



City of Rollingwood, TX
Project Name: City of Rollingwood
Control Network Surveys

Arch Technical Services, LLC.
Date: June 12, 2023
Proposal Reference No.: P22-0300



1. PROJECT IMPLEMENTATION AND TIMELINE

Understanding of Scope of Work

Arch Technical Services, LLC, dba, ATS Engineers, Inspectors & Surveyors (ATS) is pleased to provide professional surveying services as requested by the City of Rollingwood. As ATS understands, the City of Rollingwood is looking to implement a survey control network that would create consistent repeatable horizontal and vertical data for the overall purpose of ensuring that all structures are built to the rules set forth by the City of Rollingwood and able to be used by all companies that perform construction services within the City of Rollingwood.

ATS Project Approach

ATS' Project Approach in response to the City of Rollingwood's Scope of Work begins with establishing a unified, repeatable horizontal and vertical control network for all related services to work with for measurable repeatability and accuracy. ATS will adhere to, meet, or exceed the standards set out in the Texas Society of Professional Surveyors Manual of Practice, Effective December 31, 2021.

Control Network Survey

The control network survey will commence after the City of Rollingwood provides ATS with formal notice to proceed. ATS will coordinate with the City of Rollingwood's assigned staff about the proposed location of all new horizontal/vertical benchmarks to be established. To establish these benchmarks, ATS will supply, operate, and maintain survey-grade (sub-centimeter) GPS equipment and differential digital leveling methods.

ATS recommends utilizing the existing manholes found at street intersections or straight lines not to exceed a distance of five hundred feet. ATS estimates that forty-five existing manholes meet this criterion. ATS will set a punch mark in the middle of an existing manhole covers to identify where the survey observations were originally performed for repeatability.

The control survey data will be collected via Trimble GNSS Model 10 & 12 GPS receivers. Horizontal and vertical information will be obtained utilizing the Virtual Reference Station (VRS) technology to aid in geographic positioning used by the GPS receiver to collect survey data. ATS will perform two "3-minute" survey observations, which is the "measure survey control" data collection option. The accuracy of this method will produce a survey observation result +/- 0.03'. By taking two observations, ATS will take an average result as the final solution per control point.

The horizontal and vertical control survey shall be prepared following the Texas Society of Professional Surveyors Manual of Practice, Effective December 31, 2021, and shall meet or exceed the standards for Category 7 – Horizontal Control Survey, Category 8 – Vertical Control Survey, and Category 11 – Three-Dimensional Control Survey, Condition 1 depending on the project specifics.

Control Network Mapping and Publishing

ATS will coordinate with the City of Rollingwood to develop a map and make it publicly available. ATS assumes we will have access to existing GIS data held within the City of Rollingwood's GIS department.

Project Staffing/Scheduling

ATS anticipates that ten working days will be required to perform the field survey for a horizontal and vertical network with five additional days in the office to process all data. ATS will coordinate with the City of Rollingwood to develop a map that can be made publicly available. ATS assumes we will have access to existing GIS data held within the City of Rollingwood's GIS department.

Safety

ATS' comprehensive safety management system (SMS) plan is tailored specifically for surveyors and the typical issues they encounter daily. Our surveyors will conduct tailgate safety meetings each morning before work commences to address any specific issues or concerns for the day. A record of the meeting will be maintained in the project files. The field crews will also comply with all the City of Rollingwood's safety requirements. ATS prides itself on its safety performance.

Hardware and Software

Trimble GPS (Static, GNSS, RTK, and VRS capabilities)
TSC 5 & TSC 7 Data Collectors w/ Trimble access

Software

AutoCAD w/ Civil 3D Trimble
Business Center (TBS) Carlson
Survey w/ AutoCAD Map

Estimated Cost

ATS estimates a total value of \$13,000.00 for the field and office work required to produce a survey control network to be used by all required parties and to be published by the City of Rollingwood to serve as public information.