

**ELECTRIC DEPARTMENT  
ENGINEERING DIVISION**

**REQUEST FOR PROPOSAL  
FOR PROFESSIONAL SERVICES  
FAIRVIEW SUBSTATION ACCEPTANCE TESTING**

**PROPOSAL SUBMITTAL DEADLINE:**

**DATE: July 1, 2014**

**TIME: 3:00PM**

**LOCATION: ELECTRIC DEPARTMENT FRONT DESK**

**CITY OF SANTA CLARA  
ELECTRIC DEPARTMENT  
ENGINEERING DIVISION  
1500 WARBURTON AVENUE  
SANTA CLARA, CA 95050**

PROJECT MANAGER: Rocco Collichia , Harris and Associates

# REQUEST FOR PROPOSAL FOR PROFESSIONAL SERVICES

## FAIRVIEW SUBSTATION ACCEPTANCE TESTING

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### 1. INTRODUCTION

The City of Santa Clara is seeking proposals from qualified firms to provide acceptance testing services for the Fairview Substation project. Minimum requirements of Firms and detailed description of required services are included in Attachment A-Scope of Services.

### 2. ATTACHMENTS

The attachments below are included with this Request for Proposals (“RFP”). The items identified with an asterisk (\*) must be completed, signed by the appropriate representative of the company, and returned with the submittal.

- Attachment A – Scope of Work/Services\*
- Attachment B – Proposer’s Information Form\*
- Attachment C – Certification of Non-Discrimination\*
- Attachment D – Agreement for Services
- Attachment E – Cost Proposal Format\*
- Attachment F – Insurance Requirements
- Attachment G – Santa Clara Ethical Standards
- Attachment H – Affidavit of Compliance with Ethical Standards\*

### 3. INSTRUCTIONS TO PROPOSERS

#### 3.1. Pre-proposal Conference.

There is NO pre-proposal conference scheduled for this solicitation.

#### 3.2. Examination of Proposal Documents.

The submission of a proposal shall be deemed a representation and certification by the Proposer that they:

- 3.2.1. Have carefully read and fully understand the information that was provided by the City to serve as the basis for submission of this proposal.
- 3.2.2. Have the capability to successfully undertake and complete the responsibilities and obligations of the proposal being submitted.
- 3.2.3. Represent that all information contained in the proposal is true and correct.
- 3.2.4. Did not, in any way, collude, conspire to agree, directly or indirectly, with any person, firm, corporation or other Proposer in regard to the amount, terms or conditions of this proposal.
- 3.2.5. Acknowledge that the City has the right to make any inquiry it deems appropriate to substantiate or supplement information

supplied by Proposer, and Proposer hereby grants the City permission to make these inquiries, and to provide any and all related documentation in a timely manner.

No request for modification of the proposal shall be considered after its submission on grounds that Proposer was not fully informed of any fact or condition.

3.3. Questions.

Any questions by the Proposer regarding this RFP or the project must be put in writing and received by the City no later than 3:00 p.m. on June 25, 2014. Correspondence shall be addressed to:

Rocco Colicchia  
Harris & Associates  
1401 Willow Pass Road, Suite 500  
Concord, CA 94520  
(925) 348-1098  
rcolicchia@harris-assoc.com

The City shall not be responsible for nor be bound by any oral instructions, interpretations or explanations issued by the City or its representatives.

Responses from the City to questions by any Proposer will be communicated in writing to all recipients of this RFP. Questions received after the date and time stated above will not be accepted, and will be returned to senders without response.

3.4. Addenda.

Any addenda issued by City shall be in writing, shall become a part of this RFP, and shall be acknowledged and responded to by Proposer.

3.5. Submission of Proposals.

All proposals shall be submitted to:

City of Santa Clara  
Electric Department  
Engineering Division  
1500 Warburton Avenue  
Santa Clara, CA 95050

**Please mark the envelope “RFP FOR FAIRVIEW SUBSTATION ACCEPTANCE TESTING”**

Please note that faxes, electronic submissions, or any media other than hard copies are not acceptable.

Proposals must be delivered no later than 3:00 p.m. on July 1, 2014. All proposals received after that time will be returned to the Proposer unopened.

The Proposer shall submit four (4) copies of its proposal in a sealed envelope, including one (1) original, clearly marked "Original", addressed as noted above, bearing the Proposer's name and address clearly marked, "RFP FOR FARVIEW SUBSTATION ACCEPTANCE TESTING".

**3.6. Withdrawal of Proposals.**

A Proposer may withdraw its proposal at any time before the expiration of the time for submission of proposals as provided in the RFP by delivering a written request for withdrawal signed by, or on behalf of, the Proposer.

**4. RIGHTS OF THE CITY OF SANTA CLARA**

This RFP does not commit the City to enter into a contract, nor does it obligate the City to pay for any costs incurred in preparation and submission of proposals or in anticipation of a contract. The City reserves the right to:

- Make the selection based on its sole discretion;
- Reject any and all proposals;
- Issue subsequent Requests for Proposals;
- Postpone opening proposals for its own convenience;
- Remedy errors in the Request for Proposals process;
- Approve or disapprove the use of particular subconsultants;
- Negotiate with any, all or none of the Proposers;
- Accept other than the lowest offer;
- Waive informalities and irregularities in the Proposals; and/or
- Enter into an agreement with another Proposer in the event the originally selected Proposer defaults or fails to execute an agreement with the City.

An agreement shall not be binding or valid with the City unless and until it is approved by the City Council, if so required, and executed by authorized representatives of the City and of the Proposer.

**5. RFP TIMELINE**

The RFP Timeline is as follows:

RFP Issued	June 4, 2014
Deadline for questions, clarifications	June 25, 2014
Proposals must be submitted by	July 1, 2014
City selects successful proposal	July 10, 2014
City Council Approval	August 18, 2014

The City reserves the right to add, remove or combine steps in the timeline, and/or compress or extend the timeline as the City, in its sole discretion, sees fit.

## **6. INFORMATION TO BE SUBMITTED**

These guidelines govern the format and content of the proposal, and the approach to be used in its development and presentation. The intent of the RFP is to encourage responses that clearly communicate the Proposer's understanding of the City's requirements and its approach to successfully provide the products and/or services on time and within budget. Only that information which is essential to an understanding and evaluation of the proposal should be submitted. Items not related to the RFP and proposal, e.g., generalized brochures, marketing material, etc., will not be considered in the evaluation.

All proposals shall address the following items. The proposals must address the items in the order listed below, and shall be numbered 1 through 8 in the proposal document. Please include a Table of Contents preceding the Chapters.

### Chapter 1 – Proposal Summary.

This Chapter shall discuss the highlights, key features and distinguishing points of the Proposal. A separate sheet shall include a list of individuals and contacts for this Proposal and how to communicate with them. Limit this Chapter to a total of three (3) pages, including the separate sheet.

### Chapter 2 – Profile on the Proposing Firm(s).

This Chapter shall include a brief description of the Prime Proposer's firm, including firm name, address, phone number, email address and primary contact person; brief firm history, including the current permanent staff size as well as local organization structure; and, a discussion of the firm's financial stability, capacity and resources.

Additionally, this section shall include a listing of any claim, lawsuit or litigation and the result of that action resulting from (a) any public project undertaken by the Proposer either as a contractor or subcontractor or by its subcontractors where litigation is still pending or has occurred within the last five years, or (b) any type of project where claims or settlements were paid by the consultant or its insurers within the last five (5) years.

### Chapter 3 – Qualifications of the Firm.

This Chapter shall include a brief description of the Proposer's qualifications and previous experience supplying like services and/or equipment to similar public agencies. Include all areas of expertise, scope of services provided, and relevant experience, including description of each project, role of professional for that project and date completed. Include product provided, the total project cost, the period over which the provision and training was completed, and the name, title,

phone number and email address of clients to be contacted for references. Give a brief statement of the firm's adherence to the schedule and budget for each project.

Five (5) references from clients with similar projects must be submitted along with the names and telephone numbers of contact persons.

#### Chapter 4 –Product Description, Work Plan or Proposal.

This Chapter shall present a well-articulated service plan. Include a full description of major services provided, tasks and subtasks. This section of the proposal shall establish that the Proposer understands the City's objectives and work requirements and Proposer's ability to satisfy those objectives and requirements. Succinctly describe the proposed approach for addressing the required services, providing the required product and the firm's ability to meet the City's schedule, outlining the approach that would be undertaken in providing the requested services. Describe the project understanding, detailed project approach and methodology. List specific proposed services and support and training services to be provided.

#### Chapter 5 – Project Schedule.

This Chapter shall include a projected timeline for completing the project including the start date, order dates, delivery time, installation, and training, and shall indicate completion dates from date the order is received.

#### Chapter 6 – Project Staffing.

This Chapter shall discuss how the Proposer would staff this project. Key personnel will be an important factor considered by the review committee. Changes in key personnel may be cause for rejection of the proposal. Include proposed project management structure, including identification of the project consultant and individuals that will be assigned to the project.

#### Chapter 7 – Proposal Exceptions.

This Chapter shall discuss any exceptions or requested changes that Proposer has to the City's RFP conditions, requirements and agreement. If there are no exceptions noted, it is assumed the Proposer will accept all conditions and requirements identified in Attachment D –“Agreement for Services.” Items not excepted will not be open to later negotiation.

#### Chapter 8 – Proposal Costs Sheet and Rates.

This Chapter shall include the proposed costs to provide the services desired. Include any cost and price information, plus a not-to-exceed amount, that would be contained in a potential agreement with the City. Attachment E, “Sample Cost Proposal Format,” is included and should be used by all Proposers. The hourly rates may be used for pricing the cost of additional services outlined in the Scope of Work. The cost of the project, including the total hours and hourly rates by staff classification, and the resulting all-inclusive fee for the project must be included. Fees must include all anticipated costs, including travel, per diem, and out of

pocket expenses. Please note the City of Santa Clara does not pay for services before it receives them. Therefore, do not propose contract terms that call for upfront payments or deposits.

## **7. CONTRACT TYPE AND METHOD OF PAYMENT**

It is anticipated that the agreement resulting from this RFP, if awarded, will be an Agreement for the Performance of Services. The method of payment to the successful Proposer shall be for services provided based on established rates for services (Weekly Rates, Monthly Rates, etc.) with a maximum “not to exceed” fee as set by the Proposer in the proposal or as negotiated between the Proposer and the City as being the maximum cost to perform all work. This figure shall include direct costs and overhead, such as, but not limited to, materials, delivery, transportation, communications, and any subcontracted items of work.

Proposers shall be prepared to accept the terms and conditions of the Agreement, including Insurance Requirements in Attachment F. If a Proposer desires to take exception to the Agreement, Proposer shall provide the following information in Chapter 7 of their submittal package. Please include the following:

- Proposer shall clearly identify each proposed change to the Agreement, including all relevant Attachments.
- Proposer shall furnish the reasons for each proposed change, as well as specific recommendations for alternative language.

The above factors will be taken into account in evaluating proposals. Proposals that take exceptions to the proposed Agreement may be determined by the City, at its sole discretion, to be unacceptable and no longer considered for award.

## **8. INSURANCE REQUIREMENTS**

The selected Proposer(s), at Proposer’s sole cost and expense and for the full term of the agreement or any extension thereof, shall obtain and maintain, at a minimum, all of the insurance requirements outlined in Attachment F.

All policies, endorsements, certificates and/or binders shall be subject to the approval of the City of Santa Clara as to form and content. These requirements are subject to amendment or waiver, if so approved in writing by the City of Santa Clara. The selected Proposer agrees to provide the City with a copy of said policies, certificates and/or endorsement upon award of contract.

## **9. REVIEW AND SELECTION PROCESS - EVALUATION CRITERIA**

City staff will evaluate the proposals provided in response to this RFP based on the following criteria:

- Quality and completeness of proposal;
- Quality, performance and effectiveness of the solution, goods and/or

- services to be provided by the Proposer;
- Proposer’s experience, including the experience of staff to be assigned to the project, with engagements of similar scope and complexity;
  - Cost to the City;
  - Proposer’s financial stability and length of time in business;
  - Proposer’s ability to perform the work within the time specified;
  - Proposer’s prior record of performance with City or others;
  - Proposer’s ability to provide future records, reports, data and/or services; and
  - Proposer’s compliance with applicable laws, regulations, policies (including city council policies), guidelines and orders governing prior or existing contracts performed by the contractor.

#### **10. PUBLIC NATURE OF PROPOSAL MATERIAL**

Responses to this RFP become the exclusive property of the City of Santa Clara. At such time as the City awards a contract, all proposals received in response to this RFP become a matter of public record and shall be regarded as public records, with the exception of those elements in each proposal which are defined by the Proposer as business or trade secrets and plainly marked as “Confidential,” “Trade Secret,” or “Proprietary.” The City shall not in any way be liable or responsible for the disclosure of any such proposal or portions thereof, if they are not plainly marked as “Confidential,” “Trade Secret,” or “Proprietary,” or if disclosure, in the City’s sole discretion, is required under the California Public Records Act as addressed below. Any proposal which contains language purporting to render all or significant portions of the proposal “Confidential,” “Trade Secret,” or “Proprietary” shall be regarded as non-responsive.

Although the California Public Records Act recognizes that certain confidential trade secret information may be protected from disclosure, the City of Santa Clara may determine, in its sole discretion that the information that a Proposer submits is not a trade secret. If a request is made for information marked “Confidential,” “Trade Secret,” or “Proprietary,” the City shall provide the Proposer who submitted the information reasonable notice to allow the Proposer to seek protection from disclosure by a court of competent jurisdiction, at the Proposer’s sole expense.

#### **11. COLLUSION**

By submitting a proposal, each Proposer represents and warrants that its proposal is genuine and made in the interest of or on behalf of any person not named therein; that the Proposer has not directly induced or solicited any other person to submit a sham proposal or any other person to refrain from submitting a proposal; and that the Proposer has not in any manner sought collusion to secure any improper advantage over any other person submitting a proposal.

## **12. DISQUALIFICATION**

Factors, such as, but not limited to, any of the following, may disqualify a proposal without further consideration:

- Evidence of collusion, directly or indirectly, among Proposers in regard to the amount, terms or conditions of this proposal;
- Any attempt to improperly influence any member of the evaluation team;
- Existence of any lawsuit, unresolved contractual claim or dispute between Proposer and the City;
- Evidence of incorrect information submitted as part of the proposal;
- Evidence of Proposer's inability to successfully complete the responsibilities and obligations of the proposal; and
- Proposer's default under any previous agreement with the City.

## **13. NON-CONFORMING PROPOSAL**

A proposal shall be prepared and submitted in accordance with the provisions of these RFP instructions and specifications. Any alteration, omission, addition, variance, or limitation of, from or to a proposal may be sufficient grounds for non-acceptance of the proposal, at the sole discretion of the City.

## **14. GRATUITIES**

No person shall offer, give or agree to give any City employee any gratuity, discount or offer of employment in connection with the award of contract by the City. No City employee shall solicit, demand, accept or agree to accept from any other person a gratuity, discount or offer of employment in connection with a City contract.

## **15. FIRMS OR PERSONS NOT ELIGIBLE TO SUBMIT A PROPOSAL**

In order to avoid any conflict of interest or perception of a conflict of interest, Proposer(s) selected to provide professional services under this RFP will be subject to the following requirements:

15.1. The consultant or other entity who works on the procurement will be precluded from submitting proposals or bids as a prime contractor or subcontractor.

15.2. The consultant or any other entity who participated in the procurement shall not have a financial, ownership or other interest in any potential Proposer.

**ATTACHMENT A**  
**Scope of Services**  
**SUBSTATION ACCEPTANCE TESTING**

**PART 1 - GENERAL**

**1.1 WORK INCLUDED**

- A. This specification provides requirements for field-acceptance testing of substation (60kV to 12kV) equipment and electrical systems installed or constructed as part of the substation improvements for the Silicon Valley Power Fairview Substation project. The Testing Services Contractor shall be a qualified testing company having current certification by the International Electrical Testing Association (NETA) to perform the substation acceptance testing. It is the intent of this specification that the substation acceptance testing be extensive and complete to ensure correct installation and operation of all equipment.
  
- B. The City has pre-purchased the substation control building and switchgear building, which includes a control room and battery room, complete with switchgear equipment, meter and relay control panels, AC and DC station service equipment, SCADA RTU and communications equipment. The Testing Contractor's scope of work shall include visual inspections, electrical and functional tests of the switchgear building, including the control room and battery room equipment as well as all outdoor equipment as specified herein.
  
- C. Testing shall include, but is not limited to, the following:
  - 1. Outdoor substation bus work.
  - 2. 60 kV SF6 circuit breakers.
  - 3. 60 kV and 12 kV group-operated, air-break, disconnect switches.
  - 4. 60 kV and 12 kV instrument transformers.
  - 5. Power transformers, including surge arresters.
  - 6. 15 kV Metal-Clad switchgear equipment, including drawout circuit breakers, fuses, drawout voltage transformers, control power transformers, current transformers, and protective relays.

7. Medium Voltage Metal-Enclosed Bus.
  8. Meter and relay control panels, including protective relays, programmable automation controllers, substation meters, test switches and other panel mounted equipment.
  9. Grounding system.
  10. 120 V DC batteries and charger.
  11. AC and DC panelboards and enclosed circuit breakers.
  12. Automatic transfer switches.
  13. Substation control, indication and alarm systems, including oil/water separator controls and alarms; HVAC and exhaust fans for switchgear room, control room, and battery room.
  14. Fire alarm system.
  15. Substation yard security lighting and maintenance/emergency lighting systems.
  16. Verify operation of switchgear, control room, and battery room lighting, ventilation, air conditioning and power systems.
  17. Verify tightness of all control building wire and cable terminations to ensure integrity of termination.
  18. Test all interconnection wiring and cables installed between substation yard equipment, the switchgear termination cabinets, and the control building termination cabinets.
  19. Furnish all qualified personnel, supervision, and labor required for, and incidental to, testing.
  20. Furnish all test equipment, materials and labor required to perform testing, including special equipment required for testing of all protective relays, i.e. end-to-end testing of line protection from Fairview Substation to Northwestern Substation and to Scott Receiving Station.
- D. The Testing Contractor's services shall also include the following activities:
1. General equipment check per manufacturer recommendations and as approved by the City.

2. Inspect for physical, electrical, and mechanical conditions of equipment.
3. Conductor insulation tests.
4. Minor corrections to factory wiring and field wiring.
5. Minor electrical equipment adjustments.
6. Exercise all active components.
7. Inspect all indicating devices for proper operation.
8. Functional test of all electrical and mechanical controls and control systems including tests of all electrical and mechanical interlocks for proper operation and sequencing.
9. Inspect all bus connections including connection tightness utilizing a low- resistance ohmmeter.

## **1.2 RELATED SECTIONS**

- A. Section 16120, Wires and Cables
- B. Section 16314, Medium Voltage Switchgear and Control Enclosures
- C. Section 16350, 60 kV SF6 Circuit Breaker
- D. Section 16361, 60 kV and 12 kV Group-Operated Air-Break Disconnect Switch
- E. Section 16390, Grounding
- F. Section 16463, Power Transformer
- G. Section 16466, Aluminum Bus and Bus Hardware
- H. Section 16520, Yard Lighting

## **1.3 RELATED CONTROL BUILDING PROCUREMENT SPECIFICATION SECTIONS**

- A. Section 01100, General Requirements
- B. Section 13121, Power Control Enclosures
- C. Section 16313, Medium Voltage Switchgear Assemblies

- D. Section 16315, Medium Voltage Metal-Enclosed Bus
- E. Section 16470, AC and DC Station Service Equipment
- F. Section 16478, Automatic Transfer Switch
- G. Section 16480, Substation DC Batteries and Charger
- H. Section 16920, Substation Control and Relay Panels and Termination Cabinets

#### **1.4 REFERENCES**

- A. All inspections and field tests shall be in accordance with the latest edition of the following codes, standards, and specifications except as provided otherwise herein.
  - 1. American National Standards Institute (ANSI)
  - 2. Association of Edison Illuminating Companies (AEIC)
  - 3. Institute of Electrical and Electronics Engineers (IEEE)
  - 4. Insulated Cable Engineers Association (ICEA)
  - 5. National Electrical Manufacturers Association (NEMA)
  - 6. National Fire Protection Association (NFPA):
    - a. 70 - National Electrical Code, as amended by the California Code of Regulations (CCR), Title 24, Part 3
  - 7. American Society for Testing and Materials (ASTM)
  - 8. International Electrical Testing Association (NETA). Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
  - 9. Occupational Safety and Health Administration (OSHA)
  - 10. Scaffold Industry Association (SIA)
  - 11. State and local codes and ordinances
  - 12. Underwriters Laboratories, Inc. (UL)

#### **1.5 SUBMITTALS**

- A. Submit for approval, prior to beginning any testing, a proposed test plan, including a proposed schedule for testing activities, identifying the sequential order of equipment or systems to be tested and dates tests are to be performed. Provide additional documentation as specified in this Section.
- B. Submit for approval, prior to beginning any testing, a list of the equipment to be used for performing the substation acceptance tests, including test equipment manufacturer, model no. and date of most recent calibration.
- C. Maintain a written record of all tests showing date, personnel making test, equipment or material tested, and results. Reports shall be submitted to the City weekly in electronic and paper formats. Weekly test reports must be received by the City prior to the City approving any requests for progress payment.
- D. Submit signed copies of final test reports to the City for approval. Final test report must be received by the City prior to commissioning the Substation. Final test report shall be delivered in electronic and paper formats. Both electronic and paper documents shall contain a Table of Contents, Summary of Testing Results, Summary of Outstanding Issues, a statement that the substation is ready to be energized and an index. The electronic document shall follow the same format and shall be searchable. The Testing Contractor shall utilize either Adobe Acrobat or Microsoft Word for the electronic document.

## **1.6 QUALIFICATIONS OF TESTING SERVICES CONTRACTOR**

- A. Experience
  - 1. The Testing Contractor shall have a minimum of five (5) uninterrupted years of experience in the inspection, testing, calibration, and startup of high voltage substation (60kV to 12kV) apparatus, devices, schemes, systems, controls, interlocks, etc. Specific experience shall include electrical transmission and distribution substations and protective relaying equipment. The Testing Contractor's field service personnel shall be experienced in the testing, setting, configuration and startup of high voltage protective relaying schemes using the specific microprocessor-based relays to be employed on this project.
  - 2. The Testing Contractor shall be corporately independent of the electrical equipment manufacturers, suppliers and installers of the equipment.

3. The Testing Contractor shall utilize only full-time employees who are regularly engaged in electrical power systems testing. Electrically unskilled employees shall not perform or assist in testing of any kind.
4. Testing Contractor and its field personnel performing the substation acceptance testing shall hold current certification by the NETA. The Technicians who perform the testing and inspection services at Fairview Substation project shall be trained and experienced with respect to the apparatus and systems being evaluated. These individuals shall be capable of conducting the tests in a safe manner and with complete knowledge of the hazards involved. They must evaluate the test data and make an informed judgment as to the condition of the equipment and suitability of the test data. Technicians shall be certified in accordance with ANSI/NETA ETT-2000, Standard for Certification of Electrical Testing Technicians. Each on-site crew leader shall hold current certification, Level III or higher, in electrical testing.
5. The Testing Contractor shall have a registered professional electrical engineer on staff as a full time employee.

B. Qualification of Testing Contractor Personnel

1. Classifications
  - a. Field Service Engineer: A field service engineer requires a BSEE degree in electrical engineering and 5 years of actual test experience.
  - b. Senior Technician: A senior technician classification requires a two-year degree or equivalent technical education in an electrical and/or electronic curriculum and 5 years actual test experience, or a minimum of 15 years actual test experience.
  - c. Technician: A technician classification has the same general educational requirements as a senior technician and 2 years actual test experience, or a minimum of 5 years of actual test experience.
  - d. Junior Technician: A junior technician has the same general educational requirements as a senior technician and 1 year actual test experience, or 3 years actual test experience.

2. Experience on both new and existing energized power and control system installations.
3. Proficient in reading all types of electrical power and control systems drawings including system coordination data.
4. An in depth understanding of power and control system design, including metering and protective relaying schemes.
5. Proficient in the use of test equipment and devices ordinarily used for inspections, tests, and calibration of electrical power systems apparatus, including the interpretation of resultant test data.
6. Safety considerations applicable to the work being performed.
  - a. Safety practices shall include, but are not limited to, the following requirements:
    - i. Occupational Safety and Health Act.
    - ii. Accident Prevention Manual for Industrial Operations, National Safety Council.
    - iii. Applicable state and local safety operating procedures.
    - iv. City's safety practices.
    - v. ANSI/NFPA 70E, Electrical Safety Requirements for Employee Workplaces.
  - b. All tests shall be performed with apparatus de-energized except where otherwise specifically required.
  - c. The Testing Contractor shall have a designated safety representative on the project to supervise operations with respect to safety.

## **1.7 REQUIRED NOTIFICATIONS**

- A. Provide written notification to the City a minimum of two weeks prior to commencement of Substation Acceptance Testing.

- B. Following commencement of acceptance testing, provide notification of individual equipment or system tests a minimum of three working days prior to performing tests.

## **PART 2 - PRODUCTS**

### **2.1 REQUIREMENTS**

- A. The Testing Contractor shall furnish all test equipment required to perform substation acceptance tests at no additional cost to the City. The test equipment shall be supplied on an as-needed basis for use by the Testing Contractor field service personnel only.
- B. The accuracy of all test equipment utilized by the Testing Contractor for testing, calibrating, and in the evaluation of all electrical apparatus, devices, systems, and controls shall be certified traceable to the National Institute of Standards and Technology (NIST). Each applicable piece of test equipment shall have a calibration tag which indicates last date of calibration and calibration due date. Records, which show date and results of equipment calibrated or tested shall be kept up-to-date, and made available to the City if requested. Test equipment shall be calibrated in accordance with the following frequency schedule:
  - 1. Field equipment: 12 months maximum.
  - 2. Laboratory equipment: 12 months maximum.
  - 3. Leased specialty equipment: 12 months maximum where accuracy is guaranteed by lessor.
- C. The testing firm shall utilize testing and calibrating standards of a higher degree of accuracy than that of the device being tested.

### **2.2 EQUIPMENT**

- A. The Testing Contractor shall furnish all test equipment required for complete testing and calibration of the specified electrical power system apparatus, devices, and controls. The Testing Contractor shall submit a list showing the proposed test equipment, along with the manufacturer, model number, and last calibration date of the equipment. The Testing Contractor shall provide any equipment, over and above that shown below, deemed necessary to complete the project. The proposed equipment shall be subject to approval by the City. Equipment shall include:
  - 1. Portable relay test set(s) with software, capable of conducting all tests on microprocessor based relays and

control devices. The test set shall be capable of providing simultaneous 3-phase quantities of voltage and current.

2. Portable personal computer (PC), with Intel™ Core Duo™ processor, 2.0 GHz or better, Windows 7 operating system, minimum 2 GB memory, 250 GB hard drive, DVD optical drive, and Wi-Fi wireless card, including paper printer, and telecommunication software.
3. Communications cables necessary to communicate with all relays, meters, and other control devices.
4. Power Factor Test Set (Doble) with software.
5. Phase angle meter (3-phase).

### **PART 3 - EXECUTION**

#### **3.1 GENERAL REQUIREMENTS**

- A. The City may require certain tests to be performed in its presence or under the supervision of an equipment manufacturer's field representative, or City inspectors. At the beginning of substation construction activities, the Construction Contractor and the Testing Services Contractor shall meet with the City to confirm testing program requirements, including specific tests that are required to be performed in the presence of the City.
- B. Submit to the City for approval, prior to start testing, a proposed plan for performing substation acceptance testing. The proposed testing plan shall include testing schedule, proposed personnel and qualifications, and a list of equipment to be used for performing the tests.
- C. The Testing Contractor shall perform the following:
  1. Be personally present on the jobsite during the testing of all wiring, controls and systems furnished, installed, or connected under this contract and until they are all in complete and satisfactory operation and the substation is in full operation.
  2. Perform and direct the complete program of testing specified herein.

3. Personally check all wiring installed on this project for proper connection in accordance with information shown on the substation's schematic diagrams, wiring and interconnection diagrams and manufacturer's shop drawings. Highlight drawings with yellow marker as wiring is check.
  4. Provide interpretation of test results, identifying and notifying the City of any test results that are abnormal or that warrant further investigation.
- D. The Testing Contractor shall be responsible for all damage to equipment or material due to improper test procedures or test apparatus handling.
  - E. The City reserves the option to assign its personnel or representatives to assist the Testing Contractor in checking out certain control schemes where the City concludes such assistance is necessary to meet the project schedule. If the City should exercise this option, the Testing Contractor will be furnished a notice, in writing, specifying the extent of the City's involvement.
  - F. Upon testing, any deviations from these specifications and/or manufacturer's specifications shall be recorded and included in the test report, reported to the City within two days, and corrective action shall be determined by City.
  - G. It is anticipated there may be occasions when testing will have to be performed outside regular working hours. This testing would primarily be related to work during initial energization testing and load testing of equipment and systems. Other possible work of this nature would be under critical situations where the safety of crews or equipment and progress of the overall project work is concerned.
  - H. Connections shall not be made, or testing performed on equipment, facilities, circuits, or systems that may affect existing City equipment or systems without receiving proper authorization from the City. The City reserves the right to have personnel present when connections are made or testing is performed on any piece of equipment installed or tested on this project that may affect its existing systems. Scheduling for such work shall be subject to approval by the City.

- I. All test procedures, equipment, temporary circuits, etc., shall be designed and utilized to minimize danger to testing technicians and surrounding personnel; i.e., current transformer testing utilizing alligator clips will not be permitted. The Testing Contractor shall furnish and use safety devices such as rubber gloves and blankets, provide protective screens and barriers, yellow tape, danger signs, to adequately protect and warn all personnel in the vicinity of the tests.
- J. Testing Contractor shall completely inspect and test all substation equipment, wiring and control schemes for proper condition, installation and functioning. After successful completion of field acceptance tests on equipment and systems, and satisfying itself that the substation is ready for operation, the Testing Contractor shall provide written notification to the City that the substation is ready for energization.

### **3.2 GENERAL TEST PROCEDURES**

- A. The following are general test procedures to be used as specified for performing acceptance tests on substation equipment.
  - 1. Prior to performing insulation resistance (megger) tests on wiring, determine allowable procedures from manufacturer's instructions for circuits connected to solid state and microprocessor based equipment.
  - 2. Testing Contractor shall use the "yellow line" method for recording that functional tests have been successfully completed. This method requires that a yellow highlighter be used to mark those portions of the control circuits, potential circuits and current transformer circuits that have been tested and are functioning properly. The diagrams shall be dated, signed by the person who conducted the tests, and submitted to the City along with the final test and inspection reports.

### **3.3 OUTDOOR SUBSTATION BUS WORK**

- A. Visual and Mechanical Inspection
  - 1. Compare bus arrangement with the drawings to verify proper arrangement, configuration and connections.
  - 2. Inspect the physical and mechanical condition of the bus and structures.

3. Inspect all welded connections for uniformity, condition and completeness of welds.
4. Verify tightness of all bolted electrical connections using a calibrated torque-wrench in accordance with manufacturer's recommendations. Bolt torque levels shall be in accordance with NETA recommendations, unless otherwise specified by the manufacturer.
5. Following completion of tests, clean all bus support insulators.

**B. Electrical Tests**

1. Perform resistance measurements through all bolted connections using a low resistance ohmmeter. Compare resistance to values of similar connections.
2. Measure resistance of all bus joints using a low resistance ohmmeter. Compare resistance of bus joints to equal lengths of non-joined bus and to similar lengths of jointed connections.
3. Perform megger tests on each bus, phase-to-ground, with other phases grounded. Investigate values that deviate from similar connections by more than 50% of the lowest value.
4. Perform overpotential test on each bus phase, phase-to-ground with other phases grounded. Potential application shall be for one minute. Overpotential test levels shall be in accordance with NETA recommendations. The insulation shall withstand the overpotential test voltage applied.

**3.4 SF6 POWER CIRCUIT BREAKERS**

**A. Visual and Mechanical Inspection**

1. Compare nameplate data with drawings and specifications.
2. Inspect physical and mechanical condition, including any loose hardware, broken or chipped porcelain, missing cotter pins, loose gasket covers, etc.
3. Confirm correct application of manufacturer's recommended lubricants.
4. Inspect anchorage and grounding.

5. Inspect and verify adjustments of operating mechanism in accordance with manufacturer's published data.
6. Verify proper operation of SF6 gas system, including gauges and valve positions. Confirm proper SF6 gas pressure and check for leaks.
7. Verify correct operation of all SF6 gas pressure alarms and cutouts.
8. Check auxiliary switch connections, contacts, and operating linkages.
9. Perform time-travel analysis and compare results to manufacturer's published data.
10. Test SF6 gas for moisture and nitrogen content.
11. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
12. Record as-found and as-left counter operations.
13. Check spring charging motor for proper operation. Check charging motor starts counter and compare with operations counter as applicable.
14. Verify operation of all heaters.
15. Following completion of tests clean all bushings and insulators.

B. Electrical Tests

1. Perform contact resistance tests. Test values shall be in accordance with manufacturer's recommendations. Investigate any values that deviate from similar contact resistance tests by more than 50% of the lowest value.
2. Perform resistance measurements through all bolted electrical connections with a low resistance ohmmeter. Compare bolted connection resistance to values of similar connections.

3. Perform insulation resistance tests phase-to-phase, phase-to-ground and across open poles at 15,000 volts minimum. Circuit breaker insulation resistance shall exceed NETA recommended minimum values.
4. Perform instrument transformer tests on CTs as specified in this Section.
5. Perform dissipation-factor/power factor tests on breaker and bushings with breaker open. Make a minimum of six readings for each bushing position. Compare test results to manufacturer's published data. In the absence of manufacturer's published data, compare test results to values from similar breakers. Dissipation-factor/power factor tests shall be within 10% of nameplate ratings for bushings.
6. Perform minimum pick-up voltage test on circuit breaker trip and close coils. Minimum pick-up voltage values shall conform to manufacturer's published data.
7. Test each circuit breaker from local control switch, remote control switch, SCADA and relays on the control panels. Verify proper operation.

### **3.5 MEDIUM VOLTAGE VACUUM CIRCUIT BREAKERS**

#### **A. Visual and Mechanical Inspection**

1. Compare nameplate data with drawings and specifications.
2. Inspect physical and mechanical condition.
3. Confirm correct application of manufacturer's recommended lubricants.
4. Inspect anchorage and grounding.
5. Verify the unit is clean.
6. Perform all mechanical operational tests on both the circuit breaker and its operating mechanism.
7. Measure critical distances such as contact gap as recommended by manufacturer.
8. Check auxiliary switch connections, contacts, and operating linkages.

9. Perform time-travel analysis and compare results to manufacturer's published data.
10. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
11. Inspect, check adjust circuit breaker operating mechanism in accordance with manufacturer's instructions.
12. Record as-found and as-left counter operations.
13. Following completion of tests clean all bushings and insulators.

B. Electrical Tests

1. Perform contact resistance tests. Test values shall be in accordance with manufacturer's recommendations. Investigate any values that deviate from similar contact resistance tests by more than 50% of the lowest value.
2. Perform resistance measurements through all bolted electrical connections with a low resistance ohmmeter. Compare bolted connection resistance to values of similar connections.
3. Perform insulation resistance tests phase-to-phase, phase-to-ground and across open poles at 2,500 volts minimum. Circuit breaker insulation resistance shall exceed NETA recommended minimum values.
4. Perform a contact/pole resistance test.
5. Perform vacuum bottle integrity (overpotential) test across each vacuum bottle with the breaker in the open position in accordance with manufacturer's published data.
6. Perform instrument transformer tests on CTs as specified in this Section.
7. Perform insulation-resistance tests on all control wiring as specified in this Section.

8. Perform dissipation-factor/power factor tests on breaker and bushings with breaker open. Make a minimum of six readings for each bushing position. Compare test results to manufacturer's published data. In the absence of manufacturer's published data, compare test results to values from similar breakers. Dissipation-factor/power factor tests shall be within 10% of nameplate ratings for bushings.
9. Perform minimum pick-up voltage test on circuit breaker trip and close coils. Minimum pick-up voltage values shall conform to manufacturer's published data.
10. Test each circuit breaker from local control switch, remote control switch, SCADA and relays on the control panels. Verify proper operation.

### **3.6 MEDIUM VOLTAGE SWITCHGEAR**

#### **A. Visual and Mechanical Inspection:**

1. Compare equipment nameplate data with the Drawings and Specifications.
2. Inspect physical and mechanical condition.
3. Inspect anchorage, alignment, grounding and required clearances.
4. Inspect equipment for cleanliness.
5. Verify that circuit breaker/fuse sizes and types correspond to the approved submittals and Section 16305.
6. Verify that current and voltage transformer ratios correspond to the Drawings.
7. Inspect bolted connections by one of the following methods:
  - a. Use of digital low resistance ohmmeter.
  - b. Calibrated torque wrench:
    - (1) Refer to Manufacturer's instructions for proper foot-pound levels or NETA ATS.
  - c. Thermographic survey in accordance with NETA ATS recommendations.
8. Mechanical and Electrical Interlocks:

- a. Attempt closure on locked-open devices.
  - b. Attempt to open locked-closed devices.
  - c. Make/attempt key-exchanges in all positions.
9. Lubrication Requirements:
- a. Verify appropriate lubrication on moving current-carrying parts.
  - b. Verify appropriate lubrication on moving and sliding surfaces.
10. Inspect insulators for evidence of physical damage or contaminated surfaces.
11. Verify correct barrier and shutter installation and operation.
12. Exercise all active components.
13. Inspect all indicating devices for correct operation.
14. Verify that filters are in place and/or vents are clear.
15. Perform visual and mechanical inspection of instrument transformers as specified below.
16. Inspect Control Power Transformers:
- a. Inspect for physical damage, cracked insulation, broken leads, and tightness of connections, defective wiring, and overall general condition.
  - b. Verify that primary and secondary fuse ratings match the submittal Drawings.
  - c. Verify correct functioning of drawout disconnecting and grounding contacts and interlocks.
- B. Electrical Tests:
1. Perform electrical tests on current and voltage transformers as specified under Instrument Transformers, and as indicated below.
  2. Perform ground-resistance tests as specified below.

3. Perform resistance measurements through bolted connections with a digital low-resistance ohmmeter if applicable.
4. Perform insulation-resistance tests on each bus section, phase-to-phase and phase-to-ground for 1 minute.
5. Perform an overpotential test on each bus section, each phase to ground with phases not under test grounded, in accordance with Manufacturer's published data or NETA ATS. Apply the test voltage for one minute.
6. Perform insulation-resistance tests on control wiring with respect to ground. Applied potential shall be 500 volts dc for 300 volt rated cable and 1000 volts dc for 600 volt rated cable. Apply the test voltage for 1 minute:
  - a. For solid state devices that cannot tolerate the applied voltage, follow the Manufacturer's recommendation.
7. Perform system function tests.
8. Perform current injection tests on the entire current circuit of each switchgear or switchboard:
  - a. Perform current tests by secondary injection with magnitudes such that a minimum current of 1.0 ampere flows in the secondary circuit:
    - (1) Verify the correct magnitude of current at each device in the circuit.
  - b. Perform current tests by primary injection with magnitudes such that a minimum current of 1.0 ampere flows in the secondary circuit:
    - (1) Verify the correct magnitude of current at each device in the circuit.
9. Determine the accuracy of all meters.
10. Perform phasing check on double-ended or dual-source equipment to ensure correct bus phasing from each source.
11. Control Power Transformers:
  - a. Perform insulation resistance tests, winding-to-winding and winding-to-ground:

- (1) Test voltages shall be in accordance with NETA ATS or as specified by the Manufacturer.
  - b. Perform secondary wiring integrity test:
    - (1) Disconnect transformer at secondary terminals and connect secondary wiring to a rated secondary voltage source:
      - (a) Verify correct potential at all devices.
  - c. Verify correct secondary voltage by energizing primary winding with system voltage:
    - (1) Measure secondary voltage with the secondary wiring disconnected.
  - d. Verify correct function of control power transfer equipment and devices located in switchgear with multiple power sources.
- 12. Voltage Transformers: In addition to requirements specified for Instrument Transformers, perform the following electrical tests:
  - a. Perform secondary wiring integrity test:
    - (1) Disconnect transformer at secondary terminals and connect secondary wiring to a rated secondary voltage source:
      - (a) Verify correct potential at all devices.
  - b. Verify correct secondary voltage by energizing primary winding with system voltage:
    - (1) Measure secondary voltage with the secondary wiring disconnected.
- 13. Verify operation of space heaters.

C. Test Values:

- 1. Compare bus connection resistances to values of similar connections.

2. Bolt-torque levels should be in accordance with NETA ATS or Manufacturer's specifications.
3. Microhm of millivolt drop values shall not exceed the high levels of the normal range as indicated in the Manufacturer's published data:
  - a. If Manufacturer's data is not available, investigate any values which deviate from a similar bus by more than 50 percent of the lowest value.
  - b. Insulation-resistance values for bus and control power transformers shall be in accordance with Manufacturer's published data:
    - (1) If Manufacturer's data is not available, refer to NETA ATS.
    - (2) Investigate insulation values less than the allowable minimum.
    - (3) Do not proceed with overpotential tests until insulation-resistance values are above minimum values.
4. Bus insulation shall withstand the overpotential test voltage applied.
5. Insulation-resistance values for control wiring shall be a minimum of 2.0 megohms.

### **3.7 MEDIUM VOLTAGE METAL-ENCLOSED BUS**

- A. Visual and Mechanical Inspection:
  1. Compare equipment nameplate data with the Drawings and Specifications.
  2. Inspect physical and mechanical condition.
  3. Inspect anchorage, alignment, and grounding.
  4. Verify correct connection in accordance with single-line diagram.
  5. Inspect bolted electrical connections by one of the following methods:

- a. Use of digital low resistance ohmmeter.
  - b. Calibrated torque wrench:
    - (1) Refer to Manufacturer's instructions for proper foot-pound levels or NETA ATS.
  - c. Thermographic survey in accordance with NETA ATS recommendations.
6. Confirm physical orientation in accordance with manufacturer's labels to insure adequate cooling.
  7. Examine outdoor busway for removal of "weep-hole" plugs, if applicable, and the correct installation of joint shields.
- B. Electrical Tests
1. Perform resistance measurements through bolted connections and bus joints with a low resistance digital ohmmeter in accordance with NETA ATS.
  2. Measure insulation resistance of each busway, phase-to-phase and phase-to-ground for one minute, in accordance with NETA ATS.
  3. Perform an overpotential test on each busway, phase-to-ground with phases not under test grounded, in accordance with manufacturer's published data or per NETA ATS if manufacturer does not have a recommendation for this test.
  4. Perform contact-resistance test on each connection point of uninsulated busway. On insulated busway, measure resistance of assembled busway sections and compare values with adjacent phases.
  5. Perform phasing test on each busway tie section energized by separate sources. Tests must be performed from their permanent sources.
- C. Test Values
1. Compare bolted connection resistance and bus joint resistances to values of similar connections.
  2. Bolt-torque levels should be in accordance with NETA ATS or Manufacturer's specifications.

3. Microhm of millivolt drop values shall not exceed the high levels of the normal range as indicated in the Manufacturer's published data:
  - a. If Manufacturer's data is not available, investigate any values which deviate from a similar bus by more than 50 percent of the lowest value.
  - b. Insulation-resistance test voltages and resistance values shall be in accordance with Manufacturer's published data:
    - (1) If Manufacturer's data is not available, refer to NETA ATS.
    - (2) Investigate insulation values less than the allowable minimum.
    - (3) Do not proceed with overpotential tests until insulation-resistance values are above minimum values.
4. Bus insulation shall withstand the overpotential test voltage applied.

### **3.8 60 kV AND 12 kV GROUP-OPERATED, AIR-BREAK, DISCONNECT SWITCHES**

- A. Visual and Mechanical Inspection
  1. Compare equipment nameplate date with drawings and specifications.
  2. Inspect physical and mechanical condition.
  3. Confirm correct application of manufacturer's recommended lubricants.
  4. Verify that grounding is in accordance with manufacturer's instructions and with the drawings and specifications. Confirm that switch operator pipes, switch support structure, and operating platform are properly grounded in accordance with the drawings.
  5. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.

6. Check all switch operating mechanisms for correct operation after external buses have been connected. Verify proper operating rod alignment.
7. Verify correct blade alignment, blade penetration, travel stops, arc interrupter operation, and uniformity of operation of all switch blades.
8. Verify that switches have been assembled in accordance with manufacturer's instructions, and that the installation is complete, necessary cotter pins installed and insulators properly cleaned.

**B. Electrical Tests**

1. Check bolted connections for high resistance using a low resistance ohmmeter. Compare resistances to values of similar connections.
2. Perform insulation resistance tests on each pole, phase-to-phase and phase-to-ground with switch closed and across each open pole for one minute. Test voltages and results shall be in accordance with manufacturer's published data, or in the absence of such data, recommendations of the NETA.
3. Perform an overpotential test on each pole with switch closed. Test each pole-to-ground with other poles grounded. Test voltage shall be in accordance with manufacturer's published data, or in the absence of such data, recommendations of the NETA.
4. Perform contact resistance test across each switch blade. Contact resistance shall be determined in microhms. Investigate any values which deviate from adjacent poles or similar switches by more than 25%.

**3.9 12 KV AND 60 KV INSTRUMENT TRANSFORMERS**

**A. Visual and Mechanical Inspections**

1. Compare equipment nameplate data with drawings and specifications.
2. Inspect physical and mechanical condition.
3. Verify correct connection and tapping of transformers with system requirements.

4. Verify that adequate clearances exist between primary and secondary circuit wiring.
5. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
6. Verify that all required grounding and shorting connections provide contact.
7. Verify correct voltage transformer secondary circuit fusing.
8. Visually check polarity mark orientation and correct connection of all CTs in accordance with the drawings and manufacturer's shop drawings.
9. Short all CTs to ground following testing and leave shorted until it is determined in the course of the testing procedure the CT is properly connected. At completion of testing, ensure that all active CTs are left unshorted and ready for operation.
10. All CT's not used will be shorted with ring lug jumpers at CT shorting block.

B. Electrical Tests – Current Transformers (CTs)

1. Perform resistance tests through all bolted connections with a low resistance ohmmeter. Compare all bolted connection resistances to values of similar connections.
2. Perform insulation resistance tests on current transformers and wiring-to-ground at 1000 V DC before saturation test. Insulation resistance values shall exceed the minimum acceptable levels recommended by NETA.
3. Perform a polarity test of each current transformer. Polarity results shall agree with the drawings. All CT's, whether presently used or not, shall be tested for proper polarity.
4. Perform a ratio-verification test using the voltage or current method in accordance with ANSI C57.13.1. Ratio accuracies shall be in accordance with manufacturer's published data. All CT's, whether presently used or not, shall be tested for ratio verification.

5. Perform an excitation test on transformers used for relaying applications in accordance with ANSI C57. 13.1.
  6. Measure current circuit burdens at transformer terminals and determine the total burden.
  7. Check for single point ground using an ohmmeter.
- C. Electrical Tests – Voltage Transformers (VTs)
1. Perform resistance tests through all bolted connections with a low resistance ohmmeter. Compare all bolted connection resistances to values of similar connections.
  2. Perform insulation resistance tests on the VTs winding-to-winding and each winding-to-ground with test voltage in accordance with NETA recommendations. Test voltages shall be applied for one minute. Insulation resistance values shall exceed the minimum acceptable levels recommended by NETA.
  3. Perform a polarity test of each voltage transformer to verify the polarity marks or H1-X1 relationship as applicable.
  4. Perform a turns ratio test on all tap positions, as applicable.
  5. Measure potential circuit burdens at transformer terminals and determine the total burden.

### **3.10 POWER TRANSFORMERS**

- A. Visual and Mechanical Inspection
1. Compare equipment nameplate data with drawings and specifications.
  2. Coordinate and perform instrument transformer tests on CT's and VTs as specified.
  3. Inspect physical and mechanical condition.
  4. Verify removal of any shipping bracing after final placement on pad.
  5. Verify settings and operation of all temperature, level and pressure devices.
  6. Verify correct operation of cooling equipment.

- a. Fan and motor rotation.
  - b. Equipment control.
  - c. Correct overcurrent protection, as applicable.
7. Verify operation of all alarm, control, and trip circuits from temperature and level indicators, pressure relief device, and fault pressure relay and that applicable settings are in accordance with manufacturer's recommendations.
  8. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
  9. Verify correct liquid oil level in all tanks and bushings.
  10. Verify that positive inert gas pressure is maintained in tank and that cylinder is full.
  11. Perform specific inspections and mechanical tests as recommended by the manufacturer.
  12. Verify proper installation and connection of high and low side surge arresters.
  13. Verify correct grounding of transformer, including tank, Xo bushing, neutral reactor, core ground bushing, arresters and transformer mounted voltage transformers.
  14. Set transformer taps as specified by the City and lock on specified tap after testing is completed.
  15. Verify proper wiring and functioning of each transformer's SCADA control and indication points.

B. Electrical Tests

1. Perform resistance tests through all bolted connections with a low resistance ohmmeter. Compare all bolted connection resistances to values of similar connections. Investigate any values that deviate from similar connections by more than 50% of the lowest value.

2. Perform insulation resistance tests, winding-to-winding and each winding-to-ground. Winding-to-winding tests shall be performed for each combination of high and low voltage windings. Test voltage and test values shall be in accordance with the manufacturer's recommendations. In the absence of manufacturer recommendations, perform tests in accordance with NETA recommendations.
3. Calculate polarization index. Polarization index shall be greater than NETA recommended minimum level.
4. Perform turns ratio tests at all no load tap-changer (NLTC) settings and load tap-changer positions. Turns ratio shall deviate by not more than one-half percent from either the adjacent coils or the calculated ratio.
5. Test load tap changer in accordance with manufacturer's recommendations.
6. Perform insulation power factor/dissipation-factor tests on windings and bushings. Test values shall be in accordance with manufacturer's published data.
7. Perform excitation current tests.
8. Measure the resistance of each high voltage winding in each no-load tap-changer position. Measure the resistance of each low voltage winding in each load tap-changer position. Test results should be within one percent of factory results when converted to a common temperature base.
9. If core ground strap is externally accessible, measure core insulation resistance at 500 V DC. Minimum core insulation shall be 25 megohms.
10. Perform a Sweep Frequency Response Analysis (SFRA) to confirm the integrity of the core and coil and to establish the baseline for future SFRA tests. SFRA tests shall be conducted using a Doble M5300 instrument.

C. Insulating Oil Tests

1. Test results should comply with the following:
  - a. Mineral Oil: IEEE C57 106-2002 (Guide for Acceptance and Maintenance of Insulating Oil in Equipment).

2. Verify correct liquid level in all tanks and bushings and check nitrogen content in inert gas sealed oil preservation system.
3. Remove a sample of insulating oil from main tank per ASTM D-923. The sample shall be tested as follows:
  - a. Dielectric breakdown voltage: ASTM D-877 and/or ASTM D-1816.
  - b. Acid neutralization number: ANSI/ASTM D-974
  - c. Specific gravity: ANSI/ASTM D-1298
  - d. Interfacial tension: ANSI/ASTM D-971 or ANSI/ASTM D-2285
  - e. Color: ANSI/ASTM D-1500
  - f. Visual condition: ASTM D-1524
  - g. Water in insulating liquids: ASTM D-1533
  - h. Dissipation factor or power factor: ASTM D-924.
4. Remove a sample of insulating liquid in accordance with ASTM D-3613 and perform dissolved gas analysis (DGA) in accordance with ANSI/IEEE: C57.104 or ASTM D-3612.

### **3.11 SURGE ARRESTERS**

- A. Visual and Mechanical Inspection
  1. Compare equipment nameplate data with drawings and specifications.
  2. Inspect physical and mechanical condition.
  3. Inspect for correct mounting and adequate clearances.
  4. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
  5. Verify that the ground lead on each device is individually attached to a ground electrode.

6. Verify that stroke counter, if present, is correctly mounted and electrically connected.

B. Electrical Tests

1. Perform resistance tests through all bolted connections with a low resistance ohmmeter. Compare all bolted connection resistances to values of similar connections. Investigate any values that deviate from similar connections by more than 50% of the lowest value.
2. Perform insulation-resistance tests in accordance with NETA recommendations.
3. Test grounding connection as specified under Grounding Tests in this Section. Resistance between the arrester ground terminal and the ground system should be less than 0.5 ohm.
4. Perform a watts-loss test.

### **3.12 METER AND RELAY CONTROL PANELS AND TERMINATION CABINETS**

A. Visual and Mechanical Inspection

1. Visually inspect control panels and all associated equipment for physical and mechanical condition.
2. Verify equipment arrangement matches that shown on drawings and manufacturer's shop drawings.
3. Verify appropriate anchorage and required clearances.
4. Inspect doors, panels and sections for corrosion, dents, and scratches, fit and missing hardware.
5. Inspect equipment nameplates for proper device identification and that all interior and exterior nameplates are present.
6. Verify all fuses are properly installed and located in accordance with three-line diagrams, control schematics and panel wiring diagrams.
7. Verify wire terminations at terminal blocks correspond to manufacturer's shop drawings. Check all wiring for secure connections.

8. Verify all connections to ground within control panel and termination cabinet. Verify grounding of cabinet or panels to control building ground.

B. Protective Relays

1. Visual and Mechanical Inspection
  - a. Compare nameplate data with drawings.
  - b. Inspect relays for physical damage.
  - c. Check cover glass, gaskets, contacts, coils, leads, springs, etc., as applicable, for moisture or dirt.
  - d. Verify tightness of all wiring connections to relays.
2. Electrical Tests
  - a. All relays shall be tested and calibrated at the site in the relay panels after complete installation.
  - b. Connect a computer via appropriate cables and establish communications with applicable devices.
  - c. Test and set all relays to values provided by the City. Set passwords, programs, internal jumpers and dipswitches, and logic settings per settings provided by the City.
  - d. Test and verify all pickup points, restraint levels, and perform time current tests as applicable. Relays shall be tested in accordance with manufacturer's published data.
  - e. Verify operation of all light-emitting diode indicators and targets.
  - f. Set contrast for liquid-crystal displays.
  - g. Final testing of the relay calibration shall be in the relay case as specified. Cases shall not be pulled from the meter and relay control panels for this purpose.
  - h. End-to-end testing shall be performed utilizing GPS equipped, time-synchronized, relay test units.

- i. Relays with no field settings, such as lockout and auxiliary tripping relays, shall be tested to verify all contacts perform proper function. Measure coil impedances.
- j. Verify each of the relay contacts performs its intended function in the control scheme, including breaker trip tests, close inhibit tests, Device 86T lockout tests and alarm functions.
- k. Control and Instrument Switch Tests:
  - (1) Inspect all contacts and shunts. Clean contacts as required.
  - (2) Operate switch and note that all design functions are performed in proper sequence.
- l. The City will verify test results and may be present during testing of relays.
- m. Refer to single-line, three-line, and control drawings to determine all relays, meters, and equipment installed that will require testing.

C. Meter and Instrument Calibration

- 1. Visual and Mechanical Inspection
  - a. Compare nameplate data with Contract Drawings and Bill of Material.
  - b. Visually inspect meters and cases for damage.
- 2. Electrical Tests
  - a. Check meter scale with instrument transformer ratio.
  - b. Set and/or program meters per settings provided by the City.
  - c. Simulate full load and verify correct readings.

D. Programmable Automation Controller Tests

1. Simulate each alarm function at the field device end of the circuit to confirm proper operation of alarm circuit and input into the controller.
2. Verify operation of exterior alarm horn and light.
3. Verify proper operation of controller output contacts.

### **3.13 GROUNDING SYSTEM**

#### **A. Visual and Mechanical Inspection**

1. Verify ground system is in compliance with drawings and specifications.

#### **B. Electrical Tests**

1. Perform fall-of-potential test or alternative test in accordance with IEEE Standard 81 on the main grounding grid.
2. Perform point-to-point tests to determine the resistance between the main grounding system and all major electrical equipment frames, structures, system neutral connections, control and switchgear buildings.

### **3.14 120 VOLT DC STATION BATTERIES**

#### **A. Visual and Mechanical Inspection**

1. Compare equipment nameplate with drawings and specifications.
2. Inspect physical and mechanical condition.
3. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
4. Verify adequacy of battery support racks or cabinets, mounting, anchorage, and clearances.
5. Inspect for evidence of corrosion at terminals, connections, racks or cabinet.

6. Verify correct application of manufacturer's approved corrosion inhibiting grease on contact surface areas of all cell-to-cell and terminal connections including connection hardware.
7. Verify ventilation of battery room.
8. Verify existence and proper installation of suitable eyewash equipment.
9. Verify correct electrolyte levels of each cell.
10. Measure electrolyte specific gravity and temperature of all cells. Specific gravity shall be in accordance with the manufacturer's recommended values. Temperature differential between cells should not be greater than 5°F.
11. Verify presence and correct installation of flame arresters.
12. Check for excessive jar/cover distortion.

B. Electrical Tests

1. Perform resistance measurements through all bolted connections with low-resistance ohmmeter. Compare resistance measurements to values of similar connections.
2. Set charger float and equalizing voltage levels in accordance with manufacturer's recommendations.
3. Measure each cell voltage and total battery voltage with charger energized and in float mode of operation.
4. Measure intercell/jar connection resistance.
5. Perform cell impedance tests.
6. Perform a capacity load test in accordance with manufacturer's specifications and ANSI/IEEE standards.

*ANSI/IEEE Std 450-1995. Recommended Practice for Maintenance, Testing and Replacement of Large Lead Storage Batteries for Generating Stations and Substations.*

### **3.15 BATTERY CHARGER**

- A. Visual and Mechanical Inspection
  - 1. Compare equipment nameplate with manufacturer's shop drawings and specifications.
  - 2. Inspect physical and mechanical condition.
  - 3. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
  
- B. Electrical Tests
  - 1. Perform resistance measurements through all bolted connections with low-resistance ohmmeter. Compare resistance measurements to values of similar connections.
  - 2. Verify correct ac input voltage.
  - 3. Verify charger output voltage regulation from no load to full load.
  - 4. Verify output voltage range in both float and equalize modes.
  - 5. Measure ac input current with charger at full rated load.
  - 6. Measure the current limit output of the charger.
  - 7. Measure charger ac ripple voltage and current.
  - 8. Verify temperature compensation function of charger, if applicable.
  - 9. Verify charger instrumentation and alarms.
  - 10. Set the float and equalize voltages in accordance with battery manufacturer's published data.

### **3.16 AC AND DC PANELBOARDS AND ENCLOSED CIRCUIT BREAKERS**

- A. Visual and Mechanical Inspection
  - 1. Inspect panels and circuit breakers. Verify nameplate data and compare to drawings and specifications.

2. Inspection physical and mechanical condition of panelboards and breakers.
3. Verify appropriate anchorage, required clearances, physical damage, and correct alignment.
4. Inspect doors and covers for alignment and proper fit.
5. Verify ratings of all breakers against drawings. Visually inspect all circuit breakers for correct mounting and operate manually.
6. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
7. Verify all wires are properly secured, labeled and trained.
8. Verify panel schedule is complete and accurate.
9. Verify proper wiring of panelboard breaker alarm contacts and enclosed circuit breaker alarm contacts.
10. Verify proper grounding and test as specified for Grounding System in this Section.

### **3.17 AUTOMATIC TRANSFER SWITCHES**

#### **A. Visual and Mechanical Inspection**

1. Compare equipment nameplate data with drawings and specifications.
2. Inspect physical and mechanical condition.
3. Confirm correct application of manufacturer's recommended lubricants.
4. Verify appropriate anchorage and required area clearances.
5. Verify equipment grounding connections.
6. Verify correct blade alignment, blade penetration, travel stops, and mechanical operation.

7. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.

B. Electrical Tests

1. Perform insulation resistance tests on each pole, phase-to-phase and phase-to-ground with switch closed and across each open pole for one minute. Test voltage and results shall be in accordance with NETA recommendations.
2. Measure the contact resistance across each switchblade.
3. Perform resistance measurements through all bolted connections with a low resistance ohmmeter.
4. Confirm proper phasing and rotation of complete AC Station Service from Control Power Transformers in 12 kV Switchgear through Automatic Transfer Switches to AC Panelboards and Lighting Panel.

**3.18 SWITCHGEAR AND CONTROL BUILDINGS HVAC, LIGHTING, POWER AND FIRE ALARM SYSTEMS**

- A. Verify correct operation of switchgear building, control building, and battery room HVAC and exhaust fan controls and alarms, including HVAC failure alarms and activation of exhaust fans upon HVAC failure.
- B. Confirm operation of battery room exhaust fan repeat cycle timer and that unit has been set in accordance with Building Supplier recommendations for repeat cycle and duration of operation.
- C. Verify operation of installed smoke detectors and fire alarm panel. Check alarm and trouble alarms and indications. Verify proper shutdown of HVAC units upon smoke detection.
- D. Verify proper operation of switchgear building, control building, and battery room, interior and exterior lighting, both normal and emergency lighting systems.
- E. Check for proper wiring and operation of switchgear building, control building, and battery room, interior and exterior receptacles.

### **3.19 SUBSTATION OIL/WATER SEPARATOR PUMP CONTROLS AND ALARMS**

- A. Test oil/water separator pump and controls in accordance with the manufacturer's published instructions.
- B. Verify proper operation of overload, high level alarm, and oil fault alarms at switchgear and control building programmable automation controller.

### **3.20 SUBSTATION YARD SECURITY AND MAINTENANCE/EMERGENCY LIGHTING SYSTEMS**

- A. Verify lighting control panel and luminaire nameplate data and compare to drawings and specifications.
- B. Inspect physical and mechanical condition of lighting control panel and luminaires.
- C. Verify appropriate equipment anchorage and note any physical damage.
- D. Inspect lighting control panel door for alignment and proper fit.
- E. Inspect all bolted electrical connections for proper tightness using a calibrated torque-wrench in accordance with manufacturer's recommendations. In the absence of manufacturer's recommended torque values, verify in accordance with NETA recommendations.
- F. Verify all wires are properly secured, labeled and trained.
- G. Upon completion of installation, burn-in 24 hours before performing operational tests. Conduct an operating test to show that the equipment operates in accordance with the requirements of this specification section.
- H. Check manual operation of all site security lighting and maintenance/emergency lighting.
- I. Verify proper operation of photocell and operation of lighting contactor in lighting control panel. Verify operation of manual control of lighting contactor.
- J. Verify proper operation of all site security lights when lighting control panel is set to automatic operation mode. Site security lights shall come on at dusk and turn off at dawn.

- K. Ensure proper aiming of exterior light fixtures in accordance with aiming schedule and as directed by the City.

### **3.21 WIRE AND CABLE, 600 V AND BELOW**

- A. The Testing Contractor shall perform a complete de-energized check of all field wiring installed under this project to verify conformance with the drawings, shop prints, schematics and wiring diagrams to assure proper phasing and polarity of all power conductors, and to confirm that cable shields are grounded at the points indicated on the drawings.
- B. Verify all interconnection cables identified on the circuit schedule are properly labeled and terminated in accordance with drawings.
- C. Verify tightness of interconnection wiring terminations and inspect compression connectors.
- D. Perform continuity tests to confirm that the terminations of all interconnection wiring installed under this project are in conformance with the circuit schedule, drawings, and shop prints. Continuity tests shall be performed using an ohmmeter with an audible continuity buzzer.
- E. Perform insulation resistance tests on all interconnection wiring. Megger wire and cable after installation, not on the reel. Control wiring insulation resistance shall be a minimum of 2 megohms.
- F. Check cable color coding and cable tagging for conformance to Drawings.

### **3.22 SUBSTATION SCADA SYSTEM AND COMMUNICATIONS CABINET EQUIPMENT**

- A. Assist City and Switchgear and Control Building Supplier during startup, commissioning, and point verifications.
- B. Provide personnel and test equipment required to verify all needed values and targets.
- C. Verify operation of exterior alarm horn and light by simulating a contact closure from the RTU command output module.

### 3.23 THROUGH FAULT PRIMARY INJECTION TEST SUPPORT:

Under supervision and direction of the SVP protection engineer perform Through-Fault/High Current injection test procedures. SVP protection engineer to confirm all secondary protective relay circuits are correct in phase and magnitude when compared to design calculations.

A 480/277 VAC generator will be connected to the load side of an individual feeder cubicle feeder. The high voltage winding of the transformers will be shorted to ground as we move, section by section, through the test.

During the Test, current will flow through the switchgear, primary and secondary windings of the transformer, current transformers, meters and protective relaying. Measurements, which consist of current and voltage magnitude and phase angle with respect to reference voltage ( $V_a$  of the generator), shall be made using a phase angle meter. Measurements are taken at test switches, recorded and compared to expected values. The connection between the feeder relay and feeder AFD relays should be verified during the test.

Additionally, for the buss differential circuits, if all connections are correct we will measure current in the two set of CTs that have a primary current flowing but a since the currents equal but opposite polarity no voltage will be developed across the high-impedance bus differential relay. A clamp on ammeter allows us to read current without having to lift leads.

#### MANPOWER:

1- A minimum of 2 Electrical Technicians capable of operating the equipment listed below.

#### EQUIPMENT:

##### Generator and Cables:

- 1- A 480/277 VAC generator. KVA size will be provided by SVP Engineering.
- 2- Cables long enough to reach to from designated location of the generator to attachment point as indicated by SVP Engineering. Typically connection point for a distribution line feeder in the substation.

##### Equipment needed:

- 1- Digital phase angle meter. The voltage input has to withstand  $480 V / \sqrt{3}$  on the voltage channel. The meter has to be capable of displaying voltage and current magnitude and angle.

- 2- Clamp on meter with 500 A/ 1 ratio.
- 3- Fluke meter.
- 4- Extension cords that can extend from the location of the generator all way to all relays and testing points. One of the extension cords will be cut in half during the test.
- 5- Phase sequence meter.
- 6- ABB or similar test plug to measure current flowing through the test switches:

### **3.24 STATION SERVICE EQUIPMENT ENERGIZATION**

- A. Station service equipment shall include materials and equipment related to the following:
  1. 120/208 V, 3-phase, 4-wire, station service power
  2. 120V DC station service power
  3. All power circuits connected to the AC and DC panelboards
- B. The City shall be advised a minimum of two weeks prior to the energization of this equipment. This equipment may be energized from a temporary source with the concurrence of the City.
- C. The Testing Contractor shall have completed all testing and checkout of equipment prior to energization. Preliminary test reports are required to be submitted to the City prior to the energization of the equipment.
- D. Check all circuit connections immediately prior to energization.
- E. Megger all circuits phase-to-phase, phase-to-ground, wire-to-wire, or wire-to-ground immediately preceding energization to assure temporary grounds have been removed.
- F. Energize equipment one stage, section, circuit, or piece at a time to minimize damage upon equipment failure and to aid in troubleshooting.
- G. Verify proper voltage levels, current levels, phasing, and rotation after each energization step. If necessary, make corrections before proceeding to the next step.
- H. Record all measurements and tests for future reference.

### 3.25 CONTROL SYSTEM FUNCTIONAL TESTS

- A. The Testing Contractor shall perform tests as required during the startup and commissioning process.
- B. After component and equipment testing is completed, all electrical controls shall be tested by trial operation of control equipment by the Testing Contractor in the presence of the City. Verify that each interlock, indication and control function, alarm, and SCADA contact operates in accordance with the drawings, specifications and manufacturer's schematics and operating instructions.
- C. The Construction Contractor shall furnish all necessary labor, supervision, testing equipment, and tools required to locate the cause of any malfunction discovered by the Testing Contractor. Contractor shall make the necessary corrections in wiring, equipment, or connections as necessary to obtain the intended operation.
- D. Testing Contractor shall replace all equipment damaged during testing and shall ensure that all equipment and systems are in proper working order.
- E. Verify all control cable and wire terminations, and tighten all terminations before testing.
- F. Prepare written test reports to track the status of each test. Promptly document the result of each test on the test report forms, and notify City of any malfunctions identified during system testing. Upon completion of repairs, repeat the tests and record on the test report forms the date that the system functioned satisfactorily and the name of the technician or engineer performing the tests.
- G. Meters
  - 1. Verify that meter types, scales, and connections are in accordance with the drawings and that meters display proper readings.
- H. Relay In-Case Tests
  - 1. After connection of all external wiring, conduct in case tests by "forcing" each relay contact to close to verify that the control circuit is functioning properly.
  - 2. Tests shall include applying current and potential to the relays with CT and VT leads opened or shorted (using test switches). Also include phase angle and current checks after relays are actually in service and carrying load current.

3. City will direct appropriate party to correct any errors in interconnection wiring, at no additional cost to the City.
- I. Secondary-Current Tests
    1. Simulate actual load current and fault current operation of the substation electrical systems.
    2. Perform as necessary to check protective relay operation, CT circuits, meters, and instruments.
    3. Check for proper current on all relays via relay front panel or relay software.
    4. Measure the burden of each connected CT.
  - J. Potential Circuit Tests
    1. Pull fuses from VT switch and fuse cabinets and apply proper phase-to-phase and phase-to-ground voltages to the load side of the fuse blocks.
    2. With a voltmeter, check for proper voltages at all relays, instruments, switches, etc., that should be connected in the circuit.
    3. Check for proper voltage on all relays via relay front panel or relay software.
    4. Measure the burden of each potential circuit.

### **3.26 ENERGIZATION PROCEDURE**

- A. Coordination
  1. Initial Energization Procedure shall be submitted to the City at least four (4) weeks prior to energization for approval and comments. If deemed necessary by the City, a meeting will be held on site within one (1) week of the energization date to discuss any details of the energization procedure.
  2. Those to be present are as follows:
    - a. The City, or its authorized representative
    - b. Construction Contractor, including craft labor for switching, removing grounds, etc.
    - c. Testing Contractor

3. Responsibilities of those present during energization are as follows:
  - a. City
    - (1) Witness initial energization or operation of equipment.
    - (2) Obtain and hold work clearances on existing facilities to allow final permanent connections to be made by the Construction Contractor. City may stop work from proceeding if such work, in its estimation, will cause City's system to operate unsatisfactorily or to drop load.
    - (3) Perform pre-energization inspection of substation.
    - (4) Ensure that the initial energization procedure is followed.
    - (5) Perform phasing check and switching procedures for initial energization in coordination with Testing Contractor.
  - b. Construction Contractor
    - (1) Perform all labor associated with clearing new bus equipment, etc., required to allow initial energization.
    - (2) Make final connections as required for initial energization.
    - (3) Perform all work as specified, as required for initial energization.
    - (4) Coordinate with the City to obtain the required clearances.
    - (5) Witness initial energization of equipment.
    - (6) Perform pre-energization inspection of substation.
    - (7) Perform all corrective work required during initial energization.

- (8) Be responsible for the installation of all equipment and materials installed under this Contract.
- (9) Ensure that the initial energization procedure is followed.

c. Testing Contractor

- (1) Perform all testing work required during initial energization.
  - (2) Perform pre-energization inspection of substation.
4. Initial Energization Procedure may be amended when required by field conditions with the consent of the City.
  5. Testing Contractor shall provide testing personnel during energization of the substation as required, 24 hours a day, seven days a week.

B. Pre-Energization Inspection

1. Examine bus, supports and substation equipment for defects, such as cracked welds, chipped porcelain, etc.
2. Ensure all switches and circuit breakers are in proper pre-energization “open” or “closed” position as specified by the City.
3. Visibly confirm that all grounds have been removed from substation buses.
4. Check all CT's prior to energization to ensure that shorting screws are removed from CT shorting blocks and that CT's are correctly tapped.

### **3.27 POST ENERGIZATION TESTS**

- A. After energization, the Testing Contractor shall complete metering and relaying tests and checks including, but not be limited to, the following:
1. Current checks on all applicable relays and meters.

2. Potential voltage checks on all applicable relays and meters.
3. Phase angle checks and current magnitude tests on all applicable relays, at test switches and through relay software, to vectorally prove proper polarity and connection.

**ATTACHMENT B**  
**Proposer's Information Form**

PROPOSER (please print): \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

FAX: \_\_\_\_\_

Contact person, title, telephone number, email address and fax number: \_\_\_\_\_

\_\_\_\_\_

Proposer, if selected, intends to carry on the business as (check one)

- Individual
- Joint Venture
- Partnership
- Corporation

When incorporated? \_\_\_\_\_

In what state? \_\_\_\_\_

When authorized to do business in California? \_\_\_\_\_

Other (explain): \_\_\_\_\_

\_\_\_\_\_

**ADDENDA**

To assure that all Proposers have received each addendum, check the appropriate box(es) below. Failure to acknowledge receipt of an addendum/addenda may be considered an irregularity in the Proposal:

Addendum number(s) received:

- 1
- 2
- 3
- 4
- 5
- 6

Or,

\_\_\_\_\_ No Addendum/Addenda Were Received (check and initial).

**PROPOSER'S SIGNATURE**

No proposal shall be accepted which has not been signed in ink in the appropriate space below:

By signing below, the submission of a proposal shall be deemed a representation and certification by the Proposer that they have investigated all aspects of the RFP, that they are aware of the applicable facts pertaining to the RFP process, its procedures and requirements, and they have read and understand the RFP. No request for modification of the proposal shall be considered after its submission on the grounds that the Proposer was not fully informed as to any fact or condition.

**(1) If Proposer is *INDIVIDUAL*,  
sign here:**

Date: \_\_\_\_\_

\_\_\_\_\_  
Proposer's Signature

\_\_\_\_\_  
Proposer's typed name and title

**(2) If Proposer is *PARTNERSHIP* or  
*JOINT VENTURE*, at least (2) Partners  
or each of the Joint Venturers  
shall sign here:**

\_\_\_\_\_  
Partnership or Joint Venture Name  
(type or print)

Date: \_\_\_\_\_

\_\_\_\_\_  
Member of the Partnership or Joint  
Venture signature

Date: \_\_\_\_\_

\_\_\_\_\_  
Member of the Partnership or Joint  
Venture signature

**(3) If Proposer is a CORPORATION, the duly authorized officer(s) shall sign as follows:**

The undersigned certify that they are respectively: \_\_\_\_\_ (Title) and \_\_\_\_\_ (Title) of the corporation named below; that they are designated to sign the Proposal Cost Form by resolution (attach a certified copy, with corporate seal, if applicable, notarized as to its authenticity or Secretary's certificate of authorization) for and on behalf of the below named CORPORATION, and that they are authorized to execute same for and on behalf of said CORPORATION.

\_\_\_\_\_  
Corporation Name (type or print)

By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

**ATTACHMENT C**  
**Certification of Nondiscrimination**

As suppliers of goods or services to the City of Santa Clara, the firm and individuals listed below certify that they do not discriminate in employment of any person because of race, color, gender, age, religion, disability, national origin, ancestry, sexual orientation, housing status, marital status, or familial status; and that they are in compliance with all Federal, State and local laws, directives and executive orders regarding nondiscrimination in employment.

**(1) If Proposer is *INDIVIDUAL*,  
sign here:**

Date: \_\_\_\_\_

\_\_\_\_\_  
Proposer's Signature

\_\_\_\_\_  
Proposer's typed name and title

**(2) If Proposer is *PARTNERSHIP* or  
*JOINT VENTURE*, at least (2) Partners  
or each of the Joint Venturers  
shall sign here:**

\_\_\_\_\_  
Partnership or Joint Venture Name  
(type or print)

Date: \_\_\_\_\_

\_\_\_\_\_  
Member of the Partnership or Joint  
Venture signature

Date: \_\_\_\_\_

\_\_\_\_\_  
Member of the Partnership or Joint  
Venture signature

**(3) If Proposer is a CORPORATION, the duly authorized officer(s) shall sign as follows:**

The undersigned certify that they are respectively: \_\_\_\_\_ (Title) and \_\_\_\_\_ (Title) of the corporation named below; that they are designated to sign the Proposal Cost Form by resolution (attach a certified copy, with corporate seal, if applicable, notarized as to its authenticity or Secretary's certificate of authorization) for and on behalf of the below named CORPORATION, and that they are authorized to execute same for and on behalf of said CORPORATION.

\_\_\_\_\_  
Corporation Name (type or print)

By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

**ATTACHMENT D  
AGREEMENT FOR THE PERFORMANCE OF SERVICES**

**SAMPLE**

**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR’S NAME**

**PREAMBLE**

This agreement for the performance of services (“Agreement”) is made and entered into on this \_\_\_\_\_ day of \_\_\_\_\_, 201\*\_\_, (“Effective Date”) by and between \*insert Contractor’s name, a[n] \*choose one: a \_\_\_\_\_ (enter State name) corporation/partnership/individual, with its principal place of business located at \*insert Contractor’s address (“Contractor”), and the City of Santa Clara, California, a chartered California municipal corporation with its primary business address at 1500 Warburton Avenue, Santa Clara, California 95050 (“City”). City and Contractor may be referred to individually as a “Party” or collectively as the “Parties” or the “Parties to this Agreement.”

**RECITALS**

- A. City desires to secure professional services more fully described in this Agreement, at Exhibit A, entitled “Scope of Services”; and
- B. Contractor represents that it, and its subcontractors, if any, have the professional qualifications, expertise, necessary licenses and desire to provide certain goods and/or required services of the quality and type which meet objectives and requirements of City; and,
- C. The Parties have specified herein the terms and conditions under which such services will be provided and paid for.

The Parties agree as follows:

**AGREEMENT PROVISIONS**

**1. EMPLOYMENT OF CONTRACTOR.**

City hereby employs Contractor to perform services set forth in this Agreement. To accomplish that end, City may assign a Project Manager to personally direct the Services to be provided by Contractor and will notify Contractor in writing of City’s choice. City shall pay for all such materials and services provided which are consistent with the terms of this Agreement.

**2. SERVICES TO BE PROVIDED.**

Except as specified in this Agreement, Contractor shall furnish all technical and professional services, including labor, material, equipment, transportation, supervision and expertise (collectively referred to as “Services”) to satisfactorily complete the work required by City at his/her own risk and expense. Services to be provided to City are more fully described in Exhibit A entitled “SCOPE OF SERVICES.” All of the exhibits referenced in this Agreement are attached and are incorporated by this reference.

**3. COMMENCEMENT AND COMPLETION OF SERVICES.**

- A. Contractor shall begin providing the services under the requirements of this Agreement upon receipt of written Notice to Proceed from City. Such notice shall be deemed to have occurred three (3) calendar days after it has been deposited in the regular United States mail. Contractor shall complete the Services within the time limits set forth in the Scope of Services or as mutually determined in writing by the Parties.
- B. When City determines that Contractor has satisfactorily completed the Services, City shall give Contractor written Notice of Final Acceptance. Upon receipt of such notice, Contractor shall not incur any further costs under this Agreement. Contractor may request this determination of completion be made when, in its opinion, the Services have been satisfactorily completed. If so requested by the contractor, City shall make this determination within fourteen (14) days of its receipt of such request.

**4. QUALIFICATIONS OF CONTRACTOR - STANDARD OF WORKMANSHIP.**

Contractor represents and maintains that it has the necessary expertise in the professional calling necessary to perform services, and its duties and obligations, expressed and implied, contained herein, and City expressly relies upon Contractor’s representations regarding its skills and knowledge. Contractor shall perform such services and duties in conformance to and consistent with the professional standards of a specialist in the same discipline in the State of California.

The plans, designs, specifications, estimates, calculations, reports and other documents furnished under Exhibit A shall be of a quality acceptable to City. The criteria for acceptance of the work provided under this Agreement shall be a product of neat appearance, well organized, that is technically and grammatically correct, checked and having the maker and checker identified. The minimum standard of appearance, organization and content of the drawings shall be that used by City for similar projects.

**5. TERM OF AGREEMENT.**

Unless otherwise set forth in this Agreement or unless this paragraph is subsequently modified by a written amendment to this Agreement, the term of this Agreement shall begin on the Effective Date of this Agreement and terminate on \*insert end date.

**6. MONITORING OF SERVICES.**

City may monitor the Services performed under this Agreement to determine whether Contractor's operation conforms to City policy and to the terms of this Agreement. City may also monitor the Services to be performed to determine whether financial operations are conducted in accord with applicable City, county, state, and federal requirements. If any action of Contractor constitutes a breach, City may terminate this Agreement pursuant to the provisions described herein.

**7. WARRANTY.**

Contractor expressly warrants that all materials and services covered by this Agreement shall be fit for the purpose intended, shall be free from defect, and shall conform to the specifications, requirements, and instructions upon which this Agreement is based. Contractor agrees to promptly replace or correct any incomplete, inaccurate, or defective Services at no further cost to City when defects are due to the negligence, errors or omissions of Contractor. If Contractor fails to promptly correct or replace materials or services, City may make corrections or replace materials or services and charge Contractor for the cost incurred by City.

**8. PERFORMANCE OF SERVICES.**

Contractor shall perform all requested services in an efficient and expeditious manner and shall work closely with and be guided by City. Contractor shall be as fully responsible to City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for the acts and omissions of persons directly employed by it. Contractor will perform all Services in a safe manner and in accordance with all federal, state and local operation and safety regulations.

**9. RESPONSIBILITY OF CONTRACTOR.**

Contractor shall be responsible for the professional quality, technical accuracy and coordination of the Services furnished by it under this Agreement. Neither City's review, acceptance, nor payments for any of the Services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement and Contractor shall be and remain liable to City in accordance with applicable law for all damages to City caused by Contractor negligent performance of any of the Services furnished under this Agreement.

Any acceptance by City of plans, specifications, construction contract documents, reports, diagrams, maps and other material prepared by Contractor shall not in any respect absolve Contractor from the responsibility Contractor has in accordance with customary standards of good professional practice in compliance with applicable federal, state, county, and/or municipal laws, ordinances, regulations, rules and orders.

**10. COMPENSATION AND PAYMENT.**

In consideration for Contractor's complete performance of Services, City shall pay Contractor for all materials provided and services rendered by Contractor at the rate per hour for labor and cost per unit for materials as outlined in Exhibit B, entitled "SCHEDULE OF FEES."

Contractor will bill City on a monthly basis for Services provided by Contractor during the preceding month, subject to verification by City. City will pay Contractor within thirty (30) days of City's receipt of invoice.

**11. TERMINATION OF AGREEMENT.**

Either Party may terminate this Agreement without cause by giving the other Party written notice ("Notice of Termination") which clearly expresses that Party's intent to terminate the Agreement. Notice of Termination shall become effective no less than thirty (30) calendar days after a Party receives such notice. After either Party terminates the Agreement, Contractor shall discontinue further services as of the effective date of termination, and City shall pay Contractor for all Services satisfactorily performed up to such date.

**12. NO ASSIGNMENT OR SUBCONTRACTING OF AGREEMENT.**

City and Contractor bind themselves, their successors and assigns to all covenants of this Agreement. This Agreement shall not be assigned or transferred without the prior written approval of City. Contractor shall not hire subcontractors without express written permission from City.

**13. NO THIRD PARTY BENEFICIARY.**

This Agreement shall not be construed to be an agreement for the benefit of any third party or parties and no third party or parties shall have any claim or right of action under this Agreement for any cause whatsoever.

**14. INDEPENDENT CONTRACTOR.**

Contractor and all person(s) employed by or contracted with Contractor to furnish labor and/or materials under this Agreement are independent contractors and do not act as agent(s) or employee(s) of City. Contractor has full rights, however, to manage its employees in their performance of Services under this Agreement. Contractor is not authorized to bind City to any contracts or other obligations.

**15 NO PLEDGING OF CITY’S CREDIT.**

Under no circumstances shall Contractor have the authority or power to pledge the credit of City or incur any obligation in the name of City. Contractor shall save and hold harmless the City, its City Council, its officers, employees, boards and commissions for expenses arising out of any unauthorized pledges of City’s credit by Contractor under this Agreement.

**16 CONFIDENTIALITY OF MATERIAL.**

All ideas, memoranda, specifications, plans, manufacturing procedures, data, drawings, descriptions, documents, discussions or other information developed or received by or for Contractor and all other written information submitted to Contractor in connection with the performance of this Agreement shall be held confidential by Contractor and shall not, without the prior written consent of City, be used for any purposes other than the performance of the Services nor be disclosed to an entity not connected with performance of the Services. Nothing furnished to Contractor which is otherwise known to Contractor or becomes generally known to the related industry shall be deemed confidential.

**17 USE OF CITY NAME OR EMBLEM.**

Contractor shall not use City’s name, insignia, or emblem, or distribute any information related to services under this Agreement in any magazine, trade paper, newspaper or other medium without express written consent of City.

**18 OWNERSHIP OF MATERIAL.**

All material, including information developed on computer(s), which shall include, but not be limited to, data, sketches, tracings, drawings, plans, diagrams, quantities, estimates, specifications, proposals, tests, maps, calculations, photographs, reports and other material developed, collected, prepared or caused to be prepared under this Agreement shall be the property of City but Contractor may retain and use copies thereof. City shall not be limited in any way or at any time in its use of said material. However, Contractor shall not be responsible for damages resulting from the use of said material for work other than Project, including, but not limited to, the release of this material to third parties.

**19 RIGHT OF CITY TO INSPECT RECORDS OF CONTRACTOR.**

City, through its authorized employees, representatives or agents shall have the right during the term of this Agreement and for three (3) years from the date of final payment for goods or services provided under this Agreement, to audit the books and records of Contractor for the purpose of verifying any and all charges made by Contractor in connection with Contractor compensation under this Agreement, including termination of Contractor. Contractor agrees to maintain sufficient books and records in accordance with generally accepted accounting

principles to establish the correctness of all charges submitted to City. Any expenses not so recorded shall be disallowed by City.

Contractor shall submit to City any and all reports concerning its performance under this Agreement that may be requested by City in writing. Contractor agrees to assist City in meeting City's reporting requirements to the State and other agencies with respect to Contractor's Services hereunder.

**20 CORRECTION OF SERVICES.**

Contractor agrees to correct any incomplete, inaccurate or defective Services at no further costs to City, when such defects are due to the negligence, errors or omissions of Contractor.

**21 FAIR EMPLOYMENT.**

Contractor shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, gender, sexual orientation, age, disability, religion, ethnic background, or marital status, in violation of state or federal law.

**22 HOLD HARMLESS/INDEMNIFICATION.**

To the extent permitted by law, Contractor agrees to protect, defend, hold harmless and indemnify City, its City Council, commissions, officers, employees, volunteers and agents from and against any claim, injury, liability, loss, cost, and/or expense or damage, including all costs and reasonable attorney's fees in providing a defense to any claim arising therefrom, for which City shall become liable arising from Contractor's negligent, reckless or wrongful acts, errors, or omissions with respect to or in any way connected with the Services performed by Contractor pursuant to this Agreement.

**23 INSURANCE REQUIREMENTS.**

During the term of this Agreement, and for any time period set forth in Exhibit C, Contractor shall purchase and maintain in full force and effect, at no cost to City insurance policies with respect to employees and vehicles assigned to the Performance of Services under this Agreement with coverage amounts, required endorsements, certificates of insurance, and coverage verifications as defined in Exhibit C.

**24 AMENDMENTS.**

This Agreement may be amended only with the written consent of both Parties.

**25 INTEGRATED DOCUMENT.**

This Agreement represents the entire agreement between City and Contractor. No other understanding, agreements, conversations, or otherwise, with any

representative of City prior to execution of this Agreement shall affect or modify any of the terms or obligations of this Agreement. Any verbal agreement shall be considered unofficial information and is not binding upon City.

**26 SEVERABILITY CLAUSE.**

In case any one or more of the provisions in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, it shall not affect the validity of the other provisions, which shall remain in full force and effect.

**27 WAIVER.**

Contractor agrees that waiver by City of any one or more of the conditions of performance under this Agreement shall not be construed as waiver(s) of any other condition of performance under this Agreement.

**28 NOTICES.**

All notices to the Parties shall, unless otherwise requested in writing, be sent to City addressed as follows:

City of Santa Clara  
Attention: [insert Dept. here]  
1500 Warburton Avenue  
Santa Clara, California 95050  
or by facsimile at (408) \_\_\_\_ - \_\_\_\_\_

And to Contractor addressed as follows:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
or by facsimile at (\_\_\_\_) \_\_\_\_ - \_\_\_\_

If notice is sent via facsimile, a signed, hard copy of the material shall also be mailed. The workday the facsimile was sent shall control the date notice was deemed given if there is a facsimile machine generated document on the date of transmission. A facsimile transmitted after 1:00 p.m. on a Friday shall be deemed to have been transmitted on the following Monday.

**29 CAPTIONS.**

The captions of the various sections, paragraphs and subparagraphs of this Agreement are for convenience only and shall not be considered or referred to in resolving questions of interpretation.

**30 LAW GOVERNING CONTRACT AND VENUE.**

This Agreement shall be governed and construed in accordance with the statutes and laws of the State of California. The venue of any suit filed by either Party shall be vested in the state courts of the County of Santa Clara, or if appropriate, in the United States District Court, Northern District of California, San Jose, California.

**31 DISPUTE RESOLUTION.**

- A. Unless otherwise mutually agreed to by the Parties, any controversies between Contractor and City regarding the construction or application of this Agreement, and claims arising out of this Agreement or its breach, shall be submitted to mediation within thirty (30) days of the written request of one Party after the service of that request on the other Party.
- B. The Parties may agree on one mediator. If they cannot agree on one mediator, the Party demanding mediation shall request the Superior Court of Santa Clara County to appoint a mediator. The mediation meeting shall not exceed one day (eight (8) hours). The Parties may agree to extend the time allowed for mediation under this Agreement.
- C. The costs of mediation shall be borne by the Parties equally.
- D. For any contract dispute, mediation under this section is a condition precedent to filing an action in any court. In the event of mediation which arises out of any dispute related to this Agreement, the Parties shall each pay their respective attorney's fees, expert witness costs and cost of suit through mediation only. In the event of litigation, the prevailing Party shall recover its reasonable costs of suit, expert's fees, and attorney's fees. If mediation does not resolve the dispute, the Parties agree that the matter shall be litigated in a court of law, and not subject to the arbitration provisions of the Public Contracts Code.

**32. COMPLIANCE WITH ETHICAL STANDARDS.**

Contractor shall:

- A Read Exhibit D, entitled "ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO AN AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA"; and,
- B Execute Exhibit E, entitled "AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS."

**33. CONFLICT OF INTERESTS.**

This Agreement does not prevent either Party from entering into similar agreements with other parties. To prevent a conflict of interest, Contractor

certifies that to the best of its knowledge, no City officer, employee or authorized representative has any financial interest in the business of Contractor and that no person associated with Contractor has any interest, direct or indirect, which could conflict with the faithful performance of this Agreement. Contractor is familiar with the provisions of California Government Code Section 87100 and following, and certifies that it does not know of any facts which would violate these code provisions. Contractor will advise City if a conflict arises.

**34      PROGRESS SCHEDULE.**

The Progress Schedule will be as set forth in the attached Exhibit F, entitled “MILESTONE SCHEDULE” if applicable.

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but both of which shall constitute one and the same instrument; and, the Parties agree that signatures on this Agreement, including those transmitted by facsimile, shall be sufficient to bind the Parties.

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The Parties acknowledge and accept the terms and conditions of this Agreement as evidenced by the following signatures of their duly authorized representatives. It is the intent of the Parties that this Agreement shall become operative on the Effective Date.

**CITY OF SANTA CLARA, CALIFORNIA**  
a chartered California municipal corporation

APPROVED AS TO FORM:

\_\_\_\_\_  
RICHARD E. NOSKY, JR.  
City Attorney

\_\_\_\_\_  
JULIO J. FUENTES  
City Manager  
1500 Warburton Avenue  
Santa Clara, CA 95050  
Telephone: (408) 615-2210  
Fax: (408) 241-6771

ATTEST:

\_\_\_\_\_  
ROD DIRIDON, JR.  
City Clerk

“CITY”

**\*INSERT CONTRACTOR’S NAME**

\*choose one: a \_\_\_\_\_ (enter State name) corporation/partnership/individual

By: \_\_\_\_\_  
(Signature of Person executing the Agreement on behalf of Contractor)

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Local Address: \_\_\_\_\_

Email Address: \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_

Fax: ( ) \_\_\_\_\_

“CONTRACTOR”

**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR'S NAME**

**EXHIBIT A**

**SCOPE OF SERVICES**

The Services to be performed for the City by the Contractor under this Agreement are more fully described in the Contractor's proposal entitled, "\*insert name of proposal" dated \*insert date of proposal, which is attached to this Exhibit A.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR'S NAME**

**EXHIBIT B**

**FEE SCHEDULE**

In no event shall the amount billed to City by Contractor for services under this Agreement exceed \*spell out dollar amount (\$\*insert numerical dollar amount), subject to budget appropriations.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR’S NAME**

**EXHIBIT C**

**INSURANCE REQUIREMENTS**

Without limiting the Consultant’s indemnification of the City, and prior to commencing any of the Services required under this Agreement, the Consultant shall purchase and maintain in full force and effect during the period of performance of the Agreement and for twenty-four (24) months following acceptance by the City, at its sole cost and expense, the following insurance policies from insurance companies authorized to do business in the State of California. These policies shall be primary insurance as to the City of Santa Clara so that any other coverage held by the City shall not contribute to any loss under Consultant’s insurance. The minimum coverages, provisions and endorsements are as follows:

**A. COMMERCIAL GENERAL LIABILITY INSURANCE**

1. Commercial General Liability Insurance policy which provides coverage at least as broad as Insurance Services Office form CG 00 01. Policy limits are subject to review, but shall in no event be less than, the following:
  - \$1,000,000 Each Occurrence
  - \$2,000,000 General Aggregate
  - \$2,000,000 Products/Completed Operations Aggregate
  - \$1,000,000 Personal Injury
2. Exact structure and layering of the coverage shall be left to the discretion of Consultant; however, any excess or umbrella policies used to meet the required limits shall be at least as broad as the underlying coverage and shall otherwise follow form.
3. The following provisions shall apply to the Commercial Liability policy as well as any umbrella policy maintained by the Consultant to comply with the insurance requirements of this Agreement:
  - a. Coverage shall be on a “pay on behalf” basis with defense costs payable in addition to policy limits;
  - b. There shall be no cross liability exclusion which precludes coverage for claims or suits by one insured against another; and

- c. Coverage shall apply separately to each insured against whom a claim is made or a suit is brought, except with respect to the limits of liability.

#### B. BUSINESS AUTOMOBILE LIABILITY INSURANCE

Business automobile liability insurance policy which provides coverage at least as broad as ISO form CA 00 01 with policy limits a minimum limit of not less than one million dollars (\$1,000,000) each accident using, or providing coverage at least as broad as, Insurance Services Office form CA 00 01. Liability coverage shall apply to all owned (if any), non-owned and hired autos.

In the event that the Work being performed under this Agreement involves transporting of hazardous or regulated substances, hazardous or regulated wastes and/or hazardous or regulated materials, Consultant and/or its subcontractors involved in such activities shall provide coverage with a limit of one million dollars (\$1,000,000) per accident covering transportation of such materials by the addition to the Business Auto Coverage Policy of Environmental Impairment Endorsement MCS90 or Insurance Services Office endorsement form CA 99 48, which amends the pollution exclusion in the standard Business Automobile Policy to cover pollutants that are in or upon, being transported or towed by, being loaded onto, or being unloaded from a covered auto.

#### C. WORKERS' COMPENSATION

1. Workers' Compensation Insurance Policy as required by statute and employer's liability with limits of at least one million dollars (\$1,000,000) policy limit Bodily Injury by disease, one million dollars (\$1,000,000) each accident/Bodily Injury and one million dollars (\$1,000,000) each employee Bodily Injury by disease.
2. The indemnification and hold harmless obligations of Consultant included in this Agreement shall not be limited in any way by any limitation on the amount or type of damage, compensation or benefit payable by or for Contractor or any subcontractor under any Workers' Compensation Act(s), Disability Benefits Act(s) or other employee benefits act(s).
3. This policy must include a Waiver of Subrogation in favor of the City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents.

#### D. PROFESSIONAL LIABILITY

Professional Liability or Errors and Omissions Insurance as appropriate shall be written on a policy form coverage specifically designed to protect against negligent acts, errors or omissions of the Consultant. Covered services as designated in the policy must specifically include work performed under this agreement. Coverage shall be in an amount of not less than one million dollars

(\$1,000,000) per occurrence or two million dollars (\$2,000,000) aggregate. Any coverage containing a deductible or self-retention must first be approved in writing by the City Attorney's Office.

E. COMPLIANCE WITH REQUIREMENTS

All of the following clauses and/or endorsements, or similar provisions, must be part of each commercial general liability policy, and each umbrella or excess policy.

1. Additional Insureds. City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents are hereby added as additional insureds in respect to liability arising out of Consultant's work for City, using Insurance Services Office (ISO) Endorsement CG 20 10 11 85, or the combination of CG 20 10 03 97 and CG 20 37 10 01, or its equivalent.
2. Primary and non-contributing. Each insurance policy provided by Consultant shall contain language or be endorsed to contain wording making it primary insurance as respects to, and not requiring contribution from, any other insurance which the indemnities may possess, including any self-insurance or self-insured retention they may have. Any other insurance indemnities may possess shall be considered excess insurance only and shall not be called upon to contribute with Consultant's insurance.
3. Cancellation.
  - a. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided due to non-payment of premiums shall be effective until written notice has been given to City at least ten (10) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least ten (10) days prior to the effective date of non-renewal.
  - b. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided for any cause save and except non-payment of premiums shall be effective until written notice has been given to City at least thirty (30) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least thirty (30) days prior to the effective date of non-renewal.
4. Other Endorsements. Other endorsements may be required for policies other than the commercial general liability policy if specified in the description of required insurance set forth in Sections A through E of this

Exhibit C, above.

#### F. ADDITIONAL INSURANCE RELATED PROVISIONS

Consultant and City agree as follows:

1. Consultant agrees to ensure that subcontractors, and any other party involved with the Services, who is brought onto or involved in the performance of the Services by Consultant, provide the same minimum insurance coverage required of Consultant, except as with respect to limits. Consultant agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Agreement. Consultant agrees that upon request by City, all agreements with, and insurance compliance documents provided by, such subcontractors and others engaged in the project will be submitted to City for review.
2. Consultant agrees to be responsible for ensuring that no contract used by any party involved in any way with the project reserves the right to charge City or Consultant for the cost of additional insurance coverage required by this Agreement. Any such provisions are to be deleted with reference to City. It is not the intent of City to reimburse any third party for the cost of complying with these requirements. There shall be no recourse against City for payment of premiums or other amounts with respect thereto.
3. The City reserves the right to withhold payments from the Consultant in the event of material noncompliance with the insurance requirements set forth in this Agreement.

#### G. EVIDENCE OF COVERAGE

Prior to commencement of any Services under this Agreement, Consultant, and each and every subcontractor (of every tier) shall, at its sole cost and expense, purchase and maintain not less than the minimum insurance coverage with the endorsements and deductibles indicated in this Agreement. Such insurance coverage shall be maintained with insurers, and under forms of policies, satisfactory to City and as described in this Agreement. Consultant shall file with the City all certificates and endorsements for the required insurance policies for City's approval as to adequacy of the insurance protection.

#### H. EVIDENCE OF COMPLIANCE

Consultant or its insurance broker shall provide the required proof of insurance compliance, consisting of Insurance Services Office (ISO) endorsement forms or their equivalent and the ACORD form 25-S certificate of insurance (or its equivalent), evidencing all required coverage shall be delivered to City, or its representative as set forth below, at or prior to execution of this Agreement. Upon



**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR’S NAME**

**EXHIBIT D**

**ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO  
AN AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA**

**Termination of Agreement for Certain Acts.**

- A. The City may, at its sole discretion, terminate this Agreement in the event any one or more of the following occurs:
- 1 If a Contractor<sup>1</sup> does any of the following:
    - a Is convicted<sup>2</sup> of operating a business in violation of any Federal, State or local law or regulation;
    - b Is convicted of a crime punishable as a felony involving dishonesty<sup>3</sup>;
    - c Is convicted of an offense involving dishonesty or is convicted of fraud or a criminal offense in connection with: (1) obtaining; (2) attempting to obtain; or, (3) performing a public contract or subcontract;
    - d Is convicted of any offense which indicates a lack of business integrity or business honesty which seriously and directly affects the present responsibility of a City contractor or subcontractor; and/or,

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<sup>1</sup> For purposes of this Agreement, the word “Consultant” (whether a person or a legal entity) also refers to “Contractor” and means any of the following: an owner or co-owner of a sole proprietorship; a person who controls or who has the power to control a business entity; a general partner of a partnership; a principal in a joint venture; or a primary corporate stockholder [i.e., a person who owns more than ten percent (10%) of the outstanding stock of a corporation] and who is active in the day to day operations of that corporation.

<sup>2</sup> For purposes of this Agreement, the words “convicted” or “conviction” mean a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere within the past five (5) years.

<sup>3</sup> As used herein, “dishonesty” includes, but is not limited to, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, failure to pay tax obligations, receiving stolen property, collusion or conspiracy.

e Made (or makes) any false statement(s) or representation(s) with respect to this Agreement.

2 If fraudulent, criminal or other seriously improper conduct of any officer, director, shareholder, partner, employee or other individual associated with the Contractor can be imputed to the Contractor when the conduct occurred in connection with the individual's performance of duties for or on behalf of the Contractor, with the Contractor's knowledge, approval or acquiescence, the Contractor's acceptance of the benefits derived from the conduct shall be evidence of such knowledge, approval or acquiescence.

B The City may also terminate this Agreement in the event any one or more of the following occurs:

1 The City determines that Contractor no longer has the financial capability<sup>4</sup> or business experience<sup>5</sup> to perform the terms of, or operate under, this Agreement; or,

2 If City determines that the Contractor fails to submit information, or submits false information, which is required to perform or be awarded a contract with City, including, but not limited to, Contractor's failure to maintain a required State issued license, failure to obtain a City business license (if applicable) or failure to purchase and maintain bonds and/or insurance policies required under this Agreement.

C In the event a prospective Contractor (or bidder) is ruled ineligible (debarred) to participate in a contract award process or a contract is terminated pursuant to these provisions, Contractor may appeal the City's action to the City Council by filing a written request with the City Clerk within ten (10) days of the notice given by City to have the matter heard. The matter will be heard within thirty (30) days of the filing of the appeal request with the City Clerk. The Contractor will have the burden of proof on the appeal. The Contractor shall have the opportunity to present evidence, both oral and documentary, and argument.

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<sup>4</sup> Contractor becomes insolvent, transfers assets in fraud of creditors, makes an assignment for the benefit of creditors, files a petition under any section or chapter of the federal Bankruptcy Code (11 U.S.C.), as amended, or under any similar law or statute of the United States or any state thereof, is adjudged bankrupt or insolvent in proceedings under such laws, or a receiver or trustee is appointed for all or substantially all of the assets of Contractor.

<sup>5</sup> Loss of personnel deemed essential by the City for the successful performance of the obligations of the Contractor to the City.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR'S NAME**

**EXHIBIT E**

**AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS**

I hereby state that I have read and understand the language, entitled "Ethical Standards" set forth in Exhibit D. I have the authority to make these representations on my own behalf or on behalf of the legal entity identified herein. I have examined appropriate business records, and I have made appropriate inquiry of those individuals potentially included within the definition of "Contractor" contained in Ethical Standards at footnote 1.

Based on my review of the appropriate documents and my good-faith review of the necessary inquiry responses, I hereby state that neither the business entity nor any individual(s) belonging to said "Contractor" category [i.e., owner or co-owner of a sole proprietorship, general partner, person who controls or has power to control a business entity, etc.] has been convicted of any one or more of the crimes identified in the Ethical Standards within the past five (5) years.

The above assertions are true and correct and are made under penalty of perjury under the laws of the State of California.

**\*INSERT CONTRACTOR'S NAME**

\*choose one: a corporation/partnership/individual

By: \_\_\_\_\_  
Signature of Authorized Person or Representative

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**NOTARY'S ACKNOWLEDGMENT TO BE ATTACHED**

Please execute the affidavit and attach a notary public's acknowledgment of execution of the affidavit by the signatory. If the affidavit is on behalf of a corporation, partnership, or other legal entity, the entity's complete legal name and the title of the person signing on behalf of the legal entity shall appear above. Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES  
BY AND BETWEEN THE  
CITY OF SANTA CLARA, CALIFORNIA,  
AND  
\*INSERT CONTRACTOR'S NAME**

**EXHIBIT F**

**MILESTONE SCHEDULE**

(If Applicable)

**ATTACHMENT E**  
**Sample Cost Proposal Format**

## **ATTACHMENT F Insurance Requirements**

Without limiting the Consultant's indemnification of the City, and prior to commencing any of the Services required under this Agreement, the Consultant shall purchase and maintain in full force and effect during the period of performance of the Agreement and for twenty-four (24) months following acceptance by the City, at its sole cost and expense, the following insurance policies from insurance companies authorized to do business in the State of California. These policies shall be primary insurance as to the City of Santa Clara so that any other coverage held by the City shall not contribute to any loss under Consultant's insurance. The minimum coverages, provisions and endorsements are as follows:

### **A COMMERCIAL GENERAL LIABILITY INSURANCE**

1. Commercial General Liability Insurance policy which provides coverage at least as broad as Insurance Services Office form CG 00 01. Policy limits are subject to review, but shall in no event be less than, the following:

\$1,000,000 Each Occurrence  
\$2,000,000 General Aggregate  
\$2,000,000 Products/Completed Operations Aggregate  
\$1,000,000 Personal Injury

2. Exact structure and layering of the coverage shall be left to the discretion of Consultant; however, any excess or umbrella policies used to meet the required limits shall be at least as broad as the underlying coverage and shall otherwise follow form.
3. The following provisions shall apply to the Commercial Liability policy as well as any umbrella policy maintained by the Consultant to comply with the insurance requirements of this Agreement:
  - a. Coverage shall be on a "pay on behalf" basis with defense costs payable in addition to policy limits;
  - b. There shall be no cross liability exclusion which precludes coverage for claims or suits by one insured against another; and
  - c. Coverage shall apply separately to each insured against whom a claim is made or a suit is brought, except with respect to the limits of liability.

### **B. BUSINESS AUTOMOBILE LIABILITY INSURANCE**

Business automobile liability insurance policy which provides coverage at least as broad as ISO form CA 00 01 with policy limits a minimum limit of not less than

one million dollars (\$1,000,000) each accident using, or providing coverage at least as broad as, Insurance Services Office form CA 00 01. Liability coverage shall apply to all owned (if any), non-owned and hired autos.

In the event that the Work being performed under this Agreement involves transporting of hazardous or regulated substances, hazardous or regulated wastes and/or hazardous or regulated materials, Consultant and/or its subcontractors involved in such activities shall provide coverage with a limit of one million dollars (\$1,000,000) per accident covering transportation of such materials by the addition to the Business Auto Coverage Policy of Environmental Impairment Endorsement MCS90 or Insurance Services Office endorsement form CA 99 48, which amends the pollution exclusion in the standard Business Automobile Policy to cover pollutants that are in or upon, being transported or towed by, being loaded onto, or being unloaded from a covered auto.

#### C. WORKERS' COMPENSATION

1. Workers' Compensation Insurance Policy as required by statute and employer's liability with limits of at least one million dollars (\$1,000,000) policy limit Bodily Injury by disease, one million dollars (\$1,000,000) each accident/Bodily Injury and one million dollars (\$1,000,000) each employee Bodily Injury by disease.
2. The indemnification and hold harmless obligations of Consultant included in this Agreement shall not be limited in any way by any limitation on the amount or type of damage, compensation or benefit payable by or for Contractor or any subcontractor under any Workers' Compensation Act(s), Disability Benefits Act(s) or other employee benefits act(s).
3. This policy must include a Waiver of Subrogation in favor of the City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents.

#### D. PROFESSIONAL LIABILITY

Professional Liability or Errors and Omissions Insurance as appropriate shall be written on a policy form coverage specifically designed to protect against negligent acts, errors or omissions of the Consultant. Covered services as designated in the policy must specifically include work performed under this agreement. Coverage shall be in an amount of not less than one million dollars (\$1,000,000) per occurrence or two million dollars (\$2,000,000) aggregate. Any coverage containing a deductible or self-retention must first be approved in writing by the City Attorney's Office.

## E. COMPLIANCE WITH REQUIREMENTS

All of the following clauses and/or endorsements, or similar provisions, must be part of each commercial general liability policy, and each umbrella or excess policy.

1. Additional Insureds. City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents are hereby added as additional insureds in respect to liability arising out of Consultant's work for City, using Insurance Services Office (ISO) Endorsement CG 20 10 11 85, or the combination of CG 20 10 03 97 and CG 20 37 10 01, or its equivalent.
2. Primary and non-contributing. Each insurance policy provided by Consultant shall contain language or be endorsed to contain wording making it primary insurance as respects to, and not requiring contribution from, any other insurance which the indemnitied may possess, including any self-insurance or self-insured retention they may have. Any other insurance indemnities may possess shall be considered excess insurance only and shall not be called upon to contribute with Consultant's insurance.
3. Cancellation.
  - a. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided due to non-payment of premiums shall be effective until written notice has been given to City at least ten (10) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least ten (10) days prior to the effective date of non-renewal.
  - b. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided for any cause save and except non-payment of premiums shall be effective until written notice has been given to City at least thirty (30) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least thirty (30) days prior to the effective date of non-renewal.
4. Other Endorsements. Other endorsements may be required for policies other than the commercial general liability policy if specified in the description of required insurance set forth in Sections A through E of this Exhibit C, above.

## F. ADDITIONAL INSURANCE RELATED PROVISIONS

Consultant and City agree as follows:

1. Consultant agrees to ensure that subcontractors, and any other party involved with the Services, who is brought onto or involved in the performance of the Services by Consultant, provide the same minimum insurance coverage required of Consultant, except as with respect to limits. Consultant agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Agreement. Consultant agrees that upon request by City, all agreements with, and insurance compliance documents provided by, such subcontractors and others engaged in the project will be submitted to City for review.
2. Consultant agrees to be responsible for ensuring that no contract used by any party involved in any way with the project reserves the right to charge City or Consultant for the cost of additional insurance coverage required by this Agreement. Any such provisions are to be deleted with reference to City. It is not the intent of City to reimburse any third party for the cost of complying with these requirements. There shall be no recourse against City for payment of premiums or other amounts with respect thereto.
3. The City reserves the right to withhold payments from the Consultant in the event of material noncompliance with the insurance requirements set forth in this Agreement.

## G. EVIDENCE OF COVERAGE

Prior to commencement of any Services under this Agreement, Consultant, and each and every subcontractor (of every tier) shall, at its sole cost and expense, purchase and maintain not less than the minimum insurance coverage with the endorsements and deductibles indicated in this Agreement. Such insurance coverage shall be maintained with insurers, and under forms of policies, satisfactory to City and as described in this Agreement. Consultant shall file with the City all certificates and endorsements for the required insurance policies for City's approval as to adequacy of the insurance protection.

## H. EVIDENCE OF COMPLIANCE

Consultant or its insurance broker shall provide the required proof of insurance compliance, consisting of Insurance Services Office (ISO) endorsement forms or their equivalent and the ACORD form 25-S certificate of insurance (or its equivalent), evidencing all required coverage shall be delivered to City, or its representative as set forth below, at or prior to execution of this Agreement. Upon City's request, Consultant shall submit to City copies of the actual insurance policies or renewals or replacements. Unless otherwise required by the terms of this Agreement, all certificates, endorsements, coverage verifications and other



## **ATTACHMENT G Ethical Standards**

### **ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO AN AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA**

#### **Termination of Agreement for Certain Acts.**

- A. The City may, at its sole discretion, terminate this Agreement in the event any one or more of the following occurs:
1. If a Contractor<sup>6</sup> does any of the following:
    - a. Is convicted<sup>7</sup> of operating a business in violation of any Federal, State or local law or regulation;
    - b. Is convicted of a crime punishable as a felony involving dishonesty<sup>8</sup>;
    - c. Is convicted of an offense involving dishonesty or is convicted of fraud or a criminal offense in connection with: (1) obtaining; (2) attempting to obtain; or, (3) performing a public contract or subcontract;
    - d. Is convicted of any offense which indicates a lack of business integrity or business honesty which seriously and directly affects the present responsibility of a City contractor or subcontractor; and/or,
    - e. Made (or makes) any false statement(s) or representation(s) with respect to this Agreement.

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<sup>1</sup> For purposes of this Agreement, the word “Consultant” (whether a person or a legal entity) also refers to “Contractor” and means any of the following: an owner or co-owner of a sole proprietorship; a person who controls or who has the power to control a business entity; a general partner of a partnership; a principal in a joint venture; or a primary corporate stockholder [i.e., a person who owns more than ten percent (10%) of the outstanding stock of a corporation] and who is active in the day to day operations of that corporation.

<sup>2</sup> For purposes of this Agreement, the words “convicted” or “conviction” mean a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere within the past five (5) years.

<sup>3</sup> As used herein, “dishonesty” includes, but is not limited to, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, failure to pay tax obligations, receiving stolen property, collusion or conspiracy.

2. If fraudulent, criminal or other seriously improper conduct of any officer, director, shareholder, partner, employee or other individual associated with the Contractor can be imputed to the Contractor when the conduct occurred in connection with the individual's performance of duties for or on behalf of the Contractor, with the Contractor's knowledge, approval or acquiescence, the Contractor's acceptance of the benefits derived from the conduct shall be evidence of such knowledge, approval or acquiescence.
- B The City may also terminate this Agreement in the event any one or more of the following occurs:
3. The City determines that Contractor no longer has the financial capability<sup>4</sup> or business experience<sup>9</sup> to perform the terms of, or operate under, this Agreement; or,
  4. If City determines that the Contractor fails to submit information, or submits false information, which is required to perform or be awarded a contract with City, including, but not limited to, Contractor's failure to maintain a required State issued license, failure to obtain a City business license (if applicable) or failure to purchase and maintain bonds and/or insurance policies required under this Agreement.
- C In the event a prospective Contractor (or bidder) is ruled ineligible (debarred) to participate in a contract award process or a contract is terminated pursuant to these provisions, Contractor may appeal the City action to Kevin Keating by filing a written statement of dispute no later than three (3) days after July 14, 2014 with Kevin Keating. The matter will be determined by Kevin Keating within five (5) days of submittal. Any decision by Kevin Keating shall be final.

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<sup>4</sup> Contractor becomes insolvent, transfers assets in fraud of creditors, makes an assignment for the benefit of creditors, files a petition under any section or chapter of the federal Bankruptcy Code (11 U.S.C.), as amended, or under any similar law or statute of the United States or any state thereof, is adjudged bankrupt or insolvent in proceedings under such laws, or a receiver or trustee is appointed for all or substantially all of the assets of Contractor.

<sup>5</sup> Loss of personnel deemed essential by the City for the successful performance of the obligations of the Contractor to the City.

**ATTACHMENT H**  
**Affidavit of Compliance with Ethical Standards**

I, \_\_\_\_\_, being first duly sworn, state that I am \_\_\_\_\_ (title or capacity) of \_\_\_\_\_ (entity name) and I hereby state that I have read and understand the language, entitled “Ethical Standards” set forth in Attachment G, and I have the authority to make these representations on my own behalf or on behalf of the legal entity identified herein. I have examined appropriate business records, and made appropriate inquiry of those individuals potentially included within the definition of “Contractor” contained in Ethical Standards, footnote 1.

Based on my review of the appropriate documents and my good-faith review of the necessary inquiry responses, I hereby state that neither the business entity nor any individual(s) belonging to said “Contractor” category [i.e., owner or co-owner of a sole proprietorship, general partner, person who controls or has power to control a business entity, etc.] has been convicted of any one or more of the crimes identified in the Ethical Standards within the past five (5) years.

The above assertions are true and correct and are made under penalty of perjury under the laws of the State of California.

[INSERT NAME OF COMPANY]  
a [insert Corporation, Partnership, etc.]

\_\_\_\_\_  
Signature of Authorized Person or Representative

\_\_\_\_\_  
Title

**NOTARY’S ACKNOWLEDGMENT TO BE ATTACHED**

Please execute the affidavit and attach a notary public’s acknowledgment of execution of the affidavit by the signatory. If the affidavit is on behalf of a corporation, partnership, or other legal entity, the entity’s complete legal name and the title of the person signing on behalf of the legal entity shall appear above. Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.