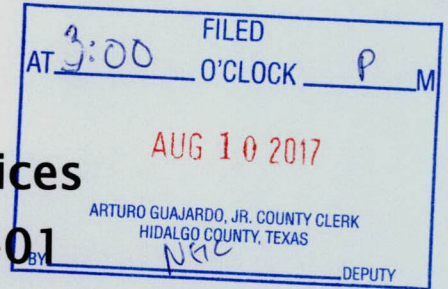


HIDALGO COUNTY
Professional Engineering Services
Contract # C-15-255A-09-01
Work Authorization Form



WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 1 of the Agreement made by and between HIDALGO COUNTY, action herein by and through the Commissioner's Court, hereinafter called the "Owner," and, L&G Consulting Engineers, Inc. d/b/a L&G Engineering, professional engineers of Mercedes, Texas hereinafter called "Engineer".

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the Engineer to provide Engineering Services required for the preparation for Traffic Signal Warrant Study for the SH107/Sunflower Road Intersection.

The scope of services to be provided by the Owner is identified in *EXHIBIT "A" - Scope of Services to be provided by the Owner* attached hereto.

The scope of services to be provided by the Engineer is identified in *EXHIBIT "B" - Scope of Services to be provided by the Engineer* attached hereto.

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is \$10,781.68. This amount is based upon the costs outlined in the Estimated Cost Proposal attached hereto as *EXHIBIT "D-1" - Estimated Man-hour Breakdown.*

PART 3. PAYMENT

Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with Article 6 of the Agreement.

PART 4. FUNDING

This Work Authorization No. 1 shall be funded through funding source:

Account No. _____

Requisition Number _____ (MUST BE INCLUDED AFTER CC APPROVAL)

PART 5. PERIOD OF SERVICE

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of scopes of the Work Authorization, as identified on *EXHIBIT "C" - Work Schedule*.

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties' responsibilities and obligations provided under the Agreement.

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION

Acknowledgement and confirmation by Hidalgo County Precinct No. 4, Commissioner Joseph Palacios as to the content and detail of this Work Authorization No. 1.

HIDALGO COUNTY
COMMISSIONER PRECINCT NO. 4

BY: Joseph Palacios

PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on 8/08/17 as indicated below.

THE ENGINEER:
L&G ENGINEERING

Jacinto Garza
By: Jacinto Garza, P.E.
President

THE OWNER:
HIDALGO COUNTY

Ramon Garcia
By: Ramon Garcia,
County Judge

ATTEST:

Arturo Guajardo, Jr.
By: Arturo Guajardo, Jr., County Clerk

APPROVED BY
COMMISSIONERS' COURT
ON: 8/8/17



LIST OF EXHIBITS

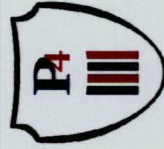
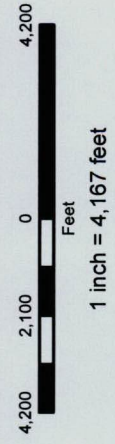
- Location Map
- Exhibit A - Services to be provided by Owner
- Exhibit B - Services to be provided by Engineer
- Exhibit C - Work Schedule
- Exhibit D-1 - Estimated Man-hour Breakdown



**PROP. TRAFFIC SIGNAL WARRANT
SH 107 AND SUNFLOWER**

LEGEND

- PROPOSED TRAFFIC WARRANT
- STREETS
- STATE ROADS
- ELSA CITY LIMITS
- HIDALGO COUNTY LIMITS



**SH 107 AND SUNFLOWER
LOCATION MAP**
TRAFFIC SIGNAL WARRANT AT THE INTERSECTION
OF SH 107 AND SUNFLOWER ROAD



EXHIBIT "A"

Services to be provided by the County

1. The County will issue work authorization to initiate all required services and designate the authorized representative of the coordination of each work authorization.
2. The County will provide copies of all subdivision plats of record and/or in the subdivision process.
3. The County will provide the Engineer with on-going guidance, timely reviews, and decisions necessary to complete services required by the work authorization in order to permit the Engineer to maintain an agreed upon project schedule.
4. The County will process all acceptable requests for payment in a timely manner.

EXHIBIT "B"
SCOPE OF SERVICES
TRAFFIC ENGINEERING AND DESIGN SERVICES

SH 107 at Sunflower Road

Project Understanding

TxDOT plans to widen SH 107 in the vicinity of Sunflower Road to six lanes. The geometric design at the Sunflower Road intersection includes directional openings for east-west left turning traffic, basically cutting off the North-South through traffic along Sunflower Road. Commissioner Palacios wants this intersection to remain fully open with a traffic signal. He has a Community Resource center (Sunflower Memorial Park) that is currently being built on the North-West corner of the intersection (this is visible on the latest google earth images). This CRC will serve over 6,000 constituents with educational, recreational, health service and other programs at no cost to the public. They have already built an 8,000 square foot building and are currently under construction of phase I of the park sitting on 70 acres. Commissioner Palacios has also already developed engineering plans to widen Sunflower Road north of SH 107 to accommodate right turn lanes on to SH 107 due to the expected traffic increase. In addition, the County owns a tract of land on the south west side which they have a planned 4H Livestock Show Grounds/Parks Department in the works. Since they are planning such major traffic generators, they want to petition TxDOT to leave this intersection open. Accordingly, a traffic signal warrant study would be part of the petition.

ETSI will conduct a traffic signal warrant study as follows:

TRAFFIC SIGNAL WARRANT STUDY:

ETSI will conduct a traffic signal warrant study at the intersection of SH 107 and Sunflower Road.

The traffic signal warrant study will follow the required guidelines listed in the Texas Manual on Uniform Traffic Control Devices (Texas MUTCD), latest edition and in accordance to TxDOT requirements.

ETSI will provide the following services:

TASK 1 - Conduct Field Investigations

- Collect turning movement counts for 11 hours of a typical weekday
- Conduct speed studies
- Take photos for each intersection approach
- Identify potential sight distance restrictions
- Identify posted speed limits
- Identify presence of roadway illumination
- Record existing intersection controls, if any
- Record general geometry of the intersection
- Record visible utilities, including power lines
- Record existing development in the vicinity of the intersection

- Record major traffic generators in the area
- Record other features that might impact installation of a traffic signal control
- Observe existing traffic patterns

Task 2 - Assess collected data

- Assess completeness of collected data
- Identify additional data requirements

Task 3 - Accident Analysis

- Request accident records for the past four years from local law enforcement authorities (L&G's assistance may be required for this task)
- Conduct accident analysis as required by the Texas MUTCD. Determine if five or more of the reported crashes that occurred within a 12 month period can be susceptible to correction by a traffic signal control.

Task 4 - Collision Diagrams

- Based on the collected accident reports, prepare a collision diagram that shows the occurred accidents in diagrammatic form.

Task 5 - Intersection Exhibits

- Prepare intersection conceptual layout in approximate scale to present the anticipated geometric conditions of the intersection after construction of Sunflower Road.

Task 6 - Signal Warrant Analysis

- Develop future traffic projections on Sunflower Road based on proposed developments in the vicinity of the intersection. It is anticipated that the future widening of both SH 107 and Sunflower Road would attract new through the intersection.
- Conduct signal warrant analysis
- Prepare warrant forms and charts

Task 7 - Photo album

- Prepare a photo albums of each approach of the intersection, depicting features and data supporting the warrant study.

Task 8 - Recommendations

- In the case where a traffic signal control is warranted, ETSI will make recommendations for the type of signal installation to be implemented along with other improvements to enhance safety.
- In cases where a traffic signal control is not warranted, ETSI may suggest other

actions to improve safety and quality of traffic flow.

Task 9 - Traffic Signal Warrant Study Report

- Prepare a report that presents all data collected, analyses work, exhibits, photographs and recommendations.

SERVICES TO BE PROVIDED BY L&G ENGINEERING

L&G will assist in the collection of accident records from the proper law enforcement agencies.

L&G will furnish ETSI hard copies and electronic versions of the intersection geometry if available.

L&G will also provide coordination and communication for the progress of the work among all parties involved.

TIME SCHEDULE

The time schedule is largely dependent on the timing of the collection of accident records and traffic counts. ETSI will submit to L&G a final report within four weeks from the notice to proceed, assuming all accident data are available. Exhibit C shows the timeline schedule for the warrant study.

**EXHIBIT C - TRAFFIC SIGNAL WARRANT STUDIES - TIMELINE SCHEDULE
SH 107 AT SUNFLOWER ROAD**

TASK	WEEKS				
	1	2	3	4	5
TASK 1 - Collect Data and Conduct Field investigations	■				
Task 2 - Assess collected data		■			
Task 3 - Accident Analysis			■		
Task 4 - Collision Diagram			■		
Task 5 - Intersection Exhibits			■		
Task 6 - Signal Warrant Analyses			■		
Task 7 - Photo album			■		
Task 8 - Recommendations				■	
Task 9 - Traffic Signal Warrant Study Report				■	

S SUBMITTAL

EXHIBIT D-1
 ESTIMATED MAN-HOUR BREAKDOWN
 COUNTY WIDE ON-CALL CONTRACT
 WA #1 - SH 107/SUNFLOWER ROAD INTERSECTION TRAFFIC WARRANT ANALYSIS

	MANHOURS							Sub-Contract Amounts / ROW COST	TOTAL HOURS	Admin / Clerical	CADD Operator / GIS Analyst	Senior Engineer Tech	Project Engineer	Senior Environmental Scientist /Specialist	Senior Engineer	Senior Project Manager	TOTAL LINE ITEM COST
	CONTRACT RATE	211.40	175.16	147.98	129.86	96.64	66.44										
WORK AUTHORIZATION NO. 1																	
TRAFFIC SIGNAL WARRANT																	
1																	\$ 6,300.00
2		4			28											32	\$ 4,481.68
SUB-TOTAL		4	0	0	28	0	0	0	0	0	0	0	28	0	0	32	\$ 6,300.00 \$ 4,481.68

TOTAL PROJECT FEE: \$ 10,781.68

**EXHIBIT D-1 - FEE SCHEDULE - TRAFFIC SIGNAL WARRANT STUDY'
SH 107 AT SUNFLOWER ROAD**

Ergonomic Transportation Solutions, Inc.

TASK	MANHOURS					Total
	Project Manager	Traffic Engineer	CADD/ Designer	Administrative Assistant		
1		6	6			12
2		1	1			2
3		1				1
4		1	2			3
5		1	2			3
6	2	12	6			20
7			2			2
8	1	2				3
9	1	8	4		8	21
Subtotal	4	32	23	8		67

Total Sheets/Labor Hours									
Contract Rates		\$	65.00	\$	31.80	\$	23.00	\$	19.00
Direct Salary Cost		\$	260.00	\$	1,017.60	\$	529.00	\$	152.00
Overhead Multiplier	165.260%	\$	429.68	\$	1,681.69	\$	874.23	\$	251.20
Fixed Fee	12.50%	\$	86.21	\$	337.41	\$	175.40	\$	50.40
Total Labor Costs		\$	775.89	\$	3,036.70	\$	1,578.63	\$	453.59

Ergonomic Transportation Solutions, Inc. Expenses

EXPENSES

Printing Reproduction
Travel
Delivery

\$ 5.19
\$ 450.00
\$ -

Total Expenses

\$ 455.19

ETSI Total Cost

\$ 6,300.00