



## CRITERIA FOR UTILITY AS-BUILTS

### PART 1 – GENERAL REQUIREMENT

All contractors installing new underground utilities shall provide a survey of all new utilities installed and all existing utilities verified/located during the Work. **Three weeks after the completion of utility installation**, Contractor shall submit a complete set of As-Built Documents.

#### 1.1 TECHNICAL REQUIREMENTS

- 1) **Reference UA Standard:** [Criteria for SURVEY, CAD, & GIS Documentation](#).
- 2) Contractors shall coordinate pre-construction with FAMA to ensure a seamless interface of technical data, software, and mapping systems to ensure a compatible final product.
- 3) Contractor and Surveyor shall verify that Site Survey Control is correctly calibrated and agrees with the Design Survey Control and has been verified against observations of that control.

#### 1.2 DELIVERABLES

- 1) Point file of all survey points.
- 2) Electronic CAD file of the As-Built Drawings.
- 3) Electronic CAD file of the As-Built Single-Line Diagram Drawings.
- 4) PDF copy of the As-Built Drawings.
- 5) PDF copy of the As-Built Single-Line Diagram Drawings.
- 6) Two hard copies of the final As-Built Drawings signed and sealed by a licensed AR Land Surveyor.
- 7) Two hard copies of the final As-Built Single-Line Diagram Drawings signed and sealed by a licensed AR Professional Engineer.

### PART 2 – SURVEY & AS-BUILT STANDARDS

#### 2.1 SURVEY REQUIREMENTS

- 1) All installed utilities must be surveyed using precision land survey practices.
- 2) All surveys shall be performed to meet current NGS accuracy standards.
- 3) Survey must be performed **PRIOR TO BACKFILL** to obtain top of pipe/conduit/ ductbank elevation and position information.
- 4) All linear utility features must be surveyed at regular intervals no more than 20 feet on straight runs and at all direction and elevation changes.
- 5) All utility termination/cap points must be surveyed and labeled clearly on the As-Built Drawings. All removed utility structures and pipes must also be identified. The approximate length of removed pipes must be indicated on the As-Built Drawings as well. Connection point, disconnection point, and utility line re-routes must be clearly shown on the As-Built drawings.



- 6) All utilities discovered during excavation that are not previously shown on the survey/construction documents must be surveyed and documented.
- 7) Each utility and its components (pipe, ductbank, valves, manholes, handholes, etc.) shall be located and depicted on the As-Built Drawings in the AR state plane coordinate system. Each data point for all utilities shall be defined by its actual state plane coordinates. Refer to the utility specific information.

## 2.2 UTILITY-SPECIFIC INFORMATION

- 1) As-built data shall indicate demarcation points between privately owned systems and those of enterprise systems.
- 2) Communications, telecom, fiber – ductbank/conduit location and width, number of conduits, conduit sizes, conduit material, bends and turns, poles, manhole structures, handholes, pull-boxes, stub ups, etc. must be shown on the As-Built Drawings referenced in the AR state plane coordinate system.
- 3) Electric
  - a. Utility Plan drawing showing ductbank/conduit location and width, feeder lengths, number of conduits, conduit sizes, conduit material, bends and turns, poles, manhole structures, handholes, pull-boxes, transformers, switches, load breaks, poles, grounds, grounding grids, generators, charging stations, stub ups, distribution panels, photovoltaic panels, inverters, site lighting, and site lighting circuits, etc. on the As-Built Drawings referenced in the AR state plane coordinate system.
  - b. Single-Line Diagram Drawings showing conduit size, cable size, transformer, switches, buildings, etc. The identifying number of any manhole, feeder, or piece of equipment (switches, transformers, etc.) shall be coordinated with FAMA.
- 4) Natural Gas, Pressurized Gas, Air Lines – lengths, pipe sizes, materials, bends, valves, caps, vents, tees, stub-ups, meters, etc. must be shown on the As-Built Drawings referenced in the AR state plane coordinate system.
- 5) Heating/Cooling Systems (High-Temp, Medium-Temp, Dual-Temp, Chilled Water) – pipe sizes, pipe material, bends, elbows, elevation changes, expansion loops, thrust blocks, manholes, handholes, valves, vents, etc. must be shown on the As-Built Drawings referenced in the AR state plane coordinate system.
- 6) Sanitary Sewer – All sanitary system components including piping (size, material, top of pipe elevation, and a slope), manhole structures, cleanouts, forced main valves, lift stations, etc. must be shown on the As-Built Drawings referenced in the AR state plane coordinate system.
- 7) Storm Sewer – lengths, pipe sizes, inverts, rim elevations, grate elevation, pipe material, and slope (%) must be shown on the As-Built Drawings. All storm system components including piping (size, material, top of pipe elevation, and a slope), manholes, cleanouts, storm, trench drains, downspouts, head walls, flared end section, sump pumps,



- mechanical treatment devices, swales, retention/detention systems, outflow control structures, etc. must be located on the As-Built Drawings referenced in the AR state plane coordinate system.
- 8) Water System (Potable Water and Fire Water) – top of pipe, pipe material, pipe sizes, and elevations, piping (size, material, top of pipe elevation, and a slope), elbows, tees, caps, elevation changes, thrust blocks, valves, service valves, fire valves, post indicator valves, hydrants, standpipes, water meters, etc. must be shown on the As-Built Drawings referenced in the AR state plane coordinate system.
  - 9) Tracer Wire Stations – all tracer wire stations must be shown on the As-Built Drawings referenced in the AR state plane coordinate system with utility specific labeling. Each tracer station shall be labeled for its respective utility.

END OF SECTION