State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
DNR212041	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
FRANK WHITTAKER
304-558-2316

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

Chapman Technical

SHIP TO
DIVISION OF NATURAL RESOURCES
PARKS & RECREATION SECTION

324 4TH AVENUE
SOUTH CHARLESTON, WV
25303-1228 304-558-3397

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
09/09/2011				

BID OPENING DATE: 10/18/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		906-00-00-001		

THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES IS SOLICITING EXPRESSIONS OF INTEREST (EOI) FOR ENGINEERING SERVICES AND OTHER RELATED SERVICES TO DESIGN, CONSTRUCT, AND/OR SPECIFY IMPROVEMENTS TO MARINE FACILITIES OPERATED BY THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES PER THE ATTACHED SPECIFICATIONS.

ALL TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO FRANK WHITTAKER IN THE WV PURCHASING DIVISION VIA EMAI AT FRANK.M.WHITTAKER@WV.GOV OR VIA FAX AT 304-558-4115. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 09/28/2011 AT 4:00 PM. ALL TECHNICAL QUESTIONS WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.

NOTICE

A SIGNED BID MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
BUILDING 15

RECEIVED
2011 OCT 18 AM 10:34
WV PURCHASING DIVISION

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
DNR212041	2

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304-558-2316

VENDOR
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SHIP TO
DIVISION OF NATURAL RESOURCES
PARKS & RECREATION SECTION

324 4TH AVENUE
SOUTH CHARLESTON, WV
25303-1228 304-558-3397

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2019 WASHINGTON STREET, EAST
CHARLESTON, WV 25305-0130

THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:

SEALED BID

BUYER: 44

RFQ. NO.: DNR212041

BID OPENING DATE: 10/18/2011

BID OPENING TIME: 1:30 PM

PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:

304-727-5580

CONTACT PERSON (PLEASE PRINT CLEARLY):

Greg Belcher, PE, Vice President - Engineering

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

RFQ No. DNR212041

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:
"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Chapman Technical Group

Authorized Signature: Robert C. Bellah Date: October 18, 2011

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 18th day of October, 2011.

My Commission expires September 20, 2020

AFFIX SEAL HERE

NOTARY PUBLIC Jessica D. Gunnoe

Official Seal
Notary Public, State of West Virginia
Jessica D. Gunnoe
506 Coal Fork Road
Charleston WV 25306
My Commission Expires Sept. 20, 2020

Chapman Technical Group

TRC

SOUND APPROACH. SOLID DELIVERY.

AIRPORT DESIGN / DEVELOPMENT ARCHITECTURE / INTERIOR DESIGN CIVIL ENGINEERING / SITE DEVELOPMENT ENVIRONMENTAL ENGINEERING LANDSCAPE ARCHITECTURE SURVEYING

Statement of Qualifications

for

Professional Engineering Services

to the

West Virginia Division of Natural Resources
Parks & Recreation Section

for

Marine Facility Improvements
at
Blennerhassett Island State Park

October 18, 2011

RFQ#: DNR212041

200 Sixth Avenue
St. Albans, WV 25177

304.727.5501
FAX 304.727.5580

Buckhannon, WV
Martinsburg, WV

www.chaptech.com

Chapman Technical Group

October 18, 2011

Department of Administration
Purchasing Division
Building 15
2019 Washington Street, East
Charleston, West Virginia 25305-0130

Re: A/E Services for Blennerhassett Island State Park - Marine Facilities
RFQ DNR212041

Dear Selection Committee:

Chapman Technical Group is most interested in providing engineering services for the design of marine facilities and other improvements at Blennerhassett Island State Park for the West Virginia Division of Natural Resources. We have assembled a highly-qualified experienced team to meet the unique requirements of this project.

Chapman Technical Group has in-house registered architects, landscape architects and civil engineers who have proven their capabilities on several major West Virginia State Park projects. Joining our team to assist with the design of the marine facilities is **TRC Engineers, Inc.** For over ten (10) years, Chapman Technical Group and TRC have worked together on multiple complex bridge projects with the WV Division of Highways, and as a result, our team has a good working relationship and a very successful track record.

TRC Engineers, Inc. has maintained a Charleston office since 1996 that has been the recipient of several WVDOH-sponsored Engineering Excellence Awards in recognition of their work. In support of their professional civil and structural design services, TRC maintains an in-house soil-mechanics laboratory (AASHTO accredited), a full-compliment of drilling equipment (skid-, truck-, track- and ATV-, and barge-mounted applications), and a staff of geotechnical engineers and geologists. **TRC Engineers, Inc.** was recently (2011) ranked No. 37 among the Top 500 Design Firms as determined by Engineering News-Record magazine. Nationally, TRC employs over 2,500 administrative, engineering and technical personnel in more than 75 offices.

Having designed many projects for the WV State Parks, **Chapman Technical Group** is very familiar with State Parks' procedures, desires and goals. **TRC Engineers, Inc.** has an accomplished staff with respect to designing marine facilities. Together our experienced team offers the reliable services needed for this most important project.

200 Sixth Avenue
St. Albans, WV 25177
304.727.5501
FAX 304.727.5580
Buckhannon, WV
Martinsburg, WV
www.chaptech.com

All West Virginia State Parks are special places which are sometimes taken for granted by state residents. With the execution of this project, it is critical that the facilities be developed in such a way that minimizes the construction footprint and maximizes the natural beauty of the park, while protecting the Parks' valuable assets. Chapman Technical Group's landscape architects, architects and engineers will work together to carefully craft the design package to accomplish these goals.

You can be assured that we will be available at the project site on short notice and can be available to whatever extent is required during the critical construction phase.

You will find all of the requested information regarding our team and our ability to execute the requirements of this project within this submittal. We would very much appreciate the opportunity to present our project team and further discuss your project. In the meantime, if you have any questions or need additional information, please contact me.

Sincerely,

CHAPMAN TECHNICAL GROUP

Robert G. Belcher, PE
Vice President, Engineering

Chapman Technical Group

Company Overview

Chapman Technical Group's St. Albans Office

Chapman Technical Group is a full-service consulting firm with offices in St. Albans, Buckhannon, and Martinsburg, West Virginia offering an extensive range of professional architectural, engineering, interior design and landscape architectural services. Established in 1984, Chapman Technical Group has steadily grown to a diverse firm of professionals, many of whom were educated in West Virginia colleges and universities. We have achieved an outstanding reputation for providing high-quality design projects, while meeting client schedules and budgets and have received numerous awards for our work.

Our facilities are both state-of-the-art and architecturally significant. Our St. Albans office is a former post office and is now on the National Register of Historic Places.

Chapman Technical Group offers a broad range of professional services.

- Airport Design
- Architecture
- Civil Engineering
- Fire Pumping & Protection
- Interior Design
- Landscape Architecture
- Recreational Facilities
- Roads, Highways, & Bridges
- Site Development
- Space Planning
- Surveying
- Water & Wastewater Systems

Awards

AMERICAN INSTITUTE OF ARCHITECTS - MERIT AWARD FOR EXCELLENCE IN ARCHITECTURE, 2009 - Interstate 79 Rest Areas.

AMERICAN SOCIETY OF CIVIL ENGINEERS - NATIONAL - SUPERIOR EMPLOYER AWARD, 2009, Support of Young Professionals in the Private Sector.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2009, Gold Award - Special Projects Category for the Mercer County Airport Runway Safety Area Project.

AMERICAN INSTITUTE OF ARCHITECTS - HONOR AWARD FOR EXCELLENCE IN ARCHITECTURE, 2008 - Upshur County Courthouse Restoration and Renovations.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2008, Bronze Award - Wastewater Category for the Spring Run State Fish Hatchery Improvements.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2007, Silver Award - Structures Category for the Mercer County Airport Runway Safety Area Project.

GARY KING COMMUNITY SERVICE AWARD, 2006.
GOOD SCOUT RECIPIENT, 2005.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2003, Gold Award - Water Treatment Category for the City of Fairmont Water Treatment Plant Project.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD,
2002, Gold Award - Transportation Category for the Raleigh County Memorial Airport Runway Rehabilitation Project.

WINNER - "COMMISSIONER'S ENGINEERING ACHIEVEMENT AWARD", 2000, The WVDOT - Division of Highways - Large Bridge Category for WV10 Buffalo Creek Bridge, Logan County, West Virginia.

FINALIST - "COMMISSIONER'S ENGINEERING ACHIEVEMENT AWARD", 1999, The WVDOT - Division of Highways - Large Roadway Category for WV10 Buffalo Creek - Taplin Project and 2000 for WV10 Buffalo Creek - Huff Junction Project, both in Logan County, West Virginia.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 1999, Silver Award - Water and Wastewater Category, for the City of Beckley Piney Creek Wastewater Treatment Plant Project.

ENTREPRENEUR OF THE YEAR AWARD - FINALIST, 1999 and 2000, Sharon L. Chapman, President, was named one of twenty finalists in the West Virginia Area Entrepreneur of the Year Award. Sharon was recognized for leading Chapman Technical Group to become one of the most highly regarded engineering firms in the state after the death of her husband and company founder, Harvey R. Chapman.

"EXPECT THE BEST FROM WEST VIRGINIA AWARD", 1998, Charleston Regional Chamber of Commerce. The Expect the Best program was created to recognize West Virginia businesses and organizations that promote quality of life at home, work, and in the community so that individuals and organizations will implement quality principles and practices leading to unprecedented pride and economic growth in West Virginia.

HONOR AWARD, West Virginia Chapter of the American Society of Landscape Architects, 1994, Shrewsbury Street Area Redevelopment Plan, for excellence in planning and design projects. Joseph E. Bird, ASLA, Project Manager.

"GOVERNOR'S AWARD FOR ENGINEERING EXCELLENCE", 1990, The West Virginia Chapter of the American Public Works Association, in recognition of outstanding Public Works Engineering and Design of Projects within West Virginia.

DUNDEE CEMENT COMPANY ANNUAL DESIGN AWARD, 1988, Yeager Airport Taxiway Overlay Project. Harvey R. Chapman, P.E., Project Manager.

AUSTIN C. PALMER "OUTSTANDING FACILITY DESIGN AWARD", 1988, City of Bridgeport Swimming Pool Complex. Harvey R. Chapman, P.E., Project Manager.

"GEORGE WARREN FULLER AWARD", Harvey R. Chapman, P.E., 1984, Robert G. Belcher, P.E., 2001, and Sharon L. Chapman, 2005, Jeffery D. Ekstrom, P.E., 2010, American Water Works Association, for distinguished service in the water supply field in the State of West Virginia.

Landscape Architecture

Fort Martin Boat Ramp 06025

Fort Martin Boat Ramp
Morgantown, West Virginia

Construction Cost: $100,000
Services: Civil Engineering, Landscape Architecture
Project Size: 4 Acres
Owner: WV Division of Natural Resources
Dennis Kincer, PE
(304)558-2771

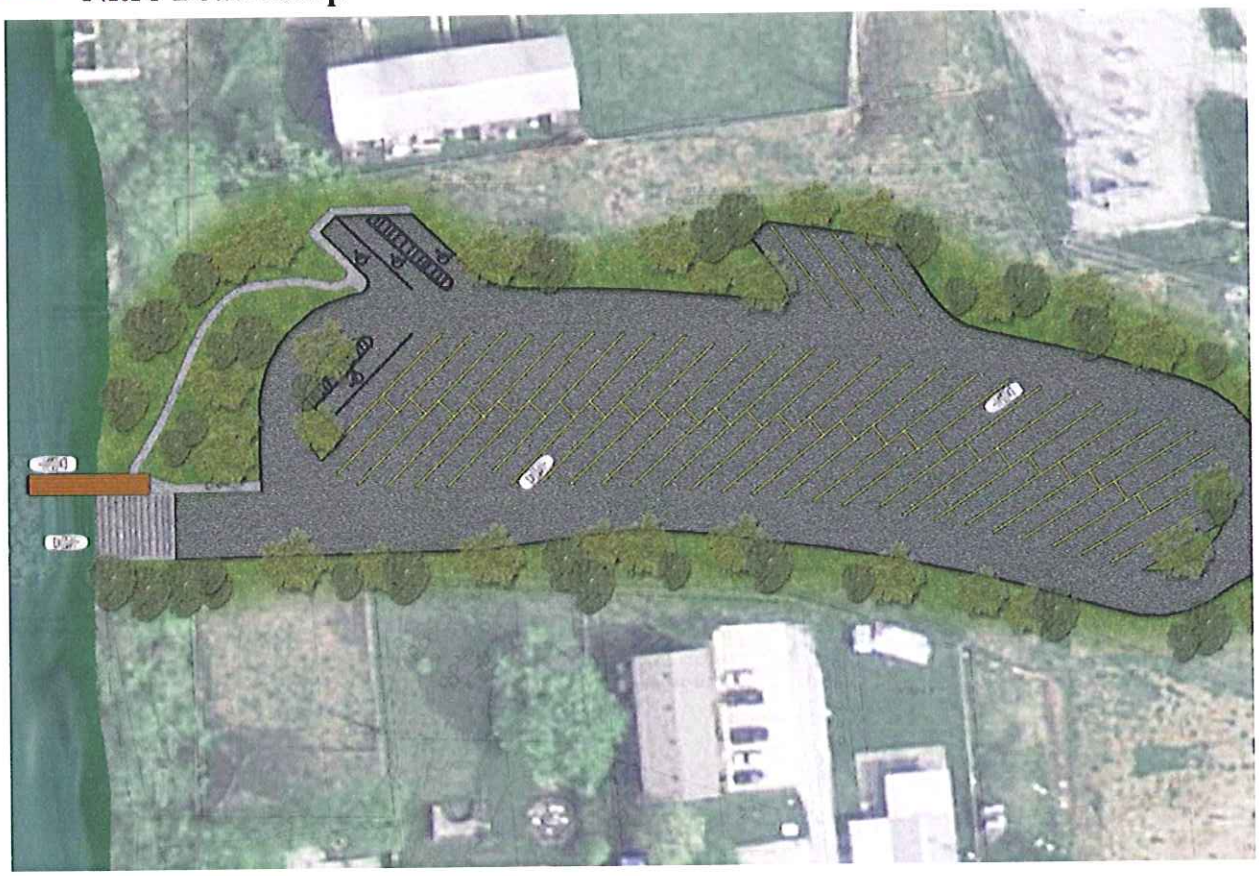
Completion Date: October 2010.

The project is located along the banks of the Monongahela River, between Morgantown & the Pennsylvania state line and consists of a 30' wide boat launch, an ADA accessible boarding ramp & dock and a 66 space vehicle parking lot.

Landscape Architecture

Nitro Boat Ramp

05016



Nitro Boat Ramp
Nitro, West Virginia

Construction Cost: $100,000
Services: Civil Engineering, Landscape Architecture
Project Size: 4 Acres
Owner: WV Division of Natural Resources
Dennis Kincer, PE
(304)558-2771

Completion Date: August 2011.

This project is located along the banks of the Kanawha River in the City of Nitro. The project consists of a 30' wide boat launch, an ADA accessible boarding ramp & dock and a 60 space vehicle parking lot.

Landscape Architecture

Poca Boat Ramp

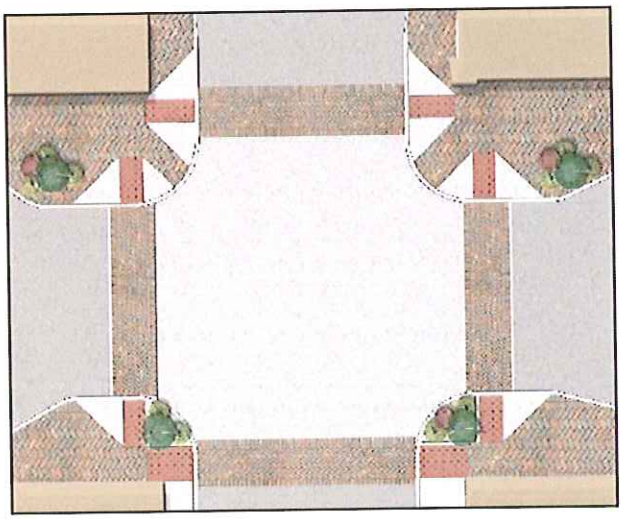
07059

Poca Boat Ramp

Poca West Virginia

The Town of Pineville is a southern West Virginia coal town with simple charm and assets like the recently-renovated Wyoming County Courthouse, but is challenged by the constant roar of coal trucks down Main Street. The heavy traffic not only poses safety concerns but also contributes to a less than ideal aesthetic.

The new streetscape plan will enhance the downtown with accent pavers that reflect the history and culture of the town, new historic period streetlights, and easy to maintain planters for a touch of green. Sidewalk bump-outs and will accentuate the main intersection on Main Street and serve as a traffic calming device. Construction is scheduled for 2008.



Intersection Detail

Landscape Architecture

Raymond City Fishing Pier

93054

Raymond City Fishing Pier
Poca, West Virginia

Construction Cost: $50,000
Services: Civil Engineering, Landscape Architecture
Project Size: 3 Acres

Owner: Town of Poca
Mayor Pat Hill
(304) 755-5061

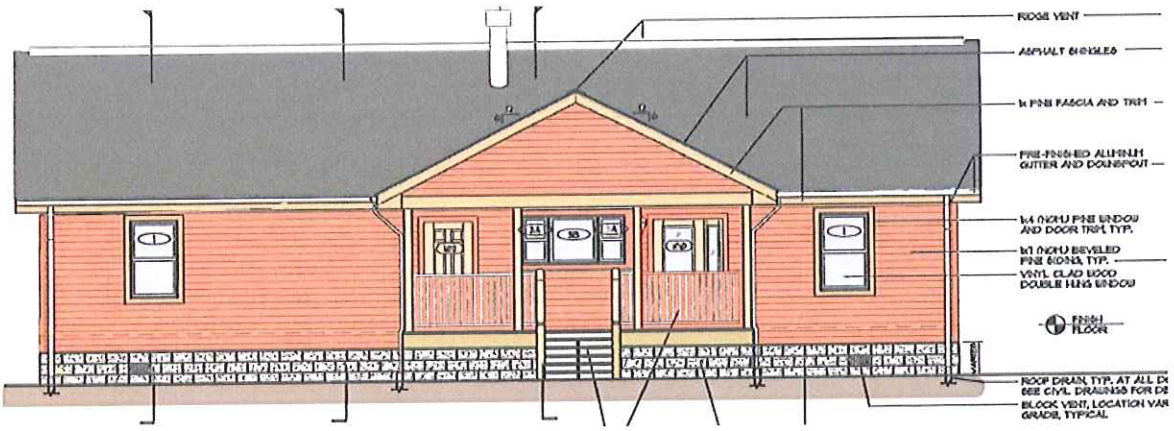
Completion Date: 1996.

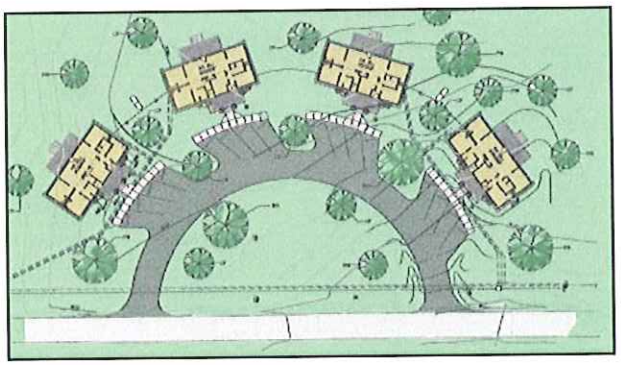
The project consisted of a 30 space combined boat trailer and automobile parking lot, including handicapped parking; an ADA accessible ramp and railing; a stationary pile driven fishing pier; and all required permitting.

Landscape Architecture

Blackwater Falls Cabins

07069





Blackwater Falls Cabins
WV DNR Parks and Recreation
Davis, West Virginia

Chapman Technical Group was selected to provide the architectural, civil engineering, and landscape architectural design to construct 13 new cabins in the environmentally-sensitive Blackwater Falls State Park, including site development and utility system upgrades.

Originally the Owner wanted to expand the existing cabin area in the park, but utility issues proved too costly at that location, so alternative sites were evaluated and a seldom used picnic area was determined to be the optimum site.

One of the goals in developing the project was to have as little environmental site impact as possible. The selection of the picnic area site meant that a new access road would not be required. A plan to cluster the cabins was developed that would further minimize the footprint of the cabin development. As much as possible, the existing grade remained unchanged to preserve the natural vegetation. A natural planting plan was developed using indigenous or naturalized plant species, with a special effort made to provide habitat vegetation for endangered animal species in the area. Ground water recharge was investigated but was deemed unfeasible due to clay soils and shallow bedrock.

As part of the project, a low-impact wastewater treatment plant was designed and will result in water clean enough to discharge into the natural waterways of the park. More than a mile of potable water line was also upgraded, which will benefit other areas of the park as well.

Construction should be complete in 2010.

Landscape Architecture

Laurel Lake WMA Swimming Pool 08080

Laurel Lake WMA Swimming Pool
Mingo County, West Virginia

The West Virginia Division of Natural Resources swimming pool at the Laurel Lake Wildlife Management Area near Lenore, West Virginia had fallen into serious disrepair and had actually closed down. Chapman Technical Group designed a rehabilitation of the pool that included a new stainless steel gutter recirculation system, a membrane liner, a new interactive wading pool, and new concrete decks. After the demolition of the old bathhouse, a new bathhouse was built which also houses the filtration equipment for the wading pool. The project was completed in 2010 at a cost of $714,000.

The swimming pool renovations included a new interactive wading pool.

Landscape Architecture

Beech Fork State Park

97049

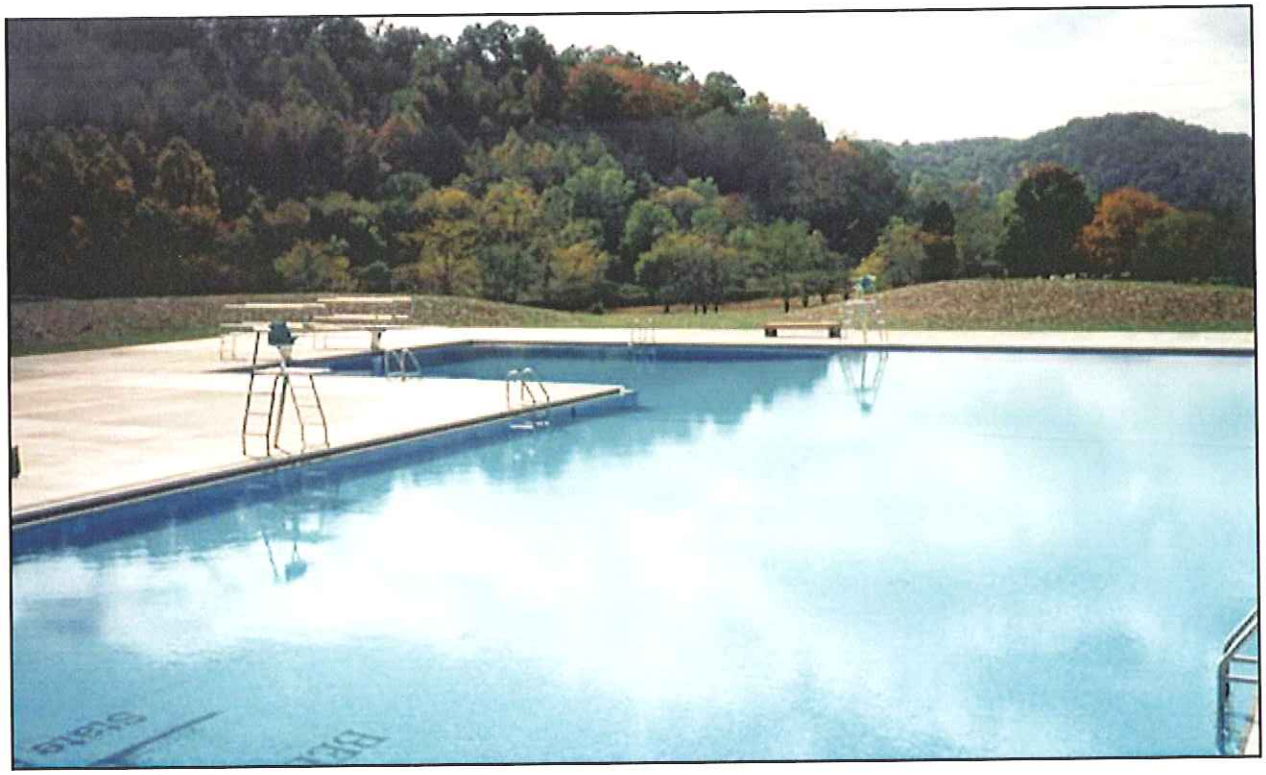
West Virginia Division of Natural Resources
State Capitol , Building 3, Room 669
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305

Chapman Technical Group designed $4.5 million worth of improvements at the state park near Barboursville including a 50-meter swimming pool, bathhouse, six modern cabins, and campground upgrades. With its distinctive high sloped roof, the bathhouse was designed as the architectural centerpiece of the Bowan Day Use area while complementing the architecture of the existing park structures. The cabins provide the warmth of natural materials such as wood and stone, yet are fully equipped with modern conveniences such as air conditioning and microwaves.

Landscape Architecture

Beech Fork State Park

97049



West Virginia Division of Natural Resources
State Capitol, Building 3, Room 669
1900 Kanawha Boulevard,
Charleston, West Virginia 25305

Chapman Technical Group designed $4.5 million worth of improvements at the state park near Barboursville including a 50-meter swimming pool, bathhouse, six modern cabins, and campground upgrades. The pool and bathhouse were constructed on 12 feet of fill, artfully designed by our landscape architects to blend naturally with the surrounding terrain. A one-half mile access road to the cabins was also designed by our landscape architects. They also provided the storm water management of the project, as well as all of the landscaping.

Landscape Architecture

Moncove Lake State Park Swimming Pool

97051

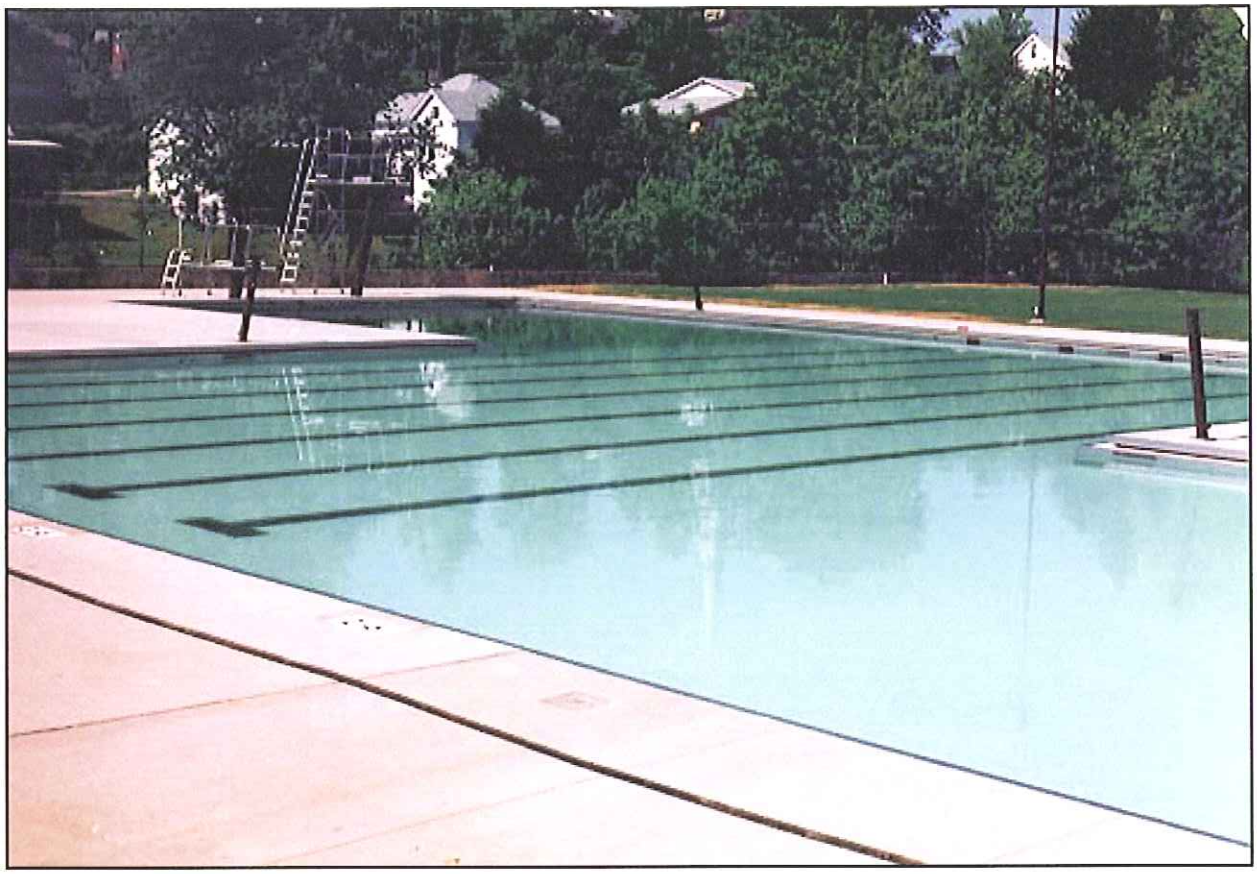
West Virginia Division of Natural Resources
State Capitol, Building 3, Room 669
1900 Kanawha Boulevard,
Charleston, West Virginia 25305

The new Moncove Lake State Park swimming pool opened for business on the Fourth of July weekend of 1999, one month ahead of schedule. Designed by Chapman Technical Group for the West Virginia Division of Natural Resources, the pool features a stainless steel gutter recirculation system and a wading pool surrounded by spraying jets of water. The 25 meter pool is a long-needed addition to the state park located south of Lewisburg.

In order to provide adequate water for the pool, not only was the construction of a pool filter room required, but the entire water system for the park had to be renovated. The water system design included a larger well pump, a larger green sand filter to remove iron, and upgraded water storage and filter backwash capabilities.

Landscape Architecture

Bridgeport Swimming Pool Complex 85009



City of Bridgeport
515 West Main Street
Bridgeport, West Virginia 26330

When the City of Bridgeport's municipal pool had deteriorated to the point of replacement, Chapman Technical Group was commissioned to design a replacement facility. After many preliminary designs, it was determined that the new complex would consist of a 25-meter Z-shaped pool and a children's wading pool. The main pool was designed to accommodate a future waterslide and the existing filter equipment was totally replaced. The project received the Austin C. Palmer Outstanding Facility Award from the West Virginia Recreation and Parks Association.

Wastewater Engineering

WV DNR – Camp Creek State Park
Wastewater System Improvements

08062

WV DNR
Parks & Recreation Department
Project Cost: $525,723
Construction Cost: $488,123

The West Virginia Division of Natural Resources, Parks and Recreation Department, retained Chapman Technical Group to provide design and construction phase services for a wastewater collection and treatment system at Camp Creek State Park in Mercer County, West Virginia. The existing facilities were served with septic tanks and leach fields which were failing due to shallow rock, a high groundwater table, and overloading during seasonal peak flows. The initial phase of the project was completed in July of 2010 and included a 6,400 GPD re-circulating sand filter wastewater treatment plant with UV disinfection and a grinder pump station which serves the superintendent's residence as well as the park's RV dump station. The treatment plant was constructed on engineered fill to elevate it above the historical high water level. Both the treatment plant and pump station were designed to facilitate future expansions of the wastewater system to pick up other park facilities when funding becomes available.

OVERVIEW

TRC Engineers, Inc. is a highly progressive engineering, design and consulting firm that offers a diversity of expertise in the areas of infrastructure, energy, and environmental consulting to both public and private-sector clients throughout the United States. Substantiating their strength in the industry, TRC was recently (2011) ranked No. 37 among the Top 500 Design Firms as determined by *Engineering News-Record* magazine. Nationally, TRC employs over 2,500 administrative, engineering and technical personnel in more than 75 offices.

Illustrating the significant credentials that TRC offers locally, they have operated a highly successful West Virginia office in Charleston since 1996 that has been the recipient of several WVDOH-sponsored Engineering Excellence Awards in recognition of their work. Over the past 15 years, they have successfully completed the designs for infrastructure projects of varying configuration, scope and complexity, as well as assisted with such unique assignments as the rewrite of the Bridge Design Manual for the WV Division of Highways. In support of their professional civil and structural design services, TRC additionally maintains an in-house soil-mechanics laboratory (AASHTO accredited), a full-compliment of drilling equipment (skid-, truck-, track- and ATV-, and barge-mounted applications), Computer Assisted Design (CADD) workstations, a staff of geotechnical engineers and geologists, and WVDOH-certified construction inspectors.

TRC has established an excellent reputation for providing quality consulting and engineering services to their clients. TRC work products routinely meet the requirements for quality set by their clients and have passed the vigorous scrutiny of federal, state, and local regulatory agencies. In most cases, TRC has been awarded subsequent contracts because of their outstanding performance on assigned projects.

Crescent City Connection Trust Indenture / Engineering Services

Orleans Parish, LA

PROJECT PROFILE

CLIENT

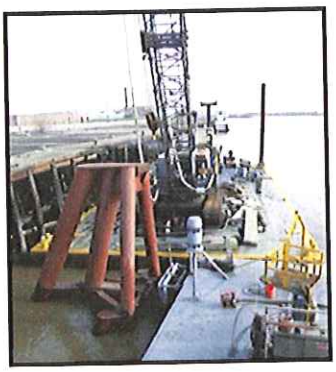
Lousianna Department of Transportation and Development

YEAR COMPLETED

2010

SERVICES

- Condition Inspections
- Development of Plans and Specifications
- Construction Administration
- Cost Estimates



Initiated in 2006, TRC provided various Trust Indenture and Engineering Services for facilities owned by or in the domain of the Crescent City Connection Division (CCCD) of the LADOTD. The CCCD funds, operates and maintains toll crossings of the Mississippi River in New Orleans consisting of two parallel high-level cantilever truss bridges, as well as three ferry crossings. Completed on a Task Order basis, our services included studies, designs, contract plans, specifications, estimates, bidding documents, and construction administration for construction projects involving periodic facility maintenance and repair work which was beyond the capabilities of the CCCD staff. Such work also required rapid response to perform emergency inspections of the various facilities due to vehicle and barge collisions, fires, and natural disasters. Several marine-related Task Orders that were completed under this contract include the following:

- **Jackson Avenue Ferry** – TRC inspectors responded within a few hours of notification of the Jackson Ave. ferry landing barge dolphin being struck by a barge. TRC structural engineers performed a condition assessment of the dolphin structure above water and then mobilized a dive team supervised by TRC's lead inspector/diver to assess the underwater portions of the dolphin. TRC then designed a temporary repair option.
- **CCC Bridge #1 Barge Collision** – TRC engineers and inspectors responded immediately after Pier 2 was struck by a fuel barge. TRC monitored the situation during the sinking of the barge and during the subsequent salvage operation. TRC functioned as CCCD's representative in coordinating the salvage operations with the U.S. Coast Guard and salvage firm. TRC's lead inspector/diver supervised the salvage dive team during the condition assessment of Pier 2 to assess damage caused to the fender system and pier footing by the barge collision and salvage operations.
- **CCC Bridge #2 Barge Collision** – TRC engineers and inspectors responded immediately after Pier 2 was struck by a barge. TRC performed an initial condition assessment of the above water portions of the fender system and pier stem. Then TRC mobilized a dive team and dive support vessel to perform a detailed underwater inspection of the fender system and pier footing. TRC's lead inspector/diver supervised the dive operations and directed the dive team during this underwater condition assessment. TRC then developed a repair design and construction cost estimates.

Camden Iron and Metal, Girard Point Pier Reconstruction

Philadelphia, PA

PROJECT PROFILE

CLIENT

Camden Iron and Metal

YEAR COMPLETED

2006

REFERENCE

Michael Faschnacht
S.T. Hudson Engrs.
(856) 342-6600

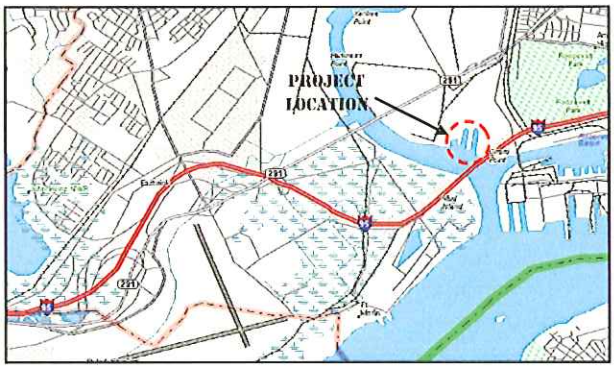
SERVICES OVERVIEW

- Test Borings
- Soil Lab Testing
- Foundation Recommendations
- Determination of Pile Capacities
- Pile Testing Recommendations

Project consisted of the reconstruction of a pier (No. 3) at the Girard Point facility of Camden Iron & Metal along the Schuylkill River waterfront in Philadelphia. The new pier would have anticipated loadings of 1000 psf, with steel pipe piles and precast concrete piles initially being considered as alternatives for foundation support of the proposed structure. The reconstruction work also included the demolition and removal of the existing Pier No. 3, along with the nearby construction of a 200-ft high steel-frame communication tower with three support legs.

The investigation was initiated with the drilling of five (5) test borings for the pier reconstruction and three (3) test borings for the proposed cell tower, all of which were completed by TRC crews. Depths ranged from 85 to 130 ft below the existing ground (or dock) surface (bgs) for the pier borings and from 26.5 to 99.5 ft bgs for the tower borings. Split spoon and Shelby tube soil samples were subsequently delivered to TRC's AASHTO/ASTM accredited soil mechanics laboratory and examined by one of our engineers to check the field classifications. Representative soil samples were selected for index testing (moisture content, gradation, Atterberg Limits), determination of volumetric properties (dry unit weight), and shear strength testing (unconsolidated-undrained triaxial).

Initially, steel pipe piles and precast concrete piles were considered as alternatives for foundation support of the proposed structure. However, based on our experience, the precast concrete piles were likely to suffer damage when driven through the soft soils of Stratum 2 into competent bearing material. Therefore, in lieu of the precast concrete piles we estimated that 16 to 24-in diameter steel pipe piles driven to/in decomposed rock would achieve the allowable design capacity in compression.



Battleship New Jersey Mooring
Camden, NJ

PROJECT PROFILE

CLIENT

S.T. Hudson

YEAR COMPLETED

2001

SERVICES OVERVIEW

- Test Borings
- Soil Lab Testing
- Foundation Recommendations
- Determination of Pile Capacities
- Pile Testing Recommendations

TRC was retained to provide a geotechnical analysis associated with the design and construction of a permanent mooring system for the battleship USS New Jersey at the Beckett Street Terminal along the Delaware River waterfront in Camden, New Jersey. The permanent mooring system for the battleship consists of four (4) large diameter (84 in.) monopiles, supplemented by plate anchors. Each monopile has an 84 in. outside diameter with 2-½ in. thick walls and is subjected to a horizontal load of up to 450 kips.

As part of the investigation, TRC analyzed and designed the large-diameter monopiles for lateral loading and performed driveability studies for pile installation. This work also included the evaluation of subsurface investigation data, obtained by others, from five (5) water-based test borings ranging in depth from 48 ft to 100 ft below the river level. A comprehensive testing program was subsequently executed in TRC's soil-mechanics lab to supplement the visual classification of soil samples and measure/verify select engineering properties of the soil and rock. TRC selected representative soil samples for index testing (moisture content, gradation, Atterberg Limits, and specific gravity) and shear strength testing (UU triaxial compression).

Tanker Dock Pier Reconstruction

Trainer, PA

PROJECT PROFILE

CLIENT

Confidential

YEAR COMPLETED

Fall 2007

REFERENCE

Steve White
S.T. Hudson Engrs.
(856) 342-6600

SERVICES OVERVIEW

- Test Borings
- Soil / Rock Lab Testing
- Pile Design
- PDA Testing
- WEAP Analysis
- Field Oversight

TRC completed a full-service geotechnical investigation that included pile analysis and design, WEAP analysis, field oversight, and full-time Pile Dynamic Analysis (PDA) for a complete reconstruction of this oil refinery tanker dock.

Work was initiated with the drilling of a series of both land and barge-based test borings, followed by soil and rock laboratory analysis, pile evaluation and analysis, and full-time PDA testing and analysis. TRC additionally designed a socketed pile to withstand the significant uplift forces that would be generated by the oil tankers that docked at the facility.

A detailed evaluation was also made of both driven and drilled/socketed piles for support of the anticipated compression and uplift loads. On-call construction consultation included recommendations for adjusted rock socket lengths as appropriate based on conditions encountered at each of the drilled/socketed pile locations.

The Pile Dynamic Analysis (PDA) test was used to evaluate real time axial capacity, compressive stress and hammer performance. The PDA data was further evaluated and analyzed using CAPWAP software to determine the estimated distribution of shaft and toe resistance, along with estimates of the pile uplift capacity. TRC supported the client's aggressive night shift and weekend work operations during the 45-day plant shut-down period using multiple PDA systems at a moments notice. Since most of our test operations were carried out over water, special PDA testing instructions were effectively employed.

Ultimately, it was TRC's PDA testing services that provided the real-time insight and quality assurance information that enabled the project to safely proceed on an aggressive schedule.

Chester Downs Horse Race Track and Casino

Chester, PA

PROJECT PROFILE

CLIENT

S.T. Hudson Engineers

YEAR COMPLETED

2005

REFERENCE

Rich Long
(856) 342-6600

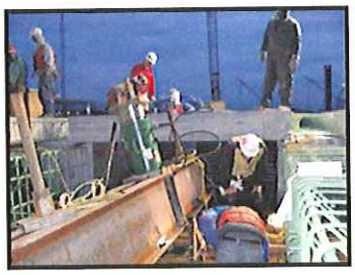
SERVICES OVERVIEW

- Test Borings
- Soil / Rock Lab Testing
- Pile Design
- PDA Testing
- WEAP Analysis
- Field Construction Oversight

TRC was retained to execute a geotechnical investigation and deep foundation design for this project which involved constructing a portion of the proposed horse race track above an old slip between Piers No. 1 and No. 2 at the previous Chester Ship Building facility. The slip is approximately 200 ft wide and over 500 ft long. No geotechnical information was available within the slip area prior to our study. The portion of the race track that was the focus of this investigation is semi-circular in shape and about 100 ft wide and 500 ft long. The track was to be constructed of precast concrete planks supported on reinforced concrete pile bents spaced about 15 ft apart.

During the investigative phase, a total of 5 test borings were drilled by TRC's in-house drilling division from a barge in the river. In concert with the comprehensive geotechnical study, a geophysical investigation was also completed to determine seismic shear wave velocities of the underlying soils and bedrock to refine the seismic design of the bridge structure. TRC's geotechnical staff were instrumental in evaluating the deep foundation alternatives that were available and worked closely with the designer, owner, and constructor to test and optimize the foundation system.

During construction, TRC staff additionally conducted full-time oversight of the pile installation and load testing of the anchored piles, performed Pile Dynamic Analysis (PDA) testing of the piles, and strength tested the grout and concrete materials in our laboratory.



ConocoPhillips Tremley Point Mooring Dolphin Replacement

Linden, NJ

PROJECT PROFILE

CLIENT

Hudson Construction Consultants

YEAR COMPLETED

2008

SERVICES OVERVIEW

- Test Borings
- Soil Lab Testing
- Foundation Recommendations

TRC was retained by Hudson Construction Consultants, Inc. to execute a geotechnical investigation associated with the proposed emergency replacement of a damaged mooring dolphin at an oil refining facility located on the Arthur Kill River. As part of the investigation, TRC's in-house drilling division completed one (1) test boring to a depth of 99.5 ft below the existing ground surface using a truck-mounted drill rig. The test boring location was selected by the Client, who also arranged for the pre-excavation of the boring location to a depth of 10 ft. This work also included the evaluation of subsurface investigation data, obtained by others, that consisted of nine (9) water-based test borings taken along the Arthur Kill.

A comprehensive testing program was subsequently executed in TRC's soil-mechanics lab to supplement the visual classification of soil samples and measure/verify select engineering properties of the soil and rock. Representative samples were selected for index testing (moisture content, gradation, Atterberg Limits), volumetric properties (dry unit weight), organic content and unconfined compressive strength. TRC evaluated the feasibility of multiple pile options with respect to site subsurface conditions and existing structures, as well as interim and long-term anticipated lateral loading conditions ranging from 50 tons to 200 tons on the dolphin.

Motiva Oil Refinery Mooring Pier

Long Island, NY

PROJECT PROFILE

CLIENT

S.T. Hudson

YEAR COMPLETED

2007

SERVICES OVERVIEW

- Test Borings
- Soil Lab Testing
- Foundation Recommendations
- Pile Design

TRC was retained as the Geotechnical Engineer to execute a geotechnical investigation for a new pier at the Motiva oil refinery along the Jamaica Bay waterfront in Long Island, NY. The proposed mooring pier will be located 60 ft. offshore of the existing concrete sea wall. Planned construction consisted of the installation of a steel pipe mono pile which will serve as a mooring as part of a new ship dock. The anticipated lateral load on the monopile will be on the order of 480 kips.

TRC analyzed and designed the large-diameter (48 in. and 60 in. diameter) monopiles based on anticipated lateral loading and performed driveability studies for pile installation. TRC also provided evaluation of axial capacity for small diameter piles for foundation support of the proposed pier structure.

As part of the investigation, TRC provided field oversight of one (1) water-based test boring performed by others, which extended over 120 ft below the mean low water. A comprehensive testing program performed by our in-house laboratory was subsequently executed on selected representative soil samples for index testing (moisture content, gradation, Atterberg Limits), determination of organic content, and shear strength testing (unconsolidated-drained triaxial testing on remolded soil samples).

Project Team

West Virginia Division of Natural Resources

Robert G. Belcher, PE
Project Officer

Chapman Technical Group

Joseph E. Bird, ASLA
Landscape Architect

Roger J. Kennedy, ASLA
Landscape Architect

Stephen M. Johnson, PE
Civil Engineer

David C. Hoy, EI
Civil/Structural Engineer

Fred L. Brown
CADD Manager

Jason E. Brown, PS
Professional Surveyor

TRC

Frederick A. Brinker, PE
Project Engineer

Melissa Logan Gillespie, PE
Project Engineer

Durk Krone, PE
Project Engineer

John D. Richard, PE
Project Engineer

ROBERT G. BELCHER, P.E.
Senior Vice President, Engineering and Project Officer

EDUCATION

West Virginia Institute of Technology, BSCE, 1983

REGISTRATION

Civil Engineering, West Virginia, 1996
Civil Engineering, Ohio, 2006

PROFESSIONAL HISTORY

January 1987 to Present: Chapman Technical Group
Senior Vice President and Project Officer.

June 1984 to January 1987: Regional Intergovernmental Council
Planning and Development Council for West Virginia Region III - Metropolitan Planning Organization for Charleston, WV, MSA.

27 years professional experience.

PROJECT EXPERIENCE

Water Systems: Design and project management for numerous water systems for both public and private water companies. Projects include new water treatment plants as large as 10 MGD, improvements to existing plants, water mains and distribution systems. Water storage projects include glass-lined steel tanks, welded high-strength steel tanks, and elevated pedestal tanks.

Wastewater Systems: Design and project management for numerous wastewater systems throughout West Virginia. Projects include new, secondary and tertiary wastewater treatment plants as large as 4.5 MGD, improvements to existing plants, small-flow treatment plants, new and rehabilitation of wastewater collection systems, and facility plan updates.

Miscellaneous: Design and project management for large highway and bridge projects, airport improvements projects, large stormwater management projects, as well as potable water and wastewater system design for site development projects throughout West Virginia.

AFFILIATIONS

Water Environment Association - WV Section
Contractor's Association of West Virginia - Associate Member
American Water Works Association - WV Section
WV Society of Professional Engineers
American Council of Engineering Companies - ACEC/WV
WVUIT Civil Engineering Advisory Board
WV Qualifications Based Selection (QBS) Council

AWARDS

George Warren Fuller Award, 2001

JOSEPH E. BIRD, ASLA
Senior Vice President
Project Manager

EDUCATION

West Virginia University, BSLA, 1978

REGISTRATION

Landscape Architect, West Virginia, 1981

PROFESSIONAL HISTORY

August 1985 to Present: Chapman Technical Group
Senior Vice President and Project Manager.

May 1978 to August 1985: Kelley, Gidley, Blair & Wolfe, Inc.
Landscape Architect and Project Manager.

Mr. Bird is a project manager and registered landscape architect. His experience ranges from large site development projects to the management of multi-discipline and architectural projects.

33 years professional experience.

PROJECT EXPERIENCE

Site Development: Site planning and project management for numerous projects throughout West Virginia ranging from small campus sites to large sites for commercial, government, industrial, and institutional development. Projects include military complexes, campuses, public housing developments and other public facilities.

Parks and Recreation: Projects include swimming pools, bathhouses, cabins and support facilities for the West Virginia Division of Natural Resources and similar facilities for county and municipal park systems. Also involved in the design of facilities such as softball fields, fishing access facilities, recreation facilities for prisons, as well as passive recreation areas for public and private clients.

Miscellaneous: Other project experience includes the urban planning and development, streetscape design, roadway and storm drainage projects, as well as the project management of numerous major architectural projects throughout West Virginia.

AFFILIATIONS

West Virginia Chapter of the American Society of Landscape Architects

AWARDS

Honor Award for Shrewsbury St. Redevelopment Plan
West Virginia Chapter of American Society of Landscape Architects

ROGER J. KENNEDY, ASLA
Landscape Architect
and Project Manager

EDUCATION

West Virginia University, BSLA, 1990
Natural Stream Training Courses I - III, West Virginia University, 2000-2002.

REGISTRATION

Landscape Architect, West Virginia, 1993

PROFESSIONAL HISTORY

June 1990 to Present: Chapman Technical Group
Landscape Architect, Project Manager and Computer Network Manager.

May 1989 to May 1990: WVU and the National Park Service
Inventoried and analyzed abandoned mine sites along the New River Gorge National River utilizing PC ArcInfo.

22 years professional experience.

PROJECT EXPERIENCE

Site Development: Responsibilities include grading design, site planning and layout, analysis of existing features and services, storm water design and management, erosion control, as well as project management. Projects include prisons, landfills, military complexes, banks, airports, subdivisions, gas stations and other public facilities.

Bridge and Highway: Responsibilities include the design of horizontal and vertical road alignments, superelevation design, intersection layout, slope design and quality control review. Projects include several multi-lane highways and bridges throughout West Virginia.

Miscellaneous: Other experience includes the use of various civil design software packages for use in site development and road design, digital terrain modeling, hydraulic analysis and related computer aided design tools. Additional responibilities include the development and management of the computing resources of the company. This includes the management of software and hardware inventories, as well as the development and management of all local area networks in each office and the wide area network which links them.

AFFILIATIONS

Member of the Sigma Lambda Alpha Honor Society of Landscape Architects
President of St. Albans Riverfest, Inc.

STEPHEN M. JOHNSON, PE
Group Manager
Civil/Environmental Engineering

EDUCATION

West Virginia Institute of Technology, BSCE, 2004

REGISTRATION

Civil Engineering, West Virginia, 2009
Civil Engineering, North Carolina, 2008
Civil Engineering, Virginia, 2011

EXPERIENCE

January 2009 to Present: Chapman Technical Group
Civil Engineer

October 2006 to January 2009: McKim and Creed
Civil Engineer

May 2004 to October 2006: Chapman Technical Group
Civil Engineer

June 2001 to May 2004: Allegheny Power
Gas Support Technician/Intern

7 years professional experience.

PROJECT EXPERIENCE

Water Systems: Overall experience includes planning, design, bidding, and construction administration/management of various public and private water system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes distribution systems, river crossings, horizontal directional drills, booster stations, treatment plants, ground and elevated water storage tanks, SCADA systems computer modeling, treatment process evaluation, and problem troubleshooting in existing systems.

Wastewater Systems: Overall experience includes comprehensive system master plans, design, bidding, construction administration/management of various public and private wastewater system projects throughout West Virginia, Virginia, and North Carolina. Specific project expreiance includes gravity and low-pressure collection systems, pump stations and force main transmission systems, treatment plant process evaluation and design, trenchless pipeline rehabilitation, bypass pump system design, odor and corrosion control, effluent infiltration ponds, decentralized and alternative on-site disposal systems, and SCADA systems.

Stormwater Systems: Overall experience includes comprehensive system master plans, design, bidding, construction administration/management of various public and private stormwater system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes drainage basin hydraulic analysis, stormwater collection, detention and BMP system design, construction stormwater management plan preparation, and MS4 permit guidance.

DAVID C. HOY, P.E.
Civil/Structural Engineer

EDUCATION

West Virginia University, BSCE, 2006

REGISTRATION

P.E., West Virginia, 2011

PROFESSIONAL HISTORY

January 2007 to Present: Chapman Technical Group
Civil Engineer

Summer 2005: Advantage Home and Environment
Assisted structural engineer with home inspections, and report preparation.

4 years professional experience.

PROJECT EXPERIENCE

Structural: Investigation, analysis, and design of various building structural systems, including foundation design. Review shop drawings and performs periodic site visits.

Civil: Design of highways, bridges, and airport improvements projects throughout West Virginia.

AFFILIATIONS

Chi Epsilon, National Civil Engineering Honor Society
ASCE, Member
WV Section YMF, Treasurer

FRED L. BROWN
CADD Manager

EDUCATION

Carver Career Center, Two Year Drafting/Cad Degree, 1997
Glenville State College, 20 Hours Toward Forestry Degree, 1988
Attended AUTOCAD14 Training Class Provided By Digital Graphics

PROFESSIONAL HISTORY

2002 to Present: Chapman Technical Group
CADD Manager.

1997 to 2002: Chapman Technical Group
Engineering Technician and CADD Designer.

14 years professional experience.

PROJECT EXPERIENCE

Bridge and Highway: Responsible for CADD drafting on basemap, site development, construction plan sheets, signal plans, superelevation plans, existing and proposed utilities, utility relocation plans, lighting plans, boring construction plans, typical sections and details, mainline cross sections, bridge plans and details, attenuator details, guardrail plan layout and details, geometric plans, station and offsets of mainline centerline, stationing and curve geometric information, survey reference and control plans, point dump creations.

Architectural/Structural: Responsible for CADD drafting on existing and proposed building plans, structural framing plans and details, foundation plans and details, structural scheduling.

Site Design: Responsible for CADD drafting on proposed site layouts, site details and cross sections.

Airport: Responsible for CADD drafting on existing and proposed taxiways and runways, taxiway signage, hangar layout, and airport master plans.

Mapping: Responsible for CADD drafting for city street and zoning maps.

Water and Wastewater: Responsible for CADD drafting on treatment plants, improvements on existing and new facilities, stormwater plans and profiles, booster stations, meter vaults, water system updates for both public and private sectors, PRV plans and details.

AFFILIATIONS

Member, National Vocational-Technical Honor Society (NV-THS)

ACHIEVEMENTS

First place winner in Carver Career Center VICA skills competition and represented Carver at the state VICA competition for technical drafting.

Judge in 2001 State VICA skills competition for technical drafting.

JASON E. BROWN, PS
Professional Surveyor

EDUCATION

West Virginia State College, General Studies, 1991 to 2002
West Virginia Institute of Technology, Paramedic Science, May 1994
Glenville State College, A.S. Land Surveying, 1997 to 2002

REGISTRATION

Professional Surveyor, West Virginia, 2009.

PROFESSIONAL HISTORY

January 2010 to Present: Chapman Technical Group
Professional Surveyor/Survey Project Manager.

January 2008 to January 2010: S&S Engineers
Surveyor Assistant/CADD Technician.

July 2005 to January 2008: Brown Drafting
Owner/Operator.

September 2003 to July 2005: Garcelon Surveying
Surveyor Assistant/CADD Technician.

May 2002 to September 2003: Triad Engineering
Survey Party Chief.

January 1995 to December 2001: Chapman Technical Group
Survey Technician/Junior Construction Representative.

16 years professional experience.

PROJECT EXPERIENCE

Highways: Established control, site surveying, topographic surveying, courthouse research, drawing production, Right-of-Way Questionnaires, bore hole stake out, and all surveying associated with the initial design of West Virginia highways for numerous highway projects throughout the state.

Site Development: All types of surveying associated with site development, to include control, topographic boundaries, research, and drawing production. Projects include military complexes, public housing, commercial development, industrial and institutional complexes, churches, resorts and public facilities throughout the state.

Parks and Recreation: Associated surveying for projects including swimming pools, bathhouses, cabins and support facilities for the West Virginia Division of Natural Resources and similar facilities for county and municipal park systems.

Water and Wastewater Systems: Associated surveying for the design of water systems, sewer systems and water and wastewater facilities for private and public water companies. Projects include water treatment plants, water mains and distribution systems, and collection systems throughout the state.

Airports: Associated surveying for the design of runways, airport facilities, lighting, and asphalt design for holding pads for small and large airport facilities throughout the state.

Boundary Surveys: Provided full boundary surveys and ALTA surveys for military complexes, private residences, prison facilities, commercial sites, and all boundaries associated with various engineering projects throughout the state.

Construction Observation: Provided construction observation, field engineering and testing for numerous water, wastewater and airport projects throughout the state.

AFFILIATIONS

West Virginia Society of Professional Surveyors.

FREDERICK A. BRINKER, PE

EDUCATION

M.S., Civil Engineering, Drexel University, Philadelphia, PA, 1989
B.S., Civil Engineering, Drexel University, Philadelphia, PA, 1985

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Professional Engineer, New York, (#081220-1), 2005
Professional Engineer, Pennsylvania (#040481-E), 1990
Professional Engineer, Wisconsin (#28944), 1992
Professional Engineer, Ohio (#E-56757), 1993
Professional Engineer, Georgia (#028838), 2003
Professional Engineer, New Jersey (#24GE04547600), 2005

AREAS OF EXPERTISE

Mr. Frederick A. Brinker, PE has project management and technical experience in the following general areas:

- Development of Subsurface Investigations
- Geotechnical Analyses
- Foundation Recommendations
- Stability Analyses
- Slope Stabilization
- Construction Quality Control
- Pavement Design
- Soil Classification

REPRESENTATIVE EXPERIENCE

Mr. Brinker possesses more than 28 years of experience in the field of civil engineering with specialized expertise in the areas of geotechnical and geo-environmental engineering. As a result of his diversified experience, he offers strong project management and technical capabilities.

Monopile and Compression Pile Evaluations, Valero Refining Company Berthing Pier - Paulsboro, NJ (Geotechnical Project Manager: 2006)

Mr. Brinker was assigned as the Project Geotechnical Manager responsible for the execution of a geotechnical investigation that was completed for a new offshore berthing pier and ancillary approach way/walkway structures at the Valero Refining Company adjacent to the Delaware River. The breasting dolphins were proposed to consist of large diameter (72 in.) monopiles. Twelve (12) to 20 in. diameter steel pipe piles and steel H-piles were being considered as alternatives for foundation support of the proposed pier structures. Mr. Brinker's responsibilities on this project included project management for all aspects of the work including technical oversight and direction of technical staff, client interaction, report preparation and quality control.

Pier 3, Camden Iron and Metal Girard Point Facility - Philadelphia, PA (Geotechnical Project Manager: 2006)
Mr. Brinker served as Project Manager for the geotechnical investigation phase of this project which involved the proposed reconstruction of Pier 3 at Camden Iron & Metal's Girard Point facility along the Schuylkill River, as well as the construction of a new 200-ft high steel-frame communication tower. Mr. Brinker's responsibilities included planning and execution of the work, cost estimating, technical direction and oversight of the engineering staff, report preparation and quality control.

Waterfront Square Condominiums & Spa, Phase 1A - Philadelphia, PA (Geotechnical Project Manager: 2003)
Mr. Brinker served as Project Manager for the geotechnical investigation phase of this project which involved the proposed construction of a combined low-rise garage building, a 25-story high-rise apartment/condominium complex, and a two-story recreation spa and health club. The objectives of the investigation were to determine subsurface conditions within the Phase 1A area of the project site, evaluate those conditions with respect to the proposed construction, and address various project-specific concerns. Mr. Brinker's responsibilities included planning and execution of the work, field reconnaissance and oversight of all field investigation activities, cost estimating, technical direction and oversight of the engineering staff, report preparation and quality control.

Maher Terminal Reconfiguration - Port Newark, NJ (Project Geotechnical Engineer: 2005-2006)
Mr. Brinker served as Project Geotechnical Engineer responsible for directing the completion of a geotechnical investigation associated with the $40 million reconstruction of a marine terminal shipping facility. Project includes re-leveling of the pavement areas, upgrading of the site drainage, upgrading of the facility's electric power distribution system, duct bank construction, upgrading of the lighting system, installation of new cranes, and related infrastructure. Geotechnical work included a subsurface investigation, pavement core collection and asphalt extraction, soil sampling, soil testing, geotechnical analysis, settlement analysis, and recommendations for both shallow and deep foundation systems.

Various Water Treatment Plant Expansion Projects – New Jersey & Pennsylvania (Geotechnical Engineer & Project Manager, 1985 – 2008)
Mr. Brinker has served many roles on various water and wastewater treatment plant expansion projects over the last 20 years, from staff level geotechnical engineer to geotechnical project manager. His responsibilities have included a full complement of duties from field engineering, data analysis and interpretation, reporting and budget management for many different types of plant expansions. Following below are several more notable projects:

- Pickering Creek Plant Expansion, Montgomery Co., PA
- Cinnaminson Water Treatment Plant Expansion, Camden County, NJ
- Mount Holly Water Treatment Plant Expansion, Burlington Co., NJ

- Bergen County Treatment Plant Upgrades, Bergen Co., NJ
- Maple Avenue Plant Expansion, Mount Laurel, NJ
- Kings Grant Plant Expansion Project, Burlington co., NJ
- City of Hinsdale Lime Sludge Lagoon Project (as employee of B&V), Hinsdale, IL
- City of Dayton Sludge Lagoon Study (as employee of B&V), Dayton, OH
- City of Elgin Lagoon Embankment Evaluation (as employee of B&V), Elgin, IL

Geotechnical investigations and analysis were conducted for many types of treatment tanks, clarifiers, equipment buildings, storage tanks, lagoons, bulkheads, pipelines, pipe racks, etc.

ConocoPhillips Pier Reconstruction Project - Trainer, PA (Project Geotechnical Engineer: 2006-2007)
Mr. Brinker served as Project Manager for this fast-track project which involved demolition and reconstruction of all berthing structures at the existing facility. Geotechnical aspects of this project included preparation and oversight of water and land-based subsurface investigation activities, laboratory testing of soil and rock samples and detailed and rigorous evaluation of driven and drilled/socketed piles for support of anticipated compression and uplift loads. Evaluation and design of driven pile alternatives included interpretation and consideration of PDA test results (performed by others). Design of drilled/socketed piles included consideration of rock quality and continuity, as well as group effects on uplift resistance provided by the mass of rock mobilized around the socketed portion of the pile.

Holtwood Hydroelectric Facility Expansion - Holtwood, PA (Project Geotechnical Engineer: 2006-2007)
Mr. Brinker served as Project Manager for the geotechnical investigation phase of this project which involves an expansion of PP&L's Holtwood hydroelectric generating facility on the Susquehanna River that will require excavation of an expanded forebay, construction of a new skimmer wall, a new rubber dam atop on the existing dam crest, a new bypass tunnel under the existing diversion wall for the existing Unit No. 1 tailrace, and excavation of approximately 750,000 cy of rock from the one-mile long channel below the powerhouse. Providing coordination and oversight for all subsurface investigation and laboratory testing of soil and rock samples, as well as geophysical testing performed by others.

Chester Downs Racetrack and Casino, Chester - Philadelphia, PA (Geotechnical Project Manager: 2006)
Mr. Brinker served as Project Manager for the geotechnical investigation and pile testing operations for this project. This project involved the construction of a bridge carrying the race track over a portion of the Delaware River. Test borings were completed on the land and in the water. The solution for support of the bridge included high capacity pipe piles above the underlying mica schist rock formation. Detailed evaluation of the site included ReMi geophysical methods to determine the site's seismic site classification for bracing design. Mr. Brinker was responsible of all aspects of the geotechnical and geophysical investigations, and for evaluation/ design of the deep foundation systems.

He was also responsible for the planning and execution of the pile testing operations by TRC's in-house pile dynamic analyzer (PDA) that was completed during the pile installation work.

350 ft Communications Tower, Cape May, New Jersey (Project Geotechnical Engineer: 2002-2003)
Mr. Brinker served as Project Geotechnical Engineer responsible for planning and directing all aspects of a comprehensive geotechnical evaluation for a new communications tower. The tower consists of a 350 ft high lattice steel-frame communication tower with three support legs spaced approximately 40 ft apart. A new 8 ft by 10 ft equipment shelter is also proposed for the new tower's electrical equipment. The investigation and recommendations focused on three different deep foundation systems namely drilled piers, driven pipe piles and a large-diameter mono-pile. Work also included resistivity survey arrays at several locations near test boring locations. Mr. Brinker also planned and conducted a seismic cross-hole survey at this site with a team subcontractor following ASTM D-4428/D-4428M-91 procedures which was conducted to provide typical shear and compression-wave velocities (Vs and Vp). The S and P-wave velocity data from the cross-hole testing was included in our final report for this project.

Brookhaven Energy Facility - Long Island, NY (Project Geotechnical Engineer: 2001-2004)
Mr. Brinker served as Project Geotechnical Engineer responsible for planning and directing all aspects of a comprehensive geotechnical evaluation for this new, combined cycle power plant covering approximately 20 acres. Major structures include cooling towers, combustion turbine generators, steam turbine generators, heat recovery steam generators, electrical transformers, oil and water tanks, stacks, roadways, above and below grade utilities, and many other small ancillary buildings/structures. Work also included resistivity survey arrays at 5 locations near test boring locations. Mr. Brinker also planned and conducted a seismic cross-hole survey at this site with a team subcontractor following ASTM D-4428/D-4428M-91 procedures which was conducted to provide typical shear and compression-wave velocities (Vs and Vp). The S and P-wave velocity data from the cross-hole testing was included in our final report for this project.

Caithness Energy - Long Island, NY (Project Manager: 2005 - 2006)
Mr. Brinker served as Project Manager responsible for planning and directing all aspects of a comprehensive geotechnical evaluation for this new, combined cycle power plant covering approximately 30 acres. Major structures include cooling towers, combustion turbine generators, steam turbine generators, heat recovery steam generators, electrical transformers, oil and water tanks, stacks, roadways, above and below grade utilities, and many other small ancillary buildings/structures. Work also included resistivity survey arrays at numerous locations near test boring locations. Mr. Brinker also planned and conducted a seismic cross-hole survey at this site with a team subcontractor following ASTM D-4428/D-4428M-91 procedures which was conducted to provide typical shear and compression-wave velocities (Vs and Vp). The S and P-wave velocity data from the cross-hole testing was included in our final report for this project.

Trans-Gas Bayside Terminal Facility - Brooklyn, NY (Project Geotechnical Engineer: 2002)
Mr. Brinker served as Project Geotechnical Engineer responsible for directing the preparation of a Preliminary Geotechnical Engineering Report for this proposed combined cycle 1,100 MW electric power generating station. The report included an evaluation of subsurface conditions, evaluation and recommendation of feasible foundation alternatives for heavy, highly sensitive structures and smaller lightly loaded structures, recommendations for re-use of onsite soils in structural fills and recommendations for maintaining the stability of temporary excavations.

Dynergy Combined-Cycle Power Station - Frederick, MD (Project Geotechnical Engineer: 2001)
Mr. Brinker served as Project Geotechnical Engineer responsible for planning and directing all aspects of a comprehensive geotechnical evaluation for this new combined cycle power plant covering approximately 115 acres. The proposed construction consisted of a combined cycle electric power generating station. Major structures associated with this facility included 4 gas turbine generators, numerous transformers, condensing units, roadways, water tanks, fuel oil storage tanks, storm water detention basins, and many small ancillary buildings. The plant encompasses about 35 acres of the 115-acre property which is underlain by solution-prone limestone conglomerate. During the geotechnical investigation, a parallel hydrogeologic study being completed by others in which a groundwater pump test was being conducted caused the occurrence of a 50 ft wide and 30 ft deep sinkhole. Mr. Brinker provided recommendations for repair of this sinkhole and conducted a detailed reconnaissance of the site and surrounding area to evaluate the potential for future sinkhole activity. Under Mr. Brinker's direction, recommendations for foundations and earthwork activities were developed to account for the subsidence potential.

VA Department of Transportation, Route 58 Widening, Route 11 to Route 638 East - Washington County, VA (Project Geotechnical Engineer: 2000)
Mr. Brinker served as Project Geotechnical Engineer charged with overseeing the investigation, data evaluation, and geotechnical recommendations for this roadway widening project which includes the widening of Route 58 from 1 lane to 2 lanes in each direction. Field work included the completion of over 80 borings in the roadway right-of-way. The scope of services included his provision of recommendations for earthwork, pavement design, and structure foundations.

VA Department of Transportation, Interstate 81 Widening - Rockingham County, VA (Project Geotechnical Engineer: 2000-2002)
Mr. Brinker served as Project Geotechnical Engineer for a pedestrian bridge tunnel extension at James Madison University as part of the I-81 widening (Project 0081-082-123). The proposed construction was to be an extension of the existing box culvert pedestrian tunnel below I-81. The extension consisted of a 35 ft long segment of 10 ft by 12 ft concrete box culvert on the west side of I-81 and a 48 ft long segment on the east side. The culverts have a 9 ft high portion for pedestrian traffic and a 3 ft high section below for utilities. Numerous utilities are located below the existing tunnel. The

existing utilities were to remain in place and not be relocated to construct the extensions. New concrete retaining walls are proposed at each end of the culvert extensions.

Pennsylvania Turnpike Commission, Northeast Extension, Bridge NB 391 at M.P. 48.5, Abutment Stability Investigation - Slatedale, PA (Project Geotechnical Engineer: 1985-1988)

Mr. Brinker served as Project Geotechnical Engineer for the investigation, monitoring, evaluation, and reporting concerning the stability of an abutment for this 500 ft. long bridge. Provided all coordination of field drilling activities, highway traffic safety and protection activities, field monitoring, laboratory testing, data evaluation, and report preparation. Field work included the installation and monitoring of crack movement devices on the abutments and wing walls, and the installation and monitoring of slope inclinometers in the borings that were drilled at each abutment. The investigation and monitoring work was conducted over an approximately 2-year period, with the results of this investigation indicating that the forward rotational movement and settlement of the abutments and subsequent cracking/movement of wing walls and pavement had occurred due to down drag on the batter piles installed in the embankments.

NJ Department of Transportation, Southard Street Bridge Replacement - Mercer County, NJ (Project Geotechnical Engineer: 2003)

Mr. Brinker served as Project Geotechnical Engineer for the design of a replacement bridge structure consisting of multi-beam steel plate girders continuously supported over three spans. Mr. Brinker coordinated all aspects of this project including the field investigation program, data analysis and interpretation, foundation analysis, settlement analysis, cost evaluations, and foundation system recommendations. He provided management and technical direction for the geotechnical team conducting the subsurface exploration program, laboratory program for soil and rock testing, evaluation of subsurface conditions, and preparation of the Geotechnical Engineering Report. The evaluation work included recommendations of feasible foundation systems, as well as settlement and global stability analyses of 1.5m to 7.0m high, prefabricated modular walls required to support the proposed bridge approach embankments.

NJ Department of Transportation, Replacement of Madison Avenue Bridges LO901 and LO902 - Somerset and Middlesex Counties, NJ (Project Geotechnical Engineer: 2002)

Mr. Brinker served as Project Geotechnical Engineer charged with directing the investigation and preparation of geotechnical recommendations for the replacement of two bridges that span over Green Brook and a tributary to Green Brook. Span lengths are approximately 60' and 30', respectively. Work included the evaluation and preparation of foundation recommendations for several foundation systems based on constructability and cost. Based on the anticipated water scour depths, a steel H-pile foundation system was recommended.

Pea Patch Island Breakwater - Salem Co., NJ (Project Geotechnical Engineer: 2001)
Mr. Brinker served as the Project Geotechnical Engineer involved in all aspects of the geotechnical investigation for this breakwater embankment project. Work tasks included planning and implementing the field investigation, direction of the assignment of soil samples for laboratory analysis, data reduction, settlement analysis, slope stability analysis and embankment design. He additionally conducted and directed the design of the breakwater for this project which involved the construction of a 20 ft high breakwater adjacent to Pea Patch Island in the Delaware River. The breakwater was constructed above deep deposits of soft organic silts and clays. The design of the breakwater was completed by modeling settlements under varying embankment configurations, slope stability analysis of the breakwater under varying configurations and incorporating high-strength geosynthetics in the breakwater design to improve stability and reduce settlements. Parametric studies were completed for both slope stability and settlement of the breakwater.

One Liberty Place Tower 1 - Philadelphia, PA (Geotechnical Engineer: 1985-1987)
Mr. Brinker was involved in all aspects of the initial and final geotechnical investigations for this high-rise building project. Work tasks included: classification and logging of boreholes, assignment of soil and rock samples for laboratory analysis, data reduction, settlement analysis, seepage analysis and preliminary design of slab and retaining wall under drain design. Mr. Brinker also performed design calculations and conducted field construction oversight for the soldier beam and lagging system that was used for excavation protection, and assisted with the design of caisson (drilled pier) foundations for this building which generally involved his completion of design calculations for the drilled shafts, calculation of end-bearing and skin resistance calculations, moment calculations along the length of the shafts and other associated foundation design calculations. Mr. Brinker also conducted oversight of the caisson construction work and verified design lengths and rock types. Of particular interest on this project, Mr. Brinker assisted the Chief Geotechnical engineer in the development of a foundation instrumentation program to define the amount of skin and end bearing resistance for the drilled shaft design.

Blue Cross/Blue Shield Tower - Philadelphia, PA (Geotechnical Engineer: 1988)
Mr. Brinker served as a Geotechnical Engineer for this high-rise building project which charged him with the completion of such work tasks as the classification and logging of boreholes, assignment of soil and rock samples for laboratory analysis, data reduction, and settlement analysis. Mr. Brinker conducted extensive settlement analysis of the foundation system for this structure which involved his computation of settlements under the spread and mat foundations by elastic methods in an effort to develop a configuration of building foundations that would limit the amount of differential settlement between columns. The computations were completed manually and via a computer program that could model multiple loaded areas of varying sizes and under differing contact pressures. The final design of the foundation system was a direct result of the settlement calculations completed by Mr. Brinker.

Redwood Towers Garage Overbuild - Baltimore, MD (Geotechnical Engineer: 1985-1986)

Mr. Brinker served as a Geotechnical Engineer involved in all aspects of the geotechnical investigation for this project which included the construction of a 25-story high-rise tower above an existing 6-story historic parking garage. Work tasks included classification and logging of boreholes, assignment of soil and rock samples for laboratory analysis, data reduction and foundation design. He conducted design calculations for numerous deep foundation alternatives for cost estimation purposes, which resulted in the ultimate selection of drilled pier foundations for this project. Because groundwater was within several feet of the lowest building floor levels, all caisson work was required to be completed via slurry methods. He additionally assisted in the design of the slurry mix for the project based on the soil types and excavation conditions, as well as conducted periodic oversight of the caisson construction work, and installed / monitored / reduced the data that was obtained from the strain gauges that were installed within several test caissons.

Essroc Cement Plant Preheater Tower Reconstruction - Nazareth, PA (Project Geotechnical Engineer: 2001-2002)

Mr. Brinker served as Project Geotechnical Engineer responsible for all aspects of the geotechnical investigation which included such work tasks as the planning and implementation of a field investigation, assignment of soil and rock samples for laboratory analysis, data reduction, caisson design and high-capacity minipile design. The project site is underlain by solution-prone limestone that created serious challenges from a foundation stability standpoint. Settlement tolerances for the pre-heater tower structure were extremely restrictive and only allowed for several foundation alternatives. Detailed designs for both drilled-pier (caisson) and high-capacity mini-pile designs were completed. He completed design calculations and schematic design drawings for the minipile design alternate, which was selected for this project. Two design alternates were used on the project -- a high capacity (200 ton) and low capacity (70 ton) pile. Developed the load test design for the static pile testing program with the results of both uplift and compression tests being used to verify the pile designs and modify the installation techniques. During the production pile installations, he also provided consultation and re-engineering of the pile designs due to the occurrence of many instances that required re-evaluation of the pile design and re-design of the pile installations to meet the design capacities due to the extremely discontinuous and erratic behavior of the limestone bedrock formations.

Gateway Development, Roadway Embankment - Atlantic City, NJ (Geotechnical Engineer: 1987-1988)

Mr. Brinker served as Geotechnical Engineer involved in all aspects of the subsurface investigation for this roadway embankment project which included such work tasks as the classification and logging of boreholes, assignment of soil samples for laboratory analysis, data reduction, settlement analysis, slope stability analysis and embankment design, and pavement analysis and design. Because the proposed roadway embankment was to be constructed over such soft sub soils, stability became a major problem. As a result, the design of the embankment required detailed slope stability

calculations. Mr. Brinker compiled all necessary input data for the program models including cross sections, soil parameters, surcharge loadings, groundwater data, and related input parameters. He also independently conducted numerous slope stability design evaluations by varying the embankment configuration, incorporating high-strength geosynthetics, and varying soil parameters.

NJ Turnpike Authority, Widening of New Jersey Turnpike, Section 4E, Mile 75.2 to 75.9 - Jamesburg, NJ (Geotechnical Engineer: 1986)
Mr. Brinker served as Geotechnical Engineer during the completion of a field investigation, data evaluation, and report preparation for this highway widening project that included the construction of three new bridges that were all 300' long and 36' wide continuous spans. The work included overseeing the drilling of over 70 test borings along the highway median and right-of-way, laboratory testing of soil samples, data reduction and evaluation, settlement analysis, bearing capacity analysis, and preparation of recommendations for foundations, earthwork, and pavement design.

Black & Veatch Corporation - Chicago, IL (Project Manager / Civil-Geotechnical Engineer: 1990-2000)
Mr. Brinker served as Project Manager / Civil-Geotechnical Engineer charged with administering civil/environmental projects including subsurface exploration and hazardous waste management. Field duties included data acquisition, risk assessment, report preparation, remediation alternatives evaluation, design and remedial construction implementation. Administrative responsibilities included deadline and budget maintenance, client interaction, business development, subcontract management, contract negotiation, cost estimating, proposal preparation and staff supervision. Relevant projects on which he served included:

- McCook/Thornton Flood Control Reservoir, Chicago, IL
- Environmental Services Term Agreement, Chicago, IL
- Former Manufactured Gas Plant Site Remediation, State of Illinois
- 14 USEPA Superfund (ARCS Program) Hazardous Waste Sites
- Superfund Groundwater Remediation Project, New Brighton, MN
- Two Water Treatment Plant Residuals Lagoon Expansion Projects
- Hazardous/Mixed Waste Environmental Investigations, Pantex Plant, Amarillo, TX
- Hazardous/Mixed Waste Environmental Investigations, Rocky Flats Plant, Boulder, CO

SPECIALIZED TRAINING

- OSHA 40-hour Hazardous Waste Site Worker, 1990
- OSHA 8-hour Hazardous Waste Site Worker Annual Refresher
- OSHA Competent Person/Excavation Safety, 1994
- First Aid/CPR Certified, 1999
- OSHA Confined Space Entry Procedure, 1996

MELISSA LOGAN GILLESPIE, PE

EDUCATION

M.S., Civil Engineering, University of Texas – Austin, 1998
B.S., Civil Engineering, Drexel University, 1996

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Professional Engineer, West Virginia (#018531), 2010
Professional Engineer, Pennsylvania (#062318), 2003
Professional Engineer, Virginia (#0402-041592), 2005
Professional Engineer, Connecticut (#PEN.0028021), 2010

AREAS OF EXPERTISE

Ms. Melissa Logan Gillespie, PE has technical experience in the following general areas:

- Development of Subsurface Investigations and Laboratory Testing Programs
- Interpretation of Subsurface Exploration, Laboratory Testing, Geophysical, and Geologic Data
- Soil and Rock Identification and Classification
- Shallow and Deep Foundation Design
- Earth Retaining Structure and Reinforced Soil Slope Design
- Slope Stability Evaluation and Mitigation Measures
- Settlement Evaluation and Mitigation Measures
- Installation and Monitoring of Geotechnical Instrumentation.
- Development and Review of Geotechnical Engineering Reports and Specifications.

REPRESENTATIVE EXPERIENCE

Ms. Gillespie possesses more than 13 years of cumulative experience in the discipline of geotechnical engineering, including field, laboratory, and office-related engineering work. Representative examples of her experience include the following:

ConocoPhillips Pier Reconstruction Project - Trainer, PA (Geotechnical Engineer)
Ms. Gillespie served as the Geotechnical Engineer for this fast-track project which involved a demolition and reconstruction of all berthing structures at the existing facility. Geotechnical aspects of this project included the preparation and oversight of water and land-based subsurface investigation activities, laboratory testing of soil and rock samples, and detailed and rigorous evaluation of driven and drilled/socketed piles for support of anticipated compression and uplift loads. The evaluation and design of the driven pile alternatives included interpretation and consideration of PDA test results (performed by others). The design of drilled/socketed piles included consideration of rock quality and continuity, as well as the group effects on uplift resistance provided by the mass of rock that was mobilized around the socketed portion of the pile. Ms. Gillespie also provided engineering consulting during construction, including assessment of subsurface conditions and evaluation/recommendation of appropriate

adjustments to rock socket lengths based on actual conditions encountered during construction.

Monopile Mooring System for Berth No. 2 Reconstruction at Beckett St. Terminal – Camden, NJ (Geotechnical Engineer)
Ms. Gillespie was assigned as the Geotechnical Engineer for this investigation which consisted of the analysis of a large-diameter (60-inch) monopile for lateral loading and drivability studies for pile installation, including the evaluation of subsurface investigation data obtained by others. The project involved the design of a permanent mooring for the bow line of a ship to be docked at the reconstructed Berth No. 2. at Beckett Street Terminal adjacent to the Delaware River. The permanent mooring was proposed to consist of a large (60 in.) diameter monopile. Ms. Gillespie's responsibilities included researching available geologic information for the area, summarizing and interpreting the test boring information, lateral evaluation of the monopile using the LPILE program, driveabiliy analysis for the monopole using the GRLWEAP program, and report preparation.

Monopile and Compression Pile Evaluations, Valero Refining Company Berthing Pier - Paulsboro, NJ (Sr. Geotechnical Engineer)
Ms. Gillespie was assigned as the Sr. Geotechnical Engineer responsible for the execution of a geotechnical investigation that was completed for a new offshore berthing pier and ancillary approachway/walkway structures at the Valero Refining Company adjacent to the Delaware River. The breasting dolphins were proposed to consist of large diameter (72 in.) monopiles. Twelve (12) to 20 in. diameter steel pipe piles and steel H-piles were being considered as alternatives for foundation support of the proposed pier structures. Ms. Gillespie's responsibilities on this project included summarizing and interpreting the test boring information, preparing a laboratory testing program, evaluation of the laboratory test data, analysis of large-diameter monopiles based on anticipated lateral loading conditions using LPILE, driveability analyses for monopile installation using GRLWEAP, evaluation of axial capacity for small diameter piles for foundation support of the proposed pier structures, and report preparation.

WV Department of Transportation, Division of Highways, West Virginia Corridor H, Scherr to Forman - Grant County, WV (Geotechnical Engineer)
Ms. Gillespie was assigned as a Geotechnical Engineer for this project which encompassed a segment of the new $47 million Corridor H roadway that includes approximately 2.2 miles of new roadway as well as a 600 ft long, 5-span bridge crossing existing County Route 3 and a 1700 ft long, 200 ft tall, 6-span bridge that carries the roadway over the Middle Fork of Patterson Creek. Ms. Gillespie assisted in researching the geologic background of the project corridor and incorporating these finding into the development of a subsurface investigation program which included 150 test borings and 8,000 linear ft of earth drilling. Ms. Gillespie also evaluated and designed foundation alternatives, utilizing current AASHTO Load and Resistance Factor Design (LRFD) procedures, for the two bridges (drilled shafts and bored and grouted H-Piles were evaluated to overcome the design challenges of highly variable geology including severely weathered, low strength shales and solution prone limestone).

WV Department of Transportation, Division of Highways, Relocation of WV Route 10, Man to Rita - Logan County, WV (Geotechnical Engineer)
Ms. Gillespie was assigned as a Geotechnical Engineer during the design of this $80 million, limited-access highway. Responsibilities included her design of rock cut slopes spanning up to 350 vertical feet, and the preparation of a TS&L report for two proposed bridge substructures, one of which was designed based on AASHTO Load Factor Design (LFD) specifications and the other based on AASHTO Load and Resistance Factor Design (LRFD) specifications. Preparation of the TS&L reports included an evaluation of subsurface conditions, evaluation and recommendation of feasible foundation systems, slope stability analysis of embankments, the completion of slope stability analysis for rock cuts and recommendations for additional subsurface exploration, where applicable. Ms. Gillespie also directed the completion of field work activities for additional subsurface exploration to better define conditions at a proposed embankment location where subsurface conditions resulted in unacceptable factors of safety based on results of initial borings. The additional field work consisted of cone penetration testing with pore pressure measurement (CPTu). She was responsible for conducting slope stability analysis of embankments, including reinforced soil slope (RSS) design incorporating the results of CPTu testing, and providing construction recommendations and special provisions for RSSs as required for the project.

PROFESSIONAL AFFILIATIONS

- Member, Organizing Committee, Deep Foundations Institute 2008 33rd Annual/11th International Conference, New York, New York.
- Member, Board of Directors, ASCE Delaware Valley Geo-Institute
- Member, Board of Directors, ASCE South Jersey Branch
- Member, Deep Foundations Institute
- Member, The International Association of Foundation Drilling

TRC

DURK KRONE, P.E.

EDUCATION

M.S., Civil Engineering, State University of New York, 1984
B.S., Civil Engineering, State University of New York, 1982

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Professional Engineer, Louisiana (#31955)
Professional Engineer, Virginia (#21456)
Professional Engineer, Massachusetts (#37620)
NHI Certification, Safety Inspection of In-Service Bridges (NH1-13055)
NHI Certification – Fracture Critical Techniques for Steel Bridges (FHWA-NHI-130078)

SPECIALIZED TRAINING

Transportation Security: Preparedness, Response and Recovery, VDOT, 2004
Woodrow Wilson Bridge, VDOT, 2004
Legal Issues and Innovative Financing, VDOT, 2004
Innovative Project Delivery, VDOT, 2004
Innovative Design Solution/Plan Submission, VDOT, 2004
Load Rating of Gusset Plates of Connections of Steel Truss Bridges Seminar, 2009

REPRESENTATIVE EXPERIENCE

Mr. Krone possesses 28 years of experience in the planning, design, inspection, and construction of bridges, tunnels, and other structures. Over the course of his career, he has managed numerous transportation, rail, and waterfront projects, including major transportation projects with construction values in excess of $200 million. Representative examples of his experience include the following:

Hampton Roads Transit / City of Portsmouth, North Landing Ferry Dock Replacement - Portsmouth, VA (Project Manager)
Mr. Krone assumed the role of Project Manager for the development of a $600,000 dual ferry docking facility under an accelerated design schedule. Project consisted of the demolition of the existing docking facility; staged construction of two floating docks; installation of prestressed concrete piles, timber pile dolphins, gangways, three concrete platforms with brick pavers, and safety railing; removal of bollards; retrofitting of seawall curb; relocation of sanitary pump for pleasure craft use; and extension and termination of utilities. PS&E documents were submitted to the client 8 weeks following Notice to Proceed (NTP).

Louisiana Department of Transportation and Development, Retainer Contract for Crescent City Connection Bridges and Facilities Trust Indenture Services Orleans, Jefferson and St. Bernard Parishes (Contract Manager: 2008 – Present)
Mr. Krone is the Project Manager for this contract which involves the performance of Trust Indenture services and engineering services for specific projects associated with the facilities owned by or in the domain of the Crescent City Connection Division (CCCD). Services being performed include, but are not limited to: operation and maintenance recommendations of bridges (which includes two major steel trusses

crossing the Mississippi River), toll collection facilities, ferry facilities, and buildings; review and approval of operating budget; periodic determination of replacement value; approval of insurers and deductible amounts; emergency response; recommendations on toll plaza configuration; and general engineering recommendations and services. Jackson Avenue Ferry Facility – Emergency response to Barge Collision (a.k.a. Allision) with the mooring dolphin and landing barge, temporary and permanent repair designs for dolphin, and underwater condition assessment. Performed construction monitoring during repairs and periodic inspection of facility after repairs were completed. Chalmette and Lower Algiers Ferry Facilities – Developed concepts and cost estimate for retrofitting landing barges to facilitate sudden vertical adjustment of the landings during storm surge events.

Louisiana Department of Transportation and Development, Crescent City Connection Bridges and Facilities - Orleans, Jefferson and St. Bernard Parishes, LA (Contract Manager: 2005 – 2008)

Project Manager for this contract which involved the performance of a physical condition inspection of certain facilities owned by or in the domain of the Crescent City Connection Division (CCCD) of the DOTD which funds, operates and maintains toll crossings of the Mississippi River in New Orleans consisting of two parallel high-level cantilever truss bridges with approaches forming a couplet, as well as three ferry crossings. The inspection work under this project annually included approximately one-half of the CCCD structures inspected under established biennial requirements, with the remaining half receiving a maintenance-type inspection. Six Passenger/automobile Ferry Facility Crossings – Performed annual condition assessments and inspections of the facilities; conducted emergency assessments and provided conceptual repairs and cost estimates to landing barges and mooring structures after hurricane Gustav.

Louisiana Department of Transportation and Development, U.S. Route 190, Mississippi River Bridge Cleaning and Painting – S.P. No. 700-24-0031 (Project Principal February 2009 – Present)

Mr. Krone is the Project Principal responsible for providing engineering and related services for the conceptual, preliminary and final design of 40 to 50 steel and/or concrete repairs, application of an epoxy co-polymer overlay system to the existing deck, removal of the existing lead based paint and the application of a new coating system to this 12,200-foot long steel truss bridge.

City of Alexandria, Cotton Street Bridge Project, Alexandria, LA (Project Principal: 2009 – Present)

Mr. Krone is assuming the role of Project Principal for the conceptual study, preliminary and final design of a $4 million Bridge Project that will include approach and structure on new alignment. As the bridge design subconsultant to the Prime Consultant, TRC is completing a conceptual study for this gateway structure that will include the incorporation of a pedestrian walkway and bikeway.

City of Baton Rouge and Parish of East Baton Rouge, Sanitary Sewer System Upgrades, Hooper Storage/Equalization Project (Project No. 09-PS-UF-0007) - Baton Rouge, LA (Project Principal: 2009 – Present)

Principal-in-Charge for the design of a 40 mgd pump station with dual wet wells. Project will include two 5 million gallon tanks for the temporary storage of sewage during peak storm periods, 24" and 36" force mains, electrical building, utilities, demolition of existing pump station, yard piping, landscaping, and architectural services.

City of Baton Rouge and Parish of East Baton Rouge, Sanitary Sewer System Upgrades, North Service Area 3-01 - Baton Rouge, LA (Project Manager: 2008-2009)
Project Subconsultant Manager for the replacement of three package pump stations, replacement of 6,200 feet of sewer force main line, and 2,000 feet of gravity sewer line. Services included utility coordination and boundary and topographic surveying.

Louisiana Department of Transportation and Development, Retainer Contract for Bridge Preservation (On-System), Statewide – S.P. No. 700-99-0429 (Contract Manager: 2008 – Present)
Mr. Krone is the Project Manager responsible for providing engineering and related services under a retainer contract to include roadway design, roadway lighting design, fixed bridge design, permit sketches, drafting, and construction related services at proposed bridge sites throughout the State of Louisiana. To date, TRC has been assigned 11 Task Orders.

Louisiana Department of Transportation and Development, LA 47 over the Mississippi River Gulf Outlet (MRGO), Orleans Parish, LA (Project Manager: 2006)
Project Manager for an in-depth inspection of the Mississippi River Gulf Outlet Bridge to determine the existing condition and report our findings. The structure consists of three through truss main bridge spans; eleven south approach steel girder spans; eleven north approach steel girder spans; ten south approach concrete girder spans; ten north approach concrete girder spans; twelve south approach concrete slab spans; and twelve north approach concrete slab spans. Overall length of the structure is 6,622 feet. Responsibilities included: in-depth inspection; coatings condition assessment; and Acoustic Emission (AE) monitoring and analysis to re-evaluate the retrofit of cracks in the lower chord steel box between panel points L15-L16.

City of Baton Rouge, Old Hammond Hwy (LA 426) Improvements – Segment 2 (Millerville Road to O'Neal Lane), City of Baton Rouge and Parish of East Baton Rouge, LA (Project Manager: 2007 – Present)
Mr. Krone is the Project Manager for the design study, NEPA study, corridor survey, ROW mapping, final design and construction engineering services for the development of a 3,930 foot long four-lane divided curb and gutter roadway with raised median, sidewalks and subsurface drainage, replacing an existing 2-lane roadway on Old Hammond Highway (LA 426) between Millerville Road and O'Neal Lane (LA 3245).

Louisiana Department of Transportation and Development, I-49 North (I-220 to Martin Luther King, Jr. Drive) Interchange Project - Caddo Parish, LA (Project Manager: 2007 – Present)
Mr. Krone is the Project Manager for the preliminary and final design of 10 bridges which include: two horizontally curved steel plate girder fly-over ramps; two low level prestressed girder bridges; two horizontally curved steel plate girder bridges (option for prestressed girders on tangent layout with curved concrete decking were considered); and four bridges to be widened. The 10 bridges are part of a project that begins at its proposed interchange with I-220, and proceeds in a northerly direction for approximately one mile to a proposed interchange with Martin Luther King, Jr. Drive (LA 3194). The project will include the design of a portion of the I-49/I-220 interchange, and a partial cloverleaf interchange at Martin Luther King, Jr. Drive. Only connections from I-220 to I-49, to the North of I-220, and from Martin Luther King, Jr. Drive to I-49, to the South of Martin Luther King, Jr. Drive, will be included in the construction plans. Geometry checks for the full multi-directional interchange at I-220 were considered in the development of the plans, while the plans allowed for future connections from I-220 to the south for a potential future extension of I-49 to the south.

Louisiana Department of Transportation and Development, Amite River Relief Bridge, LA Route 42 - Ascension Parish, LA (Project Manager: 2006 – 2008)
Mr. Krone was the Project Manager for this contract which involved the development of preliminary and final roadway plans for eight (8) off-system Louisiana bridge projects for which the LA DOTD will be developing the bridge designs. The scope initially included the preliminary and final roadway design for three sites that would include title reports, property surveys, and base and right-of-way maps. Due to the onslaught of hurricane Katrina, the prime consultant's offices in New Orleans were severely damaged and had to be closed. As a result, he assumed temporary oversight of the entire project and the preparation of 100% preliminary plans for seven of the eight sites.

Louisiana Department of Transportation and Development, I-10 Mississippi River Bridge - Baton Rouge, LA (Project Manager: 2005)
Mr. Krone was the Project Manager for this project that involved the in-depth inspection and current rehabilitation design that is needed for the 4,550-foot, I-10 Mississippi River Bridge. The bridge consists of 3 through truss approach spans with a total length of 2,423 feet, 3 eastbound deck truss approach spans with a total length of 772 feet, and 3 westbound deck truss approach spans with a total length of 1,355 feet.

Louisiana Department of Transportation and Development, US 190 over Mississippi River Bridge - Baton Rouge, LA (Project Manager: 2005)
Project Manager for this project which involved an in-depth inspection and future remedial repair work. This cantilever-style bridge carries US 190 high above the Mississippi River between Port Allen and the capital city of Baton Rouge. Totaling 12,211 feet in length, this combination bridge carries four narrow travel lanes of vehicular traffic and a single track of railroad. The scope of services associated with this assignment involved an in-depth field inspection on all components of the superstructure and all components of the substructure (above ground or above water) in conformance with the AASHTO Manual for Maintenance Inspection of Bridges.

Deficient and deteriorated members will be designed for future rehabilitation.

U.S. Route 20 over Flints Pond - Shrewsbury, MA (Project Manager)
Mr. Krone assumed the role of Project Manager for the preparation of final design documents and for the construction phase services portion of this contract. Responsible for the design and preparation of final plans, specifications, and estimates with respect to the complete replacement of a three-span reinforced concrete T-beam bridge. The replacement structure was a single-span (NE 1400 bulb-tee girder/cast-in-place concrete deck) with pile-supported integral abutments/wing walls.

Contract C04A4 Permanent Sewage Pump Station - Boston, MA (Project Manager)
Mr. Krone managed a multi-disciplinary staff during the design and construction of a $2.5 million sewage pump station for the Boston Water and Sewer Commission as part of the Central Artery/Tunnel (CA/T) Project.

Contract C01A9 - Boston, MA (Project Manager)
Mr. Krone assumed the role of Project Manager for the design of a partial building demolition in South Boston, Massachusetts. This project involved an inspection of the existing facility to assess the condition of the structure. Following the inspection, contract drawings were developed that facilitated the partial demolition of the building, provided an exterior-bracing system to support an interior non-load bearing block wall that was converted to an exterior, and provided retrofitted details for the roof termination at the new exterior wall.

AT&T Wireless Services, Northeast Region – Massachusetts (Structural Engineer)
Structural engineer responsible for the review and approval of structural drawings for an ATTWS transmitting facility. Work included reviewing the design/detailing of equipment platforms and antenna support systems for the facility.

I-90 South Boston Interchange Section of CA/T Project - Boston, MA (Deputy Project Manager)
Mr. Krone assumed the role of Deputy Project Manager for a $400 million section of the CA/T Project located in a congested industrial/commercial area in Boston. The project included main line interstate highway, cut and cover tunnels, boat sections, four permanent bridges, three temporary bridges, bridge and building demolition, surface streets and utility relocations. Responsible for the management of design staff and subconsultants in the preparation of contract documents. Directly involved in the leadership of the team's preparation of plans specifications and estimates for the design of tunnels, "boat" sections, bridges, and other structures in accordance with all project-wide standards.

Boston Marine Industrial Park (BMIP) Tunnel - Boston, MA (Deputy Project Manager)
Mr. Krone assumed the role of Deputy Project Manager for the design and construction phase services contract of the $250 million BMIP Tunnel as part of the Central Artery/Tunnel project for the Massachusetts Highway Department. The project involved the design and construction of a half-mile cut-and-cover tunnel and transition boat

structure, and included the construction of a ventilation building, steam plant, and a sewage pump station. Involved in the design of the tunnels and transition boat section structures, and also managed the coordination of client-requested design changes during construction. Coordinated the review and approval of shop drawings; performed independent design checks for alternate supply air duct and air flue formwork submittals; and reviewed and approved concrete mix designs, waterproofing materials and details, reinforcing steel support systems, and rock anchor and tie-down systems. Responded to contractor's requests for information (RFIs) and letters that requested variances to items in the contract documents.

Route 175 Chincoteague - Chincoteague, VA (Deputy Project Manager)
Mr. Krone assumed the role of Deputy Project Manager for the conceptual study, preliminary and final design for a $47 million replacement of the Black Narrows Bridge and the movable span across the Chincoteague Channel on Route 175 in Accomack County. This low-level bridge along Route 175 will include a 92-ft. single-leaf bascule type movable span over the Chincoteague/Lewis Creek Channel. The overall bridge length is 4035-ft. and will carry one traffic lane in each direction. A 729-ft long, low-level bridge carrying one traffic lane in each direction will connect the Route 175 Bridge to Marsh Island. The alignment contains compound and reverse horizontal curves and crosses open water and wetland areas. The superstructure units for the fixed spans consist of the new Virginia bulb-tee girders with custom design arch-shaped prestressed girders along the fascia. Responsibilities include his management and coordination of subconsultant tasks for roadway, geotechnical, hydraulics, traffic study, utilities, and CADD.

I-95/Route 1 Interchange - Northern Virginia (Project Manager)
Mr. Krone assumed the role of Project Manager for the conceptual, preliminary, final design, and construction services for the Route 1 Bridge replacement as part of the $300 million, I-95/Route 1 Interchange project in Alexandria, Virginia. During the initial phase of the project, a bridge concept report was prepared which included a set of bridge staging drawings that illustrate the temporary widening of the existing bridge, staged demolition of the existing bridge, construction of a new 1,671-ft long bridge that varies in width from 140-ft to 192-ft. The layout of the bridge conforms to a curved horizontal alignment with a variable structure width that lends itself to a challenging framing scheme. The concept report analyzed alternative bridge types including steel plate girders (used for final design), steel box girders and prestressed concrete AASHTO girders and spliced girders. Architectural pier concepts that incorporate reinforced concrete multicolumn bents with arched caps and tapered circular reinforced concrete columns supported by foundation alternatives incorporating drilled shafts, prestressed concrete piles, and steel H-piles have been investigated. This project also included the design of a 300-ft approach structure that consists of a low-level, cast-in-place slab span unit on integral pile bents and a combination structural steel/prestressed concrete bulb-tee approach superstructure unit that merges with the main bridge and two ramp structures.

Pembroke Area Comprehensive Transportation Plan - Virginia Beach, VA (Project Manager)
Mr. Krone assumed the role of Project Manager for the development of pedestrian and/or roadway bridge crossings as part of the development of a comprehensive transportation plan for the City of Virginia Beach. Project objective was to coordinate with the City of Virginia Beach and project stakeholders to develop goals and objectives for the future transportation system in and around the Pembroke Area (New Central Business District).

Route 165, Princess Anne Road/Ferrell Parkway - Virginia Beach, VA (Project Manager)
Mr. Krone assumed the role of Project Manager for a Phase I bridge concept design study. Study included the investigation of a 1,600-ft structure crossing the flood-way of West Neck Creek with smaller structures, such as a Quad 6x10 box culvert, single and two-span prestressed beam bridge, and a buried precast concrete arch span crossing through tributaries. A second alternative included the investigation of a 4,000-ft long structure that crossed the wetlands. Costs associated with fill versus structure were estimated and submitted to VDOT for review and consideration as part of the bridge concept study.

Route 7 Goose Creek Pedestrian Bridge Rehabilitation - Loudoun County, VA (Project Manager)
Mr. Krone assumed the role of Project Manager for the inspection, rehabilitation, and construction engineering inspection of the Route 7 Bridge over Goose Creek which was built in 1932 and served as a roadway bridge for travel along Route 7. Once development came to this area, a new parallel roadway was built and this structure was converted to a pedestrian bridge which is now part of the Potomac Heritage National Scenic Trail. Project included the removal of lead based paint, placement of a new paint system, steel stringer replacement, bearing replacement, concrete railing restorations, masonry wall restoration, placement of scour countermeasures, and the installation of pedestrian railing.

Norfolk Southern Corporation (NS) - Atlanta, GA (Project Manager)
Mr. Krone assumed the role of Project Manager for two Norfolk Southern Railroad projects. The first assignment involved the investigation of alignment problems on a bridge at Milepost: CD-248.00 over Sandusky Bay in Danbury, Ohio. This structure is a rolling lift bascule bridge with a 73.5-ft bascule span and a 35.5-ft track span. Following the investigation, a report was prepared that identified a number of structural, electrical, and mechanical deficiencies. Based upon our findings in the report, Norfolk Southern requested that the bridge be structurally rehabilitated so that they could move forward with their intent to convert the bridge to remote operation. For the second assignment, he attended a tour of four movable bridges and worked on the development of a scope and fee to consolidate the operation of those bridges to remote control at Norfolk Southern's Birmingham, Alabama dispatching center.

New York State Department of Transportation, Roslyn Viaduct Bridge Replacement - Nassau County, NY (Project Engineer)

Mr. Krone was the Project Engineer in charge of the innovative concept design for this 2100-ft dual structure replacement project. Responsibilities included his evaluation of a segmental concrete superstructure and substructure alternative using the balance cantilever construction method and a split steel box girder alternative. The concept design included an evaluation of staging concepts and issues associated with constructability. A comprehensive construction schedule was developed for each alternative, along with an engineers estimate.

Natchez Trace Parkway Bridge over Saint Catherine Creek - Natchez, MS (Project Engineer)
Mr. Krone designed a 620-ft three-span, post-tensioned box girder bridge (9-ft to 14-ft variable depth) with a transverse post-tensioned deck. Substructure consisted of 70-ft tall piers founded on prestressed concrete pile caps. Designed reinforced concrete T-beam approach spans with integral abutments.

Bridge over North West Connector at Indiana Dunes National Lakeshore - Lake and Porter Counties, IN (Project Engineer)
Mr. Krone participated in the design of a multi-cell, variable-depth, post-tensioned box girder bridge. The substructure consisted of reinforced concrete abutments on spread footings and piles. Designed reinforced concrete T-beam approach spans, integral with abutments and stub abutments and supported by steel H-piles. This structure utilized post-tensioning to facilitate the use of a variable depth structure without the need for a pier at this span length. The superstructure included rustications and recessed panels on the outside face of the barriers that resulted in an aesthetically-pleasing structure. The National Park Service chose this design, which is a replica of a PCI-award winning structure designed for the National Park Service in TN.

Route 288 - Powhatan County, VA (Project Engineer)
Mr. Krone assumed the role of Project Engineer for the concept study associated with a 1143-m bridge over the James River in Virginia. The investigation included steel plate girders, steel box girders, AASHTO girders, spliced girders, and segmental box girders.

Interstate I-81 Corridor Study - Salem District, VA
Mr. Krone was responsible for the preparation of a report for the widening and replacement alternatives associated with 58 bridges along a segment of interstate I-81 in Virginia. The alternatives included life cycle costs.

VA Department of Transportation, Route 58 (Clarksville Bypass) - Mecklenburg County, VA (Sr. Structural Engineer)
Mr. Krone assumed the role of Senior Structural Engineer assigned to check the splice designs for a three-span, 112.8-m (370-ft) unit for a bridge over the John H. Kerr Reservoir. Checked design details and the reinforcing steel schedules for 25 piers. Designed the abutments and pile foundations for the four-span 150-m (492-ft) bridge over Distillery Branch.

Bridge over B&O Canal, Georgetown - Washington, DC (Sr. Structural Engineer)
Mr. Krone inspected, rated, and designed the rehabilitation of this steel truss bridge.

Performed the analysis, as well as designed and detailed the chords and connections to be replaced, along with the bracing and jacking scheme.

Ravensburg Boulevard (Bridges over Peters Creek Valley), PA (Sr. Structural Engineer)
Mr. Krone reviewed two in-depth inspection reports to determine which members of two, three-span, 500-ft steel truss bridges needed to be built-up or replaced to bring the structure up to an HS25 rating. Designed the jacking support system to facilitate replacement of the rocker bearings with pot bearings.

Bridge over North River, TN
Designed a continuous prestressed concrete AASHTO girder bridge with substructure elements of reinforced concrete wall pier on spread footing and concrete abutments on spread footings for this bridge over North River.

Steamtown National Historic Railway - Scranton, PA (Team Leader)
Mr. Krone was the Team leader for the initial rehabilitation design of two, through-plate girder and two deck-plate girder railroad bridges.

Blueridge Parkway Bridge and State Route 46 Connector – TN (Structural Engineer)
Mr. Krone designed a single-span, reinforced concrete slab bridge with integral abutments on reinforced concrete drilled shafts.

Relief Bridge over Porter Lake - Liberty County, FL (Structural Engineer)
Mr. Krone designed the widening of a reinforced concrete slab bridge on prestressed concrete pile bents with concrete abutments on spread footings.

Tennessee Route 7 - Maury County, TN (Structural Engineer)
Mr. Krone designed the reinforced concrete T-beam approach span superstructure and reinforced concrete hammerhead piers and abutments on spread footings for this post-tensioned, box girder bridge. Designed a reinforced concrete masonry-faced gravity retaining wall structure.

Belle Vernon Bridge (I-70) over Monongahela River - Belle Vernon, PA (Structural Engineer)
Mr. Krone participated in the structural steel design for the investigation of misplaced connection holes and resultant lack of edge distance of members for a new-sloped truss for widening and rehabilitation. Checked calculations for the investigation of warping of heavy end plate weldments for the bottom chord connections of the sloped truss.

Metropolitan Washington Airport Authority - Arlington, VA (Structural Engineer)
Mr. Krone assisted in the preparation of specifications for two bridges: a "boat" section and retaining walls.

Blueridge Parkway - Watauga County, NC (Structural Engineer)
Mr. Krone designed a 370-ft masonry-faced, tieback wall.

Natchez Trace Parkway - Columbia, TN (Structural Engineer)
Mr. Krone designed a masonry-faced sheet pile retaining/head wall that supports a reinforced concrete curb and rail agricultural underpass.

Roberson Road and Buckeye Road Bridge (Structural Engineer)
Mr. Krone designed two, three-span continuous reinforced concrete slab bridges. Substructures were reinforced concrete columns on spread footings supported by steel H-piles and concrete abutments on footings supported by steel H-piles.

Blueridge Parkway Bridge and State Route 46 Connector - Williamson County, TN (Structural Engineer)
Mr. Krone designed a single-span reinforced concrete slab bridge with integral abutments on reinforced concrete caissons. Geometry of the structure required the edge beams to be designed for torsion.

Route 301, Maryland (Structural Engineer)
Mr. Krone designed a 20-ft high sound wall supported by 20-in reinforced concrete caissons along Rte 301.

Noise Wall Standards, PA Department of Transportation, Pennsylvania (Senior Structural Engineer)
Mr. Krone was assigned as a Senior Structural Engineer responsible for the development of statewide noise wall standards for Pennsylvania DOT and a series of typical details for the Commonwealth of Pennsylvania. The details included 12-ft long precast concrete panels with steel or concrete posts ranging from 8-ft to 20-ft high. Foundation standards included spread footings, as well as caissons for 4 alternate soil conditions. Developed detailed specifications to address uniformity and quality in aesthetic treatments, and concepts for mounting noise walls on structures, including the use of lightweight materials such as very lightweight concrete, corrugated metal with foam, plywood, fiberglass and acrylic.

Alameda Mid-Corridor Design-Build Project - Long Beach / Los Angeles, CA
This project is a railroad and highway improvement project developed to consolidate the rail traffic between the Port of Los Angeles and Port of Long Beach to downtown Los Angeles onto a single 20-mile long grade-separated rail route. Involved in decision-making meetings with specialty contractors who provided recommendations on how the depressed portion for the project should be constructed. Responsible for providing design recommendations to the design-build team for waterproofing the depressed railway structure that consisted of a 10-mile long, 50-ft wide and 30-ft deep "boat" section structure. Provided recommendations for waterproofing the exterior envelope, construction joints, and movement joints as well as ground water mitigation measures and details of potential cost effective repairs in the event leaks occur.

Steamtown National Historic Railway - Scranton, PA (Team Leader)
Mr. Krone was assigned as a Team Leader for the performance of a field inspection and rating of 12 through-plate girder and 20 deck-plate girder bridges, 6 concrete arches, 2 slab bridges, 2 tunnels, 1 steel truss, and numerous culverts.

United States Navy, Naval Bridge Inspections in Hampton Roads Area of Virginia for ADNFEC (Project Manager)
Mr. Krone was assigned as the Project Manager for the NBIS inspections of five bridges. Work included the preparation of load ratings, development of Structural Inventory and Appraisal (SI&A) forms (bridges were not in the system), and preparation of rehabilitation/repair alternatives that included an engineer's estimate and report preparation.

City of Portsmouth Structural Engineering Services - Portsmouth, VA (Project Engineer)
Mr. Krone was assigned as a Project Engineer/Team Leader for a contract that included inspections and report preparation for seven bridges. Provided emergency on-call responses for damage assessment of a steel corrugated culvert failure and excessive scour to the abutments and spillway slab for a two-span bridge.

MD State Highway Administration, Movable Bridge Inspections, Maryland (Team Leader)
Mr. Krone was assigned as a Team Leader for the structural, mechanical, and electrical in-depth inspections of five movable bridges. Bridge types included 2 single-leaf bascule bridges, 1 double-leaf bascule bridge, 1 double-leaf rolling lift (Scherzer) bridge, and 1 swing span bridge.

FHWA Field Inspections in Florida, Mississippi, Michigan, Tennessee, Georgia, Virginia, and North Carolina (Team Leader)
Inspected and conducted various ratings for the following types of structures: 50 steel girder bridges, 30 timber deck on steel stringer bridges, 20 glue-laminated timber deck bridges, 12 timber deck on timber stringer bridges, 30 masonry-faced concrete arch bridges, 10 tunnels, 20 post-tensioned box girder bridges, 50 culverts, and 1 suspension bridge.

JOHN D. RICHARD, PE

EDUCATION

M.S., Civil Engineering, Louisiana State University, 1976
B.S., General Studies/Social Sciences, Magna Cum Laude, Louisiana State University, 1974

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Professional Engineer, Louisiana, (#21889), 1985

AREAS OF EXPERTISE

Mr. John D. Richard, MSCE, PE, has project management and technical experience in the following general areas:

- Structural and Foundation Design
- Bridge Design for Hurricane and Coastal Regions
- Bridge Design
- Bridge Inspection
- Heavy Industrial Structural Design
- Port and Marine Structures
- Commercial and Institutional Buildings Structural Design
- Public Works Structural Design

REPRESENTATIVE EXPERIENCE

John D. Richard, PE, a registered civil engineer, is a project manager and structural engineer with more than 30 years of experience in structural and foundation engineering of highway bridges, heavy industrial buildings, chemical plants, and commercial buildings, including the design of curved and straight steel girder bridges and tall piers. His experience includes major bridge designs in a coastal environment and a major river crossing. His civil engineering experience includes project site development and layout, and marine docking structures and port facilities. His international experience includes a steel mill in the Philippines, and a steel mill jointly designed with Austrian engineers. A significant portion of his experience has been with METRIC design. He currently serves as a Senior Project Manager with Project and Task Management, Staff Management, and structural engineering responsibilities.

Port and Marine Structures

LA Department of Transportation and Development/CCCD, Retainer Contract for Crescent City Connection Bridges and Facilities Trust Indenture Services - Orleans, Jefferson and St. Bernard Parishes, State Project No. 700-99-0406 (Task Manager: 2007 - 2010)

Mr. Richard was Task Manager and Supervisory Engineer responsible for providing engineering and related services under a retainer contract that involves the repair and/or rehabilitation of ferry facility structures and bridges owned and operated by the CCCD. Representative marine responsibilities under this contract to date have included: 1) Bearing Replacement at Ferry Facilities, State Project No. 720-01-0257, Senior Project Engineer and design engineer for preparation of final plans and

construction cost estimates for redesign of bearing assemblies for ten moveable vehicular and covered pedestrian bridges to accommodate river fluctuation at six ferry facilities; 2) Senior Project Engineer for an emergency inspection, design repair, and construction engineering services for damaged dolphins at the Jackson Avenue Ferry facility due to a barge collision; 3) Senior Project Engineer for design of a new relocated berthing dolphin at the Jackson Avenue Ferry Facility. (Also see Bridge Design below for additional responsibilities under this Contract)

Argosy Gaming, Inc., Argosy Casino Riverside Structures – Lawrenceburg, IN (Project Structural Engineer: 1995 – 1997)

Mr. Richard provided the berthing analysis and structural design for three steel pipe frame jacketed berthing dolphins for the (then) largest casino boat (7,500 tons) in the United States, including pile soil analysis. The design accommodates two mooring pontoon barges, a 40 foot river level fluctuation, and a support tower on a pontoon barge that adjusts the gangway bridge to different levels. Prior to final design, Mr. Richard provided the preliminary design study of berthing design arrangements and alternatives, including monopile alternatives and fender systems. Mr. Richard also provided the preliminary and final designs for two steel truss covered pedestrian bridges, a 32' x 150' span pedestrian bridge, and a 13.5' x 200' span pedestrian bridge. The two pedestrian bridges are stepped box tube trusses of HSS rectangular steel tubes and welded connections. The design used the latest technology and the then new AWS/AISC tubular connection design procedures. Both bridges are closed to the environment with roofing and exterior walls, and the 150' pedestrian bridge has finished walls, floors and ceiling internally. The dock design was part of a project that won an ASCE Outstanding Project of the Year Award.

Bridge Design for Hurricane and Coastal Regions

LA Department of Transportation and Development, I-10 Bridge over Lake Ponchartrain – Orleans/St. Tammany Parish, LA (Senior Project Engineer: 2005 – 2006)

Mr. Richard was a Task Manager and Senior Project Engineer responsible for the design of the substructure foundation and post-tensioned concrete segmental piers for the 5,780 foot long high-level portion of a post-tensioned concrete segmental bridge alternate, the replacement bridge for a bridge damaged by Hurricane Katrina. The LRFD design of cast-in-place footings with 36" precast concrete piles utilized nonlinear analysis and design and 3D strut-and-tie models. The piers adjacent to the waterway were analyzed for vessel impact. Mr. Richard additionally participated in Contractor Information Meetings.

LA Department of Transportation and Development, Hurricane Storm Surge, Waves and Hydrodynamic Loads Design Report, I-10 Bridge Replacement, Lake Ponchartrain – Orleans/St. Tammany Parish, LA (Senior Project Engineer: 2005 – 2006)

Mr. Richard, in a technical capacity, investigated and prepared the substructure and pier shape analysis portion of the hurricane surge model report for the I-10 replacement

bridge between New Orleans and Slidel, Louisiana. Four alternate pier shapes and resultant pier loads due to storm surge and wave action were investigated.

LA Department of Transportation and Development, Intracoastal Waterway Bridge at Louisa (LA 310) Approach Spans – St. Mary Parish, LA (Senior Project Engineer: 1997 – 2000)
Mr. Richard provided project structural management and final design for the approaches to a high-rise bascule bridge in a coastal environment, including superstructure, column bents, and pile foundations. The 1,406 meters (4,613 feet) of approach spans are 37 meter (121.4 feet) two-span continuous Type BT prestressed girders on 26 meter (85.3 feet) tall column bents.

Bridge Design

LA Department of Transportation and Development, Retainer Contract for Bridge Preservation (On-System), Statewide – S.P. No. 700-99-0429 (Task Manager/Sr. Project Engineer: 2008 – Present)
Mr. Richard is assigned as a Task Manager and Senior Project Engineer responsible for providing engineering and related services under a retainer contract that involves the repair and/or rehabilitation of bridge structures throughout the State of Louisiana. Responsibilities under this contract to date have included: 1) Preparation of final plans for the I-10 Bridge Rehabilitation over the Mississippi River, East Baton Rouge Parish, for rehabilitation work on a 2,423', 3 span, through truss cantilever bridge, consisting of false chord retrofits and span jacking, floor beam connection retrofits, copolymer deck overlay, and coordination with other Consultants; 2) Task Management for the preparation of preliminary plans and cost estimates for the demolition and replacement of the Bridge over Bayou Gross Tete for the Left Turn Lanes at LA 77 & LA 78/411 US 190 project, consisting of 3-95 foot prestressed AASHTO girder spans supported by pile bents, and requiring phased construction to maintain traffic; 3) Quality Assurance/Quality Control for the development of scour remediation final plans for seventeen bridges; 4) Quality Assurance/Quality Control for the preliminary plans for the concrete slab span replacement Bridge over Bird creek, Route LA 557, Caldwell Parish; and 5) Quality Assurance/Quality Control for the preliminary plans for the 200' quad beam girder replacement Bridge over Bayou Queue de Tortue, Route LA 705, Vermillion Parish; and 6) preparation of final plans for the painting and structural rehabilitation of two movable (lift span) bridges, Little Caillou Bayou Bridge, Route LA 24, and Bayou LaCarpe Bridge, route LA 661, in Terrebonne Parish.

LA Department of Transportation and Development/CCCD, Retainer Contract for Crescent City Connection Bridges and Facilities Trust Indenture Services - Orleans, Jefferson and St. Bernard Parishes, State Project No. 700-99-0406 (Task Manager: 2007 - 2010) – Task Manager and Supervisory Engineer responsible for providing engineering and related services under a retainer contract that involves the repair and/or rehabilitation of bridge and facility structures owned and operated by the CCCD. Responsibilities under this contract to date have included: 1) preparation of final plans and construction cost estimates; 2) annual insurance evaluations; 3) Quality Assurance/Quality Control for repair and rehabilitation designs and contract drawings;

4) CE&I services to include response to RFIs, design structural modifications, submittal review and approvals; and 5) emergency response and investigations for bridge and marine facilities after man-made and natural disasters as well as repair designs and drawings for those structures. Recent work includes the use of high strength polymer concrete for replacement of armored bridge joints. Also see Port and Marine Structures.

LA Department of Transportation and Development, I-49 North, I-220 to Martin Luther King, Jr. Drive – Caddo Parish, LA (Senior Project Manager: 2006 – 2010)
Mr. Richard is Project Manager and Senior Project Engineer for the preliminary and final design of 6,768 feet of high-level curved steel girder interchange between I-220 and I-49, and 2,582 feet of bulb-tee prestressed girder interstate bridges for I-49 over McCain Creek and Martin Luther King, Jr. Drive. The project includes widening a three span continuous steel girder bridge. Mr. Richard coordinated work between multiple offices and subconsultants for a fast-tracked project on an accelerated schedule. The project is ongoing.

West Virginia Department of Highways, Phil G. McDonald Memorial Bridge Over Glade Creek (I-64), Raleigh County, WV (Task Manager: 2010) – Mr. Richard is Task Manager and Senior Project Engineer for a 3-D structural model (LUSAS) of a 1,904 foot continuous three span long steel deck truss (560', 784, 560'), to develop member loads for Gusset Plate Rating, and review of gusset plate rating using the latest FHWA Guidelines. The Project has been expanded to include a detailed model of the deck for monitoring, study, and analysis of the temperature response of the bridge to determine problems associated with the floating deck expansion bearings; and development of plans for rehabilitation of the bearings.

West Virginia Department of Highways, Kanawha Falls Steel Truss Bridge Load Rating and Update Study, Kanawha Falls, WV (Task Manager: 2010) – Mr. Richard is Task Manager and Senior Project Engineer responsible for Load Rating a 985' steel truss bridge (265', 400', 265') including substructure, and a design study for structural retrofitting to increase the bridge capacity to achieve various heavier truck loadings, including construction cost and schedule estimates.

City of Alexandria, Cotton Street Bridge Project, Alexandria, LA (Task Leader and Senior Project Engineer: 2009 – Present)
Mr. Richard is the Senior Project Engineer for the conceptual study, preliminary and final design for the bridge portion of a $4 million Bridge Project that includes approach and structure on a new alignment. The three span prestressed bridge is bifurcated–southbound lanes are straight and the northbound bridge is curved, both meeting at an interior bent. The structure includes the incorporation of a pedestrian walkway and bikeway.

LA Department of Transportation and Development, I-10 Rehabilitation over Mississippi River – East Baton Rouge Parish, LA (Senior Project Engineer: 2005 – 2006)
Mr. Richard was Deputy Project Manager and Senior Project Engineer for rehabilitation work on a 2,423 foot, three-span, through truss cantilever bridge at a major river crossing. The rehabilitation included modification of the longitudinal struts and deck to facilitate movement of the suspended center span. Sequential jacking was specified to realign the suspended span. The project also included the retrofit of the upper and lower false chord expansion connections, and the replacement of expansion joints to accommodate the suspended span thermal movement. This Project was later expanded and issued under a statewide Bridge Preservation Contract.

LA Department of Transportation and Development, Fort Buhlow Bridge and Approaches Corridor Study on US 71/US 165 between Alexandria and Pineville, LA – Rapides Parish, LA (Senior Structural Engineer: 2000 – 2002)
Mr. Richard provided the preliminary design of the three-span continuous main steel girders for a major bridge over the Red River with a 400 foot central span and 300 foot curved girder flanking spans. Mr. Richard's design responsibility included the preliminary design of plate girder approach spans, layout of prestressed girder approach spans, and preparation of cost estimates for four alternative designs, including main piers and cofferdams. MDX software was used for the steel girder designs, which were taken to an advanced level.

LA Department of Transportation and Development, Essen Lane, I-12 Interchange – Baton Rouge, LA (Senior Project Engineer: 1999 – 2002)
Mr. Richard provided the structural project management and preliminary structural design for a 1,200-foot long curved girder off-ramp consisting of three-span continuous curved steel plate girder units (exceeding 145 feet per span) in Phase II of project. Mr. Richard also provided design and drawing development for 1335 feet of concrete cantilevered retaining walls at College Drive Interchange and Essen Lane On-ramp in Phase I of project.

LA Department of Transportation and Development, I-10 Causeway Boulevard to 17th Street Canal – New Orleans, LA (Senior Structural Engineer: 1999 – 2002)
Mr. Richard provided the structural design of a two-span continuous steel plate girder bridge 424 feet in length with each span 212 feet long. The design includes a steel box cap girder integral with the two-span unit, and spanning a lower roadway. Mr. Richard also supervised staff in the design and drawing development of 1,380 feet of slab span and prestressed girder off-ramp.

City of New Orleans, Department of Public Works, Earhart Boulevard Improvements – New Orleans, LA (Senior Project Engineer: 2002 – 2003)
Mr. Richard was responsible for the design of twin 88 foot span through-girder bridges with variable section plate girders and deep abutments. Each through-girder bridge is unusually wide and carries three-lanes of traffic.

LA Department of Transportation and Development, I-10 Causeway Boulevard to 17th Street Canal – New Orleans, LA (Project Engineer: 1995)
Mr. Richard analyzed and prepared a report on the effects of using new prestressed girders for widening an existing composite steel girder/concrete slab bridge, including additional stresses in slab and concrete creep in prestressed girder caused by load transfer due to increased beam stiffness. The report critiqued and found fault with an existing technical paper (FHW NLA-200) on the subject which based contrary findings on computer modeling of the Bonnabel and Oakland Bridges.

Argosy Gaming, Incorporated, Main and Service Bridges – Lawrenceburg, Indiana (Senior Project Engineer: 1996 – 1997)
Mr. Richard provided the preliminary and final designs for two steel stepped box tube trusses for a 32' x 150' bridge, and a 13.5' x 200' bridge using the latest technology and new AWS tubular connection design procedures. Tubular box trusses are currently on the cutting edge of highway truss design.

Greater New Orleans Expressway Commission, North Shore Transportation and Drainage Improvements – Chinchuba Bayou, St. Tammany Parish, LA (Project Engineer: 2001 – 2002)
Mr. Richard was responsible for structural design and drawing preparation for a bridge widening project. Precast, prestressed girders were used to widen two existing cast-in-place bridges with new lanes of traffic.

Boat Bridge on Bayou Desiard at Canal L-11, U.S. Army Corps of Engineers – Monroe, LA (Project Engineer: 2001 – 2002)
Mr. Richard provided the conceptual and preliminary design for a 171'-0" long Boat Bridge spanning Canal L-11. The unusual superstructure spanning an existing canal is essentially a 25'-0" wide concrete U-shaped channel filled with water for boat traffic. The structure proposed will have seven continuous spans supported on pile bents.

LA Department of Transportation and Development, I-12 Widening, Acadian Thruway to Airline Highway – Baton Rouge, LA (Project Engineer: 1995 – 1997)
This project consisted of the rebuilding and widening while under traffic of 4.2 miles of urban Interstate highway and bridges. Mr. Richard provided the structural design for steel plate girders, rolled beam girders, and bearing pads for the widening of three interstate overpasses and a creek crossing.

Greater New Orleans Expressway Commission, Jacking and Bearing Pad Replacement, Pontchartrain Causeway Bridge – Jefferson and St. Tammany Parishes, LA (Project Engineer: 1994 – 1995)
Mr. Richard was responsible for the structural design and drawing preparation of portable lightweight steel jacking frames to be used during bearing pad replacement. The bridge spans, which are over water, were required to be in use by traffic during jacking. The design requirements included analysis of jacking stresses on the diaphragms of monolithically pre-cast prestressed bridge spans.

LA Department of Transportation and Development, I-49 Over Bayou Jean de Jean – Rapides Parish, LA (Structural Engineer: 1983 – 1984)
Mr. Richard provided the structural design of prestressed concrete girders and pile bents, including soil capacity analysis for friction piles, for a seven-span, continuous, prestressed concrete girder bridge over Bayou Jean de Jean.

LA Department of Transportation and Development, I-49 Over LA 121 – Rapides Parish, LA (Structural Engineer: 1983 – 1984)
Mr. Richard provided the structural design of prestressed concrete girders, column bents, footings, and deep retaining walls, including soil capacity for friction piles, for a two-span interstate bridge

LA Department of Transportation and Development, I-49 over LA 1200 Interchange- Rapides Parish, LA (Structural Engineer: 1983 – 1984)
Mr. Richard provided the structural design of prestressed girders, column bents, and friction piles, including soil capacity analysis for an interstate bridge over a road and levee.

LA Department of Transportation and Development, Millerville Road over I-12 Interchange – Baton Rouge, LA (Structural Engineer: 1984)
Mr. Richard provided the structural design of prestressed concrete girders, column bents, determination of soil capacity of friction piles, and design of foundations incorporating existing friction piles from a previous bridge in the new footings.

LA Department of Transportation and Development, US 51 Over I-55 – Hammond, LA (Structural Engineer: 1985)
Mr. Richard participated in the design of new elevated steel risers to raise an existing bridge. New steel risers of complex design had to be retrofitted and designed for ease of installation (approximately 36-inches maximum lift).

Bridge Inspection

Greater New Orleans Expressway Commission, Pontchartrain Causeway Bridge – Jefferson and St. Tammany Parishes, LA (Project Engineer: 1999 – 2001, and 2003)
Mr. Richard participated in the routine inspection of prestressed concrete spans and movable steel bascule spans of a 24 mile long causeway. Mr. Richard provided the investigation and structural design for the redesign of the connections at the center lock mechanisms, which were experiencing failures.

Highway Design

LA Department of Transportation and Development, Southwest DeRidder By Pass – Beauregard Parish, LA (Project Engineer: 1997 – 1998)
Mr. Richard was responsible for an alternate Line Study for a 17 kilometer highway by-pass, including eight alternate alignments, preliminary geometric layouts of intersections, utility evaluation, hydraulic study, bridge and culvert size and location, preliminary cost estimates, presentation at Public Meeting, and preparation of the Line

Study Report.

LA Department of Transportation and Development, Natchitoches By-Pass East – Natchitoches Parish, LA (Project Engineer: 1998)
Mr. Richard was responsible for an Alternate Line Study for a 10 kilometer highway by-pass, including four alternate alignments, preliminary geometric layouts of intersections, utility evaluation, hydraulic study, bridge and culvert size and location, preliminary cost estimates, presentation at Public Meeting, and preparation of the Line Study Report.

Heavy Industrial

National Steel Corporation, Steel Rolling Mill- Iligan, Mindanao, The Philippines (Structural Engineer: 1984 – 1985)
Mr. Richard provided the structural design (metric) of a 300 foot x 800 foot steel frame (W24-W36 equivalent) and concrete deck supporting heavy equipment on the second level of the roll mill building. The design included one-meter thick mat foundations, one meter and two-meter thick walls, and pilasters supporting the superstructure, main metal building, and crane loads. Mr. Richard, additionally, provided the structural design of the complex foundation and walls for a sideshifter, raised foundations for 6,000 HP motors, the design of large cantilevered sliding connections in beams for the steel frame, and the design of additional retaining walls and temporary sheet piling for deep pits.

Bayou Steel Corporation, Rolling Mill Building – LaPlace, LA (Structural Engineer: 1980 – 1981)
Mr. Richard provided the structural design (metric) of a concrete and steel structure with a composite deck (300' x I,000') supporting heavy industrial equipment and multiple large motors in a roll mill building during fast track design of a steel mill. The structure required innovative design due to complexity, the continual change of design requirements by the client, and the dynamic loading of fifteen large industrial motors on the raised frame. Mr. Richard's responsibilities also included design and detailing of complex sliding connections in the structural frame, and miscellaneous steel frames for machinery. Mr. Richard also provided the structural design of the chimney tower support structure. Mr. Richard represented the firm at meetings with the client, contractors, and equipment manufacturers.

Additional Experience
Mr. Richard has additional experience with miscellaneous trusses, machinery foundations, and moving cranes for other mills.

Chemical Plants

Ethyl Corporation, Alkyl-Bromide Plant – Magnolia, AR (Structural Engineer: 1987)
Mr. Richard was responsible for civil and structural design of an alkyl-bromide chemical plant, including site plan, storm and chemical drainage, roadway, recessed truck loading dock, surrounding foundations for tanks and equipment, and structural design of a four-story building (130' x 80') supporting tanks, reactors, centrifuges, offices, and bulk

chemical storage. The design included pipe racks and pipe rack towers.

Commercial and Institutional Buildings

Interline Incorporated, Office Building – Baton Rouge, LA (Structural Engineer: 1998 – 1999)
Mr. Richard provided structural design and drawing preparation for a two story steel frame office building with future third floor addition (15,400 square feet).

Greater New Orleans Expressway Commission, New Office Building – Jefferson Parish, LA (Senior Project Engineer: 2001 – 2002)
Mr. Richard was responsible for the structural and foundation design for a new two story steel framed office building and ITS (Intelligent Transportation Systems) center, and, also, the renovation of an existing office building complex.

City of Mandeville, New Maintenance Facility – St. Tammany Parish, LA (Project Engineer: 1997 – 1998)
Mr. Richard provided structural and foundation design for a new truck and vehicle maintenance and office building. The unusual location partially over a filled lagoon required the first floor (including heavy truck bays) to be entirely supported by a pile foundation.

Tallulah Correctional Facility for Youth – Tallulah, LA (Project Engineer: 1994 – 1995)
Mr. Richard provided miscellaneous structural design, owner representation, and inspection for a fifteen building, 396 bed juvenile offender boot camp/prison and educational facility for youth.

Livingston Parish School Board, Denham Springs Elementary School- Denham Springs, LA (Structural Engineer: 1984)
Mr. Richard provided structural and foundation design for an elementary school, which included masonry walls and structural block beams.

Livingston Parish School Board, French Settlement Elementary School – French Settlement, LA (Structural Engineer: 1984)
Mr. Richard provided structural and foundation design for an elementary school of structural masonry block construction.

Louisiana State University, Auditorium/Classroom and Office Building Addition, Northeast Louisiana Experiment Station – St Joseph, LA (Research Associate: 1978)
Mr. Richard was responsible for the design, drawings, specifications, and contract documents for an auditorium/classroom with offices.

Manatee County, Manatee County Stockade Expansion – Palmetto, Florida (Structural Engineer: 1990)
Mr. Richard was responsible for the structural and foundation design for a prison cell block, cafeteria, and classroom facility.

St John the Baptist Parish, Building and Site Improvements for Parish Administration Building – LaPlace, LA (Project Engineer: 1999 – 2000)
Mr. Richard was responsible for modifications, additions, and renovation of an office building, including building re-roofing.

St John the Baptist Parish, Building and Site Improvements for Parish Courthouse Building – Edgard, LA (Project Engineer: 1999 – 2000)
Mr. Richard was responsible for modifications, additions, and renovation of a courthouse building, including building re-roofing.

St Tammany Parish, Covington Branch and St Tammany Parish Library Headquarters Building Damage Survey – Covington, LA (Project Engineer: 1996)
Mr. Richard was responsible for the survey, analysis, structural check, reconstruction schemes, and report for a water-damaged structure, including analysis of roof leakage and termite damage.

St. John the Baptist Parish, Reserve Branch Library Building Damage Survey and Reconstruction – Reserve, LA (Project Engineer: 1996 – 1997)
Mr. Richard was responsible for the survey, analysis, structural check, reconstruction schemes, and report for a severely water-damaged and termite damaged structure, including detailed cost estimates for four reconstruction schemes. During the analysis, it was determined that the exterior walls of the steel-framed building were so damaged as to be detrimental to occupation, and a complete exterior wall replacement with new building details was developed.

Water Supply and Wastewater Treatment

Hooper Storage/Equalization Project, City of Baton Rouge – Baton Rouge, LA (Structural Task Leader: 2009-Present)
Mr. Richard is currently serving as Structural Task Leader for the design of a 40 million gallon per day (mgd) below grade pump station with two (2) 5 million gallon storage tanks, including all underground wet wells, pipe racks, and miscellaneous structures. Once completed, this station will provide a means to detain the peak flows during critical storm events and release the stored effluent back into the existing sanitary sewer system when demand is lower following the storm events.

US Army Corps of Engineers, New Orleans District, Ascension Parish Wastewater Treatment Plant – Ascension Parish, LA (Senior Project Engineer: 2001)
Mr. Richard was responsible for structural design and cost estimates of 7.5 MGD concrete sequential batch reactor tanks with aerobic digester tank on pile foundations, approximately 170 feet X 220 feet, with a 1.5 MGD alternative.

US Army Corps of Engineers, Memphis District, Grand Prairie Pumping Station, Grand Prairie Area Demonstration Project- White River, Arkansas (Project Engineer: 2000)
Mr. Richard provided miscellaneous structural design for a six-unit pumping station to

draw irrigation water from the White River at the rate of 1,640 cubic feet per second.

US Army Corps of Engineers, New Orleans District, Jones Creek and Tributaries Project Channel Improvements, Phase I, Amite River to Old Hammond Highway – East Baton Rouge Parish, LA (Senior Project Engineer: 2005)
Mr. Richard provided miscellaneous structural design, concrete headwall designs, and a gravity sewer aerial crossing for a large channel improvement public works project.

Louisiana State University, Pumping Station and Collection System for Ben Hur Farm – Baton Rouge, LA (Research Associate: 1978)
Mr. Richard was responsible for civil and structural design, drawings, specifications, and contract documents for a pumping station and collection system.

City of St. Peters, Water System and Wastewater Collection System – St. Peters, MO (Engineer: 1977)
Mr. Richard participated in the preparation of Government Documents for a water system and wastewater collection and treatment system for St. Peters, Missouri. Mr. Richard prepared preliminary designs and cost analyses of a 3.0 MGD oxidation ditch system. Mr. Richard also provided miscellaneous structural design and shop drawing review for the water treatment plant.

City of Brusly, Wastewater Collection and Treatment System – Brusly, LA (Engineer: 1977)
Mr. Richard participated on the preliminary design, design alternatives, and preparation of Environmental Impact Statements and Facility Plan Study for a municipal wastewater collection and treatment facility.

Site Planning and Development

Crescent City Connection Division – LA Department of Transportation and Development, Tipton County, Rialto Industrial Park – Rialto, TN (Engineer: 1977)
Mr. Richard provided the preliminary design and cost analysis of an industrial park (400 acres) including roadways, spur track layout, and water, sewer, and gas service system.

SPECIALIZED TRAINING

- Practical Steel Design for Buildings/2-20 Stories, AISC, 1977
- Light and Heavy Industrial Buildings, AISC, 1980

PROFESSIONAL AFFILIATIONS

- Chi Epsilon, Honorary Civil Engineering Society
- American Institute of Steel Construction

References

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