

PRINCIPALS

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April 22, 2020

DRMP Job #18-0365.007

Ms. Tammy Thomas-Wood
Finance & Contracts Administration Section
Brevard County Public Works Department
2725 Judge Fran Jamison Way
Viera, Florida 32940

Subject: Scope of Services
Micco Road over Sans Sebastian Canal Bridge Replacement
Brevard County, Florida

Dear Ms. Scott:

Thank you for considering DRMP, Inc. for providing bridge replacement services for Brevard County. The existing Micco Road bridge was constructed in 1938, is in poor condition and has reached the end of its service life. The principle intent of this project is to design the replacement for this structurally deficient bridge. This project is a multi-disciplined effort which includes: Survey, Geotechnical Engineering, Hydraulics Analysis, Structural Design, Roadway Design, Signing and Pavement Marking, Drainage, Environmental Permitting and Specifications Preparation.

SCOPE OF SERVICES**Task 1 - Survey**

DRMP will provide a Topographic Survey of the existing right-of-way along Micco Road for approximately 500 feet east and west of the center of the existing Micco bridge over the Sans Sebastian Canal. The field survey and resulting digital survey maps (CADD files) will be performed and prepared in accordance with the State of Florida Minimum Technical Standards, as set forth by the Board of Professional Surveyors and Mappers, Chapter 5J-17, Florida Administrative Code, per Section 472.027, Florida Statutes, and in accordance with Brevard County Public Works. Digital files will be provided to the Project Engineer for incorporation into plans. Hard-copy maps will not be prepared as part of this survey.

Tasks for this survey will include: recovering the southern line of Section 9, Township 30 South, Range 38 East, platted block, the lot corners in Block 137 of Barefoot Bay, the Platted boundary corners of Paladin Estates and existing monumentation along the 100-foot right-of-way of Micco Road. This information will be used to establish the existing right-of-way lines. A Specific Purpose right-of-way or right-of-way control survey will not be prepared as part of these services.

The above-ground visible features including existing fences, pavement and ditches will also be located within the right-of-way and added to the resulting survey base map. Survey control points will be elevated relative to surrounding Brevard County vertical control points N8A02

OFFICES

Asheboro, North Carolina
Boca Raton, Florida
Cary, North Carolina
Charlotte, North Carolina
Chipley, Florida
Fort Myers, Florida
Gainesville, Florida
Jacksonville, Florida
Lakeland, Florida
Melbourne, Florida
Orlando, Florida
Panama City Beach, Florida
Pensacola, Florida
Stockbridge, Georgia
Tallahassee, Florida
Tampa, Florida
Troutman, North Carolina



and N8A15 and topographic information will be collected at a density adequate to generate a terrain model and one-foot contour lines. Survey limits will extend approximately 500 feet on each side of the bridge along Micco Road, 100 feet upstream and downstream along the Sans Sebastian Canal and 1,500 feet west along Micco Road to the western side of Paladin Estates from southern edge of pavement to 15 feet beyond the R/W limits. Additional cross-section data will be collected at 50-foot intervals for 300 feet upstream and downstream. Subsurface utilities will be mapped from information provided by Utility Agency Owners (UAOs) and from visible above-ground utility structures (such as valves, meters, pull boxes, etc.). DRMP will perform surface designation of underground utilities. Two VVH test holes will be dug to verify the location of the existing water line crossing Micco Road. If additional locations are required, a supplemental agreement will be prepared for this additional work. DRMP will also survey the existing bridge deck and bent locations and wetland delineation flags.

A survey control line will be staked and referenced to provide control for future construction layout at intervals not to exceed 1000 feet. The horizontal base for the project and all horizontal control points will be North American Datum of 1983 (NAD83) State Plane Coordinates, Florida East Zone. Temporary benchmarks will be developed at either end of the survey baseline, approximately 400 feet apart, for use during construction. Benchmark and project elevations will be referenced to the published datum used to establish control on the project.

Task 1 Fee:

\$35,671.00

Task 2 - Geotechnical Engineering (Ardaman and Associates)

Ardaman and Associates will drill one SPT boring to a depth of 125 feet at each end of the proposed bridge. Using the boring results, Ardaman will analyze several types of driven piles to help determine the most cost-effective foundation alternative. Corrosion tests will be performed to establish the appropriate environmental classification for use during the structural design of the bridge. In addition, soil classification analysis will be performed and reported.

Task 2 Fee:

\$16,827.00

Task 3 - Hydraulic Analysis

The Consultant will prepare a bridge hydraulics report for the proposed structure. A HEC-RAS model will be developed for analysis of the following storm events: 10, 50, 100, and 500-year. The 10-year event will be analyzed to determine the no-rise requirement for SJRWMD. The 50-year event will be analyzed to check if the 2 feet of drift clearance per standard FDOT bridge design is attainable. This analysis will include documentation that there is no significant increase to the 100-year flood stage that no adversely impacts will occur on adjacent parcels. A scour analysis will be performed to determine appropriate channel armoring. A Bridge Hydraulic Recommendation Sheet will be prepared for submission with the Bridge Concept Report

Task 3 Fee:

\$36,350.00



Task 4 – Preliminary Structural Design Services

The Consultant will perform preliminary design of both a 3-span and a single span bridge. For the 3-span bridge, both cast-in-place and Florida Slab-Beam alternatives will be considered. For the single span bridge, both FIB-36 beams and FIB-45 beams will be considered. For foundations, both 18-inch and 24-inch PPCP will be considered. A preferred span configuration, superstructure and substructure will be selected based on the selection criteria of cost and constructability. Detailed cost estimates of each alternative will be developed as part of this effort. Results will be summarized in a Bridge Concept Report which will identify design criteria, site constraints, alternatives considered and will document the method used to select the preferred alternative.

The new bridge is anticipated to be approximately 100 feet in length and will carry two 11-foot lanes, two 8-foot outside shoulders and a barrier separated 5-foot sidewalk on the south side of the bridge. A traffic railing barrier will be located along the north edge of the bridge and a pedestrian parapet and railing along the south edge of the bridge. The total width will be 46'-8" measured out-to-out. The bridge will provide at least 2 feet of under clearance above the 50-year event as mandated by the FDOT Drainage Manual. DRMP anticipates that the bridge will be supported on deep foundation (18-inch or 24-inch prestressed precast concrete piling) configured in pile bents. All bent caps will be cast-in-place. We have assumed conventional construction methods will be performed and that "top-down" construction techniques will not be required. The banks will be protected with rubble rip-rap or as determined by the hydraulic/drainage engineer. The replacement bridge will be constructed in a single phase on the existing alignment. Both an on-site diversion and off-site detour will be evaluated.

The deliverable is a Bridge Concept Report which includes a Plan Sheet and Elevation Sheet depicting the preferred alternative as well as a detailed construction cost estimate. Both a "Draft" and "Final" submittal of the Bridge Concept Report are anticipated. Final Bridge Design and Plans are not included and will be negotiated after acceptance of recommendations documented in the Bridge Concept Report.

Task 4 Fee:

\$46,060.00

Task 5 - Roadway Design

The Consultant will prepare preliminary roadway geometrics to support the preliminary bridge design described in Task 4. The existing horizontal alignment will be maintained. A vertical alignment will be developed to match the existing alignment where possible. A roadway reconstruction length of 1,000 ft has been estimated for this project. A typical section will be developed and included with the Bridge Concept Report, but no formal package is anticipated.

Task 5 Fee:

\$10,820.00

Task 8 – Project General Tasks

This task includes a Project Management component for overall project coordination and contract maintenance.

Task 8 Fee:

\$15,210.00



COMPENSATION SUMMARY

The following summarizes the fees as proposed by DRMP and its subconsultant for the Scope of Services as presented herein. All application/impact and other fees will be paid directly to the appropriate agencies by the Client and are not included herein.

Task	Task Description	Fee
1	Survey	\$35,671.00
2	Geotechnical Engineering,	\$16,827.00
3	Hydraulics Analysis and Drainage	\$36,350.00
4	Structural Design	\$46,060.00
5	Roadway Design	\$10,820.00
8	Project General Tasks	\$15,210.00
	TOTAL LUMP SUM FEE (Excluding Optional Design Services)	\$160,938.00

This project will be bill monthly based on a percentage of the completed work effort.

PROJECT REQUIREMENTS AND PROVISIONS FOR WORK

Schedule

All work will begin immediately upon receiving approval of these services from Brevard County, constituting Notice to Proceed (NTP). The initial submittal which includes the Geotechnical Evaluation, Hydraulic Analysis and the Bridge Concept Report will be submitted within six months after receipt of your executed Notice to Proceed (NTP).

Additional Design Services

Final bridge design will be negotiated after receipt of County concurrence with recommendations made in the Bridge Concept Report. If the County desires to further change or expand upon these services, an additional fee may be negotiated. The negotiations for the additional services will be accomplished prior to commencing with further work on the project.

Post Design Services

Post Design Services include bidding, shop drawing reviews, responding to requests for additional information and minor plans revisions that may result from field conditions varying from design assumptions. Post Design Services are not been included in this proposal.

We sincerely appreciate this opportunity to provide these additional professional services for this project. If you have any questions regarding this proposal, please feel free to contact me.



Sincerely,

A handwritten signature in blue ink, which appears to read "Wayne D. Chalifoux", is written over a light blue horizontal line.

Dyer, Riddle, Mills & Precourt, Inc.

Wayne D. Chalifoux

Vice President

Cc: Michael Leo, PE

John Burkett, PE

Mary Dent