

Updated Capital Projects Table B- May 2025

Asset	Rating	Rehab to be Performed		Estimated Constr Costs for Rehab/Replac*	Impact to NJPDES Permit	Impact to Wastewater Efficiency	Safety Concerns
Effluent Filtration and Influent Pump Station							
Disk Filter System	4.00	2024/2025		\$ 3,400,000.00	YES	YES	NO
Influent Pump Station	4.00	2024/2025		\$ 1,400,000.00	YES	YES	YES
Sand Filter Number 1 Repairs	4.00	2024		\$ 250,000.00	YES	YES	NO
Digester Gas System							
Cleaning of Digesters and Digester System Upgrades	2.00	2032		\$ 6,500,000.00	NO	NO	NO
Replacement of Existing Temporary Flare	3.50	2027		\$ 1,500,000.00	YES	NO	YES
SCADA System							
Study Report to Assess Current SCADA System and Recommendations	4.00	2026		\$ 50,000.00	NO	NO	NO
SCADA System Upgrades (WWTP and Remote Pump Stations)	3.50	2027		\$ 950,000.00	NO	NO	NO
New Magnesium Hydroxide and Micro C Chemical Feed Systems	5.00	2024/2025		\$ 772,500.00	YES	YES	NO
Peracetic Disinfection System	4.00	2024		\$ 553,500.00	YES	YES	YES
Equalization Basin (EQ)	3.50	2025		\$ 1,500,000.00	NO	NO	YES
Grit & Trash Removal (Grit & Trash Removal Bldg)	3.00	2030		\$ 750,000.00	NO	YES	NO
Upgrades to Train 1 (Primary and Secondary Settling Tanks and Trickling Filter)	3.50	2026-2027		\$ 5,000,000.00	YES	YES	YES
Upgrades to Train 2 (Primary and Secondary Settling Tanks and Trickling Filter)	3.00	2027-2028		\$ 5,000,000.00	YES	YES	YES
Upgrades to Train 3 (Primary and Secondary Settling Tanks and Trickling Filter)	3.00	2028-2029		\$ 5,000,000.00	YES	YES	YES
Service Water System	2.00	2025/2026		\$ 750,000.00	YES	YES	NO
Instrumentation Replacement for Aeration Tanks	4.00	2024		\$ 25,000.00	YES	YES	NO
Odor Control Covers for Digester Supernatant Transfer Boxes	4.00	2024		\$ 40,000.00	NO	NO	YES
Pump Station Site Conditions	3.00	2027		\$ 1,000,000.00	NO	NO	YES
Remote Pump Station Force Mains							
Hampton Drive Force Main Inspection	5.00	2025		\$ 250,000.00	YES	NO	YES
Hampton Drive Force Main Repairs	5.00	2026		\$ 3,000,000.00	YES	NO	YES
Remaining Remote Pump Station Force Main Inspections	4.00	2026/2027		\$ 2,000,000.00	YES	NO	YES
Remaining Remote Pump Station Force Main Repairs	4.00	2027/2028		\$ 2,000,000.00	YES	NO	YES
Power Transformer at Administration Building	5.00	2026		\$ 500,000.00	NO	NO	YES
New Variable Frequency Drives	4.00	2024		\$ 50,000.00	YES	YES	NO
Installation of Safety Catwalk for CCTs 2 and 3	4.00	2024		\$ 40,000.00	NO	NO	YES
Aeration Tanks Mechanical Aerators	3.50	2025/2026		\$ 1,700,000.00	Yes	Yes	NO
New Switchgear Equipment in Main Operating Building	5.00	2026		\$ 3,000,000.00	YES	YES	YES
Aeration Tanks Internal Recycle Pumps	3.50	2025/2026		\$ 750,000.00	YES	YES	NO
Emergency Generator	5.00	2026			YES	YES	NO
* Estimated construction costs were based upon historic construction cost data and are being presented for planning purposes. Note that these costs must be adjusted These costs do not include all financing, engineering or related costs.	Rating	Overall PS&S Rating of Asset					
	1	Critical Improvements required in +20 years					
	2	Critical Improvements required in ±10 years					
	3	Critical Improvements required in ±5 years					
	4	Critical Improvements required in ±1 year					



PS&S Proposal No 090240432

November 7, 2024

Ms. Liza Viana, Township Administrator
Township of Berkeley Heights
29 Park Avenue
Berkeley Heights, NJ 07922

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Proposal for Professional Engineering Services
Preliminary/Final Design and Bidding Services
Wastewater Treatment Plant Electrical Upgrades Project: Main Switchgear, Main
Transformer, and Emergency Generator System Replacement

Dear Ms. Viana:

Paulus, Sokolowski and Sartor, LLC (PS&S) is pleased to present this proposal for preliminary and final engineering design, and bidding services for the replacement of the existing electrical switchgear, main transformer, and emergency generator system at the Township's Wastewater Treatment Plant (WWTP).

1.0 INTRODUCTION

The Township's WWTP existing electrical switchgear, main transformer, and emergency generator systems have surpassed their operational lifespan as these existing systems were installed approximately 47 years ago and are in critical need of replacement to continually provide reliable uninterrupted operation and meet regulatory compliance. Several years ago, the existing emergency generator system had undergone a significant overhaul in efforts to restore its operational reliability, however, based upon current visual inspection, there is evidence that engine coolant is leaking from the engine requiring another major overhaul and repair to eliminate the leakage. Additionally, based upon field inspections of the existing main transformer and switchgear equipment by Qualus, based upon an inspection report dated December 18, 2023, it has been observed that the main transformer is experiencing oil leakage, and coupled with its age, requires replacement. The Inspection report also identified operational deficiencies with the switchgear equipment requiring extensive repair or replacement. The electrical switchgear and main transformer are key components to the WWTP as they regulate, distribute, protect, energize, and isolate electrical equipment and circuits throughout WWTP, ensuring safe and efficient plant operation. The switchgear, transformer and the emergency generator systems are critical system components of the wastewater treatment plant, and as such, it is imperative that these systems be replaced to provide uninterrupted and satisfactory operation of the wastewater treatment plant.



2.0 SCOPE OF SERVICES

Based upon the above, PS&S has prepared this proposal to the Township of Berkeley Heights (Township) for the following services related to the WWTP Electrical Upgrades Project.

- Task 1 – Preliminary and Final Design;
- Task 2 – NJ I-Bank Assistance;
- Task 3 – Air and Electrical Permitting;
- Task 4 – Preliminary Electrical Study
- Task 5 – Survey;
- Task 6 – Bidding Assistance;
- Task 7 – Expenses.

Our proposed scope of services is broken down into the following tasks:

Task 1 Preliminary and Final Design

The objective of the preliminary and final design is to identify the scope of work for all necessary system upgrades and to develop both preliminary and final design documents to include design drawings and specifications in preparation for bidding. The preliminary and final design documents will be prepared with the understanding that the Township will be seeking funding through the NJ I Bank. The scope of our proposed work during this phase of the project is presented below:

Water Resources

- Conduct a project kickoff meeting with the Township and key wastewater treatment plant personnel;
- Conduct site visits with Project team to review scope of project, as-built conditions, discuss project with plant staff and collect any available and pertinent data;
- Conduct project review meetings with the Township and wastewater treatment plant staff after preliminary design has been completed;
- Finalize all preliminary mechanical, structural, and electrical drawings including plans, sections and details for construction;
- Develop an Engineer's Opinion of Probable Construction Cost for the Project;
- Perform detailed project coordination;
- Develop technical specifications including Front End specifications and Maintenance of Plant Operations during construction;
- Conduct a final design review meeting with the Township and wastewater treatment plant staff prior to advertising the project for bidding.



Mechanical

- Conduct site visits to inspect and verify the existing field condition and dimensions for all proposed design work;
- Prepare mechanical drawings including plans, sections, and details necessary to demolish existing generator and connect new generator to the existing above ground diesel fuel tank system;
- Prepare mechanical specifications.

Electrical

The electrical scope of work for this project will be carried out by Keystone Engineering Group, Inc. (Keystone) in coordination with PS&S. Keystone's extensive knowledge and deep understanding of the Wastewater Treatment Plant make them the ideal partner to complete this work.

- Preliminary electrical load flow, short circuit and coordination calculation will be performed to ensure the selected equipment is properly sized and provisioned.
- Necessary calculations and detailing the design of the grounding system and any required modifications.
- Electrical load list and generator sizing calculations – Generator shall serve as backup to the whole plant, including the Digester building and associated process equipment.
- Coordination with the utility company, JCP&L, as required to provide a new electrical service to the site and decommission the existing service.
- Perform review of existing plant record drawings for site/building plans, underground utilities, and single line information. Perform site inspections as required to verify existing electrical conditions and document as required for proposed upgrade.
- Prepare drawings including a site plan showing the new and demolition work required for the construction, construction phasing plan drawings, layout of the proposed feeder connections, and a single line diagram for the phased construction.
- The sequence of construction will be developed to ensure that the wastewater treatment plant remains in continuous operation during the construction activities for this project. To accomplish this goal, it is envisioned that the first construction sequence is to install the new emergency generator system outdoors at its identified location. By locating the new emergency generator outdoors, it frees up the existing Generator Room to house the new Main Switchgear equipment. Once the Main Switchgear equipment is installed within the existing Generator Room, then the existing plant electrical load can systematically be switched over from the existing Main Switchgear to the new Main Switchgear minimizing plant outage.
- Conduct site visits to inspect and verify the existing field condition and dimensions for all proposed design work.
- Develop specifications for all electrical systems and work of project;



- Develop an Engineer's Opinion of Probable Construction estimate.

HVAC

- HVAC design will consist of demolition of existing equipment in the generator and switchgear rooms, and design of new ventilation or air conditioning systems for these spaces.
- Prepare HVAC drawings including plans, sections, and details.
- Develop specifications for all HVAC systems and work of project;
- Develop an Engineer's Opinion of Probable Construction estimate.

It is anticipated that the following drawings will be prepared for the final design:

Sheet Number	Description
G-101	Cover Sheet
G-102	General Notes and Sheet Index
C-101	Existing Site Plan
C-102	Proposed Site Plan
C-501	Construction Details 1
C-502	Construction Details 2
D-101	Demolition Plan
D-102	Demolition Sections
M-101	Mechanical Plans
M-102	Mechanical Elevations and Sections
M-103	Mechanical Details 1
M-104	Mechanical Details 2
S-001	General Notes and Specifications
S-101	Generator Equipment Foundation Plan and Sections
S-102	Wall Closure Plan and Sections
S-103	Structural Details
A-101	Architectural Plan
A-102	Architectural Sections
A-103	Architectural Details
SE-101	Soil Erosion and Sediment Control Notes and Details
E-001	Electrical Legend
E-002	Electrical Administration Building Demolition Plan
E-003	Electrical Demolition Single Line Diagram
E-004	Electrical WWTP Site Plan
E-005	Electrical Temporary Generator Power Plan
E-006	Electrical Administration Building Power Plan
E-007	Electrical Administration Building Lighting Plan



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E-008	Temporary Single Line Diagram
E-009	Single Line Diagram
E-010	Partial SCADA Interconnection Diagram
E-011	Electrical Schedules
E-012	Electrical Details
E-013	Electrical Details
H-001	HVAC Legend
H-002	HVAC Administration Building Demolition Plan
H-003	HVAC Administration Building New Work Plan
H-004	HVAC Administration Building New Work Sections
H-005	HVAC Schedules
H-006	HVAC Details
H-007	HVAC Control Diagrams

The final technical specifications shall be prepared using the most current version of Microsoft Word and shall identify acceptable manufacturers for new equipment and their basis of design.

It is anticipated that the following technical specifications will be prepared:

Division 1- General Requirements

- 01110 Summary of Work
- 01111 Contract Considerations
- 01120 Liquidated Damages
- 01170 Special Provisions
- 01210 Construction Allowances
- 01225 Measurement and Payment
- 01301 Schedule of Values
- 01310 Project Administration
- 01311 Construction Scheduling
- 01320 Maintenance of Plant Operations
- 01330 Submittals
- 01400 Quality Control
- 01500 Temporary Facilities
- 01505 Mobilization
- 01600 Material and Equipment
- 01610 Delivery Storage and Handling
- 01730 Operation and Maintenance Data
- 01740 Warranties and Bonds
- 01780 Project Closeout
- 01811 Field Tests
- 01821 Equipment Start-Up and Testing



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Division 2- Site Work

- 02050 Demolition and Modifications
- 02160 Excavation and Earthwork
- 02230 Site Clearing Protection and Restoration
- 02520 Concrete Pavement and Miscellaneous Concrete
- 02920 Lawns and Grasses

Division 3 – Concrete

- 03300 Cast-In-Place Concrete

Division 5- Metals

- 05500 Metal Fabrications

Division 9 – Finishes

- 09901 Surface Preparation and Shop Priming Painting
- 09902 Painting

Division 15 - Mechanical

- 15050 Basic Mechanical Materials and Methods
- 15060 Hangers and Supports
- 15075 Mechanical Identification
- 15120 Piping Specialties
- 15200 Piping
- 15250 Mechanical Insulation
- 15735 Split System Air Conditioners
- 15760 Wall and Ceiling Unit Heaters
- 15820 Duct Accessories
- 15838 Air Diffusers
- 15860 Metal Ducts
- 15990 Testing, Adjusting, and Balancing

Division 16-Electrical

- 16010 Electrical Demolition
- 16050 Basic Electrical Materials and Methods
- 16060 Hangers and Supports for Electrical Systems
- 16075 Electrical Identification
- 16120 Wire and Cable
- 16130 Raceway and Boxes for Electrical Systems
- 16140 Wiring Devices
- 16231 Engine Generators
- 16370 Transformers



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16420	Switchboards
16422	Panelboards
16441	Motor Control Centers
16450	Grounding
16470	Electrical Studies
16480	Automatic Transfer Switches
16471	Enclosed Switches and Circuit Breakers
16510	Interior Lighting
16620	Surge Protection Devices
16950	Electrical Testing

As part of the preliminary design submission, front end bid specifications will be provided for review and comment by the Township's legal counsel and the NJ Infrastructure Bank. One (1) set of preliminary design documents shall be prepared and transmitted to the Township for review and comment.

PS&S will submit three (3), signed and sealed, sets of plans and specifications to the NJDEP, as required under the NJ I-Bank program for review and to obtain Authorization to Advertise.

Task 2 NJ I-Bank Assistance

PS&S will provide the necessary assistance and engineering services related to the preparation of documentation necessary for funding through the NJIB (New Jersey Infrastructure Bank). PS&S has ample experience in the preparation and coordination necessary to receive funding.

Resiliency Requirements

Due to recent resiliency requirements enacted by the NJDEP, a Planning Document is now required to be submitted with additional documentation encompassing a Project Plan. The Project Plan is required to include approximately 30% of the complete design documents, the Planning Document, and a separate memo addressing how the newly enacted resiliency requirements will be met.

Previously, the NJ I-Bank funding program required recipients to use a tiered approach in the planning, design and construction of environmental infrastructure, while justifying lower tiered actions. The approach is shown in descending order:

- Avoidance of the FEMA 500-year flood zone
- Elevation of the infrastructure to the FEMA 500-year plus one foot elevation (FEMA 500 + 1)



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- Elevation of critical infrastructure components to FEMA 500 + 1
- Flood-proofing facilities
- Flood-proofing of facility components
- Elevation or flood-proofing of individual components such as motor control centers, emergency generators, etc.

To qualify for SRF (State Revolving Fund) funding, under the new resiliency requirements, applicants must demonstrate resilience to climate change impacts, including state-specific projects concerning:

- Flood hazards
- Sea Level Rise
- Precipitation
- Storm Surge

Because of these new resiliency requirements, PS&S attended a virtual meeting with the New Jersey Department of Environmental Protection (NJDEP) to discuss how these new resiliency requirements would affect this project. Based on an analysis of the latest published FEMA FIRM mapping (for another project occurring at the Berkeley Heights WWTP, namely, the replacement of the existing sand filter and main influent pumps), PS&S determined that the 500-year flood elevation is approximately 213 feet. In addition, the proposed project site is outside of the 500-year flood elevation. Based on this determination, the NJDEP indicated that this project will meet resiliency requirements by designing the proposed improvements to ensure elevation of critical infrastructure components to FEMA 500 + 1. It should be noted that, per the new resiliency requirements, PS&S will need to re-analyze the 500-year flood elevation utilizing preliminary or effective FEMA Flood Insurance Study Reports or the Flood Hazard Area Regulatory Flood Elevation for the area (highest to be utilized).

As required by the NJDEP, the Planning Document will need to include mapping which addresses the following:

- Mapping that verifies the 0.2% annual change flood elevation plus 1 foot safety factor to include the following:
 - Applicants shall provide mapping that includes the 0.2% change flood elevation using preliminary or effective FEMA Flood Insurance Study (FIS) Reports with the highest flood elevation.
 - The 0.2% flood elevation plus 1 foot should be mapped with the on-site topography provided by the professional surveyor.

To meet this requirement, PS&S anticipates the scope of work to include an evaluation of potential flood risk. PS&S will establish the FEMA 0.2% annual chance flood elevation (based



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on available FEMA information) and the Flood Hazard Area (FHA) Regulatory Flood elevation, in accordance with NJDEP Flood Hazard Control Act rules. PS&S will review available FEMA mapping, associated FEMA documents, and available NJDEP information to establish these elevations and will prepare a memo summarizing the methodology used to establish the elevations and compare the two (2) elevations for consideration in evaluating the flooding risk for the project design. The Resiliency Memo will be prepared in accordance with the latest requirements and guidance published by the NJDEP.

Remaining NJIB Scope of Work

PS&S will prepare and submit, on behalf of the Township, the application Project Information, a Project Plan (formerly only inclusive of the Planning Document) and Letter of Intent as required for participation in the NJIB.

In accordance with NJIB requirements, the Planning Document will be inclusive of the following:

- Introduction
- Geographical Description of Project Location
- Existing Conditions
- Need for Project
- Nature and Location of Structures to be Built
- Management of Proposed Project
- Plans for Long-Term Needs after Design Life
- Beneficial and Adverse Effects
- Costs
- Alternatives Analysis
- Open Space/Recreational Activities
- Environmental Assessment
- Conclusion

The Project Information and Letter of Intent will be completed using the NJIB online application process and the Project Plan will be uploaded to this site.

In addition, PS&S will aid the Township in the preparation and submission of an NJIB Loan Application, and all required supporting documents, along with the design plans, specifications and Engineer's Opinion of Probable Construction cost estimate. Preparation of the design plans, technical specifications and Engineer's Opinion of Probable Construction Estimate are specifically excluded from this task. PS&S will prepare the contract document front end specifications in accordance with all NJIB requirements and provide NJIB required



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Soil Erosion and Sediment Control provisions for incorporation into the specifications and plans.

The front-end specifications will be prepared to address the new requirements, enacted in the past year, regarding the Socially and Economically Disadvantaged (SED) requirements. As part of the new SED requirements, PS&S will prepare and submit the required two (2) SED checklists along with the front-end specifications for SED review.

PS&S has included the preparation and submission of the online forms (LP-6A and SFAF) required to obtain a Planning and Design Loan for this project. PS&S will work with the Township's Bond Counsel to prepare the disbursement schedule for form SFAF and to prepare form LP-6A.

Additionally, PS&S will address comment letters received by the NJDEP for the Project Plan, loan application and environmental review in a timely manner. PS&S understands that in no case shall the time required to submit the comment letter responses negatively affect the project schedule.

As there are no longer specific deadlines or blackout periods associated with NJIB loans, the submission of all required NJIB information, applications and design documents will follow the project schedule in lieu of one imposed by the NJIB.

Also, under this phase of the project, PS&S will work to obtain the Environmental Decision Document (EDD) and approval of the design documents (including the Socially and Economically Disadvantaged Business Utilization requirements) from the NJIB, New Jersey Office of Equal Opportunity and Contract Assistance, and the NJDEP.

Once the EDD and approval of design documents has been granted, PS&S will work to obtain Authorization to Advertise for bidding from the NJDEP and NJIB.

For the Township to award the construction of the contract, authorization to award must be granted by the NJDEP/NJIB. As such, PS&S will assemble and submit the required documentation to the NJDEP in accordance with the NJDEP's Administrative Instructions Regarding Contract Bids and Awards.

PS&S has assumed that the Township will obtain one loan and that PS&S will obtain Authorization to Advertise and Award for this project only.



Task 3 Air and Electrical Permitting

Air Permitting

PS&S will identify and request the information required for the Berkeley Heights air permitting submittal for the proposed new Emergency Generator (EG) replacement. Upon receipt of the requested information, PS&S will compile and review the information, and then advise Berkeley Heights Township and/or the applicable project team members if additional information is required for the Air Permitting submittal.

PS&S will prepare the required NJDEP GP-005A Online electronic Air Permitting Submittal Package for the planned new EG replacement at the Berkeley Heights Township Wastewater Treatment Plant facility. The GP-005A air permitting submittal will be prepared in accordance with the NJDEP requirements specified in N.J.A.C. 7:27-8, Permits and Certificates for Minor Facilities, applicable NJDEP technical guidance documents, and instructions, and the currently required NJDEP Online electronic preparation and submittal process, and PS&S will certify the submittal as “Individual with Direct Knowledge”. (NOTE: Because NJDEP only allows one single GP-005A Air Permit at a facility, the GP-005A Air Permitting submittal for the new EG will also include the existing EG so that the existing EG can remain in operation while the new EG is under construction and until the installation and startup of the new EG is completed).

PS&S will next provide follow-up direction and coordination with Berkeley Heights Township for the NJDEP-required Berkeley Heights Township “Responsible Official” certification of the Air Permitting Submittal as we have done with Berkeley Heights for prior air permitting submittals for Berkeley Heights.

PS&S will make the NJDEP required Online electronic credit card payment of the NJDEP Air Permitting Fee (which is currently estimated to be \$903.20) and make the final NJDEP Online electronic air permitting submittal to NJDEP for Berkeley Heights Township’s EGs. The NJDEP approval of the GP-005A Air Permitting submittal for Berkeley Heights Township’s EGs typically becomes effective the next business day after NJDEP’s online receipt of the certified submittal and the required electronic payment for the permit.

PS&S will prepare and provide Berkeley Heights Township with a follow-up summary of the applicable Air Permit compliance requirements included in the approved Air Permit for Berkeley Heights EGs.



Electrical Permitting

PS&S will meet with the Township's Electrical Code Enforcement department to review the project's scope of work including all required National Electric Code safety and design requirements that are applicable for this project prior to developing the preliminary and final design documents.

Upon completion of the preliminary design documents, to facilitate the necessary electrical permits for this project, PS&S will provide three (3) sets of preliminary design drawings to the Township's Electrical Code Enforcement department for their review and comment. If necessary, PS&S will meet with the Electrical Code Enforcement department to review and resolve all comments prior to incorporating all resolutions to comments into the final design documents. This will streamline the permit approval process when the contractor tries to secure the electrical permits for the project.

Task 4 Preliminary Electrical Study

The scope of the preliminary electrical study analysis is from the utility transformer down to the electrical equipment required to be field marked per "The Standard for Electrical Safety in the Workplace" (NFPA 70E). The system model and evaluation will be performed with SKM Power Tools for Windows V10. Keystone will coordinate with the local utility to obtain short circuit and service entrance protection information.

The study will be in accordance with and based upon the latest published versions of IEEE 242, IEEE 399, IEEE 1584, IEEE 1584.1, and NFPA 70E.

The following power system studies will be provided for the upgraded facilities:

- Evaluate the available short circuit current throughout the system to ensure that all equipment is properly rated for the existing conditions
- Develop time current coordination (TCC) plots for the system to improve device coordination in the system.
- Perform Load Flow Analysis.
- Analyze the available arc flash incident energy in the system given the available short circuit current from the short circuit evaluation and the device opening time from the TCC plots.

These studies will be in accordance with Owner standards. Keystone will provide single line diagrams with and coordinate with the Utility for the available fault current and Utility's Primary Over-Current Protective Device.



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A summary of our findings and evaluations will be provided, including recommended short circuit and protective schemes, preliminary arc flash hazard analysis information and load flow evaluation; connected and demand loading.

Two site visits have been included to collect all required existing site information as part of this task. Keystone will provide a licensed electrician to open any panels as required.

Task 5 Survey

To meet the resiliency requirements set forth by the NJDEP, as outlined under Task 2, the 0.2% flood elevation plus 1 foot requires to be mapped with the on-site topography. Given the absence of an existing onsite survey, a topographic survey of the wastewater treatment plant must be conducted to meet these requirements.

The topographic survey will be performed using a combination of conventional on ground survey methods and Aerial mapping technology utilizing a Mavic 3 / Matrice 300 RTK drone, VRS and Static GPS (Global Positioning System). We will locate and provide elevations of fixed property features, such as existing buildings, concrete foundations, equipment, fence lines, utilities, protruding natural anomalies, and other features or structures deemed to be permanent to the site.

The ground control network will be based on the New Jersey State Plane Coordinate System established in 1983 (NAD83) and North America Vertical Datum of 1988 (NAVD88). The plan sheets will be created in AutoCAD format, 1 foot contour interval.

Property lines will be shown and plotted based on available tax map and deed information.

Task 6 Bidding Assistance

PS&S will assist the Township in bidding the anticipated contract and our scope of services will include the following:

- Provide the Township with three (3) sets of Contract Drawings and Specifications for the Township's records;
- Provide bidders with Contract Drawings and Specifications electronically through the QuestCDN website;
- Maintain a list of bidders;
- Prepare clarifications to address Request for Information (RFI) submitted by potential bidders.
- Attendance at the pre-bid meeting;



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- Prepare necessary addenda to clarify the design documents. Our level of effort assumes that up to three (3) addenda will be prepared. All addenda will be submitted and approved by the NJDEP prior to distribution, and three (3) copies of the approved addenda will be sent to the NJDEP;
- Review of the three (3) low bid packages for completeness and adherence to the bidding requirements;
- Attend bid opening;
- Provide a written evaluation of all alternative equipment offered by the bidding contractors and provide a recommendation as to the acceptability of each alternative submitted;
- Prepare and distribute award recommendation letter.

Task 7 Expenses

Expenses include costs associated with mileage, tolls, copies, and faxes.

3.0 FEES

PS&S has developed our professional lump sum fee utilizing current 2024 labor rates, as approved by Berkeley Heights Township Resolution 27-2024. PS&S anticipates increases in project billing rates as appropriate during the progression of the project. Due to the bulk of these services taking place in the year 2025, PS&S has accounted for the escalated rates within the lump sum phase amounts (approximately 6% per year).

Our professional lump sum fee summary is summarized in the below table:

TABLE- LUMP SUM FEE SUMMARY

<u>TASK NUMBER</u>	<u>DESCRIPTION</u>	<u>LUMP SUM FEE</u>
1	Preliminary and Final Design	\$237,900.00
2	NJ I-Bank Assistance	\$50,800.00
3	Air and Electrical Permitting	\$24,550.00
4	Preliminary Electrical Study	\$19,550.00
5	Survey	\$12,200.00
6	Bidding Assistance	\$25,650.00
7	Expenses	\$10,000.00
TOTAL		\$380,650.00



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We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A handwritten signature in blue ink, appearing to read 'James Wancho', with a stylized flourish at the end.

James Wancho, P.E.
Vice President

c: Alan Kennedy, Director of Wastewater Treatment
 Richard Crane, P.E., BCEE., PS&S
 Andrew Pursell, P.E., PS&S



PS&S Proposal No. 090220834

February 9, 2023

Berkeley Heights Township
29 Park Avenue
Berkeley Heights, NJ 07922
Attn: Ms. Liza Viana

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Revised Proposal for Professional Engineering Services
Preliminary/Final Design and Bidding Services
Wastewater Treatment Plant Improvement Proposal

Dear Ms. Viana:

Paulus, Sokolowski and Sartor, LLC (PS&S) is pleased to present this revised proposal for the preliminary and final engineering design, NJ I-Bank funding assistance and bidding services for the replacement of the existing sand filters and main influent sewage pumps. Additionally, it is our understanding that the Township is interested in financing the project through the New Jersey I-Bank financing program. Our revised proposal assumes that the replacement of the existing sand filters and main influent sewage pumps will be included in one overall construction project resulting in a savings in project duration and professional engineering services as only one set of Bid Documents, depicting their replacement scope of work, will be required.

BACKGROUND

Based upon the above, PS&S has prepared this proposal to the Township of Berkeley Heights (Township) for the following services related to the Wastewater Treatment Plant Improvement Project:

- Task 1 – Preliminary and Final Design;
 - Task 1A – Sand Filter Replacement;
 - Task 1B – Raw Sewage Pump Replacement;
- Task 2 – New Jersey I-Bank Assistance;
- Task 3 – Bidding Assistance;



Our proposed scope of services is broken down into the following tasks:

Task 1 Preliminary and Final Design

Task 1A - Sand Filter Replacement Design

The objective of the preliminary and final design is to develop concepts into preliminary design drawings and specifications and to finalize the preliminary documents into bid ready construction documents. The scope of our proposed work during this phase of the project is presented below:

Water Resources

- Conduct a project kickoff meeting with the Township and key wastewater treatment plant personnel;
- Conduct site visits with Project team to review scope of project, discuss project with plant staff and collect any available and pertinent data;
- Prepare design report outlining the basis of design for the replacement of the existing sand filters with new cloth media filters;
- Perform hydraulic calculations on proposed filter equipment to ensure that all upstream treatment processes will not be affected;
- Meet and coordinate with proposed filter manufacturers throughout design;
- Prepare 60% preliminary mechanical drawings depicting the new filter arrangement and location of backwash pumps.
- Conduct project review meetings with the Township and wastewater treatment plant staff after preliminary design has been finished;
- Prepare all Treatment Works Approval (TWA) Modification applications, reports, and cost estimates. Submit all necessary documents to NJ Department of Environmental Protection (DEP) for approval;
- Finalize all preliminary mechanical drawings including plans, sections and details for construction;
- Develop an Engineer's Opinion of Probable Construction Cost for the Project;
- Perform detailed project coordination;
- Develop technical specifications including Front End specifications and Maintenance of Plant Operations during construction;
- Conduct final design review meeting with the Township and wastewater treatment plants staff.

Structural

- Review existing drawings and analyze existing framing for all proposed work;
- Conduct site visits to inspect and verify the existing field condition and dimensions for all proposed design work;



- Design and coordinate the following modifications:
 - Monorail lifting system for new filter units and backwash pumps;
 - Backwash pump support framing;
 - Concrete wall separating backwash pump area from filter area;
 - Miscellaneous details for interior/exterior handrails, concrete repairs, sealing existing concrete openings, core drilling new concrete openings and pipe supports.
- Prepare structural drawings including plans, sections and details necessary to define the extent of the new work;
- Prepare structural specifications.

Electrical and Mechanical (HVAC)

- Conduct site visit to evaluate existing electrical equipment including existing motor control centers, panelboards, transformers, disconnect switches, motor starters, VFDs, control panels, receptacles, lighting fixtures, and lighting switches. Evaluate existing electrical power distribution system including panelboards for electrical load distribution;
- Provide electrical load calculations for new equipment to verify the existing electrical power distribution equipment is adequate to provide electric power to new equipment;
- Evaluate alternatives for minimizing condensation in the existing filter room;
- Develop detail design documents suitable for construction, including electrical demolition and new work plans for electrical power to new filter units and backwash pumps, power and controls for new filter control panel, power to new motorized hoist system, lighting, one line diagrams, schematics, sections, conduit and wires schedules, panel schedules, and details for construction;
- Develop detail design documents suitable for construction including mechanical demolition and new work plans for HVAC, plumbing, and control diagrams, schematics, sections, equipment schedules and details for construction. The design will be based on all required codes such as NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection facilities, client standards, laws in accordance with New Jersey State Uniform Construction Code;
- Develop specifications for all electrical and mechanical equipment, systems and work of project.

Task 1B - Raw Sewage Replacement Design

The objective of the preliminary and final design is to develop preliminary design drawings and specifications and to finalize the preliminary documents into bid ready construction documents. The scope of our proposed work during this phase of the project is presented below:



Water Resources

- Conduct site visits with Project team to review scope of project, discuss project with plant staff and collect any available and pertinent data;
- Prepare design report outlining the basis of design for the replacement of the existing pumps;
- Perform hydraulic calculations on proposed pumping units to ensure all hydraulic capacity needs of the plant are achieved and perform a hydraulic evaluation of the treatment plant to ensure proper treatment will still be met;
- Meet with proposed pump vendors;
- Prepare 60% preliminary mechanical drawings depicting the new pumping units, valving, piping, controls, and level controls. Additionally, minor modifications of the dry well area will include the removal of the existing abandoned seal water system, concrete pads and the removal and replacement of the existing sump pumps and control panel.
- Conduct project review meetings with the Township after preliminary design has been finished;
- Prepare all Treatment Works Approval (TWA) applications, reports, and cost estimates. Submit all necessary documents to NJ Department of Environmental Protection (DEP) for approval;
- Develop a By-pass pumping plan during construction including pumping requirements, suction and discharge location, temporary above grade site piping, location of by-pass pumps and power supply for by-pass pumps;
- Finalize all preliminary mechanical drawings including plans, sections and details for construction;
- Develop an Engineer's Opinion of Probable Construction Cost for the Project;
- Perform detailed project coordination;
- Develop technical specifications including Front End specifications and Maintenance of Plant Operations during construction;
- Conduct final design review meeting with the Township and Plant Staff.

Structural

- Review existing drawings and analyze existing framing for all proposed work;
- Perform site visits to inspect and verify the existing field condition and dimensions for all proposed design work;
- Design and coordinate the following modifications:
 - Install monorail lifting system for new pumping units;
 - Removal of existing concrete pads;
 - New concrete pads for pumping units;
 - Patching and repairing existing openings from existing pump motors.
 - Miscellaneous details for pipe supports;



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- Prepare structural drawings including plans, sections and details necessary to define the extent of the new work;
- Prepare structural specifications.

Electrical and Mechanical (HVAC)

- Conduct site visit to evaluate existing electrical equipment including existing motor control centers, panelboards, transformers, disconnect switches, motor starters, VFDs, control panels, receptacles, lighting fixtures, and lighting switches. Evaluate existing electrical power distribution system including panelboards for electrical load distribution;
- Provide electrical load calculations for new equipment to verify the existing electrical power distribution equipment is adequate to provide electric power to new equipment;
- Develop detail design documents suitable for construction, including electrical demolition and new work plans for electrical power and controls to new pumping units, including VFD control panels, power and controls to new sump pumps, power to new motorized hoist system, develop location to supply power for Bypass pumping system, lighting, one line diagrams, schematics, sections, conduit and wires schedules, panel schedules, and details for construction;
- Develop detail design documents suitable for construction including mechanical demolition and new work plans for HVAC, plumbing, and control diagrams, schematics, sections, equipment schedules and details for construction. The design will be based on all required codes such as NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection facilities, client standards, laws in accordance with New Jersey State Uniform Construction Code;
- Develop specifications for all electrical and mechanical equipment, systems and work of project.

It is anticipated that the following drawings will be prepared for the final design:

Sheet Number	Description
G-101	COVER
G-102	GENERAL NOTES AND SHEET INDEX
G-103	EXISTING SITE PLAN
G-104	EXISTING HYDRAULIC PROFILE
G-105	PROPOSED HYDRAULIC PROFILE
D-101	MECHANICAL DEMOLITION PLAN – SAND FILTER
D-102	MECHANICAL DEMOLITION ELEVATION – SAND FILTER
D-103	MECHANICAL DEMOLITION PHOTOS - SAND FILTER
D-104	MECHANICAL DEMOLITION PLAN – RAW SEWAGE PUMP
D-105	MECHANICAL DEMOLITION ELEVATION – RAW SEWAGE PUMP
D-106	MECHANICAL DEMOLITION PHOTOS - RAW SEWAGE PUMP
W-101	PROPOSED MECHANICAL PLAN – DISC FILTERS
W-102	PROPOSED MECHANICAL ELEVATIONS AND SECTIONS – DISC FILTERS



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W-103	PROPOSED PAINTING AND COATING PLAN – DISC FILTERS
W-104	PROPOSED MECHANICAL DETAILS - DISC FILTERS
W-105	PROPOSED MECHANICAL PLAN – RAW SEWAGE PUMPS
W-106	PROPOSED MECHANICAL ELEVATION AND SECTIONS - RAW SEWAGE PUMPS
W-107	PROPOSED MECHANICAL DETAILS – RAW SEWAGE PUMPS
W-108	PROPOSED BYPASS PUMPING - RAW SEWAGE PUMPS
W-109	PROPOSED PAINTING AND COATING PLAN – RAW SEWAGE PUMPS
E-001	LEAD SHEET
E-101	ELECTRICAL OVERALL SITE PLAN
E-102	ELECTRICAL DEMOLITION DIAGRAMS AND DETAILS – SAND FILTER
E-201	PROPOSED ELECTRICAL POWER AND LIGHTING – DISC FILTERS
E-202	PROPOSED ELECTRICAL SINGLE LINE DIAGRAM, INTERCONNECTION AND MCC ELEVATION – DISC FILTER
E-203	PROPOSED ELECTRICAL POWER AND LIGHTING – RAW SEWAGE PUMPS
E-204	PROPOSED ELECTRICAL POWER AND LIGHTING – RAW SEWAGE PUMPS
E-205	PROPOSED ELECTRICAL SINGLE LINE DIAGRAM – RAW SEWAGE PUMP
E-206	PROPOSED ELECTRICAL INTERCONNECTION AND CONTROL DIAGRAM – RAW SEWAGE PUMP
E-207	PROPOSED ELECTRICAL SCHEDULE AND DETAILS – RAW SEWAGE PUMP
E-208	PROPOSED ELECTRICAL PUMP CONTROL PANEL – RAW SEWAGE PUMP
H-101	HVAC LEGEND
H-102	PROPOSED HVAC PLAN – DISC FILTER
H-103	PROPOSED HVAC SCHEDULES AND DETAILS – DISC FILTER
H-104	PROPOSED HVAC PLAN – RAW SEWAGE PUMPS
H-105	PROPOSED HVAC SCHEDULE AND DETAILS – RAW SEWAGE PUMPS
S-001	GENERAL NOTES AND SPECIFICATIONS
S-002	STRUCTURAL SPECIFICATIONS
S-101	PROPOSED STRUCTURAL FLOOR PLAN – DISC FILTER
S-102	PROPOSED STRUCTURAL ROOF PLAN – DISC FILTER
S-101	PROPOSED STRUCTURAL FLOOR PLAN – RAW SEWAGE PUMPS
S-102	PROPOSED STRUCTURAL ROOF PLAN – RAW SEWAGE PUMPS
S-103	PROPOSED STRUCTURAL SECTION – DISC FILTER
S-104	PROPOSED STRUCTURAL SECTION – DISC FILTER
S-105	PROPOSED STRUCTURAL DETAILS – RAW SEWAGE PUMPS



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The final technical specifications shall be prepared using the most current version of Microsoft Word. The final technical specifications shall identify acceptable manufacturers for new equipment and their basis of design.

It is anticipated that the following technical specifications will be prepared for the final design:

Division 1- General Requirements

- 01110 Summary of Work
- 01111 Contract Considerations
- 01120 Liquidated Damages
- 01170 Special Provisions
- 01210 Construction Allowances
- 01225 Measurement and Payment
- 01301 Schedule of Values
- 01310 Project Administration
- 01311 Construction Scheduling
- 01320 Maintenance of Plant Operations
- 01330 Submittals
- 01400 Quality Control
- 01500 Temporary Facilities
- 01505 Mobilization
- 01600 Material and Equipment
- 01610 Delivery Storage and Handling
- 01730 Operation and Maintenance Data
- 01740 Warranties and Bonds
- 01780 Project Closeout
- 01811 Field Tests
- 01821 Equipment Start-Up and Testing

Division 2- Site Work

- 02050 Demolition and Modifications
- 02225 Bypass Pumping
- 02411 Selective Structural Demolition

Division 3 – Concrete

- 03300 Cast-In-Place Concrete
- 03740 Modifications and Repair to Existing Concrete

Division 5 – Metals

- 05000 Metals
- 05050 Metal Fastenings
- 05100 Structural Metal Framing
- 05500 Metal Fabrications
- 05520 Metal Railings



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05530 Gratings

Division 9 – Finishes

09901 Surface Preparation and Shop Priming Painting
09902 Painting

Division 11 – Equipment

11201 Disk Filter Unit
11202 Dry Pit Submersible Pumps
11204 Sump Pumps
11501 Valves and Appurtenances

Division 15 - Mechanical

15050 Basic Mechanical Materials and Methods
15060 Hangers and Supports
15070 Mechanical Sound, Vibration, and Seismic Control
15075 Mechanical Identification
15110 Valves
15120 Piping Specialties
15200 Process Piping
15760 Unit Heaters
15830 Axial Fans
15832 Power Ventilators
15900 HVAC Instrumentation and Controls
15950 Testing, Adjusting, and Balancing

Division 16 – Electrical

16010 Electrical General Provisions
16015 Short Circuit, Coordination Study, and Arc Flash Analysis
16110 Conduits, Raceways, Fittings, and Cable Trays
16120 Wire, Cable and Connectors
16130 Wiring Devices
16140 Device and outlet Boxes
16150 Junction and Pull Boxes
16160 Fuses
16418 Surge Protective Devices
16430 Distribution Panelboards
16435 Branch Circuit Panelboards
16440 Disconnect Switches
16445 Electric Equipment Enclosures
16450 Dry Type Transformer
16460 Grounding
16470 Enclosed Circuit Breakers
16505 Lighting Control System



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16512 Interior L.E.D. and Exit Lighting

PS&S will submit three (3), signed and sealed, sets of plans and specifications to the NJDEP, as required under the NJIBank program for review and to obtain Authorization to Advertise.

Task 2 NJ I-Bank Funding Assistance

PS&S will provide assistance and engineering services related to the preparation of documentation necessary for funding through the NJIB (formerly New Jersey Environmental Infrastructure Trust). PS&S has ample experience in the preparation and coordination necessary to receive funding.

PS&S will prepare and submit, on behalf of the Township the application Project Information, a Planning Document and Letter of Intent as required for participation in the NJIB.

In accordance with NJIB requirements, the Planning Document will be inclusive of the following:

- Introduction
- Geographical Description of Project Location
- Existing Conditions
- Need for Project
- Nature and Location of Structures to be Built
- Management of Proposed Project
- Plans for Long-Term Needs after Design Life
- Beneficial and Adverse Effects
- Costs
- Alternatives Analysis
- Open Space/Recreational Activities
- Environmental Assessment
- Conclusion

The Project Information and Letter of Intent will be completed using the NJIB online application process and the NJIB Planning Document will be uploaded to this site.

Depending on the complexity of the project, once the Project Information, Letter of Intent and Planning Document are submitted, PS&S will request a pre-application conference call with the NJIB and the NJDEP to discuss the project deadlines, specific project contents and loan structure.



In addition, PS&S will provide assistance to the Township in the preparation and submission of a NJIB Loan Application, and all required supporting documents, along with the design plans, specifications and Engineer's opinion on probable construction cost. Preparation of the design plans, technical specifications and Engineer's opinion of probable construction cost are specifically excluded from this task. PS&S will prepare the contract document front end specifications in accordance with all NJIB requirements and provide NJIB required Soil Erosion and Sediment Control provisions for incorporation into the specifications and plans.

PS&S has included the preparation and submission of the online forms (LP-6A and SFAF) required to obtain a Planning and Design Loan for this project. PS&S will work with the Township's Bond Counsel to prepare the disbursement schedule for form SFAF and to prepare form LP-6A.

Additionally, PS&S will address any comment letters received by the NJDEP for the planning document, loan application and environmental review in a timely manner. PS&S understands that in no case shall the time required to submit the comment letter responses negatively affect the project schedule.

As there are no longer specific deadlines or blackout periods associated with NJIB loans, the submission of all required NJIB information, applications and design documents will follow the project schedule in lieu of one imposed by the NJIB.

Also, under this phase of the project, PS&S will work to obtain the Environmental Decision Document (EDD) and approval of the design documents (including the Socially and Economically Disadvantaged Business Utilization requirements) from the NJIB, New Jersey Office of Equal Opportunity and Contract Assistance, and the NJDEP.

Once the EDD and approval of design documents has been granted, PS&S will work to obtain Authorization to Advertise for bidding from the NJDEP and NJIB.

For the Township to award the construction of the contract, authorization to award must be granted by the NJDEP/NJIB. As such, PS&S will assemble and submit the required documentation to the NJDEP in accordance with the NJDEP's Administrative Instructions Regarding Contract Bids and Awards.

PS&S has assumed that the Township will obtain one loan and that PS&S will obtain Authorization to Advertise and Award for this project only. Please note that PS&S will work with the NJDEP/NJIB to consolidate the current loans (which are split into three (3) different loans into one (1) loan).



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Task 3 Bidding Assistance

PS&S will assist the Township in bidding the anticipated contract and our scope of services will include the following:

- Provide the Township with five (5) sets of Contract Drawings and Specifications for bidding and for the Township's records;
- Maintain a list of bidders;
- Prepare clarifications to address Request for Information (RFI) submitted by potential bidders.
- Attendance at the pre-bid meeting;
- Prepare necessary addenda to clarify the design documents. Our level of effort assumes that up to three (3) addenda will be prepared. All addenda will be submitted and approved by the NJDEP prior to distribution, and three (3) copies of the approved addenda will be sent to the NJDEP;
- Review of the three (3) low bid packages for completeness and adherence to the bidding requirements;
- Attend bid opening;
- Provide a written evaluation of all alternative equipment offered by the bidding contractors and provide a recommendation as to the acceptability of each alternative submitted;
- Prepare and distribute award recommendation letter.

Task 4 Expenses

Expenses include costs associated with mileage, tolls, copies, and faxes.

Our professional lump sum fee summary is summarized in the below table:

TABLE- LUMP SUM FEE SUMMARY

<u>TASK NUMBER</u>	<u>DESCRIPTION</u>	<u>LUMP SUM FEE</u>
1	PRELIMINARY AND FINAL DESIGN (Sum of 1A – 1B)	\$170,750.00
1A	Sand Filter Replacement	\$92,650.00
1B	Raw Sewage Pump Replacement	\$78,100.00
2	NJ I-Bank Funding Assistance	\$30,905
3	Bidding Assistance	\$10,700
4	EXPENSES	\$10,000
TOTAL		\$222,355.00



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We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A handwritten signature in blue ink, appearing to read 'James Wancho', with a stylized flourish at the end.

James Wancho, P.E.
Vice President

c: Richard Crane, P.E., BCEE., PS&S
Ryan Schulz, P.E., PS&S



PS&S Proposal No 090230502

March 28, 2023

Berkeley Heights Township
29 Park Avenue
Berkeley Heights, NJ 07922
Attn: Ms. Liza Viana

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Proposal for Professional Engineering Services
Preliminary/Final Design and Bidding Services
Enclosed Waste Gas Flare Project

Dear Ms. Viana:

Paulus, Sokolowski and Sartor, LLC (PS&S) is pleased to present this proposal for the preliminary and final engineering design, NJ I-Bank funding assistance and bidding services for the replacement of the existing waste gas flare with an enclosed flare. Additionally, it is our understanding that the Township is interested in financing the project through the New Jersey I-Bank financing program.

BACKGROUND

Based upon the above, PS&S has prepared this proposal to the Township of Berkeley Heights (Township) for the following services related to the Enclosed Waste Gas Flare Project.

- Task 1 – Preliminary and Final Design;
- Task 2 – New Jersey I-Bank Assistance;
- Task 3 – Air Permitting
- Task 4– Bidding Assistance;
- Task 5- Expenses.

Our proposed scope of services is broken down into the following tasks:

Task 1 Preliminary and Final Design

The objective of the preliminary and final design is to develop concepts into preliminary design drawings and specifications and to finalize the preliminary documents into bid ready construction documents. The scope of our proposed work during this phase of the project is presented below:



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Enclosed Waste Gas Flare Project

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Water Resources

- Conduct a project kickoff meeting with the Township and key wastewater treatment plant personnel;
- Conduct site visits with Project team to review scope of project, discuss project with plant staff and collect any available and pertinent data;
- Perform digester gas system head loss calculations on existing gas piping distribution system to ensure adequate gas pressure is being supplied to the new enclosed waste gas flare;
- Meet and coordinate with proposed enclosed waste gas flare manufacturers throughout design;
- Prepare 60% preliminary mechanical drawings depicting the new waste gas flare arrangement and location;
- Conduct project review meetings with the Township and wastewater treatment plant staff after preliminary design has been finished;
- Prepare all Treatment Works Approval (TWA) Modification applications, reports, and cost estimates. Submit all necessary documents to NJ Department of Environmental Protection (DEP) for approval;
- Finalize all preliminary mechanical, structural, and electrical drawings including plans, sections and details for construction;
- Develop an Engineer's Opinion of Probable Construction Cost for the Project;
- Perform detailed project coordination;
- Develop technical specifications including Front End specifications and Maintenance of Plant Operations during construction;
- Conduct final design review meeting with the Township and wastewater treatment plants staff.

Structural

- Conduct site visits to inspect and verify the existing field condition and dimensions for all proposed design work;
- Prepare structural drawings including plans, sections and details necessary to design the foundation support pad for the new enclosed waste gas flare;
- Prepare structural specifications.

Electrical

- Conduct site visit to evaluate existing electrical equipment including existing panelboards to define the most convenient and reliable power source for the new enclosed flare. Power source must be tied into the emergency generation system;



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Enclosed Waste Gas Flare Project

March 28, 2023

- Develop detail design documents suitable for construction, including electrical demolition and new work plans for electrical power to new enclosed waste gas flare;
- Develop specifications for all electrical systems and work of project.

It is anticipated that the following drawings will be prepared for the final design:

Sheet Number	Description
G-101	COVER
G-102	GENERAL NOTES AND SHEET INDEX
G-103	EXISTING SITE PLAN AND REVISED
D-101	MECHANICAL DEMOLITION PLAN AND ELEVATION- GAS PIPING AND EXISTING FLARE
D-103	MECHANICAL DEMOLITION PHOTOS AND DETAILS
W-101	MECHANICAL LEGEND SHEET
W-102	MECHANICAL-DIGESTER BUILDING PLAN AND SECTIONS
W-103	MECHANICAL PLAN AND SECTIONS-NEW WASTE GAS FLARE
W-104	MECHANICAL DETAILS
W-106	PROCESS AND INSTRUMENTATION DIAGRAM
E-001	LEAD SHEET
E-101	ELECTRICAL OVERALL SITE PLAN
E-102	ELECTRICAL DEMOLITION AND NEW POWER AND LIGHTING
S-001	GENERAL NOTES AND SPECIFICATIONS
S-101	PROPOSED STRUCTURAL EQUIPMENT FOUNDATION PLAN AND DETAILS

The final technical specifications shall be prepared using the most current version of Microsoft Word. The final technical specifications shall identify acceptable manufacturers for new equipment and their basis of design.

It is anticipated that the following technical specifications will be prepared for the final design:

Division 1- General Requirements

- 01110 Summary of Work
- 01111 Contract Considerations
- 01120 Liquidated Damages
- 01170 Special Provisions
- 01210 Construction Allowances
- 01225 Measurement and Payment
- 01301 Schedule of Values
- 01310 Project Administration
- 01311 Construction Scheduling
- 01320 Maintenance of Plant Operations



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Enclosed Waste Gas Flare Project

March 28, 2023

- 01330 Submittals
- 01400 Quality Control
- 01500 Temporary Facilities
- 01505 Mobilization
- 01600 Material and Equipment
- 01610 Delivery Storage and Handling
- 01730 Operation and Maintenance Data
- 01740 Warranties and Bonds
- 01780 Project Closeout
- 01811 Field Tests
- 01821 Equipment Start-Up and Testing

Division 2- Site Work

- 02050 Demolition and Modifications
- 02411 Selective Structural Demolition

Division 3 – Concrete

- 03300 Cast-In-Place Concrete

Division 9 – Finishes

- 09901 Surface Preparation and Shop Priming Painting
- 09902 Painting

Division 11 – Equipment

- 11201 Waste Gas Flare

Division 15 - Mechanical

- 15050 Basic Mechanical Materials and Methods
- 15060 Hangers and Supports
- 15075 Mechanical Identification
- 15110 Valves
- 15120 Piping Specialties
- 15200 Process Piping

PS&S will submit three (3), signed and sealed, sets of plans and specifications to the NJDEP, as required under the NJ I-Bank program for review and to obtain Authorization to Advertise.

Task 2 NJ I-Bank Funding Assistance

PS&S will provide assistance and engineering services related to the preparation of documentation necessary for funding through the NJIB (formerly New Jersey



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Enclosed Waste Gas Flare Project

March 28, 2023

Environmental Infrastructure Trust). PS&S has ample experience in the preparation and coordination necessary to receive funding.

PS&S will prepare and submit, on behalf of the Township the application Project Information, a Planning Document and Letter of Intent as required for participation in the NJIB.

In accordance with NJIB requirements, the Planning Document will be inclusive of the following:

- Introduction
- Geographical Description of Project Location
- Existing Conditions
- Need for Project
- Nature and Location of Structures to be Built
- Management of Proposed Project
- Plans for Long-Term Needs after Design Life
- Beneficial and Adverse Effects
- Costs
- Alternatives Analysis
- Open Space/Recreational Activities
- Environmental Assessment
- Conclusion

The Project Information and Letter of Intent will be completed using the NJIB online application process and the NJIB Planning Document will be uploaded to this site.

Depending on the complexity of the project, once the Project Information, Letter of Intent and Planning Document are submitted, PS&S will request a pre-application conference call with the NJIB and the NJDEP to discuss the project deadlines, specific project contents and loan structure.

In addition, PS&S will provide assistance to the Township in the preparation and submission of a NJIB Loan Application, and all required supporting documents, along with the design plans, specifications and Engineer's opinion on probable construction cost. Preparation of the design plans, technical specifications and Engineer's opinion of probable construction cost are specifically excluded from this task. PS&S will prepare the contract document front end specifications in accordance with all NJIB requirements and provide NJIB required Soil Erosion and Sediment Control provisions for incorporation into the specifications and plans.



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Berkeley Heights Township
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Preliminary/Final Design and Bidding Services
Enclosed Waste Gas Flare Project

March 28, 2023

PS&S has included the preparation and submission of the online forms (LP-6A and SFAF) required to obtain a Planning and Design Loan for this project. PS&S will work with the Township's Bond Counsel to prepare the disbursement schedule for form SFAF and to prepare form LP-6A.

Additionally, PS&S will address any comment letters received by the NJDEP for the planning document, loan application and environmental review in a timely manner. PS&S understands that in no case shall the time required to submit the comment letter responses negatively affect the project schedule.

As there are no longer specific deadlines or blackout periods associated with NJIB loans, the submission of all required NJIB information, applications and design documents will follow the project schedule in lieu of one imposed by the NJIB.

Also, under this phase of the project, PS&S will work to obtain the Environmental Decision Document (EDD) and approval of the design documents (including the Socially and Economically Disadvantaged Business Utilization requirements) from the NJIB, New Jersey Office of Equal Opportunity and Contract Assistance, and the NJDEP.

Once the EDD and approval of design documents has been granted, PS&S will work to obtain Authorization to Advertise for bidding from the NJDEP and NJIB.

For the Township to award the construction of the contract, authorization to award must be granted by the NJDEP/NJIB. As such, PS&S will assemble and submit the required documentation to the NJDEP in accordance with the NJDEP's Administrative Instructions Regarding Contract Bids and Awards.

PS&S has assumed that the Township will obtain one loan and that PS&S will obtain Authorization to Advertise and Award for this project only. Please note that PS&S will work with the NJDEP/NJIB to consolidate the current loans (which are split into three (3) different loans into one (1) loan).

Task 3 Air Permitting

PS&S will identify the relevant NJDEP Facility ID # for the facility and create an online account (if one is not already setup). PS&S will review and analyze the waste gas burner equipment specifications and applicable program requirements prior to preparation of an air PCP application and will contact the NJDEP to verify applicable requirements in order to prepare an administratively complete application.

Although a risk screen analysis and air modeling is not anticipated for this emission source based on potential to emit rates, in the event additional air permit requirements are



necessary to complete a PCP application, PS&S will advise with the Authority, and as requested address the requirements under a separate proposal.

PS&S will prepare the draft permit application via the NJDEP RADIUS program and submit an administratively complete application through the NJDEP Online portal for the waste gas burner emission source and will also schedule a conference call prior to submittal of the application to identify any elements of the application that need particular attention. To the extent that NJDEP identifies the need for revisions following the submittal of an administratively complete application, the proposed budget includes preparation of one round of responses to NJDEP post-submittal requests. Should NJDEP request additional revisions, PS&S will confer with Township regarding the responses to the additional comments. PS&S will setup one meeting with the Township to review the permit requirements once the application has been issued.

Task 4 Bidding Assistance

PS&S will assist the Township in bidding the anticipated contract and our scope of services will include the following:

- Provide the Township with five (5) sets of Contract Drawings and Specifications for bidding and for the Township's records;
- Maintain a list of bidders;
- Prepare clarifications to address Request for Information (RFI) submitted by potential bidders.
- Attendance at the pre-bid meeting;
- Prepare necessary addenda to clarify the design documents. Our level of effort assumes that up to three (3) addenda will be prepared. All addenda will be submitted and approved by the NJDEP prior to distribution, and three (3) copies of the approved addenda will be sent to the NJDEP;
- Review of the three (3) low bid packages for completeness and adherence to the bidding requirements;
- Attend bid opening;
- Provide a written evaluation of all alternative equipment offered by the bidding contractors and provide a recommendation as to the acceptability of each alternative submitted;
- Prepare and distribute award recommendation letter.

Task 4 Expenses

Expenses include costs associated with mileage, tolls, copies, and faxes. Our professional lump sum fee summary is summarized in the below table:



Proposal Number 090230502

Berkeley Heights Township
Proposal for Professional Engineering Services
Preliminary/Final Design and Bidding Services
Enclosed Waste Gas Flare Project

March 28, 2023

TABLE- LUMP SUM FEE SUMMARY

<u>TASK NUMBER</u>	<u>DESCRIPTION</u>	<u>LUMP SUM FEE</u>
1	Preliminary and Final Design	\$75,000.00
2	NJ I-Bank Funding Assistance	\$32,500.00
3	Air Permitting	\$10,000.00
4	Bidding Services	\$7,000.00
3	Expenses	\$3,000.00
TOTAL		127,500.00

We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A blue ink signature of James Wancho, P.E., written in a cursive style.

James Wancho, P.E.
Vice President

c: Richard Crane, P.E., BCEE., PS&S
Ryan Schulz, P.E., PS&S



PS&S Proposal No. 090231625

November 14, 2023

Liza Viana, Township Administrator
Berkeley Heights Township
29 Park Avenue
Berkeley Heights, NJ 07922

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Proposal for Professional Services
Construction Phase Services
Peracetic Acid System Replacement Project

Dear Ms. Viana:

Paulus, Sokolowski and Sartor, LLC (PS&S) is pleased to present this proposal for construction phase services for the Peracetic Acid System Replacement Project.

1.0 INTRODUCTION

As you are aware PS&S recently completed the design for the above referenced project, which has been advertised for bid and sealed bids were received from prospective bidders on November 10, 2023, for construction associated with the replacement of the Peracetic Acid System.

To ensure that the construction contractor is performing the construction work in accordance with the requirements of the Contract Documents, PS&S is providing our proposal to Berkeley Heights Township for the Construction Management Phase Services associated with the Peracetic Acid System Replacement Project

2.0 SCOPE OF SERVICES

PS&S has prepared this proposal to the Township of Berkeley Heights (Township) for the following services related to the Peracetic Acid System Replacement Project.

- Task 1.0 – Construction Administration Phase;
- Task 2.0 – Construction Observation Phase;
- Task 3.0 – Project Closeout;
- Task 4.0 – Plant Operation and Maintenance Manual Update;
- Task 5.0 – Expenses

1450 State Route 34
Wall, NJ 07753

t. 848.206.2626

www.psands.com

Our proposed scope of services is broken down into the followings tasks;



Task 1.0 Construction Administration Phase

Our proposed construction administration services include the following:

- Provide general communication with Owner and Contractor throughout the duration of the construction regarding such issues as progress, submittal status, construction issues and their resolution;
- Provide clarification and responses to all received Request for Information (RFI) from the Contractor. Our level of effort assumes that approximately two (2) RFIs will be received requiring written contract clarifications. RFIs and associated responses will be logged and tracked to ensure timely responses and distributed to appropriate parties;
- Interpret and clarify the contract documents;
- Review contractor's monthly payment requests and provide recommendation for payment;
- Review of shop drawings and maintaining of a shop drawing submittal log. Our level of effort assumes approximately twenty (20) submittals including product data and materials certifications will be reviewed, where a portion of several submittals, due to their complexity, will require multiple rounds of review/resubmission;
- Provide a focal point for Township's Operations staff and contractor to plan and implement equipment start-up, training, and system testing of all new equipment and systems in an orderly manner;
- Perform final technical inspections, preparation of punch list items and provide final inspection of the facilities prior to acceptance by the Operations Staff;
- Prepare operating instructions and manuals for new equipment and coordinate with the contractor training of personnel and assistance in operation of new equipment and systems;
- Evaluate substantial and final completion and issue certificates of substantial or final completion as appropriate.

Task 2.0 Construction Observation Phase

It is estimated that the construction period will span approximately six (6) months. PS&S proposes to perform part time construction observations services defined as one (1) day per week at four (4) hours per day for a total of 96 hours.

The resident project engineer will perform the following scope of work services:

- Observe the work for compliance with the Contract Documents;
- Verify Contractor's pay quantities (as necessary);
- Prepare and maintain inspection logs;
- Resolve all field related construction issues that might arise;



- Coordinate vendor training;
- Witness testing and startup of equipment and systems;
- Address contractor's questions and concerns and provide communications and coordination between the Township and the contractor.

Task 3.0 Project Closeout

Our proposed project closeout services include the following scope of services:

- Conduct a final inspection on the completed project to ensure that all construction work as defined by the Contract Documents has been satisfactorily completed;
- Ensure that all specified equipment warranties have been submitted by the contractor;
- Ensure that all outstanding punch list items have been satisfactorily completed;
- Recommend dates of substantial completion and warranty commencement;
- Review and collate the Contractor's as-built drawings and prepare record drawings of the completed project;
- Ensure that all spare parts have been delivered and received by the Operations Staff;
- Ensure that all equipment training has been provided by the contractor;
- Ensure that all Operation and Maintenance manuals have been provided by the Contractor;
- Ensure that the contractor has performed final cleaning of the work site.

Task 4.0 Plant Operation and Maintenance Manual Update

PS&S will prepare a Peracetic Acid System Operations and Maintenance document to be included in the Facility's existing overall Operations and Maintenance Manual. Typical sections to be included are as follows:

- Theory of Operation;
- Description of Individual Supporting Systems;
- Basis of Design for all Supporting Systems;
- Process Flow Schematics;
- Equipment Drawings;
- List of Spare Parts;
- Sequence of Operations;
- Process Control Requirements;
- Description of Automated Control Systems;
- Safety;
- Operation and Maintenance Requirements;



The updated Operations and Maintenance sections will be provided electronically and be constructed as a living document for the Township's use, reference, and training of personnel.

Task 5.0 Expenses

Expenses include costs associated with mileage, tolls, and copies.

3.0 FEES

PS&S has developed our professional fee utilizing current 2023 labor rates, as approved by Berkeley Heights Township Resolution 34-2023. PS&S anticipates increases in project billing rates as appropriate during the progression of this project. Due to the bulk of these services taking place in the year 2024, PS&S has accounted for the escalated rates within the lump sum phase amounts (approximately 6% per year).

Our professional lump sum fee summary is summarized in the below table:

TABLE- FEE SUMMARY NOT TO EXCEED

<u>TASK NUMBER</u>	<u>DESCRIPTION</u>	<u>LUMP SUM FEE</u>
1.0	Construction Administration Phase	\$28,300.00
2.0	Construction Observation Phase	\$26,110.00
3.0	Project Closeout Services	\$6,640.00
4.0	Plant Operation and Maintenance Manual	\$3,330.00
5.0	Expenses	\$2,500.00
TOTAL		\$66,880.00

We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.



Liza Vianna, Township Administrator
Berkeley Heights Township Peracetic Acid System Replacement Project
Construction Phase Services Proposal
29 Park Avenue, Berkeley Heights, New Jersey 07922

Page 5

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A handwritten signature in cursive script that reads "Richard Crane".

Richard Crane, P.E., BCEE
Sr. Director

cc: James Wancho, P.E.
Andrew Pursell, P.E., PS&S



PS&S Proposal No 090231409

October, 19 2023

Ms. Liza Viana, Township Administrator
Berkeley Heights Water Pollution Control Plant
29 Park Avenue
Berkeley Heights, NJ 07922

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Proposal for Professional Engineering Services
Preliminary/Final Design and Bidding Services
Micro C™ and Magnesium Hydroxide Chemical Feed Systems

Dear Ms. Viana:

Paulus, Sokolowski and Sartor, LLC (PS&S) is pleased to present this proposal for the preliminary and final engineering design, and bidding services for the permanent installation of the Micro C™ and Magnesium Hydroxide Chemical Feed Systems.

1.0 INTRODUCTION

The Township's wastewater treatment plant (WWTP) has historically used powdered lime for pH and alkalinity control to support the denitrification process which occurs within the aeration tanks. However, the aging powdered lime system needs replacement with an estimated cost to replace the system of approximately \$1.2 million dollars. In addition, significant operation and maintenance level of effort is required by plant operational staff to maintain system operation of the powdered lime system. In response to these issues, PS&S recommended a trial unit testing of magnesium hydroxide as a substitute chemical for powdered lime for pH and alkalinity control. A trial test agreement was entered into with the magnesium hydroxide supplier, Merriman, and a trial test unit was rented and placed into service. Over a span of three months, the trial test unit consistently demonstrated remarkable success. The use of magnesium hydroxide not only met the treatment plant's requirements for pH and alkalinity control but also showcased its potential to be a superior alternative chemical to the traditional powdered lime system. In accordance with the trial test unit agreement, the Township currently pays a monthly fee of \$500.00 for the rental of the magnesium hydroxide trial test unit and pays a premium of \$1,220/dry ton for the chemical and a delivery fee of \$650.00 for each delivery of magnesium hydroxide. Based upon the successful performance of the magnesium hydroxide test unit, PS&S recommended that the WWTP transition to a permanent magnesium hydroxide feed system consisting of a storage tank and metering pumps. The conversion will enable the Township to return the trial test unit and procure magnesium hydroxide in bulk at a reduced chemical cost of \$875/dry ton, unlocking substantial chemical cost savings in the long run as well as significant capital expenditure cost savings between constructing a permanent feed system in lieu of upgrading the existing powdered lime system. Lastly, the current powdered lime system



requires a NJDEP air permit to operate the system and requirements for this air permit can be removed by switching to a liquid magnesium hydroxide chemical system.

Additionally, in pursuit of improved nitrate removal efficiency at the WWTP, another temporary trial was initiated. This trial involved introducing Micro C™ as a carbon source into the aeration tanks, aimed at enhancing the nitrate removal process. As the trial evolved, the benefits of using Micro C™ became increasingly evident. The temporary system successfully bolstered the plant's efficiency of the denitrification process with increased capacity for nitrate removal, resulting in improved overall performance and NJDEP permit compliance. Given the positive outcomes and the need for long-term efficiency, it is recommended that the Micro C™ feed system undergo a transition to a permanent chemical feed system consisting of a storage tank and metering pumps.

2.0 SCOPE OF SERVICES

Based upon the above, PS&S has prepared this proposal to the Township of Berkeley Heights (Township) for the following services related to the Micro C™ and Magnesium Hydroxide Chemical Feed Systems Project.

- Task 1 – Preliminary and Final Design;
- Task 2 – Bidding Assistance;
- Task 3 – Expenses.

Our proposed scope of services is broken down into the following tasks:

Task 1 Preliminary and Final Design

The objective of the preliminary and final design is to develop concepts into preliminary design drawings and specifications and to finalize the preliminary documents into bid ready construction documents. The scope of our proposed work during this phase of the project is presented below:

Water Resources

- Conduct a project kickoff meeting with the Township and key wastewater treatment plant personnel;
- Conduct site visits with Project team to review scope of project, discuss project with plant staff and collect any available and pertinent data;
- Meet and coordinate with proposed chemical feed manufacturers throughout design;



Ms. Liza Viana, Township Administrator
Preliminary/Final Design and Bidding Services
Micro C™ and Magnesium Hydroxide Chemical Feed Systems
29 Snyder Avenue, Berkeley Heights, NJ 07922

- Prepare 60% preliminary drawings depicting the new magnesium hydroxide and Micro C™ chemical feed systems;
- Conduct project review meetings with the Township and wastewater treatment plant staff after preliminary design has been finished;
- Finalize all preliminary mechanical, structural, and electrical drawings including plans, sections and details for construction;
- Develop an Engineer's Opinion of Probable Construction Cost for the Project;
- Perform detailed project coordination;
- Develop technical specifications including Front End specifications and Maintenance of Plant Operations during construction;
- Conduct final design review meeting with the Township and wastewater treatment plant staff.

Structural

- Conduct site visits to inspect and verify the existing field condition and dimensions for all proposed design work;
- Prepare structural drawings including plans, sections and details necessary to design the concrete pad and containment walls for the chemical storage tanks, and concrete pad for the chemical feed pumps;
- Prepare structural specifications.

Electrical

- Conduct a site visit to evaluate existing electrical equipment including existing panelboards to define the most convenient and reliable power source. Power source will be from the existing Grit Building which is tied into the emergency generation system;
- Develop detail design documents suitable for construction, including electrical demolition and new work plans for chemical feed pumps, power to new magnesium hydroxide mixer, lighting, one-line diagrams, schematics, sections, conduit and wires schedules, panel schedules, and details for construction;
- Develop specifications for all electrical systems and work of project.

It is anticipated that the following drawings will be prepared for the final design:

Sheet Number	Description
G-101	COVER
G-102	GENERAL NOTES AND SHEET INDEX
G-103	EXISTING SITE PLAN
W-101	MECHANICAL PLANS



Ms. Liza Viana, Township Administrator
Preliminary/Final Design and Bidding Services
Micro C™ and Magnesium Hydroxide Chemical Feed Systems
29 Snyder Avenue, Berkeley Heights, NJ 07922

W-102	MECHANICAL ELEVATIONS AND SECTIONS
W-103	MECHANICAL DETAILS
E-001	LEAD SHEET
E-101	ELECTRICAL DEMOLITION AND SITE PLAN
E-801	ELECTRICAL ONE LINE DIAGRAM AND SCHEDULE
E-901	ELECTRICAL DETAILS
S-001	GENERAL NOTES AND SPECIFICATIONS
S-101	PROPOSED STRUCTURAL EQUIPMENT FOUNDATION PLAN AND DETAILS

The final technical specifications shall be prepared using the most current version of Microsoft Word. The final technical specifications shall identify acceptable manufacturers for new equipment and their basis of design.

It is anticipated that the following technical specifications will be prepared for the final design:

Division 1- General Requirements

- 01110 Summary of Work
- 01111 Contract Considerations
- 01120 Liquidated Damages
- 01170 Special Provisions
- 01210 Construction Allowances
- 01225 Measurement and Payment
- 01301 Schedule of Values
- 01310 Project Administration
- 01311 Construction Scheduling
- 01320 Maintenance of Plant Operations
- 01330 Submittals
- 01400 Quality Control
- 01500 Temporary Facilities
- 01505 Mobilization
- 01600 Material and Equipment
- 01610 Delivery Storage and Handling
- 01730 Operation and Maintenance Data
- 01740 Warranties and Bonds
- 01780 Project Closeout
- 01811 Field Tests
- 01821 Equipment Start-Up and Testing

Division 2- Site Work

- 02050 Demolition and Modifications
- 02160 Excavation and Earthwork



Ms. Liza Viana, Township Administrator
Preliminary/Final Design and Bidding Services
Micro C™ and Magnesium Hydroxide Chemical Feed Systems
29 Snyder Avenue, Berkeley Heights, NJ 07922

- 02230 Site Clearing Protection and Restoration
- 02520 Concrete Pavement and Miscellaneous Concrete
- 02920 Lawns and Grasses

Division 3 – Concrete

- 03300 Cast-In-Place Concrete

Division 5- Metals

- 05500 Metal Fabrications

Division 9 – Finishes

- 09901 Surface Preparation and Shop Priming Painting
- 09902 Painting

Division 11 – Equipment

- 11241 Chemical Feed Pumps
- 11242 Chemical Mixer

Division 13 – Special Construction

- 13200 Chemical Storage Tanks
- 13300 Chemical Pump Building Enclosure

Division 15 - Mechanical

- 15050 Basic Mechanical Materials and Methods
- 15060 Hangers and Supports
- 15075 Mechanical Identification
- 15110 Valves
- 15120 Piping Specialties
- 15200 Process Piping

Division 16-Electrical

- 16010 Electrical Demolition
- 16050 Basic Electrical Materials and Methods
- 16060 Grounding and Bonding for Electrical Systems
- 16073 Hangers and Supports for Electrical Systems
- 16075 Identification for Electrical Systems
- 16120 Low-Voltage Electrical Power Conductors and Cables
- 16123 Control-Voltage Electrical Power Cables
- 16130 Raceways and Boxes for Electrical Systems
- 16140 Wiring Devices
- 16443 Motor-Control Centers
- 16521 LED Exterior Lighting



Ms. Liza Viana, Township Administrator
Preliminary/Final Design and Bidding Services
Micro C™ and Magnesium Hydroxide Chemical Feed Systems
29 Snyder Avenue, Berkeley Heights, NJ 07922

As part of the 60% design submission, front end bid specifications will be provided for review and comment by the Township's legal counsel. It is understood that the Township will not be seeking funding from the NJ I Bank program for constructing the permanent feed systems and therefore our level of effort does not include coordination with the NJ I Bank program.

Two (2) sets of 60% design documents shall be prepared and transmitted to the Township for review and comment.

Task 2 Bidding Assistance

PS&S will assist the Township in bidding the anticipated contract and our scope of services will include the following:

- Provide the Township with five (5) sets of Contract Drawings and Specifications for bidding and for the Township's records;
- Maintain a list of bidders;
- Prepare clarifications to address Request for Information (RFI) submitted by potential bidders.
- Attendance at the pre-bid meeting;
- Prepare necessary addenda to clarify the design documents. Our level of effort assumes that up to three (3) addenda will be prepared;
- Review of the three (3) low bid packages for completeness and adherence to the bidding requirements;
- Attend bid opening;
- Provide a written evaluation of all alternative equipment offered by the bidding contractors and provide a recommendation as to the acceptability of each alternative submitted;
- Prepare and distribute award recommendation letter.

Task 3 Expenses

Expenses include costs associated with mileage, tolls, copies, and faxes.

3.0 FEES

PS&S has developed our professional fee utilizing current 2023 labor rates, as approved by Berkeley Heights Township Resolution 34-2023. PS&S anticipates increases in project billing rates as appropriate during the progression of this project. Due to the bulk of these services



Ms. Liza Viana, Township Administrator
Preliminary/Final Design and Bidding Services
Micro C™ and Magnesium Hydroxide Chemical Feed Systems
29 Snyder Avenue, Berkeley Heights, NJ 07922

taking place in the year 2024, PS&S has accounted for the escalated rates within the lump sum phase amounts (approximately 6% per year).

Our professional lump sum fee summary is summarized in the below table:

TABLE- LUMP SUM FEE SUMMARY

<u>TASK NUMBER</u>	<u>DESCRIPTION</u>	<u>LUMP SUM FEE</u>
1	Preliminary and Final Design	\$61,850.00
2	Bidding Services	\$8,900.00
3	Expenses	\$1,750.00
TOTAL		\$72,500.00

We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A blue ink signature of James Wancho, P.E., written in a cursive style.

James Wancho, P.E.
Vice President

c: Alan Kennedy, Director of Wastewater Treatment
Richard Crane, P.E., BCEE., PS&S
Andrew Pursell, P.E., PS&S



PS&S Proposal No. 090241147

July 09, 2024

Liza Viana, Township Administrator
Berkeley Heights Township
29 Park Avenue
Berkeley Heights, NJ 07922

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Proposal for Professional Services
Construction Phase Services
Micro C and Magnesium Hydroxide Chemical Feed Systems Project

Dear Ms. Viana:

Paulus, Sokolowski and Sartor, LLC (PS&S) is pleased to present this proposal for construction phase services for the Micro C and Magnesium Hydroxide Chemical Feed Systems Project.

1.0 INTRODUCTION

As you are aware, PS&S recently completed the design for the above referenced project, which is seeking authorization to bid by the Council at the July 23, 2024 Township's meeting.

To ensure that the construction contractor performs the construction work in accordance with the requirements of the Contract Documents, PS&S is providing our proposal for Construction Management Phase Services associated with the construction of the Micro C and Magnesium Hydroxide Chemical Feed Systems Project

2.0 SCOPE OF SERVICES

PS&S has prepared this proposal to include the following services related to the Micro C and Magnesium Hydroxide Chemical Feed Systems Project.

- Task 1.0 – Construction Administration Phase;
- Task 2.0 – Construction Observation Phase;
- Task 3.0 – Project Closeout;
- Task 4.0 – Plant Operation and Maintenance Manual Update;
- Task 5.0 – Expenses

Our proposed scope of services is broken down into the followings tasks;

1450 State Route 34
Wall, NJ 07753

t. 848.206.2626

www.psands.com



Task 1.0 Construction Administration Phase

Our proposed construction administration services include the following:

- Provide general communication with Owner and Contractor throughout the duration of the construction regarding such issues as progress, submittal status, construction issues and their resolution;
- Provide clarification and responses to all received Request for Information (RFI) from the Contractor. Our level of effort assumes that approximately two (2) RFIs will be received requiring written contract clarifications. RFIs and associated responses will be logged and tracked to ensure timely responses and distributed to appropriate parties;
- Interpret and clarify the contract documents;
- Review contractor's monthly payment requests and provide recommendation for payment;
- Review of shop drawings and maintaining of a shop drawing submittal log. Our level of effort assumes approximately forty (40) submittals including product data and materials certifications will be reviewed, where a portion of several submittals, due to their complexity, will require multiple rounds of review/resubmission;
- Provide a focal point for Township's Operations staff and contractor to plan and implement equipment start-up, training, and system testing of all new equipment and systems in an orderly manner;
- Perform final technical inspections, preparation of punch list items and provide final inspection of the facilities prior to acceptance by the Operations Staff;
- Prepare operating instructions and manuals for new equipment and coordinate with the contractor training of personnel and assistance in operation of new equipment and systems;
- Evaluate substantial and final completion and issue certificates of substantial or final completion as appropriate.

Task 2.0 Construction Observation Phase

It is estimated that the construction period will span approximately six (6) months. PS&S proposes to perform part time construction observations services defined as one (1) day per week at six (6) hours per day for a total of 144 hours.

The resident project engineer will perform the following scope of work services:

- Observe the work for compliance with the Contract Documents;
- Verify Contractor's pay quantities (as necessary);
- Prepare and maintain inspection logs;
- Resolve all field related construction issues that might arise;



- Coordinate vendor training;
- Witness testing and startup of equipment and systems;
- Address contractor's questions and concerns and provide communications and coordination between the Township and the contractor.

Task 3.0 Project Closeout

Our proposed project closeout services include the following scope of services:

- Conduct a final inspection on the completed project to ensure that all construction work as defined by the Contract Documents has been satisfactorily completed;
- Ensure that all specified equipment warranties have been submitted by the contractor;
- Ensure that all outstanding punch list items have been satisfactorily completed;
- Recommend dates of substantial completion and warranty commencement;
- Review and collate the Contractor's as-built drawings and prepare record drawings of the completed project;
- Ensure that all spare parts have been delivered and received by the Operations Staff;
- Ensure that all equipment training has been provided by the contractor;
- Ensure that all Operation and Maintenance manuals have been provided by the Contractor;
- Ensure that the contractor has performed final cleaning of the work site.

Task 4.0 Plant Operation and Maintenance Manual Update

PS&S will prepare a Micro C System and Magnesium Hydroxide Systems Operations and Maintenance manual document to be included in the Facility's existing overall Operations and Maintenance Manual. Typical sections to be included are as follows:

- Theory of Operation;
- Description of Individual Supporting Systems;
- Basis of Design for all Supporting Systems;
- Process Flow Schematics;
- Equipment Drawings;
- List of Spare Parts;
- Sequence of Operations;
- Process Control Requirements;
- Description of Automated Control Systems;
- Safety;
- Operation and Maintenance Requirements;



The updated Operations and Maintenance sections will be provided electronically and be constructed as a living document for the Township's use, reference, and training of personnel.

Task 5.0 Expenses

Expenses include costs associated with mileage, tolls, and copies.

3.0 FEES

PS&S has developed our professional fee utilizing current 2024 labor rates, as approved by Berkeley Heights Township Resolution 26-2024. PS&S anticipates increases in project billing rates as appropriate during the progression of this project. Due to the bulk of these services taking place in the year 2025, PS&S has accounted for the escalated rates within the lump sum phase amounts (approximately 6% per year).

Our professional lump sum fee summary is summarized in the below table:

TABLE- FEE SUMMARY NOT TO EXCEED

<u>TASK NUMBER</u>	<u>DESCRIPTION</u>	<u>LUMP SUM FEE</u>
1.0	Construction Administration Phase	\$35,700.00
2.0	Construction Observation Phase	\$32,100.00
3.0	Project Closeout Services	\$5,950.00
4.0	Plant Operation and Maintenance Manual	\$3,350.00
5.0	Expenses	\$2,500.00
TOTAL		\$79,600.00

We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.



Liza Vianna, Township Administrator
Berkeley Heights Township Micro C and Magnesium Hydroxide Chemical Feed Systems
Construction Phase Services Proposal
29 Park Avenue, Berkeley Heights, New Jersey 07922

Page 5

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A handwritten signature in purple ink that reads 'Richard Crane'.

Richard Crane, P.E., BCEE
Sr. Director

cc: James Wancho, P.E. PS&S
Andrew Pursell, P.E., PS&S



PS&S Proposal No. 090231182

November 8, 2023

Liza Viana, Township Administrator
Berkeley Heights Township
29 Park Avenue
Berkeley Heights, NJ 07922

Education

Energy Utility

Healthcare

Public Works

Real Estate

Science & Technology

RE: Proposal for Professional Services
Construction Phase Services
Wastewater Treatment Plant Improvement Project NJ I Bank Project No.
S340385-05 - Disk Filter & Main Influent Pump Replacement

Dear Ms. Viana:

PS&S has recently submitted initial bid documents to the NJ Infrastructure Bank (NJIB) for review and comment and anticipates receiving comments from the NJIB in the coming weeks. Once comments are received, PS&S will work expeditiously to resolve all comments and will re-submit final bid documents to the NJIB in efforts to be granted Authorization to Advertise. A prerequisite to obtaining Authorization to Advertise from the NJIB, the NJIB requires that a construction phase services contract be in place. Therefore, in support of said requirement, PS&S has prepared this proposal for Construction Phase Services associated with the Wastewater Treatment Plant Improvement Project.

Based upon the above, PS&S is pleased to present this proposal to the Berkeley Heights Township (Township) for construction phase services whose scope of services are broken down into the following tasks:

Task 1.0 Pre-Construction Meeting

Prior to construction, PS&S will coordinate, arrange for, and chair a pre-construction meeting between the Township, PS&S, and the contractor (and subcontractors, if appropriate). As a part of the NJ Bank funding requirements, the NJDEP will require that a representative from the NJDEP/NJ Bank and the Office of Equal Employment Opportunity and Contract Assistance be present at the pre-construction conference. The pre-construction meeting will serve as the forum for the NJDEP representative to outline the financial paperwork required for the drawdown of funds and the contractor submissions that are necessary as part of the SED requirements. The pre-construction meeting will include detailed discussions for the following items:

- Execution of Owner-Contractor Agreement;
- Submission of executed bonds and insurance certificates;
- Distribution of Contract Documents;
- Submission of list of Subcontractors, list of equipment and materials, manufacturers and suppliers, Bid Breakdown (Schedule of Values), progress schedule and schedule of shop drawing submittals by the Contractor, for review and approval by PS&S;
- Designation of personnel representing the Township, the Contractor and Subcontractors and the Engineer;
- Payment Procedures;
- Submittal Procedures;
- Administrative procedures- field directives, substitutions, procedures for change orders;
- Lockout and Tagout of existing equipment;
- Emergency phone numbers;



- Contractor staging area and plan;
- Maintenance of Plant Operations- Sequence of Construction;
- Major equipment deliveries and priorities;
- Requirements and concerns of each organization present.
- Site visit with Contractor, NJDEP, Township and Engineer.
- Issue Notice to Proceed.

Prior to the meeting, PS&S will prepare and distribute the meeting agenda and will also prepare and distribute meeting minutes to all attendees.

Task 2.0 Construction Administration Phase

Our proposed construction administration services include the following:

- Provide general communication with Owner and Contractor throughout the duration of the construction regarding such issues as progress, submittal status, construction issues and their resolution;
- Provide communication and correspondence with the NJDEP;
- Provide clarification and responses to all received Request for Information (RFI) from the Contractor. Our level of effort assumes that approximately ten (10) RFIs will be received requiring written contract clarifications. RFIs and associated responses will be logged and tracked to ensure timely responses and distributed to appropriate parties;
- Interpret and clarify the contract documents;
- Prepare elementary and supplemental sketches as required to resolve actual or unforeseen field conditions encountered;
- Conduct regular monthly project progress meetings (our level of effort assumes 20 project meetings will be attended by PS&S) with contractors, subcontractors, Engineer, and Township to discuss project schedule, identify critical path items and discuss and resolve overall project issues. PS&S will distribute meeting agenda and minutes to attendees and the Township;
- Conduct job meetings with special State and Federal agencies, such as: Regulatory Agencies, NJIB, etc;.
- Conduct additional project meetings in addition to monthly progress meetings, to resolve issues encountered during construction. Our level of effort assumes an additional five (5) meetings will be conducted;
- Provide consultation and advice to the Township and Operations Staff during construction;
- Review contractor's monthly payment requests and provide recommendation for payment;
- Review, negotiate and prepare potential change orders. Our level of effort assumes up to two (2) change orders will be prepared, plus a final change order to close out the project;
- Review requests for escalation costs in accordance with the Division One (Measurement and Payment) Specifications section;
- Review of shop drawings and maintaining of a shop drawing submittal log. Our level of effort assumes approximately forty (40) submittals including product data and materials certifications will be reviewed, where a portion of several submittals, due to their complexity, will require multiple rounds of review/resubmission;
- Provide a focal point for Township's Operations staff and contractor to plan and implement equipment start-up, training, and system testing of all new equipment and systems in an orderly manner;
- PS&S will assist the Contractor to establish baselines and benchmarks for locating work;
- Perform final technical inspections and certifications, preparation of punch list items and provide final inspection and certification of the facilities prior to acceptance by the Operations Staff;



- Prepare operating instructions and manuals for new equipment and coordinate with the contractor training of personnel and assistance in operation of new equipment and systems;
- Prepare monthly progress reports;
- Evaluate substantial and final completion and issue certificates of substantial or final completion as appropriate
- Preparation and submission of NJDEP TWA for the Disk Filters.

In addition, PS&S will act as the Public Agency Compliance Office (PACO) on behalf of Berkeley Heights. As the PACO, PS&S will submit the monthly and quarterly Socially and Economically Disadvantaged (SED) reports via H2Loans. The reports will be provided to PS&S by the Contractor. PS&S will review the reports prior to upload to ensure compliance with the Contract SED Requirements. The reports become due after the preconstruction meeting. Based on this, it is assumed that PS&S will submit twenty-seven monthly reports and nine (9) quarterly reports.

PS&S will also assist Berkeley with payment preparation and submission of payment requisitions via H2Loans. It is assumed that these will be done monthly and include Contractor's and engineering invoices throughout the construction phase. PS&S assumes that we will assist Berkeley Heights with the submission of twenty-five payment requisitions throughout the construction phase.

Task 3.0 Construction Observation Phase

In accordance with N.J.A.C. 7:22 Subchapter 4 (NJAC 7:22-4.17 (a) 28.ii.), the NJIB requires full time inspection of the installation of critical process equipment and their supporting systems, within a treatment plant. Regarding the installation of the new disk filters and main influent pumping equipment, PS&S will provide **full-time** construction observation services when necessary for the entire duration of construction activities. Our proposed construction observation services include the following scope of services:

- The construction contract duration has been established for 810 calendar days or about 27 months. PS&S anticipates that the timeframe associated with shop drawing submittal and review, equipment delivery, and contractor's mobilization to be approximately twelve months where construction inspection will not be required. Therefore, a construction duration period of 15 months, specifically 330 working days, and about 1,980 hours of construction observation services (6 hours/day) will be required by a resident project engineer/representative. The project engineer/representative will perform the following in addition to services previously listed:
 - Observe the work for compliance with the Contract Documents;
 - Issue certificates of completion to the Township on completed systems;
 - Verify Contractor's pay quantities (as necessary);
 - Prepare and maintain inspection logs;
 - Resolve all field related construction issues that might arise;
 - Coordinate vendor training;
 - Witness testing and startup of equipment and systems;
 - Address contractor's questions and concerns and provide communications and coordination between the Township and the contractor.



Task 4.0 Project Closeout

Our proposed project closeout services include the following scope of services:

- Conduct a final inspection on the completed project to ensure that all construction work as defined by the Contract Documents has been satisfactorily completed;
- Ensure that all specified equipment warranties have been submitted by the contractor;
- Ensure that all outstanding punch list items have been satisfactorily completed;
- Recommend dates of substantial completion and warranty commencement;
- Review and collate the Contractor's as-built drawings and prepare record drawings of the completed project;
- Ensure that all spare parts have been delivered and received by the Operations Staff;
- Ensure that all equipment training has been provided by the contractor;
- Ensure that all Operation and Maintenance manuals have been provided by the Contractor;
- Ensure that the contractor has performed final cleaning of the work site;
- Observe initial operation of the project, or of performance tests required by the specifications;
- Advise the Township and Operations staff as to whether the replacements are meeting the project performance standards;
- PS&S will assist with two (2) loans closings (short term and long term) by reviewing the loan exhibits and providing comments to the bond counsel and the NJDEP, and completing the required loan closing documents which includes the FFATA, FSP Certification and the CBR form.

Task 5.0 Post Construction Certification and Plant Operation and Maintenance Manual Update

Post Construction Certification

The scope of services shall include, as required by the NJIB after one (1) year of operation, verification, and certification that all new systems installed under this construction project are operating in accordance with the design and performance requirements of the contract. Should deficiencies be noted in system(s) operation and performance, corrective actions shall be identified to be incorporated into the work to achieve contractual system performance.

Plant Operation and Maintenance Manual Update

PS&S will prepare an updated Filtration Process and Raw Influent Pumps Operations and Maintenance sections to be included in the Facility's existing overall Operations and Maintenance Manual. Typical sections to be included are as follows:

- Theory of Operation;
- Description of Individual Supporting Systems;
- Basis of Design for all Supporting Systems;
- Process Flow Schematics;
- Equipment Drawings;
- List of Spare Parts;
- Sequence of Operations;
- Process Control Requirements;
- Description of Automated Control Systems;
- Safety;
- Operation and Maintenance Requirements.



The updated Operations and Maintenance sections will be provided electronically and be constructed as a living document for the Township's use, reference, and training of personnel.

Task 6.0 Expenses

This proposal includes a budget for expenses anticipated during the construction phase duration, such as reproduction/printing costs and travel reimbursement. Specifically, reimbursement for reproduction of 10 sets of plans, 5 sets of specifications and various concept/discussion sketches have been budgeted during construction for internal and external use. Additionally, travel tolls and mileage reimbursement for personnel to and from the site are included herein.

Schedule:

PS&S has established the following general construction phase schedule to prepare this proposal:

- Award to Contractor:	April 2024
- Notice to Proceed:	May 2024
- Contractor's Mobilization:	March 2025
- Substantial Completion:	August 2026
- Final Completion:	September 2026
- Post Construction Certification:	September 2027

PS&S has developed our professional fee utilizing current 2023 labor rates, as approved by Berkeley Heights Township Resolution 34-2023. PS&S anticipates increases in project billing rates as appropriate during the progression of this project, schedule of which is reflected above. Due to the duration of this construction phase scope of work, PS&S has accounted for the escalated rates within the lump sum phase amounts (approximately 6% per year). If the construction duration of the project is delayed or extends beyond the anticipated final completion date of September 2026, PS&S reserves the right to submit a proposal to the Township requesting additional professional fees.

Construction Phase Services Proposal Fee

Our professional fee shall be a not-to-exceed cost, as summary below:

Task 1 Pre-Construction Meeting	\$9,090.00
Task 2 Construction Administration	\$359,905.00
Task 3 Construction Observation	\$371,151.00
Task 4 Project Closeout	\$17,244.00
Task 5 Post Construction Certification & O&M Updates	\$22,863.00
Task 6 Expenses	\$14,375.00

Total	\$794,628.00
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Liza Vianna, Township Administrator
Berkeley Heights Township Wastewater Treatment Plant Improvement Project
Construction Phase Services Proposal
29 Park Avenue, Berkeley Heights, New Jersey 07922

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We trust the above is satisfactory for your review. Please contact me at (732) 584-0371 should you have any questions or require additional information regarding our proposal.

Please acknowledge acceptance of our proposal by providing one (1) copy of your authorizing resolution to our office.

If you have any questions concerning the above, please do not hesitate to call.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

A blue ink signature of James Wancho, consisting of a stylized 'J' followed by a series of loops and a long horizontal stroke.

James Wancho, P.E.
Vice President

A brown ink signature of Harry Osborne, featuring a stylized 'H' and 'O' followed by a long horizontal line.

Harry Osborne, AIA
Executive Vice President

cc:
Richard Crane, P.E., BCEE
Richard Padgitt, P.E.