

SECTION 01323
RECORD DOCUMENTS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Contractor shall maintain and provide the Owner with project record documents as specified below.
- B. Maintenance of Documents:
1. Maintain in clean, dry, legible condition on site complete sets of the following:
 - a. Contract Drawings.
 - b. Specifications.
 - c. Addenda.
 - d. Approved Shop Drawings.
 - e. Photographs.
 - f. Change Orders, Modifications of Contract, Field Orders.
 - g. Test Records.
 - h. Survey Data.
 - i. Approved permits
 - j. All other documents pertinent to Contractor's Work.
 2. Make documents available at all times for inspection by Engineer.
 3. Record documents shall not be used for any other purpose and shall not be removed from the office without Owner's approval.
- C. Marking:
1. Use the following color code unless otherwise approved by the Engineer:
 - a. Deletions: Green.
 - b. Additions: Red.
 - c. Notes and Comments: Blue.
- D. Recording:
1. Label each document "PROJECT RECORD" in 2-inch high printed letters.
 2. Keep record documents current and updated at least weekly.
 3. Do not permanently conceal any Work until required information has been recorded.
 4. Contract Drawings - Legibly mark to record actual construction including:
 - a. A written record of actual ground and top of pipe elevations at each joint and at all fittings, valves, air vents and connection points and at all horizontal and vertical deviations from the construction plan set.
 - b. Records kept in a digital spreadsheet containing X,Y,Z coordinates for top of pipe elevations at each joint and at all fittings, valves, air vents and connection points. Accuracy must be sub-foot for horizontal (X, Y) and 0.1-ft for vertical (Z). An updated spreadsheet must be provided with each Contractor pay application. The Digital spreadsheet shall be directly compatible with ArcGIS software without requiring any additional re-formatting, such as a Shapefile , File Geodatabase, or properly formatted Excel or CSV files.
 - c. *{For Horizontal Directional Drilling (HDD) project, digital records of X, Y, Z coordinates for the center of the installed pipeline collected via a tethered instrument (SmartProbe or equivalent) shall be pulled through the new HDD pipe unless otherwise approved by HRSD's Project Manager}.*
 - d. The number of turns required to fully open or close all installed valves. The number of turns shall be determined in the presence of an Owner's representative prior to installation.
 - e. Horizontal and vertical location of underground utilities and appurtenances encountered referenced to permanent surface improvements.

- f. Field changes of dimensions and details.
 - g. Changes made by Change Order or Field Order.
 - h. Details not on original Contract Drawings.
 - i. Changes of different method of construction.
 - j. Use of different products not specified
5. Specifications and Addenda - Legibly mark up each Section to record:
 - a. Changes made by Change Order or Field Order.
 - b. Other matters not originally specified.
 6. Shop Drawings - Maintain as record documents and legibly annotate drawings to record changes made after review.
 7. Record Documents will be reviewed by the Engineer and the Contractor monthly and failure to keep documents accurate and current will be basis for the Owner to withhold the Contractor's monthly payment in partial or full.
 8. Valve Guides for in-line isolation valves, air vents, cathodic protection test boxes, tracer wire test boxes, and other vaults, boxes, or manholes shall be documented with swing ties, reviewed by the Engineer, and delivered to HRSD prior to HRSD operating any of these newly installed facilities.
- E. Record Drawings:
1. Record Drawings shall reflect completion of the installation of all materials, piping, and other work by the Contractor. The drawings shall show the Work in plan and sections as required for clarity with reference dimensions and elevations for complete record drawings.
 - a. Interim Record Drawings in the form of redlined plan and profile sheets shall be provided to the Engineer a minimum of 1 business week prior to a planned tie-in. No tie-ins with active systems will be allowed unless these drawings are submitted.
 - 1) The pre-substantial completion version digital spreadsheet containing X,Y,Z coordinates of the installed pipe and all appurtenances as detailed in Paragraph 1.1.D.4.b of this Section to be submitted as part of the Interim Record Drawings submittal requirements.
 - b. Final Record Drawings in the form of redlined plans shall be provided to the Engineer at the time a request for Final Inspection is made.
 - 1) The final completion version digital spreadsheet containing X,Y,Z coordinates of the installed pipe and all appurtenances as detailed in Paragraph 1.1.D.4.b of this Section to be submitted as part of the Final Record Drawings submittal requirements.
 2. The Contract Drawings may be used as a starting point in developing these drawings. Subcontractor drawings may be included in this drawing package. The drawing package must be fully integrated and include the necessary cross references between drawings.
 3. The Contractor shall record and provide to the Engineer a written record of the following:
 - a. Virginia State Plane coordinates for all valves, air vents, manholes, vaults, and horizontal pipeline bends.
 - b. Actual ground and top of pipe elevations at each pipe joint and at all fittings, valves, air vents, manholes, vaults, pressure sensor assemblies, and connection points. All vertical elevations shall utilize the NAVD 88 datum.
 - c. The recording of this information shall be performed at the time of installation of the associated pipeline and appurtenances.
- F. Valve Guides:
1. Valve Guides shall include swing ties to physical features, valve manufacturer, number of valve turns open/close, HRSD infrastructure ID. A sample Valve Guide is included as *Exhibit A* to this Section. ***{Engineer to include an example from the HRSD Design and Construction Standards, Section 6 – Drawings, Record Drawings, and Valve Guides}***
 - a. Interim Valve Guides shall be developed by the Contractor and delivered to the Engineer for review a minimum of 5 business days prior to a planned tie-in. No tie-ins with active systems will be allowed unless these drawings are submitted and complete.
 - b. Final Valve Guides shall be updated and delivered to the Engineer prior to the Final Inspection.

G. Submittal:

1. At the completion of the Project, deliver final documents to the Engineer. *{Engineer to coordinate with HRSD Project Manager the submittal of either paper or digital form.} Place all letter-sized material in a three-ring binder. Bind Contract drawings and shop drawings in rolls of convenient size for ease of handling.*
2. Accompany the submittal with a transmittal letter *{in duplicate}* containing the following:
 - a. Date.
 - b. Project title and number.
 - c. Contractor's name and address.
 - d. Title and number of each record document.
 - e. Certification that each document as submitted is complete and accurate.
 - f. Signature of Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION