

CITY UTILITIES DESIGN STANDARDS MANUAL

**Book 1
General Requirements (GR)
GR10 Final Record Drawings**

June 2015

GR10.01 Purpose

This Chapter establishes the procedures for maintaining and submitting record drawings so that City has a final record which correctly depicts infrastructure as constructed. Refer to [Chapter CADD3 – Submittals](#) for information on how to produce Record Drawings electronically.

GR10.02 Documentation and Approval Process

1. CUE Projects

A set of project drawings designated specifically for recording changes and deviations from the original project drawings shall be maintained throughout construction. The requirements for record drawings shall be described in each project manual based on the requirements of this section.

Record drawings will be produced based on the record of work provided by the contractor and Resident Project Representative (RPR) to CUE. [Exhibit GR10-1](#) and [Exhibit GR10-2](#) show sample record drawings. The following procedures will be followed.

- CUE will notify the design engineer that a particular project is ready for record drawings and provide the field records from the contractor and the RPR.
- Design Engineer shall prepare draft record drawings.
- The completed draft record drawings will be reviewed by CUE for verification of information. A full-size hard copy and PDF of the draft record drawings shall be submitted. The draft record drawings will either be accepted as record drawings or rejected and the design engineer will be required to correct and resubmit the draft record drawings.
- Once the draft record drawings have been approved by CUE for the project, final record drawings shall be submitted to CUE as one (1) full size hard copy and PDF.

2. DVS Projects

A record of all work from the construction drawings shall be made upon completion of each project to generate record drawings. [Exhibit GR10-1](#) and [Exhibit GR10-2](#) provide Sample Record Drawings. Record drawings shall be generated by drawing a line through the original design information and adding the as-constructed data to the original plans using red ink. Therefore, the record drawings shall show the original design information and the as-constructed information, which shall include, but not be limited to, features such as detention basins, topographical information, drawings added to the original plan set, and revised and new calculations based upon modifications.

DVS will notify the applicant when the project is ready for record drawings. The applicant shall then prepare the draft record drawings. Based on DVS review, the draft record drawings will either be accepted

as record drawings or rejected and the applicant will be required to resubmit revised draft record drawings.

Record drawings shall be submitted to DVS in PDF.

GR10.03 Drawing Information

1. CUE Projects

All as-constructed work shall be shown and clouded, preferably in red. Original drawing information shall under no circumstances be erased. Supplemental information collected during construction shall be added to the drawings. Examples of supplemental information include tap locations, utility locations and information, field observations, etc. As-constructed work shall be noted as follows.

a. As-constructed Work Differs from Original Drawings

Where the as-constructed work differs from the original drawings, a line will be marked through the original information. The as-constructed information shall appear adjacent to the original design information and a cloud shall be placed around the as-constructed information.

b. As-constructed Work Matches Original Drawings

Where the as-constructed information matches original design information, the as-constructed information will appear adjacent to the original information and shall have a cloud placed around it.

2. DVS Projects

All as-constructed work shall be shown and clouded, preferably in red. Original drawing information shall under no circumstances be erased. As-constructed work shall be noted as follows:

a. As-constructed Work Differs from Original Drawings

Where the as-constructed work differs from the original approved drawings, a line will be marked through the original design information, and the revised as-constructed information shall appear adjacent to the original drawing information, and a cloud placed around the revised as-constructed information.

b. As-constructed Work Matches Original Drawings

Where the as-constructed work matches the original approved drawings, the recorded information shall appear adjacent to the original approved drawing information and have a cloud placed around it.

GR10.04 Drawing Requirements

The requirements of this section apply to all projects.

1. Survey Datum

Horizontal control shall be referenced to the North American Datum 1983 (NAD83) Indiana State Plane Coordinate System, East Zone.

Vertical control shall be referenced to the National Geodetic Vertical Datum 1988 (NGVD88).

2. Survey Accuracy

For hard structures horizontal measurements and vertical elevations shall be recorded to 0.01 feet, with accuracy to 0.05 feet.

For earthen structures, horizontal measurements and vertical elevations shall be recorded to 0.1 feet, with accuracy to 0.25 feet.

3. Record Drawings Content

The following items, at a minimum, shall be included in the record drawings.

a. Alignment

Horizontal location shall be noted for features including, but not limited to:

- manholes
- cleanouts
- catch basins and/or surface inlets
- headwalls
- retaining walls
- slope protection
- channel linings
- water main and appurtenances (as required by DVS and/or CUE)
- miscellaneous structures
- stormwater basins
- swales and ditches

b. Elevation

Elevations shall be noted for features including but not limited to:

- inverts of overflows
- rims
- surface inlet grate rims and top of curb
- flow lines
- structures (all pipe elevations)
- outlets and spillways

c. Stormwater Basin Volumes

Original and as-constructed stormwater basin volumes shall be included on the record drawings.

d. Pipe Characteristics

Pipe sizes, lengths, slopes and pipe angles at structures shall be included on record drawings.

e. Materials

Materials for all work shall be included on record drawings.

f. General Record Drawing Requirements

In general, the following shall apply:

- The surveyor or engineer shall seal and sign all drawing sheets.
- Any unverified data shall show +/- thereby indicating the information has not been verified.
- The record drawing shall be clearly dated.