March 24, 2025
Revised April 22, 2025

Deanna Stockton, P.E.
Municipal Engineer
Department of Infrastructure & Operations
Municipality of Princeton
400 Witherspoon Street
Princeton, NJ 08540

Re: **Contract Modification Request #1 (CM #1)**
Resolution No. 2023-358
Engineering Design Services for the
Grover Avenue Culvert Replacement Project
Municipality of Princeton, Mercer County
GPI File No. 2300055

Dear Ms. Stockton:

Thank you for this opportunity to request a contract modification for additional engineering services to perform preliminary hydraulic and park improvement design and final ball field improvement design in Grover Park in conjunction with the above referenced project. The expanded scope of work relates to supplemental services to prepare and submit conceptual plans for improvements to the park facilities and bid documents for rehabilitation of the baseball fields at Grover Park adjacent to the Grover Avenue Culvert. The services provided are beyond the original scope of services outlined in our proposal dated January 17, 2023, and revised October 27, 2023. Included with this Request is the recommended scope of additional services, assumptions and exclusions, and fee estimate. This Request is based on preliminary discussions held with the Municipality of Princeton on July 15, 2024, February 14, 2025, and April 17, 2025.

Project Description

Structural alternatives have been reviewed and hydraulic design has been performed for the proposed Grover Avenue culvert replacement. Preliminary results of the hydraulic design were presented to the Municipality on July 15, 2024 by SWM Consulting (SWM). Based on the proposed replacement structure and roadway profile, it has been determined that increasing the hydraulic opening of the structure will alleviate existing flooding upstream of the crossing, however downstream flood elevations will increase beyond the NJDEP allowable limits. SWM has determined that the flood elevation upstream of the culvert will increase in Grover Park in order to avoid the increase in elevation downstream. Pursuant to our recent discussions, GPI will coordinate with our subconsultant, SWM, to prepare an analysis of the extent of the flood and a conceptual design to alleviate impacts to affected facilities, such as adjacent residential properties.

Following discussions regarding the bridge hydraulic design, the Municipality of Princeton approached GPI to discuss incorporating additional improvements to the recreational facilities in Grover Park with the planned culvert replacement. A meeting was held with the Princeton Engineering Department, Recreation Department and GPI on February 14, 2025 to discuss desired improvements to Grover Park. In order to rehabilitate and upgrade the existing facilities, GPI will prepare a conceptual site plan design for improvements to the playground, basketball court, picnic area, and walkways and perform final design and prepare bid documents for rehabilitation of the baseball fields in the park.

We have divided the scope of work for this Contract Modification into six (6) tasks, and offer the following Scope of Services:

Scope of Services

Task 1 – Supplemental Survey

Supplemental field survey and base mapping will be performed to detail all planimetric features pertinent to the preparation of the supplemental culvert hydraulic design and conceptual plans for park facilities improvements. All survey work will be done in accordance with Princeton standards.

a. Location of Existing Features and Utilities

We will perform a survey of existing features and topography including park facilities, existing pedestrian walkways, utility poles, drainage structures, fences, signs, and limits of wooded areas. The type of drainage structure, type of casting, size and types of pipes entering the structure and inverts on all pipes will be recovered by field survey.

The limits of detailed planimetric and topographic coverage will extend beyond the original survey previously completed as shown in Figure 1 below. Contours will be shown at 1' intervals. Individual trees and specimen shrubs will be located within the immediate vicinity of the proposed park improvement project area.

Horizontal control will be tied to the New Jersey Plane Coordinate System (NJSPC) NAD 83. Three (3) benchmarks will be established at a minimum for Contractor's reference during construction. Vertical control will be tied to North American Vertical Datum (NAVD 1988).

b. Supplemental Wetlands Delineation

During field survey, any wetlands areas within 150 feet of the proposed park improvement project area will be located and delineated, marked with flags, and mapped as delineated and referenced to the survey base map. The current resource value classification of the wetlands will be determined according to the three categories (exceptional, intermediate, ordinary) set forth in the New Jersey Freshwater Wetlands Preservation Act.

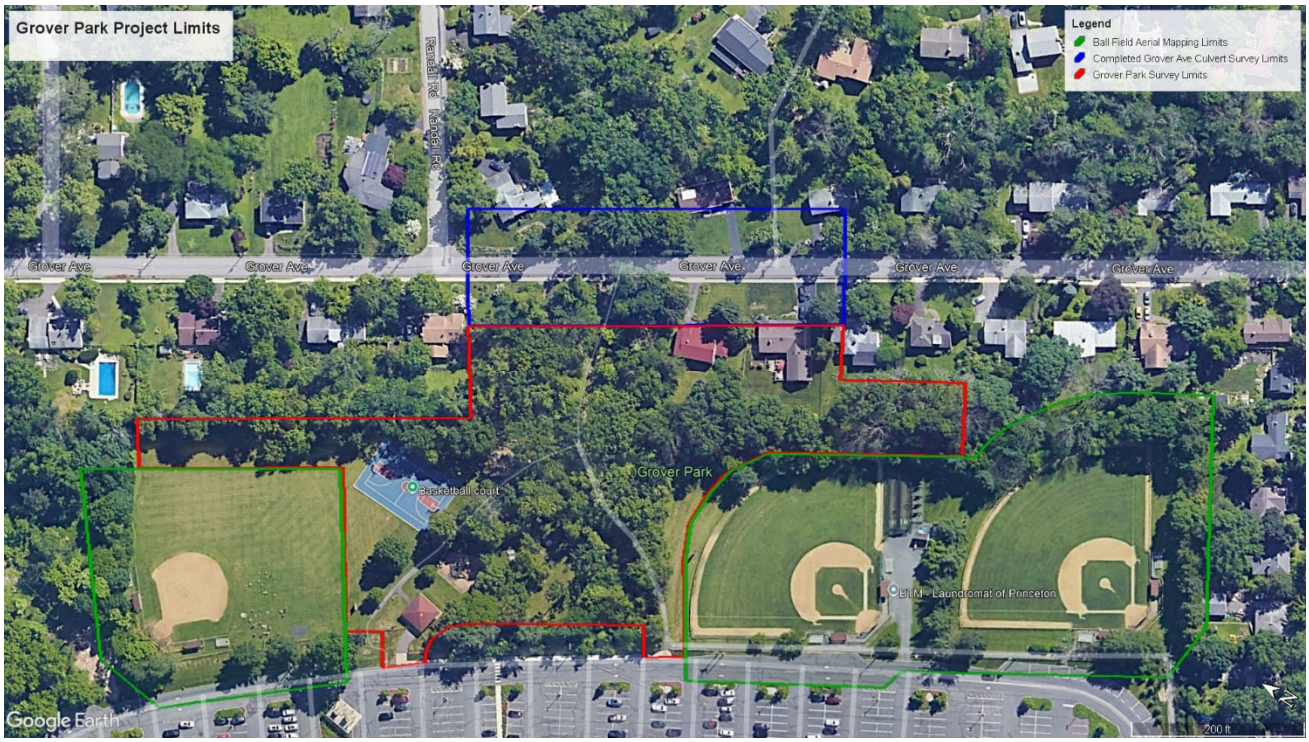

Figure 1 – Limits of Survey and Aerial Base Mapping

Task 2 – Aerial Base Mapping for Ball Field Improvements

GPI will prepare aerial base mapping existing site conditions, limits of work, and approximate right-or-way and property lines for the three (3) baseball fields at Grover Park. Base mapping will be generated by tracing of aerial photos, scanned archive maps, tax maps and GIS data. We will field edit and verify the existing features on the base plan which will be limited to fencing, field warning tracks, pedestrian walkways, signs, significant structures such as dugouts, sheds, bleachers, scoreboards, retaining walls, and batting cages, and the location of utilities (poles, aerial facilities and marked underground utilities such as sanitary sewer, water and gas). The limits of base mapping will extend 50' beyond the fencing at each field. This base mapping will be used for preparation of bid documents for upgrades to the ball fields under Task 3 only.

Task 3 – Engineering Design and Bid Documents for Ball Field Improvements

Utilizing the aerial base mapping prepared in Task 2, GPI will prepare bid documents for improvements to the three (3) baseball fields at Grover Park. Anticipated ball field improvements will include replacement of all fencing and backstops at Fields 1, 2 and 3 and improvements to the warning tracks at Fields 2 and 3.

Construction plans will include the following:

- Title/Cover Sheet
- General Notes and Estimate of Quantity Sheet
- Construction Plan Sheet
- Soil Erosion and Sediment Control Plan and Details
- Construction Details

Bid documents, consisting of construction plans and specifications, will be prepared in accordance with the NJDOT and Municipality of Princeton Standard Specifications. A construction quantity and engineer's estimate of probable cost will be prepared and submitted to the Municipal Engineer for review.

A Soil Erosion and Sediment Control Plan will be prepared in accordance with New Jersey Soil Erosion and Sediment Control standards. Should the project result in more than 5,000 square feet of soil disturbance, we will prepare an application and necessary support documentation for submittal to the Mercer County Soil Conservation District for plan certification.

We will provide the Municipal Engineering Department with electronic copies of the preliminary bid documents for review and comment prior to issuing the final submittal.

GPI will review all comments and prepare final bid documents. We will submit electronic copies of all final bid documents in PDF format along with hardcopy sets, if requested. The final submittal will also include a copy of the contract drawings in AutoCAD format, specifications in Word format, and the engineer's estimate in Excel format.

GPI will support the Municipality during bidding of the project to respond to any questions or RFI's.

Task 4 – Supplemental Hydrologic and Hydraulic Design

GPI will coordinate with SWM Consulting (SWM) to perform additional hydrologic and hydraulic design to evaluate the extent of the flood elevation increases upstream due to the culvert replacement and activities associated with the park improvements. We will perform conceptual design to analyze alternatives, such as an inlet control structure or regrading of adjacent unencumbered properties, to alleviate impacts to affected facilities at the upstream. Following completion of the conceptual design, SWM will update the preliminary HEC-RAS model to confirm conformance with NJDEP no net rise criteria.

Please refer to SWM's Scope of Work and Estimate which is attached for more information.

Task 5 – Park Improvement Conceptual Design

Following completion of the supplemental culvert hydraulic design, GPI will perform conceptual design for improvements to the park facilities and prepare conceptual plans suitable to use for presentations to the project stakeholders. Proposed improvements include the following:

- Upgrades to the playground with inclusive playground equipment and poured in place rubber surfacing.
- Replacement of the swing set.
- Rehabilitation of the basketball court and installation of new standards, backboards and rims.
- Construction of an elevated picnic area.
- Reconstruction of asphalt walkways to meet ADA requirements.
- Construction of boardwalks.
- Replacement of the existing pedestrian bridge over the unnamed Tributary to Harrys Brook.

This Task will include the following items:

a. Environmental Constraints Map

GPI will review existing environmental mapping, results of the H&H studies performed in Task 4, and NJ Geoweb to develop an environmental constraints map of the project area. The environmental constraints map will depict the limits of freshwater wetlands, flood hazard areas, flood plains, vernal pools, and any other environmentally sensitive area present in the project area.

b. Conceptual Layout of Improvements

We will develop up to two (2) conceptual park layouts to evaluate alternative park configurations and placement of the playground, swings, and picnic area. Relocation of the playground and swing set will be explored based on the results of the culvert hydraulic design and environmental constraints map. Park layout alternatives will be presented to the Municipality for review and selection of a preferred alternative for further development.

Following selection of a preferred park layout, GPI will prepare Conceptual Plans which will include environmental constraints, layout of the proposed improvements, preliminary site grading, and a rendered concept plan.

c. Electrical and Lighting

We will prepare a preliminary conceptual electrical and lighting plans for low level lighting along the walkways and elevated boardwalks through Grover Park. Preliminary Lighting calculations for all new lighting will be performed in sufficient detail for development of the conceptual plans. It is assumed an existing power source is located in the park within the project area and the existing power source will be used for all electrical and lighting improvements.

d. Preliminary Cost Estimate

GPI will prepare a preliminary order of magnitude cost estimate for each proposed park layout alternative for the Municipality's review. Cost estimates will include anticipated construction costs and permitting fees. Unit prices utilized in the cost estimate will generally reflect the economic conditions at the anticipated time of bidding.

Task 6 – Meetings

GPI will attend public meetings with local officials, residents, and local committees to present the results of the conceptual designs. Four (4) public meetings are anticipated following preliminary conceptual design. Design will be revised as needed based on public comment.

We will also schedule and attend a pre-application meeting/conference call with the NJDEP Land Use Regulation Section following conceptual design to review the various permitting aspects of the project, and for confirmation of anticipated permits. We will schedule the meeting with NJDEP at the convenience of Princeton Engineering.

Fee Summary

Based on the above, GPI is requesting a contract modification for the proposed additional scope of work. A summary table of estimated work hours by task is attached. Additional SWM proposal documents are also attached as a direct pass-through cost.

Task Description		Fee
Task 1 –	Supplemental Survey	$ 24,980.00
Task 2 –	Aerial Base Mapping for Ball Field Improvements	$ 4,900.00
Task 3 –	Engineering Design and Bid Documents for Ball Field Improvements	$ 9,760.00
Task 4 –	Supplemental Hydrologic and Hydraulic Design	$ 8,460.00
Task 5 –	Park Improvement Conceptual Design	$ 11,880.00
Task 6 –	Meetings	$ 5,940.00
	GPI Total of Supplemental Services:	$ 65,920.00
Subconsultants:		
	SWM Consulting	$ 15,280.00
Requested Change Order Amount:		**$ 81,200.00**

Assumptions and Exclusions

This proposal is subject to the following specific assumptions and exclusions:

- The proposed improvements to the playground, swings, basketball court and picnic area will be developed to a conceptual level. Preparation of Construction Documents for these facilities is not included in this proposal.
- Structural design of boardwalks is not included in this proposal. Should the Municipality require additional design beyond a conceptual level for the proposed boardwalks this proposal shall be amended.
- It is assumed a pavilion or covering of the picnic area is not required is not included in the proposed conceptual picnic area. Should the Municipality request additional design for a pavilion/covered area this proposal shall be amended.
- Improvements to the restroom building will be performed by others and is not included in this proposal. Should the Municipality require additional design for the restroom building, this proposal shall be amended.
- Landscaping design and plan preparation is not included in this proposal. Should the Municipality require additional landscape design services, this proposal shall be amended.
- Repair of the existing irrigation system is not included in this proposal.
- Geotechnical borings or test pits are not included in this proposal. Should additional geotechnical borings be required, this proposal shall be amended.
- Efforts to obtain NJDEP permits for the proposed park improvements, including submission of permit applications, is not included in this proposal.
- Coordination with Green Acres is not included in this proposal. It is assumed all coordination with Green Acres to obtain any necessary approvals for the proposed project will be performed by the Municipality.
- This proposal is based on the current NJDEP Stormwater, Flood Hazard and Freshwater Wetlands rules as they exist on the date of this proposal. In the event these rules change during the course of our work, and the scope of our work increases, then a contract modification may be required.
- This scope excludes construction management and inspection services for the ball field improvements.

Conditions

The above-described services are supplementary to our Proposal dated January 17, 2023, and revised October 27, 2023. All conditions of our original proposal shall apply.

We appreciate the opportunity to be of continued service to the Municipality. If additional information is needed, please advise.

Very truly yours,

Thomas Aslanian, P.E.
Project Manager

Enclosures
cc: James J. Purcell, P.E., P.M.P., Assistant Municipal Engineer, Municipality of Princeton
Michael Wallo, P.E., Assistant Director of Engineering

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GPI

Engineering | Design | Planning | Construction Management

HOURS ESTIMATE

CIVIL / STRUCTURAL ENGINEERING

GREENMAN-PEDERSEN, INC. - ESTIMATE SHEET

Project Name:	Grover Avenue Culvert Replacement Project
Description:	Contract Modification #1
Client:	Municipality of Princeton
Location:	Grover Avenue over Tributary to Harrys Brook
Date:	April 22, 2025

GPI Job Title	Principal	Project Manager	Sr. Engineer Structural	Engineer Structural	Sr. Designer Structural	Sr. Engineer Roadway	Engineer Roadway	CADD/ Drafting	Admin. Support	TASK TOTAL HOURS	TOTAL COST
JOB TASK											
1 - Supplemental Survey	See Survey Hours Estimate										
2 - Aerial Base Mapping for Ball Field Improvements		4					12	24		40	$4,900.00
3 - Engineering Design and Bid Docs for Ball Field Improvements		8		8	16		24	16		72	$9,760.00
4 - Supplemental Hydrologic and Hydraulic Design		4		16	24			20		64	$8,460.00
5 - Park Improvement Conceptual Design		8		24	24	4	8	16		84	$11,880.00
6 - Meetings		16		16				4		36	$5,940.00
Hours	**0**	**40**	**0**	**64**	**64**	**4**	**44**	**80**	**0**	**296**	
Billing Rate	$ 225.00	$ 190.00	$ 190.00	$ 155.00	$ 130.00	$ 190.00	$ 135.00	$ 105.00	$ 75.00		**$40,940.00**

HOURS ESTIMATE

SURVEY

GREENMAN-PEDERSEN, INC. - ESTIMATE SHEET

Project Name:	Grover Avenue Culvert Replacement Project
Description:	Contract Modification #1
Client:	Municipality of Princeton
Location:	Grover Avenue over Tributary to Harrys Brook
Date:	April 22, 2025

GPI Job Title	Principal	Dept. Head	Professional Surveyor	Party Chief	Transitman	Project Surveyor	Wetlands Analyst	Admin. Support	TASK TOTAL HOURS	TOTAL COST
JOB TASK										
1 - Supplemental Survey										
Location of Existing Features & Utilities		2	8	60	60	56			186	$22,740.00
Supplemental Wetlands Delineation							16		16	$2,240.00
Hours	0	2	8	60	60	56	16	0	202	
Billing Rate	$ 225.00	$ 190.00	$ 160.00	$ 130.00	$ 100.00	$ 130.00	$ 140.00	$ 75.00		$24,980.00

SWM Consulting

Storm Water Management Consulting, LLC - Preliminary Scope of Work and Not-To-Exceed Cost Estimate to GPI
Municipality of Princeton - Replacement of Grover Avenue Culvert
Preliminary Scope of Work and Cost Estimate for Additional Hydrologic and Hydraulic Engineering Services
September 26, 2024
Updated March 9, 2025

Note: **Scope of Work and Cost Estimate for Analysis and Preliminary Design of Additional Upstream Flood Storage Volume and Associated Replacement Culvert**

Task No.	Description	Estimated Hours
1	Preliminary Analysis of Required Upstream Storage Volumes	8
2	Estimate Stage - Storage Relationship for Proposed 8-Foot Box Culvert	5
3	Preliminary Analysis of Proposed Inlet Control Structures	8
4	Estimate Stage - Storage Relationship for Proposed Inlet Control Structure	4
5	Preliminary Analysis of Downstream WSEL Impacts of Tasks 2 and 4 Results	6
6	Prepare and Meet with K&K and Princeton to Review Task 1-5 Results	4
7	Finalize Proposed Culvert and Inlet Control Structure If Needed	4
8	Finalize Downstream WSEL and Property Impacts	4
9	Prepare and Meet with K&K and Princeton to Review Task 7-8 Results	4
10	Provide Assistance and Review for Wetland Design	8
	Subtotal - Estimated Engineering Hours	**55**
	+ 20 Percent for Contingencies	11
	Total - Engineering Hours	**66**
	Hourly Rate for Engineering Services	$230
	Subtotal - Engineering Charge	**$15,180**
	Estimated Expenses	$100
	Total - Maximum Estimated Charge for Engineering Services	**$15,280**