SECTION 01720
AS-BUILT DRAWINGS AND CURRENT STATUS DOCUMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work specified in this Section consists of maintaining, annotating and delivering the final As-Built Drawings, Specifications and indexes as defined below. For Shop and Working Drawings refer to Section 01300, Submittals. Work includes but is not limited to as-builts for Work done for all the utilities, inside and outside of median islands, trenches, other nearby utilities, curb and gutters, sidewalks, and streets, islands.

B. Definitions

1. As-Built Documents Schedule - List of As-Built Documents including but not limited to Contract Drawings and Contractor Shop Drawings the Contractor is to submit at milestones and final close-out according to Paragraphs 1.3 C. and D.

2. Current Status Documents - A set of full size reproducible Contract and Shop/Working Drawings and a copy of the Specifications marked and maintained by Contractor to show current As-Built status of construction in progress and current design status. When submitted, these shall be referred to as milestone or final as-built documents as appropriate.

3. Contractor Furnished Drawings - Working Drawings and Shop Drawings produced by the Contractor which become a supplement to the Contract.

4. Project Record Drawings - Contract Record Drawings that reflect actual completed field conditions of Work items depicted on Contractor's latest Contract, Shop and Working Drawings.

5. Drawing Index - List of Contract Drawings and cross-referenced Contractor Shop Drawings, showing the latest drawing number, sheet number, revision number, title of Drawings, attachments, and if the Drawings are revised for final As-Built. Metro provides an index with Metro contract drawings. In addition to Metro provided index, the Contractor shall maintain and provide an index for the Contractor furnished drawings. The Contractor shall cross-reference on the Contract Drawing Index, Contractor Shop Drawings which are supplemental to the Contract Drawings.

1.2 QUALITY CONTROL

Contractor quality control personnel shall perform the following:

A. Print legibly and clearly relevant construction changes/data on current print of Current Status Documents to a high standard of quality. Have Work done by a qualified engineer, designer or drafter.
B. Record additional construction information as requested by Metro on As-Built or Current Status Documents.

C. Reference Standards

1. American National Standards Institute (ANSI)
   
   ANSI 14.4M  Pictorial Drawings

1.3 SUBMITTALS - Refer to Section 01300, Submittals, for submittal procedures.

A. As-Built Documents Schedule - Within 10 days from acceptance of the Baseline Schedule, submit for acceptance a list of As-Built Contract Drawings to be submitted at completion of each Work milestone package.

1. The schedule of As-Built documents should reflect the Work scheduled on the accepted Baseline Schedule.

2. Identify As-Built documents listed in the schedule by drawing, sheet, detail numbers; description of drawing, and other related information that may be required by Metro.

B. Metro will review monthly As-Built with payment request. Current Status Documents showing as-built design and construction progress to be kept at Contractor’s field office at all times (unless otherwise specified). In the event record documents are not maintained, Metro will defer monthly payment for this pay item.

C. Milestone As-Built Contract Drawings - Within 15 days of each milestone as noted in Work Completion Schedule referenced in the Prosecution and Completion of Work paragraph in the Special Provisions, Part C, submit one full-size copy of all related As-Built Drawings cross-referenced to Shop Drawings which have been marked to indicate final As-Built Condition of Work and the latest revision of Drawing and Contract Revision Index. Deliver with index and Contract Submittal Form attesting that documents are a true and complete record of the Contract along with acceptance stamp and signature on drawings concerning third party.

D. Final Close-out Documents - Upon requesting final inspection or within 10 days prior to acceptance, submit remaining As-Built Contract and Shop/Working Drawings, the latest revision of the Drawing Indexes and any previously submitted as-built documents that have been revised.

PART 2 - PRODUCT

2.1 DOCUMENTS

A. As-Built Drawings - One full-size reproducible (22 inches by 34 inches) set of the latest revisions of Contract Drawings marked in black ink in addition to two electronic copies, one original and one in PDF format and one in Microstation format to show changes and deviations from the last revision of Drawings and Contractor Shop Drawings that represent As-Built condition submitted at milestone completions and final contract completion. Conform to Metro CADD standards.
B. Drawing Index – Electronic List of Contract Drawings, cross-referenced to Contractor Shop Drawings, showing the latest drawing number, sheet number, revision number, title of Drawings, attachments, and if the Drawing is revised for final As-Built (indicate AB if drawing was revised to show as-built condition). List of Contractor furnished (Shop) Drawings that are supplemental to the Contract Drawings.

C. As-Built Documents Schedule – Electronic List of As-Built Drawings including Contractor Shop Drawings that Contractor has scheduled to update monthly.

2.2 MEETINGS

A. Upon receipt of the As-Built Documents Schedule from the Contractor, the Metro will call a meeting with the: Metro, others and the Contractor. Metro will decide with the contract team input, which Contract and Shop Drawings are to be:

1. As-built for project record.

2. Cross-referenced and indexed.

PART 3 - EXECUTION

3.1 SAFE KEEPING OF FIELD DOCUMENTS - During times when the contract documents are not being updated, store drawings and indexes in a fire resistant locked cabinet or provide off-site backup to prevent inadvertent destruction of documents.

3.2 MARKING CURRENT STATUS DOCUMENTS

A. Stamp each page of Drawings of the Current Status Documents "CURRENT STATUS." Lettering on stamp: 1/2 inch and 1/4 inch for Drawings and Specifications respectively.

B. Legibly record construction progress information on a weekly basis. Information to include reference of Change Order, Change Notice, RFI responses, Non-Conformance Reports, shop drawings and other related information. Attach to the current status Contract Drawing any markups or sketches received from Metro as a result of design modifications or RFIs. Pertinent information must be shown on the Contract Drawing. Do not cover up Work unless relevant information has been recorded.

C. Clearly identify Change Order revision by Change Order numbers. Where more than one change is made in an area of a drawing, clearly identify the changes graphically by marking a copy of the preceding changes. Insert these copies into set of Current Status Documents on top of preceding record in a manner to preclude losing or damaging document.

D. Mark changes. Mark in black ink and bubble the changes on reproducibles.

E. When a new revision of a document is issued, stamp the superseded document "SUPERSEDED" and keep in Current Status Document set for future reference of previous mark-ups and for use for production of As-Built Drawings. The Contractor need not transfer the data recorded on superseded drawings onto the new revision but shall list all revisions on the drawing index.

3.3 MARKING FOR FINAL AS-BUILT CONDITION
A. Mark and stamp "AS-BUILT" latest revisions of the Contract Drawings and Specifications for the As-Built condition. Lettering on stamp: 1/2 inch and 1/4 inch high for Drawings and Specifications respectively. Clearly define revisions in minimum of 1/8 inch letter on a reproducible copy of Drawings and on photocopy of Specifications.

B. Use bubbles to define extent of the change.

C. Mark As-Built conditions to the extent they deviate from contract requirements on a reproducible of the latest revision of the Contract Drawings or Specifications. Specific information required on each category of Drawings is specified. If drawing does not facilitate such changes, furnish a Shop Drawing showing the details and cross-reference each drawing.

D. Mark Drawings not changed by As-Built conditions with the word "UNCHANGED" above the "AS-BUILT" label.

3.4 REQUIRED INFORMATION ON AS-BUILT DRAWINGS - Provide as-built measurements with reference to datums used for dimensioning on appropriate contract drawings. For underground utilities, measure and record exposed existing and installed lines and conduits. Locate by offset and elevation the centerline and the top elevation of the line at each grade break with surveying equipment. Locations of appurtenances of the line such as the valves, tees, bends etc. may be located in relation to offset lines and elevation. **Accuracy shall be to within 0.5 feet horizontally and to within 0.1 feet vertically.** Coordinate this Work to the satisfaction of utility owners.

3.5 CONTRACTOR FURNISHED DRAWINGS

A. Contractor Furnished Drawings - Drawings provided by Contractor and used for construction of permanent facilities. Prepare drawings to a high standard of quality, as specified, or other relevant lower tier standards defining equal drafting quality for microfilming. **Contractor furnished drawings include as-built drawings.**

B. Produce drawings on D size (22 inches by 34 inches). Provide company logo on drawing and have drawing sealed by an engineer **Civil Engineer** registered in the State of California complete with sealer's name, full signature and registration expiration date, where required by specifications.

C. Drawing numbers will be distinct to avoid duplication with Contract Drawings. Do subsequent revisions to these drawings. Include bubbles, triangles and description of the revision in the revision block and if initiated by Contractor.

D. Include these drawings in the Current Status Documents. Update for changes as specified in other parts of these Specifications.

E. Revise these drawings to show the As-Built conditions as indicated.

F. Upon completion of construction or as directed by the Metro, submit updated Drawing Index and revised original reproducibles of these drawings (see Definitions).

**PART 4 - MEASUREMENT AND PAYMENT**

4.1 MEASUREMENT - The Work of this Section will not be measured separately.

4.2 PAYMENT will be made under Schedule of Quantities and Prices Form, Schedule A, Item No. 1 - General Requirements - Lump Sum.
END OF SECTION