SCOPE OF SERVICES
Swindell Road at Galloway Road Intersection Alignment Study

Modification #2

POLK COUNTY

Prepared by:

Jacobs Engineering Group, Inc.

June 13, 2024

1. DESCRIPTION

The Polk County Roads and Drainage Division hereinafter referred to as the COUNTY, requests professional services for the preliminary engineering (conceptual) of an intersection improvement at the intersection of Swindell Road at Galloway Road in Polk County. Jacobs Engineering Group Inc. (CONSULTANT) will provide professional services to the COUNTY to prepare the alignment study and preliminary engineering of the improvement. The COUNTY has requested that the CONSULTANT provide additional design services.

Modification #1 added new scope items to the contract. All other elements of the contract remained unchanged.

Modification #2 is proposed to add new scope items to the contract. All other elements of the contract remain unchanged.

2. SERVICES

2.1 Development and Screening of Option 5 (2-signal solution)

The CONSULTANT will identify, develop, assess, and screen an additional project alternative in response to input provided during and after the public meeting held on February 27, 2024. Option 5 will consist of a two-signal alternative with proposed signals located at the intersections of Swindell Road (West)/Galloway Road and Swindell Road (North)/Galloway Road that would meet the purpose and need for this Project. Development of Option 5 will include the following:

Roadway geometry between the signals

- Tapered pavement (from 2-lane to 3-lane)
- 3-lane section

Intersection operation at Swindell Road (west)

- Northbound left turn lane included
- No Northbound left turn lane

Intersection operation at Swindell Road (north)

- Southbound left turn lane included

Roadway shoulders

- Curb and Gutter
- Flush shoulders
- Combination of curb and gutter and flush shoulders

Right of Way

Avoid impacts to New Home Baptist Church property and improvements on the east side of Galloway Road.

Minimize impacts to New Home Baptist Church property ("pastorium") and improvements on the west side of Galloway Road.

The CONSULTANT in consultation with the COUNTY will identify and document the final configuration for Option 5 to be included in the Alignment Study.

2.2 Operational Evaluation of Option 5

The CONSULTANT will analyze the operational performance and effectiveness of Option 5.

2.3 Signalization Analysis

In coordination with the COUNTY's Traffic Engineering and Operations section, the CONSULTANT shall perform signalization analysis for Option 5 in accordance with all applicable manuals, procedures, guidelines, and current design memorandums. The CONSULTANT will prepare operational analysis for the Swindell Road (west) intersection for Option 5. A similar analysis for Swindell Road (north) was previously prepared under the original authorization and will be incorporated into Option 5.

2.4 Signing and Pavement Marking

The CONSULTANT will evaluate existing signing and signage requirements and will prepare a conceptual signing and marking plan for Option 5. The conceptual plan will include advance warning signs and flashers as needed for the two new signals proposed in Option 5.

2.5 Roadway Analysis

2.5.1 Design Controls and Criteria

The CONSULTANT will prepare design controls and criteria for developing Option 5 and designing initial geometrics and other roadway elements.

2.5.2 Typical Section Analysis

The CONSULTANT will develop conceptual typical sections for Option 5 which address transportation needs and context.

2.5.3 Geometric Design

The CONSULTANT will perform geometric design using the established Project design controls and criteria. The CONSULTANT will also use Project traffic data and results of traffic analysis to design appropriate roadway elements. The CONSULTANT will establish both preliminary vertical profile and horizontal alignments of the mainline for Option 5. The design will consider environmental constraints and physical constraints.

For Option 5, the CONSULTANT shall prepare sketches of plan, profile, and typical sections as appropriate to show existing features, proposed geometry, and location of any environmental and geometric design constraints. These sketches will be made to a conceptual level.

2.5.4 Intersection Evaluation

The CONSULTANT will propose appropriate intersection control based on the results of project traffic analysis to establish an overall intersection footprint.

The CONSULTANT will develop intersection concepts/layouts based on the results of traffic operational analysis. The layouts will include turn lanes, storage lengths, and other geometric details.

2.5.5 Maintenance of Traffic

The CONSULTANT will include the estimated cost to maintain traffic during construction in the construction cost estimate for Option 5.

2.6 Drainage

The CONSULTANT will perform the following additional Drainage analysis.

2.6.1 Drainage Analysis

Additional basin analysis is required due to improvements required for Option 5. The CONSULTANT will perform drainage analysis by delineating the basin boundaries by using LiDAR information, existing survey data, and field observations. The CONSULTANT will analyze and determine high water elevations in each basin and use the information to establish the preliminary roadway profile. Drainage analysis will also include checking the capacity and structural adequacy of existing cross drains, preliminary design of potential cross drain and outfall structures, identifying any other existing drainage deficiencies that may influence the project, and identifying the recommended conceptual drainage design for Option 5. The CONSULTANT will document the drainage analysis in the updated Pond Siting Technical Memorandum.

2.6.2 Floodplain Compensation Analysis

Additional floodplain compensation analysis is required for Option 5 to determine floodplain impacts and mitigation, if any.

2.6.3 Stormwater Management Analysis

The CONSULTANT will calculate the stormwater treatment and attenuation requirements and estimate the stormwater management facility needs for Option 5. The CONSULTANT will document the analysis in the updated Pond Siting Technical Memorandum.

2.6.4 Pond Siting Technical Memorandum

The Pond Siting Technical memorandum identifying potential sites that satisfy the hydraulic requirements for storm water ponds and floodplain compensation sites must be expanded to incorporate the addition of Option 5. CONSULTANT will update the Pond Siting Technical memorandum for Option 5 identifying potential sites that satisfy the hydraulic requirements for storm water ponds and floodplain compensation sites for each major drainage basin identified in the drainage analysis. As appropriate, the CONSULTANT will evaluate feasible alternative pond sites and a feasible floodplain compensation site for each basin and update the evaluation matrix that compares estimated costs for acquisition of right-of-way and easements, and construction costs associated with each site. Include costs associated with the outfall for each potential pond site.

2.7 Geotechnical Investigation

The CONSULTANT will conduct geotechnical services associated with design activities related to this Project. Before beginning work and after the Notice to Proceed is issued, the CONSULTANT shall submit an investigation plan for approval and meet with the COUNTY's Project Manager to review the project scope and COUNTY requirements.

2.7.1 Field Investigation

The work shall include the following:

Signals (Estimated up to 6 total pole/shaft locations):

> Perform one (1) Standard Penetration Test (SPT) boring to a minimum depth of 30 feet below grade at each pole/shaft location for a total of six (6) SPT borings.

Drainage (New alternative):

> Perform two (2) hand auger borings and one (1) SPT boring within the new pond alternative. The auger borings will be performed to a depth of 5 feet and the SPT boring will be performed to a depth of 20 feet. At each auger boring location, a field permeability test will be performed.

Collect soil samples for laboratory soil testing, as necessary.

Review and create site-specific USGS and USDA soil maps to assist in further characterizing the project site and identify potential areas of concern.

Determine the vertical and horizontal extent of compressible/deleterious strata (i.e., muck, peat, clay, etc.), if encountered.

2.7.2 Laboratory Testing

All laboratory testing will be performed in accordance with Florida Sampling And Testing Methods or ASTM or by latest directives. Laboratory testing may include the following, as required by the needs of the project.

Organic Content;

Moisture Content;

Sieve Analysis;

Atterberg Limits;

2.7.3 Geotechnical Reports

The Geotechnical Report(s) shall include:

Replications of USGS and USDA soil maps with project limits and beginning/ending station shown.

Location and description of the soil borings performed.

Estimates of seasonal high and encountered ground water elevations within the drainage improvements.

Update the Roadway Soil Survey sheet describing the soils encountered at the site along with their approved suitability for reuse.

Provide geotechnical reports that include geotechnical considerations and recommendations based on the results of the field explorations to support the signalization and drainage designs.

2.8 CONSTRUCTION AND RIGHT OF WAY COST ESTIMATES

2.8.1 Construction Cost Estimates

The CONSULTANT will develop construction cost estimates for Option 5. Construction costs must include traffic management and right of way costs.

In providing opinions of cost, financial analyses, economic feasibility projections, for the project, CONSULTANT has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, CONSULTANT makes no warranty that COUNTY's actual project costs, financial aspects, economic feasibility, will not vary from CONSULTANTS' opinions, analyses, projections, or estimates.

2.8.2 Right of Way Cost Estimates

Based on typical section analysis and COUNTY design standards, the CONSULTANT will establish construction limits and determine the minimum (proposed) right of way requirements throughout the limits of the Project for Option 5. Establishment of construction limits will consider drainage features, the traffic control plan, utility relocations, stormwater pond requirements, and identified environmental issues, among other factors.

The CONSULTANT will compare the existing right of way width with the proposed right of way requirements to estimate the amount of right of way that the COUNTY must acquire for Option 5.

The COUNTY's Real Estate Office will estimate the cost for right of way acquisition, as well as cost estimates for relocations and business damages, if any for Option 5.

The CONSULTANT will submit concept plans for the Option 5 that include the parcel identification number, existing right of way lines, proposed right of way lines and acreage of property required. Additionally, the CONSULTANT will provide a spreadsheet with the following parcel information: owner, address, acreage of parent parcel and required amount of property for the Project.

2.9 ALTERNATIVES EVALUATION

2.9.1 Comparative Alternatives Evaluation

The CONSULTANT established evaluation criteria at the beginning of the Project. After developing Option 5, analyzing alternatives, and estimating costs, the CONSULTANT will update the matrix which compares the impacts, performance, and costs of the alternatives evaluated in detail. The matrix includes the performance of the No-Build Alternative as the baseline for comparison.

2.9.2 Selection of Preferred Alternative

The CONSULTANT will recommend, and the COUNTY will select a preferred alternative based on review and analysis of engineering, environmental, and public involvement issues related to this Project.

2.10 CONCEPT PLANS

The CONSULTANT will prepare conceptual plans for Option 5 in appropriate scales overlaid on the base map.

3. GENERAL

The CONSULTANT shall demonstrate good project management practices while working on this project. These include communication with the COUNTY and others as necessary, management of time and resources, and documentation. The CONSULTANT shall set up and maintain throughout the design of the project a contract file. Project management services will include contract administration, budget and subcontract management and schedule maintenance.

3.1 Progress Meetings

An additional 4 progress meetings are expected due to the extension of the project schedule.

3.2 Other Meetings and Coordination

The CONSULTANT will meet on-site with the leadership of New Home Baptist Church to present and discuss Option 5. CONSULTANT will prepare and deliver 2 foam core exhibits showing Option 5 to New Home Baptist Church for their use. CONSULTANT shall attend a County Commission workshop to support county staff in their presentation of all four options (1, 3, 4 and 5) to the Commission. No additional public meetings or presentations beyond those listed here are anticipated.

4. PROJECT SCHEDULE and COMPENSATION

The original project schedule completion date for the Final Alternative Evaluation was September 7, 2023.

Modification # 1 adjusted project schedule for completion of the Final Alternative Evaluation to March 7, 2024.

Modification # 2 adjusts project schedule for completion of the Final Alternative Evaluation to October 31, 2024.

Final Alternative Evaluation submittal date: September 6, 2024.

The original Not To Exceed Fee for the project was $370,739.51.

Modification #1 added $51,600.63 for a total Not To Exceed Fee of $422,340.14.

Modification #2 adds $112,785.70 for a total Not To Exceed Fee of $535,125.84.

Notwithstanding anything to the contrary in any forthcoming purchase order that references other terms, the parties agree that this work will be performed pursuant to the 17-059 Agreement.

EXHIBIT A-1
PROJECT DEVELOPMENT ENVIRONMENT
PROJECT DATA

ESTIMATE OF WORK EFFORT AND COST - PRIME CONSULTANT

Name of Project: Swindell Road at Galloway Road Alignment Study
County: Polk
CSA: 17-59-06 Modification #2

Consult. Name: Jacobs
Consult. No. EGXK7409
Date: 6/13/2024
Estimator: Eddie Joyner

Staff Classification	Total Staff Hours From "SH Summary - Firm"	Project Manager	Chief Engineer	Senior Engineer	Project Engineer	Engineer	SR CADD	CADD	Admin	N/A	N/A	N/A	N/A	SH By Activity	Salary Cost By Activity	Average Rate Per Task
		$228.00	$225.00	$198.00	$117.00	$91.00	$156.00	$90.00	$65.00	$0.00	$0.00	$10.00	$0.00			
Project Description and Objectives	151	38	38	30	0	0	38	0	8	0	0	0	0	152	$29,602	$194.75
Public Involvement	52	5	5	13	10	0	16	0	3	0	0	0	0	52	$8,700	$167.31
Engineering Analysis & Report	428	21	21	86	107	43	86	43	21	0	0	0	0	428	$61,624	$143.98
Environmental Analysis & Reports	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
Environmental Document	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
Design Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
Total Staff Hours	631	64	64	129	117	43	140	43	32	0	0	0	0	632		
Total Staff Cost		$14,592.00	$14,400.00	$25,542.00	$13,689.00	$3,913.00	$21,840.00	$3,870.00	$2,080.00	$0.00	$0.00	$0.00	$0.00		**$99,926.00**	**$158.11**

SUBTOTAL - PRIME	**$99,926.00**
Subconsultant: Tierra	$12,859.70
SUBTOTAL ESTIMATED FEE:	**$112,785.70**
Optional Services	$0.00
GRAND TOTAL ESTIMATED FEE:	**$112,785.70**