The preservation of existing bridges is an important, safe, and effective method that extends the service life cycle of the transportation network. **The Markosky Engineering Group, Inc. (Markosky)** welcomes the opportunity to bring our team's experience and knowledge of these types of projects to Scott Township. We have teamed with the following partners who are also very familiar with bridge preservation projects and PennDOT procedures:

- **Greenman-Pedersen, Inc. (GPI)** – Paint Coating Evaluations and Structural Engineering Support
- **American Geotechnical & Environmental Services, Inc. (AGES)** – Geotechnical Engineering (DBE)
- **Monaloh Basin Engineers (MBE)** – Survey, Right-of-Way and Utility Coordination Support (DBE)
- **Keystone Acquisition Services Corporation (KAS)** – Right-of-Way Acquisition (DBE)
- **The Lexis Group, LLC (TLG)** – Subsurface Utility Engineering (SUE) (DBE)

We understand the importance of the Disadvantage Business Enterprise (DBE) participation and with our teaming partners above we will meet or exceed the established goal of 10%.

1. Understanding of Project Issues and Team's Approach and Experience

Markosky will draw upon our team's extensive **bridge preservation** and **rehabilitation** experience along with our knowledge of design procedures to meet the challenges of this project. The following represents our understanding of the critical elements of the project and provides a summary of how we intend to successfully address them.

Approach to Project Delivery: With our similar project experience, we have the expertise to address each of the challenges identified for this project. Our extensive experience on bridge preservation and rehabilitation projects, specific to District 11-0 which includes the New Kensington Bridge Preservation Project (see below), makes Markosky the ideal candidate for the successful completion of this project. Upon selection of the project, we will meet with the Township to develop the Preliminary Engineering (PE) scope and to identify project priorities. One of the critical milestones that will be in the scope will be the completion of the design inspection. This primary task will be conducted early in PE and will be followed by a Pro Team meeting which will identify findings and recommendations for repairs. From the Pro Team meeting, we will develop the Type, Size, & Location submission. To streamline the preliminary engineering phase for this project we would look to eliminate the Line and Grade Submission since we do not expect any changes to the horizontal or vertical alignments. The Design Field View Submission will include any proposed safety improvements such as guiderail updates and preliminary right-of-way requirements such as temporary construction easements for access. This efficient approach will lead to the development of the final design scope and ultimate delivery of this project.

Approach to Project Challenges: To apply our Project Delivery approach to this project, it is imperative to understand the project challenges. Based on our field review, our desktop review and knowledge of the project area, the following is our understanding of the most critical issues associated with delivering this project:

Structures – The existing structure is a 3-span continuous weathering steel plate girder bridge on concrete substructures built in 1993. Markosky anticipates that spot/zone maintenance painting will be required at the existing expansion joint locations at the beam ends. A consideration of painting of the weathering steel in other areas could also be an option, especially in the areas where the patina is not properly developed, including up to a full painting of the structure to prolong longevity. Minor steel repairs identified during the preservation inspection will be addressed prior to the painting operations. Stay-in-place deck forms with deterioration will be removed or repaired. Markosky anticipates replacing the deteriorated scupper downspouts and extending the downspouts to an adequate outlet point away from the substructures and railroad ballast and tracks. The existing expansion joints will be evaluated for condition and expansion movement. Expansion joint openings will be measured at normal temperature ranges to determine if the joint should be removed and replaced. If replaced, the joint designs will meet the current industry standard opening width of 2.5" at 68 degrees since it appears that the bridge could be fully expanded during high temperatures. All existing bridge bearings will be inspected for any maintenance needs and the Pier 1 sole plates overhanging the concrete pedestal will be reviewed if repair is required. The deck condition warrants the placement of latex modified concrete overlay. Other deck overlay options will be considered such as a Polyester Polymer Concrete (PPC) overlay as an alternative. Concrete repairs to the existing sidewalk and barrier on the bridge are expected including joint sealing. It is expected that the protective fence will require isolated repairs. Roadway approach pavement will be replaced or receive a mill/overlay. The erosion at the far abutment and wingwall

footing will be backfilled with stable embankment material.

A critical aspect to the design schedule of this project will be following procedures and guidelines necessary to obtain Right of Entry permits, execute a Flagging and Railroad Protection Agreement and meet any PUC requirements. We will need to work closely with the District 11 Railroad Coordinator and Railroad Company early in design to determine what will be needed to be able to do the necessary work over the tracks and at the piers/abutments. Markosky has extensive experience in railroad coordination, particularly in bridge preservation and rehabilitation projects. For example, in the New Kensington Bridge Preservation Project, Markosky successfully coordinated with Norfolk Southern for the proposed preservation work (see below). Additionally, Markosky's team has experience working closely with railroads to obtain Right of Entry permits and execute Flagging and Railroad Protection Agreements for numerous bridge inspection contracts throughout the state.

Roadway - The structure is located on Old Bower Hill Road in Scott Township and crosses over the Pittsburgh & Ohio Central (POHC) and Wheeling & Lake Erie (W&LE) Railroads. Old Bower Hill Road is considered an Urban Major Collector with a two-way ADT of approximately 8,243 vpd and is not on the NHS. The structure has a roadway width of 24 feet and a deck width of 32.5 feet, which includes lane widths of 11 feet and with 1-foot offsets to the curb and structure barrier and one 5-foot sidewalk that runs on the west side. The posted and design speed limit is 25 mph. Since this project is bridge preservation there will be no changes to the vertical or horizontal alignments, and we also do not anticipate any changes to the typical section of the structure or approaches. The pavement design of any approach work will be based on PennDOT's Pavement Design Manual (Pub 242) and / or match existing (whichever is greater). A very important aspect of this project will be evaluating the condition and functionality of the existing drainage system. From the bridge inspection reports, it appears that the drainage system at a minimum will require cleaning and minor repairs. All repairs and improvements to the drainage system will follow Chapter 10 in DM-2 (Highway Design – Change No. 12 / December 2024). We anticipate the need to update the guiderail and bridge connections at the south end of the structure which will be designed to meet all current standards in PennDOT's Design Manual 2, Chapter 12.

Traffic Control - Markosky will evaluate and determine the most appropriate form of traffic control for this project. It will be very important to consider the type of construction operations, length of time to complete those construction tasks, detour length and the relatively high traffic volumes that use the structure daily when determining the best possible traffic control scenarios. A detour during off-peak hours or weekends may be the most appropriate traffic control option when doing any deck work, since many of the bridge preservation operations may not require extended closures. The viability of the detour option will also need take in to account safety due to the narrow cartway on the structure. There are a couple of possible detour options that will need to be evaluated. Options include a detour route using Scrubgrass Rd. – Swallow Hill Rd. – Greentree Rd. (3.1 miles – 7 minutes) and a detour route that uses (Vanadium Rd. - Washington Pike (SR 50) – Greentree Rd. (2.9 miles – 8 minutes). We will work closely and coordinate with PennDOT District 11, project stakeholders, local officials including Scott Township, emergency management service providers, and the local school district to minimize impacts and determine the best possible traffic control scenario. Despite the absence of visible accommodations for pedestrians accessing the structure's sidewalk or any surrounding roadways, the structure is situated in an urbanized area and serves as the sole local crossing over the railroads. Therefore, it is imperative to assess any special provisions for bicycles and pedestrians. All traffic control will follow and be designed in accordance with Pub 213.

Utilities/PUC - Markosky will investigate and identify all utilities within the project limits. From our review of documentation and filed observations, there are overhead aerial, cable and telephone utilities that cross parallel to the structure on the east side as well as cross the roadway on the north end. The power lines are carried by two large Transmission Towers that are located close to the structure. The structure itself does not appear to carry any utility facilities. It also appears that the cable / telecommunication lines are located low above the bridge deck. Currently, due to the scope of the project we do not anticipate any major conflicts with the utilities. However, Markosky understands that identifying the affected utilities and working closely with the utility companies to resolve constructability issues is critical to meeting milestone dates and letting the project on time. All utilities within the project limits of the structure will be documented by utilizing a Utility Conflict Spreadsheet and inputting information into URMS. We will identify any possible conflicts early in the design process. Markosky will work with the utilities, the Township and the District to resolve any utility conflict that is identified to get the necessary utility clearance for the project so that the required design / construction milestone dates are met for the project.

Environmental - This project will include the completion of an environmental site assessment and research to obtain information to complete the environmental document in accordance with the NEPA requirements. Environmental clearance for this project could be obtained through a BRPA CE document. Site assessment work for the project will focus on wetland

delineations, stream assessments, floodplain assessments, environmental justice, and Section 4(f) evaluations.

Cultural Resources/Historical - The three span steel stringer bridge (1993) is not eligible for NRHP listing. Due to the proposed preservation activities, Section 106 concerns for historic structures and archaeological investigations are not anticipated. There is eligible railroad lines located beneath the bridge project. Although not anticipated, any direct impacts to these eligible railroad properties will require Section 106 surveys, mitigation, and consulting party consultation.

Markosky has successfully completed similar preservation/rehabilitation projects including the following:

- **E04030 District 11-0 SR 1038 New Kensington Bridge Preservation:** 3-span pin-connected through truss over the Allegheny River and Norfolk Southern with 11 spans of steel girder approaches. Preservation work involved full painting, numerous steel repairs, replacement of expansion dams, modifications to the drainage system, LMC deck overlay, and concrete repairs. Due to the project success, it was chosen as the **2024 Bridge Project of the Year by the Engineers' Society of Western Pennsylvania (ESWP)** at the ESWP Annual Engineering Awards Banquet on Thursday, March 20. It was also most recently selected for the **Rehabilitation Category Award** for the **Association for Bridge Construction and Design (ABCD) - Susquehanna section**.

New Kensington Bridge

- **E03261 District 11-0 Neville Island:** Bridge rehabilitation of dual steel bridges on I-79 over Ramp A and Deer Run Road, including retrofit of fatigue prone details, full bridge painting and bearing replacement.

2. Efficiency during Design Process

Markosky will meet with the District Bridge Unit early in preliminary design to discuss the preservation and rehabilitation strategies and goals. The Markosky team will conduct an in-depth, hands-on rehabilitation inspection of the structure to accurately determine the extent of all the required repairs. We will also evaluate the need for any advanced testing of other areas of steel deterioration and we will collect samples for testing of hazardous materials and asbestos.

Along with the rehabilitation inspection, Markosky recommends performing a hands-on design inspection of all substructures, including 100% sounding of all concrete. NBIS inspections often do not provide the level of detail needed to accurately depict the extent of repairs needed. Identification of these issues will aid in the development of steel and concrete repair details and identify problems that may require unique methods to address.

These types of projects are the most efficient and successful when the assigned staff are involved, starting early in the design process, during inspections, through development of the repair scope of work, final plan development and ultimately during construction for any questions or unforeseen repairs. Our Project Manager (PM), **Brandon Lankey, PE, CBSI, NCTI**, will be our Inspection Team Leader in order to have a firsthand view of the work proposed.

Additionally, it is critical to understand the project constraints and how a proposed design impacts the construction. Our team will incorporate cost effective techniques and use the following approach to efficiently deliver this project:

- *Conduct utility coordination meetings* early to identify utility requirements and address them efficiently as part of our design. Major utility impacts are not anticipated. However, minor impacts will be identified and addressed promptly.
- *Identify constructability issues* and coordinate with Scott Township and the District's Construction Unit throughout the design process so that they can be appropriately addressed or avoided.
- *We will develop a pre-bid CPM schedule* that sequences all construction activities. The CPM will include utility relocations (if needed), fabrication & material lead times and environmental commitments to ensure that the contractor can meet the project completion milestone.
- *Consistent and Thorough Communication* by communicating regularly with the Township, the District and local stakeholders. Early and consistent communication is key to an efficient design process.
- *Project Monitoring and Reporting* by developing and monitoring an ASTA design schedule that provides milestone submission dates. Each project is also set up in our accounting software, enabling our PMs to monitor design budgets instantly. Monthly progress reports will be provided to the Township and the District showing physical percent complete for each task, work completed and forecasting of upcoming work and submissions

- *Fast-Track the Design Schedule* to meet or beat the scheduled let dates. The best way to ensure on-time delivery is to understand the Township's and the District's expectations and to work with the team to set aggressive, yet obtainable, project milestones. To meet commitments, it is important to tackle key issues early on each assignment.

3. Experience and Technical Competence

Evaluation Ratings
Consistently Exceeds (CE) – 66
Exceeds Expect. (EE) – 191
Expected Perform. (EP) – 512
Never been rated below EP

Markosky has successfully led and completed numerous bridge replacement and preservation design projects and has over **765 Favorable PennDOT Consultant Evaluations** which are evidence of our quality of work and our ability to complete projects on time and within budget *(See sidebar for Evaluation Ratings).*

Perhaps the most important aspect of efficiency is the selection of our design team. The individuals noted for this project have been directly involved in numerous bridge rehabilitations, preservations, and inspections. Our experience will be an asset to Scott Township and District 11-0 as our goal for any project is to take ownership of the project and make the client's PM job more efficient.

Brandon Lankey, PE, CBSI, NCTI, has over **17 years** of experience in design, rehabilitation, analysis and inspection of structures and will serve as our **PM** and **Lead Bridge Engineer (LBE)** on the project. Brandon was an integral team member on the Tarentum Bridge, SR 28 Highland Park, and Liberty Bridge projects in District 11-0 and was heavily involved in various aspects of the New Kensington project. Brandon is also one of our FAA certified UAV pilots, in which he used Markosky's drone with collision avoidance to fly between floorbeam members during the rehabilitation inspection of DCNR's Kinzua Skywalk bridge for supplemental inspection documentation.

Frank Strittmatter, PE has over **25 years** of experience and will serve as our **Lead Structure Reviewer**. Frank is Markosky's Structures Department Manager and is extremely familiar with Department policies, procedures, and preferences. Frank has completed previous truss rehabilitations and preservations on four truss projects as the Project Manager for District 9-0 including the Everett Trusses, Eckenrode Mill Truss and Krings Truss and was the Project Manager for the construction services phase for the New Kensington project.

Nicholas Wagner, PE will be our **Lead Highway Engineer (LHE)**. With over **23 years** of experience, Nick has been the LHE on numerous PennDOT projects including the New Kensington bridge project. Nick will also provide oversight and coordination with drainage design, E&SC, and ROW plan development.

Other key staff can be found in the side bar and in the accompanying **Organization Chart** and outlines our entire proposed team for this project, and specialized experience of key personnel can be found in the accompanying **Resumes.**

Key Personnel
Traffic/Utilities/PUC: Dorothy Boring, PE, PTOE (36)
Environmental: Jared Govi, ENV SP (23)
Geotech: Mike Lemansky, PE (33) (AGES)
Surveys: Brody Tunno, PLS (22) (MBE)
ROW Acq.: Craig Laurenson (21) (KAS)
S.U.E.: Bryan Teschke, PG, PGp (18) (TLG)
Support: Darin Hettich, PE (34) (GPI)

4. QA/QC

Markosky takes great pride in our quality control process and believes it is a key to our success. The prospect of long-term success with a client significantly diminishes if a great quality product is not submitted. We work in an industry where quality is paramount, and our commitment to quality is steadfast. To ensure quality control, we will develop and implement a Project-Specific Quality Management Plan (PSQMP). Every staff member follows an **11-step Master Quality Control Plan** (MQCP) that was developed to augment our PSQMP. All calculations, plans and reports prepared will be reviewed by our senior management staff prior to submission. Markosky assigns senior staff members as **Independent Reviewers** for all reviews.

PSQMP Components
• Project Checklists & BMPs
• Technical Proposal
• Approved Task Hours
• ASTA Powerproject schedule
• Cross Discipline Reviews
• Quality Assurance Reports
• MQCP Flowchart
• File Directory Structure

To achieve project consistency and quality, our subconsultants will: 1) Follow Markosky's PSQMP and quality procedures; 2) Submit work products to Markosky two weeks in advance of the submission dates; 3) Provide Monthly Progress Reports in accordance with our PSQMP; and 4) Provide Quality Assurance Reports (QAR) with each submission.

Brian Watkins, PE has over **27 years of** experience and is our Civil Division Manager and will be our QA/QC manager.

I have reviewed Publication 93 (02-25), Section 1.5 - Engineering Involvement Restrictions and determined that there are no potential conflicts of interest for anyone on this Agreement team.

I have reviewed 2 CFR 200.112, 23 CFR 1.33 and 23 CFR 172 and determined that there is no conflict of interest for anyone on the Agreement team.

Pennsylvania Department of Transportation
Consultant Qualifications Package
Resumes

Resume # 1

Name Brandon K. Lankey, PE, CBSI, NCTI **Title** Project Manager

Primary Responsibilities

Responsible for the completion of structure and roadway tasks including Type, Size and Location Studies, Hydrologic and Hydraulic Reports, Traffic Control Plans, Final Structure Design/Detailing and Roadway Design/Plan Preparation.

Years Experience: **With This Firm** 17 **With Other Firms** 0

Education

Institution	Degree(s)	Year	Specialization
The Pennsylvania State University	B.S.	2007	Structural Design and Construction Engineering Technology
The Pennsylvania State University	A.S.	2005	Architectural Engineering Technology

Active Registration

Year first registered **2017 (PA)**; 2018 (OH)

Disciplines Professional Engineer **PA (PE-086381)**; OH (PE-83322)

Year first registered **2018 (PA);** 2019

Disciplines Certified Bridge Safety Inspector; National Certified Tunnel Inspector

Other Experience and Qualifications

Brandon has experience providing design for various types of bridges and roadway projects. His bridge design experience includes all aspects from Type, Size & Location studies, Hydrologic and Hydraulic analysis, and final bridge plans. Roadway design experience includes traffic control, design field view plans, E&SPC plans, and PS&E submissions. His inspection experience includes highway bridges along with highway and transit tunnels.

Select Project Experience

SR 1038 New Kensington Bridge, Allegheny County – PennDOT District 11-0
Inspector / Designer – Preservation Inspection & Structural Design
Markosky is the Prime Consultant for the preservation of the New Kensington Bridge, a 14-span structure over the Allegheny River in Westmoreland and Allegheny Counties. The bridge features three Pratt truss river spans and multiple steel approach spans of various configurations supported on steel bents. Preliminary Engineering included design inspection, development of a preservation Type, Size and Location Report, utility coordination, and public official's coordination. Final design included development of preservation plans and specifications, traffic control plans, ATON plan, additional design inspections including pin testing, and development of bid documents. Frank has stepped in as the Project Manager during the construction phase to review shop drawings, respond to RFIs, develop modified repair details and attend weekly project control meetings in the field.

Open End Agreement for Design Services, District Wide, Bridge Design for SR 376-A74, Allegheny County, PA – PennDOT District 11-0 (E05661 WO 1 & WO 2)
PM / Inspection Team Leader – Preservation Inspection
Markosky is responsible for the In-Depth Bridge Design Inspections of 11 bridges and for the In-Depth Sign Structure Design Inspections of 13 overhead sign structures along SR 376 (Parkway East) between Churchill and

Edgewood. In addition to the inspection work, Markosky was also responsible for the development of a rigging contract, determining MPT needs, obtaining paint samples for laboratory testing, creation of field notes and summarizing inspection findings and repair recommendations in an executive summary to be included in the Preliminary TS&L. A repair list for each sign structure is being prepared for a Pro-Team meeting. Sign Structure final design will include an overall list of structure repairs, special provisions, cost estimates and item number information to be included into AutoTAB.

SR 978 over Dolphin Run, Millers Run Road, Allegheny County, PA – PennDOT District 11-0
Designer – H&H Analysis, Structure Design
As the prime consultant, Markosky conducted preliminary engineering and final design for the structure replacement of the Millers Run Road bridge over Dolphin Run in South Fayette Township. The structure was replaced with a cast in place rigid frame structure which will be interfaced with an existing privately owned culvert. Design tasks included structure design and TS&L, roadway and drainage design, hydraulic analysis, traffic control, utility coordination, phase 1 and 2 environmental site assessments, public involvement, assistance with other environmental/permitting tasks, and bid package preparation.

SR 0028 & SR 1005 Highland Park Bridge Ramps, Allegheny County, PA – PennDOT District 11-0
Inspector / Designer – Preservation Inspection & Structural Design
This project involved the reconstruction of SR 28 near the Highland Park Bridge. For Preliminary Engineering, Markosky developed TS&Ls for the preservation and/or widening of 7 bridges including the widening of a 3-span prestressed concrete structure and a reinforced concrete arch structure. Preservation inspections, including fracture critical inspections, were performed on all structures. For final design, Markosky developed final design plans and specifications for 5 bridges, several existing retaining walls and overhead sign structures. Final design tasks included hands on inspection of all structures including concrete substructure and deck sounding and development of cost estimates.

SR 279 and SR 6279 Fort Duquesne to Camp Horne, Allegheny County, PA – PennDOT District 11-0
Designer – Structural Design
This project consisted of the resurfacing and bridge preservation work on SR 279 from the Fort Duquesne Bridge to the Camp Horne Road interchange. The roadway scope of work included full depth pavement reconstruction and pavement overlays with associated guiderail and drainage repairs. The bridge preservation work consisted of expansion dam replacements, bearing repairs, steel and concrete repairs, and other associated preservation work as directed. Markosky completed the Type, Size and Location reports for the preservation of 50 sign structures within the corridor. Additional work on the sign structures includes structural analysis of 7 structures using the PennDOT SIGN program or STAAD and hand calculations. Final design plans and specifications were developed for the sign structures. Markosky was responsible for the final design of four structure preservations for overhead bridges and the widening of a single span prestressed concrete mainline structure.

SR 0366, Section A06 Tarentum Bridge Main Truss Spans and Ramps 'A' and 'B' PE, Allegheny County, PA – PennDOT District 11-0 (WO 1, WO 2, WO 4)
Inspector / Designer / PM – Bridge Preservation Inspection & Structural Design
Markosky assisted in the preservation of the Main Truss Span over the Allegheny River along with Ramps A and B for the Tarentum Bridge. Preliminary engineering tasks included a rehabilitation inspection of the structures, development of repair quantities and assistance in development of the TS&L report. Markosky also assisted with the Asbestos inspection of the Main Truss Span. Final design tasks include assistance with final plan preparation.

Resume # 2

Name Nicholas Wagner, PE **Title** Assistant Department Manager - Roadway

Primary Responsibilities

Project Management for roadway projects.

Years Experience:	With This Firm	With Other Firms
	7	16

Education

Institution	Degree(s)	Year	Specialization
University of Pittsburgh at Johnstown	B.S.	2001	Civil Engineering Technology

Active Registration

Year first registered **2006 (PA)**; 2006 (MD); 2019 (WV); 2020 (OH)

Disciplines Professional Engineer **PA (PE-073698)**; MD (PE-33741); WV (PE-23926); OH (PE-85584)

Other Experience and Qualifications

Nicholas' duties include planning, directing, and coordinating activities of projects to ensure that goals and objectives are accomplished within a prescribed time frame and funding parameters. Nicholas also serves as a mentor to other Project Managers and technical staff, providing technical and administrative guidance. He has over 23 years of experience managing highway and bridge replacement projects for various state and local agencies. He has extensive site development, highway design, intersection design, and street improvement project experience. His experience includes preparation of preliminary and final design plans including Line, Grade & Typical, Design Field View, Erosion and Sediment Pollution Control, Traffic Control, Signing and Pavement Marking, Right-of-way, and PS&E submissions. He has also performed utility coordination. He is proficient in the use of MicroStation InRoads/OpenRoads, AutoCAD Civil 3D, AutoTAB, ASTA Powerproject, ECMS and Microsoft Office Programs.

Select Project Experience

SR 1038 New Kensington Bridge, Allegheny County, PA – PennDOT District 11-0

Lead Highway Engineer

Markosky was the prime consultant for the preservation of the New Kensington Bridge, a 14-span structure over the Allegheny River in Westmoreland and Allegheny Counties. The bridge features three Pratt truss river spans and multiple steel approach spans of various configurations supported on steel bents. Preliminary Engineering included design inspection, development of a preservation TS&L Report, utility coordination, and public official's coordination. Final design included development of preservation plans and specifications, Traffic Control Plans, ATON plan, additional design inspections including pin testing, and development of bid documents.

SR 376 Section A62 (Commercial Street), Allegheny County, PA - PennDOT District 11-0

Project Manager – Lead Highway Engineer

The project involves the replacement of an existing 861-ft-long three-arch concrete arch and beam structure that spans over the Nine Mile Watershed, Frick Park, and Commercial Street. The replacement structure will be a 5-span composite steel multigirder delta frame bridge. Markosky prepared the TS&Ls for a 280' soldier pile retaining wall, a four-chord overhead sign structure and a single strut cantilever sign structure. Additional work completed during preliminary engineering included design of temporary construction access roads, Temporary Commercial

Street Plans, Site Restoration Plan for Frick Park Trail, Signing and Pavement Marking Plan and utility coordination. Utility coordination efforts involved relocations to accommodate the offline construction of the new structure and the new pier locations.

During final design, Markosky prepared the final design plans for the portions of work completed during preliminary engineering in addition to the completion of plans associated with lowering Ramp G along SR 8012 Section A02. The plans prepared for Ramp G included the Construction Plan, Signing and Pavement Marking Plan, E&S Control Plan and Cross Sections.

SR 0837, Section A42 Safety Improvement Project, Allegheny County – PennDOT District 11-0
Project Engineer – QA/QC
This project involved the evaluation of PA 837 (East Carson Street) from Smithfield Street Bridge to 33rd Street to determine and design improvements to improve the safety and mobility for roadway users and pedestrians. As a subconsultant, Markosky provided traffic engineering support and pedestrian curb ramp design.

Fairwood Manor Bridge Replacement, Irwin, PA – Borough of Irwin
Project Manager – Lead Highway Engineer
This project consisted of the replacement of the single span bridge over Tributary to Tinkers Run in Irwin Borough, Westmoreland County. The replacement structure was a prestressed concrete rigid frame on spread footings. A detour is to be used during construction. As the prime consultant, Markosky completed the final design for the replacement structure, roadway design, drainage, utility coordination, traffic control, permitting and overall project management at the site along with the final PS&E package preparation and entry into ECMS.

SR 3008, Section A03 State Street Pedestrian Improvements, Mercer County, PA – PennDOT District 1-0
Project Manager – Lead Highway Engineer
This project involved the design of pedestrian improvements along SR 3008 (State Street) from Buhl Boulevard to SR 0018 (S Hermitage Drive) in the City of Hermitage. As a subconsultant, Markosky completed the preliminary engineering roadway plans from Buhl Blvd to N Buhl Farm Drive as well as the utility coordination for the entire project. As the prime consultant, Markosky completed final design, utility coordination and overall project management for the entire corridor.

SR 0019, Section B17 Bridge Replacement, Mercer County, PA – PennDOT District 1-0
Project Manager – Lead Highway Engineer
This project consisted of the replacement of the single span bridge over Neshannock Creek Tributary in East Lackawannock Township, Mercer County. The replacement structure is a precast concrete box culvert. Since SR 0019 is an emergency detour route for I-80, both traffic lanes were maintained during construction via a temporary road. As the prime consultant, Markosky completed the design for the replacement concrete box culvert, roadway design, utility coordination, traffic control, H&H, permitting and overall project management at the site along with the final PS&E package preparation and entry into ECMS.

Jefferson Short Span Group – Various Counties, PA – PennDOT District 10-0
Project Manager – Lead Highway Engineer
Project involved the replacement of three short span bridges located in Jefferson County. Markosky was responsible for the environmental tasks for all three work orders. Markosky was also responsible for the preliminary and final engineering design for Work Order 3. All three replacement structures are precast concrete box culverts.

Pennsylvania Department of Transportation
Consultant Qualifications Package
Resumes

Resume # 3

Name Edward A. Kapelewski, PE, CBSI, NCTI **Title** Project Engineer / Team Leader

Primary Responsibilities

Project Engineer responsible for bridge safety inspections, ratings analysis and structural design.

Years Experience: **With This Firm** 11 **With Other Firms** 16

Education

Institution	Degree(s)	Year	Specialization
Pennsylvania State University	Bachelor of Science	1996	Structural Engineering

Active Registration

Year first registered	**2003 (PA);** 2006 (WV)
Disciplines	Registered Professional Engineer - Civil
	PA (PE-061023); WV (PE-016718)
Year first registered	**2006 (PA);** 2016
Disciplines	Certified Bridge Safety Inspector; National Certified Tunnel Inspector

Other Experience and Qualifications

Edward has NBIS inspection experience. He specializes in structure inspection, structural analysis, bridge ratings and report documentation involving NBIS bridge safety inspections. He has performed inspections on various roadway bridges, transit bridges, pedestrian/trail bridges, culverts, train bridges, tunnels, and inclines. He has inspected various types of structures including concrete slabs, concrete T-beams, concrete encased I-beams, steel I-beams, steel plate girders, steel trusses, timber beams and prestressed concrete adjacent box beams. In conjunction with completing all types of inspections (In-depth, Periodic, Initial and Special), he has prepared the reports and BMS coding as per PennDOT requirements as well as federal requirements. Edward has been involved with emergency flood and damage inspection services.

Select Project Experience

Open End Agreement for Design Services, District Wide, Bridge Design for SR 376-A74, Allegheny County, PA – PennDOT District 11-0 (E05661 WO 1 & WO 2)

Bridge Inspector – Preservation Inspection

Markosky is responsible for the In-Depth Bridge Design Inspections of 11 bridges and for the In-Depth Sign Structure Design Inspections of 13 overhead sign structures along SR 376 (Parkway East) between Churchill and Edgewood. In addition to the inspection work, Markosky was also responsible for the development of a rigging contract, determining MPT needs, obtaining paint samples for laboratory testing, creation of field notes and summarizing inspection findings and repair recommendations in an executive summary to be included in the Preliminary TS&L. A repair list for each sign structure is being prepared for a Pro-Team meeting. Sign Structure final design will include an overall list of structure repairs, special provisions, cost estimates and item number information to be included into AutoTAB.

SR 0028 & SR 1005 Highland Park Bridge Ramps, Allegheny County – PennDOT District 11-0
Inspector– Preservation Inspection & Structural Design

This project consisted of the reconstruction of SR 28 near the Highland Park Bridge. For Preliminary Engineering, Markosky developed TS&Ls for the preservation and/or widening of 7 bridges including the widening of a 3-span prestressed concrete structure and a reinforced concrete arch structure. Preservation inspections, including fracture critical inspections, were performed on all structures. For final design, Markosky developed final design plans and specifications for 5 bridges, several existing retaining walls and overhead sign structures. Final design tasks included hands on inspection of all structures including concrete substructure and deck sounding and development of cost estimates.

SR 1038 Section A01 New Kensington Bridge Preservation PE, FD, CCS, Allegheny County – PennDOT District 11-0 (E04030)

Team Leader – Bridge Inspection

Markosky is the Prime Consultant for PennDOT District 11-0 for the preservation of the New Kensington Bridge. The bridge is a 14-span structure over the Allegheny River and Norfolk Southern and includes 3 pin connected Pratt Truss spans and numerous steel girder-floorbeam-stringer spans supported by concrete piers or steel bents. Preliminary engineering tasks included a preservation inspection, development of repair quantities and costs, Pro Team Meeting, TS&L for the bridge preservation, utility coordination for above and underground utilities, and public involvement. The preservation inspection for this structure consisted of a hands-on, fracture critical inspection of all elements of the structure to identify limits of deterioration and extents of needed repairs for use in developing project cost estimates. Final design will include development of final structure plans and specifications, additional inspection including non-destructive pin testing and water blast cleaning of rusted elements, and development of the PS&E package. Note that Markosky will be performing the NBIS and Fracture Critical inspections of this structure in March 2019.

SR 2030, Section L03 Mountville Road Bridge over Slippery Rock Creek, Allegheny & Lawrence Counties – PennDOT District 11-0 (E02679)

Team Leader – Bridge Inspector

Markosky assisted in the rehabilitation of the Mountville Bridge. Markosky assisted with bridge inspection tasks including oversight of concrete core and steel testing. Markosky developed rehabilitation plans for the abutments as part of the final design.

Engineering and Environmental Open End, In-Depth Inspections – PennDOT District 3-0 (E04498)

Team Leader – Bridge Inspector

The scope of work included three Type 2 Inspections and six Type 4 Inspections. The Type 2 Inspections consisted of a traditional in-depth inspection of a fracture critical bridge (hands-on inspection of fracture critical and non-fracture critical members and sounding of the substructures. The Type 4 Inspections consisted of a hands-on inspection to provide section measurements for upcoming paint contracts for the District. Project tasks included preparation for inspection, the inspection, and preparation and review of inspection reports. The bridge load rating analysis was updated for each of the structures receiving a Type 2 Inspection.

Resume # 4

Name Dorothy C. Boring, PE, PTOE **Title** Senior Project Manager / Traffic Lead

Primary Responsibilities

Senior Project Manager responsible for roadway design, traffic engineering, and utility coordination.

Years Experience:	With This Firm	10	With Other Firms	26

Education

Institution	Degree(s)	Year	Specialization
University of Pittsburgh at Johnstown	Bachelor of Science	1986	Civil Engineering Technology

Active Registration

Year first registered **1997 (PA)**; 2021 (OH); 2021 (WV)

Disciplines Professional Engineer; Professional Traffic Operations Engineer (PTOE No. 2243)

PA (PE-048921E); OH(PE-86690); WV (PE-24691)

Other Experience and Qualifications

Dorothy has a diverse background and strong skill set in project development, civil engineering, and project administration. She can focus on different facets of engineering as necessitated by projects. Dorothy has designed new intersection geometry layouts, traffic signal and flashing warning device designs, complex work zone traffic control plans (temporary and emergency), signing and pavement marking plans, traffic impact studies and highway occupancy permits. She has experience in design and traffic control plan development for various roadway and bridge betterments and safety improvements. She also has experience with the development of traffic related incident management plans and transportation management plans. Dorothy also has experience with utility coordination on complex projects and serves as the URMS administrator for Markosky.

Select Project Experience

Engineering and Environmental Open End for Department and/or local agency projects, Various Counties, PA – PennDOT District 3-0
Engineer – Traffic Control Plan
Markosky developed final construction documents for the epoxy overlay of ten (10) structures and phased traffic control plans using single lane closures for various sites in Lycoming County, including SR 0015 at the I-180 interchange. Markosky developed quantities for replacing the gland material in expansion dams and developed final traffic control plans.

SR 4038, Section D10 – Layton Bridge, Fayette County, PA – PennDOT District 12-0
Project Manager
This project includes three phases: Alternative Analysis, Preliminary Engineering and Final Design. In the alternatives analysis Markosky was responsible for Traffic Engineering, which included data collection, crash analysis, capacity analysis, detour evaluations, and completing an origin-destination study to assist with determining the preferred alternative, rehabilitation, or replacement of the SR 4038 (Layton Road) structure spanning the Youghiogheny River. In preliminary engineering Markosky developed a phased maintenance & protection of traffic plan to maintain traffic during the replacement of the bridge over the Youghiogheny River the reconstruction and realignment of SR 4038 and the replacement of the Washington Run bridge. Markosky was also responsible for the signing & pavement marking plans, utility coordination and the TS&L for the SR 4038 structure over Washington Run in preliminary engineering. In final design Markosky is preparing the structure plans for the

Washington Run Bridge, utility coordination, completing the signing and pavement marking plan and developing a phased maintenance and protection of traffic plan with cross sections to facilitate the maintenance of traffic on the existing road and bridges during construction and maintain trail traffic on the Great Allegheny Passage trail that passes under the existing and proposed bridge. Markosky is also responsible for developing the incident management plan for the project.

SR 1038, Section A01 New Kensington Bridge Preservation PE, FD, CCS, Allegheny County, PA – PennDOT District 11-0 (E04030)
Traffic Engineer – Traffic Control Plan/Utility Coordination
Markosky was the Prime Consultant for PennDOT District 11-0 for preliminary and final design preservation of the New Kensington Bridge, a 14-span structure over the Allegheny River in Westmoreland and Allegheny Counties. The scope of the preservation project included steel repairs, full structure repainting, concrete repairs, expansion dam replacement, placement of an LMC overlay, lighting improvements, and minor approach roadway work. Final design tasks include development of plans and specifications for the bridge and roadway work, complex traffic control plan development for phased and detoured construction with modifications to the existing traffic signals, utility coordination, and creation of all bid documents including CPM scheduling.

30th Street Bridge & River Avenue Viaduct Structural Repairs – Phase 1, Allegheny County, PA – City of Pittsburgh
Project Manager
This project was for the preliminary and final design for phase 1 of the structural repairs on the 30th Street Bridge & the River Avenue Viaduct providing the only access to the businesses and residents on Washington's Landing (aka Herrs Island). Markosky was responsible for developing a phased Traffic Control Plan and Construction Sequencing to maintain traffic and truck deliveries across the bridge, the E & S Plan, securing Environmental Clearance and the GP-11 General Waterway Obstruction Permit. Markosky was also responsible for the Public Meeting and Stakeholder Coordination on the project during design and construction.

SR 0119, Section SE4 (US 119 Connellsville CMAQ), Fayette County – PennDOT District 12-0
Engineer – Traffic Analysis/Utility Coordination/Traffic Control
This project included improvements to 6 existing traffic signals including the development of coordination plans for the corridor extending from SR 1037 (Pittsburgh Street) to PA 711 (Crawford Avenue) in the City of Connellsville, Fayette County. The signal enhancements and miscellaneous roadway work included and adaptive signal evaluation and signal modifications to address existing congestion and queuing issues, and upgrades to ADA/pedestrian facilities at locations to enhance pedestrian safety and mobility. As the prime consultant, Markosky was responsible for overall project management, traffic analysis and design, roadway design, safety analysis and improvements, traffic control, public involvement, utility coordination, and environmental activities.

SR 3026, Section 190 (Westmoreland County Signal Upgrades –CMAQ) – PennDOT District 12-0
Engineer – Traffic Analysis/Utility Coordination/Asta Project Schedule
This project included improvements to 24 existing traffic signals including the development of coordination plans for the corridor extending from State Route 3026 at Hamilton Avenue to PA 130 and State Route 8064 (US Route 30 off ramp) in the City of Greensburg and Hempfield Township, Westmoreland County. The work included miscellaneous roadway work, signal replacements, modifications, and the addition of ADA/pedestrian facilities at locations to address existing congestion and queuing issues. As the prime consultant, Markosky was responsible for overall project management, traffic analysis and design, roadway design, driveway modifications, safety analysis and improvements, traffic control, public involvement, utility coordination, and environmental activities.

Resume # 5

Name **Francis M. Strittmatter, PE** **Title** Structures Department Manager

Primary Responsibilities

Project Manager responsible for bridge design and structural design.

Years Experience:	**With This Firm**	8	**With Other Firms**	17

Education

Institution	Degree(s)	Year	Specialization
Pennsylvania State University	B.S.	1998	Civil Engineering

Active Registration

Year first registered **2004(PA)**

Disciplines Professional Engineer - Civil **PA (PE-070835)**

Other Experience and Qualifications

Frank has in-depth engineering experience in the design, inspection and construction management of bridges, and other types of transportation related structures including structure preservation and rehabilitation projects. He has extensive experience in the design of steel, prestressed concrete, and reinforced concrete structures. Responsibilities include department supervision, design oversight, development of scopes of works and proposals, design of structures, review of reports, supervision of structural detailing, review of designs and drawings, and project management. He has completed over 60 bridge and culvert projects through construction, and several other projects to various stages of design. Frank has completed TS&L reports, H&H analyses, final calculations, permit submissions, prepared E&S plans, performed utility coordination, and conducted numerous public meetings. His experience includes the preparation of quantities, cost estimates, final plans, construction CPM's and he has assembled PS&E project development checklists.

Select Project Experience

SR 1038 New Kensington Bridge, Allegheny County – PennDOT District 11-0
Project Manager

Markosky is the Prime Consultant for the preservation of the New Kensington Bridge, a 14-span structure over the Allegheny River in Westmoreland and Allegheny Counties. The bridge features three Pratt truss river spans and multiple steel approach spans of various configurations supported on steel bents. Preliminary Engineering included design inspection, development of a preservation Type, Size and Location Report, utility coordination, and public official's coordination. Final design included development of preservation plans and specifications, traffic control plans, ATON plan, additional design inspections including pin testing, and development of bid documents. Frank has stepped in as the Project Manager during the construction phase to review shop drawings, respond to RFIs, develop modified repair details and attend weekly project control meetings in the field.

SR 279 & SR 6279, Fort Duquesne to Camp Horne, Allegheny County, PA – PennDOT District 11-0
Senior Structures Engineer

This project consisted of the resurfacing and bridge preservation work on SR 279 from the Fort Duquesne Bridge to the Camp Horne Road interchange. Responsible for the bridge design tasks consisting of expansion dam replacements, bearing repairs, steel and concrete repairs, and other associated bridge rehabilitation work as directed. The design tasks included development of the bridge preservation plans, specifications and cost estimates for several structures, development of preliminary and final design for a widened mainline structure, structural analysis including finite element analysis for sign structures, and development of repair and preservation plans for the sign structures.

Select Former Experience

SR 643, Section 001, Town Hill Interchange Bridge, Fulton County – PennDOT District 9-0
Project Manager / Lead Structures Engineer
This project involved the rehabilitation of a 4-span steel I-beam bridge over Interstate 70. Scope of work consisted of barrier and deck replacement, bridge approach transitions, the addition of shear studs to create a composite superstructure, bearing and expansion joint replacements, new slope walls, and substructure repairs to the 2-column piers. Bridge deck joints over the piers were eliminated and bearing fixity was changed from expansion to fixed. Responsible for overall project delivery, final structure plan reviews, special provisions, construction cost estimates, and shop drawing reviews.

SR 26, Section 17B, Everett Truss Rehabilitations, Bedford County, PA – PennDOT District 9-0
Project Manager / Lead Structures Engineer
This project involved the rehabilitation of a 2-span steel pony truss and 2-span reinforced concrete arch and the preservation of a 2-span steel pony truss. Rehabilitation work included concrete repairs, barrier and deck replacement, steel member replacement and retrofit, crack arresting cold expanding bushings, superstructure jacking and rocker bearing replacements. Preservation work included latex modified concrete overlay, concrete repairs, strip seal joint replacements and rocker bearing replacement. Responsible for the hands-on field investigation and subsequent recommendations of all repairs, final structure plans, special provisions, construction cost estimates and shop drawing reviews.

SR 1008, Section 01B, Eckenrode Mill Bridge, Cambria County, PA – PennDOT District 9-0
Project Manager / Lead Structures Engineer
This project involved the rehabilitation of a 1-span steel pony truss. Rehabilitation work included concrete repairs, barrier and deck replacement, stringer replacement, repair retrofits of the floorbeams, truss members, gusset plates, superstructure jacking and rocker bearing replacements. Responsible for the hands-on field investigation and subsequent recommendations of all repairs, final structure plans, special provisions, construction cost estimates and shop drawing reviews.

SR 4041, Section 003, Krings Bridge, Somerset County, PA – PennDOT District 9-0
Bridge Project Manager
This project involved the rehabilitation of a 2-span steel pony truss. Rehabilitation work included concrete repairs, barrier and deck replacement, steel member replacement and retrofit including the floor beams, stringers, truss members, and gusset plates, superstructure jacking and rocker bearing replacements. Responsible for final structure plan review, special provisions, construction cost estimates, and shop drawing reviews. Prepared the construction schedules.

SR 453, Section 003, Tyrone Forge Bridge Rehabilitation, Blair County, PA – PennDOT District 9-0
Bridge Project Manager
This project involved the rehabilitation of a 4-span reinforced concrete arched T-beam bridge. Rehabilitation work included extensive concrete repairs, pier encasements, barrier replacement, and placement of latex modified concrete overlay. The deck joints were permanently removed to reduce the water infiltration into the beams by pouring full depth diaphragms at the joint locations. The existing arched T-beams are eligible for the National Register of Historic Places as a qualifying characteristic therefore the bridge barrier shape and recesses were replicated in the proposed construction as a context sensitive design for environmental clearance.

MARKOSKY

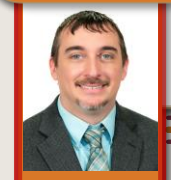
SCOTT TOWNSHIP
FOUNDED 1861

Organizational Chart
Agreement L00907
Old Bower Hill Road Memorial Bridge

Scott Township

Tom Kelley
Director of Public Services

Project Manager



Brandon Lankey [17] ▲
Lead Bridge Engineer

QAQC Manager

Brian Watkins, PE [27]
Civil Engineering Division Manager

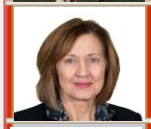
Teaming Partners

GPI	Greenman Pedersen, Inc.
MBE	Monaloh Basin Engineers, Inc.
AGES	American Geotechnical & Environmental Services, Inc.
TLG	The Lexis Group, LLC
KAS	Keystone Acquisition Services Corporation

Key Personnel - SPM

Nick Wagner, PE [23] ▲
Lead Highway Engineer

Ed Kapelewski, PE, CBSI [27] ▲
Lead Bridge Inspector



Dorothy Boring, PE, PTOE[36] ▲
Lead Traffic Engineer

Frank Strittmatter, PE [25] ▲
Lead Structure Reviewer

LEGEND:
Resumes Included with Submission ▲
Years of Experience [ ]
Unmanned Aerial Vehicle Pilot - UAV

Support Staff

Roadway
Nicholas Wagner, PE [23]
Shane Ritenour, PMP [24]
Joshua Handel, PE [11]
Samuel Weaver, PE [10]
Zachary Hayes, PE [10]

Structures and Inspection
Brandon Lankey, PE, CBSI [17] UAV
Peter Molnar, PE, CBSI [25]
Frank Strittmatter, PE [25]
Ed Kapelewski, PE, CBSI [27]
Tyler Haupt, EIT, CBSI [9] UAV
Dakota Wagner, PE CBSI [11]
Darin Hettich, PE [34] GPI
Haris Fetahagic, PE [14] GPI

Traffic Engineering
Dorothy Boring, PE, PTOE [36]
Jonathon Balko, PE [25]
Karly Pritts, MSCE [10]

Environmental & CR
Jared Govi, ENV SP [23]
Jason Harkcom [27]
Ryan Rowles, MA, RPA, CRP [26]
Laura Ricketts, CRP [30]
Michele Cannone [26]

E&S
Amanda Brown, PE [15]
Karen Gleason [26]
Joseph Vasinko, PE [13]
Alyssa Olmstead, EIT [5]

Paint Coatings
Tony Serdenes [41] GPI
Chris Farschon, PE [31] GPI
Charles Brown, PCS [37] GPI

Utilities / PUC / SUE
Dorothy Boring, PE, PTOE [36]
Shane Ritenour, PMP [24]
Joshua Handle, PE [11]
Laura Kelly [14] MBE
Bryan Teschke, PG,PGp [18] TLG
Alexis Isenberg, PE [31] TLG

Survey / ROW Plans
Brody Tunno, PLS [22] MBE
Brian Pitcher [34] MBE
Craig Laurenson [21] KAS
Margaret Qualters [47] KAS

Constructability Reviews
Michael Houser [41]
Matt Walerysiak, PE [31]

Geotechnical
Michael Lemansky, PE [33] AGES
Scott Bushmire [29] AGES
Al Hajdarwish, Ph.D, PG [26] AGES

RR Coordination
Dorothy Boring, PE, PTOE [36]
Shane Ritenour, PMP [24]