TECHNICAL SUBMITTAL FOR DESIGN-BUILD CONTRACT
PROJECT NO. DGS C-0251-0095 PHASE I
REGIONAL TRAFFIC MANAGEMENT CENTER
AND PARKING STRUCTURE
UPPER MERION TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA
June 11, 2019

Toni Dolan
Department of General Services
2nd Floor Arsenal Building
1800 Herr Street
Harrisburg, PA 17103
717.787.6141 | tdolan@pa.gov

RE: Technical Submittal for Design-Build Contract, Project No. DGS C-0251-0095 Phase I
Regional Traffic Management Center and Parking Structure

ATTN: Toni Dolan

Heim Construction, as the Design-Builder, is pleased to submit this proposal in response to the Request for Proposals for a new Regional Traffic Management Center and Parking Structure to be located in Upper Merion Township at the current location of the PennDOT Engineering District 6-0 office location.

Heim Construction and SCHRADERGROUP (SG) will serve as the lead Design-Build Team in service to DGS and PennDOT for this significant project. Both Heim Construction and SG have experience in Design-Build projects and service to PennDOT and have completed numerous projects for DGS.

Heim Construction will serve as Design-Builder and General Construction entity for this project.

Heim Construction and SG have assembled a team of design consultants with PennDOT and Design-Build project experience. Project team members and respective disciplines include the following:

- **Heim Construction** | Design-Build lead and General Contractor
- **SCHRADERGROUP (SG)** | Architecture and Structural Engineering
- **Bala Consulting Engineers (Bala)** | MEP/FP Engineering and IT
- **Pennoni Associates (Pennoni)** | Parking Structure and Intelligent Transportation Systems
- **Alfred Benesch & Company (Benesch)** | Site and Civil Engineering Landscape Architecture
- **Vistacom** | Audio-visual and RTMC Systems
- **Metropolitan Acoustics** | Acoustics
- **Re:Vision** | LEED
- **American Geotechnical & Environmental Services (AGES)** | Geotechnical and Subsurface

The team assembled for this project has previous working relationships with one another as represented below:

- Heim Construction and Benesch have completed multiple PennDOT, design-build, and FHWA funded projects together, including PennDOT District 6.0.
- Heim Construction completed work with Re:Vision for the West Chester University Business and Public Management Building.
- SG and Vistacom worked together on the PEMA building to include a PennDOT Traffic Management Center.
- SG and Bala are working together on a City of Philadelphia Police design-build project which includes a major PSAP for the agency.
- Benesch and AGES have worked on over forty projects, including many PennDOT and FHWA funded projects.
- SG, Metropolitan, and Re:Vision have completed numerous projects together.
Pennoni is currently supporting PennDOT District 6.0 in their TMC.

The Heim Construction Design-Build Team has completed and has in process numerous projects representing the requirements within the RFP as follows:

- Design-build projects by Heim, SG, Benesch, Bala, Pennoni and Vistacom.
- Retained design professional traffic management centers/similar facility experience by SG, Bala, Vistacom, and Pennoni.
- Retained design professional federal-aid/FHWA project experience by Heim Construction, SG, Pennoni, Benesch, Vistacom, and AGES.
- Each of these projects reflects the experience of the team’s professional management individual experiences assigned to this project.

In summary, the Heim Construction Design-Build Team attended the pre-proposal conference, is preparing our DBE compliance plan, has received all of the addenda provided, and acknowledges that we have responded to the requirements within this RFP to include the technical, cost submittal, and mandatory documents sections.

The Heim Construction Design-Build Team’s proposed price reflects the scope of work identified in the bridging documents. The team believes there could be significant savings in the mechanical, electrical, and plumbing systems. The team would welcome the opportunity to discuss these savings with DGS and PennDOT.

The primary contact for this proposal is Roy Heim, President of Heim Construction. His contact information is addressed below.

Sincerely,

Roy Heim, President
Heim Construction Company, Inc.
1020 Chestnut Road
Orwigsburg, Pennsylvania 17961
570.968.4445 | royh@heimconstructionco.com
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Submitted June 11, 2019
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PROJECT MANAGEMENT TEAM OVERVIEW
1. PROJECT MANAGEMENT TEAM OVERVIEW

BREIF OVERVIEW OF PROJECT TEAM + MANAGEMENT

1.1. PROJECT MANAGEMENT ORGANIZATION

Heim Construction Company (Heim Construction) will be the Design-Builder Contractor and Lead in your project. Working with us as the architecture consultant will be SCHRADEGROUP (SG). SG will manage the design team that includes Bala Engineers, Benesch, Pennoni, American Geotechnical & Environmental Services (AGES), Metropolitan, Re:Vision and Vistacom.

Department of General Services (DGS) and PennDOT will be working directly with the key personnel from Heim Construction and SG.

Below is a team chart of each firm’s role and managing personnel.

The following pages include an organizational chart to identify the proposed key personnel and team for your project.

<table>
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<th>ROLES/RESPONSIBILITIES</th>
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| DESIGN-BUILD CONTRACTOR GENERAL CONTRACTOR | Heim Construction Company  
  Roy A. Heim | President                                             |
| ARCHITECTURE STRUCTURAL ENGINEERING     | SCHRADEGROUP architecture, LLC  
  David L. Schrader, AIA, LEED AP | Managing Partner |
| MEP/FP ENGINEERING TECHNOLOGY           | Bala Consulting Engineers  
  John H. Brockwell | Vice President, Principal in Charge |
| SITE + CIVIL ENGINEERING LANDSCAPE ARCHITECTURE | Alfred Benesch & Company  
  Christopher G. Bentz, PE | Project Manager |
| PARKING STRUCTURE INTELLIGENT TRANSPORTATION SYSTEM | Pennoni Associates  
  Jeffrey Purdy | Vice President |
| GEOTEchnical PARKING DESIGN             | American Geotechnical & Environmental Services, Inc. (DBE)  
  Michael Giovannitti, PE | Project/Branch Manager |
| LEED CONSULTANT                         | Re:Vision  
  Scott Kelly, AIA, LEED Fellow, CPHC, LFA, Green Advantage | Principal |
| ACOUSTICAL DESIGN                       | Metropolitan Acoustics  
  Felicia Doggett | President, CEO |
| AUDIOVISUAL                             | Vistacom  
  Daniel Gundry | Project Executive |
HEIM CONSTRUCTION COMPANY | DESIGN-BUILD + GENERAL CONTRACTOR

Roy A. Heim
PRESIDENT

Michael J. Wright
VICE PRESIDENT OPERATIONS

Scott A. Blankenhorn
CHIEF ESTIMATOR/PROJECT MANAGER

Jeffrey Bush
PROJECT MANAGER/ESTIMATOR

Mark Saylor
FIELD SUPERINTENDENT

Carol A. Bush
CONTRACT ADMINISTRATOR

VISTACOM | AUDIOVISUAL

Daniel Gundy
PROJECT EXECUTIVE

Matthew Longo
TECHNICAL LEAD

Jason Bubnis
DESIGN ENGINEER

SCHRADERGROUP | ARCHITECTURE

David L. Schrader, AIA, LEED AP
PRINCIPAL IN CHARGE

Dan D’Amico, AIA, LEED AP
PROJECT MANAGER

William S. Cox, CDT
JOB CAPTAIN, PROJECT ARCHITECT

Selby Niumataiwalu
DESIGNER

Charlotte A. Stoudt, NCIDQ, LEED AP ID+C
INTERIOR DESIGNER

Bruce E. Bachtle, AIA
QUALITY ASSURANCE + QUALITY CONTROL
BENESCH ENGINEERING | CIVIL + SITE ENGINEERING, LANDSCAPE ARCHITECTURE

Christopher Bentz, PE
PROJECT MANAGER
George Horas, PE, VMA
PRINCIPAL IN CHARGE
Michael Wunderler, PE
CIVIL ENGINEER
Travis Steich, PE
CIVIL ENGINEER
Vernon Gernhart, III, PE
CIVIL ENGINEER
Kyle Foster, EIT
CIVIL ENGINEER
Josh Engatz, PLA
LANDSCAPE ARCHITECTURE

BALA ENGINEERS | MEP/FP ENGINEERING

John H. Brockwell
VICE PRESIDENT, PRINCIPAL IN CHARGE
Charles B. Kensky, PE
PROJECT MANAGER/EXECUTIVE VICE PRESIDENT
Scott M. David, PE, MBA
MECHANICAL DEPARTMENT DIRECTOR
Bruce W. Young
ELECTRICAL DEPARTMENT MANAGER
David Hofmeister
PLUMBING + FIRE PROTECTION DEPARTMENT MANAGER

PENNONI | TRAFFIC MANAGEMENT SYSTEMS + PARKING STRUCTURE

Richard D. Roberts, PE, SECB
VICE PRESIDENT & CHIEF ENGINEER
Brian R. Keaveney, PE, PTOE
ASSOCIATE VICE PRESIDENT + DIVISION MANAGER
Jeffrey E. Purdy, PE
ASSOCIATE VICE PRESIDENT + OPERATIONS MANAGER
Perry D. Schram, PE
STRUCTURAL ENGINEERING VICE PRESIDENT

SCHRADERGROUP | STRUCTURAL ENGINEERING

Thomas E. Forsberg, PE
PRINCIPAL, STRUCTURAL ENGINEERING
Jeffrey Rothermel, PE
STRUCTURAL ENGINEER

METROPOLITAN ACOUSTICS | ACOUSTICAL DESIGN

Felicia Doggett
PRESIDENT, ACOUSTIC DESIGNER
Scott Hulteen
CONSULTANT

BALA ENGINEERS | TECHNOLOGY

Joseph E. Ford, RCDD
MANAGER, INTEGRATED TECHNOLOGY SYSTEMS (ITS)
Bruce D. Osborn, RCDD
PROJECT MANAGER

AMERICAN GEOTECHNICAL & ENVIRONMENTAL SERVICES (DBE) | GEOTECHNICAL + PARKING DESIGN

Michael Giovannitti, PE
BRANCH MANAGER, QA/QC
Suresh Gutta, PhD, PE
GEOTECHNICAL PROJECT MANAGER

RE:VISION ARCHITECTURE | LEED CONSULTANT

Scott Kelly, AIA, LEED FELLOW, LFA, CPHC
PRINCIPAL
Kristie Kozenewski, LEED AP BD + C, O + M, CPHC, WELL AP
CONSULTING STUDIO DIRECTOR
1.2. MANAGEMENT STRUCTURE FOR THE OVERALL PROJECT TEAM AND PRIOR EXPERIENCE WORKING TOGETHER

PROJECT TEAM, THEIR ROLES + WORKING RELATIONSHIP HISTORY

HEIM CONSTRUCTION COMPANY | DESIGN-BUILD, GENERAL CONTRACTOR

Heim Construction Company has successfully offered a wide variety of construction services including general construction, construction management, public works, design-build, interior design, infrastructure and more. Heim Construction employs approximately 75 experienced men and women and has two divisions, an infrastructure division that has completed projects such as dams, water treatment plants, streetscapes and bridge projects as well as a general construction division that has completed a variety of projects such as health care facilities, out-patient surgery centers, higher education, government, hospitality, commercial and retail, special projects and preschool facilities.

- Heim Construction and Benesch have completed multiple PennDOT, design-build, and FHWA funded projects together, including PennDOT 6.0 District. Also, Heim Construction has completed work with Re:Vision for the West Chester University Business and Public Management Building.

SCHRADERGROUP | ARCHITECTURE, STRUCTURAL ENGINEERING

SCHRADERGROUP architecture LLC (SG) is a full-service firm offering planning, programming and architectural and structural engineering design services for a wide variety of project types. Founded in 2004 providing services from offices in Philadelphia, Lancaster, and Baltimore for fifteen years, SG is recognized both regionally and nationally for design that offers the highest degree of service to the user, responds to and respects both the built and natural environment and demonstrates inspired aesthetics.

- SG also has prior experience working with Bala, Re:Vision, Metropolitan and Vistacom which provides an excellent starting point for your project. The project they worked on together was the PEMA project which included a PennDOT traffic management center.

This allows us to devote more time to developing a creative design solution that provides a functional and dynamic environment for employees, visitors and the community as a whole.

BENESCH | CIVIL + SITE ENGINEERING, LANDSCAPE

Alfred Benesch & Company (Benesch) is a multi-disciplined engineering and professional services firm. Roads, bridges, schools, parks and airports are just a few examples of where you can find our work. They enhance infrastructure and communities across the country – creating spaces and providing connections in ways that make a difference.

Since 1946, Benesch has successfully completed thousands of planning, design and engineering projects throughout the United States and is currently ranked #132 among the Top 500 Design Firms in the country by Engineering News Record.

- Benesch has previous work history with AGES on over forty (40) projects which includes PennDOT and FHWA funded projects. Benesch had also worked with Pennoni on previous projects as well.

BALA CONSULTING ENGINEERS | MEPF ENGINEERING, TECHNOLOGY

Bala Consulting Engineers is a multi-discipline engineering and design organization comprising 175 engineers, designers and support personnel. Established in 1982, Bala services Data Center, mission critical, commercial, institutional and industrial clients. Bala’s project history is rich with solving complex engineering challenges in data centers, high rise mixed use urban towers, office buildings, college campuses, healthcare institutions and historic facilities.

Bala’s history of firsts includes the first LEED-CS Certified Platinum building in the world, being the first Engineering Firm with a LEED-CI Certified office, the tallest LEED Certified building in the U.S., and many more. From their pioneering role in sustainable design, to the emergence of CAD and our adoption of Revit/BIM, Bala provides high performance solutions in engineering, consulting, commissioning and testing.
• Bala and SG are currently together working on the design-build project for the City of Philadelphia.

PENNONI ASSOCIATES | TRAFFIC MANAGEMENT SYSTEMS + PARKING STRUCTURE

Pennoni is a full service, multidisciplinary consulting engineering firm headquartered in Philadelphia, Pennsylvania that has provided a wide range of engineering services to public and private sector clients for over 51 years.

Pennoni brings significant design build experience in the construction of parking structures employing structural, mechanical and electrical engineering expertise. This work will be led by Perry Schram PE with significant design build experience. This is joined by their design build expertise in Intelligent Transportation Systems (ITS) led by Jeffrey E. Purdy, PE who has delivered RTMC’s for numerous clients across the country to include PennDOT Districts 2 and 6 through design build and traditional design bid build contracts.

• Pennoni is familiar with working on various projects in the past with SG and Bala.

RE:VISION ARCHITECTURE | LEED CONSULTANT

Re:Vision specializes exclusively in green building projects that demonstrate how to provide more using less. Re:Vision collaborates with other design teams, contractors, owners, and facility managers to deliver more sustainable buildings, and to verify performance through green building certifications. Their certification experience includes LEED, Living Building Challenge, Net-Zero Energy, SITES, WELL Building Standard, Passive House, Energy Star, Enterprise Green Communities, custom metrics for campuses, and government programs like CALGreen and San Francisco Green Building Ordinance.

Re:Vision’s core approach is aligning comprehensive project goals with appropriate green building strategies and certification systems that provide real value. They are a certified B-Corporation that meets rigorous standards for social and environmental performance, accountability, and transparency.

• Re:Vision and SG have worked together on the Pennsylvania Emergency Management Agency Project as well as many other public works projects.

METROPOLITAN ACOUSTICS | ACOUSTICAL DESIGN

Metropolitan Acoustics, LLC is an acoustics, vibration, and sound modeling consulting firm based in Philadelphia, Pennsylvania. The firm was founded in 1990 by the current President, Felicia Doggett. In the firm’s 29-year history, they have consulted on over 2,800 projects.

Metropolitan has received awards for entrepreneurial achievement and growth in the Philadelphia area and have expanded their geographical reach nationally. Typical clients include architectural firms, engineering firms, developers, and builders. They also work directly for private companies as well as corporate facilities, performance centers, theaters, educational institutions, healthcare facilities, hospitality and entertainment clients, and more.

• Metropolitan and SG worked together on the Pennsylvania Emergency Management Agency Project as well as many other public works projects.

VISTACOM | AUDIOVISUAL

Vistacom is celebrating its 65th year of providing high quality, cost-effective, state-of-the-art audiovisual technology products and services. From its inception and through today, the philosophy adopted by the Ferlino family has always been to “get it right at the drawing stage.”

Vistacom employs more than fifty technical employees in the areas of engineering, project management, software programming, installation and service. Vistacom dedicates a project team solely focused on your project. This project team is certified at the highest possible levels within their respective disciplines. Vistacom fully subscribes to AVAQ’s AV9000 Quality Assurance standards to further provide value and reliability to our clients’ technology investments.

• Vistacom worked with SG and Metropolitan on the Pennsylvania Emergency Management Agency Project together. Vistacom also has worked on a number of projects with Bala.

AMERICAN GEOTECHNICAL & ENVIRONMENTAL SERVICES (DBE) | GEOTECHNICAL + PARKING DESIGN

American Geotechnical & Environmental Services (AGES), Inc. provides professional geotechnical services for public and private clients. Founded
in 1995, AGES has grown to be one of the largest specialty geotechnical consultants in the northeastern United States. They have been involved in the design of infrastructure projects with construction costs of over $10.5 billion in the last 24+ years. **AGES is a Small Business and a Pennsylvania certified Disadvantaged Business Enterprise (DBE.)**

- AGES worked with Benesch on over forty (40) projects which were mostly PennDOT and FHWA projects.

**UNDERSTANDING THE SERVICES AND MATERIALS TO BE PROVIDED**

Heim Construction understands that the Project includes the design and construction of a new free-standing building for the RTMC, as well as fit-out of the existing RTMC space, and a new parking structure. The existing parking structure will be demolished and a new RTMC building will be constructed occupying about half the footprint of the existing parking structure. A new parking structure will be constructed on the south parking lot area along the berm adjacent to Valley Forge Road (PA-23). The initial concept for the RTMC facility is an approximately 37,000 SF 2-story office building (plus a 5,000 SF penthouse).

The initial concept for the new parking structure is an approximately 84,000 SF 2 ½ - story parking garage.

Heim Construction shall submit with our proposal to DGS a Pre-Construction CPM schedule which identifies the following minimum design submissions to DGS:

- Preliminary Design Submission
- Draft Final (90%) Design Submission
- Final Design Documents Submission

Heim Construction shall provide an initial CPM Project Schedule that includes the following:

- All design submissions and approvals.
- Building permitting submissions and approvals.
- Start of construction – RTMC and parking structure
- Completion of buildings
- RTMC Cutover Plan Approval
- Substantial completion and completion of punch list
- Commissioning of all contracted items
- Training
- Testing of RTMC Network and A/V components
- Final Certificate of occupancy

Heim Construction shall develop a CPM Project Schedule within (30) days of Notice to Proceed or the date of the Letter of Intent, whichever comes first.

- The CPM project schedule shall be updated on a monthly basis and shall be submitted with each application for payment.
- DGS reserves the right to assess Liquidated Damages if Heim Construction fails to provide a final certificate of occupancy for the project by the Contract Completion Date.

Heim Construction shall assume responsibility for all site conditions and measurements related to this contract and shall not submit additional invoices to DGS for any costs associated with verifying site conditions and measurements. Heim Construction shall provide all necessary items to achieve and satisfy the objectives of this contract. The items shall include, but not be limited to, the following:

- Architectural and Engineering Design
- Development and distribution of specifications
- CPM Schedule identifying milestones for design, construction and testing
- Construction documentation, including submittals/shop drawings/as-builts and testing/training plans
- Coordination and management of construction
- Site preparation
- Procurement of equipment/material
- Installation of equipment/material
- Labor
- Supervision
- Removal of demolition and construction debris
• RTMC Cutover Plan to ensure smooth transition operations and minimize downtime
• Testing of all components and systems as applicable in the performance of this Work
• Registration and submittal of all warranties
• Reports, construction drawings and catalog data on all equipment being provided
• Upload all test reports, training plans, O&M manuals and approved permits/certificates in .pdf format to e-Builder

Heim Construction shall upload the complete set of record drawings electronically to e-Builder. These documents and all other such document submittals are to be provided in .pdf format and other electronic format (.dwg,.doc,.xls, etc.) as DGS may reasonably request.

Construction shall be performed in accordance with the provisions of the General Conditions of the Design-Build Contract and will be reviewed by the DGS Bureau of Construction or its designee.

Commissioning is the joint responsibility of Heim Construction (including direct and indirect Design-Build Contractor labor, supervision, materials, subcontractors and suppliers), and the Commissioning Agent (CxA). The CxA will be contracted through the Construction Manager (CM) so the costs shall not be included in the proposal.

Heim Construction shall engage an independent testing agency to perform Quality Control (QC) Testing as required to verify and enforce compliance with all requirements of the Contract Documents.

Heim Construction’s Retained Professional shall engage an independent testing agency to perform Quality Assurance (QA) Services primarily to satisfy the Special Inspection requirements of the IBC Chapter 17.

The Project Team reserves the right to engage a qualified testing and inspecting agency to perform additional independent tests under the Construction Manager Quality Assurance (CM-QA) program for the purpose of checking the results of Heim Construction’s Quality Control Testing and to use those as the basis for approval or rejection at its sole discretion.

Heim Construction shall request Final Inspection from DGS in e-Builder pursuant to the terms of the General Conditions of the Design-Build Contract and the Administrative Procedures for the Design-Build Contract.

Heim Construction’s Retained Professional, in conjunction with DGS or its designee, shall conduct the Final Inspection. Final payment will be released pursuant to the terms of the General Conditions of the Design-Build Contract and the Administrative Procedures for the Design-Build Contract.

Heim Construction shall meet as many times as required with, and otherwise communicate with, the Project Team throughout the design, construction and commissioning process. Heim Construction shall note, however, that the Contract is with DGS and final decisions rest with DGS.

THE TEAM’S EXPERIENCE WITH DESIGN-BUILD CONTRACTS

Heim Construction has over twenty-seven (27) years of experience in a variety of construction services including general construction, construction management, public works, design-build, interior design, infrastructure and more. Heim Construction employs approximately 75 experienced men and women and has two divisions, an Infrastructure division that has completed projects such as dams, water treatment plants, streetscapes and bridge projects as well as a general construction division that has completed a variety of projects such as health care facilities, out-patient surgery centers, higher education, government, hospitality, commercial and retail, special projects and pre-school facilities.

Heim Construction has recently worked on two (2) projects with DGS, including a combined PennDOT/DGS project on an eight (8) building complex for District 6-0. This demonstrates our ability and understanding of state systems, e-Builder project management system, DGS administrative procedures and general conditions. DGS project managers can attest to Heim Construction’s ability to keep a project on tract and focused on completion. In addition, Heim Construction
Company has managed and completed projects for the Federal Highway Administration in the hard bid and design-build modes.

In structuring our Design-Build Team, we gave thoughtful consideration to the combined experience and familiarity the team has in working with PennDOT/DGS and Design-Build projects.

Currently, SG (architecture) and Bala Engineers (MEP/FP and technology) are working together on the Design-Build project from the City of Philadelphia. The project is the transformation of a historical building in the city into the City’s Police Department headquarters and various agencies.

In addition to this, SG has previous work history with Vistacom, Re:Vision and Metropolitan on the DGS Project and State’s Emergency Management Agency building (PEMA) which includes a PennDOT traffic management center component.

The entire Design-Build team has experience with Design-Build projects, PennDOT projects, mission critical projects, DGS projects and FHWA or Federal Aid projects. Examples of the Team’s experience can be found in Section 4 (Qualifications.)

1.3. MANAGEMENT STRUCTURE THAT WILL BEST SERVE THE INTEREST OF THIS PROJECT

Heim Construction recognizes that the evolution of the regional management traffic center has occurred with much planning, foresight and effort through a combined effort of PennDOT executives, PennDOT employees, stakeholder input, Jacobs Design team and others to allow District 6-0 to provide enhanced operations and capabilities related to their traffic system management and operations initiatives.

Heim Construction’s Project Management Plan for this project is summarized as follows.

LEADING THE CONSTRUCTION

Heim Construction has the experience to complete this design-build project on-time, under-budget and with the highest of quality. This is achieved through excellent communication and teamwork. Heim Construction will partner with PennDOT/DGS to determine what features and functions of the traffic management center are most important to you.

TRADE CONTRACTOR AND SUPPLIER OUTREACH

Heim Construction maintains an extensive databank of local, regional and national trade contractors and suppliers. The firms on our lists have been prequalified through comprehensive review of demonstrated ability to licensing, certification (where applicable), management stability, financial strength, bonding capability, workload/capacity, safety record, project references, relevant experience, reputation, availability and experience of personnel, demonstrated ability to achieve schedule milestones, ability to meet installation requirements and quality standards and claims record.

We encourage you and the designers to provide the names of other trade contractors and suppliers with whom you have had successful or unsuccessful experience.

BID PACKAGING

Our team will structure bid packages focused on quality, cost efficiency and timely completion. In the interest of equality, the packages will be structured to enlist woman, minority and disabled veteran owned business participation. To accomplish effective bid packaging, we will make sure that all interested, qualified bidders receive the same information.

All elements of the eventual contracts are clearly defined in order to eliminate confusion and conflict and maximize competitive pricing. Then the combined purchasing economies are realized, design evaluation takes place, schedule-driven field needs are considered and alternatives of team interest are priced in the market place. We encourage value-enhancing suggestions from bidders during this time as well.

In order to answer questions, clarify contract conditions and take full advantage of market suggestions, our project team will organize and manage a prebid conference for each major piece of work.
PROCUREMENT
Once the bids are received and analyzed, PennDOT/DGS will be given a summary of the bidding and a recommendation for proceeding.

PHASING
Since most construction management projects involve some degree of early package release, we will work with SG to coordinate the phasing of document production with the construction schedule.

SCHEDULING
Our project staff will begin the scheduling process by choosing a template from our centralized database that is specific to your project. It will also include a thorough work breakdown structure, activity code structure and an extensive procurement chain.

We will include you, the designers, trade contractors and suppliers in the preconstruction baseline schedule process, because we are all stakeholders in the project’s success.

SITE LOGISTICS PLANNING
The cost, schedule, quality, safety and community image of your project will be controlled through a tailored, comprehensive site management approach.

QUALITY PLANNING AND VISUALIZATION
Quality construction starts with quality design. In preconstruction, our staff will review design with SG to confirm constructability, coordination, completeness and adherence to established standards.

We will analyze the design documents and/or 3D model to determine the optimum means and methods for the materials and equipment specified and will develop inspection plans, checklists and a commissioning plan for major systems, such as skin, roof, mechanical, electrical and special finishes.

We will also construct any virtual and/or physical mockups deemed necessary by the project team to verify functional and/or space availability needs. Whenever feasible, we will have physical mockups constructed on site by the trade workers who will actually do the construction to establish reproducible benchmarks.

ENVIRONMENTAL, HEALTH & SAFETY PLANNING
Preconstruction planning for safety will confirm everyone’s well-being, help to maximize productivity and reduce cost associated with risk. Our project team, along with an area Environmental, Health & Safety (EH&S) manager, will conduct a project hazard assessment prior to construction start. They will identify normal and extraordinary risk at each stage of the construction process and will develop a project safety program that addresses the identified hazards and risks. They will consider PennDOT/DGS safety requirements and concerns, insurer involvements (e.g. OCIPS, CCIPS, certificates), third-party liabilities, procedures for working in occupied areas, site access, environmental, security, posting, project safety team organization, incident investigation and reporting approach, safety measurements (e.g. RIR, LT AIR) and OSHA. A summary of our Safety Plan can be found in Section 2 (Work Plan).

CHANGE MANAGEMENT COST CONTROL
In reality, there are “good” and “bad” change orders. Good ones are those PennDOT/DGS may desire for such reasons as the need to increase building size, change function for business reasons or take advantage of value engineering suggestions. Bad change orders are everything else and result from something adverse, such as adverse site conditions.

First, when a potential change is noted, we will research the design to verify that it does indeed constitute a change in the scope of work stipulated by the contract. Next, we will independently estimate the cost and evaluate the schedule impact of a change. We will also review trade contractor and supplier estimates for changes and negotiate discrepancies on your behalf.

When changes in the scope or conditions occur, our project team will track them from identification to final resolution. As potential changes develop, they will move from potential to actual via contract supplement or will be canceled if not perceived to add value to the project. Potential and approved
change orders will be listed in a report and reviewed with you regularly.

RISK MANAGEMENT COST CONTROL
We will work diligently to minimize risk. We will pay close attention to schedule control for claims prevention, quality planning to avoid rework, verification of trade and supplier bonds, verification of in-place trade insurance certificates, safety planning for accident avoidance, trade contractor financial status monitoring, verification of second-tier contractor and supplier payments, proper trade/supplier payment monitoring (no overpayment), appropriate contingencies.

MONITORING AND REPORTING COST CONTROL
We monitor an up-to-date assessment of current and projected costs that will be available to you at all times.

Key functions of the job cost segment will include change order control, project cost reports (with user-defined formatting), job cost inquiry, job cost productivity, income/cost update, field reporting, estimating history and closing, job cash position reporting and job cost report writer.

Our approach to scheduling will not end with the creation of the baseline schedule. Our scheduling effort will intensify once under construction.

Once under construction, it will be the responsibility of Heim Construction’s Superintendent for this project, to manage the work at the site.

COMMUNICATION AND REPORTING
In order to keep you fully informed at all times, we will first determine your preferred method of daily communication (e.g. phone, e-mail, fax, in person). We will then present to you a periodic project report. The frequency, timing, format and content of this report will be tailored to your needs. The report normally includes an executive summary, cost study, request for information log, submittal log, submittals outstanding log, architect’s supplemental instruction log, construction schedules including a look ahead schedule and progress photos.

MEETING GUIDELINES
While there will exist the need for frequent meetings, particularly during design, our goal will be to keep meetings short. In order to accomplish this, agendas will be distributed in advance to make attendees aware of the discussion topics. We recommend that the number of attendees be minimized and discussions limited to the agenda topics. The goal of each meeting will be to bring closure to as many topics as possible.

CONTROL SYSTEMS
A variety of information control systems will make sure of the ability of our project team to anticipate situations rather than react to them as they arise. The key to meeting your reporting requirements will be our timing and format flexibility. We understand your need for visibility, accurate information and early warning in order to make sound, timely decisions.

In addition to the comprehensive cost control aspects of the system, it serves as an outstanding administrative facilitator. Subsystems addressing a wide range of document control needs include contract drawings, contract specifications, submittals, requests for information, guarantees and warranties, deficiencies and omissions, material shipments, meeting minutes, certificates and approvals, accounting, required training and project directory.

Heim Construction understands the need for timely, comprehensive close out, and our project team is committed to making that happen. As with every other aspect of the project, our success in this phase will result from a well-conceived plan. The plan will detail the necessary measures for commissioning reports, operation and maintenance manuals with warranties, systems training, stock replacement materials delivery, documentation and storage, outstanding change order resolution, lien releases, final billing and plans/model and specifications with changes noted.
SECTION 2: WORK PLAN
2. WORK PLAN
OUTLINE OF THE PROJECT’S TECHNICAL PLAN

2.1. UNDERSTANDING OF THE DESIGN-BUILD CONCEPT
The Design-Build Team is familiar with the Design-Build project delivery. We understand that the advantage to the owner in this case PennDOT/DGS is having only one contract with a single point of responsibility.

The Designer and Design-Build Contractor will work together from the beginning as a team providing unified project recommendations to fit the owner’s schedule and budget. Any changes are then addressed by our entire team, leading to collaborative problem solving and innovation.

2.2. PRE-CONSTRUCTION PHASE EFFORT
One of the keys to a successful project is Heim Constructions’s pre-construction services.

Our pre-construction services are intended as a means to work with the project’s owner(s) to help deliver a satisfactory project that meets the owner’s objectives.

The typical pre-construction services will include the following:

- Work with the owner and the design team to establish the budget, project schedule, site conditions, constraints and phasing requirements
- Develop a preliminary project schedule incorporating pre-construction & construction
- Schedule regular project meetings
- Complete the Design Development and Construction Documents design
- Evaluate LEED requirements
- Advise on selection of building systems, materials and equipment
- Identify long lead items
- Evaluate value engineering and potential cost savings alternatives
- Prepare bidder’s list and submit for owner approval
- Subcontractor pre-qualification
- Obtain permits as necessary
- Issue subcontractor/purchase orders
- Setup cost controls for construction

DESIGN PHASE

Task 1: Introduction, Operational Goals and Final Design
Since the bridging documents have been provided, which essentially completes the Schematic Design and most of the Design Development phases of design, the Design-Build team will review the documents provided as a starting point to complete the Design Development phase and move into the Construction Documents for final design. The existing Regional Traffic Management Center (RTMC) and Parking Structure is toured to develop a common understanding of the current basis of operations.

Task 2: Site Assessment Issues
The site under consideration is toured and reviewed by the entire Design-Build team and stakeholder team. The team uses the tour and reviews to develop a conceptual site analysis further defining the site concerns and vulnerabilities.

Task 3: Sustainability Charrette
The Design-Build team holds a sustainability planning charrette to identify the various sustainable approaches and techniques that PennDot might adopt for their project.
Sustainable systems are discussed, including their order of magnitude and operational costs. Various decisions are made and incorporated in the documents to provide for a facility that meets or exceeds expectations. These concepts are utilized in the development of the systems analysis identified in Task 4.

**Task 4: Systems Analysis and Narratives (Building, Technology, AV and Furniture)**

There are four major components to a mission critical facility. They include the redundant, survivable and sustainable building systems specific to the operations of this type of facility, the technology systems that allow the facility to communicate, the Audio-Visual systems that allow for the facility to manage and manipulate the incoming data, and the furniture that satisfies the ergonomic needs of people who will work in the facility. The Design-Build team will define the various systems available for each of the areas listed above. Basic systems descriptions and life cycle definition are provided for each to include developed system narratives for bidding. The Design-Build team develops a list of the applicable Federal, State and local codes and recommendations to be followed. Further, a set of basic infrastructural requirements (utilities) is developed to understand the connectivity needs. System redundancy and diversity are taken into account for all of the systems described reflecting the goals established.

**Task 5: Schedule Development**

The Design-Build team develops a full schedule identifying critical elements of the timeline for the project. All critical milestone functions as well as items established as part of the approval process are delineated and time frames are provided. The schedule includes all of the items pertaining to the project from the inception through Owner Occupancy. All relevant design and construction-related tasks are identified.

**Task 6: Document Development**

**Design Development Phase** | Structural, mechanical and electrical design system options are discussed and reviewed with the team. Based on system recommendations, preliminary engineering designs are developed and coordinated with the architectural plans. The Design-Build team begins the development of the phasing plans. The Team also offers value engineering suggestions for review. Progress is reviewed every two (2) weeks with the Design Team to provide verification that the project’s goals are being maintained.

**Construction Documents Phase | Construction Documents** involve the detailed delineation of the project requirements for the construction of the project. The construction documents phase is more technically involved and the Design-Build team will refine and finalize the plans, which will be reviewed with the Client to provide an understanding and comfort level of how the process will be maintained during construction. The Design-Build team will prepare and submit all permitting forms, construction documents and associated information to governing agencies.

**Task 7: Bid Phase**

We anticipate bidding the HVAC, Electrical and Plumbing/Fire Protection systems as provided in the RFP Document and will follow the prescribed process.

**2.3. CONSTRUCTION PHASE EFFORT**

As the single point of contact for the Owner, Heim Construction leads the design phase effort into the construction phase. A successful Design-Build project started with a well-defined scope of work, requires a specific range of responsibility for team members, a criteria to measure success, a knowledgeable Owner that can make quick decisions and experienced and competent team members. It is Heim Construction’s role to lead this highly collaborative, fully integrated process that is built on trust, mutual respect, teamwork, innovation and creative problem solving. Heim Construction will endeavor to carefully select its subcontractors and suppliers in the procurement phase and manage its competitively bid MEP subcontractors to make sure all its Team is integrated and working toward project objectives. Heim Construction will implement its Project Management Plan to
effectively manage time, cost and quality using a variety of project controls.

2.4. PRE-CONSTRUCTION PHASE ISSUES AND MITIGATION STRATEGIES

One area of project risk that impacts several disciplines is IT coordination with PennDOT BIO. As many of the systems are dependent upon the network that PennDOT BIO will be implementing, it is critically important that proactive coordination begin early during Pre-Construction and continue through the Cutover Phase. Early coordination is one key to mitigating this risk; the other key is regularly scheduled touchpoints between all teams. To this end, dedicated IT coordination meetings will be scheduled separate from normal construction and owner meetings to ensure all stakeholders are moving in the same direction. Heim Construction and its team will manage this process to minimize and mitigate this potential project risk.

2.5. PROPOSER’S UNDERSTANDING OF CONSTRUCTION PHASE CHALLENGES AND PROPOSED SOLUTIONS

The Design-Build Team recognizes there are many construction phase challenges.

• Maintaining unimpeded access for all District 6 business and operations.
• Ensuring safety of all employees, customers and construction workers on a tight site
• Maintaining neighbor relations throughout the construction phase with traffic, deliveries, noise, dust, etc.
• High visibility and mission critical status of RTMC to overall operation.
• Careful execution of well-planned phasing.
• Site logistics to manage construction operations on tight site.
• Need for just in time deliveries.
• Off-site staging plan for materials.
• Swing space considerations and careful execution of move plan.
• Submittal approval process with multi-layer approval process.

• Management of critical long lead items.
• Management of Authorities having jurisdiction in approvals, inspections and certifications.
• Careful selection of parking structure demolition techniques.
• Careful coordination of utility disruptions.
• Maintenance of LEED scorecard items, best practices and documentation.
• RTMC cutover and testing process.

Solutions to these problems began with the selection of strategic team members who have the experience and understanding to address these issues in the planning and design phase. Each challenge requires a unique solution in collaboration with the Design-Build Team, Construction Manager, DGS, PennDOT and Jacobs Team. Real solutions will be developed when this collaboration begins and the Design-Build Team has the opportunity to interact and understand the clients concerns.

2.6. LONG LEAD ITEMS (PERMIT, ETC) AND PHASE OF CONSTRUCTION

On our Design Team, SG contributes a quarter-century of experience in the planning and design of facilities located in the Commonwealth of Pennsylvania. They are responsible for completing approximately $800 million in Pennsylvania projects, including Pennsylvania Emergency Management Agency’s New State Emergency Operations Center (EOC), Additions and Renovations to the County of Montgomery’s 9-1-1 Center and EOC, and the New Emergency Services Facility for Armstrong County. Through local presence and years of experience working within the Commonwealth, and recently completed work in Upper Merion Township specifically, SG is well-versed in obtaining required permits from various agencies for projects throughout Pennsylvania. SG has in-depth knowledge of the rules and regulations dictated by these agencies as well understanding of schedule considerations that arise during permitting processes.

We will need to coordinate a variance for the parking garage set-back with Upper Merion, make a Land Development Submission and submit E&S
Plans to Montgomery County Conservation District. These activities and durations are captured in the schedule in Section 3 (Master Schedule.) While DGS/PennDOT are exempt from Township approval, they are not exempt from the Montgomery County Conservation District.

Other long lead item to consider steel doors and the AV/RTMC systems equipment. Within the RTMC, there are a few specific scope items that have long leads for both procurement and installation. The Barco video wall components carry a 10-12 week lead time from the manufacturer along with a 4-6 week total installation process. The technical furniture within the TOC also has an 8-10 week lead time from the manufacturer. Added to these two manufacturer lead times, the equipment rack assembly, programming, and quality assurance testing for the TOC and headend systems will take approximately 4-6 weeks to complete.

Long lead MEP Equipment anticipated for pre-purchase include the following:

- Generators
- Substations & Switchgear
- Transformers
- Chiller Plant (Cooling Towers and Chillers)
- Air Handling Units
- And other HVAC, Electrical and Plumbing/Fire Protection systems equipment

As a result of extensive experience with renovations and additions, SG is accustomed to formulating project phasing plans that allow for continued use of the building throughout construction. We understand the issues surrounding continued building occupancy, and excel at working with clients to create phasing plans that keep in mind ease of implementation, minimization of any additional expenses, and the safety of the users.

In our work for the County of Montgomery, Pennsylvania, which included 28,000 SF of renovations and 12,000 SF of additions to the 9-1-1 Center and EOC, we created a migration plan to ensure uninterrupted operation of the facility throughout the entire renovation and addition process. The project sought to modernize and expand the existing facility to meet the needs of the growing population. Designed as a fully redundant, secure, and hardened facility, the Center serves all County Emergency Operations and 9-1-1 needs.

2.7. CRITICAL MATERIALS AND EQUIPMENT

Critical materials and equipment will be identified by the Design-Build Contractor throughout the design process. As designers specify materials and equipment, they will be checking availability and lead times with product manufacturers to ensure they will conform to the timelines established in the master schedule. While critical items have not yet been established some of the ones the team will be watching include:

Generators | It is to be determined if a generator will need to be online to support the parking garage for the initial opening. Early procurement by the Design-Build Contractor will be examined ahead of the MEP public bidding.

Precast parking garage | The precast production is the most critical item. There are essentially 12 months to design and construct the parking garage. That leaves three months for design, two months for fabrication and seven months to construct. The challenge will be to get an electrical bid package out quickly to ensure the electrical sub is on board for the garage. Partnering with a fabricator that can meet the schedule will be key, and the DBT has spoken with several possible manufacturers. We have also discussed the possibility of having our DBT member Pennoni Associates do the detailing work for the fabricator to shorten review time.

During the Schematic Design Phase, Bala will coordinate the requirements for the pre-purchase of the long-lead MEP equipment. During the Design Development Phase, Bala will confirm load requirements, equipment sizing calculations, and design criteria to establish the Pre-Purchase specifications package. Bala will prepare pre-purchase specifications for the long-lead MEP equipment to support advanced construction activities. MEP Equipment anticipated for pre-purchase include the following:

- Generators
2.5. \textbf{WORK PLAN}

- Substations & Switchgear
- Transformers
- Chiller Plant (Cooling Towers and Chillers)
- Air Handling Units
- And other HVAC, Electrical and Plumbing/Fire Protection systems equipment

2.8. \textbf{PROPOSER’S APPROACH AND SCHEDULE STRATEGY FOR MEETING MILESTONES}

Heim Construction believes that the use of milestones provides the opportunity for the Design-Build Team to focus on completing activities that will have the greatest impact on the schedule. As this is a complex project focusing on the milestones is useful for communicating important dates to the entire project team. This allow team members to adjust their efforts to complete activities connected to the milestone events. By proceeding this way, Heim Construction can create the sense of urgency needed to meet the milestone deadlines and avoid the pitfalls of accelerating and stacking trades at the end of the project. Heim Construction will update the schedule every thirty (30) days and distribute it to all team members with an assessment of planned progress vs master baseline schedule. If any activities slip behind schedule, we conduct an assessment of the causes and create a plan to mitigate the impact. This may include acceleration, scope modification, alternate material selection, additional resources, logic changes, buffering or float absorption.

Heim Construction will use an independent scheduling consultant working with our team members input, in addition to our in-house staff in the creation of the Critical Path Schedule. We feel this gives us an independent look during its creation and monitoring of progress.

The most critical portion of the proposed PennDOT District 6 facility will be to verify the programming and develop a detailed planning process. Initiating the project properly with this portion of the process will ensure the best outcome for the DGS project.

SG has developed programming, planning, and design for over 70 public safety/mission critical facilities throughout the country. As a result, we have a well-developed and inclusive process in place that ensures all topics are defined in their entirety. In essence, the final process developed by our team will provide PennDOT/DGS with a solid set of design documents and a construction process.

We have reviewed the preliminary project and program information provided in the RFP and understand what needs to be achieved for the design of a new PennDOT Regional Traffic Management Center and Parking Structure. Throughout our workshop approach, we will provide examples of other relevant facilities and other operational models, and will balance the presented concepts with the elements described in the RFQ. This will provide a benchmark from which the detailed schematic design process can occur. Stakeholders will be able to review the process at several milestones to determine if the proposed schematic design effort has moved too far from the original RFQ requirements. If it has, the team can then re-evaluate the overall programming effort to determine if it has benefited from the exposure to other concepts adopted nationally and if so, how it will benefit the PennDOT/DGS project.

\textbf{SCHEDULE STRATEGY}

SG is aggressive in moving projects through the various phases of design and documentation to ensure that the schedule is met and the project budget is not impacted by inflation. Throughout each project phase, we develop and continue to update a milestone schedule of major tasks. These tasks are scheduled and identified creating a project “critical path.” From target date to target date along the critical path, we develop work plans that describe the activities to be accomplished in order to meet the next target date.

All Project Managers attend weekly project scheduling and manpower assignment meetings where each active project within the office is reviewed for schedule compliance and resource allocation. The Project Manager is responsible to you for adherence to both schedule and budget throughout the life of the project. The combination of strong project management, experienced
personnel, and state of the art computerized production techniques are key elements in both our quality and schedule control process.

The SG team works diligently to maintain the schedule of any project utilizing all aspects of the design and construction process within the architect’s control. We maintain project schedules accurately using the following process:

- we utilize Microsoft Project systems and Primavera Contractor Scheduling and relate information on our own FTP site. This information can be made available to all consultants and DGS and is supplemented via e-mail updates.
- we utilize a baseline schedule at the beginning of each project and continually refer back to that during the process.
- we utilize the specific day by day milestone scheduling process in which every conceivable approval meeting, deadline, design meeting and other appropriate scheduling components is included.
- we communicate deviations from the proposed schedule to the client immediately and develop a recovery schedule in the unlikely instance of schedule slippage.

2.9. TEAM MINIMIZING DGS RISK

The Design-Build process lends itself well to minimize the risks to DGS. First Heim Construction will become the single entity responsible for design and construction. Because our team creates the documents, we will assume responsibility to resolve scope dispute issues between trades as well as any items incomplete or omitted from the design. This will release DGS from the Spearin Doctrine of document sufficiency and bridge the liability gap between design professionals and builder. The Design-Build process lays to rest much of the self-serving posturing typically seen in the design/bid/build processes and multi Prime Contract Delivery. DGS will have the benefit of a firm price before design is completed, its responsibility for scheduling and coordinating work will be minimized and its risks for claims and cost over runs greatly reduced.

2.10. PROPOSER’S UNDERSTANDING OF JOB SITE CONTROLS AND PRACTICES AND MAINTAINING THE MINIMUM NUMBER OF PARKING SPACES

The Design-Build Team understands that construction cannot have an adverse impact on the operations of and access to the existing facility. Furthermore, we understand that maintaining a minimum of 350 parking spaces during all phases of construction for employees and visitors is an important part of the staging design criteria. Below is an abbreviated overall staging plan including key elements of each stage:

Stage 1

- Stage 1 consists of demolishing the existing parking area and constructing the new parking garage and associated infrastructure on the south side of the site.
- The existing parking structure has approximately 216 spaces. It, along with surface parking adjacent to it, appear to be capable of supporting the requisite 350 spots. If additional
spots are required, the DBC will investigate providing them on an adjacent parcel.

- Site operations will be isolated and protected at all times allowing for the safe passage of employees and visitors to and from parking areas.
- Access to the existing loading dock will be maintained at all times.
- The construction access points will be located so that they do not interfere with the employee/visitor access points and limit the amount of traffic on the surrounding residential streets.
- The laydown and trailer area will be located as necessary so as not to interfere with parking and site operations.
- Consideration will be given to emergency vehicle access, fire escape routing and mustering locations.

Stage 2

- Stage 2 consists of demolishing the existing parking garage and parking areas adjacent to it, construction of the new RTMC and construction of the associated infrastructure.
- The new parking garage has 250 parking spaces. It, along with surface parking adjacent to the RTMC appear to be capable of supporting the requisite 350 spots. If additional spots are required, the DBC will investigate providing them on an adjacent parcel.
- Site operations will be isolated and protected at all times allowing for the safe passage of employees and visitors to and from parking areas.
- Access to the existing loading dock will be maintained at all times.
- The construction access points will be located so that they do not interfere with the employee/visitor access points and limit the amount of traffic on the surrounding residential streets.
- The laydown and trailer area will be located as necessary so as not to interfere with parking and site operations.
- Consideration will be given to emergency vehicle access, fire escape routing and mustering locations.

Stage 3

- Stage 3 consists of the backfilling of the existing 4th Floor RTMC.
- It is anticipated that these operations will not have an adverse impact on the operations of the site.

2.11. PROJECT SAFETY PLAN, MANAGEMENT AND MONITORING

Heim Construction has a strong and serious advocacy when it comes to safety. The safety culture at Heim Construction heightens the awareness of every person in the company and empowers each and every employee to make corrections, shut down operations and report safety violations without recourse.

Heim Construction holds monthly safety meetings at the company headquarters. It is mandatory that every division and crew of the company has a representative on the safety committee that attends these meetings.

Heim Construction is also associated with an outside consultant to inspect our project sites and present the findings during our safety meetings. The primary goal here is to provide up to date information about trends throughout the industry, review new and upcoming changes to regulations, highlight issues that could have an effect on the safety of Heim Construction personnel, provide reports on unannounced visits and safety inspections on all Heim Construction projects and assist the people in improving the safety environment.

The Heim Construction Company safety plan is all inclusive and current. We have an intensive Safety Plan book that includes programs for:

- Health and Safety
- Injury and Illness Prevention
- Personal Protective Equipment
- Fall Protection
- Electrical Safety
- Control of Hazardous Energy
• Confined Space
• Aerial and Scissor Lift Safety
• Ladder Safety
• Welding and Cutting
• Lead Compliance
• Hearing Conservation
• Accident Investigation
• Pre-Shift Safety Meeting
• Respiratory
• Excavation and Trenching
• Sample Site Specific Emergency Action
• Safety Management and Monitoring

The Safety Plan book in its entirety is available upon request.

Some of the focused precautionary steps that Heim Construction practice includes:

Accidents can be prevented | Accident prevention starts by observing the work circumstance. Once you are able to recognize a particular hazard, it becomes the first step in reducing the risk and allows precautionary steps to eliminate the threat.

Reduce workplace stress | Heim Construction recognizes that physical and mental health for workers is important to create a consistent safe environment. We encourage and provide programs to help reduce stress and promote health.

Training | Injuries that are cause by incorrect operation of tools is a serious and danger situation. Heim Construction, on a regular basis, schedules crew training when a new piece of equipment or a new type of tool is introduced into the work force.

Means of egress | Conducting a safety tailboard when arriving on a new construction site is an essential task that must be performed. Locating and identifying crisis exits and communicating this to every member of the crew will save lives in an emergency situation. This path identification also identifies the importance of clear pathways and the avoidance of clutter.

Communication | A report of unsafe working condition is required, will be inspected immediately and is corrected immediately. All reports are documented and kept in a database.

PPE is the key to safety | Not wearing the proper issued Personal Protection Equipment (PPE) is an unacceptable action and is required by all personnel on site.

Heim Construction empowers all employees to make sure that every day on a worksite is a safe day. Heim Construction continues to hold appropriate discussion and training to ensure safety is number one.

2.12. EFFECTIVENESS OF QA/QC PLAN AND INTEGRATION WITH CM’S QA/QC

The inspection and test are important components in the quality assurance (QA) and quality control (QC) process, but our methods take a deeper dive into insuring Heim Construction is controlling materials, personnel, subcontractors and work procedures to ensure quality results. Heim Construction strives to build a strongly integrated team in conjunction with a well-defined quality QA/QC process in order to produce quality results at the highest level. Ultimately, each and every individual associated with the project is responsible for maintaining the established quality assurance goals which are achieved by adhering to the following strategies:

Project personnel | Consistent project teams with dedicated management will help ensure quality throughout the project. Heim Construction designates a quality manager specific to the project. Our quality managers are qualified and certified. Heim Construction will create a “Project Quality Control Organization Chart” that shows that quality is a top down responsibility and provides shows an independence between the quality manager and the project superintendent. The Plan indicates the responsibilities of our project superintendent(s) has and what his or her responsibilities are.

Quality Communications | Our expectation is that Heim Construction will hold a project start-up meeting and continue with routine production meetings on a regularly schedule day/time where quality issues will be discussed. In our packet, Heim Construction has standard forms that will be made
for project specific use to submit test results and/or inspection forms to the Owner. The detailed plan will define the touch points the Heim Construction will have with the Owner.

**Quality assurance surveillance** | Heim Construction intends to conduct quality assurance surveillance, initially, on a weekly basis. Maintaining communication with all trades working on the project and open discussion of performance and quality control sets the stage, immediately, stating Heim Construction and the Owners expectations.

**Subcontractors and suppliers** | Outside organizations play a huge role in supplying materials and carrying out work on construction projects. Heim Construction has over thirty (30) years of extensive experience with quality subcontractors. Heim Construction recognizes that experienced subcontractors with a proven track record of quality and on-time performance result in projects that are efficient, safe, quality work and economical. Based on scope presentation and vetting interviews by our management team, all quality subcontractors will be given total due consideration.

Heim Construction will provide procedures followed for obtaining qualifying suppliers and subcontractors, a complete listing of project suppliers and subcontractors and records of supplier and subcontractor qualifications.

**Project quality specifications** | Heim Construction will comply to the Owner’s specifications as well as building and industry standard codes. Identified project deliverables will be distributed to all teams and regularly checked.

**Inspections and tests** | Heim Construction will provide a list of all inspections and tests that we expect to perform and provide inspection forms and test reports.

These procedures will be included for conducting these task inspections:

- Make sure that work is ready to begin
- Handle material receiving and inspections
- Monitor work in process
- Verify that completed work meets project specifications

**Control of non-conformances** | Heim Construction is clear that all non-conformance issues will be recorded and dealt with.

Typical non-conformance procedures we use include:

- Preventing cover-ups
- Corrective actions
- Incident records

**Project completion inspections** | As a continuing phase of project completion, Heim Construction will schedule routine walk through inspections and quality reviews with the Owner’s representatives. Identifying areas that need attention and making corrections as soon as possible. With these controls in place, final inspections and any corrective actions will be minimal.

2.13. LEED CERTIFICATION PROCESS

Cost effective energy conserving features will be incorporated into the design to achieve LEED Silver certification in accordance with LEED v4 for BD&C: New Construction. The Project Team will evaluate the project for sustainability potential and has determined that the project shall meet LEED v4 Silver certification, as defined by the USGBC. All associated costs, such as fees, certifications, Green Power certificates or other costs shall be part of the Design-Build Contractor’s proposal and shall not be passed on as extra fees to the Project Team. Any schedule related items such as post-occupancy commissioning activities will also be included in the Design-Build Contractor’s schedule and associated staffing costs. Any deviation from this requirement must be accompanied by documented proof that compliance is not life cycle cost effective within the life of the building and approved in writing by the Project Team.

We understand that the boundary of LEED project shall include the building and parking associated with the building. Our team’s overall intent is that the parking structure shall be included in the LEED boundary.

When approaching a new project with the intent of implementing any degree of sustainability or energy...
efficiency, the importance of communication and collaboration between all parties involved cannot be stressed enough. Gone are the days of traditional building design in which consultants, designers and consultants could function in a vacuum of sorts. Integrated design demands that all parties—from client to contractor—are involved in the process from pre-design through to post-occupancy evaluations. There are a myriad of opportunities to maximize efficiencies and exploit the positive aspects of interdependencies within a building design and a true team approach is integral to success.

To ensure a successful, integrated process from the start, the design team will initiate a sustainable design goal-setting session that includes all stakeholders, followed by a focused and collaborative design charrette with all team members. Our objective at this point is to guarantee that all parties have a clear understanding of project goals and are prepared to move forward in a way that promotes teamwork for the duration of the project. After sustainable goals are set and thoroughly understood, a level of connectedness and focus is maintained through regular biweekly meetings or reviews.

The process is dependent upon an underlying common sense approach. By focusing on the goals set forth at initial meetings and facilitating communication and collaboration between all project team members, SG has facilitated numerous successful, high-performance, energy-efficient facilities for our clients.

We understand that this project aims to achieve a LEED Silver rating. The team will strive to take advantage of all opportunities to achieve that rating through choices in practices, materials, and equipment. The first step in an energy efficient building is to reduce the demands of the mechanical system. So, optimize orientation (not much can be done with this project site) and massing, followed by designing an efficient envelope (insulation, windows, roof, etc). The last item is designing the energy efficient mechanical system, including selecting energy efficient mechanical units, installing energy efficient windows and exterior doors, and specifying high light-reflectivity (albedo) roofing products and site materials. In addition, products with extended longevity and warranties are favored during the design and specification process to reduce long-term maintenance, and replacement costs and reduces the environmental demands for replacement and/or rebuilding; products include brick repointing mortar, concrete patching material, interior and exterior paint and coating products, LED light bulbs, and general architectural finishes such as acoustical ceiling panels, floor tiles, and miscellaneous trim materials. Door and wall-floor transition protection shall also be incorporated to mitigate the amount of accrued marring and damage that may occur at these frequent-impact locations.

EXAMPLES OF SUSTAINABLE INITIATIVES COMMONLY INCORPORATED INTO OUR PROJECTS

- high efficiency HVAC, Electrical and Plumbing/Fire Protection systems and control systems including central monitoring and automatic control systems
- optimizing the building massing and envelope
- ground source heat pumps
- solar hot water heater systems
- optimized energy performance through an iterative process to determine appropriate, cost-effective strategies
- gray water systems
- rain gardens (aiding with storm water control)
- storm water quantity/quality control
- reduced impervious coverage
- underground infiltration basins
- stormtech and bioswale recharge system combined with detention basins
- native plant landscaping
- high albedo / reflective roof systems for reduction of heat island effect
- operable windows
- roof monitors (allowing for bilateral daylight within rooms and greatly reducing the need for artificial lighting)
• interior lighting utilizing automatic controls and occupancy sensors
• night sky-friendly lighting for light pollution reduction
• vegetative roof
• building materials with recycled content
• regional materials
• low emitting materials
• low flow, water saving fixtures
• building materials with environmental and health impact disclosures recycled content materials
• certified wood products
• high insulating values for building envelope
• construction activity pollution protection
• waste management
• where appropriate, reuse of existing furniture and equipment
• coordination of building energy commissioning
• acoustical analysis and design
• reduced parking footprint
• light pollution reduction
• additional integrative process that PennDOT/ DGS decides to include

2.14. BUY AMERICA REQUIREMENTS
We understand the Buy America Provisions requirements for furnish steel or iron materials, including coating for permanently incorporated work as accordingly to 23 CFR 635.410 and as follows:
• Pig iron and processed, pelletized, and reduced iron ore manufactured outside of the United States is acceptable for use in domestic manufacturing process for steel and/or iron materials.
• All manufacturing processes of steel or iron materials in a product, including coating; and any subsequent process that alters the steel or iron material’s physical form or shape, or changes its chemical composition; are to occur within the United States. This includes rolling, extruding, machining, bending, grinding, drilling, and coating. Coating includes all processes that protect or enhance the value of the material, such as epoxy coatings, galvanizing or painting.
• Provide certification to the Department, that all manufacturing processes for steel and iron materials in a product, including coating, have occurred in the United States.

Products manufactured of foreign steel or iron materials may be used, provided the cost of such products as they are delivered to the project does not exceed 0.1% of the total contract amount, or $2,500, whichever is greater and the product is a “Steel Product” as defined by the Steel Products Procurement Act.

SG has familiarity with the Buy America requirements with 80% of their project experience being public work in the Common Wealth. These projects include public schools, public safety and DGS projects.

2.15. FHWA PROCEDURES AND REQUIREMENTS
Heim Construction understands the FHWA-1273 Required Contract Provisions, Federal-Aid Construction Contracts defined in detail in Appendix L. The Team also understands that FHWA Funding is a critical component of the financial model for this project. As such, there will be a significant focus on adherence to their procedures and requirements during all phases of the Project’s development, including construction. We understand that the Construction Phase of the Project will be subject to continual inspection by both the Department and its’ authorized agents. As illustrated elsewhere in this proposal, critical components of the Team have previous experience with FHWA funded projects. During the Construction Phase, Heim Construction will provide unencumbered access to all areas, will provide all required reporting information in a timely fashion, will provide regular Status Reports with a focus on schedule and budget and will provide proactive manage.

2.16. TECHNOLOGY AND INTEGRATION SERVICES; TESTING AND VALIDATION
Design, integration, testing and validation of the RTMC systems and the cutover of the existing RTMC services and systems to the new RTMC will be guided by FHWA’s Systems Engineering Process (SEP) illustrated in Figure 1. The Heim Team agrees with the statement made on page 12 of the Systems Engineering Report that application of the SEP results in significant benefits and value to the project. Jeffrey E. Purdy PE from Pennoni will lead the SEP for the project. He has employed SEP on RTMC projects across the country and provided training to the Maryland State Highway Administration and the New Hampshire Department of Transportation in the application of the SEP.

In implementing the SEP, we will decompose the Bridging Documents to discretely define the detailed requirements of the project for each system and subsystem. These requirements form the basis of the requirements traceability matrix guiding the design development, testing and acceptance, and cutover plan protocols. This will be an iterative process first applied in tracing requirement to design and then requirement to system acceptance testing from unit tests through system validation. It is applied a third time for the cutover plan and subsequent system and subsystem testing.

As the design is progressed, testing protocols will be defined for each installation contractor to perform specific unit testing through system validation tests – a systematic testing and acceptance plan to bring the RTMC online with minimal debugging required prior to cutover. As the design progresses, each testing protocol will be compiled into the Cutover Plan which will be submitted to DGS and PennDOT for review and approval. These testing and cutover protocols will conform to the Bridging Documents and Appendix X Section 014000 – Quality Control Testing Services as appropriate as most of these requirements pertain to material testing and quality control.

Once the new RTMC is brought online documentation protocols will be implemented during the 180-day testing period to document the performance of the RTMC and the resolution of any events that occur. Once the 180-day test is approved, decommissioning of the existing RTMC will commence and again testing protocols will be utilized to identify any operational or system performance impacts to the new RTMC.

Building from the Systems Engineering Report included with the Bridge Documents, system cutover and testing requirement with be defined for systems within the RTMC and include but not limited to the following:

- Barco Control Room Management (CMS) Server, Transform N Video Wall Controller
- Barco Media Gateway Server (MGS)
- IPTV System
- Digital Radio System
- OTN Central Node and OMS Server
- Bluetooth Server Traffic Signal Servers
- Ramp Metering Server
- NextGen ATMS Traffic Signal System including Econolite, Peek, Siemens, and Naztec (Aries,
Centracs, CLMATS, Streetwise, Rhythm, i2 and Tactics) plus the City of Philadelphia’s KITS software

- Incident Command Center Systems
- ITS Subsystems
  - Center Subsystems including the Traffic Management, Emergency Management, and Information Service Provider systems.
  - Traffic Management Subsystem
  - Emergency Management Subsystem
While BIO is responsible to the installation and configuration of the following software on the operator and non-operator workstations, these systems will be included in the traceability matrix and the system integration and testing protocols:

- Genetec Omnicast IP video management system (VMS)
- Skyline Center-to-Center Video Sharing Servers
- Cisco 4510 Core Network Switch and Firewalls comprising the District LAN

BALA’S TECHNOLOGY SYSTEMS APPROACH

Structured Cabling System (SCS) | This section includes the design of all necessary cabling, conduits/raceways, cable terminations, controls, systems, materials, devices, components, electrical power, equipment racks/cabinets and software, as well as all appurtenances, programming, commissioning, testing and manufacturer warranties necessary to deliver complete and fully operational systems as indicated by the Design-Build RFP Bridging document provided by Jacobs Engineering Group dated April 24, 2019.

Communications connectivity will be provided to the fire alarm system per NFPA 72.

Communications connectivity will be provided per ASME A17.1.

All copper and fiber optic exterior cables in exterior applications will be rated for exterior applications and classified as Outside Plant (OSP) polyethylene (PE) rated installed in dedicated inner-duct/conduit system routed through dedicated conduits. Unlisted OSP cable will not extend more than 50’ into the building before transitioning to UL listed indoor-rated cable. OSP cable will be terminated on proper grounded UL listed surge protection when transitioning to indoor-rated cable. Plenum cabling will be used in plenum spaces.

Cable Tray | Provide UL Listed cable tray for all horizontal systems cabling. Size cable tray to accommodate all horizontal systems cabling plus 100% growth capacity. Cable tray shall have adjustable rungs and a minimum 4-inch-high side wall on both sides. Provide manufactured bends and intersections at all cable tray junctions. Provide cable tray in a streets and alleys configuration for main cable routing from IDF/MDF to workstation areas.

Backbone Cabling Distribution | Backbone cabling distribution will be routed in redundant and diverse paths from the server room to the telecommunications room(s). Optical fiber cabling will consist of laser optimized OM4 grade multimode and/or OS2 singlenmode cabling. Copper distribution will consist of Category 5e UTP for any analog signals, such as fire alarm, fax, POTS, etc.

Horizontal Cabling Distribution | The structured cabling will consist of Category 6A balanced unshielded twisted pair (UTP) for data, video, voice, and voice over IP (VoIP) to 250 feet from IDF termination point to edge device termination point for a permanent link test. Outlet configurations and requirements shall be as indicated in the DB RFP. Patch cords for both ends of cables (layer 2 switch ports and workstations) will be included.

Velcro straps will be used to secure all cable bundles.

Server Room | The server room shall house the systems that are required to provide Risk IV fault tolerance connectivity. From the point of building demarcation, the design will include redundant and diverse routing to the network core. With consideration for the hot aisle containment solution that will reside in this rooms, cabling distribution from the core networking cabinet(s) will be delivered to each planned day one cabinet, as well as planning future growth, within this room for equipment connectivity via Category 6A unshielded twisted pair (UTP) and optical fiber cabling. Optical
fiber cabling will consist of laser optimized OM4 grade multimode and/or OS2 singlemode cabling. All cabling within this room shall be delivered in a two-tier overhead or underfloor UL Listed cable tray distribution system. If underfloor, the cable tray will be designed so to as not impede airflow.

The server room infrastructure will include, but not be limited to, the following elements:

- The telecommunications ground busbar shall be 4”hx12”wx1/4” thick. All cabinet, cable tray, and equipment connections shall utilize a minimum 6AWG insulated stranded copper ground wire with 2-hole compression lugs on all ends. Each cabinet will be individually connected to the grounding system/signal reference grid. Copper ground feed shall be sized accordingly from ground source.

- Electrical outlets in the demarcation room shall not be switched. Light fixtures shall be placed on separate non-switched emergency circuits. Electrical outlets for equipment cabinets shall be dedicated fed from separate circuits (2 per cabinet) mounted on the rear of the cable tray at each cabinet.

- All cabinets will be bolted together within the entire row at a minimum of three locations at both front and rear of each cabinet.

- Cabinets shall be in a hot aisle/cold aisle configuration.

- Cable tray will be sized accordingly to allow for day one and future cabling distribution requirements. Each section will be bonded with UL listed bonding jumpers or UL Listed splice connectors as recommended by the manufacturer.

- All conduits shall be sealed in all annular space with a UL Listed firestop solution matching the integrity of the penetrated wall or floor.

**Wireless Local Area Network Access (Wi-Fi)**

The wireless local area network (WLAN, also known as wireless fidelity “Wi-Fi”) system shall be a segment of the basic network infrastructure and will utilize “plug and play” style wireless access points (WAPs) mounted on walls or ceilings to provide wireless network access where needed. Placement will such that 50 linear feet will not be exceeded between each providing for a 25ft radius of overlapping coverage. WAPs will consist of two Category 6A cables each.

**Cellular Distributed Antenna System (CDAS)**

The cellular DAS system shall be separate from the public safety DAS and Wi-Fi systems. RF signals from each of the major carriers shall be transmitted via coaxial cable to a neutral-host wireless multi-band combiner. The wireless combiner system shall distribute the multi-carrier signals using RF over single mode fiber to a series of optical remote amplifiers installed in wall/ceiling mounted locations throughout the building. The amplified signals shall be distributed over ½” plenum rated coaxial cables to ceiling or wall mounted multi-band antennas ensuring adequate downlink signal levels of (-75 dBm) for 700 MHz LTE and (-85 dBm) for Cellular/PCS/AWS Services throughout 95% of the space.

**Public Safety Distributed Antenna System (PDAS)**

The public safety DAS system will be separate and independent from the cellular DAS system per NFPA 72 and IFC 510.

The RF coverage provided will be 99% ubiquitous coverage for talk-out and talk-in reliability for all elevator shafts, egress stairways, electrical/mechanical rooms, fire department command center(s) and areas surrounding fire standpipes.

### 2.17. CLOSEOUT PROCESS

SG adheres to the strict punch list and closeout methodology described both in the AIA documents as well as in our inclusive front end specification documents.

Following the construction administration phase of the project, which will be managed by Heim Construction, the SG team will work in concert with Heim to provide a substantial completion inspection with a punch list of items requiring correction and prepare a substantial completion certificate. SG will review furnished O&M manuals, schedules, guarantees, bonds, and certificates. SG will also review “as-built” documents and prepare a set of
closeout record documents for the Owner. Record documents will include O&M manuals, warranty cards and forms, inspection tickets and approvals, certificates of occupancy, and reproducible record drawings and CAD files for delivery to the Owner.

TRAINING

Pennoni has been providing technical assistance and support services to District 6-0 in the daily operational functions of the Regional Traffic Management Center (RTMC), including the training of new RTMC operators.

Their staff has real experience in the District 6-0 RTMC and has helped the District provide uninterrupted 24-hour/7-day a week service (including Holidays) since April of 2005, adapting to numerous changes in policies, procedures, and systems during this time of progressive growth.

They are capable of training RTMC operators in accordance with existing District and Central Office policies and procedures, and the use of Q-free’s OpenTMS ATMS software, including the analytical and reporting tools.

They are also knowledgeable regarding the Department’s Roadway Closure Reporting System (RCRS) and the District’s Incident Response Plans (IRP).

Their signal specialists can provide training on the Transcore ramp metering system, and traffic signal system packages including KITS, Streetwise, Centracs, IQ Central, Tactics, MaxView (new UCC system) and Rhythm In-Sync (Adaptive).

Their staff also possess FEMA National Incident Management System (NIMS) certifications, and are extremely familiar with forthcoming new initiatives, such as Managed Lanes, Variable Speed Limits, Queue Detection, Junction Control, Part-time Shoulder Use, and Integrated Corridor Management (ICM).

The RTMC will be a key component in the success of future District Transportation System Management and Operations (TSMO) and ITS expansion projects, including the I-76 Corridor Comprehensive Transportation Management Plan and Active Traffic Management (ATM) project.

For the RTMC AV Systems, Vistacom develops a course curriculum for the different training sessions that will be scheduled during this phase of the project. At a high level, this will include TOC operator training on the Barco and Digital Radio Systems, administrative training on the Barco, IPTV, and digital signage systems, and a troubleshooting 101 training on all AV systems. In addition to scheduled training classes as part of initial training, Vistacom will schedule refresher training at the 3- and 6-month marks of beneficial system use.

COMMISSIONING

The Commissioning Agent (CxA) will be a DGS representative, that DGS will provide, who will be responsible for coordinating, directing, and participating in the day-to-day commissioning activities. The CxA shall not provide craft supervision, labor, or physical plant.

Heim Construction understands our responsibilities in commissioning are:

- Commissioning is the joint responsibility of the Design-Build Contractor (including direct and indirect Design-Build Contractor labor, supervision, materials, subcontractors and suppliers), and the CxA. The CxA will be contracted through the Construction Manager (CM) so the cost for the CxA shall not be included in the design build proposal. The Design-Build Contractor shall include all other costs necessary to support the CxA and the work required until demonstrated and accepted by the CxA.

- The Design-Build Contractor is responsible to provide the primary supervision support and labor required for start-up, testing, and commissioning.

- The commissioning process requires Mechanical and Electrical designer and contractor input and participation to ensure all portions of the Work have been completed in a satisfactory and fully operational manner.

We recognize that we will provide commissioning support:

- Start-up and testing of equipment and systems.
• Assistance in testing, adjusting and balancing.
• Operating equipment and systems for commissioning tests.
• Assigning qualified personnel for participation in commissioning tests, including seasonal testing required after the initial commissioning.
• Equipment, materials, and labor necessary to correct deficiencies found during the commissioning process which fulfill contract and warranty requirements.
• Operation and maintenance information and record drawings.
• Assistance in developing system operation descriptions.

• Training for the systems specified in Mechanical and Electrical sections.
• Providing support to the CxA to address requirements for LEED related items throughout the design stages and prior to the start of construction.

Heim Construction understands that we shall be responsible for assembling the Design-Build Contractor’s Commissioning Submittal. The Design-Build Contractor including their design team professionals and subcontractors shall be responsible for submitting information required to be included in the Commissioning Submittal to the Design-Build Contractor’s commissioning representative.
SECTION 3:
MASTER SCHEDULE
3.1. EXECUTIVE LEVEL CPM GRAPHICAL SCHEDULE

Heim Construction understands that an initial milestone schedule is required as part of the Technical Proposal submission as stated in the RFP.

Please find in the following pages, the executive level CPM graphical schedule.

3.2. FIRM MILESTONES REQUIRED BY DGS

The firm milestone required by DGS are indicated below:

3.2.a. All design submissions and approvals
3.2.b. Building permitting submissions and approvals
3.2.c. Start of construction – RTMC and parking structure
3.2.d. Completion of buildings
3.2.e. RTMC Cutover Plan Approval
3.2.f. Substantial completion and completion of punch list
3.2.g. Commissioning of all contracted items
3.2.h. Training
3.2.i. Testing of RTMC Network and AV components
3.2.j. Final Certificate of occupancy

The milestones indicated above should signify the start and/or completion date of a specific activity and any uncompleted milestones will require a Recovery Plan from Heim Construction.

Heim Construction understands the Project Schedule requirements and contingencies in Article 8 of Appendix R (General Conditions for the Design-Build Contract) including:

- within seven (7) calendar days of the Effective Date of Contract (unless Letter of Intent is issued otherwise), we shall furnish DGS a draft progress schedule.
- within thirty (30) calendar days of the Effective Date of Contract, Heim Construction will prepare and submit to DGS the completely integrated Project Schedule in detailed CPM format for DGS’ approval. This shall be done via e-Builder.
- the project schedule will be updated and issued at least once per month and submit with each application for payment. It is mandatory that we attend the monthly schedule update meeting.
- the failure to provide full cooperation in the preparation of the CPM schedule and any updated schedules will be sufficient reason for declaring the Design-Build Contractor in default.
- DGS reserves the right to assess Liquidated Damages if we fail to provide a final certificate of occupancy for the project by the Contract Completion Date.
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<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
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0251-0095 Phase 1
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**Start-only**

**Finish-only**

**External Tasks**

**External Milestone**

**Deadline**

**Progress**

**Manual Progress**

**ENT OF GENERAL SERVICES**

0251-0095 Phase 1

Center and Parking Structure

**MASTER SCHEDULE**
<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
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<td>Internal Review of All systems integration</td>
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<td>Fri 1/24/20</td>
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<tr>
<td>51</td>
<td>Integration of Comments</td>
<td>5 days</td>
<td>Mon 1/27/20</td>
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<td>52</td>
<td>Specification Development</td>
<td>28 days</td>
<td>Fri 12/27/19</td>
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<td>53</td>
<td>Draft final (90%) Design Submission</td>
<td>1 day</td>
<td>Mon 2/3/20</td>
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<td>Tue 2/4/20</td>
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<td>Final Design Document Submission</td>
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<td>Wed 2/5/20</td>
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<td>56</td>
<td>Final Specifications</td>
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<td>7 days</td>
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<td>58</td>
<td>Bid Document - Finalize Base Bid Packages</td>
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<td>DGS/PennDOT Review of Final Documents</td>
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<td>64</td>
<td>APPROVALS &amp; PERMITTING</td>
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<td>Wed 9/4/19</td>
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<td>65</td>
<td>Surveying/ Base Mapping</td>
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<td>Utility Investigations</td>
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<td>Site Design</td>
<td>35 days</td>
<td>Wed 9/11/19</td>
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<td>Mont County Conservation District (MCCD) Mtg</td>
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<td>Upper Merion Township (UMT) Kickoff Meeting</td>
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<td>Wed 9/11/19</td>
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<td>UMT - Variance Request/ Prep/ Approval</td>
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<td>Thu 9/12/19</td>
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<td>UMT Site Plan Review and Approval</td>
<td>60 days</td>
<td>Wed 9/18/19</td>
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<td>72</td>
<td>E&amp;S Plan Preparation</td>
<td>30 days</td>
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<td>Thu 10/24/19</td>
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### MASTER SCHEDULE

**Center and Parking Structure**

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<thead>
<tr>
<th>External Tasks</th>
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<th>Progress</th>
<th>Manual Progress</th>
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<td><strong>BIDDING AND AWARD - MPE PACKAGES ONLY - RTMC</strong></td>
<td>47 days</td>
<td>Mon 4/6/20</td>
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<td>Advertisement</td>
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<td>Bid Due Date</td>
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<td>Thu 5/7/20</td>
<td>Tue 6/9/20</td>
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<td>81</td>
<td><strong>DESIGN AND BIDDING - PARKING GARAGE ONLY</strong></td>
<td>55 days</td>
<td>Mon 9/2/19</td>
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<td>Pre-Design Performance Specification</td>
<td>11 days</td>
<td>Mon 9/2/19</td>
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<td>Bidding and Award and Shop Drawings - noted below</td>
<td>55 days</td>
<td>Mon 9/2/19</td>
<td>Fri 11/15/19</td>
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<td>86</td>
<td><strong>CONSTRUCTION</strong></td>
<td>774 days</td>
<td>Mon 9/16/19</td>
<td>Thu 9/1/22</td>
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<td>87</td>
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<td>1 day</td>
<td>Mon 9/16/19</td>
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<tr>
<td>88</td>
<td>Prepare submittal for precast garage</td>
<td>45 days</td>
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<td>Complete Precast Garage Construction</td>
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<td>Demolish Existing Parking Garage</td>
<td>23 days</td>
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<td>92</td>
<td>Construct RTMC Building and Site</td>
<td>326 days</td>
<td>Mon 11/2/20</td>
<td>Mon 1/31/22</td>
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<td>Systems integration cutover</td>
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<td>RTMC goes online</td>
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<td>Backfill Existing RTMC</td>
<td>66 days</td>
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<td>Tue 5/31/22</td>
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<td>RTMC 6 month operational test</td>
<td>132 days</td>
<td>Tue 3/1/22</td>
<td>Wed 8/31/22</td>
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<td>97</td>
<td>Final Completion</td>
<td>1 day</td>
<td>Thu 9/1/22</td>
<td>Thu 9/1/22</td>
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</table>

Project: DGS C-0251-0095 Phases
DGS RTMC
Date: Mon 6/10/19

HEIM CONSTRUCTION CO.
3.3. MASTER SCHEDULE CHALLENGES AND SOLUTIONS

The Design-Build Teams approach in preparing the master schedule is to minimize disruptions to the users, adjacent property owners, traveling public and ensure the safety of all parties impacted, while constructing the project in the most efficient manner possible. We see the critical aspects of the schedule to be as follows:

Design Submissions and approvals | Integral to the timely completion of the project is the design and approval process. The Design-Build Team has focused on saving as much time as possible in the design sequence to allow adequate durations for construction activities. In this activity the Design-Build Team will focus on identifying long lead items that can be procured in advance of construction commencement as well as sequencing to minimize disruptions. As our preliminary schedule details we are keeping a tight timeline on the design schedule to allow as much time as possible for the construction.

Building Permitting Submissions and Approvals | Because the Design-Build Team has the least amount of ability to control this aspect of the project we need to make sure our submissions for approvals to Authorities Having Jurisdiction (AHJ) are complete, accurate, compliant and timely so that we do not expose the schedule to unnecessary impacts. We will accomplish this by having each team member review all submissions before they are presented and Heim will follow closely the submission deadlines required by AHJ.

RTMC and Parking Structure completion | The Design-Build Team will develop construction activities and durations based on quantities, applying reasonable production rates, using preliminary estimates and in consultation with suppliers, local subcontractors, consultants and based on experience. These relationships, which are a necessary and valuable resource will guide realistic establishment of activity durations and ultimately determine if the project can be accomplished in normal working hours or if premium time efforts will be part of the schedule success. The Design-Build Team careful selection of team members familiar with the technology and A/V aspects of this project will ensure our success. Critical to overall success will be ensuring the Parking Structure holds to its timeline. Given the limited number of manufacturers and their production schedules meeting this timeline will require selection of the right precast partner and detail team.

We will need to coordinate a variance for the parking garage set-back with Upper Merion, make a Land Development Submission and submit E&S Plans to Montgomery County Conservation District. These activities and durations are captured in the schedule. While DGS/PennDOT are exempt from Township approval, they are not exempt from the Montgomery County Conservation District.

RTMC Cutover Plan | The Heim Design-Build Team is in a great position to prepare and execute this plan as it has team members Vistacom, who participated in the bridging document preparation and is intimately familiar with the Owners needs as well as the Design-Build Contractor design and performance portions. This coupled with Pennoni, who has employees in the current RTMC gives Heim Design-Build Team a unique insight into the operational needs to create and execute the cutover plan.

Commissioning | In the design phase the Design-Build Team will prepare a commissioning submittal and the Owners Commissioning Agent will prepare the commissioning plan. Key to the schedule will be the ability of the Design-Build Team to address commissioning aspects and reporting during the construction period so no significant deficiencies are reported and schedule position is impacted upon startups. Careful consideration shall also be given to the LEED requirements for commissioning and scorecard position to determine activities that impact timeline the most are required and beneficial.

Testing of RTMC Network and A/V Components | Because some of the components are unique and single source, rigorous and timely testing is essential to delivering on schedule. There will be factory acceptance testing done in advance of systems
acceptance test. The Design-Build Team will do as much stand alone testing as feasible to ensure no loss of schedule position for failed components that may impact overall master schedule progress.

A critical area of project risk that impacts several disciplines is IT coordination with PennDOT BIO. As many of the systems are dependent upon the network that PennDOT BIO will be implementing, it is critically important that proactive coordination begin early during Pre-Construction and continue through the Cutover Phase. Early coordination is one key to mitigating this risk; the other key is regularly scheduled touchpoints between all teams. To this end, dedicated IT coordination meetings will be scheduled separate from normal construction and owner meetings to ensure all stakeholders are moving in the same direction. Heim Construction and its team will manage this process to minimize and mitigate this potential project risk.
SECTION 4: QUALIFICATIONS
4. QUALIFICATIONS
THE TEAM’S PROJECT EXPERIENCE, QUALIFICATION + COMMITMENT

4.1. DESIGN-BUILD CONTRACTOR QUALIFICATIONS

Please find Heim Construction’s internal hierarchy-team organizational chart below as well as the requested qualifications in the following pages.

4.1.A. DESIGN-BUILD CONTRACTOR DESIGN-BUILD PROJECT EXPERIENCE

Please refer to pages 4.2-4.3 of this section.

4.1.B. DESIGN-BUILD CONTRACTOR TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

Please refer to page 4.4 of this section.

4.1.C. DESIGN-BUILD CONTRACTOR FEDERAL-AID/FHWA PROJECT EXPERIENCE

Please refer to pages 4.5-4.6 of this section.

4.1.D. DESIGN-BUILD CONTRACTOR MANAGEMENT TEAM INDIVIDUAL QUALIFICATIONS

Please refer to pages 4.7-4.12 of this section.

4.1.E. DESIGN-BUILD CONTRACTOR STATEMENT OF READINESS AND COMMITMENT OF RESOURCES

Heim Construction Company verifies that the company will be ready and committed to use its resources to fulfill the DGS PennDOT District-6 Regional Traffic Management Center and Parking Structure project if a contract is agreed upon between the Design-Build Contractor (Heim Construction) and DGS/PennDOT.
PENNDOT DESIGN-BUILD GOLD STAR ROAD BRIDGE
SR 3015 Sec 02B Gold Mine Mountain Road over Wiconisco Creek,
Schuylkill County, Pennsylvania

The project site is situated on Gold Mine Mountain Road outside the Boro of Tower City, Porter Township, Schuylkill County, Pennsylvania. PennDOT is authorized to use a variety of project delivery methods including a design-build agreement.

The project involves the replacement of the bridge structure carrying S.R. 3015 over Wiconisco Creek utilizing the PennDOT Design-Build criteria. The existing bridge, built in 1947, was a two-span steel rolled I-beam with a clear span of 41.7 feet and a bridge deck travel width of 23.42 feet. ADA traffic along this road averages to be 1,806 vehicles. To maintain traffic during construction, a temporary road supported by three (3) pipes over Wiconisco Creek will be constructed upstream from the proposed bridge location.

Heim Construction hired Alfred Benesch & Company to assist in developing a structure design that increased the clear span to 56.5 feet and widen the deck area to 33 feet out to out.

The superstructure used 4 – 48/27” x 61.6’ x 25.52 tons each Prestressed Concrete Spread Box Beams, integral abutment design was used to incorporate the deck pour with the beam encasement at the abutments. The entire Design-Build process was accomplished in a four (4) month time period.
EMPIRE EDUCATION GROUP
396 Route 61 North Pottsville, Pennsylvania

The project included a design of a new two-story corporate office that includes CEO and executive offices, a new entrance lobby for visitors, a boardroom and private conference areas, large open cubical office areas, managerial and supervisory offices, and a new employee lunchroom and various support space.

In addition to the new construction, the project involved an additional 60,000 sf of renovation of the existing Empire Beauty School. Timing and work scheduling were critical to the Owner because training and classes were in session and had to continue with minimal interruption. The areas involved were classrooms and hands-on areas where students engaged in practical exercises of their trade and discipline.

TEAM INVOLVED
Heim Construction Company

PROJECT EXPERIENCE TYPE
Design-Build

DATE
August 2012

OWNER
Frank Schoeneman

CONTACT
570.998.4149

PROJECT AMOUNT
$5.9 million

STATUS
Completed

PENN STATE SCHUYLKILL NITTANY APARTMENTS V
Pennsylvania State University, State College, Pennsylvania

Design of a new thirty thousand (30,000) SF apartment building for Penn State Schuylkill Campus, which includes twelve (12) apartment units with seventy-two (72) beds, a student lounge, laundry facilities and a student life office. Nittany Apartments V achieved Silver certification under the LEED for new construction rating system.

Sustainable practices and features include all of the following; 46% of construction waste diverted from the landfills, 21% of the content of all building materials utilized in the project were recycled, 49% were manufactured and extracted locally, parking and pavement were minimized, the buildings energy usage is 14% better than code requirements, low emitting construction materials were used throughout, maximized use of natural light in conjunction with high efficiency light fixtures, no CFC’s or ozone depleting refrigerants in HVAC equipment and Industry leading low-flow plumbing fixtures throughout.

TEAM INVOLVED
Heim Construction Company

PROJECT EXPERIENCE TYPE
Design-Build

DATE
August 2010

CONTACT
Judge Charles Miller
570.622.5570

OWNER
Pennsylvania State University

PROJECT AMOUNT
$4.2 million

STATUS
Completed
PPL EMERGENCY MANAGEMENT STORM CENTER
Scranton, Pennsylvania and Lancaster, Pennsylvania

The PPL Corporation is an energy company headquartered in Allentown, Pennsylvania. It currently controls about 8,000 megawatts of regulated electric generating capacity in the United States and delivers electricity to 10.5 million customers. PPL Electric Utilities (formerly known as PP&L and Pennsylvania Power and Light) is the PPL Corporation’s primary subsidiary.

These centers monitor and prepare responses during major storms. The technical hub for the millions of PPL customers operate out of these storm centers. Heim Construction was hired to renovate during normal hours of operations without disrupting storm center service.
4.1.C. DESIGN-BUILD CONTRACTOR FEDERAL-AID/FHWA
PROJECT EXPERIENCE

POTTSVILLE STREET BRIDGE
SR 1002 Sec 01B over Mill Creek, Borough of Port Carbon, Pennsylvania

Utilizing an 80% contribution of Federal funds, the PennDOT hired consultant Erdman Anthony of Mechanicsburg, Pennsylvania, to design demolition of the existing structure and the replacement of the single span Prestressed Concrete Adjacent Box Beam superstructure Bridge over Mill Creek.

The construction contract allowed for a seven (7) month construction period that included sidewalks, minor approach work, temporary traffic signal, local road detour with milling and repaving detour route upon completion of project and other miscellaneous construction.

Erdman Anthony’s design called for the structure to use HP 12x74 steel beam bearing piles, 11- 48/21” x 66.5’ x 23.66 tons each Prestressed Concrete Adjacent Box Beams, 74 cubic yards of class AAAP concrete and some 56,000 lbs of reinforcement bars.

TEAM INVOLVED
Heim Construction Company

PROJECT EXPERIENCE TYPE
PennDOT/FHWA

DATE
Jan 2017

CONTACT
Alfred A. Picca, PE, Assistant District Executive; Construction 610.871.4435 alpicca@pa.gov

OWNER
PennDOT

PROJECT AMOUNT
$1.8 million

STATUS
Completed
SCHOERNERSVILLE ROAD  
SR 1009 Section M89, City of Bethlehem, Lehigh County, Pennsylvania

New signal timing plans, updated signal hardware and an upgrade in signal interconnection to a closed loop traffic responsive system along Schoenersville Road (SR 1009) Corridor from Avenue C/Stoke Park Road to 8th Avenue in Hanover Township and City of Bethlehem, Lehigh County and other miscellaneous construction over this 5.62 miles of roadway.

Heim Construction played a significant role in keeping the project on schedule having its crews performing accelerated concrete patching utilizing the Department’s categories of Type “A” and Type “B” on a very active roadway with 17,000 cars of daily traffic.

A unique requirement dictated that all concrete patching was to take place between the hours of 7pm and 6am the following morning. The Heim Construction crews were stationed and prepared each evening to launch their traffic control to provide a safe working area for the workers. The workers would mobilize, remove the area to be replaced, install dowels, prepare the area for the accelerated concrete, install the concrete, cure the product and then remove the traffic control to allow free and clear access for the daily traffic.

Front end planning and coordination were keys to this successful projects. In addition to the 2,200 square yards of accelerated patching, 2,736 lineal feet of patching joints and the removal and construction of twenty (20) ADA ramps to include curbs, sidewalks and domes.

STATE ROUTE 309, SECTION 03M  
Schuylkill County, McAdoo Borough and Kline Township, Pennsylvania

Restoration of SR 309 including reconstruction of pavement, guide rail replacement, construction of ADA curb ramps, drainage upgrades traffic signal upgrades and other miscellaneous construction, as indicated on the approved drawings included in the bid package for STATE ROUTE 309, SECTION 03M, in SCHUYLKILL COUNTY, MCADOO BOROUGH and KLINE TOWNSHIP from approximately Haddock Rd at segment 0420 offset 1856 NB and segment 0421 offset 1822 to approximately 300’ South of the Carbon County Line at segment 0460 offset 1419.

Heim Construction’s role in this project supports the preparation for the General Contractors paving operation. The construction items that Heim Construction will perform prior to the paving operation include; Joint patching, Installing new pavement joint, Provide subbase material for concrete pavement patching, Concrete Pavement Patching, Type A, 9” depth, Concrete Pavement Patching, Type B, 9” depth, Install Plain Concrete curb including removal of existing curb, variable height, Install Plain Cement Mountable Curb, Type A, Install Cement Concrete Sidewalk, Provide Detectable Warning Surface, Polymer Concrete, Perform Concrete Driveway Reconstruction, and Install Concrete Steps.

The Heim Construction Team are self-sufficient performing all their own support activities such as traffic control, excavation, disposal, and maintenance of the work area.
**4.1.D. DESIGN-BUILD CONTRACTOR MANAGEMENT TEAM**

**INDIVIDUAL QUALIFICATIONS**

**ROY A. HEIM**
Heim Construction Company  
President

Roy Heim, Founder/President of Heim Construction Company, Inc. is recognized for his expertise in design-build and construction projects by his peers. Heim Construction has been recognized in the industry of its peers with prestigious awards on numerous projects. Roy has been the driver of the company for twenty (27) years providing inspiration and leading by example and dedication. His efforts were recognized by the Schuylkill County Chamber of Commerce in 2016, awarding Roy the Entrepreneur of the year honor.

Roy Heim’s background covers heavy highway, health care facilities, out-patient surgery centers, higher education facilities, government projects, hospitality, commercial and retail buildings, special projects and pre-school facilities.

Mr. Heim’s ability to deliver each project on time, completed with above standard quality. His mind set has set a culture at Heim Construction Company to, always, do the right thing.

**SELECT EXPERIENCE**

<table>
<thead>
<tr>
<th>ROLE</th>
<th>years of experience</th>
<th>EDUCATION</th>
<th>PROFESSIONAL REGISTRATIONS</th>
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<tr>
<td>President</td>
<td>TOTAL 27 years</td>
<td>TECHNICAL SCHOOL FOR CARPENTRY</td>
<td>Schuylkill Chamber of Commerce</td>
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<td>Associated Pennsylvania Constructors Board Member</td>
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<td>International Code Council</td>
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<td>Schuylkill Municipal Authority Board Member</td>
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<td>M&amp;T Board Member</td>
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<td>Schuylkill Country Club Board Member</td>
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<td>2016 Schuylkill Chamber of Commerce Entrepreneur of the Year</td>
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<td>Board of Director for Orwigsburg Little League</td>
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<td>Coach of Orwigsburg Little League</td>
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<td>Coach of Blue Mountain Midget Football</td>
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<td>Coach of Blue Mountain Boys Basketball Travel Team</td>
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<td>ABC Past Board of Director</td>
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<td>Chairman of Penn State Capital Campaign</td>
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**QUALIFICATIONS 4.7**

**Design Build of Penn State Nittany V**
Schuylkill Haven, PA  
40,000 SF Dorm, Completed August 2010

**Design Build of Pottsville Street Bridge**
Borough of Port Carbon, Pa. SR 1002 Sec 01B over Mill Creek

**Design Build of Lehigh County SR 1009**
Schoenersville Road (SR 1009), City of Bethlehem, Pennsylvania

**Design Build of Empire Beauty School**
Pottsville, PA  
Corporate Expansion (30,000 SF Addition)

**State Route of 309, SECTION 03M**
Schuylkill County, McAdoo Borough and Kline Township, Pennsylvania

**McAdoo Boro SR 309 ADA** (Ongoing)

**Evserson Boro SR 23 Slip Formed Curbs** (Ongoing)

**Schoenersville Road SR 1009 Patches** (Ongoing)

**Summit Hill SR 902 ADA** (Completed Aug 2018)

**Schuylkill County Bridge #200**  
Rehabilitation of substructure and superstructure with a compressed construction schedule

**West Chester University**  
College of Business and Public Management

**Design-Build of Yuengling Museum**  
Pottsville, Pennsylvania  
35,000 SF

**Design-Build of a car museum with Indoor Life Size Drive-In Theater**  
Orwigsburg, Pennsylvania  
50,000 SF
SCOTT BLANKENHORN
Heim Construction Company
Chief Estimator, Project Manager

Scott is a 1985 graduate of Blue Mountain High and South Schuylkill AVTS with a major in carpentry. He also graduated from Williamsport Area Community College in 1987 with a major in construction carpentry. Scott’s thirty (30) year career bundles hands-on construction building, managing crews and subcontractors, scheduling, cost estimating, drawing and purchasing. Residential and commercial projects flow through Scott’s area especially when a high degree of difficulty and a schedule must be met. Scott examines each project to ensure that the most cost effective operations are specified. Scott’s understanding of funding sources and specifications whether Federal, State or local provide accurate estimates for our customers.

SELECT EXPERIENCE

Penn State Schuylkill Nittany V Apartments
Student Housing, Schuylkill Campus
$4.2 million.

Empire Beauty School
Pottsville, Pennsylvania
New construction and renovations. $5.9 million.

Dr. Robert Kimmel Surgery Center
Pottsville, Pennsylvania
New construction. $2 million.

Lehigh Valley Hospital
Three (3) floor renovation Adult Care Center.
$2.3 million.

Dr. Solomon Lu Eye Surgery Center
Wyomissing, Pennsylvania.
$2.5 million.

Dr. Robert Zimmerman
Women’s Comprehensive Care Facility
Pottsville, Pennsylvania
$3.2 million.

Dr. Sadoski Dental
Pottsville, Pennsylvania
$2.2 million.

ROLE
CHIEF ESTIMATOR, PROJECT MANAGER

YEARS OF EXPERIENCE
TOTAL 30 years

EDUCATION
CONSTRUCTION CARPENTRY
Williamsport Area Community College/1987

AFFILIATIONS
Cressona Masonic Lodge
Cressona Borough Sewer & Water Authority
MICHAEL J. WRIGHT
Heim Construction Company
Vice President of Operations

Michael has managed multi-million dollar projects and programs with national and international companies such as Turner Construction and URS Corporation. His expertise lies in project management, scheduling, value engineering, design-build construction services, and estimating. His work experience covers a 32 year period constructing facilities to serve the needs of education, medical, transportation, manufacturing, warehousing, industrial, commercial and residential construction clients. He has managed over a half billion dollars in Pennsylvania Public School projects and was a former Director of Turner Constructions K-12 Division and recently, DGS projects at West Chester University and PADOT District 6 Bucks County Maintenance facilities.

SELECT EXPERIENCE

PADGS  West Chester University
5-story business/student center. $25 million. 100,000 SF.

PADGS/PADOT Bucks County Maintenance Facility for District 6-0
Eight buildings. $18 million.

Pennsylvania Power & Light
Lancaster Storm Center renovations.

Pennsylvania Power & Light
Scranton Storm Center renovations.

Pennsylvania Power & Light
Board Room Renovations.

Red Rose Transit Authority
Queen Street Station, 7-story parking garage. $20 million.

Lancaster Area School District, Wharton Elementary School
$12 million.

Montgomery County Community College
Art Barn
Addition. $8 million.

Quakertown Area School District, Richland Elementary School

Addition and renovations. $9 million.

North Penn School District, York Ave Elementary School
Renovations. $8 million.

Lancaster County
Administration building. Renovations. $15 million

Hazleton Area School District
$80 million. Renovations and additions. Eleven schools.

West Chester Area School District, B.Rustin High School
Pre-construction services. $45 million.

Downingtown Area School District, West High School
Additions and renovations. $35 million.

Exeter Area School District
New Elementary School. $18 million.

Progressive Vision Institute
$3.5 million. New Surgical Center.

Lehigh Hills
Strip Mall. $3 million.
CAROL BUSH
Heim Construction Company
Contract Administrator

Carol Bush was hired by Heim Construction Company to streamline our project management and estimating team. Carol brings along nineteen (19) years of experience, where she began as an administrative assistant and bookkeeper then diversified into a Community Manager for five (5) years along with several years in the construction industry.

Carol’s duties not only add to the efficiency to our project management and estimating team but also include bidding and contracting documentation preparation. Her experience includes expert knowledge in federal, public and private contract management and administration.

SELECT EXPERIENCE

**Penn State Schuylkill**
Nittany V Apartments
Student Housing Schuylkill Campus
$4.2 million.

**Empire Beauty School**
Pottsville, Pennsylvania
New construction and renovations. $5.9 million.

**Dr. Robert Kimmel Surgery Center**
Pottsville, Pennsylvania
New construction. $2 million.

**West Chester University**
College of Business and Public Management
$39 million.

**Design-Build of Yuengling Museum**
Pottsville, Pennsylvania
35,000 SF. $6 million.

**Design-Build of a car museum with Indoor Life Size Drive-Inn Theater**
Orwigsburg, Pennsylvania
50,000 SF. $2 million.
MARK SAYLOR
Heim Construction Company
Field Superintendent

Mark brings over 39 years of experience in the construction industry. Mark started his career out of high school in commercial construction. In the past 20 years Mark has supervised major education and residential projects including the award winning over Twenty Million dollar West Chester University College of Business and Public Management ($20 million) and DGS New Construction of the Bucks County Maintenance Facility for the PA Department of Transportation ($15 million) in District 6-0. Mark’s ability to plan and schedule projects brings the best possible results to the Owner. Selecting the best qualified subcontractors for the projects and maintaining open lines of communications are hall marks of a Mark Saylor project.

SELECT EXPERIENCE

DGS West Chester University
5-story Business/Student Center. $25 million 100,000 SF.

DGS/PennDOT Bucks County
Maintenance Facility for District 6-0 eight Buildings. $18 million.

Willow Lane Elementary School
$30 million. 60,000 SF. New building.

Chester County Technical Campus
$40 million. 180,000 SF. Renovation and new building.

Reading Citadel High School
Renovation and new buildings.

Downington Middle School/Freshman Center
$40 million 60,000 SF. New building.

Bombay County
200,000 SF. New.

Allentown Refrigerated Terminal
100,000 SF. New construction.

Quakertown Community School District,
Strayer Freshman Center
80,000 SF. Renovation.

Saint Luke Knolls
Eight building complex.

Spanco
Cranes. 60,000 SF. New.

Boyertown Jr. High School West
60,000 SF. Renovation.

Viwinco
50,000 SF. New.

James Hardy Corporation
New addition. 60,000 SF.

Can Corporation
100,000 SF. New.

Tri-County Business Campus
50,000 SF. Renovation.

Marsh Creek Corporate Center
100,000 SF. New Buildings.

Drug Plastics
20,000 SF. Demolition and new construction.

Furniture Unlimited
30,000 SF. Addition.

Boyertown YMCA East Center
30,000 SF. New building.
JEFFREY BUSH  
Heim Construction Company  
Project Manager, Estimator

Jeffrey Bush joined Heim Construction Company, Inc. in March 2014. Jeffrey comes to Heim with over thirty-five (35) years in the construction industry. Jeffrey spent over twenty-five (25) years in the concrete construction of water and waste water treatment plants. With this experience in the concrete construction of structures based on ACI, the transition to Heim Construction Company, Inc. concrete division was a logical fit. Jeffrey also brings many years in the construction management, with duties that include, estimating, scheduling, project management and general superintendent.

Jeffrey’s involvement in projects with Federal and State funding, his knowledge of the contract and administrative requirements of the agencies help make Heim Construction the best it can be in the construction industry.

SELECT EXPERIENCE

4th Refrigeration System  
Naval Air Warfare Center  
West Trenton, New Jersey  
$5.6 million.

Warminster WWTP Upgrade  
Warminster, Pennsylvania  
$4.1 million.

Lititz WWTP Upgrade  
Lititz, Pennsylvania  
$11.8 million.

Swatara WWTP Upgrade  
Swatara Township, Pennsylvania  
$20 million.

Milton WWTP Upgrade  
Milton, Pennsylvania  
$52 million.

Easton WWTP Upgrade  
Easton, Pennsylvania  
$12.5 million.
4.2. RETAINED DESIGN PROFESSIONAL QUALIFICATIONS

Please find the Design Team’s organizational chart below as well as the requested qualifications in the following pages.

4.2.A. RETAINED DESIGN PROFESSIONAL DESIGN-BUILD PROJECT EXPERIENCE

Please refer to pages 4.14-4.15 of this section.

4.2.B. RETAINED DESIGN PROFESSIONAL TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

Please refer to page 4.16 of this section.

4.2.C. RETAINED DESIGN PROFESSIONAL FEDERAL-AID/FHWA PROJECT EXPERIENCE

Please refer to pages 4.17-4.18 of this section.

4.2.D. RETAINED DESIGN PROFESSIONAL MANAGEMENT TEAM INDIVIDUAL QUALIFICATIONS

Please refer to pages 4.19-4.22 of this section.

4.2.E. RETAINED DESIGN PROFESSIONAL STATEMENT OF READINESS AND COMMITMENT OF RESOURCES

The Design Team collectively gives their statement that the firms are ready and committed of each offices’ resource for the DGS PennDOT District-6 Regional Traffic Management Center and Parking Structure project.
4.2.A. RETAINED DESIGN PROFESSIONAL DESIGN-BUILD

PROJECT EXPERIENCE

CITY OF PHILADELPHIA EMERGENCY 911 CENTER
400 North Broad Street, Philadelphia, Pennsylvania

The City of Philadelphia is consolidating its Police, Fire and EMS operations into the old Inquirer Building on 400 North Broad. This project is a Design-Build project with Keating Inquirer Builders, LLC (DJK).

SCHRADERGROUP (SG) was responsible for providing programming and planning services for the entire second floor of the 468,000 SF renovation to the facility. The second floor consists of all of the City of Philadelphia Police, Fire, and Office of Information Technology Services for the City’s 9-1-1 system.

SG interfaced directly with Fire Department, Police Department, and Office of Information Technology user teams to develop the project on behalf of DJK. SG is currently in the process of providing procurement and permitting documents for the facility budgeted by DJK. The team has been working seamlessly to implement this work into the overall project and appear as one provider of design and construction services to the City’s Capital Programs.

Bala Consulting Engineers (Bala) has currently completed the MEP Engineering and design of the fit-out of the City of Philadelphia’s new E-911 Call / Dispatch Center and associated Data Center located within the Philadelphia Public Services Building. This state-of-the-art facility consolidates Police, Fire and EMS operations. The program for the space includes 120 call center workstations, 95 Technology cabinets in the Data Center, one situation/conference room with 20 desk positions.

The design includes new UPS power systems, with redundant (2N) capacity components and dual power feeds, to serve the Data Center, Call Center plus IDF, MDF, and DeMarc Equipment to support 500kW of critical computing load ultimate buildout. The new cooling systems include redundant (N+1) capacity components and dual piping distribution pathways, to serve the Data Center. The UPS rooms are cooled via the building chilled water system with redundant 2N capacity components and dual piping distribution pathways.

Bala’s Integrated Technology Systems (ITS) Group provided the Base Building Infrastructure design for the low voltage systems consisting of security and structured cabling systems supporting the building’s technology requirements. The design also included coordination with City’s Technology Systems Integrator and Audio-Visual Consultant to ensure proper interconnectivity for the Police, Fire and EMS Technology and Radio Systems.

TEAM INVOLVED

SCHRADERGROUP

Bala Consulting Engineers

PROJECT EXPERIENCE TYPE

Design-Build

DATE

Start 2018

OWNER

City of Philadelphia/Officer Town Investments, Inc.

CONTACT

Bart Blaststein
President and Chief Executive Officer Tower Investments, Inc.
215.467.4600

PROJECT AMOUNT

$200 million estimate

STATUS

Under construction
Through this Design-Build project, Pennoni teamed with LF Driscoll Construction Management Corporation to construct a 1,500-space parking garage for the University of Pennsylvania Health Systems (UPHS) along Health Sciences Drive. The parking garage accommodated employees, patients and visitors to the hospital. Pennoni conducted a field exploration consisting of twenty-five (25) borings and eight (8) test pits. Borings were advanced to bedrock and then the bedrock was cored. The report presented recommendations for foundation and floor slab design as well as recommendations for earthwork, ground water readings, and an underdrain design.

Pennoni conducted an environmental site assessment and clean fill analysis to confirm that hazardous materials and spoils could safely be removed from site. Pennoni also provided site planning, grading, utility design and construction detailing as part of the site construction documentation. As part of the overall site design, Pennoni provided an extensive stormwater design system that included an underground stormwater tank and two bio-retention areas. The system is also designed to accommodate the remaining development planned for the site. These systems were designed as part of the permitting required for the Philadelphia Water Department. Pennoni provided traffic studies and plans to submit for approvals for the curb cuts and the proposed streetscape from the Philadelphia Streets Department and PennDOT.

Pennoni also worked with LF Driscoll and UPHS to obtain the required permits from City agencies including City Zoning, Philadelphia Water Department, PennDOT, and the Pennsylvania Department of Environmental Protection.

**SR 202, SECTION FIX, DESIGN BUILD**
SR 202, Chester, Pennsylvania

This project involves the replacement of the SR 0202 Bridge over SEPTA’s single line of railroad tracks known as the West Chester Railroad-Santa Line. The existing bridge is a 3-span, steel, multi-girder bridge. Due to the condition of the existing bridge, replacement has become urgent. This project was originally designed and approved as a superstructure replacement, however, the scope changed to include demolition of the existing and reconstruction of a new bridge.

Benesch provided site and civil engineering services for this project. The replacement structure is a single span pre-stressed concrete bridge. The existing typical section at the structure consisted of four 12 foot lanes, two 8 foot right shoulders and a 4 foot median width with metal guiderail. North of the structure, the 4 foot median continued to the Westtown Road Interchange. South of the structure, the median width varies from 4 feet to 20 feet. The horizontal and vertical alignment remained the same as existing. The two existing concrete piers were demolished as well as the two existing concrete stub abutments. Mechanically stabilized earth retaining (MSE) walls will be constructed in lieu of piers. Two concrete stub abutments were constructed behind the MSE walls. The overall span length of the bridge was reduced due to the construction of the MSE walls. The constructed footprint of the new bridge was within the limits of the existing right-of-way.
4.2.B. RETAINED DESIGN PROFESSIONAL TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

STATE EMERGENCY OPERATIONS CENTER, NEW FACILITY
Pennsylvania Emergency Management Agency (PEMA), Susquehanna Township, Harrisburg, Pennsylvania

SCHRADERGROUP (SG), in a joint venture with AECOM Technology Corporation (AECOM), completed a new, approximately 145,000 SF State Emergency Operations Center (SEOC) serving as a home for many of the State’s emergency response functions. In addition to ensuring the supply of continuous power and communication that is necessary for the SEOC, the design team provided a building that is reinforced and secure for emergency staff. The new facility provides dedicated emergency services and disaster assistance for the state, with the ability to sustain uninterrupted operations during activations.

In addition to the SEOC, the facility provides ergonomically-designed office space for all PEMA administrative departments, as well as partner organizations and integrated functions such as the Office of the State Fire Marshal, and the Pennsylvania Department of Transportation (PennDOT) Traffic Management—which Vistacom was the TMC consultant for.

The complex also supports a Tier 3 data center, media briefing, training facilities and protected storage for PEMA operations vehicles.

Design for this facility follows sustainability guidelines, as understood by the US Green Building Council’s LEED certification process. PEMA has set a goal of achieving a LEED certified rating.

All programming, planning and site master planning preceding the design portion of the project also was completed by SG/AECOM.

Included on the team for this project is Re:Vision as the LEED consultant and Metropolitan Acoustics as the acoustic consultant.

TEAM INVOLVED
SCHRADERGROUP
Vistacom
Re:Vision Architecture
Metropolitan Acoustics

PROJECT EXPERIENCE TYPE
RTMC

DATE
2016

OWNER
Pennsylvania Emergency Management Agency

CONTACT
Jeff Thomas
Deputy Executive Director
717.651.2001

PROJECT AMOUNT
$46 million building and site budget with $14.5 million technology, AV and furniture

STATUS
Completed
This project involved the construction of four structure mounted sound barriers along SR 0095, Section LW1 in the City of Philadelphia. The bridges were built in 1967 and carry SR 0095 as a viaduct over the city streets in South Philadelphia. The existing dual structures were 44 span and 67 span prestressed concrete PA I-beam bridges on cast-in-place full height reinforced concrete abutments, u-wings and piers.

Benesch’s role was to serve as the engineer for the contractor, Road-Con, Inc. As part of final design, Benesch coordinated all design activities with the contractor as well as the Engineer-of-Record, CECO Associates and Trumbull Construction Management Services as well as PennDOT District 6-0. The structure mounted sound barrier locations are based on a noise study performed by McCormick Taylor. That study broke the project limits into four separate Noise Sensitive Areas.

The sound barriers consist of W6x25 steel posts mounted to the rear face of the existing parapet at a height of 10’-0” above the top of the parapet with a maximum post spacing of 8’-0”. The posts are spaced to eliminate conflicts with existing junction boxes, utilities, ITS conduit, sign structures and control boxes. As a secondary structural element, a steel shelf angle was designed to resist the vertical dead load of the concrete panel. Thru-bolts are used to connect the shelf angle to the existing rear face of the parapet. Tightened, the bolts were grouted into place. The total length of sound barrier on this project is 6,570 feet.
SR 476 STRUCTURE + GROUND MOUNTED SOUND BARRIER
Delaware County, Pennsylvania

This project is located on SR 476 in Haverford Township, Delaware County, Pennsylvania. This project involved the construction of sound barriers along Interstate I-476 northbound, in the vicinity of the Darby Creek overpass.

The proposed Design-Build sound barrier was constructed immediately adjacent to the existing edge of the shoulder. The sound barrier consisted of both ground mounted and structure mounted barriers. The northern terminus of the proposed sound barrier overlapped the existing barrier. A portion of the existing shoulder was excavated and reconstructed to allow for the construction of the proposed sound barrier and concrete barrier. Several inlets were constructed along the section of the proposed sound barrier to effectively drain the roadway. Drainage pipes were constructed within the existing embankment connecting to the proposed inlets, and discharging to proposed rock lined channels on the embankment slopes. Benesch met with the Delaware County Conservation District and submitted an E&S report/plan.

Unique Features: Three lanes of traffic were be maintained throughout the construction work zone during the duration of the project. Benesch submitted maintenance and protection of traffic plans.

S.R. 22, SECTION 400 IMPROVEMENT PROJECT
Whitehall Township, Pennsylvania

The preliminary design for the US Route 22, Section 400 Improvement Project involved reconstructing an approximate 2.0-mile section of US Route 22 from 15th Street to 5th Street (Benesch portion) in Whitehall Township, Lehigh County. Specifically, the proposed project involved widening the existing four-lane expressway to six or eight lanes and reconstructing the existing MacArthur Road (SR 145) interchange. Also included in the project were replacement of the existing bridge structures carrying US Route 22 over Mickley Road and Jordan Creek, replacement of numerous channel culverts, replacement of the existing overpass carrying MacArthur Road over US Route 22, reconstruction/realignment of local access/connector roads, replacement of all existing sign structures and safety appurtenances within the limits of reconstruction, potential retaining walls and sounds barriers, and installation of intelligent transportation system hardware.

Due to funding constraints the scope has been reduced to safety improvements at the MacArthur Road interchange. The current Design-Build project (SR 0145, Section 001) involves reconstructing the existing MacArthur Road Interchange as a Partial Cloverleaf Interchange and reconfiguring ramp access to reduce the number of conflict points by removing the close merge/ diverge movements on US Route 22 under MacArthur Road, extending the loop ramp acceleration lanes on US Route 22 to encourage safer merging patterns, and improving overall traffic flow of the interchange. Also included in the project are replacement of the existing overpass carrying MacArthur Road over US Route 22 to improve the vertical clearance deficiency, installation of appropriate signing for the new interchange, and replacement of safety appurtenances within the limits of reconstruction as needed.
QUALIFICATIONS

4.19

For more than two decades, David Schrader has designed facilities of public interest. Specializing in programming, planning and architectural design for mission critical and law enforcement facilities, David has significant experience in project types ranging from feasibility studies and master planning to additions, renovations and new facility design. David’s design accolades, speaking engagements and publications in the field of design for mission critical facilities are numerous. Working closely with his clients, David has the ability create a vision that results in measurable success for the client, the design team, and the public-at-large. “Partnership in design is a key focus of creating a better designed environment for each client.”

SELECT EXPERIENCE

Armstrong County, Pennsylvania
Emergency Operations Center, Programming and Planning, New Facility

Bradford County, Towanda, Pennsylvania
Public Safety Training and Emergency Operations Center, Programming and Planning

Centre County Emergency Services, Bellefonte, Pennsylvania
Emergency Services Facility (EOC/9-1-1), Programming and Planning, Renovations

County of Dare, Manteo, North Carolina
Dare-Tyrrell Counties Regional Emergency Communications Center (RECC) and Dare County Emergency Operations Center (EOC), New Facility

County of Montgomery, Upper Providence, Pennsylvania
9-1-1 Center and Emergency Operations Center, Programming and Planning, Additions and Renovations

County of Northampton, Nazareth, Pennsylvania
Emergency Management Operations Center, Expansion and New Garage

County of Wayne, Lyons, New York
9-1-1 Communications Center, Backup 911 and EOC Facilities Study
9-1-1 Communications Center, Renovation

Federal Emergency Management Agency/ CSEPP Program, Various Locations, Kentucky
Programming, Planning, Design and Project Oversight for Seven County Mission Critical Facilities

Lackawanna County, Jessup, Pennsylvania
Public Safety Center and Emergency Management Center (9-1-1), New Facility

Lexington Fayette County Urban Government, Kentucky
Public Safety Center, Third Party Review, Programming and Planning

Lubbock Emergency Communication District, Lubbock, Texas
Backup 9-1-1 and Administrative Facility, Programming and Planning, New Facility

Madison County, Kentucky
Emergency Services Center (EOC/9-1-1), Renovations, Programming and Planning

Morris County, New Jersey
Emergency Services Center, Design Review for New Facility

Orleans Parish Communication District, New Orleans, Louisiana
9-1-1 and Emergency Communications, Programming and Planning, New Facility

Pennsylvania Emergency Management Agency, Susquehanna Township, Pennsylvania
State Emergency Operations Center, New Facility

Philadelphia Police and Fire, Philadelphia, Pennsylvania
Conversion of Former Inquirer Building to Public Services Facility

Pueblo Chemical Stockpile Depot, Pueblo, Colorado
Depot Emergency Operations Center, Programming and Planning, New Facility

Pueblo County Sheriff, Pueblo, Colorado
Emergency Services Center (EOC/9-1-1), Programming and Planning, New Facility

Information about additional projects completed available upon request.
JOHN H. BROCKWELL
Bala Consulting Engineers
Vice President, Principal in Charge, Mission Critical Market Sector Leader

John has over 25 years of experience managing a variety of Mission Critical projects, including Data Centers, technology facilities, emergency operations, call centers, and command and control centers. His responsibilities have included providing leadership in the design and documentation quality, project execution and overall management, as well as playing a key role in the development of project scope, schedule and budget.

SELECT EXPERIENCE

**PSAC-II | New York City Emergency 911 Center, Bronx, NY**
Provided Project Management services for this 450,000 SF redundant site that supports critical facility operations for New York City’s E-911 Center, NYPD, FDNY and the Department of Information Technology and Telecommunications (DoITT) Data Centers.

**PSAC-I | New York City Emergency 911 Center, Brooklyn, NY**
Provided Project Management services for the UPS and mechanical plant expansion study, ten year capital plan study for infrastructure improvements and multiple Data Center IT application deployments for the 4th and 5th floors for DoITT.

**City of Philadelphia Emergency 911 Center, Philadelphia, PA**
Project Manager for Philadelphia’s new Emergency 911 Call and Dispatch Center located within the old Inquirer Building on 400 North Broad Street.

**New Jersey Fiber Exchange, Wall, NJ**
Provided design services for the new Tier III carrier neutral Data Center facility. The new Data Center will accommodate 1,000 IT Cabinets and approximately 3.6 MW of IT load in a hot aisle/ cold aisle arrangement. The facility is designed to support the ultimate build-out of 8 MW of IT load.

**1547 Realty Partners, Orangeburg, NY**
Providing MEP/FP & structural engineering for this new 200,000 SF, design/build Data Center. Also engineering new 50MW substations for the facility’s future expansion.

**Global Financial Trading Firm, Philadelphia, PA**
Provided design services for the 75,000 SF fitout of Trading Floor/Office space, Data Center and (30) seat Network Operations Center (NOC). MEP Critical systems include 2N Generator/UPS with N+1 Chilled Water Mechanical Plant. Data Center utilities CRAH Unit design with hot aisle/ cold aisle configuration with raised access floor and overhead plenum return.

Information about additional projects completed available upon request.
CHRISTOPHER BENTZ, PE
Alfred Benesch & Company
Project Manager

Chris Bentz, PE joined Alfred Benesch & Company in 1992. He specializes in land development, municipal, transportation and infrastructure improvements, including preparation and review of subdivision and zoning ordinances, stormwater drainage and management, recreation, CDBG grant applications, water system improvements, wastewater collection system design, hydraulic modelius, site development, contract preparation, highway occupancy permit preparation, hydraulic and hydrologic reports, Hec-Ras hydraulic computer modeling, TS&L submission, and erosion and sedimentation control. Chris is the Associate Director for the Schuylkill County Conservation District and is a member of the PADEP Northeast Region Stormwater Focus Group.

SELECT EXPERIENCE

Mahanoy Business Park, NorthPoint Development, Mahanoy & Ryan Townships, Schuylkill County, PA
This project involves constructing three industrial spec buildings totaling 2.5 million square feet for warehousing and distribution on a parcel of land spanning 540 acres. Benesch will be completing site design, permitting and building layout including stormwater management, erosion and pollution control, PADEP Joint Permit and environmental clearance, and utility coordination. This project also includes the design and permitting of a packaged sewer treatment plant, waterline crossing/extension under Interstate-81, Traffic Impact Study and Highway Occupancies Permitting for two driveways and off site intersection improvements through PennDOT. In addition to overall project management, Chris provided client coordination, meeting attendance, quality assurance, design and scheduling.

Union Station Intermodal Center, City of Pottsville, PA
Project Manager: Benesch provided preliminary and final design as well as construction services for the Union Station Intermodal Center, a mixed-use Intermodal facility. Chris managed the project team and provided QA/QC for the project.

SR 322, Section 100, Delaware County, PennDOT District 6-0
Quality Assurance/Quality Control. This $250M project consists of the rehabilitation and expansion of a two lane, seven-mile principal arterial to four lanes in southern Delaware County, PA. The three phases of this reconstruction project (Sections 101, 102, & MIT) include major roadway network upgrades along the corridor, relocation of a maintenance facility, and reconstruction of multiple structures and culverts to address major safety, access management and traffic congestion deficiencies. Chris provided review of field survey tasks and M&P of traffic plans.

ROLE
PROJECT MANAGER

YEARS OF EXPERIENCE
TOTAL 26 years

EDUCATION
BACHELOR OF SCIENCE, STRUCTURAL DESIGN AND CONSTRUCTION ENGINEERING
Pennsylvania State University

PROFESSIONAL REGISTRATIONS
PROFESSIONAL ENGINEER
Pennsylvania
Building Code Official: PA, WV
NHI Seminar on Scour, HEC 18 and HEC 20
Society of American Value Engineer’s (SAVE) Value Engineering Workshop –Module I & II
Amtrak On-Track Safety for Contractors

AFFILIATIONS
American Society of Highway Engineers
American Society of Testing Materials
National Society of Professional Engineers
Design Build Institute of America

QUALIFICATIONS 4.21
RICHARD D. ROBERTS, PE, SECB
Pennoni Associates
Vice President, Chief Structural Engineer

Mr. Roberts is Vice President and Chief Structural Engineer at Pennoni Associates. His engineering experience includes strong emphasis in structural design and management for a wide range of commercial, institutional, and industrial projects. He has coordinated design efforts from schematic phase to project completion with architects, owners, consultants and contractors on a variety of projects. His project experience includes high-rise building structure design, deep foundation design, and evaluation and modifications of existing and historic structures.

SELECT EXPERIENCE

Walter Reed National Military Medical Center, NAVFAC Washington - P-116 Parking Garage, Bethesda, MD
Responsible for design and construction-phase services for structural engineering for the design and construction of a new $15 million 650-vehicle reinforced concrete multi-level parking (MLP) structure with exterior finishes compatible with the architectural character of the existing historic medical campus. The parking garage included vehicular, motorcycle and bicycle parking spaces; and one elevator, two stair towers, lighting, access ramps, and signage and striping. The design team included OKKS Architects.

NAVFAC Washington Defense Security Service Headquarters Addition, Quantico, VA
Responsible for the design RFP for the construction of a 4-story and 40,000 square foot (SF) office building addition to the existing Defense Security Service (DSS) headquarters building and a nearby 3-level parking structure of approximately 107,000 SF/300 personal occupancy vehicles. Deliverable products included Concept Plans and Basis of Design (BOD) Report; Pre-Final Design-Build RFP; Concept Plans, and BOD Report; and Final Design-Build RFP, Concept Plans, and BOD Report. The total construction cost was approximately $38 million.

Wilkes-Barre, Intermodal Facility, Wilkes-Barre, PA
Structural design of a six level, 787 car parking structure consisting of approximately 312,000 SF. The structural system consisted of precast concrete tees on structural steel framing and incorporates steel braced frames and precast concrete shear walls to resist the lateral forces. The structural design accommodated the connection of an existing parking structure and the very close proximity of an existing office building.

Scranton - Parking Garage, Scranton, PA
Structural design of an eight-story, 450 parking space garage. The structural system consists of steel columns and beams supporting post-tensioned concrete floor slabs on a reinforced concrete mat foundation. The superstructure is braced by steel diagonal braces and the sloped ramping floor system.

Robinson Alley Parking Garage, Conshohocken, PA
Structural design of a 3 level, 200 car parking structure with on grade access to each level.

Dockside Residences at Pier 30 – Apartment Building/Parking, Philadelphia, PA
Structural design of a 16-story 542,000 SF apartment building and parking structure constructed over the Delaware River. The structural system includes: Post-tensioned concrete flat plate system for apartment floors, one-way, post-tensioned slab and beam system for the garage levels, cast-in-place concrete shear walls for the lateral load resisting system and concrete pile caps on steel pile foundations.

Walter Read National Military Medical Center - Uniformed Services University Parking Structure, Bethesda, MD
Responsible for the condition assessment and repair design of an approximately 380,600 SF (861 parking space) 31-year old cast-in-place concrete parking structure. Assessment included as -built drawing review, visual observations, sounding and delamination survey, petrographic, chloride ion, and carbonation material analysis. A report and repair design were prepared that included an opinion on the general condition, identified deficiencies and distress items with reference to photographs, recommendations for required repair and improvement, and an opinion of probable repair costs.
4.3. INFORMATION TECHNOLOGY (IT) / INTELLIGENT TRANSPORTATION SYSTEM (ITS) QUALIFICATIONS

Please find the Design IT/ITS Team’s organizational chart below as well as the requested qualifications in the following pages.

4.3.A. IT/ITS DESIGN-BUILD PROJECT EXPERIENCE

Please refer to pages 4.24-4.25 of this section.

4.3.B. IT/ITS TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

Please refer to page 4.26 of this section.

4.3.C. IT/ITS FEDERAL-AID/FHWA PROJECT EXPERIENCE

Please refer to pages 4.27-4.28 of this section.

4.3.D. IT/ITS MANAGEMENT TEAM INDIVIDUAL QUALIFICATIONS

Please refer to pages 4.29-4.31 of this section.

4.3.E. IT/ITS STATEMENT OF READINESS AND COMMITMENT OF RESOURCES

Both Bala and Pennoni are ready and committed of resources from each firm’s offices for the DGS PennDOT District-6 Regional Traffic Management Center and Parking Structure project.
4.3.A. IT/ITS DESIGN-BUILD PROJECT EXPERIENCE

1547 CRITICAL SYSTEMS REALTY
Orangeburg, New York

Bala provided engineering design/build services for this Data Center Realty group’s Orangeburg, NY property. The property is just 25 miles from Manhattan and synchronous with Manhattan, Connecticut and key facilities in New Jersey. The facility is an optimal location for latencysensitive applications, business continuity and disaster recovery facilities. The state-of-the-art building is designed to meet the highest standards of infrastructure requirements.

Bala provided MEP/FP engineering for the phased buildout of a 232,000, 24 MW (ultimate buildout) facility. Phase 1 included documentation for two (2) medium voltage primary services to the core/shell, and infrastructure to support the first two (2) 1.5 MW (IT Load) Data Center Suites (approximately 10,000 SF each) with a mechanical systems annualized average operating PUE of 1.4. The generator plant for each suite consists of two (2) 2MW diesel generators (N+1). Utility power is provided from two (2) 13.2 kV, 1200A substations serving 2500kVA unit substations in an (N+1) concurrently maintainable A/B system. Each UPS system is a multi-module (N+1) redundant system. Each Data Center suite utilizes cold aisle containment with an (N+1) cooling system implementing a mix of DX refrigerant CRAC units with free cooling and inrow coolers with remote air cooled condensers. Also engineering a new 50MW substation for the next 200,000 SF Data Center on the site.

TEAM INVOLVED
Bala Consulting Engineers

PROJECT EXPERIENCE TYPE
Design-Build

DATE
2017

OWNER
1547 Critical Systems Realty

CONTACT
Jerry Martin, Managing Partner, 1547 Critical Systems Realty jmartin@1547realty.com

PROJECT AMOUNT
$240 million

STATUS
In progress (phased project)
Pennoni provided engineering design services for this design-build project, which expanded PennDOT District 6-0’s Intelligent Transportation System Network (ITS), including additional closed circuit television cameras (CCTV), dynamic message signs (DMS), incident detectors, and travel time readers to a large portion of I-95 in Bucks County and Philadelphia and on I-676 (Vine Street Expressway) in Philadelphia.

This (ITS) project covers 19 miles of I-95 between Broad Street and I-676 in Philadelphia, and between Academy Road and Route 1 in Philadelphia and Bucks counties. It also includes 2.1 miles of I-676 between I-76 and I-95 in Philadelphia. On I-95, 17 new (CCTV’s), 10 (DMS), 54 travel time readers and 40 incident detectors were installed. It also included the upgrade of 14 existing (CCTV’s) and 4 existing (DMS). On I-676, crews installed 3 (DMS) and vehicle detectors. Our design services included site verification, survey, maintenance and protection of traffic, geotechnical investigation and analysis, ITS device support structure and foundation design, ITS device power supply design, environmental permitting, fiber optic and SONET communications network design, and the design of video sharing/conferencing with other Agency Control Centers including Bucks County, Philadelphia, and the Delaware River Port Authority.

Pennoni’s ITS experience includes projects from both the ITS planning and design/implementation standpoints. Previously, we have worked on ITS master plans for both the Schuylkill Expressway (I-76), I-476 and Route 309. We designed local arterial ITS systems along Routes 23 and 202, which were the first deployments along non-limited access roadways that included traffic signals systems, CCTV cameras, DMS and vehicle detectors integrated into the PennDOT District 6-0 Regional Traffic Management Center.

Pennoni provided engineering design services as part of a design-build project for US 202 Section 7IT. The project expanded PennDOT District 6-0’s Intelligent Transportation System Network.

The team’s design responsibilities included the following; Site verification, Survey services and Environmental permitting, Maintenance and protection of traffic, Geotechnical investigation and analysis, ITS device support structure and foundation design and ITS device power supply design, Fiber optic and SONET communications network design, Traffic signal design, and Design of video sharing with adjacent Municipalities.
4.3.B. IT/ITS TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

RTMC SUMMARY OF STAFF EXPERTISE

EOC/TMC, CONCORD, OH

The New Hampshire Department of Transportation (DOT) and Department of Safety (DOS) engaged an engineering and integration team led by Jeffrey E. Purdy, PE, prior to joining Pennoni, to design and commission the joint Transportation Management Center/Emergency Management Center (TMC/EMC). TMC/EMC hosts the E-911 Public Safety Answering Point (PSAP), State Police Dispatch and Communications Center, the Emergency Operations Center (EOC) and the TMC. With the state of New Hampshire’s receipt of a federal grant, Mr. Purdy led a design team that designed the facility employing the Federal Highway Administration Systems Engineering process and conforming to the Department of Homeland requirements. The design and specifications include:

- Conformed to the systems engineering process as required by the Federal Highway Administration.
- Specified systems integration, testing, and acceptance requirement including a Configuration Management Plan for TMC systems with existing NHDOT ITS deployments, NHDOT Wide Area Network and Radio Dispatch System.
- Specified construction, commissioning, and systems acceptance testing of the TMC infrastructure, including the video display systems, TMS network and communications systems, equipment room, and data cabling necessary to support the TMS.

The TMC/EMC was brought online in 2006 with the DOT being its first occupants followed by State Police and Emergency Management.

Additional RTMC experience includes the following:

- Pennsylvania DOT, District-6 ITS Agreements, Bucks, Chester Delaware, Montgomery, and Philadelphia Counties, PA
- Indiana DOT Borman Expressway Backhaul Replacement ITS Design-Build, Gary, IN (2008 - 2010)
- Massachusetts DOT, I-91 ITS Design-Build, Northampton, MA
- PennDOT, District 8 a four-phase deployment of ITS throughout the district with a total contract value in excess of $20M (2008 – 2010)
- Florida DOT, District-1 expansion of the I-75 advanced traffic management systems with a contract value of $25M and upgrade of their primary and secondary TMC’s (2010 – 2013)
- Florida DOT, District-4 ITS deployment along seven arterial roadways integrated into the TMC (2010 – 2013)
- City of Orlando, Downtown ITS Design-Build - Phase 1, a project to upgrade the traffic signal system to include video detection, digital CCTV monitoring and installation of a fiber optic network (2009-2010)

TEAM INVOLVED
Pennoni Associates

PROJECT EXPERIENCE TYPE
Design-Build/PennDOT/RTMC/Federal-Aid/FHWA

DATE
2006-2009

OWNER
New Hampshire Department of Transportation
P. O. Box 483, Route 106 Concord, NH 03302-0483

CONTACT
William Lambert, PE Administrator/Traffic Engineer
603.271.1679 william.lambert@dot.nh.gov
To safeguard the safety of the structure during and after construction, the owner required the use of targeted Structural Health Monitoring (SHM) applications.

Through Pennoni’s Performance Management of Bridges IDIQ contract with Federal Highway Administration (FHWA), Intelligent Infrastructure Systems is working with Infratek Solutions Inc. to design and build the commercial version of the RABIT™ Bridge Deck Assessment Tool.

Pennoni’s Intelligent Infrastructure Systems and Infratek are providing the services necessary to manufacture, calibrate, validate, prepare operations documentation and deliver maintenance and warranty services for four (4) RABIT™ Bridge Deck Assessment Tools. This also includes technical support and training for Long-Term Bridge Performance (LTBP) program field personnel on the proper deployment, operation, and maintenance of the systems.

RABIT™ is a robotic nondestructive evaluation (NDE) platform designed to enhance the assessment of bridge decks and was developed as part of the Federal Highway Administration (FHWA) Long-Term Bridge Performance (LTBP) program. RABIT™ includes high-resolution cameras and imaging systems for crack mapping, Electrical Resistivity to characterize the corrosive environment of concrete, Impact Echo and Ultrasonic Surface Waves to evaluate concrete delamination and concrete deck strength, Ground Penetrating Radar to map rebar and other metallic objects below the surface, and a Global Positioning System to record and mark location data.

Unit #1, which has been in development since December 2015, was delivered to FHWA in March 2017. Units #2, #3 and #4 are scheduled to be delivered before the end of the year.
Pennoni provided engineering design services for this design-build project, which expanded PennDOT District 6-0’s Intelligent Transportation System Network (ITS), including additional closed circuit television cameras (CCTV), dynamic message signs (DMS), incident detectors, and travel time readers to a large portion of I-95 in Bucks County and Philadelphia and on I-676 (Vine Street Expressway) in Philadelphia.

This (ITS) project covers 19 miles of I-95 between Broad Street and I-676 in Philadelphia, and between Academy Road and Route 1 in Philadelphia and Bucks counties. It also includes 2.1 miles of I-676 between I-76 and I-95 in Philadelphia. On I-95, 17 new (CCTV’s), 10 (DMS), 54 travel time readers and 40 incident detectors were installed. It also included the upgrade of 14 existing (CCTV’s) and 4 existing (DMS). On I-676, crews installed 3 (DMS) and vehicle detectors. Our design services included site verification, survey, maintenance and protection of traffic, geotechnical investigation and analysis, ITS device support structure and foundation design, ITS device power supply design, environmental permitting, fiber optic and SONET communications network design, and the design of video sharing/conferencing with other Agency Control Centers including Bucks County, Philadelphia, and the Delaware River Port Authority.

Pennoni’s ITS experience includes projects from both the ITS planning and design/implementation standpoints. Previously, we have worked on ITS master plans for both the Schuylkill Expressway (I-76), I-476 and Route 309. We designed local arterial ITS systems along Routes 23 and 202, which were the first deployments along non-limited access roadways that included traffic signals systems, CCTV cameras, DMS and vehicle detectors integrated into the PennDOT District 6-0 Regional Traffic Management Center.

**INTELLIGENT TRANSPORTATION SYSTEM + ADAPTIVE SIGNAL**
Bucks + Montgomery Counties, Pennsylvania

Pennoni provided engineering design services as part of a design-build project for US 202 Section 7IT. The project expanded PennDOT District 6-0’s Intelligent Transportation System Network.

The team’s design responsibilities included the following; Site verification, Survey services and Environmental permitting, Maintenance and protection of traffic, Geotechnical investigation and analysis, ITS device support structure and foundation design and ITS device power supply design, Fiber optic and SONET communications network design, Traffic signal design, and Design of video sharing with adjacent Municipalities.
JOSEPH E. FORD, RCDD
Bala Consulting Engineers
Manager, Integrated Technology Systems (ITS)

Joe Ford oversees the ITS complement of services in all of Bala’s offices. Joe has extensive experience in the design, documentation, and installation of tele/data/security/AV systems. He has presented nationally on the integration of “converged” buildings systems and the Internet of Things (IoT) in designing today’s Intelligent Buildings. Joe’s breadth of project types include commercial offices and headquarters, data centers, research facilities, mixed-use/high-rise towers, college & university facilities and transportation hubs.

SELECT EXPERIENCE

City of Philadelphia Emergency 911 Center, Philadelphia, PA
Currently providing Tele/Data/Security/AV design services for the Data Center and Police + Fire Call Center fit-out including new entrances, renovations to all floors within the building, and develop redundant systems to support an N+1 facility. The renovated building will be home to the Philadelphia Police Department Headquarters, the 6th and 9th districts, Philadelphia Police +Fire Communications Center and the Medical Examiners Offices.

Port Authority of New York and New Jersey, Newark, NJ
Provided systems design for IP network, IP access control and video surveillance, multi-user flight information systems, distributed antenna system (DAS), high-density wifi and voice over internet protocol (VoIP) and public address, including architectural and multi-discipline coordination. Also responsible for modifying and assembling the written Division 27 and 28 technical specifications and coordinating with referenced specification sections for this project.

Chemours Headquarters, Wilmington, DE
Provided design services for a 265,000 SF, 10-story, multi-phased restack construction project in a historic building, which included planning to keep current users active, moving users to a swing space and moving users back to renovated floors/areas. Design also included a 400 SF main server room with 12 cabinets built into two pods with hot aisle containment.

Chemours Discovery Hub Research Lab, Wilmington, DE
Provided design services for a 312,000 SF, 3-story research lab project. The design services included planning for the latest IP voice, data, video, technologies and applications. Design also included a 450 SF main server room with 12 cabinets built into two pods with hot aisle containment. Distribution consisted of feeds from two core network switches via a two-tier cable tray system.

Camden County Prosecutor’s Office, Camden, NJ
Currently providing telecommunications systems design, security systems design and A/V programming services for the Camden County Prosecutor’s Office. The program is 38,000 SF with workstations, private office spaces, meeting rooms and a jail/holding cell on the main floor requiring sophisticated security systems.
JEFFREY E. PURDY, PE
Pennoni Associates
President Vice President, Operations Manager of Intelligent Infrastructure Systems (IIS)

Mr. Purdy is an Associate Vice President of Pennoni and Operations Manager of Intelligent Infrastructure Systems (IIS) a division of Pennoni specializing in the application of technology in transportation. He has more than three decades of experience in transportation and systems engineering, strategic planning and capital programming. Throughout his career, he has assisted federal, state and local transportation and public safety agencies implementing advanced technology employing the FHWA endorsed Systems Engineering process. Mr. Purdy has managed the design and commissioning of each of District-6’s TMCs including the first TMC at the King of Prussia location and its upgrade. He has assisted transportation agencies across the nation, as well as overseas to develop policies, implement best practices, and design, construct and operate infrastructure that improve operational efficiency and advance safety for the agency as well for the public.

SELECT EXPERIENCE

DelawareDOT/Transcore - Design-Build All Electronic Tolling of US 301, Dover, DE
Project principal; Led an engineering team to produce final design and construction documents to implement all electronic tolling (AET) on the new US 301 in Delaware. Pennoni reports to Transcore, the toll collection system integrator and prime contractor for the project. Also responsible for the cabling plans and installation details for all the AET equipment inclusive of cameras, lighting system, transponder antenna readers, video systems and the fiber optic communication network. Within the toll collection shelters, Pennoni is responsible for all cabling and termination plans and equipment racking plans.

PennDOT, District-6 ITS Multiple Agreements, Bucks, Chester Delaware, Montgomery and Philadelphia Counties, PA
PM/Principal on multiple projects supporting the development of the PennDOT District-6 ITS program. Starting with the I-95 Section EYE, he designed the first TMC for District-6 located in St. Davids, PA. Subsequently, Mr. Purdy has managed the design and commissioning of each of District-6’s TMC’s including the first TMC at the King of Prussia location and its upgrade.

PennDOT, District-6 I-95 ITS Design-Build Sections ITC & ITF, Bucks, Delaware, Montgomery + Philadelphia Counties, PA
Project Principal for two concurrent design build projects in the Philadelphia metropolitan area with a construction value in excess of $40 million. The projects include the design and construction of the transportation management system along I-95, US Route 1 and other limited access highways in Delaware and Bucks Counties. ITS field devices include travel time systems, CCTV systems, dynamic message signs, roadway weather information systems and an upgrade to the TMC located in King of Prussia, PA. Jacobs was the engineer of record for the projects and we are responsible for the engineering, procurement, installation, testing and commissioning of the fiber optic network.

PRESENTATIONS

BICSI – “Build SMART, Not Hard”
Chemours – “Technology in Today’s Smart Building Environments”
BICSI – “GPS Roadmap to a Reliable Data Center”
BICSI – “Gigabit Passive Optical Networks”
Mr. Keaveney serves as an Associate Vice President and Division Manager of the Transportation division. He provides professional transportation engineering and project management services to public and private sector clients, including public testimony. His project experience includes transportation studies, capital improvement plan development and management, traffic signal design, procurement and construction monitoring, closed loop traffic signal system design, corridor analysis and optimization, site related traffic impact study preparation and review, land development review, Intelligent Transportation System (ITS) planning and implementation, municipal traffic congestion mitigation measures, and transportation planning and modeling. Mr. Keaveney’s ITS experience includes design build projects and management of staff placed at the PennDOT District 6 Regional Transportation Management Center. This staff is responsible for the daily operation of the RTMC.

**SELECT EXPERIENCE**

**PennDOT District 6-0 - Traffic Unit, TMC Monitoring Assistance, King of Prussia, PA**

Responsible for agreement that assists the Department with monitoring traffic on area roadways within Montgomery, Delaware, Chester and Philadelphia Counties to facilitate safe and efficient roadway operation. Responsibilities of staff include using over 100 CCTV cameras to monitor traffic flow within area, coordination with area news and advanced traveler information services regarding existing roadway traffic conditions, coordination with Police, Emergency, and PennDOT Service Patrol (motorist assistance and towing) regarding motorist assistance and incident clearance issues, and coordination with PennDOT maintenance crews regarding both routine and emergency roadway repair issues. Responsibilities also included detailed record and event log maintenance regarding area roadway incidents.

**PennDOT - Schuylkill Expressway Corridor Transportation Systems Management, Route 23 Corridor ITS, Montgomery County and City of Philadelphia, PA**

Responsible for ITS portion of project on the pilot Route 23 Corridor as part of the overall Schuylkill Expressway Corridor Transportation Systems Management project. This project was the first non-freeway/signaled corridor connected to the PennDOT District 6-0’s TMC for control during incident scenarios. The project includes the installation of an interconnected signal system, along with ITS devices, for the Route 23 corridor and City Avenue through West Conshohocken Borough, Lower Merion Township, and the City of Philadelphia. PennDOT District 6-0’s TMC utilizes the signal system and CCTV Cameras/DMS installations to monitor traffic flow, implement revised signal timing plans, and provide directional information to motorists during incidents. The corridor when completed interconnects 17 traffic signals with aerial and underground fiber optic cable, and includes three DMS, three CCTV cameras, three video detection locations and 14 signal pre-emption systems. Two of the small-scale DMS’s are installed on context sensitive cantilever structures.

**Upper Merion Township & Bridgeport Borough, Montgomery County - King of Prussia Traffic Signal System (SR 0202, MS1), Various Locations, PA**

Responsible for implementation of optimized timing, phasing, and interconnection of 74 signalized intersections within Upper Merion Township and Bridgeport Borough in effort to relieve congestion and improve progression along major arterials within the Township, particularly DeKalb Pike (US 0202), South Gulph Road, N. Gulph Road, Mall Boulevard, Allendale Road and Henderson Road. This project also provided upgraded LED signal heads and emergency pre-emption equipment at all project intersections in Upper Merion Township, and provided the complete modernization of approximately six intersections in Bridgeport Borough, including new mastarms, signal heads, vehicle detection, and underground electrical distribution. The operational and maintenance plans involved coordination and cooperation between the municipalities.

**QUALIFICATIONS**

4.31
4.4. GENERAL CONSTRUCTION ENTITY QUALIFICATIONS

Please find the General Construction Entity Team’s organizational chart below as well as the requested qualifications in the following pages.

4.4.A. GENERAL CONSTRUCTION ENTITY DESIGN-BUILD PROJECT EXPERIENCE

Please refer to pages 4.33-4.34 of this section.

4.4.B. GENERAL CONSTRUCTION ENTITY TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

Please refer to page 4.35 of this section.

4.4.C. GENERAL CONSTRUCTION ENTITY FEDERAL-AID/FHWA PROJECT EXPERIENCE

Please refer to pages 4.36-4.37 of this section.

4.4.D. GENERAL CONSTRUCTION ENTITY MANAGEMENT TEAM INDIVIDUAL QUALIFICATIONS

Please refer to pages 4.38-4.41 of this section.

4.4.E. GENERAL CONSTRUCTION ENTITY STATEMENT OF READINESS AND COMMITMENT OF RESOURCES

Heim Construction Company verifies that the company will be ready and committed to use its resources to fulfill the DGS PennDOT District-6 Regional Traffic Management Center and Parking Structure project if a contract is agreed upon between the Design-Build Contractor (Heim Construction) and DGS/PennDOT.
4.4.A. GENERAL CONSTRUCTION ENTITY DESIGN-BUILD
PROJECT EXPERIENCE

PENNDOT DESIGN-BUILD GOLD STAR ROAD BRIDGE
SR 3015 Sec 02B Gold Mine Mountain Road over Wiconisco Creek,
Schuylkill County, Pennsylvania

The project site is situated on Gold Mine Mountain Road outside the Boro of Tower City, Porter Township, Schuylkill County, Pennsylvania. PennDOT is authorized to use a variety of project delivery methods including a design-build agreement.

The project involves the replacement of the bridge structure carrying S.R. 3015 over Wiconisco Creek utilizing the PennDOT Design-Build criteria. The existing bridge, built in 1947, was a two-span steel rolled I-beam with a clear span of 41.7 feet and a bridge deck travel width of 23.42 feet. ADA traffic along this road averages to be 1,806 vehicles. To maintain traffic during construction, a temporary road supported by three (3) pipes over Wiconisco Creek will be constructed upstream from the proposed bridge location.

Heim Construction hired Alfred Benesch & Company to assist in developing a structure design that increased the clear span to 56.5 feet and widen the deck area to 33 feet out to out.

The superstructure used 4 – 48/27” x 61.6’ x 25.52 tons each Prestressed Concrete Spread Box Beams, integral abutment design was used to incorporate the deck pour with the beam encasement at the abutments. The entire Design-Build process was accomplished in a four (4) month time period.

TEAM INVOLVED
Heim Construction Company

PROJECT EXPERIENCE TYPE
Design-Build/PennDOT

DATE
August 2013

OWNER
PennDOT

CONTACT
Alfred A. Picca, PE, Assistant District Executive; Construction
610.871.4435
alpicca@pa.gov

PROJECT AMOUNT
$1.2 million

STATUS
Completed
EMPIRE EDUCATION GROUP
396 Route 61 North Pottsville, Pennsylvania

The project included a design of a new two-story corporate office that includes CEO and executive offices, a new entrance lobby for visitors, a boardroom and private conference areas, large open cubical office areas, managerial and supervisory offices, and a new employee lunchroom and various support space.

In addition to the new construction, the project involved an additional 60,000 sf of renovation of the existing Empire Beauty School. Timing and work scheduling were critical to the Owner because training and classes were in session and had to continue with minimal interruption. The areas involved were classrooms and hands-on areas where students engaged in practical exercises of their trade and discipline.

PENN STATE SCHUYLKILL NITTANY APARTMENTS V
Pennsylvania State University, State College, Pennsylvania

Design of a new thirty thousand (30,000) SF apartment building for Penn State Schuylkill Campus, which includes twelve (12) apartment units with seventy-two (72) beds, a student lounge, laundry facilities and a student life office. Nittany Apartments V achieved Silver certification under the LEED for new construction rating system.

Sustainable practices and features include all of the following; 46% of construction waste diverted from the landfills, 21% of the content of all building materials utilized in the project were recycled, 49% were manufactured and extracted locally, parking and pavement were minimized, the buildings energy usage is 14% better than code requirements, low emitting construction materials were used throughout, maximized use of natural light in conjunction with high efficiency light fixtures, no CFC’s or ozone depleting refrigerants in HVAC equipment and Industry leading low-flow plumbing fixtures throughout.
The PPL Corporation is an energy company headquartered in Allentown, Pennsylvania. It currently controls about 8,000 megawatts of regulated electric generating capacity in the United States and delivers electricity to 10.5 million customers. PPL Electric Utilities (formerly known as PP&L and Pennsylvania Power and Light) is the PPL Corporation’s primary subsidiary. These centers monitor and prepare responses during major storms. The technical hub for the millions of PPL customers operate out of these storm centers. Heim Construction was hired to renovate during normal hours of operations without disrupting storm center service.
Utilizing an 80% contribution of Federal funds, the PennDOT hired consultant Erdman Anthony of Mechanicsburg, Pennsylvania, to design demolition of the existing structure and the replacement of the single span Prestressed Concrete Adjacent Box Beam superstructure Bridge over Mill Creek.

The construction contract allowed for a seven (7) month construction period that included sidewalks, minor approach work, temporary traffic signal, local road detour with milling and repaving detour route upon completion of project and other miscellaneous construction.

Erdman Anthony’s design called for the structure to use HP 12x74 steel beam bearing piles, 11- 48/21” x 66.5’ x 23.66 tons each Prestressed Concrete Adjacent Box Beams, 74 cubic yards of class AAAP concrete and some 56,000 lbs of reinforcement bars.
SCHOERNERSVILLE ROAD
SR 1009 Section M89, City of Bethlehem, Lehigh County, Pennsylvania

New signal timing plans, updated signal hardware and an upgrade in signal interconnection to a closed loop traffic responsive system along Schoenersville Road (SR 1009) Corridor from Avenue C/Stoke Park Road to 8th Avenue in Hanover Township and City of Bethlehem, Lehigh County and other miscellaneous construction over this 5.62 miles of roadway.

Heim Construction played a significant role in keeping the project on schedule having its crews performing accelerated concrete patching utilizing the Department’s categories of Type “A” and Type “B” on a very active roadway with 17,000 cars of daily traffic.

A unique requirement dictated that all concrete patching was to take place between the hours of 7pm and 6am the following morning. The Heim Construction crews were stationed and prepared each evening to launch their traffic control to provide a safe working area for the workers. The workers would mobilize, remove the area to be replaced, install dowels, prepare the area for the accelerated concrete, install the concrete, cure the product and then remove the traffic control to allow free and clear access for the daily traffic.

Front end planning and coordination were keys to this successful projects. In addition to the 2,200 square yards of accelerated patching, 2,736 lineal feet of patching joints and the removal and construction of twenty (20) ADA ramps to include curbs, sidewalks and domes.

STATE ROUTE 309, SECTION 03M
Schuylkill County, McAdoo Borough and Kline Township, Pennsylvania

Restoration of SR 309 including reconstruction of pavement, guide rail replacement, construction of ADA curb ramps, drainage upgrades traffic signal upgrades and other miscellaneous construction, as indicated on the approved drawings included in the bid package for STATE ROUTE 309, SECTION 03M, in SCHUYLKILL COUNTY, MCADOO BOROUGH and KLINE TOWNSHIP from approximately Haddock Rd at segment 0420 offset 1856 NB and segment 0421 offset 1822 to approximately 300’ South of the Carbon County Line at segment 0460 offset 1419.

Heim Construction’s role in this project supports the preparation for the General Contractors paving operation. The construction items that Heim Construction will perform prior to the paving operation include; Joint patching, Installing new pavement joint, Provide subbase material for concrete pavement patching, Concrete Pavement Patching, Type A, 9” depth, Concrete Pavement Patching, Type B, 9” depth, Install Plain Concrete curb including removal of existing curb, variable height, Install Plain Cement Mountable Curb, Type A, Install Cement Concrete Sidewalk, Provide Detectable Warning Surface, Polymer Concrete, Perform Concrete Driveway Reconstruction, and Install Concrete Steps.

The Heim Construction Team are self-sufficient performing all their own support activities such as traffic control, excavation, disposal, and maintenance of the work area.
4.1.D. DESIGN-BUILD CONTRACTOR MANAGEMENT TEAM
INDIVIDUAL QUALIFICATIONS

ROY A. HEIM
Heim Construction Company
President

Roy Heim, Founder/President of Heim Construction Company, Inc. is recognized for his expertise in design-build and construction projects by his peers. Heim Construction has been recognized in the industry of its peers with prestigious awards on numerous projects. Roy has been the driver of the company for twenty (27) years providing inspiration and leading by example and dedication. His efforts were recognized by the Schuylkill County Chamber of Commerce in 2016, awarding Roy the Entrepreneur of the year honor.

Roy Heim’s background covers heavy highway, health care facilities, out-patient surgery centers, higher education facilities, government projects, hospitality, commercial and retail buildings, special projects and pre-school facilities.

Mr. Heim’s ability to deliver each project on time, completed with above standard quality. His mind set has set a culture at Heim Construction Company to, always, do the right thing.

SELECT EXPERIENCE

Design Build of Penn State Nittany V Schuylkill Haven, PA
40,000 SF Dorm, Completed August 2010

Design Build of Pottsville Street Bridge Borough of Port Carbon, Pa. SR 1002 Sec 01B over Mill Creek

Design Build of Lehigh County SR 1009 Section M89 Schoernersville Road (SR 1009), City of Bethlehem, Pennsylvania

Design Build of Empire Beauty School Pottsville, PA Corporate Expansion (30,000 SF Addition)

State Route of 309, SECTION 03M Schuylkill County, McAdoo Borough and Kline Township, Pennsylvania

McAdoo Boro SR 309 ADA (Ongoing)
Tamaqua SR 309 Streetscape (Ongoing)
Elverson Boro SR 23 Slip Formed Curbs (Ongoing)
Schoernersville Road SR 1009 Patches (Ongoing)
Summit Hill SR 902 ADA (Completed Aug 2018)
Schuylkill County Bridge #200 Rehabilitation of substructure and superstructure with a compressed construction schedule.

ROLE
PRESIDENT

YEARS OF EXPERIENCE
TOTAL 27 years

EDUCATION
TECHNICAL SCHOOL FOR CARPENTRY
Schuylkill County Vocational

PROFESSIONAL REGISTRATIONS
Schuylkill Chamber of Commerce
ACI
ABC Legislative Committee
NEPA Manufacturers and Employers Association
Associated Pennsylvania
Constructors Board Member
International Code Council
Schuylkill Municipal Authority
Board Member
M&T Board Member
Schuylkill Country Club Board Member
2016 Schuylkill Chamber of Commerce Entrepreneur of the Year
Board of Director for Orwigsburg Little League
Coach of Orwigsburg Little League
Coach of Blue Mountain Midget Football
Coach of Blue Mountain Boys Basketball Travel Team
ABC Past Board of Director
Chairmen of Penn State Capital Campaign

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Schuylkill County Bridge #200 Rehabilitation of substructure and superstructure with a compressed construction schedule.
SCOTT BLANKENHORN
Heim Construction Company
Chief Estimator, Project Manager

Scott is a 1985 graduate of Blue Mountain High and South Schuylkill AVTS with a major in carpentry. He also graduated from Williamsport Area Community College in 1987 with a major in construction carpentry. Scott’s thirty (30) year career bundles hands-on construction building, managing crews and subcontractors, scheduling, cost estimating, drawing and purchasing. Residential and commercial projects flow through Scott’s area especially when a high degree of difficulty and a schedule must be met. Scott examines each project to ensure that the most cost effective operations are specified. Scott’s understanding of funding sources and specifications whether Federal, State or local provide accurate estimates for our customers.

SELECT EXPERIENCE

Penn State Schuylkill Nittany V Apartments
Student Housing, Schuylkill Campus
$4.2 million.

Empire Beauty School
Pottsville, Pennsylvania
New construction and renovations. $5.9 million.

Dr. Robert Kimmel Surgery Center
Pottsville, Pennsylvania
New construction. $2 million.

Lehigh Valley Hospital
Three (3) floor renovation Adult Care Center.
$2.3 million.

Dr. Solomon Lu Eye Surgery Center
Wyomissing, Pennsylvania.
$2.5 million.

Dr. Robert Zimmerman
Women’s Comprehensive Care Facility
Pottsville, Pennsylvania
$3.2 million.

Dr. Sadoski Dental
Pottsville, Pennsylvania
$2.2 million.

QUALIFICATIONS 4.39
Michael has managed multi-million dollar projects and programs with national and international companies such as Turner Construction and URS Corporation. His expertise lies in project management, scheduling, value engineering, design-build construction services, and estimating. His work experience covers a 32 year period constructing facilities to serve the needs of education, medical, transportation, manufacturing, warehousing, industrial, commercial and residential construction clients. He has managed over a half billion dollars in Pennsylvania Public School projects and was a former Director of Turner Constructions K-12 Division and recently, DGS projects at West Chester University and PADOT District 6 Bucks County Maintenance facilities.

**SELECT EXPERIENCE**

**PADGS West Chester University**
5-story business/student center. $25 million. 100,000 SF.
**PADGS/PADOT Bucks County Maintenance Facility for District 6-0**
Eight buildings. $18 million.
**Pennsylvania Power & Light Lancaster Storm Center renovations.**
**Pennsylvania Power & Light Scranton Storm Center renovations.**
**Pennsylvania Power & Light Board Room Renovations.**
**Red Rose Transit Authority Queen Street Station, 7-story parking garage.**
$20 million.
**Lancaster Area School District, Wharton Elementary School**
$12 million.
**Montgomery County Community College Art Barn**
Addition. $8 million.
**Quakertown Area School District, Richland Elementary School**
Addition and renovations. $9 million.
**North Penn School District, York Ave Elementary School**
Renovations. $8 million.
**Lancaster County Administration building. Renovations. $15 million**
**Hazleton Area School District**
$80 million. Renovations and additions. Eleven schools.
**West Chester Area School District, B.Rustin High School**
Pre-construction services. $45 million.
**Downingtown Area School District, West High School**
Additions and renovations. $35 million.
**Exeter Area School District**
New Elementary School. $18 million.
**Progressive Vision Institute**
$3.5 million. New Surgical Center.
**Lehigh Hills Strip Mall.** $3 million.
JEFFREY BUSH
Heim Construction Company
Project Manager, Estimator

Jeffrey Bush joined Heim Construction Company, Inc. in March 2014. Jeffrey comes to Heim with over thirty-five (35) years in the construction industry. Jeffrey spent over twenty-five (25) years in the concrete construction of water and waste water treatment plants. With this experience in the concrete construction of structures based on ACI, the transition to Heim Construction Company, Inc. concrete division was a logical fit. Jeffrey also brings many years in the construction management, with duties that include, estimating, scheduling, project management and general superintendent.

Jeffrey’s involvement in projects with Federal and State funding, his knowledge of the contract and administrative requirements of the agencies help make Heim Construction the best it can be in the construction industry.

SELECT EXPERIENCE

4th Refrigeration System
Naval Air Warfare Center
West Trenton, New Jersey
$5.6 million.

Warminster WWTP Upgrade
Warminster, Pennsylvania
$4.1 million.

Lititz WWTP Upgrade
Lititz, Pennsylvania
$11.8 million.

Swatara WWTP Upgrade
Swatara Township, Pennsylvania
$20 million.

Milton WWTP Upgrade
Milton, Pennsylvania
$52 million.

Easton WWTP Upgrade
Easton, Pennsylvania
$12.5 million.
4.5. AUDIOVISUAL (AV) + RTMC SYSTEMS ENTITY QUALIFICATIONS

Please find the AV + RTMC Systems Entity Team’s organizational chart below as well as the requested qualifications in the following pages.

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**Pennsylvania Turnpike Commission**
Traffic Operations Center Video Wall System
Middletown, PA

Initial Project Completed: August 2012
Upgrades Completed: March 2017 and June 2019
Total AV Project Spend: $2.3 million
Contact: Jeff Beard, Manager of Network Control
jbeard@paturnpike.com

The Pennsylvania Turnpike Commission (PATC) constructed a primary Traffic Operations Center (TOC) in Middletown, PA in 2012. Vistacom served as the AV Design/Build Contractor installing three (3) large-format video walls using Barco OL 70” rear projection cubes and Barco TransformN video processing with each wall representing a different region of the state. Vistacom worked closely with the general contractor, architect, client reps and other trades to deliver a seamless implementation. Vistacom has serviced and maintained the audiovisual systems since project completion with upgrades occurring in March 2017 and June 2019 to ensure the technology systems remain state-of-the-art in support of the PATC’s mission.

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**Massachusetts State Police**
Watch and Real Time Crime Center
Framingham, MA

Project Completed: October 2017
Total AV Project Spend: $1.5 million
Contact: Lt. Col. Dermot Quinn
dermot.quinn@massmail.state.ma.us

As part of its homeland security initiative, Massachusetts State Police built a cutting edge Real Time Crime and Watch Center at its headquarters to support local and state law enforcement efforts. Vistacom served as the AV design/build contractor alongside the rest of the construction team to help “build the airplane as we fly it” according to Lt. Col. Quinn. Vistacom built out the Barco overview video wall, technical furniture, and related AV connectivity and continues to support the Watch Center through its Managed Services team.

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**Avangrid**
Cyber Security Operations Center
Rochester, New York

Project Completed: May 2019
Total AV Project Spend: $2.2 million
Contact: David Lathrop, Manager of Security Technical Services
david.lathrop@iberdrolausa.com

Avangrid is currently installing thousands of miles of dedicated fiber network so as to isolate its operational technology assets. As part of this program, Avangrid upgraded its physical security
operations center and built a new cyber security operations center to monitor to this new network and jointly respond to security threats. Vistacom worked with Avangrid and its security team to design systems that would visualize all their systems, automate situational awareness, and help their team become more responsive during incidents using Barco’s TransformN and OpSpace.

4.5.B. AV + RTMC SYSTEMS ENTITY TRAFFIC MANAGEMENT CENTERS + SIMILAR FACILITY PROJECT EXPERIENCE

The following project references are provided to demonstrate Vistacom’s technical experience and expertise working on various Traffic Management Center Projects.

- Pennsylvania Department of Transportation
  District 6-0 Regional Traffic Management Center
- Pennsylvania Department of Transportation
  District 8-0 Regional Traffic Management Center
- Pennsylvania Department of Transportation
  District 11-0 Regional Traffic Management Center
- Pennsylvania Department of Transportation
  Statewide Traffic Management Center (STMC)
- Pennsylvania Turnpike Commission
  Traffic Operations Center
- City of Philadelphia
  Traffic Operations Center
- Brooklyn Battery Tunnel
  Traffic Control Center
- New York State Department of Transportation
  Joint Traffic Management Center
- New York State Department of Transportation
  Region 11 Traffic Operations Center (NICON)
- New York State Department of Transportation
  Capital Region Transportation Management Center (CRTMC)
- City of New York
  Traffic Management Center
- State of Arizona
  ADOT Traffic Operations Center

4.5.C. AV + RTMC SYSTEMS ENTITY FEDERAL-AID/FHWA PROJECT EXPERIENCE

The following project references are provided to demonstrate Vistacom’s technical experience and expertise working on various Federal Aid Projects.

- Pennsylvania Emergency Management Agency & PennDOT
- PEMA SEOC and PennDOT STMC
- PANYNJ and TBTA
- Sandy Restoration Projects (multiple)
- Massachusetts Bay Transportation Agency Operations Control Center

4.5.D. AV + RTMC SYSTEMS ENTITY MANAGEMENT TEAM INDIVIDUAL QUALIFICATIONS

Please refer to pages 4.44-4.46 of this section.

4.5.E. AV + RTMC SYSTEMS ENTITY STATEMENT OF READINESS AND COMMITMENT OF RESOURCES

Vistacom confirms that they are duly certified, licensed and otherwise able to and capable of performing all tasks required for a complete design and installation according to the project requirements.
DANIEL GUNDRY
Vistacom
Project Executive

Mr. Gundry is an experienced professional with a background in both construction management and audio-visual system integration. Prior to joining Vistacom, he was a PM for a national construction management firm specializing in fit-out and interior trades. His unique understanding of both the construction and technology worlds is a tremendous asset to Vistacom’s high profile and fast track projects in terms of risk management, proactive communication and ensuring a positive project outcome for their major clients.

As Project Executive, his responsibilities include overseeing technical project team including; AV/IT design engineers, network engineers, software programmers, project managers, and both shop and field technicians. His additional responsibilities include complete account management and financial decisions, on-site executive project coordination, maintaining relationships with other trades and design team members, performing technical project review, and serving as an executive client liaison responsible for overseeing long range technical consultations and partnerships. He is also a Certified Barco Specialist who leads their Control Room Team line of business.

SELECT EXPERIENCE

- Holds primary and hands-on responsibility for the Control Room Team from a business and technical perspective. Thoroughly familiar with the technologies, applications, and industries associated with control room projects.
- 7+ years of experience on control room projects ranging across vertical markets from utilities to transportation to military to network operations and beyond.
- Key member of the design and operations team for the PPL Energy Data and Operations Center project, a secure and fully redundant critical facility that consolidates PPL Transmission Control, Distribution Control and Data Centers. System included a large format video wall used to monitor transmission control across PPL Energy’s enterprise. The video wall system deployed is a NERC/CIP Cyber Asset as is maintained as such with all compliance and regulatory requirements being managed by Vistacom Service. Design included integrating video wall processing with Alstom energy management software, coordinating with architectural and construction efforts, and providing detailed sight line analysis, discovery confirmation, user interviews, and comprehensive training. Design includes redundant video wall processors including both manual and automated failover.
- Served as Project Executive for the PEMA Statewide EOC in Harrisburg, PA. The SEOC is the nucleus for all emergency management and response in the state. Technology deployed includes seven (7) different control rooms and eleven (11) different video walls. The entire building is interconnected using Barco’s Control Room Management Suite (CMS) video processing platform where any video can go to any destination at any time. Dan’s responsibilities included executive oversight, managing the project communications from weekly schedules and progress meetings to executive level reports that were shared with the Governor’s office.
- Served as Project Executive for PJM Interconnection’s video wall processing platform upgrade project. This project included upgrading the legacy Planar Indisys platform with a new Barco TransformN/ CMS system for all eleven (11) active control room video walls with ZERO DOWNTIME on the video walls. Dan consulted with the PJM team, drafted the migration plan, and supervised the cutover so that PJM’s operational staff experienced no downtime during the cutover to the new system.
MATT LONGO
Vistacom
Technical Lead - Control Room

Mr. Longo is an experienced control system professional with more than 8 years of experience in the control room and video wall industry. His job responsibilities include providing advanced certified AQAV9000 system integration services throughout all phases of construction to include mechanically installing and aligning video wall displays, video wall processor set-up and commissioning, network integration, general audio-visual and control technology installation, and acceptance testing. Mr. Longo is a Vistacom-certified trainer for user-level and technical-level training of video wall systems. Mr. Longo is certified by Barco at its highest technical levels and serves as a Master Trainer for Vistacom’s internal staff relative to Barco display and processing technologies.

SELECT EXPERIENCE

- Thoroughly familiar with the subject matter, systems, and equipment and brings experience and demonstrated ability to qualify for the proposed role through work on previous control room system audio visual and video wall engineering projects including recent projects such as SEPTA, Pennsylvania Turnpike Commission, PPL, PSEG, and MBTA projects. Certified on Barco video walls. Brings 5+ years of experience on the pertinent equipment including Barco CMS Software, TransformN Processor, and 70” Cubes, and Cisco networking.

- Key member of the technical team for the SEPTA project to enhance ability to protect the transit network and respond to potential Homeland Security threats by improving availability and reliability of real-time system status information. System included three separate video walls used to monitor train control, subway lines, SCADA systems, bus systems, SEPTA police, and a war room, configured to allow other related agencies and fusion centers to obtain time critical video access and other security related information. Design included video distribution and management to integrate and capture data and video feeds from the OTN, interface into Genetec control system, as well as 2000+ cameras. Provided both basic user training and advanced technical training to SEPTA staff in multiple sessions. Prepared custom training manuals, troubleshooting, and quick start guides. Provides ongoing remote training and support to technical staff as needed.

- Supported Pennsylvania Turnpike Commission project including three display walls to manage and monitor cameras used for the full East/West turnpike throughout Pennsylvania. Project included full systems and infrastructure design and planning to build out into an existing space, two 3x2 display walls and one 4x2 display wall, videoconferencing war room, Vidsys integrated control, cameras connected via the client multicast network, and several breakout areas for monitoring. Training was completed on system architecture, Barco CMS software, cube diagnostics and troubleshooting, system electronics, remote diagnostics, and system reboot procedures.

- Lead technician and trainer for the MBTA project which includes sixty 70” displays arranged in a 20 x3 high arrangement to monitor train system and 10,000 camera feeds distributed throughout the system. Includes tie in to the Vidsys PSIM platform for automated recall of perspectives on the display wall based on different predefined situations as well as client network tie in and network switch provisioning for multicast content delivery. Training was completed on system architecture, Barco CMS software, cube diagnostics and troubleshooting, system electronics, remote diagnostics, and system reboot procedures.

ROLE
TECHNICAL LEAD

YEARS OF EXPERIENCE
TOTAL 17 years

EDUCATION
AUDIO TECHNOLOGY
SAE School of Audio Engineering

CERTIFICATIONS/TRAINING
Barco TransformN Specialist and Advanced Certifications, Barco ODL and OL Series Cube Certification, Microsoft MCTS Certification, Christie Microtile, Christie Phoenix, Kramer Certified Digitalist, InfoComm CTS, Vistacom Certified Trainer Program, AVAQ AV9000 Certified Quality Assurance Technician
Clear One Converge Training, Revolabs Advanced Product Configuration Training, Linux Programming, and Cisco SMB Specialization for Engineers
OSHA 10-hour Training, Hazard Materials Training, NERC/CIP Compliance Training

QUALIFICATIONS 4.45
JASON BUBNIS
Vistacom
Design Engineer - Control Room

Mr. Bubnis is an experienced control system professional with more than 21 years of experience in the audiovisual industry, with 16 years specific to the control room and video wall industry. His job responsibilities include providing planning, design and specifications for small to very large control room projects integrated with advanced visual environments. Mr. Bubnis’ experience has been cataloged across the spectrum of installation through design and project close-out and will bring this wealth of knowledge to all projects he is involved.

SELECT EXPERIENCE

• Thoroughly familiar with the subject matter, systems, and equipment and brings experience and demonstrated ability to qualify for the proposed role through work on previous control room system audio visual and video wall engineering projects including recent projects such as FPL, Duke Energy, ERCOT, Microsoft, Oklahoma Power, Amtrak and Omaha Public Power.

• Key member of the design team for the FPL DCC Consolidation project. Provided design and project planning services to the project AV implementation team that included several large projection based video walls, several near seamless LCD video walls and network based visualization and control systems that spanned the entire building, allowing all aspects of the business to be able to collaborate and share information when required, thus reducing downtime and loss of revenue.

• Lead several design projects, where through an iterative process, provide a comprehensive design to the customer that included all elements of the room environment, including: ceiling design, lighting design, acoustical design, finish recommendations, technology design, ergonomic design with a concentration on MMI (man/machine interface) and human interactions, console and furniture design and spatial planning of the control space and adjacent spaces. Design projects include: Duke Energy, FPL, BGMU, Metro Water, Microsoft, to name a few.

• Strong understanding of network design and network protocols.
CONTACT
For additional information or to meet with us to discuss future opportunities, reach out and we’ll be in touch.

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