



STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

**REQUEST FOR QUALIFICATIONS NOTICE
NUMBER 03A3722**

Read carefully as the following revisions have been made to this document:

- On 03/16/23, GENERAL the Fee & Escalation table has been revised
- On 04/01/22, GENERAL, Ukraine-Russian-related Sanctions Requirement added
- On 04/01/22, SUBMISSION OF STATEMENTS OF QUALIFICATIONS (SOQs), the electronic submittal time changed to 10:00am

Note: Questions concerning this Request for Qualifications (RFQ) must be submitted in writing to the attention of Lisa Pallesen at lisa.pallesen@dot.ca.gov. Questions must be received no later than seven (7) business days after the RFQ advertisement. Consultants contacting the District or Division directly seeking information about this RFQ will be disqualified from consideration in the selection process.

Proposers are advised that Caltrans has established a federally mandated overall annual DBE goal comprising both race neutral and race conscious elements to ensure equal participation of DBE groups specified in 49 CFR 26.5. In compliance with 49 CFR 26, Caltrans set a contract goal for DBEs participating in this solicitation expressed as a percentage of the total dollar value of the resultant Agreement. The DBE participation goal for this solicitation is twenty-two percent (22%). See section I.H. in this RFQ for requirements.

I. GENERAL INFORMATION

- A. Caltrans is soliciting Statements of Qualifications (SOQs) from qualified firms that may lead to the award of a contract for On-Call Land Surveying, R/W Engineering and Sub-Surface Utility Locating Services for District 1. In submitting your SOQ, you shall comply with the instructions found herein. In addition to those programs that are specified in this solicitation, prospective consultants are encouraged to consider programs that are available, such as those for the use of small businesses, disadvantaged businesses, disabled veteran businesses, new emerging firms, and other businesses covered by State and Federal programs.
- B. The estimated contract amount is \$1,999,177.00 - \$3,248,663.00.
- C. The estimated contract term is three (3) years.
- D. Interviews will be held via WebEx on March 19, 2024. Confirmation letters will be sent to those firms short-listed.

- E. The most highly qualified consulting firm will be required to submit an electronic copy of the financial documents listed on the appropriate Financial Documents Submittal Checklist available on the [AE Contract Information](#) website. The most highly qualified consulting firm will be notified of their selection and receive instructions for the electronic submission of the financial documents.

The most highly qualified consulting firm must submit a complete financial documents package no later than four (4) days after notification of selection. The prime consultant must submit the complete financial documents package in order for Caltrans to have the information necessary to engage in negotiations. The prime consultant is solely responsible for timely and complete submission of financial documents on behalf of the entire proposed team; financial documents will not be accepted from proposed subconsultant firms. Failure to submit a complete financial documents package by the specified due date may result in termination of negotiations with the most highly qualified consulting firm.

- F. Negotiations will be held with the top-ranked firm by teleconference/WebEx during the week of March 25, 2024. The fee for profit shall be 10.4 percent, and the escalation shall be as follows:

Year	Period	Escalation
1	03/05/24 - 03/31/25	2.27%
2	04/01/25 - 03/31/26	4.55%
3	04/01/26 - 03/31/27	4.55%
4	04/01/27 - 05/31/27	4.55%

Notes:

1. Partial year will only occur on the last year of the contract term. All other periods are full years.
 2. Increases to the loaded billing rates after contract execution is not authorized for any reason per Article IV, Section 17 and Article XVI, Section 6 of the California Constitution.
- G. The scheduled date to complete cost negotiations and submit final cost proposal is May 7, 2024.
- H. Disadvantaged Business Enterprise Program
1. This solicitation and resultant Agreement is financed in whole or in part with federal funds and therefore subject to Title 49, Code of Federal Regulations, Part 26 (49 CFR 26) entitled "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs." To ensure equal participation for Disadvantaged Business Enterprise (DBE) groups specified in 49 CFR 26.5, Caltrans specifies a contract goal for DBE participation. The required goal for DBE participation in this solicitation is not less than twenty-two percent (22%).

2. Only participation by certified DBEs will count toward the contract goal for this solicitation. In order to count toward a contract goal, a firm must be certified as a DBE by the California Unified Certification Program (CUCP) and possess the NAICS and work codes applicable to the type of work the firm will perform on the Agreement by the SOQ submittal due date. NAICS and Work codes are provided by the [Office of Civil Rights](#) website.
 3. It is the proposer's responsibility to verify that the DBE firm is certified as a DBE by the specified SOQ submittal due date and time. The list of DBEs certified by the CUCP are located on the [Office of Civil Rights](#) website.
 4. A DBE must perform a commercially useful function (CUF) for the type of work it will perform on the Agreement as provided in 49 CFR 26.551(1)-(4). A DBE performs a CUF when it is responsible for the execution of a distinct element of the work of the Agreement and is carrying out its responsibilities by actually performing, managing, and supervising the work involved.
 5. See "Statement of Qualifications Submittal Instructions and General Contract Process Information" for detailed information and references to the required forms. Required forms will be made a part of the Agreement. Failure to meet the DBE goal or Good Faith Effort requirements and provide required DBE participation at due date and time of SOQ submittal may result in the SOQ submittal being rejected as non-responsive.
- I. Federal and/or State prevailing wage rates may apply. This requirement, if applicable, will be specified in the draft Agreement. See SOQ Submittal Instructions, Section I., H. regarding the California Department of Industrial Relations (DIR) Consultant/Contractor Registration Program on the [AE Contract Information](#) website.
 - J. Caltrans does not guarantee, either expressly or by implication, that any work or services will be required under any contract issued as a result of this RFQ.
 - K. A Pre-award or Post-award Audit will be performed on any contract issued as a result of this RFQ.
 - L. Contract boilerplate can be obtained on the [AE Contract Information](#) website.
 - M. Pursuant to Executive Order (EO) N-6-22 issued March 4, 2022, persons identified in the list established by the US Department of the Treasury are ineligible to bid on, submit a proposal for, enter into, or renew any Agreement with the State for any goods and/or services.

Any person who submits a bid or proposal to Caltrans certifies that it is not identified in the most current lists located

<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>.

If applicable, any person who submits a bid or proposal to Caltrans certifies that its subcontractors are not identified in the most current lists located <https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>

II. SCOPE OF WORK/DELIVERABLES

The work to be performed for this RFQ is described in the Scope of Work/Deliverables and is hereby incorporated as Attachment 1.

III. CONFLICT OF INTEREST

- A. Conflicts of interest may occur due to direct or indirect financial or business interests in the work to be performed or in any real property acquired for such project. Conflicts of interest can include, but are not limited to, past, existing or planned activities or because of relationships with other persons or firms. If there is a conflict of interest, the proposed team, including both the prime consultants and subconsultants, and individual employees of team members would actually or potentially be unable to render impartial assistance or advice to Caltrans. The proposer's objectivity or availability in performing the contract work may be impaired due to actual or potential conflicts of interest.
- B. If the proposed team determines that any actual or potential conflicts of interest exists, it must identify and describe in detail each conflict of interest to Caltrans, using the Disclosure of Potential Conflict of Interest Form, which can be found on the [AE Contract Information](#) website. Along with the description of the actual or potential conflicts of interest, the proposed team shall also offer measures to avoid, neutralize, or mitigate all listed conflicts. The list of conflicts, including conflicts that apply to individuals as well as firms, and the mitigation measures on the Disclosure of Potential Conflict of Interest Form must be submitted as a separate section in the Statement of Qualifications. Disclosure of information will not disqualify a proposed team from competing for a contract. The existence of actual or potential conflicts of interest will be used as a criterion to evaluate team availability during the evaluation and selection process. Caltrans reserves the right to terminate negotiations with the first selected firm and begin negotiations with the next selected firm or to cancel the procurement prior to execution if Caltrans learns that the selected team failed to disclose any actual or potential conflicts, which it knew or should have known about, or if the proposed team provided or omitted information on the disclosure form that results in the information being false or misleading.
- C. After award, conflict of interest guidelines and policies shall continue to be monitored and enforced by the Caltrans Contract Manager.

Additional information about Conflict-of-Interest issues can be found in the SOQ Submittal Instructions and General Contract Process Information document (Section V. Post Government Employment Restrictions and Section VI. Conflict of Interest Concerning Consultant(s)) found on the AE Contract Information website (see link below). The State and Federal contract boilerplates on DPAC's website also contain information on conflict-of-interest issues (Exhibit D) and can be found on the AE Contract Information website (see link below).

- D. The prime consultant and subconsultants may be proposed on SOQs for other Caltrans A&E on-call contracts; however, the Caltrans Contract Manager may prohibit work on specific project(s) where Caltrans determines that a conflict of interest exists.

IV. SUBMISSION OF STATEMENTS OF QUALIFICATIONS (SOQs)

- A. **IMPORTANT:** Download "Statement of Qualifications Submittal Instructions and General Contract Process Information" from the [AE Contract Information](#) website (Dated Rev. 10/07/2020) . Failure to follow these instructions may result in rejection of your SOQs.

- B. SOQ Package Submittal Instructions

Read instructions below carefully. You will be required to submit an electronic SOQ file to Sacramento.

1. The electronic submission of a single unprotected (i.e. not password protected) PDF file of the SOQ is required. The electronic submittal will be accepted until **10:00 a.m. on 03/05/2024**. Hard copies of the SOQs are **NOT** required. Fax copies or copies transmitted by email will not be allowed.
2. You will be required to create a Novell Filr account with Caltrans. Send an email message to the Contract Analyst, Lisa Pallesen, at lisa.pallesen@dot.ca.gov containing the information listed below for a link and instructions to complete the self-registration page and submit the SOQ electronically.
 - Your firm's name
 - Your email address
 - The solicitation number for which you would like to submit a SOQ

The file name shall include the contract number, consultant name (max. 25 characters) separated by an underscore (_), ending with the ".pdf" extension.

Example A: 50A0694_JohnDoeConsulting.pdf

Example B: 50A0694_aaa1234engineer.pdf

3. SOQ submittals will be considered non-responsive if the electronic

submittal is not received by the date and time specified in this RFQ.

C. Request for RFQ Copies

Copies of this RFQ may be obtained on the [CaleProcure](#) website.

SCOPE OF WORK/DELIVERABLES**Land Surveying, R/W Engineering, and Sub-Surface Utility Location Services**

for Caltrans, Division of Project Development, North Region Office of
Surveys, District 1, South

On-Call Contract

LAND SURVEYING¹, Right of Way ENGINEERING,
and Sub-surface Utility Location SERVICES

A. Purpose of Work

The Consultant must perform Land Surveying, Right of Way Engineering, and Subsurface Utility location services to include quality levels QL D, QL C, and QL B, as defined by the American Society of Civil Engineers (ASCE) in CI/ASCE 38-22, on an “as-needed” basis to support the California Department of Transportation (Caltrans), Division of Project Development, North Region Office of Surveys, District 1, South. The Caltrans contract manager will assign specific work to the consultant to augment the Caltrans work force through issuing task orders describing the services to be performed. The consultant must only perform work assigned in an authorized task order. This contract does not guarantee that a task order will be issued.

B. Exclusion of Work

The following activities will be performed by Caltrans’ staff or its other Consultants and are excluded from this Contract. Consultant must include the excluded activities in the project schedule to be submitted to Caltrans for approval. Consultant further agrees to provide the necessary information in a timely manner to facilitate the successful completion of the excluded tasks listed below:

1. The Consultant must not perform QL A level of Subsurface utility location as defined by the ASCE in CI/ASCE 38-22 on any projects, and the consultant will not be reimbursed for any QL A level of Subsurface utility location work performed.
2. All Positive Location work as per contract 03A3422.
3. Right of way or real property valuation and acquisition is excluded.
4. Caltrans Headquarters photogrammetry services are excluded from this contract.
5. The Consultant shall not perform work on project(s) in the planning phase (K-Phase) and will not be reimbursed for any work performed during this phase of a project.
6. All Department agreements with utility agencies is excluded.
7. Utility relocations is excluded.

¹ Defined in section 8726 of the California Business and Professions Code

8. Excludes determining utility conflicts for project development
9. Excludes the development of PS&E work

C. Location of Work

The work must be performed on projects to improve the State transportation system throughout the counties of Lake and Mendocino in California. The specific location within the above-described geographical limits of the work to be performed must be identified in each task order. It may become necessary for Caltrans, Division of Project Development, North Region Office of Surveys, District 1, South, to obtain project related data extended into another adjoining Division of Project Development, North Region Office of Surveys, District 1 (South), 2, 3, and 4 /County line. Certain Division of Project Development, North Region Office of Surveys California County projects may also require studies/work that extends into adjacent counties adjoining Caltrans' District 1, South outside of the boundary of Caltrans' District 1. In such instances, the project related work must not extend more than a 30-mile radius from the District/County, Division of Project Development, North Region Office of Surveys, District 1 geographic boundary.

D. Required Services

1. Under an authorized task order, the consultant must provide Land Surveying services within the geographical jurisdiction of this contract set forth in the "Location of Work" section, including all necessary personnel, material, transportation, lodging, instrumentation, and the specialized facilities and equipment to satisfy all appropriate agencies and required to ensure compliance with all federal, state, and local statutes, laws, codes, regulations, policies, procedures, ordinances, standards, specifications, performance standards, and guidelines, applicable to the consultant's services and work product.
2. Under an authorized task order, the consultant must provide Right of Way Engineering services within the geographical jurisdiction of this contract set forth in the "Location of Work" section, including all necessary personnel, material, transportation, lodging, instrumentation, and the specialized facilities and equipment to satisfy all appropriate agencies and required to ensure compliance with all federal, state, and local statutes, laws, codes, regulations, policies, procedures, ordinances, standards, specifications, performance standards, and guidelines, applicable to the consultant's services and work product.

3. Right of Way Engineering Services may include but not limited to preparation and maintenance of Right of Way Engineering documents, such as preparation and recordation of various types of recorded maps, Land Net Maps, Appraisal Maps, Deeds, and all activities related to Right of Way Monumentation, Condemnation, Deeds, Right of Way Record Maps and other property acquisition and disposal documents.
4. Under an authorized task order, the consultant must provide Subsurface Utility location services to include quality levels QL D, QL C, and QL B, as defined by the ASCE in CI/ASCE 38-22 (minus any project engineering work) within the geographical jurisdiction of this contract set forth in the “Location of Work” section, including all necessary personnel, material, transportation, lodging, instrumentation, and the specialized facilities and equipment to satisfy all appropriate agencies and required to ensure compliance with all federal, state, and local statutes, laws, codes, regulations, policies, procedures, ordinances, standards, specifications, performance standards, and guidelines, applicable to the consultant's services and work product.
 - a. For Quality Level D Subsurface including Aerial or Ground-Mounted Facilities Utility Tasks
 - i. Records and Information Research.
 - Conduct appropriate investigations (e.g., owner records, Caltrans records, RNC records, County records, personal interviews, and visual inspections), to help identify utility owners that may have facilities within the project limits or that may be affected by the project.
 - ii. Records Collection.
 - Collect applicable records (e.g., utility owner base maps, “as built” or record drawings, permit records, field notes, geographic information system data, and oral histories) on the existence and approximate location of existing involved utilities
 - iii. Records Review.
 - Review records for: evidence or indication of additional available records; duplicate or conflicting information; need for clarification.
 - iv. Aerial or Ground-Mounted Facilities.
 - Include records research, identification, and depiction of aerial or ground mounted utility facilities in QL D tasks if specified.

- v. Compilation and Presentation of Data.
 - Provide all information on all involved utilities including electronic files, and/or other documents as required or directed by Caltrans.
 - For information depicted, indicate utility type and ownership; date of depiction; quality level(s); end points of any utility data; line status (e.g., active, abandoned, or out of service); line size and condition; number of jointly buried cables; and encasement.
- b. For Quality Level C Subsurface Utility Tasks
 - i. Inclusive of QL D Tasks, perform tasks as described for QL D. There is no prescribed order in which QL D and C tasks must be performed.
 - ii. Identification of Surface Utility Features.
 - Using project topographic data (if available) and from field observations, identify surface appurtenances of underground utilities.
 - iii. Aerial or Ground-Mounted Facilities.
 - Include survey and correlation of aerial or ground-mounted utility facilities in QL C tasks if specified.
 - iv. Surveys.
 - Survey surface features of subsurface utility facilities or systems, if such features have not already been surveyed by a licensed professional. If previously surveyed, check survey data for accuracy and completeness.
 - The survey shall include (in addition to subsurface utility features visible at the ground surface): determination of invert elevations of any manholes and vaults; interior dimensions and line connections of such manholes and vaults; any surface markings denoting subsurface utilities furnished by utility owners.
 - v. Confined Space Procedures.
 - Whenever the work requires the entry of personnel into confined spaces (including but not limited to manholes, vaults, and pipes), comply with applicable Cal-OSHA and OSHA (Occupational Safety and Health Administration, U.S. Department of Labor) procedures and requirements.
 - vi. Provide all information on all involved utilities including electronic files, and/or other documents to reflect the integration of

- QL D and QL C information; as appropriate, amend the indicated quality level of depicted information.
- c. For Quality Level B Subsurface Utility Tasks
- i. Shall be inclusive of QL C Tasks as described in this SOW. There is no prescribed order in which QL C and B tasks must be performed.
 - ii. Utility Detection and Marking.
 - Select and apply appropriate geophysical method(s) to search for and detect subsurface utilities within the project limits, and/or to trace a particular utility line or system.
 - Based on an interpretation of data, field mark the indications of utilities on the ground surface for subsequent survey. Utilize paint or other method acceptable to Caltrans for marking of lines.
 - Utilize the uniform color code of the American Public Works Association to field mark the indications of utilities on the ground surface.
 - Unless otherwise directed, field mark centerline of single-conduit lines, and outside edges of multi-conduit systems.
 - As an alternative to the field marking of lines, Consultant may, with Caltrans approval, utilize other means of data collection, storage, retrieval, and reduction that enables the correlation of surface geophysical data to the project's survey control.
 - iii. Surveys.
 - Survey all markings that indicate the presence of a subsurface utility.
 - Perform surveys to a horizontal accuracy consistent with applicable Caltrans survey standards. Reference surveys to the project's survey control.
 - If requested, record depth information as may be indicated by the particular geophysical method used.
 - Provide all information on all involved utilities including electronic files, and/or other documents to integrate QL D, QL C, and QL B information; as appropriate, amend the indicated quality level of depicted information.
5. Provided in Attachment 1A is a list of proposed Caltrans projects; Division of Project Development, North Region Office of Surveys, District 1, South, however,

this list is not exclusive, and it constitutes no commitment that the projects will be initiated or completed, or work assigned to the consultant. Caltrans reserves the right to add or delete from this list of projects that are within the geographical jurisdiction of this contract set forth in “Location of Work” section within the Division of Project Development, North Region Office of Surveys, District 1, South’s jurisdiction.

6. Caltrans intends to utilize this contract to complete a specific piece of work if it is within the geographical jurisdiction of this contract set forth in the “Location of Work” for each of the projects in this contract utilizing the services described in this Scope of Work (SOW) and as described in a task order. Caltrans may find it necessary to create a separate contract (or contracts) that involves a specific project in this contract and includes part of the work in this contract. Caltrans reserves the right to procure A&E services involving the listed projects or unlisted projects (within the geographical jurisdiction of this contract set forth in “Location of Work” Section) involving in whole or in part the same work using a project-specific agreement if the schedule to complete performance of the specific project extends beyond the term of this contract or the cost exceeds the dollar balance remaining in the contract after accounting for amounts due to the consultant for work previously performed and for work scheduled to be performed in executed task orders.

Should a project-specific agreement be procured under these provisions, the parties mutually agree that, under Exhibit D, Section III, Termination of this Contract, Caltrans must terminate for convenience the portion of the contract that includes the common SOW identified in the project specific agreement per Exhibit D, Section III, Termination of this Contract. Such partial termination for convenience must be processed by amendment to this contract. Unless otherwise required by law, regulation, or Caltrans policy or procedure, the consultant may compete for these project specific contracts.

7. In this contract is a list of proposed personnel classifications for which services are anticipated to be needed by Caltrans during the term of this contract; however, this list is not exclusive of the classification performing Land Surveying Services. Caltrans reserves the right to add/or delete personnel classifications from this list.

- i. Project Surveyor
- ii. Land Surveying Assistant
- iii. Land Surveying Technician
- iv. Instrument Person
- v. Party Chief

- vi. Rod Person
- vii. Journeyman Chainman

8. When any of these positions are needed, the approximate range for the number of positions are:

- a. Project Surveyor - 1 to 4.
- b. Land Surveying Assistant; Land Surveying Technician; Instrument Person; Party Chief; Rod Person; Journeyman Chainman - 1 to 4.

The numbers shown above are approximate. The exact number and classification of consultant staff used for augmentation is specified in the task order.

9. At the sole discretion of Caltrans, the consultant may have to provide the required services on safety projects, emergency projects, emergency storm damage projects, excess parcel assessments, or other current/future transportation projects, including minor projects not listed above, except for those specially excluded above, within the geographical jurisdiction of this contract set forth in "Location of Work" Section.

10. The potential projects may vary in scope and size and may encompass any improvement for the State transportation system including, but not limited to, roadway rehabilitation, widening and/or realignment of existing facilities, relocation of existing facilities, and construction of new facilities. The project location, project limits, purpose, expected results, project deliverables, period of performance, project schedule, and SOW to be performed must be described in each task order.

11. Consultant must be available, on two days' written notice:

- a. To meet with Caltrans; to participate in internal Project Development Team (PDT) meetings or other Caltrans meetings.
- b. To provide technical expertise on an "as-needed" basis.

12. Maintaining a stable work force is essential to the successful completion of Caltrans, Division of Project Development, North Region Office of Surveys, District 1, South, work. The consultant must implement a personnel retention plan.

13. The consultant may be expected to spend time for extended assignments to perform support functions at Caltrans offices. Caltrans may provide the office space at various Caltrans offices assigned as "home base", when required by a task order

including, but not limited to, all utilities, office equipment, and office supplies typically used by the Caltrans personnel, to the consultant personnel providing services under this contract. The consultant, including its sub-consultants, must include the Office Indirect Cost Rate (OICR) in its cost proposals and use the OICR in billing Caltrans for those personnel utilizing Caltrans' office facilities. If the consultant, including its sub-consultants, has no OICR, it will develop and use an OICR to reflect an equitable distribution of allowable costs to the contract (as specified in 48 CFR 31.203(f)). The Consultant may be required to work on-site in a Caltrans facility. The Consultant shall adjust its hours to meet the business needs of Caltrans and shall be available during Caltrans regular business hours, between 8:00 a.m. and 5:00 p.m. Any variance in schedules shall be detailed within each task order.

D. Workplan Standards Guide (WSG) Codes

Task orders are based on the Caltrans WSG. The latest WSG is found in the Guide to Project Delivery WSG, which is available from the Caltrans' Publication Unit and on the Internet at <http://www.dot.ca.gov/hq/projmgmt/guidance.htm>. The WSG references the WBS categories, which are potential and related work activities applicable to this contract. The WSG references WBS categories which present the potential and related work activities that the consultant may have to perform. All revisions to the current version of the WBS must apply during the life of this contract.

The WBS activities below applicable to this Contract are limited to those set forth below:

160.10.45	Utility Locations Determined for Preliminary Engineering (See Note 3)
160.10.65	Right of Way Relinquishment and Vacation Study
160.20.25	Existing Records
160.20.30	Land Net Surveys
160.20.35	Land Net Map
160.20.40	Right of Way Engineering Products
160.20.50	Control Surveys
160.20.55	Photogrammetric Maps and Products (See Note 1)
160.20.60	Engineering Surveys
160.20.65	As-Built Centerline Surveys

160.20.70	Pavement Surveys
160.30.10	Surveys and Mapping for Environmental Studies
185.10.50	Control Surveys
185.10.55	Photogrammetric Maps and Products (See Note 1)
185.10.60	Engineering Surveys
185.10.65	As-Built Centerline Surveys
185.10.70	Pavement Surveys
185.20.40	Utility Locations Determined for Design (See Note 3)
220.05.05	Existing Records
220.05.10	Land Net Survey
220.05.25	Monumentation Perpetuation Record of Survey
220.10	Land Net Map
220.15	Right of Way Maps
220.15.05	Appraisal Maps
220.15.95	Other Maps
220.20	Acquisition Documents
220.20.05	Deeds
220.20.15	Resolution of Necessity Package
220.25	Documents to convey property rights
220.25.05	Director's deed package
220.25.95	Other deeds and documents
220.35.05	Flagged Right of Way (Includes Staking Utilities)
220.35.10	Staked Right of Way
235.05.20	Environmental Mitigation Right of Way Work
235.10.10	Hazardous Waste Sites Survey
255.35.10	Construction Staking Package
255.35.20	Project Control for Construction
255.70	Right of Way Engineering Products
270.10.10	Construction Staking Package
270.10.20	Project Control for Construction

270.10.30	Existing Monument Perpetuation (See Note 2)
270.15.15	Slope Stakes
270.15.25	Rough Grade Stakes
270.15.30	Final Grade Stakes
270.15.35	Drainage and Minor Structure Stakes
270.15.50	Miscellaneous Stakes (Includes Staking Utilities)
270.15.55	Photogrammetric Product for Construction (See Note 1)
270.15.60	Ground Stakes for Major Structure
270.15.65	Superstructure Stakes for Major Structure
270.66	Technical Support
285.10.05	Field Surveys for Change Order
285.10.10	Staking for Change Order
285.10.15	Other Functional Support
300.05.05	Right of Way Monumentation Survey
300.05.10	Filed Monumentation Record of Survey
300.10	Trial Exhibits and Testimony
300.25	Relinquishment and Vacation Maps
300.30	Deed Package for Excess Land Transactions
300.35	Right of Way Record Map

Note 1: The anticipated work for WBS code 160.20.55, 185.10.55 and 270.15.55 must be limited to field surveys and related office processing for aerial mapping control placement and positioning.

Note 2: This WBS code is to be used only for projects with no two (2) phase work.

Note 3: Consultant work limited to only providing survey data of existing Subsurface utilities including existing aerial or ground-mounted facilities.

E. General Personnel Requirements

1. The consultant's personnel must be capable, competent, and experienced in performing the work in this contract with minimal instruction. Personnel skill level must match the specific job classifications, as set forth or in the consultant's cost proposal, Attachment 2 and task complexity. The consultant's personnel must be knowledgeable about, and comply with, all federal, state, and local laws and regulations.
2. The consultant must submit a written request and obtain the Caltrans CM's prior written approval for any substitutions, additions, alterations, or modifications to the consultant's originally proposed personnel and project organization, as depicted on the proposed consultant's organization chart or the consultant's cost proposals. The substitute personnel must have the same job classification, as set forth or in the consultant's cost proposal, Attachment 2, not exceed the billing rate, and meet or exceed the qualifications and experience level of the previously assigned personnel, at no additional cost to Caltrans.
3. In responding to Caltrans' task order and in consultation with the Caltrans contract manager and the Caltrans task order manager, the consultant contract manager must identify the specific individuals proposed for the task and their job assignments. The consultant must provide documentation that proposed personnel meet the minimum qualifications as required by this contract.
4. The consultant's personnel must typically be assigned to and remain on specific Caltrans projects/deliverables until completion and acceptance of the project/deliverables by Caltrans. Personnel assigned by the consultant must be available at the start of a task order and after acceptance of the project/deliverable by Caltrans.
5. After the Caltrans contract manager's approval of the consultant's personnel proposal and finalization of a task order, the consultant may not add or substitute personnel without the Caltrans contract manager's prior written approval.
6. Resumes containing the qualifications and experience of the consultant's and sub-consultant's personnel, which include existing, additional, and substitute personnel, and copies of their minimum required certifications, must be submitted to the Caltrans contract manager for review before assignment on a project or task order. The resume and copies of current certification for each candidate must be submitted to the Caltrans contract manager within one week of receiving the request.

7. The Caltrans contract manager or Caltrans task order manager may interview the consultant's personnel for the qualifications and experience. The Caltrans contract manager's decision to select the consultant's personnel will be binding to the consultant and its sub-consultants. The consultant must provide adequate qualified personnel to be interviewed by the Caltrans contract manager or Caltrans task order manager within one week of receiving the request.
8. The Caltrans task order manager will evaluate the adequacy (quality and quantity) of the work performed by the consultant's personnel and determining whether the deliverables satisfy the acceptance tests and criteria. The Caltrans contract manager consulting with the Caltrans task order manager may reject any consultant personnel determined by the Caltrans contract manager to lack the minimum qualifications. If the level of performance is below expectations, the Caltrans contract manager may direct the consultant to immediately remove consultant personnel from the project specified in a task order and request another qualified person be assigned as needed. The substitute personnel must meet the qualifications required by this contract for performance of the work as demonstrated by a resume and copies of current certifications submitted by the consultant. Substitute personnel must receive prior written approval from the Caltrans contract manager. Invoices with charges for personnel not pre-approved by the Caltrans contract manager for work on the contract and for each task order must not be reimbursed.
9. The consultant must not remove or replace any existing personnel assigned to task orders without the prior written consent of the Caltrans contract manager. The removal or replacement of personnel without the written approval from the Caltrans contract manager will violate the contract and may cause termination of the contract per Exhibit D, Section III, Termination of the Contract.
10. When assigned consultant personnel is on approved leave and required by the Caltrans contract manager, the consultant contract manager must provide a substitute employee until the assigned employee returns to work from the approved leave. The substitute personnel must have the same job classification, as set forth in the consultant's cost proposal, Attachment 2, not exceed the billing rate, and meet or exceed the qualifications and experience level of the previously assigned personnel, at no additional cost to Caltrans. Substitute personnel must receive prior written approval from the Caltrans contract manager to work on this contract.

11. Other project personnel not identified on the consultant's cost proposal, must also satisfy minimum qualifications for assigned task orders. Caltrans' prior written approval is required for all personnel not identified on the consultant's organization chart or the consultant's cost proposals before providing services under this contract.
12. The consultant is responsible to provide fully trained personnel to efficiently perform the work. The consultant's personnel may be asked to attend certain special training if recommended by the Caltrans contract manager. On such occasions, with the approval of the Caltrans contract manager, Caltrans will compensate the consultant for the consultant's actual cost for time spent in training only. All other costs, fees, and expenses associated with the training, including any transportation costs and training fees, must be the consultant's responsibility.
13. In location(s) where the consultant personnel is expected to work for extended period(s) of time, the consultant must either relocate the personnel or strive to hire local persons.

F. Land Surveying Personnel Requirements

1. The consultant, including the prime consultant and all sub-consultants, must throughout the life of the contract, retain within its firm, a staff of people properly licensed and certified under the laws of the State of California and qualified to perform all aspects of the required work described in this contract and all work specified in a task order with any emergencies that may arise during the life of this contract. The consultant must be prepared to provide additional personnel during the period performance of this contract to accommodate the work.

2. Consultant Contract Manager

The consultant contract manager must coordinate work-related matters and consultant's operations under this contract with the Caltrans contract manager in coordination with the Caltrans task order manager. The consultant contract manager must be knowledgeable about all Caltrans policies and procedures.

The consultant contract manager must be a Professional Land Surveyor or pre-January 1, 1982 Registered Civil Engineer licensed in the State of California and

be in good standing with the California State Board of Professional Engineers, Land Surveyors, and Geologists (BPELSG) during the contract period.

The consultant contract manager must have a minimum of five (5) years of responsible experience performing the duties as a consultant contract manager leading a team of A&E firms for similar Land Surveying Services contracts, with a minimum of ten (10) years of demonstrated experience acceptable to Caltrans in delivering the A&E Required Services identified above and be an employee of the Prime Consultant firm.

For each cumulative set of competence, 5 years minimum managerial experience and set of 10 years minimum project delivery experience, gained from multiple projects at various times, shall be in serial (not in parallel/concurrent order), with the total time not accounting for double-counting or any overlapping within each set of the two types of competence.

Specific consultant contract management experience shall be detailed for each relevant project listed in the resume section of the Statement of Qualifications (Section E of the Standard Form 330) with a brief description of each project and include significant details of the previous role that best demonstrates the person's capability and experience relevant to his/her proposed role in this contract.

Specifically for the five (5) years of responsible experience performing the duties as a Consultant Contract Manager, the other Project Manager, Design Manager, Lead Designer, and other lead roll position experiences will not qualify for the Consultant Contract Manager experience as outlined for Personnel Requirements under Consultant Contract Manager.

Besides other specified responsibilities, the consultant contract manager must handle all matters related to the consultant's personnel, sub-consultants, land surveying services work, and consultant's and sub-consultants' operations including, but not limited to:

- a. Ensuring that deliverables are acceptance tested and that criteria are specific, measurable, attainable, realistic and time-bound; and that the deliverables satisfy the acceptance tests and criteria.

- b. Supervising, reviewing, monitoring, training, and directing the consultant's and sub-consultants' personnel.
- c. Assigning qualified personnel to complete the required task order work as specified on an "as-needed" basis in coordination with the Caltrans contract manger and Caltrans task order manager.
- d. Administering personnel actions for consultant personnel and ensuring appropriate actions taken for sub-consultant personnel.
- e. Maintaining and submitting organized project files for record tracking and auditing.
- f. Developing, organizing, facilitating, and attending scheduled coordination meetings, and preparation and distribution of meeting minutes.
- g. Implementing and maintaining quality control procedures to manage conflicts, ensure product accuracy, and identify critical reviews and milestones.
- h. Assuring that all applicable safety measures are in place.
- i. Providing invoices in a timely manner and providing monthly contract expenditures.
- j. Reviewing invoices for accuracy and completion before billing to Caltrans.
- k. Managing sub-consultants.
- l. Managing overall budget for the contract and provide report to the Caltrans contract manager.
- m. Monitoring and maintaining required DBE or DVBE involvement.
- n. Ensuring compliance with the provisions in this contract and all specific task order requirements.

- o. Knowledge, experience, and familiarity with prevailing wage issues and requirements in State of California.

3. Consultant Task Order Manager

For each task order, the consultant must provide a consultant task order manager to coordinate the consultant task order operations with the Caltrans contract manager in coordination with the Caltrans task order manager.

The Consultant Task Order Manager must have a minimum of five (5) years of responsible demonstrated experience acceptable to Caltrans in delivering similar Land Surveying Services contract. The consultant task order manager must be accessible to the Caltrans contract manager in coordination with the Caltrans task order manager during normal Caltrans working hours that task order work is underway.

The consultant task order manager (who may not be the consultant contract manager) must be assigned to conduct, or direct the conduct of, all work assigned under a single task order. The consultant task order manager must be a Professional Land Surveyor or a pre-January 1, 1982 Registered Professional Civil Engineer licensed in the State of California and be in good standing with the BPELSG during the Contract period. The consultant task order manager must be the primary contact for the assigned task order and be available for communication with Caltrans.

4. Consultant Task Order Lead person.

The consultant task order lead person (who may be the Task Order Manager) must be assigned to conduct, or direct the conduct of, all work assigned under a single task order. The consultant task order lead person must be the primary contact for the assigned task order and be available for communication with Caltrans.

5. Consultant Personnel and Team Member Qualifications.

The consultant team member must be capable of assisting the consultant contract manager in all aspects of the required work. The consultant team member's required professional qualifications must be identified in each task order.

6. In this contract, a person authorized to review and approve consultant land surveying deliverables in place of the consultant task order manager must be called the consultant land surveying responsible person. The consultant land surveying responsible person, must be a Professional Land Surveyor or a pre-January 1, 1982 Registered Professional Civil Engineer licensed in the State of California and be in good standing with the BPELSG during the contract period.
7. All deliverables under this contract not fully approved by Caltrans bearing the signature of the consultant land surveying responsible person who is no longer employed by the consultant or its sub-consultants, must be replaced with deliverables under this contract bearing the signature of a qualified replacement consultant land surveying responsible person currently employed by the consultant or its sub-consultants. In such an event, no additional time will be allowed or cost reimbursed to the consultant without the prior written approval of the Caltrans contract manager.
8. All of the consultant's work must be conducted under the direction of the consultant contract manager who must have the experience as described in this contract. All deliverables under this contract requiring the consultant land surveying responsible person's signature, must be produced by the responsible consultant personnel having appropriate experience, and must be signed by a consultant land surveying responsible person.
9. Party Chiefs

Party Chiefs must fulfill one of the following requirements:

- a. A Professional Land Surveyor licensed in the State of California and be in good standing with the BPELSG.
- b. A pre-January 1, 1982, Registered Professional Civil Engineer licensed in the State of California and be in good standing with the BPELSG.
- c. An experienced surveyor/union-certified party chief/journeyman with a documented minimum of five years of party chief field surveying experience who serves as chief under the direction and supervision of a person who is a Professional Land Surveyor licensed in the State of California or pre-January 1, 1982, Registered Professional Civil Engineer licensed in the State of California and be in good standing with the

BPELSG. This direction and supervision must be provided in a manner and with a span of control and immediacy that enables the supervisor to be in “Responsible Charge” of the work as defined in the Business and Professions Code, Division 3, Chapter 15 (The Land Surveyors Act).

Party Chief: The duties of the survey party chief include, but are not limited to: plan, coordinate and direct the daily operations and/or assignments of a field survey party, oversees tailgate safety meetings every ten working days or more often as the work location requires, insures the survey party is working in a secure and safe manner; direct the survey party in procedures to be used in fieldwork that conforms with the Caltrans Surveys Manual; verify project datum and project control; check the accuracy of the survey data collected and construction stakes set; and produce a daily Field Surveys Party Report, which verifies the survey party time and project charges.

10. Project Surveyor

Project Surveyor must fulfill one of these licensing requirements and be in good standing with the BPELSG during the Contract period.

- a. A Professional Land Surveyor licensed in the State of California.
- b. A pre-January 1, 1982, Registered Professional Civil Engineer licensed in the State of California.

Project Surveyor: The duties of the project surveyor in the office include, but are not limited to: prepare survey requests and supporting information for the field survey; analyze, reduce and/or adjust field survey data to produce maps, reports, digital terrain models, project control maps, and related documents to determine property and right of way boundaries; and, research public records from counties, cities, utility companies, and other agencies to produce, signs and seals, documents and maps defining the existing location of, acquisition of, and disposal of State Right of Way, including but not limited to: legal descriptions, acquisition deeds, resolutions of necessities (Condemnation), land net maps, appraisal maps, relinquishment or vacation maps, federal application maps, final record maps and Record of Survey Maps. The Project Surveyor may be designated as the Consultant Task Order Manager on respective task orders.

11. Land Surveying Assistants

The Land Surveying Assistants must fulfill one of the following requirements:

- a. A degree (Associate, Bachelors, Masters, or higher) in land surveying or surveying engineering from an ABET accredited institution (College or University) and a minimum of two years of qualifying experience in land surveying.
- b. Possession of a valid Land Surveyor-in-Training certificate issued or accepted by the BPELSG, and a minimum of two years of qualifying experience in land surveying.
- c. An experienced surveyor with a documented minimum of four years of surveying experience who works under the direction and supervision of a Professional Land Surveyor licensed in the State of California or pre-January 1, 1982, Registered Professional Civil Engineer licensed in the State of California and be in good standing with the BPELSG.

The land surveying assistants to the party chiefs and project surveyor must be capable of assisting in all required and associated field and office land surveying work, able to perform difficult survey and complex professional land surveying work involving duties in the field or office with little direct supervision. Duties include, but are not limited to, assist party chief in construction staking, design, and right of way surveys, assist office chief or project surveyor in preparing right of way maps using Computer-Aided Design (CAD), maintaining right of way records and geospatial information systems, research and compile a wide variety of data from public records, geospatial information systems and other sources using both manual and computerized processes, and survey support.

12. Land Surveying Technicians

The land surveying technicians must work under the direction of a Professional Land Surveyor licensed in the State of California or a pre-January 1, 1982 Registered Professional Civil Engineer licensed in the State of California and be in good standing with the BPELSG. The land surveying technicians must fulfill one of these criteria:

- a. The equivalent of a two-year college degree, preferably with an emphasis in mathematics and engineering and a minimum of one year of qualifying experience in land surveying.

- b. A documented minimum two years of demonstrated experience acceptable to Caltrans in a land surveying services related field, under the direction of a Professional Land Surveyor licensed in the State of California.

The land surveying technicians must be capable of assisting in all required office and/or field land surveying services work.

13. Instrument person

The instrument person must be union certified as an instrument person or have a minimum six years of qualifying experience in land surveying. The instrument person reports to the party chief and must be capable of assisting the party chief in all required field and office surveying work.

14. Rod person

A rod person must have a minimum two years of qualifying experience in land surveying and may augment a party comprising at a minimum one party chief as the project task workload dictates, and as preapproved by the Caltrans contract manager.

15. Surveying Journeymen Chainman

The surveying journeymen chainman must be union certified as a journeyman or have a minimum four years of qualifying experience in land surveying. The surveying journeyman chainman to the party chief must be capable of assisting the party chief in all required field and office surveying work.

- 16. The consultant must have personnel with documented and demonstrated expertise and experience in the fields of Geographic Information Systems (GIS) and geodetic survey control.

17. Minimum Requirements for Survey Party Membership:

Unless otherwise specified in the task order, each survey party must comprise a party chief and up to three survey party members, unless additional survey party members are required for safety. At a minimum, one assistant to the party chief

must be capable of assuming temporary leadership of the survey party, absent a party chief, or in emergencies.

18. Consultant will provide consultant surveyors of classification and numbers as specified in the task order. Consultant surveyors assigned to a field crew will be provided the following by the consultant:
 - Vehicle as specified in I.2.a of this contract.
 - Safety equipment including by not limited to hard hat, ANSI 107-2004 or higher class II garment, safety glasses, hearing protection and hard soled work boots.

It is expected that significant task orders will include consultant staff working alongside Caltrans staff on survey party's or assist in the office.

19. All consultant personnel working on a survey party must complete security and privacy awareness training each year (see <http://itsecurity.dot.ca.gov/training>).
20. All consultant personnel working on a survey party must have a current certification of Defensive Driving Training and a current California Driver's License.

G. Subsurface Utility Location Personnel Requirements

The Consultant shall provide team members as needed who are capable of assisting the Consultant Task Order Lead person in all aspects of the required work as described in Section D (Required Services). Team members in responsible charge of specific duties related to utility surveying shall be licensed by the State of California for the specific duties for which they are qualified by their education and experience.

H. Consultant Availability and Work Hours

1. The typical workday includes all hours worked as identified in the task order or as directed by the Caltrans contract manager. Unless otherwise specified in a task order or directed by the Caltrans contract manager, the normal work week must comprise forty (40) hours.
2. If Caltrans determines that the work cannot be performed during normal business hours or the work is necessary at off hours to avoid danger to life or property, the

consultant's operations may be restricted to specific hours during the week. Night work may be required on projects involving high traffic areas. Changes in hours or schedules must be documented by amendment of task orders. Any shift differential rate pay must be reimbursed under the Department of Industrial Relations (DIR) determination.

3. The Caltrans contract manager in coordination with the Caltrans task order manager, must provide advance notice of one working day(s)/24 hours if the consultant's services are not required, or if reassignment of personnel is required. If Caltrans fails to provide the required advance notice and the consultant personnel are not required, Caltrans must provide a maximum of four hours compensation.

I. General Requirements

1. The consultant must prepare the required deliverables, backup documents, and other items required by this contract according to requirements of this contract and applicable Caltrans Manuals for the work.
2. Pursuant to Exhibit B - "Budget Detail and Payment Provisions", Section 2 – "Compensation and Payment", Consultant shall submit monthly itemized invoices, including all supporting timesheets. Vendor receipts for Other Direct Charges, including transportation and subsistence costs, to be reimbursed shall be at actual costs incurred without any markups.
3. The Consultant's timesheet/invoices/expenses shall be subject to the review of the Consultant Contract Manager and the subsequent review and the approval of the Caltrans Task Order Manager before submitting timesheets, invoices, or expense reimbursement requests for payment.
4. The consultant must begin the required work within two working days after receiving a fully executed task order and issuing the Notice to Proceed from the Caltrans contract manager to the consultant contract manager or on the date specified in the task order. Some work, however, may require consultant personnel to mobilize within 24-hours of notifications. Once the work begins, the work must be pursued and performed diligently until all required work has been completed to the satisfaction of the Caltrans contract manager or Caltrans designee task order manager.

5. The work must not be performed when conditions prevent a safe and efficient operation and must only be performed with written authorization by Caltrans.
6. The consultant contract manager, consultant task order manager, and key personnel must be accessible to the Caltrans contract manager and the Caltrans task order manager during normal Caltrans working hours or after hours as required by the Caltrans contract manager.
7. The consultant contract manager may direct the consultant's employees to work overtime to meet task order schedules at the request of the Caltrans contract manager or task order manager. All overtime must be pre-approved by the Caltrans Task Order Manager. Overtime must be worked only when directed in writing by the Caltrans Task Order Manager and specifically required by the task order and must only be paid to persons covered by the Fair Labor Standards Act.
8. All consultant personnel must sign a confidentiality and nondisclosure agreement.
9. The consultant may disclose no information to third parties without prior written approval of the Caltrans contract manager.
10. The consultant must only provide incidental non-A&E services, such as Computer Aided Drafting & Design (CADD) support, GIS support, utilities location support, traffic control, office support, field office support, and meeting support, provided (a) such services are necessary for completing the A&E tasks and/or deliverables performed by the consultant described in executed task orders and covered by the work in this contract and (b) the rendering of the services is approved in advance by the Caltrans contract manager. These incidental services must only be provided to support the consultant's personnel performing A&E services, tasks, and deliverables on this contract. The contract amount spent on such incidental services must be relatively minor when compared to the professional A&E services performed. The consultant must not be paid or reimbursed for any incidental non-A&E services provided to Caltrans unless provided in the fashion described in this contract and included in the executed task order. The consultant ensures that task orders only include any incidental non-A&E services.
11. Incidental training services may be provided only if the training involves the specific work product of this agreement. Such incidental training services are permitted, but only if:

- a. The training involves the specific work product created under this agreement (and does not involve general A&E training and is not the work product of a previous agreement); and
 - b. The total aggregate cost of all training including all other incidental work cumulatively under this agreement shall not exceed 10% of the total authority of the agreement; and
 - c. The training is an incidental task within the agreement and not the purpose for entering this agreement.
12. The consultant must include the Caltrans contract manager or task order manager in written communications to other Caltrans personnel for any clarification on work.

J. Coordination

1. For directing consultant personnel working in Caltrans facility, Caltrans Task Order Manager shall coordinate all instructions with respect to Required Services and deliverables through the Consultant Task Order Manager.
2. The foregoing paragraph does not relieve the consultant of professional responsibility during the performance of this contract. Where the consultant believes a better standard solution to a task being performed or an issue being addressed is possible, the consultant must promptly notify the Caltrans contract manager and task order manager of these concerns, with the reasons, therefore. However, Caltrans must make all final decisions on the interpretation of the Consultant's instructions, directions, work product and outputs that are described in the task order.
3. The consultant must work closely with the Caltrans contract manager and the Caltrans task order manager identified in the task order.
4. The consultant must have the capability to send to and receive from Caltrans' digital electronic mail system and file transfer protocol system including, but not limited to, attachments for word processing, photographs, spreadsheets, and databases.

5. Caltrans will not reimburse the consultant for costs to relocate its personnel to the service area of this contract. Caltrans will not reimburse the consultant for per diem costs, unless preapproved by the Caltrans contract manager. Caltrans will not reimburse the consultant for out-of-state travel without prior written approval from the Caltrans contract manager.
6. The consultant must obtain the Caltrans contract manager's approval prior to making presentations at non-Caltrans sponsored conferences or workshops for any services provided under this contract.
7. The consultant must notify the Caltrans contract manager or Caltrans task order manager in writing a minimum one week before it begins any field work, unless the task order specifies some other notification date.
8. Caltrans must not incur costs beyond the funding commitments in the contract and each task order. If the consultant anticipates that funding for work will be insufficient to complete work, the consultant must promptly notify the Caltrans contract manager.

K. General Equipment Requirements

1. The consultant or its sub-consultants must incorporate no materials or equipment of a single or sole source origin without the advance written approval of Caltrans.
2. The consultant may claim reimbursement for providing equipment or supplies. However, such claimed costs must comply with 48 Code of Federal Regulation (CFR), Chapter 1, Part 31 (Federal Acquisition Regulation - FAR cost principles) and 2 CFR, Part 200, and follow the consultant's company-wide allocation policies and charging practices with all clients including federal government, state governments, local agencies, and private clients.

L. Subsurface Utility Location Equipment Requirements

1. Office Equipment and Supplies (Consultant's Office):

The consultant must have and provide adequate office equipment and supplies to complete the work required by this contract. Such equipment and supplies must include, but not be limited to:

 - a. Office supplies.

- b. Computers with software, printers, plotters, fax machines, calculators, data collectors and their necessary attachments and accessories.
 - c. Data processing systems, software packages, reference materials, or other tools, including hardware and software, used in providing Subsurface Utility location deliverables.
 - d. The consultant must provide a computer system for each person working under a task order that meets the Caltrans current specifications. Qualified Caltrans information technology personnel must install required software. Caltrans reserves the right to provide the computer system if beneficial to Caltrans' interest.
 - e. Reference material, or other tools, used in providing deliverables.
 - f. Caltrans will not purchase hardware, software, or other equipment (including, but not limited to, batteries, paper, and office supplies) that may be required for the consultant to perform work required in this contract. The Caltrans contract manager will not approve any consultant's request for digital electronic connections and compatibility with current Caltrans Windows-based networks and programs.
 - g. In-house printing, reproduction, and delivery services.
 - h. Computer Aided Drafting equipment and software capable of producing land surveying maps, drawings, and documents in the Caltrans approved format (MicroStation, AutoCAD Civil 3D, Trimble Business Center, ArcGIS).
2. Field Equipment and Supplies:

Consultant must have and provide adequate field tools, instruments, equipment, materials, supplies, and safety equipment to complete the required field work and that meet or exceed QL D, QL C, and QL B level of Subsurface Utility location as defined by the ASCE in CI/ASCE 38-22 and Caltrans specifications per the Caltrans Manuals.

The consultant must provide all necessary tools, instruments, equipment, materials, supplies, and safety equipment required to perform the work identified in each task order and this contract accurately, efficiently, and safely. The consultant's personnel must be fully trained in using such necessary tools, instruments, equipment, materials, supplies, and safety equipment. The consultant must not be reimbursed separately for tools of the trade, which may include, but not be limited to the following, if required by the task order:

- a. Electromagnetic locators.
- b. Magnetic locators.
- c. Sonic locators.
- d. Ground Penetrating Radar.
- e. Passive Electronic Markers and other energy fields to determine locations.

M. Land Surveying Equipment Requirements

1. Office Equipment and Supplies (Consultant's Office):

The consultant must have and provide adequate office equipment and supplies to complete the work required by this contract. Such equipment and supplies must include, but not be limited to:

- a. Office supplies.
- b. Computers with software, printers, plotters, fax machines, calculators, data collectors and their necessary attachments and accessories.
- c. Data processing systems, software packages, reference materials, or other tools, including hardware and software, used in providing transportation land surveying deliverables.
- d. The consultant must provide a computer system for each person working under a task order that meets the Caltrans current specifications. Qualified Caltrans information technology personnel must install required software. Caltrans reserves the right to provide the computer system if beneficial to Caltrans' interest.
- e. Reference material, or other tools, used in providing deliverables.

- f. Caltrans will not purchase hardware, software, or other equipment (including, but not limited to, batteries, paper, and office supplies) that may be required for the consultant to perform work required in this contract. The Caltrans contract manager will not approve any consultant's request for digital electronic connections and compatibility with current Caltrans Windows-based networks and programs..
- g. In-house printing, reproduction, and delivery services.
- h. Computer Aided Drafting equipment and software capable of producing land surveying maps, drawings, and documents in the Caltrans approved format (MicroStation, AutoCAD Civil 3D, Trimble Business Center, ArcGIS).

2. Field Equipment and Supplies:

Consultant must have and provide adequate field tools, instruments, equipment, materials, supplies, and safety equipment to complete the required field work and that meet or exceed Caltrans specifications per the Caltrans Manuals. The tools, instruments, equipment, materials, supplies, and safety equipment required for each consultant field personnel must include, but not be limited to, the following, if required by the task order:

- a. Sufficient vehicles suitable for the work to be performed and terrain conditions of the project sites. Vehicles must be fully equipped with all necessary tools, instruments, equipment, materials, supplies, and safety equipment required for the efficient operation of the consultants' field personnel. Each vehicle must have a load carrying capacity of 1500 pounds of materials and equipment. Each vehicle must have sufficient ground clearance to safely maneuver through highway construction sites while fully loaded with equipment and materials. Each vehicle must have overhead flashing amber light(s), visible from all sides (360 degrees), with a driver control switch; fire extinguisher; and first aid kit. Vehicles without side windows must not be used. Each vehicle must be equipped to meet Caltrans safety requirements.
- b. Hand tools including but not limited to; shovels, gloves, measuring tape, sledgehammer, clip board, calculator, peg book for the requested field personnel work.

- c. All necessary safety equipment including fire extinguisher, appropriate footwear, white hard hats, eye protection, hearing protection, and American National Standards Institute (ANSI) 107-2004 or higher-Class II garment for the requested field work to be performed safely and efficiently within operating highway and construction zone environments.
- d. Necessary miscellaneous tools, non-consumables, and supplies including, but not limited to, hammers, and shovels.
- e. Traffic cones, at a minimum 6, for traffic control as necessary. Such cones must be 28 inches, minimum, in height.
- f. Traffic control devices (including signs, sign bases, flags, and handheld signs) as required to perform the requested field personnel work.
- g. Photo target templates.
- h. Leveling instruments and equipment:
 - i. Self-leveling/Digital level or electronic bar code level rod capable of achieving the precisions stated in the Caltrans Surveys Manual.
 - ii. Suitable leveling rods for the work to be performed.
- i. A Total Station Survey System comprising:
 - i. A digital electronic angle measuring instrument with a manufacturer's listed accuracy for the direct circle reading of the horizontal and vertical angles of three seconds or better.
 - ii. A digital electronic distance measurer with a manufacturer's listed accuracy of five millimeters plus/minus three ppm or better.
 - iii. A digital electronic data collector capable of running Caltrans' surveys data collection feature code library.
 - iv. Prior to the commencement of the first Task Order for construction staking or topographic surveys, Consultant must have a data collector compatible and interchangeable with Caltrans' standard Trimble Data collector.

- v. Total station survey system must be capable of producing reports sufficient for Quality Assurance.
 - j. Dual frequency Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) Equipment: GPS/GNSS equipment must be used when required by the Task Order or the Caltrans Contract Manager.
 - i. GPS/GNSS receivers and antennas suitable for the specific survey.
 - ii. GPS/GNSS antennas with ground planes as specified in the Caltrans Surveys Manual.
 - iii. Fixed-height tripods as specified in the Caltrans Surveys Manual.
 - iv. Real Time Kinematic (RTK) or Real Time Network (RTN) GNSS system equipment comprising a base station, base radio, and a rover unit.
 - k. Survey-grade terrestrial stationary laser scanning, and mobile terrestrial laser scanning equipment as specified in the Caltrans Surveys Manual.
3. The consultant must provide all necessary tools, instruments, equipment, materials, supplies, and safety equipment required to perform the work identified in each task order and this contract accurately, efficiently, and safely. The consultant's personnel must be fully trained in using such necessary tools, instruments, equipment, materials, supplies, and safety equipment. The consultant must not be reimbursed separately for tools of the trade, which may include, but not be limited to, the above-mentioned equipment.

N. Standards

1. All work/services under this contract must be performed under all federal, state, and local statutes, laws, codes, regulations, policies, procedures, ordinances, standards, specifications, performance standards, and guidelines, including the latest Caltrans regulations, policies, procedures, manuals, standards, specifications, performance standards, directives, guidelines, handbooks, guidance documents, forms, templates, policy memo, methodologies, and other informational or directive publications, including compliance with FHWA and State guidelines for implementing those requirements; and any permits, licenses,

agreements or certifications that apply to specific task orders; the terms and conditions of this contract; and current Caltrans Manuals and any future revisions. Work not covered by the “Manuals” must be performed as specified in the task order. If no standards exist, task orders may call for developing new standards, so long as these standards do not conflict with the requirements or amend the Scope Of Work under of this contract.

- a. The consultant obtains, at its expense, all necessary manuals, reference documents, and other materials.
- b. Caltrans Manuals may be purchased from the Publication Distribution Unit. The publications staff may be reached at (916) 263-0822, and the center is at these address:

State of California
California Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, CA 95815-3800

- c. Manuals and documents that are not available from the Caltrans Publication Distribution Center or are not available from Caltrans’ internet web site may be requested from the Caltrans contract manager. Caltrans does not guarantee the availability of publications, nor its internet web pages.
- d. Caltrans’ regulations, policies, procedures, manuals, standards, specifications, performance standards, directives, guidelines, handbooks, guidance documents, forms, templates, policy memo, methodologies, and other informational or directive publications, are dynamic documents and subject to change. The consultant is responsible to verify that the latest version or update is used.

2. Manuals, Documents, and Websites

These manuals, documents and links to internet sites are referenced in association with the work in this contract. The list is not all-inclusive but should illustrate the reference material and sources of information.

- a. Caltrans’ Internet Home Webpage:

<http://www.dot.ca.gov/>

- b. Manual of Uniform Traffic Control Devices (MUTCD):
California Manual on Uniform Traffic Control Devices:
<http://mutcd.fhwa.dot.gov/>
<http://www.dot.ca.gov/trafficops/engineering/>
 - c. Caltrans Surveys Manual:
http://www.dot.ca.gov/hq/row/landsurveys/SurveysManual/Manual_TOC.html
 - d. Caltrans CADD User's Manual:
<https://dot.ca.gov/programs/design/manual-cadd-users-manual>
 - e. Caltrans Standard Plans and Standard Specifications:
<http://www.dot.ca.gov/des/oe/construction-contract-standards.html>
 - f. ASCE 38-22 Standard Guideline for Investigating and Documenting Existing Utilities
[Newly updated ASCE 38 22 utility engineering standard and new companion standard ASCE 75 22 now available | ASCE](#)
 - g. Caltrans Right of Way Manual:
<http://www.dot.ca.gov/hq/row/rowman/manual/index.htm>
<http://www.dot.ca.gov/hq/row>
 - h. [Cal OSHA California Code of Regulations](https://www.dir.ca.gov/title8/2943_1.html)
https://www.dir.ca.gov/title8/2943_1.html
3. Land surveying services and associated work performed by the consultant must conform to the California Land Surveyors Act. Business & Professions Code §§ 8700 et. seq. The consultant personnel in “Responsible Charge”, as defined in the California Land Surveyors Act, must be a PLS licensed in the State of California or a pre-January 1, 1982, Registered Professional Civil Engineer licensed in the State of California and be in good standing with the BPELSG during the Contract period.
 4. Subsurface Utility Location services and associated work performed by the consultant must conform to the California Professional Engineers Act, (Business and Professions Code §§ 6700 et seq.), the California Land Surveyors Act

(Business & Professions Code §§ 8700 et seq.), and the Geologist and Geophysicist Act (§§ 7800 et seq.)

O. Field Safety

Besides the requirements specified elsewhere in this contract, the following also must apply:

1. The consultant must maintain a working environment safe for project personnel and the public. The consultant's personnel must comply with all safety provisions of the Caltrans Safety Manual, Caltrans Surveys Manual, Caltrans Traffic Manual, and Caltrans Code of Safe Practices. The consultant must comply with all federal, state, and local Occupational Safety and Health Administration (OSHA) statutes, laws, codes, regulations, policies, procedures, ordinances, standards, rules, specifications, performance standards, and guidelines, and the safety instructions that Caltrans issues for performance of task order work, applicable to the work under this contract, regarding safety equipment and procedures (including, but not limited to, use and operation). Under no circumstance must the consultant's safety policies be less stringent than Caltrans.
2. The field work must not be performed when conditions prevent a safe and efficient operation and must only be performed with written authorization by Caltrans.
3. The consultant must provide, at no cost to Caltrans, all safety equipment to perform the required services safely including, but not limited to gloves, coveralls, sunscreen, insect repellents, fire extinguisher, hard-soled safety footwear, white hard hats, eye protection, hearing protection, and ANSI 107-2004 or higher-Class II garment. The consultant's personnel must wear hard-soled safety footwear, white hard hats, eye protection, hearing protection (when applicable), and ANSI 107-2004 or higher-Class II garment.
4. The consultant must provide, at no cost to Caltrans, appropriate safety training for all the consultant's and the sub-consultant's office, and field personnel, including training required for performing the work in an office setting or in the field to work on and near highways safely.
5. The consultant must be solely responsible for protecting health and safety of its personnel, sub-consultants, and Sub-consultant's personnel in performance of this contract.

6. Traffic Control

- a. If specified in the task order, Caltrans must provide traffic control to accomplish the work within Caltrans' right-of-way. When Caltrans is to provide traffic control, the consultant must request the traffic control before the work to obtain proper clearance. Limited work hours, night work or weekend work may be necessitated by the closure schedule approved by Caltrans for work on State freeways or highways. For work outside of Caltrans' right-of-way, the consultant must provide traffic control in coordination with the local jurisdiction and/or private owners.
- b. If the task order requires the consultant to provide traffic control or traffic control devices, the consultant must follow policy and procedures per the FHWA Manual on Uniform Traffic Control Devices (MUTCD) and the California Manual of Traffic Control Devices.

P. Orientation Provided by Caltrans

Caltrans may provide orientation regarding the requirements for this contract and each task order as deemed necessary by Caltrans. The orientation may comprise instructions on Caltrans procedures, practices, and requirements for the specific work to be performed and sharing of project related files and notes. However, if the orientation instructions conflict with the contract or task order requirements, the contract and the executed task order must prevail over any instructions provided.

Q. Monitoring and Review Procedure

1. The Caltrans contract manager and task order manager will have the unilateral right, occasionally, or as requested by the consultant, to monitor and review the progress and processes of the consultant related to work performed under this contract.
2. The performance of the consultant contract manager, key personnel, and team must be evaluated by the Caltrans contract manager but no less frequently than annually, and at the expiration of the contract. Unsatisfactory reviews of specific consultant personnel may cause Caltrans requesting that they be replaced with new personnel. The consultant must immediately replace personnel with individuals whose qualifications at a minimum equal those of the personnel

replaced at no additional cost to Caltrans. Evaluation includes, but not be limited to:

- a. Job performance.
- b. Quality of Work.
- c. Timely submittal of reports, invoices, daily diaries, and other required documents.
- d. Early detection of problems and timely resolutions.
- e. Requesting timely approval for personnel changes and travel expenditure.
- f. Responsiveness and ability to control costs.
- g. DBE or DVBE Participation.
- h. Conflicts of interest.

Poor performance and any negative evaluations may cause replacement of the consultant contract manager, key personnel, or any personnel; the need to replace key personnel must reflect adversely on the consultant's performance evaluation, and if warranted, may cause the termination of the contract per Exhibit D, Section III, Termination of the Contract.

3. The survey party chief for each consultant's survey party must prepare a daily "Weekly Field Survey Report." The reports must be prepared on Caltrans-provided forms and must be prepared daily.
4. The office survey team leader for each consultant's office survey team must prepare a weekly "Office Survey Report." The report must be prepared weekly at the end of the week's work.
5. The consultant must provide a monthly Task Order Summary Report detailing all work performed under each task order. This report should coincide with the dates covered by the monthly invoice period of performance. The report should be included with the invoice submittal.

R. General Materials to be provided by Caltrans

Materials (if deemed applicable, necessary, and when available from Caltrans) that may be furnished or provided by Caltrans and where listed in the individual task orders and this contract, are for the consultant's use only, must be returned at the end of the contract.

The consultant must use the materials in the execution of the specific work described in the task order. These materials may include, but not be limited to:

1. Background or reference information for each task order.
 2. Project special provisions, full-size and reduced-size sets of project plans, materials information handout, and construction contract and proposal, as necessary.
 3. Caltrans standardized forms.
 4. If Permits to Enter onto private property are required to complete work identified in a task order, Caltrans will issue letters of the Intent to Survey for the identified properties. Caltrans will provide the consultant with Caltrans approved “Notice to Property Owners” door hangers.
 5. Background information, site topographic maps, as-built drawings, blank Caltrans plan sheet overlays, digital electronic seed files, cell libraries, lane closure request forms, right-of-way alignments and survey limits, preliminary utility location maps, areas where focused studies are needed, and Construction Contract Documents, as available, for each task order.
 6. Digital Electronic templates of task order formats.
- S. Subsurface Utility Location Materials to be provided by Caltrans.
1. Relevant and existing documents related to utilities, if any are available, that apply to the current project within the project limits. These may include utility maps, owner information, permit records, right-of-way record data, survey maps, control, data, topographic maps, and planimetric maps. ***Note: Caltrans cannot guarantee the accuracy or completeness of such information.***
 2. Liaison with utility owners and property owners as necessary to facilitate the Consultant’s access to pertinent records or property.
 3. Survey monument disks, plugs, tags, and marker posts.

Note: The consultant handles the return to Caltrans, in original condition, of all items provided for use under this contract. The consultant must replace, at the consultant’s sole expense, all lost or damaged Caltrans data or materials.

T. Land Surveying Materials to be provided by Caltrans

1. Relevant and existing documents, right-of-way record data, survey maps, control, data, topographic maps, and planimetric maps, if any are available, that apply to the current project within the project limits.
2. Monument pipe, rebar, disks, plugs and/or tags.
3. “Weekly Field Survey Report” forms.

Note: The consultant handles the return to Caltrans, in original condition, of all items provided for use under this contract. The consultant must replace, at the consultant’s sole expense, all lost or damaged Caltrans data or materials.

U. Materials to be provided by the Consultant

Unless otherwise specified in this contract, the consultant must provide all materials to complete the required work under the delivery schedule and cost estimate outlined in each task order.

1. The consultant must provide to its land surveying services personnel sets of the following that apply to the current project:
 - a. Standard Specifications.
 - b. Standard Plans.
 - c. Materials under section “Equipment Requirements”.
2. When performing work within railroad company property, the consultant must obtain sufficient and/or adequate insurance coverage that must comply with the railroad company’s requirements when performing work within their jurisdiction. The insurance and types of coverage required by the railroad company may be above and beyond that required by Caltrans. The consultant may have to provide additional railroad liability insurance including, but not limited to:
 - a. Commercial General Liability Insurance.
 - b. Business Automobile Coverage Insurance.
 - c. Worker Compensation and Employers Liability Insurance.

- d. Railroad Protective Liability Insurance.
- e. Umbrella or Excess Insurance.
- f. Pollution Liability Insurance.

V. Product Approval and Payment

1. Deliverables, backup documents, and other items produced by the consultant in the performance of this contract, must be subject to the approval and acceptance by the Caltrans contract manager or task order manager prior to invoicing and payment for these items.
2. All deliverables and tasks provided for acceptance under each task order must comply with the terms, covenants and conditions of this contract.
3. Upon completion of each deliverable or task, the Caltrans contract manager or task order manager must either accept or reject the completed work. In the event of non-acceptance due to errors, omissions, or non-compliance with the Caltrans Manuals, as revised by the time of the task order, or this contract, the consultant must remedy the errors, omissions, or non-compliance to the satisfaction of the Caltrans contract manager or task order manager at no cost to Caltrans prior to payment. Caltrans must withhold payment until the work is satisfactorily completed and approved by the Caltrans contract manager. Additional cost incurred to correct errors will not be compensated.
4. Caltrans must not pay the consultant for the consultant's work under this contract and the charges incurred by the consultant that ignores the requirements specified in this contract and to the task order, and such work must be corrected at the consultant's sole expense at no additional cost to Caltrans.
5. All reviews, inspections and approvals made prior to the final acceptance of deliverables or task orders are intended only to provide interim authorizations to proceed and do not constitute final approval of the deliverable or task order.
6. Notwithstanding any other provision, until final acceptance of a task order under the agreement, any acceptance or approval means approval to proceed, but it does not mean acceptance or approval of a deliverable or task, and it does not reduce or eliminate any of contractor's duties or responsibilities under this agreement.

W. General Deliverables

All deliverables, developed under this contract, and subject to Exhibit D, sections XIX and XX, must be sent to Caltrans upon completion of each task order deliverable and with the acceptance/approval of the work by the Caltrans contract manager or task order manager. The consultant must retain a copy of all documents furnished to Caltrans until expiration of the contract.

Unless otherwise specified in the task order, the deliverables must conform to Caltrans current hardware and software platforms.

1. The consultant must work in close liaison with the Caltrans contract manager and task order manager. Time is of the essence. Caltrans must exercise review and approval functions through the Caltrans contract manager or task order manager at key points, as specified in each task order. Milestone reviews must be performed with the Caltrans contract manager and task order manager for the specific performance, products, and deliverables in each task order.
2. The consultant must prepare a cost estimate showing task, subtask, personnel, personnel hours estimated for each task or subtask, and a schedule of deliverables.
3. All deliverables, backup documents, and other items required by this contract must be prepared on Caltrans standardized forms. Necessary forms will be provided by Caltrans for the consultant's use.
4. All deliverables, backup documents, and other items required by this contract must be submitted in both hardcopy and unprotected and modifiable digital electronic files in the Caltrans-approved forms and in the Caltrans-approved and designated digital electronic formats under the guidelines in this contract and each task order. The unprotected and modifiable digital electronic files must include the responsible person's digital electronic signature and seal. The consultant must verify the latest version of software used prior to submittal.
5. At the end of each task order or when requested by the Caltrans task order manager, the consultant must also submit one unprotected and modifiable digital electronic copy of all deliverables, backup documents, and other items required by this contract in a specified digital device format. The file formats must be specified in each task order. Documentation must accompany each digital device indicating the contents of each file.

6. The consultant personnel involved in preparation or review of deliverables, backup documents, and other items must be identified in the prepared or review report.
7. If the consultant fails to submit the required deliverables, backup documents, and other items required by this contract and any approved task order, Caltrans may withhold payment and/or terminate this Contract under the termination provisions of this contract per Exhibit D, Section III, Termination. If the contract is terminated, the consultant must, at Caltrans' request, return all materials recovered or developed by the consultant under the contract.
8. The consultant must prepare and update the Caltrans WBS in this contract for each task order issued by the Caltrans task order manager showing a deliverables schedule. The consultant must complete and meet the agreed upon schedule for each task order. Failure to complete the work based on the agreed upon schedule in the task order may cause termination of the task order or this contract. Caltrans may have work completed allowed by law, for which the consultant must be liable for any additional costs incurred by Caltrans to complete the work. Such costs may be deducted from amounts due to the consultant in pending or future invoices, or if the contract is terminated, may be recouped by any means allowed by law.
9. Deliverables specified in each task order must be delivered to the attention and address stated in each task order.
10. The Consultant must be capable of working in either English or Metric units.
11. All deliverables must be prepared in U.S. Customary English Units unless an exception is approved. The units to be used for deliverables must be addressed within individual task orders.
12. A task order may require the consultant to use software and digital electronic formats other than those stated in this contract as needed to accomplish the objectives of the task order.
13. Quality Control Plan:

Prior to the work, the consultant must prepare the quality control plan and the minimum standard of work quality and obtain approval from the Caltrans task order manager, in effect for every task order during the entire time the work is being performed under the contract. The consultant must complete the quality control plan and certify at completing work that all measures contained were satisfied. Caltrans must perform quality assurance on the quality control plan to assure that quality control was satisfied.

The Consultant's quality control plan must establish a process whereby:

- a. All deliverables are reviewed for accuracy, completeness, and readability before submittal to Caltrans.
- b. Calculations and plans are independently checked, corrected and re-checked.
- c. All job-related correspondence and memoranda are routed and received by affected persons and then filed in the task order file.
- d. Field activities are routinely verified for accuracy and completeness, such that any discovered deficiencies do not become systemic or affect the result of a task order deliverable.

The consultant must provide an outline of the quality control program before a specific task begins and must identify critical quality control reviews within each task order. The Caltrans task order manager must periodically request evidence that the quality control/quality assurance plan is functioning. All deliverables, backup documents, and other items required by this contract must be submitted to the Caltrans task order manager for review. The deliverables must be marked clearly as being fully checked or unchecked, and that preparing the material followed the quality control plan established for the work. The Quality Control/Quality Assurance (QC/QA) plan must contain provisions for developing appropriate "checklists" to maintain product quality and control. These "checklists" must be delivered to the Caltrans task order manager with the QC/QA plan. The consultant must update these documents when directed by the Caltrans task order manager. Within seven (7) calendar days of the Notice to Proceed, the consultant must submit to the Caltrans task order manager or Caltrans designee a job specific QC/QA plan and staffing plan.

14. Subject to Caltrans review, approval, and acceptance, the consultant has total responsibility for and must verify the accuracy and completeness of the deliverables, backup documents, and other items required by this contract prepared by the consultant or its sub-consultants for the projects as specified in this contract and in each task order. All deliverables, backup documents, and other items required by this contract must be reviewed by Caltrans for conformity with project standards and the requirements in the task order and this contract. The deliverables, backup documents, and other items required by this contract are subject to Caltrans' review, approval, and acceptance. Reviews by Caltrans do NOT include detailed review or checking of major components, quantitative calculations, related details or accuracy of information. The responsibility for accuracy and completeness of such items remains solely that of the consultant.
15. The Caltrans contract manager or task order manager must address all questions which may arise on the quality or acceptability of deliverables furnished and work performed for this Contract.
16. Prepare the deliverables, backup documents, and other items required by this contract under prevailing industry standards and in a form acceptable to the Caltrans contract manager or the Caltrans task order manager. These items must identify the preparer, the designated reviewers, and the criteria for acceptance. The deliverables must satisfy the Caltrans acceptance criteria and tests. The work product must be complete, of neat appearance, well-organized, technically and grammatically correct, independently checked for error, checked by designated reviewers (Caltrans and Consultant Personnel), dated, and must conform to industry standards and all Caltrans, State, and Federal Standards, Requirements, and Procedures. All deliverables must be approved by the Caltrans Contract Manager or Caltrans designee.
17. The minimum standard of appearance, organization, and content of deliverables, backup documents, and other items required by this contract, must be that of similar types produced by Caltrans and set forth in related Caltrans manuals.
18. Caltrans and the consultant must develop and agree to a schedule for the services and deliverables to be completed and delivered, and where appropriate, for acceptance criteria and acceptance tests that the services and deliverables must satisfy as a prerequisite for approval by Caltrans. All deliverables must satisfy the standards set forth in "Standards" section to be accepted for payment.

- X. Land Surveying, Right of Way Engineering and Subsurface Utility Deliverables
1. The consultant must obtain written approval from Caltrans for all deliverables, backup documents, and other items required by this contract. If there are no Caltrans standardized forms, the format and content requirements for all deliverables, backup documents, and other items required by this contract must be specified in each task order.
 2. All land surveying and subsurface deliverables, backup documents, and other items required by this contract performed on computer must be delivered in Caltrans approved hardware and software formats. Specific deliverable file formats must be identified in the individual contract task orders.
 3. All maps must be submitted in unprotected and modifiable digital electronic files in the Caltrans-approved and designated formats and must conform to Caltrans standards.
 4. Survey points, lines, and monuments must be established, marked, identified and referenced, as required by Standards and Symbols for Photogrammetric Mapping, CADD Standards, task order, and the requirements in this contract.
 5. Survey notes, drawings, calculations and other survey documents and information must be completed as required by the task order and the requirements in this contract.
 6. All original survey documents resulting from this contract (including original field notes, data collector raw files, edits to field data, adjustment calculations, final results, and intermediate documents) must be delivered to Caltrans and must become the property of Caltrans. The consultant must retain a copy of all survey documents furnished to Caltrans.
 7. The final results of all surveys must be delivered to Caltrans in the formats specified below:
 - a. The HORIZONTAL CONTROL must be submitted in unprotected and modifiable digital electronic files in the Caltrans-approved and designated formats and must conform to Caltrans standards. The digital electronic medium must follow the Caltrans computerized system.

- b. The VERTICAL CONTROL must be submitted in unprotected and modifiable digital electronic files in the Caltrans-approved and designated format and must conform to Caltrans standards. The digital electronic medium must follow the Caltrans computerized system.

The TOPOGRAPHIC DATA must be submitted in unprotected and modifiable digital electronic files in the Caltrans-approved and designated formats and must conform to Caltrans standards. The digital electronic medium must follow the Caltrans computerized system as specified in the task order (AutoCAD Civil 3D, Trimble Business Center).

- c. Other - As specified in the Task Order.

8. Caltrans role must be limited to technical oversight only and monitoring the Consultant's quality assurance program.
9. Quality assurance must be required for Caltrans produced data or data produced by another consultant.

Y. Subsurface Utility Deliverables

1. All required reports, documentation, studies, field notes and sketches, , and electronic data shall be submitted for review and acceptance by the Caltrans Contract Manager.
2. Final submittals shall incorporate any corrections or revisions resulting from Caltrans' review.
3. Digital Data File Deliverables.
 - a. Digital data file deliverables shall be in comma-separated variable format and with a data structure to be specified by Caltrans. Digital data file deliverables shall contain the utility data elements needed to enable virtual regeneration of a 3-D model of the utility infrastructure for a project with appropriate attribution and at a sufficient level of detail to aid Caltrans engineer in identifying potential utility conflicts for project planning and design.
 - b. The Consultant's selected hardware and software, methodology, and format for deliverables, shall conform to the applicable requirements of the Caltrans Survey and/or Drafting Manuals, or shall be as otherwise directed or approved by Caltrans.

- c. The Consultant shall contact the Caltrans Task Order Manager, prior to creating any electronic data, to verify the current collection and submission requirements.
- d. Where physical storage media are used, the Consultant shall identify each unit of media submitted, with adhesive labels affixed to the media and containing identifying and archival information prescribed by the Caltrans Task Order Manager.
- e. A transmittal letter must accompany the physical storage media and shall contain the same information as required to be affixed to the media and shall also contain a description of the data formats and software utilized.
- f. At a minimum, digital data file deliverables shall include:
 - i. The Feature Type elements described in Table 2, see Attachment 3.
 - ii. The Geometry Type elements described in Table 3, see Attachment 3
 - iii. The Feature Attribute elements described in Table 4, see Attachment 3.
 - iv. Additional metadata elements that describe
 - A. How and when the data was collected,
 - B. The coordinate reference system and datum used,
 - C. The individual(s) who certified the data, and
 - D. Any known limitations.
- g. Feature Types, Geometry Types and Feature Attributes suitable for inclusion in the digital data file deliverables are described using the following tables:
 - i. Feature Attributes as shown in Table 4 and Table 5, see Attachment 3.
 - ii. Domain definitions as shown in Table 6 and Table 7, see Attachment 3.

Z. Conflict of Interest

- 1. All land surveying and subsurface utility location services provided by the consultant and deliverables produced by the consultant must be free of any conflict of interest and must be subject to the approval and acceptance of the

Caltrans contract manager. The consultant must inform the Caltrans contract manager of any 'perceived' conflict of interest when discovered.

2. The consultant must not receive compensation for any services or products in which the consultant is found to have a conflict of interest. In the event of non-acceptance due to discovery of conflict of interest, the consultant must provide replacement deliverables free of any conflict of interest prior to payment. If replacement deliverables are not possible, the consultant must not receive compensation for the deliverables containing conflict of interest. Examples of conflict of interest include, but not be limited to:
 - a. Providing land surveying services for Caltrans on a particular project and providing land surveying services for the construction contractor on the same project.

The above conflict of interest scenario is only an example of possible conflicts of interest for the services provided under this contract but is not intended to describe all circumstances for potential or actual conflicts.

AA. Travel

1. The Consultant employee's headquarters and/or primary residence as defined in the Caltrans Travel Guide shall be identified in the Task Order for travel purposes for the purpose of determining appropriate travel reimbursement.
2. The Caltrans Contract manager's prior written approval is required for all domestic or international travel.

BB. List of Abbreviated Terms

A&E (Architectural and Engineering)

BPELSG (California State Board of Professional Engineers, Land Surveyors, and Geologists)

CADD (Computer Aided Drafting & Design)

Caltrans (California Department of Transportation)

DBE (Disadvantaged Business Enterprise)

DPAC (Division of Procurement and Contracts)

DVBE (Disabled Veterans Business Enterprise)

FHWA (Federal Highway Administration)

GNSS (Global Navigation Satellite System)

GPS (Global Positioning System)

MUTCD (Manual of Uniform Traffic Control Devices)
OSHA (Occupational Safety and Health Administration)
OICR (Office Indirect Cost Rate)
PDT (Project Development Team)
PLS (Professional Land Surveyor)
RTK (Real Time Kinematic)
RTN (Real Time Network)
SOW (Scope of Work)
WBS (Work Breakdown Structure)
WSG (Workplan Standards Guide)

CC. Datum Requirements

1. Caltrans must designate the existing horizontal and vertical control monuments to be the basis of Consultant performed surveys and mapping. Caltrans must provide the California Coordinate System values for the horizontal control monuments and the elevation values for the vertical monuments. All bearings and distances must be on the California Coordinate System as based on the primary control furnished to consultant. The consultant must adjust the consultant performed surveys utilizing the designated control monument values. Exceptions need prior written approval from the Caltrans Task Order Manager.
2. All surveying data and maps prepared by the consultant must conform to Sections 8801 through 8902 of the Public Resources Code. Distances and bearings shown must be grid and the maps and documents must show the datum and combination grid factor for surface conversion.
3. The task order must designate which Zone and epoch of the California Coordinate System is to be used for horizontal coordinate values.
4. The task order must designate the vertical datum to be used for elevations.

DD. Monument Markings

Monuments established by the consultant must be marked by the consultant with Caltrans-furnished disks, plugs, or tags. In addition, the consultant must identify State furnished monuments by tagging or stamping the monuments with the license or registration number of the consultant's surveyor in "Responsible Charge" of the work.

ATTACHMENT 1 01SURVSO24 PROJECT LIST		
Project ID	Co-Rte-Post	Description
0100000135	MEN-253-0/0	52 Culverts - Russian & Upper Navarro River Split Project
0100000136	MEN-128-14.3/40.6	51 Culverts - Middle Navarro River Split Project
0100000672	MEN-001-61.99/62.26	Pudding Creek Bridge
0112000110	MEN-001-59.8/62.1	Fort Bragg ADA
0112000283	MEN-101-89.2/89.2	Cedar Creek Culvert
0113000032	MEN-001-0.6/1	Gualala Downtown Enhancements
0116000047	MEN-001-6.4/9.5	Gualala Shoulders
0117000115	MEN-101-9.9/11.2	Hopland ADA
0117000237	MEN-101-21/28.6	UKIAH REHAB
0118000122	LAK-029-R34.9/R35.23	Kelsey Creek L Turn Channelization
0119000124	MEN-001-14.745/33.91	North Point Arena CAPM
0119000130	MEN-128-17.9/30.7	BOONVILLE CAPM
0120000062	MEN-101-30.8/33.8	Calpella Cable Median Barrier
0120000130	LAK-020-16.74/18.02	Lucerne Complete Streets
0120000134	MEN-128-0/50.5	Culvert Rehabilitation & Fish Passage
0121000023	MEN-101-50.7/52.2	Oilwell Hill Safety
0121000072	MEN-101-R9.5/10.8	LAFRANCHI SAFETY
0121000085	LAK-029-17.6/18	Lak-29/C St Left Turn Channelization
0121000105	MEN-101-39.8/40.4	Ridgewood Grade Safety
0122000027	LAK-029-5/5.9	Middletown Safety South
0122000050	MEN-271-0/7.3	MEN-271 Class 3 CAPM
0122000133	MEN-001-75/77	Westport Slide Complex
0122000135	LAK-020-R43.9/R44.2	Abbot Mine Curve Improvement
0123000047	MEN-001-41.8/42.5	Navarro Combined
0123000168	MEN-020-0/R33.158	Men-20 Broadband Middle Mile (var locations)
0123000169	LAK-029-0/5.826	LAK- 29 Broadband Middle Mile (var locations)

ATTACHMENT 3 – TABLE REFERENCES

Table 2. Feature Types

Feature Type	Definition	Comment
Segment	A linear utility feature represented by a series of connected points.	Examples include water line, electric cable, and communication line.
Device	A discrete utility feature that is directly involved with the conveyance, control, or distribution of a particular utility service.	Examples include valve, splice, and transformer.
Access Point	An opening that provides access to utility devices, segments, and containing structures. This feature type is only a point or two-dimensional.	Examples include lid, cover, door, and grate.
Support Structure	A structure used to support utility lines and devices.	Examples include pole, tower, and thrust block.
Containing Structure	A structure or chamber that houses or provides access to utility devices and typically provides a junction area for multiple utility lines.	Examples include pull box, junction box, manhole, vault, and valve box.
Secured Utility Area	An area typically fenced off to restrict access to utility facilities.	
Encasement	A structure that encloses and protects utility facilities and surrounding infrastructure, environment, and the public.	Examples include concrete cap, steel pipe, and tunnel.
Marker	A visible or remotely detectable sign or device used to reference the location of a utility facility.	
Tracer	A wire or tape used to reference the location of a linear utility facility.	

Table 3. Geometry Types

Feature Type	Geometry Type (Minimum Required¹)	Geometry Type (Optional²)
Segment	Line String	3D Object ³
Device	Point	Polygon or 3D Object
Access Point	Point	Polygon
Support Structure	Point	Polygon or 3D Object
Containing Structure	Polygon	3D Object
Secured Utility Area	Polygon	
Encasement	Line String	3D Object
Marker	Point	
Tracer	Line String	

¹Minimum required geometry type is the simplest geometric depiction of a feature type that conforms to this standard.

²Optional geometry type is any alternative geometric depictions of a feature type that may be used under this standard.

³If using a 3D Object geometry type, the 3D Object shall include all necessary transformation data to convert local coordinates to georeferenced coordinate data

Table 4. Feature Attributes

Feature Attribute	Applies to Feature Type								
	Segment	Device	Access Point	Support Structure	Containing Structure	Secured Utility Area	Encasement	Marker	Tracer
ID	M	M	M	M	M	M	M	M	M
Owner	M	M	M	M	M	M	M	M	M
Operator	O	O	O	O	O	O	O	O	O
Utility Type	M	M	M	M	M	M	M	M	M
Device Type	M	M	M	M	M		M	O	O
Conveyance Purpose	M	M		M	M		M	O	O
Intended Permanence	M	M	M	M	M	M	M	M	M
Buried Status	O	O	O	O	O	O	O	O	O
Operational Status	M	M	M	M	M	M	M	M	M
Horizontal Spatial Reference	M	M	M	M	M	M	M	M	M
Vertical Spatial Reference	M	M	M	M	M	M	M	M	M
Accuracy Level	M	M	M	M	M	M	M	M	M
XYZ	M	M	M	M	M	M	M	M	M
Azimuth		C	C	C	C	C			
XYZ Observed	O	O	O	O	O	O	O	O	O
XY Relative Position	C	C	C	C	C	C	C	C	C
Z Relative Position	C	C	C	C	C	C	C	C	C
XYZ Junction Point	O	O	O	O	O	O	O	O	O
Quality Level	O	O	O	O	O	O	O	O	O
Linked File	O	O	O	O	O	O	O	O	O
Date Data Collected	O	O	O	O	O	O	O	O	O
Data Sensitivity Level	O	O	O	O	O	O	O	O	O
Is Certified	O	O	O	O	O	O	O	O	O
Certification Summary	O	O	O	O	O	O	O	O	O
Material	O			O			O		O
Is Cathodic Protected	O			O			O		O
Is Encased	O						O		O
Is Filled	O				O		O		O
Fill Material	O						O		O
Conveyance Method	O	O							
Cross Section Configuration	O								
Number of Conduits	O								
Inside Height	O				O		O		
Inside Width	O				O		O		
Inside Length					O				
Outside Height	O	O		O	O		O		
Outside Width	O	O	O	O	O	O	O		
Outside Length		O	O	O	O	O			
Wall Thickness	O				O		O		

M = Mandatory

O = Optional

C = Conditional (applies if the geometry type used is a 3D object or if observed data are available)

Blank = Does not apply

Table 5. Feature Attribute Definitions

Attribute	Definition	Domain	
Accuracy Level	Numerical code describing the positional accuracy of points defining the utility feature, as described in Table 1.		
Azimuth	Horizontal angle (measured clockwise) of the length dimension of a utility feature with respect to a north base line.		
Buried Status	Indicator of whether the feature is partially or completely underground.	Aboveground Completely Buried	Partially Buried
Cathodic Protected	Cathodic Protected	True	FALSE
Certification Summary	Name and credentials of the party that certified the data		
Certified	Indicator of whether the data have been certified	True	FALSE
Conveyance Method	Method to move or convey matter through the utility feature	Gravity High Pressure Low Pressure Pressurized	Other Unknown Not Applicable
Conveyance Purpose	Primary purpose of service of the utility feature	Cathodic Protection Collector Control Monitoring Cooling Data Transfer Distribution Fire Heating Irrigation	Lighting Service Sign Illumination Trace Traffic Control Transmission Other Unknown
Cross Section	Configuration of the cross section of the utility feature	Arch Box Cable Circular Pipe Duct	Duct Bank Horizontal Ellipse Pear Trench Other
Data Sensitivity Level	Indicator of the sensitivity level of the data recorded for a utility feature. If the data are considered sensitive security information (SSI), the data must be labeled on any output produced and handled in accordance with 49 CFR 1520.	Restricted Unrestricted	SSI
Date Data Collected	Date when a utility feature was surveyed in the field		

Device Type	Type of device	Air Eliminator Amplifier Anchor Anode Antenna Armor Attenuator Cable Cap Capacitor Catch Basin Cathodic Test Station Clean Out Conduit Cover Culvert Culvert End Curb Inlet Door Downspout Drain Drain Separator Drop Inlet Duct Duct Bank Fill Point Filter Fire Connection Point Generator Glycol Recovery Pit Grate Grease Trap Grit Chamber Ground Ground Point Ground Rod Guy Anchor Guy Pole Guy Wire Hand Hole Head Bolt Outlet Headwall Hydrant	Outlet Paging Device Panel Pedestal Pig Launch Point Pipe End Pole Pressure Reducing Station Pump Ejector Station Pre-Conditioned Air Unit Pull Box Pump Pump Booster Station Pump Station Pump Station Ejector Push Brace Radio Receptacle Rectifier Reducer Regulator Regulator Reducer Relay Repeater Reservoir RFID Marker Riser Sample Point Satellite Sensor Service Loop Service Point Solar Panel Speaker Splice Splice Box Splitter Sprinkler Stilling Basin
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		Impedance Matching Point Inlet Intake Junction Box Lid Lift Station Light Lighting Circuit Point Lighting Service Point Line Line Clean Out Load Capacitor Load Coil Manhole Marker Post Marker Sign Media Converter Meter Motor Network Systems Site Neutralizer Oil Water Separator	Stormceptor Storm Filter Storm Gate Stub Out Switch Tank Tape Telephone Terminal Terminator Thrust Block Tower Transformer Treatment Unit Trench Tunnel Undefined Utility Point Vault Valve Box Valve Vent Wing wall Wire Other Unknown
Encased	Indicator of the presence of encasement to insulate or protect the utility feature	True	FALSE
Fill Material	Material used to fill the space between a utility feature and its encasement or an out-of-service feature.	Flowable Fill Foam	Sand Styrofoam
Filled	Indicator of the presence of filling material inside the infrastructure feature	True	FALSE
Horizontal Spatial Reference	Coordinate system and datum associated with the X and Y coordinates		
ID	Alphanumeric utility feature identifier		
Inside Height	For circular shaped segments, inside diameter of the utility feature cross section. For non-circular shaped segments, maximum inside height of cross-sectional shape. For features other than segments, maximum inside height of feature. For segments, not applicable.		

Inside Length	For features other than segments, maximum inside length of feature (measured in the horizontal plane, perpendicular to the width).		
Inside Width	For circular shaped segments, not applicable. For non-circular shaped segments, maximum inside width of cross-sectional shape. For features other than segments, maximum inside width of feature.		
Intended Permanence	Intended longevity of the utility feature	Permanent	Temporary
Linked File	Name of file(s) containing information about the utility feature (e.g., digital photos, CAD files, video, permits, agreement, and other supporting information). Files may be stored as separate fields in a table or as part of an array that contains file names in a single field.		
Material	Predominant material of which the utility feature is constructed. For features that transmit a signal or electrical power, material refers to the conductor material.	Acrylonitrile Butadiene Styrene Aluminum Asbestos Cement Asphalt Block Abandoned in Place Brick Canvas Clay Coaxial Cable Composite Concrete Copper Corrugated Metal Corrugated Plastic Ductile Iron Earthen Fiber Optic (or Optical Fiber) Fiberglass Galvanized Steel Geotextile Glass	Gravel High Density Polyethylene (HDPE) Iron Multiple Nickel Pitch Fiber Plastic Polyethylene Polypropylene Polystyrene Polyvinyl Chloride (PVC) Reinforced Concrete Removed Steel Stone Terracotta Tile Titanium Transite Twisted Pair Copper Unknown Wood Wrapped Steel
Number of Conduits	Number of conduits within a pipe or duct bank	Number of Conduits	

Operational Status	Operational status of the utility feature (see definition of various operational status options in Table 7).	Abandoned In Place In Service	Other Out of Service Proposed
Operator	Name of the entity that operates the utility feature		
Outside Height	For circular shaped segments, outside diameter of the utility feature cross section. For non-circular shaped segments, maximum outside height of cross-sectional shape. For features other than segments, maximum outside height of feature.		
Outside Length	For segments, not applicable. For features other than segments, maximum outside length of feature (measured in the horizontal plane, perpendicular to the width).		
Outside Width Outside Width	For circular shaped segments, not applicable. For non-circular shaped segments, maximum outside width of cross-sectional shape. For features other than segments, maximum outside width of feature.		
Owner	Name of the entity that owns the utility feature		
Quality Level	Quality level in accordance with ASCE/CI 38- 02	A B	C D
Utility Type	Type of utility feature (see definitions of various utility types in Table 6)	Chemical Communication Compressed Air or Other Gas Disposal Electric Heating and Cooling Natural Gas Non-Potable Water	Petroleum Reclaimed Water Steam Storm Water Wastewater Water Joint Use Other Unknown
Vertical Spatial Reference	Coordinate system and datum for the Z coordinate		
Wall Thickness	Maximum wall thickness.		
XY Relative Position	Relative position of XYZ Observed with respect to the horizontal alignment of the utility feature.	Center	Right Edge Left Edge

XYZ	<p>X, Y, and Z coordinates representing the center of the utility feature for data exchange purposes. Depending on the implementation, the X, Y, and Z coordinates may be stored as separate fields in a table or as part of an array that contains spatial data in a single field.</p> <p>For non-linear structures, XYZ represents an anchor point used for 3D representations, which may or not coincide with the feature's centroid. In many cases, XYZ coincides with the observed location in the field (e.g., center of manhole lid). For proper orientation in a 3D space, the Azimuth attribute is also necessary.</p>		
XYZ Junction Point	<p>X, Y, and Z coordinates of the junction point where two features connect (e.g., the point where a pipe into a manhole or vault, or the point where a manhole chimney connects to a vault).</p>		
XYZ Observed	<p>X, Y, and Z coordinates of the utility feature as measured in the field. Depending on the implementation, the X, Y, and Z coordinates may be stored as separate fields in a table or as part of an array that contains spatial data in a single field.</p>		
Z Relative Position	<p>Relative position of XYZ Observed with respect to the elevation of the utility feature.</p>	<p>Center Crown/Top Soffit</p>	<p>Invert Bottom</p>

Table 6. Domain Definitions for Utility Type

Utility Type	Carries
Chemical	Chemical substances other than petroleum and natural gas.
Communication	Data, voice, and/or video signals. Depending on the carrier technology and other factors, a communication feature can include optical fiber, coaxial cable, or twisted pair copper.
Compressed Air or Other Gas	Compressed air or a gas other than natural gas.
Disposal	Disposal substances, typically in connection with the extraction of hydrocarbon products.
Electric	Electrical power.
Heating and Cooling	Fluids used to heat or cool buildings and other facilities.
Natural Gas	Flammable gas, mostly methane, that occurs naturally underground.
Non-Potable Water	Non-potable water. Non-potable water is water that has not been tested, treated, and approved for human consumption.
Petroleum	Raw or refined petroleum products in a liquid state.
Reclaimed (or Recycled) Water	Water that has been reclaimed or recycled and can be used for new, usually non-drinking, purposes.
Steam	Pressurized steam.
Storm Water	Storm water.
Wastewater	Water that has been used at homes, businesses, and industrial processes.
Water	Potable water.
Joint Use	More than one type of utility.

Table 7. Domain Definitions for Operational Status

Operational Status	Description
Proposed	Proposed utility feature that has not been built yet
In Service	Active, in-service utility feature (including short-term service interruptions for maintenance activities)
Out of Service	Temporary non-usage of a functioning utility feature in which property rights are maintained
Abandoned in-Place	Permanent non-usage (i.e., the utility feature will not be used again) in which property rights are relinquished but liabilities (e.g., environmental liabilities) are maintained
Removed	Physically removed from the field
Unknown	Operational status not determined

Definitions and Terms as needed.

A. Definitions and Terms.

1. *Abandoned Utility:* Any subsurface installation that is no longer in service and not connected to any portion of any active subsurface installation.
2. *BPELSG:* California Board for Professional Engineers, Land Surveyors, and Geologists
3. *CI/ASCE 38-02:* "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data," American Society of Civil Engineers, 2003.
4. *CGA Best Practices:* The technologies and practices recommended by the Common Ground Alliance for locating, marking, excavating and mapping underground utilities.
5. *Consultant:* The individual or firm directly, or indirectly through subconsultants, providing engineering and design-related services as a party to the contract.
6. *Contract Manager:* The designated DOT representative responsible to coordinate, authorize, and monitor the status of Task Orders issued pursuant to the contract.
7. *Excavation:* Any operation in which earth, rock, or other material in the ground is moved, removed, or otherwise displaced by means of tools, equipment, or explosives in any of the following ways: grading, trenching, digging, ditching, drilling, augering, tunneling, scraping, cable or pipe plowing and driving, or any other way
8. *Field Mark:* To indicate the existence of any utility using the guidelines in Appendix B of the "Guidelines for Operator Facility Field Delineation" published in the most recent version of the Best Practices guide of the Common Ground Alliance, and in conformance with the uniform color code of the American Public Works Association..
9. *Project Manager:* The designated Caltrans representative responsible on a specific project to evaluate and prescribe SUE needs, and to monitor the performance of approved tasks.
10. *MUTCD:* "Manual on Uniform Traffic Control Devices," U.S. Department of Transportation, Millennium Edition, December 2000.
11. *QL A:* Utility Quality Level A. The activities involved to obtain the highest accuracy available for horizontal and vertical location of utilities, via excavation and exposure (or verification of previously exposed and surveyed utilities), and subsequent measurement of subsurface utilities, usually at a specific point.
12. *QL B:* Utility Quality Level B. The activities involved to determine the existence and approximate horizontal position of subsurface utilities, via application of appropriate geophysical methods, and the professional judgment used to correlate such information to QL C information.
13. *QL C:* Utility Quality Level C. The activities involved in surveying and plotting visible above-ground utility features, and the professional judgment used to correlate such information to QL D information.
14. *QL D:* Utility Quality Level D. Any information on utilities derived from existing records and oral recollections.

15. *Qualified Person:* Any person who completes a training program in accordance with the requirements of Section 1509 of Title 8 of the California Code of Regulations Injury and Illness Prevention Program, that meets the minimum locators training guidelines and practices published in the most recent version of the Best Practices guide of the Common Ground Alliance.
16. *RNC:* Regional Notification Center. The organization of operators of subsurface installations (currently **California811**) that provides advance warning of existing subsurface installations, for the purpose of protecting those installations from damage, removal, relocation, or repair.
17. *Subsurface Utility Engineering, or SUE:* A branch of engineering practice that involves managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design.
18. *Utility:* Any subsurface installation, high priority subsurface installation, active subsurface installation, or inactive subsurface installation, as defined by the California Safe Dig Act (Government Code §§ 4215 et seq.)
19. *Utility Quality Level:* A professional opinion of the quality and reliability of utility information. Such reliability is determined by the means and methods of *the professional*.