

PROFESSIONAL CERTIFICATIONS:

Professional Engineer:
Pennsylvania

National Society of
Professional Engineers
(NSPE)

Urban Land Institute (ULI)

American Society of Civil
Engineers (ASCE)

Engineers Club of
Philadelphia (ECP)

Society of American Military
Engineers (SAME)

EDUCATION:

BS, 2006, Pennsylvania State
University, Civil Engineering,

BA, 2006, Lock Haven
University, Natural
Sciences/Physics

WORK SUMMARY:

Mr. Humes is a multi-disciplinary professional engineer with experience in construction and civil engineering design. Areas of specialization include stormwater management, erosion and sedimentation control, utility coordination and relocations, and land development design and permitting. Mr. Humes is responsible for the generation of detailed construction drawings, calculations, permitting applications and material specifications. Mr. Humes' experience includes Water Facilities Engineering, Sanitary Sewer Design, Stormwater Management, Storm Sewer Conveyance Design, Utility Coordination, Landscaping, Site Lighting layout, Erosion and Sedimentation Pollution / Prevention Control and Design in addition to oversight of survey field work, office reduction, and drafting required to perform ground-based topographic surveys for various projects. Mr. Humes additionally has experience with title report reviews, easement and legal description development. Coordinating with various agencies and clients to obtain property boundary information and set monumentation (i.e. drill holes, pk nails, etc.). Compiling the field work and topographic points to comply with National Map Accuracy Standards for scale mapping showing contour intervals, while coordinating the horizontal and vertical controls, which are typically based on local datums. Any visible planimetric features are located in the field and platted. Data is processed and platted in a three-dimensional digital format. Visible utilities are located and down measurements are obtained. Mr. Humes is well versed in the federal, state and local permitting processes.

PROJECT EXPERIENCE:

PHILADELPHIA ENERGY SOLUTIONS (PES) REFINERY 21 UNIT TRAIN UNLOADING FACILITY, PHILADELPHIA, PA

Design Manager performing Civil/Land Development design, reviews and Constructability reviews for an approximately 50 acre proposed train offloading facility. The proposed project required permitting within the City of Philadelphia in an expedited timeframe. The design included multiple phases to allow for the transfer of Bakken Crude Oil to the refinery to begin immediately. The design of an additional track for unloading operations including extensive grading and stormwater management while incorporating an industrial manifold for unloading, electrical and lighting performed by others. Responsibilities included design for conformance with local, state and federal requirements to determine compliance with construction, zoning and land development guidelines. (2014)

PHILADELPHIA ENERGY SOLUTIONS (PES) REFINERY 14 UNIT TRAIN UNLOADING FACILITY, PHILADELPHIA, PA

Project Engineer performing Civil/Land Development reviews and Constructability reviews for an approximately 50 acre proposed train offloading facility. The proposed project required permitting within the City of Philadelphia in an expedited timeframe. The design included multiple phases to allow for the transfer of Bakken Crude Oil to the refinery to begin immediately. The design was performed by others, while the client requested our assistance with permitting and constructability reviews. Responsibilities included review of design for conformance with local, state and federal requirements to determine compliance with construction, zoning and land development guidelines. (2012-2013)

LONGWOOD BOTANICAL GARDENS, MAIN FOUNTAIN GARDEN RENOVATION, KENNETT SQUARE, PA

Project Engineer performing site/land development engineering design services for renovation of the Main Fountain Garden. The Main Fountain Gardens will be completely removed and reconstructed with new infrastructure and rehabilitated fountains. The proposed renovation includes relocation of all major utilities to allow maintenance crews future access while minimizing visibility by visitors. Responsibilities include review of existing survey information, plan development, utility relocation, and obtaining NPDES permitting approvals. Civil engineering challenges included assisting with the design of an extensive underground network of tunnels interconnecting the fountains, and stormwater management features allowing for the reuse of stormwater in the “living waters” fountains, while separating the chemically treated waters. (2013 – 2014)

SEPTA NORRISTOWN REGIONAL RAIL LINE, NORRISTOWN, PA

Project Manager providing oversight of setting control points utilizing GPS systems and total stations. Taking topographic shots along the embankment of the rails, showing the erosion of the embankments. Evaluating erosion along the embankment to determine sections along the 3.5 Mile stretch that should be reviewed further in SEPTA’s Capital Improvements Planning Budget.

PHILADELPHIA WATER DEPARTMENT GREEN STORMWATER INFRASTRUCTURE (GSI) ON-CALL DESIGN CONTRACT, PHILADELPHIA, PA

Deputy Project Manager performing Civil/Land Development design, reviews and Constructability reviews for an ongoing On-Call Engineering contract with the Philadelphia Water Department Office of Watersheds (PWD-OOW) for the design of Green Stormwater Infrastructure (GSI) in support of the City of Philadelphia’s Green City, Clean Waters initiative. Design services include site layout, grading, ADA ramp design, hydrologic and hydraulic design of GSI detention/infiltration systems, utility coordination/relocation, service connections, and assistance with community/public outreach. Design of stormwater management systems is in accordance with local, state, and federal codes in addition to PWD Office of Watersheds GSI requirements. Additional services performed by the Urban Led Team in support of design include topographic field survey, geotechnical investigative and infiltration testing, and subsurface utility location. Tasks include design for

- Fottrell Square - 12 GSI systems throughout 15 city blocks creating 4.12 greened acres
- East Poplar - 7 GSI systems throughout 6 city blocks and 2 public parks creating 4.38 greened acres.
- SRTS – 12 GSI systems throughout 12 city blocks creating 7.06 greened acres
- ARLE – 4 GSI systems at 1 intersection creating 0.75 greened acres
- Buist Avenue – 18 GSI systems throughout 9 city blocks and 1 public park creating 9.07 greened acres
- Max Myers Center – 20 GSI systems along 12 city blocks and 1 public park creating 16.48 greened acres.
- For a combined total of 73 GSI systems throughout 55 city blocks and 4 public parks creating a combined 41.86 greened acres (2014-2017)

BRIDGEPORT, DELAWARE AVENUE BRIDESBURG AND PHASE 1B, PHILADELPHIA, PA

Project Engineer overseeing survey field work of topographic shots, laying out control points and traversing those control points along the first new road in Philadelphia in 30 Years and the first new Bridge in Philadelphia in over 20 years. This project received an Honorable Mention in 2016 from the PSPE SE Regional Outstanding Engineering Achievement Program.

ARDMORE TRANSIT STATION, LOWER MERION, PA

Project Engineer providing site & land development services including the permitting and site plan approval process. This project includes the coordination between SEPTA, AMTRAK and Lower Merion

Township for the design of a parking garage, station renovations, roadway and streetscape improvements, ADA accessible pedestrian pathways, in addition to the utility coordination and overall site layout. (2010 - 2017)

VILLANOVA TRANSIT STATION, SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY (SEPTA), VILLANOVA, PA

Project Engineer providing site & land development services including the permitting and site plan approval process. Provided utility coordination and conceptual design drawings and details for renovations to the Villanova Station on SEPTA's Paoli/Thorndale Regional Rail Line. The primary improvements consisted of new high-level platforms, lower-level platforms, a new pedestrian tunnel beneath the tracks, and interior renovations to the station building. A key element of the design is ADA accessibility to the platforms, tunnel, and station building. (2011 – 2017)

SUGARHOUSE CASINO PHASE 1A EXPANSION, PHILADELPHIA, PA

Design Manager, provided site/land development engineering design services for the SugarHouse Casino Phase 1A Expansion. The expansion included additional gaming space, back of floor space, and a multi-story parking garage. In addition to the building expansion, the project includes the extensive site modifications to the northern half of the property including two Combined Sewer Overflow (CSO) relocations, a revised parking layout, revised site amenities, and the relocation of the Sugarhouse Drive entrance on North Delaware Avenue. Responsibilities included, but were not limited to, site layout/grading; erosion and sedimentation control design; stormwater management design and calculations; design of Delaware Avenue improvements; ADA Ramp Design; Philadelphia Water Department (PWD) permitting; U.S. Army Corp of Engineers (USACE) permitting; PennDOT Highway Occupancy Permitting (HOP); Philadelphia Streets Department permitting; and National Pollution Discharge Elimination System (NPDES) permitting with the PA Department of Environmental Protection (PADEP). (2013 – 2014)

SUGARHOUSE CASINO DELAWARE AVENUE IMPROVEMENTS, PHILADELPHIA, PA

Design Manager, Urban Engineers (Urban) was tasked with the civil and traffic engineering services for the reconstruction of Delaware Avenue for the SugarHouse Casino Phase 1A Expansion. The project encompassed significant improvements along 1,850 feet of Delaware Avenue including: pavement reconstruction, re-profiling, new and modified traffic signals, striping and signage, turning lanes, lighting, drainage improvements, curb, sidewalk, ADA ramps, guiderails, medians and barriers. All work was done in accordance with the Pennsylvania Department of Transportation (PennDOT) and the City of Philadelphia Streets Department's standards. The traffic engineering portion of this project included traffic studies and design, starting with data collection and analysis and progressing to traffic control plans, traffic signal timings and plans and pavement marking and signing plans. Civil engineering tasks included roadway design and coordination with the various jurisdictional permitting and utility agencies for their approvals. A Highway Occupancy Permit was obtained from PennDOT after review by the Streets Department. Early and ongoing collaboration with the Streets Department, PennDOT and utilities was vital in ensuring that the existing roadway, the infrastructure it contains and its surrounding amenities would maintain and/or exceed pre-existing levels of service after construction.

SUGARHOUSE CASINO SHACKAMAXON STREET CSO, PHILADELPHIA, PA

Design Manager, Urban Engineers (Urban) was contracted to prepare plans for the relocation of the existing Shackamaxon Street Combined Sewer Outfall (CSO) between North Delaware Avenue and the Delaware River to accommodate the expansion of the SugarHouse Casino facilities. Urban's civil engineering services entailed the design of the relocated 9'6" x 9'6" Box Sewer, approximately 750 linear feet, Chamber and Headwall in addition to the site restoration. Urban was required to prepare plans in accordance with Philadelphia Water Department, Pennsylvania Department of Environmental Protection

and United States Army Corps of Engineers standards while remaining attentive to the interests of the casino. This involved maintenance and protection of traffic and construction phasing that would allow the casino to continue to operate during construction without impacting its customers or employees, and allow the improvements to be constructed with minimal interference from casino operations.

SUGARHOUSE CASINO LAUREL STREET CSO, PHILADELPHIA, PA

Design Manager, Urban Engineers (Urban) was contracted to prepare plans for the reconstruction of three 11' x 11' Box Sewers, approximately 450 linear feet each of sewer facilities between North Delaware Avenue and the Delaware River along the Laurel Street Combined Sewer Outfall (CSO). The project was precipitated by the proposed expansion of the SugarHouse Casino facilities. As part of an agreement with the City of Philadelphia, SugarHouse agreed to fund and construct the improvements to the outdated and undersized infrastructure running underneath its site. Urban's civil engineering services entailed the design of the reconstructed CSO and site restoration. Urban was required to prepare plans in accordance with Philadelphia Water Department, Pennsylvania Department of Environmental Protection and United States Army Corps of Engineers standards while remaining attentive to the interests of the casino. This involved maintenance and protection of traffic and construction phasing that would allow the casino to continue to operate during construction without impacting its customers or employees, and allow the improvements to be constructed with minimal interference from casino operations.

SOAK IT UP! DESIGN COMPETITION, CITY OF PHILADELPHIA, PHILADELPHIA, PA

Project Engineer for the award-winning design for a retail retrofit in the Soak It Up! Design Competition that focused on urban stormwater issues. The juried national competition was organized by the City of Philadelphia Water Department, EPA, and the Community Design Collaborative. The Urban Team's winning design, Stormwater reStore, put a new vision on an urban retail shopping center to turn the shopping center into a vibrant, pedestrian-friendly, and community-oriented site through the use of rain gardens, streetscape improvements, stormwater infiltration and storage, and landscaped stormwater features. (2013)

GIRARD POINT STORMWATER ANALYSIS, SUNOCO REFINERY, PHILADELPHIA, PA

Project Engineer performing Hydrologic and Hydraulic Analysis of approximately 206 acres of drainage area that included approximately 460 catch basins. Sunoco requested the analysis of the existing facilities to determine problematic areas and recommended modifications to the existing facilities to eliminate existing flooding conditions. Responsibilities included the review of survey information, plan development, pipe network hydraulic analysis to determine sections being inundated with stormwater flows, and hydrologic analysis determining peak flows and volumes to aid in the recommended modifications. (2011-2012)

FRANKLIN INSTITUTE MUSEUM ADDITION, THE FRANKLIN INSTITUTE, PHILADELPHIA, PA

Providing civil engineering design services for renovation and expansion of the Franklin Institute, Pennsylvania's most visited museum. The new museum addition includes a conference center and exhibition space. Civil engineering responsibilities for this project included site grading, utility assessment and relocation, and stormwater management in addition to construction support services, and project closeout. Urban was also responsible for obtaining associated permits/approvals (i.e., ERSA, Act 537, E&S) and providing design for sanitary, storm drainage, HVAC, fire protection, and electrical systems in compliance with current City of Philadelphia regulations. (2011-2013)

RENOVATION OF DILWORTH PLAZA, CLIENT: CENTER CITY DISTRICT, PHILADELPHIA, PA

Project Engineer for the reconstruction of this public plaza which is located west of Philadelphia's Historic City Hall. The reconstruction was intended to create a dramatic improvement to the underutilized public space, and improve accessibility and wayfinding to the existing transit facilities. Working with SEPTA's City

Hall Station project team, the project included new fare lines to the 15th Street and City Hall stations, and ADA access to those stations, as well as the nearby subway surface line. The concept also included removal of all the grade changes caused by walls and steps to create an ADA accessible expanse of lawn, a water feature, and a café. The finished plaza was intended to help celebrate City Hall, while becoming a focal point for people moving between the expanded Convention Center and the array of restaurants and hotels in the vicinity of City Hall. Civil engineering challenges included compliance with the PWD stormwater regulations which will require onsite underground cisterns, extensive subsurface utility coordination and relocation, and multi-discipline design coordination with several team members. Responsible for the design of site grading, utilities, and stormwater management. (2010-2013)

PASEO VERDE - TEMPLE UNIVERSITY STATION TRANSIT ORIENTED DEVELOPMENT (TOD) MIXED-USE DEVELOPMENT, CLIENT: JONATHAN ROSE COMPANIES & ASOCIACION PUERTORRIQUENOS EN MARCHA (APM), PHILADELPHIA, PA

Project Engineer providing site/land development engineering design services from concept to completion for a new mixed-use multi-level building complex on an existing parking lot adjacent to SEPTA's Temple Station located in Philadelphia, PA. The proposed mixed use complex includes Residential townhomes and condominiums (~179,000 GSF), 1st level parking garage for 67 parking spaces, 1st and 2nd level commercial and retail space (~31,000 GSF). Site / Land development responsibilities included utility coordination/relocation and service connections, assistance with zoning permits, design of stormwater management in accordance with Philadelphia Water Department (PWD) and PADEP requirements, procuring environmental permits including NPDES and E&S permits, and site layout/grading. Pre-bid and construction support services will also be performed. The site attained Platinum LEED certified Neighborhood Development (ND), the country's first, earned by creating an eco-friendly, transit focused project with the goal of "providing a healthy living environment for residents through sustainable practices, as well as cost savings through effective reduction in energy use." Project challenges included public outreach for the development, intermodal coordination with SEPTA and compliance with City oversight and regulatory agencies (implementing the first Blue Roof system in the City of Philadelphia). (2011-2013)

PIDC QUAY WALL

Project Engineer, providing civil design plans, specifications and services of the roughly 1,000 ft long Historic section of the Quay Wall along Broad Street as you enter the Philadelphia Navy Yard (the Country's first Naval Shipyard). Coordinating with the Structural, Marine, Traffic, Historic, PIDC and other agencies involved.

ROWAN UNIVERSITY, NORTH HALLS SIDEWALK AND DRAINAGE IMPROVEMENTS, BOROUGH OF GLASSBORO, CAMDEN COUNTY, NJ

Project Engineer providing support with the North Halls Walkway Project, that replaced and widened a portion of the Rowan University Sidewalk to accommodate increased pedestrian needs, enhanced access for emergency fire truck access to adjacent buildings, replaced associated lighting and created buffer zone to provide increased protection to wetlands and riparian zones. The project also included making improvements to stormwater infrastructure to manage drainage in the North Halls area, prepare design plans and documents that acquired NJDEP Wetlands and Flood Hazard Protection Area permits and Soil Erosion and Sediment Control approval. As part of the sustainability and stormwater goals, the reconstructed sidewalk resulted in a net improvement by reducing of impervious coverage in the wetland transition area and riparian zone, and improved vegetated buffer zones. Performed stormwater management design and environmental permitting, incorporating Best management Practices (BMP) screening, BMP design, and hydrologic and hydraulic analysis for stormwater management. Flood Hazard Area riparian areas and wetlands were delineated and impacts minimized to advance sustainability goals and address regulatory requirements.(2015-2017).

THE ARCH RENOVATIONS AT UNIVERSITY OF PENNSYLVANIA, SAYLOR GREGG ARCHITECTS, PHILADELPHIA, PA

Civil Engineer for the renovations and improvements creating a basement stairway entrance. Responsible for water main and utility relocations in former 36th Street per the City of Philadelphia Water Department's Private Cost Project Requirements. (2011-2012)

UNIVERSITY OF PENNSYLVANIA SPRUCE STREET PLAZA (KANE PARK), PHILADELPHIA, PA

As a Project Engineer, assisted with the overall design of the approximate ½ acre site, developing the area between Spruce Street and Convention Avenue between 33rd and 34th Streets into a park. Responsible for the design of the ADA compliant ramps and private cost document coordination for the relocation of the water main, fire hydrant, inlet and stormwater pipe. This included coordinating the approvals with the City of Philadelphia Water Department. The project included coordination with both the Department of Streets and PennDOT to permit the mid-block crossing and to review and approve the work within the rights-of-way of 33rd Street (PennDOT Highway) and 34th Street (City Street). (2011-2012)

CATTO MEMORIAL STATUE, PHILADELPHIA, PA

Project Engineer providing oversight of field survey work and civil engineering design services for the extensive site preparation and underground repairs prior to installation of "A monument for Octavius Catto, who changed Philly" according to philly.com, located adjacent to City Hall. (2015-2017)

ERDENHEIM FARM & TRAIL, WHITEMARSH, PA

Project Engineer providing oversight in obtaining elevation and topographic shots of the proposed trail on the farm. Stakeout for the proposed trail easement along the Farm. Setting control points with GPS system and total stations. Provided full topographic survey of utilities on and along the proposed trail. Provided topographic surveying of streambank and streambed for Hydraulic and Hydrologic (H&H) Study.

QUARTETT ESTATES, CITY OF PHILADELPHIA, PA

Project Manager, overseeing a topographic survey of this 16 Acre site including deed research and platting. Following the survey, performing land development design services for a 40 lot subdivision, preparing design development plans and specifications for the project.

VETERANS AFFAIRS MEDICAL CENTER (VAMC) LOOP ROAD PROJECT, WILMINGTON, DE

Project Assistant Manager providing site/land development design services including verification of existing utilities, site inspection of soil borings and utility locations, coordination with the architect, structural engineer, mechanical, electrical and plumbing engineers, procedures for DNREC Permit approvals, grading/ drainage design, roadway and stormwater profiles, relocation of existing structures and corresponding rerouted utilities. This project included the creation of a loop road reconnecting the existing parking on the West side of the facility with Kirkwood Highway, as well as, a new lobby building addition (a new entrance at the intersection of the Community Living Center CLC, the Auditorium, mechanical rooms and the rehab area). Extensive coordination was required with traffic and highway groups regarding Delaware Department of Transportation (DelDOT) for the modified exit onto Kirkwood Highway. (2012 – 2015)

VETERANS AFFAIRS MEDICAL CENTER (VAMC) PARKING GARAGE, WILMINGTON, DE

Project Assistant Manager providing oversight regarding site inspections of soil borings and utility locations, extensive coordination with the project team regarding DNREC Permitting Approval processes, grading/drainage design, roadway and stormwater profiles, relocation of existing structures and corresponding rerouted utilities. While we were not the civil designer, we were brought onto the team as a permitting consultant to help expedite the permitting process. (2013 – 2015)

PHILADELPHIA GAS WORKS (PGW) PRUDENT DESIGN WORK, PHILADELPHIA, PA

Duties performed consist of organizing documents received from PA One Call, researching City Highway/Survey record plans, drafting existing curblines, houselines, and utilities, performing site visits and/or investigation through online aerials and street views, designing of proposed gas main alignment and the corresponding notes to the contractor for installation, and quantities and material lists. This project includes design- drafting services to assist in the city-wide replacement of cast iron gas pipelines. When given a particular area, existing features are first evaluated and sketched to assist in the proposed placement of new plastic gas mains and corresponding property service laterals. This project also requires value engineering analyses for: the installation of proposed fire control panels. The improvement of building alarm panels, and the integration of detection/ suppression systems. Data collection and surveys of local ordinances are to be conducted to properly define legal right-of-ways for new gas pipelines and corresponding property boundaries. (2013 – 2017)

SCHUYLKILL RIVER DEVELOPMENT CORPORATION (SRDC) SCHUYLKILL RIVER TRAIL (SOUTH TO CHRISTIAN), PHILADELPHIA, PA

Design Manager providing project oversight, grading, engineering design and drafting services for the expansion of the Schuylkill River Trail. The project involves lengthening the current Schuylkill River Trail from the South Street Bridge by 0.3 miles. The project consists of adding a bioretention basin to account for stormwater management on site. (2013 – 2015)

E. G. EMIL & SON, INC., INDUSTRIAL PLANT, PHILADELPHIA, PA

Project Engineer providing site/land development engineering design services for an expansion of an operating industrial food processing plant. The proposed expansion is adding a shipping and receiving dock, a shipping cooler and a parking lot expansion. Responsibilities included the review of survey information; permit and construction plan development; coordination with City of Philadelphia Water Department, Department of Licenses and Inspections, Planning Commission, and Streets Department; site grading, site utility layout and design. (2013)

SPRINGFIELD TOWNSHIP MASTER PLAN, WYNDMOOR, PA

Project Engineer for the conceptual and schematic civil engineering and stormwater management design for a new municipal campus. The design included the layout and design of parking lots and driveways, pedestrian paths, and stormwater management for a new municipal administration building that included the police department, a new library, and a new public works building and associated facilities. (2012-2013)

SUGARHOUSE INTERIM CASINO, HSP GAMING, LP, PHILADELPHIA, PA

Project Engineer providing site grading, combined sewer and regulator chamber design, and stormwater management design in compliance with city and PADEP regulations and design standards. The project involved redevelopment of a 242-acre vacant parcel of land along Philadelphia's Delaware River waterfront for a Class 2 Casino License. The project consists of a new 30,000 SF slots facility, and a 1,800-LF continuous waterfront promenade accessible to the public. (2011-2013)

MUSEUM TOWERS PHASE II RESIDENTIAL APARTMENT COMPLEX, CLIENT: FOREST CITY, INC., PHILADELPHIA, PA

Project Engineer providing site/land development engineering design services for the development of an existing 2.5 acre site. The development expanded on the existing 16 story high rise residential complex with the addition of a 16 story high rise, 5 story low rise and a 5 story parking garage residential complex. Responsibilities included, Utility Companies, City of Philadelphia Water Department, Department of Licenses and Inspections, Streets Department coordination, site grading, utility layout, stormwater management design and attaining NPDES Permitting approvals. (2011-2013)

PENNSYLVANIA ACADEMY OF FINE ARTS (PAFA) LENFEST PLAZA, SAYLOR GREGG ARCHITECTS, PHILADELPHIA, PA

Civil Engineer for the \$3 million pedestrian plaza positioned between the Academy's Frank Furness Historic Landmark Building and the Samuel M.V. Hamilton Building. Lenfest Plaza closed half a block of Cherry Street (between Broad Street and Carlisle Street) to vehicular traffic and reclaimed it for pedestrian traffic. Responsible for water main and sewer abandonment in former Cherry Street per the City of Philadelphia Water Department's Private Cost Project Requirements. (2010-2012)

800 WALNUT STREET, LIBERTY PROPERTY TRUST, PHILADELPHIA, PA

Civil Engineer for the development of a 12-story, 153,000-SF medical office building above an existing seven-story parking garage at 8th and Walnut Streets. The building will be designed and constructed to attain LEED certification. Civil engineering design includes sidewalk and curb replacement; new utilities connections; and coordination with various City of Philadelphia departments. (2012-2013)

NEWCOURTLAND SENIOR HOUSING DEVELOPMENT, NEWCOURTLAND ELDER SERVICES, INC., PHILADELPHIA, PA

Project Engineer for the development of a 5-acre brownfield site located in North Philadelphia. The site was subdivided into three properties which are being developed into independent senior housing facilities. The 1940 W. Allegheny Ave. development, will consist of two separate buildings connected via a covered walkway; a 13,100 GSF Adult Day Health Center; and 7,300 GSF Senior Center containing day/dining rooms, medical clinic, offices, pharmacy and kitchen. Each development will have separate access driveways and lighted parking/plaza areas. Independent stormwater management systems for each development will utilize a variety of BMPs including, subsurface infiltration systems, rain gardens, porous pavement and green roofs. Site grading is critical for a balance cut/fill ratio to limit the costs associated with removal of contaminated soils. Each development will require full services utility connections for domestic and fire water, sanitary, electric, gas and telecommunications. (2010-2011)

INTERNATIONAL ALLIANCE OF THEATRICAL STAGE EMPLOYEES (IATSE) LOCAL 8, PHILADELPHIA, PA

As a Project Engineer, assisted with the layout of the one-story 10,300 SF building and stormwater layout and modeling. Due to the area of disturbance, a PADEP NPDES permit was required as well as compliance with Philadelphia Water Department Stormwater Management regulations. Stormwater management involved the use of a green roof (approximately 8,538 SF), a structural subsurface detention system lined with an impermeable geosynthetic due to existing on-site lead contamination and use of several non-structural best management practices such as using native vegetation. (2010)

SCHUYLKILL RIVER DEVELOPMENT CORPORATION (SRDC) SCHUYLKILL RIVER TRAIL (DUPONT CRESCENT), PHILADELPHIA, PA

As a Project Engineer, assisted the design team with trail alignment and various calculations for this multi-use trail running parallel to the river within a broader greenway from 34th Street (University Avenue) to Wharton Street in the Grays Ferry section of the city of Philadelphia. The greenway will ultimately provide connections to hundreds of miles of state, federal and local trail systems throughout the region. (2010)