

Division 02 | Surveys

Section includes various general guidelines for site survey assessment and the investigation of subsurface and other geotechnical conditions, as well as demolition and site remediation.

This design guideline is written to the designer of record (DOR). This guideline is written to document UA standards of work, assist the designers in ensuring UA standards are incorporated into the contract documents and provide a resource to facilitate the design process. It is the designer of record's responsibility to coordinate the criteria set forth in design guideline and in conjunction with the manufacturer requirements and use the most stringent standard.

Section 02 21 00 – Surveys

A. General

1. All surveys performed for The University of Alabama must be completed by or under the direct supervision of a professional land surveyor licensed in the State of Alabama.
2. All surveys are to adhere to the technical standards for land surveying in the State of Alabama.

B. Utility Surveys

1. Scope: Surveying of all new and exposed existing underground utilities. Scope of work shall not include any boundary surveys.
2. Qualifications: Surveys shall be performed by or under the supervision of (a) a Professional Licensed Surveyor registered in the state of Alabama or (b) a licensed Professional Engineer registered in the state of Alabama who is degreed in Civil Engineering and normally engaged in topographical surveying. Proof of registration shall be submitted (name and license number shall be acceptable).
3. Standard of Care: Surveys shall comply with the State of Alabama Technical Standards (ATS) for Surveying. Surveys shall be performed utilizing survey grade GPS and/or other survey grade data collection equipment capable of providing digital northing, easting, and elevation output. Surveys shall be on the UA's coordinate datum (NAD83 Alabama State Planes, West Zone, US Foot).
4. Phasing: Personnel performing surveys shall be available to perform required surveys without disruption of workflow.

C. Survey Requirements

1. Survey all new and all exposed existing underground utilities, except irrigation piping smaller than 2", outside the building footprint. Provide survey equipment as required for all conditions encountered.
2. NO UTILITY SHALL BE BACKFILLED WITHOUT BEING SURVEYED.
3. Indicate utility, dimensions or pipe size, and material at all survey points.
4. Survey Shots: As a minimum, survey shots shall be taken at the following locations:



- a. 25' maximum intervals on straight runs
 - b. 10' maximum intervals on curved portions of flexible utilities
 - c. All changes in alignment (both vertical and horizontal)
 - d. Changes in size and/or material
 - e. Connections to existing
 - f. End of lines
 - g. Sleeves and casings
 - h. In-line valves (top of nut)
 - i. Offset valves (both top of nut and center of valve body)
 - j. Concrete encased duct banks (edges of concrete)
 - k. Electrical and OIT Manholes (corners and center of cover)
 - l. Grease traps (corners and center of covers)
 - m. Storm and Sanitary Manholes (corners and center of cover, all pipe inverts)
 - n. Underground Detention (boundaries, extents, inspection ports)
 - o. All above-ground system features (hydrants (top), valve boxes, meter boxes, access or inspection ports, junction boxes, cleanouts, manhole covers, etc.)
 - p. Thrust blocks: (Bottom, top, outer boundary)
 - q. Other system components
5. Directional Bores: Depth and location of bores shall be tracked and marked on the ground in accordance with the above guidelines, to be surveyed same as other utilities.

D. Information Submittals

1. Survey data shall be submitted with each Pay Request.
2. Submittals shall consist of the following:
 - a. A site plan containing surveyed utilities in *.dwg file in AutoCAD Civil 3D format, complying with the following requirements:
 - i. File name shall be Project name + "Utilities" + date (example "Presidential 2 Utilities 2-14-14.dwg")
 - ii. **No External References.**

- iii. Drawings will be created using AutoCAD Civil 3D and will retain Civil 3D Content.
 - iv. The contract documents Site Utility Plan (AutoCAD Civil 3D), provided by the Engineer of Record, shall be used as the base plan.
 - v. Do not explode Civil 3D Objects or export drawings to base AutoCAD.
 - vi. Points shall be imported into the drawing in a Point Group labeled with the date of import.
 - vii. Utilities shall be indicated with continuous polylines interconnecting survey points. Lines for each utility shall be on separate layers with descriptive names beginning with “New” (example: “New_UAGas”). Color of layers shall be per Alabama One Call color code.
 - viii. Drawings shall be kept current. All current survey information shall be updated prior to each monthly submittal.
 - ix. Each submitted Drawing will be cumulative.
- b. A *.txt Point File(s) in PNEZD(comma delimited) (PointNumber, Northing,Easting, Elevation,Description)
- File name shall be Project name + “Utilities” + date (example “Presidential 2 Utilities 2-14-14.txt”)
3. Media:
- a. Monthly submittals will be uploaded to Estus project site. NEED LOCATION AND WORK FLOW.
 - b. 100% Submittal will consist of CD/DVD and Mylar print.

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