



**Airport Trunk Main Sewer Phase 2B  
Post Design Services  
City Project No. CIP19-014  
Scope of Work**

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Appendix A – Consultant Fees

## **Overview**

Post Design services for the City of Prescott (City) Airport Trunk Main Sewer Phase 2B Project (Project) will be performed by Lyon Engineering & Surveying, Inc. (Engineer) & (Surveyor).

Tasks and requirements set forth in this Scope of Work have been generally defined by the following major elements:

- Construction Administration Services
  - Provide engineering support during construction
  - Coordination with utilities and operations
  - Communication facilitation and documentation
  - Field Inspection
  - Testing
  - Record Drawings

### **Task Series 1000 Post Design Engineering Services**

The objective of post design engineering services is to assure that construction of the Project is carried out in accordance with the intent of the design and the requirements of regulatory agencies, with a minimum of disruption to ongoing activities of the stakeholders and roadway commuters.

As the Owner, the City will be the central point of contact for the Contractor and the Engineer. Instructions to the Contractor will be issued by the City per the construction contract.

### **Task 1100 Project Administration**

The Engineer will provide administrative services to facilitate construction activities and communicate with the City regarding the construction progress. These tasks will include special coordination meetings, construction photographs, reviewing Contractor's redline markup as-built drawings on an on-going basis, coordination with City personnel, other Engineer management and coordination, maintain records and reports of construction inspection and testing activities, and general document maintenance and management. The Engineer will maintain a log of all work items, including RFIs, submittals, alternates, claims, etc.

#### ***Subtask 1110 Conferences and Meetings***

The Engineer will attend on an as needed basis the meetings identified below. Other Project Team members will be requested to attend meetings as deemed necessary.

Meetings attended by the Engineer include:

- Construction Progress Meetings on a weekly basis (attended by Key Project Team members) as necessary. These meetings will be scheduled and coordinated by the Contractor.

- Work Coordination Meetings on an as-needed basis. These meetings will be scheduled and coordinated by the Project Manager.
- Issue and RFI Resolution Meetings on an as-needed basis. These meetings will be scheduled and coordinated by the Project Manager.
- Meetings with dry utility companies on an as-needed basis. These meetings will be scheduled and coordinated by the Project Manager.

### ***Subtask 1120 Project Coordination***

The Engineer will coordinate with the City Project Manager communicating via phone calls or email during the course of the project. Such communications may include contractor progress, upcoming critical installation or inspection activities, overall quality and progress of work, clarification of special provision items, unforeseen or deficient construction items that are not covered by the Request for Information process (materials, weather damage or delay requests, etc.)

### ***Subtask 1130 Requests for Information***

The Engineer will act as main point of contact to the Project Manager and will be responsible for routing and maintaining records of Requests for Information (RFI). The Engineer will maintain a log of RFIs for monitoring the status and timeliness of responses. The Engineer Project Team will assist with the RFI response development in relation to their area of design responsibility with the Project Manager issuing the completed response to the Contractor and City. The Engineer will issue interpretations and clarifications of the requirements of the Contract Documents, as requested by the Contractor in a RFI or other format as deemed suitable by the City Project Manager, to facilitate proper fabrication, construction, or installation of the work.

The Engineer will evaluate, at City request, Contractor's claims to determine if they are justified under the Contract and will review Contractor's proposals for additional compensation and/or time relating to changes or claims. The Engineer will assist with the claim reviews as required.

### ***Subtask 1140 Submittal Reviews***

The Engineer will review product data, shop drawings, samples, test results, operations and maintenance manuals, and other data that the Contractor is required to submit. Submittals will be transmitted, processed and filed electronically. The Engineer will be responsible to distribute the submittals to the appropriate Project Team members and consolidate the reviews of different members into a single review to the Contractor. Such review and approval or other action will not extend to means, methods, sequences, techniques or procedures of construction selected by Contractor, or to safety precautions and programs incident thereto. The City of Prescott will maintain a submittal log for monitoring the status and timeliness of responses. Pavement and concrete mix design will be reviewed and approved by the City of Prescott.

### ***Subtask 1150 Record Drawings***

The Engineer will develop record drawings based on Contractor field notes and redlines, and as-built field coordinates provided by the Surveyor. The drawings will be updated in CAD and delivered to the City as pdf, dwg or dgn and hard copies. The Engineer will submit three (3) full size copy sets, one (1) mylar set, and one (1) thumb drive to the City. The record drawing will be per the City of Prescott General Engineering Requirements Article 10 dated July 2016.

➤ **Deliverables:**

- Three (3) 22" x 34" copies of the Record Drawings
- One (1) 22" x 34" copy of the Record Drawings on Mylar
- One (1) thumb drive containing the Record Drawings in PDF, dgn or dwg electronic format

### ***Subtask 1160 Post Construction Results of Survey***

The Surveyor shall place aluminum caps on an 18" rebar at corners based on City right-of-way or property purchases. The Surveyor will develop a Post Construction Results of Survey per Sections E of the City provided Attachment 'A' Rev 05/17.

➤ **Deliverables:**

- Three (3) 24" x 36" copies of the Post Construction Results of Survey
- One (1) 24" x 36" Post Construction Results of Survey on Mylar
- Post Construction Results of Survey in PDF and dwg electronic format

### ***Subtask 1170 Field Survey Verification of Sewer Improvements***

The Engineer's Surveyor will field verify the installed manhole base invert elevations of each manhole prior to installation of cylinder manhole sections. Manhole inverts must be within 0.05 ft of design inverts shown on the design plans. The Engineer's Surveyor will field verify the installed sewer main invert elevations at intervals of no more than 100 ft between manholes prior to backfilling of the sewer main. Sewer main inverts must be within 0.05 ft at 100 ft intervals of design inverts based on sewer main slopes shown on the design plans.

➤ **Deliverables:**

- Map of verified manhole bases and main line inverts including:
  - Field measurement of inverts and date surveyed
  - Design inverts
  - Difference between field and design inverts

### ***Subtask 1180 Construction Survey Layout Verification***

The Engineer's Surveyor will field check the construction stakes, lines and grades set by the Contractor's Surveyor utilizing the project control in the approved construction plan set. The Engineer's Surveyor will utilize survey level equipment to check all vertical grade stakes for manholes and sewer mains shown on the design plans.

➤ **Deliverables:**

- Copy of Engineer's Surveyor field notes at completion of project

## **Task 1200 Inspection Services**

The Engineer team will conduct as needed, daily inspections and special inspections, and coordinate for other required inspections, so as to ensure quality work and to prevent any delays to work progress and completion. The Engineer will perform the following:

### ***Subtask 1210 Engineers Certificate of Completion (ECC)***

The Engineer team will conduct as needed, daily inspections of sewer construction to satisfy the requirements of the ECC and prepare the ECC with all supporting documentation, including all test results and supporting data, apply for and obtain Approval to Operate status from Yavapai County Environmental Services.

### ***Subtask 1220 Site Visits***

The Engineer will conduct occasional, periodic visits to the site to make spot checks of work-in-progress, review site conditions in response to an RFI or changes, or to assist in coordination of construction issues requiring their attention.

### ***Subtask 1230 Substantial and Final Completion Inspections***

The Engineer will coordinate with the City and conduct inspections jointly with the City and the Contractor to determine if the Project is substantially complete and will, before issuing a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction (punch list). Upon verification that the City is in agreement with the Substantial Completion determination, the Engineer will issue the Certificate of Substantial Completion and the punch list.

The Engineer will conduct a final inspection to determine if the finished Work has been completed to the standard required by the Contract Documents and that Contractor has fulfilled its obligations as required. This inspection will be based on the punch list and any other functional or operational deficiencies that occur in the time period between when the punch list is generated and the Final Inspection. Once it has been determined that the Work is finished and complete and the City is in agreement with the determination, the Engineer will recommend, in writing, final payment to Contractor.

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## Allowances

### **Contingency**

At the request of the City, the Engineer has added a contingency to the contract to cover additional unforeseen post design services on an as needed basis. This contingency cannot be used without the express written consent of the Public Works Director.

## Scope Assumptions

1. The level of effort assumes that the project will adhere to the **480**-day construction schedule as described in the project Special Provisions and does not include any night work.
2. Permits required for construction activities will be obtained and paid for by the Contractor including storm water permits.
3. The Contractor will be responsible for producing, implementing and maintaining a Storm Water Pollution Prevention Plan (SWPPP) for all construction activities.
4. Any reference to the City of Prescott General Engineering Requirements in this scope is per the version dated July 2016.



City of Prescott  
 Airport Trunk Main Phase 2B  
 Post Design Services  
 City Project No. CIP19-014

Fee Proposal  
 Lyon Engineering & Surveying, Inc.  
 8/28/2019

Task No.	Task Description	SVY	STCH	SMGR	ENG	PE	INSP	DRONE	Total	Total
		\$ 150	\$ 125	\$ 135	\$ 135	\$ 150	\$ 85	\$ 100		
<b>Task Series 1000</b>	<b>Post Design Engineering Services</b>									
Task 1100	Project Administration									
Subtask 1110	Conferences and Meetings					69	69		138	\$ 16,215
Subtask 1120	Project Coordination					138			138	\$ 20,700
Subtask 1130	Requests for Information					70			70	\$ 10,500
Subtask 1140	Submittal Reviews					32			32	\$ 4,800
Subtask 1150	Record Drawings	80			80	12			172	\$ 24,600
Subtask 1160	Post Construction Results of Survey	32	40	16					88	\$ 11,960
Subtask 1170	Field Survey Verification of Sewer Improvements	620		120		40			780	\$ 115,200
Subtask 1180	Construction Survey Layout Verification	140		16					156	\$ 23,160
Task 1100 Subtotal		872	40	152	80	361	69	0	1574	\$ 227,135
Task 1200	Inspection Services									
Subtask 1210	Engineers Certificate of Completion (ECC)					140	1380		1520	\$ 138,300
Subtask 1220	Site Visits					140			140	\$ 21,000
Subtask 1230	Substantial and Final Completion Inspections					16	16		32	\$ 3,760
Task 1200 Subtotal		0	0	0	0	296	1396	0	1692	\$ 163,060
<b>Task Series 1000 Subtotal</b>		<b>872</b>	<b>40</b>	<b>152</b>	<b>80</b>	<b>657</b>	<b>1465</b>	<b>0</b>	<b>3266</b>	<b>\$ 390,195</b>
<b>Allowances</b>										
Contingency	Per the Request of the City of Prescott									\$ 5,000
Allowances Subtotal										\$ 5,000
<b>Contract Total</b>										<b>\$ 395,195</b>

Labor Codes Legend:

**SVY** - Survey Crew, **STCH** - Survey Technician, **SMGR** - Survey Manager, **ENG** - Project Engineer, **PE** - Principal Engineer, **INSP** - Inspection, **DRONE** - Aerial Drone