Dedicated Civil Engineering Services

The cornerstone of public works—from installing drainage systems to constructing buildings—is civil engineering. Without it, running water, paved roads, sturdy shelter and countless other everyday items that are taken for granted would not exist. Acknowledging the importance of civil projects to society, commerce and culture, **BANC3** built its identity upon a foundation of civil engineering, and this service remains the primary component of the firm.

In eight years of operations, we have remained tightly focused on infrastructure development and improvement. During this time, we built on our experience through each project we successfully completed, and gained attention for the high quality of our work from such clients as the US Army Corps of Engineers, NJ Department of Transportation, and URS Corporation. By recruiting top-flight infrastructure technical experts—such as the former Director of Public Works for the Fort Monmouth US Army Garrison—we continued to refine the muscles we would need to support larger, more complex projects. As a result, we expanded our client services, which now include site development, infrastructure maintenance and repair, road and highway improvements, stormwater management, construction management and inspection, and permitting.

This demonstrated ability to bringing the best resources to every project is reflected in our current infrastructure improvement contracts for Fort Hamilton, the Federal Highway Authority, and the Metropolitan Transit Authority. Today, BANC3 is recognized and respected in a competitive industry for our commitment to excellence by major federal and state agencies, and the leading engineering firms in the country.

Civil Engineering Leadership

Founded by Babu Cherukuri, PE, a civil engineer accomplished in planning, design and project management, BANC3 provides proven design engineering, evaluations, and for inspection services construction. transportation and environmental projects. To maintain such services effectively, Mr. Cherukuri drew from more than 20 years of experience to establish the high levels of technical proficiency and Quality Control to be incorporated into every BANC3 project. As such, under Mr. Cherukuri's leadership, BANC3 has designed, built, improved and maintained an eclectic collection of client properties, including: designs to upgrade the existing water distribution system of the 100acre. 40-building Trenton Psychiatric Hospital; site/civil designs for the expansion five New Jersev Motor of Vehicle Commission (NJMVC) facilities; and civil designs for improvements to Michie Stadium at the US Military Academy in West Point, NY.

To meet the demands of increasingly complex projects involving, at a minimum, advanced technologies and more stringent permitting requirements, Mr. Cherukuri recruited a team of resident experts in civil engineering: Jim Ott, PE, is a 30-year veteran of civil projects on US military bases across three states, and served as Director of the Directorate of Public Works (DPW) at Fort Monmouth, NJ for 15 years. Under Mr. Ott's direction, the DPW developed into a major regional service provider to federal and defense installations: Over 75 regional customers were supported, including McGuire AFB, Lakehurst NAES, Fort Dix, Dover AFB, and Picatinny Arsenal. As the extent of his knowledge and management ability have construction of clean rooms, radiation test facilities and anechoic chambers.

As a Certified Municipal Engineer, **Shree Shaha**, **PE** has 20 years overall experience, including 15 years as Township Engineer for South Brunswick, NJ. During his professional career he has designed and constructed water, wastewater and stormwater systems; completed utility relocations and related rightof-way documents; designed highway drainage systems for interstate highways;



BANC3 provided essential site work, engineering designs, and land surveying to support structural upgrades and facility improvements to Michie Stadium.

been demonstrated on numerous projects, he received the 2006 Secretary of the Army Distinguished Service Award in recognition of his visionary leadership, innovation, mission support, and customer service.

With over 40 years experience in construction and engineering, **Terry Matthews** has managed a comprehensive series of civil engineering projects that includes the construction and repair of buildings, roads, railroads, bridges, dams, and pipelines. At Fort Monmouth, he managed the construction management and contract administration office for 24 years. In that role, Mr. Matthews designed and managed diverse projects ranging from designs and specifications to construction inspection, on to the complex prepared contract documents and provided construction assistance for commercial, residential and school site development projects; supervised and managed the construction of roadway improvements; and served as Engineer to the Zoning and the Planning Boards.

Major Civil Engineering Projects

BANC3 maintains extensive and ongoing civil engineering project experience which enables us to expedite project preparations and facilitate all Task Orders for projects of any complexity. Our significant projects include:

Civil Engineering and Surveying Services for Historic Michie Stadium—US Military Academy; West Point, NY: We are currently providing engineering design and surveying services in support of the Phase IV architectural and structural restoration of the 83-year old historic Michie Stadium at the United States Military Academy at West Point. BANC3's extensive site work and engineering designs included new drainage and grading, utility designs, soil erosion and sediment control, sight lighting, demolition, and site construction details. We removed old existing pedestrian walkways, and added a concrete promenade new around the concession area.

Civil Engineering and CAD Services for Mt. Bachelor Highway in Oregon—United States Department of Transportation—Federal Authority: Vancouver, Highway WA: BANC3 designed numerous improvements, including: replacement of pavement structure; revisions to horizontal and vertical alignments to meet design speed; restoration of crown superelevation; roadway widening, and including paved shoulders; rehabilitation of an existing parking lot; construction of a new parking lot; relocation of chain on/off areas; upgrades to signing, guardrail and pavement markings to current Manual on Uniform Traffic Control Devices (MUTCD) standards; and drainage improvements.

Civil Engineering, Environmental **Engineering and Land Surveying Services** for the Expansion of Five Motor Vehicle **Inspection Stations**—New Jersev Motor Vehicle Commission; Flemington, Freehold, Lakewood, Randolph, South Brunswick, NJ: BANC3 designs include stormwater management, grading, soil and erosion control, water distribution system designs, septic system designs, sanitary collection and treatment systems, wetlands delineation and mitigation, demolition specifications, facility security designs. permitting. parking lots/roads designs/layout, and utility designs.



BANC3 directed the installation of new high-speed optical fiber and the replacement of related appurtenances—such as this cable junction point—that upgraded an aging infrastructure and supported increased demands for system capacity and data transmission speed from Fort Hamilton mission requirements.

Civil Engineering and Design Services for a Telecommunications Infrastructure **Upgrade**—Fort Hamilton, NY: Under an urgent mission requirement, the New York Area Command needed to upgrade the telecommunications infrastructure of several critical facilities with optical fiber; premise wiring also needed to be installed with optical fiber within other key facilities. To satisfy the requirement, BANC3 developed and executed a complete solution to install new high-speed fiber optic cable that included assessment, engineering. value engineering, scope development, telecom design, pricing, construction, construction management and quality control.

During installation of the optical fiber we discovered many collapsed or unavailable full conduits in the proposed cable routes. We therefore designed alternative routes through other available conduits. To accomplish this, we constructed interior and underground pathways, replaced manholes and conduits as necessary, and utilized directional boring to create some pathway sections. While replacing manholes, we discovered and resolved a critical problem: a major hub manhole which needed to be replaced without impacting telecommunications services on the installation.

Construction Management for the Pennsylvania Judicial Center—Harrisburg, PA: Recognizing a need to consolidate its court system, the State of Pennsylvania began construction of new court and office buildings in its capital, Harrisburg, to serve as the administrative center of its Unified Judicial BANC3 has been providing System. construction management services during construction of the nine-story, 330,000 sf court building, adjacent office complex, and the 95,000 sf parking garage.

We maintain a full-time, on-site presence during construction to monitor the project schedule milestones, budget, and quality of work. BANC3 construction managers (CM) inspect all work performed, making reinspections as needed to ensure tasks have been fully completed and conform to plans and specifications. To verify progress, CMs take photographs for file and reports.

School Construction Program Management—Gloucester City, Millville, and Vineland, NJ: BANC3 provided full program management services to the New Jersev Schools Development Authority (SDA) during construction and improvements to five schools in three districts. Working closely with SDA officials, we developed a comprehensive plan for each district, and managed the design and construction of all school facilities projects. Our responsibilities included design management, bid and award construction field support. observation, project controls, and information management and reporting.

We directed rehabilitation projects that included replacement of fire alarm systems, electrical upgrades, windows/doors and curtain wall replacement, roof replacement, masonry wall restoration and Americans with Disabilities Act (ADA) improvements (e.g., accessibility to buildings and rest rooms). Further, by incorporating several energy conservation elements—such as geothermal heating and efficiency lighting—in the design charrette process, BANC3 initiated the means to receive Leadership in Energy and Environmental Design (LEED) certification for these projects.

Key Civil Engineering Services

Planning and Site Development

BANC3 prepares conceptual plans and site plans based on the proposed improvement requirements established by the client and standards set forth in the City/Township Land Development Ordinance. Site development plans consist of detailed layouts of parking, roadways, building setbacks, on-site utilities. stormwater structures, soil erosion controls, and other necessary details. Additional supporting plans show construction details and notes, including a site location map, surrounding property owners, an index of civil drawings, appropriate title blocks and related bulk density site information, and overall physical features of the area. BANC3 has provided planning and site development services for:

- A proposed salt storage shed for the Department of Sanitation of the City of New York
- The expansion of five vehicle inspection stations for the NJMVC at Flemington, Freehold, Lakewood, South Brunswick, and Randolph, NJ
- The expansion of the Monmouth County Vocational School, Monmouth County Vocational School District

• The African American Fund of New Jersey Charter School, Plainfield Township, NJ

Infrastructure Services

Those assets that support an economy and protect public interests are the backbone of every society. Hospitals, schools, power and water treatment plants, sewer systems, streets, bridges and parks are just a few primary components of a sweeping network of facilities and resources that comprise a typical local or state infrastructure. Keeping this network healthy, secure and active is the responsibility of individual owners and managers to serve effectively the diverse needs of dependant citizens. BANC3 recognizes the urgency of maintaining such community assets, and has established civil infrastructure management as one of our core disciplines. To protect the integrity of infrastructure. routinely we provide maintenance, repairs. rehabilitations and alterations to existing buildings, utilities, and road systems.

Facility Services

Our comprehensive services include the design of building additions, mechanical improvements and retrofits, renovations, roof repairs and replacements, environmental compliance, permitting, and construction management. Recognizing that renovation projects often include the handling of hazardous materials, we conduct surveys for asbestos and lead based paint. Further, we identify hazardous materials on construction documents to ensure safe handling and disposal of those materials during the renovation.

BANC3 facility infrastructure projects include:

• The design-build of a controlled humidity warehouse and urban training facility at Fort Dix, NJ.

- Engineering designs for facility improvements and new construction for US postal Service facilities in New Jersey and New York.
- Civil designs for the structural restoration of Michie Stadium at the US Military Academy at West Point, NY.

Utility Infrastructure Evaluation and Design

BANC3 designs utilities infrastructure for new facilities, and evaluates the capacity of existing utility infrastructure to support proposed expansions. These utility designs consist of a utility inventory/evaluation, systems' compatibility, and sizing. Additionally, utility profiles are made, including sanitary sewer and storm sewer systems, potable water, electric power, natural gas, telephone service, cable television, and communication lines. Utility infrastructure projects designed by BANC3 include:

- A water distribution system and fire suppression system upgrades for the 100-acre Trenton Psychiatric Hospital
- Telecommunications systems upgrade for Fort Hamilton, NY
- Underground electrical lines for Woodbridge Development Center in Woodbridge, NJ

Roadway Evaluation and Design

BANC3 transportation services go beyond human safety in a structurally sound environment. We meet project objectives through designs that incorporate present engineering requirements with considerations of future impacts to the roadway.

Our designs consider numerous roadway components, including alignment, sidewalks, driveways/aprons, property and access impacts, and grading plans for intersecting streets. To optimize these improvements, we take into account any histories of drainage problems, along with any long-term drainage study recommendations. Cross sections are included as necessary to provide sufficient information (e.g., establishment of proposed crown locations, slope conditions, driveways and adjacent property impacts, limits of all features, and phases of work) for clearly and properly depicted designs. As such, these designs can be itemized accurately in the specifications and quantified in the Engineer's Estimate.



Looking beyond today's needs, BANC3 can develop thorough needs analyses to address such issues as utility layout and design, ingress/egress, Right-of-Way issues, and subsurface conditions. Further, BANC3's prominence and active involvement with local and regional transportation authorities enables us to provide the fullest overview of capital improvements and their potential ramifications.

BANC3's roadway designs and support services include:

• Multiple roadways in Freehold, Flemington, South Brunswick, Randolph, and Lakewood at NJMVC expansion sites.

- Installation of CCTV cameras on the New York Thruway from Mile Post 0 to Mile Post 36.
- Engineering improvements and CAD services for Mt. Bachelor Highway in Oregon for the Western Federal Lands Highway Division.
- CAD services for a feasibility study of seven damage-prone sites along Oregon Highway 35 (for Western Federal Lands Highway Division) to develop a project scoping process for potential improvements and engineering requirements.

Construction Management

BANC3 construction management and inspection projects encompass roadways. utilities, and buildings, including school reconstruction programs. BANC3 has been involved in the construction management and inspection of projects with combined construction costs totaling more than \$1 billion. Our experienced personnel possess in-depth knowledge of construction inspection procedures, guidelines and methods of operation and utilize those which will be most effective on a given project.

Our successful approach applies seven critical methodologies:

- Managing schedules to anticipate and avert delays.
- Managing schedule disruptions early to deliver projects on time and ensure overall program requirements are met.
- Managing time extensions, change orders, and claims to mitigate cost/time impact on the project, minimizing legal exposure to the Client.
- Providing timely and meaningful schedule data to key staff so they will

consistently understand program status and direction.

- Monitoring cost, preparation of progress payments and final payments, evaluation and processing of change orders and claims.
- Monitoring construction work for compliance with plans, specifications, materials and workmanship.
- Monitoring the Contractor's compliance with his standard Safety Plan.

Our construction management projects include:

- Construction inspection of three Delaware River Port Authority Bridges (Ben Franklin, Betsy Ross, and Walt Whitman)
- Construction inspection of highway pavement markings for the NJ Department of Transportation.
- Construction of three explosive truck holding yards at Naval Weapons Station Earle, Colts Neck, NJ
- Building renovations for PS 41 for the New York City School Construction Authority (NYCSCA); New York, NY