

WORK AUTHORIZATION NO. 1

**PROJECT: Engineering Services for Roadway Widening on
CR 100 from Chandler Road to CR 105, approximately 11,375'**

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated June 2, 2022 and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and LAN (the "Engineer").

Part 1. The Engineer will provide the following Engineering Services set forth in Attachment "B" of this Work Authorization.

Part 2. The maximum amount payable for services under this Work Authorization without modification is \$61,030.00.

Part 3. Payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the Contract.

Part 4. This Work Authorization shall become effective on the date of final acceptance and full execution of the parties hereto and shall terminate on December 31, 2024. The Engineering Services set forth in Attachment "B" of this Work Authorization shall be fully completed on or before said date unless extended by a Supplemental Work Authorization.

Part 5. This Work Authorization does not waive the parties' responsibilities and obligations provided under the Contract.

Part 6. County believes it has sufficient funds currently available and authorized for expenditure to finance the costs of this Work Authorization. Engineer understands and agrees that County's payment of amounts under this Work Authorization is contingent on the County receiving appropriations or other expenditure authority sufficient to allow the County, in the exercise of reasonable administrative discretion, to continue to make payments under this Contract. It is further understood and agreed by Engineer that County shall have the right to terminate this Contract at the end of any County fiscal year if the governing body of County does not appropriate sufficient funds as determined by County's budget for the fiscal year in question. County may effect such termination by giving written notice of termination to Engineer.

Part 7. This Work Authorization is hereby accepted and acknowledged below.

EXECUTED this _____ day of _____, 20____.

ENGINEER:

Lockwood, Andrews and Newnam, Inc.

By: Travis Michel
Signature

Travis Michel, P.E.
Printed Name

Sr. Associate
Title

COUNTY:

Williamson County, Texas

By: _____
Signature

Printed Name

Title

LIST OF ATTACHMENTS

Attachment A - Services to be Provided by County

Attachment B - Services to be Provided by Engineer

Attachment C - Work Schedule

Attachment D - Fee Schedule

Attachment A - Services to be Provided by County

Williamson County Road & Bridge Division personnel will provide:

- Project direction, review and oversight
- Existing LIDAR contours and apparent ROW (Wilco's GIS Department)
- Aerial background (photography) files
- Geotechnical investigations and pavement design
- Existing culvert sizes and elevations
- Available recent bid tabs for development of the OPCC
- Right of Entry acquisition for adjacent properties if required
- Construction oversight, administration, and management

Attachment B - Services to be Provided by Engineer

Project Locations:

1. CR 100 from Chandler Road to CR 105, approximately 11,375'

Task 1: Project Management

Attend progress review meetings with Road & Bridge Division at 50%. Prepare monthly progress reports and invoices. Maintain project schedule and perform QA/QC. Coordinate with other consultants.

Task 2: LIDAR Contours and Apparent R.O.W.

To be provided by the County's GIS Department.

Task 3: Preliminary Engineering

N/A

Task 4: Geotechnical Investigations

To be provided by the County
(pavement design)

Task 5: Environmental Studies

N/A

Task 6: Utility Coordination

N/A

Task 7: FEMA Coordination

N/A

Task 8: Final Engineering

8.1. Roadway Design:

8.1.1. Preliminary field work which includes marking the boundaries of the project, assessing the slopes and conditions of driveways, and determining if there's a need to relocate mailboxes and roadway signs, among other tasks.

8.1.2. Roadway design and develop schematic drawings for construction purposes. The plan set will encompass the following sheets:

- I. Title sheet,
- II. Project Layout (one sheet),
- III. Survey Control Sheet (To be provided by others)
- IV. Existing and proposed cross sections,
- V. Quantity summary,
- VI. Plan and profile (including SW3P, signage and pavement marking elements),
- VII. Relevant TxDOT standard details.

8.1.3. Develop the Opinion of Probable Construction Cost (OPCC).

8.2. Hydrologic & Hydraulic Analysis, and Construction Documents (Drainage Sheets)

8.2.1. Hydrologic Analysis: The contributing drainage basin to County Road 100 (CR 100) will be delineated utilizing LiDAR, survey information, and GIS analysis. Small basins (less than 200 acre) will be analyzed using the rational method, while large basins will be analyzed using HEC-HMS.

8.2.2. Hydraulic Analysis: A hydraulic model will be provided to analyze one minor cross culverts on CR 100 that was identified during a cursory field visit. The minor cross culvert will be analyzed using HY-8. Arch CMP pipes with a minimum cover of 1 foot will be provided for the proposed crossing culvert configurations. The location of existing ditches will be collected through site information and desktop analysis. Spreadsheet ditch calculations will be provided to analyze the existing parallel ditches on both the East and West sides of CR 100. The goal of the drainage improvement is to achieve a 25-year design storm capacity for cross culverts and a 10-year capacity for parallel drainage ditches.

8.2.3. Design Plans: It is anticipated the following drawings will be included in Drainage sheets:

- I. Drainage Area Map (1 sheet)
- II. Hydrologic Calculations (1 sheet)
- III. Culvert Hydraulic Calculations (1 sheet)
- IV. Culvert Plan & Profile Sheets (1 sheet)
- V. Ditch Calculations (1 sheet)

Note: Ditch grading and callouts will be provided in roadway plan & profile sheets.

Task 9: Bidding Phase Services

N/A

Task 10: Construction Phase Services

10.1. Review and respond to Contractor's Requests for Information (RFIs) (Up to 4 RFIs).

Deliverables:

50% Submittal:

- Scroll plot of drainage areas and runoff calculations
- 11"x17" plan sheets
- Estimates and quantities

90% Submittal:

- Scroll plot of drainage areas and runoff calculations
- 11"x17" plan sheets
- Technical Specifications
- Estimates and quantities

100% (Final) Submittal:

- Signed and sealed plan set
- Final OPCC

Exclusions:

The following items are excluded from LAN's scope of work but may be included as a Supplemental Service should the County request them:

1. Subconsultant services, including but not limited to: Surveying, Geotechnical Engineering, Pavement design, Environmental Consulting, Subsurface Utility Engineering (SUE), Traffic study, etc.
2. Utility coordination or relocations design.
3. Utility design to address water or wastewater conflicts with the proposed drainage improvements is not included in this scope.
4. Detailed Traffic Control Plans (Construction Contractor to provide Traffic Control Plan)
5. Develop cross section sheets.
6. Separate SW3P sheets (LAN will incorporate these elements into the plan and profile)
7. Separate signage and pavement marking sheets (LAN will incorporate these elements into the plan and profile)
8. Driveway culverts will not be analyzed in this scope. Driveway culverts will be relocated as needed to accommodate the roadway widening and will match existing condition or better.
9. Public involvement.
10. Bid phase services.
11. Develop record drawings.
12. Any other items not identified in the basic services.

Attachment C - Work Schedule

Expected Notice to Proceed from Williamson County near February 12, 2024.

Milestone	Duration	Date Due
Notice to Proceed		February 12, 2024
50% Submittal	8 weeks	April 12, 2024
50% Review Comments returned	2 weeks	April 26, 2024
90% Submittal	4 weeks	May 24, 2024
90% Review Comments returned	1 week	May 31, 2024
100% (Final) Submittal	3 weeks	June 21, 2024

Attachment D - Fee Schedule

The following tasks will be invoiced at the hourly rate for the personnel performing the tasks.
The total amount for each task will not be exceeded without approval from the county.

Task 1 – Project Management	\$6,745.00
Task 8 – Final Engineering	\$49,405.00
Task 10 – Construction Phase	\$4,880.00
Total	\$61,030.00

Work Authorization #1

Project: CR 100 from Chandler Road to CR 105, approximately 11,375'

Project Name: CR 100 Roadway Widening Engineering Services	Total Task Hours	Total Task Cost	Project Principal	Project Manager	Project Engineer	Senior CAD Technician	Engineer - In - Training	Admin/ Clerical
			\$ 260.00	\$ 210.00	\$ 165.00	\$ 130.00	\$ 130.00	\$ 100.00
Project Management and Setup								
Project Management	17	\$ 3,340.00	2	12				3
Coordination with other Consultants	6	\$ 1,020.00		3			3	
Monthly Progress Meetings (3 meetings), Agenda & Meeting Minutes Preparation	12	\$ 2,385.00		9	3			
Subtotal	35	\$ 6,745.00	2	24	3	0	3	3
Roadway Design								
Field work (limits, striping, driveway, etc. identification)	14	\$ 2,280.00		4	4		6	
Prepare Schematics	146	\$ 20,100.00		14		92	40	
Prepare Quantity Summary & OPCC	9	\$ 1,410.00		3		3	3	
Quality Control/Quality Assurance	8	\$ 1,880.00	4	4				
Mileage (\$0.655/mile) & Plan Production/Printing/Courier Services		\$ 350.00						
Subtotal	177	\$ 26,020.00	4	25	4	95	49	0
Hydrologic & Hydraulic Analysis, and Construction Documents (Drainage Sheets)								
Data Collection (Hydrologic Analysis)	6	\$ 850.00			2		4	
Rational Method (Hydrologic Analysis)	7	\$ 980.00			2		5	
Data Collection (Hydraulic Analysis)	8	\$ 1,180.00			4		4	
Rational Method (Hydraulic Analysis)	13	\$ 1,795.00			3		10	
Parallel Ditch Analysis (Hydraulic Analysis)	10	\$ 1,440.00			4		6	
Drainage Area Map (1 sheet)	25	\$ 3,355.00			3		22	
Hydrologic Calculation (1 sheet)	20	\$ 2,670.00			2		18	
Culvert Hydraulic Calculations (1 sheet)	20	\$ 2,670.00			2		18	
Culvert Plan & Profile Sheets (1 sheet)	35	\$ 4,725.00			5		30	
Ditch Calculations (1 sheet)	20	\$ 2,670.00			2		18	
QC Review	5	\$ 1,050.00		5				
Subtotal	169	\$ 23,385.00	0	5	29	0	135	0
Limited Construction Phase Services								
Respond to Contractors RFIs (Estimate 4 RFIs)	28	\$ 4,880.00		12	8		8	
Subtotal	28	\$ 4,880.00	0	12	8	0	8	0
Total Fee		\$ 61,030.00						