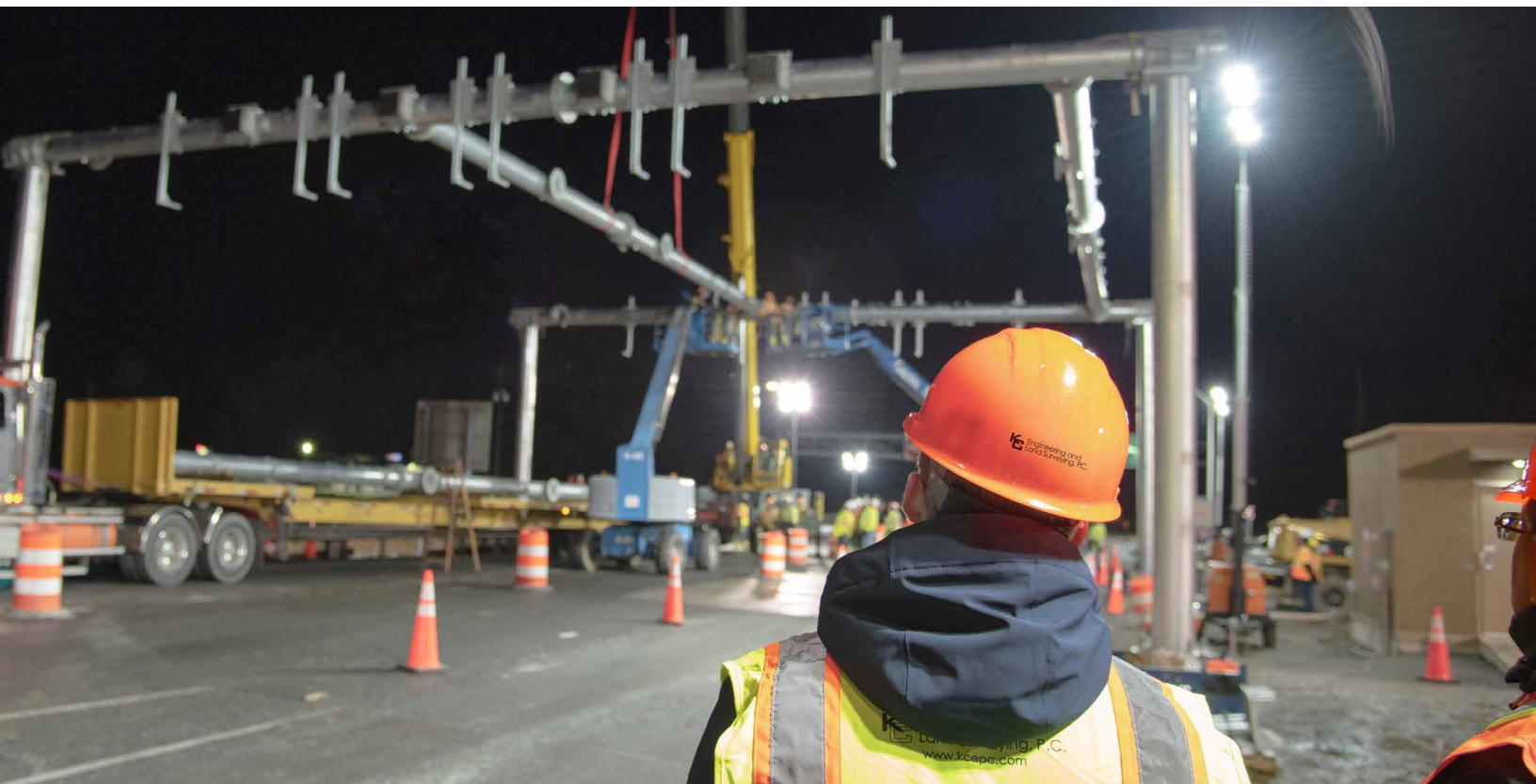


COMPANY BROCHURE

Knowledge. Commitment. Excellence.



KC ENGINEERING AND LAND SURVEYING, P.C.

IS A DIVERSIFIED, MULTIDISCIPLINED CONSULTING ENGINEERING FIRM.

Since our founding, KC Engineering and Land Surveying, P.C. (KC) has kept pace with the rapidly changing technological advancements in the industry. We are able to provide our public and private sector clients with a comprehensive range of professional services. The corporate headquarters of the firm is located in New York City, with regional offices located in Newburgh and Albany, NY. KC is a certified Minority Business Enterprise (MBE) and ISO 9001:2015 certified.

KC offers comprehensive engineering and surveying services, including civil engineering, structural engineering, geotechnical engineering, construction inspection, land surveying, and all related services. Additionally, KC has highly-qualified personnel with experience completing design-build projects. KC is committed to providing exceptional and personalized service to each client on every project, and we do so efficiently, effectively, and within budget.

KC's philosophy of maintaining quality control at every level shows in our impeccable safety record, with no claims or litigation. KC is constantly striving to give our clients more effective control over complex construction, delivering high-quality finished projects on time and within budget. We do it by managing people, quality, costs, and time in a safe, secure construction environment, and we see every project from concept, initialization, and design to bidding construction and final closeout.

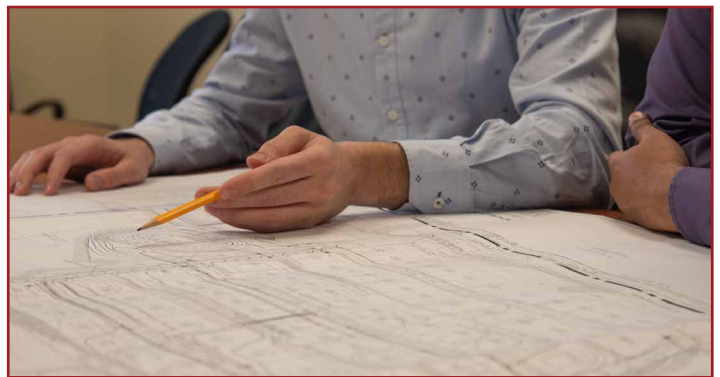


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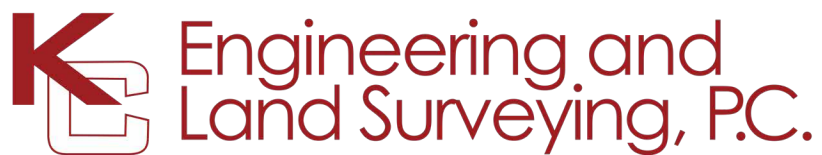
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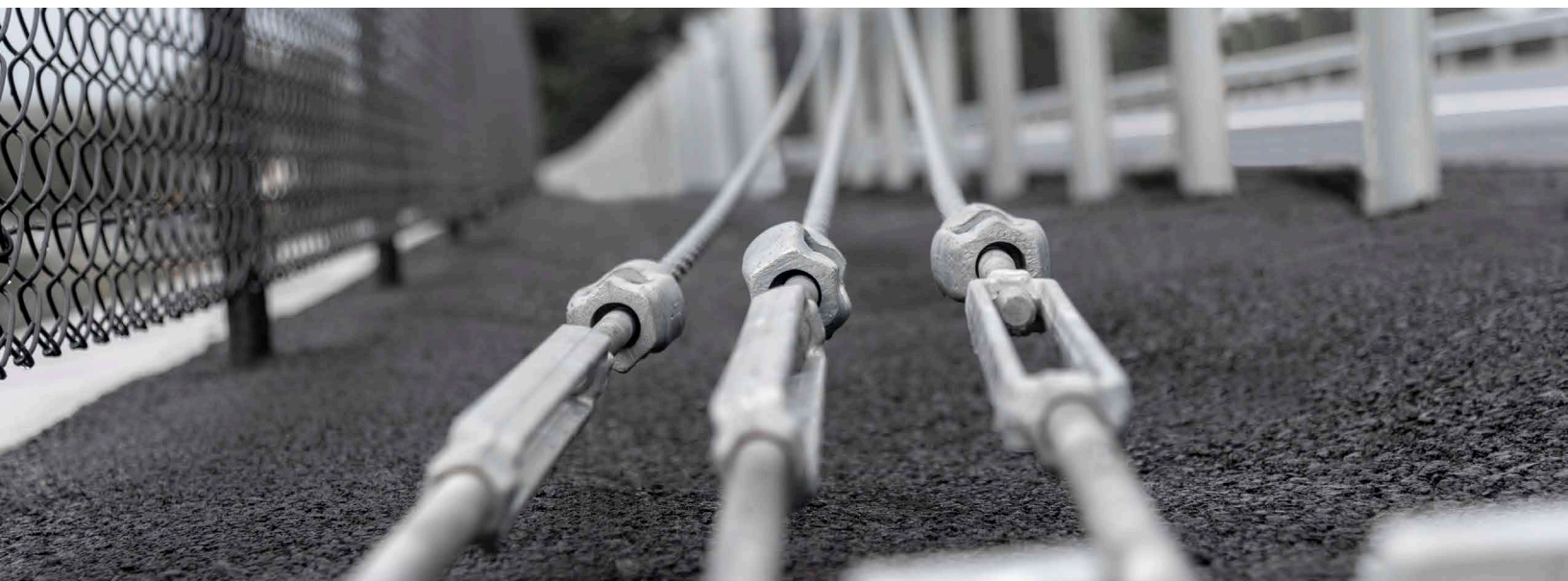
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STRUCTURAL ENGINEERING



CIVIL ENGINEERING

Responsibility to Community.



CIVIL ENGINEERING

At KC Engineering and Land Surveying, P.C. (KC), our interdisciplinary team ensures responsible solutions tailored to planning challenges and specific clients' needs.

Our civil engineering services include site grading, drainage, and earthwork; pavement evaluation and design; traffic engineering; soil erosion and sediment control (E&SC); signage and striping plans; drainage structure design; utilities engineering, including water and sewer systems; stormwater management; roadway and site lighting; civil site plans, subdivisions, and site layouts; parking lot design; and permitting, cost estimation, and specifications.

KC closely adheres to local, state, and federal standards, as well as all applicable international and state building codes. Our civil engineering group provides these services for roads and highway projects, as well as residential, commercial, industrial, institutional, and mixed-use projects.

KC's civil engineering group brings together many talented engineers ready to develop drainage plans and design sewer and stormwater systems. KC fully understands the New York State Department of Environmental Conservation's (NYSDEC's) stormwater treatment and compliance requirements and has prepared Stormwater Pollution Prevention Plans (SWPPPs) for projects of all sizes. Our solutions pursue the lowest impact and operating cost while meeting permit requirements. We also provide construction phase stormwater management compliance inspections and recommendations to maintain permit compliance in dynamic construction environments.

KC's traffic engineering experience includes the formulation and presentation of traffic impact statements, operational analysis, level-of-service (LOS) calculations, signal design and operational assessment, safety studies, implementation, and maintenance. Our engineers effectively and efficiently plan, design, and oversee intersection improvements, parking facilities, maintenance and protection of traffic plans, highways, driveways, roadways, utility relocations, site lighting, curbs, and sidewalks so that the outcomes not only provide for smooth transitions, but also for economically-functional results.

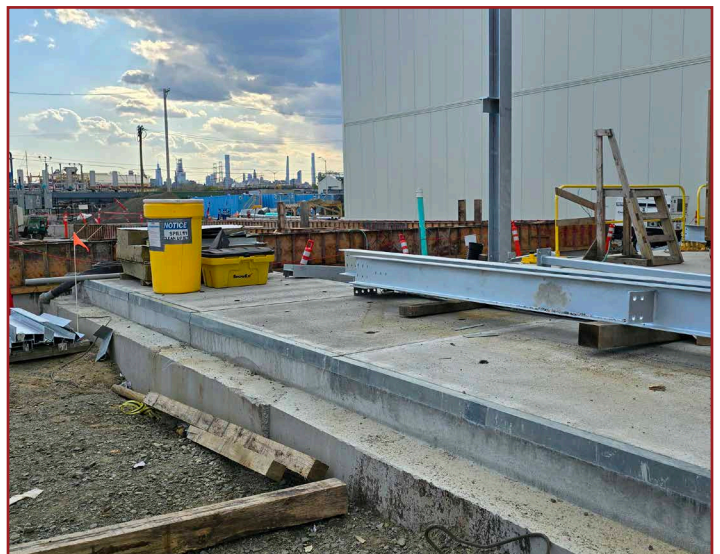
Services

- Code Compliance
- Community Liaising
- Drainage & Sewer System Design
- Environmental Engineering
- Geotechnical Engineering
- Highway Design
- Intersection Improvements
- Lighting Design (Security / Site / Street / Tunnel)
- Permitting Support
- Parking Facilities Design
- Roadway Design
- Traffic Engineering
- Site Development
- Stormwater Management
- Utility Design & Relocation
- Value Engineering Support
- Wastewater Treatment
- Water Supply



Champlain Hudson Power Express (CHPE), Various Locations, NY |

The CHPE is an innovative renewable power transmission project for the delivery of low-cost renewable energy to New York State, which includes the installation of approximately 339 miles of underground and underwater transmission line from the United States-Canada border to Astoria, Queens, NY. For the upland cable installation, KC is preparing the utility plan and profile, site access road plans, the maintenance and protection of traffic (MPT) plans, E&SC plans, a SWPPP, and drainage plans. For the Astoria converter station, KC is performing all civil and drainage design, including development of the site plan, site grading, and 3D modeling; vehicle turning analysis; and preparation of plans and specifications to meet all local and national code requirements. The project involves close coordination with many stakeholders, including municipalities, park lands, utility companies, and railroads.



NYSDOT Contract D031304-07: NY-27 at Barnes Road Reconstruction, Brookhaven, NY

| This project constructed a new diamond interchange, including ramps and ancillary facilities, to improve safety and mobility. Work included development of traffic counts, forecast data, and project scoping, design alternatives, and capacity and accident analyses. KC assisted with the Project Scoping Report / Final Design Report (PSR / FDR) by designing speed memos and performing flood plain, crash, and pavement analyses. KC also provided surveying services, including right-of-way (ROW) mapping research and development of a ROW base map.

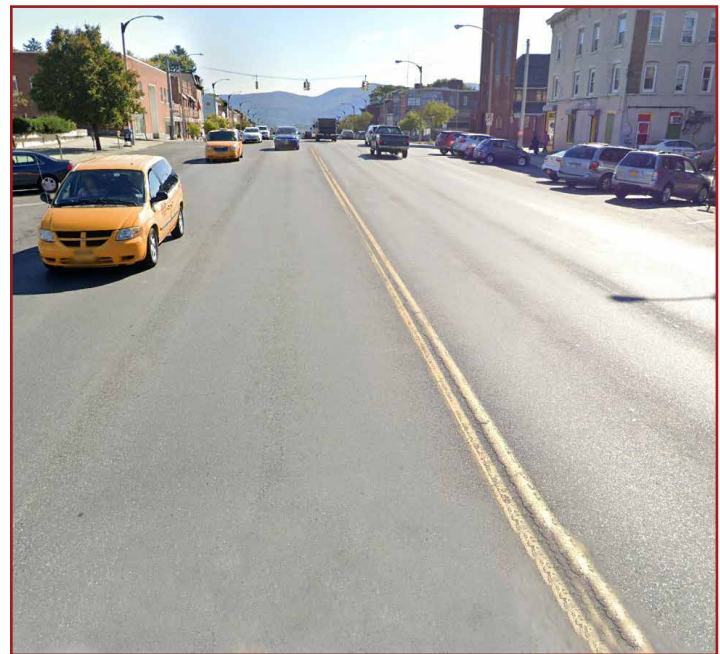


The KC civil engineering group consists of a team of skilled professionals dedicated to providing responsive and quality service to our clients.

NYS DOT Contract D037603: Widening of the Van Wyck Expressway (VWE) from the Kew Gardens Interchange (KGI) to John F. Kennedy (JFK) Airport, New York, NY | The project scope included widening of the VWE to add a fourth lane from the KGI to JFK International Airport, which involved evaluation of the proposed project on 21 bridges and evaluation of on- / off-ramp operations. KC provided traffic, utility, and structural engineering and design. KC modified proposed profiles to meet minimum vertical clearance requirements and design standards. Additionally, KC coordinated and oversaw the development of the WZTC schemes for the VWE over North Conduit Avenue, Belt Parkway, and South Conduit Avenue to Federal Circle.



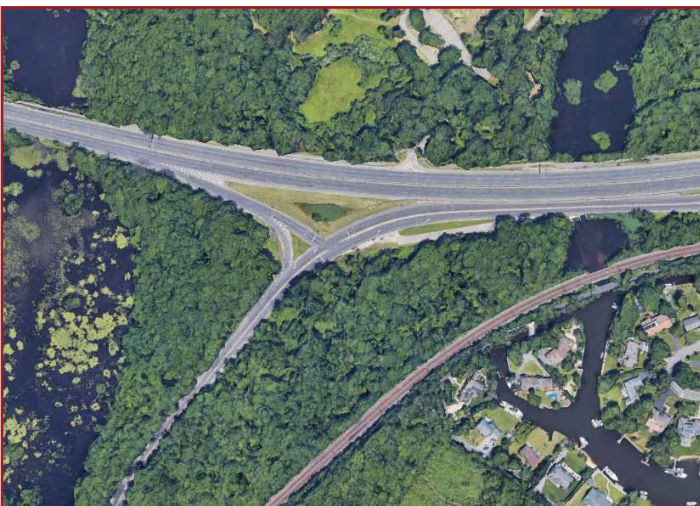
Contract 8005.26: Broadway Pedestrian and Traffic Signal Improvements, Newburgh, NY | The project scope included the identification and reconstruction of non-standard features within and adjacent to the side street intersections along Broadway between Chambers Street and Robinson Avenue in Newburgh, NY. The scope of work encompassed pedestrian curb ramps and traffic signals along Broadway, including several mid-block crossings, which were determined to be non-compliant with Americans with Disabilities Act (ADA) standards. KC was responsible for providing data collection and analysis services, including design survey and mapping, determination of existing conditions, capacity analysis, and traffic counts; preliminary and detailed design, including development of design alternatives, Draft and Final Design Approval Documents (DAD), Advance Detail Plans (ADP), cost estimates, and contract documents; permitting, including State Environmental Quality Review Act (SEQRA) determination; and utility coordination.





Contract 8761.74: Route 9D Pedestrian Improvements, Wappingers Falls, NY | KC prepared a preliminary Engineer's Report to assist the Village of Wappingers Falls with receiving this NYSDOT Transportation Alternatives Program (TAP)-funded project, which featured safety enhancements for pedestrian and multimodal traffic users on Route 9D. The project included traffic calming features, ROW surveying and mapping, utility coordination, ADA-compliant

sidewalk improvements and crosswalks, and new pedestrian / street lighting. New LED lighting fixtures were selected to provide pedestrian scale lighting that also allowed the Village to phase out existing and costly cobra head lighting above. The project included installation of several Rectangular Rapid Flashing Beacons (RRFBs) to enhance pedestrian safety at crosswalks.

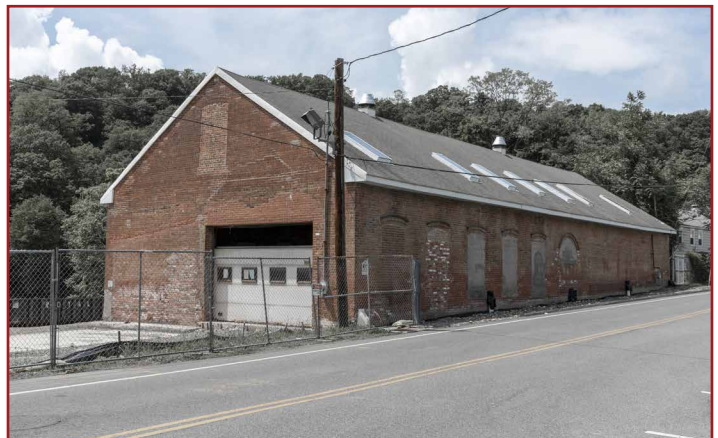


NYSDOT Contract D031472-04: Oakdale Merge Planning and Feasibility Study, Islip, NY | The project scope included the identification, evaluation, and documentation of existing conditions and deficiencies along 3 miles of the Sunrise Highway (NY-27) Oakdale Merge area from Connetquot Avenue to Locust Avenue in Islip, NY. The scope of work also included review of environmental impacts due to proximity to wetlands. KC was responsible for performing highway capacity software (HCS) analysis and accident analysis, analyzing traffic data, identifying existing highway features and deficiencies, preparing detailed cost estimates for design concepts, design survey and mapping, and preparing utility and culvert inventories.

NYS DOT Contract D037604: Highway Safety Investigation, Region 8, NY | The project scope included highway safety investigations at 25 locations along various highways in Ulster, Orange, Dutchess, Putnam, Rockland, and Westchester Counties. KC's scope of work included generating accident history of the project area, plotting collision diagrams, and determining accident patterns, contributing factors, and countermeasures for each study location, as well as performing the cost-benefit analysis for recommended improvements. Field observations included sight obstructions, roadside clearances, parking restrictions, curvature, driveways, stop lines, crosswalks, locations of reference markers, sight distances from critical stopping points, and cultural characteristics of the area.



Highway Garage, Phases I and II, Wappingers Falls, NY | After providing civil engineering and surveying services for the construction of the highway garage for the Village of Wappingers Falls, KC provided environmental engineering services for the 0.9-acre Highway Garage site. KC's services consisted of a Phase I Environmental Site Assessment (ESA) and a Phase II Subsurface Investigation (SI), including a geophysical survey; advancement of soil borings; installation of temporary groundwater monitoring wells and soil vapor probes; and collection of soil, groundwater, soil vapor, and air samples. KC's findings were documented in a Phase II Subsurface Investigation Report.



KE Engineering and
Land Surveying, P.C.

CONSTRUCTION INSPECTION

The Highest Standard.



CONSTRUCTION INSPECTION

At KC Engineering and Land Surveying, P.C. (KC), our interdisciplinary team delivers responsible solutions tailored to each client's specific needs.

KC's construction inspection team consistently delivers high-quality projects on time and within budget by prioritizing safety, quality control, and cost management in every phase of construction.

What sets KC apart is our seamless integration of field and office support. Every field team is backed by a dedicated group of in-office professionals who provide real-time assistance, ensuring that inspectors and engineers in the field receive the most up-to-date information aligned with current standards, regulations, and client expectations. This collaborative structure allows us to resolve issues quickly and maintain consistent project momentum.

In addition, KC emphasizes continuous learning and client-specific alignment. Our team undergoes regular training and is thoroughly briefed at the start of each new project to ensure a clear understanding of the client's goals, project requirements, and quality expectations.

With a deep understanding of the engineering and architectural design processes, KC provides exceptional service across all stages of construction. All of our inspectors are OSHA-certified and maintain current credentials that meet or exceed industry standards.

Whether supplementing a client's in-house staff or providing a full on-site inspection team, KC offers the expertise required for a successful field program.

KC's construction inspection group includes construction managers, resident engineers, skilled senior and junior inspectors, and office, traffic, civil, and structural engineers. This comprehensive team ensures code and contract compliance, performs detailed cost preparation and reviews, and produces thorough and accurate documentation from project initiation through closeout.

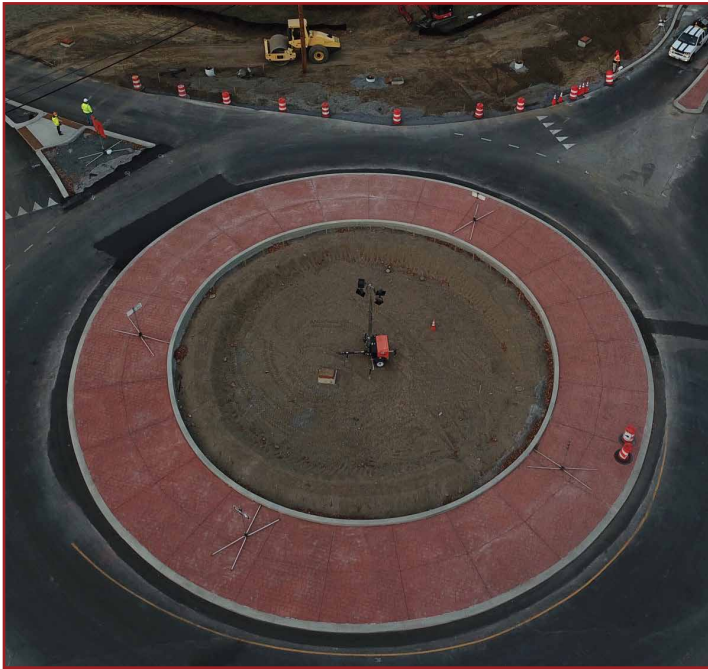
Services

- As-Built Drawing Preparation
- Bid Analysis & Evaluation
- Change Order Review, Preparation, & Negotiation
- Claims Review & Resolution
- Community Liaising & Public Outreach
- Constructability Review
- Construction Inspection & Management
- Construction Materials Review
- Construction Support Services
- Cost Estimating
- Design Standards & Code Compliance Review
- Document Control & Management
- Environmental Compliance Monitoring
- Maintenance & Protection of Traffic Plans
- Monitoring Lane Closure Durations
- Office Engineering & Record Keeping
- Permitting Assistance & Regulatory Coordination
- Progress Reporting & Project Closeout
- Quality Assurance & Quality Control
- Resident Engineering
- Review of Shop Drawings
- Safety Compliance Oversight
- Scheduling & CPM Analysis
- Traffic Engineering & Congestion Mitigation
- Utility Coordination



NYSDOT Contract D041169: Construction Inspection Services for Route 376 at Hooker Avenue Intersection Improvements, Dutchess County, NY

The project scope includes the construction inspection services required for improvements to the signalized intersection of Route 376 at Hooker Avenue and New Hackensack Road, which also includes construction of a modern roundabout to replace an existing signalized intersection and pedestrian improvements at the intersection and along the Hooker Avenue approach, including new buffered sidewalks and crosswalks with pedestrian refuge islands. The project will improve air quality by mitigating congestion while improving safety, overall intersection operations, streetscapes, and roadway cross-sections. KC is inspecting all construction work on this project. Through routine inspection reports and progress assessments, KC ensures that project elements are built to withstand local environmental conditions and meet safety standards, thereby minimizing future maintenance issues.



Culvert and Drainage Improvements, Blooming Grove, NY |

KC provided architectural and engineering design, bid phase, and construction administration and support services for the replacement of an undersized culvert. During construction, KC performed full-time inspection in accordance with the NYSDOT Highway Work Permit to ensure that culvert installation conformed with approved plans and generally accepted standards, which included tracking daily quantities, maintaining project records, managing change orders, preparing as-built drawings, and completing project closeout and punch list items.



We provide comprehensive construction inspection & management services on projects key to the region's infrastructure.

MTA Design-Build Contract A31740: Americans with Disabilities Act (ADA) Upgrades at 13 Stations Package 3 Design-Build, New York, NY

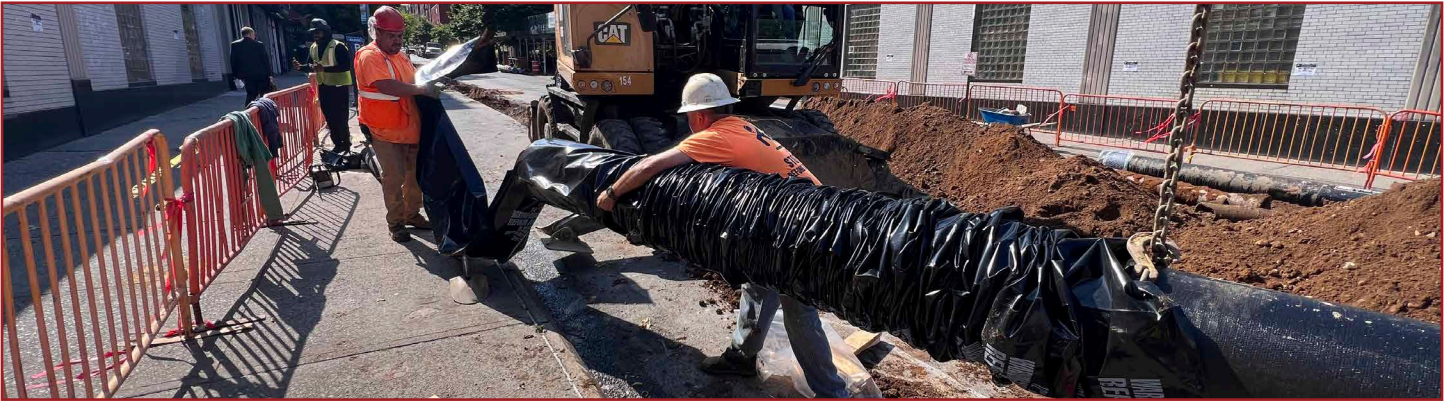
The project scope includes the implementation of station accessibility improvements in accordance with ADA regulations at 13 subway stations. As the Independent Quality Firm (IQF), KC is responsible for providing quality assurance (QA) oversight for construction and initial design stages, which includes reviewing the Developer's Quality Management Plan (QMP) and providing suggestions for revision; performing on-site field inspections to oversee and ensure implementation of proper construction quality control (QC) means and methods; and performing periodic quality audits.



PANYNJ Design-Build Contract 70151: JFK Airport Central Substation #2 Design-Build, New York, NY

The scope of work for this design-build project includes the development of a new two-story, single-building 40MVA substation and all associated components on an approximately 81,065-square-foot (SF) site. KC serves as Quality Manager and Construction QC Manager / Resident Engineer for this design-build project and is responsible for protecting and safeguarding the interests and objectives of the PANYNJ. KC oversees design unit deliverables and supervises quarterly audits. Additionally, KC verifies that site activities are performed in accordance with quality requirements; plans and directs the activities of inspection and testing personnel; monitors the quality of materials, workmanship, and construction; maintains records of satisfactory completion of site activities, equipment, material acceptability, and personnel qualifications; conducts thorough on-site inspections and proactively identifies any contract deviations prior to installation activities; issues nonconformance reports (NCRs); and recommends and enforces changes to construction means and methods.





NYCDDC Contract HWCQR05B: Resident Engineering Inspection Services for Distribution Water Main Work in Ellwell Crescent, New York, NY | The project scope included the replacement of approximately 19,100 linear feet (LF) of distribution water main in Ellwell Crescent from Alderton Street to Carlton Street and other locations in New York, NY. One location was in proximity to the MTA subway line along Queens Boulevard. KC provided inspection staff, including a

Resident Engineer, Office Engineer, Senior Inspector, two Inspectors, and the Community Construction Liaison, who performed pre-construction, construction, and post-construction services throughout the duration of the project. KC's scope included all services required for the inspection, management, coordination, and administration of the project from commencement through substantial completion, final acceptance, and project closeout.



NYSDOT Contract D037956: Bridge Rehabilitation of Route 9 Over Wappinger Lake, Dutchess County, NY | This bridge rehabilitation project involved a complete replacement of a 213-foot double-span reinforced concrete beam structure. The new bridge has 11 metalized steel girders, new bearings, and a reinforced concrete deck. Due to the nature of the new roadway elevation, new drainage, curbs, guiderails, and asphalt roadway were installed. KC performed construction inspection of Stages 1 and 2, which consisted of 4 of the 11 new steel girders and a new 33-foot-wide concrete deck on the west side of the structure. Stage 3 included demolition and installation of 4 girders on the east side of the bridge.

NYS DOT Contract D037607: Region 8 Bridge Maintenance, Dutchess, Orange, and Westchester Counties, NY

The project scope included the rehabilitation of several bridges in Region 8. The scope of work included repair of existing bridge superstructures, structural steel, abutments, and piers; painting; and installation of new deck systems. KC's inspectors were responsible for providing detailed inspection, on-site field testing of materials, field measurement, and preparation of monthly and final estimates, progress reports, and record plans detailing all deviations from the contract plans.



Orange County Department of General Services Contract RFP-DPW01-19: Engineering and Construction Inspection Services, Orange County, NY

The project scope included providing construction inspection services on an as-needed basis for various Orange County construction projects, including site construction and development; building renovation and construction; bridge rehabilitation and replacement; roadway construction and placement of asphalt pavement; sewer, water, and gas main installation; and/or sanitary sewer collection and treatment system improvements. Projects included the Smith Farm housing development, North Interceptor sewer main, Hamaspik of Orange County, 282 Mountain View – Reisman, and the sanitary sewer main line extension at Acres Point.

KE Engineering and
Land Surveying, P.C.

DESIGN-BUILD

Technical and Quality Experts.



DESIGN-BUILD

At KC Engineering and Land Surveying, P.C. (KC), our interdisciplinary team ensures responsible solutions tailored to planning challenges and specific clients' needs.

Design-build is a project-delivery system adopted in New York consisting of a joint bid by a construction firm and a design firm.

This is in contrast to the design-bid-build process, by which a design firm will sell a design to a client, who is then largely responsible for the procurement of construction services. Design-build is a cost-saving operation for the client, usually resulting in higher value for all parties involved. Unlike design-bid-build, in which the designer is awarded the project after a conceptual proposal, design-build typically sees teams shoulder most or all of the cost of full practical design development. This full design is included in the final proposal, and a winning team is awarded the project. KC takes design-build projects extremely seriously, and is eagerly pursuing teaming opportunities.

KC has highly-qualified personnel with experience appropriate for design-build projects, including Design and Quality Managers; Lead Structural, Civil, Utility, Geotechnical, and Hydraulic Engineers; Design Survey Managers; and all support staff. We also assign a Design Team Coordinator to each design-build project to manage the proposal process and project progress, as well as an ISO / Quality Control (QC) Auditor to assist the Quality Manager with required design and construction QC auditing.

With all that experience, what makes KC a good partner for design-build projects?

Our Track Record and Talent.

Our design personnel and our narratives always score high. Our Design Team Coordinators are design-build proposal compliance experts — ensuring our team maximizes our technical score. Our work on design-build projects has won industry awards.

Our Certifications.

KC is MBE and ISO 9001:2015 certified, allowing the KC Team to gain MBE credit for designing and developing refined, approved quality control plans following the ISO quality management system. KC has 4 senior managers certified as Design-Build Professionals by the DBIA and a dozen ISO-certified lead auditors on staff.

Our In-House Services.

We have over 130 employees skilled and able to provide structural, civil, geotechnical, utility, and hydraulic engineering; permitting; design survey; quality control; and any other related or required service for a design-build project, making us a valuable partner on any team. Our staff are committed and experienced, and their skill shows in our success.



NYSDOT Design-Build Contract D900056: I-81 Viaduct - Phase 1, Contract 2, Syracuse, NY |

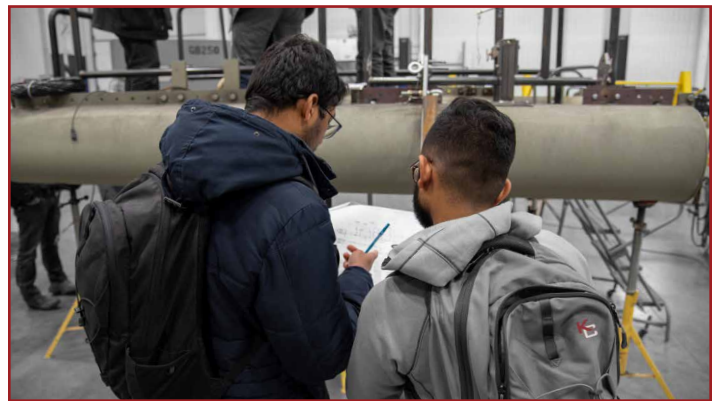
The scope of work for this design-build project includes improvements to the new section of I-81 between I-690 and Kirkville Road, 2 bridges over the CSX Rail Yard, the new section of I-81 between Interchange 4 and Interchange 3, and the NYS Route 5 / 92 intersection; reconstruction of portions of Interchange 3 – I-481 NB over Route 290 and the existing I-81 / I-481 Southern Interchange; replacement of 2 bridges over Route 290; and removal of 5 bridges and construction of 8 new superstructures and substructures. KC is the Lead Designer and Quality Manager and is providing geotechnical, structural, utility, drainage, stormwater, and highway design. This project includes major bridge improvement, demolition, and/or replacement and highway reconstruction in an urban area with many adjacent projects, communities, businesses, and active CSX operations, requiring coordination with relevant stakeholders to maintain safety.





NYSTA Design-Build Contract D800002: Cashless Tolling, Statewide, NY |

The scope of work for this design-build project included demolition of existing toll booths at each toll plaza location and construction of cashless tolling gantries over a 400+-mile section of the NYS Thruway from approximately Exits 16 to 61, as well as all associated signing, striping, landscaping, and electrical work. KC was Lead Designer for this project. KC's work included providing design for the toll gantries; generators / MEP; communication buildings, including tie-in points to existing power and fiber sources and adequate parking space; toll plaza and highway ramp reconstruction; maintenance and protection of traffic (MPT); signage and striping; and drainage and utility relocation. KC also performed quality management as Quality Manager, surveying, and civil and utility engineering services.



KC takes design-build projects extremely seriously, and is eagerly pursuing teaming opportunities.

NYSDOT Design-Build Contract D900034: Region 8 Bridge Replacement, Ulster County, NY |

This design-build project included the full replacement of two bridges: BIN 1040750 NYS Route 209 (3-span continuous steel girder bridge with a total span of 402 feet) over Rochester Creek and BIN 1019700 NYS Route 28 (7-span continuous steel girder bridge with a total span of 994 feet) over Esopus Creek. KC performed the structural design of the two structures, geotechnical work, environmental permitting, surveying, roadway design, and hydraulic analysis.

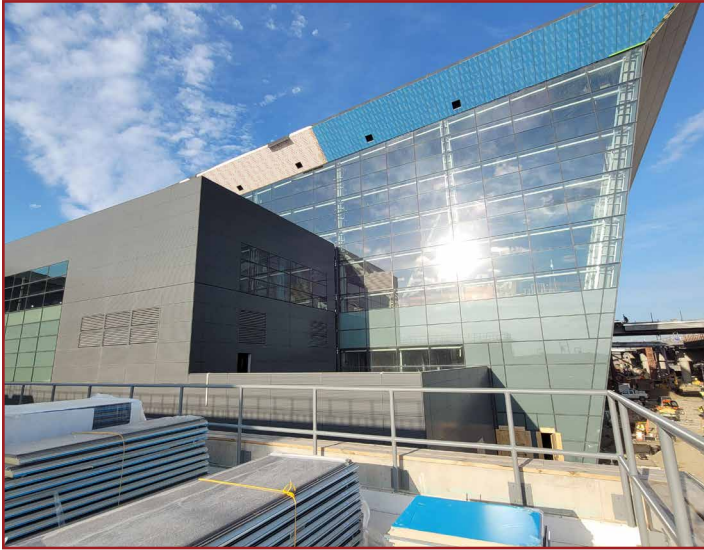
KC was the Lead Designer and our team was the Best Value selection – we had the highest technical score, and our overall technical and cost score was 100. This project was completed one month ahead of schedule.



NYSDOT Design-Build Contract D900043: Kew Gardens Interchange Improvements, New York, NY |

This design-build project included six full bridge replacements consisting of the demolition of the existing structures and complete construction of the replacement bridges. In addition, the construction of five new bridges and alignment modifications provided operational improvements to the Grand Central Parkway (GCP), Jackie Robinson Parkway (JRP), and Union Turnpike (UT) in the Kew Gardens Interchange. The highway work included the realignment of the existing mainline roadways and the interconnecting ramps within the interchange. The project also included construction of cut-and-fill

type earth retaining structures and approach work to tie into the new bridge structures. KC provided bridge design, utilities design, drainage design, risk management, and quality management services.



PANYNJ Design-Build Contract 70151: JFK Airport Central Substation #2 Design-Build, New York, NY

| The scope of work for this design-build project includes the development of a new two-story, single-building 40MVA substation and all associated components on an approximately 81,065-square-foot (SF) site. KC serves as Quality Manager and Construction QC Manager / Resident Engineer for this design-build project and is responsible for protecting and safeguarding the interests and objectives of the PANYNJ. KC oversees design unit deliverables and supervises quarterly audits. Additionally, KC verifies that site activities are performed in accordance with quality requirements; plans and directs the activities of inspection and testing personnel; monitors the quality of materials, workmanship, and construction; and issues nonconformance reports (NCRs).

NYSTA Design-Build Contract D214134: The New NY Bridge, Tappan Zee Hudson River Crossing Rockland County, NY

| As part of the design team for this design-build project, KC provided design support services, including for the bridge approach, approach roadways, new maintenance access ramps connecting the Thruway mainline and River Road, and associated adjustments to River Road. KC also designed on- and off-ramp adjustments at Interchange 9, retaining walls and noise walls, drainage systems, signing and pavement markings, lighting, erosion and sediment control (E&SC), and maintenance and protection of traffic (MPT). KC also provided construction support services.

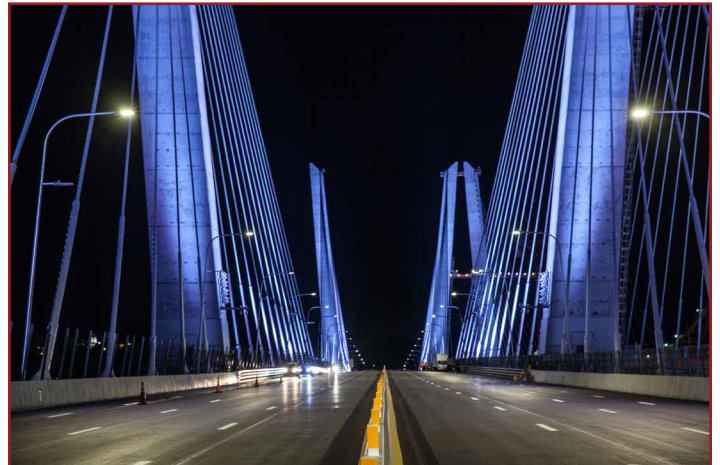


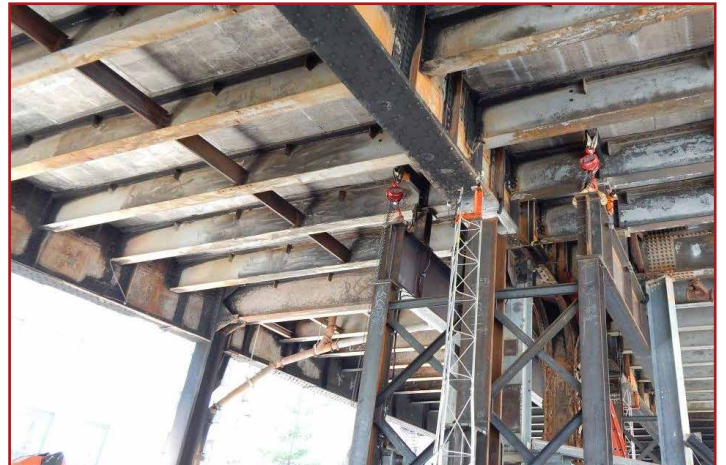
Photo credit: NYSTA



NYS DOT Design-Build Contract D900040: Bruckner Viaduct Deck Replacement, New York, NY | This design-build project included the rehabilitation of six bridge decks along the Bruckner Viaduct. The scope included replacement of the concrete deck, deck joints, bearings, and pedestals, and repair of concrete piers, abutments, deteriorated structural steel members, and other structural work. It also included structural steel painting and miscellaneous structural work. KC provided field verifications of all concrete substructure repair areas, all superstructure steel replacement members, and the types and layouts of all end diaphragms. The field verification work on structural steel members required the use of 60-foot and 80-foot boomlifts and lane closures on a daily basis. KC's tasks also included preparation of Release For Construction (RFC) drawings for all the substructures and structural steel repair work.

MTA-MNRR Design-Build Contract 1000071957: Design and Construction of Emergency Repairs, Park Avenue Viaduct at 118th Street, Bronx, NY |

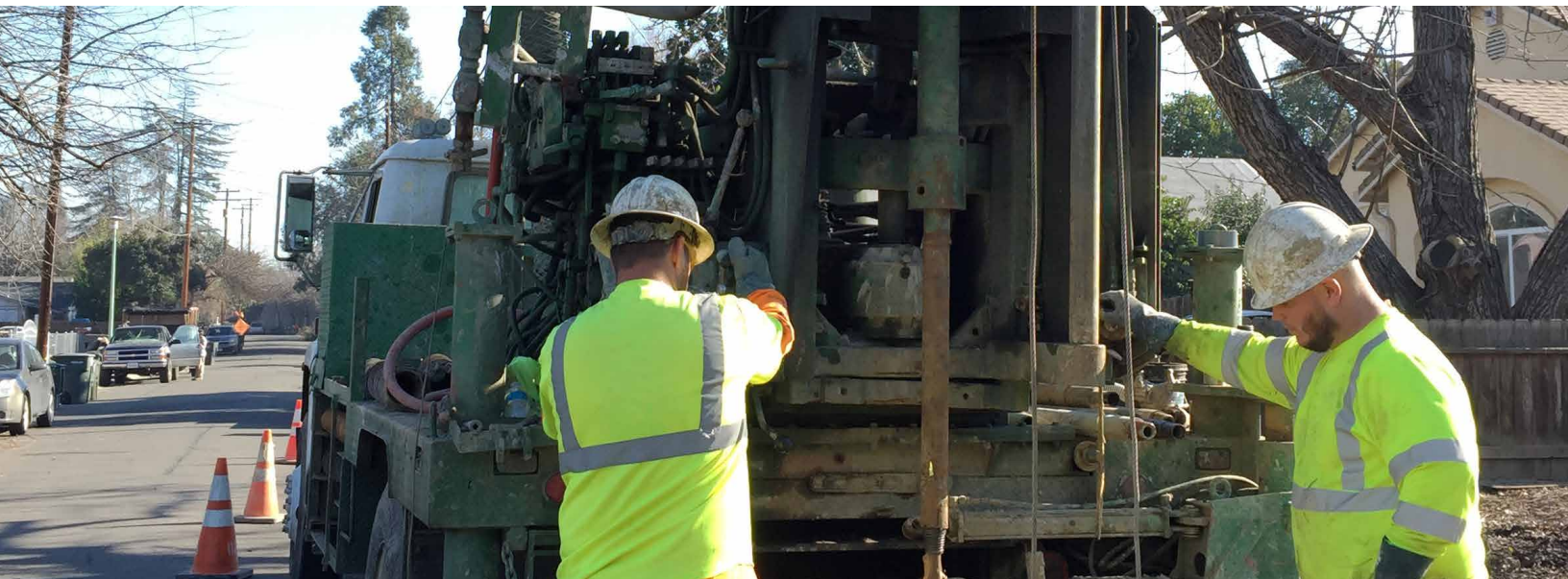
This design-build project consisted of providing structural analysis and details for the replacement of damaged steel columns supporting main tracks on Park Avenue. The steel structural details included lifting operations and lifting sequence, stiffening of the existing beams to control deflection due to train loading during the repair period, and design of replacement members as per AREMA Standards. KC served as Lead Designer on this project and completed the design at an accelerated schedule of two weeks to allow the contractor to meet aggressive project milestones.



KE Engineering and
Land Surveying, P.C.

GEOTECHNICAL ENGINEERING

Stability Solutions.



GEOTECHNICAL ENGINEERING

At KC Engineering and Land Surveying, P.C. (KC), our interdisciplinary team ensures responsible solutions tailored to planning challenges and specific clients' needs.

KC's geotechnical engineering group has the combined expertise and experience to accommodate clients' diverse geotechnical engineering needs.

Our expertise includes evaluating project sites, coordinating surface and subsurface geotechnical investigations, analyzing laboratory test results, evaluating critical design parameters, recommending optimum foundation design based on client requirements, seismic site evaluation and liquefaction potential, and alternate foundation design and ground improvements.

KC focuses on the preparation and documentation of geotechnical work that, depending on the needs of the project, may include creating geotechnical work plans and various reports, such as Geotechnical Baseline Reports and Foundation Design Reports.

KC's engineers hold QC in the utmost regard and have extensive experience in providing stable foundation solutions for various structures, including bridges; highways; buildings; waterfront structures; retaining, mechanically stabilized earth (MSE), and modular walls; and underpinning of existing structures.

KC's geotechnical and structural engineers provide effective foundation designs ranging from conventional spread footings to pile foundations and drilled shafts. Additionally, we can provide innovative solutions using helical piles, soil nails, and soil anchors based on project requirements. We have the knowledge to implement the appropriate design, analysis, and installation solutions that lead to a reliable finished product while considering client needs as well as each project's unique site conditions, schedule, and cost.

Services

- Bearing Capacity Evaluation for Shallow Foundations
- Design & Analysis of Deep Foundations
- Soil Structure Interaction Analysis with FEM
- Geotechnical Baseline & Foundation Design Reports
- Global Stability Analysis of Embankments & Excavations
- Ground Improvements & Subgrade Stabilization
- Concrete Retaining, T-Wall, MSE, & Modular Walls
- Drilled Shaft Foundation Design for Noise Walls, Light Towers, & OHSS
- Seismic Site Classification & Liquefaction Analysis
- Settlement Analysis, Surcharge Loading Evaluation, & Wick Drain Solutions
- Geotechnical Investigations & Boring Inspections
- Geophysical Evaluation of Subsurface Rock Profile & Karst Investigations
- Structural Analysis of Foundation Members & Foundation Inspections
- Support of Excavation with Sheet Piles, Soldier Piles, & Soil Anchors
- Underpinning Design & Evaluation of Existing Foundation Structures
- Value Engineering & Alternate Foundation Design
- Waterfront Structures, Cofferdams, Bulkhead, & Seepage Analysis
- WEAP, PDA, & CAPWAP Analysis for Pile Foundations



NYSDOT Design-Build Contract D900056: I-81 Viaduct - Phase 1, Contract 2, Syracuse, NY |

The scope of work includes I-81 improvements, including removal / replacement of multiple bridges and interchange improvements and reconstruction. KC is the Lead Designer and Quality Manager and is providing complete geotechnical, structural, utility, drainage, stormwater, and highway design. KC's geotechnical scope of work includes geotechnical investigation with standard penetration testing (SPT) and cone penetration testing (CPT) borings; overseeing geophysical surveys for evaluation of possible Karst formations; performing design and analysis of pile foundations for replacement bridges, tieback anchors, retaining walls with heights up to 40 feet, and drilled shaft foundations for noise walls, sign structures, and Geosynthetic Reinforced Soil (GRS) walls; performing slope stability analyses and shop drawing and constructability reviews; preparing geotechnical reports; evaluating the suitability of subsurface soils for infiltration basins; and coordinating design changes.





Design-Build Contract YON-103219: Empire City Casino Valet Entrance Bridge Replacement, Phase 1, Yonkers, NY

| The project scope included the rehabilitation of the existing valet entrance bridge at the Empire City Casino and Raceway. KC's scope of work included development and implementation of a geotechnical investigation program, including soil borings, test pits, and pavement coring. KC coordinated and supervised borings, pavement and concrete cores, and test pits; arranged for laboratory testing of soil samples; prepared a geotechnical investigation report; analyzed existing

foundation capacity based on structural loading requirements and developed recommendations for stabilization of foundations; performed stability analyses of the abutment wall and wing wall in regard to sliding and overturning, traffic surcharge loading, hydrostatic loading considerations, and recommendations for groundwater control measures; and reviewed subgrade soil and pavement structures based on cores collected during field investigation, identified possible reasons for observed pavement defects, and developed recommendations for pavement stabilization.

KC provides comprehensive Geotechnical Engineering services on projects key to the region's infrastructure.

Champlain Hudson Power Express (CHPE), Various Locations, NY

| The CHPE is an innovative renewable power transmission project for the delivery of low-cost renewable energy to New York State, which includes the installation of approximately 339 miles of underground and underwater transmission line from the United States-Canada border to Astoria, Queens, NY. At the Astoria Converter Station complex, KC is preparing the geotechnical design, including review of soil boring logs, classification of soils based on the United Soil Classification System, development of design soil parameters and wall sizing, sliding and overturning stability analyses, and bearing capacity analysis; preparing structural design (reinforcement design) of retaining walls; drafting plans, profiles, and sections for retaining walls; and performing buried pipe analysis to determine the adequacy of soil cover. KC is also designing and analyzing a permanent sheet pile wall to protect a sloping access roadway. The sheet pile wall is being designed for sudden draw down conditions to account for groundwater fluctuations due to tidal waves.



NYSDOT Design-Build Contract D900043: Kew Gardens Interchange Improvements, New York, NY

| This design-build project included six full bridge replacements consisting of the demolition of the existing structures and complete construction of the replacement bridges. In addition, the construction of five new bridges and alignment modifications provided operational improvements to the Grand Central Parkway (GCP), Jackie Robinson Parkway (JRP), and Union Turnpike (UT) in the Kew Gardens Interchange. KC provided geotechnical, structural, utility, and drainage design; risk management; and quality management services. KC's geotechnical scope of work included assessing boring logs;

evaluating subsurface soil conditions and calculating soil parameters; analyzing soil structure using PLAXIS 2D; reviewing loading information for a proposed culvert under a 15-foot embankment; investigating an existing culvert's structural capacity; coordinating with the contractor to devise various construction plans; and preparing expanded polystyrene (EPS) material specifications, accounting for density and limiting strain values.



NYSDOT Contract D037949-04: Route 94 and 17A Pavement and Improvements, Orange County, NY

The project scope included the preliminary design services required for the improvement of 21 locations along the Route 94 and 94 / 17A corridor. The scope of work included milling and overlay; sidewalk, intersection, and traffic signal improvements; embankment stabilization; culvert replacement; pavement settlement repairs; sight distance improvements; and miscellaneous drainage improvements. KC provided geotechnical engineering, including scoping analysis, and developed scoping alternatives, design alternatives, and the draft and final Design Approval Documents (DADs) for embankment stabilization at Route 94 and provided environmental services for all sites. Additionally, KC evaluated the alternatives with NYSDOT's Preliminary Cost Estimating Tool (PCET).

NYSDOT Design-Build Contract D900034: Region 8 Bridge Replacement, Ulster County, NY

The scope of this design-build project included the replacement of two bridges: BIN 1040750 NYS Route 209 (3-span continuous steel girder bridge with a total span of 402 feet) over Rochester Creek and BIN 1019700 NYS Route 28 (7-span continuous steel girder bridge with a total span of 994 feet) over Esopus Creek. KC's geotechnical scope of work included geotechnical investigation, conducting soil borings to depths exceeding 100 feet, and laboratory testing of soil samples; evaluation of design soil parameters and subsurface soil conditions based on borings; review of maximum loading conditions; selection of the foundation type; design and analysis of steel pipe piles extending to more than 100 feet; and L-pile analysis to determine maximum lateral deflections, pile group analysis to determine group efficiency, and settlement analysis for the embankment area. Piles were designed for severe erosion conditions with meandering river flow around the pier foundations. A modified pile foundation design was developed using closed end pipe piles to increase the individual geotechnical pile capacity and to minimize the concrete quantity, which resulted in reduced cost and an expedited construction schedule. Additionally, the scope of work included preparation of working drawings with material notes and specifications, recommendations for pile installation, and testing and inspection requirements.





NYSTA Contract D214890-03: Interchange 25 / 25A Gantry and OHSS Design, Schenectady, NY | KC provided geotechnical investigation, design, and analysis for various OHSS and gantry structures. The project scope included the preliminary and final design for the installation of tolling gantries in Albany, Schenectady, and Harrison, NY. KC provided the structural and geotechnical design for gantries and sign structures, inspection of soil boring operations, evaluation of design soil parameters for the proposed foundations, preparation of the geotechnical engineering report, settlement analysis, design of drilled shaft foundations for the sign structures and gantry structures based on the structural loading requirements and subsurface soil conditions, and development of the construction drawings for the drilled shafts, reinforcement details, material specifications, and installation notes.

Franny Reese Park Modular Retaining Wall, Wappingers Falls, NY | The project scope included the development of a new park on two former residential parcels in the Village of Wappingers Falls, which required the installation of 20-foot-high retaining walls along a steep slope. KC provided coordination of the subsurface geotechnical investigation program; evaluation of design soil parameters; review of site topography; review of the modular block retaining wall design submittal; evaluation of the allowable bearing capacity of sub-grade soils; recommendations for ground stabilization; recommendations for improvement of existing unstable soils; recommendation of material specifications for backfill and geotextile reinforcement; and verification of sliding, overturning, and global stability analysis.



KE Engineering and
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LAND SURVEYING

At KC Engineering and Land Surveying, P.C. (KC), our interdisciplinary team ensures responsible solutions tailored to planning challenges and specific clients' needs.

KC's land surveying group is a leading provider of boundary and topographic surveying, base mapping, right-of-way mapping with GPS control, and geographic information system (GIS) services.

We continue to invest in the latest developments in GPS technology and personnel training as part of our commitment to provide quality service at competitive rates. We have in-house capabilities for performing Computer-Aided Design (CAD) and analysis, word processing, and cost estimating. Real Time Kinematic (RTK) surveying and differential rapid static GPS are our preferred methods for performing a variety of surveying services such as construction layouts, topographic and as-built surveys, wetland locations, aerial photo control, and hydrographic surveys.

KC's newest pieces of survey equipment, our terrestrial, aerial drone, and mobile Light Detection and Ranging (LiDAR) scanners, allow us to pick up the full detail of project areas with minimal impacts to the traveling public. The scanners' capabilities cut field time in half and produce high-quality and detailed survey plans.

KC's land surveying group consists of dedicated professional land surveyors, party chiefs, instrument people, GIS technicians, draftsmen, engineering technicians, and CAD operators with experience researching and recording all types of survey data and with extensive experience out in the field in varying terrains and weather.

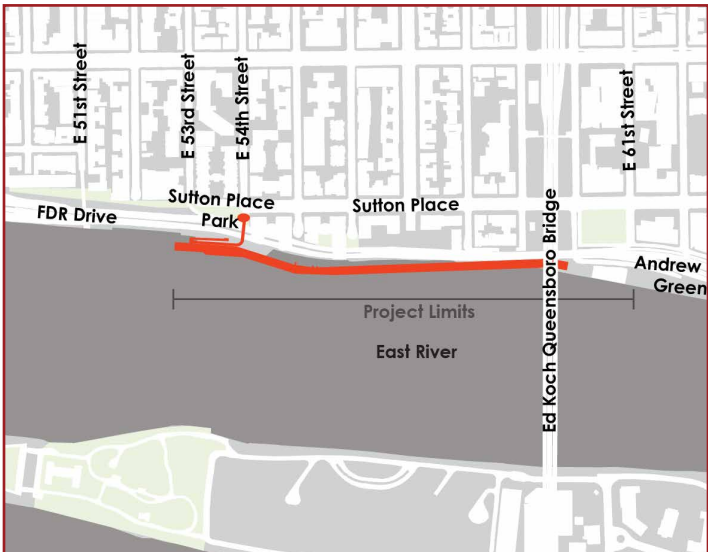
Services

- Aerial Photogrammetry Control
- American Land Title Association (ALTA) & American Congress on Surveying and Mapping (ACSM) Standards
- As-Built Surveys
- Conversion of Hard-Copy Source Information
- Deeds & Records Research
- Digital Depth Sounders & GPS Receivers
- Digital Land Base Mapping
- DTM to Compile Topographic Mapping
- Dynamic Three-Dimensional Terrain Modeling
- Environmental Surveys
- FAA 1A / 2C Certifications
- Ground Control Surveys & Field Verifications
- Geodetic Networks for GIS Databases
- GPS Coordination
- High Definition (HD) Laser Scanning
- Monumentation
- Planimetric & Topographic Data for GIS
- Right-of-Way (ROW) Mapping
- Sun & Star Shots
- Survey Plans, Reports, & Legal Descriptions
- Topographic / Utility / Deformation Surveys
- Traditional Conversion Option / Board Digitizing / Tracing Paper Source Documents
- USGS Level 1 & Level 2 DTMs
- Vertical Controls / Benchmarks



NYCEDC Contract 33610002: East Midtown Greenway (EMG), New York, NY

| The intent of this project was to construct a continuous public waterfront esplanade over the East River in Manhattan, NY. The EMG's southern and northern termini are East 53rd Street and East 61st Street. The project also included a new pedestrian bridge that provides access to the esplanade at 54th Street and Sutton Place South. KC performed the topographic survey, utility survey, and easement survey for the project. Work associated with the production of these deliverables included a comprehensive investigation of all available record utility and government agency maps. KC also researched available design drawings, as-built drawings, and aerial maps spanning approximately 80 years to understand site conditions, both above and below ground. KC's survey crew also coordinated with an arborist to accurately measure, classify, and record all trees within the project limits.



NYS DOT Contract D038105: Rehabilitation of Brooklyn-Queens Expressway (BQE) Viaduct, Queens, NY

The project involved rehabilitation of a viaduct on the BQE over 47th Street, running over Laurel Hill Boulevard from 47th Street to 58th Street, and work on a 45-span bridge. KC performed design survey and mapping, including base and supplemental mapping; topographic field survey of roadway, approach, and bridge superstructure and substructure elevations; geotechnical survey of soil borings and underground utility surveys; and ROW surveying, mapping, and analysis. KC produced draft and final design survey reports, CADD files, base mapping reports, and ROW mapping reports.



The basic principles of surveying have changed little over the ages, but the tools used by surveyors have evolved.

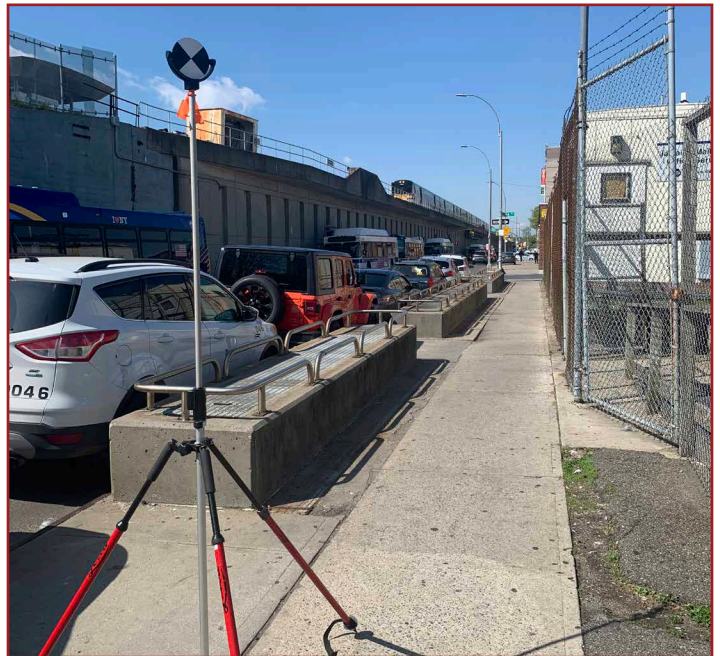


NYS DOT Contract D031304-06: Priority Surface Treatments, Suffolk County, NY

The project scope included highway pavement surface restorations at multiple locations. The scope of work included two-inch milling of the existing asphalt riding surface, isolated full-depth pavement repair, two inches of new top course asphalt resurfacing, installation and/or upgrade of sidewalk curb ramps, new pavement markings, and traffic signal loop and traffic count loop replacement. KC provided design survey of the project sites, including supplemental field survey, pedestrian ramp evaluation, and utility and drainage casting inventory. KC assisted with preparing the construction cost estimate, advanced detailed plans (ADPs) and all related preliminary progress plans for highway design, and the final plans, specifications, and estimates (PS&E).

NYCEDC Contract 54350001: Station Plaza Intermodal Roadway Improvements, New York, NY

The project scope included the engineering and landscape architectural design services required to improve pedestrian safety, reduce traffic congestion, improve conditions for more than 18,000 daily transit users, and create open space at Station Plaza. The Station Plaza transit hub is served by 13 bus lines, 2 subway lines, the Long Island Railroad (LIRR), and the AirTrain service from John F. Kennedy (JFK) International Airport to the LIRR. The scope of work included proposed roadway realignment and restoration, site regrading, retaining walls, sidewalks, pavements and pavement markings, lighting, and signage. KC provided land surveying services in support of design development, which included topographic, metes and bounds, easement, and utility surveys along Archer Avenue between 144th Place and 147th Place at 90-70 Sutphin Boulevard and 91-24 and 91-20 146th Streets.





NYSDOT Contract D038181: Design Services for Drainage Enhancement, Nassau County, NY |

The project scope included preparation of PS&E documents and ADPs for alleviation of flooding conditions caused by storm surge and rainfall in Nassau County. KC provided survey and mapping, including design and ROW survey, mapping, and analysis; detailed highway design, including preparation of cost estimates, ADPs, and final PS&E documents; finalization of drainage models and solutions to mitigate surcharge issues; and solicitation and coordination with a subsurface utility exploration (SUE) subcontractor.



NYSTA Contract D214787-02: I-287 / Route 17S Pavement Resurfacing, Rockland and Orange Counties, NY |

The project scope included the final design (Phases V and VI) for pavement resurfacing along the New York State Thruway mainline, interchange ramps, service area deceleration / acceleration lanes, and the Sloatsburg truck parking area. KC was responsible for performing design survey and mapping, including preparation of a digital terrain model (DTM) in InRoads format; environmental permitting and consulting services, which included wetland studies and field delineation, floodplain evaluations, and applying for and obtaining permitting; and detailed design, including preparation of ADPs and PS&E for drainage structures, stormwater treatment, and work zone traffic control (WZTC).

NYS DOT Contract D038174: Flood Mitigation, Queens, NY

The scope of work for this project includes addressing flooding occurring in various locations in Queens, including the Van Wyck Expressway (VWE), Long Island Expressway (LIE), and the Grand Central Parkway (GCP). KC's scope of work includes design survey and mapping in support of preliminary and final design services. The data being collected includes rim / invert elevations, overall depth at each drainage structure, verification of the configuration of the existing drainage system, and survey at all accessible drainage structures along approximately 1,700 linear feet (LF) of trunk sewer within the project limits.



Amtrak Contract BPO1003963: Hudson Line Control, Various Locations, NY

KC was tasked with providing geo-referenced control for a mobile LiDAR project on the National Railroad Passenger Corporation (Amtrak) Hudson Line. The corridor consisted of 94 miles of track, from MP 75.8 to MP 169.9. Specifications called for setting targets within the track at intervals of less than 800 feet apart, alternating between the northbound and southbound tracks. Targets consisted of a MAG Nail set in the corner of a painted target on ties. In addition, readily available National Geodetic Survey (NGS) control monuments and approximately 50 random check points immediately adjacent to the railway were to be observed for validation.

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STRUCTURAL ENGINEERING

Technically and Aesthetically Excellent.



STRUCTURAL ENGINEERING

At KC Engineering and Land Surveying, P.C. (KC), our interdisciplinary team ensures responsible solutions tailored to planning challenges and specific clients' needs.

KC's structural engineering group consists of our structural engineers who, combined with our civil and geotechnical engineering and surveying professionals, provide extensive capabilities in the rehabilitation and replacement of existing structures and the design of new steel and concrete structures.

We have extensive experience in designing highways, small to mid-size residential and office buildings, water supply and sewer treatment plants, and mechanical equipment for buildings. We are committed to creative, ingenious solutions that provide the best possible design services on complex projects. KC's design experts are practiced in rehabilitation design and in the design of new bridges, from simple span bridges to complex structures with curved girder design. KC's design experts are practiced in the design of new and replacement structures and the rehabilitation of existing structures with simple to complex geometric features. We utilize a broad range of modern building materials and have developed bridge superstructure and substructure designs for highways, railroads, and light rail applications.

Our engineers are well versed in the latest code requirements and specifications to deliver quality structures meeting safety, durability, economical, aesthetic, and environmental requirements. KC's structural engineering group contains many seasoned structural and geotechnical engineers providing various structural design services, including foundation design, seismic and guiderail and foundation design, seismic and wind vulnerability analyses, and structural integrity and load rating design for bridges, culverts, temporary structures, buildings, gantries, sign structures, and more.

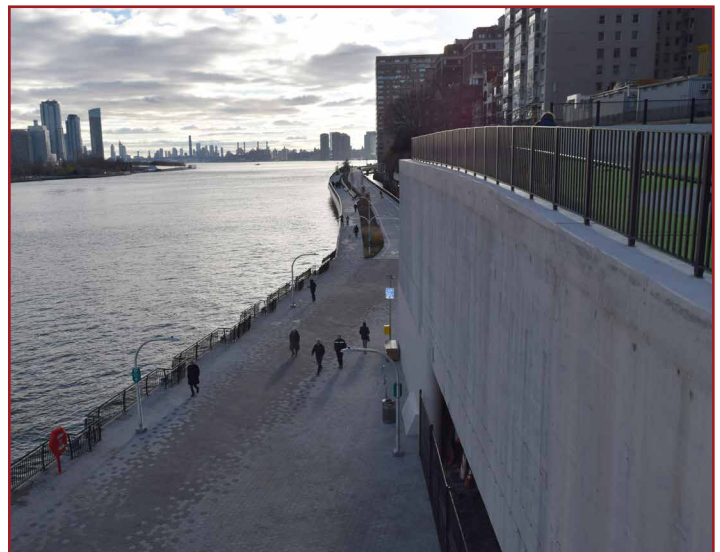
Services

- Code Compliance
- Community Liaising
- Demolition Design
- Design and Analysis of Bridges, Culverts, Buildings, Facilities, Gantries, & Sign Structures
- Drainage Design
- Environmental & Geotechnical Analyses
- Fatigue Evaluation
- Foundation Design & Analysis
- Geotechnical Engineering
- Load Ratings & Structural Analysis
- Retaining Wall Design & Analysis
- Seismic Vulnerability Assessment
- Special Structures Design
- Stormwater Management
- Traffic Engineering
- Utility Design & Relocation



NYCEDC Contract 33610002: East Midtown Greenway (EMG), New York, NY |

The intent of this project was to construct a continuous public waterfront esplanade over the East River in Manhattan, NY. The EMG's southern and northern termini are East 53rd Street and East 61st Street. The project also included a new pedestrian bridge that provides access to the esplanade at 54th Street and Sutton Place South. KC actively coordinated with a bridge architectural firm to provide bridge design. The primary structure is a steel tied arch bridge with one arch on either side of the walkway. These arches have a rise of 18 feet and are inclined 6 degrees outward. The walkway is a concrete deck with a clear width of 14 feet between railings. Lighting fixtures are mounted directly onto the arches to provide ample lighting onto the bridge deck.





NYSTA Design-Build Contract D800002: Cashless Tolling, Statewide, NY |

The scope of work for this design-build project included demolition of existing toll booths at each toll plaza location and construction of cashless tolling gantries from approximately Exits 16 to 61, as well as all associated signing, striping, landscaping, and electrical work. KC was Lead Designer for this project. KC led the structural engineering team and provided design for four different types of gantries; generators / mechanical, electrical, and plumbing (MEP); and communication buildings, including tie-in points to existing power and fiber sources, adequate parking space, and safe access for maintenance personnel.



We are committed to creative, ingenious solutions that provide our clients with the best possible design services on complex projects.

NYSTA Contract D214568: I-95 Replacement of 2 Bridges and Rehabilitation of 4 Bridges, Westchester County, NY

| This project completed the final mile of a 15-mile reconstructed segment of I-95. The span included a six-ramp interchange system with the Cross Westchester Expressway and Midland Avenue. The project scope included full replacement of two bridges and rehabilitation of four bridges located on or over I-95. The scope of work also included reconstruction of permanent pavement of the mainline and associated ramps, roadway improvements, and drainage and utility work. KC designed the realignment of a temporary roadway to reduce the width of the temporary bridge carrying the roadway, as well as abutments, piers, and profiles for the temporary bridge.



NYSDOT Contract D031472-06: Ocean Parkway Shared-Use Path (SUP), Nassau and Suffolk Counties, NY

| This project included the design and construction of a 10-mile SUP adjacent to Ocean Parkway in the Towns of Oyster Bay, Babylon, and Islip. The project included four pre-fabricated pedestrian bridges at Tobay Beach, West Gilgo Beach, Cedar Beach, and Gilgo Beach. The scope of work included final design services (Phases V and VI) associated with the SUP, including the design of traffic calming measures, speed tables, flexible delineators, signing, and striping, as well as bike parking areas. KC provided structural design and survey services for the project, including development of the profile and Digital Terrain Model (DTM) for the proposed SUP alignment; design of the wingwalls for the pedestrian bridges, including the excavation and embankment details and bar lists; and project management and oversight.



NYSTA Contract D214941: I-87 over Wallkill River Bridge Rehabilitation, Ulster County, NY | The project scope includes the rehabilitation of I-87 over Wallkill River at Milepost 81.72 in Ulster County. KC is performing preliminary and detailed bridge design, environmental studies, and project reporting and coordination. KC's scope of work also includes

site inspection of existing substructures and documenting deterioration; reviewing record plans, inspection reports, and seismic analysis reports; preparing a CSI bridge model for seismic analysis of an existing bridge; and preparing repair details for existing substructures in accordance with the latest inspection and biennial inspection reports.



NYSDOT Contract D037603: Widening of the Van Wyck Expressway (VWE) from the Kew Gardens Interchange (KGI) to John F. Kennedy (JFK) Airport, New York, NY | The VWE is the major gateway into and out of JFK International Airport. It was originally constructed in the early 1950s and is unable to handle current and projected traffic volumes. The design included relocating the existing pier to accommodate future VWE widening, strengthening abutments, reconstructing in place the existing center pier, removing some existing piers, rapidly replacing the superstructure, and installing new bearings. KC was responsible for the accident analysis, utility relocation, and preliminary design of five structures that are part of the VWE and Belt Parkway Interchange.

Contract CY-XS-0001-19: Replacement of County Bridge No. H0910 Ferguson Road over Dock Watch Hollow Brook, Warren Township, NJ

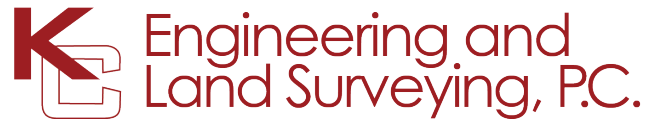
| The project scope included the replacement of a 20-foot-long, 25-foot-wide County Bridge. The existing superstructure was in serious condition due to severe rusting and advanced section losses exhibited by girders, while the substructure was in fair condition due to missing masonry stones, deteriorated pointing in the west abutment, and severe scaling in the east abutment wingwalls. KC designed the replacement bridge to carry unrestricted legal loads and provide a clear roadway width to accommodate two lanes of traffic.



Contract CY-XS-0001-17: Replacement of County Bridge No. H0401 Cortelyous Bridge over Nine Mile Run, Somerset County, NJ

| The project scope included the design and construction of a new bridge capable of carrying unrestricted legal loads and providing a clear roadway for two lanes of traffic. KC was responsible for investigating and recommending the most suitable structure for the proposed bridge, including a precast rigid frame culvert with cast-in-place parapets, veneer, and cast-in-place footings or a precast arch bridge with fascia veneer, guide rails, and cast-in-place footings. Drainage design was required for the roadway approaches, including determination and evaluation of runoff areas contributing to roadway drainage as well as identification of drainage boundaries. KC also provided field survey of the project site.





Diversified. Multidisciplined.

KC Engineering and Land Surveying, P.C. (KC) is a diversified, multidisciplinary consulting engineering firm. Since 1983, KC has provided our public and private sector clients with a comprehensive range of professional services using only the latest technical equipment. The corporate headquarters of the firm is located in New York City, with branch offices in Newburgh and Albany, NY. KC has extensive experience with government agencies, municipalities, and private clients; a diverse, professional staff; and an impeccable record of services rendered.

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