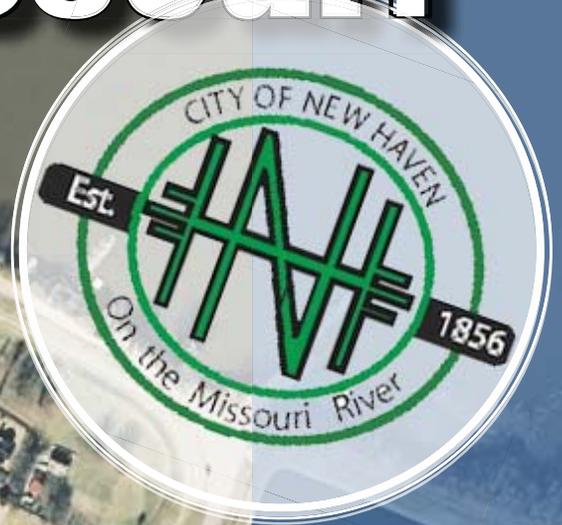


New Haven Missouri



Qualifications Levee Accreditation

KLINGNER
& ASSOCIATES, P. C.
Engineers • Architects • Surveyors

Klingner has performed
seventeen Levee
Accreditations

New Haven Missouri

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Klingner & Associates
616 N. 24th Street
Quincy, IL 62301
Phone: 217.223.3670
Fax: 217.223.3603

Contact: Gavin Risley
Email:
grisley@klingner.com



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KLINGNER & ASSOCIATES, P. C.

Transmittal Letter

March 6, 2014

Mr. Steve Roth, City Administrator
City of New Haven
101 Front Street
New Haven, Missouri 63068

Re: Request for Proposal - Levee Accreditation

Dear Mr. Roth:

In the qualifications which follow, we have demonstrated how Klingner can help the City of New Haven achieve their project goals in the most cost-effective and efficient manner. We value our working relationships with our clients, and are committed to developing a working relationship with the City of New Haven that will exceed your expectations.

Klingner has a long history of providing Water Resources services. The firm was originally founded with drainage and flood control specialties. We have personnel certified in Engineering and/or Surveying in the states of Missouri, Illinois, Iowa, Indiana, Wisconsin, Kentucky and Minnesota. We have undertaken a wide diversity of projects with our highly specialized and diverse staff.

Klingner has performed levee and drainage work on the Mississippi, Missouri, Illinois, and a multitude of other rivers throughout the Midwest. Our experience and expertise are diverse, but we have become somewhat specialized in FEMA Accreditation, having worked on PALs for seventeen (17) different clients. ***This experience will enable us to provide New Haven with an efficient and streamlined Levee Accreditation project.***

Your consideration of the Klingner & Associates team is greatly appreciated. Please feel free to contact us if you have any questions.

Sincerely,
KLINGNER & ASSOCIATES, P.C.



Gavin Risley, P.E., Certified Floodplain Manager

KLINGNER & ASSOCIATES, P. C.

Summary of Qualifications

Technical Competence / Specialized Experience

Klingner & Associates, P.C. has over 100 years of experience with every aspect of levee engineering, including permitting, design, construction engineering, and observation. The firm was initially founded on drainage and levee land reclamation projects. Currently, Klingner is actively involved in approximately ten levee improvement projects, products of the 2008 flood. Over the years, the firm has been involved in numerous levee designs, from the turn of the 20th century to the 1960s rehabilitation projects, to the 1993 and 2008 flood recovery levee rebuilds / improvements.

Klingner & Associates utilizes in-house specialized services typically required in levee design and construction. Such services include geotechnical engineering / materials testing, permitting services, and surveying. With a full geotechnical lab in Hannibal MO, Klingner has the capability to investigate levee design stability, seepage, and foundations, in addition to testing capabilities during construction.

Permitting levee improvements and modifications can be a monumental task. Klingner is familiar with the U.S. Army Corps of Engineers (USACE) permitting staff and thoroughly understands the process. In particular, Klingner has provided both major and minor 408 and 404 permitting assistance. Klingner also has the specialized services that are required for permitting, including wetland delineation/mitigation, habitat assessments, hydrologic and hydraulic engineering. We work closely with historical consultants to provide information typically required in the archaeological permit process. These permits are required by the Corps of Engineers for any levee improvements and/or for a multitude of other project types. Additionally, if sand dredging or borrow material is necessary, Klingner understands the permit requirements and has the specialized experience and understanding to see the process through (dredge permits). Finally, Klingner understands the PL84-99 requirements when levee modifications are proposed, insuring the newly constructed / improved levees will be included in the program and updated in the official Operations & Maintenance Manual.

With several surveying crews in Quincy and a full crew in Hannibal, Klingner has the required staff & experience to provide surveying services throughout a levee improvement project, from design, construction, and post construction. Our surveying staff is intimately familiar with USACE surveying standards, including preferred elevation datums, horizontal projections, and As-Built requirements.



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FABIUS RIVER DRAINAGE DISTRICT

100 Year Certification & FEMA Coordination

The Fabius River Drainage District is located on Missouri side of the Mississippi River across from Quincy, Illinois. The District includes approximately 17 miles of levees that protect a variety of property types. The District is home to agricultural, residential, commercial, and industrial properties and is traversed by U.S. Route 24, U.S. Route 61, and a railroad. Protecting these properties and vital infrastructure is extremely important for the Fabius District.

This project involved uniformly improving the levee protection for this large drainage district on the Mississippi River. The revised USACE Flow Frequency study calculated 100-YR profiles higher than the previously used 1979 USACE study. Having 100-YR levee certification, the Drainage District authorized Klingner & Associates to update the certification to meet the new requirements. Project services included use of existing survey data as part of the original 100-YR levee certification, survey of new cross-sections and profiles, earthwork calculations, coordination with USACE, development of cost estimates, dredge permits, mussel surveys, wetland delineation, sedimentation basin design, plan of reclamation amendment, Right of Way drawings, public meeting coordination and provide survey control. Additionally, revised hydraulic analysis was necessary because of the changed boundary conditions for all diverted and interior flows.

Upon completion of maintenance work by the District, the levee was resurveyed and successfully re-accredited through FEMA Region VII in Kansas City, MO.

Elevations and cross-sections were submitted for FEMA reviews and approval post-2008 flood. Project completed December 2008.



Fabius River Drainage District
Mr. Roger Sutter
573.393.2003

Client Reference

Your trusted solution.

AKnowledge

MCGEE CREEK / COAL CREEK DRAINAGE & LEVEE DISTRICTS

Provisionally Accredited Levee (PAL)

Klingner & Associates, P.C. (K&A) was contracted by both the McGee Creek and Coal Creek Districts (Districts) on the Illinois River to perform a FEMA Provisionally Accredited Levee (PAL) review under the FEMA 44 CFR 65.10 requirements. The review and analysis was executed to retain 100-year levee accreditation for both Illinois River Districts that are located between Meredosia and Beardstown, Illinois. These two independent projects considered approximately 28 miles of levees, multiple levee closures, and approximately 29 square miles of drainage basin.

Project services included utilization of the USACE's National Levee Database, supplemental surveying work, USACE inspection review, freeboard analysis (modeling/mapping), interior drainage analysis (modeling/mapping), settlement calculations, slope stability analysis, and development and/or review of operation and maintenance procedures. The 65.10 submittals were accepted by FEMA Region V allowing the Districts' levees to remain accredited.

Services also included USACE Periodic Inspection review, interpretation, and further analysis/coordination with USACE - St. Louis District.

Skill



Coal Creek Drainage & Levee District
Mr. Greg Rebman Commissioner
217.323.4605

McGee Creek Drainage & Levee District
Mr. Larry Wiese Commissioner
217.257.8974

**Client
References**

Your trusted solution.

SOUTH QUINCY DRAINAGE & LEVEE DISTRICT

Provisionally Accredited Levee (PAL)

Expertise

South Quincy Drainage & Levee District (District) provides flood risk reduction to agricultural property, railroad infrastructure, roadways, wastewater treatment facilities, and a multitude of industrial properties along the Mississippi River just south of Quincy, Illinois. The ability to retain 100-year accreditation is vital to this protected 5,800 acres of property (USACE estimated 300 million in industry protected in 1986).

Klingner provided professional services for South Quincy Drainage & Levee District Provisionally Accredited Levee (PAL), in accordance with FEMA 44 CFR 65.10. The services provided included the review of USACE documentation on the levee system, the drilling and analysis of geotechnical borings, an interior drainage analysis (modeling/mapping), hydraulic analysis for embankment protection, and certification of 65.10 certification sheets for all components.

The Interior Drainage section of this submittal was extremely beneficial. Utilizing newly collected LiDAR surface data and updated pump station information, Klingner was able to more accurately map the interior floodplain. The end result was a reduction of 2ft in the interior BFE, which is extremely beneficial for potential future development. This analysis required the use of hydrologic modeling to accurately predict the amount and elevation of interior drainage water.

This FEMA PAL is currently under review at FEMA Region V in Chicago, Illinois.



Client
Reference

South Quincy Drainage & Levee District
Mr. Robert Breckenkamp
217.248.6293

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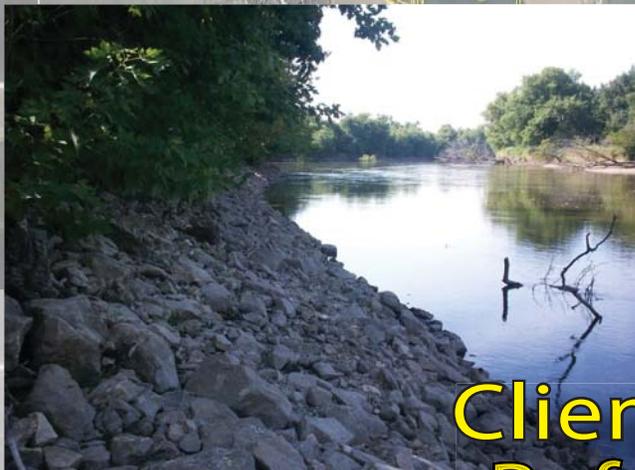
TWO RIVERS LEVEE & DRAINAGE DISTRICT

Provisionally Accredited Levee (PAL)

The Two Rivers Levee & Drainage District is located on the Mississippi River north of Burlington, Iowa. The entire system is comprised of approximately 48 miles of levee along the Iowa River, Mississippi River, and smaller river tributary streams. The levee system protects approximately 47,800 acres of municipal and agricultural property.

Klingner provided professional services for Two Rivers Levee & Drainage District Provisionally Accredited Levee (PAL), in accordance with FEMA 44 CFR 65.10. All requirements were completed, submitted, and accepted by FEMA Region VII in Kansas City, MO. Klingner utilized a multitude of engineering techniques and modeling software to document the levee system's performance and compliance with the FEMA standards. Embankment stability, levee freeboard, and interior drainage all required the use of specialty software packages and engineering interpretation. Each one of these three items is an individual certifiable section of the FEMA 65.10 package. Klingner's work with the District has resulted in an updated Flood Insurance Rate Map for the interior protected area.

Experience



Client
Reference

Two Rivers Levee & Drainage
District

Ms. Vicki Stoller
319.937.6667

FULL-SCALE PLANS HAVE BEEN FILED FOR RECORDING. NOT RESPONSIBLE TO STANDARD SCALE. USE GRAPHIC SCALERS. VERIFY ALL DIMENSIONS AND MEASUREMENTS ON THE FIELD PLANS.

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HUNT-LIMA DRAINAGE & LEVEE DISTRICT

Levee Improvement Project

Innovative

Hunt-Lima Drainage & Levee District is located just south of Warsaw, Illinois along the Mississippi River. The District protects approximately 28,500 acres of primarily residential and agricultural property. The District's levees were most recently constructed to protect against the 50-year flood plus 3 feet of freeboard. As a result of recent flooding of the District (3 events in the last 40 years), the District would like to improve their levee system and attain a 100-year plus freeboard level of protection. Through the performance of this levee improvement project, the District also plans to meet the FEMA 65.10 requirements and become an accredited levee system.

Klingner is providing engineering services for the proposed levee improvements for the Hunt-Lima Drainage & Levee District in Adams and Hancock Counties, Illinois. Overall the project consists of dredging approximately 280,000 CY of sand from the river, and storing the material in linear stockpiles at specified locations along the land side of the existing levee. The dredged sand will be placed and shaped atop the existing levee so that the northern end of the district protects against the 1% chance (100-year) flood event plus four feet freeboard. The levee will be tapered to the southern end of the District which would also protect against the 100 year flood plus three feet of freeboard.

The goal of these improvements is to reduce the flooding impact on the landowners within the District, to keep the District within the Federal PL-84.99 program, and to become a FEMA accredited levee. This would allow the District's Levee system to be recognized by FEMA, which would allow the landowners more liberties within the District and reduced flood insurance rates.

Scope of services included:

- Major 408 Permitting
- 404 Permit
- Geotechnical Analysis / Review
- Interior Drainage Study
- Mussel Survey
- Preliminary Design and Permitting
- Survey
- Bidding / Construction Engineering / Inspection
- FEMA 65.10
- Update Operations & Maintenance Manual



Client Reference

Hunt-Lima Drainage & Levee
District

Mr. Sam Zumwalt
217.256.4619

Your trusted solution.

KLINGNER & ASSOCIATES, P. C.

Principal in Charge

Michael Klingner, PE



Education

Master of Science in
Civil and Environmental
Engineering (Construction
Management Option)
1984, University of
Wisconsin-Madison

Bachelor of Science in
Civil Engineering (Soils/
Structural Option) 1977,
University of Missouri-
Columbia

Registrations

Professional Engineer:
Missouri #EN 20602 (1982)
Illinois #062-040550 (1982)
Indiana #PE10100335
(2001)
Michigan #6102049406
(2002)

Professional Societies

Currently Chairman ,
Upper Mississippi Illinois &
Missouri Rivers Association
(UMIMRA), member since
1984
ACEC National Levee
Safety Committee and
immediate Past National
Director for ACEC-Illinois

President and CEO of Klingner & Associates, P.C. since 2000. He has been with the firm since 1977.

Mr. Klingner has over thirty years' experience in the engineering and construction fields, and has been Project Manager for numerous multi-million dollar projects with various funding entities, specializing in river management and improvement projects.

Principal-in-Charge for Drainage Districts, Corps of Engineers, and floodplain management projects. Recent projects include the Quincy Area Hydropower Project, with experience in the Federal Energy Regulatory Commission hydroelectric licensing process, and application for Energy Efficiency grants, and Lock & Dam #18 Hydropower FERC permits for the City of Burlington, Iowa. Mr. Klingner has experience with renewable energy projects with Lock and Dams 20, 21, 22, 24, and 25, accredit the Provisionally Accredited Levee (PAL) for the Milan, IL / Big Island River Conservancy District Local Flood Protection Project (LFPP), Fabius River Drainage District-Marion County Missouri update of certification to meet the revised USACE Flow Frequency study calculated 100-YR profiles and other post-flood of 2008 restoration projects.

Other projects include Sny Island Levee & Drainage District 100 year Flood Certification in Adams, Brown & Calhoun Counties, Illinois. Project Manager for South Quincy Drainage & Levee District interior drainage and Mississippi River Seepage Pumping Improvements and revision of 100 year Interior Flood Elevation. Project Manager for Cedar Creek Linear Parkway. Non-structural flood management project for conservation easements along three miles of waterway, tributary to Mississippi River. Multi-participant project including Great River Economic Foundation, City of Quincy, Quincy Park District, and Illinois Department of Natural Resources. Principal-in-Charge for Henderson County 100 year levee certification for Henderson County Drainage District 1 & 2, FEMA Application MT-2, Forms 1, 2 & 8 submittals, and Corps of Engineers levee elevation & 100 year Interior Drainage Elevation Study, including Mississippi River Seepage. Project Manager for Two Rivers Regional Council Inland Water Terminal and Foreign Trade Zone Study for Adams, Brown, Cass, Pike, Schuyler and Scott Counties along the Illinois and Mississippi Rivers. Principal-in-charge 100 year levee certification project for Marion & Lewis County (Fabius River Drainage District), Missouri.

Project Manager for State of Illinois Capital Development Board Emergency Fast Track Construction for FEMA and Illinois Emergency Management Agency provisional living quarters due to Flood of 1993 in Kinderhook, New Canton, and Hardin, Illinois. Winner of 1994 CDB Madigan Award Special Merit for Teamwork under Emergency Conditions.

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KLINGNER & ASSOCIATES, P. C.

Water Resources Department Manager

Bryan Bross, PE, RG



Education

B.S. in Geological Engineering, (1993)
Magna Cum Laude,
University of Missouri-Rolla

M.E. in Geotechnics,
Missouri University of
Science & Technology

Registrations

Licensed Professional Engineer:

Illinois, 062-052892,
(1999)

Missouri, EN 030244,
(1999)

Iowa, 17084, (2004)

Alabama, 32149-E (2011)

Registered Geologist:

Missouri Certificate
Number 0981 (1997)

Illinois 196-000535 (1998)

Professional Societies

Member, Association of
Engineering Geologists

Member, Society of
American Military
Engineers

Member, Iowa
Groundwater Association

Senior Geological Engineer for Klingner & Associates, P.C., he has been with the firm since 1994.

Branch Office Manager, Burlington Iowa Office Director

Performed the feasibility study, permit acquisition, design, contractor negotiation, project coordination, and construction observation of the Skunk River Erosion Protection Project at the Green Bay Levee & Drainage District No. 2 near Wever, Iowa. The project consisted of 2600 lineal feet of riprap to protect the flank levee along the Skunk River from encroachment by river bank erosion.

Performed topographic data collection, design, bidding, permit acquisition assistance, and provided construction phase observation services for a six (6) phase major levee rehabilitation and maintenance project utilizing Digital Terrain Modeling for the Iowa River – Flint Creek Levee District #16 involving dredging over 200,000 CY of sand from the Mississippi River, relocating over 96,500 CY of sand from multiple borrow sites by truck and scraper, in-place mixing of over 13,400 CY of sand to achieve a seepage berm gradation to meet Corps of Engineers requirements, and reshaping of over seventeen (17) miles main stem levees. Total project costs exceeded \$2.5 million and were performed on time and under budget in preparation for levee certification services for the Federal Emergency Management Agency.

Provided levee certification to meet FEMA requirements of 44 CFR 65.10 for one (1) levee and drainage system in Region 5, and two (2) levee and drainage systems in Region 7 as follows:

- Milan – Big Island LFPP (Region 5 – Illinois)
- Two Rivers Levee & Drainage Association (Region 7 – Iowa)
- Muscatine Island LFPP (Region 7 – Iowa)

Performed detailed computer simulated hydraulic analysis using HEC-2 on Mississippi River between L&Ds #21 & #22 in order to obtain permit from Illinois Department of Transportation to raise levees in the Sny Island Levee & Drainage District.

Performed the feasibility study, permit acquisition, design, contractor negotiation, project coordination, and construction observation of the Skunk River Erosion Protection Project at the Green Bay Levee & Drainage District No. 2 near Wever, Iowa. The project consisted of 2600 lineal feet of riprap to protect the flank levee along the Skunk River from encroachment by river bank erosion.

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KLINGNER & ASSOCIATES, P. C.

Water Resources Engineer

James Powell, PE



Education

Bachelor of Science in Agricultural Engineering, University of Illinois at Urbana-Champaign, 1998

Master of Science in Civil Engineering, University of Illinois at Urbana-Champaign, 2001

Registrations

Licensed Professional Engineer:
Illinois #062-057593 (June 2004)
Missouri #2005014632 (December 2005)

Certified Floodplain Manager—IL 07-00342 (2007)

Professional Societies

American Society of Agricultural Engineers

Member, Alpha Epsilon, Honor Society for Agricultural Engineers

Illinois Society of Professional Engineers

Illinois Association for Floodplain & Stormwater Management

Water Resources engineer with Klingner & Associates, P.C. from 2001 – June 2002, and 2007 to 2011. Water Resources Department Manager from 2009 to Dec 2011. Special on-call Consultant for Klingner from January 2012 to current.

Prior Engineering experience includes stormwater feasibility studies, levee encroachment analysis, bridge hydraulic reports, flood control studies, water supply analysis, hydraulic analysis of municipal and rural water systems, rural water system facilities planning, wastewater facilities planning, stable channel design, streambank stabilization, pump station planning and design, and many other hydrologic and hydraulic studies.

He also worked with the Sny Island Drainage District, in which interior drainage was analyzed as part of FEMA's flood insurance rate map revisions. Hydrologic and hydraulic models were used, along with frequency analysis to determine the 100-year floodplain for the 120,000 acre drainage district. Interior drainage studies were also performed for the Fabius River Drainage District, involving the use of hydrologic and flood routing models. Floodplain mapping and flow profiles were also developed for Cedar Creek Linear Park, Quincy, IL, using current hydraulic and hydrologic flow and mapping software.

Dam safety inspections and dam improvements and permitting for recreational and water reservoir lakes. Also provided technical expertise for numerous levee & drainage districts to update assessments in Illinois and Missouri, and induced head permitting with State agencies.

Project experience also includes study and design of flood protection levees / floodwalls in Marseilles, IL, design and quality control of uniform levee improvements, Fabius River Drainage District, MO, levee improvement feasibility, Des Moines County Drainage District #8, IA, Mid-America Intermodal Port Authority design of barge dock and levee crossing, Quincy, IL, and hydraulic and hydrologic studies of hydropower feasibility, Quincy, IL.

Additional project experience includes working with FEMA and USACE for accreditation (PAL) of over fifteen (15) flood protection systems. Prior experience involved designing Best Management Practices (BMPs) for urban and agricultural lands, including significant efforts in streambank stabilization.

Special consultant on computer modeling of flood plain and water resource projects, including Hydrologic Engineering Center Flood Damage Reduction Analysis (HEC-FDA), Monte Carlo analysis, and HEC-RAS modeling. Development of depth/damage functions and mathematical modeling.

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KLINGNER & ASSOCIATES, P. C.

Water Resources Engineer

Gavin Risley, PE CFM



Education

Bachelor of Science
in Environmental
Engineering, summa cum
laude, 2008, Missouri
University of Science and
Technology

Master of Science in
Environmental Engineering,
2009, Missouri University
of Science and Technology

Registrations

Professional Engineer:
Illinois #062-065312 (2013)
Missouri #2013025031
(2013)
Iowa #21968 (2014)
Kentucky #29376 (2013)

Certified Floodplain
Manager Cert. #IL-10-
00529

Continued Education

Advanced Modeling Using
HEC-RAS, University of
Wisconsin – Madison

Unsteady Flow Modeling
Using HEC-RAS,
University of Wisconsin –
Madison

Water Resources engineer with Klingner & Associates, P.C. since 2010.

Mr. Risley's experience to date includes hydrologic/hydraulic engineering/modeling, geotechnical modeling, civil/site design/layout work, permitting, and environmental remediation. More specifically Mr. Risley has had project or research involvement with the following project types:

- FEMA 44CFR 65.10 Levee Accreditation
- HEC-RAS Steady & Unsteady Flow Modeling for:
 - Bridge/Culvert Modeling
 - Sediment Transport Modeling
 - Spillway Design Modeling
 - Induced Head/Encroachment Analysis Modeling
 - Floodway Modeling for Map Revisions
- Hydrologic Modeling using HEC-HMS for:
 - Flow development
 - Interior drainage studies for Map Revisions
- Slope Stability & Seepage Modeling for:
 - Lake Dams
 - River Levees
- Drainage Analysis for:
 - Drainage disputes
 - Contaminated site discharge estimations
- Streambank Stabilization Layout/Design for:
 - Riprap revetment
 - Stream barbs
 - Wing dams
- Energy Dissipation Structure Design including:
 - Stilling basins
 - Baffle blocks
 - Check dams
- Pump Station work including:
 - Design
 - Testing
- Dredging work including:
 - Bathymetric Survey
 - Site planning
- Lake work including:
 - Layout
 - Permitting
 - Spillway design
- Assessment of Benefit Calculations for Drainage Districts Permitting for:
 - EPA
 - DNR
 - USACE
- Environmental Remediation work including:
 - Contaminated sediment remediation techniques

Your trusted solution.

KLINGNER & ASSOCIATES, P. C.

Hydraulic Engineer

Mark Bross, PE



Education

Bachelor of Science in Civil Engineering - 1996, University of Missouri at Rolla, Rolla Missouri

Registrations

Professional Engineer:
Illinois #062-054706 (2001)
Missouri #2001004562 (2001)
Iowa #21162 (2012)

Professional Societies

American Concrete Institute
American Society of Civil Engineers
Missouri Rural Water Association

Continued Education

Case Study for Small and Medium Water Utilities – Risk Assessment Methodology for Water Utilities

Modified Sandia Method of VA

Pumping Systems Design, American Society of Civil Engineers

Senior Project Engineer with Klingner & Associates, P.C. since 1996. Experience includes structural analysis and design in steels using LRFD, and reinforced concrete using the ACI Building Code, hydrology, water and wastewater treatment facilities, and transportation systems. Familiar with storm sewer design, hydrological computer modeling, water distribution systems, highway design and construction in accordance with MHTD standards, and construction estimating and scheduling.

Specific experience includes hydraulic modeling of portions of the Mississippi River and interior drainage studies for levee permitting and FEMA certification using HEC-1 and HEC-RAS. Hydraulic modeling of several large rural water systems in Illinois and Missouri including the Clayton-Camp Point Water Commission, Dallas Rural Water District, and Ralls County PWSD #1, and several municipal water systems using Cybernet v3.1. Modeling includes calibration of existing systems and design of water system improvements. Other experience includes some design of highways for Illinois Department of Transportation (IDOT) and Missouri Department of Transportation (MoDOT) and construction inspection of elevated storage tanks, water main, concrete paving operations and bridges.

Experience in Drainage engineering.

- Illinois Department of Transportation – Illinois 336 roadside drainage ditch design, including erosion control measures, 1996; IL 255 roadside drainage ditch design, culvert hydraulics, and energy dissipation structures.
- Sny Island levee and Drainage District – Hydraulic modeling of the Mississippi River from just north of Hannibal, Missouri to just south of Clarksville, Missouri, including Locks and Dams No 22 and 24 for permitting of diversion levee improvement in the District, 1997.
- Henderson County Levee and Drainage District No. 2 – Interior drainage analysis for certifying the Mississippi River mainstem levee for 100-year flood protection and modifying FEMA Flood Insurance Rate Maps in the district, 1998.
- Fabius River Levee and Drainage District – Interior drainage analysis for certifying the Mississippi River Mainstem levee for 100-year flood protection and modifying FEMA Flood Insurance Rate Maps in the district, 1999.
- Illinois Department of Transportation, District 4 – Hydraulic modeling, analysis and reports for replacement of eight (8) bridges at various locations, 2000.
- Missouri Department of Transportation, Bridge Office – Hydraulic modeling, analysis and reports for replacement of a 3 span bridge in Schuyler County.
- Illinois Department of Transportation – Hydraulic modeling for 10 bridge replacements for District 4 (IDOT).
- Missouri Department of Transportation – Hydraulic modeling for several bridge replacements for District 2

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KLINGNER & ASSOCIATES, P. C.

Structural Engineer

Alan Lukens, PE,SE



Education

Master of Science in
Agricultural and Structural
Engineering (co-major)
1987, Iowa State University,
Ames, Iowa.

Bachelor of Science in
Agricultural Engineering
1985, Iowa State University,
Ames, Iowa.

Registrations

Professional Engineer
Iowa #PE-13201 (1995)
Illinois #062-047328 (1992)
Missouri #E-2001020814
(2001)
Alabama #32072-E (2011)
Kansas #22582 (2012)

Structural Engineer
Illinois #081-005167 (1994)

Professional Societies

Member, Illinois Society of
Professional Engineers

Member, National Society of
Professional Engineers

International Code Council

Director of Structural Engineering Services since 2000, Structural Engineer, and Project Engineer for Klingner & Associates, P.C. since 1988. Mr. Lukens has comprehensive experience in structural design.

Project Manager for levee inspection, evaluation and reports for Corps of Engineers on approximately 40 levees; Pavilion Rehabilitation, Siloam Springs State Park; Inspection of Mayer Pond Dam, Adams County, Illinois; and Village of Gladstone Water Supply System, Village of Gulfport Water Supply System.

Mr. Lukens also has a wide range of structural experience for numerous architectural and engineering projects which include Farm & Home Retail/Warehouse Facility, West Central Illinois Area on Aging New Senior Citizen Facility, St. Peter School Kindergarten/Jr. High Addition, Hannibal Clinic MRI Facility, City of Quincy City Hall Plaza, City of Quincy Washington Theatre, Mt. Sterling YMCA, Hy Vee Harrison Grocery Facility, Kohl Wholesale Warehouse, Mississippi Belle Distributing Koch's Lane Bldg., Park Downtown Quincy Parking Structure, Quincy Notre Dame High School Addition, United Community Credit Union Renovation, Knox College Fitness Center, Galesburg CUSD #205, Monmouth College, Southeastern CUSD #337, Pikeland CUSD #10, and St. John Anglican Church Educational Building.

Field technician experience includes bearing capacity testing, nuclear density testing, concrete testing, and concrete pour observations. Project experience includes New Iowa State Penitentiary – Fort Madison.

Your trusted solution.

KLINGNER & ASSOCIATES, P. C.

Geotechnical Engineer

Ronald Craven, PE



Education

Bachelor of Science in
Civil Engineering 1975,
University of Missouri-Rolla

Registrations

Professional Engineer
Iowa #09885 (1982)
Illinois #062-040791 (1983)
Missouri #EN 020124
(1982)

Certifications

ACI Certified Concrete
Strength Testing
Technician, American
Concrete Institute

Project Engineer at Klingner & Associates, P.C. since 2005. Owner and Project Engineer at Hannibal Testing Labs, Inc. December 1983 to 2005. Prior to that he was with another engineering firm for eight years.

He has extensive experience in the geotechnical engineering field and construction materials testing. Coordinated all phases of geotechnical investigations as well as management of construction materials testing and quality control projects that involve earthwork, concrete and asphalt testing and inspection. Eighteen years experience in the management of business functions including marketing, personnel, tax reporting, payroll generation, accounts payable and receivable. Computer skills include Microsoft Word and Excel; proprietary geotechnical engineering programs for boring log preparation, compaction, soil identification, atterberg limits, slope stability, consolidation and permeability testing. Geotechnical engineering analyses for buildings, bridges, earth retaining structures, impoundments and pavements. Coordination, inspection and load testing of deep foundation projects including driven piles, drilled piers and auger cast piles. Utilization of global positioning systems for boring locations as well as standard surveying techniques for elevation data. Groundwater monitoring well installation cost estimating, scheduling and implementation.

Your trusted solution.

KLINGNER & ASSOCIATES, P. C.

Land Surveyor

Steve Mock, PLS



Education

Quincy College, Quincy, Illinois, 1971 and 1972, Majoring in Math.

Registrations

Registered Land Surveyor
Illinois #035-002784 (1986)
Missouri #LS-2539 (1995)

Professional Societies

Member, Illinois Society of Professional Land Surveyors

Member, Missouri Society of Professional Surveyors

Continued Education

Missouri Society of Professional Land Surveyors Annual Meeting

Illinois Professional Land Surveyors Association Annual Conference

Mr. Mock has been a member of the Survey Department for Klingner & Associates since 1973, and the Professional Land Surveyor since 1986. He is Department Manager of the Land Surveying/GIS department since 2011, and experienced in property, topographic, and hydrographic surveys.

Project Manager for Rock Island District Corps of Engineer's projects involving boundary surveys for tower sites and reservoirs; topographic surveys for tower sites, storm sewers, lakes and wildlife preserves; control work for aerial photography and hydrographic surveys. Safety Officer responsible for insuring compliance with all provisions of both the firm's Safety Plan and General Accident Prevention Measures required by the U.S. Army Corps of Engineers.

In charge of Rock Island District Corps of Engineer's projects involving horizontal control densification surveys for 66 miles of Illinois Waterway System, FAA tower site surveys, and engineering surveys for Chautauqua Lake on the Illinois River. As Safety Officer for these projects, he was responsible for insuring compliance with all of the provisions of both the firm's Safety Plan and the General Accident Prevention Measures as required by the U.S. Army Corps of Engineers. Involved with depth soundings at Lock and Dam 22, Saverton, MO; construction staking and control layout for the Correctional Facility at Mt. Sterling, IL; and Dot Food surveys including horizontal and vertical controls, topographic and property surveys, Mt. Sterling, IL. Involved with survey work for drainage ditches and levees for McGee Creek, Keach, Lima Lake and Fox Run Drainage and Levee Districts. Also involved with numerous topographic surveys and mapping for landfills, subdivisions, sewer line constructions, and commercial properties. He was crew chief for the Littleby Creek Bridge hydrographic survey involving stream profiles and cross sections. Involved with the horizontal and vertical control, boundary survey and siltation sections for the LaBelle, Missouri Lake; and soundings for siltation sections of the Ewing, Missouri Lake and the Edina, Missouri Lake.

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Project Description:

The City of New Haven, Missouri provides flood protection to many residential and commercial properties located near the City's Missouri River front. This flood protection system is currently below the acceptable FEMA Accreditation elevation, which causes the area being protected by the levee to be mapped as a Special Flood Hazard Area (SFHA) or Zone A. The City would like to have the flood protection being provided recognized by FEMA. Therefore, the City plans to submit 44CFR65.10 documentation under the FEMA's Levee Analysis and Mapping Procedure (LAMP) Freeboard Deficient section. Once accepted by FEMA, the City's levee system will be recognized as providing protection and the area behind the levee will be remapped accordingly.

Project Location:

The project site is located in New Haven, Franklin County, Missouri on the Missouri River between river miles 81.4 and 81.7.

Project Zoning:

This proposal assumes that the site is zoned for the intended use and there are no zoning services included in this scope.

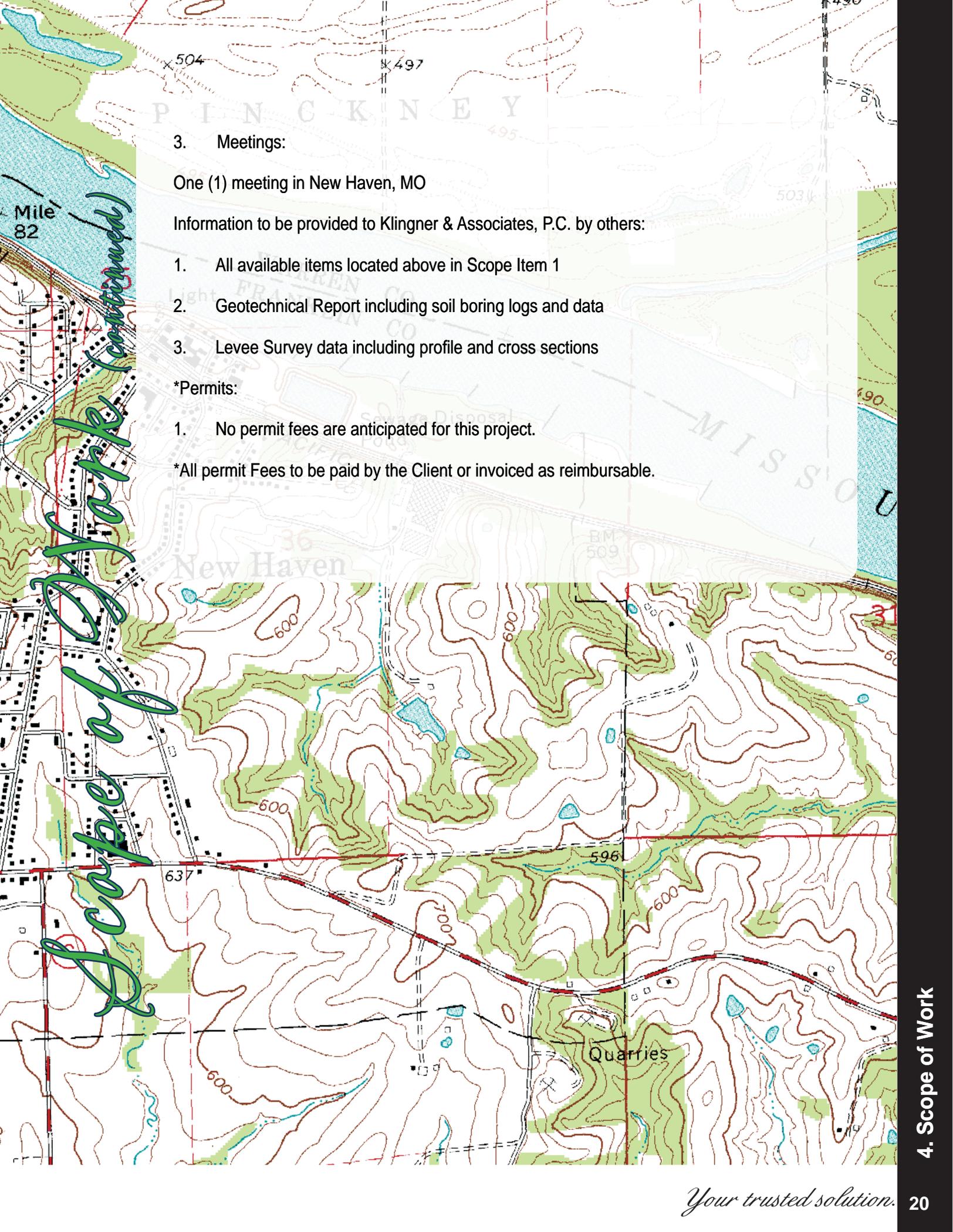
Scope of Services FEMA 44CFR65.10 Process:

1. Data Collection – The following information will be collected and analyzed prior to the beginning work on the 65.10 documentation:
 - a. Last 10 years of USACE inspection reports
 - b. As-built plans of flood protection and drainage systems
 - c. Operation & Maintenance Manuals for all levee and drainage system components
 - d. Original USACE reclamation or rehabilitation plans and/or studies
 - e. USACE technical notes or other information (i.e. soil borings, geotechnical studies, etc.)
 - f. USACE old letters of certification
 - g. Levee system data (i.e. elevation data, geotechnical data, flood performance data, etc.)
 - h. Pump Station plans, specs, and recent capacity tests
 - i. Emergency Action Plan and/or Procedures

A PLAN FOR SUCCESS...

2. FEMA Submittal – The proposed project approach will adhere to the FEMA 44CFR65.10 requirements. A tabbed submittal will be prepared containing the required certification and documentation necessary to satisfy FEMA Region VII requirements. This tabbed format contains seven (7) sections that must be sign, sealed, and submitted by a Professional Engineer (Klingner & Associates, P.C.). The seven (7) sections are summarized below:
- a. Cover Page: this is the cover page that provides general information (date, levee owner, etc.)
 - b. Certification of Design and O&M: the overall certification, verifying adequate design
 - c. (As-Built) and operation and maintenance systems are in place.
 - d. Section 1 – Freeboard: verification that the levee system provides at least three feet freeboard above the base flood. The top elevation (NLD data) will be compared with USACE 2004 Flow Frequency base flood elevations for the Missouri River. The USACE Flow Frequency study data represents the best / most current available data and is acceptable to FEMA. The package this project will be submitted under is the freeboard deficient section of LAMP. This section does not include the collection of new survey data.
 - e. Section 1ii – Alternative Freeboard Analysis: N/A
 - f. Section 1iii – Coastal Levees: this section will be noted “Non Applicable” by the Engineer.
 - g. Section 1iv – Minimum Coastal Freeboard: this section will be noted “Non Applicable” by the Engineer.
 - h. Section 2 – Closures: this section requires the Engineer to analyze all closure structures for all openings through the levee system.
 - i. Section 3 – Embankment Protection: the Engineer will demonstrate no appreciable erosion of the levee embankment will occur during the base flood (as noted in the Embankment protection tab). This will be performed through hydraulic modeling and material property analysis.
 - j. Section 4 – Embankment and Foundation Stability: the Engineer will assess available geotechnical data; the Engineer may perform supplemental analysis of seepage through and under the levee as well as slope stability of the levee section. The use of geotechnical computer software and Klingner & Associates Geotechnical Division may both be exploited throughout the completion of this section. This section does not include the collection of new geotechnical data.
 - k. Section 5 – Settlement: Engineer will assess the potential for future losses of freeboard as a result of levee settlement. The use of state-of-the-art computer software may be used for estimates of potential settlement. This section does not include the collection of new geotechnical data.
 - l. Section 6 – Interior Drainage: Engineer will review existing interior drainage analysis and perform updated hydraulic and hydrologic calculations to adequately map inundation from interior flood waters for the base flood. This section does not include the submittal of a Letter of Map Revision (LOMR), however, this analysis would suffice for such a submittal.
 - m. **Section 7 – Other Design Criteria: It is not anticipated additional special analyses to be required and Engineer will note “Non Applicable” for this section.**

Scope of Work (continued)



3. Meetings:

One (1) meeting in New Haven, MO

Information to be provided to Klingner & Associates, P.C. by others:

1. All available items located above in Scope Item 1
2. Geotechnical Report including soil boring logs and data
3. Levee Survey data including profile and cross sections

*Permits:

1. No permit fees are anticipated for this project.

*All permit Fees to be paid by the Client or invoiced as reimbursable.

OUR PROJECT Estimate

Our work will be charged on an hourly basis. The following area estimated fees:

New Haven Levee Accreditation

Data Collection & Analysis	\$3,600.00
Certification of Design and O&M Plan Review	\$4,000.00
Section 1: Freeboard Review	\$3,000.00
Section 2-3: Closures & Embankment Protection	\$4,000.00
Section 4: Embankment & Foundation Stability	\$5,000.00
Section 5: Settlement	\$3,000.00
Section 6: Interior Drainage	\$16,000.00
QA/QC / Engineer Site Visits / Project Management	\$7,000.00
*Total	\$45,600 (Opinion of Probable Cost)

*Estimated fees are based on initial preparation and submittal. Additional submittals and follow ups may require additional time and fees.

Other available services that can be provided upon mutually agreed upon scope of services and budget:

- Levee improvement design and permitting.
- Surveying (i.e. levee survey and/or Right-of-Way survey)
- Geotechnical Investigation and Report.
- Construction and Bidding Documents.
- Environmental services including wetland delineation or endangered species surveys/consultation.
- Archeological and related surveys.
- Coordination and representation on any permit issues.
- Construction Administration.
- Construction Testing.
- Onsite construction meetings and observations.
- As-built plans from redlines provided.

All work will be done in accordance with Klingner & Associates, P.C. General Terms and Conditions

Estimated Costs

OUR PROJECT **Schedule**

Schedule *	
Data Collection & Analysis**	One (1) month following received signed contract
44 CFR 65.10 Sections***	One (1) month following complete Data Collection
FEMA Review	Two (2) month from date of submittal
FEMA Follow-ups****	One (1) month following FEMA notice
Final FEMA Review	One (1) month following resubmittal

*Overall Schedule - may be impacted by FEMA's new LAMP Procedures

**Data Collection & Analysis – the timeline of this section may increase or decrease depending upon the available data; i.e. if the City has geotechnical, survey, and other data listed in Scope Item 1.

*** 44 CFR 65.10 – the timeline of this section is dependent upon the available data; i.e. Embankment & Foundation Stability may require further analysis than what has been performed previously

**** FEMA Follow-ups – typically FEMA has a few questions regarding the first submittal, however, this section may not be required and is not included in the proposed fee

February												
Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
2	3	4	26	27	28	29	30	31	1	23	24	25
9	10	11	2	3	4	5	6	7	8	2	3	4
16	17	18	9	10	11	12	13	14	15	9	10	11
23	24	25	16	17	18	19	20	21	22	16	17	18
30	31	1	23	24	25	26	27	28	1	23	24	25
6	7	8	2	3	4	5	6	7	8	30	31	1

May												
Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
3	4	5	27	28	29	30	1	2	3	1	2	3

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