



Barowka and Bonura  
Engineers and Consultants, L.L.C.

**SOQ No. 24-015**

**Routine Engineering Services  
for Drainage Projects**

**Resolution No.: 144202**

**Deadline: Friday, June 21, 2024  
at 3:30 PM**

Barowka and Bonura Engineers and Consultants, L.L.C.  
209 Canal Street  
Metairie, Louisiana 70005

Jeffrey Bonura, P.E., Member  
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**Collaborate. Innovate. Implement.**

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# ***BBEC*** Barowka and Bonura Engineers and Consultants, L.L.C.

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June 21, 2024

Jefferson Parish Purchasing Department  
c/o Ms. Shanna Folse, Purchasing Specialist II  
General Government Building  
200 Derbigny St., Suite 4400  
Gretna, Louisiana 70053

**SUBJECT: Routine Engineering Services for Drainage Projects  
Resolution No. 144202**

Dear Ms. Folse:

Barowka and Bonura Engineers and Consultants, L.L.C. (BBEC) appreciates the opportunity to submit this Statement of Qualifications to provide Routine Engineering Services for Drainage projects in Jefferson Parish.

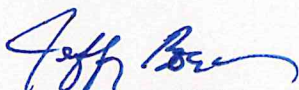
The attached qualifications statement demonstrates that BBEC maintains the technical ability to address the needs of Jefferson Parish and assist them in the execution of any Drainage project. BBEC, an engineering consulting firm specializing in civil engineering design, construction management, grant management and computer consulting services, is fully qualified to provide the engineering services necessary.

BBEC's substantial experience in drainage design and construction management, civil engineering design, and program administration in Jefferson Parish and surrounding areas in Southeast Louisiana is evidenced in the attached statement of qualifications. BBEC has completed numerous projects through construction throughout residential neighborhoods and high-traffic commercial and industrial areas. In Jefferson Parish, just a few examples where BBEC provided or is currently providing engineering services for drainage projects include the East Bank Master Drainage Plan, Ames Boulevard Roadside Drainage Improvements, Avondale/Bridge City Drainage Evaluation, Bissonet Plaza Master Drainage Plan, Labarre Road Back-to-Back U-Turn Intersection Improvements, and Craig Avenue Drainage Improvements.

As noted in this Statement of Qualifications, BBEC has substantial experience managing projects in neighboring parishes as well. The projects include drainage, water, sewer, and roadway construction, sidewalk and driveway connections, utility relocation and coordination, levee construction and renovation, flood control analysis, and all incidental work.

Once again, we sincerely appreciate the opportunity to submit this Statement of Qualifications to Jefferson Parish, and we look forward to serving you.

Very truly yours,

  
Jeffrey Bonura, P.E.  
Sole Member



**A. Project Name and Advertisement Resolution Number:**

***Routine Engineering Services for Drainage Projects (Resolution # 144202)***

**B. Firm Name & Address:**

**Barowka and Bonura Engineers and Consultants, L.L.C.  
209 Canal Street, Metairie, LA 70005**

**C. Name, title and contact information of Principal, as defined in Section 2-926 of the Jefferson Parish Code of Ordinances, who is a registered, licensed architect, professional engineer, or surveyor in the State of Louisiana:**

**Jeffrey Bonura, P.E.  
Sole Member  
Office: (504) 828-0030  
Fax: (504) 828-8006  
Email: jbonura@bbecllc.com**

**D. Name and contact information of employee who is a registered and licensed architect, professional engineer, or surveyor in the State of Louisiana in the applicable discipline. A subcontractor may be substituted here only if the advertised Project requires more than one discipline.**

**Kevin Forschler, P.E.  
Office: (504) 828-0030  
Fax: (504) 828-8006  
Email: kforschler@bbecllc.com**

**E. Please provide the number of employees whose primary function corresponds with each category:**

<u>5</u> Administrative	<u>0</u> Estimators	<u>0</u> Specification Writers
<u>0</u> Architects (Licensed)	<u>0</u> Geologists	<u>2</u> Structural Engineers
<u>0</u> Chemical Engineers	<u>0</u> Geotechnical Engineers	<u>1</u> Graduate Engineers
<u>4</u> Civil Engineers	<u>0</u> Interior Designers	<u>2</u> Project Managers
<u>1</u> Construction Inspectors	<u>0</u> Landscape Architects	<u>2</u> Clerical
<u>0</u> Ecologists	<u>0</u> Land Surveyor	<u>4</u> Grant/Funding Specialist
<u>1</u> Electrical Engineers	<u>0</u> Mechanical Engineers	<u>0</u> Sanitary Engineers
<u>1</u> Engineer Intern	<u>0</u> Environmental Engineers	
<u>0</u> Professional Land Surveyors	<u>3</u> Drafters	<b><u>26</u> TOTAL</b>

**F. Is this submittal by a JOINT-VENTURE? Please check: YES ☐ NO ☒**  
**If marked "No" skip to Section I. If marked "yes" complete Sections G-H.**

<b>G. If submittal is by JOINT-VENTURE, list the firms participating and outline specific areas of responsibility (including administrative, technical, and financial) for each firm. Please attach additional pages if necessary.</b>		
1. N/A		
2. N/A		
<b>H. Has this JOINT-VENTURE previously worked together? Please check: N/A</b> YES _____ NO _____		
<b>I. List all subcontractors anticipated for this Project. Please note that <u>all subcontractors must submit a fully completed copy of this questionnaire</u>, applicable licenses, and any other information required by the advertisement. See Jefferson Parish Code of Ordinances, Sec. 2-928(a)(3). Please attach additional pages if necessary.</b>		
<b>Name &amp; Address:</b>	<b>Specialty:</b>	<b>Worked with Firm Before (Yes or No):</b>
1. BBEC will obtain prior approval from the Parish before utilizing a subconsultant should one be deemed necessary. Further, we will work with any sub-consultant or support consultant assigned to us for a specific project.		
2.		
3.		
<b>J. Please specify the total number of support personnel that may assist in the completion of this Project:</b>  <div style="border-bottom: 1px solid black; width: 100px; margin-left: 0;">22</div>		

**K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e. resume) that demonstrates the employment history and experience of the Firm's key persons that may assist in the completion of this Project. Please attach additional pages if necessary.**

**PROFESSIONAL IN CHARGE OF PROJECT:**

**Name & Title:**

**Jeffrey Bonura, P.E.  
Sole Member**

**Project Assignment:**

**Supervising Professional / Project Manager**

**Name of Firm with which associated:**



**Barowka and Bonura  
Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**27**

**Education: Degree(s)/Year/Specialization:**

**B.S. / 1991 / Civil Engineering**

**Active registration: Year first registered/discipline:**

**1995 / Civil**

**Other experience and qualifications relevant to the proposed Project:**

Jeffrey Bonura, P.E. is the sole owner of the firm of Barowka and Bonura Engineers and Consultants, L.L.C. Mr. Bonura began his career in 1988 and since that time has worked as a project engineer, project manager and program manager on municipal, commercial, institutional and industrial projects.

Mr. Bonura has broad experience in civil engineering resulting from his more than 36 years in the consulting engineering practice. He has substantial experience in roadway and drainage planning, design, and construction management. Mr. Bonura's experience related to drainage includes design of drain piping, box culverts, structures, pump stations, ditches and canal, detention systems, and managing the cleaning of debris from the systems.

Mr. Bonura served as project engineer/manager for the projects listed below. His responsibilities included work plan preparation, budgeting, cost control and monitoring, team supervision, engineering design, and construction management.

Projects with detailed descriptions of work are provided below:

#### **East Bank Master Drainage Plan, Jefferson Parish, LA, 04/2023-Present**

Mr. Bonura is the Supervising Engineer for this project which consists of updating Jefferson Parish's hydrologic and hydraulic model of its 50 square mile East Bank. BBEC worked with the Parish to identify relevant upgrades in the drainage system and has incorporated the improvements from 18 drainage projects into the Parish's SWMM model. To do so, BBEC modified the drainage features in the existing model including drainage subbasins, conduits (pipes and canals), storage areas, and pumping stations. BBEC is currently working with Jefferson Parish to develop criteria for prioritizing additional improvements. The resulting improvements will also be incorporated into the model. The project also includes the development of conceptual phase plans and construction cost estimates for the recommended improvement projects.

#### **Avondale/Bridge City Drainage Evaluation (Area between the Mississippi River and the Union Pacific Railroad, from Huey P. Long Bridge to Avondale Garden Road), Jefferson Parish, LA, 04/2021-Present**

Mr. Bonura is serving as Supervising Engineer for the development of a hydraulic and hydrologic model of the Project Area between the Mississippi River and the Union Pacific Railroad, from the Huey P. Long Bridge to Avondale Garden Road; and, developing various alternatives for improvements with cost estimates for the alternatives. The alternative analysis will also include an evaluation of rights-of-way in place or needed for the alternatives and coordination with the railroad companies. BBEC will provide alternatives for evaluation and cost estimates including two alternate channels to drain the Host Facility and rail yard area, two alternatives to drain the Training Facility, two locations for storage as an alternative to transmission, for the project area, and two alternatives to drain the Bridge City residential area. BBEC will provide drawings, specifications, and contract documents, and oversee lab inspections of materials and equipment.

#### **Bissonet Plaza Master Drainage Plan (A/E Project No. 20-1708), Jefferson Parish, LA, 05/2018-05/2021**

Mr. Bonura served as the Supervising Engineer for this project where BBEC developed a hydrologic and hydraulic (H & H) model of a 180 acre residential (zoned R1) area in Jefferson Parish, Louisiana, said area bounded by Power Boulevard, Kawanee Avenue, West Esplanade Avenue, and the Elmwood Canal. BBEC developed a limited scope of services for the necessary topographical survey; provided oversight and reviewed the final topographic survey; developed the H & H model using third party software; coordinated the model with the Parish's own parish-wide H & H model; and provided the running model to others for evaluation of improvements.

#### **Harvard Avenue Drainage Improvements, Project No. 99-046-046-DR and 99-046A-DR, Jefferson Parish, LA, 04/2000-06/2006**

Mr. Bonura designed approximately 6,000 linear feet of 24-inch to 72-inch drainpipe in Jefferson Parish, Louisiana. BBEC used Intergraph's Storm and Sanitary SelectCAD modeling software to determine the surface runoff and the pipe sizes. Data from the existing Parish's GIS was used to develop the surface terrain for the basis of the model. The project requires that the various drain lines be installed within 50-foot Parish right-of-ways in commercial and residential areas, existing utilities throughout the length of the project are maintained, and the site is restored, including roadways, to its before construction condition. The project also required three separate jack-and-bores, from 30-inches to 72-inches in diameter, across a three-lane roadway to discharge into a canal. The estimated construction cost is \$2,430,000.

#### **Lake Avenue and Carrollton Avenue Drainage Study, Jefferson Parish, LA, 04/2003-07/2005**

Project included an extensive drainage and traffic control study on Lake and Carrollton Avenues in the Bucktown area of Jefferson Parish, Louisiana. Hydraulic modeling of the entire area was performed and drainage improvements were recommended in conjunction with the findings of the traffic study. Mr. Bonura performed the hydraulic model, coordinated with the traffic engineer and designed the proposed drainage improvements.

#### **Cleary Avenue Roadway and Drainage Improvements, Jefferson Parish, LA, 01/1998-06/2005**

The construction project included reconstruction of approximately 4000 feet of concrete roadway, redesign of existing drainage system and general improvements to existing infrastructure on Cleary Avenue from Veterans

Boulevard to West Esplanade Avenue. The project area modeled included Cleary Avenue from Veterans Boulevard to West Esplanade Avenue, including neighboring streets connecting to Cleary's drainage trunk line. Mr. Bonura performed the modeling, design, evaluation (drainage under roadway), and plans and specifications. The project is complete through construction.

**Waggaman Area Drainage Study (Project No. 2011-03-DR), Jefferson Parish, LA, 02/2013-01/2016**

Mr. Bonura served as Supervising Engineer to perform a hydrologic study for three separate residential subdivisions in Waggaman, Louisiana: Waggaman, South Kenner, and Manor Lane. The Waggaman subdivision is bounded by River Road to the north, Live Oak Boulevard to the south, Saul's Canal to the west, and Dandelion Ditch to the east. South Kenner subdivision is bounded by River Road to the north, North Railroad Canal to the south, Saul's Canal to the east, and another subdivision to the west. The Manor Lane subdivision is bounded by River Road to the north, North Railroad Canal to the south, Latigue Road Ditch to the west, and Modern Farms Road Ditch to the east. BBEC used the Storm Water Management Model (SWMM) to evaluate the existing subsurface drainage capacities for each subdivision and to examine if the existing system was able handle a 10-year design storm. BBEC developed a hydrologic and hydraulic model for each area and recommended subsurface improvements based on the SWMM model to handle a 10-year design storm.

**Cleary Improvements (Veterans Blvd. to West Esplanade Avenue) (Council District 5), Jefferson Parish, LA, 11/2017-11/2021**

Mr. Bonura served as Design Engineer and Supervising Professional for this project which consisted of the reconstruction of Cleary Avenue between Veterans Boulevard and West Esplanade Avenue and includes drainage improvements.

The improvements included removing and replacing approximately 4,000 linear feet of four-lane concrete street (2 travel lanes, 2 parking lanes) with curbs; removing and replacing adjoining concrete sidewalks, drives, and ADA ramps; installation of new sub-surface drainage; installation of new outfall pipe crossing W. Esplanade Avenue and discharging into W. Esplanade Avenue Canal; installation of new outfall pipe crossing Veterans Blvd. and discharging into Veterans Blvd. Canal (Canal No. 3); the replacement of all water mains crossing Cleary Avenue and West Esplanade Avenue in the project area; and coordination with private utilities for their respective utility relocations.

The scope of work also included traffic phasing, allowing the contractor to work on one lane at a time. When working on the parking lanes, the 2-way traffic was maintained. When working in the travel lanes, only 1-way traffic was allowed.

Mr. Bonura managed the resident inspection such that one inspector was provided for the full 2-year construction duration, and additional inspectors were provided when the work required it. The construction contract ran over the original contract time. The contractor paid the inspection cost overrun through liquidated damages.

**Craig Avenue Drainage Improvements, Public Works Project No. 2019-022-DR, Jefferson Parish, LA, 01/2020-Present**

Mr. Bonura is currently serving as the Supervising Engineer for this project. The scope of work includes the design and construction administration services for the design of upgrades to subsurface drainage on Craig Avenue between Kawanee Avenue and West Esplanade Avenue. The project involves installing a large diameter drain line within 20 feet of residential structures and connecting this new drain line to the existing trunk line that runs along the opposite side of the road and to the existing catch basins on the cross streets of Craig Avenue. BBEC is overseeing the Surveying and Geotechnical Engineering services.

**Westbank Mississippi River Bike Trail, Around Avondale Shipyard (2017-059-RBP), Jefferson Parish, LA, 05/2018-Present**

Mr. Bonura is the supervising professional over the project, providing day to day input for the implementation of the project. BBEC is currently working on detailed plans and specifications for the construction of the 2.5 mile bike path, part of which is on the top of the Mississippi River levee and the balance of which is on the shoulders of two state highways. A key component to BBEC's designs on the levee section is to maintain the integrity of the levee and while constructing the base and asphalt bike path section with a limited width of top of levee. For the state highway portion of the project, part of the project has asphalt shoulders in place, therefore only pavement markings and signage are required. In other locations, roadway widening and required subsurface drainage is necessary to install the bicycle travel lanes.

BBEC developed a hydraulic and hydrologic model to drain a 220-acre area. BBEC designed the drainage for the area, which includes a series of canals with 48-inch and double 48-inch culverts.

BBEC is currently coordinating its work with the LDOTD, the West Jefferson Levee District, the USACE through the levee district, and Union Pacific Railroad to obtain the necessary permits to perform the project. BBEC is also working with Jefferson Parish to determine the required right-of-way (ROW) so it could be acquired from the adjacent property owner(s).

Once the design is complete, BBEC will perform bidding services, construction administration services, and resident inspection services for the construction project.

#### **Design of Access Ways and Ladders at Drainage Pump Stations, Project No. 2014-022-DR, Jefferson Parish, LA, 11/2014-11/2019**

Mr. Bonura served as Supervising Engineer where BBEC prepared cost estimates and designed ladders, stairs, and elevated walkways in 16 drainage pump stations to connect elevated structures and allow personnel to access the top of structures within Jefferson Parish. Design included analysis and details to retrofit new items to existing structures. The projects included the design of access ways and ladders at various drainage pump stations on the Eastbank and Westbank of Jefferson Parish identified as follows: Project I: Bonnabel, Elmwood, Estelle No. 1, Estelle No. 2, Hero, Lake Cataouche No. 2 and Westminster. Project II: Suburban, Duncan and Planters. Project III: Parish Line, Ames, Bayou Segnette, Mount Kennedy, Westwego No. 2 and Whitney-Barataria. Design services were performed for Projects II and III and Design, Bidding, Construction Management, Resident Inspection and As-built services were performed for Project I.

#### **Manson Ditch and Lower Kraak Outfall System Improvements, Jefferson Parish, LA, 06/2004-09/2008**

Mr. Bonura served as Supervising Engineer for the project which the scope of the work was to provide full engineering services, including evaluation of alternatives, preliminary design, final design, bidding, construction administration, resident inspection, and as-built drawing services, for the improvements to the Manson Ditch outfall into the West Metairie Avenue Canal. All design work is complete and the project is on hold pending funding. The project consists of hydraulic modeling of drainage structures, design of drainage systems composed of cast-in-place concrete structures and pipe systems, connection to existing culverts, transition to existing canal banks, utility relocations, roadway and other site restoration, traffic maintenance and signal design, pavement striping, and all incidental work. Currently two large diameter drain lines (60-inch and 72-inch diameter) discharge into the West Metairie Canal culvert crossing under Cleary Avenue. The purpose of the project is to remove the connection and discharge the two drain lines directly into the canal, requiring an outfall structure. The outfall structure is designed to accept the two drain lines, connect to the existing two 96-inch diameter culverts, and be able to transition to a future 16-foot wide u-channel. Temporary bank stabilization is required until the future u-channel project is completed. Traffic flow on the two major arterial streets must be maintained at all times through construction of the project.

#### **West Napoleon Avenue Improvements, Cleary Avenue to Severn Avenue, (LA DOTD Project No. 742-07-0088), Jefferson Parish, LA, 02/2003-08/2005**



Mr. Bonura performed design and construction administration services on this \$13 million TIMED roadway and drainage project, which consisted of about 3,800 l.f. of four-lane concrete roadway divided by a new 30-foot wide concrete u-channel. Mr. Bonura coordinated with the private utility companies to relocate (or work around) natural gas pipelines and power and communication lines, overhead and buried, and coordinated construction and connection to public utilities (water and sewer) as well. Mr. Bonura reviewed and made recommendations regarding substitute materials and construction methods and monitored the contractors' accelerated operations that reduced the construction contract time from two and a half years to one and a half years.

**Labarre Road Back-to-Back U-Turn Intersection Improvements (West Esplanade Avenue/North Labarre Road), Jefferson Parish, LA, 2004**

Mr. Bonura served as the Supervising Engineer where the project consisted of the construction of a new cast-in-place concrete bridge and the installation of a 36-inch diameter water line canal crossing. BBEC provided construction management and resident inspection. The construction cost was \$1,200,000.

**Drainage Pump Station Fuel Storage Secondary Containment, Jefferson Parish, LA, 09/2002-06/2004**

Mr. Bonura designed secondary containment systems to contain diesel fuel at 11 west bank drainage pump stations so that the fuel from the largest storage tank on the site would be retained in the event of a diesel fuel spill. Mr. Bonura developed details for containment systems such as concrete retaining walls for tanks farms stored on existing slabs, and lining systems for earthen containment ponds if the slab option did not provide sufficient volume. Mr. Bonura provided the details to the Drainage Department, who in-turn advertised the work for public bid as funding allowed and administered the work through construction.

**Ames Boulevard Rehabilitation, West Bank Expressway to Happy Street, (Public Works Project No. 2013-033-RB) (DOTD No. H.01179), Jefferson Parish, LA, 11/2015-11/2020**

Mr. Bonura is serving as the Supervising Professional for this project which includes all necessary professional design services in connection with the project defined as follows: Mill existing asphalt pavement over existing concrete roadway; replace damaged concrete roadway panels, associated underlying base course, and concrete curb as necessary; clean and seal existing concrete joints; overlay existing concrete roadway with new asphalt; adjust existing public utility facilities (water, sewer, drainage) as necessary to match finished roadway grades and comply with current ADA guidelines; and install permanent striping.

As this project is eligible for federal construction funds as part of the Federal Aid Urban System Program, all work shall be performed in accordance with Louisiana Department of Transportation and Development (LA DOTD) guidelines which includes development of existing and proposed drainage maps with associated hydraulic computations, and all design work shall be subject to review by the LA DOTD.

BBEC completed the Preliminary Phase of this project coordinating all topographic surveys and other investigations, preparing a program of borings and other soil investigations, plotting information obtained from surveyor on plan, preparing preliminary layouts and sketches to develop design criteria, and preparing a preliminary cost estimate.

Nearing the end of the Design Phase, BBEC prepared detailed construction plans and technical specifications in accordance with LA DOTD criteria and submitted 90% plans for LDOTD review. These plans include locations of all utilities affected, and ownership and taking lines of rights-of-way where required. BBEC will also prepare permits for submission to and approval of local, state and federal authorities.

**Ames Boulevard Roadside Drainage Improvements, Jefferson Parish, LA, 01/2004-12/2005**

Mr. Bonura performed runoff calculations and designed drainage improvements for a two-mile segment of Ames Boulevard on the West Bank of Jefferson Parish. Mr. Bonura prepared construction drawings for the project in less than three weeks utilizing the Parish's standard details, and the Parish's GIS maps for plan sheets, and

coordinated the work with the Parish, private utilities, and the annual contractor constructing the project. The total project cost is about \$800,000.

#### **Sanitary Landfill Stormwater Detention, Jefferson Parish, LA, 1998**

As part of the landfill permitting process, the requirement for the site was to contain the 25-year storm. Mr. Bonura developed the initial stormwater management plans to address the requirement. To put the landfill project out for bid, Mr. Bonura designed the actual facilities and site improvements to maintain compliance with the 25-year storm requirement. Mr. Bonura designed a complete drainage system for the 88 acre Phase III expansion site, which included the construction of ditches, canals, bridges, culverts, and outfall structures. Mr. Bonura performed the hydraulic modeling to determine the runoff for the site, performed the hydraulic modeling analysis to determine the ditch and canal cross sections, with the existing tight elevation constraints, performed a cost analysis study to determine the most cost effective method for the canal crossings, compared precast box culverts, poured in place box culverts, ConSpan sections, precast (Waskey) bridge sections, and poured in place bridge sections. Mr. Bonura determined (with concurrence of the contractor on the site) that the poured in place bridge section was the most cost-effective method, determined the culvert sizes and prepared final construction drawings and specifications for the entire project. The drainage portion of the project cost about \$3,000,000.

#### **Sanitary Landfill Phase I and II Expansion, Jefferson Parish, LA, 1997**

As Project Engineer and Construction Manager for the upgrade to the Phase I and Phase II sites of the Jefferson Parish Sanitary Landfill to meet new Federal Subtitle D regulations, Mr. Bonura designed about 20 HDPE leachate manholes with submersible pumps and several thousand feet of leachate collection pipe under existing solid waste. Mr. Bonura designed several thousand feet of leachate transmission lines, the retrofitting of about 20 leachate collection lines to install in-line submersible pumps, and an oxidation pond with an overflow/outfall structure. Mr. Bonura served as Construction Manager for the entire project.

#### **Drainage User Fee Study, Jefferson Parish, LA,**

Mr. Bonura served as a project engineer supervising data collection and performed statistical analysis of the collected data and drafted various sections of the final report. The project scope was to develop a parish-wide drainage utility user fee for Jefferson Parish. The project consisted of collecting sufficient data to develop a comparison of previous to impervious land for the various land uses in the Parish. The project utilized the Parish's then current drainage master plan cost projections as a cost basis, and then used the data collected and analyzed as a basis for cost allocation to the residents, businesses, and other property owners in Jefferson Parish. The report served as the basis for the proposed drainage user fee that was put out for a vote of the public.

#### **District 4 Drainage Outfall Improvements Evaluation, Jefferson Parish, LA, 08/2014-08/2017**

Mr. Bonura was Project Engineer and the supervising professional on the project. The project consisted of identifying all drainage outfalls in Jefferson Parish Council District 4 and developing preliminary plans and cost estimates for options to replace the existing outfalls with improved structures, considering aesthetics, maintenance, and hydraulic performance.

#### **Canal Monumentation Program, Jefferson Parish, LA, 01/2004-12/2005**

Mr. Bonura worked with the Parish's Drainage Department to develop and implement a canal monumentation project for the entire Parish. The project included stationing the canals with vertical and horizontal monuments strategically located, locating right of way and servitude information, researching existing data and projects for data relevant to the project such as current or past projects, subdivision plats, the Parish's GIS, and other information available for the implementation of the project.

#### **Bayou Gauche Drainage Analysis, St. Charles Parish, LA, 01/2003-12/2005**

Mr. Bonura served as Design Engineer for the project which included updating the Parish's existing hydraulic and hydrologic computer models with current developments for the Sunset Drainage District watershed in St. Charles

Parish. The Parish's existing HEC -1 and HEC-2 hydraulic models were evaluated and revised to include infrastructure improvements throughout the drainage district. The existing models were converted to HEC-RAS and HEC-HMS for use in this study and future evaluations. Model runs were performed to verify the need for drainage pump station improvements in the area and determine the improved capacity of the pump station.

#### **Guichard Canal Area Drainage Evaluation, St. Bernard Parish, LA, 03/2004-04/2005**

The project consisted of evaluating the ability of an existing drainage system in St. Bernard Parish, Louisiana to handle the 10-year storm for a 200-drainage basin in a residential area primarily consisting of open ditches and miscellaneous culverts with multiple outfalls into the Guichard Canal. The area is bounded by the Guichard Canal on the west, Paris Road on the east, Judge Perez Drive on the south, and Patricia Street on the north. The area also contained two drainage pump stations that were designed to drain the subsurface system, while the main volume of flow during the rain events utilized roadside ditches and some subsurface drain lines. Mr. Bonura supervised the development of a drainage layer in the Parish's GIS, supervised the surveying of elevations of the drainage features, developed a hydrologic and hydraulic model for the area, modeled the area and determined all deficient drain lines. Mr. Bonura made recommendations for the necessary improvements to cover the 10-year storm.

#### **LA-45 Evacuation Route Basin Drainage Improvements, Lafitte Area Independent District, LA, 02/2020-Present**

Mr. Bonura is serving as Supervising Engineer for BBEC, performing as sub-consultant, which has been tasked with developing a current H&H rainfall runoff model for the LA-45 Evacuation Route Basin, both for existing conditions and to reflect the proposed Lafitte Tidal protection project. The analysis will locate and quantify areas subject to internal drainage problems resulting from the completion of the Tidal Protection project, including the location and sizing of nominally three pump stations or gravity flood gates, to be designed under separate contract. BBEC is developing the H&H model for both the current conditions and the proposed Tidal Protection conditions, determining canal, culvert, and storm sewer capacity requirements, providing an AutoCAD drawing delineating drainage basins, improvements alignments, and sump requirements for both gravity and pumped discharge, and providing a letter report of the findings of the study. BBEC will also prepare preliminary plans which will include Drainage Maps, Conceptual Storm Sewer Routing Plans to show ditches and storm sewer locations, and sized required, and identify an potential problem areas, plans and profiles, required right-of-way and construction access, and any impacts to existing properties. BBEC will provide Drainage Map, coordination with Engineer on the results of the H&H Study, and Jefferson Parish Public Works Standard Details, as requested. BBEC will prepare final plans and technical specifications which will consist of a full set of construction plans including final plans and profiles, detailed Drainage Map, standard structural and grading details, and cross sections, along with a cost estimate of construction quantities and the estimate of probable cost. Technical Specification will be included in a complete set of Contract Documents. BBEC will perform construction management for the project.

#### **Widening / Stabilization of Congressman Hebert, Creely, and Bluebird Canals (Hazard Mitigation Grant Program (HMGP), St. Bernard Parish, LA, 01/2015-Present**

Mr. Bonura serves as the supervising professional and project engineer on the hydraulic and hydrologic model phase of the entire project and the design of the Congressman Hebert Canal replacement portion of the project. The project includes increasing the capacity and improves the stability of Congressman Hebert, Creely, and Bluebird Canals, that consists of 11,600 linear feet of open canal and culverts ranging from 4-feet bottom width to 16-feet bottom width channels. Mr. Bonura coordinated with St. Bernard Parish, Lake Borgne Basin Levee District, and the Louisiana Department of Transportation and Development to obtain information regarding the existing drainage plan. BBEC performed a hydrologic and hydraulic analysis of the existing system to evaluate the entire area for the 5-year, 10-year, and 25-year storms. BBEC established the design cross sections for the channels, which included concrete u-channels, concrete box culverts, and round and arched pipe, and concrete lined trapezoidal sections, depending on the availability of land and other conditions.

#### **Cypress Park Subdivision Drainage Evaluation, St. Tammany Parish, LA, 11/2016-12/2017**

Mr. Bonura served as the supervising professional and project engineer on the hydraulic and hydrologic study of the Erindale Heights and Cypress Park Subdivisions (about 450 acres of single family residential property). The study consisted of developing a computer model of the hydrology and drainage system consisting of natural channels, open ditches, closed conduits, and culverts. BBEC evaluated the 5, 10, 25, 50, and 100 year storms, and developed several alternatives for addressing the flooding concerns. BBEC provided pros and cons, permitting concerns, and construction cost estimates related to the alternatives. The alternatives considered included elevation adjustments to open channels, increased closed conduit usage and size of existing closed conduits, levees, and pump stations.

#### **HMGP Elevation of Coast Guard Road, Phase I (Project No. 1603x-075-0010), Plaquemines Parish, LA (Funding Source: FEMA Hazard Mitigation Grant Program), 09/2013-06/2016**

Mr. Bonura worked with Plaquemines Parish Government to design the two-foot elevation and stabilization of Coast Guard Road. As Supervising Engineer, he oversaw the design of the upgrades to the existing drainage system, a Hydrologic and Hydraulic (H & H) Study to identify the existing drainage system, the need for upgrades, and to assess the reduction of flooding due to contemplated improvements to Coast Guard Road. He performed calculations, modeling, and analysis to assess the hydraulic capacity of the existing drainage system and provided recommendations for improvements that will increase system capacity and reduce the risk of flooding. As part of the H&H evaluation, Mr. Bonura included an analysis of Mississippi River elevations data to identify periods when the improvements would be inundated by the river effects, and what depths would be encountered. Mr. Bonura oversaw the surveying and environmental review process.

#### **Map Modernization Project (DFIRM) (Contract No. EMT-2005-CA-0110), St. Bernard Parish, LA, 03/2005-12/2008**

Mr. Bonura oversaw and assisted FEMA to develop St. Bernard Parish's flood insurance rate maps as part of FEMA's map modernization program. Mr. Bonura prepared the project scoping document for St. Bernard Parish and received FEMA approval in accordance with FEMA document Guidance for Scoping Flood Mapping Projects. Mr. Bonura incorporated the Parish's hydraulic features into the GIS. Mr. Bonura performed the necessary hydraulic and hydrologic studies and analyses necessary for the implementation of the map modernization project by using USCAE's hydraulic and hydrologic modeling software HEC-RAS and HEC-HMS. Mr. Bonura incorporated the results of the hydrologic and hydraulic studies GIS to develop the necessary flood plains. Mr. Bonura prepared a Base Map for the project (streets, ditches, benchmarks, etc.) from St. Bernard Parish's existing GIS, modifying the format to FEMA standards. Mr. Bonura has submitted all hydraulic and hydrologic and survey work for independent QA/QC, and is currently developing DFIRM base maps. All work associated with the development of the DFIRMs were in strict compliance with the National Flood Insurance Program.

#### **Gloria Drive Pump Station, Project No. 20-2022A, Lafitte Area Independent Levee District Drainage, Town of Jean Lafitte, LA, 05/2020-Present**

Mr. Bonura is serving as Supervising Engineer for this project for Design Engineering Services for the Gloria Drive Pump Station Improvement Project which consists of expanding the existing pump station by doubling its capacity from 45 cfs to 90 cfs. The existing pump station has one pump on a pile supported structure, adjacent to an existing levee. The existing pump discharge pipe runs through the levee, discharging on the other side. On the pump station side, the levee is supported by a timber bulkhead, part of which has deteriorated over time. When constructed, the levee project provided for a second pipe penetration in anticipation of this project. The pump station has an existing stand-by generator, which was appropriately sized for the single pump.

The proposed scope of the 45 cfs expansion includes:

- Installing a new 45 cfs pump in line with the second discharge pipe provided by the levee project
- Constructing a new reinforced concrete pump station structure for both pumps, with bar screens



(mechanical if funding allows) at the entrance. The new structure will replace the deteriorating timber bulkhead, as well.

- Repairing or replacing the timber bulkhead wall not addressed by the pump station structure.
- Installing a new generator structure and generator sized to run both pumps and incidental equipment.
- Extending the new pump discharge pipe as required and providing for scour protection at the outfall.
- Building the project in phases to utilize the existing pump during construction or providing temporary pumping during construction.

#### **Reggio Canal Flood and Erosion Protection, St. Bernard Parish, LA, 2006**

The project consisted of structural design of the steel sheet pile bulkhead wall and tieback systems, design of drainage systems, connection and coordination with a levee project adjacent to the proposed bulkhead, maintenance dredging of the existing canal, utility relocations, roadway and other site restoration, traffic maintenance, and all incidental work. Mr. Bonura performed all phases of the project, including design of bulkhead and drainage system, construction supervision throughout the project and coordination with local and state agencies for disposal of spoil. Mr. Bonura supervised and worked with an engineering intern in all design aspects of the project.

#### **Ring Levee Improvements, St. Bernard Parish, LA, 2003-2005**

Mr. Bonura served as Project Engineer assisting St. Bernard Parish in identifying low segments of their existing levees for approximately 12 miles of Parish-maintained levees. BBEC utilized existing aerial photographs and GPS elevations obtained from a surveyor to determine the low areas as compared to the permitted levee. BBEC provided the Parish with cross sections, fill estimates, and construction details to repair the settled levees. St. Bernard Parish repaired the levees themselves.

#### **CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 10/2020 – Present**

Mr. Bonura is serving as Supervising Engineer for this project which includes performing engineering services related to improving the drainage systems crossing railroads in St. Charles Parish. The project includes the drainage facilities crossing and/or adjacent to the CN railroad including Ducayet Drive, Ormond Oaks Drive, Destrehan Drive, Longview Drive, Longwood Drive, and S. Destrehan Avenue. As part of the analysis, this was modeled and is proposed as improvements required to mitigate flooding from the 50-year and 100-year rainfall events. The recommendations for the analysis are as follows:

- Increasing area of Destrehan Pump Station #2 sump to 0.56 acres, invert EI – 12, 1100 cfs pump capacity (currently under design)
- No restricted flow – assuming existing catch basins and pipes have maximum flow
- Widening Dunleith Canal to PS#2 to 50 ft bottom
- Widening Carriage Canal to 50 ft bottom
- Increasing Stanton Hall canal crossing to 2-6'x20' box culverts
- Increasing widths of Hill Heights ditches to 50 ft with 3:1 slopes, 8ft max depth (10 ft easement for maintenance) for portion parallel to, adjacent to, and affected by the CN railroad
- Adding 60" RCP on south side of tracks to connect Ormond Ditch to CN Railroad Trestle
- Upsizing existing railroad crossings

#### **Project Worksheet 20824 – Storm Drains, Jean Lafitte Parkway Drainage Line Repairs/Replacement, St. Bernard Parish, LA, 06/2014-11/2019**

Mr. Bonura assisted the Parish in securing funding; and managed as supervising professional the design, bidding, and construction services for repairs. The project included the complete replacement of about 4,200 linear feet of 72-inch to 96-inch drain-pipe, with drainage structures and smaller lateral lines to collect stormwater from existing roadway catch basins. The project also included the replacement of roadway intersections where the drain line

crosses streets. The project bid was \$3.9 million. BBEC performed all design, bidding, and is performing the construction services for the project. In addition to the normal design services, Mr. Bonura obtained a Coastal Use Permit determination, and USACE wetlands permit determination, and a SLFPA-E (regional levee district) permit for the project.

#### **Primrose Box Culverts, St. Charles Parish, LA, 03/2004-10/2004**

Mr. Bonura provided design and construction related services for the three 24-foot clear span box culverts and related road/drive restoration.

#### **Boutte Drainage Improvements, St. Charles Parish, LA, 09/2002-05/2004**

Mr. Bonura performed all engineering tasks for the project consisting of about 1,500 linear feet of 24-inch drainage pipe along US Highway 90 in Boutte. Included is provision of additional catch basins and manholes, traffic maintenance, roadway restoration, and re-grading of existing channels. TR-55 (computer model) was used to determine the watershed's runoff. Hydraulic calculations were performed by hand. The estimated construction cost is \$274,000.

#### **Drainage Pump Station Evaluation, St. Bernard Parish, LA, 2005**

Evaluation of condition and hydraulic capacity of the Parish's 18 existing pump stations, perform preliminary design services, identify alternatives for improvements. The evaluation considered the hydraulic performance of the pumps, the conditions of the incoming channel, automation/control capabilities, and projected flows. Mr. Bonura developed a master plan document to prioritize the improvements, and developed cost estimate for the improvements.

#### **Parish-Wide Drain Line Cleaning – Phase I, St. Bernard Parish, LA, 2005**

Immediately following Hurricane Katrina many of the Parish's streets were flooded and had difficulty draining due to the storm debris clogging its drainage system. The Parish issued an emergency contract for debris removal services, including the removal of debris from Parish drain lines. Mr. Bonura managed the immediate issuance of work orders to the contractor to remove the debris and restore drainage, and monitored the work being performed. He utilized the Parish's existing GIS system to accurately track and report progress. Mr. Bonura worked with the Parish and FEMA to obtain FEMA Public Assistance eligibility determinations and assisted the Parish in securing \$9.3 million in FEMA funding to cover the project costs. Mr. Bonura managed the project through completion, including developing the necessary work orders and field protocol for resident inspection and quality control, overseeing the document control and invoice review in the office, coordination of disposal sites, and contract compliance.

#### **Parish-Wide Drain Line Cleaning – Phase 2, St. Bernard Parish, LA, 2007**

Phase 1 of the project included the removal of debris from the drainage system immediately following Katrina. After Phase 1 was completed, and Parish residents started to return home, further drainage problems were observed. It was determined that drain lines not cleaned in Phase 1 contained debris that required cleaning. Mr. Bonura coordinated with the Parish, State, and FEMA to develop a project to clean the remaining drain lines that needed cleaning. The project included working with FEMA to perform eligibility inspections, documentation of the eligibility inspections, procurement of a contractor, construction contract administration, resident inspection of the project, and compliance with the FEMA funding program. Mr. Bonura managed the project through completion, coordinating the work with the Parish and FEMA, overseeing the procurement, construction contract administration, and resident inspection.

#### **Ollie Pump Station, Plaquemines Parish, LA, 2015**

Mr. Bonura served as Program Manager for this project which is to provide frontal protection for the Ollie Pump Station. The work consisted of construction of reinforced concrete floodwalls, clearing and grubbing, site drainage modifications, steel sheet pile driving, extending steel pump station discharge tube piping, installing backflow

prevention and all mechanical components necessary. Temporary Flood Protection and Temporary Restraining Structures are required to accomplish the construction goals for the contract. Asbestos and Lead Abatements included in the demolition on an existing pump station building. A bridge is constructed on the north side of the property to haul earthen levee embankment material and create a surcharge/preload of material to stabilize the sub-grade. The earthen levee will be reconfigured to tie into the newly installed floodwall.

#### **Diamond Pump Station, Plaquemines Parish, LA, 2015**

Mr. Bonura served as Program Manager for this project which is to provide frontal protection for the Diamond pump station. The work consists of construction of reinforced concrete floodwalls, clearing and grubbing, site drainage modifications, vertical wick drains, embankment material installed for preload/surcharge, steel sheet pile driving, steel H pile driving, concrete slope paving, concrete base slab and stem for T-walls, extending steel pump station discharge tube piping, installing backflow prevention and all mechanical components necessary per specification. Temporary Flood Protection and Temporary Restraining Structures required accomplishing the construction goals for the contract. The earthen levee will be reconfigured to tie into the newly installed T-wall.

#### **Wilkinson Pump Station, Plaquemines Parish, LA, 2015**

Mr. Bonura served as Program Manager for this project which is to provide frontal protection for the Wilkinson Pump Station. The work consists of construction of a new pump station, new floodwall, new levees, berms and embankments, new channels and ditches, and demolition of the existing pump station. The pump station and floodwall construction consists of two phases of work.

The first phase is construction and monitoring of the preload. Construction of the preload consists of clearing and grubbing, sand fill placement, vertical wick drain installation, geotechnical instrumentation installation, and placing and compacting embankment.

The second phase is construction of the pump station and floodwall. Construction of the pump station consists of clearing and grubbing, excavation, deep soil mix column installation, driving pile, placing reinforced concrete, placing and compacting embankment, and installing vertical pumps, engines, discharge piping, new discharge pipe supports, and other electrical and mechanical system. Construction of the new discharge pipe supports consists of driving pile, placing concrete beam, and constructing pipe support saddles. Construction of the pump station will also include a metal building system with safe room, an elevated fuel storage platform, a precast concrete ramp, reinforced concrete wing-walls, and a steel walkway above the discharge piping. Construction of the floodwall consists of clearing and grubbing, excavation, driving pile, placing reinforced concrete, and placing and compacting embankment. Levee and embankment construction consists of clearing and grubbing, excavation, placing sand fill and un-compacted fill, placing reinforcement geo-textile, placing and compacting embankment, and establishing turf. Channel and ditch construction consists of excavation and placement of riprap with bedding. A new storm drainage system consisting of reinforced concrete pipe and inlet will be constructed to convey storm water from the pump station and levee to the intake channel. Demolition of the existing pump station consists of removal and storage of pumps, engines, and gears, demolition and removal of the pump station structure, elevated fuel storage tanks, fencing, retaining walls, and other structural, electrical, and mechanical systems.

#### **Oakville to La Reussite Levee, Plaquemines Parish, LA, 2013**

Mr. Bonura served as Program Manager for this project which is to provide frontal protection for the Oakville to La Reussite Levee. The work consisted of installing temporary access roads, drainage structures, traffic control, installing steel sheet piling, Install of TRS (Temporary Retaining Structure) steel H-piling, constructing concrete floodwall, placement of compacted fill in an approximate 8 mile segment of embankment, concrete slope pavement, and extending eight (8) existing seventy two (72) inch diameter discharge pipes used for the Mississippi River Diversion.

#### **Duvic Pump Station, Plaquemines Parish, LA, 2013**

Mr. Bonura served as Program Manager for this project which is to provide frontal protection for the Duvic Pump Station. The work consists of construction of reinforced concrete floodwalls, earthen levee construction, clearing and grubbing; painting; establishment of turf; placing crushed stone for roadway, bedding, geo-textile, driving steel sheet piling, steel H-piles, excavation, structural excavation and backfill, surfacing, drainage systems, electrical systems, back flow prevention, demolition of existing discharge pipes, construction of temporary flood protection and other incidental work.

**RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA, 10/2019-Present**

As Supervising Engineer, Mr. Bonura is overseeing the assessment of the damages along the streets contained in this project. He is currently performing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage. He used DOTD's HYDRWIN software to design all drainage improvements in the project area. Mr. Bonura is also designing the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. The project contains 39 streets with a cost estimate of \$6,054,030.68.

**RR177 – St. Roch Group North Group B (FRC), City of New Orleans, LA, 10/2019-Present**

As Supervising Engineer, Mr. Bonura is overseeing the assessment of the damages along the streets contained in this project. He is currently performing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of Elysian Fields Ave., and west of St. Roch Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage. He used DOTD's HYDRWIN software to design all drainage improvements in the project area. Mr. Bonura is also designing the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. The project contains 33 streets with a cost estimate of \$6,161,483.33.

**RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA, 10/2019-Present**

As Supervising Engineer, Mr. Bonura is overseeing the assessment of the damages along the streets contained in this project. He is currently performing design services for FEMA-eligible street repairs in the south of I-610, north of the Florida Ave. canal, east of St Roch Ave., and west of the Peoples Ave. canal. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage. He used DOTD's HYDRWIN software to design all drainage improvements in the project area. Mr. Bonura is also designing the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. The project contains 48 streets with a cost estimate of \$5,485,357.95.

**Gentilly Woods Street Improvements (Project No. 2012-FEMA-2F1-1), City of New Orleans, LA, 01/2013-07/2016**

Mr. Bonura served as Supervising Engineer for the Gentilly Woods Street Improvement project which included all professional engineering design services for FEMA-eligible paving street repairs on streets in the area bounded by Chef Menteur Hwy./Gentilly Blvd., Peoples Ave., the Dwyer Canal, and the Industrial Canal/Inner Harbor Navigation Canal. Plans and specifications for the reconstruction of these roads included the following design features: roadway pavement complete with curbs; a base for the roadway pavement; subsurface drainage, water, and sanitary sewer installation; adjustments as required at driveways and at intersecting streets; installation of ramps for the handicapped at intersections.




During the Survey and Scoping Phase, BBEC acquired all information on the required area of the project, including topographic surveys and information on existing and proposed utilities. A Project Scope Report was prepared based on the results of the survey and programming documents provided by the Department of Public Works, which included an analysis of the constructability, cost, and time schedule. During the Preliminary Design Phase, BBEC assisted the engineer by incorporating approved FEMA eligible work into a plan/profile sheet utilizing the City of New Orleans Standards and Details and preparing an initial cost estimate.

BBEC completed the preliminary and final design phases which included the preparation of complete final construction plans, specifications, bid documents, and construction cost estimate. This project has not yet been selected for construction by the City of New Orleans.

**Read Blvd. East Group C, Capital Improvement Program, Project No. 2016-RR146. PW No. 21032, City of New Orleans, LA, 03/2017-Present**

Mr. Bonura is serving as the Supervising Professional providing Construction Administration and Resident Inspection Services for the Read Blvd. East Group C project which includes all necessary professional design services in connection with the project defined as replacement of roadway pavement, with base replacement, complete with curbs; replacement of sidewalks and drive aprons; subsurface drainage, water, and sanitary sewer installation; and adjustments as required at driveways, at intersecting streets, and at project termini to provide for positive flow of water towards catch basins. This project has been completed.

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>	
<b>Name &amp; Title:</b>	
	<b>Kevin Forschler, P.E. Project Engineer</b>
<b>Project Assignment:</b>	
	<b>Project Engineer / Model Development</b>
<b>Name of Firm with which associated:</b>	
	 <b>Barowka and Bonura Engineers and Consultants, L.L.C.</b>
<b>Years' experience with this Firm:</b>	
	<b>9</b>
<b>Education: Degree(s)/Year/Specialization:</b>	
	<b>B.S. / 2014 / Civil</b>
<b>Active registration: Year first registered/discipline:</b>	
	<b>2020 / Civil</b>
<b>Other experience and qualifications relevant to the proposed Project:</b>	
<p>Mr. Forschler is currently working on projects for Jefferson Parish, the City of New Orleans, St. Bernard Parish, St. Tammany Parish, and Lafayette. The projects he is working on involve roadway restoration, drainage modeling and design, water transmission main replacement, off-system bridges, walkway design, lift station design, and water and wastewater treatment. Mr. Forschler has worked on multiple FEMA Public Assistance funded projects that involved rehabilitating Katrina damaged roadways in both St. Bernard Parish and the City of New Orleans. He has also worked on numerous other roadway and drainage projects in the neighboring communities. Mr. Forschler has utilized Autodesk Storm and Sanitary Analysis and SWMM modeling programs to develop drainage models for multiple areas in Jefferson Parish, including certain sections of Waggaman, the Avondale/Bridge City area, and the Bissonet Plaza neighborhood. In addition to drainage modeling, Mr. Forschler also has experience using the HYDRWIN application to design drainage systems for roadways.</p> <p>Mr. Forschler has experience working with various municipalities, coordinating with other entities such as the levee districts, LADOTD, and railway companies to resolve conflicts and ensure that proposed designs meet the entities' guidelines.</p> <p>Projects with detailed descriptions of work are provided below:</p> <p><b>East Bank Master Drainage Plan, Jefferson Parish, LA, 04/2023-Present</b></p> <p>Mr. Forschler is currently managing the project team during the update of the existing conditions SWMM model to include improvements from multiple drainage projects that have been completed recently. He also worked with the Jefferson Parish Drainage Department to define criteria to establish which areas included in the updated SWMM model show signs of significant flooding. During each project task, Mr. Forschler is performing QA/QC on all</p>	

revisions to the SWMM model to assure that the results simulated in the model are as accurate as possible.

**Avondale/Bridge City Drainage Evaluation (Area between the Mississippi River and the Union Pacific Railroad, from Huey P. Long Bridge to Avondale Garden Road), Jefferson Parish, LA, 04/2021-Present**

Mr. Forschler developed a surveying scope to gather pertinent topographic information for the project and managed the surveyor for the Parish while they conducted the survey. Mr. Forschler developed a hydraulic and hydrologic model using SWMM v.5 of the Project Area between the Mississippi River and the Union Pacific Railroad, from the Huey P. Long Bridge to Avondale Garden Road. Using the model simulation, he developed various alternatives for drainage improvements in the area. He also created a hydrologic and hydraulic report presenting the findings from the model simulation and cost estimates for each of the drainage improvement alternatives.

**Westbank Mississippi River Bike Trail, Around Avondale Shipyard, (2017-059-RBP), Jefferson Parish, LA, 05/2018-Present**

Mr. Forschler is developing plans and specifications for the construction of a bike path around the Avondale Shipyard area. The project contains the area of River Rd. from east of Avondale shipyard to LA 18 and the stretch of LA-18 up until the existing bike path access ramp west of the shipyard. The project includes the installation of a bike path on top of the levee, restriping existing shoulder to be repurposed as a bike path, widening the road to allow for bike travel, and addition of subsurface drainage in areas indicated by Jefferson Parish. Mr. Forschler is also currently developing the necessary details to cross active railroads at 3 locations and working with the railroad company and LDOTD to obtain construction permits.

**Cleary Improvements (Veterans Blvd. to West Esplanade Ave.) (Council District 5) Jefferson Parish, LA, Public Works No. 2017-014-RBP, 11/2017-Present**

Mr. Forschler assisted with developing plans for the rehabilitation of this road and verified that the proposed vertical profiles allowed for positive drainage along the road. The project contains the area of Cleary Ave. from Veterans Blvd. to W. Esplanade Ave. The repairs to be made include removing and replacing the existing concrete roadway, adding improvements to the subsurface drainage system, and relocating any utilities that were conflicts.

**Ames Boulevard Rehabilitation, West Bank Expressway to Happy Street, (Public Works Project No. 2013-033-RB) (DOTD No. H.011797), Jefferson Parish, LA, 11/2015-Present**

Mr. Forschler assessed the damage along Ames Blvd. and created plans for the rehabilitation of this damage. The project contains the area of Ames Blvd. from the Westbank Expressway to Happy St. The repairs to be made include milling the existing asphalt overlaying the existing concrete roadway, replacing any damaged concrete panels, overlaying the concrete roadway, replacing any damaged sections of curb and gutter, and removing and replacing any damaged drive aprons and sidewalks. Mr. Forschler is responsible for visiting Ames to document where repairs need to be made along the roadway. Mr. Forschler addressed all comments that DOTD provided in order to ensure that all DOTD guidelines were met and reviewed the bid tabulation from DOTD to check for any errors.

**Craig Avenue Drainage Improvements, Public Works Project No. 2019-022-DR, Jefferson Parish, LA, 05/2020-Present**

Mr. Forschler assisted with the development of plans for the addition of new drain line on this road. The project contains the area of Craig Ave. from Kawanee Ave. to Gillen St. The scope of the project includes the installation of a new trunk line, connecting the lateral drain lines to the new trunk line, and the removal and replacement of existing water mains and isolation valves and concrete roadway. Mr. Forschler helped in the design of the proposed drain line, determining the correct vertical and horizontal alignment to avoid conflicts with existing utilities. He also designed the vertical profile for the proposed roadway repairs.

**Bissonet Plaza Master Drainage Plan (A/E Project No. 20-1708), Jefferson Parish, LA, 05/2018-05/2021**

Mr. Forschler met with Jefferson Parish personnel to identify and discuss flood prone streets within the study area. He worked with a CAD technician to develop a map highlighting these flood prone areas and utilized Jefferson

Parish GIS and Autodesk Storm and Sanitary Analysis software to create an accurate drainage model of the project area. The drainage model provided analysis of the area's interior drainage system for a 10-year storm event. Mr. Forschler ran the Parish's existing East Bank drainage model in SWMM to determine the discharge water surface elevation of the project.

#### **Waggaman Hydraulic Study, Jefferson Parish, LA, 02/2013-01/2016**

Mr. Forschler performed a hydrologic study for three separate residential subdivisions in Waggaman, Louisiana, Waggaman, South Kenner, and Manor Lane. The Waggaman subdivision is bounded by River Road to the north, Live Oak Boulevard to the south, Saul's Canal to the west, and Dandelion Ditch to the east. South Kenner subdivision is bounded by River Road to the north, North Railroad Canal to the south, Saul's Canal to the east, and another subdivision to the west. The Manor Lane subdivision is bounded by River Road to the north, North Railroad Canal to the south, Latigue Road Ditch to the west, and Modern Farms Road Ditch to the east. Mr. Forschler utilized the Storm Water Management Model (SWMM) to evaluate the existing subsurface drainage capacities for each subdivision and to examine if the existing system can handle a 10-year design storm. He developed a hydrologic and hydraulic model for each area and recommended subsurface improvements based on the SWMM model to handle a 10-year design storm. Mr. Forschler ran the Parish's existing West Bank drainage model in SWMM to determine the discharge water surface elevation of the project.

#### **Widening / Stabilization of Congressman Hebert, Creely, and Bluebirds Canals, St. Bernard Parish, LA, 01/2015-Present**

Mr. Forschler used Autodesk Storm and Sanitary Analysis software to create accurate drainage models of the project area for both pre-mitigation and post-mitigation conditions. The drainage model provides analyses of the area's interior canal system for a 10-year, 50-year and 100-year storm event. The results of the model were then compared to the existing house slab elevation data provided by St. Bernard Parish for each of the storms in order to determine the impact that the improvements have on flooding of the properties in the project area.

#### **Project Worksheet 20824 – Storm Drains, Jean Lafitte Parkway Drainage Line Repairs/Replacement, St. Bernard Parish, LA, 06/2014-11/2019**

Mr. Forschler estimated the cost of the replacement of drain lines along Jean Lafitte Parkway from Judge Perez Dr. to the outfall at Hermitage Dr. The scope of work for the project included the removal and replacement of drain lines; removal and replacement of roadway pavement section, sidewalks, and driveways; and the improvement of the outfall at Hermitage Dr.

#### **Mid-City Street Improvements (Project No. 2012-FEMA-4G-1), City of New Orleans, LA, 11/2012-Present**

Mr. Forschler reviewed plans to ensure that our drawings meet the City of New Orleans Standards.

#### **Engineering Services for the Four-Year Road Maintenance Program (Project No. P160302), St. Charles Parish, LA, 04/2016-12/2019**

Mr. Forschler made site visits to each street in St. Charles Parish included in the Road Maintenance Program and gathered relevant information on the current condition of each street. The information was then used to determine which streets required repair and what the scope of work for each street repair should be for the project.

#### **Comprehensive Pedestrian and Bicycle Master Plan, St. Charles Parish, LA, 02/2017-01/2019**

Mr. Forschler provided cost estimates for the construction of the proposed bike paths in the bike path study.

#### **Hurricane Katrina Damage Roadway Restoration, East Law Damage Assessment, St. Bernard Parish, LA, 07/2015-05/2018**

BBEC was hired by SBP to assess the roadway and subsurface damages caused by a private operator, Mr. Forschler reviewed sewer and drain line videos for damages, prepared the evaluation report and cost estimate to repair damages.

#### **Hurricane Katrina Damage Roadway Restoration (FEMA PA Funded), St. Bernard Parish, LA, 06/2015-**



**08/2017**

Mr. Forschler accompanied BBEC and St. Bernard Parish (SBP) representatives during the supplemental walkthroughs, taking pictures of any of the damages and issues that SBP requested to be addressed. He also used the elevation surveys provided by Barriere Construction Co., L.L.C. to determine if drainage could be improved on the streets that had issues with standing water post construction. Mr. Forschler reviewed as-builts for each road for closeout to check for discrepancies between the as-builts provided by the contractor and our own.

**FEMA Hazard Mitigation Assistance Consultant (Project No. 2130-02035), Project Management for 2013 FMA Grant Funding, City of New Orleans, LA, 01/2017-Present**

Mr. Forschler visited 11 sites to gather information about the history of the buildings. Using this information, he developed a scope of work for the installation of permanent generators and automatic transfer switches at each site. He then created cost estimates outlining the budget for the installation of the permanent generators and automatic transfer switches. He also provided specifications for generators and automatic transfer switches that were suitable for each site.

**Technical Assistance for Floodplain Management, Community Rating System and Hazard Mitigation Related Services (Project No. 0352)), Jefferson Parish, LA, 01/2017-06/2020**

Mr. Forschler provided Asset Inventory Assessments of Parish and Municipal structures for evaluation of risk vulnerabilities and mitigation opportunities in preparation of an updated multi-jurisdictional hazard mitigation plan.

**FEMA Public Assistance Grant and Program Management, Jefferson Parish, LA, 07/2022-Present**

Mr. Forschler coordinates with the necessary Parish Departments and A&E firms to procure all necessary documentation to develop an agreement for any as-needed coastal work that the A&E firm has been selected to perform. He reviews proposals sent by A&E firms to determine fees for as-needed work based on FEMA standards and all contract documents for as-needed coastal work to make sure that they meet federal guidelines.

**Laplace Water Intake Pump Station and Pre-Treatment Facility, St. John the Baptist Parish, LA, 08/2022-Present**

Mr. Forschler performed a hydrologic and hydraulic review of the clarifier site to determine the existing runoff during a 10-year design storm and the additional runoff that would be generated post-development. He then sized a detention pond, as required by Parish ordinances, to retain the additional runoff so that it would not exceed the existing runoff at the site.

**Canebrake Utilities, Lamar County, MS, 03/2021-Present**

Mr. Forschler developed initial evaluations of the existing sewer facilities and the existing water distribution system for the client. He used information from the current owner of the system and information determined during a site visit in order to provide a report on the condition of the existing systems. He also looked into the current permit status for each of the wastewater treatment facilities in order to determine if the operator had any issues meeting the state and federal requirements for the operation of the existing facilities.

**Acadiana Water and Sewer, Lafayette, LA., 02/2021-Present**

Mr. Forschler went on site visits to the existing wastewater treatment plants in Garden Heights, Belleville, and Mark Ridge in order to take measurements of the different sections of the treatment facilities. He also located damaged areas of each facility that would need to be replaced during construction.

**Sanitary Landfill 2019 Solid Waste Permit Application, Jefferson Parish, LA, 01/2018-01/2020**

Mr. Forschler assisted with preparing the Landfill Permit Renewal Application by gathering needed documentation to be included in the new application.

**H2O Water Projects, St. Tammany Parish, LA, 09/2020-Present**

The scope of work for this project is the installation of automatic flushing units to flush the water mains in four

subdivisions in St. Tammany Parish in order to ensure good water quality. Mr. Forschler accompanied an operator who has experience working with automatic flushers on site visits to all four subdivisions to determine the locations that the flushing units should be installed. He then developed a plan set for the installation of the flushing units and is currently negotiating with bidders throughout the procurement process because this is a private sector project.

**Design, Capacity, and Installation of Emergency Pump Outs (EPO) and Related Incidentals, Sewer Lift Station F7-11 Rehabilitation Jefferson Parish, LA, 05/2015-05/2019**

Mr. Forschler assisted with design of the rehabilitation of two undersized lift stations. He evaluated the hydraulics of the lift stations and used that information to select pumps that would adequately handle the capacity of the stations. He determined whether the proposed pumps would fit within the wet wells for the lift stations. For the station that upgraded to a three wet well system, he selected pumps with motors that operate using a variable frequency drive.

**RR176 – St. Roch Group North Group A (PMOI), (FEMA PA Funded), City of New Orleans, LA, 10/2019-Present**

Mr. Forschler accompanied a representative of New Orleans DPW and assessed the damage along the streets contained in this project. The project area consists of the streets in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street is either replacement of sidewalks and driveways, incidental road repairs determined by FEMA, or full replacement of roadway section and subsurface sewer, water, and/or drainage facilities. Mr. Forschler used DOTD's HYDRWIN software to design all drainage improvements in the project area. He is also designing the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. Mr. Forschler made sure that the plans for sewer and water line replacements addressed all SWBNO comments and that design followed the SWBNO guidelines.

**RR177 – St. Roch Group North Group B (FRC), (FEMA PA Funded), City of New Orleans, LA, 10/2019-Present**

Mr. Forschler accompanied a representative of New Orleans DPW and assessed the damage along the streets contained in this project. The project area consists of the streets in the area south of I-610, north of the Florida Ave. canal, east of Elysian Fields Ave., and west of St. Roch Ave. The scope of work for each street is either replacement of sidewalks and driveways, incidental road repairs determined by FEMA, or full replacement of roadway section and subsurface sewer, water, and/or drainage. Mr. Forschler used DOTD's HYDRWIN software to design all drainage improvements in the project area. He is also designing the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. Mr. Forschler made sure that the plans for sewer and water line replacements addressed all SWBNO comments and that design followed the SWBNO guidelines.

**RR178 – St. Roch Group North Group C (FRC), (FEMA PA Funded), City of New Orleans, LA, 10/2019-Present**

Mr. Forschler accompanied a representative of New Orleans DPW and assessed the damage along the streets contained in this project. The project area consists of the streets in the area south of I-610, north of the Florida Ave. canal, east of St Roch Ave., and west of the Peoples Ave. canal. The scope of work for each street is either replacement of sidewalks and driveways, incidental road repairs determined by FEMA, or full replacement of roadway section and subsurface sewer, water, and/or drainage. Mr. Forschler used DOTD's HYDRWIN software to design all drainage improvements in the project area. He is also designing the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. Mr. Forschler made sure that the plans for sewer and water line replacements addressed all SWBNO comments and that design followed the SWBNO guidelines.

**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**John J. Housey, Jr., P.E.  
Project Engineer**

**Project Assignment:**

**Project Engineer / Project Development**

**Name of Firm with which associated:**

**Barowka and Bonura  
Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**13**

**Education: Degree(s)/Year/Specialization:**

**M.S. / 1965 / Structural Engineering  
B.S. / 1964 / Civil Engineering**

**Active registration: Year first registered/discipline:**

**1966 / Civil**

**Other experience and qualifications relevant to the proposed Project:**

Mr. Housey has been working as an engineer in the public works industry for over 57 years. His experience includes bridges, buildings, roadways, and utility (water, sewer, and drainage) construction. He has substantial experience in project management, steel building detailing, bridges, barges and parts for offshore platforms. As a steel fabricator, Mr. Housey oversaw the fabrication of steel buildings, steel bridges (stationary and movable), barges, various parts of offshore platforms including girders, piling and legs, floor and wall framing, various parts of ships including bulkheads and framing members. Over the past 57 years, he has been responsible for the design of crane runways, spreader bars, lifting frames, and hydraulic jacking of heavy structures and barges.

Mr. Housey managed the construction of over \$100 million in asphaltic concrete (AC) and Portland cement concrete (PCC) roadways funded by FEMA Public Assistance Grants. He has intimate knowledge in how various site conditions affect the construction and performance of the roadways, as well as how to maintain the necessary documentation to comply with the funding federal programs.

Mr. Housey is a past Board Member and President of the Southern Association of Steel Fabrication. He served as a member on AISC committee regarding quality control. As a member and past Chairman of the ASCE/SEI Structures Committee in New Orleans for several years, he is familiar with the design of bridges, buildings and residential structures. He is familiar with fabrication specifications of API, AWS, AREA, AISC and ABS.

Projects with detailed descriptions of work are provided below:

**Design of Access Ways and Ladders at Drainage Pump Stations; Project No. 2014-022-DR, Jefferson Parish, LA, 11/2014-11/2019**

Mr. Housey prepared cost estimates and designed ladders, stairs, and elevated walkways in 16 drainage pump stations to connect elevated structures and allow personnel to access the top of structures within Jefferson Parish. Design included analysis and details to retrofit new items to existing structures. The projects included the design of access ways and ladders at various drainage pump stations on the Eastbank and Westbank of Jefferson Parish identified as follows: Project I: Bonabel, Elmwood, Estelle No. 1, Estelle No. 2, Hero, Lake Cataouche No. 2 and Westminster. Project II: Suburban, Duncan and Planters. Project III: Parish Line, Ames, Bayou Segnette, Mount Kennedy, Westwego No. 2 and Whitney-Barataria. Mr. Housey performed Design services for Projects II and III and Design, Bidding, Construction Management, Resident Inspection and As-built services for Project I.

#### **East Bank Water Treatment Plant Improvements, Jefferson Parish, LA, 12/2016-Present**

As Project Manager, Mr. Housey supervises and coordinates drainage and process piping for both the Laboratory and the P4 Plant. He attends progress design meetings with other disciplines and field visits as required to locate existing utilities and prepares specifications and required design calculations. Design includes calculations for pressure piping flow, thrusts and supports, also drainage requirements and system design.

#### **FEMA Public Assistance Grant and Program Management, Jefferson Parish, LA, 04/2022-Present**

Mr. Housey directed field inspectors to locate, photograph and measure damages to streets and drainage utilities in Lafitte. He created files and spreadsheets of damage assessments at each location and created SIR spreadsheets and CEF Repair Estimates for streets and drainage in Lafitte for this project which includes program management services which assists Jefferson Parish with the review and implementation of procurement policies, ensuring that all potential emergency contracts comply with federal requirements and guidelines set forth in the Public Assistance Program.

#### **Widening / Stabilization of Congressman Hebert, Creely, and Bluebird Canals, St. Bernard Parish, LA, 01/2015-Present**

The project includes increasing the capacity and improving the stability of Congressman Hebert, Creely, and Bluebird Canals, that consists of 11,600 linear feet of open canal and culverts ranging from 4-feet bottom width to 16-feet bottom width channels. Mr. Housey coordinated with St. Bernard Parish, Lake Borgne Basin Levee District, and the Louisiana Department of Transportation and Development to obtain information regarding the existing drainage plan. BBEC established the design cross sections for the channels, which included concrete u-channels, concrete box culverts, and round and arched pipe, and concrete lined trapezoidal sections, depending on the availability of land and other conditions. Mr. Housey is designing 2,500 linear feet of large diameter reinforced concrete pipe box culverts, and U-channels for the project.

#### **Project Worksheet 20824 – Storm Drains, Jean Lafitte Parkway Drainage Line Repairs/Replacement, St. Bernard Parish, LA, 06/2014-11/2019**

Mr. Housey prepared the damage assessment to adjacent existing roadway.

#### **CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 10/2020-Present**

Mr. Housey assisted in the design of the Cofferdam structure to resist the jacking loads required to jack & bore the culvert pipes under the railroad.

#### **RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA, 10/2019-Present**

As part of BBEC design team for this FEMA PA funded project, Mr. Housey met with DPW representatives and surveyed damage to existing streets, reviewed and designed repairs to existing streets, including roadway profiles and drainage requirements.

#### **RR177 – St. Roch Group North Group B (FRC), City of New Orleans, LA, 11/2019-Present**

As part of BBEC design team for this FEMA PA funded project, Mr. Housey met with DPW representatives and surveyed damage to existing streets, reviewed and designed repairs to existing streets, including roadway profiles and drainage requirements.



**RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA, 11/2019-Present**

As part of BBEC design team for this FEMA PA funded project, Mr. Housey met with DPW representatives and surveyed damage to existing streets, reviewed and designed repairs to existing streets, including roadway profiles and drainage requirements.

**Woodmere Boulevard Panel Replacement, JP Project No. 2017-061-RBP, State Project No. H012884.6, Jefferson Parish, LA, 08/2019-Present**

Mr. Housey reviewed the contract documents from the LADOTD and discovered inconsistencies in the plans and quantities. He laid out street where work was required, supervised CAD drawing preparation and revised required quantities. He is preparing change orders for final quantities and closeout.

**Cleary Improvements (Veterans Blvd. to West Esplanade Ave.) (Council District 5), Jefferson Parish, LA, 11/2017-Present**

Mr. Housey supervised and reviewed CAD drawings of waterlines as requested by the Parish.

**Read Blvd. East Group C, Capital Improvement Program, Project No. 2016-RR146 (PW No. 21032), City of New Orleans, LA, 03/2017-Present**

As Project Manager, Mr. Housey has designed requirements to remove damage to existing streets and replace with new concrete streets and proper drainage profiles. He is also providing Contract Administration on this project. This involves overseeing the resident inspector and reviewing inspection reports, approval of construction materials, conducting bi-weekly progress meeting, approving construction invoices and keeping the client informed of construction progress, issues and other items. The CCTV Inspection of the existing drainage lines revealed the need for multiple repairs to existing drainage lines. This has required evaluation of method of repair and associated costs.

Mr. Housey managed the resident inspection services, including providing guidance and oversight to the resident inspector and coordinating with the City to ensure contract quantities were tracked timely and accurately.

**Hurricane Katrina Roadway Restoration, St. Bernard Parish, LA, 05/2011-08/2017**

Mr. Housey was BBEC's on-site engineer who provided Construction Administration services and Supervised Resident Inspectors of this FEMA PA funded project for over \$100 Million in roadway and drainage repair for 436 streets. Mr. Housey developed plans and construction cost estimates as well as managed the construction of facility repairs. He reviewed contractor submittals for conformity, resolved construction issues and led field progress meetings. Mr. Housey coordinated with the Contractor, Parish, and inspectors to troubleshoot issues in the field, resolved neighbor complaints, interpreted design specs to maintain the quality and standards of the work, and ensured that the work was satisfactorily completed. Mr. Housey reviewed all test reports for conformity to specifications, performed substantial and final completion walk-throughs for acceptance, reviewed as-builts for work completed, and reviewed contractor's monthly invoices and quantities. The project lasted 11 years and consisted of up to 18 construction inspectors at one time.

**Mid-City Street Improvements, New Orleans, LA, 11/2012-11/2016**

Mr. Housey reviewed and updated drawings based on client comments. He oversaw the revising of the CAD drawings to ensure conformance with project requirements. He maintained the tracking system of various bid items at each location with updates and totals as needed.

**Gentilly Woods Street Improvements, New Orleans, LA, 01/2013-07/2016**

Mr. Housey reviewed and updated drawings based on client comments. He oversaw the revising of the CAD drawings to ensure conformance with project requirements. He maintained the tracking system of various bid items at each location with updates and totals as needed.

**Lower 45 Evacuation Route Basin, Lafitte Tidal Protection, Lafitte Area Independent District, LA, 05/2018-Present**

As Project Manager, Mr. Housey is providing design alignment and earthen levee.

**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**Madan Kamboj, P.E.  
Project Engineer**

**Project Assignment:**

**Project Engineer / Project Development**

**Name of Firm with which associated:**

**Barowka and Bonura  
Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**3.5**

**Education: Degree(s)/Year/Specialization:**

**M.S. / 1978 / Civil Engineering: Structures/Soil Mechanics  
B.S. / 1967 / Civil Engineering**

**Active registration: Year first registered/discipline:**

**1977 / Civil - Environmental**

**Other experience and qualifications relevant to the proposed Project:**

Mr. Kamboj has more than 43 years of experience performing project design, construction administration, and project monitoring for general civil projects including drainage, utilities, streets, highways and bridges, buildings, water and sewer treatment plants, multi-story parking garages; airport taxiways, traffic separation facilities, bike paths, and overhead pedestrian walkways at high traffic intersections.

Mr. Kamboj has successfully attended a course in "Highway Capacity Manual" at New York Polytechnical. He led a team of Engineers and Cost Estimators for conducting line and grade studies for North South Expressway in Northern Louisiana which eventually became Interstate 49. This project included Hydraulic Design of culverts, pavement type analysis, intersection geometry and cost estimates for each projected alignment analysis. Mr. Kamboj designed twelve (12) miles of US-61 four lane highway in Wilkinson County, Mississippi for MDOT. He evaluated geometrical design, profile and grades, intersection layout, culvert analysis and cost estimation for construction. Mr. Kamboj designed city streets for C.J. Peete including geometry, pavement, design, intersection improvements, redesigning utilities (e.g. water, sewer, gas) and drainage improvements. The cost of street improvements was \$24M.

Projects with detailed descriptions of work are provided below:

**Westbank Mississippi River Bike Trail, Around Avondale Shipyard, (2017-059-RBP), Jefferson Parish, LA, 12/2020-Present**

Mr. Kamboj is designing a 2.3 milelong bike path along River Road and finishing on the top of Mississippi River Levee. The bike path is designed to provide separated path to the pedestrians and shall provide safety by separating bike and pedestrian traffic. The project cost is \$350,000.

**Gloria Drive Pump Station, Project No. 20-2022A, Lafitte Area Independent Levee District Drainage, Town of Jean Lafitte, LA., 02/2021 – Present**

Mr. Kamboj is providing Structural and Foundation design of Gloria Drive Pumping Station and approximately 70 Ft. long Steel Sheet Pile wall supported by ASTM D25 Timber Piles. The Pump Station design incorporates designing foundations supported by 14"X 14" PPC Piles, Concrete Base Level, Middle Level and Roof Slabs, Concrete Enclosure Walls & Structural Supports for Pump Station Screens. The present Generator Structure will be enlarged and strengthened to accommodate new electrical equipment.

**CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 10/2020-Present**

Mr. Kamboj is preparing drainage improvements by the Jack & Bore method of multiple culvert sites to improve frequent flooding in Luling, St. Charles Parish. Multiple culverts employing Jacking Method are to be rammed under the road embankment by using 72", 60" and 48" metal pipes. The ditches on inlet and outlet shall be improved by providing Conspan Culvert Bridges and these ditches shall be provided with G.C.C.M. lining to improve flow of rain discharge. The project cost is \$6.2M.

**RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA, 10/2019-Present**

Mr. Kamboj is currently performing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage. He is also assisting with the design of roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. The project contains 39 streets with a cost estimate of \$6,054,030.68.

**RR177 – St. Roch Group North Group B (FRC), City of New Orleans, LA, 10/2019-Present**

Mr. Kamboj is currently performing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of Elysian Fields Ave., and west of St. Roch Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage. He is also assisting with the design of the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. The project contains 33 streets with a cost estimate of \$6,161,483.33.

**RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA, 10/2019-Present**

Mr. Kamboj is currently performing design services for FEMA-eligible street repairs in the south of I-610, north of the Florida Ave. canal, east of St Roch Ave., and west of the Peoples Ave. canal. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage. He is also assisting with the design of the roadways receiving full pavement replacement and subsurface utility relocations/improvements and creating plans for the construction of the proposed work. The project contains 48 streets with a cost estimate of \$5,485,357.95.

**Laplace Water Intake Pump Station and Pre-Treatment Facility, St. John the Baptist Parish, LA, 08/2022-Present**

**Mississippi Riverside Pump Station & Transfer Pump Station**

Mr. Kamboj is designing the layout of the pump station, plan and typical sections, roof structure, wind analysis and seismic category determination, structural framing. He is performing foundation design, selection of driven piles, wave analysis and barge collision forces to superstructure and substructure.

**Waskey Bridge from Pump station at The River to Mississippi River Levee (850 Ft. Length)**

Mr. Kamboj is designing plan & typical sections, railing for vehicle impact, precast concrete panels for structure,

precast bent design and selection of foundation and driven piles for all load transfer to the underlying soils.



**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**Matthew Hahn, PE  
Professional Engineer**

**Project Assignment:**

**Design / Project Management**

**Name of Firm with which associated:**

**L.L.C. Barowka and Bonura  
Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**2**

**Education: Degree(s)/Year/Specialization:**

**B.S. / 2016 / Civil Engineering**

**Active registration: Year first registered/discipline:**

**2020 / Civil**

**Other experience and qualifications relevant to the proposed Project:**

Mr. Hahn has over eight (8) years of experience in the field of civil and consulting engineering with a strong background in water resources, civil/site design, project management, and land surveying. His vast knowledge includes but is not limited to design and hydraulic modeling of water distribution systems, hydrologic modeling and drainage design, sewerage and wastewater treatment, site development and planning, structural design, public speaking, topographic land surveying, boundary surveying, floor elevation surveying, earthwork balancing and site grading, recreation facilities/athletic fields, public bid process, permitting, and construction administration and management.

Projects with detailed descriptions of work are provided below:

**Avenue E Drainage Improvements, Jefferson Parish, LA, 02/2023-Present**

As project manager, Mr. Hahn developed the drawings, specifications, and quantity estimates for subsurface drainage improvements along four (4) residential streets in Old Metairie. This project includes the installation of a new subsurface drainage trunk line along Avenue E and new drainage laterals along connecting side streets to improve drainage in the area. Mr. Hahn developed the engineering design and plans for new 48" and 36" RCP subsurface drain lines and incidental sewer, water, and roadway improvements.

**Drainage Evaluation of Metairie Road, Jefferson Parish, LA, 10/2017-03/2020**

As Project Manager, Mr. Hahn used EPA SWMM software to complete a drainage assessment of a 2-mile segment of Metairie Road from Causeway Boulevard to Focis Street. Mr. Hahn modeled the drainage system, developed improvement alternatives, and prepared a report of findings.

#### **Hill Heights Drainage Improvements – Phase 1, Project No. P190802, Ordinance No. 22-3-14, St. Charles Parish, LA, 04/2022 – 06/2023**

Mr. Hahn managed the engineering and design of drainage improvements at the Hill Heights Canal in the Ormond Estates Subdivision on the east bank of St. Charles Parish. The project included the removal and replacement of the existing steel sheet pile wall along the east bank of the Canal with a new sheet pile wall with steel waler and cap plate. The new sheet pile wall is approximately 200 linear feet with 30-ft long steel sheet piles. The project included structural backfill behind the protected side of the wall, canal cleaning and grading, and drainage canal slope grading. As part of this project, Mr. Hahn provided technical engineering assistance during the bidding and construction phases of the project.

#### **U.S. Highway 51 Drainage Improvements, Town of Amite, LA, 02/2021-08/2021**

As Project Manager, Mr. Hahn used EPA SWMM software to complete a drainage assessment of a 1-mile segment of U.S. Highway 51 in Amite City, LA. Mr. Hahn developed conceptual design of drainage improvements, sidewalk improvements, and developed cost estimates and a report of findings.

#### **CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 04/2022 – Present**

As a project engineer, Mr. Hahn is developing the plans, specifications, and cost estimates for this project which includes the construction of several new drainage culverts crossing and/or adjacent to the CN railroad in Destrehan, St. Charles Parish, LA. Mr. Hahn is also preparing the CN Railroad permitting documents for the new drainage improvements.

#### **RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA, 06/2022-Present**

Mr. Hahn developed cost estimates and quantity estimates for FEMA-eligible road rehabilitation work as part of this project. This project includes assisting the City of New Orleans in assessment of the damage along the streets contained in this project, and providing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage.

#### **RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA, 04/2022-Present**

Mr. Hahn developed cost estimates and quantity estimates for FEMA-eligible road rehabilitation work as part of this project. This project includes assisting the City of New Orleans in assessment of the damage along the streets contained in this project, and providing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage.

#### **East St. Tammany Water Consolidation, St. Tammany Parish, LA, 08/2022-Present**

This project includes development and analysis of a hydraulic model of the Cross Gates and Meadow Lake water distribution systems in St. Tammany Parish, LA. As project manager, Mr. Hahn oversaw development of the WaterCAD hydraulic computer model, including water usage data processing, hydraulic input parameters, and model calibration. Mr. Hahn performed calibration field testing of the water system by flow testing fire hydrants at selected locations. Mr. Hahn developed an engineering report of findings to supplement the hydraulic model and recommend improvements to the system.

#### **East St. Tammany Water Consolidation – Phase 2, St. Tammany Parish, LA, 05/2023-Present**

This project includes development and analysis of a hydraulic model of the Cross Gates, Meadow Lake, and River Oaks water distribution systems in St. Tammany Parish, LA. As project manager, Mr. Hahn oversaw development

of the WaterCAD hydraulic computer model, including water usage data processing, hydraulic input parameters, and model calibration. Mr. Hahn performed calibration field testing of the water system by flow testing fire hydrants at selected locations. Mr. Hahn developed an engineering report of findings to supplement the hydraulic model and recommend improvements to the system.

#### **West St. Tammany Water Consolidation, St. Tammany Parish, LA, 05/2023-Present**

This project includes development and analysis of a hydraulic model of the Faubourg Coquille and Bedico Creek water distribution systems in West St. Tammany Parish, LA. As project manager, Mr. Hahn oversaw development of the WaterCAD hydraulic computer model, including water usage data processing, hydraulic input parameters, and model calibration. Mr. Hahn performed calibration field testing of the water system by flow testing fire hydrants at selected locations. Mr. Hahn developed an engineering report of findings to supplement the hydraulic model and recommend improvements to the system.

**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**John Sparks  
Construction Services**

**Project Assignment:**

**Design / Construction Management**

**Name of Firm with which associated:****Years' experience with this Firm:**

**2.5**

**Education: Degree(s)/Year/Specialization:**

**M.S. / 1998 / Civil Engineering  
B.S. / 1994 / Civil Engineering**

**Active registration: Year first registered/discipline:**

**2024 / Civil / LA  
2002 / Civil / MS**

**Other experience and qualifications relevant to the proposed Project:**

Mr. Sparks has over twenty-three years of experience in civil and environmental engineering and construction with a strong emphasis on the design and construction of Wastewater Treatment, Collection and Pumping Systems. He has successfully managed the engineering design and/or construction of multi-million-dollar projects in the field of wastewater and heavy construction, for both public and private entities/clients. He has substantial experience in the field of Assessment Management for public utilities, including the use and development of GIS applications for asset inventory, and the development of asset mapping systems. As the Site Manager for an ISO certified manufacturing facility, Mr. Sparks has extensive knowledge and experience with the control of inventory, process upgrades to meet regulatory requirements, quality assurance and quality control, and the development of processes to improve and standardize production outputs and deliverables. Mr. Sparks has also rounded out his knowledge with experience in heavy construction including management of rehabilitation and construction of waterways and water control structures, the management of site work and road building projects. Significant and recent projects are listed below.

Projects with detailed descriptions of work are provided below:

**FEMA Public Assistance Grant and Program Management, Jefferson Parish, LA, 03/2022-Present**

Mr. Sparks is performing cost analysis and methodology memorandum for the billings by the subcontractors used in the Temporary Waterline Repairs in Grand Isle and Lafitte. This project includes the processing of FEMA reimbursements, based on federal and state requirements and development of closeout documentation. He is

assisting with providing broad based support services designated to help maximize federal funding, expedite the process, and retain funds during the closeout process.

#### **Acadiana Water and Sewer, Lafayette, LA, Lafayette, LA, 08/2021-Present**

The project includes the rehabilitation and upgrades of three existing extended aeration sewer plants in Lafayette Parish, Louisiana. BBEC provided engineering design and construction administration services for the improvements and upgrades for each facility. Mr. Sparks performed construction budget estimating and review of treatment processes and process equipment specifications.

#### **Water & Wastewater Utilities- Design of Improvements/Upgrades, Multiple Parishes, LA, 07/2022-Present**

The project is the design and budgeting of initial and secondary improvements and rehabilitation of existing wastewater treatment plants and collection systems for the client. Mr. Sparks performed the technical and engineering design and specifications for the primary and secondary treatment and activated sludge process treatment processes. Mr. Sparks also provided design of flow monitoring and SCADA improvements for the treatment plants. The project consists of 20 wastewater treatment plants operating as extended aeration treatment and facultative pond treatment. Anticipated completion date is October 2022.

#### **TESI, Multiple Parishes, LA, 10/2021-07/2022**

Mr. Sparks performed assessments and evaluations of 26 wastewater treatment systems including treatment and collection, and 3 public water systems. The scope of Mr. Sparks' work included the site investigation of individual treatment facilities, collection, and distribution systems to assess structural conditions, equipment operation, evidence of process issues, and overall general operational conditions. The evaluation and assessment report is prepared using site observations and data collected from regulatory agencies; and includes the identifying of facilities deficiencies, recommendations of means to correct deficiencies and costs budgeting for implementation of corrections.

#### **Water & Wastewater Utilities – Condition Assessments/Evaluation, Multiple Parishes, LA, 05/2022-07/2022**

Mr. Sparks performed site inspections, assessments, and evaluations of 26 wastewater treatment systems including treatment and collection, and 4 public water systems. The scope of Mr. Sparks' work included the site investigation of individual treatment facilities, collection, and distribution systems to assess structural conditions, equipment operation, evidence of process issues, and overall general operational conditions. The evaluation and assessment report is prepared using site observations and data collected from regulatory agencies; and includes the identifying of facilities deficiencies, recommendations of means to correct deficiencies and costs budgeting for implementation of corrections.

#### **Eden Isles and Meadows WWTP EQ Basin Analysis, St. Tammany Parish, LA, 08/2021-10/2021**

Conducted an analysis of the needs and means for providing flow equalization measures to mitigate the impact of extraneous flows to the wastewater treatment plants. Analysis and evaluation of diurnal flows and precipitation events was performed to determine equalization requirements. Project also included preliminary design budgeting for additional buildings affected by damaging storm events occurring during Hurricane Ida.

#### **Continuing Sewer Assessment Program, City of Vicksburg, MS 2/2016 – 11/2020**

Evaluation Program -- Years One through Four

Street Repairs Program – Years One through Three

Mr. Sparks was the Project Manager for the sanitary sewer evaluation and repair projects for the City. The evaluation projects consisted of smoke testing, inspection of sewer lines and manholes. Provided deliverables of evaluation and analysis of observations made during the inspection phases. Deliverables also included the GIS positioning of assets and observations/defects. Evaluation projects consisted of the annual assessment of approximately 150,000 linear feet of sanitary sewer and 500 manholes. Repair projects consisted of new installations of sewer lines and manholes, replacement of existing sewer lines by excavation, rehabilitation of existing sewer lines by Cured-In-Place Pipe (CIPP) and Pipe-bursting. Mr. Sparks was responsible for the design and routing of all bypass pumping and traffic control. Repair projects had an annual construction value of



approximately 1.5 million.

**Judge Perez Sewer Rehabilitation, St. Bernard Parish, LA 2019**

Mr. Sparks served as project manager for the rehabilitation of a 24-36" interceptor along Judge Perez from Paris Road to Valero refinery. Project included incoming line repairs by pipe bursting and rehabilitation of lateral services. Project included the boring and installation of 2,000 linear feet of 20-inch diameter HDPE force main. Permitting was obtained due to the vicinity of a high pressure/capacity natural gas line. Mr. Sparks also designed the capacities and layouts of all bypass pumping for maintenance of sanitary sewer flows and the design and installation of temporary traffic control for 24-hour lane closures on Judge Perez.

**Sanitary Sewer CIPP Rehabilitation, Various Locations, Daphne Utilities, Daphne, AL 2017-2020**

Mr. Sparks served as the project manager for the construction of rehabilitation of 8-24" diameter sanitary sewer lines for the authority under a three-year contract. Mr. Sparks was responsible for the design and routing of all bypass pumping and temporary traffic control. This included the design and installation of a high head bypass system with 24" diameter HDPE discharge piping with multiple permit-required road crossing by open cut excavation.

**A2/A4 Basins—Downtown Sewer Rehabilitation, Emerald Coast Utilities Authority, Pensacola, FL, 2008-2009**

Mr. Sparks served as project manager for the rehabilitation of over 100,000 linear feet of 8-36" sanitary sewer lines. The project also included the design and installation of road crossings by directional drilling/boring. Mr. Sparks was responsible for all Permit-required Temporary Traffic Control needed for intersection and lane closures on FLDOT State Highways. Mr. Sparks was responsible for the design and routing of all bypass pumping required. Also, responsible for all required City permits and coordination between involved entities during all construction activities.

**Suncoast Infrastructure Inc., Project Manager, Florence, MS, 01/2005-04/2021**

Mr. Sparks provided project management of CIPP and sewer construction projects and evaluated and analyzed sewer collection and treatment systems. He managed wetout facility, and materials inventory and improved efficiencies and capabilities of manufacturing.

**Lampkin Construction Co., Inc., Vice President/Project Manager, Vicksburg, MS, 09/2002-12/2004**

Mr. Sparks performed construction management of heavy construction projects, including USACE, USGS, FHWA design build projects, bank stabilization, lake dam rehabilitation, and road building. He managed inventory and certifications of rock yards.

**Neel Schaffer, Inc., EI/PE Project Engineer, Jackson, MS, 06/1998-09/2002**

Mr. Sparks performed design and construction administration services for water and sewer projects, lift station, WWTP rehabilitation projects and hydraulic analysis of water systems.

**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**Ethan Jones, EI  
Engineer Intern**

**Project Assignment:**

**Modeling**

**Name of Firm with which associated:**

**Barowka and Bonura  
Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**2**

**Education: Degree(s)/Year/Specialization:**

**B.S. / 2022 / Civil Engineering**

**Active registration: Year first registered/discipline:**

**2022 / EI**

**Other experience and qualifications relevant to the proposed Project:**

Mr. Jones is a recent graduate from Louisiana State University where he obtained a Civil Engineering degree in May of 2022 and became an Engineer Intern in June of 2022. He is currently working on projects for Wastewater Treatment where he is gathering measurements and doing calculations to find velocity through pipes for the selection of pumps and creating plan sets for submittals. Mr. Jones has also done Grant Management where he has visited sites to gather measurements for sketches and worked on volumetric cut and fill calculations for clearing residential canals in Lafitte. Mr. Jones has also worked on Roadway and Drainage projects where he has assisted with cost estimates for clients. Mr. Jones has used WaterGEMS to model and analyze water systems for St. Tammany Parish. Additionally, Mr. Jones worked on aeration analysis for Flow Eq Basins. Mr. Jones is currently working on raw water intake for St. John the Baptist Parish.

Projects with detailed descriptions of work are provided below:

**CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 06/2022 – Present**

Mr. Jones worked on completing the cost estimate and making additions to the specifications for this project which includes the construction of several new drainage culverts crossing and/or adjacent to the CN railroad in Destrehan, St. Charles Parish, LA. Mr. Jones also assisted in preparing the CN Railroad permitting documents for the new drainage improvements.

**RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA, 06/2022-Present**

Mr. Jones assisted in the creation of cost estimates to assure that the quantities that were on the submittals matched those of the cost estimate for FEMA-eligible road rehabilitation work as part of this project. This project

includes assisting the City of New Orleans in assessment of the damage along the streets contained in this project, and providing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage.

#### **RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA, 06/2022-Present**

Mr. Jones assisted in the creation of cost estimates to assure that the quantities that were on the submittals matched those of the cost estimate for FEMA-eligible road rehabilitation work as part of this project. This project includes assisting the City of New Orleans in assessment of the damage along the streets contained in this project, and providing design services for FEMA-eligible street repairs in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street varies and includes the following types of work: replacement of sidewalks and driveways, incidental road repairs determined by FEMA, and full replacement of roadway section and subsurface sewer, water, and/or drainage.

#### **East St. Tammany Water Consolidation, 2022 Contract, St. Tammany Parish, LA, 08/2022-Present**

This project includes development and analysis of a hydraulic model of water distribution systems in St. Tammany Parish, LA. As an Engineer Intern, Mr. Jones developed a hydraulic model to simulate existing conditions of the system in WaterGEMS. Mr. Jones performed calibration field testing of the water system by flow testing fire hydrants at selected locations in order to better calibrate the model. Mr. Jones assisted in the development of an engineering report of findings to supplement the hydraulic model and recommend improvements to the system.

#### **Laplace Water Intake Pump Station and Pre-Treatment Facility, St. John the Baptist Parish, LA, 02/2023-Present**

Mr. Jones is working on raw water intake for LaPlace where two alternatives are being considered. One on the river and one on the dry side of the levee. Mr. Jones is assisting in modeling the project, as well as selecting the pumps and pipe sizes to bring clean drinking water to the citizens of the Parish.

#### **Water Hydraulic Modeling in East St. Tammany Parish, 2023 Contract No. 23-048, St. Tammany Parish, LA, 04/2023-Present**

This project includes continuing the development of the East St. Tammany Cross Gates water model. The existing model will be combined with other subdivisions to consolidate the water distribution system. Mr. Jones performed calibration field testing of the water system to be added to the Cross Gates water model by flow testing fire hydrants at selected locations in order to better supplement the hydraulic model and recommend improvements to the system. Mr. Jones assisted in the development of an engineering report of findings to supplement the hydraulic model and recommend improvements to the system.

#### **Water Hydraulic Modeling in West St. Tammany Parish, 2023 Contract No. 23-042, St. Tammany Parish, LA, 04/2023-Present**

This project includes developing and analyzing a hydraulic model of water distribution systems in West St. Tammany Parish, LA for the Bedico Creek System and the Faubourg Water System. The system includes 14 wells, some of which will be taken out of service upon construction of the improvements. Other wells will be kept to provide water. Mr. Jones performed calibration field testing of the water system by flow testing fire hydrants at selected locations in order to better calibrate the model. Mr. Jones assisted in the development of an engineering report of findings to supplement the hydraulic model and recommend improvements to the system.

#### **Diversified Water Well Pretreatment System, St. Tammany Parish, LA, 06/2023-Present**

This project includes new potable water treatment improvements at the Diversified Well site in Madisonville, LA. This project includes new greensand filtration units for iron and manganese removal, metal and CMU building to house the filters, chemical storage, and personnel offices, and water piping in site. As part of this project, Mr. Jones assisted in the filter pilot study to assess water quality and scale-model filtration results for varying filtration media.

**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**Ashton Bonura  
Graduate Engineer**

**Project Assignment:**

**Construction Services**

**Name of Firm with which associated:**

**Barowka and Bonura  
Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**10**

**Education: Degree(s)/Year/Specialization:**

**B.S. / 2022 / Civil and Environmental Engineering  
B.S. / 2020 / General Business with an Entrepreneurship Minor**

**Active registration: Year first registered/discipline:****Other experience and qualifications relevant to the proposed Project:**

Mr. Bonura is a recent graduate from the University of New Orleans where he obtained a Civil and Environmental Engineering degree in December 2022. He has assisted the licensed engineers within the company for several years prior to earning his degree. Mr. Bonura has worked on projects that involve water and wastewater treatment, lift station design, roadway rehabilitation and drainage improvements, and sanitary landfill permit renewals.

Projects with detailed descriptions of work are provided below:

**Westbank Mississippi River Bike Trail, Around Avondale Shipyard, (2017-059-RBP), Jefferson Parish, LA, 08/2019-Present**

Mr. Bonura assisted on this project by reviewing the plans and creating quantity take-off for the construction cost estimate, addressed client comments, and worked with drafters and engineers for plan revisions. The project contains the area of River Rd. from east of Avondale shipyard to LA 18 and the stretch of LA-18 up until the existing bike path access ramp west of the shipyard. The project includes the installation of a bike path on top of the levee, restriping existing shoulder to be repurposed as a bike path, widening the road to allow for bike travel, and addition of subsurface drainage in areas indicated by Jefferson Parish.

**Cleary Improvements (Veterans Blvd. to West Esplanade Ave.) (Council District 5) Jefferson Parish, LA, Public Works No. 2017-014-RBP, 08/2019-06/2021**

Mr. Bonura assisted on this project by reviewing the plans and creating quantity take-off for the construction cost estimate, addressed client comments, and worked with drafters and engineers for plan revisions. Mr. Bonura

worked with the resident inspector to reviewed plans and field work to verify the work performed by the contractor to verify final contract quantities. The project contains the area of Cleary Ave. from Veterans Blvd. to W. Esplanade Ave. The repairs to be made include removing and replacing the existing concrete roadway, adding improvements to the subsurface drainage system, and relocating any utilities that were conflicts.

**Woodmere Boulevard Panel Replacement, JP Project No. 2017-061-RBP, State Project No. H012884.6, Jefferson Parish, LA 05/2020-Present**

Mr. Bonura assisted on this project by reviewing the plans and creating quantity take-off for the construction cost estimate, addressed client comments, and worked with drafters and engineers for plan revisions. Mr. Bonura worked with the resident inspector to reviewed plans and field work to verify the work performed by the contractor to verify final contract quantities.

**RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA, 12/2019-Present**

Mr. Bonura assisted on this project by reviewing the plans and creating quantity take-off for the construction cost estimate, addressed client comments, and worked with drafters and engineers for plan revisions. The project area consists of the streets in the area south of I-610, north of the Florida Ave. canal, east of N. Broad St., and west of Elysian Fields Ave. The scope of work for each street is either replacement of sidewalks and driveways, incidental road repairs determined by FEMA, or full replacement of roadway section and subsurface sewer, water, and/or drainage.

**RR177 – St. Roch Group North Group B (FRC), City of New Orleans, LA, 12/2019-Present**

Mr. Bonura assisted on this project by reviewing the plans and creating quantity take-off for the construction cost estimate, addressed client comments, and worked with drafters and engineers for plan revisions. The project area consists of the streets in the area south of I-610, north of the Florida Ave. canal, east of Elysian Fields Ave., and west of St. Roch Ave. The scope of work for each street is either replacement of sidewalks and driveways, incidental road repairs determined by FEMA, or full replacement of roadway section and subsurface sewer, water, and/or drainage.

**RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA, 12/2019-Present**

Mr. Bonura assisted on this project by reviewing the plans and creating quantity take-off for the construction cost estimate, addressed client comments, and worked with drafters and engineers for plan revisions. The project area consists of the streets in the area south of I-610, north of the Florida Ave. canal, east of St Roch Ave., and west of the Peoples Ave. canal. The scope of work for each street is either replacement of sidewalks and driveways, incidental road repairs determined by FEMA, or full replacement of roadway section and subsurface sewer, water, and/or drainage.



**KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:****Name & Title:**

**Pete Foret**  
**Computer Aided Drafting**

**Project Assignment:**

**Drafting**

**Name of Firm with which associated:**

**Barowka and Bonura**  
**Engineers and Consultants, L.L.C.**

**Years' experience with this Firm:**

**4**

**Education: Degree(s)/Year/Specialization:**

**B.S. / 1995 / Business Administration with a Computer Science Option  
and Management Minor**

**Active registration: Year first registered/discipline:****Other experience and qualifications relevant to the proposed Project:**

Mr. Foret is a multi-discipline AutoCAD drafter and designer with experience in the Civil, Structural, Architectural, Electrical and GIS/Mapping fields. He has a combined 33 years of experience generating alignments, plan and profile sheets, cross sections, contour maps, structural and architectural plans, and details and electrical one-line diagrams. Mr. Foret has prepared site plans for over 500 residential properties which are used to perform environmental assessments and archaeological investigations by FEMA EHP and the State Historic Preservation Office. He has been the drafting coordinator for multiple firms and has been responsible for developing drafting standards for a consistent and quality drawing set.

Projects with detailed descriptions of work are provided below:

**Ames Boulevard Rehabilitation, West Bank Expressway to Happy Street, (Public Works Project No. 2013-033-RB) (DOTD No. H.011797), Jefferson Parish, LA., 07/2020-Present**

Mr. Foret was involved with the 98% and 100% Final submittal of roadway design plans to the LADOTD. This involved updating the project border on all sheets to the current LADOTD border while maintaining LADOTD standards. The drawing set included a standard LADOTD title sheet as well as plan sheets, typical sections, cross sections, core boring sheets, LADOTD and Jefferson parish special detail sheets and associated summary and quantities table sheets.

**East Bank Water Treatment Plant Improvements, Jefferson Parish, LA., 07/2020-Present**

Mr. Foret was responsible for plan preparation following established project standards. Plans included a site layout for the routing of new chemical feed lines over an existing survey and avoiding existing utilities. Drawings also included details necessary for the proper routing and installation of the new feed lines.

**FEMA Public Assistance Grant and Program Management, Jefferson Parish, LA, 12/2021 - Present**

Mr. Foret plotted the platform locations for the water line to Grand Isles in CAD using GIS coordinates. He also created exhibits of before, during and after Hurricane Ida aerial photographs to assist with determining debris to be removed.

**Craig Avenue Drainage Improvements, Public Works Project No. 2019-022-DR, Jefferson Parish, LA, 10/2020-Present**

Mr. Foret updated the plan/profile sheets with a new proposed roadway gradeline.

**Gloria Drive Pump Station, Project No. 20-2022A, Lafitte Area Independent Levee District Drainage, Town of Jean Lafitte, LA, 02/2021-Present**

Mr. Foret set up the survey and generated a preliminary site plan for a drainage pump station.

**CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 10/2020-Present**

Mr. Foret set up the survey reference file with a baseline supplied by the railroad and created site plans for 6 proposed construction sites including a plan/profile sheet for a new 425' long 60" drainpipe connecting two sites. He also generated multiple cross sections through the 6 construction sites as well as other details.

**RR176 – St. Roch Group North Group A (PMOI), City of New Orleans, LA., 07/2020-Present**

Mr. Foret generated the 100% submittal drawings on this project. This drawing submittal contained plan and profile sheets that included proposed centerline and gutter line profiles as well as existing centerline, gutter line, sidewalk, right of way and utilities grades and profiles in the project area. Mr. Foret was also responsible for ensuring that the drawing set conformed to City of New Orleans Department of Public Works drawing standards.

**RR177 – St. Roch Group North Group B (FRC), City of New Orleans, LA., 07/2020-Present**

Mr. Foret generated the 100% submittal drawings on this project. This drawing submittal contained plan and profile sheets that included proposed centerline and gutter line profiles as well as existing centerline, gutter line, sidewalk, right of way and utilities grades and profiles in the project area. He also generated cross sections based on project guidelines. Mr. Foret was also responsible for ensuring that the drawing set conformed to City of New Orleans Department of Public Works drawing standards.

**RR178 – St. Roch Group North Group C (FRC), City of New Orleans, LA., 07/2020-Present**

Mr. Foret generated the 100% submittal drawings on this project. This drawing submittal contained plan and profile sheets that included proposed centerline and gutter line profiles as well as existing centerline, gutter line, sidewalk, right of way and utilities grades and profiles in the project area. He also generated cross sections based on project guidelines. Mr. Foret was also responsible for ensuring that the drawing set conformed to City of New Orleans Department of Public Works drawing standards.

**FEMA Hazard Mitigation Assistance Consultant (Project No. 2130-02035), City of New Orleans, LA, 11/2021 - Present**

Mr. Foret drafts site plans for the home elevation grant applications which involves saving aerial images from Google Earth and tracing it with the basic home floor plan dimensions obtained from the field. These site plans are used to perform environmental assessments and archaeological investigations by FEMA EHP and the State Historic Preservation Office.

**Application Development and/or Project Management of FEMA HMA Grant Programs, Lafourche Parish, LA, 12/2021 - Present**

Mr. Foret drafts site plans for the home elevation grant applications which involves saving aerial images from Google Earth and tracing it with the basic home floor plan dimensions obtained from the field. These site plans are used to perform environmental assessments and archaeological investigations by FEMA EHP and the State

Historic Preservation Office.

**Grant Management Services for Federal and State Grants, Lafitte Area Independent Levee District, LA, 04/2022 - Present**

Mr. Foret traced the Lafitte existing and proposed levee layouts in CAD onto an aerial from Google Earth. He also created photo sheets from photos taken in the field with GIS coordinates embedded in them to be used for levee inspections.

**Federal Emergency Management Agency Public Assistance Program Services, St. Charles Parish, LA, 12/2021 - Present**

Mr. Foret drafts site plans for the home elevation grant applications which involves saving aerial images from Google Earth and tracing it with the basic home floor plan dimensions obtained from the field. These site plans are used to perform environmental assessments and archaeological investigations by FEMA EHP and the State Historic Preservation Office.

**H2O Water Projects, St. Tammany Parish, LA, 09/2020-Present**

Mr. Foret did some minor markups and checked for drafting standards/consistency.

**Acadiana Water and Sewer, Lafayette, LA, 08/2020-Present**

Mr. Foret created figures for the Engineer reports for the water and wastewater systems for Belleville, Garden Heights, Mark Ridge and Village Quest subdivisions. He drafted the site plan and profile for the Belleville water system. He also generated the site plans, mechanical plans and structural plans for the repairs and improvements to the Belleville, Garden Heights and Mark Ridge wastewater treatment plants.

**Southwood Ridge, Tangipahoa Parish, LA, 08/2020-Present**

Mr. Foret created figures for Engineer's report.

**Artesian, St. Tammany Parish, LA, 08/2020-Present**

Mr. Foret created figures for Engineer's report.

**Coast Water Projects, St. Tammany Parish, LA, 07/2020-Present**

Mr. Foret created the site plans and demolition plans as well as the plans, sections, structural foundation details and typical details for the proposed chemical feed buildings and the details for the chemical feed system itself at the Eden Isles, Meadows and Belair disinfection sites. He coordinated with our electrical sub for the drafting of the electrical one line and riser diagrams as well as his equipment layouts on the site plans for the three sites. Mr. Foret drafted the plan/profile sheet and cross sections for the proposed new waterline crossing the marina bay as well as the standard details for the Eden Isles Water Main Repair.

**L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.**

## PROJECT NO. 1

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

**Waggaman Area  
Drainage Study  
(Project No.  
2011-03-DR),  
Jefferson Parish, LA**

**Jefferson Parish  
Government  
Mitchell Theriot, P.E.,  
Director  
Department of Drainage  
1221 Elmwood Park  
Blvd., Suite 907  
Jefferson, LA 70123  
MTheriot@jeffparish.net  
(504) 736-6753**

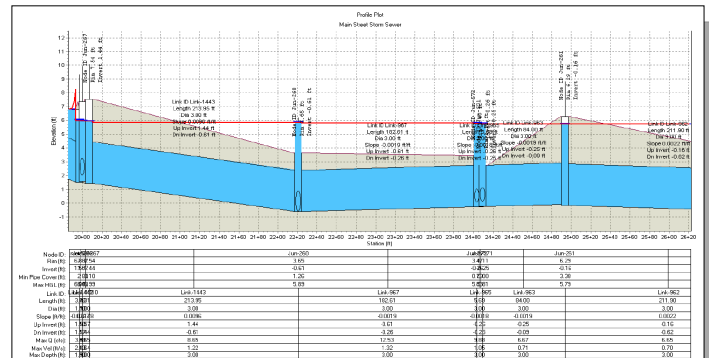
### Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications
- Construction Administration

BBEC performed a hydrologic study for three separate residential subdivisions in Waggaman, Louisiana: Waggaman, South Kenner, and Manor Lane. The Waggaman subdivision is bounded by River Road to the north, Live Oak Boulevard to the south, Saul's Canal to the west, and Dandelion Ditch to the east. South Kenner subdivision is bounded by River Road to the north, North Railroad Canal to the south, Saul's Canal to the east, and another subdivision to the west. The Manor Lane

subdivision is bounded by River Road to the north, North Railroad Canal to the south, Latigue Road Ditch to the west, and Modern Farms Road Ditch to the east. BBEC used the Storm Water Management Model (SWMM) V.5 to evaluate the existing subsurface drainage capacities for each subdivision and to examine if the existing system was able handle a 10-year design storm. BBEC developed a hydrologic and hydraulic model using the existing Parish GIS for each area and recommended subsurface improvements based on the SWMM model to handle a 10-year design storm.

BBEC developed the survey scope of work and managed the surveyor to obtain the needed data for the model. BBEC performed multiple model runs to determine the most cost-effective means to drain the 10-year storm for each subdivision. BBEC developed recommended project scopes and construction cost estimates for each subdivision.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

**Work for which Firm was Responsible:**

2016 (actual)

\$300.000 (fee)

\$300.000 (fee)

## PROJECT NO. 2

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

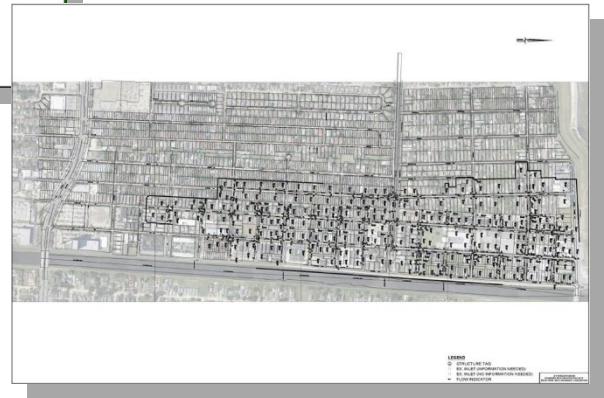
**Lake Avenue and  
Carrollton Avenue  
Drainage Study,  
Jefferson Parish, LA**

**Jefferson Parish  
Government  
Mark Drewes, Director  
Department of Public  
Works  
1221 Elmwood Pk.  
Blvd., Suite 904  
Jefferson, LA 70123  
MDrewes@jeffparish.net  
(504) 736-6783**

### Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans

The project included an extensive drainage and traffic control study on Lake and Carrollton Avenues in the Bucktown area. Hydraulic modeling of the entire area was performed and drainage improvements were recommended in conjunction with the findings of the traffic study. BBEC performed the hydraulic model, coordinated with the traffic engineer and designed the proposed drainage improvements.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

**Work for which Firm was Responsible:**

2005 (actual)

\$80.000 (fee)

\$80.000 (fee)



## PROJECT NO. 3

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

**Primrose Box Culverts,  
St. Charles Parish, LA**

**St. Charles Parish  
Government  
Public Works and  
Wastewater  
15045 River Road  
Hahnville, LA 70057  
Darrin Duhe,  
Chief Operating Officer  
dduhe@stcharlesgov.net  
(985) 783-5102**

### Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications
- Construction Administration

BBEC performed preliminary and final design, construction related services, administration, and resident inspection services for three 24-foot clear span box culverts and related road/drive restoration.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

**Work for which Firm was Responsible:**

2004 (actual)

\$350.000

\$350.000

## PROJECT NO. 4

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

**Harvard Avenue  
Drainage Improvements,  
Project No 99-046-DR  
and 99-046A-DR,  
(Funding Source:  
Community  
Development  
Block Grant),  
Jefferson Parish, LA**

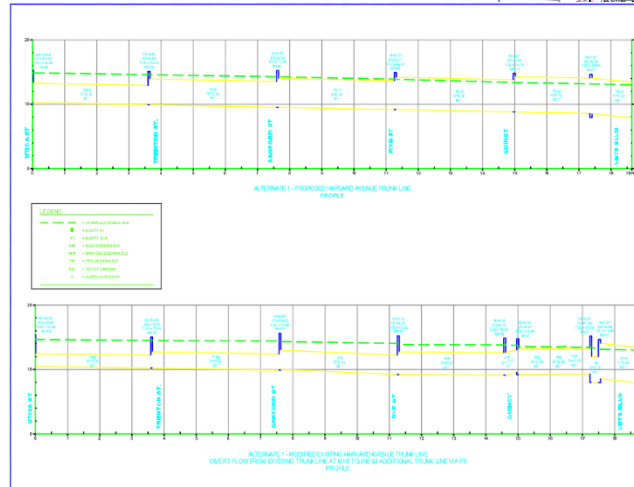
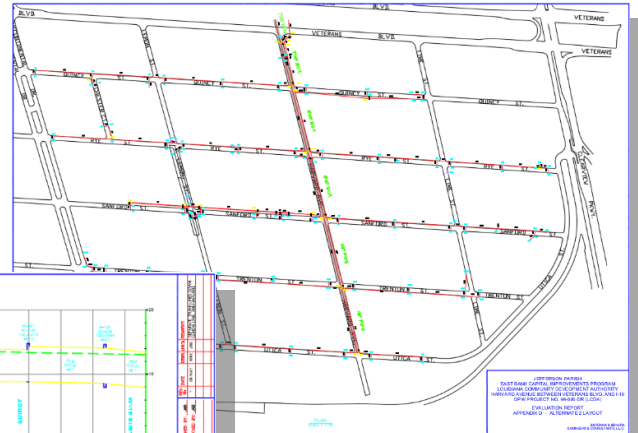
**Jefferson Parish  
Government  
Mark Drewes, Director  
Department of  
Public Works  
1221 Elmwood Pk.  
Blvd., Suite 904  
Jefferson, LA 70123  
MDrewes@jeffparish.net  
(504) 736-6783**

### Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications
- Construction Administration

BBEC designed approximately 6,000 linear feet of 24-inch to 72-inch drainpipe in Jefferson Parish, Louisiana. BBEC used Intergraph's Storm and Sanitary SelectCAD modeling software to determine the surface runoff and the pipe sizes. Data from the existing Parish's GIS was used to develop the surface terrain for the basis of the model. The project required that the various drain lines be installed within 50-foot Parish right-of-ways in

commercial and residential areas, existing utilities throughout the length of the project maintained, and the site restored, including roadways, to it's before construction condition. The project also required three separate jack-and-bores, from 30-inches to 72-inches in diameter, across a three-lane roadway to discharge into a canal. BBEC developed and administered the temporary traffic control plans for while the work was being performed.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

**Work for which Firm was Responsible:**

2006 (actual)

\$2,879,840

\$2,879,840

## PROJECT NO. 5

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

**Manson Ditch and  
Lower Kraak Outfall  
System Improvements,  
Jefferson Parish, LA**

**Jefferson Parish  
Government  
Mark Drewes, Director  
Department of  
Public Works  
1221 Elmwood Pk.  
Blvd., Suite 904  
Jefferson, LA 70123  
MDrewes@jeffparish.net  
(504) 736-6783**

### Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications

The scope of BBEC's work was to provide full engineering services, including evaluation of alternatives, preliminary design, final design, bidding, construction administration, resident inspection, and as-built drawing services, for the improvements to the Manson Ditch outfall into the West Metairie Avenue Canal. The project consisted of hydraulic modeling of drainage structures, design of drainage systems composed of cast-in-place concrete structures and pipe systems, connection to existing culverts, transition to existing canal banks, utility relocations, roadway and other site restoration, traffic maintenance and signal design, pavement striping, and all incidental work. Currently two large diameter drain lines (60-inch and 72-inch diameter) discharge into the West

Metairie Canal culvert crossing under Cleary Avenue. The purpose of the project was to remove the connection and discharge the two drain lines directly into the canal, requiring an outfall structure. The outfall structure is designed to accept the two drain lines, connect to the existing two 96-inch diameter culverts, and be able to transition to a future 16-foot wide u-channel. Temporary bank stabilization is required until the future u-channel project is completed. Traffic flow on the two major arterial streets will be maintained throughout the construction of the project.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

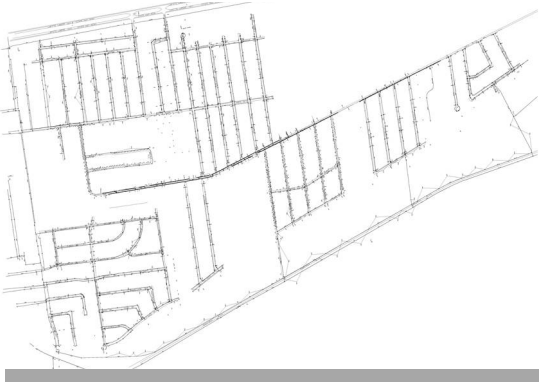
**Work for which Firm was Responsible:**

2008 (actual)

\$8,000,000

\$8,000,000

**PROJECT NO. 6**

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p><b>Ames Boulevard Roadside Drainage Improvements, Jefferson Parish, LA</b></p> <p><b>Jefferson Parish Government Mitchell Theriot, P.E., Director Department of Drainage 1221 Elmwood Park Blvd., Suite 907 Jefferson, LA 70123 MTheriot@jeffparish.net (504) 736-6753</b></p>	<p><b><u>Applicable Experience</u></b></p> <ul style="list-style-type: none"> <li>• Project Evaluation</li> <li>• Project Design</li> <li>• Drafting of Technical Plans</li> <li>• Development of Technical Specifications</li> </ul> <p>diameter. Round and arched pipe was installed; concrete and plastic materials were used. Project site provided limited space between the road and property lines because of its 40-foot ROW. Existing water, sewer, power, cable television, and telephone services were worked around.</p>	<p>BBEC designed roadside drainage improvements along approximately 6,200 linear feet of Ames Boulevard in Jefferson Parish for this project. BBEC utilized TR-55 (computer model) to determine surface runoff for the drainage system. BBEC developed a computer model based on DOTD's spreadsheet to perform the hydraulic design. The drainage pipe ranged from 15- to 36-inches in</p> 
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2005 (actual)	\$180,000	\$180,000



**PROJECT NO. 7**

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

**Cleary Improvements  
(Veterans Blvd. to West  
Esplanade Ave.)  
(Council District 5),  
Public -Works  
No. 2017-014-RBP,  
Jefferson Parish, LA**

**Jefferson Parish  
Government  
Mark Drewes, Director  
Department of  
Public Works  
1221 Elmwood Pk.  
Blvd., Suite 904  
Jefferson, LA 70123  
MDrewes@jeffparish.net  
(504) 736-6783**

**Applicable Experience**

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications
- Construction Administration

The project consists of the reconstruction of Cleary Avenue between Veterans Boulevard and West Esplanade Avenue and includes drainage improvements.

Under a prior contract, BBEC developed a hydrologic and hydraulic model for the project area and the surrounding neighborhoods that drain into the project area; evaluated the design conditions and made recommendations for drainage

improvements for the area.

The improvements include removing and replacing approximately 4,000 linear feet of four-lane concrete street (2 travel lanes, 2 parking lanes) with curbs; removing and replacing adjoining concrete sidewalks, drives, and ADA ramps; installation of new sub-surface drainage; installation of new outfall pipe crossing W. Esplanade Avenue and discharging into W. Esplanade Avenue Canal; installation of new outfall pipe crossing Veterans Blvd. and discharging into Veterans Blvd. Canal (Canal No. 3); the replacement of all water mains crossing Cleary Avenue and West Esplanade Avenue in the project area; and coordination with private utilities for their respective utility relocations.

The scope of work also includes traffic phasing, allowing the contractor to work on one lane at a time. When working on the parking lanes, the 2-way traffic is maintained. When working in the travel lanes, only 1-way traffic is allowed.

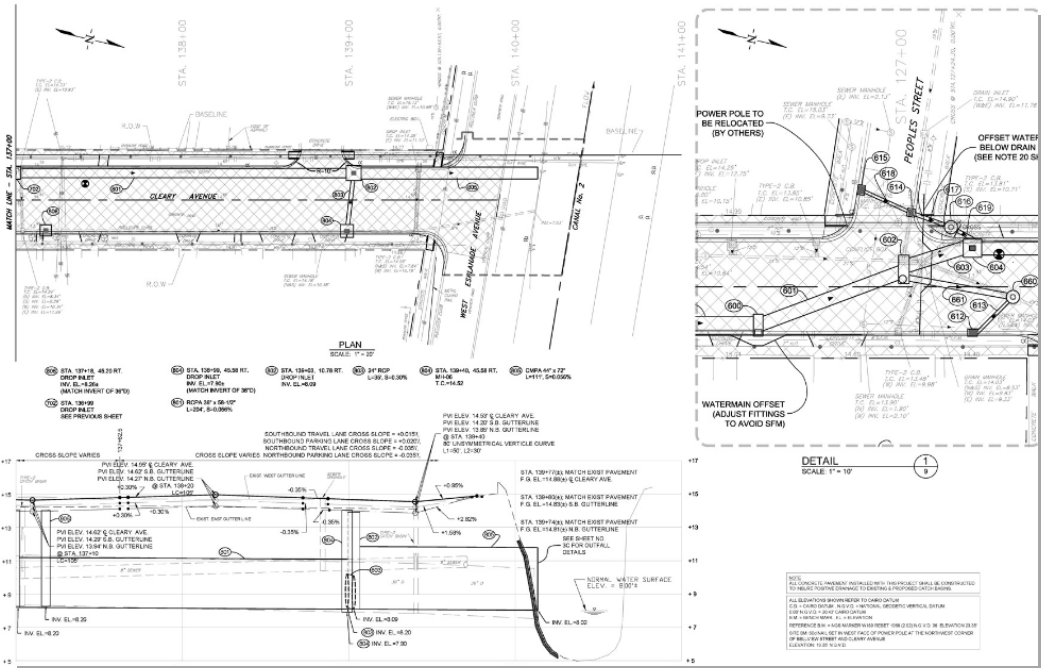
As part of the roadway and drainage improvement project, BBEC performed the engineering services to design and construct 7 water line roadway crossings varying in size from 8-inch to 12-inch water mains. The roadway crossings included connecting to existing water mains with valves, tees, and other fittings as required.

BBEC is currently providing Construction Administration and Construction Inspection Services including but not limited to:

- Preparing formal contract documents for the execution of the construction contract
- Observing and inspecting the materials and construction procedures at the site of the work as it progresses
- Establishing construction monuments, project baseline, and benchmark's as necessary
- Coordinating with owners of utilities for relocation of their facilities to clear the site for construction
- Requiring and reviewing tests of materials necessary for the project
- Determining contract pay quantities, including necessary materials checking




- Verifying and approving contractor's pay estimates
- Preparing progress reports, as requested
- Preparing detailed drawings as necessary to supplement the construction drawings
- Reviewing shop drawings and samples for conformance with the design and for compliance with the result required in the contract documents
- Performing final inspection and making a recommendation for acceptance
- Verifying and approving Testing Laboratory pay estimates
- Preparing all necessary documentation required for construction change orders
- Preparing written recommendation for all required changes to plans and specifications during construction
- Attending council meetings and other meetings as necessary to discuss issues associated with the project



Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2021 (actual)	\$4.456.889	\$4.456.889

## PROJECT NO. 8

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p><b>West Napoleon Avenue Improvements, Cleary Avenue to Severn Avenue, (LA DOTD Project No. 742-07-0088), Jefferson Parish, LA</b></p> <p><b>Jefferson Parish Government Mark Drewes, Director Department of Public Works 1221 Elmwood Pk. Blvd., Suite 904 Jefferson, LA 70123 MDrewes@jeffparish.net (504) 736-6783</b></p>	<div data-bbox="440 443 844 709"> <p><b><u>Applicable Experience</u></b></p> <ul style="list-style-type: none"> <li>• Project Design</li> <li>• Drafting of Technical Plans</li> <li>• Development of Technical Specifications</li> <li>• Construction Administration</li> </ul> </div> <p>BBEC performed construction administration services on this \$11 million TIMED roadway and drainage project, which consisted of about 3,800 linear feet of four-lane concrete roadway divided by a new 30-foot wide concrete u-channel. BBEC coordinated with the private utility companies to relocate (or work around) natural gas pipelines and power and communication lines, overhead and buried, and coordinated construction and connection to public utilities (water and sewer) as well. BBEC reviewed and made recommendations regarding substitute materials and construction methods and monitored the contractors' accelerated operations that reduced the construction contract time from two and a half years to one and a half years. The project consisted of the design of three 9' x 9' box culverts (for a 250-foot box culvert crossing; design (roadway &amp; culvert), construction administration services for about 3,500 linear feet of a new four-lane roadway construction with installation of 26 foot-wide concrete u-channel, traffic design &amp; maintenance, utility relocations, resident inspection.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2005 (actual)	\$11.580.000	\$11.580.000

# PROJECT NO. 9

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

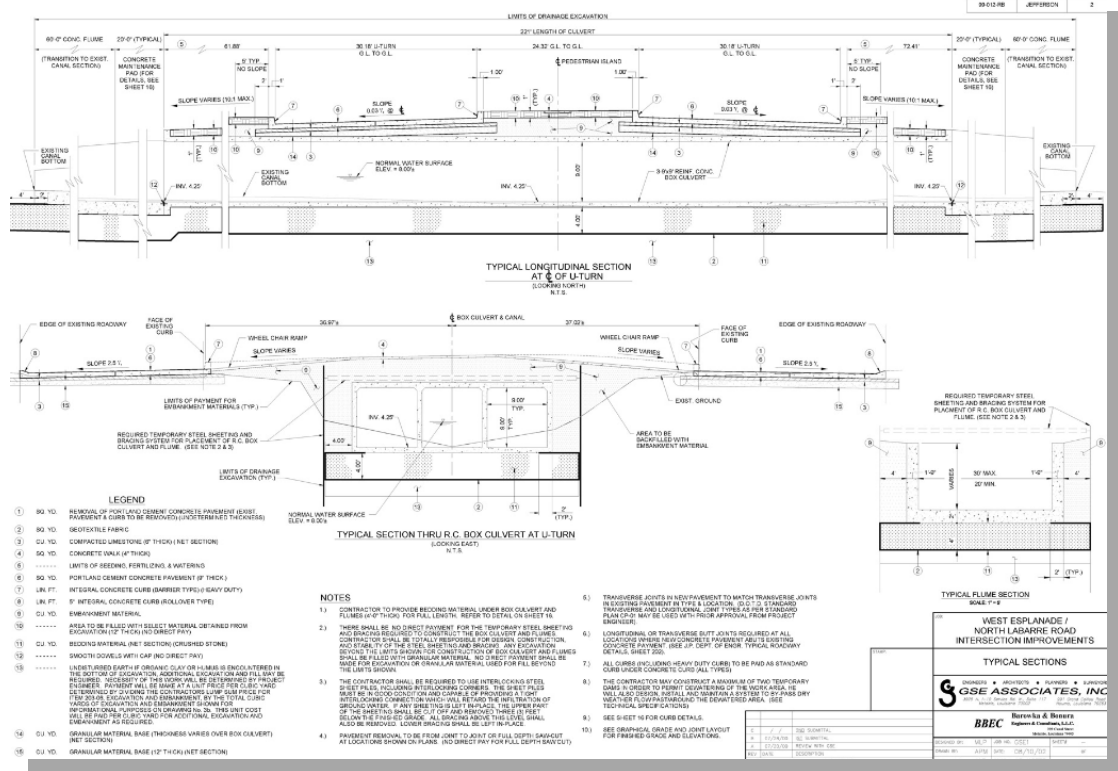
**Labarre Road  
Back-to-Back  
U-Turn Intersection  
Improvements  
(West Esplanade  
Avenue/North  
Labarre Road),  
Jefferson Parish, LA**

**Jefferson Parish  
Government  
Mark Drewes, Director  
Department of  
Public Works  
1221 Elmwood Pk.  
Blvd., Suite 904  
Jefferson, LA 70123  
MDrewes@jeffparish.net  
(504) 736-6783**

## Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications

BBEC prepared plans and specifications for a 250-foot box culvert canal crossing on West Esplanade Avenue near N. Labarre Road. The project included the design of a box culvert containing three 9-foot by 9-foot precast concrete culverts, roadway design above the culvert and along West Esplanade adjacent to the structure, traffic design and maintenance, and utility relocations.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

**Work for which Firm was Responsible:**

2004 (actual)

\$1,020,854

\$1,020,854



## PROJECT NO. 10

**Project Name,  
Location and Owner's  
contact information:**

**Nature of Firm's Responsibility:**

**Boutte Drainage  
Improvements,  
St. Charles Parish, LA**

**St. Charles Parish  
Government  
Public Works and  
Wastewater  
15045 River Road  
(LA 18)  
Hahnville, LA 70057  
Darrin Duhe, Chief  
Operating Officer  
dduhe@stcharlesgov.net  
(985) 783-5102**

### Applicable Experience

- Project Evaluation
- Project Design
- Drafting of Technical Plans
- Development of Technical Specifications
- Construction Administration

The project consisted of design and construction related services for 2,000 linear feet of 15-inch to 30-inch drain-pipe along US Highway 90, including roadway and parking lot restoration. TR-55 (computer model) was used to determine the watershed's runoff. Hydraulic calculations were performed by hand.



**Completion Date  
(Actual or estimated):**

**Estimated Cost:**

**Entire Project:**

**Work for which Firm was Responsible:**

2004 (actual)

\$350.000

\$350.000

**M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.**

<b>Parties:</b>		<b>Status/Result of Case:</b>
<b>Plaintiff:</b>	<b>Defendant:</b>	
1. N/A	N/A	BBEC's firm nor its staff has had any litigation with Jefferson Parish.
2.		
3.		
4.		

**N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.**



**Barowka and Bonura  
Engineers and Consultants, L.L.C.**

Barowka and Bonura Engineers and Consultants, L.L.C. is an engineering consulting firm specializing in civil engineering design, construction management, and computer consulting services. BBEC's Project Team has substantial experience in all aspects of public works projects. Our staff has specific experience in project development, drainage design, construction management, hydraulic and hydrologic modeling and alternative project evaluation. Our drainage design experience includes numerous projects including drainage pipe, cast-in-place conduit (closed and open), and roadway culvert crossings of all kinds. Our project experience also includes the necessary environmental permitting and property acquisition necessary to get any project done.

**MINIMUM QUALIFICATIONS:**

- One Principal who is a professional engineer who shall be registered as such in Louisiana. This requirement is met by: Jeffrey Bonura, P.E.



- A professional in charge of the project who is a professional engineer who shall be registered as such in Louisiana with a minimum of five (5) years-experience in the disciplines involved.  
This requirement is met by: Jeffrey Bonura, P.E.
- One employee who is a professional engineer registered as such in Louisiana in the field or fields of expertise required for the project:  
This requirement is met by: John J. Housey, Jr., P.E., Madan Kamboj, P.E., Matthew Hahn, P.E., and Kevin Forschler, P.E.

## **1. PROFESSIONAL TRAINING AND EXPERIENCE IN RELATION TO THE TYPE OF WORK REQUIRED FOR THE ROUTINE ENGINEERING SERVICES:**

BBEC has been involved in performing design and construction management of various public works projects ranging from the smallest of projects to the large multiple project multi-million dollar capital improvement programs. Our staff has extensive experience in bidding of public works projects (with and without bid alternates), management of public works and private construction projects, management and training of resident inspectors, and completion of As-Built Drawings. Our staff also has specific experience in the design of roads and bridges, and the ancillary work such as private property issues, drainage systems, flow maintenance, deep excavations, utility construction, coordination with private utility entities, and management of traffic signalization and street lighting installations.

BBEC's overall experience with drainage facilities includes:

- performing hydraulic and hydrologic models and studies for numerous subdivisions and groups of subdivision, one Parish-wide study for St. Bernard Parish, and an update of Jefferson Parish's East Bank Drainage Model.
- performing design and construction administration sources for miles of drainpipe varying from 12-inch pipe to 120-inch pipe, including the needed structures
- performing design and construction administration of multiple box culvert projects spanning over 12 feet, including precast concrete structures, cast-in-place concrete structures, and aluminum structures.
- performing design and construction administration services for canal and levee improvements, including bank stabilization, conversion from earthen to concrete lined channels, new and elevated levee construction, concrete cladding of levees, and levee crossings with utilities.

BBEC staff, have been involved in the cost-effective analysis, design, construction, and operation of hydraulic systems, including overflow control structures, for over 36 years. We have also been involved in the designs of levees and other water and earth retaining systems; concrete bridges; concrete and steel bulkheads; timber and compost pier repairs; wetlands restoration by marsh creation; and shoreline protection by living shorelines development as well as foreign material deposits.

Further, BBEC staff has performed engineering services on many other public works projects that require flow control facilities similar to these used in coastal projects, such as gravity and pressure hydraulic systems, large diameter flow control valve gates, weirs, and structures that contain them. Similar projects also include flow and level sensing devices and the necessary controls to adjust the flow and water levels.

**Mr. Jeffrey Bonura, P.E., Sole Member and Supervising Engineer**, (36 years of experience), will provide quality control and assurance for all assigned projects. He has experience in performing and managing design, bidding, construction (including inspector training and oversight), and as-built drawing phases of construction projects. In addition, he managed more than \$100 million in FEMA funded roadway and drainage projects and has performed engineering services for over \$200 million in Public Works projects.

His extensive experience also includes solid waste collection and disposal; bridge, and drainage systems; watershed management; levees and water control structures; landfill design and permitting; underground storage tank management; geographical information systems; and coastal protection and restoration. Further, Mr. Bonura has substantial specific experience with providing design, procurement, construction management, and record document preparation and has substantial experience coordinating the work with construction contractors and other engineering firms, as well as local, state, and federal agencies.

Mr. Bonura has been working with computer-based hydraulic models since 1988. He has experience in HEC-1, HEC-2, HEC-RAS, HAEC-HMS (including converting HEC-1 and HEC-2 models to HEC-HMS and HEC-RAS systems), SWMM, StormCAD, SewerCAD, HydroCAD, Flowmaster, TR-55, and other hydrologic and hydraulic modeling software packages. He has and continues to write his own hydraulic modeling programs for special cases. Mr. Bonura spot checks the modeling by hand for model verification and has substantial experience analyzing hydraulic and operating conditions of existing pump stations, including the configuration of suction and discharge basins.

Mr. Bonura has taken the raw input data from an old Kentucky Pipe Model for the entire Jefferson Parish water distribution system, added it to tables from the Parish's GIS, and developed a working geographical hydraulic model. Mr. Bonura extracted the raw input data from old HEC-1 and HEC-2 models in St. Charles Parish and inserted the data into HEC-RAS and HEC-HMS and verified the results between the two models.

Mr. Bonura has substantial specific drainage experience in Jefferson Parish in designing neighborhood drainage systems such as Cleary Avenue between Veterans Boulevard and West Esplanade Avenue and Harvard Avenue between Veterans Boulevard and I-10. Mr. Bonura has current major drainage channel experiences in designing canal and box culvert improvements in our Widening/Stabilization of Bluebird, Creely, and Congressman Hebert Canals project in St. Bernard Parish, Louisiana. Mr. Bonura also has substantial experience using computer models such as Storm CAD and Storm and Sanitary Select CAD to evaluate drainage systems and determine the optimum design for the site conditions. Mr. Bonura used computer models for Cleary Avenue and Harvard Avenue projects, as well as to evaluate drainage conditions along Ames Boulevard and in the Bucktown area.

In addition to our specific engineering and disaster-related expertise, BBEC has extensive knowledge of the Geographic Information Systems (GIS). Drawings and data developed from the GIS showing site topography could be used to develop site plans for construction, traffic detour plans, preliminary cost estimates, project presentations, tracking operations, and many other uses. We have used these services to prepare detailed zone maps for streets, drain lines, sewer systems, and canals. We have also prepared progress reports of construction services by showing street-by-street progress of crews through a zone, and we published the information on the web daily for some of our clients.

Our training and experience are directly embedded in our staff. What follows are a list of key individuals anticipated for the project with brief resumes. Complete resumes are provided elsewhere in this SOQ.

What follows are brief summaries of our key staff in addition to Mr. Bonura:

- **Mr. Kevin Forschler, P.E.**, (9.5 years of experience) has been designing and administering the construction of typical public works projects (sewer, drainage, and roadway); including the recent completion of the hydrologic and hydraulic modeling of the area associated with our Waggaman Hydraulic Study and Avondale/Bridge City Drainage Evaluation project and the completion of the Bissonet Plaza Master Drainage Plan in Jefferson Parish. He is currently working on Craig Avenue Drainage Improvements and the Westbank Mississippi River Bike Trail projects in Jefferson Parish,

described herein.

- **Mr. John J. Housey, Jr, P.E.**, (57 years of experience), recently administered the construction of over \$100 million roadway and drainage improvements for Hurricane Katrina damages in St. Bernard Parish and is currently working on projects such as Craig Avenue Drainage Improvements and the Westbank Mississippi River Bike Trail in Jefferson Parish, the design for improvements to streets in the St. Roch area of the City of New Orleans, and the design of CN Railroad Culverts in St. Charles Parish.
- **Mr. Madan Kamboj, P.E.** (43.5 years of experience) has been performing project design, construction administration, and project monitoring for general civil projects including drainage, utilities, streets, highways and bridges, buildings, water and sewer treatment plants, multi-story parking garages; airport taxiways, traffic separation facilities, bike paths, and overhead pedestrian walkways at high traffic intersections. Mr. Kamboj is currently providing structural and foundation design for the Gloria Drive Pump Station in the Town of Jean Lafitte and the design of CN Railroad Culverts in St. Charles Parish.
- **Mr. Matthew Hahn, PE** (8 years of experience) is experienced in the field of civil and consulting engineering with a strong background in water resources, civil/site design, project management, and land surveying. His vast knowledge includes but is not limited to water distribution systems, hydrologic modeling and drainage design, sewerage and wastewater treatment, site development and planning, structural design, public speaking, topographic land surveying, boundary surveying, floor elevation surveying, earthwork balancing and site grading, recreation facilities/athletic fields, public bid process, permitting, and construction administration and management. Mr. Hahn is currently the Project Manager for the Avenue E Drainage Improvements in Jefferson Parish and recently managed the engineering and design of drainage improvements at the Hill Heights Canal in the Ormond Estates Subdivision on the east bank of St. Charles Parish.
- **Mr. John Sparks**, (23 years of experience), has a Master of Science degree in Civil Engineering with emphasis on Wastewater Processes and Water and Sewer Systems Design. He has over 23 years of experience designing and rehabilitating sewer systems in the Southeastern states.
- **Mr. Pete Foret** (33 years of experience), is a multi-discipline AutoCAD drafter and designer with experience in the Civil, Structural, Architectural, Electrical and GIS/Mapping fields. His extensive experience includes generating alignments, plan and profile sheets, cross sections, contour maps, structural and architectural plans and details and electrical one-line diagrams. He has been the drafting coordinator for multiple firms and has been responsible for developing drafting standards for a consistent and quality drawing set.

## **2. SIZE OF FIRM, CONSIDERING NUMBER OF PROFESSIONAL AND SUPPORT PERSONNEL REQUIRED TO PERFORM THE TYPE OF ENGINEERING TASKS:**

BBEC staff consists of 26 (including 6 licensed civil/structural engineers) professional, technical, and clerical personnel capable of handling all project and administrative tasks; all of which are available to work on the project. Mr. Bonura will manage projects through completion, making sure that all requirements of the projects are met. We have sufficient licensed and experienced engineers, junior engineers, technicians, and GIS and drafting support to effectively perform work with its existing staff.

Over the years, BBEC successfully performed well over \$100 million in fees of engineering and engineering related projects for various entities and municipalities throughout southeast Louisiana. The work performed includes surveying management, H & H modeling, project design and development, floodplain analysis and hazard mitigation, geographic information systems, and others. BBEC has substantial experience in working on many public works projects. We have worked as a company for 27 years for various locations in Southeast Louisiana, and Mr. Bonura worked an additional 10 years on projects prior.

## **3. CAPACITY FOR TIMELY COMPLETION OF NEWLY ASSIGNED WORK, CONSIDERING THE FACTORS OR TYPE OF ROUTINE ENGINEERING TASK, CURRENT UNFINISHED WORKLOAD, AND**

#### **PERSON OR FIRM'S AVAILABLE PROFESSIONAL AND SUPPORT PERSONNEL:**

Our wealth of experience with public works type projects in Jefferson Parish allows us to provide the Parish with the necessary knowledge of keeping the Project on schedule and within budget, adhering to the standards set forth by the Parish. BBEC can begin work immediately and devote the necessary manpower to continue with the work through completion within any reasonable schedule required by the Parish. BBEC has never failed to meet or exceed our clients' expectations on any of our projects.

Our current staff is more than sufficient to handle our current workload. We have contracts in the signing, design, and bidding phases of work. We continue to move our projects through the implementation process. As projects are implemented, the availability of staff increases.

Mr. Bonura will manage the project through completion, making sure that all the requirements of the project are met. BBEC has sufficient licensed and experienced engineers, junior engineers, technicians, and GIS and drafting support to effectively perform work with its existing staff and meet any schedules reasonably set by the Parish.

#### **4. PAST PERFORMANCE BY PERSON OR FIRM ON PARISH CONTRACTS:**

Our proposed Project Manager performed several drainage projects for Jefferson Parish, namely, Harvard Avenue Drainage, Bucktown Drainage, Cleary Avenue Drainage, and Waggaman Drainage. Mr. Bonura also managed the parish-wide drainage model for St. Bernard Parish to update its FIRMs and performed similar multi-subdivisions drainage projects for other parishes. Kevin Forschler has drainage experience, working on many of the projects with Mr. Bonura. Mr. Forschler also performed BBEC's portion of the Bissonet Drainage Master Plan in gathering data, reviewing the Parish's existing SWMM model, and developing the existing conditions model for the watershed. Mr. Forschler recently completed the modeling and master planning services for the Avondale/Bridge City project. Mr. Bonura is currently managing the East Bank Master Drainage Plan project in Jefferson Parish with Mr. Forschler performing design services.

BBEC's staff has performed and managed design, bidding, construction (including inspector training and oversight), and as-built drawing phases of about \$50 million in Jefferson Parish Department of Public Works construction projects that includes all aspects of construction similar to those in the project sought such as drainage evaluation and design, deep excavations by trenching, trenchless pipeline installation, roadway restoration, traffic maintenance, maintenance of water flow in pipes and canals, public utilities, and public awareness and relations. BBEC's reputation for performance in Jefferson Parish is second to none.

**Relevant projects completed or currently being managed by BBEC staff specifically for Jefferson Parish include:**

- Ames Boulevard Roadside Drainage Improvements
- Avondale/Bridge City Drainage Evaluation (Area between the Mississippi River and the Union Pacific Railroad, from Huey P. Long Bridge to Avondale Garden Road),
- Bissonet Plaza Master Drainage Plan (A/E Project No. 20-1708)
- Canal Monumentation Program
- Cleary Avenue Roadway and Drainage Improvements
- Craig Avenue Drainage Improvements, Public Works Project No. 2019-022-DR
- Design of Access Ways and Ladders at Drainage Pump Stations, Project No. 2014-022-DR
- Digital Flood Insurance Rate Map
- Drainage Pump Station Fuel Storage Secondary Containment
- East Bank Master Drainage Plan

- Harvard Avenue Drainage Improvements, Project No 99-046-DR and 99-046A-DR (Funding Source: Community Development Block Grant)
- Labarre Road Back-to-Back U-Turn Intersection Improvements (West Esplanade Avenue/North Labarre Road)
- Lake Avenue and Carrollton Avenue Drainage Study
- Manson Ditch and Lower Kraak Outfall System Improvements
- Road Bond Parish-wide Improvement Program Jefferson Parish, LA, Public Works Project No. 98-026-RBI, Whitney Avenue Canal Improvements (Stumpf Boulevard to Belle Chasse Highway) SPN # 98-030-RBI
- Road Bond Parish-wide Improvement Program Jefferson Parish, LA, Public Works Project No. 98-026-RBI, Whitney Ave Improvements. (Westbank Expressway to Stumpf Blvd.) SPN # 98-031-RBI
- Waggaman Area Drainage Study
- Westbank Mississippi River Bike Trail, Around Avondale Shipyard, (2017-059-RBP)
- West Napoleon Avenue Improvements, Cleary Avenue to Severn Avenue, (LA DOTD Project No. 742-07-0088)

BBEC performed many other engineering projects for Jefferson Parish unrelated to drainage; therefore, they are not listed.

#### **5. LOCATION OF PRINCIPAL OFFICE WHERE WORK WILL BE PERFORMED:**

BBEC's main office is located at 209 Canal Street in Metairie, which is where the work will be performed.

#### **6. ADVERSARIAL LEGAL PROCEEDINGS BETWEEN THE PARISH AND THE PERSON OR FIRM PERFORMING PROFESSIONAL SERVICES, IN WHICH THE PARISH PREVAILED, OR ANY ONGOING PROCEEDINGS BETWEEN PARISH AND THE PERSON OR FIRM:**

BBEC's firm nor staff has had any litigation with Jefferson Parish.

#### **7. PRIOR SUCCESSFUL COMPLETION OF THE PROJECTS OF THE TYPE AND NATURE OF THE ENGINEERING SERVICES, AS DEFINED, FOR WHICH FORM HAS PROVIDED VERIFIABLE REFERENCES:**

As noted throughout this Professional Services Questionnaire, BBEC and its staff members have an excellent history of service to Jefferson Parish, its Departments, and its citizens. Our projects range from the smallest \$5,000 fee project to our largest \$60,000,000 fee project. Project descriptions are included in this qualifications submittal to substantiate our experience in previous contracts. We invite further scrutiny of our track record with the Parish through discussion with any of the Departments noted elsewhere in this document. BBEC has not been faulted for any time delays, cost overruns, and / or design inadequacies.

For Jefferson Parish drainage projects completed by BBEC inclusive of Waggaman Area Drainage Study, Bissonet Plaza Master Drainage Plan, Harvard Avenue Drainage Improvements, Cleary Avenue Roadway and Drainage Improvements, Lake Avenue and Carrollton Avenue Drainage Study, and the Avondale/Bridge City Drainage Evaluation project, we offer the following:

- **Mitchell Theriot, P.E., Director of Drainage Department • Jefferson Parish • 1221 Elmwood Park Blvd., Suite 907, Jefferson, LA. 70123 • 504-736-6753**
- **Mark Drewes, Director of Public Works • Jefferson Parish • 1221 Elmwood Park Blvd., Suite 904, Jefferson, LA. 70123 • 504-736-6783**
- **Michelle Gonzales, CFM Director of Ecosystem and Coastal Management • Jefferson Parish •**



1221 Elmwood Park Blvd., Suite 310, Jefferson, LA. 70123 • 504-736-6653

- **Jeb Tate, Director of Electronic Information Systems • Jefferson Parish • 1221 Elmwood Park Blvd., Suite 700, Jefferson, LA. 70123 • 504-736-6720**

For recent projects we have performed that have similar drainage project development aspects for other clients, we offer the following references:

- **Krista Clark, Parish Engineer • Plaquemines Parish • 333 F. Edward Hebert Blvd., Bldg. 500, Belle Chasse, LA 70037 • 504-297-5343**
- **Donald Bourgeois, Jr., Capital Projects Supervisor • St. Bernard Parish • 1125 E. St. Bernard Hwy, Chalmette, LA. 70043 • 504-278-4250**
- **Darrin Duhe, Chief Operating Officer • St. Charles Parish • 15045 River Road, Hahnville, LA 70057 • 985-783-5102**

**To simplify the submittal, the following projects for BBEC are listed in section L:**

- Waggaman Area Drainage Study (Project No. 2011-03-DR), Jefferson Parish, LA
- Lake Avenue and Carrollton Avenue Drainage Study, Jefferson Parish, LA
- Primrose Box Culverts, St. Charles Parish, LA
- Harvard Avenue Drainage Improvements, Project No 99-046-DR and 99-046A-DR, (Funding Source: Community Development Block Grant), Jefferson Parish, LA
- Manson Ditch and Lower Kraak Outfall System Improvements, Jefferson Parish, LA
- Ames Boulevard Roadside Drainage Improvements, Jefferson Parish, LA
- Cleary Improvements (Veterans Blvd. to West Esplanade Ave.) (Council District 5), Public -Works No. 2017-014-RBP, Jefferson Parish, LA
- West Napoleon Avenue Improvements, Cleary Avenue to Severn Avenue, (LA DOTD Project No. 742-07-0088), Jefferson Parish, LA
- Labarre Road Back-to-Back U-Turn Intersection Improvements (West Esplanade Avenue/North Labarre Road), Jefferson Parish, LA
- Boutte Drainage Improvements, St. Charles Parish, LA

**Additional Relevant Project Listing (not in section L):**

#### **East Bank Master Drainage Plan, Jefferson Parish, LA, 04/2023-Present**

BBEC is currently updating Jefferson Parish's hydrologic and hydraulic model of its 50 square mile East Bank. BBEC worked with the Parish to identify relevant upgrades in the drainage system and has incorporated the improvements from 18 drainage projects into the Parish's SWMM model. To do so, BBEC modified the drainage features in the existing model including drainage subbasins, conduits (pipes and canals), storage areas, and pumping stations. BBEC is currently working with Jefferson Parish to develop criteria for prioritizing additional improvements. The resulting improvements will also be incorporated into the model. The project also includes the development of conceptual phase plans and construction cost estimates for the recommended improvement projects.

#### **Avondale/Bridge City Drainage Evaluation (Area between the Mississippi River and the Union Pacific Railroad, from Huey P. Long Bridge to Avondale Garden Road), Jefferson Parish, LA**

BBEC developed the topographical survey scope for the project and manages the surveyor for the Parish. BBEC is developing a hydraulic and hydrologic model using SWMM v.5 of the Project Area between the Mississippi River and the Union Pacific Railroad, from the Huey P. Long Bridge to Avondale Garden Road; and, developing various alternatives for improvements with cost estimates for the alternatives. BBEC will provide alternatives and associated cost estimates for improvements, including alternate channels to drain the

**Craig Avenue Drainage Improvements, Public Works Project No. 2019-022-DR, Jefferson Parish, LA, 01/2020-Present**

## Digital Flood Insurance Rate Map, Jefferson Parish, LA

[illegible]

As a member of the Jefferson Parish Roads Program Management Team, BBEC was responsible for coordinating several road construction projects between Jefferson Parish and the design consultants, ensuring timely progress of the projects and maintaining the quality and standards of the work. BBEC was also responsible for maintaining computerized project schedules and an on-line reporting system for all projects in the program. The types of projects managed by BBEC include concrete box culvert construction, roadway widening, new roadways, bridge construction and rehabilitation, and all drainage and other utilities associated with the project.

- Served as Program Manager during construction of this project. Project consisted of lining the Whitney Ave. Canal with a concrete flume (20'-wide x 10'-high x 3434 ft.-long) to stabilize the canal banks in order to improve the existing two-lane roadway (including curb & gutter, roadway base repair, milling of asphalt and overlay). Monitored the construction of this project for the Parish. Assisted the Construction Engineer by resolving conflicts or other situations that arose during construction. Presented field concerns to the Parish and coordinated their resolutions. Reviewed Contractor Invoices, Testing Lab Invoices, & Change Orders for processing. Assisted the Contractor with his coordination with another near-by construction operation (98-031-RBI). Coordinated the hauling of excavated canal material with the Contractor and the Parish-operated landfill to use for cover material. Assisted the Construction Engineer with his dealings with the utility company to move their lines. Closely monitored the vibration results from the Testing Lab to keep the vibrations from the construction operations to a minimum (worked with local leaders and their concerns for private property).

- **Whitney Ave Improvements. (Westbank Expressway to Stumpf Blvd.) SPN # 98-031-RBI**

Served as Program Manager during construction of this project. Project consisted of closing the Whitney Ave. Canal with several concrete box culverts (triple-barrel 433 feet, double-barrel 550 feet, single barrel 2825 feet) to enclose the canal in order to improve the existing two-lane roadways on each side of the canal and add U-turns in various locations (including curb & gutter, roadway base repair, milling of asphalt and overlay, sub-surface drainage, traffic signalization). Monitored the construction of this project for the Parish. Assisted the Construction Engineer by resolving conflicts or other situations that arose during construction. Presented field concerns to the Parish and coordinated their resolutions. Reviewed Contractor Invoices, Testing Lab Invoices, & Change Orders for processing. Assisted the Contractor with his coordination with another near-by construction operation (98-030-RBI). Coordinated the hauling of excavated canal material with the Contractor and the Parish-operated landfill to use for cover material. Assisted the Construction Engineer with his dealings with the utility company to move their lines. Closely monitored the vibration results from the Testing Lab to keep the vibrations from the construction operations to a minimum (worked with local leaders and their concerns for private property). Worked closely with Parish officials to solicit funds from an incorporated city to help replace the deteriorated water line and line the deteriorated sewer line prior to proceeding with a reconstructed roadway. Met with local businesses and the Construction Engineer to facilitate access to all driveways during construction.

**Drainage Pump Station Fuel Storage Secondary Containment, Jefferson Parish, LA, 09/2002-06/2004**

BBEC designed secondary containment systems to contain diesel fuel at 11 west bank drainage pump stations so that the fuel from the largest storage tank on the site would be retained in the event of a diesel fuel spill. BBEC developed details for containment systems such as concrete retaining walls for tanks farms stored on existing slabs, and lining systems for earthen containment ponds if the slab option did not provide enough volume. BBEC provided the details to the Drainage Department, who in-turn advertised the work for public bid as funding allowed and administered the work through construction.

**Canal Monumentation Program, Jefferson Parish, LA, 01/2004-12/2005**

BBEC worked with the Parish's Drainage Department to develop and implement a canal monumentation project for the entire Parish. The project included stationing the canals with vertical and horizontal monuments strategically located, locating right of way and servitude information, researching existing data and projects for data relevant to the project such as current or past projects, subdivision plats, the Parish's GIS, and other information available for the implementation of the project.

**Bissonet Plaza Master Drainage Plan (A/E Project No. 20-1708), Jefferson Parish, LA, 05/2018-05/2021**

BBEC developed a hydrologic and hydraulic (H & H) model of a 180 acre residential (zoned R1) area in Jefferson Parish, Louisiana, said area bounded by Power Boulevard, Kawanee Avenue, West Esplanade Avenue, and the Elmwood Canal. BBEC developed a limited scope of services for the necessary topographical survey; provided oversight and reviewed the final topographic survey; developed the H & H model using third party software; coordinated the model with the Parish's own parish-wide H & H model; and provided the running model to others for evaluation of improvements.

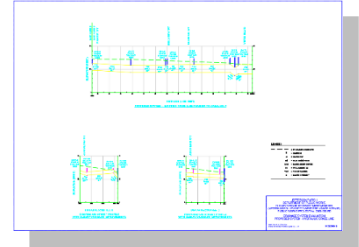
**Design of Access Ways and Ladders at Drainage Pump Stations, Project No. 2014-022-DR, Jefferson Parish, LA, 11/2014-11/2019**

The projects included the design of access ways and ladders at various drainage pump stations on the East bank and Westbank of Jefferson Parish identified as follows: Project I: Bondable, Elmwood, Estelle No. 1, Estelle No. 2, Hero, Lake Cataouche No. 2 and Westminster. Project II: Suburban, Duncan and Planters. Project III: Parish Line, Ames, Bayou Segnette, Mount Kennedy, Westwego No. 2 and Whitney-Barataria. Jefferson Parish determined the need for protected access ways and ladders at drainage pump stations to allow operators safe movement to outside equipment. BBEC prepared cost estimates and designed ladders, stairs, and elevated walkways in 16 drainage pump stations to connect elevated structures and allow

personnel to access the top of structures within Jefferson Parish. Design included analysis and details to retrofit new items to existing structures. BBEC also performed Bidding, Construction Management, Resident Inspection and As-built services for Project I.

### Cleary Avenue Roadway and Drainage Improvements, Jefferson Parish, LA

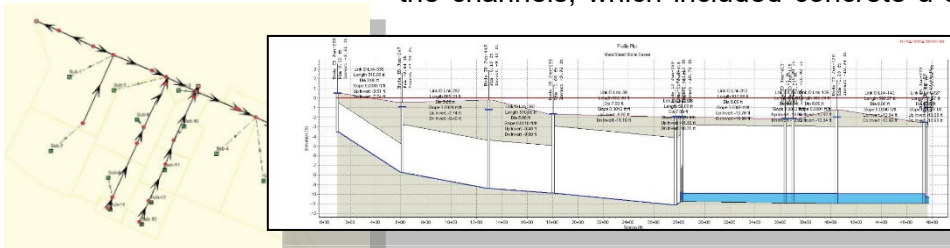
The project included reconstruction of approximately 4000 feet of concrete roadway, redesign of existing drainage system and general improvements to existing infrastructure on Cleary Avenue from Veterans Boulevard to West Esplanade Avenue. Hydraulic modeling and studies were performed on the existing drainage system to determine the size and location of new trunk lines to be constructed with this project. BBEC performed the modeling, design, evaluation (drainage under roadway), and bidding services. The project is currently under construction. BBEC performed construction administration and resident inspection services.



### Widening / Stabilization of Congressman Hebert, Creely, and Bluebird Canals, St. Bernard Parish, LA, 01/2015-Present

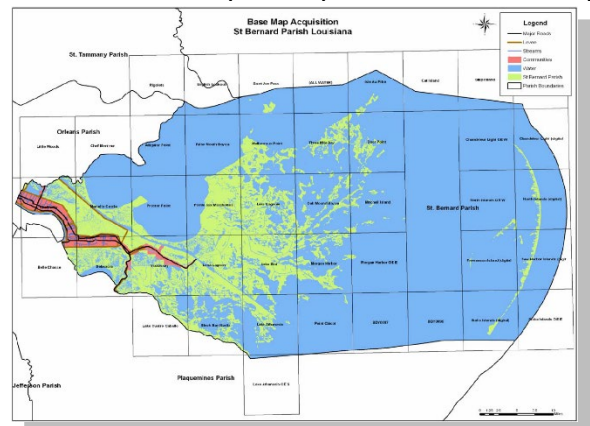
The project includes increasing the capacity and improves the stability of Congressman Hebert, Creely, and Bluebird Canals, that consists of 11,600 linear feet of open canal and culverts ranging from 4-feet bottom width to 16-feet bottom width channels. BBEC coordinated with St. Bernard Parish, Lake Borgne Basin Levee District, and the Louisiana Department of Transportation and Development to obtain information regarding the existing drainage plan. BBEC performed a hydrologic and hydraulic analysis of the existing system to evaluate the entire area for the 5-year, 10-year, and 25-year storms. BBEC established the design cross sections for the channels, which included concrete u-channels, concrete box culverts, and

round and arched pipe, and concrete lined trapezoidal sections, depending on the availability of land and other conditions. 50% Final Designs have been submitted to the client.



### Map Modernization Project (DFIRM) (Contract No. EMT-2005-CA-0110) (2003 Contract), St. Bernard Parish, LA

BBEC assisted FEMA develop St. Bernard Parish's flood insurance rate maps as part of FEMA's map modernization program. BBEC prepared the project scoping document for St. Bernard Parish and received FEMA approval in accordance with FEMA document Guidance for Scoping Flood Mapping Projects. BBEC incorporated the Parish's hydraulic features into the GIS. BBEC performed the necessary hydraulic and hydrologic studies and analyses necessary for the implementation of the map modernization project by using USCAE's hydraulic and hydrologic modeling software HEC-RAS and HEC-HMS. BBEC incorporated the results of the hydrologic and hydraulic studies GIS to develop the necessary flood plains. BBEC prepared a Base Map for the project (streets, ditches, benchmarks, etc.) from St. Bernard Parish's existing GIS, modifying the format to FEMA standards. BBEC has submitted all hydraulic and hydrologic and survey work for independent QA/QC and is currently developing DFIRM base maps. All work associated with the development of the DFIRMs were in strict compliance with the National Flood Insurance Program.



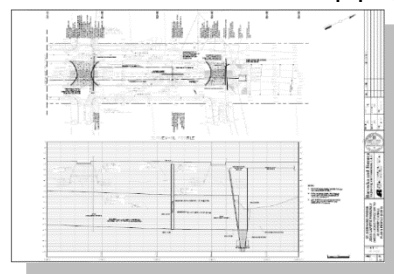


#### **LA-45 Evacuation Route Basin Drainage Improvements, Lafitte Area Independent District, LA, 02/2020-Present**

BBEC, performing as sub-consultant, developed H&H models for the LA-45 Evacuation Route Basin, both for existing conditions and to reflect the proposed Lafitte Tidal protection project. The analysis identified internal drainage problems resulting from the completion of the Tidal Protection project and established pipe, ditch, canal, and LADOTD roadway culvert sizes. BBEC also modeled discharge pump station and determined the capacity for each of the three pump stations. BBEC also provided Drainage Maps and Conceptual Storm Sewer Routing Plans to show ditches and storm sewer locations, and sized required, and identify any potential problem areas, plans and profiles, required right-of-way and construction access, and any impacts to existing properties.

#### **Project Worksheet 20824 – Storm Drains, Jean Lafitte Parkway Drainage Line Repairs/Replacement, St. Bernard Parish, LA, 06/2014-11/2019**

The project consisted of the complete replacement of about 4,200 linear feet of 72-inch to 96-inch drainpipe, with drainage structures and smaller lateral lines to collect stormwater from existing roadway catch basins. The project also included the replacement of roadway intersections where the drain line crosses streets. The project bid was \$3.9 million and the work is complete. BBEC performed all design, bidding, and is performing the construction services for the project. In addition to the normal design services, BBEC obtained a Coastal Use Permit determination, and USACE wetlands permit determination, and a SLFPA-E (regional levee district) permit for the project.



#### **CN Railroad Culverts in Ormond, Project No. P200801, Ordinance No. 20-9-5, St. Charles Parish, LA, 10/2020 – Present**

BBEC is performing engineering services related to improving the drainage systems crossing Canadian National (CN) Railroad System on the east bank of St. Charles Parish. The project includes the drainage facilities crossing and/or adjacent to the CN railroad at Ducayet Drive, Ormond Oaks Drive, Destrehan Drive, Longview Drive, Longwood Drive, and S. Destrehan Avenue. The project includes the installation of (6) 60-inch culverts, (2) 54-inch culverts, and (1) 48-inch culvert crossing the railroad at various locations. The project also includes the installation of 60-inch drainpipe, cast-in-place concrete box culverts, u-channels, and other drainage structures. BBEC is performing design, construction management, and permitting of the project. BBEC is also coordinating with and managing the surveying, and geotechnical engineering services.

#### **Drainage Pumping Stations Improvements, St. Bernard Parish, LA, 2005**

BBEC evaluated the condition and performance of 18 existing drainage pump stations in St. Bernard Parish and made recommendations for improvements. The evaluation consisted of site visits to observe condition and make test pump runs to measure performance, developing computer models to evaluate alternatives for improvements, perform hydrologic analysis to determine required capacity, and evaluate costs of improvements to arrive at the most cost effective improvements. BBEC prepared plans and specifications for several stations.

#### **Cypress Park Subdivision Drainage Evaluation, St. Tammany Parish, LA, 11/2016-12/2017**

BBEC performed a hydraulic and hydrologic study of the Erindale Heights and Cypress Park Subdivisions (about 450 acres of single-family residential property). The study consisted of developing a computer model of the hydrology and drainage system consisting of natural channels, open ditches, closed conduits, and culverts. BBEC evaluated the 5, 10, 25, 50, and 100 year storms, and developed several alternatives for addressing the flooding concerns. BBEC provided pros and cons, permitting concerns, and construction cost estimates related to the alternatives. The alternatives considered included elevation adjustments to open channels, increased closed conduit usage and size of existing closed conduits, levees, and pump stations.



#### **Bayou Gauche Drainage Analysis, St. Charles Parish, LA, 01/2003-12/2005**

The project included updating the Parish's existing hydraulic and hydrologic computer models with current developments for the Sunset Drainage District watershed in St. Charles Parish. The Parish's existing HEC -1 and HEC-2 hydraulic models were evaluated and revised to include infrastructure improvements throughout the drainage district. The existing models were converted to HEC-RAS and HEC-HMS for use in this study and future evaluations. Model runs were performed to verify the need for drainage pump station improvements in the area and determine the improved capacity of the pump station.

#### **Guichard Canal Area Drainage Evaluation, St. Bernard Parish, LA, 03/2004-04/2005**

The project consisted of evaluating the ability of an existing drainage system to handle the 10-year storm for a 200-drainage basin in a residential area primarily consisting of open ditches and miscellaneous culverts with multiple outfalls into the Guichard Canal. The area is bounded by the Guichard Canal on the west, Paris Road on the east, Judge Perez Drive on the south, and Patricia Street on the north. The area also contained two drainage pump stations that were designed to drain the subsurface system, while the main volume of flow during the rain events utilized roadside ditches and some subsurface drain lines. BBEC developed a drainage layer in the Parish's GIS, surveyed elevations of the drainage features, developed a hydrologic and hydraulic model for the area, modeled the area and determined all deficient drain lines. BBEC made recommendations for the necessary improvements to cover the 10-year storm.

#### **Plaza Drive Area Drainage Evaluation, St. Bernard Parish, LA, 2005**

The project consisted of evaluating the ability of an existing drainage system to handle the 10-year storm for a 150 drainage basin in a residential area primarily consisting of open ditches and miscellaneous culverts with multiple outfalls into the drainage trunk line under Judge Perez Drive to the north and the drainage canal along St. Bernard Highway to the south. The area includes three parallel streets, including Plaza Drive. The area also contained two drainage pump stations that were designed to drain the subsurface system, while the main volume of flow during the rain events utilized roadside ditches and some subsurface drain lines. BBEC developed a drainage layer in the Parish's GIS, surveyed elevations of the drainage features, developed a hydrologic and hydraulic model for the area, modeled the area and determined all deficient drain lines. BBEC made recommendations for the necessary improvements to cover the 10-year storm.

#### **Parish-Wide Drain Line Cleaning – Phase I, St. Bernard Parish, LA, 2005**

Immediately following Hurricane Katrina many of the Parish's streets were flooded and had difficulty draining due to the storm debris clogging its drainage system. The Parish issued an emergency contract for debris removal services, including the removal of debris from Parish drain lines. BBEC immediately issued work orders to the contractor to remove the debris and restore drainage, and monitored the work being performed. BBEC utilized the Parish's existing GIS system to accurately track and report progress. BBEC worked with the Parish and FEMA to obtain FEMA Public Assistance eligibility determinations and assisted the Parish in securing \$9.3 million in FEMA funding to cover the project costs. Mr. Bonura managed the project through completion, including developing the necessary work orders and field protocol for resident inspection and quality control, overseeing the document control and invoice review in the office, coordination of disposal sites, and contract compliance.

#### **Parish-Wide Drain Line Cleaning – Phase 2, St. Bernard Parish, LA, 2007**

Following Hurricane Katrina, while BBEC was managing and administering an emergency drain line cleaning contract, BBEC developed bid documents to publicly bid a drain line cleaning contract to complete the cleaning of all Parish drain lines not covered by the emergency contract (Phase 1). BBEC assisted the Parish through the Public Bid process to obtain a new contractor. BBEC utilized the Parish's existing GIS system to accurately track and report progress, and to verify that work performed under Phase 1 was not duplicated under Phase 2. BBEC worked with the Parish and FEMA to obtain FEMA Public Assistance eligibility determinations and assisted the Parish in securing FEMA funding to cover the project costs.

**Bar None East Phase III, St. Charles Parish, LA, 03/2004-08/2005**

The project included reconstruction of an existing drainage system in the Bar None Subdivision along Canyon and Holster Lanes. BBEC's services included a hydraulic analysis of the existing drainage system using StormCAD hydraulic modeling software, recommendations for improvements, and the preparation of plans and specifications for the recommended improvements. The project consisted of the installation of approximately 1,000 linear feet of 18-inch diameter drain-pipe and associated inlets and structures, typical utility coordination and relocation, and pavement restoration.

**Gloria Drive Pump Station, Project No. 20-2022A, Lafitte Area Independent Levee District Drainage, Town of Jean Lafitte, LA, 05/2020-Present**


BBEC is providing Design Engineering Services for the Gloria Drive Pump Station Improvement Project which consists of expanding the existing pump station by doubling its capacity from 45 cfs to 90 cfs.

The existing pump station has one pump on a pile supported structure, adjacent to an existing levee. The existing pump discharge pipe runs through the levee, discharging on the other side. On the pump station side, the levee is supported by a timber bulkhead, part of which has deteriorated over time. When constructed, the levee project provided for a second pipe penetration in anticipation of this project. The pump station has an existing stand-by generator, which was appropriately sized for the single pump.

The proposed scope of the 45 cfs expansion includes:

- Installing a new 45 cfs pump in line with the second discharge pipe provided by the levee project
- Constructing a new reinforced concrete pump station structure for both pumps, with bar screens (mechanical if funding allows) at the entrance. The new structure will replace the deteriorating timber bulkhead, as well.
- Repairing or replacing the timber bulkhead wall not addressed by the pump station structure.
- Installing a new generator structure and generator sized to run both pumps and incidental equipment.
- Extending the new pump discharge pipe as required and providing for scour protection at the outfall.
- Building the project in phases to utilize the existing pump during construction or providing temporary pumping during construction.

**O. To the best of my knowledge, the foregoing is an accurate statement of facts.**

Signature:  Print Name: Jeffrey Bonura, P.E.

Title: Sole Member Date: June 21, 2024