

ATTACHMENT A SCOPE OF SERVICES

Article 3 of the AGREEMENT is amended and supplemented to include the following agreement of the parties. CONSULTANT shall, except as otherwise provided for herein, furnish all Engineering services, labor, equipment, and incidentals (SERVICES) as required for this AGREEMENT.

DESCRIPTION OF PROJECT

This project is located on Post Oak Road approximately 0.2 miles east of 96th Avenue SE. The purpose of this project is to replace the existing load posted bridge carrying Post Oak Road over an unnamed tributary to Jim Blue Creek.

1. ROADWAY/STREET

The project length is approximately 0.42 miles. Post Oak Road is classified as a rural collector. The existing roadway is asphalt and is approximately 22' wide. The new roadway section will be 26' wide with 6' sod shoulders. New guardrail systems will be required at the approaches to the bridge. Additional R/W is anticipated for permanent construction. The roadway will be closed to through traffic, but local access will be maintained throughout construction.

Roadway design will follow the City of Norman Engineering Design Criteria as well as the 2018 AASHTO Policy of Geometric Design of Highways and Streets, the 2011 AASHTO Roadside Design Guide, and the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Detailed construction plans shall meet the City of Norman standards for submittal.

2. TRAFFIC

a. Traffic Control

Post Oak Road will be closed to thru traffic during construction of the new bridge. Traffic Control Plans will be prepared with a signed detour.

b. Signing and Striping

Signing and striping plans will be prepared in accordance with the latest City of Norman and ODOT standards.

3. BRIDGE/STRUCTURAL

The existing bridge over the tributary to Jim Blue Creek will be replaced. The clear roadway between the railing will match the required width (pavement plus shoulders) for a rural local road. W-beam guardrail will be used to protect the ends of the bridge railing.

a. Hydraulic Design

The size of the bridge will be determined by a hydrology & hydraulic study in accordance with City of Norman Engineering Design Criteria and the ODOT Drainage Manual. The bridge is located in a FEMA Flood Zone A.

b. Structural Design

The structural design of the bridge will be in accordance with the AASHTO LRFD Bridge Design Specifications, 9th Edition and ODOT Bridge Division policies. ODOT standard bridge railing will be used. The foundation will be designed in accordance with recommendations of the geotechnical report that will be prepared for this site.

4. SURVEY

The survey limits will extend 1,200' west of the existing bridge and 1,200' east of the existing bridge along Post Oak Road. The survey will extend 80' north of the center of the road and 110' south of the center of the road. The survey of the creek will extend 300' upstream and 300' downstream of the existing bridge.

Within the limits of the survey the following information will be collected:

- Set a minimum of 2 control points/benchmarks for vertical and horizontal purposes derived from GPS static observation, OPUS solution, VRS Network, or existing control if provided.
- Topographical survey will include all the following existing surface features: roads, curbs, drives, sidewalks, buildings, finished floor at thresholds, signs, fences, walls, tree lines, flowerbeds, all visible drainage structures and flow lines, and visible or marked utilities.
- Tree cover will be annotated by coverage being dense or sparse within those areas.
- Trees located on the south side of the road, south of the white fence, within the survey footprint will be individually located.
- All utility companies servicing the project area will be contacted thru "CALL OKIE- 811" 14 days prior to field survey.
- All utility information field collected will be placed in the CAD drawing.
- Storm sewer manholes, sanitary sewer manholes, water valve rims and inverts will be measured for depth (to the connection outside of survey limits).
- Cross-sections at interval grid to produce contours at 1.0' minimum density.
- Right-of-way, property lines and ownerships will be established using a title company.

Staking for the new right-of-way or easements is included in Section 7: Right-of-Way.

5. GEOTECHNICAL

The scope of the geotechnical services is as follows:

- a. Advance two (2) abutment borings to a minimum depth of 30 feet into bedrock. The borings will be sampled using the Standard Penetration Test at a maximum of 5 feet intervals beginning at ground level. The borings will be located as close as possible to the proposed abutments.
- b. Once bedrock is encountered, the rock hardness will be tested using the Texas Cone Penetrometer (TCP) on a maximum of 5 feet intervals.
- c. Advance four (4) in-place borings in the approaches to the new bridge and obtain soil samples form 0-6 and 6-36 inches below the ground. A composite bulk sample will be obtained to determine the Proctor and Resilient Modulus.

- d. The soil samples recovered will be tested to determine the soil classification (Atterberg Limits and gradation) and moisture content. Soluble sulfate will be tested on the roadway samples. Proctor and Resilient modulus will be tested on the bulk samples.
- e. Groundwater levels will be measured during and 24 hours after completion of the drilling. The borings will be plugged per Oklahoma Water Resources Board (OWRB) requirements.
- f. The borings will be located in the field by an Engineer using the plans provided. Vertical control established in the project plans will be used to obtain surface elevations of the borings. The geotechnical services will provide a foundation report containing recommendations for driven piles and, if appropriate, drilled pier foundations. The report will include recommendations for the approach roadway pavement design for HMA and essentially will be performed to verify the City of Norman paving standard is adequate. The report will be prepared under the supervision of and signed by a registered Professional Engineer in the State of Oklahoma.

6. ENVIRONMENTAL CLEARANCE

MKEC will provide environmental mitigation measures as required in the plans and provide any support documentation for CC Environmental to obtain all environmental permits or requirements, including 404 permit and OWRB permit as applicable.

7. RIGHT-OF-WAY

It is expected that right-of-way (R/W) will be acquired for this project. The CONSULTANT will prepare right-of-way plans, exhibits and legal descriptions for the acquisition of right-of-way. CONSULTANT will provide R/W staking for the parcels during the acquisition process. The cost for staking R/W will be a unit price per request/mobilization. Right-of-way acquisition services are not included in this contract.

8. UTILITIES

- a. **Utility Map (color-coded)**
CONSULTANT will provide a color-coded set of plan and profile sheets to OWNER for each affected utility company to coordinate the necessary utility relocations.
- b. **Utility Relocation Coordination**
OWNER will coordinate the relocation of utilities as required for the project and will request written approval from all utility companies as to the accuracy of all facilities on the plans.
- c. **Utility Meetings**
CONSULTANT will attend utility relocation meetings with each utility. The meeting will be coordinated by the City of Norman. The OWNER will prepare the meeting minutes.
- d. **Utility Relocation Plan Review**
CONSULTANT will ensure any utility relocation plans meet the requirements of the project.

e. Utility Relocation Design

The design of OWNER owned utility relocations is not anticipated for this project. If the design or relocation of OWNER-owned utilities is necessary, services will be added to the agreement by written amendment.

9. CONSTRUCTION

a. Bidding

The OWNER will assume primary responsibility for the bidding/award process for the project. The CONSULTANT will serve the OWNER in a support role during the bidding/award process. Additionally, the CONSULTANT shall answer questions from possible contractors, including the development of written responses to questions received.

b. Construction Support

CONSULTANT shall attend any scheduled Pre-Construction Meeting and will be available throughout construction to answer questions, including formal Requests for Information (RFIs) and assist the OWNER as necessary, helping to resolve any complications or conflicts that may arise. If shop drawings are to be produced during construction, CONSULTANT will be available to assist the OWNER in review. CONSULTANT shall attend regularly scheduled progress meetings, as required.

c. Construction Management/Testing

Construction Management and Testing are not included in this contract.

d. Record Drawings

Record Drawings will be prepared and submitted to the OWNER based upon field documents provided by the construction administrator.

MEETINGS

The consultant shall schedule monthly design progress meetings or conference calls with the OWNER to discuss current project status, upcoming milestones, and any issues arising on the project.

DESIGN CRITERIA

The design and plans shall conform to current (at the time of bidding) Federal, State of Oklahoma, City of Norman, and American Association of State Highway and Transportation Officials (AASHTO) polices and standards unless modified in writing at the direction of the OWNER. It is expected that this project will be bid and awarded by the City of Norman.

DELIVERABLES

The CONSULTANT shall provide monthly project status updates that include (but are not limited to) schedule updates, action items, and the anticipated submittal date for upcoming milestones. CONSULTANT shall make available all design calculations upon request. CONSULTANT shall complete thorough quality control reviews prior to the submittal of all deliverables.

1. Design Plans – 30/60/90 Milestone Schedule

a. Plan Requirements

Plan submissions will include an 11x17 (half size) PDF file and four (4) 11x17 (half size) hardcopy prints.

b. Preliminary (30%) Plans and Engineering Report

The 30% Preliminary Design Submittal will include, but is not limited to, the following:

- Title Sheet
- Typical Section
- Plan and Profile Sheets
- Drainage Area Map
- Bridge General Plan & Elevation
- Survey Data Sheets including Utility Data Sheets
- Cross Sections
- Preliminary Estimate of Earthwork
- Opinion of Probable Construction Cost
- Updated Design Schedule
- Bridge Hydraulic Report
 - Four (4) hard copies and one (1) PDF
- Engineering Report
 - Four (4) hard copies and one (1) PDF

The preliminary engineering report will summarize the project scope, approach and design considerations. Proposed solutions will be presented in the report along with estimates and a recommendation. The content of the deliverable will be coordinated with City staff.

c. 60% Plans

The 60% Preliminary Design Submittal will include, but is not limited to, the following:

- Title Sheet
- Typical Section
- Drainage Area Map
- Storm Water Management Plan
- Plan and Profile Sheets
- Bridge General Plan and Elevation
- Traffic Control/Sequencing Plans
- Estimate of Earthwork
- Survey Data Sheets including Utility Data Sheets
- Cross Sections
- Opinion of Probably Construction Cost
- Updated Design Schedule

d. Right-of-Way Documents

- Right-of-Way Plans with:

- Owner Name & Information
- Book and Page Information, if applicable
- Easements with Book and Page Information
- Parcel Numbers
- Dimensions
- Overall Parcel Map
- Legal Descriptions with:
 - Written Descriptions
 - Exhibits

e. Final (90% Plans)

- Title Sheet
- Typical Section
- Pay Item Lists and Notes
- Summary Sheets
- Drainage Area Map
- Storm Water Management Plan
- Erosion Control Sheets
- Plan and Profile Sheets
- Bridge General Plan and Elevation
- Signing and Striping Sheets
- Final Estimate of Earthwork
- Survey Data Sheets Including Utility Data Sheets
- Final Cross Sections
- Detail Sheets
- Environmental Mitigation Notes
- Sequence of Construction & Traffic Control Plans
- Opinion of Probably Construction Cost
- Updated Design Schedule

f. Plans, Specifications, and Estimate (PS&E Submittal)

- Title Sheet
- Typical Section
- Pay Item Lists and Notes
- Summary Sheets
- Drainage Area Map
- Storm Water Management Plan
- Erosion Control Sheets
- Plan and Profile Sheets
- Bridge General Plan and Elevation
- Signing and Striping Sheets
- Final Estimate of Earthwork
- Survey Data Sheets Including Utility Data Sheets
- Final Cross Sections
- Detail Sheets
- Environmental Mitigation Notes
- Sequence of Construction & Traffic Control Plans
- Final Opinion of Probably Construction Cost

- Bid Documents and/or Documentation as required by OWNER or bidding agency

ADDITIONAL SERVICES NOT INCLUDED

- Full time construction inspection or observation.
- Construction surveying or surveying as-built conditions.
- Property Acquisition
- Traffic Study
- Appraisals – Negotiations & Acquisitions
- GIS mapping services or assistance with these services
- Providing renderings, model or mock-ups
- Utility Relocation Design