, or (2) negligent or

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

1 willful acts, errors, omissions or misrepresentations committed by Consultant, its
2 officers, employees, agents, subcontractors, or anyone under Consultant's control,
3 in the performance of work or services under this Agreement (collectively "Claims"
4 or individually "Claim").

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

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

19 D. The provisions of this Section shall survive the expiration or
20 termination of this Agreement.

21 18. AMBIGUITY. In the event of any conflict or ambiguity between this
22 Agreement and any Exhibit, the provisions of this Agreement shall govern.

23 19. COSTS. If there is any legal proceeding between the parties to
24 enforce or interpret this Agreement or to protect or establish any rights or remedies under
25 it, the prevailing party shall be entitled to its costs, including reasonable attorneys' fees.

26 20. NONDISCRIMINATION.

27 A. In connection with performance of this Agreement and subject
28 to applicable rules and regulations, Consultant shall not discriminate against any

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

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

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

25 A. During the performance of this Agreement, the Consultant
26 certifies and represents that the Consultant will comply with the EBO. The
27 Consultant agrees to post the following statement in conspicuous places at its
28 place of business available to employees and applicants for employment:

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

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

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

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

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

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

1 23. COPYRIGHTS AND PATENT RIGHTS.

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

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

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

15 24. COVENANT AGAINST CONTINGENT FEES. Consultant warrants
16 that Consultant has not employed or retained any entity or person to solicit or obtain this
17 Agreement and that Consultant has not paid or agreed to pay any entity or person any
18 fee, commission or other monies based on or from the award of this Agreement. If
19 Consultant breaches this warranty, City shall have the right to terminate this Agreement
20 immediately notwithstanding the provisions of Section 10 or, in its discretion, to deduct
21 from payments due under this Agreement or otherwise recover the full amount of the fee,
22 commission or other monies.

23 25. WAIVER. The acceptance of any services or the payment of any
24 money by City shall not operate as a waiver of any provision of this Agreement or of any
25 right to damages or indemnity stated in this Agreement. The waiver of any breach of this
26 Agreement shall not constitute a waiver of any other or subsequent breach of this
27 Agreement.

28 26. CONTINUATION. Termination or expiration of this Agreement shall

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

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

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

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

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

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

March 14, 2011

TWINING, INC., a California corporation
By [Signature]
President
BRIAN C. KRAMER
Type or Print Name

March 15, 2011

By [Signature]
Secretary
ROBERT M. RYAN
Type or Print Name

"Consultant"
CITY OF LONG BEACH, a municipal corporation
Assistant City Manager

9.16, 2011

By [Signature]
City Manager

"City"

EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER.

This Agreement is approved as to form on 3/24, 2011.

ROBERT E. SHANNON, City Attorney
By [Signature]
Deputy

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

EXHIBIT “A”

Scope of Work

Appendix A

Scope of Services

ON CALL / AS-NEEDED CERTIFIED MATERIALS TESTING AND INSPECTION SERVICES FOR PUBLIC WORKS INFRASTRUCTURE FACILITY PROJECTS

A. PROJECT DESCRIPTION AND OVERVIEW

The City of Long Beach, acting through its Department of Public Works, desires to engage the services of one or more Material Testing Laboratories and or Professional Engineering Firms to provide, Certified Materials Testing and Inspection Services and on an on call / as-needed basis for Public Works infrastructure and facilities projects. Inspection services shall be performed by ICC certified deputy inspections. The approximate term of services in anticipated between January 2011 and December 2013.

B. DEFINITIONS

OWNER – City of Long Beach

CITY – The City of Long Beach or designated representative.

CONSULTANT – The individual, Partnership, corporation, joint venture, or other legal entity named as such in the contract documents to perform the work.

C. BACKGROUND – GENERAL

1.1 CERTIFIED MATERIAL TESTING LABORATORY SERVICES

The Certified Material Testing Laboratory must be currently certified for materials testing and reporting in accordance with AASHTO, Caltrans, Federal ISTEA 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 laboratories have the ability to dispatch qualified personnel. When needed, within four hours. The requested services are typically performed between the hours of 7:00 a.m. and 5 p.m. seven days a week, but may be required on a 24 – hour basis.

1.1.2 CERTIFICATION OF COMPLIANCE

Upon completion of the project the laboratory shall provide under the appropriate professional registration a letter certifying the project.

1.2 INSPECTION SERVICES

Construction Inspection Services are classified in three areas of work as follows:

1.2.1 CONSTRUCTION INSPECTION

Inspects projects in the public right-of-way and insures that they are in compliance with the project plans and specifications including all applicable laws and regulations.

1.2.2 SPECIAL INSPECTION

Provide continuous or periodic deputy inspection service as required by code. Special inspections shall include but is 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, structural observation, and 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.

1.2.3 CONSTRUCTION MANAGEMENT

Oversees the inspection and management of facility and tenant improvement projects.

D. BASIC AND OTHER SERVICES

In addition to the requirements described in the background requirement listed above, this Scope of Work is intended to procure professional services to be provided hereunder shall include, but not be limited to the following:

1.3 MATERIAL TESTING LABORATORY SERVICES

The Material Testing Laboratory Services consist of material testing of specimen of concrete, masonry, aggregates, asphalt and asphalt plant inspection, soils, epoxies, metals, steel reinforcement and 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 streets, and other general laboratory materials tests per the "Standard Specifications for Public Works Construction," 2009 edition.

1.4 CONSTRUCTION INSPECTION

Inspection projects in the public right-of-way and insures that they are in compliance with the project plans and specifications including all applicable laws and regulations.

E CITY RESPONSIBILITES

1.5 Provide City-side project management as designated by the Director, Engineering Bureau, Planning and Facility Bureau, Redevelopment, Construction Services Officer, Project Management Officer, Division Engineer, Senior Civil Engineer, or other appropriate Public Works Manager.

1.6 Provide **coordination** to avoid interfering with other City construction projects and/or major events.

F MISCELLANEOUS/CONSULTANT'S LEAD REPRESENTATIVE

1.7 Prior to final selection, the City must agree to the Proposing Firm's designated Lead Representative (LR) by review of his or her qualifications contained in the Firm's Proposals as well as his or her performance during the Oral interview. If after a period of time, the City is not satisfied with the work and progress of the LR, another LR shall be furnished by the consultant firm. The LR, once selected, shall not be replaced, unless approved by the City.

EXHIBIT “B”

Rates or Charges



Schedule of Fees January 1, 2011-Januray 1, 2014

Personnel Rates
(Per Hour Unless Otherwise Noted)

<u>Engineering and Consulting</u>			
10001	Principal Engineer/Geologist.....	\$	175.00
10017	Metallurgical Engineer.....	\$	170.00
70000	Registered Geotechnical Engineer.....	\$	170.00
10011	Technical Advisor, Material Scientist or Welding/NDT Consultant	\$	170.00
70003	Registered Geologist/Certified Engineering Geologist.....	\$	160.00
10003	Senior Engineer/Geologist.....	\$	155.00
10009	Registered Civil Engineer.....	\$	150.00
60003	Roofing/Waterproofing Consultant.....	\$	175.00
10013	Project Engineer/Manager.....	\$	140.00
30000	Quality Control Manager.....	\$	130.00
10005	Senior Staff Engineer/Geologist.....	\$	125.00
10007	Staff Engineer/Geologist.....	\$	120.00
10015	Quality Control Administrator.....	\$	110.00
10019	Metallurgical Technician.....	\$	85.00
90001	CADD Operator/Draftsperson.....	\$	75.00
70107	Field Supervisor.....	\$	95.00
20000	Laboratory Manager.....	\$	95.00
98000	Laboratory Technician.....	\$	75.00
90005	Expert Witness Testimony.....	\$	390.00
<u>Field Inspection</u>			
10101-10207	Reinforced Concrete, Masonry, Drilled-in-Anchors, Prestressed Concrete, Fireproofing, or Structural Steel Welding/Bolting Inspector.....	\$	92.00
10501	Lead Inspector.....	\$	94.00
70109	L.A. Deputy Grading Inspector.....	\$	97.00
75001	Senior Asphalt Construction and Placement Inspector.....	\$	95.00
75005	Asphalt Placement Technician.....	\$	82.00
75003	Asphalt Plant Inspector.....	\$	84.00
75006	Asphalt Plant Technician.....	\$	82.00
70103	Senior Soils Technician or Pile Driving Inspector.....	\$	84.00
70101	Soils Technician.....	\$	82.00
10203	AWS Certified Welding Inspector.....	\$	84.00
10107	Concrete Quality Control (ACI/Caltrans Technician).....	\$	82.00
10505	DSA Class 1 Inspector.....	\$	123.00
10507	DSA Class 2 Inspector.....	\$	113.00
10509	OSHPD Class A Inspector.....	\$	128.00
60001	Roofing/Waterproofing Inspector.....	\$	82.00
10515-10523	Mechanical/Electrical/Plumbing Inspector.....	\$	83.00
50003	Field Engineering Technician.....	\$	88.00
<u>Shop Inspection</u>			
10301	Structural Steel Fabrication Inspector (ICC/ICBO).....	\$	82.00
10303	Structural Steel Fabrication Inspector (AWS).....	\$	84.00
10309	Batch Plant Quality Control Technician/Inspector.....	\$	82.00
10325	Glue-Laminated Fabrication Inspector.....		Quotation
10328	Pipe Fabrication Inspector (Reinforced Concrete, Prestressed, Clay).....	\$	82.00
<u>Non-Destructive Testing</u>			
10401-10406	NDE Technician.....	\$	97.00
10305-10307	Combination NDE Technician/Welding Inspector.....	\$	97.00
10409/10411	Radiographic (X Ray, Gamma Ray).....		Quotation

Equipment Usage (Per Day Unless Otherwise Noted)

95318	Skidmore.....	\$	40.00
95309	Torque Wrench, Small.....	\$	15.00
95312	Torque Wrench, Large.....	\$	25.00
95315	Torque Multiplier.....	\$	40.00
95321	Air Meter.....	\$	40.00
95324	Brass Mold.....	\$	20.00
95446	Drilling/Sampling Equipment.....	\$	50.00
95443	Nuclear Gauge (Per Hour).....	\$	9.00
95333	Pull Test Equipment.....	\$	60.00
95348	Concrete/Asphalt Coring Equipment (Per hour).....	\$	120.00
95327	Pachometer.....	\$	55.00
95336	Floor Flatness (Dipstick).....	\$	45.00
95330	Schmidt Hammer.....	\$	20.00
95341	Vapor Emission Test Kits.....	\$	45.00
95339	V-Meter.....	\$	40.00
95351	Fireproofing Adhesion/Cohesion (Per Test).....	\$	15.00
95300	Ultrasonic Equipment and Consumables.....	\$	60.00
95303	Magnetic Particle Equipment and Consumables.....	\$	30.00
95306	Liquid Penetrant Consumables.....	\$	20.00
TBD	Phased Array Ultrasonic Equipment.....	\$	85.00
95347	Ground Penetrating Radar (Per Hour).....	\$	85.00
95359	Pavement Profilograph Equipment (Per Hour).....	\$	115.00

Specimen Pick-Up

20102	Standard Sample: Concrete Cylinders (Each).....	\$	18.00
20101	Standard Sample: Mortar/Grout Cubes and Cores, Fireproofing and Epoxy Prisms (Each).....	\$	18.00
20103-20104	Oversize Sample: Masonry Prisms, Shotcrete Panels, Flexural Beams (Each).....	\$	45.00
20107	Technician for Specimen Pick-Up/Sampling Not Listed Above (Per Hour, 2-Hour Minimum).....	\$	80.00
20109	Technician for Specimen Pick-Up/Sampling 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).....	\$	85.00

Jobsite Trailer, Mobile Laboratory or On-Site Portable Laboratory

95360 By Quotation

General Conditions

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

Travel Time and Mileage

Mileage is reimbursable at current IRS Rates.
Expenses are only billed at cost. Invoices are to be paid within 30 days.

Laboratory Testing
(Per Test Unless Noted Otherwise)

<u>Concrete Tests (Field Made Specimens)</u>	
20201	6" x 12" or 4" x 8" Cylinder: Compression Strength (ASTM C39)..... \$ 29.00
20203	Unit Weight Including Lightweight Concrete..... \$ 72.00
20205	Core Compression Including Trimming (ASTM C42)..... \$ 50.00
20207	6" x 6" x 18" Flexural Beams Not Exceeding Referenced Size (ASTM C78, C293 or CTM 523)..... \$ 70.00
20208	6" x 6" x 30" Flexural Beams (CTM 523)..... \$ 85.00
20209	Cylinders: Splitting Tensile Strength (ASTM C496)..... \$ 85.00
20211	Modulus of Elasticity Test (ASTM C469)..... \$ 140.00
20251	Drying Shrinkage Up to 28 Days: Three 3" x 3" or 4" x 4" Bars, Five Readings up to 28 Dry Days (ASTM C157)..... \$ 375.00
20270	Additional Reading, Per Set of Three Bars..... \$ 45.00
20271	Storage over Ninety (90) Days, Per Set of Three Bars, Per Month..... \$ 30.00
80003	Rapid Chloride Permeability Test: Cylinders or Cores (ASTM C1202)..... \$ 375.00
80006	Density, Absorption, and Voids in Hardened Concrete (ASTM C642)..... \$ 300.00
40005	Flexural Toughness (ASTM C1609, Formerly ASTM C1018)..... \$ 450.00
40009	Coefficient of Thermal Expansion of Concrete (CRD 39, AASHTO T336)..... \$ 700.00
<u>Concrete Specimen Preparation</u>	
20151	Diamond Sawing of Cores or Cylinders (Each)..... \$ 22.00
20157	Coring of Test Panels in Lab (Each)..... \$ 25.00
<u>Laboratory Trial Batch: Concrete, Cement and Mortar</u>	
30217	Compression Test Cylinders Made and Tested in Laboratory..... \$ 45.00
30219	6" x 6" x 18" Flexural Beams Made and Tested in Laboratory..... \$ 82.00
30221	6" x 6" x 30" Flexural Beams Made and Tested in Laboratory..... \$ 95.00
30223	Splitting Tensile Strength Cylinders Made and Tested in Laboratory..... \$ 100.00
30225	Modulus of Elasticity Test Cylinders Made and Tested in Laboratory..... \$ 156.00
30227	Unit Weight Test Cylinders Made and Tested in Laboratory..... \$ 80.00
30201	Laboratory Trial Batch (ASTM C192)..... \$ 325.00
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)..... \$ 700.00
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)..... \$ 400.00
30230	Additional Reading, Per Set of Three Bars..... \$ 45.00
30231	Storage over Ninety (90) Days, Per Set of Three Bars, Per Month..... \$ 30.00
30207	Setting Time Up to 7 Hours (ASTM C403)..... \$ 125.00
30209	Bleeding (ASTM C232)..... \$ 125.00
30229/20255	Concrete Restrained Expansion (ASTM C878)..... \$ 450.00
30213	Laboratory Trial Batch: Packaged Non-Shrink Grout, Grade "A" or "C" (ASTM C1107)..... \$ 1,500.00
30215	Laboratory Trial Batch: Packaged Non-Shrink Grout, Grade "B" (ASTM C1107)..... \$ 1,000.00
30211	Mix, Make and Test Mortar or Grout Specimens for Compressive Strength: Set of 6 (ASTM C109, C942)..... \$ 350.00
20263	Non-Shrink Grout: Height Change after Final Set (ASTM C1090)..... \$ 360.00
20265	Non-Shrink Grout: Height Change at Early Age (ASTM C827)..... \$ 950.00
20259	Non-Shrink Grout: Fresh Grout Properties (ASTM C1090, CRD621)..... \$ 400.00
30232	Cracking Resistance, Set of Three Rings, Laboratory Trial Batching, Test Until Cracking or up to 28 Days (ASTM 1581)..... \$ 4,000.00
30233	Evaluation of Pre-Packaged Masonry Mortars (ASTM C270)..... \$ 1,000.00
<u>Chemical Analysis and Petrographic Examination of Concrete</u>	
80120	Chemical Analysis for Water Soluble Sulfates (ASTM C114)..... \$ 160.00
80126	Chemical Analysis for Water Soluble Chlorides (ASTM C1218)..... \$ 160.00
80123	Chemical Analysis for Acid Soluble Chlorides (ASTM C1152)..... \$ 230.00
80193	Chloride Diffusion Coefficient of Cementitious Mixtures by Bulk Diffusion (ASTM C1556)..... \$ 2,000.00
80129	Petrographic Examination of Hardened Concrete (ASTM 856)..... Quotation

Physical and Chemical Analysis of Cement

80195	Complete Physical Testing and Chemical Analysis of Portland Cement (ASTM C150).....	\$	1,775.00
80100	Chemical Analysis of Portland Cement (ASTM C150).....	\$	575.00
80103	Physical Testing of Portland Cement (ASTM C150).....	\$	1,250.00
80194	Testing of Type K Cement, Mortar Expansion (ASTM C806).....	\$	500.00
80106	Partial Analysis or Specific Physical Tests.....		Quotation
80110	Sulfates Resistance of Hydraulic Cement (ASTM 1250).....		Quotation

Laboratory Testing (Continued)

Physical and Chemical Analysis of Fly Ash

80140	Chemical Analysis of Fly Ash (ASTM C618).....		Quotation
80143	Physical Testing of Fly Ash (ASTM C618).....	\$	1,350.00
80146	Partial Analysis or Specific Physical Tests.....		Quotation

Physical Testing of Chemical Admixtures for Concrete

80196	Qualification of Admixture per ASTM C494.....		Quotation
80197	Qualification of Admixture per L.A. City RGA 27-69.....		Quotation

Soils and Aggregate Tests

30503	Abrasion: LA Rattler (ASTM C131).....	\$	185.00
30505	Abrasion: LA Rattler (ASTM C535).....	\$	195.00
70301	Atterberg Limits/Plasticity Index (ASTM D4318, CTM204).....	\$	150.00
70303	California Bearing Ratio Excluding Maximum Density (ASTM D1883).....	\$	375.00
70305	Chloride and Sulfate Content (CTM 417, CTM 422).....	\$	130.00
30403	Clay Lumps and Friable Particles (ASTM C142).....	\$	175.00
30321	Cleaness Value: 1" x #4 (CTM 227).....	\$	175.00
30322	Cleaness Value: 2.5" x 1.5" or 1.5" x .75" (CTM 227).....	\$	275.00
70393	Collapse Potential/Index (ASTM D5333).....	\$	175.00
70396	Compressive Strength of Molded Soil-Cement Cylinders (ASTM D1633).....	\$	105.00
70309	Consolidation Test: Full Cycle (ASTM 2435, CTM 219).....	\$	195.00
70311	Consolidation Test: Time Rate per Load Increment (ASTM D2435, CTM 219).....	\$	45.00
70313	Corrosivity Series: Sulfate, Cl, pH, Resistivity (CTM 643, 417, and 422).....	\$	245.00
70315	Crushed/Fractured Particles (ASTM D5821, CTM 205).....	\$	175.00
70317	Direct Shear Test: Remolded and/or Residual (ASTM D3080).....	\$	245.00
70319	Direct Shear Test: Undisturbed - Slow [CD] (ASTM D3080).....	\$	225.00
70321	Direct Shear Test: Undisturbed - Fast [CU] (ASTM D3080).....	\$	195.00
70378	Durability Index: Per Method - A,B,C, or D (CTM 229).....	\$	210.00
70325	Expansion Index (ASTM D4829, UBC 18-2).....	\$	160.00
30507	Flat Particle and Elongated Particle (ASTM D4791).....	\$	225.00
30508	Flat or Elongated Particle (ASTM D4791).....	\$	195.00
70331	Maximum Density: Methods A/B/C (ASTM D1557, CTM 216).....	\$	175.00
70333	Maximum Density: Check Point (ASTM D1557).....	\$	65.00
70335	Maximum Density: AASHTO C [Modified] (AASHTO T-180).....	\$	195.00
70337	Moisture Content (ASTM D2216,CTM 226).....	\$	25.00
70339	Moisture and Density: Ring Sample (ASTM D2937).....	\$	30.00
70341	Moisture and Density: Shelby Tube Sample (ASTM D2937).....	\$	40.00
70340	Moisture-Density Relations of Soil-Cement Mixtures Premixed in the Field (ASTM D558).....	\$	225.00
70342	Moisture-Density Relations of Soil-Cement Mixtures Mixed in the Lab (ASTM D558).....	\$	295.00
30401	Organic Impurities (ASTM C40).....	\$	90.00
70343	Permeability.....		Quotation
80001	Potential Reactivity: Chemical Method (ASTM C289).....	\$	475.00
70394	Potential Reactivity: Mortar Bar Expansion Method, 14-Day Exposure (ASTM C1260).....	\$	700.00
70397	Potential Reactivity of Aggregate Combination, Mortar (ASTM C1567).....	\$	900.00
70345	R-Value: Soil (ASTM 2844, CTM 301).....	\$	255.00
70347	R-Value: Aggregate Base (ASTM D2844, CTM 301).....	\$	275.00
70349	Sand Equivalent (ASTM D2419, CTM 217).....	\$	125.00
70351	Sieve #200 Wash Only (ASTM D1140, CTM 202).....	\$	90.00
70353	Sieve with Hydrometer: 3/4" Gravel to Clay (ASTM D422, CTM 203).....	\$	225.00
70355	Sieve with Hydrometer: Sand to Clay (ASTM D422, CTM 203).....	\$	215.00
70357	Sieve Analysis Including Wash (ASTM C136, CTM 202).....	\$	135.00
70359	Sieve Analysis Without Wash (ASTM C136, CTM 202).....	\$	100.00
70360	Sieve Analysis: Split Sieve (ASTM C136, CTM 202).....	\$	215.00
70361	Sieve Analysis Without Wash: With Cobbles (ASTM C136, CTM 202).....	\$	210.00

Laboratory Testing (Continued)

70363	Soundness: Sodium or Magnesium Sulfate, 5 Cycles (ASTM C88).....	\$	325.00
70365	Specific Gravity and Absorption: Coarse (ASTM C127, CTM 206).....	\$	100.00
70367	Specific Gravity and Absorption: Fine (ASTM C128, CTM 207).....	\$	165.00
70369	Swell/Settlement Potential: One Dimensional (ASTM D4546).....	\$	105.00
70371	Triaxial.....		Quotation
70373	Unconfined Compression (ASTM D2166, CTM 221).....	\$	135.00
30317	Unit Weight Per Cubic Foot (ASTM C29).....	\$	80.00
30319	Voids in Aggregate (ASTM C29).....	\$	80.00
 Asphalt Concrete Tests			
75060	Percent Swell (CTM 305).....	\$	135.00
75012	Film Stripping (CTM 302).....	\$	185.00
75021	Centrifuge Kerosene Equivalent (CTM 303).....	\$	178.00
75033	Bulk Specific Gravity Of Compacted Sample or Core: (CTM 308 and ASTM D2726).....	\$	45.00
75036	Bulk Specific Gravity of Compacted Sample or Core: Parafin Coated (CTM 308 and ASTM D1188).....	\$	65.00
75063	Moisture Content (CTM 370).....	\$	85.00
75024	Extraction: % Bitumen (ASTM D6307, CTM 382).....	\$	145.00
75027	Extraction: % Bitumen and Gradation (CTM 382, ASTM D6507, ASTM D5444, and, CTM 202).....	\$	195.00
75030	Chemical Extraction: % Bitumen and Sieve Analysis (ASTM D2172 Method A or B).....	\$	215.00
75042	3 Point LTMD: Parafin Coated (CA 375, 308 and ASTM D1188).....	\$	199.00
75039	5 Point LTMD: Parafin Coated (CA 375, 308, and ASTM D1188).....	\$	275.00
75054	HVEEM Stabilometer Test with Mixing (CT 304, 366, ASTM D1560).....	\$	325.00
75057	HVEEM Stabilometer Test, Premixed (CT 304, 366, ASTM D1560).....	\$	199.00
75048	Maximum Lab Density: Marshall (ASTM D1559 and D561).....	\$	175.00
75049	Maximum Lab Density: Marshall 6" Specimen (ASTM D5581).....	\$	205.00
75050	Maximum Density of Hot Mix Asphalt by the Superpave Gyrotory Compactor (ASTM D6925).....	\$	282.00
75051	Maximum Theoretical Specific Gravity [RICE] (CT 309, ASTM D2041).....	\$	150.00
75037	Specific Gravity and Absorption: Coarse (ASTM C127, CTM 206).....	\$	100.00
75038	Specific Gravity and Absorption: Fine (ASTM C128, CTM 207).....	\$	165.00
75000	Sieve Analysis Per Aggregate Size (CTM 202, ASTM D5444 and ASTM C136).....	\$	85.00
75003	Sieve Analysis With Wash (CTM 202 and ASTM D5444).....	\$	135.00
75006	Sand Equivalent (CTM 217 and ASTM D2419).....	\$	125.00
75009	Abrasion Resistance/Los Angeles Rattler (CTM 211 only).....	\$	195.00
75015	Crushed/Fractured Particles (CTM 205, ASTM D5821).....	\$	175.00
75018	Flat or Elongated Particles (ASTM D4791).....	\$	195.00
75004	Fine Aggregate Angularity (AASHTO T304).....	\$	185.00
75066	Resistance to Plastic Flow, Marshall Test, of Cored Sample (ASTM D1559).....	\$	125.00
75069	Resistance to Plastic Flow Marshall Test, Premixed, Remolded (ASTM D1559).....	\$	199.00
75072	Resistance of Plastic Flow Marshall Test with Mixing (ASTM D1559).....	\$	325.00
75106	Resistance of Plastic Flow Gyrotory Compacted Specimen premixed (ASTM D5581).....	\$	225.00
75107	Resistance of Plastic Flow Marshall Test 6" Specimen premixed (ASTM D5581).....	\$	215.00
75084	Marshall Mix Design (Excluding Aggregate Quality Tests).....	\$	2,750.00
75087	Marshall Mix Design with RAP (Excluding Aggregate Quality Tests).....	\$	3,500.00
75090	Marshall Mix Design with Lime (Excluding Aggregate Quality Tests).....	\$	3,600.00
75083	Open Grade Asphalt Concrete Mix Design (CTM 368).....	\$	1,200.00
75093	HVEEM Mix Design (Excluding Aggregate Quality Tests).....	\$	2,750.00
75096	HVEEM Mix Design with RAP (Excluding Aggregate Quality Tests, RAP Qualification).....	\$	3,025.00
75099	HVEEM Mix Design with Lime (Excluding Aggregate Quality Tests).....	\$	3,250.00
75094	HVEEM Mix Design Caltrans Type C Untreated Mix (Including Aggregate Quality Tests).....	\$	3,815.00
75095	HVEEM Mix Design Caltrans Type C Lime Treated Mix (Including Aggregate Quality Tests).....	\$	3,925.00
75109	Gyrotory Compacted Superpave Mix Design (Excluding Aggregate Quality Tests).....	\$	3,100.00
75075	Index of Ret. Strength with Mix Proportion (AASHTO T282 and ASTM D4867).....	\$	825.00
75078	Index of Retained Strength, 24-Hour Immersion (AASHTO T282 and ASTM D4867).....	\$	195.00
75064	Effect of Moisture on Asphalt Paving Mixtures (ASTM D4867).....	\$	1,250.00
75065	Effect of Moisture on Asphalt Paving Mixtures, One Freeze Thaw Cycle (ASTM D4867).....	\$	1,475.00
75102	Resistance of Compacted Bituminous Mixtures to Moisture Induced Damage (Untreated) CT 371.....	\$	1,650.00
75105	Resistance of Compacted Bituminous Mixtures to Moisture Induced Damage (Lime Treated) CT 371.....	\$	1,800.00

Laboratory Testing (Continued)

<u>Brick Masonry Tests</u>	
20301	Modulus of Rupture: Flexural (5 Required Per ASTM)..... \$ 35.00
20303	Compression Strength (3 Required Per ASTM)..... \$ 35.00
20305	Absorption: 5 Hour or 24 Hour (5 Required)..... \$ 40.00
20307	Absorption (Boil): 1, 2 or 5 Hours (5 Required)..... \$ 50.00
20309	Initial Rate of Absorption (5 Required)..... \$ 30.00
20311	Efflorescence (5 Required)..... \$ 50.00
20313	Cores: Compression..... \$ 45.00
20315	Shear Test on Brick Cores: 2 Faces..... \$ 70.00
<u>Concrete Block, ASTM C140</u>	
20321	Compression (3 Required Per ASTM)..... \$ 45.00
20323	Absorption/Moisture Content/Oven Dry Density (3 Required Per ASTM)..... \$ 75.00
20327	Linear Shrinkage (ASTM C426)..... \$ 195.00
20335	Web and Face Shell Measurements..... \$ 35.00
20329	Tension Test..... \$ 145.00
20331	Core Compression..... \$ 45.00
20333	Shear Test of Masonry Cores: 2 Faces..... \$ 70.00
20339	Efflorescence Tests (3 Required)..... \$ 35.00
<u>Masonry Prisms, UBC STD 21-17</u>	
20341	Compression Test: Composite Masonry Prisms Up To 8" x 16"..... \$ 180.00
20343	Compression Test: Composite Masonry Prisms Larger Than 8" x 16"..... \$ 240.00
<u>Mortar and Grout</u>	
20351	Compression: 2" x 4" Mortar Cylinders (UBC STD 21-16)..... \$ 28.00
20353	Compression: 3" x 3" x 6" Grout Prisms, Includes Trimming (UBC STD 21-18)..... \$ 50.00
20355	Compression: 2" Cubes (ASTM C109)..... \$ 28.00
20357	Compression: Cores (ASTM C42)..... \$ 50.00
20253	Mortar Expansion (ASTM C806)..... \$ 275.00
<u>Masonry Specimen Preparation</u>	
20155	Cutting of Cubes or Prisms..... \$ 44.00
<u>Fireproofing Tests</u>	
20401	Oven Dry Density (Per Sample)..... \$ 62.00
<u>Gunite and Shotcrete Tests</u>	
20361	Core Compression Including Trimming (ASTM C42)..... \$ 50.00
20363	Compression: 6" x 12" Cylinders..... \$ 29.00
20365	Compression: Cubes..... \$ 28.00
<u>Concrete Roof Fill: Gypsum, Vermiculite, Perlite, Lightweight Insulating Concrete, Etc.</u>	
20371	Compression Test (ASTM C495 and C472)..... \$ 30.00
20373	Air Dry Density (ASTM C472)..... \$ 25.00
20379	Oven Dry Density (ASTM C495)..... \$ 45.00
<u>Reinforcing Steel, ASTM A615</u>	
20501	Tensile Test: # 11 or Smaller..... \$ 50.00
20503	Bend Test: # 11 or Smaller..... \$ 44.00
20505	Tensile Test: # 14..... \$ 95.00
20507	Tensile Test: # 18..... \$ 175.00
20509	Sampling and Tagging (Fabricator)..... \$ 24.00
<u>Reinforcing Steel - Welded or Coupled Specimens</u>	
20521	Tensile Test: Welded #11 and Smaller..... \$ 55.00
20523	Tensile Test: Welded #14..... \$ 95.00
20525	Tensile Test: Welded #18..... \$ 110.00
20527	Tensile Test: Mechanical Splice..... \$ 110.00
20529	Weld: Macroetch..... \$ 65.00
20531	Slippage Test In Addition to Tensile Test (Per Caltrans 52-1.08C)..... \$ 165.00

Laboratory Testing (Continued)

Metal and Steel Testing

20601	Tensile Strength: Up to 100K Pounds (Each).....	\$	45.00
20603	Tensile Strength: Up to 200K Pounds (Each).....	\$	50.00
20605	Tensile Strength: Up to 300K Pounds (Each).....	\$	60.00
20607	Tensile Strength: Up to 400K Pounds (Each).....	\$	105.00
20609	Tensile Strength: 400K to 600K Pounds (Each).....	\$	145.00
20611	Tensile Strength: Stress-Strain Percent Offset.....	\$	145.00
20545	Weld: Macroetch.....	\$	65.00
20547	Weld: Fracture.....	\$	30.00
20615	Bend Test.....	\$	44.00
20617	Flattening Test.....	\$	55.00
20619	Brinell and Rockwell Hardness Test (ASTM E18) (Per Test).....	\$	72.00
20630	Bolt: Axial Tensile Test (Up to 7/8" diameter).....	\$	40.00
20631	Bolt: Wedge Tensile Test (Up to 7/8" diameter).....	\$	55.00
20632	Bolt: Axial Tensile Test (Greater than 7/8" up to 1 1/4" diameter).....	\$	60.00
20633	Bolt: Wedge Tensile Test (Greater than 7/8" up to 1 1/4" diameter).....	\$	75.00
20634	Bolt: Axial Tensile Test (Greater than 1 1/4" diameter).....		Quotation
20635	Bolt: Wedge Tensile Test (Greater than 1 1/4" diameter).....		Quotation
20636	Bolt: Proof Load Test (Up to 7/8").....	\$	65.00
20637	Bolt: Proof Load Test (Up to 1 1/4").....	\$	85.00
20638	Bolt: Proof Load Test Greater than 1 1/4").....		Quotation
20639	Nut: Proof Load Test (Up to 7/8").....	\$	45.00
20640	Nut: Proof Load Test (Up to 1 1/4").....	\$	65.00
20641	Nut: Proof Load Test Greater than 1 1/4").....		Quotation

Chemical Testing of Metal and Steel

80170	Steel Chemical Analysis.....	\$	125.00
80173	Weight of Galvanized Coating.....	\$	75.00

Machining and Preparation of Tensile and Bend Sample: Carbon Steel

20751	Machinist: Initial Preparation from Mock-up, Etc. (Per Hour).....	\$	72.00
20753	Sawcut to Overall Width (Per 0.5" Thickness or Fraction Thereof).....	\$	40.00
20755	Machine to Test Configuration: Milled Specimens (Per 0.5" Thickness or Fraction Thereof).....	\$	55.00
20757	Machine to Test Configuration: Turned Specimens (Per 0.5" Thickness or Fraction Thereof).....	\$	110.00
20759	Prepare Subsize Specimens (Per 0.5" Thickness or Fraction Thereof).....	\$	72.00

Charpy Impact

20621	Charpy Impact Ambient Temperature, per sample (Average of 3 Samples Typically Required).....	\$	45.00
20623	Charpy Impact Reduced Temperature, per sample (Average of 3 Samples Typically Required).....	\$	65.00

Machining of Charpy Samples: Carbon Steel

20780	Cutting and Milling (Per 0.5" or Fraction Thereafter) (Average of 3 Samples Typically Required).....	\$	72.00
20783	Final Machining to Sample Configuration (Average of 3 Samples Typically Required).....	\$	72.00

Prestressing Wires and Tendons, ASTM A416

20701	Stress-Strain Analysis: Wire or Strands (Including Chart and Percent Offset).....	\$	165.00
20703	Tensile Test Only.....	\$	120.00
20705	Tendons.....		Quotation

Calibration Services and Universal Machine Usage

20801	Calibration Services.....		Quotation
20803	Universal Test Machine Usage (Per Hour).....	\$	200.00

Ceramic Tile Testing Division

The Ceramic Tile Institute of America (CTIOA) and Twining Laboratories 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.

Special Testing/Engineering Services

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

EXHIBIT “C”

City’s Representative:

Gillis Monroe, Construction Officer

Exhibit “D”

The City does not provide any materials or information and no other tasks are required.