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Colliers
Engineering & Design

September 3, 2025

VIA EMAIL (paikwin.leung@parks.nyc.gov)

City of New York Department of Parks & Recreation
The Olmsted Center
117-02 Roosevelt Ave
Flushing Meadows Corona Park
Corona, NY 11368

Proposed Staffing Plan – Q492 Elmhurst Park
Site Final Composite As-Built Drawing for Cover System Task Order 3
DPR Parent Contract #: CNYG-1623M
Work Order #: 1 Citywide Civil and Structural Pre-Design Engineering, Investigation, Testing, and Inspection Services, CNYG-2324M

Site: Q492 Elmhurst Park
Asset: Q492 Elmhurst Park
Location: Elmhurst Park is located between 57th Avenue and Grand Avenue, opposite 79th Street in Queens, NY. The site is bordered by a CSX freight rail line on the west. A Verizon facility with truck parking and residential rear yards border the park on the east.
Colliers Engineering & Design Project No. NYPR0008003P

This staffing plan lays out the anticipated scope of services and fees regarding the above-mentioned task order.

Scope of Services:

We understand that Elmhurst Park historically contained various gas tanks and previously underwent environmental testing and capping with a demarcation mesh of the contaminated soils in 2001. We further understand that since then the park has been backfilled with a clean fill and various amenities have been constructed at the site.

The project comprises of performing 23 test borings using a Geoprobe drilling rig or similar to locate the previously installed demarcation mesh and verify the depth and material of the clean fill cap. Furthermore, DPR wishes for CED to prepare as-built plans and details of the cap system.

Design Services:

TASK 1 FINAL COMPOSITE AS-BUILT DRAWING OF THE COVER SYSTEM

Colliers Engineering & Design (CED) will prepare an As-Built Cover System Documentation Package for the site. The primary objective of this effort is to clearly depict and document the final constructed conditions of the cap system. This as-built package will serve as a record of the actual

field installation. It will demonstrate regulatory compliance and provide a critical reference for long-term monitoring, maintenance activities, and future site planning or redevelopment.

The final as-built plans will include detailed engineering drawings and cross sections. Together, these deliverables will establish a clear and verifiable representation of the constructed cover system in support of both environmental and regulatory requirements.

Development of Typical Cap Cross-Sections

CED will develop four (4) to five (5) representative typical cap system cross-section details that reflect the various cover configurations installed across the site.

Each cross-section will include:

- Scaled cross-sectional graphics showing each layer of the cap (e.g., topsoil, geotextile, gravel, sand, subgrade, etc.).
- A clearly formatted table summarizing each layer's material type, thickness, and any relevant installation notes.

These cross-sections will serve as the primary graphical documentation of the cover system and will be prepared using AutoCAD Civil 3D or equivalent drafting software.

Plan Markup for Cross-Section Locations

To supplement the cross-sectional details, CED will prepare a final As-Built Plan Set with callouts indicating the locations on-site where each typical cross-section applies. This will ensure that the cap system's variability and spatial context are clearly understood.

The plan will include:

- Labels/hatches corresponding to each cross-section show in plan view.
- A legend and cross-reference table to facilitate interpretation

Allowance Services:

TASK A1 TOPOGRAPHIC SURVEY

Colliers Engineering & Design will prepare a Topographic Survey of Elmhurst Park, known as Lots 31 & 90, Block 2805, situated in the Borough and County of Queens, City and State of New York in accordance with the Current Existing Code of Practice for Land Surveys adopted by the New York State Association of Professional Land Surveyors, Inc.; the guidelines of the New York State Education Department and the State Board of Engineers and Land Surveyors.

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The limits of the Topographic Survey will be limited to the area noted in the Survey Limits below where the survey will be limited to the adjacent curb line of Grand Avenue and 57th Avenue and extend ten (10) feet onto adjacent parcels, where feasible or accessible.

Our office will prepare a topographic survey map that is a graphic pictorial representation of existing site features observed at the time of the field survey such as buildings, curbs, sidewalks, roadways, driveways, retaining walls, fences, individual trees in open areas, and utility hardware. Limits of wooded areas will be depicted based on the approximate dripline, but individual trees within wooded areas will not be surveyed. The topographic map will depict existing spot elevations and contours at a one-(1) foot contour interval. GPS surveying techniques will be used to control the survey with the resulting horizontal datum being NY State Plane Coordinate System NAD83 and the vertical datum being North American Vertical Datum NAVD88 with a conversion to Queens Borough Datum.

The depiction of utilities will be limited to observable and accessible surface hardware, such as manholes, inlets, valves, junction boxes, utility poles, area lights, overhead wires, etc.

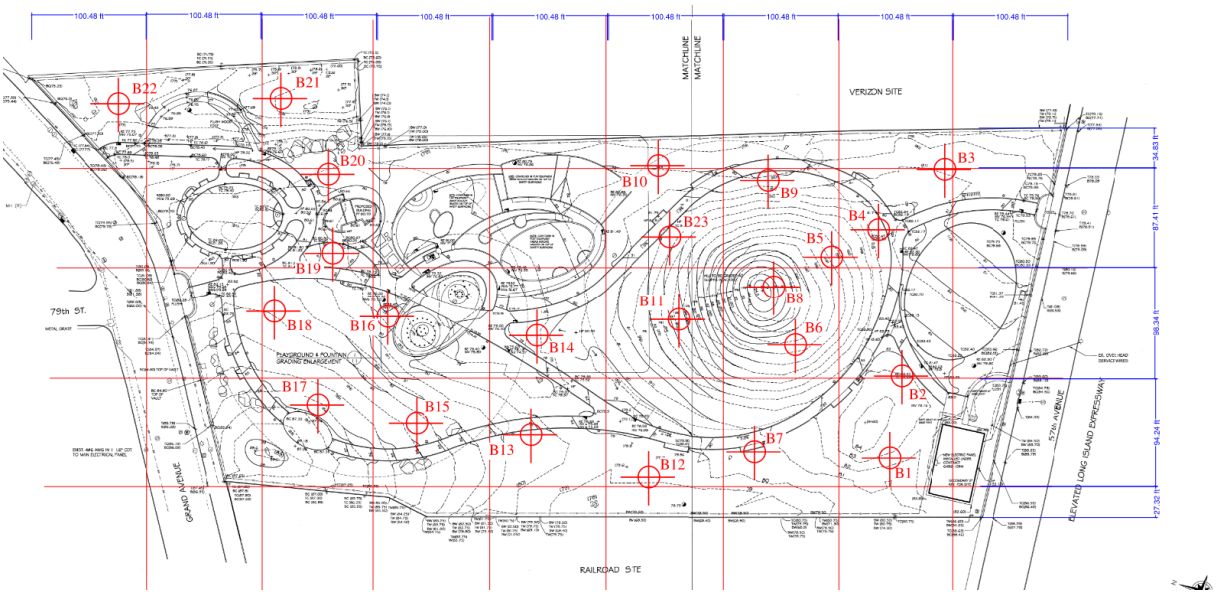
Included in this task of service are the following tasks:

- Establish on-site survey control;
- Field traverse, topographic survey and data collection;
- Field measure inverts of accessible gravity structures;
- Field survey data reduction and computation;
- Preparation of topographic survey map in AutoCAD Civil 3D 2018 format.

Traffic safety protection for field survey crew and cleaning of clogged or obstructed drain and sewer structures is **not** included in the fee for this survey. If it is determined that safety protection is required for any of the survey services performed under this contract, we will advise you of the approximate cost prior to moving forward. Such additional cost would be invoiced as a reimbursable expense pursuant to prior authorization.

Soil Boring Stakeout

Calculate and stake twenty-three (23) proposed soil boring locations on two (2) separate mobilization based on the locations noted below. A stakeout sketch showing the proposed locations will be provided. The fee for this task is based on maximum of two (2) site visits.



TASK A2 GEOTECHNICAL INVESTIGATION

CED will perform 23 test borings at the specified locations to classify the clean fill cap materials and verify the cap's thickness. Each boring will extend to a depth of up to 15 feet below existing site grades. Based on current assumptions, the field work is expected to be completed within eight (8) days; however, this duration may be adjusted depending on the actual depth of the clean cap and the ability to reach the demarcation layer. If additional field time is required beyond the planned eight days, CED will request a supplemental fee to cover the extended effort.

This scope assumes that the demarcation mesh layer will be encountered in the field and can be reliably used to determine the thickness of the clean fill. However, if the mesh is not present or cannot be conclusively identified, CED will use professional engineering judgment to estimate the clean cap thickness based on observed soil stratigraphy, visual classification, and composition of recovered samples.

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Program Scope

Test Borings

We will coordinate with a subcontractor to mobilize drilling equipment to perform 23 Standard Penetration Test (SPT) borings to visually classify the subsurface soils and obtain soil samples for laboratory testing. Soil cuttings generated from the exploration will be stored within drums. The test borings will be backfilled with grout to the existing grades.

All sampling tools and equipment in contact with potentially contaminated soils shall be decontaminated with Alconox solution between drilling locations and at the conclusion of the exploration.

Private Utility Locator

Our subcontractor will coordinate with a private utility locator to clear the specified test boring locations.

Drums (Staging, Transportation, Testing, and Disposal)

Our subcontractor will coordinate to provide up to 15 drums to store contaminated soil cuttings generated from the explorations at the site. At the completion of the test borings, the drums will be transported to a dedicated drum-staging area consisting of a 2x4 berm and plastic sheeting which will be created by our subcontractor.

We will coordinate to have the drums tested and transported to a local facility for disposal. This proposal assumed the drums will be non-hazardous. It testing come back as hazardous we will need to revise our proposal to include the additional disposal costs.

Field Observation

The subsurface exploration program will be performed under the full-time observation of a geotechnical specialist, who will observe and log the explorations, collect soil samples, and will be acting under the direction of a licensed Professional Geotechnical Engineer.

Duration

This proposal considers eight days to perform the test borings. If the boring take longer than 8 days, this proposal will need to be revised to include the additional field days.

General Laboratory Soil Testing

Representative samples obtained from the explorations will be subjected to limited laboratory testing to evaluate general engineering characteristics. Such testing will likely include moisture contents, grain-size analysis, and Atterberg Limits.

Geotechnical Data Report

We will prepare a geotechnical data report summarizing the subsurface conditions encountered at the site. The report will include the results of the subsurface exploration program and laboratory testing.

TASK A3 AIR MONITORING

CED will prepare an Air Monitoring Work Plan (AMWP) outlining the monitoring requirements and proposed methods. The AWMP will outline the recording, reporting and quality assurance procedures that will be implemented using two direct-reading aerosol monitoring stations capable of measuring particulate matter (PM-10) concentrations. The AWMP can be included in NYCDPR's 10-day notification to the NYSDEC and NYSDOH.

An upwind and a downwind monitoring station will be established at the perimeter of the work area and adjusted as needed on a daily basis. Dust levels will be recorded at 15-minute intervals and results will be compared to the CAMP action level of 100 micrograms per cubic meter (µg/m³) averaged over a 15-minute period. If this threshold is exceeded over background concentrations (i.e. upwind), work will be paused and dust suppression measures - such as water misting, reducing drilling rates - will be implemented. If after implementation of dust suppression measures are 150 µg/m³ above upwind levels work will be halted pending re-evaluation of work activities.

Monitoring data, observations, and response actions (if any) will be documented in a daily field log. The daily field logs will be included in the post-monitoring summary report.

Deliverables

- As-built topographic survey with Geoprobe locations and demarcation layer elevations
- Boring location plan
- Signed and sealed boring logs (NY Professional Engineer)
- Signed and sealed as-built cover plan and cross sections detail sheets.

Anticipated Schedule:

CED anticipates approximately four to five (4–5) weeks to complete the development and internal review of the Health and Safety Plan (HASP) and Air Monitoring Plan. Upon approval, field activities will commence, beginning with one (1) week allocated for survey operations followed by two (2) weeks of geotechnical investigation. Once field work is completed, an estimated three (3) weeks of office-based processing and analysis will be required to finalize the survey and geotechnical reports.

Following the completion of these reports, CED will initiate preparation of the As-Built Cover System Drawing. We anticipate this task will require approximately five (5) weeks, including drafting, internal QA/QC, and final delivery. The total anticipated project duration from Notice to Proceed (NTP) to final submittal is approximately fifteen (15) weeks, as outlined in the proposed project schedule below.

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Schedule of Fees:

For your convenience, we have broken down the total estimated cost of the project into the categories identified within the scope of services for CED's hourly not to exceed.

Fees Schedule

DESIGN SERVICES FEE		Fee
TASK 1	FINAL COMPOSITE AS-BUILT DRAWING OF THE COVER SYSTEM	$47,813.00
TOTAL HOURLY NOT TO EXCEED FEE		**$47,813.00**

ALLOWANCE SERVICE FEE		Fee
TASK A1	TOPOGRAPHIC SURVEY	$31,665.60
TASK A2	GEOTECHNICAL INVESTIGATION	$83,410.00
TASK A3	AIR MONITORING	$32,570.00
TOTAL LUMP SUM FEE		**$147,645.60**

TOTAL FEE	Fee
DESIGN SERVICES FEE	$47,813.00
ALLOWANCE SERVICE FEE	$147,645.60
TOTAL DESIGN + ALLOWNACE FEE	**$195,458.60**

Exclusions and Understandings

Services relating to the following items are not anticipated for the project or cannot be quantified at this time. Therefore, any service associated with the following items is specifically excluded from the scope of professional services within this agreement.

- Services not specifically outlined in Section I;
- Modifications of or additions to the completed survey map after it has been distributed. If additional survey requirements or other form of survey certification is requested, a separate fee will be negotiated for performing such service;
- Property Line survey;
- Underground utility survey;
- Supplemental field survey;
- Roadway Cross Sections;
- Stream Cross Sections;
- Field survey of "obscured areas" (under tree canopies and/or submerged areas);
- Performance of independent horizontal and vertical check points to validate the accuracy of the LiDAR point cloud data or aerial mapping;
- Subsurface utility investigation, designating or mapping;
- Building façade survey;
- Building interior survey;
- Rooftop survey;
- Property title search;

- ALTA/NSPS Land Title Survey;
- Construction stakeout services;
- Wetland delineation, reports or surveys;
- Tree Location Plan and/or surveys;
- Subdivision or Consolidation Plans and/or Parcel Maps;
- Security clearance protocol.
- Laboratory-based air sampling;
- Off-site air monitoring;
- Additional environmental services including permitting, remedial investigations, actions and regulatory submissions are excluded.

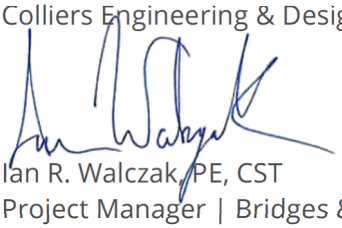
If an item listed herein, or otherwise not specifically mentioned within this agreement, is deemed necessary, Colliers Engineering & Design may prepare an addendum to this agreement for your review, outlining the scope of additional services and associated professional fees regarding the extra services.

Due to the unforeseen thicknesses of the cover system **CED and its subconsultants have assumed 8-days of field work** to complete the 23 borings. If drilling is slow or depths are greater than 15ft therefore requiring additional field work time CED will notify DPR and provide a budget of additional costs before proceeding.

Our contractors shall be responsible for contacting the One Call System; however, the Client is responsible for providing us with available utility information. If requested, Colliers Engineering & Design can arrange for or retain an underground utility location company to determine the location of underground utilities and structures with reasonable certainty. Regardless of the level of effort to identify and locate existing utilities, we cannot be held responsible for damage to utilities that are not marked, incorrectly marked, or otherwise not physically exposed by Level 'A' designating techniques.

Thank you for this opportunity. We look forward to hearing from you to set up the project kick-off meeting. Should you have any questions or require additional clarification, please do not hesitate to contact me directly.

Sincerely,
Colliers Engineering & Design, Inc.



Ian R. Walczak, PE, CST
Project Manager | Bridges & Structures
IRW/rcm
Enclosure
cc: Terence McCormick, NYC DPR (via email)
Allaire O'Connor, NYC DPR (via email)
Gerald Gamer, NYC DPR (via email)
Richard Maloney, Colliers Engineering & Design (via email)

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TASK ORDER 3 - DESIGN SERVICES			Colliers Engineering & Design				
JOB NUMBER: NYPR0008003P	Hours	Total Per Task	Richard C. Maloney - Principal	Ian R. Walczak - Engineering Project Manager	Bilal Awan - Structural Engineer	Ahmed Elmekati - Engineering Project Manager	Francisco Sanchez-Dominici - Senior Geotechnical Engineer
			$ 305.00	$ 247.00	$ 182.00	$ 247.00	$ 204.00
TASK 1 - FINAL COMPOSITE AS-BUILT DRAWING OF THE COVER SYSTEM	213	$ 47,813.00	18	89	74	8	24
Total Labor Hours	213		18	89	74	8	24
Total Design Services (CED)	213	$ 47,813.00					
Reimbursables/Materials Cost	-	$ -					
Total Tasks 1	213	$ 47,813.00					

TASK ORDER 3 - ALLOWANCES		
JOB NUMBER: NYPR0008003P	Hours	Total Per Task
TASK A1 - TOPOGRAPHIC SURVEY	LUM SUM	$ 31,665.60
TASK A2 - GEOTECHNICAL INVESTIGATION	LUM SUM	$ 83,410.00
TASK A3 - AIR MONITORING	LUM SUM	$ 32,570.00
Total Design Services	213	$ 47,813.00
Reimbursables/Materials Cost	-	$ -
Total Allowance Serivces (LUMP SUM FEE)	-	$ 147,645.60
Total Design & Allowance Services Fee	-	$ 195,458.60

NYC Parks

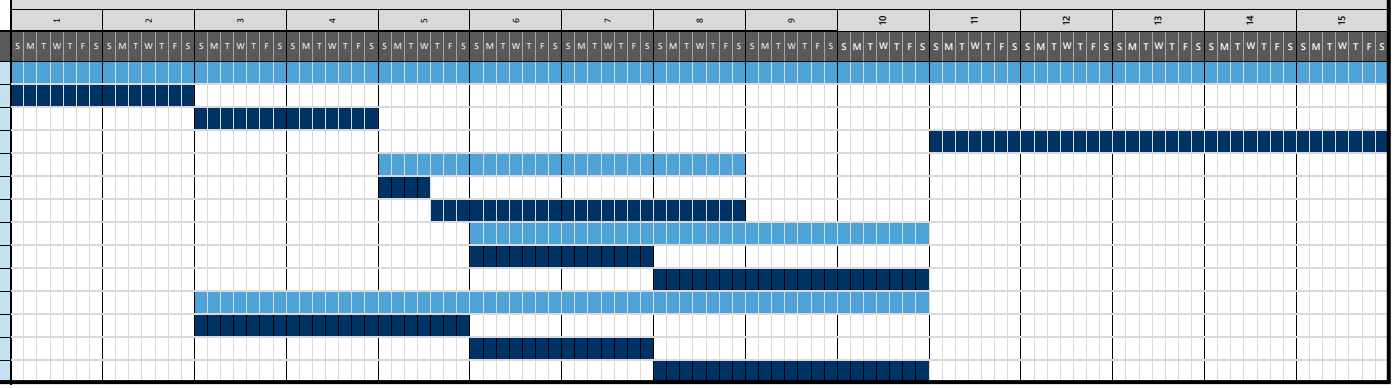
Colliers Engineering & Design

NEW YORK CITY DEPARTMENT OF PARKS AND RECREATION

TASK ORDER 3 - Q492 ELMHURST PARK - SITE FINAL COMPOSITE AS-BUILT DRAWING OF COVER SYSTEM

WEEKS AFTER NOTICE TO PROCEED

	TASK
1	**FINAL COMPOSITE AS-BUILT DRAWING OF THE COVER SYSTEM**
1.1	DOCUMENT REVIEW
1.2	HEALTH & SAFETY PLAN (HASP)
1.3	AS-BUILT DRAWINGS
A1	**TOPOGRAPHIC SURVEY**
A1.1	FIELD WORK
A1.2	SURVEY OFFICE WORK
A2	**GEOTECHNICAL INVESTIGATION**
A2.1	**FIELD WORK**
A2.2	**REPORTING**
A3	**AIR MONITORING**
A3.1	**MONITORING PLAN**
A3.2	**FIELD WORK**
A3.3	**POST-MONITORING REPORT**



Ahmed H. Elmekati, PhD, PE

Principal Associate | Regional Discipline Leader
Geotechnical Services

Education

PhD Civil Engineering, Rensselaer Polytechnic Institute, 2007

MS Civil Engineering, Rensselaer Polytechnic Institute, 2006

BS Civil Engineering, Mansura, Egypt, 2001

Professional Registrations

Professional Engineer (PE) New Jersey, New York, Connecticut, Texas, Massachusetts, Ohio, Maine, Michigan, Rhode Island, New York

Professional Certifications

OSHA 10 Hr Construction Safety

Dr. Elmekati is a geotechnical engineer with more than 20 years of experience in geotechnical and foundation engineering. He currently serves as Senior Project Manager and is responsible for our geotechnical services in the NYC Metropolitan area, New York State, Northern New Jersey, New England, as well as Texas. Dr. Elmekati's experience includes planning geotechnical subsurface explorations and soil laboratory and field-testing programs, preparation and review of engineering proposals, engineering calculations, geotechnical recommendation reports, specifications, design details, construction instrumentation monitoring, and construction documents for several types of projects.

Dr. Elmekati has extensive experience in the analyses, design, and performance evaluation of geotechnical structures using state-of-the-practice numerical modeling tools including shallow and deep foundations, tunnels, excavation support systems, hydraulic barriers and dams, and ground improvement techniques. He is also experienced in multi-scale and multi-physics modeling of geotechnical systems.

Dr. Elmekati also has extensive experience during the construction phase of projects, including review of shop drawings; field overview, and progress documentation. He is experienced with construction monitoring including planning real-time deformation and vibration monitoring programs as well as assessing related records including impact on nearby adjacent structures and evaluation of full-scale instrumented load tests. He also has experience in providing construction litigation support, claims analysis, and forensic geotechnical evaluations. He has also performed value engineering and peer review of multiple projects.

Key Projects

143 Brunswick Street

Jersey City, Hudson County, NJ

Geotechnical Project Manager for the construction of a new five-story mixed-use development occupying the full site with a footprint of approximately 13,668 sq ft. The first floor will be utilized as commercial space and ground parking. The upper levels will be utilized as residential units. Duties included planning and supervising a preliminary subsurface exploration program consisting of test borings and cone penetration tests and preparing a geotechnical exploration report.

KS Broad Street

Village of Ridgewood, Bergen County, NJ

Geotechnical Project Manager for a new development comprising the construction of a new five-story mixed-use building on a site previously occupied by a fuel gas station and underlain by uncontrolled fill. Duties included planning and supervising the subsurface exploration program and preparing a geotechnical exploration report. Duties also included providing pre-construction and construction related services including performing a preconstruction condition survey, developing and implementing a construction instrumentation monitoring program and geotechnical Special Inspections in accordance with NJ IBC 2015 requirements.

NJ Dragon Project

Jersey City, Hudson County, NJ

Geotechnical Project Manager for the addition of three stories to the existing two-story building. The additional stories will be constructed in-place and supported on new independent columns passing through existing floors and inward of the basement wall. Duties included planning and supervising the subsurface exploration program and preparing a geotechnical exploration report that addressed design and construction challenges arising from the very soft nature of the underlying cohesive soils.

Ferry Point Trump Golf Links

Bronx Borough, New York City, NY

Geotechnical Project Manager for the construction of a new $10M club house within the facility. The pile-supported structure was constructed over a pre-existing landfill which required special considerations during construction. Duties included managing the special inspection program per NYCDOB requirements including the installation of foundations and super-structure elements.

North Street and Richmond Terrace (U-Haul Staten Island)

Staten Island, Richmond County, NY

Geotechnical Project Manager for the construction of two new buildings a seven story self-storage structure occupying a footprint of approximately 46,400 sq ft and a single-story warehouse structure occupying a footprint of approximately 20,800 sq ft. Duties included planning and supervising a two-stage soil exploration program and preparing a foundation recommendations report addressing the subsurface conditions below the site while considering loads imposed by various buildings.

260 72nd Street

New York City, NY

Geotechnical Engineer for a new development consisting of high-rise residential tower with multiple basement levels. Duties included coordinating and performing a subsurface investigation including controlled inspection of test borings, piezometers, and in-situ permeability testing. Prepared a full geotechnical report summarizing the results of the subsurface investigation and providing geotechnical recommendations and construction considerations.

335-339 5th Avenue

New York City, NY

Geotechnical Project Manager for a development consisting of a new 30-story building with one basement level in Manhattan. The proposed development will be constructed in close proximity to an existing AMTRAK tunnel. Duties included planning and supervising the subsurface investigation program and preparing a geotechnical report. Duties also included evaluating the impact of construction on the existing tunnel through employing advanced finite element analysis using PLAXIS. Results of the impact analysis were included as part of an assessment report submitted to AMTRAK.

249-255 Java Street

Brooklyn, NY

Geotechnical Project Manager for the construction of a new single-story building occupying a footprint of 12,500 sq ft and abutting existing structures on three sides. Duties including value engineering of the proposed driven pile foundations. Our team performed additional test borings and developed recommendations for ground improvement as a cost-effective alternative to the driven piles proposed by others. Ground improvement also minimized the impact on adjacent structures as it induces limited vibrations during construction.

Pacific Park Development (Atlantic Yards)

Brooklyn Borough, New York City, NY

Geotechnical Project Manager for a new development comprising six new high-rise buildings with basements and associated underground parking. Duties included planning and supervising the subsurface investigation program, preparing geotechnical reports for each of the five buildings, and supervising geotechnical special inspections in accordance with NYC Building Code.

Atlantic Yards

Brooklyn Borough, New York City, NY

Geotechnical Engineer for the construction of high-rise developments over the depressed LIRR tracks in Brooklyn. Within this area, the tracks are located more than 40 ft below surrounding grade. The foundations of the proposed buildings will be constructed in between the tracks which required special attention to ensure the tracks are operable during construction. Duties included evaluating the performance of the proposed foundation elements including anticipated settlements and load capacities.

520 Park Avenue

New York City, NY

Geotechnical Engineer for a development consisting of a 52-story concrete residential tower with four basement levels located 13ft from an existing NYCT subway structure. Reviewed subsurface conditions and developed soil design parameters required for foundation design. Established lateral capacities and design methodologies for rock socketed shafts.

USTA Stadium 3

Queens Borough, New York City, NY

Geotechnical Engineer for a new development including the construction of new stadium and tennis courts and related facilities. Evaluated the performance of the proposed structural design for the Grand Stand Stadium supported on shallow foundations within different areas of cut and fill. Evaluated the performance of the proposed pile-supported Armstrong Stadium with slab-on-grade under the effect of fill placement. The assessment was performed using 3D quasi-static analyses to estimate the settlement of the proposed structures.

71 Smith Street

Brooklyn Borough, New York City, NY

Geotechnical Engineer for a development consisting of high-rise residential tower with multiple basement levels. Reviewed subsurface conditions and developed soil design parameters to evaluate the feasibility of ground improvement techniques utilizing timber piles in reducing settlement. The evaluation was performed utilizing 3D models incorporating super-structure and foundation elements.

The Edge Development

Brooklyn Borough, New York City, NY

Geotechnical Engineer for a development consisting of 1 million SF of mixed-use residential and retail space along the waterfront in the Williamsburg neighborhood of Brooklyn. Duties included implementing a construction instrumentation monitoring program to evaluate the effect of installing driven piles on neighboring structures. Controlled inspection of the installation of mini-piles and driven taper-tube piles. Prepared full pile driving and mini-pile installation report.

46 Kearny Avenue Garage

Jersey City, Hudson County, NJ

Geotechnical Project Manager for a new development comprising the construction of a new five-story parking garage occupying a footprint of 40,600 sq ft. Duties included planning and supervising a multi-phase subsurface exploration program consisting of test borings and test pits and preparing a geotechnical exploration report. Duties also included providing preconstruction and construction related services including condition survey, developing and implementing a construction instrumentation monitoring, and Special Inspections in accordance with NJ IBC 2015 requirements.

New Valley Hospital Campus Parking Garage

Paramus, Bergen County, NJ

Geotechnical Project Manager for the new Valley Hospital Campus in Paramus, NJ. The campus comprises a new hospital complex, a new parking structure abutting the complex, and a new earth embankment supported on both structures. The parking structure will occupy a footprint of approximately 36,000 SF. Duties included planning and supervising the subsurface exploration program and geotechnical exploration report.

LaGuardia Airport East Parking Garage

Queens Borough, New York City, NY

Geotechnical Engineer for development of a new parking garage to serve LGA Airport by providing 1,120 parking spaces on six levels and is connected to Terminal C by a pedestrian bridge. Evaluated geotechnical conditions on the site. Designed the piles required for supporting the foundation system, including, drivability analysis (GRL-WEAP), and pile axial and lateral capacity and pile group settlement analyses. Reviewed contractor shop drawings submittals and conformance to project specifications by NY-NJ Port Authority.

Cherry Hill High School East Renovations

Township of Cherry Hill, Camden County, NJ

Geotechnical Project Manager for a project consisting of the alteration to the Auditorium including complete removal of existing brick veneer, complete demolition or artial demolition and repair/reconstruction of existing CMU infill. The project also includes grouting of existing CMUm walls with modifications to the existing foundations to accommodate additional loads. Duties included planning and supervising a geotechnical and foundation exploration program consisting of test borings and test pits.

Manual Arts, Gymnasium and Cafeteria Building

Borough of Haddonfield, Camden County, NJ

Geotechnical Project Manager for the rehabilitation of an existing two-story brick structure with a basement occupying a portion of its footprint and founded on conventional spread footings. Deep foundation elements were proposed to relieve the overstress on the existing foundations. Duties included developing a quasi-static model to estimate the settlement of the proposed and existing foundations under the addition of new fill required to raise grades.

Stevens Institute of Technology

City of Hoboken, Hudson County, NJ

Geotechnical Project Manager for a new development comprising the construction of two new four-story buildings. Both buildings will be connected through an elevated dual-level bridge at the second and third floor levels. Duties included planning and supervising a construction instrumentation monitoring program during the demolition of the existing buildings and site features occupying the site. The program consisted of vibration monitoring as well as deformation monitoring using optical surveying techniques.

HNA Training Facility

Palisades, Rockland County, NY

Geotechnical Project Manager for addition of a new five-story structure occupying a footprint of approximately 12,000 SF and a stormwater management facility. The new structure will connect to an existing structure through an elevated walkway at its third level. Duties included planning and supervising a soil exploration program and preparing a geotechnical recommendation report.

Columbia University's New Manhattanville Campus Expansion

New York City, NY

Geotechnical Engineer for the expansion of the Columbia campus within the an industrial/commercial area on the west side of Manhattan. Conducted performance-based finite element analyses of different sections at the proposed top-down construction within the site. Performed controlled inspection of borings, CPTs. Performed a subsurface investigation including controlled inspection of borings, piezometer installation, and rock coring. Performed falling head tests in boreholes.

New Valley Hospital Campus

Paramus, Bergen County, NJ

Geotechnical Project Manager for the new Valley Hospital Campus in Paramus, NJ. The campus comprises a new hospital complex, a new parking structure abuting the complex, and a new earth embankment supported laterally using both structures. Duties included planning and supervising the subsurface exploration program and preparing a three-volume geotechnical exploration report that addressed the liquefiable nature of the underlying granular soils. Duties also included providing geotechnical special inspections in accordance with NJ IBC 2018 including the supervision of the installation of ground-improvement, earthwork, as well as performing a full-scale load test on a sacrificial footing.

White Plains Institute for Rehab and Healthcare

City of White Plains, Westchester County, NY

Geotechnical Project Manager for A development consisting of a new five-story building with one underground garage parking level with access ramps resulting in a difference in grade with surrounding developments. Duties included planning and supervising the subsurface investigation program for the proposed permanent retaining structure at the east side of the property to support the difference in grade. Duties also included performing the structural and geotechnical design of the permanent soldier pile and lagging wall supporting the difference in grade. Provided construction support services including response to contractor RFIs and review of shop drawings submitted by contractors.

Franklin Lakes Sunrise Assisted Living

Borough of Franklin Lakes, NJ

Geotechnical Project Manager for the construction of a new senior living two-story building with one below-grade parking level occupying a footprint of approximately 40,100 square feet along with typical appurtenant site improvements including parking lots, driveways, lighting, and landscaped areas. Duties included planning and supervising the subsurface exploration program and preparing full geotechnical report. Duties also included developing recommendations to address the shallow groundwater table encountered within the area.

Bronx Center for Rehab and Health Care (1010 Underhill Avenue)

Bronx, NY

Geotechnical Project Manager for the construction of a new four-story addition to the existing building. The addition will have one basement level and will occupy a footprint of approximately 19,600 square feet. Duties included planning and supervising a subsurface exploration plan consisting of test borings and test pits and preparing a geotechnical report with foundation design recommendations and construction considerations for the project.

Williamsburg Center for Renal Dialysis (722 Myrtle Avenue)

Brooklyn, NY

Geotechnical Project Manager for the interior renovation of the existing three-story brick building with one basement level. The renovations included the construction of new elevator shafts connecting the basement and the upper floors. Duties included planning and supervising a subsurface exploration plan consisting of test borings and test pits and designing underpinning to support existing foundations during construction. Duties also included performing a pre-construction condition survey to record existing conditions prior to the installation of underpinning.

Mountain Lakes Sunrise Assisted Living

Borough of Mountain Lakes, Morris County, NJ

Geotechnical Project Manager for a new development involving the construction of a new three-story building occupying a footprint of 27,800 SF on an undeveloped densely wooded site with planned excavations exceeding 30 ft to reach final grades. Duties included planning and supervising the subsurface exploration program and preparing a full geotechnical report. Duties also included reviewing the design of the retaining walls and performing global stability analysis to assess their performance.

2 Memorial Drive

Borough of Lodi, Bergen County, NJ

Geotechnical Project Manager for the construction of a new single-story building occupying a footprint of 62,500 sq ft. along with appurtenant site improvements including landscaped areas, parking, and lighting. Duties included planning and supervising the subsurface exploration program and preparing full geotechnical report.

Watchtower Office Building

Wappinger's Falls, Dutchess County, NY

Geotechnical Project Manager for a development comprising the construction of a new two-story office building with a footprint of approximately 24,750 sq ft along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed buildings and the stormwater management facilities and preparing related geotechnical reports.

Middletown Subaru

Middletown, Orange County, NY

Geotechnical Project Manager for the construction of four new single-story buildings along with appurtenant site improvements including landscaped areas, parking, and lighting. Duties included planning and supervising the subsurface exploration program and preparing full geotechnical report.

15 Bradhurst Avenue

Town of Mount Pleasant, Westchester County, NY

Geotechnical Project Manager for proposed parking lot expansion with 156 new parking spaces along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

5101 Fashion Drive

Nanuet, Rockland County, NY

Geotechnical Project Manager for proposed renovations of the existing single-story retail building including the construction of a new loading dock as well as various interior renovations. Duties included planning and supervising a two-stage soil exploration program and preparing a geotechnical recommendation report.

Nanuet Pool Bath House

Town of Clarkstown, Rockland County, NY

Geotechnical Project Manager for the construction of a replacement to the existing bath house. The replacement bath house is a new bearing wall structure occupying a footprint of approximately 1,500 SF. The remaining portion of the site will be utilized as paved driveways and parking areas. Duties included planning and supervising a soil exploration program and preparing a geotechnical recommendation report.

The Residences at Sterling Point

Township of Franklin, Somerset County, NJ

Geotechnical Project Manager for a development comprising the construction of two new buildings each occupying a footprint of approximately 12,000 sq ft along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed buildings and the stormwater management facilities and preparing related geotechnical reports.

Proposed Starbucks

Paramus Borough, Bergen County, NJ

Geotechnical Project Manager for a new development involving the construction of a new 2,600 SF commercial building. The geotechnical report for the site indicated the presence of loose liquefiable granular soils at 20 ft to 25 ft below the ground surface. Duties included performing a peer review and developing an alternative ground modification scheme that resulted in more than $200K in savings. Duties also included providing oversight during construction.

Warwick Meadows

Village of Warwick, Orange County, NY

Geotechnical Project Manager for a development comprising the construction of 14 new buildings along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

Stonegate II

New Windsor, NY

Geotechnical Project Manager for a development comprising the construction of two new buildings along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed buildings and related stormwater management facilities and preparing related geotechnical reports.

Westchester Ridge Hill Development

Yonkers, NY

Geotechnical Engineer for the 1.2 million SF mixed-use development on an 85-acre site comprising the construction of multiple new buildings, roadways and retaining structures. Duties included performing a geotechnical exploration program for the retaining structures supporting Con-Ed property along the Western Alignment and controlled observation of the installation of caissons forming this structure. Duties also included review of shop drawing submittals for the T-wall retaining structures on site and analyzing construction instrumentation monitoring records of vertical and lateral movement of the retaining structures.

Hill Yorktown

Yorktown, Westchester County, NY

Geotechnical Project Manager for a development comprising the construction of 11 new buildings along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed buildings and the stormwater management facilities and preparing related geotechnical reports.

1791 E Main Street

Mohegan Lake, Westchester County, NY

Geotechnical Project Manager for the construction of a new single-story structure occupying a footprint of approximately 10,000 SF. Duties included planning and supervising a soil exploration program and preparing a geotechnical recommendation report.

Bayside Mixed-use Development

Marlboro Hamlet, Ulster County, NY

Geotechnical Project Manager for the construction of five new residential buildings and one commercial building with related roadways and parking lots on an undeveloped site that is densely wooded and underlain by shallow bedrock. Duties included providing construction support services for the contractor to determine the extent of rock excavation within the site.

2602 Route 17M

Town of Goshen, Orange County, NY

Geotechnical Project Manager for a development comprising the construction of a new warehouse structure occupying a footprint of approximately 300,000 square feet, along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

1081 Dolston Road

Town of Wawayanda, Orange County, NY

Geotechnical Project Manager for a development comprising the construction of a new warehouse structure occupying a footprint of approximately 241,000 square feet, along with typical appurtenant site improvements including parking lots, driveways, and landscaped areas and multiple stormwater management facilities. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

RDM Hamptonburgh

Town of Hamptonburgh, Orange County, NY

Geotechnical Project Manager for a development comprising the construction of three new warehouses with footprint areas ranging between 51,000 sq ft and 125,000 sq ft, along with typical appurtenant site improvements and a stormwater management facility. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical data reports as well as determining the depth to rock at various locations within the proposed site.

524 Route 303

Town of Orangetown, Rockland County, NY

Geotechnical Project Manager for a development comprising the construction of a new addition to the existing warehouse structure occupying a footprint of approximately 60,000 square feet, along with typical appurtenant site improvements and a stormwater management facility. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

Linen Choice Warehouses

Orangetown, Rockland County, NY

Geotechnical Project Manager for the construction of two new single-story warehouse buildings occupying footprints ranging from 59,000 SF to 103,000 SF and a stormwater management facility along with appurtenant site improvements including landscaped areas, parking, and lighting. Duties included planning and supervising the subsurface exploration program and preparing full geotechnical report.

Active Acquisitions

Township of Branchburg, Somerset County, NJ

Geotechnical Project Manager for a development comprising the construction of three new warehouses with footprint areas ranging between 95,000 sq ft and 350,000 sq ft, along with typical appurtenant site improvements and a stormwater management facility. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

38 Broadway Road

Township of South Brunswick, NJ

Geotechnical Project Manager for a development comprising the construction of a new addition to the existing warehouse structure occupying a footprint of approximately 37,000 square feet, along with typical appurtenant site improvements and a stormwater management facility. Duties included planning and supervising the subsurface exploration program for the proposed stormwater management facilities and preparing related geotechnical reports.

Turner Logistics Center

Piscataway Township, Middlesex County, NJ

Geotechnical Project Manager for the construction of new structures to protect the existing pipelines during and after the construction of the proposed railroad line that services the logistics center. Duties included planning and supervising a subsurface exploration program, preparing a geotechnical exploration report, designing the foundations for the proposed protection structures, and providing construction support. The proposed foundation system consisted of drilled-in mini-caissons socketed into bedrock.

2712 Hylan Boulevard

Staten Island Borough, New York City, NY

Geotechnical Project Manager for construction of two new 10-unit townhouse buildings, each occupying a footprint of approximately 3,767 SF. The remaining portion of the site will be utilized as paved driveways and parking areas. Duties included planning and supervising a soil exploration program and preparing a geotechnical recommendation report.

176 Pennington Avenue

City of Passaic, Passaic County, NJ

Geotechnical Project Manager for construction of two new 10-unit townhouse buildings, each occupying a footprint of approximately 5,600 SF. The remaining portion of the site will be utilized as paved driveways and parking areas. Duties included planning and supervising a soil exploration program and preparing a geotechnical recommendation report.

800 Centennial Avenue

Piscataway Township, Middlesex County, NJ

Geotechnical Project Manager for a new development comprising the construction of a new single-story industrial building occupying a footprint of 277,800 SF, along with typical appurtenant site improvements. Duties included planning and supervising soil exploration programs for foundation and stormwater management designs and preparing corresponding geotechnical reports.

1 Disposal Road

Borough of North Arlington, Bergen County, NJ

Geotechnical Project Manager for the expansion of an existing single-story warehouse building. Following the expansion, the development will occupy a total footprint of 493,000 SF. Duties included planning and supervising a multi-phase subsurface exploration program and preparing geotechnical report.

Matrix Distribution Center – 201 Old York Road

Bordentown Township, Burlington County, NJ

Geotechnical Project Manager for a new development involving a warehouse occupying approximately 551,000 SF with related driveways and parking areas. A wet basin is proposed to satisfy stormwater management requirements at the site. Duties included addressing NJDEP's request to evaluate the seepage through the clay liner covering the bottom and sides and evaluating its stability against uplift considering perched water conditions.

Canajoharie Reservoir Dam

Town of Ephratah, Fulton County, NY

Geotechnical Project Manager for an existing dam consisting of an earthen embankment and a concrete spillway structure. The earth embankment extends approximately 100 ft in length and about 30 ft in height. The spillway is a reinforced concrete structure with walls extending about 5 ft

above the earth embankment. The walls extend to form a L-shaped structure to increase the effective spillway length. Duties included performing stability analyses in accordance with NYS DEP requirements to assess the conditions of the embankment and the spillway structure. The stability analyses were performed using force equilibrium techniques. Prepared a geotechnical stability report summarizing the findings.

College Hill Open Reservoir Dam

City of Poughkeepsie, Dutchess County, NY

Geotechnical Project Manager for an existing dam consisting of an earthen embankment that surrounds the reservoir at College Hill Park. The earth embankment extends approximately 36 ft in height with a width of 100 ft. Duties included performing stability analyses in accordance with NYS DEP requirements to assess the conditions of the dam. The stability analyses were performed using force equilibrium techniques. Prepared a geotechnical stability report summarizing the findings.

Schwartz Estate Pond Dam 6

Village of Montebello, Rockland County, NY

Geotechnical Project Manager for an existing dam consisting of an earthen embankment separating Ponds 6 and 7. The earth embankment extends approximately 64 ft in length and connects to a concrete spillway at its end. Duties included planning a supervising a subsurface exploration program and performing stability analyses in accordance with NYS DEP requirements to assess the conditions of the dam. The stability analyses were performed using force equilibrium techniques. Prepared a geotechnical stability report summarizing the findings.

Heatherdell Road Embankment

Village of Ardsley, Westchester County, NY

Geotechnical Project Manager for assessing the erosion observed within the embankment supporting Heatherdell Road in the Village of Ardsley, NY. The embankment extends approximately 45 ft in height with the lower portion supported by an existing 15-ft high retaining wall. The erosion lead to the development of very steep slopes that impeded the safety of the roadway. Duties included performing a geotechnical health assessment of the embankment and developing mitigation schemes to address slope stability and drainage.

Lake Suzanne Dam

Town of Ramapo, Rockland County, NY

Geotechnical Project Manager for an existing dam consisting of an earthen embankment and a concrete spillway structure. The earth embankment extends approximately 50 ft in length and about 15 ft in height. The spillways is a reinforced concrete structure with walls extending about 5 ft above the earth embankment. The walls extend to form a c-shaped structure to increase the effective spillway length. Duties included performing stability analyses in accordance with NYS DEP requirements to assess the conditions of the dam. The stability analyses were performed using force equilibrium techniques. Prepared a geotechnical stability report summarizing the findings.

Chain O'Hills Road Embankment

Woodbridge Township, Middlesex County, NJ

Geotechnical Project Manager for assessing the excessive erosion that was observed at multiple locations within the embankment supporting Chain O'Hills Road. The erosion lead to the development of very steep slopes that impeded the safety of the roadway. Duties included performing a geotechnical health assessment of the embankment and developing mitigation schemes to address slope stability and drainage conditions. The assessment was performed by combining surface information collected by airborne LiDAR with subsurface information collected through subsurface explorations. Duties also included preparing a geotechnical assessment report as well as performing cost/benefit analyses for the developed mitigation schemes.

Salt Point Mill Pond Dam

Town of Pleasant Valley, Dutchess County, NY

Geotechnical Project Manager for an existing rock masonry/concrete dam extending approximately 70 ft in length and 14 ft in height. Height of water upstream of the dam is approximately 13.5 ft. The dam was constructed on a rock outcrop that extends on both of its sides. Duties included performing stability analyses in accordance with NYS DEP requirements to assess the conditions of the dam. The stability analyses were performed using force equilibrium techniques. Prepared a geotechnical stability report summarizing the findings.

Hunter Mountain Dam

Town of Hunter, Greene County, NY

Geotechnical Project Manager for an existing earth embankment dam extending more than 1,500 ft in length and 17 ft in height. The embankment separates a lake from a residential area located downstream of the dam. Water within the lake is controlled using a spillway structure consisting of a reinforced concrete spillway wall and reinforced concrete side walls. Duties included performing stability analyses in accordance with NYS DEP requirements to assess the conditions of the dam and the spillway structure. The stability analyses were performed using force and limit equilibrium techniques. Prepared a geotechnical stability report summarizing the findings.

NYC DEP Hillview Reservoir Seismic Design

City of Yonkers, Westchester County, NY

Geotechnical Engineer for design and construction of a cover for half of the reservoir that provides water to New York City. Developed spring constants required for soil-structure interaction and foundation design and modeling. Evaluated the stability and performance of the embankment slopes and embedded pile foundations using static and pseudo static analysis models in the computer soil structure interaction analysis code PLAXIS. Evaluated the design of the existing dividing wall and the additional buttress for dynamic stability and performance under seismic events by developing multiple soil-structure interaction models in the computer soil structure interaction analysis code FLAC.

USCOE Permanent Canal Closures and Pump Stations

City of New Orleans, LA

Geotechnical Project Manager for the construction of a temporary flood protection system consisting of earthen levees with stability berms and sheet piles at some locations was necessary to construct elements of the new pump stations. Performed a peer review of the design of the temporary flood protection system including evaluating the exit gradients and piping at the toe of the levees on the protected side. Factors of safety against slope stability were also evaluated for the proposed design.

Crane Valley Dam Seismic Retrofit

Madera County, CA

Geotechnical Engineer for an excavation on the downstream side was required to enhance the stability of the existing dam, which required the design of a dewatering system capable of handling the estimated flow rates. Performed seepage and stability analyses of the dam in presence of downstream excavated zones. SEEP/W was used to conduct the seepage analyses, first by calibrating the known piezometric levels corresponding to different lake levels, which would confirm the test data from permeability tests. Performed static and pseudostatic stability analyses to determine the effect of the drawdown on stability. Designed a dewatering system for the excavated zone.

Exxon-Mobile Buffalo Terminal OU-4

City of Buffalo, Erie County, NY

Geotechnical Engineer for a 1,200-foot-long riverbank located along the Buffalo River, adjacent to a hazardous waste site. Assisted in planning and overviewing the geotechnical subsurface investigation. Developed a laboratory testing program to determine strength and stiffness properties. Provided a remedial slope stabilization design based on static and pseudo-static slope stability analyses using limit equilibrium techniques. Performed trench stability analyses using limit equilibrium techniques.

Replacement of Structure No. WE-16 Myrtle Avenue Minor Bridge

Township of Westfield, Union County, NJ

Geotechnical Project Manager for the replacement of the existing culvert that carries Myrtle Avenue over Stream 10-25 Road River. The new culvert will have a clear span of 75 ft and a width of 9 ft. Duties included planning and supervising a subsurface exploration, developing foundation recommendations, and construction considerations.

NYS Route 303 Culvert Replacement

Orangeburg, Rockland County, NY

Geotechnical Project Manager for the replacement of the existing culvert that carries a private driveway over Sparkill Creek. Duties included planning and supervising a subsurface exploration, developing foundation recommendations, and construction considerations.

AMP Cannelton Hydroelectric Project

City of Cannelton, Perry County, IN

Geotechnical Engineer/ Manager for construction of a cofferdam and excavation to allow the installation of a hydroelectric power plant adjacent to the Cannelton Locks and Dam on the Ohio River. Reviewed the available geotechnical information and the selection of geotechnical design parameters. Performed static and pseudo-static stability analyses of the side slopes under various loading and construction conditions. Led the planning and design and of the Controlled Phased Removal scheme for the cofferdam structure.

Reconstruction of Bridge No. U-15 (Breza Road over Doctors Creek)

Township of Upper Freehold & Borough of Allentown, Monmouth County, NJ

Geotechnical Project Manager for the reconstruction of the existing bridge carrying Breza Road over Doctor's Creek. The new bridge will accommodate two lanes of traffic and will extend about 35 ft in width with a span of 50 ft. Duties included planning and supervising a subsurface exploration, developing foundation recommendations, and construction considerations.

Potts Mill Road Culvert Extension

Township of Florence, Burlington County, NJ

Geotechnical Project Manager for the extension of Culvert No. D22. The existing culvert is a single-span brick-masonry arch that is supported on stone masonry skewbacks. The structure is skewed 3 degrees from the centerline of the roadway. The overall structure extends 11 ft in length and has a roadway width between curbs of 26.5 ft that carries two traffic lanes (one in each direction). The waterway opening has a height of approximately 11 ft. Duties included planning and supervising a subsurface exploration program to develop recommendations for the design of a permanent earth retaining structures to support the proposed road widening. Duties also included developing the design of these permanent earth retaining structures and preparing a full drawing set for permitting and bidding to contractors.

Replacement of Lamerson Road Bridge (Structure No. 1401-273)

Township of Chester Township, Morris County, NJ

Geotechnical Project Manager for the replacement of the existing bridge over Herzog Brook. The proposed structure will have a clear span of 26 ft and will support a curb to curb roadway width of 18 ft. Duties included planning and supervising a subsurface exploration, developing foundation recommendations, and construction considerations.

Replacement of Morsetown Road Culvert (Structure No. 1600-312)

Township of West Milford, Passaic County, NJ

Geotechnical Project Manager for the replacement of the existing culvert over Tributary to West Brook. The proposed structure will have a clear span of 15 ft and will support a curb to curb roadway width of 25 ft. Duties included planning and supervising a subsurface exploration, developing foundation recommendations, and construction considerations.

Legoland NY – NYS Route 17 Exit 125 Highway Improvements

Town of Goshen, Orange County, NY

Geotechnical Project Manager for the construction of multiple structures and roadways to improve the traffic patterns and provide access to the proposed Legoland Theme Park. The structures included a new double-span bridge along with related roadway embankments, new culverts, new sign structures, and the extension of an existing culvert passing below NYS Route 17. The new roadway embankments will extend up to 25 ft in height with the sides supported using T-walls. Duties included developing and overseeing a $600K subsurface exploration program in accordance with NYSDOT Geotechnical Design Manual, developing foundation recommendations and performing performance analyses for the proposed structures as well as the design of a roadway embankment supported on soft soils. Duties also included providing engineering support during the construction phase of the project including, observation of pile installation, review of submittals, and review of contractors' change orders.

Replacement of Marshall Hill Road Culvert

West Milford Township, Passaic County, NJ

Geotechnical Project Manager for the replacement of the existing Marshal Hill Road Culvert over Tributary to Belchers Creek. The proposed structure will have a clear span of 12 ft and will support a curb to curb roadway width of 27 ft. The culvert will be supported on driven piles. Driven sheet piles will be employed to provide scour protection. Duties included providing construction support services during the construction phase of the project including review of RFIs, contractor submittals, and providing special inspections during the installation of the piles.

FDU Pedestrian Bridge Replacement

Hackensack/Teaneck, Bergen County, NJ

Geotechnical Project Manager for the replacement of the existing pedestrian bridge super-structure connecting the east and west sides of the FDU campus across the Hackensack River while re-utilizing the existing pile foundations and overlying substructures. Duties included planning and supervising a subsurface exploration and evaluating the axial and lateral capacities and performance of the existing piles concrete-filled pipe piles under static and seismic loading conditions. Duties also included preparing a geotechnical assessment report summarizing the findings.

Kosciuszko Bridge

Brooklyn & Queens Boroughs, New York City, NY

Geotechnical Engineer for replacement of the existing 1.1-mile-long Kosciuszko Bridge. Evaluated ground settlement resulting from placing roadway embankments for the new Brooklyn Connector using 3D models developed in PLAXIS 3D and Settle3D. Evaluated the performance of a barrier wall at the Laurel Hill site during the construction of nearby excavations using information provided by real-time a real-time instrumentation monitoring program consisting of inclinometers. Evaluated the lateral pile response of pile foundations. Preliminary design of MSE and GRES walls during the pre-bid phase.

Replacement of Ratzer Road Culvert (Structure No. 1600-367)

Township of Wayne, Passaic County, NJ

Geotechnical Project Manager for the replacement of the existing culvert over Tributary to Pompton River. The proposed structure will have a clear span of 15 ft and will support a curb to curb roadway width of 25 ft. Duties included planning and supervising a subsurface exploration, developing foundation recommendations, and construction considerations.

Goethals Bridge Replacement (I-287 over the Arthur Kill)

City of Elizabeth, NJ to Staten Island Borough, New York City, NY

As Geotechnical Engineer, led the design of a floating road system consisting of a mechanically stabilized earth embankment over very soft organic/peat stratum. The design was first performed using conventional methods. PLAXIS 3D was used to evaluate the performance and develop a maintenance plan that meets the project requirements. Overviewed the geotechnical design of piles supporting the temporary trestles on the project including estimating tip elevations, and lateral (L-Pile) and vertical capacities as well as pile driveability analyses using GRL-WEAP.

NYSTA/NYSDOT Tappan Zee Bridge (Governor Mario M. Cuomo Bridge)

Westchester County, NY

Project Geotechnical Engineer for the new twin cable-stayed bridge built to replace the old bridge over the Hudson River. Led the review of results of the subsurface exploration program consisting of Cone Penetration Tests and laboratory strength and stiffness tests to establish soil design parameters required for the design of the pile foundations in accordance with AASHTO LRFD. Performed comprehensive interpretation analyses of the axial and lateral pile load tests including analyses of strain gauge and inclinometer results and prepared the interpretive report.

Tiber Creek Sewer Construction Impact Evaluation - Virginia Avenue Tunnel

Washington, D.C.

Geotechnical Engineer for evaluation of the performance of existing underground Tiber Creek sewer during and after the construction of the new two-track Virginia Avenue Tunnel Duties included evaluating the performance of the sewer and evaluating construction impact using advanced 3D finite element analyses that capture various construction stages and their effect on the sewer.

MTA ESA CQ31

New York, NY

As Geotechnical Engineer, provided geotechnical and foundation engineering services for the East Side Access Project's second largest tunneling project to construct four short and shallow tunnels, three reception pits, three emergency access and vent shafts, and the completion of a previously started open-cut excavation. Performed static slope stability analyses and deformation analysis for various structures and their effect on existing structures.

DSNY North Shore Marine Transfer Station

Flushing, Queens Borough, New York City, NY

Geotechnical Engineer for construction of a new fender system on the marine side of the Marine Transfer Station. Duties included developing a timber pile design establishing pile driving criteria through performing drivability analyses. Duties also included supervising Special Inspections including the installation of the timber pile driving and providing support during construction.

Linden Boulevard Crossing

Brooklyn, NY

Geotechnical Project Manager for the construction of a pipe crossing below Linden Boulevard using HDD techniques. Duties included providing construction instrumentation monitoring services including deformation monitoring using automated motorized total station (AMTS) and vibration monitoring. The systems consisted of a solar-powered wireless connected equipment with web-based access to select project personnel.

The Gables

Mount Laurel, Burlington County, NJ

Geotechnical Project Manager for the construction of a pipe crossing using HDD techniques. Duties included developing the design of support of excavation (SOE) systems for the launch and receiving pits. A sliding rail system was utilized for the launch pit which extended 34 ft in length, 20 ft in width and extended about 20 ft in depth. A 3-sided trench box system was utilized to the support the receiving pit to allow access to an existing manhole.

Key Capture Energy (KCE) TX7, TX8, TX9 Projects

Pecos, Reeves County, TX

Geotechnical Project Manager for the construction of a new battery storage facility occupying a footprint of approximately 24,000 square feet and comprising eight new containers as well as four transformer/inverter assemblies. Duties including planning and overseeing a subsurface exploration program and an in-situ testing program to determine soil electrical resistivity and preparing related exploration reports.

Key Capture Energy (KCE) TX2 Project

Port Lavaca, Calhoun County, TX

Geotechnical Project Manager for the construction of a new battery storage facility occupying a footprint of approximately 13,500 square feet and comprising eight new containers as well as four transformer/inverter assemblies. Duties including planning and overseeing a subsurface exploration program and an in-situ testing program to determine soil electrical resistivity, and preparing related exploration reports addressing the expansive and corrosive nature of the site soils. Duties also including performing the design of an economical Geogrid-reinforced Earth Structure as an alternative to the traditional drilled shafts foundations.

AT&T New Co Fitout - 1441 South Ave

Staten Island, NY

Geotechnical Project Manager for the construction of a new underground storage tank, mechanical pipes and electrical ducts. Duties included the design of support of excavation (SOE) systems to allow for the installation of the proposed equipment in accordance with NYC DOB and building code requirements.

Forefront Power Photovoltaic Solar Development – Varano & Urbanski Sites

Goshen, Orange County, NY

Geotechnical Project Manager for the construction of new 5MW Photovoltaic solar power facilities including solar panel arrays, switch gears, transformers, and inverters. Duties including planning and overseeing a subsurface exploration program and an in-situ testing program to determine soil electrical resistivity and preparing related exploration reports.

Hampton Roads Sanitation District Army Base Treatment Plant

Norfolk, VA

Geotechnical Engineer for renovations proposed to enhance the performance of the existing treatment plant. Duties included performing a geotechnical data analyses and parameter evaluation to assess the potential impact of the installation of driven piles on existing structures within the zone of influence of the piles. Settlement was evaluated at strategic locations to quantify this impact and optimize pile driving activities.

KCE NY3 Battery Storage Facility

Town of Ramapo, Rockland County, NY

Geotechnical Project Manager for the construction of a new battery storage facility including nine new containers each occupying a planar area of 40 ft by 8 ft and about 9.5 ft high. The facility will occupy an overall footprint of about 16,686 sq ft. Duties included planning and supervising a geotechnical exploration program to develop foundation recommendations and construction considerations. The geotechnical exploration program consisted of test borings and in-situ electric soil resistivity testing using the Wenner 4-probe method.

South Texas Nuclear Power Plant Units 3 and 4

Matagorda County, TX

Geotechnical Engineer for the construction of two new nuclear power units to increase the capacity of the existing facility. The proposed site was characterized by the presence of challenging soils comprising expansive clays with degradable strength. Duties included performing an evaluation of available geotechnical information and establishing geotechnical design parameters for the design of the support of excavation for the proposed 90 ft cut within site soils. Duties also included performing static and pseudo-static global stability and deformation-based analysis of the different excavation support structures during different stages of construction.

New Jersey American Water (NJAW) Howell Operations Center

Township of Howell, Monmouth County, NJ

Geotechnical Project Manager for the construction of a new two-story 18,000 SF office building, a new single-story 60,000 SF garage/meter shop building, and new stormwater management facilities. Duties included planning and supervising a geotechnical exploration program to develop foundation recommendations and construction considerations.

Avangrid Fraser Substation

Town of Fraser, Rockland County, NY

Geotechnical Project Manager for the construction of a new substation facility including a stormwater management facility. Duties included planning and supervising an exploration program to determine the infiltration characteristics of on-site soils in accordance with NYS Stormwater Management Design Manual.

Florida HDD Crossings

Hillsborough and Hernando Counties, FL

As Geotechnical Engineer, installation of new pipelines at different locations within Hillsborough and Hernando Counties using Horizontal Directional Drilling (HDD) techniques. Performed 2D settlement analysis to determine the width of the trough caused by the construction of the new pipelines and its effect on surrounding buildings.

NYCEDC Pier 79

Manhattan, NY

Geotechnical Project Manager for the installation of new fender piles to replace the existing timber fender pile systems. The new fender piles consisted of 120-ft steel monotube piles installed as one segment using a barge floating on the Hudson River. Duties included providing and overseeing controlled construction observation and special inspections during construction.

Global Terminal Rail Mounted Gantry (RMG) Transtainer Expansion

City of Jersey City, Hudson County, NJ

Geotechnical Engineer for the expansion of the existing terminal required providing support for large Rubber-Tired Gantries (RTGs) with restricted tolerance in differential settlement along the rails. Performed quasi-static settlement analyses to estimate the settlement of different strata due to loads from the placed containers at the site.

Port Freeport

City of Freeport, Brazoria County, TX

As Geotechnical Engineer, performed static slope stability analyses of the wharf structure. Performed consolidation settlement analyses required to evaluate the performance of the wharf. Performed analyses to assess the design of different structural elements. Assisted in developing and calibrating the 3D finite element model developed for performance studies.

Coney Island Infrastructure Project

Brooklyn Borough, New York City, NY

Geotechnical Project Manager for improving the infrastructure of Coney Island to transform it into a year-round attraction. Project included installation of new sewers and raising street grades. Planned and supervised the geotechnical exploration including drilling of 35 borings. Developed bid drawing set for the proposed support of fill systems required to raise street grades. Developed a construction instrumentation monitoring program consisting of vibration and deformation monitoring for nearby historic buildings as well as other sensitive structures.

Affiliations & Memberships

American Society of Civil Engineers, Member

ASCE Geotechnical Institute, Member

United States Association for Computational Mechanics (USACM), Member

Network for Earthquake Engineering Simulation (NEES), Member

Egyptian Engineering Syndicate

Francisco Sanchez-Dominici, PE

Assistant Project Manager | Geotechnical Services

Mr. Sanchez is a geotechnical engineer of the firm with more than 6 years of experience in geotechnical and foundation engineering. He currently serves as Assistant Project Manager and assists with our geotechnical services in the NYC Metropolitan area, New York State, New Jersey, New England, Ohio, Connecticut, Maryland as well as Texas. Mr. Sanchez's experience includes overseeing construction inspection projects, planning geotechnical subsurface explorations and soil laboratory and field-testing programs, preparation and review of engineering proposals, engineering calculations, geotechnical recommendation reports, specifications, design details, construction instrumentation monitoring, and construction documents for several types of projects.

Mr. Sanchez has extensive experience in the analyses, design, and performance evaluation of geotechnical structures using state-of-the-practice numerical modeling tools including shallow and deep foundations, excavation support systems, dams, and ground improvement techniques. He is also experienced in multi-scale and multi-physics modeling of geotechnical systems.

Mr. Sanchez also has extensive experience during the construction phase of projects, including review of shop drawings, field overview, and progress documentation. He is experienced with construction monitoring including conducting pre- and post-construction condition surveys and planning real-time deformation and vibration monitoring programs as well as assessing related records including impact on nearby adjacent structures and evaluation of full-scale instrumented load tests. He has also performed value engineering and peer review of multiple projects.

Areas of Expertise

- Geotechnical Engineering
- Non-Intrusive Subsurface Characterization
- Slope Stabilization
- Dam Engineering
- Foundation Engineering
- SOE & Retaining Structures
- Earthquake Engineering
- Ground Improvement
- Construction Instrumentation Monitoring and Condition Surveys
- Construction Observation & Special Inspections
- Geotechnical Forensics

Education

B.S. Civil Engineering,
NJIT, 2019

Professional Registrations

Professional Engineer (PE)
New Jersey, Connecticut, Maryland

Professional Certifications

OSHA 10 Hr Construction Safety

OSHA 40 Hr HAZWOPER

Affiliations & Memberships

American Society of Civil Engineers, Member

Key Projects

Hoboken Seawall Reconstruction

City of Hoboken, Hudson County, NJ

Assistant Project Manager for the construction of approximately 1,000 feet of a new seawall along the shoreline in Hoboken, New Jersey. Duties included managing inspection staff and budget on the project, ensuring ongoing compliance with project documents, and communicating effectively with the project team about field conditions.

National Coast Guard Museum

Town of New London, New London County, CT

Geotechnical Project Engineer for the construction of a new six story building occupying a footprint of approximately 19,000 sq ft. Duties included conducting construction observations during the construction of the building micropile foundation and coordination with the general contractor for issues encountered during construction.

65-75 Dupont Street

Borough of Brooklyn, City & State of New York

Geotechnical Project Engineer for design and observation of support of excavation construction for the proposed project. The project includes the construction of 7 to 8 story residential buildings with major site environmental cleanup required at the site. The design of the support of excavation included soil-mix walls and sheet pile walls with bracing such as raker & heel block systems and tiebacks. In addition, interior support of excavation consisted of sheetpile walls with tiebacks was required at the site to allow phasing requirements for environmental efforts.

300 East Main Street

Borough of South Bound Brook, Somerset County, New Jersey

Field Geotechnical Engineer for observation of micropile foundation elements for the proposed multi-story residential development. Duties included ensuring compliance with project documents for means and methods and foundation elements, and periodically reporting observations.

499 Summit Avenue

City of Jersey City, Hudson County, NJ

Geotechnical Project Engineer for design and inspection of support of excavation for the proposed project. The project includes the construction of a 53-story mixed-use tower adjacent to a 40 ft slope down toward PATH railroad tracks and tunnel. Duties included designing and observation of SOE elements which conform to spacing requirements for the proposed building and offset requirements by Port Authority of New York and New Jersey.

12 5th Avenue

Borough of Manhattan, City & State of New York

Geotechnical Project Engineer for inspection of excavation support for the proposed project. The project includes the construction of a 19-story residential building with two below grade levels. Duties included design and supervision of the construction of the support of excavation system. The design included a secant pile wall system with beams in every other pile embedded into bed rock surrounding the site. The walls had multiples tiers of bracing and cross bracing and also provided support to the surrounding buildings.

Palisades Center

Hamlet of West Nyack, Town of Clarkstown, Rockland County, NY

Geotechnical Project Engineer for the restoration of the garage floor pavement of the existing shopping mall. The project comprised assessing the condition of the existing pavement and performing a geotechnical exploration to determine the cause of distress and provide recommendations for mitigation. Duties included planning and supervising the subsurface exploration program and preparing geotechnical assessment report to include the design of deep foundation elements to support a new structural slab.

Replacement of A38 Bridge Replacement on County Route 54

Middletown Township, Monmouth County, NJ

Geotechnical Project Engineer for the construction of a replacement bridge with an overall length of 117 ft and out-to-out width of 37 ft. Duties included leading the geotechnical exploration and providing recommendations for deep foundations and designing permanent earth retaining structures at the approaches of the proposed bridge to support the roadway. The retaining wall consisted of combined wall systems which included sheetpiles and O-piles.

808 Pavonia

City of Jersey City, Hudson County, New Jersey

Geotechnical Project Engineer for proposed 55 and 49-story towers in Jersey City. Duties included leading supplemental geotechnical exploration and design of support of excavation. The project included a multi-tiered braces tangent pile wall and soldier pile and lagging wall with tieback supports. The maximum height of the proposed wall was 45 ft.

Verizon Warehouse

Town of Tuckahoe, Westchester County, NY

Geotechnical Project Engineer for the rehabilitation of an existing commercial warehouse and associated parking occupying a footprint of approximately 90,000 sq ft. Duties included planning and supervising a subsurface exploration program consisting of test borings and preparing a geotechnical exploration report addressing the cause of excessive settlement within the pavement and addressing the deep fill layers encountered below the existing warehouse, as well as pavement design. Additional duties included design of slope stabilization systems and recommendations for repair of walls in distress.

Bilal A. Awan, EIT

Engineering Designer | Bridges & Structures

Bilal A. Awan is a Structural Engineer with a background in civil, geotechnical, coastal, and structural design. His experience includes a strong focus on coastal and waterfront engineering projects, such as boardwalks, seawalls, and bulkheads. He has worked on public works projects and is proficient in designing with various materials, including timber for boardwalks and steel sheet pile for bulkheads. His design experience extends to marine structures, retaining walls, dam inspections, and culverts. Awan has also worked on unique projects, such as designing theme park ride foundations and performing telecommunication mount analyses using software like STAAD and Risa 3D. He holds an Engineer in Training (EIT) certification from New Jersey and a BS in Civil & Environmental Engineering from Rutgers University.

Education

BS Civil & Environmental Engineering, Rutgers University, 2023

MS Structural Engineering, Rutgers University, (2026)

Professional Registrations

Engineer in Training (EIT), New Jersey

OSHA 10-HR Construction Safety

Affiliations & Memberships

American Society of Civil Engineers – Central Jersey Branch – Social Chair

North American Society for Trenchless Technology

Key Projects

Coastal Engineering

City of Cape May Seawall Beachfront Promenade Preservation/Widening

City of Cape May, Cape May County, NJ

Engineering Designer for the installation of a new promenade/seawall cap running along the ocean side, substantially increasing storm resilience, and safeguarding the city from the impacts of coastal flooding events; and widening of the promenade between Jackson Street and 1st Avenue. This project enhances storm protection which is crucial for ensuring the long-term structural integrity and resilience of the Cape May Promenade. It aims to enhance the promenade's functionality, providing increased protection for the historic City of Cape May against potential damage from sea level rise, storm surges, and coastal flooding.

Wildwood Boardwalk Reconstruction

City of Wildwood, Cape May County, NJ

Engineering Designer for the reconstruction of the City's historic boardwalk, which was originally built in 1928. Services included structural evaluation of the 90-year-old concrete substructure; rehabilitation, retrofit and reuse of the substructure with concrete repairs, new beams and a protective coating; then complete reconstruction of the timber framing and decking using Cumaru Brazilian hardwood decking. Project also includes addition of ADA ramps, pavilions and other improvements.

Wildwood Boardwalk Master Plan / Rehabilitation

City of Wildwood, Cape May County, NJ

Engineering Designer responsible for developing a detailed Master Plan for the future look and connectivity of the Wildwood Boardwalk, the beach and street end access areas. We also developed a rehabilitation plan that included replacing the troublesome portion of concrete, restoring the remainder of the concrete substructure with structural spall and crack repairs, and coating the entire concrete substructure with an elastomeric protective coating giving the boardwalk a uniform and new appearance that should last another 90 years. Conducted site condition assessments and created plans for reconstruction, designing super and substructure of boardwalk. Included creating estimates and specifications. Coordinating with contractors on submittals.

Rehabilitation of Frank Sinatra Drive Seawall

City of Hoboken, Hudson County, NJ

Engineering Designer responsible for the design and plan creation of the Frank Sinatra Drive Seawall and roadway. This included designing the roadway, steel bulkhead, pile cap, and concrete plank components. Responsibilities also involved creating plans, estimating quantities, and compiling specifications. The role required coordinating with contractors on RFIs and submittals.

Birch Bark Drive Bulkhead Replacement

Township of Brick, Ocean County, NJ

Engineering Designer responsible for the design and plan creation of the Birch Bark Drive bulkhead. This included designing the roadway and a new steel bulkhead, as well as the demolition of the existing timber bulkhead and the creation of a concrete pile cap. The role involved creating plans, estimating quantities, and compiling specifications.

Telecommunications

Telecommunications Mount Analysis

Various Locations

Engineering Designer responsible for analyzing proposed and modified telecom tower mounts using RISA3D. This work included creating reports for clients on passing and failure rates. The role involved completing over 15 projects with a fast turnaround rate.

Dam Engineering

Darlington Park Swimming Pool Platform Inspection

City of Mahwah, Bergen County, NJ

Engineering Designer responsible for inspecting the Darlington Park swimming platform and spillover dam. The role included designing repairs and creating the necessary drawings.

City of New York Parks and Recreation Projects

Uncle Vito F. Maranzano Glendale Playground (Q290-123M)

Borough of Queens, Queens County, NY

Engineering Designer, with responsibilities including the design of new stormwater systems, plumbing, security lighting, and structural concrete repairs. A key role was played in the playground reconstruction, which involved installing upgraded stormwater systems, new security lighting, and a new water supply system. The role also included creating specifications and estimates.

Weeping Beech Park (Q022-123M)

Borough of Queens, Queens County, NY

Engineering Designer, responsible for designing drainage, water supply, electrical, and structural elements of the park. The role involved coordinating with the civil engineering team for SWPPP applications and managing various subconsultants, such as surveyors, geotechnical engineers, and HAZMAT specialists. The position also required coordination with Con Edison and the NYC DOT Lighting Division. The designer was also responsible for creating specifications and estimates.

St. Catherine's Park (M079-123M)

Borough of Manhattan, New York County, NY

Engineering Designer, responsible for designing drainage, water supply, electrical, and structural elements of the park. The project scope involved the replacement and upgrade of various park components, including pavements, curbs, play equipment, sports courts, and security lighting. All designs were created to meet modern safety and accessibility standards. The role also included creating specifications and estimates.

Walker Park (R015-124M)

Borough of Staten Island, Richmond County, NY

Engineering Designer, responsible for designing drainage, water supply, electrical, and structural elements of the park. The project scope involved the replacement and upgrade of pavements, curbs, play equipment, sports courts, and security lighting. All designs were created to meet modern safety and accessibility standards. The role also included creating specifications and estimates.

Holcombe Rucker Park (M216-124M)

Borough of Manhattan, New York County, NY

Engineering Designer, responsible for designing drainage, water supply, electrical, and structural elements for a project that replaced and upgraded pavements, curbs, play equipment, sports courts, and security lighting. All designs were created to meet modern safety and accessibility standards, and the role also included creating specifications and estimates.

Bridge Engineering

Tonche Association Pedestrian Bridge

Town of Woodstock, Ulster County, NY

Engineering Designer, responsible for designing a pedestrian bridge over a dam spillway. The role included steel detailing, designing bridge girders, and creating concrete footings. Plans were created using AutoCAD.

Earth Retaining Structures / Slope Stabilization

Glenside Avenue Park

Union County, NJ

Engineering Designer, responsible for designing retaining walls and culverts for proposed pathways in a park. This work included concrete and steel design, structural detailing, and the use of AutoCAD and EnerCalc. The role also involved coordinating with civil engineers to create a complete plan set, as well as creating specifications and estimates.

Kay Farmersville LLC

Northampton County, PA

Engineering Designer, responsible for designing retaining walls and culverts for proposed roadways in a field. This work included concrete and steel design, detailing of structures, and the use of AutoCAD and EnerCalc. The role involved heavy steel reinforcement and concrete detailing, as well as coordinating with civil engineers to create a complete plan set. Specifications and estimates were also created.

Buildings - Structural Engineering

Imagination Station Site Improvements

City of Toledo, OH

Structural Engineer responsible for designing and creating plans for existing stairs in a science museum. The project involved concrete stair treads and risers with existing steel stair stringers.

Theme Park Projects

Hurricane Harbor Ride and Slide Repairs

Township of Jackson, Ocean County, NJ

Structural Engineer responsible for inspecting existing water park rides, designing structural repairs, and creating repair plans. This work involved timber stairs, girders, steel beams, and general rehabilitation.