HanoverEngineering

Company Qualifications

Sand Spring Run Streambank Restoration Project
Monroe County, Pennsylvania

Proposal and Qualifications

LOCATIONS

Bethlehem Office (Corporate Headquarters)
252 Brodhead Road, Suite 100 · Bethlehem, PA 18017-8944
610.691.5644 · Fax 610.691.6968

Allentown Office
5920 Hamilton Blvd., Suite 108 · Allentown, PA 18106-8942
610.395.9222 · Fax 610.395.9262

Poconos Office
3355 Route 611, Suite 1 · Bartonsville, PA 18321-7822
570.688.9550 · Fax 570.688.9768

Lancaster-Lebanon Office
20 C Snyder Lane · Ephrata, PA 17522-9101
717.721.7444 · Fax 717.721.7447

Elizabethtown Office
48 North Market Street · Elizabethtown, PA 17022-2025
717.367.0144 · Fax 717.361.1012

Wellsboro Office
3006 Princeton Street · Wellsboro, PA 16901-7632
570.724.5326 · Fax 570.724.5386

Portersville Office
1271 Perry Highway, PO Box 218 · Portersville, PA 16051-0218
724.598.6414 · Fax 724.368.4184

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Statement of Interest

Hanover Engineering Associates, Inc. (HEA) is pleased to submit our Proposal and Statement of Qualifications for Engineering Services to the Monroe County Conservation District (MCCD) for the Sand Spring run Stream Bank restoration Project as outlined in the Request for Qualifications dated August 20, 2019. As a local engineering firm, we greatly appreciate the opportunity to provide our services to improve the quality of life in our surrounding community. Our Poconos Office located in Bartonsville, PA is proud to present this proposal and qualifications for your consideration.

Project Understanding and Observations

Based on our review of the Request for Qualifications, attendance at the Pre-Bid Site Visit on September 11, 2019, supporting information provided by (MCCD), and additional information we have gathered, we understand that correcting the sever erosion and sediment pollution along the Sand Spring Run is a high priority project. This is a situation that will continue to deteriorate unless improvements are made to restore the stream to its natural conditions and stabilize the banks and floodplain areas.

HEA will implement our experienced and capable staff to complete the necessary background research, field studies, analysis, design, and permitting to achieve the project objectives.

We understand that the site is at a location which may be difficult or inconvenient to access and will incorporate that challenge into your approach. We will also focus on conservation of the existing natural resources to the greatest extent possible, by recreating natural conditions, preserving trees and vegetation, and limiting the extent and time of earth disturbance.

We are excited at the prospect of assisting you through this process.

Scope of Services

We will complete the scope of services in accordance with the items listed in the RFQ Section 3 “Scope of Services”. To that extent, we have elaborated on specific tasks as described below:

A. Deliverable #1 - Data Collection:
November 1, 2019 – January 3, 2020

i. Site Visit and Determine Survey Limits
ii. Selection of Reference Reach
iii. FGM Stream and Topographical Survey

- Our office will utilize information gathered in previous tasks and other additional required information that is deemed necessary and available to meet the project requirements.

- A PA OneCall will be conducted to obtain information pertaining to existing utilities in the area, if any.
- We will receive and integrate existing survey and mapping information from the client, if any.
- Upon review of the above, our firm will conduct a fluvial geomorphic and topographical field survey as needed to include stream features, ground elevations, structure locations, boundaries, and any other pertinent features in the area of the project as needed to prepare the project design and drawings. Additional contour information will be prepared and integrated based on existing available LIDAR data (2-foot contours).
- All information obtained will be compiled and integrated into an AutoCAD drawing document for use in preparing the minor subdivision plans.

iv. Review Available Data and Prepare Initial Condition Plan and Report

- Hanover Engineering will develop an existing conditions plan that shows the existing conditions of the stream as it runs through the project reach, and potential proposed improvements that are to be completed. The plan will focus on stream characteristics, stream banks and conditions, and areas surrounding the stream corridor that would be utilized as part of the project (spoil sites, staging, access, etc.).

v. Prepare Wetland Delineation and Report

- Qualified scientists on our staff will delineate the boundary line(s) of wetlands and "waters of the Commonwealth/ United States" located within the project area (entire parcel) in accordance with the *Corps of Engineers Wetlands Delineation Manual* (January 1987) and subsequent guidance documents and regional supplements. All applicable field notes recorded during the site evaluation will be incorporated into a wetland evaluation report listing our findings. This report will also include field data sheets, applicable photographs, and other attachments describing the delineation methodology and showing a sketch of the wetland boundaries that were identified and flagged on-site.
- Based on our observations during the pre-bid meeting, we anticipate deminimus wetland impacts.

B. Deliverable #2 - Preliminary Design:
January 2020 – March 2020

vi. Prepare Preliminary Design Drawings and Riparian Planting Plan

- We will utilize the data and information obtained in the previous tasks to prepare the preliminary design and layout for the stream restoration improvements.
- Our initial approach will be as follows: Use only large stone along stream for stabilization up to 100-year flood elevation, unless the floodplain can be re-established, for which rock will extend only one foot above bankfull flow elevation. Construction cost will be considered as to which option should be pursued. Only large stone should be used for stabilization and fish habitat due to high gradient stream channel. Wood structures will likely not have the stability to withhold the high-flow forces.

vii. Develop Project Estimates and Cost

- We will prepare an itemized estimate of quantities and cost for the proposed improvement options. Costs will be based on our experience with similar projects and local data pertaining to material, labor, and equipment costs. We acknowledge that the project will require PA Prevailing Wage rates.

C. Deliverable #3 - Final Design and Permitting:
March 2020 – August 2020

viii. Develop Hydrology and Hydraulics Design

- Using the survey data and base mapping for the project area, we will complete a hydrologic and hydraulic (H&H) analysis. As required by applicable regulations, this task will include review of the proposed improvements/activity and elevations for stream forces during low and high flow events. Consideration will be made for the dam/weir located immediately upstream of the project area.

ix. Perform Geotechnical and Slope analysis

- We will evaluate background information regarding on-site soils to determine the best approach

x. Develop a Grading Plan

xi. Pre-application Meetings for Permitting

- We will attend a pre-application meeting as necessary to review the project scope and requirements with authorities.

xii. Prepare Erosion and Sediment Control Plan

- This task includes preparation of an erosion and sediment pollution control (ESPC) plan that includes interim soil stabilization methods to be utilized during construction and site-specific stabilization methods as required by elected County Conservation District and the Pennsylvania Department of Environmental Protection (PADEP) for minimization of sediment/soil migration from the project limit. Also, a narrative report will be prepared depicting the design of the Erosion and Sedimentation Controls for this project. Hanover Engineering Associates, Inc. will complete and coordinate the submission to the elected County Conservation District.

xiii. Prepare and submit NPDES Permit Applications

- Included in this task will be the preparation and submission of the NPDES Permit for the project. This will include a Pennsylvania Natural Diversity Inventory (PNDI) search for potential impacts on special concern resources, Act 14 Municipal Notifications, Cultural Resource Notifications, and preparation of the Erosion & Sediment Pollution Control Plan and Post Construction Stormwater Management Plan depicting the permanent Best Management Practice Facilities for the subject parcel.

- Should a potential conflict occur with the PNDI or with the Cultural Resource Notification, Hanover Engineering Associates, Inc. will assist you to resolve any potential conflicts through simple correspondences with the listed agencies for any potential impacts. *This Proposal does not include any additional field studies or research. Based on prior experience for similar projects within the region, it is highly likely that potential impacts may be easily resolved through simple correspondence since all activities proposed are extremely low impact in nature and direct conflicts are a goal for this type of project. If additional field evaluations and in-depth research become required, Hanover Engineering Associates, Inc. will contract separately with you for such services in accordance with standard rates for time and materials.*

- We have allotted for review and response to comments received the Conservation District and PA DEP. We expect that the nature of the comments will not result in substantial revisions or redesign.

xiv. Prepare and submit Section 404 / Chapter 105 Joint Permit Applications

- After reviewing the background information, we feel that the project can be permitted under General Permits rather than a Section 404/Chapter 105 Joint Permit. We anticipate the following:
  - GP-8 for temporary crossing for construction access,
  - GP-3 for all stabilization (less than 500 linear feet of stabilization), and
  - Possibly GP-1 for fish habitat structures (optional).

D. Deliverable #4 - Construction Documents:
August 2020 – September 2020
xv. Prepare Technical Specifications
xvi. Prepare Construction Drawings
xvii. Prepare Long-Term Monitoring /Operation & Maintenance Plan

Cost

After our review of the requested tasks and stated project parameters, we propose the following fee structure for this project:

A.	Deliverable #1 - Data Collection	$	11,750
B.	Deliverable #2 - Preliminary Design	$	12,000
C.	Deliverable #3 - Final Design and Permitting	$	31,000
D.	Deliverable #4 - Construction Documents	$	8,500
	Expenses	$	$1,200
PROJECT TOTAL ESTIMATE		**$**	**64,450**

- Hanover Engineering will perform the above-described Scope of Services on a time and materials basis in accordance with our current rate schedule. It is our goal to present you with a comprehensive estimate of costs which includes all expected tasks to complete the project scope in its entirety. In the event certain tasks are reduced or simplified, the final cost would be lower than our estimate as presented.
- Invoices will be prepared and issued per the RFQ or otherwise negotiated by MCCD if the project is awarded.
- Any services above those listed in the scope of services and agreed to by MCCD, would be performed only after a contract amendment is presented and approved. See attached for our current Professional Fee Schedule.
- The work will be performed in accordance with our Terms and Conditions of Professional Service Agreement, unless another form of contract agreement is presented and acceptable to both parties.

Outside Fees

The client will be responsible for all application review fees.

HANOVER ENGINEERING ASSOCIATES, INC
2019 PROFESSIONAL FEE SCHEDULE

DESCRIPTION		HOURLY RATE
PRINCIPAL		$163.75
ENGINEER		
Senior Engineer		152.50
Registered		146.25
Graduate (Nonregistered)		109.50
SENIOR PROJECT MANAGER		144.25
REGISTERED MECHANICAL ENGINEER		152.50
PIPELINE ENGINEER		155.00
CERTIFIED PLANNER		144.25
REGISTERED GEOLOGIST		127.00
SENIOR SCIENTIST		125.00
REGISTERED LANDSCAPE ARCHITECT		144.25
TRAFFIC SPECIALIST		144.25
REGISTERED SURVEYOR		120.00
ENVIRONMENTAL		
Environmental Specialist		101.00
Environmental Technician		84.50
GIS (GEOGRAPHIC INFORMATION SYSTEMS) WORK		
GIS Specialist		101.00
GIS Technician		80.00
DESIGN / DRAFTING / TECHNICAL WORK		
Senior Designer/Senior Technician		108.15
Design/Calculations/Technician		93.00
Draftsperson 1 (CAD Drafting)		82.00
Draftsperson 2/Technician 2		77.00
GROUND PENETRATING RADAR / GLOBAL POSITIONING SERVICE FIELD PERSON		101.00
SURVEY CREW		
Two-Person Crew (2 @ $86.00 each)		172.00
Three-Person Crew (3 @ $72.50 each)		217.50
One-Person Crew w/Robotic Equipment		133.00
3D Scanning w/One-Person Crew		196.75
CONSTRUCTION OBSERVER / SEWAGE OFFICER		
Highway, Heavy, Commercial, or Residential Construction		105.00
Highway, Heavy, Commercial, or Residential Construction (Senior)		111.25
Certified Sewage Enforcement Officer		105.00
Onlot Sewer Percolation Test (Pass or Fail)	Lump Sum	515.00
Observe Percolation Test	Lump Sum	419.00
SECRETARIAL / WORD PROCESSOR		46.50

1. Travel to and from the job site is chargeable time, with project mileage at $0.55 per mile.
2. Overtime is charged at 1.5 times base rate.
3. Ordinary overhead expenses are included in the above rates.
4. Extraordinary expenses required specifically for a particular project will be billed at direct cost plus 10%. Examples of these expenses include special consultants, borings, laboratory testing charges and living and travel expenses when employees are away overnight. Per Diem at IRS rates for region or charged at direct cost plus 10%.
5. A special rate of $175.00 per hour is established for formal hearings and court appearances as an expert witness for a Professional Engineer, Geologist, Surveyor, or other professional.
6. A 1.25% interest charge per month will be added to outstanding invoice balances after the initial 30-day period due. This is equivalent to a 15% per year carrying charge.
7. Hanover Engineering retains the right to stop work for clients whose bills are not paid within 30 days of invoicing.
8. Cost for plan copies is $0.55 per square foot (black & white); $2.00 per square foot (color).
9. Cost for Mylars is $1.65 per square foot (black & white); $6.00 per square foot (color).
10. Cost for photocopies is $0.25 per page (black & white); $0.55 per page (color)
11. Field equipment usage will be charged as follows: Sewage Flow Meter - $15.00/day, Traffic Counter - $55.00/day, GPS Locator - $25.00/day, RTKGPS - $22.00/hour, SUB-RTKGPS - $6.00/hour.
12. Push Camera - $10.00/hour for Televising; $15.00/hour for Televising and Locating Services.

Exceptions

As with any project of a large scale and complexity, it is difficult to accurately predict the specific requirements of certain tasks. Certain assumptions must be made when estimating those tasks which can significantly alter the cost and time of the project. In the interest of providing the best service to MCCD as possible, we offer the follow items which are not included in our scope of work but may be desired or needed once the project commences.

- Easements – We have assumed that all work will be within pre-existing PA Game Lands and will not require preparation of right-of-way or easement.
- Geotechnical Investigation – We anticipate using an assumed geotechnical design for embankments based on available soil survey data and field observations. In the event that geotechnical investigation is required such as soil bores or laboratory testing, we will provide a separate proposal for that work, or proposed to require that work during the construction phase of the project, when appropriate access and ESPC controls have been established.
- Support During Bidding and Construction – As the scope of work identified in the RFQ concludes with preparation of Technical Specifications and Drawings, we have not included any bidding or construction phase services. We would be happy to further assist MCCD during future phases of the project.
- Completion and submission of any other project permits or approvals, including but not limited to building/utility permits, floodplain permits, Natural Features Conservation Plan approvals, Township approvals, and others
- Delineation of wetlands and waterways boundaries beyond project limits
- Formal surveys or reports for endangered and threatened species
- Formal surveys or reports cultural resources (historical and archaeological)
- Coordination for site planning with any contractors, builders, or developers
- Any permit modifications required by PA DEP based on alterations to the design, planning, or timing of the project
- Any compensatory mitigation design or construction if any on-site or off-site mitigation is required
- Any mitigation monitoring, on-site or off-site

INDEX

Company Profile

Company Profile Owners

Key Personnel and Team Members

Additional Information

Professional Engineering & Consulting Services

Similar Projects Completed

Environmental Consulting Services

Stormwater Management

Land Surveying

CAD, GIS & GPS

Municipal & Community Planning Clients

Municipal & Community Planning Clients – Contact List

Company Memberships in Professional/Technical Societies

Appendix A Resumes

Appendix B Project Profiles

Hanover Engineering

COMPANY PROFILE

Hanover Engineering Associates, Inc. is a Pennsylvania Corporation formed in January 1970. Over the past 45 years, the company has grown steadily to its current staff of over 80 employees. As the company has grown, Hanover Engineering has continued to expand its service area, and has opened offices in regions as needed to support its growing clientele. Hanover Engineering currently has eight office locations in Pennsylvania. The firm's corporate headquarters is located on Brodhead Road in Hanover Township, north of Bethlehem, PA.

Over the years, Hanover Engineering has provided consulting civil engineering, structural engineering, environmental and surveying services in Pennsylvania, as well as Maryland, New Jersey and other surrounding states, through its offices located in the Lehigh Valley, Lancaster-Lebanon and Pocono areas. Over the last few years, Hanover Engineering has expanded its service area to include northern and western Pennsylvania, as well as the eastern Ohio region.

While Hanover Engineering has continued to grow and expand its services over the years, its corporate mission has remained the same – service to our clients and the community. Our goal is to provide quality designs that result in improvements to our community and our natural surroundings through engineering solutions that are sustainable, cost-effective, and environmentally responsible.

Hanover Engineering's success is a result of its commitment to quality, exceptional service, and lifelong relationships with their clients. More than 90 percent of our business volume comes from existing and returning clients – a testament to customer satisfaction. Members of the professional staff are not just Hanover Engineering employees; each one is the "client engineer." In that role, our staff members meet regularly with clients and visit the project sites to support the client, from the design inception to the point of construction completion.

As a local, employee-owned engineering firm, Hanover Engineering is proud to contribute to the quality of life in the areas and communities we serve.

All company shareholders are full-time employees of Hanover Engineering. The company's owners/officers are as follows:

Charles H. Unangst, PE, PLS, President and CEO

Jill Lipovsky Smith, PE, Vice President and COO

Brien R. Kocher, PE, Vice President and CFO

Robert J. Lynn, PE, Vice President of Municipal Engineering

Scott J. Brown, Vice President of Energy Services

J. Bradley Youst, PE, Vice President

Phillip C. Malitsch, PE

Salvatore J. Caiazzo, PE

KEY PERSONNEL AND TEAM MEMBERS

Key Personnel

Hanover Engineering has numerous staff members who are trained and available to assure the timely completion of the scope of services in accordance with the Monroe County Conservation District – Sand Spring Streambank project schedules and requirements.

Office Location

Staff from Hanover Engineering's Pocono office located at 3355 Route 611, Bartonsville, PA will be assigned the task of performing services for this project.

Primary Team Members

It is being proposed that Michael H. Muffley, PE would serve as the primary contact for the Sand Spring Streambank project. Salvatore J. Caiazzo, PE would provide support and backup representation in the event of illness, vacation or other schedule conflicts.

- **Michael H. Muffley, PE**: Mr. Muffley is a Professional Engineer licensed in Pennsylvania with 15 years of municipal and private engineering experience. He has provided municipal engineering services to East Penn Township, Lehighton Borough, Penn Forest Township, and Kidder Township in Carbon County, Jackson Township, Polk Township, Coolbaugh Township, Smithfield Sewer Authority and Paradise Township in Monroe County, and several municipal clients in the Berks County area. He is also currently the Municipal Sewer Facilities Engineer for East Penn Township and Storm Sewer Facilities Engineer for Smithfield Sewer Authority.

  Mr. Muffley has designed and managed various types of municipal and private projects including sanitary sewer collection systems; subdivision and land development; stormwater management design; culvert replacement; preparation of Erosion and Sediment Pollution Control and NPDES Permits; roadway design, rehabilitation, and Highway Occupancy Permits; culvert replacements; dam inspections, rehabilitation, and Emergency Action Plans; lake dredging; and stream and trout habitat improvements.

- **Salvatore J. Caiazzo, PE:** Mr. Caiazzo is a Professional Engineer licensed in Pennsylvania and 6 other states. He has over 15 years of private and municipal engineering experience. He has been the lead engineer on several land developments involving educational facilities, including the Reibman Administrative Building for East Stroudsburg University; Alteration and Additions to East Stroudsburg High School-South Campus; and Additions and Alterations to Smithfield Elementary School. Additionally, he has been lead engineer on numerous large scale land developments throughout the Poconos.

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KEY PERSONNEL AND TEAM MEMBERS

Mr. Caiazzo has designed and managed various types of industrial, municipal and private clients including subdivision and land development; design of sanitary sewers, water systems, and stormwater management, gas pipeline design; power plant conversion projects; bridge hydraulic and hydrologic analysis; preparation of Erosion and Sediment Pollution Control and NPDES Permits; roadway design, rehabilitation, and Highway Occupancy Permits; culvert replacements; lake dredging; and stream and trout habitat improvements.

- **Jason E. Smith, PWS**: Mr. Smith is a Senior Environmental Scientist. He has over 22 years of professional experience in water resource management as a biologist, wetland scientist, environmental planner, and limnologist (lakes). As a senior scientist, he has worked on numerous wetland projects of varying nature, lake/reservoir studies, and watershed management projects, amongst a wide variety of other environmental projects. Mr. Smith has conducted water quality monitoring, stream flow measurement, macrophyte/hydrophyte surveys, and other lake, stream, and watershed monitoring procedures. He has worked on several stormwater runoff control plans and erosion control designs for watershed management and land development projects. Mr. Smith's wetland experience as a Professional Wetland Scientist includes wetland delineation and permitting; wetland mitigation, restoration, and constructed wetland design; educational trail development; Geographic Information Systems mapping and database management and development; threatened and endangered species surveys; and environmental assessments. Mr. Smith has completed several Master Plans for trout habitat improvement, several for which he has completed design and permitting, and has managed through construction and post-construction monitoring. He has also completed several environmental education projects including development of education curricula, resource identification, and trail layout and design. Mr. Smith has also completed Open Space Plans and Master Site Plans for recreational park development.

- **Kerry T. Hanhn, PLS**: Mr. Hahn has over 31 years of experience in surveying. As Crew Chief, his duties include performing land, construction, topographic, aerial, property boundary, and floodplain surveys; completing ALTA/ACSM Land Title surveys; establishing GPS control for aerial surveys and subdivisions; providing commercial building stake out, and wetlands delineations. In addition to surveying, he also performs deed research, CAD drafting, preparation of plans and legal descriptions for recording.

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ADDITIONAL INFORMATION

Fees for Service

Hanover Engineering offers a billing structure that is unique. Many other firms invoice based strictly on the pay grade of the individual performing the work. To help minimize costs for both the municipality and the Developer, we, at times, will bill based on the task performed, not by pay grade. For example, if an engineer is in the Township for another purpose, such as a meeting, and stops by a project site to complete a needed an inspection, this time will typically be billed at the lower associated rate. Also, time is billed for minimum 15-minute (¼ hour) increments for Municipal reviews and Township projects.

Additional charges including billable mileage rate (from our closest office), overtime charges, cost for plan copies, and field equipment usage, are included and described at the bottom of our Professional Fee Schedule. Mileage may be negotiable. Survey rates are provided on this schedule as well.

A copy of our current Professional Fee Schedule is provided within this Qualifications Package. A rate increase of between 2% and 3% is anticipated for the next three (3) years.

Insurance

STATEMENT OF INSURANCE REQUIRED BY PENNSYLVANIA LAW: Hanover Engineering maintains the insurance required by Pennsylvania law. By submitting this proposal, Hanover Engineering hereby certifies that at the time of this certification, our firm does not knowingly employ or contract with any illegal alien, and that our firm has participated or attempted to participate in the Basic Pilot Program administered by the United States Department of homeland Security in order to verify that it does not employ any illegal aliens.

Hanover Engineering maintains company insurance through our insurance provider, Cincinnati Insurance Company, and Professional Liability Insurance through RLI Insurance Company. Our company's liability insurance meets or exceeds all insurance requirements listed in the Request for Proposal. Copies of insurance certificates are provided within this Qualifications Package.

Conflicts of Interest

Hanover Engineering has a policy, consistent with the American Society of Civil Engineers' *Code of Ethics*, that it will not provide Engineering or Surveying services to any private enterprises or individuals within a community that retains Hanover Engineering as their appointed Municipal Engineer.

Hanover Engineering

PROFESSIONAL ENGINEERING & CONSULTING SERVICES

Municipal Engineering and Planning
- Streets, Bridges, and Culverts
- Public Water and Sanitary Sewer Systems
- Wastewater Treatment Facilities
- Parks and Recreational Area Design
- Open Space and Recreation Plans
- MS4 Compliance and Reporting
- Watershed Management Ordinances
- Act 537 Sewage Facilities Plans
- Act 209 Traffic Impact Fee Ordinances
- Comprehensive Planning
- SALDO and Zoning Ordinances
- Capital Improvements Programming

Structural Engineering
- Steel and Concrete Structures
- Structural Analysis
- Crane Runway Evaluation, Inspection, and Analysis
- Bridge Inspection
- Rehabilitation Design
- Foundation Design
- Structural Inspection and Design for Industrial and Commercial Buildings

Mechanical Engineering
- Pipeline and Facility Engineering
- Feasibility Studies
- Budgetary Estimating
- Front End Engineering Design
- Process Flow Diagrams
- Piping and Instrumentation Diagrams
- Mechanical, Civil, and Electrical Detailed Drawings
- Hydraulic Analysis
- Project Management Services

Subdivision and Land Development
- Residential Subdivisions
- Commercial and Industrial Development
- Low Impact Development
- Development Impact Studies
- Feasibility Studies and Site Evaluation
- Regulatory Compliance Evaluations

Utility Line Design and Permitting
- Utility Line Permitting and Permit Compliance
- ESCGP and NPDES Permitting
- DEP and USACE Permitting
- Article VII Application Process
- Route Development and Final Alignment Layout
- Project Coordination/Project Management
- Horizontal Direction Drill Design
- Legal Plat Preparation
- Compressor Facilities Permitting
- Gas Well Pad Permitting
- Environmental and E&S Feature Inspections

Transportation Planning and Permitting
- Municipal Impact Fee Studies
- Traffic Impact Analyses
- Highway Occupancy Permitting
- Traffic Signal Design and Permitting
- Pedestrian Mobility Enhancements Transportation
- Capital Improvements Planning

Environmental Consulting Services
- Wetland Delineation
- DEP and USACE Permitting
- Wetland Restoration and Mitigation
- Stream Assessment, Monitoring, and Restoration
- Trout Habitation Improvements
- Lake Studies and Management
- Dam Engineering, Planning, and Permitting
- Watershed Studies
- Threatened and Endangered Species Surveys
- Rivers Conservation and Greenways Planning
- Cold Water Conservation Plans
- Pond Management
- Dredging Evaluation, Design, and Permitting
- Stormwater Basin Retrofits
- Environmental Site Assessments (Phase I & II)
- Perc Testing and Soil Probe Analysis
- Onlot Sewer System Designs
- Water Supply and Pumping Design
- Geologic Studies
- Hydrogeologic Studies
- Carbonate Geology Studies
- Soil Classification
- Sinkhole Investigation

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Hanover Engineering

PROFESSIONAL ENGINEERING & CONSULTING SERVICES *(con't)*

Stormwater Management

- Best Management Practices (BMPs) Design
- Post Construction Stormwater Management
- Stormwater Management Facility Design
- NPDES Phase II Stormwater Compliance
- Soil Investigations and Infiltration Testing
- Floodplain and Floodway Studies
- Culvert Rehabilitation/Replacement Design
- Erosion and Sediment Pollution Control Plans
- Stormwater Facility Inspection
- Act 167 Planning
- Low Impact Development

Land Surveying

- 3D Scanning
- ALTA/ACSM Land Title Surveys
- Boundary and Topographic Surveys
- Construction Stakeout
- As-Built Surveys
- Aerial Photography Ground Control
- Heavy Construction Erection Surveys
- Bathymetric Surveys (waterway bottom)
- Flood Elevation Studies
- FEMA/NFIP Flood Insurance Certifications
- Alignment Surveys for Industrial Facilities

Computer Aided Drafting (CAD), Geographic Information Systems (GIS) and Global Positioning System (GPS)

- Roadway Layout and Profiling
- Database Creation and Management
- Comprehensive Plan Mapping
- Municipal Mapping and Database Development
- Sinkhole Location and Database Development
- Water, Sewer, and Utility System Mapping
- Watershed Mapping and Database Development
- GPS Surveys
- Desktop, Mobile, and Web Geospatial Application Development

SIMILAR PROJECTS COMPLETED

Hanover Engineering's staff have completed similar projects related to Monroe County Conservation District's Sand Spring Run Streambank project, as highlighted below:

a. Tunkhannock Creek Association – Trout Habitat Improvement and Streambank Stabilization

b. Brodhead Forest and Stream Association – Trout Habitat Improvement and Streambank Stabilization

c. Henryville Flyfishers – Trout Habitat Improvement and Streambank Stabilization

d. William Thiele – Streambank Stabilization

e. Brodhead Hunting and Fishing Club – Trout Habitat Improvement

f. Skytop Lodge – Trout Habitat Improvement

g. Wildlands Conservancy – Oughoughton Creek Streambank Stabilization

h. Wildlands Conservancy – Monocacy Creek Stream Restoration

i. Wildlands Conservancy – Indian Creek Park Stream Restoration

j. Bushkill Stream Conservancy – Bushkill Creek Trout Habitat Improvement Project

k. Bushkill Township – Sobers Run Streambank Stabilization and Trout Habitat Improvement

l. Lake Wallenpaupack Watershed Management District – Mill Brook Streambank Stabilization Project

m. Lake Wallenpaupack Watershed Management District – Lake Shoreline Stabilization Project

The knowledge and experience of our Professional Engineers and supporting staff ensures a high level of technical professionalism in the services we provide.

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Hanover Engineering

ENVIRONMENTAL CONSULTING SERVICES

Hanover Engineering provides a full range of Environmental Consulting Services in Pennsylvania, Ohio and other surrounding states. Our firm's Environmental staff specializes in wetland services, lake and watershed management, stream restoration, lake and pond dredging, trout habitat improvement, Environmental Site Assessments, park and trail planning, stormwater management, and water quality studies.

Our experienced staff is thoroughly familiar with all aspects of federal, state and local regulatory processes and work regularly with agency representatives to achieve project goals, efficiently and effectively. Hanover Engineering has worked diligently to develop and maintain an excellent rapport with all regulatory agencies, which is invaluable in the regulatory and permitting process.

Environmental Consulting Services include:

- Wetland Delineation
- DEP and USACE Permitting
- Wetland Restoration and Mitigation
- Threatened and Endangered Species Surveys
- DEP Permit Compliance
- Stream Assessment, Monitoring, and Restoration
- Streambank and Shoreline Stabilization
- Trout Habitation Improvements
- Trail Planning and Design
- ESCGP-2 and NPDES Permitting
- Utility Line Permitting and Permit Compliance
- E&SPC Plans and Observation
- Route Development and Final Alignment Layout
- Gas Well Pad Permitting
- Compressor Facilities Permitting
- Core Boring Evaluations
- Environmental Inspections
- Lake Studies and Management
- Pond Management
- Dam Engineering, Planning, and Permitting
- Watershed Studies
- Dredging Evaluation, Design, and Permitting
- Environmental Site Assessments (Phase I & II)
- Geologic Studies
- Hydrogeologic Studies
- Carbonate Geology Studies
- Sinkhole Investigation
- Soil Classification
- Stormwater Basin Retrofits
- MS4 Compliance and Reports

Hanover Engineering provides civil and structural engineering, as well as surveying services in support of our environmental consulting work.

The staff at Hanover Engineering is regularly called upon to provide construction oversight for wetland restoration and mitigation projects, along with erosion and sediment pollution control plan observation and management to best ensure compliance with federal and state regulations.

Hanover Engineering works with the reviewing and permitting agencies and regularly provides services to our clients to address the necessary documentation and reporting needs throughout a project, as required by permit conditions. The experience and knowledge of our staff ensures a high level of technical professionalism in the services we provide to our clients.

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Hanover Engineering

STORMWATER MANAGEMENT

Hanover Engineering provides a full range of services in the field of Stormwater Management. Whether it is preliminary site planning, layout and design of new stormwater facilities, rehabilitation of existing stormwater facilities, construction inspection, or determining ongoing maintenance responsibilities, our highly trained staff is able to guide our clients through the ever evolving and complicated field of stormwater management.

Our staff keeps up-to-date with the latest regulations that affect the requirements of Stormwater Management, including National Pollution Discharge Elimination System, Erosion and Sedimentation Control, Act 167 Stormwater Management Planning, Municipal Separate Storm Sewer Systems, and Post Construction Stormwater Management. Hanover Engineering maintains close working relationships with local, state and federal regulatory agencies to stay on top of the continually changing regulations of Stormwater Management.

Stormwater Management Services include:

- Preliminary Site Evaluation and Planning for Stormwater Management
- Preliminary Soil Investigations and Infiltration Testing
- Wetland Delineation and Mitigation
- Act 167 Planning
- Stormwater Management Facility Design
- Erosion and Sediment Pollution Control (ESPC) Plans and Permitting
- National Pollution Discharge Elimination System (NPDES) Permitting
- Post Construction Stormwater Management (PCSM) Design
- Best Management Practices (BMPs) Design
- Stormwater Quality
- Low Impact Development
- Stormwater Management Plan Review
- Preparation of Stormwater Management Ordinances
- Municipal Separate Storm Sewer Systems (MS4)
- Culvert Rehabilitation/Replacement Design
- Storm Sewer Rehabilitation
- Floodplain and Floodway Studies
- Stream Bank Stabilization
- Stormwater Facility Inspection and Certification

Along with the extensive knowledge base, education and experience of our staff, Hanover Engineering also utilizes the most advanced CAD, GIS and hydraulic modeling software to analyze existing stormwater conditions and provide stormwater management solutions.

Hanover Engineering's experienced staff of Professional Engineers, Geologists, Wetland Scientists, Soil Scientists and support staff of Engineers-In-Training, CAD and GIS Technicians, and field personnel are able to quickly assess stormwater situations, provide stormwater management solutions and respond to our client's needs.

Hanover Engineering

LAND SURVEYING

Hanover Engineering provides a full range of services in the field of land surveying. Surveying services are provided to our municipal and private clients in support of our municipal improvement projects, and civil and structural engineering projects.

Whether in the field or in the office, our staff delivers the highest level of precision using the most advanced equipment and software including Global Positioning System (GPS) and total robotic station capabilities. GIS database and Computer Aided Drafting (CAD) integration are also used by our survey crews to provide timely and accurately prepared base plans and boundary surveys. Our firm utilizes the State Plane Coordinate System to easily incorporate field data into GIS databases and CAD files. Our firm also has 3D laser scanning capabilities.

This technology, combined with decades of field experience, allows our staff to quickly assess situations and make prompt, accurate decisions.

Specific Surveying Services include:

- Construction Stake Out
  - Earthwork
  - Utilities
  - Curbline/ADA Improvements
  - Roadways
  - Erosion & Sediment Control/Limit of Disturbance
  - Cut Sheet Preparation
- Anchor Bolt, Column Line, Foundation Layout
- Control Surveys/Benchmark Establishment
- Ground Control Survey for Aerial Mapping
- As-Built Surveys & Plan Preparation
- Deformation & Alignment Surveys
- Boundary, Retracement, Topographic Surveys
- Bathymetric (Water Depth) Surveys
- 3D Laser Scanning
- Deed & Easement Research
- ALTA/NSPS Land Title Surveys
- Boundary & Easement Plats
- Legal Descriptions
- Wetland/Watercourse Location & Mapping
- FEMA/NFIP Flood Insurance Certifications
- Flood Elevation Studies

Our firm's staff of Professional Land Surveyors has over 100 combined years of surveying experience. With the knowledge and education of our licensed Professionals, along with a support staff of experienced Party Chiefs, Surveyors-In-Training, and field personnel, Hanover Engineering is able to provide our clients with accurate and timely services for any type of surveying project, whether large or small.

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Hanover Engineering

CAD, GIS, & GPS

Hanover Engineering provides a full range of design, data collection, and drafting services, supported by our highly trained staff, to service the needs of our clients. Whether in the field or in the office, our staff utilizes the most advanced equipment and software to provide the most accurate information and efficient services possible.

Hanover Engineering can provide powerful GIS/GPS data capturing services for any size municipal or private project. Our experienced personnel use the latest CAD (Computer-Aided Design) software, ESRI (Environmental Systems Research Institute), GIS (Geographic Information System) software, and Trimble GPS (Global Positioning System) equipment to provide accurate and up-to-date information for our projects.

Hanover Engineering's CAD staff is highly diversified in various disciplines of drafting and work alongside our Engineering staff, Surveyors, and other field technicians to create highly detailed plans for our municipal and private clients. They are fully integrated into the design process and provide valuable assistance in the preparation of civil, municipal, and structural engineering plans using the latest available technology and software.

Hanover Engineering's GIS technicians work closely with the Engineering, CAD, and Environmental departments to provide detailed computer-based mapping and information for projects. Information can be obtained through existing state, county, and municipal databases, as well as data collected from the field. Using the data obtained, our GIS specialists create detailed maps, used to update database inventories and/or map areas of interest, which are shared with the project team and clients to ensure that cost-effective, informative, and timely decisions are made throughout the project.

Our GPS specialists work alongside the Surveyors, Environmental department, and Engineers on a daily basis to provide accurate reference points and field data. GPS field technicians work closely with GIS analysts in developing the raw data collected from the field into maps and information to be used on the project. GPS technicians often travel to remote, previously unmapped areas, to collect data which establish the groundwork for the development of many of our projects.

Our technical staff of CAD, GIS, and GPS employees work together as a team to provide valuable mapping, database information, and plans for each project. These mapping and drafting specialists support the project team from the start of a project to the successful completion.

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Hanover Engineering

MUNICIPAL & COMMUNITY PLANNING CLIENTS

Hanover Engineering provides engineering services within Pennsylvania for both individual municipalities on a project-by-project basis and also to municipal and public agencies as their appointed Engineer. Below is a list of current municipalities we serve as the Appointed Engineer.

IN LEHIGH COUNTY

- Emmaus Borough
- Fountain Hill Borough
- Lower Macungie Township (Conflict Engineer)
- Salisbury Township (Alternate Engineer & Alternate SEO)
- South Whitehall Township (Alternate Geotechnical Engineer & Alternate SEO)
- Upper Saucon Township

IN NORTHAMPTON COUNTY

- City of Bethlehem
- County of Northampton (Parks Department Engineer)
- East Allen Township
- First Regional Compost Authority
- Hanover Township
- Lehigh Township
- Lower Saucon Authority
- Lower Saucon Township (Including Host Municipal Inspectors)
- Plainfield Township (Wetlands/Environmental Consultant, Host Municipal Inspectors, & Alternate SEO, Alternate Engineer for the Synagro Tech. Inc. – Biosolids Project)
- Tatamy Borough

IN BERKS COUNTY

- Longswamp Township

IN BUCKS COUNTY

- Plumstead Township (Wetlands Consultant)

MUNICIPAL & COMMUNITY PLANNING CLIENTS *(con't)*

IN CARBON COUNTY

- East Penn Township (Engineer & Sewage Facilities Engineer, Building Code Official, Zoning Officer)

IN CHESTER COUNTY

- Atglen Borough (Update Stormwater Ordinance for Act 167 Compliance)
- West Grove Borough
- West Grove Borough Authority

IN DAUPHIN COUNTY

- Williamstown Borough
- Williamstown Borough Authority

IN LANCASTER COUNTY

- Adamstown Borough
- Akron Borough (Sanitary Sewer & Stormwater Engineer)
- Clay Township
- Conoy Township
- Denver Borough
- Elizabeth Township (Stormwater Management Ordinance & Feasibility Study)
- Elizabethtown Borough
- Leacock Township
- Pequea Township (Alternate Engineer, Alternate SEO, & MS4 Engineer)

IN LAWRENCE COUNTY

- Hickory Township

IN LEBANON COUNTY

- East Hanover Township
- Heidelberg Township
- Myerstown Water Authority
- Richland Borough (Completion of Annual Water Audit as required by DRBC)
- South Londonderry Township Municipal Authority (On Call Engineer)

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MUNICIPAL & COMMUNITY PLANNING CLIENTS *(con't)*

IN MERCER COUNTY

- Wolf Creek Township

IN MONROE COUNTY

- East Stroudsburg Borough (Alternate Engineer)
- Eldred Township
- Jackson Township
- Paradise Township
- Smithfield Township (Alternate Engineer)
- Smithfield Sewer Authority (Storm Sewer Facilities Engineer & Alternate Engineer)

IN TIOGA COUNTY

- Delmar Township

Hanover Engineering provides Engineering, Planning, Surveying, and Environmental services to both Municipal and private clients, but Hanover Engineering has a policy that it will not provide private enterprises or individuals with Engineering and Surveying service in a community that retains Hanover Engineering as their appointed Municipal Engineer.

Hanover Engineering also provides full soil percolation testing, soil evaluation services, and onlot Sewage Enforcement Officer services for:

- Adamstown Borough
- Coolbaugh Township
- Denver Borough
- East Allen Township
- Eldred Township
- Emmaus Borough
- Fountain Hill Borough
- Hanover Township, Northampton County
- Longswamp Township (Alternate)
- Lower Saucon Township
- Pequea Township (Alternate)
- Plainfield Township (Alternate)
- Salisbury Township (Alternate)
- Shenango Township (Alternate)
- South Whitehall Township (Alternate)
- Upper Saucon Township

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MUNICIPAL & COMMUNITY PLANNING CLIENTS
CONTACT LIST

LEHIGH COUNTY		
Emmaus Borough	Mr. Shane M. Pepe, Manager	610.965.9292
Fountain Hill Borough	Mr. Anthony Branco, Executive Administrator	610.867.0301
Lower Macungie Township (Conflict Engineer)	Mr. Bruce E. Fosselman, Manager	610.966.4343
Salisbury Township (Alt. Engr. & Alt. SEO)	Mrs. Cathy Bonaskiewich, Manager	610.797.4000
South Whitehall Township (Alt. SEO & Alt. Geotechnical Engr.)	Mrs. Renee Bickel, Manager	610.398.0401
Upper Saucon Township	Mr. Thomas F. Beil, Manager	610.282.1171
NORTHAMPTON COUNTY		
City of Bethlehem	Mr. Matthew Dorner, Chief Engineer	610.865.7051
County of Northampton (Parks Department Engineer)	Mr. Gordon T. Heller, Parks and Recreation Division	610.746.1975
East Allen Township	Ms. Deborah A. Seiple, Manager	610.262.7961
First Regional Compost Authority	Mr. William Bedics, Director of Operations	610.262.1000
Hanover Township	Mr. John J. Finnigan, Jr., Manager	610.866.1140
Lehigh Township	Ms. Alice A. Rehrig, Manager	610.767.6771
Lower Saucon Authority	Mr. William Ross, Administrator	610.317.3212
Lower Saucon Township (Including Host Municipal Inspectors)	Ms. Leslie Huhn, Manager	610.865.3291
Plainfield Township (Wetlands Consultant, Alt. SEO, Host Municipal Inspector, & Alt. Engr. for the Synagro Tech. Inc. – Biosolids Project)	Mr. Thomas Petrucci, Manager	610.759.6944
Tatamy Borough	Ms. Deanne Werkheiser, Secretary	610.252.7123

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MUNICIPAL & COMMUNITY PLANNING CLIENTS *(con't)*
CONTACT LIST

BERKS COUNTY		
Longswamp Township	Mr. Michael Sacks, Chairman, Board of Supervisors	610.682.7388
BUCKS COUNTY		
Plumstead Township (Wetlands Consultant)	Ms. Carolyn McCreary, Manager	215.766.8914
CARBON COUNTY		
East Penn Township (Engineer & Sewage Facilities Engineer Building Code Official, Zoning Officer)	Ms. Jillyan Sterling, Secretary	570.386.5735
CHESTER COUNTY		
Atglen Borough (Update Stormwater Ordinance for Act 167 Compliance)	Ms. Caren D. Andrews, Manager	610.593.6854
West Grove Borough	Mr. Greg McCummings, Manager	610.869.2792
West Grove Borough Authority	Mr. Greg McCummings, Manager	610.869.2792
DAUPHIN COUNTY		
Williamstown Borough	Mr. Dane Williard, Council President	717.647.4848
Williamstown Borough Authority	Mr. Charles Croft, Jr., Authority Manager	717.647.4848

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MUNICIPAL & COMMUNITY PLANNING CLIENTS *(con't)*
CONTACT LIST

LANCASTER COUNTY		
Adamstown Borough	Ms. Shirley (Sam) Toffy, Borough Secretary	717.484.2280
Akron Borough (Sanitary Sewer & Stormwater Engineer)	Ms. Susan Davidson, Manager/Secretary	717.859.1600
Clay Township	Mr. Bruce Leisey, Manager/Treasurer	717.733.9675
Conoy Township	Ms. Kathy Hipple, Secretary/Treasurer	717.367.4927
Denver Borough	Mr. Michael Hession, Manager	717.336.2831
Elizabeth Township (Stormwater Management Ordinance & Feasibility Study)	Ms. Loren Miller, Twp. Office Manager	717.464.2322
Elizabethtown Borough	Mrs. Roni Ryan, Manager	717.367.1700
Leacock Township	Mr. Frank E. Howe, Secretary/Treasurer	717.768.8585
Pequea Township (Alt. Engr., Alt. SEO, & MS4 Engr.)	Ms. Lori Ann Leitch, Secretary/Treasurer	717.464.2322
LAWRENCE COUNTY		
Hickory Township	Ms. Kathy Abranovich, Chair	724.658.0510
Shenango Township (Alt. SEO)	Mr. Albert Burick, Secretary/Treasurer	724.658.4460
LEBANON COUNTY		
East Hanover Township	Mr. Dennis Grubb, Secretary/Treasurer	717.865.3614
Heidelberg Township	Ms. Jennifer Snyder, Office Manager	717.949.3885
Myerstown Water Authority	Mr. Christopher Strause, Operations Manager	717.866.9301
Richland Borough (Completion of Annual Water Audit as required by DRBC)	Ms. Perri Shanaman, Secretary	717.866.5601
South Londonderry Township Municipal Authority (On Call Engineer)	Mr. Scott A. Galbraith, Public Works Director	717.838.5556

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MUNICIPAL & COMMUNITY PLANNING CLIENTS *(con't)*
CONTACT LIST

MERCER COUNTY		
Wolf Creek Township	Ms. Lorey North, Secretary	814.786.8102
MONROE COUNTY		
Coolbaugh Township	Mr. Douglas A. Hein, Business Manager	570.894.8490
East Stroudsburg Borough (Alt. Engr.)	Mr. Brian Bond, Manager	570.421.8300
Eldred Township	Ms. Mary Anne Clausen, Chairman	610.381.4252
Jackson Township	Ms. Jacqueline R. Elliott, Secretary	570.629.0153
Paradise Township	Ms. Reda Briglia, Secretary/Treasurer	570.595.9880
Smithfield Township (Alt. Engr.)	Mr. Brian E. Barrett, Chairman/Secretary	570.223.5082
Smithfield Sewer Authority (Storm Sewer Facilities Engr. & Alt. Engr.)	Ms. Terri Timko, Assistant Secretary	570.223.5082
TIOGA COUNTY		
Delmar Township	Mrs. Pamela Musser, Secretary	570.724.5482

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LIST OF COMPANY MEMBERSHIPS IN PROFESSIONAL/TECHNICAL SOCIETIES

American Concrete Institute (ACI)

American Institute of Certified Planners (AICP)

American Institute of Steel Construction (AISC)

American Planning Association (APA)

American Society of Agronomy (ASA)

American Society of Civil Engineers (ASCE)

American Society of Landscape Architects (ASLA)

American Society of Mechanical Engineers (ASME)

American Waterworks Association (AWWA)

Association for Iron and Steel Technology (AIST)

Association of State Dam Safety Officials (ASDSO)

Association of State Floodplain Managers (ASFPM)

Brodhead Watershed Association (BWA); Adopt-A-Stream Steward

Carbon Chamber and Economic Development

Chamber of Commerce - Elizabethtown

Chamber of Commerce - Lehigh Valley

Chamber of Commerce - Pocono

Chamber of Commerce - Wellsboro

Construction Specifications Institute (CSI)

Council of Landscape Architectural Registration Board (CLARB)

Crop Science Society of America (CSSA)

Eastern Pennsylvania Water Pollution Control Operators Association (EPWPCOA)

Engineers Without Borders USA (EWB-USA) – Lehigh Valley Professional Chapter

Institute of Transportation Engineers (ITE)

International Erosion Control Association (IECA)

Lehigh Valley Economic Development Corporation (LVEDC)

Marcellus Shale Coalition (MSC)

National Eagle Scout Association (NESA)

HanoverEngineering

LIST OF COMPANY MEMBERSHIPS IN PROFESSIONAL/TECHNICAL SOCIETIES *(con't)*

National Parks Conservation Association (NPCA)

National Recreation and Park Association (NRPA)

National Society of Professional Surveyors (NSPS)

Natural Trust for Historic Preservation (NTHP)

New York State Association of Professional Land Surveyors (NY-PLS)

North American Lake Management Society (NALMS)

Northeast Aquatic Plant Management Society (NEAPMS)

Northeast Organic Farming Association of New York (NOFA-NY)

PA Association of Notaries (PAN)

PA Association of Professional Soil Scientists (PAPSS)

PA Association of Sewage Enforcement Officers (PA SEO)

PA Council of Professional Geologists (PCPG)

PA Ground Water Association (PGWA)

PA Lake Management Society (PALMS)

PA Mapping and Geographic Information Consortium (PAMAGIC)

PA Municipal Authorities Association (PMAA)

PA Society of Land Surveyors (PSLS)

PA State Association of Boroughs (PSAB)

PA State Association of Township Engineers

PA State Association of Township Supervisors (PSATS)

PA Water Environment Association (PWEA)

Rails-to-Trails Conservancy (RTC)

Society of Wetland Scientists (SWS)

Soil Science Society of America (SSSA)

The Ground Water Foundation

The Society for Conservation Geographic Information Systems (SCGIS)

The Urban and Regional Information Systems Association (URISA)

Water Environment Federation (WEF)

Hanover Engineering

APPENDIX A

RESUMES

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EDUCATION

Penn State University

ADDITIONAL TRAINING

Multiple Continuing Education Courses

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer: Pennsylvania
Professional Land Surveyor: Pennsylvania

PROFESSIONAL ASSOCIATIONS

American Society of Civil Engineers
Pennsylvania Society of Land Surveyors

EXPERIENCE

Engineer – Project Manager – Hanover Engineering

Mr. Unangst has been an employee of Hanover Engineering since 1983. Throughout his time with Hanover Engineering he has provided engineering and surveying leadership throughout the company for projects across Pennsylvania and surrounding states. Mr. Unangst is the President of Hanover Engineering. He has extensive experience in commercial, industrial, and residential development and utility and roadway design projects in both the public and private sectors. As the responsible engineer, he has provided project leadership for the design and permitting process for each project, along with construction oversight and inspection, as needed to insure proper completion and conformance with local and State regulations.

Over his 34-year career at Hanover Engineering, Mr. Unangst has gained experience in representation of clients, surveying, and engineering procedures and requirements to provide the project management and oversight, as needed to successfully complete design, permitting, and construction of projects. Mr. Unangst's regular duties include:

1. Township, County and private consulting engineering services, including representation at public meetings.
2. Design, specification preparation, and project inspection for construction projects, including energy, sewer, water, stormwater, industrial, retail, and park facilities.
3. Project and client management for design of various Municipal and private utility and land development projects.
4. Field surveying and designs for boundary surveys and civil engineering projects.
5. Design and analysis of erosion and sediment pollution control facilities.
6. Design and calculations of Pennsylvania Department of Environmental Protection permitting.
7. Utility construction site work and construction management.

Examples of Specific Experience

- **Airport Center, Hanover Township, Lehigh County.** Provided engineering and client management for the design, permitting, and construction of the 501,000-square foot retail shopping center constructed on 70 acres near the intersection of Route 22 (SR 0022) and Airport Road (SR 1003). The design of the services included surveying, design of site utility improvements, obtaining required permits and approvals for land development, and preparation of as-built drawings as required by the Township for project closeout.
- **Lehigh Valley Industrial Park VII, Saucon Tract, City of Bethlehem, Northampton County.** Provided engineering and client management for the design, permitting, and construction of the 240-acre industrial and office park complex on a Brownfield site, previously occupied by the Bethlehem Steel B.O.F. Facilities. The design of the services included surveying, design of site utility

improvements, obtaining required permits and approvals for land development, and preparation of as-built drawings as required by the City for project closeout.

- **Southmont Center Land Development, Bethlehem Township, Northampton County.** Provided engineering and client management for the design, permitting, and construction of the 380,000-square foot retail shopping center constructed on 47 acres along the Route 33 Extension. The design of the services included surveying, design of site utility improvements, obtaining required permits and approvals for land development, and preparation of as-built drawings as required by the Township for project closeout.
- **Natural Gas Industry.** Provides engineering and client management for the design and permitting of natural gas gathering lines, compressor pads, and well pads involving over one thousand miles of pipelines.

Examples of Municipal Appointments

- **Upper Saucon Township, Lehigh County.** Provides engineering services for various Municipal needs, including client contact and meeting attendance, municipal reviews, preparation of ordinances, preparation of comprehensive plans and official maps, roadway reconstruction, waterway encroachment permitting, bridge replacement, and grant application completion.
- **Paradise Township, Monroe County.** Provides engineering services for various Municipal needs, including client contact and meeting attendance, municipal reviews, preparation of ordinances, preparation of comprehensive plans and official maps, roadway reconstruction, waterway encroachment permitting, bridge replacement, and grant application completion.

EDUCATION

B.S. Civil Engineering – Lafayette College, 2003

ADDITIONAL TRAINING

Hydrologic Engineering Center River Analysis System (HEC-RAS) – Villanova University

Dam Breach Analysis – American Society of Civil Engineers

Best Practices for Inspection, Maintenance, and Repairs of Small to Medium Dams – Lorman Education Services

Stormwater Management Symposium – Villanova University

Computational Methods in Stormwater Management – Penn State University

Confined Space Entry and Trench Safety Training – Susquehanna Safety Solutions/OSHA

ESCGP Permit Training – PA Department of Environmental Protection

Erosion and Sedimentation Manual Training – PA Department of Environmental Protection

Managing Floodplain Development Through the NFIP – Federal Emergency Management Agency

Various Other Continuing Education Courses

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer: Pennsylvania

Certified Floodplain Manager

PROFESSIONAL ASSOCIATIONS

American Society of Civil Engineers

Association of State Dam Safety Officials (ASDSO)

Association of State Floodplain Managers (ASFPM)

Pennsylvania Lake Management Society

Carbon Chamber and Economic Development

EXPERIENCE

Engineer – Hanover Engineering

Mr. Muffley has experience in projects involving municipal and private clients. He is experienced in using AutoCAD Civil 3D to complete low-impact land development designs for projects including design and drafting of Stormwater Management Plans, Grading Plans, road layout and profile designs, Subdivision Plans and utility designs. Mr. Muffley has designed and prepared Stormwater Management Plans and Erosion and Sediment Pollution Control Plans that include the latest stormwater management techniques and regulations. He also has experience in overseeing the construction and implementation of stormwater management, utility, roadway, and erosion and sediment pollution control designs in the field. Mr. Muffley has experience performing annual dam inspections in accordance with Pennsylvania Department of Environmental Protection (PA DEP) guidelines and has prepared plans for repair and improvements of existing dams, as well as Dam Breach Analyses and Emergency Action Plans. Mr. Muffley has prepared PA DEP permit applications for wetland and stream disturbances for road crossings, culvert replacements, and stream bank stabilization projects. He has also reviewed Site Development Plans submitted to municipal clients for compliance with Zoning and Subdivision and Land Development Ordinances. He has prepared traffic impact studies and intersection controls for residential and commercial land development.

Examples of Specific Experience

- **Sanitary Sewer Project, East Penn Township, Carbon County.** Completed the final design phase and managed the construction phase of a sanitary sewer collection system, including gravity main, low pressure force main, a pump station, and borings under two State roads, the PA Turnpike, and the Lehigh River. Assisted in development of the sanitary sewer Rates, Rules, and Regulations Ordinance. Coordinated connection notices and communication with residents connecting to the

sewer system. This project was funded by the American Recovery and Reinvestment Act of 2009, which required reporting of spending, status, and number of jobs created as a result of the project.

- **Lake Harmony Stormwater Concept Study, Kidder Township, Carbon County.** Project consisted of analysis and report of the existing hydrology and stormwater characteristics for the watershed surrounding a lake community in order to identify specific problem areas that contribute to sediment and nutrient pollution in the lake. Recommendations will be provided for projects that can be implemented to address the problem areas and help prevent further pollution of the lake.
- **Carbon County Fairgrounds Development, Lower Towamensing Township, Carbon County.** Project Manager and client consultant for the survey and subdivision of a 700 acre parcel, formerly a Superfund Site due to the historical industrial use of the property. Responsibilities include preparing land development plans for a 40-acre tract that will be used as County Fairgrounds, including field survey, Land Development Plan approval, environmental clearances, coordination with EPA remediation activities, and Highway Occupancy Permitting through PennDOT.
- **Culvert Replacement Projects, Various Municipal Clients.** Designed the replacement of stream culverts under existing Township/Borough roads. The culverts were designed using the National Streamflow Statistics and HEC-RAS software models. Also prepared the erosion control design and prepared information for submittal of the General Permit to PA DEP.
- **Pocono Creek Pedestrian Bridge, Stroud Township and Stroudsburg Borough, Monroe County.** Managed and prepared the design and permitting for a pedestrian bridge and trail system to cross the Pocono Creek in Stroud Township and Stroudsburg Borough, including FEMA Letter of Map Revision (LOMR) and Joint Permit. Construction responsibilities included project administration through the bidding and construction phases. The trail connects a Township park with Stroudsburg High School. Design included a HEC-RAS analysis of the existing stream conditions and proposed impacts of the bridge installation. The project was funded through grants from DCED and DCNR.
- **Thomas Gulick Pond Repairs, Bethlehem Township, Northampton County.** Assisted the client with identifying the regulatory requirements to repair a breached private pond in Bethlehem Township. Worked with DEP Division of Dam Safety and Northampton County Conservation District to prepare and permit an improvements plan which included breach repair, re-design and replacement of outlet structure, and shoreline stabilization.
- **Annual Dam Inspections and Emergency Action Plans.** Performed the annual dam inspections, as required by PA DEP for high hazard dams, for various municipal and private clients in Berks and Monroe Counties, including the Mountain Spring Lake Dam and Spring Lake Dam in Monroe County, Bear Creek Lake Dam in Carbon County, Bernhart Dam and Egelman Dam owned by the City of Reading, and the Stanford Avenue Detention Pond owned by the Township of Spring. Prepared Emergency Action Plans for the dams listed above, as well as various others, which included dam breach analyses and preparation of flood inundation maps.
- **Various Municipal Clients.** Assisted with the design of various public work improvement projects, including annual road improvements projects and traffic intersection upgrades. Annual road improvement projects included road surveys and evaluations with Municipal Officials, design of cost effective methods for rehabilitation and improvement of roads, preparation of project specifications, contract administration, and field observation. Oversaw the use of the cold in-place recycled base course method for rehabilitation of deteriorated local roadways. Assisted with traffic intersection upgrades including design and layout of horizontal and vertical geometry, evaluation of capacity, warrant analysis, design of lane configuration and dimensions, and signal layout. Included in these projects was the evaluation and design of storm sewer facilities, utility relocation, and right-of-way acquisition.
- **Oil & Natural Gas Industry.** Prepared ESCGP-1, ESCGP-2, and general/joint permit submissions for various pipeline and compressor station projects. Prepared Land Development Plans and site design for compressor station projects, including driveway and pad layout, grading, and stormwater analysis. Prepared highway occupancy permit submissions for utility crossings and driveways for state and local roads. Attended public and agency meetings on behalf of client.

Examples of Appointments

- **Jackson Township, Monroe County.** Currently serves as Township Engineer providing engineering services and representation at Planning Commission and Board of Supervisors meetings, as required.
- **Smithfield Township Sewer Authority, Monroe County.** Currently serves as Stormwater Facilities Engineer providing engineering services and representation at Authority meetings, as required.

EDUCATION

B.S. Environmental Resource Management – Pennsylvania State University, 1993. Technical Focus – Water Resource Management

ADDITIONAL TRAINING

Advanced Wetland Delineation – Rutgers University

Constructed Wetland Design – A Handbook of Constructed Wetlands – United States Department of Agriculture – Natural Resource Conservation Service, Environmental Protection Agency – Region 3, Pennsylvania Department of Environmental Protection

Vegetation Sampling Methods for Wetlands – Rutgers University

Threatened and Endangered Species – Rutgers University

Wetland Delineation Series – Vegetation Identification – Rutgers University

An Introduction to Stream Processes, Assessment, and Restoration, Ecosystem Recovery Institute

Designing Stormwater Best Management Practices Using the Pennsylvania Handbook of BMPs for Developing Areas – Villanova University

Soil Bioengineering for Streambank, Shoreline, and Slope Stabilization – Rutgers University

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual – Pennsylvania Association of Professional Soil Scientists

PROFESSIONAL REGISTRATIONS

Professional Wetland Scientist: Society of Wetland Scientists

Boating Safety Certification: United States Coast Guard

PROFESSIONAL ASSOCIATIONS

Bushkill Township, Northampton County, Supervisor

Bushkill Township, Northampton County, Environmental Advisory Council, Chairman/Liaison to Board of Supervisors

Nazareth Area Council of Governments, Representative (Bushkill Township)

Pennsylvania Lake Management Society, President (2000-01, 2006-07), Eastern Regional Director (2001-05)

Northeast Aquatic Plant Management Society, Board of Directors (2002-05)

North American Lake Management Society, Education Committee

Society of Wetland Scientists – Mid-Atlantic Chapter, Past-President

Warren County Community College – Ecotourism Technical Advisory Committee

Trout Unlimited – Forks of the Delaware Chapter (2006 Pennsylvania Council – Outstanding Professional Conservationist Award)

EXPERIENCE

Senior Scientist/Project Manager – Hanover Engineering

Jason Smith has over 22 years of professional experience in water resource management as a biologist, wetland scientist, environmental planner, and limnologist (lakes). As a senior scientist, he has worked on numerous wetland projects of varying nature, lake/reservoir studies, and watershed management projects, amongst a wide variety of other environmental projects. Mr. Smith has conducted water quality monitoring, stream flow measurement, macrophyte/hydrophyte surveys, and other lake, stream, and watershed monitoring procedures. He has worked on several stormwater runoff control plans and erosion control designs for watershed management and land development projects. Mr. Smith's wetland experience as a Professional Wetland Scientist includes wetland delineation and permitting; wetland mitigation, restoration, and constructed wetland design; educational trail development; Geographic Information Systems mapping and database management and development; threatened and endangered species surveys; and

environmental assessments. Mr. Smith has completed several Master Plans for trout habitat improvement, several for which he has completed design and permitting, and has managed through construction and post-construction monitoring. He has also completed several environmental education projects including development of education curricula, resource identification, and trail layout and design. Mr. Smith has also completed Open Space Plans and Master Site Plans for recreational park development.

Examples of Specific Experience

- **Wetlands**. As a Professional Wetland Scientist, Mr. Smith has accurately delineated wetlands on over 3,000 acres in Pennsylvania and New Jersey. Many of the delineated sites, including a 407-acre site, where over 500 wetland flags were established to define the wetland boundaries, were inspected and approved by the United States Army Corps of Engineers during the Jurisdictional Determination process. As a project manager, Mr. Smith has prepared complete wetland mitigation and restoration plans for numerous sites, including grading plans, planting plans, and monitoring programs for projects in Pennsylvania and the Adirondack Region of New York. Mr. Smith has also prepared plans for constructed wetlands to treat urban and agricultural stormwater runoff in northeastern Indiana and eastern Pennsylvania, including a large retrofit project with Wal-Mart to convert “dry detention basins” into “wet-bottom basins” during the construction phase. As a requirement for wetland mitigation projects, Mr. Smith has prepared numerous wetland mitigation monitoring reports which have all been accepted by the Pennsylvania and New Jersey Departments of Environmental Protection. Mr. Smith has had a 100% success rate in securing wetland, stream encroachment, and other related permits in Pennsylvania and New Jersey. Threatened and endangered species surveys and reports for numerous listed plant and animal species, including the Federally listed bog turtle, have been completed for many permitting projects.
- **Environmental Planning**. Mr. Smith has experience in environmental planning from completing several reviews of municipal ordinances and regional plans for several watershed management projects. Mr. Smith has worked with several Townships in eastern Pennsylvania to review their ordinances and to make appropriate recommendations regarding environmental planning for resource conservation and protection. This process includes a detailed audit of all existing ordinances and development of a comprehensive list of ordinance and regulation deficiencies, primarily from a watershed and water quality protection standpoint. Regional plans, environmental studies, and other pertinent information were also evaluated in this process, and the existing watershed protection initiatives for each Township were summarized. Mr. Smith also serves as the Wetland Consultant for Plumstead Township, Bucks County, Pennsylvania, which entails evaluating sites under review by the Township for proposed land development for potential wetland and waterway impacts, as well as other potential environmental issues. Additionally, Mr. Smith has been involved with the development and implementation of Open Space Plans, including securing conservation easements and land acquisitions. Mr. Smith has worked extensively on Open Space preservation and woodlands protection in Bushkill Township, Northampton County, Pennsylvania, including innovative protection of great than five (5) square miles of privately owned woodlands utilizing the Township’s Official Map. Mr. Smith has since assisted the Pennsylvania Land Trust Association with the development of a statewide publication that explains the use of and potential for the Official Map as an environmental protection and preservation tool. Mr. Smith has also worked with the Blooming Grove Hunting & Fishing Club to evaluate the conservation priorities for several riparian areas along the Blooming Grove Creek and its tributaries.
- **Stream Restoration and Trout Habitat Improvement**. Mr. Smith has developed Master Plans for stream restoration and trout habitat improvement projects on the Paradise Creek, Brodhead Creek, Wagner Run, and the Upper Tunkhannock Creek for the Henryville Flyfishers, Brodhead Forest and Stream Association, Pocono Lake Preserve, and the Tunkhannock Creek Association. Mr. Smith also designed numerous stream restoration projects for the Bushkill Stream Conservancy, the Henryville Conservation Club, Inc. (Henryville Flyfishers), and the Pocono Lake Preserve, all of which were successfully implemented. All plans involved the assessment of existing and reference conditions, followed by detailed design and permitting for the proposed instream restoration techniques. Mr. Smith assisted with construction observation and supervision to assist with general project logistics and to ensure successful implementation.
- **Lake and Watershed Management**. Mr. Smith has a broad background in freshwater biology, chemistry, and aquatic biology. His field monitoring experience includes bathymetric and macrophyte surveys, fishery habitat evaluation, lake and stream water quality monitoring, streamflow

measurement, and collection and identification of phytoplankton, zooplankton, aquatic plants, and benthic macro-invertebrates. Mr. Smith has managed several lake and reservoir studies and Phase I Watershed Assessment projects, which involve intensive water quality monitoring and watershed investigations. Mr. Smith has installed, operated, and maintained numerous automated water monitoring stations to collect real-time water quality and quantity data, and he has collected and analyzed all required data and developed detailed management reports tailored for the study areas. He has worked on and developed several Lake and Watershed Management Plans for projects in New Jersey and Pennsylvania. He has also designed and managed several Phase II projects to design, permit, and implement recommendations of these Plans, several of which were within the Lake Wallenpaupack Watershed in northeastern Pennsylvania. Mr. Smith has also prepared plans and permits for restoration projects, including numerous dredging projects, at several other lakes and reservoirs including Strawbridge Lake (NJ), Lake Surprise (NJ), Deep Creek Lake (PA), Pocono Lake (PA), and Shipshewana Lake (IN). Mr. Smith has also completed numerous pond restoration projects, including design and permitting for dredging, shoreline stabilization, and habitat improvements.

- **Stormwater Management**. Mr. Smith has completed numerous stormwater management plans for large land development projects within the Delaware River Watershed. These plans were developed to determine pre- and post- nonpoint source pollutant (NPS) discharges, the goal for which was to determine compliance with regulations and to determine recommendations for correcting identified problems. Solutions included the use of several innovative and conventional Best Management Practices (BMPs) to reduce the nonpoint source pollutants, as well as to better control water quantity leaving the development areas. Mr. Smith has also completed several “retrofit” stormwater management designs in the Lake Wallenpaupack Watershed to correct severe stormwater runoff problems in large subdivisions which were approved and constructed prior to stormwater management regulations. Mr. Smith provided consulting for stormwater management projects for the Bushkill Stream Conservancy and the Tobyhanna Creek Tunkhannock Creek Watershed Association for approximately 13 years, and the Martins-Jacoby Watershed Association for approximately 6 years.
- **Shoreline, Streambank, and Bank Stabilization Projects**. Mr. Smith has completed shoreline, streambank, and bank stabilization designs for the Lake Wallenpaupack Watershed Management District, the East Stroudsburg Area School District, Montgomery County, the Bucks Conservation District, Pocono Lake Preserve, Henryville Flyfishers, Pennsylvania Department of Conservation and Natural Resources, and many other clients. He has combined structural engineering techniques with innovative bioengineering techniques to produce sound and lasting functional designs to create aesthetically pleasing and structurally sound stabilization projects which also restore and provide wildlife habitat. Notable streambank stabilization and stream restoration projects include Sambo Creek (East Stroudsburg, PA), Teedyuskung Creek (Glen Eyre, PA), Mill Brook (Greentown, PA), Saucon Creek (Hellertown, PA), Brodhead Creek (Henryville, PA), Paradise Creek (Henryville, PA), Bushkill Creek (Nazareth, PA), an unnamed tributary to East Branch Monocacy Creek (Nazareth, PA), Sobers Run (Nazareth, PA), Wagner Run (Pocono Creek, PA), Upper Tunkhannock Creek (Pocono Lake, PA), Upper Tunkhannock Creek (Pocono Pines, PA), East Branch Perkiomen Creek (Sellersville, PA), and Leavitt Branch (Skytop, PA).

Examples of Appointments

- **Plumstead Township, Bucks County.** Appointed as Wetland Consultant for the Township from 2006 until the present.
- **Plainfield Township, Northampton County.** Appointed as Wetland Consultant for the Township from 2016 until the present.

EDUCATION

B.A. History – Gettysburg College, 1983

ADDITIONAL TRAINING

Paralegal Certification – American Institute for Paralegal Studies, 1987
German Language Certificate – Klausenhof Academy, 1983

PROFESSIONAL REGISTRATIONS

Professional Land Surveyor: Pennsylvania

PROFESSIONAL ASSOCIATIONS

Pennsylvania Society of Land Surveyors, Lehigh Valley Chapter Board Member
National Society of Professional Surveyors

EXPERIENCE

Registered Land Surveyor – Project Manager – Hanover Engineering

Mr. Hahn has over 31 years of experience in surveying. As Crew Chief, his duties include performing land, construction, topographic, aerial, property boundary, and floodplain surveys; completing ALTA/ACSM Land Title surveys; establishing GPS control for aerial surveys and subdivisions; providing commercial building stake out, and wetlands delineations. In addition to surveying, he also performs deed research, CAD drafting, preparation of plans and legal descriptions for recording.

Examples of Specific Experience

- **Structural Surveys.** Provides surveying services for clients at various industrial manufacturing plants and commercial developments, including Severstal Sparrows Point, LLC (former Bethlehem Steel Facility), ArcelorMittal Steel, Pfizer, Burron, Lehigh Heavy Forge, Lehigh Valley International Airport, and Moravian Hall Square.
- **Municipal and Private Construction Surveys.** Provides surveying services for various municipal and private clients for new residential, municipal, and structural projects, including Lehigh Valley Industrial Park, Inc., Sanofi-Pasteur, Irwin & Leighton, PPL, UGI Utilities, Northstar Construction, Shane Patrick, and Warfel Construction, as well as Hanover Township, Moore Township, Allen Township, and East Allen Township.
- **Property Surveys.** Provides survey services for the establishment and documentation of land tracts of varying size and type from single-family residences to tracts of over 1,000 acres for the Nature Conservancy, Henryville Flyfishers Club, and Lehigh and Northampton Counties.
- **Natural Gas Industry.** Performs private property, topographical, and GPS surveys, and deed and plan research services in establishing location and construction of natural gas lines.
- **Surveying Management.** Experienced in measurement procedures and practices using total stations, automatic levels, global positioning systems, and electronic data collection. Functions in all aspects of a field crew, working as a rod man, instrument man, and crew chief.
- **Cadastral Surveying.** Experienced in boundary location procedures and methods of property ownership and conveyance.
- **Utility Design and Stake Out.** Experienced with the stake out of public utilities and improvements including stormwater, sanitary sewer, waterline, roads, and curbs. Routinely performs calculations associated with the installation of utilities, from the initial layout to the creation of cut sheets for contractor use.
- **Topographic and As-built Surveying.** Experienced in the location of physical features and topography used in the generation of existing condition and As-built Plans.
- **Building Construction Stake Out.** Experienced in the calculations and field methods of building construction stake out.
- **Drafting.** Experienced with the use of AutoCAD and traditional drafting methods for the creation of plans.

EDUCATION

B.A. Geography – Environmental Science – Kutztown University, 2008

ADDITIONAL TRAINING

ESRI Web Course – Python for Everyone

ESRI Seminar – ArcGIS Online Subscriptions: Mapping and GIS for Organizations

ESRI Seminar – Getting started with ArcGIS Viewer for Flex

ESRI Seminar – Introduction to ArcGIS Viewer for Silverlight

ESRI Seminar – Visualizing and Analyzing Imagery with ArcGIS 10.0

ESRI Workshop – Introduction to Editing and Maintaining Parcels

ESRI Workshop – Introduction to ArcGIS Online

ESRI Web Course – Planning a Cartography Project

EXPERIENCE

GIS Specialist – Hanover Engineering

In his position at Hanover Engineering, Mr. Amey's responsibilities include overseeing projects, gathering and processing, analyzing, editing and archiving spatial data. He has experience incorporating GIS into projects that are not inherently geospatial by utilizing database management capabilities to provide fresh solutions. Mr. Amey's experience also includes detailed knowledge of Global Navigation Satellite Systems (GNSS), building Online GIS applications and services, natural gas pipeline route development, and wetland/stream delineations.

Examples of Specific Experience

- **Geographic Information Science.** Detailed knowledge of ESRI's product suite, as well as mobile GIS, AutoCAD, Adobe Photoshop, and GPS Pathfinder. Knowledgeable and experienced with advanced cartographic design, geostatistical analysis, spatial and 3D analyst, digitizing, georeferencing, coordinate systems, versioning, ArcSDE geodatabase, mobile, desktop and web geospatial application development, data interoperability, raster and vector data manipulation, ModelBuilder and automation processes, remote sensing, photogrammetrics and aerial classification.
- **Cartographic Design.** Intuitive understanding of the cartographic process from gathering, evaluating and processing various data sources to the intellectual and graphical design of the map. In-depth knowledge and understanding of the user's requirements, while keeping in mind the good design principles of simplicity, legibility, and composition.
- **Global Navigation Satellite System.** Familiar with various models of GNSS equipment and very knowledgeable of the correct application of each. Familiar with differential correction procedures for both GPS and GLONASS technology, as well as real-time corrections in the field. Extensive knowledge of the different GNSS collection software options including Trimble's Terrasync, Terraflex and ESRI's ArcPad software and experienced with incorporating GNSS collection capabilities into smartphone and tablet mobile applications.
- **Natural Gas Pipeline Route Development.** Experienced with routing natural gas pipelines and incorporating his knowledge of GIS, GNSS and environmental science, in routing decisions both during the initial desktop layout, as well as the in-field route walk-through. Familiar with coordinating efforts between engineers, land agents, environmental scientists, and survey crews to ensure projects are completed on time and within budget.
- **Web-Based GIS Application Design.** Well versed in the latest technologies and tools used to design full featured GIS applications. Designed applications for watershed conservancies, municipalities, natural gas pipeline industry, and for internal company use. These applications allow users to view and interact with GIS data in a more controlled, friendly and easy to use environment. Continually expanding his knowledge base to learn new coding languages and techniques to develop these applications.

EDUCATION

Associate Degree in Specialized Technology – Lincoln Technical Institute, 2005

Mechanical Drafting Design and CAD Technology – Lincoln Technical Institute, 2005

ADDITIONAL TRAINING

3D Modeling

AutoCAD, AutoCAD Civil 3D, AutoCAD Auto Turn, AutoCAD M-Color

DWG True View

Geometric Tolerances

Kinematics

Statics

Strength of Materials

Synergis Network File Manager

Technical Communication

Technical Mathematics

EXPERIENCE

Designer/Technician – Hanover Engineering

Mr. Anglada has over 14 years of experience providing drafting and engineering support for residential subdivisions and land developments. His duties include preparation of plans for utility layout design, stormwater design, roadway and parking lot design, landscaping and lighting design, PennDOT highway occupancy permits, erosion and sediment pollution control, and post construction stormwater management.

Mr. Anglada also assists with the preparation of property plats, as-built plans, color presentation plans, and truck turning exhibits.

Examples of Specific Experience

- **Lake Harmony Watershed & Restoration Project, Kidder Township, Carbon County.** Prepared Sediment Accumulation Over Time Plans and cross sections.
- **Sanitary As-Built Executive Parkway, Upper Saucon Township, Lehigh County.** Prepared as-built plans.
- **Jack Williams Tire & Auto Service Center, Chestnuthill Township, Monroe County.** Prepared land development plans, PennDOT Highway Occupancy Permit Plans, and Right-of-Way Permit Plans.
- **Tobyhanna Army Depot, Coolbaugh Township, Monroe County.** Prepared Grading and Utility and Erosion and Sediment Pollution Control Plans for building repair and renovation.
- **Mt. Nebo Apartments, Middle Smithfield Township, Monroe County.** Prepared land development plans, Erosion and Sediment Pollution Control Plans, and Post Construction Stormwater Management Plans.
- **Pocono Lake Preserve Main Camp Site, Tobyhanna Township, Monroe County.** Prepared color exhibits/presentation plans for various sites and parking lot expansions.
- **3100 Emrick L.P., Bethlehem Township, Northampton County.** Prepared land development plans and as-built plans for a three-story medical office building.
- **Country Meadows Retirement Community, Forks Township, Northampton County.** Prepared land development plans for a continuing care facility.
- **Follet Corporation, Forks Township, Northampton County.** Prepared Site, Grading, and Erosion and Sedimentation Pollution Control Plans for a parking lot expansion.
- **Natural Gas Industry.** Prepared ESCGP-1 and ESCGP-2 Permit Plans, construction plans, and horizontal directional drill plans and profiles for natural gas transmission lines.

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APPENDIX B

PROJECT PROFILES

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Upper Tunkhannock Creek – Trout Habitat Improvement

Environmental Consulting Services

In 2011, Hanover Engineering Associates was contracted by the Tunkhannock Creek Association to develop a Master Plan for Trout Habitat Improvement along the Upper Tunkhannock Creek in Tobyhanna Township, Monroe County, Pennsylvania. As part of the project, Hanover Engineering completed the design and permitting required to install 33 new trout habitat improvement structures throughout the Association's stretch of stream.

New structures included rock vanes, rock cross vanes, stone deflectors, log-face stone deflectors, stone deflector with single log, J-hook rock vanes, one log deflector, one channel block, and one bank cover crib, as well as random boulder placement.

The combination of these improvements with the normal high stream flow volumes and velocities in the Upper Tunkhannock Creek creates pools and pocket water, as well as promotes development and restoration of riffle zones, to provide improved trout habitat conditions within the vicinity of the new structures.

Careful planning and design allowed for streamlined permitting and minimized impacts to the stream during installation. The entire project was approved under Statewide General Permit No. 1 – Fish Habitat Improvement.

PROJECT DETAILS

- **Location**
  Tobyhanna Township, Monroe County
- **Client**
  Tunkhannock Creek Association
- **Completion Date**
  March 2012
- **Total Project Cost**
  $163,500

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Brodhead Forest & Stream – Trout Habitat Improvement

Environmental Consulting Services

Hanover Engineering developed a Master Plan for Trout Habitat Improvement along Paradise Creek in Monroe County for the Brodhead Forest and Stream Association. During plan development, Hanover Engineering completed the design and permitting required to install five new trout habitat improvement structures at one of the priority locations identified by the Association.

The new structures were then constructed using large boulders needed to withstand the high flow velocities of Paradise Creek, and included one Rock Vane, one Rock Cross Vane, two Stone Deflectors, and Random Boulder Placement.

High streamflow volumes and velocities in Paradise Creek, following installation, have already begun to improve trout habitat conditions within the vicinity of the new structures.

Careful planning and design allowed for streamlined permitting and minimized impacts to the stream for installation. The entire project was completed under Statewide General Permit No. 1 – Fish Habitat Improvement.

PROJECT DETAILS

- **Location**
  Stroud Township, Monroe County
- **Client**
  Brodhead Forest & Stream Association
- **Completion Date**
  September 2010
- **Total Project Cost**
  $26,500

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Williams Transco – Riparian Corridor Mitigation

Environmental Consulting Services

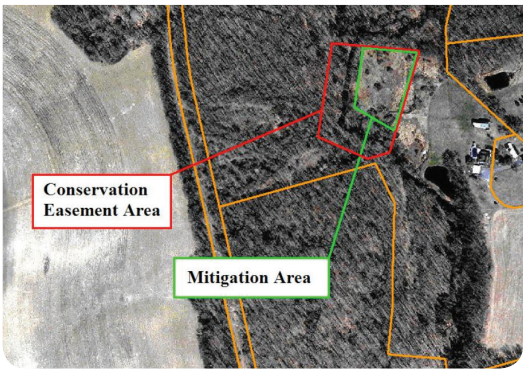
Hanover Engineering provided wetland evaluation, land surveying, design, and monitoring services for compensatory mitigation for stream and riparian corridor impacts to Sobers Run, Little Bushkill Creek, and the Aquashicola Creek, including their riparian corridors and associated wetlands, as part of the Sentinel Expansion project located in Ross Township, Monroe County and in Bushkill and Plainfield Townships, Northampton County, Pennsylvania. The primary goals of the project were to mitigate for impacts to water quality and wildlife habitat at several nearby locations by creating a single large contiguous area of wetland and upland riparian habitat along Sobers Run. The Castone Property was selected as a viable site, having nearly four acres of impacted riparian corridor along Sobers Run associated with old pastureland.

Hanover Engineering developed and prepared all materials required for a deed restriction, delineated all on-site wetlands and watercourse boundaries, and then completed the professional land surveying and filing with the Northampton County Courthouse.

A planting plan for the mitigation area was developed using a combination of 175 native shrubs and 375 native trees to reestablish forested riparian conditions in wetland and upland areas and to benefit local wildlife throughout the 3.79 acre mitigation site. Infill by volunteer shrubs and trees from local seed sources figured into planning for long-term coverage. The site was treated regularly to control non-native plant species and reduce herbivore damage. Hanover Engineering completed all required monitoring for the site to document conditions and to ensure proper development.

PROJECT DETAILS

- **Location**
  Bushkill Township, Northampton County
- **Client**
  Evergreen Environmental
- **Completion Date**
  2008
- **Total Project Cost**
  $19,500 (engineering services)



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INSTRUCTIONS FOR NONCOLLUSION AFFIDAVIT

1. This Non-collusion Affidavit is material to any contract awarded pursuant to this proposal. According to §4507 of the Commonwealth Procurement Code, 62 Pa.C.S. §4507, governmental agencies may require Non-collusion Affidavits to be submitted with proposals.

2. This Non-collusion Affidavit must be executed by the member, officer, or employee of the Proposer who makes the final decision on prices and the amount quoted in the proposal.

3. Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of proposals are unlawful and may be subject to criminal prosecution. The person who signs the affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the Proposer with responsibilities for the preparation, approval or submission of the proposal.

4. In the case of a proposal submitted by a joint venture, each party to the venture must be identified in the proposal documents and an affidavit must be submitted separately on behalf of each party to the joint venture.

5. The term "complementary proposal" as used in the affidavit has the meaning commonly associated with that term in the proposal process, and includes the knowing submission of proposals higher than the proposal of another firm, any intentionally high or noncompetitive proposal, and any other form of proposal submitted for the purpose of giving a false appearance of competition.

6. Failure to submit a Non-collusion affidavit with the Proposal in compliance with these instructions may result in disqualification of the proposal.

NONCOLLUSION AFFIDAVIT

MCCD Project Name:_____

State of Pennsylvania :
County of Northampton :

I state that I am the CFO, VP (Title) of Hanover Engineering, Associates, Inc. (Name of Firm) and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the prices(s) and the amount of this proposal.

I state that:

1. The price(s) and amount of this proposal have been arrived at independently and without consultation, communication or agreement with any other contractor, proposer, or potential proposer.

2. Neither the price(s) nor the amount of this proposal, and neither the approximate price(s) nor approximate amount of this proposal, have been disclosed to any other firm or person who is a proposer or potential proposer, and they will not be disclosed before the proposal submission date.

3. No attempt has been made or will be made to induce any firm or person to refrain from proposing on this contract, or to submit a proposal higher than this proposal, or to submit any intentionally high or noncompetitive proposal or other form of complementary proposal.

4. The proposal of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive proposal.

5. Hanover Engineering, Associates, Inc. (Name of Firm) its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by state or federal law in any jurisdiction, involving conspiracy or collusion with respect to proposing and/or bidding on any public contract, except as follows:

_____

I state that Hanover Engineering, Associates, Inc. (Name of Firm) understands and acknowledges that the above representations are material and important, and will be relied upon by the Monroe County Conservation District (MCCD) in awarding the contract(s) for which this proposal is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the MCCD of the true facts relating to the submission of this proposal.

_____
(Signature)

Brien Kocher
(Signatory's Printed Name)

CFO, VP
(Signatory's Title)

SWORN TO AND SUBSCRIBED BEFORE ME THIS 23rd DAY OF September, 2019.

Christie Guinan
Notary Public

My Commission Expires
December 22, 2019

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Christine Guinan, Notary Public
Hanover Twp., Northampton County
My Commission Expires Dec. 22, 2019
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

NOTARIAL SEAL
Christine Guinan, Notary Public
Hanover Twp., Northampton County
My Commission Expires Dec. 22, 2019
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

RESPONDENT INFORMATION FORM
STATEMENT OF BIDDER QUALIFICATIONS

1. **Company name, bidder email, mail address and all branch office addresses.**

Hanover Engineering Associates, Inc. - mmuffley@hanovereng.com

252 Brodhead Road, Suite 100, Bethlehem, PA 18017 - Corporate Office

3355 Route 611, Suite 1, Bartonsville, PA 18321 - Pocono Office, 5920 Hamiltion Boulevard, Suite 108, Allentown, PA 18106 - Allentown Office

20 C Snyder Lane, Ephrata, PA 17522 - Lancaster Office, 3006 Princeton Street, Wellsboro, PA 16901 - Wellsboro Office

2. **Type of business entity (corporation, non-for-profit, proprietorship, etc.) and Federal Tax Identification Number.**

S Corporation

23 1724466

3. **If company is a corporation, state the date and place of incorporation and give a brief history of company's operations. Please include if your firm is affiliated with Minority, Women, Small or Disadvantaged Business Enterprises.**

PA - January 1970

Hanover Engineering (HEA) has provided consulting civil engineering, structural engineering, environmental

and surveying services in Pennsylvania, as well as Maryland, New Jersey and other surrounding states, through its

offices located in the Lehigh Valley, Lancaster-Lebanon and Pocono areas.

While Hanover Engineering has continued to grow and expand its services over the years, its corporate mission has remained the same – service to our clients and the community. Our goal is to provide quality designs that result in improvements to our community and our natural surroundings through engineering solutions that are sustainable, cost-effective, and environmentally responsible.

4. **List directors, officers, owners, managerial employees or partners, and identify the ownership interest of each.**

Charles Unangst, President - Brien Kocher, VP, CFO

Jill Smith, VP, COO - Robert Lynn, VP, CFO

Scott Brown, VP of Energy Services

Sal Caiazzo, Phil Malitsch, Brad Youst

5. **Total number of employees and total number of licensed professionals (include an organizational chart, if available).**

73 Employees

See attached chart

6. **Identify locations from which services will be performed.**

Poconos Office, Bartonsville

Bethlehem Office (as needed for additional expertise and support)

7. **Identify or attach license or certificates to perform the work in each jurisdiction where the work will take place.**

Michael Muffley, PE Pennsylvania

Jason Smith, PWS

Kerry Hahn, PLS Pennsylvania

Copies of license certificaitons available upon request

8. **Has any director, officer, owner or managerial employee had any professional license suspended or revoked? If yes, list the name of the individual, license held and disposition of the issue.**

No

9. **Has any director, officer, owner or managerial employee been convicted or the subject of criminal indictment during the past five (5) years? If yes, summarize the matter and its disposition.**

No

10. **Is the company currently involved in bankruptcy or similar proceedings? If yes, explain.**

No

11. **During the past three (3) years, has company been found guilty of any OSHA, EPA or State environmental or safety violation? If yes, describe the nature of the violation and steps taken to remediate the condition(s).**

No

12. **During the past five (5) years, has company been charged with retaliation or discrimination against any employee on the basis of race, ethnicity, national origin, disability, gender or other violation of equal employment opportunities? If yes, summarize each claim and its disposition.**

No

13. **During the past five (5) years, has company been named as a party in any action involving a claim for personal injury or wrongful death arising from performance of work on any project? If yes, summarize the claim and its disposition.**

No

14. During the past five (5) years, has company been the subject of an investigation or proceedings before the city, state or federal Departments of Labor for any alleged violation of any wage or labor law? If yes, summarize each such instance and its disposition.

No

15. Has the company ever been terminated from a project by the Owner? If yes, list the projects on which the bidder was terminated, the nature of the termination (e.g., convenience, suspension, for cause), and the date of said termination.

No

16. List the technical and professional staff to be employed on this project; describe general and specific specialties/expertise and overall resources; provide title, role and work resume of each team member, including principals.

Charles Unangst, PE/PLS-Principal

Michael Muffley, PE-Project Engineer/Manager

Jason Smith, PWS-Project Scientist, Kerry Hahn, PLS-Surveyor

Michael Amey-GIS Specialist, Christopher Anglada-CAD Designer

17. Indicate your understanding of the scope of work involved in the project and potential problems to be addressed. Summarize how you will respond to specific phases of the work, identifying any innovative or creative design approaches or strategies that the company proposes.

We have read the Request for Qualifications and have attended the on-site Pre-Bid Meeting. We are familiar with the entire site and the challenges posed by access, waterway crossing and topography. Past and ongoing erosion is caused by toe erosion and mass failures. Banks are currently at or near the angle of reposed and must be cut back in order to properly stabilize the stream channel to correct toe erosion issues and prevent mass failures. Soils must be removed in benches to accomplish this goal and hard armor stabilization with flow control structures in the channel up to bankfull flow, and possibly 100-year flood, elevation must be installed. Soil disposal should be accomplished at adjacent old borrow areas which were observed to be wooded upland areas.

18. Describe the nature and level of communications company will maintain with MCCD staff during the various project phases.

This project would be managed out of Pocono Office in Bartonsville, PA, which is approximately 1-2 miles from the Conservation District Office. The conservation District staff would be kept apprised of all project activities and would be invited to attend site evaluations and meetings throughout the project design and permitting process.

19. Discuss any special or specific qualifications company has for this project.

HEA staff assigned to this project have completed numerous, highly successful Streambank stabilization, stream restoration, and trout habitat restoration projects on local streams throughout the region. Similar sites with very high banks were stabilized in several locations and have withstood numerous flood flows with no damages. To the extent possible, all sites were designed to improve in-stream habitat, and particularly for trout, as well as aesthetics by using native stone and native plantings. Please refer to the list of projects by HEA staff.

20. Describe how company will ensure Project performance, quality and consistency through adequate management, supervision and control techniques.

HEA will develop a project schedule for review and approval by the Conservation District. Charles Unangst, President, oversees the general workload of HEA. Michael Muffley will be the project manager out of the Pocono office and will handle all Professional Engineering aspects of the project, as well as coordinate all environmental evaluations, permitting, drafting and other project elements. The staff selected have worked together on numerous similar projects with excellent results.

21. Describe company's system of monitoring and oversight to ensure maintenance of complete and accurate work, payroll and invoicing records.

HEA's professional bookkeeping department develops project invoices monthly, using industry standard billing software. Invoices are reviewed by project managers prior to being sent out to Clients. HEA will work closely with the Conservation District to ensure that invoicing will be set-up to meet grant requirements for formatting. Records are kept for seven (7) years.

22. Does company have any projects ongoing at the time of the submission of this bid? If yes, list the projects on which the bidder is currently working, the percentage now complete, and the expected dates of completion.

Yes. a) Brodhead Hunting and Fishing Club-Trout Habitat Improvement: 50% complete, Completion: 11/30/19

b) Wildlands Conservancy-Oughoughton Creek Park Stream Stabilization: 50% complete, Completion: 9/30/20

c) Wildlands Conservancy-Indian Creek Park Stream Restoration: 25% complete, Completion: 3/31/20

d) Bushkill Stream Conservancy-Bushkill Creek Trout Habitat Improvement Project: 80% complete, Completion: 10/31/19

23. Attach company's most current certified financial statement or, if a certified statement has not been issued within the past 12 months, the company's latest internal financial statement.

By: _____
(Signature)

Brien Kocher, CEO, VP, Hanover Engineering Associates, Inc.
(Print Name, Title and Company)

Dated: September 23, 2019

Sworn to before me this 23rd **day of** September **,20**19

Christine Guinan
Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Christine Guinan, Notary Public
Hanover Twp., Northampton County
My Commission Expires Dec. 22, 2019
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Professional Licenses and Certifications

Last Name	First Name	PE, Professional Engineer													EIT, Engineer In Training	PLS, Professional Land Surveyor			SIT, Surveyor In Training	SEO, Sewage Enforcement Officer	AICP, American Institute of Certified Planners	ACI Certified Concrete Field Testing Technician (Grade I)	ASDSO, Association of State Dam Safety Officials	BCO, Building Code Official	CFM, Certified Floodplain Manager	CSI (Construction Specifications Institute) Certified Documents Technologist	CSI, Certified Stormwater Inspectors	Civil 3D 2012 Certified Associate	CPESC, Certified Professional In Erosion and Sediment Control	CPSS, Certified Professional Soil Scientist	GISP, Certified Geographic Information Systems Professional	HMI, Host Municipal Inspector	NICET CET, Transportation ET/ Highway Construction Level I National Institute for Certification In Engineering Technologies	NICET CET, Underground Utilities Construction ET/ Water and Sewer Level II National Institute for Certification In Engineering Technologies	NICET CET, Underground Utilities Construction ET/ Water and Sewer Lines Level III National Institute for Certification In Engineering Technologies	Notary	PG, Professional Geologist	PWS, Professional Wetland Scientist	RLA, Registered Landscape Architect	Sewage System Operator (Class E)	TOPS, Traffic Operations Practitioner Specialist	TSOS, Traffic Signal Operations Specialist	Wastewater System Operator, Class E - Subclass 4	Waterworks Operator
		PA	DE	IL	LA	MD	MA	NJ	NM	NY	OH	TX	VA	WV		PA	NJ	NY																										PA				
	TOTALS:	16	1	1	1	3	2	3	1	1	1	1	1	1	1	5	1	1	1	6	1	1	1	2	1	0	2	1	2	1	1	3	1	0	1	8	1	2	1	1	1	1	1	1	1
Birdsall	James B.	1																																						1					
Bohl	Andrew T.	1						1																																			1		
Brown	Scott J.																			1												1													
Caiazzo	Salvatore J.	1		1	1		1			1	1			1																														
Chimics	Kevin J.	1																																										
Chunko	Heather M.																																			1								
Corona	Joseph W.																												1														
DeCoursey	Mathew L.																																					1						
Dellinger	R. Steven																				1																							
Eckenrode	Michael T.															1																												
English	Carrie T.																																			1								
Feller	Dean W.																																		1									
Fry	Farley F.	1	1			1	1						1																															1
Fry	Steffanie A.																																			1								
Gray	Gregory C.																			1		1																						
Grim	Robert P.																			1				1									1											
Guinan	Christine																																			1								
Hahn	Kerry T.															1																												
Hermany	Jared R.																		1																										
Houston	Alma E.																																			1								
Kaylor	Erik R.																												1														
Kemecsy	Pamela J.																			1																1								
Kocher	Brien R.	1																																										

Professional Licenses and Certifications

Last Name	First Name	PE, Professional Engineer													EIT, Engineer In Training	PLS, Professional Land Surveyor			SIT, Surveyor In Training	SEO, Sewage Enforcement Officer	AICP, American Institute of Certified Planners	ACI Certified Concrete Field Testing Technician (Grade I)	ASDSO, Association of State Dam Safety Officials	BCO, Building Code Official	CFM, Certified Floodplain Manager	CSI (Construction Specifications Institute) Certified Documents Technologist	CSI, Certified Stormwater Inspectors	Civil 3D 2012 Certified Associate	CPESC, Certified Professional In Erosion and Sediment Control	CPSS, Certified Professional Soil Scientist	GISP, Certified Geographic Information Systems Professional	HMI, Host Municipal Inspector	NICET CET, Transportation ET/ Highway Construction Level I National Institute for Certification In Engineering Technologies	NICET CET, Underground Utilities Construction ET/ Water and Sewer Level II National Institute for Certification In Engineering Technologies	NICET CET, Underground Utilities Construction ET/ Water and Sewer Lines Level III National Institute for Certification In Engineering Technologies	Notary	PG, Professional Geologist	PWS, Professional Wetland Scientist	RLA, Registered Landscape Architect	Sewage System Operator (Class E)	TOPS, Traffic Operations Practitioner Specialist	TSOS, Traffic Signal Operations Specialist	Wastewater System Operator, Class E - Subclass 4	Waterworks Operator
		PA	DE	IL	LA	MD	MA	NJ	NM	NY	OH	TX	VA	WV		PA	NJ	NY																						PA					
Lynn	Robert J.	1																									1																	
Macias	Chris D.														1																													
Malitsch	Phillip C.	1																																										
Milot	James A.																																								1	1		
Moreo	Johanna F.																																				1							
Muffley	Michael H.	1																					1		1																			
Piel	Samuel L.																														1													
Prunoske	Jennifer A.	1																									1		1															
Rentko	Joseph E.	1				1		1																																				
Schran	Sallyann A.																																				1							
Schray	Jacob A.																			1				1								1												
Smith	Jason E.																																						1					
Smith	Jill Lipovsky	1																																										
Stakem	Rebecca L.																											1																
Tanczos	Jerry J.	1				1		1	1			1																																
Taylor	Christopher A.																			1												1						1						
Unangst	Charles H.	1														1																												
Wilson, III	Raynold W.															1	1	1																										
Woods	Andrew J.	1														1																												
Wright	Randall J.																																							1				
Youst	J. Bradley	1																																										

Hanover Engineering Associates, Inc
Profit & Loss
January through June 2019

	Jan - Jun 19	
Ordinary Income/Expense		
Income		
600 · Revenues		3,822,914.87
601 · Reimbursable Revenue		165,674.54
604 · Support Revenue		3,945.90
920 · Interest Income		41.95
Total Income		3,992,577.26
Gross Profit		3,992,577.26
Expense		
800 · Advertising		4,145.00
804 · Automobile		29,793.17
810 · Bank Service Charges		4,108.05
811 · Computer Software		21,867.45
813 · Cleaning Services		10,053.57
816 · Computer Supplies		9,904.03
823 · Dues and License		8,099.40
825 · Subscriptions & Books		3,327.25
828 · Water		118.01
830 · Professional Development		8,604.22
831 · Lodging & Meals		
914 · Emp Cost - Seminars	2,252.16	
831 · Lodging & Meals - Other	6,031.50	
Total 831 · Lodging & Meals		8,283.66
832 · Electric		16,456.68
833 · Gas		6,784.96
834 · Employee Benefits		260,196.80
835 · Employee Expenses		25,486.99
840 · Hanover Engineering Emp. Events		2,992.38
841 · Marketing		
805 · Promotions and Donations	5,293.56	
814 · Conventions	53.00	
916 · Client Meals	1,425.72	
841 · Marketing - Other	10,822.88	
Total 841 · Marketing		17,595.16
850 · Insurance		73,727.82
852 · Insurance - Officers Life		16,560.12
860 · Interest Expense		7,825.56
868 · Legal and Accounting		6,834.00
870 · Per Diem - Structural & Private		325.00
873 · Per Diem - Energy		9,620.00
875 · Operating		15,174.47
876 · Office Supplies		14,809.90
877 · Garbage-Recycing		907.10
880 · Postage		7,551.90
882 · Professional Fees		1,902.50
889 · Rental Properties		11,250.00
890 · Rent		243,922.91
892 · Equipment Contracts		23,233.40
894 · Salaries and Wages		2,513,805.59
898 · Safety Items		214.54
899 · Survey Supplies and Tools		11,715.01
901 · Support Services/Subcontractors		1,716.79
902 · Taxes - Other and Licenses		13,488.81
904 · Taxes - Payroll		235,269.19
910 · Telephone		29,283.05
911 · Internet		8,536.93
915 · Reimbursable Project Expense		63,680.93
Total Expense		3,749,172.30

Hanover Engineering Associates, Inc
Profit & Loss
January through June 2019

	Jan - Jun 19
Net Ordinary Income	243,404.96
Net Income	**243,404.96**

Hanover Engineering Associates, Inc
Balance Sheet
As of June 30, 2019

	Jun 30, 19	
ASSETS		
Current Assets		
Checking/Savings		
100 · PNC Checking		15,196.56
102 · BB&T - Checking - 2313		-6,047.13
104 · BB&T - Lancaster - 3776		837.43
106 · PNC Bank - Money Market		6,351.13
108 · Lafayette Ambassador Bank		8,436.08
109 · National Penn Bank - MM		3.06
110 · Petty Cash		
1101 · Bethlehem PC	515.30	
1102 · Allentown PC	308.96	
1103 · Elizabethtown PC	-85.61	
1104 · Lancaster PC	835.43	
1105 · New Castle PC	-617.92	
1106 · Pocono PC	-260.50	
1107 · Towanda PC	-64.06	
1108 · Wellsboro PC	123.43	
110 · Petty Cash - Other	7,284.58	
Total 110 · Petty Cash		8,039.61
112 · Embassy Bank		7,434.29
119 · ESSA Bank & Trust		11,960.72
121 · First Citizens - Towanda		600.00
128 · BB&T - Payroll - 1573		5,979.02
130 · BB&T - Money Market - 5945		15,105.31
131 · BB&T - FSA Acct - 3501		6,902.95
Total Checking/Savings		80,799.03
Total Current Assets		80,799.03
Fixed Assets		
256 · Leasehold improvements		82,617.93
260 · Automobiles and trucks		1,023,859.70
261 · Automobile - Leased/Loan		27,321.32
262 · Office equipment		2,040,127.61
263 · Equipment - Leased		226,868.40
264 · Furniture and fixtures		332,483.93
265 · Equipment		463,756.95
270 · Accumulated depreciation		-3,926,515.00
289 · Accumulated Amortization		-5,596.00
Total Fixed Assets		264,924.84
Other Assets		
286 · Non-compete Agreement		5,600.00
287 · Officer's life insurance		126,797.58
Total Other Assets		132,397.58
TOTAL ASSETS		**478,121.45**
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Accounts Payable		
Cash Basis Accounts Payable*		68,807.73
Total Accounts Payable		68,807.73
Credit Cards		
199 · PNC Bank Credit Card		2,160.29
Total Credit Cards		2,160.29
Other Current Liabilities		
***Sales Tax Payable**		328.26

Hanover Engineering Associates, Inc
Balance Sheet
As of June 30, 2019

	Jun 30, 19
311 · BB&T - LOC	153,103.19
445 · SUTA Tax Withheld	1,182.75
450 · Medical Insurance Withheld	-10,546.63
451 · 401K Loan Withheld	-81.36
453 · 401K Deferrals Withheld	81.36
454 · United Way Withheld	-945.00
458 · Employee Life Ins Withheld	-2,649.42
459 · FSA Withheld	2,180.47
Total Other Current Liabilities	142,653.62
Total Current Liabilities	213,621.64
Long Term Liabilities	
485 · BB&T - Loan JB 00003	62,789.21
486 · WellsFargoEquipment-Trimbles	-23,406.56
487 · BB&T - CAD Loan	2.59
488 · Balboa - Office 365	1,473.86
Total Long Term Liabilities	40,859.10
Total Liabilities	254,480.74
Equity	
Retained Earnings	17,090,734.73
500 · Common Stock	148,800.00
510 · Additional paid-in-capital	97,000.00
520 · Treasury stock	-228,800.00
530 · Shareholder Distribution	-17,127,498.98
Net Income	243,404.96
Total Equity	223,640.71
TOTAL LIABILITIES & EQUITY	**478,121.45**