HAMMOND NORTHSHORE REGIONAL AIRPORT
RUNWAY 18-36 / 13-31 INTERSECTION REHABILITATION
PRELIMINARY DESIGN PHASE SERVICES

Work Authorization for Professional Services

132392	1
(Project Identification No.)	(Work Authorization No.)

It is agreed to undertake the following work in accordance with the provisions of our Prime Agreement for Professional Services dated July 19, 2012.

Description of Assignment:

This assignment includes Preliminary Design Phase services for the removal of the existing Runway Intersection pavement, design of a new pavement structure, pavement marking and construction scheduling and phasing. Attachment A defines the Scope of Work for this project.

Basis of Compensation/Period of Services:

Basic Services: Lump Sum Payment of Sixty Five Thousand Seven Hundred Sixty Six Dollars and Fifty Five Cents ($65,766.55)

Special Services:

Field Surveying Services (Forte and Tablada, Inc.): To be based on actual hours worked, by discipline, times the agreed upon fee schedule, plus non-salary expenses. The estimated limit for Field Surveying Services is Sixteen Thousand Five Hundred Thirty Dollars and No Cents ($16,530.00)

Geotechnical Investigation (Terracon): To be based on actual hours worked, by discipline, times the agreed upon fee schedule, plus non-salary expenses. The estimated limit for Geotechnical Investigation is Seventeen Thousand Five Hundred Dollars and No Cents ($17,500.00).

Agreed as to scope of services, time schedule, and budget:

For: **Hammond Northshore Regional Airport**	For: **THE LPA GROUP INCORPORATED**
Date: _____	Date: 12/4/2012

Attachment: A – Scope of Work
B – LPA Fee Proposal
C – Forte and Tablada, Inc. (Field Surveying) – Fee Proposal
D – Terracon (Geotechnical) – Fee Proposal

ATTACHMENT A
WORK AUTHORIZATION NO. 1
RUNWAYS 18-36 / 13-31 INTERSECTION REHABILITATION
SCOPE OF WORK – PRELIMINARY DESIGN PHASE SERVICES

Project Understanding

Hammond Northshore Regional Airport (HDC) is proposing to rehabilitate the concrete pavement within and on all sides of the Runways 18-36 / 13-31 intersection. More specifically, the concrete pavement on Runway 13-31 between the bituminous sections (approximately 1,550 feet) will be fully rehabilitated and the concrete on Runway 18-36 within the 13-31 safety area will be fully rehabilitated. The design will include removal of the existing pavement, design of a new pavement structure, pavement marking and construction scheduling and phasing. This project will not include any lighting upgrades. All design will be accomplished using the current editions of the applicable FAA Advisory Circulars.

Project Approach

LPA's approach to the development of this project will include the following items:

1. Preliminary Design Engineering
   - 1.1. Survey and Mapping
   - 1.2. Geotechnical Evaluation
   - 1.3. Pavement Design
   - 1.4. Preparation of FAA Form 7460-1
   - 1.5. Preparation of a Short Form EA
   - 1.6. Engineer's Report
2. Final Design Engineering
   - 2.1. Project Scheduling and Phasing
   - 2.2. Construction Plans and Specifications
3. Meetings

4. Deliverables
5. Bidding Phase Services
6. Construction Phase Services

Detailed Scope of Services

1. Preliminary Design Engineering

1.1 Survey and Mapping

1.1.1 Survey and Mapping / Airspace Analysis

LPA will develop mapping for the project through traditional field survey techniques. Topographic field surveys will be performed to establish control, survey runway centerline and edges, establish runway grades to an accuracy of 0.2 foot, survey to establish grades along sides of the runways, locate structures and determine structure inverts, and any other miscellaneous features within the project area. Survey and mapping work will be performed in accordance with the following FAA Advisory Circulars:

- AC 150/5300-16A "General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey."
- AC 150/5300-18B "General Guidance and Specification for Aeronautical Surveys: Airport Survey Data Collection and Geographic Information System Standards."

According to the FAA's Airports GIS Transition Policy dated August 23, 2012 non-primary airports in the NPIAS are exempted from complying with the AC 150/5300-18B standards for projects that do not impact safety critical data as defined in Table 1 in the memorandum. Since this project does not impact safety critical data, the survey and mapping work will not be performed to be fully compliant with AC's 150/5300-16A, and -18B. LPA will only perform survey work necessary for this project. The survey and mapping work that is performed will be compliant with the circulars as it relates to each. That work generally includes runway ends, runway profiles, the runway intersection point, and monuments. The mapping will be developed in accordance with -18B as it relates to layering of CADD files and CADD drafting standards. The mapping will not include GIS shape files nor will it include feature attribution. Airspace analysis as described in -18B will not be performed.

Survey and mapping will be performed by Baton Rouge Land Surveying. A scope of work and fee estimate prepared by Baton Rouge Land Surveying is attached.

1.2 Geotechnical Evaluation

A geotechnical investigation will be performed on the pavement subgrade to assist in the evaluation of the pavement subgrade and new pavement design. Geotechnical evaluations will consist of pavement borings to obtain and test samples of the subgrade materials. It is anticipated that a total of 15 borings will be obtained within the pavement rehabilitation limits. Borings will be taken in accordance with FAA AC 150/5320-6E as well as in areas of significant pavement distresses.

The geotechnical investigation will be performed by Terracon Consultants, Inc., located in Baton Rouge, LA. Their detailed scope and fee proposal is included as an attachment.

1.3 Pavement Design

Pavement design will be performed in accordance with FAA AC 150/5320-6E, *Airport Pavement Design and Evaluation,* and the FAA's pavement design software, FAARFIELD, using the current fleet mix for HDC. The fleet mix will be provided by the Owner and used in the development of the pavement design. The pavement design will determine the required pavement section to provide a 20-year structural life. It is anticipated that the project will consist of complete removal of the existing pavement and construction of a new pavement structure.

1.4 Preparation of FAA Form 7460-1, "Notice or Proposed Construction or Alteration"

LPA will prepare and submit two FAA Form 7460-1 submissions for the proposed project. The form will be prepared in accordance with FAR Part 77, "Safe, Efficient Use, and Preservation of The Navigable Airspace" and Advisory Circular 150/5300-13A. Preparation will consist of preparing the following documents:

- FAA Form 7460-1
- Project narrative
- ALP indicating the proposed site

- Site plan
- Construction Safety Phasing Plan (CSPP)

The project narrative will include a project description, operational impacts and the project phasing requirements. The site plan will indicate the project limits, site elevations, runway elevations and the FAR Part 77 imaginary surfaces applicable to the project. If necessary, cross sections will be provided at critical points to illustrate potential temporary penetrations due to construction equipment or other construction activities. The CSPP will be prepared in accordance with FAA AC 150/5370-2F, "Operational Safety on Airports During Construction".

The initial submission will be prepared and submitted at the completion of the preliminary design stage. This submission will include all items above except the CSPP. This submission is intended to make the FAA aware of the project. The second submission will include the CSPP to satisfy requirements provided in AC 150/5370-2F and is intended for a safety review of the project by the FAA, including any temporary impacts to the airspace resulting from the construction equipment.

Form 7460-1 will be prepared electronically and submitted on-line on the FAA's Obstruction Evaluation / Airport Airspace Analysis website (https://oeaaa.faa.gov). Supporting documents will be uploaded and attached to the electronic submission.

1.5 FAA Environmental Evaluation Short Form EA

The Short Form EA will be completed in accordance with the guidelines for completing FAA Short Form EAs and the regulations contained in Federal Aviation Administration Orders 1050.1E and 5050.4B. LPA will use the latest version of the environmental form.

LPA will conduct the analysis required, specific to this project, to complete an FAA Short Form EA based on available data. The analysis will include the following categories which are contained in the Short Form EA.

- Air quality
- Coastal Resources

- Compatible land use
- Construction Impacts
- Department of Transportation Section 303/4(f)
- Farmlands
- Fish, Wildlife and Plants
- Floodplains
- Hazardous Materials, Pollution Prevention and Solid Waste
- Historical, Architectural, Archaeological and Cultural Resources
- Light Emissions and Visual Impacts
- Natural Resources, Energy supply and Sustainable Design
- Noise
- Secondary (Induced) Impacts
- Socioeconomic Impacts, Environmental Justice, Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands
- Wild and Scenic Rivers
- Cumulative impacts

It is anticipated that no detailed review of any of the above categories will be required for this project.

1.6 Engineer's Report

LPA will prepare and submit the Engineer's Report for the project as part of the preliminary design submission. The report will provide the following items:

- The scope of the proposed project, including the limits of pavement rehabilitation
- FAA design standards used in designing the project
- Survey and Mapping
- Geotechnical report
- Description of the pavement design and analysis

- Recommended method for rehabilitation
- Proposed pavement sections (Form FAA 5100-1)
- Phasing evaluation and alternatives
- Description of the project's contract documents and technical specifications
- Engineer's Opinion of Probable Construction Costs

ATTACHMENT B
HAMMOND NORTHSHORE REGIONAL AIRPORT
RUNWAY 18-36 / 13-31 INTERSECTION REHABILITATION
WORK AURTHORIZATION No. 1
SUMMARY OF FEES

BASIC SERVICES		
Preliminary Design	$	65,766.55
TOTAL BASIC SERVICES	**$**	**65,766.55**
SPECIAL SERVICES		
Field Surveying (Forte and Tablada, Inc.)	$	16,530.00
Geotechnical (Terracon)	$	17,500.00
TOTAL SPECIAL SERVICES	**$**	**34,030.00**
Total Work Authorization No. 1	**$**	**99,796.55**

HAMMOND NORTHSHORE REGIONAL AIRPORT
RUWNAY 18-36 / 13-31 INTERSECTION PAVEMENT REHABILITATION
HOUR ESTIMATE

Preliminary Design Phase Services

Item No.	Item/Task Description	Project Manager	Technical Manager	QA/QC	Civil Engineer	Designer	CADD Technician	Admin Assistant		
1	Project Formulation	16	8					8		
2	Kickoff Meetings	6	16					4		
4	Coordination Meetings with Subconsultants	4	8					2		
6	Records Review and Site Visits		8		16					
7	Survey and Mapping	2	4		8	40				
8	Geotechnical Review	2	4		8					
9	Preliminary Plans	0	0	0	0	0	0	0		
10	Pavement Design		4		24					
11	Preliminary Phasing	8	20		30					
12	Engineer's Report	8	24		80	8		8		
13	Quality Review			24						
14	FAA Form 7460-1				8	8				
16	30% Design Review Meeting	6	16							
	Totals:	52	112	24	174	56	0	22	0	0

	Labor Costs	Hours	Rate	Total
	Project Manager	52	$ 76.00	$ 3,952.00
Total Wo	Technical Manager	112	$ 56.00	$ 6,272.00
	QA/QC	24	$ 75.00	$ 1,800.00
	Civil Engineer	174	$ 34.00	$ 5,916.00
	Designer	56	$ 26.00	$ 1,456.00
	CADD Technician	0	$ 20.00	$ -
	Admin Assistant	22	$ 23.00	$ 506.00
	Total Labor			**$ 19,902.00**
	Overhead(167.12%)			$ 33,260.22
	Total Labor and Overhead			**$ 53,162.22**
	Profit (15%)			$ 7,974.33
	Direct Costs			$ 4,630.00

Direct Expenses	Costs
Travel & Per Diem	$ 3,850.00
Reproduction & Postage	$ 780.00
Phone/Fax	
Total Directs	$ 4,630.00

$ 64.89

Total Preliminary Design Phase Services **$ 65,766.55**

Preliminary Plans

Item No.	Drawing Title	No. of Drawings	Project Manager	Technical Manager	QA/QC	Civil Engineer	Designer	CADD Technician	Admin Assistant
1		1							
2		3							
3		1							
4		1							
5		5							
6		4							
7		1							
8		2							
9		3							
	Totals:	21	0	0	0	0	0	0	0

ATTACHMENT C

BATON ROUGE
LAND SURVEYING
A Division of Forte & Tablada

Tuesday, October 23, 2012

LPA Group
5757 Corporate Blvd
Suite 200
Baton Rouge, LA 70808

Attention: Natalie Graham

Re: Hammond Northshore Regional Airport
Tangipahoa Parish

Dear Ms. Graham:

The following are our fees and scope of services for the surveying requested for the above reference project.

ITEM	AMOUNT	RATE	UNIT	TOTAL
Research - Quote Preparation	2	$135	/hour	$270
Control and Runway GPS survey	25	$150	/hour	$3,750
Topographic Field Work: 2-man survey crew	50	$150	/hour	$7,500
Nighttime premium (for loss of production) (field work only)		12%		$1,350
Management - PLS (including field, project review)	14	$135	/hour	$1,890
Clerical	2	$35	/hour	$70
Drafting	20	$85	/hour	$1,700
	TOPO TOTAL:			**$16,530**

Please note that this quote is based on the following items defining the scope of the survey:

(Scope as outlined in email received from M Baker on 10/16/12)

1. Survey at a level of accuracy to achieve 2/10 foot contours on the pavement and ½ foot contours beyond the limits of the pavement.

2. Survey should include runway centerline/profile shots at a minimum of 25 foot centers, the edge of the runway pavement (at the runway edge line), and edge of shoulder pavement for both runways. The runways should be surveyed at a minimum of a 25-foot grid or closer to achieve the 2/10 foot contours.

3. Survey all features/structures within the limits. Features and structures will include edge lights, airfield signs, inlets, storm sewer manholes, duct markers, electrical handholes/manholes. Survey point should generally be the center of the structure. Airfield sign foundations should be surveyed at all four corners of the foundation.

4. Runway end points and the Runway 31 threshold location. If there are not currently monuments at the runway end points they should be identified by the end of pavement and physical center measured between the edges. PK nails shall be placed at the runway end points if no monument currently exists. The Runway 31 threshold is defined as the physical center of the runway and at the leading edge of the white threshold bar.

5. Survey deliverables are to include a .dwg mapping file, ASCII point file and a dtm file with breaklines.

6. Monuments should include any existing PACS and SACS on the airport. Other known existing monuments should also be captured.

I've been in contact with Jason Ball, Airport director, and as far as he is aware, there are only 2 monuments on the airfield ("that have been previously used during aerial photography and GPS surveying"). I've also researched NGS's website for potential stations/monuments on the airfield (airport code "HDS") and there are none listed. We intend to tie these monuments into our survey and potentially use them for our GPS control surveying, if they are current enough and tie to our virtual reference system (LSU C4G) within a certain tolerance.

You've also referenced 2 FAA documents (FAA Advisory Circular 150-5300-16A &18B) which are quite extensive and much broader than the apparent requested scope of work. It appears that only item in the scope above that is significantly influenced by these documents is #6, which I've addressed in the paragraph above and will conform to these documents. Our final deliverables will also conform to the "18B" document.

We look forward to the opportunity to work with Michael Baker on this project. If you have any questions or require additional information please contact our office.

Very truly yours,

Todd A. Harris, P.L.S.

Terracon

December 4, 2012

The LPA Group
5757 Corporate Blvd.
Suite 200
Baton Rouge, LA 70808

Attn: Natalie Graham
The LPA Group/Michael Baker Corporation

Re: Proposal for Geotechnical Engineering Services
Hammond North Shore Regional Airport
Runway Rehabilitation Project
Hammond, Louisiana
Terracon Proposal No. PEH125076

Dear Mr. Homan:

Terracon Consultants, Inc. (Terracon) appreciates the opportunity to submit this proposal to provide geotechnical engineering services for the above referenced project. This proposal was requested by Mr. Brad Homan of Michael Baker Jr., Inc. on October 16, 2012. There was also a plan view sketch of the proposed reconstruction area provided. The purpose of this study will be to evaluate the pertinent geotechnical conditions at the site and to develop geotechnical parameters, which will assist in the design and construction of replacement runway paving at the facility. This proposal outlines our understanding of the project and scope of services and provides a lump sum fee for our services.

A. PROJECT INFORMATION

The following paragraphs present the project information that was available at the time this proposal was prepared. Should this information be incorrect, please contact this office so that our scope of services may be reevaluated accordingly.

Project Location

Item	Description
Location	Hammond North Shore Regional Airport
Existing improvements	Concrete Runway Pavements
Existing topography	Relatively Flat

Item	Description
Geologic setting	The property is located within an area of Prairie Terrace deposits of Pleistocene age. These deposits typically consist of silty clays and clays with some sand layering. They usually provide fair to good pavement support.

Project Description

The project will include the demolition and reconstruction of the existing concrete runway pavements at the intersection of Runways 18/36 and 13/31. Based upon observations during a site visit in July 2012, the existing concrete pavement is in fair condition for its age, but there are concerns about void formation under the pavement. According to airport personnel and results of previous investigations below existing runway, there is no base and the pavement was placed directly on clay. The observed pumping of water at the expansion joints from essentially only foot pressure suggests an assumption that some fines have migrated to the surface from the subgrade. The edge cracking at some locations would support loss of subgrade support.

B. SCOPE OF SERVICES

Based upon our understanding of the project and the geologic setting, we have developed a work scope to perform a geotechnical investigation for the planned area of reconstruction in general accordance with the requirements outlined in FAA Advisory Circular 150/5320-6E. The FAA Circular indicates that for runways that borings be performed at approximate 200-ft intervals to a depth of 10 feet. The conduct of this geotechnical investigation includes several aspects of work that integrate into our completed work product for the planned development. Each aspect is defined below.

Field Investigation

The field investigation will include a reconnaissance of the site by Terracon personnel and the conduct of a soil boring program. The site reconnaissance will include an assessment of the access conditions at the project site and will allow observation of the site from a geotechnical perspective, including: aspects of surface topography, drainage, existing pavement conditions, vegetation, and surface soils.

Based on the proposed structure and our familiarity with soil conditions at this site, we propose the following soil boring program:

- 15 concrete cores followed by soil borings drilled and sampled within the runway reconstruction extent to a depth of about 10 feet below existing grade.

The drilling and sampling will be conducted in general accordance with industry standard procedures and practices typical for this region and soil conditions. The boring locations will be

selected based on observed site conditions (e.g., some at failure locations and others at non-failed areas), but generally spaced at 200-ft intervals. If field conditions dictate, the work scope may be modified to collect the data that are necessary for the planned construction.

Field Exploration Sequencing

The work will be performed in two field phases. The first phase will be conducted at night with a light plant so that both runways can be closed. For this phase the cores and borings at the intersection of the two runways, all of the borings of the longer runway, and within the safety area of the short runway will be completed. The second phase will be performed during the day to complete the cores and borings within the non-safety areas of the remaining runway, so as to only require closing one runway during the day.

Conditions/Items to be Provided by Client

Items to be provided by the client include the right of entry to conduct the exploration and an awareness and/or location of any private subsurface utilities existing in the area. We will contact Louisiana OneCall for location of utilities in public easements. Location of private lines on the property is not part of the Louisiana OneCall or Terracon scope. All private lines should be marked by others prior to commencement of drilling.

The coring and drilling will be performed on a closed runway but with flight operations ongoing on the remaining open runway. Our equipment is equipped with flashing lights and we will be using a light plant for night operations. Please advise us of any other requirements for working on the closed runways prior to our mobilization. We will require approximately a 20 minute notice to remove drill stem and cover the borehole if we are asked to stop our drilling and move off the runway.

Terracon will take reasonable efforts to reduce damage to the property, such as rutting of the ground surface. However, it should also be understood that in the normal course of our work some disturbance of this type could occur. We have not budgeted to restore the site beyond backfilling our boreholes. If there are any restrictions or special requirements regarding this site or exploration, these should be known prior to commencing field work.

Our fee is based on the site being accessible to our truck-mounted drilling equipment and Terracon providing layout of the borings; additional costs may result if this is not the case. It does not include services associated with site clearing, wet ground conditions, tree or shrub clearing, damage of existing crops / landscape or location of underground utilities beyond contacting a "one-call" locate service. If such conditions are known to exist on the site, Terracon should be notified so that we may adjust our scope of services and fee, if necessary.

Terracon will lay out the borings using a measuring wheel from the known points (e.g., runway intersection) and right angles will be estimated. If a specific elevation reference is desired, we

recommend having the project surveyor locate our borings after completion. Latitude and longitude will be recorded using a hand held GPS.

For safety purposes, all borings will be backfilled according to state regulations immediately after their completion. Excess auger cuttings will be bagged for further laboratory testing. Because backfilling with soil material often settles below the surface after a period of time, we will fill the borings with a tamped dry concrete mix to within about 1 foot of the pavement surface and the top 12 inches filled with a high strength concrete to reduce the potential for future settlement. We will check the core locations prior to demobilization to make sure they have not settled, and repair as necessary.

Laboratory Testing

Selected soil samples will be tested in our geotechnical laboratory to confirm shear strength, classification and compressibility properties. Such testing will include, but is not limited to, moisture content and Atterberg limits determinations, unconfined compression tests and (if granular materials are encountered) particle size determinations. A proctor test (modified) and a CBR will be performed on a representative sample of the prevailing subgrade soil to aid in assignment of a design k value for the soil. The quantity of each test will be determined by the project engineer after reviewing the findings of the field investigation.

Engineering Analysis and Report

The field and laboratory data will be reviewed and evaluated by a licensed professional engineer. An engineering report will be prepared that provides the results of the testing performed, along with our evaluations, conclusions and recommendations:

- Soil boring logs with the following information
  - Soil stratification based on visual soil classification
  - Summarized laboratory data
  - Groundwater levels observed during drilling
- Site location plan
- Exploration location plan
- Description of subsurface exploration and laboratory testing procedures
- Evaluation of soil and groundwater conditions
- Recommended pavement design parameters including soil modulus from the CBR value
- Base recommendations and net modulus
- Pavement recommendations
- Subgrade preparation/ earthwork recommendations

Additional Services during Design

We anticipate that meetings may be convened to discuss our initial report, to discuss project design and development, and for engineering assistance associated with preparation of construction documents. Time associated with engineers to travel to and attend such meetings

or telephone conference calls will be charged at a rate of $90/hour for Project Manager, $115/hour for Project Engineer, and $160/hour for Principal. Mileage for travel to/from meetings would be charged at a rate of $0.72/mile, in addition to the travel time at the rates above. We have included two meetings in our budget.

Upon completion of draft plans and specifications, we are prepared to review the pertinent documents related to the site preparation and pavement construction portions of the project. We will review those portions of the plans and specifications, and make suggestions for changes that may be necessary to reflect consistency with the recommendations as provided in the geotechnical report. We have included two review iterations in our budget.

CMET Services during Construction

A critical aspect of our services with respect to a geotechnical investigation for the planned development is the continuation of the role of the geotechnical engineer during the development of final plans and specifications and during construction. Construction materials engineering and testing (CMET) services performed directly for the owner and/or design team by the geotechnical engineer of record provide a valuable opportunity for the geotechnical engineer to confirm some of the assumptions made about subsurface conditions, and to document that those aspects of construction that are critical to the site preparation, foundation and pavement performance.

Although CMET services are outside the scope of this proposal, Terracon maintains a staff of engineering technicians and the necessary construction materials testing capabilities to fully support our involvement in the construction stage of the project. We can provide a more definite fee estimate and scope of services upon review of the plans and specifications for the project.

Schedule

Based upon our existing work load we have developed a tentative schedule for this work, as described below.

- Complete field investigation within 2 to 3 weeks of notice to proceed, subject to appropriate scheduling with airport operations.
- Complete laboratory testing within 1 to 2 weeks from completion of field investigation.
- Perform engineering analyses and provide report of geotechnical investigation within 4 to 5 weeks of notice to proceed.

If needed, the possibility of an expedited schedule can be evaluated at the time of approval. We will inform you of our anticipated date for completion of the report of geotechnical investigation upon your notice to proceed.

C. COMPENSATION

An estimate of fees for the design assistance phases for this project has been developed by applying our standard fee schedule to the proposed work scope. For the scope of work stated in the Scope of Services above, with the exception of the CMET Services during Construction, the lump sum total fee would be **$ 17,500.00**. Unless instructed otherwise, the invoice will be sent to your attention at the above address.

The cost estimate developed assumes that the site is accessible with our truck-mounted exploration equipment with only minimal difficulty. We have included up to 4 hours of stand-by time related to airport operations delays in our budget.

We will issue 1 electronic copy of the Report of Geotechnical Investigation as the deliverable for this project. Hard copies can be provided upon request.

D. AUTHORIZATION

This proposal may be accepted by executing a work order referencing Terracon's Master Services Agreement (MSA) with LPA/Michael Baker Jr., Inc. This proposal is valid only if authorized within 60 days from the listed proposal date.

We appreciate the opportunity to submit this proposal. If we can answer any questions or provide any additional information, please call.

Sincerely,
Terracon Consultants, Inc.

Lynne E. Roussel, P.E.
Department Manager

Stephen E. Greaber, P.E.
Principal