CS-11-076

SUPPLEMENTAL AGREEMENT APPROVAL FORM

PROJECT: Blackrock Road

from SR A1A to Heron Isles Parkway

SUPPLEMENTAL AGREEMENT NO: 01

DATE: 10/20/11

CONTRACT NUMBER: CM1745

TO CONTRACTOR: Peters & Yaffee, Inc. .

Reason for Supplemental Agreement: Additional scope and fees necessary for Peters & Yaffee, Inc. to thoroughly investigate the use of GRS abutments as bridge foundations and a flat-slab substructure to span over top of the existing culvert at Gravel Creek (leaving it in place). Peters & Yaffee shall determine its applicability to this project and make a final recommendation as to the viability of its implementation.

Original Contract Sum.....	$	417,681.22
Net Change by Previous Supplemental Agreement.....	$	.00
Contract Sum Prior to This Supplemental Agreement.....	$	417,681.22
Amount of This Supplemental Agreement (Add/Deduct).....	$	41,369.60
New Contract Sum Including this Supplemental Agreement.....	$	459,050.82

APPROVED BY: _____ DATE: 10/28/11
Ted Selby, County Manager

APPROVED BY: _____ DATE: 11-14-11
David Hallman, County Attorney

APPROVED BY: _____ DATE: 11-14-11
Walter J. Boatright, Chair

APPROVED BY: _____ DATE: 11/16/11
John A. Crawford, Clerk of Courts

BY _____ ESIC 11/14/11

SCOPE OF SERVICES

ENGINEERING SERVICES

FOR

BLACKROCK ROAD SUPPLEMENTAL AGREEMENT #1
Contract No. CM1745

Work Authorization #

NASSAU COUNTY, FLORIDA

October 20, 2011

Project Background

The Consultant's existing Blackrock Road Design contract includes design services for the replacement of the existing box culvert at the crossing at Gravel Creek. The current design approach will include either a total replacement or an extension/rehabilitation of the existing structure to allow for the proposed roadway typical section and increased its service life. Based on information received since the original contract was negotiated, the Consultant believes that this project is ideal for the utilization of the abutment technology called Geosynthetic Reinforced Soil Integrated Bridge System (GRS).

The use of GRS abutments as bridge foundations and a flat-slab substructure to span over top of the existing culvert at Gravel Creek (leaving it in place), could potentially save the County construction cost and time, minimize traffic delays resulting from the anticipated detour and reduce or totally eliminate the anticipated impacts to jurisdictional wetlands. The FHWA is partnering with the County on this project and have indicated a willingness to develop the plans and specifications necessary for GRS abutments.

It is anticipated that additional design services would be required by the Consultants to design the bridge structure, the associated roadway approaches and develop construction plans and bid documents for building the bridge as a separate project. The elimination of the current scope items that would no longer be required (such as the bridge hydraulics report, box culvert design analyses and additional roadway plan sheets) will offset a majority of the costs of these additional services.

The purpose of this supplemental agreement is to provide the additional scope and fees necessary for the Consultants to thoroughly investigate this technology, determine its applicability to this project and make a final recommendation as to the viability of its implementation. It is anticipated that the study-phase services will be completed in six weeks and will be developed concurrently with those included in the original scope of services for the project. The Consultant will update the project schedule to include the study phase.

SCOPE OF SERVICES

As a supplement to the Original Blackrock road design services contract, the Consultant will provide the following additional services requested by Nassau County that were not included in the original scope of services:

The consultant shall provide a detailed investigation of the potential use of the Geosynthetic Reinforced Soil (GRS) Integrated Bridge System as a viable option to either the rehabilitation or replacement of the existing Gravel Creek Box culvert. The services that will be provided include:

1. Research the Geosynthetic Reinforced Soil (GRS) Integrated Bridge System in order to become familiar with its design elements as well as its record of success/failure on similar type applications. This research will be based on currently available technical information relative to its structural integrity, record of success/failure on similar type projects, different construction/contracting techniques utilized on past ABS bridge projects and any possible FDOT determinations/restrictions relative to its use on their facilities or those that are routinely inspected by them.

2. Based on the research included above, field data (detailed topo survey, jurisdictional wetland delineations and geotechnical services collected as part of the consultant's original contract), and other design documentation included in the consultant's original scope, the Consultant will provide a detailed evaluation of the following site specific design elements and the impact that each could have on the viability of the use of ABS abutments for this project:

    a. Structural Integrity

    b. Roadway Alignment Options / Issues

    c. Pedestrian Access

    d. Maintenance of Traffic

    e. Bridge Hydraulics

    f. Utilities

    g. Environmental Permitting

    h. Construction Contracting Options

    i. Construction Time

    j. Construction Cost

Once these various elements have been evaluated, the consultant will provide a brief summary of the potential advantages and disadvantages of utilizing this technology as well as a recommendation to the County relative to a future course of action.

Attendance at two formal meetings (one progress meeting and a final recommendation meeting) as well as an estimated 40 hours of coordination time is also included within this task.

PRELIMINARY COST ESTIMATE

Peters and Yaffee will provide an Engineers Construction Cost Estimate for the construction of the GRS Bridge for the Blackrock Road Project. This estimate will provide the County with the various pay items and quantities needed for all of the associated cost for GRS Bridge Improvements. As the study is developed and finalized from this Supplement Agreement, Peters and Yaffee will continue to review and update the cost estimate when the scope changes and/or at milestones of the study. The cost estimate will be provided to the County in order to determine the construction cost savings compared to the conventional box culvert replacement or box culvert improvements.

The cost to construct a GRS Bridge is potentially 25% to 60% less than traditional methods. Also, there are several value added benefits that can be realized using the GRS Bridge approach. The additional benefits to the GRS System include:

- Reduced construction duration
- Construction not dependant on weather conditions
- Flexible design to adapt for various site conditions
- Reduced maintenance costs
- Construction methods use common material and equipment

Peters and Yaffee will continue to quantify the real dollar value gained as the project progresses to through the study phase. As our team begins to receive data and develop final quantities, the additional benefits will be captured and tracked for additional cost savings.

PROJECT DELIVERABLES

The Consultant shall contact the County prior to making a submission to verify the number of copies to submit. Up to five (5) draft copies of the study and required supporting documents (utility correspondence, drainage and permit evaluations, QC certifications, design calculations, letters, memos, etc.) will be submitted at the time of delivery for the final study.

COMPENSATION

Peters and Yaffee and its subconsultants will perform the scope included in this supplemental agreement for a lump sum fee of **$41,369.60.** If additional services related to this evaluation are required that are not included herein, a separate fee and scope will be provided at such a time.