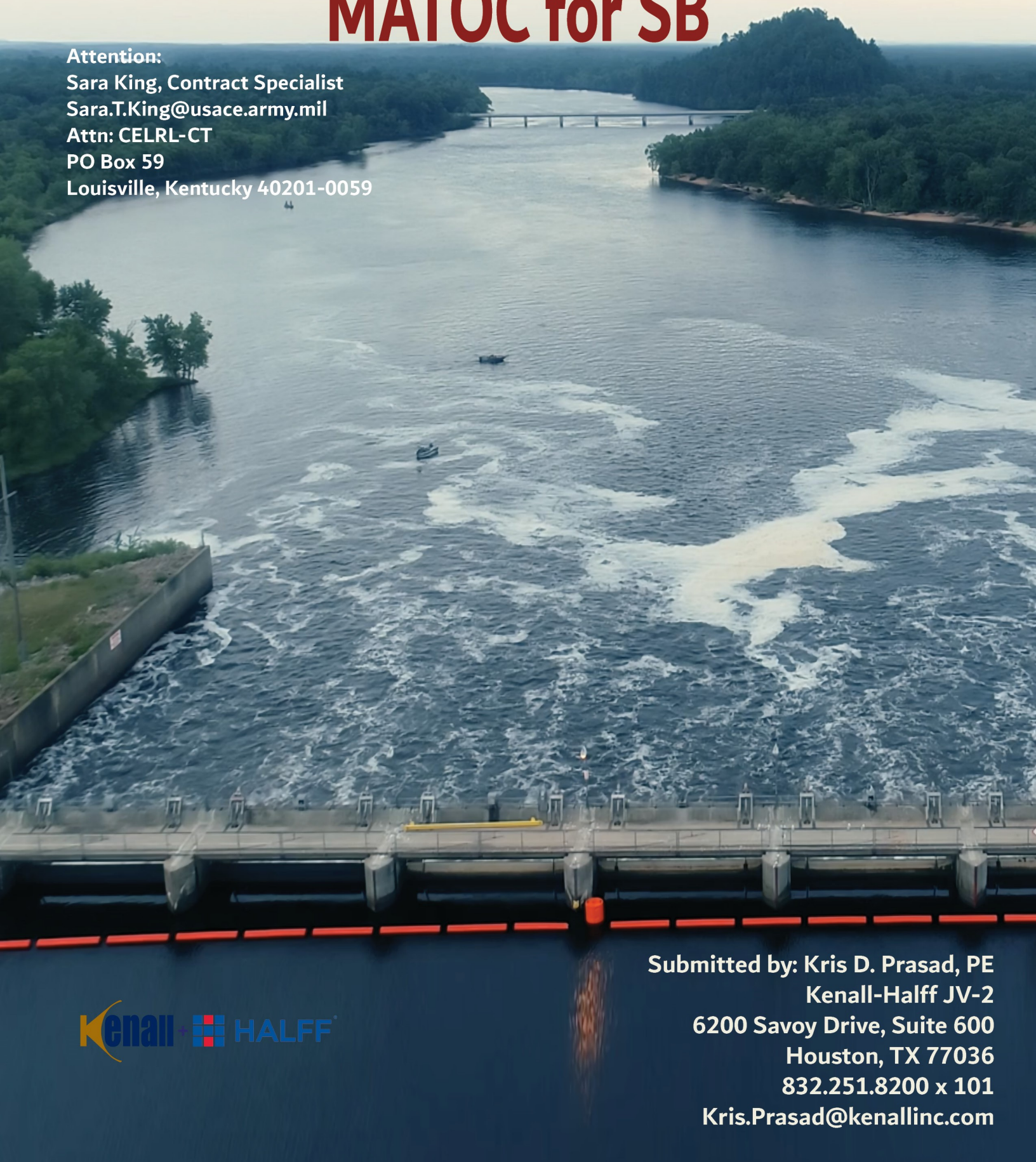
IIJA $25M AE Design River Services MATOC for SB



Attention:
Sara King, Contract Specialist
Sara.T.King@usace.army.mil
Attn: CELRL-CT
PO Box 59
Louisville, Kentucky 40201-0059

Submitted by: Kris D. Prasad, PE
Kenall-Halff JV-2
6200 Savoy Drive, Suite 600
Houston, TX 77036
832.251.8200 x 101
Kris.Prasad@kenallinc.com

TABLE OF CONTENTS

TAB

A

Section A–C

ARCHITECT - ENGINEER QUALIFICATIONS

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION *(City and State)*

IIJA $25M AE Design River Services MATOC for SB | Variety of A-E services primarily for Civil Works projects located within LRD geographical boundaries

2. PUBLIC NOTICE DATE	3. SOLICITATION OR PROJECT NUMBER
June 08, 2022	W912QR22R0059 | SMALL BUSINESS

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE

Kris D. Prasad, JV Partner

5. NAME OF FIRM

Kenall-Halff JV-2, LLC | UEI #CLHNBD1KSMT3

6. TELEPHONE NUMBER	7. FAX NUMBER	8. E-MAIL ADDRESS
832-251-8200 x 101	832-251-8201	kris.prasad@kenallinc.com

C. PROPOSED TEAM

(Complete this section for the prime contractor and all key subcontractors.)

	(Check) PRIME	(Check) JV PARTNER	(Check) SUBCONTRACTOR	9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
a.	X			Kenall-Halff JV-2, LLC (Kenall-Halff) ☐ Check if branch office SMALL BUSINESS (WOSB)	8101 Westglen Drive Houston, TX 77063	JV – Program/Project Management, architectural, mechanical, electrical, civil, structural, H&H modeling and analysis, and geotechnical engineering, environmental impact studies, historical cultural resources, landscape architecture, archaeology, land surveying, life cycle-cost analysis, CADD/BIM
b.		X		Kenall, Inc. (Kenall) ☐ Check if branch office SMALL BUSINESS (WOSB)	8101 Westglen Drive Houston, TX 77063	Program/Project Management, Civil, Structural, H&H Modeling and Analysis, and Geotechnical Engineering, CADD/BIM
				Kenall ☒ Check if branch office	5210 Storey Street Harahan, LA 70123	Civil, Structural, and Geotechnical Engineering, Construction Inspection & Testing Services
c.		X		Halff Associates, Inc. (Halff) ☐ Check if branch office	1201 N Bowser Rd Richardson, TX 75081	JV Partner - Program/Project Management, Architectural, Mechanical, Electrical, Civil, Structural, H&H Modeling and Analysis, Geological, Environmental Impact Studies, Historical Cultural Resources, Landscape Architecture, Archaeology, Land Surveying, Life Cycle-Cost Analysis, Water Resources Engineering, CADD/BIM

				Halff ☒ Check if branch office	4000 Fossil Creek Blvd. Fort Worth, TX 76137	Civil, H&H Modeling and Analysis, Structural, Mechanical, Electrical, Landscape Architecture, Land Surveying, CADD/BIM, GIS
				Halff ☒ Check if branch office	5000 West Military Highway, Ste. 100 McAllen, TX 78503	Civil, Mechanical, Electrical, Land Surveying, CADD/BIM
				Halff ☒ Check if branch office	100 NE Loop 410, Suite 200 San Antonio, TX 78216	Civil, H&H Modeling and Analysis, Mechanical, Electrical, Landscape Architecture, Land Surveying, CADD/BIM, GIS
d.			X	Biohabitats, Inc. (Biohabitats) ☐ Check if branch office SMALL BUSINESS	The Stables Building, 2081 Clipper Park Road Baltimore, MD 21211	Ecosystem Restoration
				Biohabitats ☒ Check if branch office	2026 Murray Hill Road, Room 102 Cleveland, OH 44106	
				Biohabitats ☒ Check if branch office	1624 Market Street, Suite 202 Denver, CO 80202	
e.			X	Construction Cost Management, Inc. (CCM) ☐ Check if branch office SMALL BUSINESS (WOSB)	2413 North Main Street Fort Worth, TX 76164	Cost Estimating and Scheduling Services
f.			X	Gannett Fleming ☒ Check if branch office	2500 Corporate Exchange Drive, Suite 230 Columbus, OH 43231	Civil Works (earthen structures, bridges, culverts), Mechanical, Electrical and Geotechnical Engineering Services
g.			X	Hana Engineers and Consultants, LLC (Hana) ☐ Check if branch office SMALL BUSINESS (8a)	7501 Boulder View Drive, Suite 620 Richmond, VA 23225	Geotechnical Engineering and Environmental Services

h.			X	Jensen Hughes, Inc. (Jensen Hughes) ☒ Check if branch office	8000 Regency Parkway Suite 580 Cary, NC 27518	Fire Protection Engineering and Life Safety Design Services
i.			X	SmithGroup, Inc. (SmithGroup) ☒ Check if branch office	35 E Wacker Dr, Ste 900 Chicago, IL 60601	Navigation Services
				SmithGroup ☒ Check if branch office	500 Griswold St, Ste 1700 Detroit, MI 48226	
				SmithGroup ☒ Check if branch office	44 E Mifflin St, Ste 500 Madison, WI 53703	
j.			X	Strategic Value Solutions, Inc. (SVS) ☐ Check if branch office SMALL BUSINESS (WOSB)	1650 NE Grand, Suite 100 Lee Summit, MO 64086	Value Engineering Services
k.			X	Terracon Consultants, Inc.(Terracon) ☒ Check if branch office	13050 Eastgate Park Way, Suite 101 Louisville, KY 40223	Geotechnical Engineering and Testing Services, Environmental Studies/Surveys and Abatement Design (asbestos and lead)

TAB

B

SECTION D
Organizational Chart

SECTION D- Program Organizational Structure and Roles/Responsibilities

Commitment Statement

As the Program Manager, I will ensure efficient, cost-effective delivery of quality designs across multiple projects on this contract. The Kenall-Halff JV-2 will provide exceptional customer satisfaction to meet 100% contract goals.

Benefits of our Program Organization

- JV partners have experience working with all Team Members, enhancing efficient integration and seamless operations and project execution.
- Program Manager is single POC to USACE Contracting and has authority to commit the JV; PMs have autonomous decision-making authority.
- QC Manager has independent reporting to JV Management Committee, ensuring our focus on quality execution and our highest priority.
- Access to 2,417 personnel within our 41 LRD offices with capacity to perform concurrent design and provide construction phase services.

Kenall-Halff JV-2 Team Organizational Structure

Direct Report

Communication

JV-2 Management Committee

Brad Ezell (1) Vishwa Bahl (1)

PROGRAM MANAGER

Kris D. Prasad, PE (1)

QUALITY CONTROL MANAGER

Mike Fallon, PE, PMP (1)

CONTRACT MANAGER

PROJECT MANAGERS

Srujan Chikyala, PE (1)
Levi Hein, PE, CFM (1)

CIVIL ENGINEERS

Designer
Rajesh Tolikonda, PE (1)
Rob Wright, PE (7)
Checker
Sam Sahai, PE (1)

STRUCTURAL ENGINEERS

Designer
Matthew O'Donnell, PE(4)
Checker
Rukshan Wijeratne, PE (1)

MECHANICAL ENGINEERS

Designer
John Ferencak, PE, LEED AP (1)
Checker
Dave Branson, PE, LEED AP
BD+C (1)

ELECTRICAL ENGINEERS

Designer
Phillip Applebaum, PE (1)
Checker
Maged Rifaat, PE (1)

GEOTECHNICAL ENGINEER

Designer
Kris D. Prasad, PE (1)
Checker
Voss Lakshman, PE (1)

ENVIRONMENTAL ENGINEERS

Designer
Chris Streb, PE (2)
Checker
Michael Lighthiser, PE, LEED AP (2)

FIRE PROTECTION ENGINEERS

Designer
Eric Babcock, PE (6)
Checker
James Waite, PE (6)

COST ENGINEER

Keith Kothmann, CPE, CCC, CCI (3)

ARCHITECTS

Designer
Dale Rhoads, AIA (1)
Checker
Alan LaFon, RPA, AIA, NCARB, LEED AP (1)

LANDSCAPE ARCHITECTS

Designer
Jason Stangland, PLA, LEED AP (7)
Checker
Nate Novak, PLA, LEED AP BD+C*(7)

FIRM INDEX

1 Kenall-Halff JV-2 | 2 Biohabitats | 3 CCM | 4 Gannet Fleming | 5 Hana
6 Jensen Hughes | 7 SmithGroup | 8 SVS | 9 Terracon

* Resumes not included

TAB

C

SECTION E

Resumes

Professional Qualifications

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Srujan Chikyala, PE	**Project Manager**	a. TOTAL: 13 b. WITH CURRENT FIRM: 13

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering BS, Civil Engineering	PE (Civil): TX #122374 (2015)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Srujan has extensive experience working with USACE, USDA-NRCS, NAVFAC Southeast, IBWC, and USFWS. He has successfully managed numerous design projects including dams, levees and flood control erosion protection, bridges, canals, stormwater drainage, retention, detention, water quality, grading, earthwork, utilities, pavement, and military facilities for various federal clients. Expertise with AutoCAD, Civil-3D, InRoads, GEOPAK, MicroStation, HEC-1, XPSWMM, HEC-HMS, HECGeoHMS, HEC-GeoRAS, HEC-FDA, ArcGIS, CADBIM policies. Extensive experience in conducting engineering studies and designs for new construction, partial and full renovations.

Training: Federal Project Management. **Membership:** SAME, ACEC, ASCE. **Publications:** Swell-shrink and strength behaviors of lime and cement stabilized expansive organic clays, Applied Clay Science; Effects of Organics on Stabilized Expansive Subgrade Soils, GeoShanghai International Conference, 2010 (Best Paper Award); Mitigating the effects of organics in stabilized soils: Technical Report No. FHWA/TX-09/0-5540-1.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
USACE Fort Worth District - AE Services for SRM and CTC Projects, Fort Polk, LA	PROFESSIONAL SERVICES: 2017-2019 CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the development of D-B RFP and D-B-B RFPs including design of access trails, culvert repairs, crosswalk improvements, roads, and repairs for wash racks. Cost: $5.5M

Specialized Experience Area(s)

Civil Information Modeling (CIM); UFC 3-201-01, MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Design-Build RFP Preparation, Full Design Documents

- ✓ Managed seven (7) staff and two specialty subcontractors
- ✓ Managed project planning/execution; coordinated with USACE design manager and Fort Polk installation personnel
- ✓ Prepared DQCP, led design charrette and design review meetings, prepared confirmation notices, directed subcontractors for surveying and cost estimating, prepared design analysis, developed UFC 3-201-01, CIM plans and specs deliverables using USACE CADBIM
- ✓ Reviewed MCAASES MII cost estimates
- ✓ Conducted QC reviews using Bluebeam sessions; responded to RFIs
- ✓ Established the schedule & completed the project on-time & in budget
- ✓ Compiled full design documents, prepared the general drawings and specifications using Specs Intact
- ✓ Compiled RFP and prepared general documentation of Design-Build RFP by following the Design-Build template methodology

b.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
US Fish & Wildlife – Trinity River Champions Lake Spillway Replacement | Liberty, TX	PROFESSIONAL SERVICES: 2019 -2020 CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the replacement/reconstruction of the existing Spillway. The primary purpose of this D-B project was to produce design-build construction documents, specifications, and a cost estimate to repair the levee/spill way and associated appurtenances. Cost: $3.5M

Specialized Experience Area(s)

CIM, UFC 3-201-01,
Full Design Documents

- ✓ Managed a team of five personnel and conducted design charrette in developing CIM H&H models and design deliverables including plans and specs
- ✓ Coordinated with the USFWS, USACE, TxDOT and County personnel
- ✓ Acquired drill rig access for water borings, and oversaw the field investigations
- ✓ Conducted QC reviews using Bluebeam sessions on UFC 3-201-01
- ✓ compliant Specs and Plans
- ✓ Established the schedule and completed the project on-time and within budget. Responded to RFIs
- ✓ Compiled full design documents, prepared the general drawings and specifications

c.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - A-E services for Maintenance at Dams 44, 45, 48, and 50, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2020
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the development of four design packages for the maintenance of Dams and bring the dams into compliance with the State of Texas Dam Safety Laws & Guidelines, USACE and applicable federal regulations. Cost: $3.5M

Specialized Experience Area(s)

CIM, USACE CADBIM policies and procedures, Full design documents, MCAASES MII Cost Estimates, Specs Intact

- ✓ Managed 9 staff in developing 4 D-B-B RFP packages for the maintenance of Dams and bring the dams into compliance with the State of Texas Dam Safety Laws & Guidelines, USACE and applicable federal regulations
- ✓ Managed project planning/execution; coordinated with USACE design manager, Fort Hood DPW personnel, and stakeholders
- ✓ Prepared DQCP, led design charrette and design review meetings, prepared confirmation notices, directed subcontractors for surveying and cost estimating, prepared design analysis, developed UFC 3-201-01 deliverables including CIM plans and specs
- ✓ Responded to DrChecks design review comments and performed QA reviews of MCAASES MII cost estimates
- ✓ Compiled full UFC 3-201-01 (Civil, Structural) design documents, prepared the general drawings and specifications
- ✓ Responded to bidder inquiries and construction RFIs

d.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - Various Drainage Repairs at RGAAF, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2018
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the design to mitigate drainage issues on RGAAF at Fort Hood, TX. Cost:$4.9M

Specialized Experience Area(s)

CIM, UFC 3-201-01, USACE CADBIM policies and procedures, D-B RFP design, MCAASES MII Cost Estimates, Specs Intact

- ✓ Managed 7 staff in developing a D-B RFP package to mitigate drainage issues on RGAAF at Fort Hood, TX.
- ✓ Managed project planning/execution; coordinated with USACE design manager, Fort Hood DPW personnel, and stakeholders
- ✓ Prepared DQCP, led design charrette and design review meetings, prepared confirmation notices, directed subcontractors for surveying and cost estimating, prepared design analysis, compiled D-B RFP deliverables, and reviewed MCAASES MII cost estimates
- ✓ Conducted QC reviews using Bluebeam sessions on UFC 3-201-01 compliant Specs and Plans
- ✓ Established the schedule and completed the project on-time and within budget
- ✓ Responded to DrChecks comments and RFIs

e.

(1) TITLE AND LOCATION *(City and State):*
IBWC - Sunland Park Levee Forensic Investigation, El Paso County, TX and Dona Ana County, NM

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Cost:$10M

Specialized Experience Area(s)

CIM, Full design documents

- ✓ Managed 7 staff in providing Forensic Engineering services that included identifying causes of the levee failure; developing corrective action alternatives; and upon selection of the best alternative, providing the design for the repair of levee and its associated structures
- ✓ Managed project planning/execution; coordinated with IBWC design manager, and its stakeholders
- ✓ Led design charrette and review meetings, directed subcontractors for drilling and surveying, prepared design analysis, compiled design deliverables, and reviewed cost estimates
- ✓ Established the schedule and completed the project on-time and within budget

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Levi Hein, PE, CFM	**Project Manager**	a. TOTAL: 16 b. WITH CURRENT FIRM: 16

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering (2004)	PE (Civil): TX #109956 (2011) Certified Floodplain Manager (CFM): TX #11835-10N (2010)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.):*

Since joining Halff in 2006, Levi has obtained training or has hands-on experience using HEC-HMS, HEC-RAS. He has formal training with the GIS-based H&H software and has experience with ArcView applications. Levi has technical design experience including streambank stabilization, erosion mitigation and stream restoration, levees and dams, flood control channels and detention basins, erosion and sediment control, stormwater designs, and local drainage problems. His work includes many innovative and cost-effective solutions to standard problems. Levi has also gained experience in grading and paving design, utility relocation coordination and boundary survey preparation. **Training**: TxDOT Roadway Hydraulic Design; TxDOT Bridge Hydraulic Design; and TxDOT Riverine Hydraulic Design. **Organizations**: American Society of Civil Engineer and Texas Floodplain Management Association

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
USACE Fort Worth District - Lower Colorado River (CR) Flood Control Project, Wharton, TX	PROFESSIONAL SERVICES: 2021 CONSTRUCTION: **2024 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the basin-wide hydrologic and hydraulic study for the Colorado River to determine impacts and benefits of operational plan changes to existing reservoirs. Cost: $30.5M

Specialized Experience Area(s)

Civil Information Modeling (CIM); UFC 3-201-01, MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Full Design Documents

- ✓ Managed multi-disciplinary practices to produce solicitation documents using MicroStation CADD software and HEC-RAS (unsteady) hydraulic modeling
- ✓ Prepared DQCP, led design charrette and design review meetings, prepared confirmation notices, directed subcontractors for surveying and MCAASES MII cost estimating, prepared design analysis, developed UFC 3-201-01, CIM plans and specs deliverables using USACE CADBIM and Spec Intact
- ✓ Established the schedule & completed the project on-time & in budget
- ✓ Conducted QC reviews
- ✓ Ensured that the design was prepared in conformation with Civil Works Planning Document, Lower CR Basin, Phase 1, TX, Interim Feasibility Report and Integrated Environmental Assessment, Volume III, Wharton

b.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
City of Lewisville - Timber Creek Streambank Stabilization Phase 2, Lewisville, TX	PROFESSIONAL SERVICES: 2020 CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the 700 lf of streambank stabilization along Timber Creek including tieback gabion walls, gabion mattress, rock riprap, and turf reinforcement mat. Cost: $2.6M

Specialized Experience Area(s)

CIM, Full Design Documents

- ✓ Managed project planning/execution, coordinated with the client, managed the analysis and design of 700 linear feet of streambank stabilization along Timber Creek with tieback gabion walls, gabion mattress, rock riprap, and turf reinforcement mat
- ✓ Led the development of detailed analysis, design, cost estimation and preparation of construction plans, drainage easements, specifications, bid documents and permitting with USACE

c.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
City of Southlake - Patterson's Pond Erosion Repairs - Southlake, TX	PROFESSIONAL SERVICES: 2019 CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Project Manager for the vegetated segmental block downstream of the concrete spillway. Cost: $214.8K

Specialized Experience Area(s)

CIM, Full design documents

- ✓ Oversaw hydraulic and scour analysis, counter-measure design downstream of the existing spillway.
  Led the development of detailed analysis, design, cost estimation and preparation of construction plans, specs, and bid documents.
- ✓ Coordinated with USACE to address Section 404 permit requirements and flowage easements associated with the project.

d.

(1) TITLE AND LOCATION *(City and State):*
City of Wharton – Wharton Levee Sump Study, Wharton, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION: **N/A**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Project Manager for the plans, specifications, and other supporting documents necessary for construction of Colorado River Levee Segments 1-4, covering more than 11,820 lf of levee from the Rust property west of Wharton, Texas to U.S. Highway Business 59 (Richmond Road), five interior sump areas, and Hughes Street relief storm sewer system for Caney Creek. Fee:$42.8K

Specialized Experience Area(s)
CIM, Value Engineering, H&H Engineering, Coordination with USACE

- ✓ Oversaw the sump design hydraulic analysis for Flood Damage Reduction Project on Colorado River in Wharton, TX
- ✓ Oversaw the value engineering design services for the current design and evaluation of phased/partial construction of the Levee Segment 2, Vineyard Sump, and Harrison Sump facilities
- ✓ Managed multi-disciplinary final deliverable for the preliminary engineering report that documented the analysis, methodology, results, and recommendations for phase sump and levee construction
- ✓ Established the schedule and completed the project on-time and within budget
- ✓ Presented recommendations at both a neighborhood public meeting and a city council workshop

e.

(1) TITLE AND LOCATION *(City and State):*
Brazos River Authority (BRA) - Morris Sheppard Dam Breach Inundation, Granbury, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **N/A**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Project Manager for the development of GIS-based flood inundation maps along the Brazos River mainstem resulting from a Morris Sheppard Dam Breach scenario. Fee:$120K

Specialized Experience Area(s)
H&H Engineering

- ✓ Managed project planning/execution, coordinated with the client, managed the development of inundation mapping for the Morris Sheppard Dam breach scenarios (design flood and sunny-day breach) at Possum Kingdom Lake in accordance with TCEQ
- ✓ Led the development of downstream reservoir guidelines for Lake Granbury's DeCordova Bend Dam to determine impacts on lake level elevations and downstream flows

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Rajesh Tolikonda, PE	**Civil Engineer Designer**	a. TOTAL: 11 b. WITH CURRENT FIRM: 10

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering BS, Civil Engineering	PE (Civil): TX, #130945 (2018), LA and OK USACE CQM

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Provides 11 years of experience leading civil engineering on various engineering projects that included military facilities, utilities, drainage structures, dams, levees, roadways, bridges, and other flood control structures for various federal clients including USACE, USDA-NRCS, NAVFAC Southeast, USFS, USFWS & IBWC. Expertise with AutoCAD, Civil-3D, InRoads, GEOPAK, MicroStation, HEC-1, XPSWMM, HEC-HMS, HECGeoHMS, HEC-GeoRAS, HEC-FDA and ArcGIS. Extensive experience in conducting engineering studies and designs for new construction and renovation of military facilities, utility infrastructure, landscaping, fire protection, and site drainage. **Training:** Federal Project Management. **Membership:** SAME, ACEC, ASCE.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: USACE Fort Worth District- AE Services for SRM and CTC Projects, Fort Polk, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Civil Engineer Designer for EISA compliant stormwater drainage for roads, buildings, parking lots, and utility improvements. Led design of wash racks, installation of domestic, fire water, and sewage utilities for building renovations including site restoration. Cost: $5.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Design-Build RFP Preparation, Full Design Documents

- ✓ Developed an EISA Section 438 compliant stormwater drainage design using AutoCAD Civil 3D to eliminate ponding and redirect storm water and runoff from the roof and redeveloped parking lots
- ✓ Designed UFC 3-201-01 compliant pumpstation, roadway, drainage slopes and ditches
- ✓ Designed culvert repairs and drainage improvements, headwalls, wing walls, and apron with placement of Type 3 object markers in accordance with the Manual on Uni-form Traffic Control Devices (MUTCD)
- ✓ Designed UFC compliant utility service improvements for domestic and fire water service, sewage, and other dry utilities to accommodate building renovations
- ✓ Developed Civil 3D with ArcGIS site restoration plans and specs including flatwork and landscaping improvements
- ✓ Participated in design charrette and design review meetings

b.

(1) TITLE AND LOCATION *(City and State)*: US Fish & Wildlife – Trinity River Champions Lake Spillway Replacement | Liberty, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019-2020
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Civil Engineer Designer Led the design for the replacement/ reconstruction of the existing Spillway. The primary purpose of this D-B project was to produce design-build construction documents, specifications, and a cost estimate to repair the levee/spill way and associated appurtenances. Rebuilding and armoring of the levee and associated spillway provided safe access for both the public and the utility companies. Cost: $3.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), Full Design Documents

- ✓ Designed spillway with use of CIM in accordance with federal, local, state standards
- ✓ Performed erosion control calculations and developed seepage mitigation measure including installation of sheet piles
- ✓ Evaluated 44 CFR §65.10 compliant existing flood conditions of the park area, performed levee inspection and levee certification for 100-yr flood event
- ✓ Designed UFC 3-201-01 compliant spillway liner Articulated Concrete Blocks and drive sheet Piles to –19.50 ft elevation with the top of the sheet piles even with the elevation of the spillway.
- ✓ Designed spillway requirements to control seepage from the upstream to downstream and maintain ‘Normal Pool” at the upstream end
- ✓ Developed AutoCAD plans and specifications, and cost estimates
- ✓ Responded to construction RFIs and involved in progress meetings

c.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District – A-E services for D-B-B Fort Hood – Repair North Fort Hood Drainage, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Civil Engineer Designer Developed the civil design package to correct the drainage at NFH Cantonment by preventing the roads and airstrips overtopping and inundation during the 25-yr storm event and alleviating other general flooding issues associated with five areas in Fort Hood, TX. Cost: $5.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), CADBIM, Full Design Documents Specs Intact (Civil), MII Cost Estimates

- ✓ Conducted site visits, attended design charrette and design review meetings
- ✓ Developed CADBIM (civil) design repair drawings using MicroStation V8i
- ✓ Evaluated the existing flood conditions for the area, performed UFC 3-201-01 (Civil) complaint interior drainage analysis, delineation of drainage areas using ArcGIS, creation of rater files using LiDAR data, evaluated channel stability, stream restoration near US-36
- ✓ Responded to DrChecks design review comments and performed QA reviews of MII cost estimates

d.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District – Dallas Floodway System AT&SF Bridge Demolition, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Civil Engineer Designer Developed the civil design package D-B-B package for modifying the existing AT&SF Railroad Bridge by demolishing portions of the bridge, while maintaining the Santa Fe Trestle Trail features. Cost: $2.8M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), CADBIM, Full Design Documents, Specs Intact (Civil), MII Cost Estimates

- ✓ Conducted site visits, attended design charrette and design review meetings
- ✓ Developed CADBIM design repair drawings using MicroStation V8i
- ✓ Coordinated with USACE, City of Dallas, local utility providers, and other stakeholders
- ✓ Reviewed existing LiDAR data, and MII cost estimates
- ✓ Held QC reviews using Bluebeam sessions
- ✓ Responded to DrChecks design review comments and performed QA reviews of MII cost estimates
- ✓ Prepared UFC 3-201-01 (Civil) complaint full design documents

e.

(1) TITLE AND LOCATION *(City and State):*
IBWC - Sunland Park Levee Forensic Investigation, El Paso County, TX and Dona Ana County, NM

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Civil Engineer Designer for the investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Cost:$10M

Specialized Experience Area(s)
CIM, Full design documents

- ✓ Analyzed rainfall events based on the available weather data and corelated with the flood event and erosion damage and associated amenities to protect work areas from future erosion
- ✓ Performed modelling and simulation studies including the evaluation by using the research analysis, predesign site assessment, site identification surveys, USACE, IBWC, BOR design concepts, manuals, standards and reports
- ✓ Designed appropriate grading and drainage filters to have a positive drainage with reduced impact on erosion of the levee slopes
- ✓ Analyzed and designed access roads and the levee embankment crest roads to handle the maintenance and recreational traffic loading

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Rob Wright, PE	**Civil Engineer Designer**	a. TOTAL: 27 b. WITH CURRENT FIRM: 10

15. FIRM NAME AND LOCATION *(City and State)*: SmithGroup | Madison, WI

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering (1995)	PE (Civil): WI # 34561-6 (2001), OH, ND, MN, IL, Hawaii

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Rob Wright is a principal and civil engineer with over 27 years of experience in the waterfront, coastal, heavy-civil, and municipal project areas. His experience includes engineering design and project management on a variety of diverse, multi-disciplinary, and complex coastal and waterfront projects. The projects include feasibility studies, inspections, civil and waterfront engineering design, construction document preparation, stormwater management and modeling, contract administration, field assessments and client coordination. Rob also works routinely with State and Federal Agencies on complex water quality permitting as part of the waterfront projects. Rob is a trusted technical resource to the waterfront practice and plays a key role in leading our large scale coastal protection and marina rehabilitation projects. His unique experience also includes serving as the appointed engineer for the Village of Mt. Horeb, Wisconsin.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: Port of Washburn Navigation Improvements, Washburn, WI

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2020
CONSTRUCTION: **2010-2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Civil Engineer Designer for redefining and upgrading the waterfront of the City of Washburn Harbor. The project scope consisted of rehabilitation of 575 feet of failing bulkhead wall, which included replacement of the upper portion of the 120 year old timber crib with a new concrete vertical wall, renovated the fuel dock and 150 ton travel lift dock by replacing the vertical steel wall system with a replacement system capable of withstanding the harsh weather conditions and loads imposed by the travel lift.

Specialized Experience Area(s)

CIM, Full Design Documents

- ✓ Extensive client and team coordination throughout the project that was critical in redefining and upgrading the waterfront of the City of Washburn Harbor
- ✓ Reviewed the master plan that provided a roadmap for improvements to be implemented over the next 20 years and included recommendations for revitalization of the City Dock bulkhead wall, public marina improvements, development of a waterfront park, enhanced beach area with public amenities, fish cleaning and boat wash-down facilities, a public boat launch, and improved circulation, parking, and boat storage
- ✓ Designed and engineered a replacement of the existing launch ramp and boat handling facility, and restored another 515 linear feet of timber wall along the northern wall of the City Dock
- ✓ Developed Design CIM plans and specs using AutoCAD
- ✓ Conducted site visits, attended design charrette and design review meetings
- ✓ Assisted in clearances and permits, including threatened and endangered species, historic structures, erosion & sediment control, and a joint Department of Environmental Protection/USACE waterways permit

b.

(1) TITLE AND LOCATION *(City and State)*: Lakewalk and Shoreline Protection Project, Euclid, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2022
CONSTRUCTION: **2019-2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Civil Engineer Designer for Waterfront master plan and implementation of a two-mile-long public access trail along the Lake Erie shoreline. The plan included a combination of offshore breakwaters to address erosion, provides bluff stabilization and re-vegetation, and creates public beaches and waterfront access for the community.

Specialized Experience Area(s)

CIM, Full Design Documents

- ✓ Extensive client and team coordination throughout the project that was critical in preparing Waterfront master plan of a two-mile-long public access trail along the Lake Erie shoreline
- ✓ Reviewed the master plan as part of a significant public engagement process that brought together over 80 private landowners, the City of Euclid, and permitting entities
- ✓ Led overall Civil design for this project
- ✓ Assisted the team in obtaining necessary environmental permits
- ✓ Developed Design CIM plans and specs using AutoCAD

c.

(1) TITLE AND LOCATION *(City and State):*
Caesar Creek State Park Marina, Warren County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2014
CONSTRUCTION: **2016**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Civil Engineer Designer for the design of a new marina and waterfront park. Work included construction document preparation, permitting, market analysis and public/private partnership formation. The team worked with the Ohio Department of Natural Resources to accommodate the needs of the park users as well as meet engineering needs required for the breakwaters and marina facility.

Specialized Experience Area(s)

CIM, Full Design Documents, cost estimation cost estimation, design charrette

- ✓ Extensive client and team coordination throughout the design process that was critical in designing a new marina and waterfront park
- ✓ Reviewed the Master plan
- ✓ Performed hydraulic analysis and led the overall design of this project
- ✓ Assisted the team in obtaining necessary environmental permits
- ✓ Developed Design CIM plans and specs using AutoCAD
- ✓ Conducted site visits, attended design charrette and design review meetings
- ✓ Managed multi-disciplinary final deliverable for the engineering report that documented the analysis, methodology, results, cost estimation, and construction recommendations
- ✓ Prepared DQCP, led design charrette and design review meetings, prepared confirmation notices, compiled RFP deliverables

d.

(1) TITLE AND LOCATION *(City and State):*
Bradstreet's Landing Pier and Shoreline Restoration, Rocky River, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Civil Engineer Designer for the improvements to Bradstreet Landing Park on Lake Erie. The plan improved the park by expanding access and use, enhancing water quality and habitat, and creating a nice destination for residents.

Specialized Experience Area(s)

CIM, Full Design Documents, cost estimation, design charrette

- ✓ Extensive client and team coordination in preparing Master plan and providing design for improvements to Bradstreet Landing Park on Lake Erie
- ✓ Reviewed the Master plan and led Civil design for this project
- ✓ Assisted the team in obtaining necessary environmental permits
- ✓ Developed Design CIM plans and specs using AutoCAD
- ✓ Conducted site visits, attended design charrette and design review meetings
- ✓ Managed multi-disciplinary final deliverable for the engineering report that documented the analysis, methodology, results, cost estimation, and construction recommendations
- ✓ Led design charrette and design review meetings, prepared confirmation notices, compiled RFP deliverables

e.

(1) TITLE AND LOCATION *(City and State):*
Edgewater Marina Rehabilitation, Cleveland, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2014
CONSTRUCTION: **2015**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Civil Engineer Designer for the complete redesign and replacement of a marina destroyed by Hurricane Sandy on Lake Erie. Scope included new floating docks and anchoring, utilities, circulation promenade and fencing..

Specialized Experience Area(s)

CIM, Full Design Documents

- ✓ Extensive client and team coordination throughout the design process that was critical in Edgewater Marina Rehabilitation
- ✓ Led the Civil redesign and replacement of a marina destroyed by Hurricane Sandy on Lake Erie
- ✓ Design included an analysis of extreme storm events and numerical modeling to determine design parameters for the proposed marina replacement
- ✓ Developed Design CIM plans and specs using AutoCAD

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Sam Sahai, PE	**Civil Engineer Checker**	a. TOTAL: 45 b. WITH CURRENT FIRM: 18

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering	PE (Civil): FL #53819 (1999), KY #10058, LA #25522, MS #20462, NC #38457, SC #19275, VA #37158, AL #12621, AR #9648, TN

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Sam has 45 years of experience providing civil and structural engineering services in the Southeast region for various clients including USACE, USDA-NRCS, NAVFAC Southeast, USFS, USFWS & IBWC. He has vast experience with civil and structural inspections and design of municipal infrastructure, port infrastructure, and industrial facilities. Expertise with AutoCAD, Civil-3D, InRoads, GEOPAK, MicroStation, HEC-1, XPSWMM, HEC-HMS, HECGeoHMS, HEC-GeoRAS, HEC-FDA and ArcGIS. He is also proficient in seismic evaluations and seismic rehabilitation as per ASCE 31 and 41, respectively. During the design phases of projects, he provides detailed review services to check that the project's engineering recommendations are incorporated into the plans and specifications for the projects.**Training:** Federal Project Management. **Membership:** SAME, ACEC, ASCE.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District – AE Services for SRM and CTC Projects, Fort Polk, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Civil Engineer Checker for the development of D-B RFP and D-B-B RFPs including design of access trails, culvert repairs, crosswalk improvements, roads, and repairs for wash racks. Cost: $5.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), Specs Intact, MII Cost Estimates, USACE CADBIM Policies and Procedures, Design-Build RFP Preparation, Full design documents

- ✓ Provided QA/QC Check of all analyses, designs, quantities, plans, specifications, estimates, reports, and other deliverables
- ✓ Reviewed an EISA Section 438 compliant design for stormwater drainage using AutoCAD Civil 3D to eliminate ponding and redirect storm water and runoff from the roof and redeveloped parking lots
- ✓ Reviewed the design of UFC compliant utility service improvements for domestic and fire water service, sewage, and other dry utilities to accommodate building renovations
- ✓ Reviewed site restoration USACE CADBIM plans and specs including flatwork and landscaping improvements.
- ✓ Participated in design charrette and all design review meetings
- ✓ Reviewed UFC 3-201-01 complaint pumpstation design
- ✓ Responded to Dr Checks design review comments and performed QA reviews of MII cost estimates

b.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District – A-E services for D-B-B Fort Hood – Repair North Fort Hood Drainage, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Civil Engineer Checker for the development of the civil design package to correct the drainage at NFH Cantonment by preventing the roads and airstrips overtopping and inundation during the 25-yr storm event and alleviating other general flooding issues associated with five areas in Fort Hood, TX. Cost: $5.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Full design documents

- ✓ Provided QAQC Check of all analyses, designs, quantities, plans, specifications, estimates, reports, and other deliverables
- ✓ Evaluated the existing flood conditions for the area, performed interior drainage analysis, delineation of drainage areas using ArcGIS, creation of rater files using LiDAR data, evaluated channel stability, stream restoration near US-36
- ✓ Participated in design charrette and all design review meetings
- ✓ Responded to DrChecks design review comments and performed QA reviews of MII cost estimates
- ✓ Reviewed the UFC 3-201-01 (Civil) complaint full design documents

c.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - A-E services for Maintenance at Dams 44, 45, 48, and 50, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2020
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Civil Engineer Checker for the development of four civil design packages for the maintenance of Dams and bring the dams into compliance with the State of Texas Dam Safety Laws & Guidelines, USACE and applicable federal regulations. Cost: $3.5M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Civil), MII Cost Estimates, Specs Intact, Full Design Documents

- ✓ Provided QAQC Check of all analyses, designs, quantities, plans, specifications, estimates, reports, and other deliverables
- ✓ Reviewed UFC 3-201-01 (Civil) complaint design of the new access road with flex base that provides all-weather functionality across the embankment. Reviewed CIM storm drainage and SWPPP.
- ✓ Reviewed the USACE Nationwide Permits that required to authorize minor activities in the Waters of US so that repairs could be authorized by NWP 3.
- ✓ Responded to Dr Checks design review comments and performed QA reviews of MII cost estimates
- ✓ Reviewed the Specifications in Specs Intact

d.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - Various Drainage Repairs at RGAAF, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2018
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Civil Engineer Checker for the civil design to mitigate drainage issues on RGAAF at Fort Hood, TX. Cost:$4.9M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Civil), D-B RFP design, MII cost estimates, Specs Intact

- ✓ Provided QAQC Check of all analyses, designs, quantities, and draft/final/corrected final RFP deliverables
- ✓ Relocated utility vaults and utility access holes to meet grade requirements along with correction to drainage failures to ensure compliance with UFC 3-260-01
- ✓ Reviewed civil design in AutoCAD
- ✓ Responded to DrChecks design review comments and performed QA reviews of MII cost estimates
- ✓ Reviewed the UFC 3-201-01 (Civil) complaint D-B RFP documents

e.

(1) TITLE AND LOCATION *(City and State)*:
IBWC - Sunland Park Levee Forensic Investigation, El Paso County, TX and Dona Ana County, NM

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Civil Engineer Checker for the investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Cost:$10M

Specialized Experience Area(s)

CIM, Full design documents

- ✓ Reviewed rainfall events based on the available weather data and corelated with the flood event and erosion damage and associated amenities to protect work areas from future erosion
- ✓ Reviewed modelling and simulation studies including the evaluation by using the research analysis, predesign site assessment, site identification surveys, USACE, IBWC, BOR design concepts, manuals, standards and reports
- ✓ Performed design review of UFC 3-201-01 (Civil) complaint grading and drainage filters to have a positive drainage with reduced impact on erosion of the levee slopes
- ✓ Performed design review of access roads and the levee embankment crest roads to handle the maintenance and recreational traffic loading

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Matthew O'Donnell, PE	**Structural Engineer Designer**	a. TOTAL: 35 b. WITH CURRENT FIRM: 23

15. FIRM NAME AND LOCATION *(City and State)*: Gannett Fleming, Inc. | Columbus, OH

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering (1987)	PE (Structural): OH #PE.55646 (1991)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Matthew has 35 years of experience with alignment and alternatives analysis studies, structure-type studies, hydraulic and scour analyses, load ratings, final design and review, and environmental documents. His work spans 150+ projects (200+ bridges, including 80+ rehabs/reconstructions and 88 H&H analyses). **Membership:** ACEC, ASCE.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
Homer Road over the North Fork of the Licking River and Frampton Road over Wakatomika Creek Bridge Replacements, Licking County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016-2017
CONSTRUCTION: **2017**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Designer for preliminary and final bridge and roadway design services, and construction plan preparation for two bridge replacements over waterways. Cost: $1M

Specialized Experience Area(s)
Full design documents, cost estimates UFC 3-20101(Civil, Structural, geotechnical)

- ✓ Reviewed the hydraulic analyses
- ✓ Developed the preliminary bridge layouts, and the final bridge designs and plans. The existing Homer Rd. Bridge over the North Fork of the Licking River was a 2-span, 84'-long steel beam bridge that was replaced with an 85'-long composite prestressed concrete box beam bridge on integral abutments with spill-through slopes. The existing Frampton Rd. Bridge over Wakatomika Creek was a 76'-long steel pony truss bridge that was replaced with a 100'-long composite prestressed concrete box beam bridge on integral abutments with spill-through slopes.
- ✓ Designed a prestressed concrete box beam superstructure on concrete substructures for the replacement type
- ✓ Reviewed cost estimates
- ✓ Coordinated with DOT and USACE with design to be in compliant with UFC 3-20101(Civil, Structural, geotechnical)

b.

(1) TITLE AND LOCATION *(City and State)*:
MAH-80-0.97, I-80 Widening over the Meaner Reservoir, Mahoning County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2008
CONSTRUCTION: **2009**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Designer for the preliminary design of the widening and rehabilitation of three dual bridges on I 80 that cross over local roads. The project involved widening of a 4.5-mile section of I-80 to three lanes in each direction, including the replacement/ widening/ rehabilitation of six mainline concrete slab bridges by replacing the concrete decks with wider slabs, widening and patching the cap-and-column piers, and widening and patching the stub abutments. Cost: $95M

Specialized Experience Area(s)
Full design documents
UFC 3-20101(Civil, Structural, geotechnical)

- ✓ Performed the preliminary substructure, bearing, and expansion joint designs and developing the site plan for the 2,500-foot-long, twin, prestressed-concrete I-beam bridges over Meander Creek Reservoir
- ✓ Performed the preliminary design and developed the site plan for a dual, curved bridge widening, including the horizontal and vertical bridge geometries and the preliminary design of the foundations
- ✓ Performed the preliminary designs of two other dual bridge widenings
- ✓ Estimated construction costs for an alternatives study of the reservoir bridges
- ✓ Coordinated with DOT and USACE with design to be in compliant with UFC 3-20101(Civil, Structural, geotechnical)
- ✓ Prepared the final designs and plan details for the six concrete slab bridge widenings, including six pier designs using the RC-PIER computer program; and estimated final construction costs

c.

(1) TITLE AND LOCATION *(City and State)*:
PRE-35-17.74 over Twin Creek, Bridge Replacement, Preble County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2010
CONSTRUCTION: **2010**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Designer for the design of a bridge replacement on US 35 over Twin Creek. The project involved replacing a 244'-long, three-span, closed-spandrel concrete arch bridge using part-width or accelerated construction methods. Cost: $1.8M

Specialized Experience Area(s)
CIM, Full design documents

- ✓ Led the preliminary engineering study that involved hydraulic analyses of the existing bridge and two replacement alternatives using HEC-RAS; analyzing the proposed alternatives to determine the most cost-effective replacement concept, taking into consideration the accelerated construction costs and road user delay costs incurred by a 17-mile traffic detour versus the temporary shoring costs and unique construction challenges necessitated by implementing part-width construction; and developing preliminary design plans for the selected alternative
- ✓ Established the proposed roadway alignment
- ✓ Developed new roadway profiles for the two bridge alternatives
- ✓ Established the geometries of the bridge replacement alternatives
- ✓ Developed the preliminary designs for three-span composite prestressed-concrete box-beam and three-span composite steel beam bridge alternatives
- ✓ Estimated construction costs, including the road user delay costs and accelerated construction costs
- ✓ Final design involved designing and preparing detailed plans for a three-span, composite prestressed-concrete box-beam bridge
- ✓ Coordinated with the preparation of the roadway and bridge construction plans; estimating construction costs and assisting with the overall project management and coordination

(1) TITLE AND LOCATION *(City and State):*
FRA-CR18-0027 (Central College Road) over Big Walnut Creek 51340, Franklin County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2010
CONSTRUCTION: **2010**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

d.

Structural Engineer Designer for the design of the rehabilitation of a 203-foot-long, four-span, prestressed-concrete box-beam bridge. The project also involved rehabilitation and patching of the existing stone abutments and pier. Cost: $925K

Specialized Experience Area(s)
Full design documents

- ✓ Provided design for replacing the existing prestressed box beam and concrete slab superstructures with new, prestressed-concrete box beams and a composite concrete deck. The new superstructure was supported on new, capped-pile abutments, existing wall-type stone abutments, and a T-type (hammerhead) concrete pier
- ✓ Developed the final design and plan details for the entire superstructure, a combination vehicular and bicycle railing, and substructures
- ✓ Coordinated with the preparation of the bridge and roadway plans; estimated construction costs, and assisted with the overall project management and coordination

(1) TITLE AND LOCATION *(City and State):*
Northwest Industrial Connector and MAR-309-1398 over Rock Swale Ditch, Marion County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2005-2010
CONSTRUCTION: **2010**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

e.

Structural Engineer Designer for the preparation of bridge construction plans for a new roadway to allow semi-trucks to get from various industrial properties located west of the city of Marion to U.S. Route 23. Cost: $4.9M

Specialized Experience Area(s)
Full design documents

- ✓ Reviewed hydraulic analyses of the existing channels and sizing the proposed culvert structures at two waterway crossings using HEC-RAS; evaluating floodplain impacts for the preferred alternative
- ✓ Prepared the preliminary layouts and designs for the construction of 2 three-sided, precast-concrete culverts and a prestressed box-beam bridge widening
- ✓ Prepared the preliminary the preliminary layouts for two conceptual bridge alternatives for a railroad overpass; and estimated preliminary construction costs
- ✓ Prepared the culvert designs and detailed plans;
- ✓ Designed the prestressed-concrete box beams, elastomeric bearings, and abutments for the bridge widening
- ✓ Prepared detailed plans for the railroad overpass bridge that comprised a 321-foot-long, three-span continuous, steel plate girder superstructure supported by integral, capped-pile abutments and T-type (hammerhead) concrete piers
- ✓ Coordinated with the preparation of plans; and estimated construction costs

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Rukshan Wijeratne, PE	**Structural Engineer Checker**	a. TOTAL: 22 b. WITH CURRENT FIRM: 7

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MBA, Business Management BS, Structural Engineering	PE (Structural): TX, # 102708 (2009)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Mr. Wijeratne's Structural Engineering and Design experience includes military, institutional, commercial, medical and industrial projects. He specializes in high wind zone, seismic and blast design at military facilities. Proficient in International Building Code (IBC 2018), & ASCE 7-16 and material codes AISC/LRFD, ACI 318-14, ACI-530-05, NDS-05. He is also an experienced designer of connections for high-rise structures and renovation/restoration of historic buildings at military installations (Fort Sam Houston, JBSA-Randolph AFB, RRAD, Barksdale AFB, Laughlin AFB and Fort Hood). **Training:** SEAoT, SECB

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - Renovation of Buildings 16, 44, 615, 2002, and 2006, Fort Sam Houston, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2022
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Checker Led QA/QC of five (5) separate 100% structural plans and specs to renovate five historical buildings (total 100,400 SF renovation area) that range from 100-130 years old to provide functional administrative office space with a 25-year usable life. Cost: $31M

Specialized Experience Area(s)
UFC 3-201-01 (Structural), MII Cost Estimates, Specs Intact (Structural), USACE CADBIM Policies and Procedures, Full design documents

- ✓ Conducted site investigations to assess the condition of the facilities
- ✓ Reviewed UFC 3-201-01 (Structural) compliant demolition plans for interior shear walls, load bearing walls, exterior doors and wood frame, and stairs. Reviewed load analysis and structural steel calculations on the beams
- ✓ For B2006, reviewed UFC 3-201-01 (Structural) compliant design, replacement of deteriorated ground floor slab plus full renovation of the two balconies. For B44, reviewed design, two elevator/stair shafts on the east and west sides of the building. For B2002, reviewed design, new passenger elevator.
- ✓ Performed QA/QC of all design deliverables
- ✓ Attended charrette, design review meetings, responded to DrChecks comments, bidder inquiries and construction RFIs

b.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District – Dallas Floodway System AT&SF Bridge Demolition, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Checker for modifying the existing AT&SF Railroad Bridge by demolishing portions of the bridge, while maintaining the Santa Fe Trestle Trail features. Cost: $2.8M

Specialized Experience Area(s)
UFC 3-201-01 (Structural), MII Cost Estimates, Specs Intact (Structural), USACE CADBIM Policies and Procedures, Full design documents

- ✓ Reviewed UFC 3-201-01 (Structural) compliant section details for the steel trestle bridge, piers, stringer beams and footings. Considered details carefully as slight deviation would increase the timeline of the project; cost increase due to change orders. The structural demolition plan showed the plan view of all the bridges that were to be demolished
- ✓ Developed CADBIM design repair drawings using MicroStation V8i
- ✓ Coordinated with USACE, City of Dallas, local utility providers, and other stakeholders
- ✓ Reviewed existing LiDAR data, and MII cost estimates
- ✓ Held QC reviews using Bluebeam sessions
- ✓ Responded to DrChecks design review comments and performed QA reviews of MII cost estimates
- ✓ Prepared Civil Full design documents

(1) TITLE AND LOCATION *(City and State)*:

(2) YEAR COMPLETED

c.

USACE Fort Worth District - Repair Fire Protection, Install Security Fences and Repairs of Buildings at Red River Army Depot, Texarkana, TX

PROFESSIONAL SERVICES: 2021
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Checker Led QA/QC of structural designs for DB and DBB RFP packages for three fence projects. Designs completed in compliance with AT/ FP , DoD ABA and UFAS, UFC, and EISA standards. Cost: $16.5M

Specialized Experience Area(s)

UFC 3-201-01 (Structural), MII Cost Estimates, Specs Intact (Structural), USACE CADBIM Policies and Procedures, Full design documents

- ✓ Attended the design charrette and conducted site investigations to assess the condition of the project sites
- ✓ Reviewed UFC 3-201-01 complaint structural assessment of the wind and seismic lateral loading on security lighting posts for the fence projects and anchoring necessary to handle the seismic and wind loads
- ✓ Utilized DrChecks to respond to design comments, attended design review meetings
- ✓ Performed QA review of MII developed cost estimates

d.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - Repair Building B499 Randolph Air Force Base, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Checker Performed QA/QC of structural design package to renovate the entire 3rd floor (12,800 SF), of A-Wing at B499, HQ Air Force Personnel Center to provide open storage cubicle areas, a new secured area, command suite, SCIF facility & support spaces. Cost:$3.6M

Specialized Experience Area(s)

UFC 3-201-01 (Structural), MII Cost Estimates, Specs Intact (Structural), USACE CADBIM Policies and Procedures, Full design documents

- ✓ Reviewed structural calculations to add 2500lbs in the non-secure area
- ✓ Reviewed UFC 3-201-01 (Structural) complaint load analysis and structural steel calculations on the beams where as-builts were not provided. Used Revit for BIM modelling when structural analysis and calculations were performed
- ✓ Responded to DrChecks design review comments
- ✓ Performed QA reviews of MII cost estimates

e.

(1) TITLE AND LOCATION *(City and State)*:
IBWC - Sunland Park Levee Forensic Investigation, El Paso County, TX and Dona Ana County, NM

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Structural Engineer Checker for the investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Cost:$10M

Specialized Experience Area(s)

Full design documents

- ✓ Reviewed UFC 3-201-01 (Structural) compliant maintenance and recreational traffic loading on the access roads and the levee embankment crest roads
- ✓ Reviewed structural reports on all water control structures and floodwalls within the study area.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
John Ferencak, PE, LEED AP	**Mechanical Engineer Designer**	a. TOTAL: 24 b. WITH CURRENT FIRM: 6

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | San Antonio, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Mechanical Engineering (1998) MS, Mechanical Engineering (2004)	PE (Mechanical): TX, #91775 (2003)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
John has 23 years of industry experience in numerous commercial, industrial, healthcare and government projects including USACE & GSA. His areas of expertise include air conditioning, and heating systems, ventilation systems, energy monitoring and control systems, piping systems, plumbing systems, cost estimating, energy auditing and life cycle cost analysis. **Training**: TxDOT- 17.2.1: Mechanical Engineering, TxDOT- 17.3.1: Plumbing Engineering.
Organizations: ASHRAE, Texas Society of Professional Engineers

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
City of Dallas - Mill Creek-Peaks Branch-State Thomas Drainage Relief Project, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2022
CONSTRUCTION: **2023 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Mechanical Engineer Designer for the design and construction of a 25,000 lf, 30-foot diameter, 100-foot deep tunnel to provide drainage relief for the Mill Creek and Peaks Branch drainage basins. Cost: $250M

Specialized Experience Area(s)
Construction Phase Services, Full design documents, USACE Coordination, Cost Estimating

- ✓ Oversaw the design for the heat load calculations for sizing of the HVAC equipment (low pressure systems)
- ✓ Aided in the air distribution design of the vertical buildings
- ✓ Managed the plumbing design of administrative facilities
- ✓ Designed roof drainage outside to the building
- ✓ Stamped/sealed mechanical and plumbing designs as the EOR

b.

(1) TITLE AND LOCATION *(City and State)*:
GSA- United States Federal Courthouse, San Antonio, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Mechanical Engineer Designer for a new 6.4-acre federal courthouse built as a design-build project. Scope included preparation of construction documents, preliminary design concepts through final design review for the building. Cost: $142M

Specialized Experience Area(s)
Design Charette, CPS services, Complex Mechanical design

- ✓ Assisted in designing mechanical hydronic systems that included a 900-ton central plant utilizing variable screw chillers piped in a variable primary arrangement. Project achieved 26% energy savings over EISA 2007 requirements.
- ✓ Designed a smoke control system to meet life safety requirements for the atrium.
- ✓ Designed facility according to LEEDv4 (Gold), GSA PBS-100, US Courts Design Guide, and US Marshals Service Publication 64.

c.

(1) TITLE AND LOCATION *(City and State)*:
USAF- JBSA 502nd, Lackland AFB - Repair and Replace HVAC Components, B1160, San Antonio, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Mechanical Engineer for the replacement of the HVAC and installation of new life safety systems for the air traffic control tower. Cost: $125K

Specialized Experience Area(s)
Complex Mechanical design

- ✓ Oversaw the project and any oversights that involved the replacement of the existing chilled water air handlers with a VAV DX air handler
- ✓ The existing stairwell was upgraded to meet current code for life safety which included a stair pressurization and fire alarm upgrades in compliance with UFC 3-600-01
- ✓ Designed HVAC in accordance with UFC 3-441-01

d.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District- Corpus Christi Army Depot, Building 8 North Repairs, Phase E-H, Corpus Christi, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2021
CONSTRUCTION: **2026 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Mechanical Engineer Designer for the repair to the Building 8 North facility which included electrical, plumbing, lighting, communication, HVAC, fire suppression, elevator, mechanical, roof, structural, floor, ACP, and abatement of ACM and lead based paint. Cost: $48.9M

Specialized Experience Area(s)
Design Charette; CIM; MII estimates; USACE CADBIM

- ✓ Conducted field survey to validate scope of work, design documents and engineering analysis for the upgrade of plumbing, HVAC, and other mechanical systems including central chill water plant, steam piping upgrades, decentralized boiler systems, VAV air handler systems and industrial ventilation
- ✓ Performed HVAC loads and energy modeling in Trane Trace 700
- ✓ Designed HVAC and plumbing system in accordance with UFC 3-441-01 and UFC 3-420-01

e.

(1) TITLE AND LOCATION *(City and State):*
TxDOT- DHQ Laboratory Renovation, San Antonio, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Mechanical Engineer Designer for the renovation of a 15,000 sq ft laboratory for the San Antonio district headquarters of TxDOT. The laboratory functions included a sub-base material testing and asphalt lab. Cost: $2.4M

Specialized Experience Area(s)
Design Charette; Complex Mechanical design, CADBIM

- ✓ Directed mechanical preconstruction engineering, design studies, and construction plans and specifications for mechanical, power systems, and controls for new Border Patrol Station
- ✓ Designed key spaces that had HVAC systems within the buildings that included smoke purge and detention grade equipment and plumbing systems that included standard sewer, water, and vent
- ✓ Stamped/sealed mechanical designs as the EOR

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Dave Branson, PE, LEED AP BD+C	**Mechanical Engineer Checker**	a. TOTAL: 45 b. WITH CURRENT FIRM: 5

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Mechanical Engineering (1985)	PE (Mechanical): TX #61431 (1987) LEED AP BD +C USGBC #10054321 LPST Corrective Action Project Manager, TX (CAPM00164)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Dave Branson has served as Project Engineer of Record on more than 40 LEED Silver certified projects. Specialist in LEED and ASHRAE 90.1 HVAC and Energy Analysis applications. He is an accomplished Engineer and Project Manager specializing in integrated building systems, indoor air quality and photocatalytic oxidation including HVAC, DDC Controls & plumbing systems. **Organizations**: SAME, American Society of Heating, Refrigerating, and ASHRAE. Served as a voting member on standard committee ASHRAE 90.1., Fellow ASHRAE

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - Red River Army Depot (RRAD) – Install Security Fences and Repair Buildings, Texarkana, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2021
CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Mechanical Engineer Checker for the preparation of full construction plans and specs for 27 facility projects including major renovations to a warehouse and a fire station, including 23 DBB RFPs/ 4 Workplans. Designs completed in compliance with AT/ FP , DoD ABA and UFAS, UFC, and EISA standards. Cost**:** $16.5M

Specialized Experience Area(s)
Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Conducted site investigations to assess the condition of the project sites.
- ✓ Reviewed ASHRAE 90.1 compliant design of MEP system upgrades to reduce heating and cooling lifecycle costs for Fire Station #1
- ✓ Reviewed design of insulation system, upgraded lighting using high efficiency LEDs, and upgraded the existing HVAC to accommodate the storage of temperature sensitive HazMat equipment and medical supplies
- ✓ Utilized DrChecks to respond to design comments, attended design charrette and review meetings.

b.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - A-E Services for multiple SRM & CTC Projects, Fort Polk, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Mechanical Engineer Checker for the preparation of D-B-B RFP submittal for two separate packages for repairs to the North and South Wash Racks. Design included replacement of the 16-inch supply water lines, water cannons, two (2) electrical switch gears, control panels, lighting system, four 480V pumps, wiring and conduit, latrines, addition of two (2) hand wash stations, and control booth. Cost: $5.5M

Specialized Experience Area(s)
Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Conducted site investigations to assess the condition of the project sites
- ✓ Reviewed design of pump station with 480V pumps, control room, control panels, electrical switch gears, high mast lighting system, 16-inch water supply lines, drain lines, 18-inch wash rack concrete slab, water cannons, hand wash stations, latrines, and landscaping.
- ✓ Reviewed design of vehicle wash facility with two 200 HP wash pump station, 2160 G.P.M., and 235 Total Dynamic Head (T.D.H). Designed Post wash facility with two 25 HP wash pump station, 360 G.P.M., and 165 T.D.H.
- ✓ Designed sufficient water pressure and volume to each wash station per UFC 4-214-03 guidance.
- ✓ Utilized DrChecks to respond to design comments
- ✓ Attended design charrette and review meetings

c.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - Design of Tactical Equipment Maintenance Facility (TEMF) Renovations at Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Mechanical Engineer Checker for developing four (4) separate 100% plans and specifications packages for each battalion TEMF. Building renovations totaling required to rearrange the functional areas and capacities for doors, power/data upgrades, overhead cranes, and maintenance pits. Size: 88,000 SF. Cost: $22M

Specialized Experience Area(s)
Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Attended the design charrette and conducted site investigations to assess the condition of the project sites
- ✓ Reviewed design of HVAC systems as per recent ASHRAE 90.1 requirements
- ✓ Reviewed design of a dedicated Outside Air System for the interior space ventilation requirements
- ✓ Reviewed design of vehicle exhaust systems for the repair and maintenance areas with manual controls

d.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - Repair Building B499 Randolph Air Force Base, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Mechanical Engineer Checker for developing a D-B-B RFP to renovate the entire 3rd floor of B499, HQ, at Air Force Personnel Center, to provide open storage cubicle areas, a new SCIF, a command suite, as well as additional support spaces. Size: 17,573 SF. Cost: $3.8M

Specialized Experience Area(s)
Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Reviewed design of HVAC systems as per ASHRAE 90.1 requirements.
- ✓ Rerouted and designed HVAC utilities that do not specifically serve the secure area per ICD/ICS 705 Version 1.5.
- ✓ Reviewed design of duct penetrations to the open storage and secure areas greater than 96 in2 with security bars per DODM 5200.01-Volume 3-Enclosure 3 and ICD/ICS 705 Version 1.5.
- ✓ Attended design charrette and design review meetings
- ✓ Performed overall QC of design deliverables
- ✓ Responded to DrChecks comments and RFIs

e.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - AE Services for Design-Build Repair Building 6426, Hangar 3, for 11th Bomb Squadron, Barksdale AFB, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Mechanical Engineer Checker for a 35% DB package ready to advertise (RTA) conceptual design and design analyses for renovations of a Hangar in conformance to UFC 4-211-01. Size: 28,000 SF. Cost: $6.6M

Specialized Experience Area(s)
Specs Intact; MII estimates; USACE CADBIM, D-B RFP

- ✓ Reviewed design of HVAC system, ventilation, louvers and fans, and new air vents at restrooms
- ✓ Reviewed Analyses / Studies / Life Cycle Costing as part of the design
- ✓ Attended design charrette, VE study and design review meetings
- ✓ Performed overall QC of design deliverables
- ✓ Responded to DrChecks comments and RFIs

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Phillip Applebaum, PE	**Electrical Engineer Designer**	a. TOTAL: 39 b. WITH CURRENT FIRM: 24

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Richardson, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Electrical Engineering (1984)	PE (Electrical): TX #68404 (1990)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Phillip has managed and engineered the development of plans and specifications for MEP projects involving military, education and other institutional facilities. His discipline specific experience in all types of electrical distribution, including 5 and 15 KV systems, as well as functional, efficient, and decorative lighting design also makes him a key contributor of the project design. He is also experienced in specialty systems including computer room power and distribution, life safety systems, emergency power systems, and lighting control. His experience in managing multidiscipline projects that have significant MEP design due to existing conditions have made him a vital asset for those facilities that are required to remain in operation while construction is in progress. His discipline specific experience in all types of electrical distribution, including 5 and 15 KV systems, as well as functional, efficient, and decorative lighting design also makes him a key contributor in the aesthetic design of projects. Philip is also experienced in specialty systems including computer room power and distribution, life safety systems, emergency power systems, and lighting control.
Organizations: Illuminating Engineering Society (IES); National Society of Professional Engineers (NSPE); Texas Society of Professional Engineers

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
City of Dallas - Mill Creek-Peaks Branch-State Thomas Drainage Relief Project, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2022
CONSTRUCTION: **2023 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Electrical Engineer Designer for the design and construction of a 25,000 lf, 30-foot diameter, 100-foot deep tunnel to provide drainage relief for the Mill Creek and Peaks Branch drainage basins. Cost: $250M

Specialized Experience Area(s)
Construction Phase Services, Full design documents, USACE Coordination, Cost Estimating

- ✓ Led the global MEP design and provided overall QC on the electrical design
- ✓ Coordinated efforts to facilitate a complete electrical design up to 100% design complete
- ✓ Design oversight on electrical components including specifications on grounding systems, internal and external lighting systems, and special systems including fire alarms, access control, and CCTV
- ✓ Performed the calculations for the associated fault current for each of the electrical panels

b.

(1) TITLE AND LOCATION *(City and State)*:
Dallas Water Utilities - Roof and HVAC Equipment Replacement and Major Repairs, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Electrical Engineer Designer for the replacement of roofing, HVAC equipment at various DWU facilities including 77 roof replacement designs and 461 HVAC system component replacements at 3 water treatment plants, 2 wastewater treatment plants, 3 service stations, and 12 pump stations. Cost: $3.6M

Specialized Experience Area(s)
Major Electrical Upgrades

- ✓ Prepared the replacement documents for electrical systems
- ✓ Verified existing condition assessments and assisted in solicitation for contracts and contract administration during construction.
- ✓ Assisted in the analysis of one of Dallas's critical pump stations that conveys treated water to other ground storage reservoirs via an 84-inch transmission main and pumps directly into the Pleasant Grove and East High-pressure zones. The station consists of nine pumps, four of which are two-speed, and has a total capacity of 400 mgd.

c.

(1) TITLE AND LOCATION *(City and State):*
UT Dallas - Central Energy Plant (CEP) Electrical Upgrades, Richardson, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017
CONSTRUCTION: **N/A**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Electrical Engineer Designer for the electrical design upgrades for the Central Energy Plant. Fee: $313K

Specialized Experience Area(s)
Major Electrical Upgrades

- ✓ Provided electrical design that included new main campus main-tie-main distribution 12.47KV switchgear re-feeding existing campus loads and a new Energy Plant distribution main-tie-main 12.47KV switchgear dedicated to the CEP. This distribution gear provided multiple dedicated feeders to service all loads within the CEP including transformers serving 5KV chillers and a 480V main-tie-main distribution serving the central plant motor control centers.
- ✓ Electrical Engineer of Record

d.

(1) TITLE AND LOCATION *(City and State):*
Toyota Manufacturing Plant Expansion for Kautex, San Antonio, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2021
CONSTRUCTION: **N/A**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Electrical Engineer Designer for the electrical design for the expansion of an existing building. Fee: $56.5K

Specialized Experience Area(s)
Major Electrical Upgrades

- ✓ Provided electrical design and engineered construction documents for the building expansion defining electrical distribution, connections for power and lighting systems, conduit raceways for telephone/data systems, security systems, and fire alarm. This included MV distribution to a new 3,000kVA transformer which feeds two independent 1,600 Amp Switchboards.
- ✓ Electrical Engineer of Record

e.

(1) TITLE AND LOCATION *(City and State):*
Texas Department of Criminal Justice (TDCJ), Electrical Infrastructure Upgrade, Huntsville Unit, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017
CONSTRUCTION: **2017**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

Electrical Engineer Designer for the upgrade to the electrical infrastructure within the entire complex. Fee: $575.3K

Specialized Experience Area(s)
Major Electrical Upgrades

- ✓ Responsible for the preparation of engineering services to TDCJ for upgrade of electrical infrastructure for the complex including upgrades to unit substations, medium voltage and low voltage feeders, distribution panel and branch circuit panel upgrades, and repairs to equipment
- ✓ Designed security lighting upgrades and installed in critical locations throughout the corrections campus.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Maged Rifat, PE	**Electrical Engineer Checker**	a. TOTAL: 47 b. WITH CURRENT FIRM: 5

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Electrical Engineering	PE (Electrical): TX #42314 (1977)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Maged Rifaat has more than 47 years of experience in providing electrical design for facilities, municipal water and wastewater system, construction, and inspection services and disaster management and response for various clients including USACE, City, County and various local entities. He has provided technical expertise in researching, developing, redesigning, and implementing various automation enhancements to streamline wastewater collection, treatment and maintenance activities, resulting in significant cost savings in energy usages, chemical consumptions, and communication services. His field of expertise includes the following: electrical load analysis; riser and one-line diagrams; lighting and power layout; short circuit current and voltage drop calculations panel schedules and specifications; power generation and transmission; high, medium and low voltage distributing system.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
USACE Fort Worth District - Red River Army Depot (RRAD) – Install Security Fences and Repair Buildings, Texarkana, TX	PROFESSIONAL SERVICES: 2021 CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Electrical Engineer Checker for the preparation of full construction plans and specs for 27 facility projects including major renovations to a warehouse and a fire station, including 23 DBB RFPs/ 4 Workplans. Designs completed in compliance with AT/ FP , DoD ABA and UFAS, UFC, and EISA standards. Cost**:** $16.5M

Specialized Experience Area(s) Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Conducted site investigations to assess the condition of the project sites.
- ✓ Reviewed electrical design that included automatic cantilever rolling gate openers and UFC 3- 350-01 compliant security lighting at the vehicle and pedestrian gates. Gates con- formed to ADA criteria with CAC readers, intercoms, cameras, and keypads
- ✓ Utilized DrChecks to respond to design comments, attended design charrette and review meetings.

b.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
USACE Fort Worth District - A-E Services for multiple SRM & CTC Projects, Fort Polk, LA	PROFESSIONAL SERVICES: 2017-2019 CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Electrical Engineer Checker for the preparation of D-B-B RFP submittal for two separate packages for repairs to the North and South Wash Racks. Design included replacement of the 16-inch supply water lines, water cannons, two (2) electrical switch gears, control panels, lighting system, four 480V pumps, wiring and conduit, latrines, addition of two (2) hand wash stations, and control booth. Cost: $5.5M

Specialized Experience Area(s) Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Conducted site investigations to assess the condition of the project sites
- ✓ Designed the control room with a control panel, a mini-power zone (480V-240/120V with a 60A panel), a heater fed by a disconnect switch, general receptacles, and a light fixture.
- ✓ Designed exterior electrical distribution system with a service transformer, primary feeder, secondary feeder, and 3-phase service. Designed ASHRAE 90.1 2013, UFC 3-530-01and FAA complaint lighting for the control room and exterior high mast LED lighting.
- ✓ Utilized DrChecks to respond to design comments, attended design charrette and review meetings

c.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - Design of Tactical Equipment Maintenance Facility (TEMF) Renovations at Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Electrical Engineer Checker for developing four (4) separate 100% plans and specifications packages for each battalion TEMF. Building renovations totaling required to rearrange the functional areas and capacities for doors, power/data upgrades, overhead cranes, and maintenance pits. Size: 88,000 SF. Cost: $22M
Specialized Experience Area(s) Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Attended the design charrette and conducted site investigations to assess the condition of the project sites
- ✓ Reviewed design of automatic receptacle control in accordance with ASHRAE 90.1-2013 and automatic lighting control in accordance with ASHRAE 90.1-2013/UFC 3-530-01. Design included energy conservation and energy monitoring via sub-metering as required by ASHRAE 90.1 and 189.1.
- ✓ Reviewed design for upgrading interior lighting control system for all areas with LED lights with energy-controlled sensors
- ✓ Reviewed design QC of the new telecommunications room and premise distribution system in compliant with UFC-3-580-01 standards

d.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - Repair Building B499 Randolph Air Force Base, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Electrical Engineer Checker for developing a D-B-B RFP to renovate the entire 3rd floor of B499, HQ, at Air Force Personnel Center, to provide open storage cubicle areas, a new SCIF, a command suite, as well as additional support spaces. Size: 17,573 SF. Cost: $3.8M
Specialized Experience Area(s) Specs Intact; MII estimates; USACE CADBIM, Full Design Documents

- ✓ Reviewed design of electrical wiring to support communication wiring and system/program set up per DODM 5200.01-Volume 3-Enclosure 3
- ✓ Verified and modified the existing electrical service/transformer to support new requirements. Electrical conductors were sized to handle project loads and then terminated into required electrical transmission equipment
- ✓ Performed design QC of LED replacements for interior and exterior lights
- ✓ Designed occupancy sensor-controlled surge protectors for cubicles to secure non-critical loads when workstations are unoccupied
- ✓ Attended design charrette and design review meetings
- ✓ Performed overall QC of design deliverables
- ✓ Responded to DrChecks comments and RFIs

e.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - AE Services for Design-Build Repair Building 6426, Hangar 3, for 11th Bomb Squadron, Barksdale AFB, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Electrical Engineer Checker for a 35% DB package ready to advertise (RTA) conceptual design and design analyses for renovations of a Hangar in conformance to UFC 4-211-01. Size: 28,000 SF. Cost: $6.6M
Specialized Experience Area(s) Specs Intact; MII estimates; USACE CADBIM, D-B RFP

- ✓ Reviewed design of new electrical service and new LED lighting and controls
- ✓ Attended design charrette, VE study and design review meetings
- ✓ Performed overall QC of design deliverables
- ✓ Responded to DrChecks comments and RFIs

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Kris D. Prasad, PE	**Geotechnical Engineer Designer**	a. TOTAL: 29 b. WITH CURRENT FIRM: 20

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering BS, Civil Engineering	PE (Civil): TX #91952 (2003); LA #34186 (2008)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Professional experience includes 800+ projects with a value of over $500M for various clients including USACE, NAVFAC, IBWC, USDA-NRCS, USFWS, state and local agencies. Provided engineering and design services on horizontal structures such as airfield, levees, dams, channels, drainage structures, pump stations, public utilities, road and bridge projects, water and sewage line, buildings and military facilities, residential subdivision underground utilities, and pavement designs. Proficient in geotechnical softwares including but not limited to GeoStudio Suite (SEEP/W, SLOPE/W, SIGMA/W), Ensoft (APILE, LPILE, SHAFT, GROUP), PCASE, FLAC, PLAXIS, Bentley (gINT, HoleBASE, OpenGround). **Training:** Federal Project Management. **Membership:** SAME, ACEC, ASCE.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District-AE Services for SRM and CTC Projects, Fort Polk, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Geotechnical Engineer Designer for EISA compliant stormwater drainage for roads, buildings, parking lots, and utility improvements. Led design of wash racks, installation of domestic, fire water, and sewage utilities for building renovations including site restoration. Cost: $5.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Geotechnical), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Design-Build RFP Preparation, Full Design Documents

- ✓ Conducted pre-design site assessment by performing a site walk to document current conditions
- ✓ Oversaw subsurface field investigation including EM 1110-1-1804 compliant soil borings up to 40 ft. using buggy & track mounted rigs
- ✓ Assigned laboratory tests to determine the soil characteristics
- ✓ Performed PCASE analysis and provided pavement design recommendations for new pavement with heavy equipment trailer with Abrams Tank
- ✓ Performed Creek Stability analysis using SLOPE/W
- ✓ Designed UFC 3-201-0
- ✓ 1 (Geotechnical) foundation for box culverts, retaining walls, slope riprap and roadway
- ✓ Provided erosion control recommendations
- ✓ Provided geotechnical design recommendations including lateral earth pressures, soil bearing pressure and uplift pressure for culvert foundation, foundation design for wash racks, groundwater control, pavement and trail design, and construction recommendations

b.

(1) TITLE AND LOCATION *(City and State)*:
US Fish & Wildlife – Trinity River Champions Lake Spillway Replacement | Liberty, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019-2020
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Geotechnical Engineer Designer for the replacement/ reconstruction of the existing Spillway. The primary purpose of this D-B project was to produce design-build construction documents, specifications, and a cost estimate to repair the levee/spill way and associated appurtenances. Rebuilding and armoring of the levee and associated spillway provided safe access for both the public and the utility companies that need to access their infrastructure. Cost: $3.5M

Specialized Experience Area(s)
UFC 3-201-01, Full Design Documents

- ✓ Conducted pre-design site assessment by performing a site walk to document current conditions
- ✓ Coordinated with the USFWS, USACE, TxDOT and County personnel
- ✓ Acquired drill rig access for water borings,
- ✓ Oversaw the field investigations, assigned lab testing, and analyzed the tests results for the design development of the existing dam with eroded rock fill spillway and reduce seepage through the voids of the filled rocks
- ✓ Performed slope stability, seepage, settlement, erosion and seismic analysis of structures for the new spillway and existing levee
- ✓ Provided UFC 3-201-01 (Geotechnical) compliant foundation design parameters for new spillway and intake structures
- ✓ Utilized PLAXIS, SLOPE/W, SEEP/W, and gINT softwares

c.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District – A-E services for D-B-B Fort Hood – Repair North Fort Hood Drainage, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Geotechnical Engineer Designer to correct the drainage at NFH Cantonment by preventing the roads and airstrips overtopping and inundation during the 25-yr storm event and alleviating other general flooding issues associated with five areas in Fort Hood, TX. Cost: $5.5M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Geotechnical), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Full Design Documents

- ✓ Conducted pre-design site assessment by performing a site walk to document current conditions
- ✓ Led EM 1110-1-1804 compliant 25 soil borings drilled up to 25 feet using track mounted rigs
- ✓ Assigned EM1110-2-1906 compliant and ASTM standards laboratory tests to determine moisture content, Atterberg limits, complete sieve analysis, soil classification, and triaxial test
- ✓ Analyzed slope stability for the open channels for the conditions
- ✓ Developed and analyzed a two-dimensional numerical model slope stability using the SLOPE/W module within GeoStudio
- ✓ Provided UFC 3-201-01 (Geotechnical) compliant recommendations for erosion analysis, bedding for box culverts and reinforced concrete pipes, coefficient of earth pressures, rip-rap recommendations for outfalls, pavement design (PCASE), and construction recommendations

d.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - A-E Services for Dam 42 Repairs, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Geotechnical Engineer Designer for the repairs to rehabilitate Dam 42 to ensure the design and repairs bring the dam into compliance with the State, USACE and applicable federal regulations. Cost: $1.5M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Geotechnical), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Full Design Documents

- ✓ Reviewed the results of the USACE field and lab investigation
- ✓ Performed engineering analysis which included seepage and stability analysis of the proposed embankment modifications and emergency spillway erodibility by using SEEP/W and SLOPE/W
- ✓ Performed PCASE analysis and provided pavement design recommendations for new access road leading to the outfall with a landing area adjacent to the spillway outfall
- ✓ Provided geotechnical parameters for bearing capacity, equivalent fluid pressures, and subgrade modulus
- ✓ Provided recommendation for design alternative methods to restrict access and penetrations of embankment by incorporating Jersey barrier along downstream with accounting stability and seepage analysis required for the dam

e.

(1) TITLE AND LOCATION *(City and State)*:
IBWC - Sunland Park Levee Forensic Investigation, El Paso County, TX and Dona Ana County, NM

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Geotechnical Engineer Designer for the investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Cost:$10M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Geotechnical), Full design documents

- ✓ Conducted pre-design site assessment by performing a site walk to document current conditions
- ✓ Performed forensic analysis of the levee by reviewing all the contract documents, QC data, and inquiring the personnel involved
- ✓ Oversaw subsurface field investigation including EM 1110-1-1804 compliant soil borings (252) up to a depth of 80 ft. 130 soil borings were drilled on top of a levee and 122 borings drilled on the river side slope of the levee using buggy & track mounted rigs
- ✓ Assigned laboratory tests to determine the soil characteristics
- ✓ Performed UFC 3-201-01 (Geotechnical) complaint slope stability and seepage analysis, scour analysis, and provided erosion control measures, geophysical analysis, and provided engineering recommendations
- ✓ Evaluated levee erosion and amount of soil loss for six factors: length of slope, slope gradient, ground cover, soil type, management, and rainfall
- ✓ Utilized LPILE, SHAFT, GROUP, gINT softwares

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Voss Lakshman, PE	**Geotechnical Engineer Checker**	a. TOTAL: 24 b. WITH CURRENT FIRM: 15

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV, LLC | Houston, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering BS, Civil Engineering	PE (Civil): TX #90452 (2002)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Voss Lakshman has more than 24 years of professional experience in the areas of quality control, geotechnical engineering, foundation design, environmental engineering and construction management and inspection. His experience engineering includes structural foundation design of various structures from dams, brides, high-rise buildings, school buildings and facilities, and petrochemical plants to individual homes, roads, warehouses and retaining walls. He has vast knowledge of Corps of Engineers standards and specification, AASHTO and ASTM test methods, specifications, and practices. **Membership:** ACEC, ASCE.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District-AE Services for SRM and CTC Projects, Fort Polk, LA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Geotechnical Engineer Checker for EISA compliant stormwater drainage for roads, buildings, parking lots, and utility improvements. Led design of wash racks, installation of domestic, fire water, and sewage utilities for building renovations including site restoration. Cost: $5.5M

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Geotechnical), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Design-Build RFP Preparation, Full Design Documents

- ✓ Reviewed laboratory tests to determine the soil characteristics
- ✓ Reviewed PCASE analysis and provided pavement design recommendations for new pavement with heavy equipment trailer with Abrams Tank
- ✓ Reviewed Creek Stability analysis using SLOPE/W
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint design for the foundation for box culverts, retaining walls, slope riprap and roadway
- ✓ Reviewed erosion control recommendations
- ✓ Reviewed geotechnical design recommendations including lateral earth pressures, soil bearing pressure and uplift pressure for culvert foundation, foundation design for wash racks, groundwater control, pavement and trail design, and construction recommendations

b.

(1) TITLE AND LOCATION *(City and State)*:
US Fish & Wildlife – Trinity River Champions Lake Spillway Replacement | Liberty, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019-2020
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Geotechnical Engineer Checker for the replacement/ reconstruction of the existing Spillway. The primary purpose of this D-B project was to produce design-build construction documents, specifications, and a cost estimate to repair the levee/spill way and associated appurtenances. Rebuilding and armoring of the levee and associated spillway provided safe access for both the public and the utility companies that need to access their infrastructure. Cost: $3.5M

Specialized Experience Area(s)
UFC 3-201-01 (Geotechnical), Full Design Documents

- ✓ Reviewed laboratory test results including moisture content, Atterberg limits, complete sieve analysis, soil classification, triaxial testing, consolidation testing and permeability testing
- ✓ Reviewed the tests results for the design development of the existing dam with eroded rock fill spillway and reduce seepage through the voids of the filled rocks
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint earth embankment and foundation recommendations for seepage analysis, seepage management for rockfill dam and levees with soil, slope stability analysis, and breach analysis
- ✓ Reviewed gINT boring log fence diagrams
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint foundation design parameters for new spillway and intake structures
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint design for the spillway road which consisted of articulated concrete block erosion control mat

c.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District – A-E services for D-B-B Fort Hood – Repair North Fort Hood Drainage, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Geotechnical Engineer Checker to correct the drainage at NFH Cantonment by preventing the roads and airstrips overtopping and inundation during the 25-yr storm event and alleviating other general flooding issues associated with five areas in Fort Hood, TX. Cost: $5.5M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Geotechnical), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Full Design Documents

- ✓ Reviewed EM1110-2-1906 compliant and ASTM standards laboratory tests to determine moisture content, Atterberg limits, complete sieve analysis, soil classification, and triaxial test
- ✓ Reviewed slope stability for the open channels for the conditions
- ✓ Reviewed and analyzed a two-dimensional numerical model slope stability using the SLOPE/W module within GeoStudio
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint recommendations for erosion analysis, bedding for box culverts and reinforced concrete pipes, coefficient of earth pressures, rip-rap recommendations for outfalls, pavement design (PCASE), and construction recommendations

d.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - A-E Services for Dam 42 Repairs, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2019
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Geotechnical Engineer Checker for the repairs to rehabilitate Dam 42 to ensure the design and repairs bring the dam into compliance with the State, USACE and applicable federal regulations. Cost: $1.5M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Geotechnical), MII Cost Estimates, Specs Intact, USACE CADBIM Policies and Procedures, Full Design Documents

- ✓ Reviewed the results of the USACE field and lab investigation
- ✓ Reviewed engineering analysis which included seepage and stability analysis of the proposed embankment modifications and emergency spillway erodibility by using SEEP/W and SLOPE/W
- ✓ Reviewed PCASE analysis and provided pavement design recommendations for new access road leading to the outfall with a landing area adjacent to the spillway outfall
- ✓ Reviewed geotechnical parameters for bearing capacity, equivalent fluid pressures, and subgrade modulus
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint recommendation for design alternative methods to restrict access and penetrations of embankment by incorporating Jersey barrier along downstream with accounting stability and seepage analysis required for the dam

e.

(1) TITLE AND LOCATION *(City and State)*:
IBWC - Sunland Park Levee Forensic Investigation, El Paso County, TX and Dona Ana County, NM

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2016
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Geotechnical Engineer Checker for the investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Cost:$10M

Specialized Experience Area(s)

CIM, UFC 3-201-01 (Geotechnical), Full design documents

- ✓ Reviewed the existing as-builts before performing levee safety inspection and development of the risk assessment documentation
- ✓ Reviewed forensic analysis of the levee by reviewing all the contract documents, QC data, and inquiring the personnel involved
- ✓ Reviewed laboratory tests to determine the soil characteristics
- ✓ Reviewed UFC 3-201-01 (Geotechnical) complaint slope stability and seepage analysis, scour analysis, and provided erosion control measures, geophysical analysis, and provided engineering recommendations
- ✓ Reviewed geological site characterization and fault mapping for Canutillo Levees
- ✓ Reviewed comparative analysis with historically failed earthen embankments due to dispersive soils

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Chris Streb, PE	**Environmental Engineer Designer**	a. TOTAL: 27 b. WITH CURRENT FIRM: 21

15. FIRM NAME AND LOCATION *(City and State)*: Biohabitats, Inc. | Baltimore, MD

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Biological Resources Engineering BS, Civil Engineering	PE (Civil): MD #26960 (2003)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Chris has 27 years of diversified engineering experience in regenerative design including ecological planning, green infrastructure design, stream restoration, and sustainable technologies. His projects have ranged from green infrastructure planning for the New York City to designing patented floating wetland technology for the Baltimore Inner Harbor. Well versed in all aspects and scales of watershed restoration, his experience includes physical and biological assessments, hydrologic and hydraulic analyses, site evaluation and data synthesis, concept development, permitting, de-sign and construction documents, cost estimating, construction procurement and monitoring. His experience in the design of stormwater practices includes micro-bioretention systems, organic sand filters, and cisterns. He has engineered facilities for wastewater treatment which have incorporated anaerobic digesters, trickling filters, and wetland cells. Chris has been one of the creative leaders within Biohabitats, integrating engineering and a passion for the natural world to design ecological systems that yield functions and services that support communities, biodiversity, and life. **Trianing:** Rosgen Levels I-II, Biomimicry Specialist

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
H2OHIO Sandusky Bay Restoration Initiative Nutrient Reduction Wetlands, Vickery (Sandusky and Erie Counties), OH	PROFESSIONAL SERVICES: 2020-2022 CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Environmental Engineer Designer for Sandusky Bay Initiative to restore the ecological functionality of the Bay and improve water quality. The Initiative aims to restore coastal wetlands to enhance nutrient uptake, reduce algal blooms with a focus on Planktothrix (HAB). Fee: $810k

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Performed base line investigation
- ✓ Designed grades for establishment of coastal wetlands
- ✓ Determined design functions
- ✓ Developed Civil Engineering Modeling concept plans for each of the nature-based shoreline and restoration sites
- ✓ Designed invasive management plans and native planting plans
- ✓ Designed habitat restoration and green infrastructure
- ✓ Participated in public engagement process
- ✓ Developed cost and budgeting information
- ✓ Developed plans and specifications in AutoCAD
- ✓ Coordinated clearances and permits, including threatened and endangered species, historic structures, erosion & sediment control, and a joint Department of Environmental Protection/USACE waterways permit.

b.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
Cuyahoga Green Bulkheads at Irishtown Bend, Cleveland, OH	PROFESSIONAL SERVICES: 2017-2021 CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Environmental Engineer Designer for the design of larval fish habitat along 5.6 miles of steel sheet pile on the Cuyahoga River navigation channel. Fee: $800K

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Assessed the stream and watershed conditions.
- ✓ Developed a design to restore stability, ecological function, and safe access.
- ✓ Led workshops and charrettes with stakeholders.
- ✓ Designed and installed porotypes.
- ✓ Developed plans and specifications in AutoCAD
- ✓ Attended design charrette and design review meetings
- ✓ Performed overall QC of design deliverables
- ✓ Developed cost and budgeting information
- ✓ Responded to comments and RFIs

c.

(1) TITLE AND LOCATION *(City and State):*
Miquon School Stream Restoration, Conshohocken, PA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Environmental Engineer Designer for the stream restoration design for a creek adjacent to a school. Cost: $130K

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Assessed the stream and watershed conditions.
- ✓ Developed a design to restore stability, ecological function, and safe access.
- ✓ Coordinated clearances and permits, including threatened and endangered species, historic structures, erosion & sediment control, and a joint Department of Environmental Protection/USACE waterways permit.

d.

(1) TITLE AND LOCATION *(City and State):*
Allegheny Arboretum Confluence Discovery Park Master Plan at Indiana University of Pennsylvania, Indiana, PA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Environmental Engineer Designer and Project Manager for assessing ecological conditions and regeneration of ecological functions of this former industrial site. Size: 354 acres | Fee: $49K

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Performed field inspection and site assessment.
- ✓ Identified recommendations for ecological improvement.
- ✓ Designed management plan for plant communities.
- ✓ Identified key animal indicator species and their habitat requirements.
- ✓ Developed an ecosystem service valuation including carbon storage, stormwater runoff reduction, and air pollution removal.
- ✓ Quantified projected restoration benefits and their change as plant communities mature.
- ✓ Developed plans and specifications in AutoCAD

e.

(1) TITLE AND LOCATION *(City and State):*
Lardner's Point Park Living Shoreline, Philadelphia, PA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2018
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Environmental Engineer Designer for this project that converts an industrial riverfront into an ecologically rich and sustainable greenway park.
Size: 4 acres | Cost: $1.4M

Specialized Experience Area(s)
CIM, Full Design Documents, cost estimates

- ✓ Assessed the site conditions
- ✓ Developed schematic design recommendation
- ✓ Prepared final design and construction package for a park along the greenway corridor and trail network
- ✓ Designed habitat enhancement and restoration components, including meadow creation, riparian woodland plantings, wetland enhancement and invasive species management
- ✓ Designed a 'living shoreline' of native riparian and marsh plants to provide stabilization, habitat, and localized water quality improvement
- ✓ Developed plans and specifications in AutoCAD
- ✓ Attended design charrette and design review meetings
- ✓ Performed overall QC of design deliverables
- ✓ Reviewed cost estimates
- ✓ Responded to comments and RFIs

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Michael Lighthiser, PE, LEED AP	**Environmental Engineer Checker**	a. TOTAL: 27 b. WITH CURRENT FIRM: 21

15. FIRM NAME AND LOCATION *(City and State)*: Biohabitats, Inc. | Denver, CO

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MSc, Environmental Water Resources, Civil and Environmental Engineering BS, Civil Engineering	PE (Civil): KY, # 22713 (2002); IN, PE10403242 (2003); OH, E67166 (2002); CA, 61790 (2001); CO, PE-38750 (2004)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Mike has 27 years of water resources engineer specializing in the restoration of natural systems for institutional, commercial, and public sector projects. He specializes in stream and wetland restoration. Proficient in H&H, and geomorphology of large rivers, creeks, fens, salt marshes, coastal lagoons, and shorelines. He is also an experienced in both steady and unsteady one-dimensional flow, sedimentation and erosion, and rainfall/runoff relationship, morphological surveys of streams, tidal inlets, and tidal channels; topographical surveys of marshes and shorelines; measurements of water level and velocity; bathymetric surveys; and wave-data collections. As one of the firm's seniors and most experienced engineers, he regularly serves as design reviewer. **Trianing:** EPA SWMM, Rosgen Level I-II

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
H2OHIO Sandusky Bay Restoration Initiative Nutrient Reduction Wetlands, Vickery (Sandusky and Erie Counties), OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020-2022
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Environmental Engineer Checker for Sandusky Bay Initiative to restore the ecological functionality of the Bay and improve water quality. The Initiative aims to restore coastal wetlands to enhance nutrient uptake, reduce algal blooms with a focus on Planktothrix (HAB). Fee: $810k

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Reviewed base line investigation
- ✓ Reviewed grades designed for establishment of coastal wetlands
- ✓ Reviewed Civil Engineering Modeling concept plans for each of the nature-based shoreline and restoration sites
- ✓ Reviewed invasive management plans and native planting plans
- ✓ Reviewed habitat restoration and green infrastructure plans
- ✓ Participated in public engagement process
- ✓ Reviewed cost and budgeting information
- ✓ Reviewed clearances and permits, including threatened and endangered species, historic structures, erosion & sediment control, and a joint Department of Environmental Protection/USACE waterways permit.

b.

(1) TITLE AND LOCATION *(City and State)*:
USACE Detroit District – Knowlton Creek Run-off and Sediment Control Design for the Spirit Mountain Recreation Area Authority, Duluth, MN

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2012
CONSTRUCTION: **2012**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Environmental Engineer Checker oversaw the design process and plans, specifications, and ECIFP. Fee: $180K

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), Full Design Documents, MII Cost Estimates for Ecological Restoration

- ✓ Assessed sites
- ✓ Reviewed UFC 3-201-01 compliant plans designed to reduce the quantity of run-off and to reduce the peak flows
- ✓ Reviewed designed infiltration scenarios
- ✓ Provided hydrographs and flows for the revised discharge
- ✓ Contributed to hydraulic modeling of the storm sewer system
- ✓ Performed overall QA/QC of the ecological design deliverables

c.

(1) TITLE AND LOCATION *(City and State)*:
USACE Philadelphia District – Wissahickon Feasibility Study, Philadelphia, PA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Environmental Engineer Checker, as a subconsultant, evaluated cost and restoration benefits for the 40 project restoration alternatives under consideration. Fee: $250K

Specialized Experience Area(s)
CIM, UFC 3-201-01 (Civil), Full Design Documents, MII Cost Estimates for Ecological Restoration

- ✓ Assessed restoration sites
- ✓ Wrote and edited chapters of the feasibility stud
- ✓ Reviewed restoration alternatives
- ✓ Reviewed estimated construction costs for the alternatives
- ✓ Reviewed UFC 3-201-01 compliant plans and specifications
- ✓ Performed overall QA/QC of the ecological design deliverables

d.

(1) TITLE AND LOCATION *(City and State):*
Springbrook Garden Park Wetland Restoration, Mentor, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019-2020
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Environmental Engineer Checker in charge of the engineering for a stream and wetland restoration and creation of new floodplain. Size: 1,175lf, 2.75 acres | Fee: $399K

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Performed design review of the integrated stream and wetland complex
- ✓ Oversaw hydrologic and hydraulic modeling with Civil Engineering Modeling
- ✓ Performed overall QA/QC of all restoration design deliverables
- ✓ Reviewed cost and budgeting information
- ✓ Consulted during construction to ensure compliance

e.

(1) TITLE AND LOCATION *(City and State):*
Marcourt Farms Chagrin River Restoration Design-Build, Village of Hunting Valley, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2019
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Environmental Engineer Checker for engineering of stream stabilization and adjacent ecological restoration, including riparian habitat and floodplain connectivity. Size: 500lf, 1 acre | Cost: $385K

Specialized Experience Area(s)
CIM, Full Design Documents

- ✓ Oversaw design development
- ✓ Provided technical oversight of the restoration design
- ✓ Assisted with floodplain permitting - USACE Buffalo District - NWP27
- ✓ Performed overall QA/QC of all restoration design-build plan set
- ✓ Reviewed cost and budgeting information
- ✓ Oversaw memo for securing an Ohio EPA Section 319 grant
- ✓ Consulted during construction to ensure compliance

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Eric Babcock, PE	**Fire Protection Engineering Designer**	a. TOTAL: 23 b. WITH CURRENT FIRM: 20

15. FIRM NAME AND LOCATION *(City and State)*: Jensen Hughes, Inc. | Cary, NC

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Fire Protection Engineering (2000)	PE (Fire Protection): NC (048044); CA (FP1610); MD (32353); NJ (24GE050811400), NY (083801), VA (41615), KY (43764) NCEES 16-883-72

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Eric Babcock is a registered Professional Engineer experienced in the management of projects for the design, review, inspection, and commissioning of fire protection systems, including fire sprinkler, fire alarm, and life safety systems for government buildings. He provides oversight for the development of full building code analyses for use by all engineering disciplines, architects, and interior designers. **Membership:**Professional Member, Society of Fire Protection Engineers (SFPE); Member, National Fire Protection Association (NFPA); Member, Salamander Honorary Fire Protection Engineering Society **Training:** SprinkCAD Fire Protection Design/Calculation Seminar, October 2003; Fundamentals of Engineering, State of Delaware, Fall 2000; FM-200 Fire Suppression Systems, KIDDE Fire Systems Training Program; ADS Series, FM-200 Fire Suppression Systems, KIDDE Fire Systems Training Program **Publications:** Babcock, E., "NFPA 99: A Fire and Life Safety Perspective," Consulting Specifying Engineer, June 2016; Babcock, E., "Building Codes, Performance Based Design and Life Safety Systems," Pratt Institute Center for Continuing & Professional Studies, 2011; Babcock, E., "WTC 7 Tower Talk of SFPE Seminar," Consulting Specifying Engineer, November 2002

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
Maintain/Repair/Add HH60 Hangar B751 Maintenance Hangar, Patrick AFB, FL	PROFESSIONAL SERVICES: 2018-2020 CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Designer. Provided code consulting and design of the fire suppression system, water supply system, and fire alarm/mass notification system for the complete renovation of a 25,000-SF hangar bay with associated shops and support areas. Cost: $15M

- ✓ Acting Fire Protection Engineer of Record for Design
- ✓ Designed UFC 3-600-01compliant Fire Suppression System (High-expansion Foam)
- ✓ Designed UFC compliant fire life safety systems, mass notification system
- ✓ Designed water supply lines
- ✓ Provided upgrades to existing fire pump installation supplying hangar

Specialized Experience Area(s)

USACE CADBIM; UFC 3-600-01

b.

(1) TITLE AND LOCATION *(City and State)*:	(2) YEAR COMPLETED
USAG, Humphreys East School, USAG Camp Humphreys, South Korea	PROFESSIONAL SERVICES: 2022 CONSTRUCTION: **2023 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Designer. Provided fire protection, life safety and accessibility code reviews for the project. The project includes the design and construction of a new $57M Humphreys East School per DoDEA Education Facilities specifications. Cost: $57M

- ✓ Provided Fire Life Safety Services in compliance with UFC 3-600-01
- ✓ Provided on-site design charrette participation and report development
- ✓ Performed building code and life safety code analysis and developed the Fire Protection/Life Safety Design Analysis and Life Safety Plan in accordance with the applicable UFCs and in conformance to the installation guidance document
- ✓ Provided design and review services for the fire suppression and fire alarm / mass notification system including water-based sprinkler system. Produced deliverables in AutoCAD and Autodesk REVIT (BIM)

Specialized Experience Area(s)

UFC 3-600-01; Use of USACE CADBIM Policies and Procedures

c.

(1) TITLE AND LOCATION *(City and State):*
USACE, NASIC Building 828 Fire Protection Systems Replacement, Wright-Patterson AFB, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2022
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Fire Protection Engineer Designer. Provided fire protection and life safety services for the design of fire protection systems and construction administration services.

- ✓ Acting Fire Protection Engineer of Record for Design
- ✓ Designed UFC 3-600-01compliant replacement Fire Protection Systems
- ✓ Participated in the design charrette and final documentation
- ✓ Drawings developed using 3D BIM

Specialized Experience Area(s)
UFC 3-600-01; Use of USACE CADBIM Policies and Procedures

d.

(1) TITLE AND LOCATION *(City and State):*
P-707 Bachelor Enlisted Quarters, MCB Camp Lejeune, NC

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020-2022
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Fire Protection Engineer Designer. Provided code consulting and design of the fire alarm and fire sprinkler systems for the D/B of a new 75,487-SF three story BEQ. The complex shall contain 165 Marine Corps 2+0 rooms along with support spaces. Maximum occupancy shall be 330 enlisted military personnel. The facility shall be designed around enclosed interior corridors. Each Marine Corps 2+0 room shall include a double occupancy living/sleeping area, two individual closets, shared toilet with a shower compartment, and a sink service area. Cost:N/A

- ✓ Providing code consulting and design of the fire alarm and fire sprinkler systems for the D/B of a new 75,487-SF three story BEQ
- ✓ Developed the code analysis and the Code Plans
- ✓ Designed UFC 3-600-01compliant fire protection engineering for the water-based fire suppression systems and a fire alarm/mass notification system, performed a hydrant flow test to validate available water supply
- ✓ Assisted in the development of the Cost Estimate for the Design Charrette Report and performed the 100% design submittal review. Deliverables were produced in AutoCAD and Autodesk REVIT (BIM)

Specialized Experience Area(s)
UFC 3-600-01, Use of USACE CADBIM Policies and Procedures

e.

(1) TITLE AND LOCATION *(City and State):*
Naval Operations Support Center (NOSC) Miscellaneous Repairs & Renovations, Chattanooga, TN

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2015-2016
CONSTRUCTION: **2017**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Fire Protection Engineer Designer. This project consisted of the Architecture, Interior Design, ATFP, and MEP design for a renovation of an existing 40,000 SF secure Naval Reserve. The spaces renovated included training, administrative, educational, assembly, storage spaces, and secure entry and reception spaces. Cost: N/A

- ✓ Provided UFC 3-600-01compliant fire protection design narrative, the building code and life safety analysis, and design documents for the fire alarm and suppression systems in accordance with the applicable codes and standards for vehicle maintenance facilities, a correctional facility and an assembly facility that houses fire pumps and water storage tanks
- ✓ Participated in the design charrette and final documentation
- ✓ Drawings developed using 3D BIM.

Specialized Experience Area(s)
UFC 3-600-01, USACE CADBIM

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
James Waite, PE	**Fire Protection Engineering Checker**	a. TOTAL: 16 b. WITH CURRENT FIRM: 5

15. FIRM NAME AND LOCATION *(City and State)*: Jensen Hughes, Inc. | Cary, NC

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Fire Protection Engineering (2006)	PE (Fire Protection): NC 044586 (2016) NICET #118943 Water-Based Systems Layout-Level III (2011)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:
Jimmy is a Fire Protection Engineer specializing in water-based fire protection systems. He also has experience with active fire protection systems including fire alarm systems and clean agent systems. Through his contracting background he has experience working with Authority Having Jurisdiction (AHJ) to gain permits and working to find solutions to permit complex projects. Member, Society of Fire Protection Engineers (SFPE)

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
Maintain/Repair/Add HH60 Hangar B751 Maintenance Hangar, Patrick AFB, FL

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018-2020
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Checker. Provided code consulting and design QC of the fire suppression system, water supply system, and fire alarm/mass notification system for the complete renovation of a 25,000-SF hangar bay with associated shops and support areas. Cost: $15M

- ✓ Reviewed UFC 3-600-01compliant Fire Suppression System (High-expansion Foam)
- ✓ Reviewed UFC compliant fire life safety systems, mass notification system
- ✓ Reviewed water supply lines
- ✓ Reviewed upgrades to existing fire pump installation supplying hangar

Specialized Experience Area(s)
USACE CADBIM; UFC 3-600-01

b.

(1) TITLE AND LOCATION *(City and State)*:
P-707 Bachelor Enlisted Quarters, MCB Camp Lejeune, NC

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020-2022
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Checker. Provided code consulting and design QC of the fire alarm and fire sprinkler systems for the D/B of a new 75,487-SF three story BEQ. The complex shall contain 165 Marine Corps 2+0 rooms along with support spaces. Maximum occupancy shall be 330 enlisted military personnel. The facility shall be designed around enclosed interior corridors. Each Marine Corps 2+0 room shall include a double occupancy living/sleeping area, two individual closets, shared toilet with a shower compartment, and a sink service area. Cost:N/A

- ✓ Performed design QC of the fire alarm and fire sprinkler systems for the D/B of a new 75,487-SF three story BEQ
- ✓ Reviewed the code analysis and the Code Plans
- ✓ Reviewed UFC 3-600-01compliant fire protection engineering for the water-based fire suppression systems and a fire alarm/mass notification system, performed a hydrant flow test to validate available water supply
- ✓ Reviewed Cost Estimate for the Design Charrette Report and the 100% design submittal

Specialized Experience Area(s)
UFC 3-600-01, Use of USACE CADBIM Policies and Procedures

c.

(1) TITLE AND LOCATION *(City and State):*
P-707 Bachelor Enlisted Quarters, MCB Camp Lejeune, NC

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Checker. Provided fire protection construction administration services for fire protection including site inspections and shop drawings reviews for the design and construction of a multi-story 70,000 SF hangar/warehouse facility. The building included a hangar bay with shops and office spaces, and a warehouse area for storage of goods associated with the program. The project also included the construction of an open sided hazardous storage area, an open sided vehicle storage area, and a Motor-T automotive shop. Cost:N/A

Specialized Experience Area(s)
UFC 3-600-01, Use of USACE CADBIM Policies and Procedures

- ✓ Performed design QC of the fire alarm and fire sprinkler systems for the design and construction of a multi-story 70,000 SF hangar/warehouse facility Reviewed the code analysis and the Code Plans
- ✓ Reviewed the design of complete fire sprinkler protection, a low-level, low-expansion Aqueous Film Forming Foam (AFFF) system, fire alarm/mass notification and detection system, fire pump and water storage tanks
- ✓ Reviewed Cost Estimate for the Design Charrette Report and the 100% design submittal

d.

(1) TITLE AND LOCATION *(City and State):*
P-240 Triton Mission Control Facility, NAS Whidbey Island, Oak Harbor, WA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Checker. Design-Build $26 million project to demolish the existing Building 240 at NASWI and construct a new 28,115 SF, one-story Triton Mission Control Facility. Cost:$26M

Specialized Experience Area(s)
UFC 3-600-01, Use of USACE CADBIM Policies and Procedures

- ✓ Performed design QC of the fire alarm and fire sprinkler systems for this Design-Build $26 million project
- ✓ Reviewed the design of complete wet pipe fire sprinkler system utilizing multiple risers and shielding, with a combination of fire alarm/mass notification and detection systems throughout the facility with multiple panels connected via fiber cabling for a design build Mega MACC Seed Project

e.

(1) TITLE AND LOCATION *(City and State):*
Repair Freight Terminal, Building 977 Renovation, Travis AFB, CA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Fire Protection Engineer Checker for fire protection engineering services for the renovation of Building 977. Cost:N/A

Specialized Experience Area(s)
UFC 3-600-01, Use of USACE CADBIM Policies and Procedures

- ✓ Performed design QC of the fire alarm/mass notification system; schematic design of a wet pipe sprinkler system; design of a carbon monoxide detection system for gas-fired radiant heaters; an egress analysis; and a fire protection narrative

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Keith Kothmann, CPE, CCC, CCI	**Cost Engineer**	a. TOTAL: 45 b. WITH CURRENT FIRM: 40

15. FIRM NAME AND LOCATION *(City and State)*: Construction Cost Management, Inc. | Fort Worth, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
Electrical Engineering Studies BS, Engineering CE PRIMAVERA P3 (1996)	Certified Professional Estimator (ASPE #1187166) – National – Membership obtained 1985 Certified Construction Consultant (ACI #6950) – National – Membership 1985 Certified Construction Inspector (ACI #6950) – National – Membership 1985 Scheduling Certification – 2000.

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Keith specializes in providing cost estimates for government and DoD, historic restoration, heavy civil, complex MEP projects, POL fuel facilities, National Park Service as well as many other unique project types. His expertise includes the use of MCACES MII, SUCCESS, PACES, Timberline, and other cost estimating programs as well as MS Project and Primavera for scheduling. His professional services include preparing conceptual/planning estimates, project schedules, schematic estimates, design development estimates, detailed preconstruction estimates, and life cycle costs. Projects range in all sizes up to approximately $500 million.

Awards: National Award Winner 2018 ASPE, Pentagon; National Award Winner 2021 ASPE, Trans-Canyon Waterline

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: USACE Fort Worth District – A-E services for D-B-B Fort Hood – Repair North Fort Hood Drainage | Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Cost Engineer for the repair of North Fort Hood Drainage. Scope included alleviating overtopping of roadways by floodwaters, removing sediment buildup, repairing erosion, stabilizing all disturbed areas, alleviating flooding of infrastructure, installing culverts/headwalls/inlets, increasing ditch capacities, creating trapezoidal channels, placing/or removing concrete, installing Fort Hood Stormwater BMPs & correcting any failures identified during site investigations. Cost:$5.5M

Specialized Experience Area(s)

MII Cost Estimates

- ✓ Led the development of MII cost estimates for this project which needed correction of all drainage failures for Areas A, C, E, and Longhorn and Shorthorn Airstrips
- ✓ Attended design charrette and all design review meetings.
- ✓ Provided cost estimates and schedules for charrette, 35%, 65%, 95%, and 100% design submittals.

b.

(1) TITLE AND LOCATION *(City and State)*: USACE Fort Worth District – Fort Hood Dams, 44, 45, 48 and 50, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Cost Engineer for project that included drainage improvements for Dams 44, 45, 48, and 50, including earthwork, storm drainage, paving, and related improvements. ACC $3M MPT: 3.1.2, 3.1.3., 3.1.6. Cost:$9.5M

Specialized Experience Area(s)

MII Cost Estimates

- ✓ Led the development of MII cost estimates for project that included drainage improvements for Dams 44, 45, 48, and 50, including earthwork, storm drainage, paving, and related improvements.
- ✓ Attended design charrette and all design review meetings.
- ✓ Provided cost estimates and schedules for charrette, 35%, 65%, 95%, and 100% design submittals.

c.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District – Sabine Pass to Galveston Bay, Port Arthur and Vicinity Coastal Storm Risk Management, (CSRM)

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **N/A**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Cost Engineer for this iconic project. The project starts at the northern end of the Taylors Bayou Turning Basin, where steel sheet pile floodwall meets concrete piles. The existing Port Arthur and Vicinity Hurricane Flood Protection Project consists of concrete piles, both cantilever and braced cantilevered. The floodwall was located adjacent to the Taylors Bayou Turning Basin which was to be dredged for maintenance and deepening. A portion of the floodwall section failed in August 2017 due to erosion of the flood-side foundation materials. Cost: N/A

Specialized Experience Area(s)
MII Cost Estimates, Value Engineering

- ✓ Led the development of MII cost estimates and Value Engineering services for this project
- ✓ Provided cost estimates including removal of the floodwall as needed and a new floodwall section to be designed and constructed. This project accounted for future deepening of Taylors Bayou Turning Basin based on the Sabine-Neches Waterway Channel Improvement Feasibility study. This included erosion and scour protection, impact barriers, resiliency features, utilities and structures
- ✓ Attended design charrette and all design review meetings
- ✓ Led the VE Study
- ✓ Provided cost estimates and schedules for charrette, 35%, 65%, 95%, and 100% design submittals.

d.

(1) TITLE AND LOCATION *(City and State):*
USACE South Texas Levee / Border Wall– Rio Grande Valley Floodwall

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2021**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Cost Engineer for the first 3-mile section of the US/Mexico border wall to be constructed, therefore the VE ideas generated from this meeting could possibly be used on the entire wall from the Gulf of Mexico to the Pacific Ocean, thereby generating a much greater impact than just for the immediate scope. Scope included a new concrete floodwall / levee with a new border wall constructed on top with related security improvements adjacent to the wall. Cost: $36 million. MPT: 3.1.3

Specialized Experience Area(s)
MII Cost Estimates, Value Engineering

- ✓ Led the development of MII cost estimates for this project that consisted of approximate 3-mile section of United States and Mexico Border
- ✓ Attended design charrette and all design review meetings.
- ✓ Participated in the VE Study
- ✓ Provided cost estimates and schedules for charrette, 35%, 65%, 95%, and 100% design submittals.

e.

(1) TITLE AND LOCATION *(City and State):*
USACE Fort Worth District - Various Drainage Repairs at RGAAF, Fort Hood, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017-2018
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Cost Engineer for the development of D-B RFP to mitigate drainage issues on RGAAF at Fort Hood, TX. Cost:$4.9M

Specialized Experience Area(s)
UFC 3-201-01, D-B RFP design

- ✓ Led the development of MII cost estimates for this project that consisted of development of D-B RFP to mitigate drainage issues on RGAAF at Fort Hood, TX
- ✓ Attended design charrette and all design review meetings.
- ✓ Provided cost estimates and schedules for draft, final and corrected final D-B RFP deliverables

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Dale Rhoads, AIA	**Architect Designer**	a. TOTAL: 38 b. WITH CURRENT FIRM: 10

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | McAllen, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
AAS, Architectural Technology (1985)	Registered Professional Architect: TX #20504 (2008) Registered Accessibility Specialist: TX #1257 (2010)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Dale joined Halff in 2011, bringing more than 25 years of architectural and related project experience. His experience includes education, government, corporate, medical, and criminal justice projects. Dale is an expert in building systems and the production of construction documents, Dale is responsible for the coordination of architectural detailing, the incorporation of structural and MEP building systems into significant new construction and renovation projects. He has been involved in numerous USACE projects in the SWD.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: Dallas Water Utilities - Stormwater Operations Center, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Designer for the confirmation of programming and building concept development for a Flood Control Operations Center to include administration offices, conference training center, staff facilities, and mechanical and electrical warehouse facilities for the City of Dallas' Dallas Water Utilities. Cost: $11.5M

Specialized Experience Area(s)

CADBIM, Full design documents

- ✓ Led the final design documentation of the project, including architectural BIM modeling and coordination.
- ✓ Coordinated with all disciplines through completion of the design documents.
- ✓ As a Construction Administration Architect, oversaw the building construction as owner's representative, shop drawing review, RFI resolution, and general contractor coordination

b.

(1) TITLE AND LOCATION *(City and State)*: Dallas Water Utilities - Meter Services Facility, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Designer for a new 37,900 sf facility intended to house the former Meter Operations and Meter Reading Division functions for Dallas' municipal water distribution system. Cost: $11.5M

Specialized Experience Area(s)

CADBIM, Full design documents

- ✓ Designed a new building to house the administrative, meeting and shops/operations functions of these two entities. Meeting areas include training rooms employing up-to-date technology, conferencing and break areas, a 'bull pen' for use as a home base by field personnel, and an exercise area. The shops include large and small meter test bench apparatus a meter rebuilding shop, meter storage areas and a 'plug shop'. This facility includes a three-ton bridge crane and significant water flow infrastructure and utilities at the test benches.

c.

(1) TITLE AND LOCATION *(City and State)*: USACE Fort Worth District - Air and Marine Operations Center, March Air Reserve Base, Riverside, CA

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2017
CONSTRUCTION: **2018**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Designer for the plans, specifications, design analyses; cost estimates, schedules; DBB and DB requests for multidisciplinary engineering for a new construction facility. Cost: $10.9M

Specialized Experience Area(s)

CADBIM, Specs Intact, MII Cost Estimates, Value Engineering

- ✓ Led schematic and final design documentation of the project, including all architectural BIM modeling and coordination
- ✓ Coordinated with all disciplines through completion of the design documents
- ✓ Participated in USACE on-site design review meetings at intermittent milestones
- ✓ Coordinated with, structural, mechanical, civil and electrical and incorporated value engineering study recommendations into final design

d.

(1) TITLE AND LOCATION *(City and State):*

USACE Fort Worth District- Brown Field Border Patrol Station, Dulzura, CA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES: 2020

CONSTRUCTION: **2022 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Architect Designer for the ancillary support facilities and structures consisting of a vehicle maintenance facility, covered structure for 64 ATVs, vehicle wash facility and fuel station, kennel facility, a pump house facility and storage tanks for domestic water and fire services, a heliport, and an on-site wastewater treatment system. Cost: $33.5M

Specialized Experience Area(s)

CIM, CADBIM, Specs Intact, MII Cost Estimates, Full Design

- ✓ Oversaw schematic and final design documentation of the project, including all architectural BIM modeling and coordination
- ✓ Prepared building designs to optimize a 50,000-sf admin building with room for expansion, maintenance building, heliport, kennels
- ✓ Prepared final architectural design and specifications including coordination of finishes of the facilities
- ✓ Participated in USACE on-site design review meetings at intermittent milestones. Incorporated the results of the value engineering study into the final design and construction documents

e.

(1) TITLE AND LOCATION *(City and State):*

Perot Development - Logistics Center 9, 10, & 11, DFW Airport, TX

(2) YEAR COMPLETED

PROFESSIONAL SERVICES: 2019

CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE

☒ Check if project performed with current firm.

Architect Designer for a campus of five new speculative office/ warehouse distribution center buildings, totaling 2.35M SF. Facility designed for logistics and/or freight forwarding, with multiple office locations and configuration possibilities per building. Fee: $1.5M

Specialized Experience Area(s)

CADBIM, Full design documents

- ✓ Led the overall design of the warehouse buildings.
- ✓ Oversaw all phases of building design and documentation of the warehouse buildings within the project, including architectural BIM modeling and coordination.
- ✓ Coordinated with all disciplines through completion of the design documents.
- ✓ Provided construction administration services including shop drawing review, RFI resolution, and general contractor coordination.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Alan LaFon, RPA, AIA, NCARB, LEED AP	**Architect Checker**	a. TOTAL: 38 b. WITH CURRENT FIRM: 5

15. FIRM NAME AND LOCATION *(City and State)*: Kenall-Halff JV-2, LLC | Richards, TX

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
M. Arch., Architecture (1986) B. Arch., Architecture (1983)	Registered Professional Architect (RPA): TX, #22920, 2011; OK & 2 other states; AIA; NCARB; LEED AP

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Provides over 38 years of experience in the design and project management of multi-discipline projects for NAVFAC, USACE, DOE, DoD, CBC, GSA and National Guard construction projects. Skilled in facilitation of charrettes, building design and coordination of all disciplines for a successfully executed project. Skilled in providing sustainable solutions to meet LEED standards. **Training**: TxDOT – 16.1.1: Architecture, TxDOT- 16.2.1: Building and Facilities Architecture. **Organizations**: AIA, NCARB

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*:
City of Dallas - Mill Creek-Peaks Branch-State Thomas Drainage Relief Project, Dallas, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION: **2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Checker for the staff coordination, law enforcement interviews, understanding of environmental impacts, GIS data management, graphics and maps. Fee: $431.8K

Specialized Experience Area(s)
GIS, Environmental

- ✓ Providing planning services to define the shoreline types, areas for demolition and preservation, habitat for wildlife and fisheries, and recreational areas for public use once the lake is fully impounded.
- ✓ Overseeing the shoreline utilization plan evaluated areas for shoreline management and lake operations for UTRWD staff as well as law enforcement including Texas Parks & Wildlife and the County Sheriff.

b.

(1) TITLE AND LOCATION *(City and State)*:
Oklahoma City Water Utilities Trust, Utilities Operations Center, Oklahoma City, OK

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2022
CONSTRUCTION: **N/A**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Checker for the surveying, civil engineering, architecture, structural, and MEP engineering of the site re-development of the Plant. Fee: $311.6K

Specialized Experience Area(s)
CADBIM, Full design documents

- ✓ Led preparation of a project programing, concept design and master plan report for the site re-development of the Overholser Water Treatment Plant.
- ✓ Led programming the building construction that will be considered and decommissioning and demolition of the existing water treatment equipment will be included in the master plan.

c.

(1) TITLE AND LOCATION *(City and State)*:
USACE Fort Worth District - Corpus Christi Army Depot, Building 8 North Repairs, Phase E-H, Corpus Christi, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2021
CONSTRUCTION: **2026 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Checker for the repair to the facility which included a multi-disciplinary team of MEP, elevator, mechanical, roof, structural, floor, ACP, and abatement of ACM and lead based paint. Cost: $48.9M

Specialized Experience Area(s)
USACE CADBIM; MCASES MII; Facilitation of VE studies; Full Design Documents

- ✓ Reviewed overall architectural design for the repair of Building 8 at Corpus Christi, TX
- ✓ Ensured comments were addressed properly in the contract documents and that the project was in full compliance with the technical requirements.
- ✓ Ensured project progress was satisfactory and that the project was delivered on schedule.
- ✓ Ensured compliance with UFCs and utilized AutoCAD with A/E/C CAD standards and used SpecsIntact format.

(1) TITLE AND LOCATION *(City and State)*:

(2) YEAR COMPLETED

d.

USACE Fort Worth District- Buildings 9403-9416 H Barracks at McGregor Base Camp, El Paso, TX

PROFESSIONAL SERVICES: 2022
CONSTRUCTION: **2024 (est.)**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Checker for the renovation of 15 buildings "H Barracks" configuration into a "U-shaped Barrack" configuration, totaling 128,835 SF. The design included new electrical, plumbing, lighting, communication, HVAC, and fire suppression system as well as all new interior and exterior finishes. Cost: $40M

Specialized Experience Area(s)

CIM, MII estimates; USACE CADBIM, Specs Intact, Full Design Documents

- ✓ Oversaw schematic and final design documentation of the project, including all architectural BIM modeling and coordination.
- ✓ Reviewed building designs to optimize a 50,000-sf admin building with room for expansion, maintenance building, heliport, kennels.
- ✓ Reviewed final architectural design and specifications including coordination of finishes of the facilities.
- ✓ Participated in USACE on-site design review meetings at intermittent milestones. Incorporated the results of the value engineering study into the final design and construction documents.

e.

(1) TITLE AND LOCATION *(City and State):*

TxDOT Pharr- Regional Headquarters Renovations; Pharr, TX

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2019
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Architect Checker for the converted existing administrative and warehouse space into newly remodeled office spaces. Cost: $2.5M

Specialized Experience Area(s)

CIM, Full design documents

- ✓ Oversaw the asbestos abatement throughout the facility, new floor finishes, paint and new ceilings throughout the existing facility.
- ✓ QA/QC the design of new energy-efficient electrical and mechanical systems since outdated ones were gutted
- ✓ Designed and oversaw existing toilet rooms with new fixtures and finishes, new low voltage wiring for Network and VOIP systems and security systems.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE
Jason Stangland, PLA, LEED AP	**Landscape Architect**	a. TOTAL: 23 b. WITH CURRENT FIRM: 17

15. FIRM NAME AND LOCATION *(City and State)*: SmithGroup | Madison, WI

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Landscape Architecture	Landscape Architect: WI #477 (2003)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*:

Jason Stangland is a principal landscape architect with SmithGroup with over 18 years' experience and expertise in urban design, planning and waterfront development. For the past 10 years Jason has been working to strategically position communities to rebuild and enhance their waterfronts as catalytic economic and social reinvestments for the communities they serve. He has worked with municipalities throughout the Great Lakes and Mississippi River basin to holistically integrate ecological, economic, and cultural amenities that help reimagine underutilized waterfront properties. As part of these projects, Jason helps identify and secure funding resources for clients and municipalities through a variety of federal, state, and local grant programs.

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: Port of Washburn Improvements, Washburn, WI

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2020
CONSTRUCTION: **2010-2020**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Landscape Architect for redefining and upgrading the waterfront of the City of Washburn Harbor. The project scope consisted of rehabilitation of 575 feet of failing bulkhead wall, which included replacement of the upper portion of the 120 year old timber crib with a new concrete vertical wall, renovated the fuel dock and 150 ton travel lift dock by replacing the vertical steel wall system with a replacement system capable of withstanding the harsh weather conditions and loads imposed by the travel lift, designed and engineered a replacement of the existing launch ramp and boat handling facility, and restored another 515 linear feet of timber wall along the northern wall of the City Dock.

Specialized Experience Area(s)

Full Design Documents

- ✓ Extensive client and team coordination throughout the project that was critical in redefining and upgrading the waterfront of the City of Washburn Harbor
- ✓ Prepared the master plan that provided a roadmap for improvements to be implemented over the next 20 years and included recommendations for revitalization of the City Dock bulkhead wall, public marina improvements, development of a waterfront park, enhanced beach area with public amenities, fish cleaning and boat wash-down facilities, a public boat launch, and improved circulation, parking, and boat storage
- ✓ Developed 3D Modeling visualization using Sketchup

b.

(1) TITLE AND LOCATION *(City and State)*: Lakewalk and Shoreline Protection Project, Euclid, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2022
CONSTRUCTION: **2019-2022**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE — ☒ Check if project performed with current firm.

Landscape Architect for Waterfront master plan and implementation of a two-mile-long public access trail along the Lake Erie shoreline. The plan included a combination of offshore breakwaters to address erosion, provides bluff stabilization and re-vegetation, and creates public beaches and waterfront access for the community.

Specialized Experience Area(s)

Full Design Documents

- ✓ Extensive client and team coordination throughout the project that was critical in preparing Waterfront master plan of a two-mile-long public access trail along the Lake Erie shoreline
- ✓ Prepared the master plan as part of a significant public engagement process that brought together over 80 private landowners, the City of Euclid, and permitting entities
- ✓ Obtained necessary environmental permits
- ✓ Developed 3D Modeling visualization using Sketchup

c.

(1) TITLE AND LOCATION *(City and State):*
Caesar Creek State Park Marina, Warren County, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2014
CONSTRUCTION: **2016**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Landscape Architect for the design of a new marina and waterfront park. Work included construction document preparation, permitting, market analysis and public/private partnership formation. The team worked with the Ohio Department of Natural Resources to accommodate the needs of the park users as well as meet engineering needs required for the breakwaters and marina facility.

Specialized Experience Area(s)

Full Design Documents

- ✓ Extensive client and team coordination throughout the design process that was critical in designing a new marina and waterfront park
- ✓ Led the preparation of Master plan and design for this project
- ✓ Assisted the team in obtaining necessary environmental permits
- ✓ Developed Design using AutoCAD
- ✓ Developed 3D Modeling visualization using Sketchup

d.

(1) TITLE AND LOCATION *(City and State):*
Bradstreet's Landing Pier and Shoreline Restoration, Rocky River, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2018
CONSTRUCTION: **2019**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Landscape Architect for the improvements to Bradstreet Landing Park on Lake Erie. The plan improved the park by expanding access and use, enhancing water quality and habitat, and creating a nice destination for residents.

Specialized Experience Area(s)

Full Design Documents

- ✓ Extensive client and team coordination in preparing Master plan and providing design for improvements to Bradstreet Landing Park on Lake Erie
- ✓ Led the preparation of Master plan and design for this project
- ✓ Assisted the team in obtaining necessary environmental permits
- ✓ Developed Design using AutoCAD
- ✓ Developed 3D Modeling visualization using Sketchup

e.

(1) TITLE AND LOCATION *(City and State):*
Edgewater Marina Rehabilitation, Cleveland, OH

(2) YEAR COMPLETED
PROFESSIONAL SERVICES: 2014
CONSTRUCTION: **2015**

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm.

Landscape Architect for the complete redesign and replacement of a marina destroyed by Hurricane Sandy on Lake Erie. Scope included new floating docks and anchoring, utilities, circulation promenade and fencing..

Specialized Experience Area(s)

Full Design Documents

- ✓ Extensive client and team coordination throughout the design process that was critical in Edgewater Marina Rehabilitation
- ✓ Led the redesign and replacement of a marina destroyed by Hurricane Sandy on Lake Erie
- ✓ Design included an analysis of extreme storm events and numerical modeling to determine design parameters for the proposed marina replacement
- ✓ Developed Design using AutoCAD
- ✓ Developed 3D Modeling visualization using Sketchup

TAB

D

SECTION F
Example Projects

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
1

21. TITLE AND LOCATION *(City and State)*
Champion Lake Spillway Replacement, Liberty County, TX

CONTRACT NUMBER:
140F0219C0031

TO NUMBER(S):
140F0219C0031

CONTRACT TYPE:
FFP

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2019-2020
CONSTRUCTION (if applicable):
2021

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
U.S. Fish and Wildlife Service (USFWS)

b. POINT OF CONTACT NAME
Mr. Ray FletcherEED

c. POINT OF CONTACT TELEPHONE NUMBER
(505) 248-6443

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Designed the spillway to mitigate the flood and seepage

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☒ Recreation
- ☐ Planning
- ☒ Design
- ☒ Earthen Structures
- ☐ Concrete Bridges
- ☐ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural, Geotechnical)
- ☐ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☐ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☐ MCACES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

95 Percent by $ Value of the Overall Work was Self-Performed: $401K

Brief Project Overview

At the Trinity River Wildlife Refuge in Liberty, TX, torrential rains from Hurricane Harvey severely damaged the 800-acre Champion Lake levee and spillway. The 3500-ft levee and 200-ft earthen spillway are connected and automatically release water from Champion Lake when levels rise. Water was constantly leaking out from the spillway; numerous cuts were observed that was caused by this long-term flooding episode. Parts of the levee experienced washout along the top surface and additional damage occurred along the side slope of the levee. Kenall engineers evaluated existing flood conditions of the area, performed levee inspection and levee certification for a 100-yr flood event, per 44 CFR §65.10. The primary purpose of this D-B project was to produce construction documents, specifications, and a cost estimate to repair the levee/spill way and associated appurtenances. Rebuilding and armoring of the levee and associated spillway provided safe access and recreation for both the public and the utility companies that need to access their infrastructure. Recreation structures included rehabilitation of fishing platforms and concrete boat ramp and boardwalk.

Specialized Experience and Technical Competence

Hydrology & Hydraulics (H&H): Kenall evaluated existing flood conditions of the park area, performed 44 CFR §65.10 compliant levee inspection and levee certification for a 100-yr flood event. Designed 30-ft wide by 300-ft long spillway. As part of the design, Kenall prepared a drainage design document which included an overview of the analysis to evaluate the existing flood conditions for the area and new spillway design including development of the CIM H&H models to check adequacy of the proposed spillway.

Performed H&H analysis with HEC-HMS, HEC-RAS, and ArcGIS. Performed risk and uncertainty analysis with respect to future damages for flood/storm risk reduction plans. Performed ER 1105-2- 100 and ER 1105-2-101 risk-based analysis and utilized @RISK models to ascertain damage variance for incorporation into HEC- FDA. Performed analyses using HEC-FDA for determining expected annual flood damages and for event damages with development of the uncertainty parameters for use in HEC-FDA model.

To accomplish the hydraulic performance of the spillway, Kenall delineated drainage area (upstream of the spillway) using LiDAR and survey data, used Atlas-14 rainfall data for the HEC-HMS model, Unsteady State 2D hydraulic model (existing and proposed condition) was prepared for water surface elevation and flooding extent. Considered hydraulic force to design the spillway design elements.

Geotechnical: Kenall reviewed the existing as-builts before performing levee safety inspection and development of the risk assessment documentation. Researched existing data that included historical design, construction documents, and drawings. Conducted pre-design site assessment by performing a site walk to document current conditions. Kenall performed EM 1110-1-1804 compliant soil borings using buggy and track mounted rigs.

☐

Borings were drilled up to 100 feet on top of the levee and adjacent to the rockfill spillway. EM1110-2-1906 and ASTM standards compliant tests were performed to determine the soil characteristics. Analyzed the earth embankment and foundation for seepage analysis, seepage management for rockfill dam and levees with soil, slope stability analysis, and breach analysis.

Designed the levee and spillway to automatically release the water if the water levels were above 7.5 ft. However, in the existing condition, water was constantly leaking even if water level was below the 7.5 ft due to damaged spillway and levee. We analyzed the spillway and the embankment for foundation stability for a variety of loading and seepage conditions and performed EM 1110-2-1901, EM 1110-2-2300, and FEMA criteria seepage analysis. The following criteria were accounted for the analysis depth and duration of flooding, embankment geometry, expected seepage during the base flood conditions, embankment, and foundation material properties.

Kenall performed finite element modeling seepage analyses at the embankment cross sections perpendicular to the axis of the levee. Modeled and analyzed a 2-D finite element seepage behavior numerically using the SEEP/W module within GeoStudio. Selected seepage cross sections at the deeper soil borings for analysis. Developed subsurface geometries of the cross sections with subsurface strata lines, recent boring logs and supplemented with historic USACE boring logs. Modelled and simulated using the FLO-2D models to determine the flow line depth and levee free board. Incorporated the data collected from the site survey in the modelling and simulation analysis.

Kenall designed impermeable sheet pile cut-off walls to prevent horizontal seepage of water through the rockfill dam / spillway. We analyzed for slope stability per Corps of Engineers *"Design and Construction of Levees"* manual (EM 1110-2-1913) at embankment cross sections perpendicular to the axis of the levee / spillway / dam. The conditions as identified by EM 1110-2-1913 include Case I – End of construction, Case II – Rapid drawdown, Case III – Steady seepage from full flood stage (fully developed phreatic surface). Developed and analyzed a two- dimensional numerical model slope stability using the SLOPE/W module within GeoStudio. Selected shear strength parameters for this analysis considering various factors such as the results of the field investigation, laboratory testing, and engineering analysis, published correlations with index properties, and engineering judgment and experience with similar materials.

Analyzed rapid drawdown condition with the assumption that steady state seepage flow had developed at the base flood level and followed by a subsequent decrease in river elevation that occurs rapidly enough such that the phreatic surface through the levee remained fully developed at the base flood elevation. We designed 25-ft-deep sheet pile for seepage control and dam stability. Designed foundation for

Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☐	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☐	Cost Estimates Services
☐	Schedules
☒	Construction Phase Services
☒	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☒	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

new spillway and intake structures. Analyzed erodibility for the existing rockfill embankment and spillway. Designed spillway road which consisted of articulated concrete block erosion control mat. Developed O&MM and presented the data and designs in the report form for the project.

Developed gINT boring log fence diagrams, incorporated boring data and boring coordinates in OpenGround. Presented boring logs in MicroStation and AutoCAD. Developed 3-D views of subsurface stratigraphy, seepage, and stability analysis.

Surveying Services: Surveyed and mapped the cross sections of the levee and spillway. We obtained coordinates for geotechnical borings and developed a 3-D stratigraphy of the spillway for geotechnical and H&H modelling. Topographic survey included within the limits of civil design work plus 50 feet, random shots in the lake to verify the LIDAR data elevations. Compiled LiDAR data from previous studies and sources within the study area. Processed the LiDAR data to create a terrain dataset and used for hydrologic and hydraulic analysis. Provided the LAS format LiDAR data throughout the study area.
Converted the LAS files to multipoint files and used to create the Digital Terrain Model (DTM) using

Environmental System Research Institute (ESRI) ArcGIS software.

Civil / Structural: Developed civil works design features to the new spillway, dam, levee, access roads and embankment crest roads. The design recommendation included lining the top of the spillway with Articulated Concrete Blocks and driving sheet piles to –19.50 ft elevation with the top of the sheet piles even with the elevation of the spillway. When built, the proposed spillway will satisfy requirements to control seepage from the upstream to downstream and maintain 'Normal Pool" at the upstream end. In the design of the spillway, we maintained existing hydraulic condition of the reservoir and downstream channels. Also, considered floodway and floodplain of the Trinity River. Civil Information Modelling was used during the construction phase to update design models with additional construction intelligence while making in-field modifications/adjustments to the model during construction phases.

Kenall developed corrugated sheet pile design and specifications for the spillway. Developed design and specifications articulated concrete blocks (ACB) on the spillway road to provide a hard armor surface and permanent erosion control and to facilitate truck traffic. Designed grade beams and cable connected ACBs to prevent erosion of the top of the spillways. Designed rock riprap on the upstream and downstream of the spillway. Provided construction sequencing to the contractor. Designed appropriate grading and drainage to have a positive drainage with reduced impact on erosion of the levee slopes. Produced all drawings in MicroStation formats. Submittals included drawings and specifications. Plans included drainage area map, demolition sheets, grading sheets, ACB details, construction sequencing. Designed all the features in compliant with UFC 3-201-01, Civil Engineering.

Recreation structures: Designed new floor deck and guard rials for the existing fishing platform. Designed boardwalk kerb rails and guard railings. Designed precast concrete boat ramp.

Kickoff Meeting, Review Meetings and Submittals: Kenall conducted on-site kickoff/ design charrette and design review meetings with multiple stakeholders involved during the course of the project. Developed 65%, 90%, 100% and IFC drawings using AutoCAD Civil 3D. Developed project technical specifications. Coordinated and responded to review comments from various stakeholders. Performed technical and BCOES reviews of the submittals.

Miscellaneous Services: Prepared Opinion of Probable Construction Cost. Performed socioeconomic impact analysis and life cycle costing and financial ability to pay analysis as well as identified and addressed issues relating to environmental. Design work also included addressing the RFIs of our construction partner. Performed shop drawing reviews and performed QA/QC inspections of the construction work. USACE CAD/BIM policies were utilized to complete the drawings for USACE review and permitting. Coordinated and completed the paperwork to attain the environmental permits

Challenges Overcome: This project was located within the watershed of Trinity River, and separation of the drainage area of the Champions Lake was challenging. This was solved by isolating the drainage area of the spillway based on the ArcGIS analysis of the latest LiDAR data and maximum water surface elevation of the Trinity River and existing dike.

Stake Holders Involved: USFWS, USACE, Liberty County, and TxDOT.

Past Peformance	
Quality	Excellent
Schedule	Excellent
Cost	Excellent
Management	Excellent

Key Personnel		
Person	**Role on Project**	**Proposed Role**
K. Prasad	Geotechnical	Geotechnical
S. Chikyala	Project Manager	Project Manager
R. Tolikonda	Civil/H&H	Civil/H&H
D. Ling	GIS/CAD	GIS/CAD

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Kenall	Houston, TX	Project Mgmt., Civil, H&H, Structural, Geotechnical
b.	Halff	Dallas, TX	Quality Control

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
2

21. TITLE AND LOCATION *(City and State)*
AE Services for Dallas Floodway AT&SF Bridge Demolition Dallas, TX

CONTRACT NUMBER: W9126G17D0001

TO NUMBER(S): W9126G19F0047

CONTRACT TYPE: FFP

22. YEAR COMPLETED
PROFESSIONAL SERVICES: 2020
CONSTRUCTION (if applicable): 2021

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER: USACE Fort Worth District

b. POINT OF CONTACT NAME: Sandra E. Allen

c. POINT OF CONTACT TELEPHONE NUMBER: (817) 886-1669

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Demolition of bridge to improve public safety and to increase the capacity of the Dallas Floodway System to pass flood waters downstream.

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☒ Recreation
- ☐ Planning
- ☒ Design
- ☒ Earthen Structures
- ☒ Concrete Bridges
- ☐ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural)
- ☒ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☒ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☒ MCACES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

62 Percent by $ Value of the Overall Work was Self-Performed: $173K

Brief Project Overview

The AT&SF Railroad Bridge was taken out of service and abandoned as a railroad bridge in the 1990s. The AT&SF facility extends approximately 3,000 feet across the Dallas Floodway. There are two separate segments of AT&SF Bridge in the Floodway, separated by approximately 450 linear feet of earthen railroad embankment. The bridges are 23-feet high and include numerous types of construction. Most of the bridge length consists of wooden trestle construction, however, a steel truss clear span bridge crosses the main river channel. There is also approximately 660 linear feet of concrete railroad bridge. The City of Dallas constructed a hike and bike trail that incorporates the truss clear span bridge and includes architectural details that reflect the design of the existing bridge. These features are referred to as the Santa Fe Trestle Trail.

The scope of this project was to demolish to improve public safety and to increase the capacity of the Dallas Floodway System to pass flood waters downstream. The removal of the bridge piers in the floodway to reduce the resistance to downstream flow improved floodway system performance. This included modifying the existing AT&SF Railroad Bridge by demolishing portions of the bridge, while maintaining the Santa Fe Trestle Trail features. The AT&SF Railroad Bridge removal included demolition and removal of approximately 900 linear feet of wooden trestle ballast-deck bridge, demolition, and removal of approx. 100 linear feet of wooden trestle open deck bridge, and demolition and removal of approximately 660 linear feet of concrete ballast-deck bridge. Removed the wood trestle and concrete portions of the bridge as part of this project. Removed piers to one foot below finished grade.

Matched the final grade/elevations to the adjacent ground. The two railroad embankment segments (measuring 453 and 518 feet) have remained in place as part of this project. The Santa Fe Trestle Trail embankment remained in place as part of this project.

Design services included survey, environmental, civil, and structural engineering. The primary purpose of this project was to produce full design drawings, specifications, Engineering Considerations and Instructions for Field Personnel (ECIFP), DDR and a cost estimate.

Specialized Experience and Technical Competence

Civil: Civil work included grading, design of disposal/staging areas due to large amount and variety of disposal material, relocation of utilities, erosion and sediment control design documents and Water Quality and Prevention of Water Pollution .

Grading Improvements: USACE provided surface elevation data obtained from LIDAR survey of the subject project area. Utilized LIDAR data to extract existing ground surface elevations for the purpose of developing finished grading plans. Designed removal of piers for all bridges to one foot

below finished grade. Graded the area around the bridges for positive drainage and seeded to match native grasses post demolition.

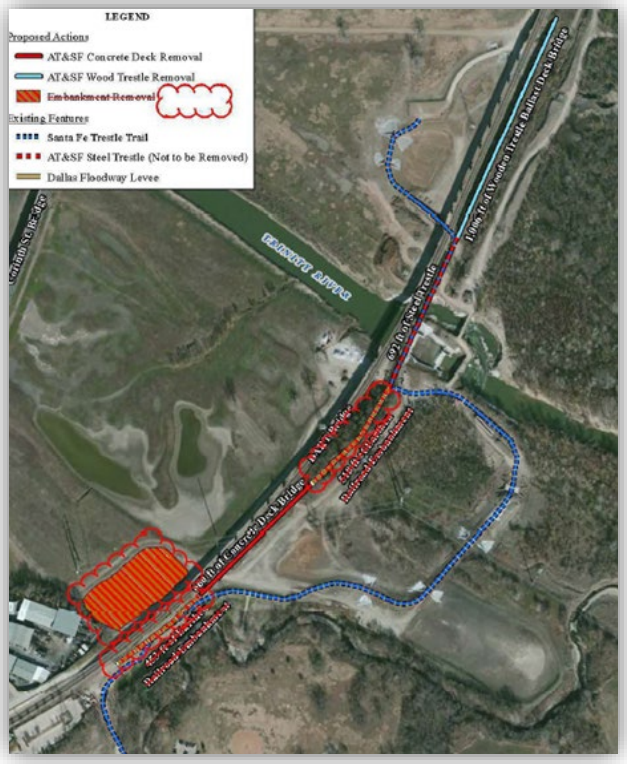
Design of Disposal/Staging Areas: Designed a disposal/staging area for each side of the Dallas Floodway. Selected one location for the Wooden Trestle Bridge on the North side of the Floodway, and one location on the South side of the Floodway for both Concrete Bridge and Steel Trestle Bridge. Designed disposal/staging site locations by considering noise pollution, minimum traffic congestion, optimum driving distance to landfill/recyclable site and to have less impact or damage to the existing infrastructure (utilities, streets, etc. in the vicinity)

Relocation of Utilities: Coordinated with utility companies, City of Dallas and the county and identified existing utilities based and relocated as needed.

Erosion and Sediment Control: Developed erosion and sediment control plans for wooden trestle bridge, Concrete Bridge and Steel Trestle Bridge.

Water Quality and Prevention of Water Pollution: AE provided the guidance to contractor to implement appropriate Best Management Practices (BMPs) at the perimeter of any demolition area. Identified BMPs in the design plans to minimize excessive soil erosion within the Dallas Floodway.

Surveying Services: Performed topographic survey with random shots within the limits of grading area limits plus fifty feet, to verify the LIDAR data elevations. Compiled LiDAR data from government and sources within the study area. Processed the LiDAR data to create a surface.

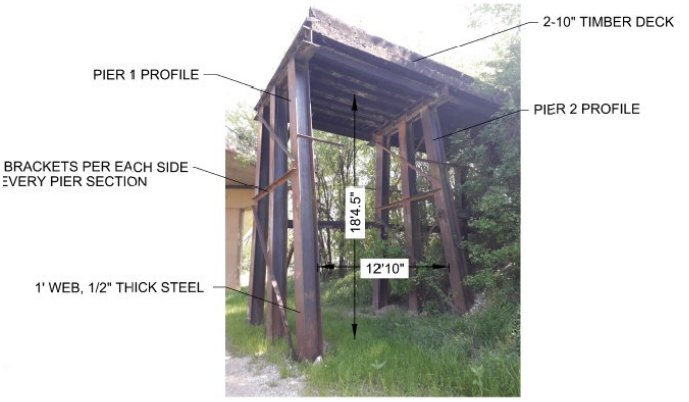


Experience in Performing A/E Services Scope	
☐	Hydrology and Hydraulic Services
☐	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☒	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☐	Cost Estimates Services
☒	Schedules
☒	Construction Phase Services
☒	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☐	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☐	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

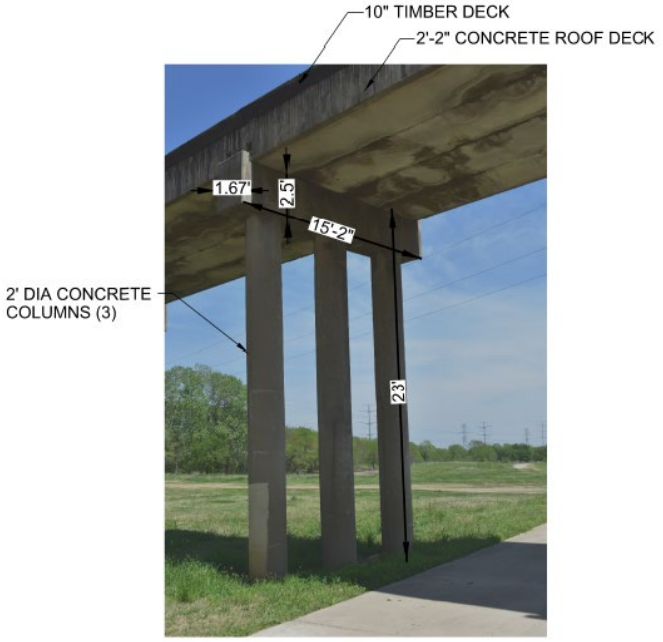
HAZMAT Survey / Environmental: Performed hazardous Material Survey on the three bridge segments to determine the existence of Asbestos-Containing Material (ACM), Lead-Based Paint (LBP), and to characterize the Treated Wood Waste (TWW). Detected ACM in isolated areas of the Timber Trestle bridge. Identified them on the drawings for abatement due to the demolition nature of the project and the possibility for ACM fibers to become pulverized and airborne during the demolition activities. Due to the open-air structure, provided guidance to the contractor to apply wetting agent during the demolition phase to further reduce the potential for ACM fibers to become airborne. Sampled wood materials (TWW) in the project and examined by Toxicity Characteristics Leaching Procedures (TCLP) and found to be Texas Class II waste.

Provided guidance for SWPPP permitting, controlling waste material on site for contractor to submit waste manifest and waste profile sheet which requires signature by the owner (City of Dallas).

Structural: Developed section details for the steel trestle bridge, piers, stringer beams and footings. Considered details carefully as slight deviation would increase the timeline of the project; cost increase due to change orders. The structural demolition plan showed the plan view of all the bridges that were to be demolished.



C PIER 1 AND 2 SECTION/PROFILE
SCALE: NTS



E PIER 3 TO PIER 20
SCALE: NTS

Produced UFC 3-201-01, Civil Engineering drawings in MicroStation formats. Submittals included drawings and specifications. Plans included drainage area map, demolition sheets, grading sheet.

Landscaping: Provided tree and brush removal plans in general conformance with ETL 1110-2-583, Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures. Provided guidance in the plans for tree clearing to be restricted in between September 1 and February 14 to avoid impacts during the Avian Breeding Season and also mentioned not to remove additional trees at the abutments but only to remove the remaining stumps according to ETL 1110-2-583. Landscaping plans also provide the details and notes to backfill the resulting voids and compacted to match adjacent soil type and compaction. Also, provided fill material specifications in the plans. Provided landscaping design to retain the Santa Fe Trestle Trail to be utilized for recreational purposes by locals.

Design Charrette, Review Meetings and Submittals: Kenall conducted on-site design charrette and design review meetings with multiple stakeholders involved during the course of the project. Developed Draft and Final RFP using MicroStation. Developed project technical specifications. Coordinated and responded to review comments from various stakeholders. Performed technical and BCOES reviews of the submittals.

Other Services: Prepared ECIFP with Environmental and Health / Safety Considerations that needed to be taken during the construction phase of the project. Prepared Opinion of Probable Construction Cost. Design work also included addressing the RFIs of our construction partner. Performed shop drawing reviews and performed QA/QC inspections of the construction work. Utilized USACE CAD/BIM policies to complete the drawings.

Stake Holders Involved: USACE, City of Dallas, County, DART, and TxDOT.

Past Peformance	
Quality	Satisfactory
Schedule	Very Good
Cost	Satisfactory
Management	Very Good

Key Personnel		
Person	**Role on Project**	**Proposed Role**
K. Prasad	Geotechnical	Geotechnical
R. Tolikonda	Civil	Civil
R. Wijeratne	Structural Checker	Structural Checker

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Kenall	Houston, TX	Project Mgmt., Civil, Environmental, Structural

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
3

21. TITLE AND LOCATION *(City and State)*
A-E Services for multiple Sustainability, Renovation and Modernization and Combat Training Center Projects, Fort Polk, LA

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2017-2019
CONSTRUCTION (if applicable):
2020

CONTRACT NUMBER: W9126G17D0011
TO NUMBER(S): W9126G17F0028
CONTRACT TYPE: FFP

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
USACE Fort Worth District

b. POINT OF CONTACT NAME
Mr. Edgar Jörge, AIA, NCARB

c. POINT OF CONTACT TELEPHONE NUMBER
(817) 886-1982

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Developed D-B/D-B-B RFP packages for the construction, repairs, and renovation of several civil projects.

Type of Project

- ☒ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☐ Recreation
- ☒ Planning
- ☒ Design
- ☒ Earthen Structures
- ☒ Concrete Bridges
- ☒ Culverts
- ☒ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural)
- ☒ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☒ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☒ MCACES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

70 Percent by $ Value of the Overall Work was Self-Performed: $755K

Brief Project Overview

The scope of the task order was to develop D-B RFP and D-B-B RFP construction packages for the construction, repairs, and renovation of a several civil projects (seven individual submittal packages) on the Fort Polk, LA. Each subtask brief details are provided below.

Access Trail (Task 1): Prepared D-B RFP for new aggregate 1900 ft trail including creation of drainage ditches, turnouts, and drainage culverts, removal of trees for approximately ½ mile.

Guard Rail System Repairs (Task 2): Prepared D-B RFP for roadway widening, width varying from 18 feet to 24 feet and drainage establishment.

Holy Springs Culvert Repairs (Task 5): Prepared D-B RFP for culvert design and drainage, headwalls, wingwalls and other features.

Cold Springs Culvert Repairs (Task 6): Prepared D-B-B RFP submittal for drainage improvements and the replacement of an existing timber bridge, modifying the road alignment in a best possible way.

Crosswalks (Task 7): Prepared D-B-B RFP submittal for the development of crosswalk improvement at the two major traffic intersections on post.

Wash Racks (Task 11 & 12): Prepared D-B-B RFP submittal for two separate packages for repairs to the North and South Wash Racks. Design included replacement of the 16-inch supply water lines, water cannons, two (2) electrical switch gears, control panels, lighting system, four 480V pumps, wiring and conduit, latrines, addition of two (2) hand wash stations, and control booth.

Specialized Experience and Technical Competence

Hydrology & Hydraulics (H&H): Kenall performed H&H model for the design of culverts, bridges, access trails, roadway widening as per the installation design guidelines, USACE Design Concepts and their Manuals. Accomplished the drainage design by delineated drainage area using LiDAR and survey data and ArcGIS. Prepared a drainage design report which included an overview of the analysis to evaluate the existing flood conditions for the area and designed all the features including development of the H&H models to check adequacy of the proposed culverts. Analyzed Cold Springs culvert by dividing the drainage area into three areas as the flow passes through three different locations on the Cold Springs Road.

Calculated the depth of direct runoff and time of concentration by using Runoff Curve Number. The peak discharge was calculated to be 4,472.80 cfs. Designed EM 1110-2-2909 compliant box culverts 6-12' x 6'to convey the peak discharge. Timber Bridge, Drainage Area #2 is approximately 2,328 acres and currently drains into an existing culvert across Cody Springs Road. Per installation requirements, since the drainage area was too large, used Soil Conservation Service (SCS) method to calculate the discharge. The peak discharge was calculated to be 4,920.23 cfs. Designed EM 1110-2-2909 complaint box culverts to convey the peak discharge.

Designed a 48-inch, 36-inch reinforced concrete pipes, 8-inch steel pipe or an equivalent low water crossing with the channel bottom of 850-feet. Drainage Area #3 is approximately 8.5 acres and currently drains into an existing culvert. Per the installation requirements, used Rational method to calculate the peak discharge expected to pass through the culvert. Obtained the intensity-duration curve for the Fort Polk area from which the rainfall intensity (in/hr) was calculated for the area. Obtained the runoff coefficient from the table corresponding to the unimproved grassland or pasture ground cover as 0.20. Calculated rational method peak discharge for the 25-year design storm as 19.16 cfs, with a factor of safety of 25%, the total peak discharge came out to be approximately 24 cfs. Designed EM 1110-2-2909 compliant 24-inch concrete pipe to convey the peak discharge.

Geotechnical: Kenall conducted pre-design site assessment by performing a site walk to document current conditions. Performed EM 1110-1-1804 compliant soil borings up to 40 feet using buggy and track mounted rigs. Performed EM1110-2-1906 and ASTM standards compliant laboratory tests to determine the soil characteristics. Designed foundation for box culverts, retaining walls, slope riprap and roadway. Provided erosion control recommendations and performed foundation settlement analysis for the proposed loads. Designed the pavement using USACE PDT Type of load for; 25-ton Mine Resistant, Ambush Protected (MRAP) Vehicle–3 axle. At Cold Springs Road and Holy Springs Road designed the pavement for Vehicular traffic to be Buffalo MRAP vehicle of 20,000 passes per year and a design life of 25 years.

Developed gINt boring log and fence diagrams. Presented boring logs in MicroStation and AutoCAD. Developed 3-D views of subsurface stratigraphy.

Surveying Services: Surveyed and Mapped the area to assist with the design of the roads and culverts. Developed alternate design options with the survey data. Performed SUE services to determine the utilities with precise horizontal and vertical locations to safely expose, measure and map utilities on the drawings. Compiled LiDAR data from various sources within the study area. Processed the Lidar data to create a terrain dataset for hydrologic and hydraulic analysis. Provided LAS format LiDAR data. Converted the LAS files to multipoint files to create the Digital Terrain Model (DTM) using Environmental System Research Institute (ESRI) ArcGIS software.

Civil / Structural: Task 2, designed roadway, drainage slopes and ditches, clearing and grubbing of trees, demolition plans to show removal of guardrails, new object markers and establishing positive drainage.

Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☒	Relocation Services
☒	Electrical Engineering Services
☒	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☒	Cost Estimates Services
☒	Schedules
☒	Construction Phase Services
☐	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☒	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

Task 5A, designed culvert repairs and drainage improvements, headwalls, wing walls, and apron with placement of Type 3 object markers in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Task 6, designed drainage improvements, timber bridge design, and a box culvert. Also, included developing two additional options. Option #1 included a straightened road alignment to shorten the overall length of the road. At STA 48+75.0 removed curve from the road alignment and designed the new roadway alignment in a best possible way. Option #2 replaced 8 feet steel pipe with box culverts under the base bid. Design replacement culverts to accommodate a 25-year design storm.

Task 7, Conducted traffic study and feasibility study of roundabout.

Task 11 and 12, designed a 11-inch concrete pavement section to satisfy the life cycle design requirements for MRAP vehicles. Designed UFC 4-214-03 compliant storm structures limited to cross drains size. Designed a 16-inch ductile iron pipe water line to carry water from the settling ponds and from the pump station to the wash cannons and bird bath. Designed a new pump station.

For all tasks, designed appropriate grading to have a positive drainage with reduced impact on erosion of the embankment slope near the embankments and culverts.

Provided construction sequencing to the contractor. Produced all drawings in MicroStation formats. Submittals included drawings and specifications. Plans included drainage area map, demolition sheets, grading sheets, culvert details, construction sequencing. Prepared erosion control plans and storm water pollution prevention plans for the construction activities.

Landscaping: Developed landscape plans with establishment of grass through seeding and fertilizing.

Mechanical / Electrical / Plumbing: Designed pump station with 480V pumps, control room, control panels, electrical switch gears, high mast lighting system, 16-inch water supply lines, drain lines, 18-inch wash rack concrete slab, water cannons, hand wash stations, latrines, and landscaping. Designed vehicle wash facility with two 200 HP wash pump station, 2160 G.P.M., and 235 Total Dynamic Head (T.D.H). Designed Post wash facility with two 25 HP wash pump station, 360 G.P.M., and 165 T.D.H. Designed sufficient water pressure and volume to each wash station per UFC 4-214-03 guidance. Designed the control room with a control panel, a mini-power zone (480V-240/120V with a 60A panel), a heater fed by a disconnect switch, general receptacles, and a light fixture. Designed exterior electrical distribution system with a service transformer, primary feeder, secondary feeder, and 3-phase service. Designed ASHRAE 90.1 2013, UFC 3-530-01and FAA complaint lighting for the control room and exterior high mast LED lighting.

Design Charrette, Review Meetings and Submittals: Kenall conducted on-site design charrette and design review meetings with multiple stakeholders. Conducted design charrette to obtain all the stake holders' information for all sites over multiple days. Charrette report included documenting the current conditions. Discussed concept designs for all options during the charrette with stake holders of various departments of Fort Polk installation. Led project management activities including coordinating with the client and subcontractors, scheduling, performing QA/QC reviews and transmittal of all deliverables, participated in all review meetings, and monthly reporting and invoicing. Responded to all the comments and inquiries through ProjNet system (Dr. Checks). Produced all drawings in MicroStation DGN format; and cost estimates in MII format. Submittals included drawings, specifications, design analysis report for D-B-B submittals. All submittals were made at four different levels 35%, 65%, 95% and 100% as per the DQM plan. D-B Submittals included concept plans, and preliminary specifications. Performed technical and BCOES reviews of the submittals.

Miscellaneous Services: The end user's requested alternatives that is a combination of options in most cases which consistently exceeded the CCL. Kenall led a review of desired changes vs. changes that can be incorporated due to CCL limitations. Final chosen option met the CCL and end user needs. Project was plagued with numerous unforeseen changes and adjustments – primarily changes requested by the various end-users. AE Team made continual adjustments and met all milestones.

Challenges Overcome: This project Reduced deadline for Task 1, 2, 5 from 60 to 50 days to meet FY deadlines Kenall added resources and submitted the design for tasks 1, 2, 5 in 50 days as needed. Tasks 6 and 7 had a reduction in timeline from 90 to 60 days to meet FY deadline. Kenall added resources and submitted the design for Tasks 6, and 7 in 60 days as needed.

Developed drainage report in 14 days for Task 6 without the availability of Survey data. Obtained LIDAR data; submitted preliminary report. Once survey data was available, updated the report.

Submitted the design in time without any setbacks in the schedule.

Stake Holders Involved: Fort Polk Installation, USACE, and LADOTD

Past Peformance	
Quality	Satisfactory
Schedule	Satisfactory
Cost	Satisfactory
Management	Satisfactory

Key Personnel

Person	Role on Project	Proposed Role
S. Chikyala	Project Manager	Project Manager
R. Tolikonda	Civil	Civil
S. Sahai	Civil (QC)	Civil QC
K. Prasad	Geotechnical	Geotechnical
V. Lakshman	Geotechnical (QC)	Geotechnical (QC)
D. Ling	GIS/CAD	GIS/CAD

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Kenall	Houston, TX	Project Mgmt., QC, Geotechnical, Civil/H&H, Structural

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
4

21. TITLE AND LOCATION *(City and State)*
IBWC Rio Grande River Sunland Park Levee Forensic Investigation | El Paso County, TX and Dona Ana County, NM

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2016
CONSTRUCTION (if applicable):
2018

CONTRACT NUMBER:
IBM15C0002

TO NUMBER(S):
NA

CONTRACT TYPE:
FFP

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
International Boundary and Water Commission (IBWC)

b. POINT OF CONTACT NAME
Ms. Andrea Glover, PE

c. POINT OF CONTACT TELEPHONE NUMBER
(915) 832-4747

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Design earthen structures, floodwall, access roads and embankment crest roads design. Alteration and repair of real property for construction.

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☐ Recreation
- ☐ Planning
- ☒ Design
- ☒ Earthen Structures
- ☐ Concrete Bridges
- ☐ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01, Civil Engineering (Civil, Structural, Geotechnical)
- ☐ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☐ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☐ MCACES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE

97 Percent by $ Value of the Overall Work was Self-Performed: $964K

Brief Project Overview

IBWC awarded this project to Kenall to complete Forensic Engineering Investigation of the two levee segments of Rio Grande an 8.45-mile segment in El Paso County, TX and a 3.38-mile segment in Dona Ana County, NM. Levee failure was a result of construction completed in 2010 that did not meet the established durability standards for levees. Kenall provided Forensic Engineering services to identify causes of the levee failure; develop corrective action alternatives; and upon selection of the best alternative, provide the design for the repair of levee and its associated structures.

Specialized Experience and Technical Competence

Hydrology & Hydraulics (H&H): Kenall evaluated existing flood conditions of the levee, performed 44 CFR §65.10 compliant levee inspection and levee certification for a 100-yr flood event. As part of the design, modelling & simulation and analysis were performed using the FLO-2D models. Also, determined the flow line depth and levee free board from hydraulic modelling FLO-2D models. Performed modelling and simulation analysis from the data collected from the site identification survey.

Geotechnical: Kenall reviewed the existing as-builts before performing levee safety inspection and development of the risk assessment documentation. Researched existing data that included historical design, construction documents, and drawings. Conducted pre-design site assessment by performing a site walk to document current conditions. Kenall performed EM 1110-1-1804 compliant soil borings using buggy and track mounted rigs.

Field Investigation, Safety Evaluation and Risk Assessment: Developed civil works design features to repair the levee, floodwall, access roads and embankment crest roads. Reviewed the operation & maintenance, repair, replacement, and rehabilitation (OMRR&R) report before performing levee safety inspection and development of the risk assessment documentation. Performed research by reviewing historical design, construction documents and drawings, specifications, and construction inspection daily reports. Documented prevailing site conditions with 4,500 photographs and developed a geodatabase during the pre-design site assessment.

Geophysical survey: Performed EM1110-1-11802 compliant geophysical analysis. The survey included an electromagnetic survey (EM31 Survey) and GPR survey. Identified underground utilities, subsurface anomalies, and other buried items. Analyzed survey data to determine preliminary characterization of subsurface soils and rock and established water table depth.

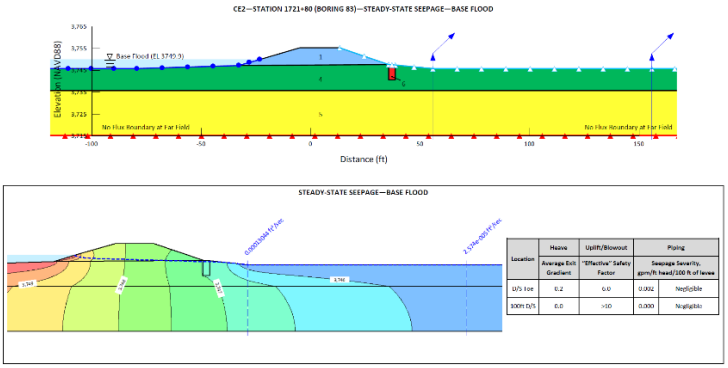
Subsurface Exploration: Performed EM 1110-1-1804 compliant soil borings. Of 252 soil borings drilled, 130 borings were drilled on top of a levee and 122 borings drilled on the river side slope of the levee. Used Buggy and track mounted rigs for drilling. Drilled these soil borings up to a depth of 80 feet. Obtained soil samples to the termination depth of the borings.

Geotechnical laboratory testing: Performed EM1110-2-1906 and ASTM compliant soil tests which included crumb tests, pinhole tests, double hydrometer testing, complete sieve analysis, soil classification, direct shear testing, triaxial testing, chemical dispersivity testing, consolidation testing and permeability testing.

Geotechnical Analysis: Included seismic analysis, slope stability analysis, seepage analysis, breach analysis and settlement analysis. Evaluated levee erosion and amount of soil loss for six factors: length of slope, slope gradient, ground cover, soil type, management, and rainfall. Performed a comparative analysis with historically failed earthen embankments due to dispersive soils.

Earth Embankment & Foundation Seepage Analysis: Performed EM 1110-2-1901, EM 1110-2-2300, and FEMA compliant seepage analysis. Per FEMA NFIP Regulation 65.10(b)(4), requires that the existing levee be shown to have sufficient embankment and foundation stability to meet the FEMA criteria for a variety of loading conditions. The analysis included an evaluation of the expected seepage during the base flood conditions. The analysis accounted depth and duration of flooding, embankment geometry and seepage, and embankment and foundation material properties. Performed seepage analyses at embankment cross sections perpendicular to the axis of the levee using finite element modeling. Modeled the seepage behavior numerically using the SEEP/W module within GeoStudio to develop and analyze a two-dimensional finite-element model. Selected seepage cross sections for analysis at locations corresponding to the deeper geotechnical borings. Developed the subsurface geometries of the cross sections, including subsurface strata lines, from recent boring logs and supplemented with historic boring logs performed by USACE. Performed modelling and simulation using the FLO-2D models to determine the flow line depth and levee free board. Used the data collected from the site survey in the modelling and simulation analysis.

Seepage Management/Levees with Soil: Incorporated zoning embankment and filter drains as part of the design

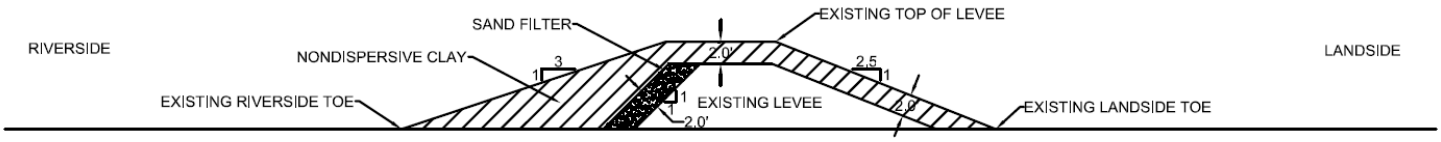


Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☐	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☐	Design Analysis Services
☒	Plans and Specifications Services
☐	Material Quantities
☐	Cost Estimates Services
☐	Schedules
☐	Construction Phase Services
☒	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☒	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

recommendation for the collection of seepage water in such a way as to reduce the seepage pressure and carry the water to a safe and controlled outlet.

Complex Stability Analysis for Earthen Embankment: Performed slope stability analyses at embankment cross sections perpendicular to the axis of the levee for the conditions required by the Corps of Engineers "Design and Construction of Levees" manual (EM 1110-2-1913). Performed numerical analysis of slope stability for this project using the SLOPE/W module within GeoStudio to develop and analyze a two-dimensional model. Selected shear strength parameters used for this analysis based on the results of the field investigation, laboratory testing, and engineering analysis, published correlations with index properties, and engineering judgment and experience with similar materials. Analyzed the rapid drawdown condition with the assumption that steady state seepage flow had developed at the base flood level and was followed by a subsequent decrease in river elevation that occurs rapidly enough such that the phreatic surface through the levee remained fully developed at the base flood elevation. Analyzed the steady state seepage condition with the assumption that the Rio Grande River remains at the 100-year flood level elevation long enough to allow a fully developed phreatic surface to develop through the embankment.

Geologic Site Characterization: Performed geological site characterization and fault mapping for Canutillo Levees. The levees were supported upon Wind-blown sand deposits, Young Quaternary deposits along the Rio Grande River, and Old Quaternary deposits. The nearest known fault zone to the Sunland Park Levee system is the Hueco fault zone area of west Texas and southern New Mexico which is about 15 miles east of the levee system.



Seismic Hazard, Ground Motion and Liquefaction Studies: A review of the soil boring information indicated that some soils within the foundation have the potential for liquefaction or significant strength loss as is characteristic of alluvial soils along the Rio Grande River. The levee borings depicted loose to medium dense sand and silt layers. None of the soil strata encountered were located below the water table. Dry sands would not be subject to liquefaction but might compress modestly during and shortly after an earthquake.

Settlement Analysis: Performed EM 1110-1-1904 compliant settlement analysis. Levee distress analysis included development of three design alternatives to mitigate or repair erosion damage and stabilize vegetated earthen slopes.

Geotechnical Software's: Used OpenGround, gINT., AutoCAD to present the three-dimensional views of subsurface stratigraphy and the seepage and stability analysis.

Surveying Services: Surveyed and mapped levee cross sections. Obtained coordinates for geotechnical borings to develop a three-dimensional stratigraphy of the levee for modelling.

Civil / Structural: Assessed all water control structures and floodwalls within the study area for any deficiencies. Analyzed rainfall events based on the available weather data and correlated with the flood event and erosion damage and associated amenities to protect work areas from future erosion. Performed modelling and simulation studies including the evaluation by using the research analysis, predesign site assessment, site identification surveys, USACE, IBWC, BOR design concepts, manuals, standards, and reports. This was done to determine the best feasible alternative design. Designed appropriate grading and drainage filters to have a positive drainage with reduced impact on erosion of the levee slopes. Analyzed and designed access roads and the levee embankment crest roads to handle the maintenance and recreational traffic loading. Performed Life-Cycle Cost Analysis to estimate the overall costs of three project alternatives and to select the design that ensures the levee will provide the lowest overall cost of ownership consistent to its quality and function.

Environmental: Performed environmental testing and evaluation for hazardous materials such as petroleum products, automotive chemicals that were visually observed during the pre-design site visit and photo documentation.

Kickoff Meeting, Review Meetings and Submittals: Kenall conducted on-site kickoff/ design charrette and design review meetings with multiple stakeholders involved during the project. Conducted charette to obtain all the stake holders' input and concerns. Discussed three alternative concept designs during the design charrette. Charrette included performing interviews with the public in the vicinity of levee about the historic flooding, major rainfall events, construction, and maintenance history. These interviews were done as part of the site identification surveys. Developed drawings using AutoCAD Civil 3D. Developed project technical specifications. Coordinated and responded to review comments from various stakeholders. Performed technical and BCOES reviews of the submittals.

Challenges Overcome: Levees meander around the mountains, therefore, the rainfall data varied substantially. Obtained the rainfall data from two radar stations with a radial distance of 6 miles and 30 miles, respectively. Provided a better correlation of realistic data. This realistic data helped in developing alternative design concepts.

Stake Holders Involved: IBWC, USIBWC, USACE, City or El Paso, El Paso Water Board, TxDOT.

Past Peformance	
Quality	Very Good
Schedule	Satisfactory
Cost	Satisfactory
Management	Satisfactory

Key Personnel		
Person	**Role on Project**	**Proposed Role**
K. Prasad	Geotechnical	Geotechnical
S. Chikyala	Project Manager	Project Manager
R. Tolikonda	Civil	Civil
S. Sahai	Civil (QC)	Civil QC
R. Wijeratne	Structural	Structural
D. Ling	GIS/CAD	GIS/CAD
V. Lakshman	Geotechnical (QC)	Geotechnical QC

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Kenall	Houston, TX	Project Mgmt., H&H, Civil, Structural

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
5

21. TITLE AND LOCATION *(City and State)*
USACE Fort Worth District - Colorado River Flood Control Levee Study and Design, Wharton, TX

CONTRACT NUMBER:
W9126G-15-D-0015

TO NUMBER(S):
W9126G19F0267

CONTRACT TYPE:
FFP

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2021
CONSTRUCTION (if applicable):
2024 (est.)

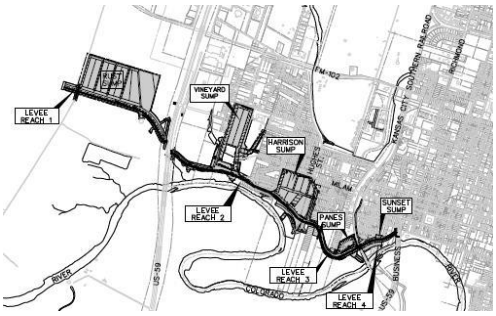
23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
USACE Fort Worth District

b. POINT OF CONTACT NAME
Kathleen Gately

c. POINT OF CONTACT TELEPHONE NUMBER
(817) 886-1590

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)



Project Scope

Halff performed a basin-wide hydrologic and hydraulic study for the Colorado River to determine impacts and benefits of operational plan changes to existing reservoirs

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☐ Recreation
- ☒ Planning
- ☒ Design
- ☒ Earthen Structures
- ☐ Concrete Bridges
- ☒ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural, Geotechnical)
- ☒ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☒ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☒ MCASES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

80.2% of the $1.1M was Self-Performed: $906.5K

Brief Project Overview

Following Halff's completion of the Lower Colorado River (CR) Flood Damage Evaluation project for USACE and Lower Colorado River Authority (LCRA), Halff was authorized to conduct a feasibility study to investigate additional flood protection alternatives for the City and prepare 100% design documents.

The proposed levee is 11,480 lf and roughly parallels the Colorado River along the left overbank. The initial design involved the integration of detailed field survey with existing aerial mapping. The levee alignment is in a tight, developed corridor and involved extensive coordination with stakeholders. The proposed levee is entirely within the existing Colorado River 1% Annual Chance Exceedance (ACE) floodplain. A Letter of Map Revisions (LOMR) and Conditional Letter of Map Revision (CLOMR) were prepared and coordinated with FEMA. The levee is designed in accordance with FEMA regulations in 44 CFR Section 65.10. The levee is more than 15 ft high through much of its length and more than 30 ft high through an existing ravine. Stability issues and seepage were a major concern given the proximity of the levee to the Colorado River. Interior drainage issues were addressed with the design of five sumps.

Specialized Experience and Technical Competence

Hydrology & Hydraulics (H&H): Halff developed H&H models were developed to analyze the interior drainage, sumps, and sluice structures. HEC-HMS rainfall-runoff models were developed to generate sump inflow hydrographs. For the synthetic 24-hr duration events and historic storm event analysis with variable durations, the initial and constant loss rate method was utilized along with the SCS unit hydrograph method. The initial loss and unit hydrograph parameters were developed using standard methodology based on slopes, land use, and soil types. Hydrographs generated by the HEC-HMS model, were combined and routed through the sumps and sluice structures using an unsteady HEC-RAS hydraulic model. Culverts, crossings, and road profiles were included in the unsteady HEC-RAS hydraulic model to account for impacts from runoff reaching the existing city street culverts and ultimately to the sump.

Halff designed CR Levee Reaches 1 through 4 which included over 11,480 lf. of levee, 5 interior sump areas, and a Hughes Street relief storm sewer system for Caney Creek. The storage- elevation relationships were developed for the sumps and were modeled as storage areas in the hydraulic model. Storage-elevation relationships were developed for the sumps and were modeled as storage areas in the hydraulic model. Storage area connections were also used to model the culverts, weirs, and pipes between interconnected storage areas to account for the dynamic nature of the rating curves dependent on tailwater conditions. The Colorado River overflow model was updated with the available data for the Walmart/Caney Creek relief channel and the Santa Fe relief channel.

The sluice structure and outfall between the sump and the Colorado River was modeled as a lateral structure/weir in HEC-RAS. For the historic events, the historic Colorado River tailwater hydrograph was utilized to model the response of the sump and sluice structure. The sumps were sized using multiple discrete events analysis in accordance with USACE EM 1110-2-1413. Sluice outfall stability at the Colorado River was another concern with the design. Sluices were aligned where possible to outfall in relatively stable reaches of the Colorado River.

This analysis considered both hypothetical local interior rainfall events (low exterior stage) and historic high exterior stages and coincident rainfall. The sump structures were designed to drain through the levee via gravity sluice structures that are equipped with flap and sluice gates. Special headwall details for the sluice structure outfalls were designed to allow the connection and complete closure of the flap gates.

Flood Management: Halff identified a flood risk management project that was technically sound, economically feasible, environmentally acceptable and supported by the City of Wharton. Several measures were investigated, including permanent evacuation, by-pass channels, levees, and channel modifications.

Civil / Structural: The grading, benching, and slope protection of the existing Colorado Riverbanks in the vicinity of the sluices was incorporated, as well as the installation of rock riprap for additional erosion protection. Post-construction seeding requirements and erosion control components were also detailed in the design. Designed storm drain improvements to provide additional relief to Caney Creek due to undersized pipes. A design of a 10' x 6' concrete box culvert for the Hughes Street alignment. Pavement design was provided using PCASE software at Hughes Street due to Storm drain improvements. Maintenance roads, access ramps, and turnarounds are provided in multiple locations along the levees and sumps. Gates and fencing prevent unauthorized motor access on the levees and within the sump areas. All drawings were developed using AutoCAD Civil 3D, GEOPAK, InRoads, and specifications using SpecsIntact.

Construction Phase Services: Halff along with its subconsultant evaluated construction progress and schedule compliance, meeting local building code requirements, participation and review of commissioning, inspection, reporting, change order review, baseline and monthly schedule review and support of USACE with time impact analysis, investigation, and negotiations of contractor claims.

Cost Estimating: Provided separate cost estimates at each design submittal for all areas using MII.

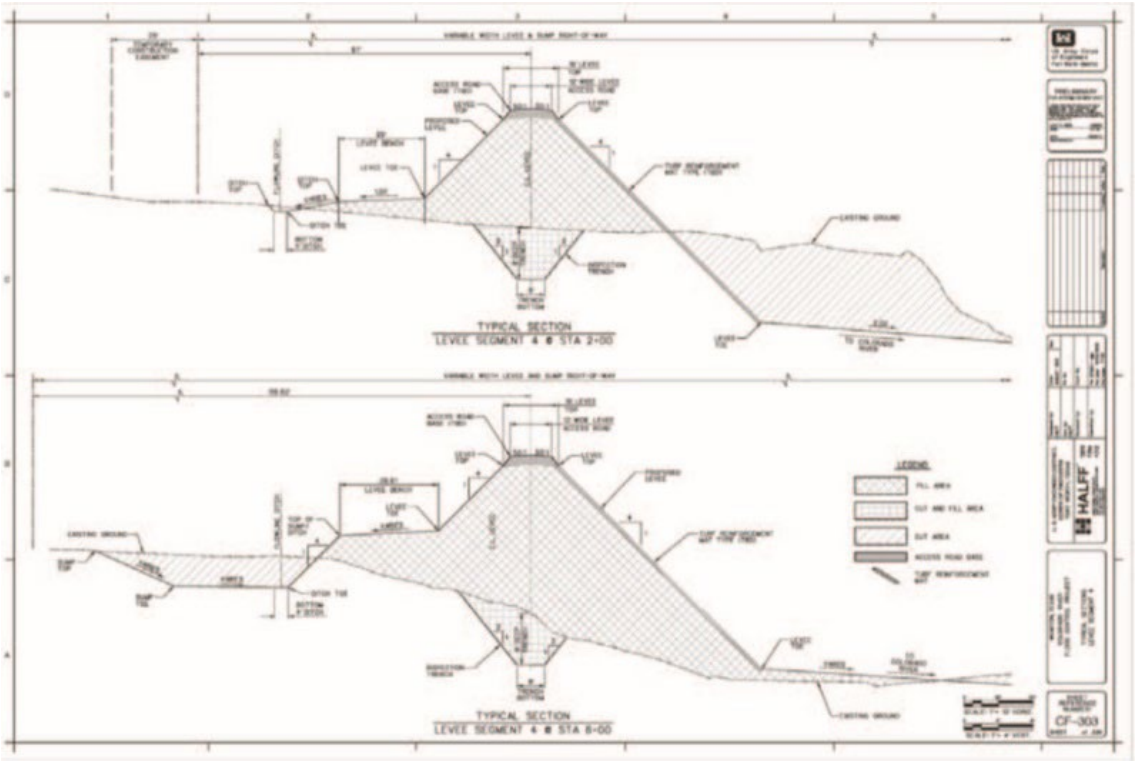
Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☐	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☐	Material Quantities
☒	Cost Estimates Services
☐	Schedules
☒	Construction Phase Services
☒	Environmental Engineering Services
☐	Value Engineering Services
☐	Inspection / Investigation
☒	Surveying Services
☐	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☐	Coordination and Attainment of Permits
☒	Support and Coordination in the development of utility agreements

Environmental: A wetland mitigation planting area was incorporated into one of the sump designs in accordance with the EPA Wetlands Guide and Wetland Construction Guide.

Utility: Analyzed the existing utility conflicts and coordinated with the city and private utility providers for the vertical relocation of utility conflicts (water, sanitary sewer, and gas lines). Location of the soil disposal site and haul route were identified and coordinated with USACE, City of Wharton and other agencies.

Stakeholder Coordination: The proposed levee was designed to tie-in to existing TxDOT highways and rights-of-way. The proposed levee was designed to tie-in to the existing KCS Railroad. Sump excavation plan was prepared in coordination with Texas Railroad Commission to avoid any damages to the existing plugged gas wells and dry hole wells in the vicinity of the proposed levee and sumps. A CLOMR was coordinated and submitted to FEMA for the proposed levee system.

Challenges Overcome: At several locations, the proposed alignment was adjusted, and benching was provided to meet acceptable factors of safety related to stability. An underdrain system was designed at the interface of the levee and an existing railroad embankment to address seepage issues. Long-term settlement was addressed by slightly over designing the height of the levee to ensure freeboard requirements would still be satisfied following expected settlement. To address concerns with desiccation cracking associated with the CH clays, a zoned construction approach with low PI clays on the riverside face of the levee and high PI clays in the core of the levee was proposed.



Kickoff Meeting, Review Meetings and Submittals: Halff conducted design charrette and design review meetings with multiple entities including USACE, City of Wharton, private utilities, TxDOT, railroad commission and other stakeholders.

Stake Holders Involved: USACE, TxDOT, TCEQ, USFW

Past Peformance	
Quality	Satisfactory
Schedule	Satisfactory
Cost	Satisfactory
Management	Satisfactory

Key Personnel		
Person	**Role on Project**	**Proposed Role**
L. Hein	Project Manager	Project Manager
M. Fallon	QC Manager	QC Manager

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Halff	Richardson, TX	Prime: Project Management, Civil, Structural, H&H Modeling, and Environmental Analysis

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
6

21. TITLE AND LOCATION *(City and State)*
Mill Creek/Peaks Branch/State-Thomas Drainage Relief Tunnel- Dallas, TX

CONTRACT NUMBER:
TW-2016-00000359

TO NUMBER(S):
00000359

CONTRACT TYPE:
FFP/Hourly

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2016 (design)
CONSTRUCTION (if applicable):
2023 (est.)

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
City of Dallas - Dallas Water Utilities

b. POINT OF CONTACT NAME
Milton Brooks, PE, CFM

c. POINT OF CONTACT TELEPHONE NUMBER
(214) 914-1689

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Halff designed a 5-mile long underground drainage Relief Tunnel to provide 100-year flood protection to the east Dallas area

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☐ Recreation
- ☒ Planning
- ☒ Design
- ☐ Earthen Structures
- ☐ Concrete Bridges
- ☒ Culverts
- ☒ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01, Civil Engineering (Civil, Structural, Geotechnical)
- ☐ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☒ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☐ MCASES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

62.8% of the $24M was Self-Performed: $15.1M

Brief Project Overview

The Mill Creek/Peaks Branch/State-Thomas Drainage Relief Tunnel (MCPBST) is a five-mile underground tunnel that will provide 100-year flood protection for nearly 2,200 commercial and residential properties in the east Dallas area. The current drainage system in these areas was constructed 50 to 70 years ago and provides two-to-five-year flood protection.

The MCPBST will improve stormwater conveyance resulting in protection of schools, medical facilities, residents, and businesses. Construction began in spring 2018 and is slated for completion in 2022. The tunnel, once complete, will include 2 miles of 35-foot diameter tunnel and 3 miles of 30-foot diameter tunnel, and will convey a maximum discharge of 20,000 cubic feet per second. The competed tunnel will provide much-needed flood relief during large rain events.

Halff provided all design and construction phase services for the $207M construction project. Major project elements include:

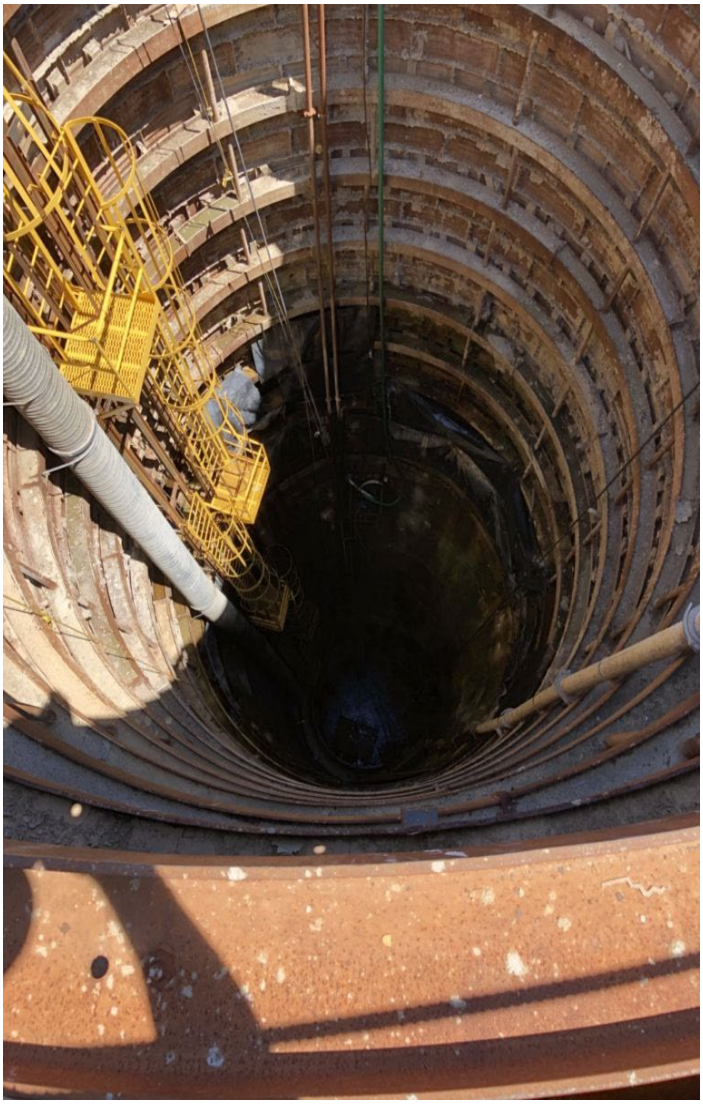
- Collection systems and storm sewers to intercept and convey flood flows to the tunnel.
- North Carroll Avenue and Gaston Avenue drainage improvements, including 2,400-lf of 9-ft by 9-ft concrete box, utility relocations and street reconstruction.
- Five large intake/drop shaft structures to convey stormwater from the existing systems to the tunnel. The drop shafts vary in size from 12-ft to 25-ft in diameter.
- A 40-ft diameter outfall shaft.
- A 30,000-gpm dewatering station.

Specialized Experience and Technical Competence

Civil / Structural: The MCPBST includes five drop shafts, an outfall to White Rock Creek, a shaft for three 600-hp pumps to empty the tunnel, storm sewers, utility relocations and street reconstruction. Halff designed the following additional features for the City of Dallas:

- 5-mile long deep tunnel
- Tunnel connection and intake systems at the following locations: East Peaks Branch (Fair Park), Peaks Branch at I-30, Peaks Branch at N Carroll Ave, Mill Creek at San Jacinto, and State-Thomas at Woodall Rodgers
- Pump station to empty the tunnel for maintenance and inspection
- Section 404 Assessment and Nation-Wide Permit

Halff also designed water and wastewater improvements to accommodate the new storm-sewer systems at the shaft sites. All drawings were developed using GEOPAK and MicroStation.



Flood Management: Halff initially developed drainage relief alternatives and drainage master plans to address frequent flooding in the Mill Creek, Peaks Branch and East Peaks Brach watersheds. Cost estimates were prepared for each alternative. The evaluation criteria for each alternative included flood reduction, total project cost, constructability, maintenance and construction impacts to residents and businesses.

The selected alternative – the MCPBST – is the centerpiece of a plan to address flooding in east Dallas and the State-Thomas area north of Woodall Rodgers Freeway.

Hydrology & Hydraulics (H&H): Halff prepared 2D, fully dynamic, hydrologic/hydraulic models for Mill Creek, Peaks Branch and East Peaks Branch. The models were used to evaluate existing conditions and to identity flood-prone areas in these watersheds. The 2D models were also used to evaluate the effectiveness of drainage-relief alternatives developed in the initial phase of the project and to develop recommendations for implementing drainage improvements for each watershed.

Halff completed an engineering assessment for the MCPBST outfall structure to White Rock Creek HEC-RAS analysis of the regulatory models was performed to determine hydraulic impacts associated with the tunnel outfall.

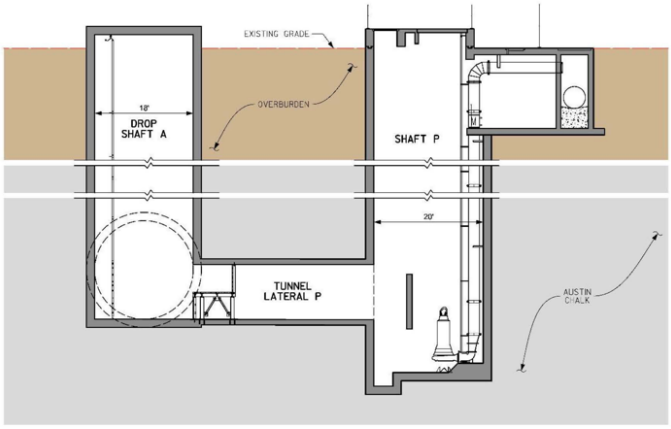
Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☒	Relocation Services
☒	Electrical Engineering Services
☒	Mechanical Engineering Services
☒	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☐	Material Quantities
☒	Cost Estimates Services
☒	Schedules
☒	Construction Phase Services
☒	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☒	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☒	Support and Coordination in the development of utility agreements

Electrical/Mechanical Services:
Halff designed the mechanical, plumbing, electrical for the pumpstation/ switchgear building, totaling 1,850 sf. Halff coordinated with utility companies to have a transformer on site. Halff provided power to SCADA, HVAC, security systems, plumbing systems, ITS, and other facilities. The design includes building surveillance and access control. Halff oversaw or performed all electrical and mechanical design

The pumps are outside of the building in 20-ft diameter shaft. The pumps are powered by medium voltage, variable frequency drives.

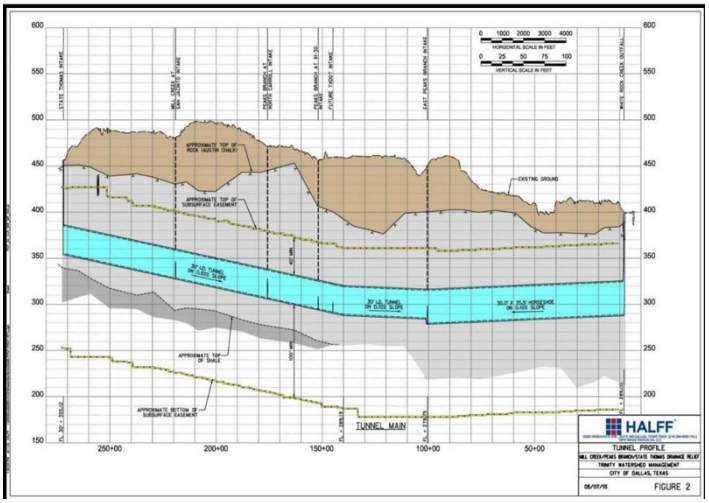
All plans were developed using MicroStation.

Dewatering Pump Station: Halff designed a triplex pump station to dewater the MCPBST. The station is similar in design to a wastewater lift station. The nominal capacity of the station is 36.7 mgd and includes three 600 horsepower medium voltage (4160 V) submersible pumps. The static head varies from 40 to 170 feet over a complete dewatering cycle, necessitating variable frequency drives on the pumps. The wet well is a 190-ft deep 20-ft diameter shaft. The project conditions, namely the head range and total well depth, are atypical. Halff evaluated several alternatives and designed the station to adequately address these conditions, simplify operations and meet the project requirements.



Architectural Services: Halff developed architectural design concepts and construction/implementation plans for the pump station. Performed all architectural modeling and coordination including the schematic and final design documentation. Conducted on-site design review meetings at intermittent design milestones. Coordinated with structural, mechanical, civil, and electrical and incorporated value engineering study recommendations into final design.

Geotechnical Services:
Geotechnical report included the following information: Project alignment; contract elements; sources of geological and geotechnical information; project geological setting; site conditions; previous construction experience in the



local geology; definition of alignment reaches and excavation horizon; ground classification; geotechnical properties of site materials; ground characterization by alignment reach; design considerations; construction considerations; instrumentation, monitoring and protection of existing structures; references and glossary.

Construction Phase Services: Halff attends weekly owner and construction meetings in addition to visiting the project to assess construction issues. Halff oversees submittal and RFI reviews and responses and provides construction claim and change-order reviews. Halff prepares field orders and associated plan revisions, and reviews non-conformance reports and make recommendations. Halff also assists with public meetings associated with MCPBST construction.

Survey: Halff conducted topographic surveys for use in design of the improvements. The survey work included: set baseline control, horizontal and vertical ties to existing features, survey existing storm sewer sections at proposed connections, and field ties to geotechnical boring locations.

Cost Estimating: Halff developed opinions of probable construction cost during the alternative development stage and with each design submittal. The construction estimates were used to evaluate design alternatives and to confirm the project remained within the established budget.

Cultural Resources / Environmental: Halff provided multiple environmental services to support the design and construction of the MCPBST. Halff conducted Phase I Environmental Site Assessments (ESA) on 25 properties within the proposed project area – the properties included small undeveloped tracts, residential, commercial, and industrial properties. The Phase 1 ESAs were performed to document environmental conditions at each site based on both historical and existing property uses. The Phase 1 ESAs included site visits, regulatory reviews, and preparing ESA reports in accordance with ASTM guidelines. Phase 2 ESAs were conducted on 8 parcels including one industrial parcel based on the results of the Phase I ESAs.

Environmental services include preparation of soil and groundwater management plans guide contractors during construction in contaminated areas. Additional environmental services provided as part of the Mill Creek project included hazardous materials assessments, Section 404 assessments, and tree surveys.

Stakeholder Coordination: Halff supported the City's coordination effort during the design phase. Halff developed materials for use in public meetings and Council briefings. Halff personnel provided technical presentations when necessary to support City staff.

TBM Mill Creek dual-diameter drive:
The largest hard rock TBM ever to work in the USA has been designed and utilized by the Robbins contractors for the Mill Creek drainage relief tunnel. The 38.1ft diameter Robbins main beam gripper TBM designed to excavate the 5-mile-long drive and undergo a cutterhead diameter conversion midway through to 32.5ft.

The two diameters are required as the upstream section of the drainage infrastructure alignment has been designed with a lower peak flow rate of 15,000ft3/sec (424m3/sec) than the downstream section, which has a peak flow of 20,000ft3/sec (565m3/sec). Using one TBM with two cutterheads of different diameter to construct the entire tunnel proved a less time consuming and expensive option than other solutions.

Robbins and SMJV are working closely to create the safest and most efficient sequence for completing the cutterhead conversion within the limits of the bore.

The TBM is expected to progress rapidly through the Austin Chalk allowing the project to be completed on schedule
Challenges Overcome: This is a complex and significant project for the City of Dallas. The project required substantial communication between multiple stakeholders. Halff supported the City to make sure key issues were properly communicated with the various stakeholders.

Project Meetings: Halff attended monthly project review meetings with the City and the City's Program Management Consultant (PMC). Halff attended Council and City staff meetings and prepared meeting materials.

Stake Holders Involved: City of Dallas, Texas Department of Transportation, Dallas Area Rapid Transit, USACE, Texas Commission on Environmental Quality, and Franchise Utilities

Past Peformance	
Quality	Very Good
Schedule	Exceptional
Cost	Very Good
Management	Very Good

Key Personnel		
Person	**Role on Project**	**Proposed Role**
P. Applebaum	Electrical Engineer	Electrical Engineer
J. Ferencak	Mechanical Engineer	Mechanical Engineer

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Halff	Richardson, TX	Prime: Project Management, Civil, Structural, H&H Modeling, and Environmental Analysis

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER: 7

21. TITLE AND LOCATION *(City and State)*
Port of Washburn Navigation Improvements, Washburn, WI

CONTRACT NUMBER: N/A

TO NUMBER(S): N/A

CONTRACT TYPE: FFP

22. YEAR COMPLETED
PROFESSIONAL SERVICES: 2009-2020
CONSTRUCTION (if applicable): 2010-2020

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER: City of Washburn, WI

b. POINT OF CONTACT NAME: Mr. Scott Kluver

c. POINT OF CONTACT TELEPHONE NUMBER: (715) 373-6160 x4

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Designed improvements for the navigation facility in the western basin of Lake Superior

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☐ Flood Damage Reduction
- ☒ Navigation
- ☐ Ecosystem Restoration
- ☒ Recreation
- ☒ Planning
- ☒ Design
- ☐ Earthen Structures
- ☐ Concrete Bridges
- ☐ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural)
- ☐ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☐ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☐ MCACES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

100 Percent by $ Value of the Overall Work was Self-Performed: $753K

Brief Project Overview

SmithGroup was selected to assist the Port of Washburn Harbor Commission under a long term contract with strategic planning and design for improvement and rehabilitation of their navigation facility in the western basin of Lake Superior. This long term contract is one task order with series of interconnected projects. Aging infrastructure, the desire to improve and expand recreational amenities, the facility's importance to navigation and marine operations in the region, and the impact of severe winter storms occurring without lake ice were all key issues factors driving the need for investment.

Washburn's deep-water harbor is critical to the region and the community's local economy. It supports US Coast Guard recovery efforts, occasional use by the 107-foot USGS Research Vessel Kyi, and overnight mooring of US Army Corps of Engineer ships performing dredging and maintenance operations in the area. The facility's 150-ton travel lift, which is used to haul out recreational and commercial vessels from regional ferry operations, helps the region continue to serve as the gateway to the Apostle Islands National Lakeshore.

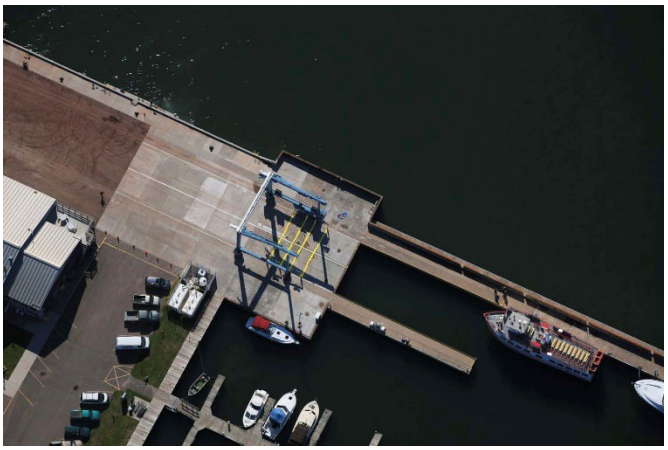
SmithGroup's initial engagement included leading the community and Harbor Commission through the development of a strategic improvements plan for harbor renovation and infrastructure rehabilitation. This plan provided a roadmap for a series of projects designed to address both urgent needs and long-term enhancement and modernization of the port.

SmithGroup led the identification and preparation of funding requests which leveraged millions in state and federal resources toward addressing facility needs and produced a series of projects completed over a 10-year period. The most recent project, the City Dock Rehabilitation, included underwater inspection of historic timber cribs and replacement of the dock's northeast wall due to damage from ice and severe storms. The historic dock extends roughly 515 linear feet into Lake Superior near the northern end of Chequamegon Bay and is used to moor large ships operating in the area as well as to transport aggregate to remote locations throughout the region.

Specialized Experience and Technical Competence

City Dock Rehabilitation: Storms funnel through the Apostle Is-lands and produce large waves and extreme ice shove that pounds the north-eastern face of the historic City (Coal) Dock. After over a century of use, the upper portions of the timber cribs were ripped apart scattering debris into lake and atop the dock. SmithGroup identified state funding and developed application materials on behalf of the Harbor Commission which were used to fund nearly 80% of the overall construction cost. In addition to grant procurement assistance, SmithGroup performed underwater inspection and surveying of the timber crib structures. Cores of the timber were analyzed to aid in determining the structural stability of the lower portions of the cribs that remained.

Side-scan sonar (see graphic on bottom right) was also used to assess the structure and determine where material had been lost and needed to be removed, and to support the development of rehabilitation alternatives. Alternatives explored included stabilization of the northern face with a stone revetment, replacement of the damaged portions with new timber cribs, and placement of new steel sheet pile and tie-back system. Coated steel sheet pile was selected as it retained the ability to moor vessels directly against the dock face, was deter-mined to be more cost effective due to the availability of quality stone and suitable timber in the remote market and would withstand concerns over microbial degradation occurring on ex-posed steel elsewhere throughout the region.

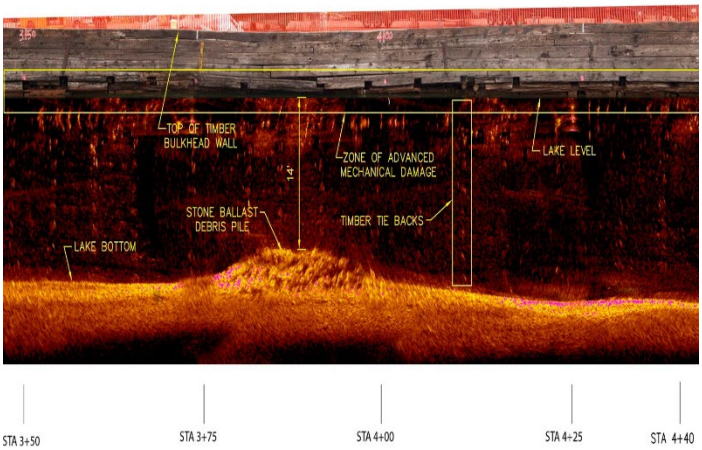


SmithGroup prepared UFC 3-201-01 compliant all plans and specifications for the project, prepared and negotiated the state and federal coastal and waterway permits, supported the Harbor Commission through the bidding and construction contract award, and provided full-time on-site construction observation. The remaining portions of upper timber cribs were selectively removed to allow for the installation of the tie-back system. Voids between the new sheeting and timber face were filled with stone. Geotechnical borings indicated shallow depth to bed-rock making it difficult to achieve the required sheet embedment, therefore plans called for the installation of grouted pins at the toe in select areas where necessary impediment depths were unable to be achieved. Finally, mooring analysis and design was performed using the US Coast Guard buoy tender ship as the design template.

Fuel Dock & Travel Lift Well Improvements

The Port of Washburn is an important recreational boating asset and commercial port within the region, offering both gas and diesel at the fuel dock and haul out, maintenance and repair for vessels with the facility's 150-ton travel lift. SmithGroup was called upon to assess the condition of the existing structures after staff noticed concrete portions of the dock and well were degrading and sinking. SmithGroup performed an underwater inspection of the steel bin walls used to form the dock and lift well and identified that holes in the steel resulting from age and microbial degradation had allowed fill material to spill out into the lakebed and from underneath the concrete surfaces. Surficial

Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☐	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☒	Relocation Services
☒	Electrical Engineering Services
☐	Mechanical Engineering Services
☒	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☒	Cost Estimates Services
☐	Schedules
☒	Construction Phase Services
☐	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☐	Surveying Services
☒	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements



investigations also determined that fuel sumps were not draining properly reducing the effectiveness of the alarm system intended to identify concerns over potential fuel leaks.

SmithGroup developed plans for restoration and enhancement of these facilities. The existing piles were determined to be suitable for reuse and encapsulated within a new aluminum coated steel bin-wall for added corrosion resistance. A new grade beam and pile cap was installed on the existing piles.

Plans also included a new fuel control and distribution system with sumps and alarm system, updated fuel dispensers and point of sale network, and an im-proved sanitary pump-out. A new boat washdown was also constructed and included a series of sumps and baffles to collect, and appropriately dispose of, marine debris from boat hull washing and to allow for recycling and reuse of wash water. Previously wash water was returned to Lake Superior untreated.

Transient Boater & Public Launch Improvements

The existing recreational boat launch was underutilized, and the Harbor Commission sought to improve the facility to increase visitation and public boat access to Lake Superior. SmithGroup identified and applied to a series of state and federal programs and was successful at helping the Harbor Commission secure funding to design and construct the improvements.

SmithGroup worked with the marina operator and stakeholders to create plans that included improving the vertical curve at the top of the existing ramp to enhance the launching of larger boats with extended tongue trailers, the installation of a new fixed and floating boarding docks, new transient boat slips to accommodate overnight guests, a new boater restroom building, fish cleaning station with grinder and pavilion, and vehicle-trailer parking with bio-filtration areas using native plants. The plans also include a dedicated travel way for the facility's 150-ton marina travel lift which is used to transfer vessels to nearby boat storage buildings and laydown areas.

Marina Dock Upgrades

SmithGroup was hired by the Harbor Commission to develop plans for renovation of the 140 slips that accommodate boats ranging from 24 feet to 110 feet in length. Design plans included re-decking of the existing access gangways, new dockside utilities including upland electrical panels and distribution system, and replacement decking on the floating docks. The project was completed in phases to minimize outages and impacts to boater activities.

Stake Holders Involved: City of Washburn, USGS, USACE

Past Peformance	
Quality	Excellent
Schedule	Excellent
Cost	Excellent
Management	Excellent

Key Personnel		
Person	**Role on Project**	**Proposed Role**
R. Wright	Civil Engineer	Civil Engineer Designer
J. Stangland	Landscape Architect	Landscape Architect
N. Novak	Landscape Architect Checker	Landscape Architect Checker

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SmithGroup	Madison, WI	Project Mgmt., Waterfront Engineering, Civil, Structural, Coastal Engineering, Landscape Architecture

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
8

21. TITLE AND LOCATION:
H2OHIO Sandusky Bay Restoration Initiative Nutrient Reduction Wetlands, Vickery (Sandusky and Erie Counties), Ohio.

CONTRACT NUMBER:
12696.201

TO NUMBER(S):
NA

CONTRACT TYPE:
FFP

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2020-2022
CONSTRUCTION (if applicable):
2022

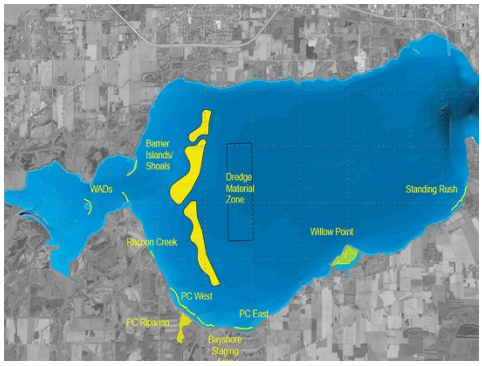
23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
The Nature Conservancy – Ohio

b. POINT OF CONTACT NAME
Ms. Alexis Sakas, PM – Natural Infrastructure

c. POINT OF CONTACT TELEPHONE NUMBER
(419) 260-8942

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)



Project Scope

Restore the ecological functionality of the Bay and improve water quality

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☐ Flood Damage Reduction
- ☒ Navigation
- ☒ Ecosystem Restoration
- ☐ Recreation
- ☒ Planning
- ☒ Design
- ☐ Earthen Structures
- ☐ Concrete Bridges
- ☐ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural, Geotechnical)
- ☐ Specs Intact (Mechanical, Electrical, Structural, and Civil
- ☐ USACE CADBIM Policies and Procedures (Structural and Civil).
- ☐ MCASES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

Percent by $ Value of the Overall Work was Self-Performed: $810K

Brief Project Overview

Sandusky Bay is a unique Great Lakes Bay ecosystem, with one of the largest extents of coastal wetland systems (now mostly bermed) in the Ohio Lake Erie basin. In its natural form, Sandusky Bay (64 sq. miles) was part of the Great Black Swamp, one of the largest coastal wetlands in North America in the 1850's. Over the years, Sandusky Bay wetlands and aquatic habitat have been impacted by high lake levels, nutrient loadings, and upstream land use changes. The Ohio Department of Natural Resources (ODNR) launched the Sandusky Bay Initiative to restore the ecological functionality of the Bay and improve water quality. The Initiative aims to restore coastal wetlands to enhance nutrient uptake, reduce algal blooms with a focus on Planktothrix (HAB), reduce suspended sediments, and create fish and wildlife habitat. The success of this project could lead to further natural recovery of coastal wetlands through improved water clarity and sheltering from waves.

After completing the Strategic Plan in 2019 by the City of Sandusky and Biohabitats, The Baird-Biohabitats-Tetra Tech team was selected by The Nature Conservancy – Ohio to develop 100% plans for recommended projects under this task order. Projects included: 1) design of three (3) Bay shoals (over 300 acres in size) to reduce wave energy in Muddy Creek Bay to aid in reducing sediment resuspension and create wetlands; 2) design of wave attenuation devices (WADs) at the mouth of Muddy Creek Bay to further reduce wave energy and resuspension of sediment; 3) design of eight (8) separate nature-based shoreline projects (living shorelines) to reduce nearshore energy and shoreline erosion and resuspension of sediments, creation of emergent and submerged aquatic vegetation communities for update and processing of nutrients, and creation of fish and wildlife habitat; 4) restoration of Willow Point to enhance habitat and formation of wetlands; and 5) restoration of the Pickerel Creek Riparian Wetland area within Pickerel Creek Wildlife Area. Other deliverables included preparation of preliminary Management, Operations, Maintenance, and Monitoring Plan (MOMM), development of a strategic regulatory compliance plan, development of technical specifications, and completion of Bay physical and water quality conditions prior to and after project construction. Biohabitats was responsible for: 1) completing baseline investigations; 2) determining design elevations for wetland formation and adaptation over a range of long-term water levels in Sandusky Bay, 3) setting projects restoration goals, design functions, and restoration targets, 4) the 60% design of the nature-based shorelines projects, the Willow Point Wildlife Area restoration project, and Pickerel Creek Riparian Wetland Restoration project; 5) design of all habitat features, planting plans, and plant schedules, 6) preparation of technical specifications for nature-based shoreline projects and habitat features; 7) assistance with developing construction cost estimates; and 8) permitting the first two projects selected for construction. Total cost of all projects ~$300M.

Specialized Experience and Technical Competence

Baseline Investigations: Biohabitats completed all baseline investigations involving determining substrate conditions, presence and absence of submerged aquatic vegetation beds, presence of existing wetlands, and overall quality using the Ohio Rapid Assessment Method (ORAM), assessing overall conditions of shoreline health using Ohio's Lacustrine Quality Habitat Evaluation Index (LQHEI), and Pickerel Creek quality using Ohio's Qualitative Habitat Evaluation Index (QHEI). Developed a comprehensive bibliography of Sandusky Bay Research completed over the years in Sandusky Bay to understand past and current conditions and food web dynamics fully. These data were combined with water quality modeling, physical modeling, geotechnical and cultural resources investigation, and sediment quality testing to finalize site selection and evaluate different alternatives before selecting the recommended project at each site.

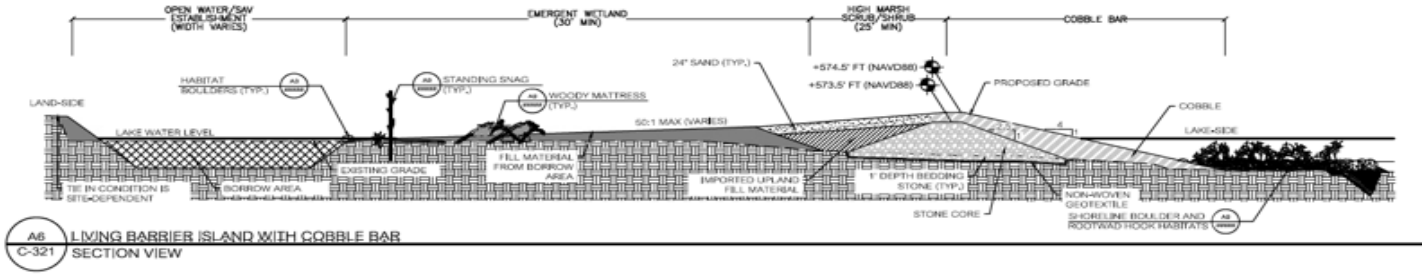
Design Grades for Establishment of Coastal Wetlands: Setting design water elevations for coastal wetland systems required an understanding of how Lake Erie water level changes impact coastal community vegetation composition, wetland hydroperiod, seed bank, long-term monthly water level changes with a focus on the growing season, and how specific coastal wetland species react to different water levels. Through a review of past research on Lake Erie coastal wetlands and a review of available Lake Erie gauge data, Biohabitats settled on using The Twin Limit Marsh Model: A Non-equilibrium Approach to Predicting Marsh Vegetation on Shorelines and in Floodplains (P.A. Keddy & D. Campbell 2019) to determine design grades for the establishment of a range of coastal wetland habitats. The model was specifically developed using a reference site located in Lake Erie by the researchers. The model required input of long-term monthly water levels to forecast the low and high range of water levels required to create conditions conducive to establishing desired wetland types required to maximize uptake of nutrients found in the water column. Biohabitats prepared a separate tech memo to document the methods and results: Marsh Limits Design Memo (Biohabitats, 2021). Application of this model to the Sandusky Bay project was.

Determining Design Functions: Design development requires a thorough understanding of ecosystem functions to be provided by each of the projects. A primary consideration was designing the system to reduce wave energy, reduce sediment resuspension, and create habitat for fish and wildlife with a focus on larval fish species and coastal bird species, a restoration priority for the State of Ohio. Also, a process was completed to fully understand how the designs would impact overall Bay health over time. A series of graphic models were developed using Mindomo to understand the interaction between different trophic levels and how the landscape scale interventions may alter the current trajectory of annual Planktothrix blooms, which pose a threat to human health and regional economy. A series of workshops were held with research scientists working in Sandusky Bay to fully understand the cause and factors contributing to the Planktothrix problems. In response, a separate tech memo was prepared by Biohabitats that identified the theory of change, functions desired, the abiotic and biotic components to establish each function, restoration goals and targets, and metrics to evaluate the performance of completed projects. The results of the analyses are documented in the Goals, Targets, and Metric tech memo (Biohabitats 2021).

Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☐	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☐	Cost Estimates Services
☐	Schedules
☐	Construction Phase Services
☒	Environmental Engineering Services
☐	Value Engineering Services
☐	Inspection / Investigation
☒	Surveying Services
☐	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

Concept Plans: With the completion of the baseline investigations and determination of design functions, Biohabitats developed CIM concept plans for each of the nature-based shoreline and restoration projects.

Design Development: The project required the development of 100% UFC 3-201-01,Civil Engineering (Civil, Structural, Geotechnical) 65%, 90%, 100% plans and specifications. Biohabitats developed of seven (7) nature-based shoreline projects, one (1) riparian enhancement project, and one (1) project involving reconfiguration of bathymetry of an existing diked area through the 60% design and developing all habitat features, planting plan and plant schedules for all projects, and preparation of technical specifications for the nature-based shoreline projects, habitat features, and plantings. Of particular importance were: 1) the development of typical cross-sections for the nature-based shoreline projects given the unique designs proposed in Sandusky Bay that would withstand fetch, wave, and ice conditions (provided by others); and 2) accommodate a range of water levels for the establishment of wetland types, the substrate requirement for desired wetland types, and habitat features for fish and wildlife.



Permitting and Agency Coordination: Biohabitats was responsible for agency coordination and compliance with identifying permitting requirements. Developed a strategic regulatory compliance plan that included identifying all permit requirements (federal, state, and local) applicable to the Initiative, general-time line for completing permitting activities, required information for each permit including forms and documentation required, and agency contacts. As part of the process of determining requirements, Biohabitats hosted a series of meetings with the USACE Buffalo District, Ohio EPA, and other partners to present the projects, and seek input on the designs and likely regulatory requirements. Once final designs were completed, Biohabitats hosted pre-application meetings with USACE Buffalo District and Ohio EPA to discuss regulatory requirements potentially applicable to each project. Prepared Individual Section 404 permit & Certification applications.

Management, Operations, Maintenance, & Monitoring (MOMM) Plan: Developed a generic MOMM plan for all projects to identify management requirements once projects are completed, any operating requirements for each site, a detailed list of maintenance and inspection requirements likely required for each project with input from the project coastal engineer, and a preliminary monitoring plan to understand likely requirements and costs fully.

Challenges Overcome: The project represents one of the largest landscape-scale restoration intervention projects ever undertaken in the Great Lakes. As a result, a broad range of expertise was required (ecological, coastal engineer, modeling, geotechnical, cultural resources) including: 1) extensive modeling completed by others but with input from Biohabitats, particularly regarding modeling creation of SAV habitat; 2) determining design grades for desired wetland types; 3) understanding feedback loops and ecosystem self-organization principles desired to establish resilient wetland communities; understanding herbivory and invasive species threats, and creating structures that would reduce wave and ice sheer potential to allow for creation and recruitment of submerged aquatic vegetation. However, challenges were overcome by involving the right disciplines and experience in Great Lakes coastal ecosystems, establishing a strong project mgmt. team, regular communications with TNC and ODNR, USACE, and understanding other project precedence's in the Great Lakes.

Stake Holders Involved: The Nature Conservancy, ODNR, Ohio SHPO, USACE Buffalo District, Ohio EP.

Miscellaneous Services: Prepared Opinion of Probable Construction Cost. Performed socioeconomic impact analysis and life cycle costing addressed issues relating to environmental. Responded to construction RFIs. Performed shop drawing reviews and performed QA/QC inspections of the construction work. USACE CAD/BIM policies were utilized to complete the drawings and permitting.

Past Peformance	
Quality	Excellent
Schedule	Excellent
Cost	Excellent
Management	Excellent

Key Personnel		
Person	**Role on Project**	**Proposed Role**
C. Streb	Environmental	Environmental
M. Lighthiser	Environmental (QC)	Environmental (QC)

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
a.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
	Biohabitats	Cleveland, OH	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
9

21. TITLE AND LOCATION *(City and State)*
Homer Road and Frampton Road Bridge Replacements, OH

CONTRACT NUMBER: 88-137

TO NUMBER(S): N/A

CONTRACT TYPE: FFP

22. YEAR COMPLETED
PROFESSIONAL SERVICES: 2016-2017
CONSTRUCTION (if applicable): 2017

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER: Licking County Engineer's Office

b. POINT OF CONTACT NAME: Mr. Jared Knerr, PE, PS

c. POINT OF CONTACT TELEPHONE NUMBER: 760-670-5280

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Frampton Road Bridge Replacement

Project Scope

Preliminary and final bridge and roadway design services for two bridge replacements.

Type of Project

- ☐ Design/ Build RFP preparation
- ☒ Fully Designed by the offeror
- ☐ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☐ Recreation
- ☐ Planning
- ☒ Design
- ☐ Earthen Structures
- ☒ Concrete Bridges
- ☐ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural, Geotechnical)
- ☐ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☐ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☐ MCASES MII in construction cost estimating (Cost Engineer)
- ☐ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

Percent by $ Value of the Overall Work was Self-Performed: $100,000 (71%)

Brief Project Overview

Gannett Fleming provided preliminary and final bridge and roadway design services for the replacement of Frampton Road and Homer Road Brides. A prestressed concrete box beam superstructure on concrete substructures was recommended for the replacement type. Gannett Fleming also provided condition inspection and load rating services for one of the bridges on the route the contractor would use to deliver the prestressed concrete box beams to the construction site.

Specialized Experience and Technical Competence

Hydrology & Hydraulics (H&H): The existing bridge was located within FEMA Zone A so a base flood elevation had not been established. Gannett Fleming sized the proposed replacement structure so it can be constructed outside of the ordinary high-water limits. Furthermore, the design ensured that there is no increase in the upstream 100-year flood elevation.

The H&H analysis was performed to comply with Ohio DOT's and USACE 3-201-01 current drainage criteria. Hydrology calculations were performed to establish the drainage area at the bridge crossing and to determine estimated flows. Hydraulic analyses of the existing channel and structure were performed using the HEC-RAS computer program. Since a base flood elevation had not been established, the initial hydraulic analysis modeled the existing conditions to establish the existing 100-year high water level. The hydraulic model was revised by replacing the existing bridge with a new bridge sized to provide a hydraulic opening that does not increase the 100-year flood elevation determined for the existing structure.

Bridge Design & Plans: The roadway survey was evaluated, and a proposed centerline developed, using the existing centerline of right-of-way to the largest extent possible. A vertical profile was developed to match the existing which assumed that an adjustment was not needed for hydraulic considerations. The roadway grading limits were developed based on the proposed roadway typical section and the proposed pre-stressed adjacent concrete box beam bridge, and the wingwall configurations set to match the grading limits while minimizing effects on the existing stream and overall work area. In order to expedite project delivery and minimize costs, simplified plan criteria were followed which showed roadway plan and profile information on the structure site plan and eliminated the need for cross sections. The pavement design was in accordance with the "short project" criteria.

Gannett Fleming's structure type study determined that a pre-stressed concrete adjacent box beam structure with a composite reinforced concrete deck on integral abutments was the most cost-effective replacement structure for the existing bridge in compliance with Ohio DOT's & USACE 3-201-01 criteria.. The existing 88-ft two-span steel beam bridge carrying Homer Road over the North Fork of the Licking River was replaced with an 85-ft single span concrete bridge. The existing 76-ft single span steel pony truss carrying Frampton Road was replaced with a 100-ft single span concrete bridge.

Geotechnical Engineering:
Gannett Fleming's geotechnical group performed the geotechnical analysis and provided the foundation recommendations for the new bridges. The geotechnical exploration program consisted of two borings with one at each proposed abutment location. Lab testing consisted of full classification testing on four samples and one unconfined compressive strength of one rock sample from each boring.

Homer Road Foundations – During the site reconnaissance for the development of the geotechnical exploration program, no rock outcrops were observed in the vicinity of the bridge and the stream did not appear to have a rock bottom. Literature research including top of rock mapping and water well log reviews was used to estimate top of bedrock elevations which were predicted to be approximately 130 feet below the ground surface elevation at the bridge. Actual top of rock from our geotechnical exploration program located bedrock at a depth of 60 feet below ground elevation which allowed the use of steel H-piles bearing on rock.

Frampton Road Foundations – During the site reconnaissance for the development of the geotechnical exploration program and no rock outcrops were observed in the vicinity of the bridge. Literature research including top of rock mapping and water well log reviews was used to estimate top of bedrock elevations which were predicted to be approximately 50 feet below the ground surface elevation. Actual top of rock from our geotechnical exploration program located bedrock to vary from a depth of 28-44-feet at the west abutment to 28-feet at the east abutment. With the top of bedrock confirmed at a reasonable depth, steel H-piles bearing on rock were used.


Homer Road Bridge Replacement

Experience in Performing A/E Services Scope	
☐	Hydrology and Hydraulic Services
☒	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☐	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☒	Cost Estimates Services
☒	Schedules
☒	Construction Phase Services
☐	Environmental Engineering Services
☐	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☐	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☐	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

Past Peformance	
Quality	Excellent
Schedule	Excellent
Cost	Excellent
Management	Excellent

Key Personnel		
Person	**Role on Project**	**Proposed Role**
M. O'Donnell	Lead Structural Engineer	Lead Structural Engineer

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Gannett Fleming, Inc.	Columbus, OH	Project Management., Structural, Geotechnical, H&H, Roadway Engineering

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER
10

21. TITLE AND LOCATION *(City and State)*
AE Services for Developing Design-Build Request for Proposal (RFP) of Drainage Repairs on Robert Gray Army Airfield (RGAAF) at Fort Hood, TX

22. YEAR COMPLETED
PROFESSIONAL SERVICES:
2017-2018
CONSTRUCTION (if applicable):
2018

CONTRACT NUMBER: W9126G17D0011
TO NUMBER(S): 0002
CONTRACT TYPE: FFP

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER: USACE Fort Worth District
b. POINT OF CONTACT NAME: Mr. Ernesto Rada, PE
c. POINT OF CONTACT TELEPHONE NUMBER: (817) 886-4207

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Project Scope

Designed the culverts and drainage ditches to reduce the flood damage

Type of Project

- ☒ Design/ Build RFP preparation
- ☐ Fully Designed by the offeror
- ☒ Flood Damage Reduction
- ☐ Navigation
- ☐ Ecosystem Restoration
- ☐ Recreation
- ☒ Planning
- ☒ Design
- ☒ Earthen Structures
- ☐ Concrete Bridges
- ☒ Culverts
- ☐ Pump Station

Specialized Experience

- ☒ Civil Engineering Modeling (Civil)
- ☒ UFC 3-201-01,Civil Engineering (Civil, Structural)
- ☒ Specs Intact (Mechanical, Electrical, Structural, and Civil)
- ☒ USACE CADBIM Policies and Procedures (Structural and Civil)
- ☒ MCACES MII in construction cost estimating (Cost Engineer)
- ☒ Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

55 Percent by $ Value of the Overall Work was Self-Performed: $177K

Brief Project Overview

The airport and Fort Hood were planning to maintain and or improve stormwater drainage in several areas that exhibited poor drainage during past rain events. Poor drainage in several of these areas resulted in water standing on the taxiways which creates a hazard to airfield traffic. The scope of this project included the design of storm drainpipe, culverts, and re-grading the grassed area adjacent to Taxiways A, B, and E along with adjustments to airfield signage on the Robert Gray Army Airfield. The work was divided into Areas 1 & 2, Areas 3 & 4, RC-1 Area A, and RC-1 Area B. The work in Areas 1 & 2 included re-grading and repairing erosion in the grassed areas adjacent to Taxiway A & E along with adjustments to existing utility manholes and airfield signage. The work in Areas 3 & 4 included re-grading and repairing erosion in the grassed area adjacent to Taxiway B & UAS Ramp along with adjustments to airfield signage. The work in RC-1 Area A included upsizing a culvert south of the airfield. The work in RC-1 Area B included upsizing the storm drain system adjacent to Taxiway B from Taxiway D to Gray Lake. Other items included establishing & maintaining the stormwater prevention pollution plan and complying with the Clean Water Act.

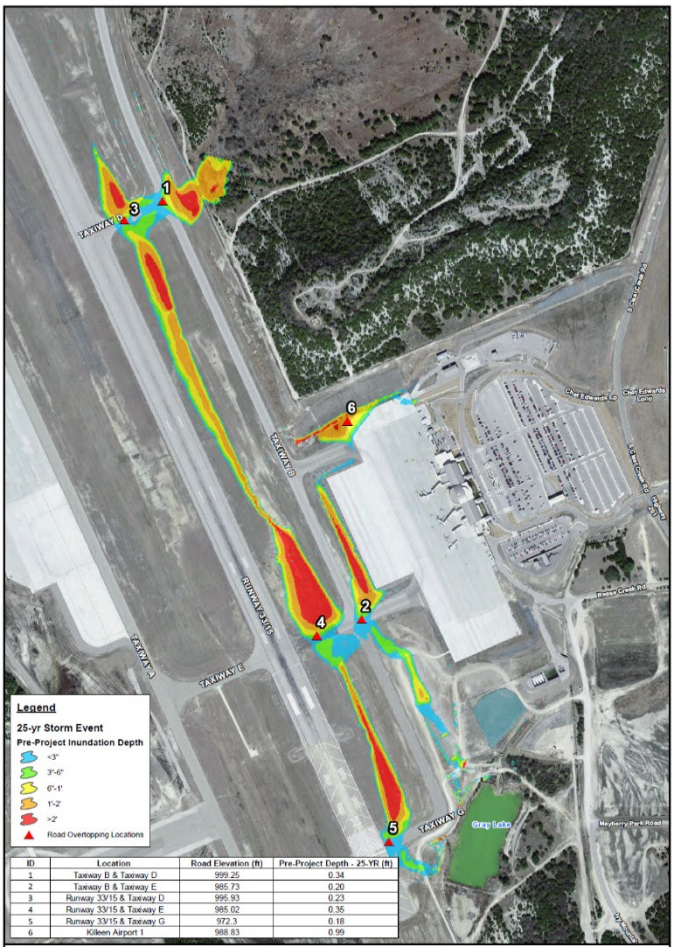
Design services included H&H, survey, civil, and structural engineering. The primary purpose of this D-B project was to produce D-B RFP drawings, specifications, and a cost estimate to repair the drainage features and associated structures.

Specialized Experience and Technical Competence

Hydrology & Hydraulics (H&H): The primary purpose of the proposed improvements was to prevent taxiway overtopping and inundation during the 25-year storm event. As part of the design, prepared a drainage design document which included an overview of the analyses that was used to evaluate the existing flood conditions and to present the recommended drainage improvements to eliminate overtopping occurrences. This included development of the CIM H&H models to check adequacy of the proposed improvements. Performed H&H analysis with HEC-HMS, HEC-RAS, and ArcGIS.

Hydrologic Model: Analyzed the West Fort Hood drainage study using two different methodologies. Performed hydrologic analyses of open channel systems with HEC's Hydrologic Modeling System (HEC-HMS) version 3.5. Developed storm sewer networks within the airfield with XP STORM. XP STORM is a dynamic modeling software that provides a 1-dimensional (1D) modeling approach for open channels and closed systems, and a 2-dimensional (2D) approach to analyze overland flow and potential flooding based on a 2D surface. The combined 1D and 2D model gave a better understanding of the amount of flooding in an area and where flooding occurs. Both the HEC-HMS open channel and the XP STORM models used the same hydrologic methods to calculate discharges within the area.

Hydraulic Model: Used both HEC-RAS and XP STORM because the area was conveyed through both developed and undeveloped areas of the Robert Gray Army Airfield. Modeled open channels downstream of Gray Lake using HEC-RAS while storm sewer networks and developed portions of the airfield were modeled using XP STORM. The open channel analysis consisted of the Reese Creek Tributary 1. The XP STORM analysis consisted of the open channels, culverts, and storm drain systems.



ID	Location	Road Elevation (ft)	Pre-Project Depth - 25-YR (ft)
1	Taxiway B & Taxiway D	999.25	0.34
2	Taxiway B & Taxiway E	985.73	0.20
3	Runway 33/15 & Taxiway D	995.93	0.23
4	Runway 33/15 & Taxiway E	985.02	0.35
5	Runway 33/15 & Taxiway G	972.3	0.18
6	Killeen Airport 1	988.83	0.99

To accomplish the H&H modelling, delineated the drainage area using LiDAR and survey data. Generated topographic information from LiDAR data that was obtained from Fort Hood and dated June 2009. Used this data along with site visit observations and engineering plans to delineate the drainage basins and sub-basins for the tributaries in the study areas. Selected design points for sub-basin delineations based on natural drainage breaks, critical locations such as road crossings and major confluences, and known areas of flooding specified by Fort Hood staff.

Developed hydraulic models of each of the studied streams using the cross-sections obtained from 2013 survey and from contours generated from 2009 LiDAR. Derived the geometric data for the models from the topography and field survey while the Manning's roughness coefficients were determined from the aerials, photographs, and field visits. Obtained bridge and culvert data primarily through field surveys and verified through field visits.

Experience in Performing A/E Services Scope	
☒	Hydrology and Hydraulic Services
☐	Geotechnical Engineering Services
☒	Structural Engineering Services
☒	Civil Site Services
☒	Relocation Services
☐	Electrical Engineering Services
☐	Mechanical Engineering Services
☐	Architectural Services
☒	Design Reports Services
☒	Design Analysis Services
☒	Plans and Specifications Services
☒	Material Quantities
☐	Cost Estimates Services
☐	Schedules
☒	Construction Phase Services
☒	Environmental Engineering Services
☒	Value Engineering Services
☒	Inspection / Investigation
☒	Surveying Services
☒	Technical Studies / Analysis
☒	Field Planning-Data Collection, Verification and Consultation
☒	Coordination and Attainment of Permits
☐	Support and Coordination in the development of utility agreements

Separated the hydraulic results into open channel (HEC-RAS) and closed systems (XP STORM) for clarity. Proposed models were developed to verify capacity of proposed drainage structures. The HEC-RAS model indicated that runoff overtops the existing 60" CMP culvert by 0.64 feet during the 25-year storm event. Increasing the 60" CMP culvert to 3-5'x6' box culverts conveyed 25-year storm event with 1.84 feet of freeboard. Designed concrete energy dissipaters at the outfall of the culvert to minimize erosion downstream of the headwall. Energy dissipaters were not included as part of the HEC-RAS model. The XP STORM analysis showed that overtopping depths at taxiways range from 0.23 to 0.99 feet during the 25-year storm event under existing conditions.

Surveying Services: Topographic survey included within the limits of civil design work plus fifty (50) feet, and random shots to verify the LIDAR data elevations. Compiled LiDAR data from Fort Hood DPW and sources within the study area. Processed the LiDAR data to create a terrain dataset and used the data for H&H analysis.

Civil / Structural: Developed DB RFP for drainage features to provide civil and structural conceptual drawing. These included repairs failing drainage channel at Taxiway B, repair erosion at Intersection of Taxiway E and A,

repair, and maintenance of failing drainage channel from East Ditch Line along NB Taxiway, surface drainage by lowering the existing inlet elevations, wherever feasible, site upgrades by either regrading or providing storm drainage. Provided guidance to the relocation of electrical manholes, airfield signage, which shall be adjusted to meet UFC 3-206-01. Provided guidance to the DB contractor to use the reports and drawings developed by Kenall, TCEQ, FEMA and other applicable criteria. The DB contractor finalized the design of the roadside ditch and channel widening, culverts, berms, paving, utility relocations, and all other associated work. Designed appropriate grading and drainage to have a positive drainage with reduced impact on erosion of the ditches.

Provided the guidance to site contractor to comply with all applicable requirements of Section 404 of the Clean Water Act and portions of the project may be completed under Nationwide Permit 14: Linear Transportation Project. Provided the guidance to the contractor to comply with all applicable requirements of the Fort Hood Construction Site Storm Water Inspection Program Memorandum of Instruction (MOI) and the Construction General Permit issued by the Texas Commission on Environmental Quality (TCEQ) (TPDES General Permit No. TXR15000). Guidance also included for the submission of completed SWPPP, Construction Site Notices (CSNs), and Notice of Intent (NOI) to DPW-ENV of construction of land-disturbing activities.

Provided guidance for preparing the erosion control and construction storm water management package, to meet State and local requirements and obtain erosion control permits and sediment control measures necessary to retain sediment within the boundaries of the project sites during construction.

Designed all the features in compliant with UFC 3-201-01, Civil Engineering. Produced all drawings in MicroStation formats. Submittals included drawings and specifications. Plans included drainage area map, demolition sheets and grading sheets.

Design Charrette, Review Meetings and Submittals: Kenall conducted on-site design charrette and design review meetings with multiple stakeholders involved during the course of the project. Developed Draft and Final RFP using MicroStation. Developed project technical specifications. Coordinated and responded to review comments from various stakeholders. Performed technical and BCOES reviews of the submittals.

Miscellaneous Services: Prepared an environmental memo by performing a site visit to make observations and record existing conditions along several drainage ditches within the airfield and along an airfield access road. The objective of the site visit was to identify waterways within the project area that could be considered jurisdictional by the USACE. This included identifying the type of vegetation in the project limits. USFWS Information for Planning and Conservation database was searched to develop a list of potential federally threatened and endangered species within the project area.

Prepared Opinion of Probable Construction Cost. Design work also included addressing the RFIs of our construction partner. Performed shop drawing reviews and performed QA/QC inspections of the construction work. Utilized USACE CAD/BIM policies to complete the drawings.

Value Engineering Study: Coordinated Value Engineering Study by AE project manager in tandem with Project Delivery Team (PDT). Members of the PDT briefed the VE team on the project objectives and provided information on the site, design issues and constraints, design documents, and cost estimate.

Stake Holders Involved: Fort Hood DPW, USACE

Past Peformance	
Quality	Satisfactory
Schedule	Satisfactory
Cost	Satisfactory
Management	Satisfactory

Key Personnel		
Person	**Role on Project**	**Proposed Role**
K. Prasad	Program Manager	Geotechnical
S. Chikyala	Project Manager	Project Manager
S. Sahai	Civil (QC)	Civil QC

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Kenall	Houston, TX	Project Management., Civil, H&H, Structural

TAB

E

SECTION G

Matrix

Key Personnel Participation

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

26. NAMES OF KEY PERSONNEL (From Section E, Block 12)	27. ROLE IN THIS CONTRACT (From Section E, Block 13)	28. EXAMPLE PROJECTS LISTED IN SECTION F									
		1	2	3	4	5	6	7	8	9	10
Srujan Chikyala, PE	Project Manager	●		●	●						●
Levi Hein, PE, CFM	Project Manager					●					
Rajesh Tolikonda, PE	Civil Engineer Designer	●	●	●	●						
Rob Wright, PE	Civil Engineer Designer							●			
Sam Sahai, PE	Civil Engineer Checker			●	●						●
Matthew O'Donnell, PE	Structural Engineer Designer									●	
Rukshan Wijeratne, PE	Structural Engineer Checker		●		●						
John Ferencak, PE, LEED AP	Mechanical Engineer Designer						●				
Dave Branson, PE, LEED AP BD+C	Mechanical Engineer Checker			●							
Phillip Applebaum, PE	Electrical Engineer Designer						●				
Maged Rifaat, PE	Electrical Engineer Checker			●							
Kris D. Prasad, PE	Geotechnical Engineer Designer	●	●	●	●						●
Voss Lakshman, PE	Geotechnical Engineer Checker			●	●						
Chris Streb, PE	Environmental Engineer Designer								●		
Michael Lighthiser, PE, LEED AP	Environmental Engineer Checker								●		
Eric Babcock, PE	Fire Protection Engineering Designer										
James Waite, PE	Fire Protection Engineering Checker										
Keith Kothmann, CPE, CCC, CCI	Cost Engineer										●
Dale Rhoads, AIA	Architect Designer										
Alan LaFon, RPA, AIA, NCARB, LEED AP	Architect Checker										
Jason Stangland, PLA, LEED AP	Landscape Architect							●			

29. EXAMPLE PROJECTS KEY

NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Champion Lake Spillway Replacement, Liberty County, TX	6	Mill Creek-Peaks Branch Drainage Relief Tunnel, TX
2	AE Services for Dallas Floodway AT&SF Bridge Demolition, Dallas, TX	7	Port of Washburn Improvements, Washburn, WI
3	A-E Services for multiple Sustainability, Renovation and Modernization and Combat Training Center Projects, Fort Polk, LA	8	H2OHIO Sandusky Bay Restoration Initiative Nutrient Reduction Wetlands, Vickery (Sandusky and Erie Counties), OH
4	IBWC Sunland Park Levee Forensic Investigation | El Paso County, TX and Dona Ana County, NM	9	Homer Road and Frampton Road Bridge Replacements, Licking County, OH
5	Colorado River Flood Control Levee Study and Design, Wharton, TX	10	AE Services for Drainage Repairs on RGAAF at Fort Hood, TX

TAB

F

SECTION H - I

Additional Information

SECTION H—ADDITIONAL INFORMATION

30. Provide any additional information requested by the agency. attach additional sheets as needed.

Kenall, Inc., (Kenall), a woman-owned small business (WOSB), and Halff, Inc., (Halff), a small business, formed the Kenall-Halff-Joint Venture (JV), which is a WOSB JV to merge the resources of our firms to pursue A/E civil works projects for USACE/DoD. We have worked together for the past three years, providing in-place, integrated management processes/procedures, which will enhance seamless delivery. Kenall has worked with USACE since 2016 on 26 projects totaling >$190M and provides 47 staff in three offices. Halff is based in Texas that has nationwide experience and also has a current $100 M IDIQ contract to perform engineering/design services for USACE's and provides extensive experience in planning, dam, levee, and flood protection assessment and design; H&H engineering PFMS; permitting; and design. Kenall provides civil engineering, geotechnical engineering, and floodplain management nationwide architectural design. Together, the JV provides considerable in-house resources and expertise to perform this contract for the Louisville District with minimal risk.

To augment our team's capabilities and capacity to perform this contract, the Kenall-Halff JV-2 assembled a team of LRD-experienced firms to support the JV. Specifically, we included six major sub-consultants, including Gannett Fleming (LB), Terracon (LB), CCM (WOSB, HUBZone), Smithgroup (LB), Hana Engineering (SDB), and CCM (WOSB). We also included three specialty sub-consultants on our team, including Jensen & Hughes (LB), Biohabitats and Strategic Value Solutions (SB). The specific services each firm provides was previously outlined in Sections C and D and is summarized in the highlight box above.

Team Roles and Responsibilities

Kenall + HALFF

Prime Contractor

- Program/project management, QC, project controls, sub mgmt
- DB and DB RFPs for Planning, H&H, Earthen Structures, Concrete Bridges, Culverts, Pump Stations, and Ecological Restorations

Major Sub-consultants

GANNETT FLEMING	• Civil works—Earthen Structures, Concrete Bridges, Culverts. • Mechanical, electrical, geotechnical engineering
Terracon	• Geotechnical engineering/testing
SMITHGROUP	• Navigation Services
HANA ENGINEERS & CONSULTANTS, LLC	• Geotechnical engineering • Environmental engineering/services
CCM CONSTRUCTION COST MANAGEMENT	• Cost estimating services

Specialty Sub-consultants

JENSEN HUGHES	• Fire protection engineering and life safety design services
Biohabitats	• Ecosystem Restoration
SVS STRATEGIC VALUE SOLUTIONS	• Value engineering services

Exhibit H-1 summarizes the Kenall-Halff team's capabilities and benefits for the solicitation-required sections while the following pages provide additional details.

Exhibit H-1. Team Capabilities to Support the A/E Services for Civil Works for Louisville District

Solicitation Requirement	Description of Approach/Capabilities	Benefit to USACE
(a) Professional Qualifications	• 21 out of 21 key personnel (KP) have professional registrations/certifications, some with multiple and 27 registrations/certifications total; 11 have advanced degrees • KP have combined over 600 years (or 28 years average each) of subject matter experience and an average of 13 years with their firm; 18 have USACE experience	Provides proven expertise to enhance performance efficiencies
(b) Specialized Experience/Technical Competence	• All of the required specialized experience/technical competencies are demonstrated on the designers' and checkers' resumes as designated in the solicitation • Team has more than 190 years of experience working for USACE • Team completed over 40 projects totaling more than $40M for LRD in last 5 years • Our 10 projects (Section F) cover all the solicitation specialized experience criteria	No learning curve; enhances ability to satisfy CELRL requirements
(c) Capacity	• The JV team provides 2,417 staff in 41 offices within LRD and 11,674 nationwide • 386 PMs, 421 architects, 4,005 engineers and 3,975 professional registrations and certifications (PE, RA/AIA, FPE, PMP, LEED, CVS, VMA,CCE, CCC) • Nine team members providing resources and design tools across the region	Ensures available resources to support multiple, concurrent TOs
(d) Past Performance	• 79% of JV's CPARS ratings are Exceptional and Very Good in the last 5 years; team has no unsatisfactory CPARS ratings • Identified VE/other savings >$4B; proven process to monitor TO performance • Achieved >90% repeat business rate and earned more than 120 commendations	Reduces performance risk and enhances customer satisfaction

H(a) Professional Qualifications

The Kenall-Halff team will leverage the capabilities of our key personnel to maximize performance on this A/E civil works contract for the Louisville District. Our management team selected 21 key personnel (see Section E for resumes) who have experience across all SOW areas in this solicitation. In addition, our key personnel have completed dozens of projects for new construction and partial/full renovation of dams, levees, roadways, bridges, canals, and stand-alone buildings for USACE, providing in-depth knowledge of USACE requirements, eliminating any learning curve and maximizing performance. As illustrated in **Exhibit H-2**, our key personnel have excellent credentials (education and registrations), extensive subject matter experience, and long-term tenures with their firms to enhance project execution. In fact, 50% of our key personnel have advanced degrees (100% have bachelors) and all 21 have professional registrations and/or certifications. Additionally, 90% of our key personnel have at least 15 years of experience in their subject area and 80% have at least 5 years of experience working with their respective firm, providing established communications and networking capabilities. Majority of our key personnel have experience working with USACE/DoD and at sites throughout LRD. Moreover, most of our key personnel have DB/DBB new construction and/or renovation experience on projects within the LRD AOR, providing local knowledge of key issues and in-place relationships, which allows our team to avoid any learning curve and enhance performance efficiencies. **Exhibit H-3** (next page) conveys our key personnel qualifications and experience in specialized experience areas.

To lead this contract, our JV assigned Kris Prasad, PE, as our Program Manager (PgM). Kris offers 20+ years of program/project management experience, including six years of experience managing four current A-E ID/IQ contracts for USACE. He has managed 26 task orders under these three contracts totaling more than $190M and performed both DB and DBB projects. To support Kris, we assigned two Project Managers (PM) and a Design QC Manager to ensure consistent TO delivery and to support multiple, concurrent TOs.

To deliver the technical expertise to perform the diverse projects under this contract, Kris and his two PMs selected 21 technical staff to fulfill the solicitation-required disciplines. Our technical staff have performed engineering/design construction and renovation projects, including implementation of sustainable, cost-saving solutions. Moreover, many of our staff are recognized industry experts, have extensive training, have authored technical publications, are involved in professional technical organizations and research groups, and have worked on award-winning (DBIA, ACEC, USGBC) projects. Our team also provides expertise in areas such as site investigation/assessment, engineering feasibility studies, engineering services during construction, LEED certification, value engineering, cost estimating, planning, NEPA documentation, and asbestos, lead, and PCB surveys It is also important to note that one or both of our JV partners have previously worked with our team members, providing knowledge of our operations, established relationships/ communication projects on dozens of DB/ DBB new protocols, and integrated work processes.

Exhibit H-2. Summary Overview of Key Personnel Professional Qualifications

Key Personnel Specialized Exp.

- PM, Srujan Chikyala, PE, has a BS and MS in Civil Engineering, as well as 13 yrs of exp on design/construction projects including dams, levees, flood control structures, bridges, pump stations, and canals for Federal/USACE clients
- PM, Levi Levi Hein, PE, CFM, has BS in Civil Engineering and 16 years of Civil Works design experience including streambank stabilization, erosion mitigation, levees & dams, flood control sediment control, and stormwater designs.
- Civil Engineer Designer, Rob Wright, PE, has BS & MS in Civil Engineering & 27 years of experience in the waterfront, coastal, heavy-civil project areas
- Structural Engineer Designer, Matthew O'Donnell, PE, has BS in Civil Engineering & 35 years of experience with bridge design hydraulic scour analyses, and load ratings.

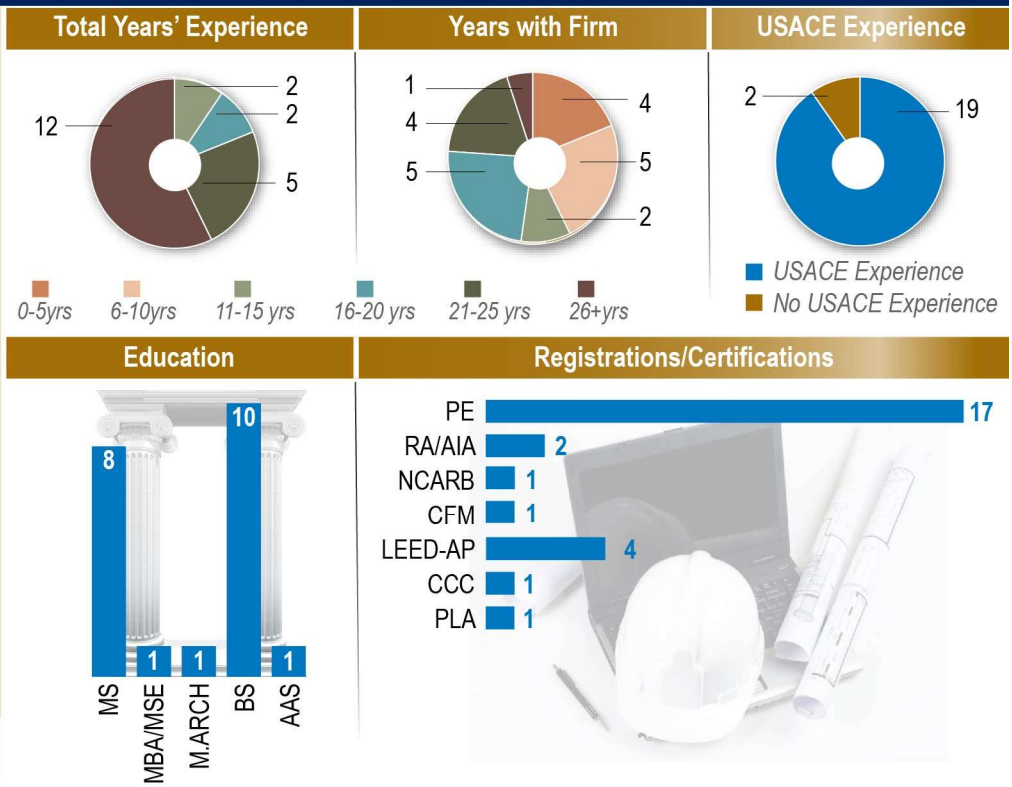


Exhibit H-3. Summary Overview of Key Personnel Professional Qualifications (23 Key Personnel)

Project Role/ Name of Individual	Registration/Certification	Education (*Highest Degree*)	Total Years' Experience	Years Exp. With Firm	Specialized Experience: Civil Information Modeling	USACE CADBIM	UFC 3-201-01	MCACES MII	Design Charrette	SpecsIntact	Value Engineering
Project Manager/ **Srujan Chikyala**	PE	MS	13	13	●	●	●	●	●	●	●
Project Manager/ **Levi Hein**	PE, CFM	BS	16	16	●	●	●	●	●	●	●
Civil Engineer Designer/ **Rajesh Tolikonda**	PE	MS	11	10	●	●	●	●	●	●	
Civil Engineer Designer/ **Rob Wright**	PE	BS	27	10	●	●	●	●	●	●	
Civil Engineer Checker/ **Sam Sahai**	PE	MS	45	18	●	●	●	●	●	●	●
Structural Engineer Designer/ **Matthew O'Donnell**	PE	BS	35	23	●	●	●		●	●	
Structural Engineer Checker/ **Rukshan Wijeratne**	PE	MBA	22	7	●	●	●	●	●	●	●
Mechanical Engineer Designer/ **John Ferencak,**	PE	MS	24	6		●		●	●	●	
Mechanical Engineer Checker/ **Dave Branson**	PE, LEED AP BD+C	BS	45	5		●		●	●	●	●
Electrical Engineer Designer/ **Phillip Applebaum,**	PE	BS	39	24		●		●	●	●	
Electrical Engineer Checker/ **Maged Rifat**	PE	BS	47	5		●		●	●	●	●
Geotechnical Engineer Designer/ **Kris D. Prasad**	PE	MS	29	20	●		●		●	●	
Geotechnical Engineer Checker/ **Voss Lakshman**	PE	MS	24	15	●		●		●	●	
Environmental Engineering Designer/ **Chris Streb**	PE	MS	27	21	●		●		●	●	
Environmental Engineering. Checker/ **Michael Lighthiser**	PE, LEED AP	MSc.	27	21	●	●	●	●	●	●	
Fire Protection Engineering Designer / **Eric Babcock**	PE	BS	23	20		●			●	●	
Fire Protection Engineering Checker / **James Waite**	PE	BS	16	5		●			●	●	
Cost Engineer/ **Keith Kothmann**	CPE, CCC, CCI	BS	45	40				●	●	●	●
Architect Designer/ **Dale Rhoads**	AIA	AAS	38	10		●		●	●	●	●
Architect Checker / **Alan LaFon**	RPA, AIA, NCARB, LEED AP	M.Arch.	38	5		●		●	●	●	●
Landscape Architect/ **Jason Stangland**	PLA, LEED AP	BS	23	17		●			●	●	

H(b) Specialized Experience and Technical Competence

The Kenall-Halff team has completed 100% of the scope elements outlined in the A/E Civil Works solicitation, ensuring we have the technical competence to complete this work for the Louisville District. As illustrated in **Exhibit H-4**, our team has completed all elements of the specialized experience requirements identified in the solicitation across our ten Section F projects. All members of our team have experience working on civil works type projects as well as experience working with USACE, providing established relationships and thus avoiding any learning curve. Our team also provides extensive architectural and engineering expertise, ensuring we can meet any USACE-required design and/or construction requirements. In particular, we have a vast understanding of civil works design in varying formats and delivery methods. Our team has completed thousands of cost estimates using MII and is experienced in other USACE software (SpecsIntact, ProjNet, etc.). **Exhibits H-5** through **H-10** (see pages H-5 through H-7) convey the Kenall-Halff team's experience and competence in the seven specialized experience and technical competencies listed in the solicitation.

Exhibit H-4. Summary of the Kenall-Halff JV-2 Section F Projects

Project Title	Client	Location	$ Value Self-Performed	Year Completed	Specialized Experience: Civil Information Modeling	USACE 3-201-01 Civil Engineering	Specs Intact	USACE CADBIM	MCACES MII	Value Engineering
1. Champion Lake Spillway Replacement, Liberty County, TX.	USFWS	TX	$401K	2020	●	●				
2. AE Services for Dallas Floodway AT&SF Bridge Demolition Dallas, TX	USACE	TX	$173K	2020	●	●	●	●	●	
3. A-E Services for multiple SRM and Combat Training Center Projects, Fort Polk, LA	USACE	LA	$755K	2019	●	●	●	●	●	
4. USIBWC Rio Grande River Sunland Park Levee Forensic Investigation | TX and NM	USIBWC	TX	$964K	2016	●	●				
5. Colorado River Flood Control Levee Study and Design, Wharton, TX	USACE	TX	$906K	2020	●	●	●	●	●	
6. Mill Creek/Peaks Branch/State-Thomas Drainage Relief Tunnel-Dallas, TX	City of Dallas	TX	$1.5M	2022	●	●		●		
7. Port of Washburn Improvements, Washburn, WI	City of Washburn	WI	$753K	2020	●	●				
8. H2OHIO Sandusky Bay Restoration Initiative Nutrient Reduction Wetlands, Vickery (Sandusky and Erie Counties), Ohio	Nature Conservancy	OH	$810K	2022	●	●				
9. Homer Road and Frampton Road Bridge Replacements	Licking County	OH	$100K	2017	●	●				
10. AE Services for Developing Design-Build RFP of RGAAF at Fort Hood, TX	USACE	TX	$177K	2018	●	●	●	●	●	●

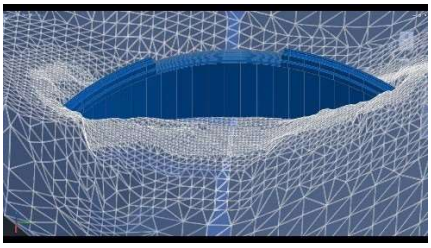
H-5 Use of Civil Information Modeling (Civil)

Technical Competence/Capabilities

- 1,900+ mechanical/electrical/ structural/civil engineers, and architects
- Proficient in 3D CIM tools from Bentley & Microstation and design packages such InRoads, OpenRoads, SLOPE/W, SEEP/W, SIGMA/W, and Geopak

Key Personnel Experience

☑ Proposed Civil Engineer Checker, Sam Sahai, PE, reviewed stormwater drainage using AutoCAD Civil 3D for USACE



Civil 3D: Creating a FEM ready Dam Model with Civil 3D

Relevant Specialized Experience (Project Examples)	
Buckeye Lake Dam Improvements, Licking County, OH	• Gannet Fleming reviewed pressure diagrams for sheet piling analysis using Shore Suite software • Use of Civil Information Modeling to support geotechnical analysis for sheet piling design, which included axial and lateral capacity, and settlement
Champion Lake Spillway Replacement, Liberty County, TX USFWS & USACE	• Kenall developed 65%, 90%, 100% and IFC drawings using AutoCAD Civil 3D • Provided the LAS format LiDAR data throughout the study area. Converted the LAS files to multi point files and used to create the Digital Terrain Model (DTM) using Environmental System Research Institute (ESRI) ArcGIS software
A-E Services for multiple Sustainability, Renovation and Modernization and Combat Training Center Projects, Fort Polk, LA USACE	• Kenall surveyed and mapped the area to assist with the de-sign of the roads and culverts • Developed gINT boring log and fence diagrams. Presented boring logs in AutoCAD. Developed 3-D views of subsurface stratigraphy • Converted the LAS files to multipoint files to create the Digital Terrain Model using Environmental System Research Institute ArcGIS software
A-E Services for North Fort Hood Drainage, Fort Hood, TX USACE	• Kenall reviewed NFH Stormwater Masterplan and development of H&H Models for all five (5) areas using XPSTORM, XPSWMM, HEC-HMS, and HEC-RAS

H-6 Use of UFC 3-201-01, Civil Engineering (Civil, Structural, Mechanical, Electrical, Geotechnical)

Technical Competence/Capabilities

- Expertise with standard design criteria including UFC 3-201-01

Key Personnel Experience

☑ Proposed PM, Srujan Chikyala PE, managed projects in TX/KY/TN which included UFC 3-201-01 design requirement

☑ Proposed Civil Engineer Designer, Rajesh Tolikonda, PE, led a design at Fort Polk for USACE including UFC 3-201-01 criteria

Kenall followed UFC 3-201-01 in preparing RFP packages for trails, culverts, road widening, and bridges at Fort Polk

Relevant Specialized Experience (Project Examples)	
Able Pump Station,Dallas Water Utilities, TX City of Dallas & USACE	• Halff designed pump station, designed the H&H modeling, and provided all UFC 3-201-01 civil and structural design for the sumps, flood storage calculations and construction phasing. • The electrical design included pump station, lighting plans, and other electrical features. Provided LEED certification coordination, subsurface utility exploration and coordination of utility relocations.
Five Mile Creek Treatment Plant, North Little Rock, AK	• Halff design included new mechanical bar screens, a new 27 mgd influent pump station consisting of four new submersible flygt pumps and pipe gallery vault, a new elevated Parshall Flume structure, replacement of all effluent submersible pumps, two new auxiliary generators and related yard piping. • Designed instrumentation & SCADA system that monitors pumps and flow into the treatment plant.
Colorado River Phase II and Baughman Slough, Wharton, TX USACE	• Site development complied with UFC 3-201-01. • Halff scope of work also included H&H modelling, sump design & layout, outfalls design into the river with gate control. Polk street design included grading, drainage improvements and street design. • Site development design complied with UFC 3-201-01, Civil Engineering
RTA Ferry Terminal, Mississippi River, New Orleans, LA RTA & USACE,	• Kenall performed slope stability and seepage calculations using SLOPE/W and SEEP/W for distinct phases of the excavation • Discussed options for repairs of weak river slopes with USACE per UFC 3-201-01

H-7 Use of Specs Intact (Mechanical, Electrical, Structural, and Civil)

Technical Competence/Capabilities

- Prepares technical specifications using SpecsIntact for thousands of projects including >200 for USACE

Key Personnel Experience

☑ Proposed Civil Engineer Designer, Rajesh Tolikonda, PE, used SpecsIntact for a for Dallas Floodway AT&SF Bridge Demolition Dallas, TX

Kenall prepared a 35% DB RFP package using SpecsIntact for AE Services for Developing DB RFP of RGAAF at Fort Hood, TX.

Relevant Specialized Experience (Project Examples)	
Dam 44, 45, 48, 50, Fort Hood, TX USACE	• Kenall SpecIntact specifications included site design for concrete all-weather access road, earthen dam embankments, grass-lined channels, culverts, storm drainage, all utilities and erosion and sediment control.
Colorado River Phase II and Baughman Slough, Wharton, TX, USACE	• Kenall SpecIntact specifications included site designs development for outfalls with gate control on the riverside, concrete and asphalt pavement, stormwater detention basins with earth embankments, grass-lined channel widening, culverts, four bridges, storm drainage, grading, sanitary sewer, water and gas distribution and erosion and sediment control
A-E Repair of Building 6426, Hangar 3, 11th Bomb Squadron, Barksdale, LA USACE	• Kenall developed project technical specifications utilizing SpecsIntact • Coordinated and responded to review comments from various stakeholders. Performed technical and BCOES reviews of the submittals

H-8 Use of USACE CADBIM Policies and Procedures (Structural and Civil)

Technical Competence/Capabilities

- Proficient in 3D BIM tools from Bentley & Microstation and design packages such Civil3D, STAADPro, LPILE

Key Personnel Experience

☑ Proposed Structural Engineer Checker, Rukshan Wijeratne, P.E., has 22 years of design/review experience including use of USACE CADBIM policies/procedures

Kenall Team used USACE CADBIM policies and procedures to complete renovation of a 40,000 SF Naval Reserve facility including architectural, MEP, structural, and civil engineering.

Relevant Specialized Experience (Project Examples)	
North Fort Hood Drainage (Five Areas), Fort Hood, TX USACE	• Kenall developed USACE CADBIM policies/procedures to prepare plans and specifications for this project. • Hydrologic, and hydraulic modeling using HEC-HMS, EPA SWMM and HEC-RAS.
Dam 42, Fort Hood, TX USACE	• Hydrologic, and hydraulic modeling using HEC-HMS and HEC-RAS to evaluate the options of dam raise. • Developed USACE CADBIM (3D BIM) policies and procedures construction drawings.
Naval Operations Support Center (NOSC) Miscellaneous Repairs & Renovations, Chattanooga, TN NAVFAC	• Kenall reviewed completed the architectural and interior design services for this DB project • Reviewed CAD drawings in accordance with ERDC/ITL TR 12-6 USACE CAD Standards • Reviewed design activities using AutoDesk Revit Architecture, Structural, & MEP modules
GSA Emmett J. Bean North & South Entry Turnstile Renovation, Indianapolis, IN USACE	• Kenall reviewed designed new turnstiles and access control at the north and south entry points • Reviewed overall architectural services including building detailing, development of Specs and preparation of Design Manuals • Reviewed all documents completed with REVIT software and converted to CAD for the using agency
Pit 3, 4, and 5 Relicensing Improvements Project, Shasta County, CA	• Kenall reviewed concept designs and contract documents of Pit 3, 4 & 5 Dam's new structures and conveyances for In-Stream Flow Release (IFR) including adding new bypass gates through the existing river gates at Pit 5 using USACE CADBIM

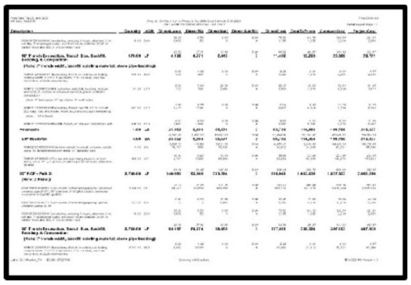
H-9 Construction Cost Estimating using MCACES MII (Cost Engineer)

Technical Competence/Capabilities

- 3 cost estimators certified by AACE/ASPE or equivalent and proficient in MCACES MII
- Team provided over $1.5B in cost estimates for USACE over the past 10 years using MCACES MII
- MCACES Second-Generation version MII software

Key Personnel Experience

☑ Proposed Cost Engineer, Keith Kothmann, CPE, CCC, CCI, industry leader and pioneer in construction cost estimating for over 40 years including MCACES MII



CCM has completed MII cost estimates ranging in value from <$50,000 to >$450,000,000.

Relevant Specialized Experience (Project Examples)	
AE Services for Colorado River Phase II and Baughman Slough, Wharton, TX USACE	• Kenall used MCACES MII to develop construction cost estimates as part of the construction packages (drawings and specifications) for the construction of various levees, channel widening, floodwalls, sumps, sluice gates and bridges.
Building 304 Renovation Naval Support Activity, Mechanicsburg, PA NAVFAC	• CCM led the development of MII cost estimates for this NAVFAC project; attended the design charrette and all design review meetings • Provided cost estimates for the charrette meeting, 35%, 65%, 95%, and 100% design submittals
A-E Services for Repair North Fort Hood Drainage, Fort Hood, TX USACE	• Kenall used MCACES MII to prepare a construction cost estimate as part of a DBB packages for the repair of 200 acres NFH Drainage at Fort Hood • The project consisted of drainage improvements to prevent the NFH Cantonment roads and airstrips overtopping during the 25-year storm event
Fort Hood Dams 44, 45, 48 and 50, Fort Hood, TX, USACE	• CCM led the development of MII cost estimates for project that included drainage improvements for four dams including earthwork, storm drainage, paving, and related improvements • Provided cost estimates for the design charrette, 35%, 65%, 95%, and 100% design submittals
Sabine Pass to Galveston Bay, Port Arthur and Vicinity Coastal Storm Risk Management USACE	• CCM led the development of MII cost estimates and Value Engineering services for this project • Provided cost estimates including removal of the floodwall as needed and a new floodwall section to be designed and constructed

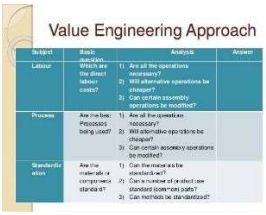
H-10 Facilitation of Value Engineering studies in accordance with SAVE (Value Engineering)

Technical Competence/Capabilities

- Completed >1500 VE workshops
- 6 certified VE Specialists

Key Personnel Experience

☑ Proposed Value Engineer, Kyle Schafersman, PE, CVS won 2008 SAVE Rising Star Award



SVS has identified $4B in VE savings.

Relevant Specialized Experience (Project Examples)	
Cow Bayou Complex, Orange County, TX USACE	• SVS proposed VE savings of $165 million in construction costs and $3.3 million in O&M costs • The VE study recommended optimizing the alignment and number of pumps in the pump station and the use of levees in lieu of T-wall
Port Arthur Hurricane Flood Protection Project, Site #2, Port Arthur, TX USACE	• SVS proposed VE savings of $185 million in construction costs and $7.5 million in O&M costs • The VE team developed ideas to simplify the construction of the new floodwall including the use of precast concrete components
Houston ship Channel (HSC) Bay Aquatic Beneficial Use Site (BABUS), Galveston Bay, Houston, TX USACE	• SVS proposed VE cost savings of $670 million in construction and $43 million in O&M costs • VE study minimized the disturbed bay bottom area & increased beneficial reuse/habitat credits

H(c) Capacity

With 2,471 staff at 41 offices within LRD, including 1,050+ engineers and architects, supported by >9,200 additional staff nationwide, the Kenall-Halff team provides sufficient capacity to support multiple task orders under this contract. The JV team provides 2417 staff in 41 offices located within LRD and 11, 674 nationwide staff with expertise and qualifications across all key engineering disciplines. With this staff, Kenall-Halff JV-2 has successfully managed up to 15 concurrent task orders with design fees ranging from <$50K to >$4.5M.

H(c).1 Design Quality Management Plan (DQMP)

Our JV has an in-place Design Quality Management Plan and internal controls to effectively manage multiple types and sizes of design projects across a diverse geography with varying site conditions. Our team offers experience across 100% of the A/E Civil Works SOW areas, enhancing efficient, responsive delivery to USACE.

H(c).1.1 Firm's Management Approach

The Kenall-Halff JV-2 has in-place management processes to deliver accurate, complete, and feasible designs for civil works projects. We provide USACE-proven procedures and systems/tools that have been used to complete over $200M on A/E projects for USACE. **Exhibit H-11** outlines our process for managing designs to support D-B RFP proposal preparation, full design as DOR, and engineering during construction. Additionally, the following subsections provide details on key elements of our management approach to ensure minimal risk to USACE.

Staffing and Resource Capacity—The Kenall-Halff JV-2 will leverage our core team of 21 key personnel supplemented by additional JV/team staff and local/specialty subcontractors to staff multiple task orders under this contract. We will also leverage our team's experience working in all states within LRD, at many military installations and civil works sites within LRD, and our long history of working with USACE. The depth and experience of our LRD-based staff reduces costs, maximizes responsiveness, enhances project execution across multiple TOs, strengthens knowledge of local conditions, and ensures continuity across project sites, reducing performance risk to USACE. **Exhibit H-12** (next page) illustrates our depth/breadth of key personnel and other technical/administrative staff within LRD and throughout the US to support this contract along with our team capabilities. It also conveys the # of registrations/certifications these staff offer, including PEs by specific engineering discipline. Our 21 key personnel and other resources of our team provides the necessary capacity to deliver staff on day one of the contract, including support functions such as CADD/BIM technicians, specification writers, schedulers, procurement staff, etc.

Upon TO award, our PgM will assign a PM who develops a staffing/resource plan for the TO, based upon the TO schedule, to define staffing and resource requirements and uses our management systems to project, track, monitor, analyze, and control staffing levels. The PgM and PM will select staff from our initial core team supplemented by additional staff as needed. Project staffing plans are rolled up to a program-level, master schedule to allow the PgM to perform resource leveling and identify efficiencies across TOs. Our management team reviews 3-week look-ahead forecasts and staffing utilization reports from our management systems to ensure staff are deployed efficiently and are available for future work.

Exhibit H-11. Key Elements of the Kenall-Halff JV-2's Design Management Approach

Design Activity	Design Management Approach/Activities
D-B RFP Proposal Preparation	• PM works with design discipline leads to develop conceptual designs for facility features in conformance with USACE and facility/site user requirements and specifications. • Design team uses AutoCAD/CIM to prepare design concepts, ensure consistency and facilitate construction estimating/scheduling including identification of long-lead items • Develop 35% design package using SpecsIntact and BIM/CIM/AutoCAD per USACE requirements • Design team interacts with USACE Project Delivery Team (PDT) to ensure compliant conceptual design
Full Design (Designer of Record)	• PM coordinates with design team to develop basis of design and conceptual drawings and prepare detailed plans/specifications as required; prepare specs/plans for 35/65/95/100% and IFC submittals • PM and estimating team provide cost feedback to design team to meet budget • PM/Design Manager coordinate with USACE PDT and end users to develop solutions to key issues • PM conducts "over the shoulder" design reviews in collaboration with Design Manager to ensure final design incorporates agreed-upon solutions and ensures conformance with requirements
Engineering During Construction	• PM and USACE PDT review shop drawings/material testing results to ensure conformance with requirements or identify need for revisions prior to submittal to USACE • A/E team is engaged when RFIs are submitted by construction personnel and when design revisions may be required due to differing site conditions or minor adjustments are necessary to address details not reflected in the design documents • A/E team is engaged during construction inspections, testing, and startup performed by manufacturers' representatives, operator training and preparation of O&M manuals
Project Closeout	• PM works with design team to prepare recording logs for submittal to USACE

Exhibit H-12. Kenall-Halff JV-2 Team's Capacity by Discipline and Professional Registrations

Capacity by Discipline in LRD and Nationwide

Discipline	JV Staffing US	Team Staffing LRD	Team Staffing US
Program Manager	1	25	232
Project Manager	104	35	386
Civil Engineer	269	35	386
Structural Engineer	19	154	531
Mechanical Engineer	26	141	293
Electrical Engineer	13	124	269
Geotechnical Engineer	3	124	739
Environmental Engineer	4	25	282
Fire Protection Engineer	1	49	214
Cost Engineer	1	2	8
Architect	16	334	421
Landscape Architect	41	70	113
Hydraulics/Hydrology Engineer	87	35	123
Value Engineer		2	8
CADD	65	39	274
Other Technical	337	723	6036
Administrative	155	500	1359
TOTAL STAFF	1142	2417	11674

Team Professional Registrations and Certifications

Registration/Certification	# Staff
Registered Professional Engineer (PE)	2750
Registered Architect (RA/AIA)	421
Registered Landscape Architect (RLA/PLA)	113
Registered Fire Protection Engineer (FPE)	214
Project Management Professional (PMP)	300
LEED Accredited Professional (LEED-AP, all subsets)	75
Certified Cost Professional (CCP)	2
Registered Professional Land Surveyor (RPLS)	88
Certified Value Specialist (CVS)	8
Value Methodology Associate (VMA)	2
Certified Cost Engineer (CCE)	1
Cost Consultant (CCC)	1

Team Professional Engineers (By Discipline)

Engineering Discipline	# Staff
Civil Engineer	309
Structural Engineer	425
Mechanical Engineer	234
Electrical Engineer	215
Geotechnical Engineer	517
Environmental Engineer	197
Fire Protection Engineer	128
Hydraulics/Hydrology Engineer	98

Major Subcontractors

GANNETT FLEMING With 60 offices and 2,700+ employees Gannet Fleming is consistently ranked among the nation's leading bridges, dams, levees and reservoirs design firms by ENR.

- Designed > 100 new bridges and dams, modified > 600 existing dams and 50 levee systems, and evaluated the safety of > 1,000 dams
- Dam projects include Earth and rockfill, Mass concrete and roller-compacted concrete gravity, Timber crib, Slab and buttress, Move- able crest (steel or rubber gate) and Concrete arch

CCM CCM has been providing estimates for USACE projects for over for the past 40 years involving projects ranging in value from $50,000 to >$450,000,000. MII is the staple of their cost engineering services, with 2 to 3 MCACES MII projects per month.

- CCM is a WOSB, HUBZone SB with 12 staff including 8 cost estimators, all of which are certified and have expertise with MII software as well as PACES, MS-Project, and Primavera

Terracon With 160+ offices nationwide including 30+ within the LRD geographic boundaries, Terracon provides environmental, geotechnical, and materials testing service.

- Completed 100+ projects for USACE Louisville District
- Provide 500+ registered engineers and geologist
- #24 on ENR's Top 500 Design Firms (2021); #1 Asbestos/Lead
- Materials testing services & thousands of borings from LRD states
- 30+ yrs' environmental/geotechnical engineering on 2,000+ projects

HANA ENGINEERS & CONSULTANTS, LLC Established in 2013, Hana is a Minority-owned small business & a certified 8(a) by the U.S. SBA.

- Specializes in geotechnical engineering and design including the design of ground improvement and land reclamation, retaining structures, waterfront/marine structures, utility and renewables, and shallow and deep foundations
- Performs slope stability & settlement analyses, liquefaction and earthquake engineering, & numerical & finite modeling services

SMITHGROUP Established in Detroit in 1853, SmithGroup is one of the largest navigational, architecture, engineering and planning firms in the U.S. With a staff of 1,236 across 19 offices, SmithGroup specializes in the government, healthcare, higher education, science & technology, and workplace sectors.
Offers depth in all disciplines serving the built and natural environment, including architecture, engineering (civil, structural, mechanical, electrical and plumbing), landscape architecture, urban design and environmental science. As of 2019, it ranks among the top 50 architecture firms according to Architect Magazine, the official magazine of AIA and also ranked as the 6th largest architecture/engineering firm in the U.S.

Specialty Subcontractors

Biohabitats Founded in 1982, employs 62 people with expertise in conservation planning, ecological restoration and regenerative design services.

- 2016 Top 10 Projects award from the AIA
- 2015 Engineering & Science Award of Excellence from the Pittsburgh AIA
- 2016 ASLA Analysis and Planning Honor Award - Baton Rouge Lakes Master Plan.

JENSEN HUGHES With 90+ offices and a staff of 1,250, Jensen & Hughes is a leader in Fire protection/detection and building safety.

- Members of: National Fire Protection Assoc., Society of Fire Protection Engineers, and Fire Protection Research Foundation
- Training partner of the Automatic Fire Alarm Association

SVS STRATEGIC VALUE SOLUTIONS SVS is an SB firm with 21 employees, incl. 6 CVS. With nearly 30 years of exp., SVS provides value analysis, risk mgmt, constructability, & ITR services.

- Reviewed 33B in capital projects, identifying $4B in savings & operational improvements on 300+ projects
- Facilitated >1,500 value engineering workshops for capital improvement projects

To monitor staffing utilization, our PMs participate in weekly resource meetings with our PgM to ensure resources are available. Our PgM will plan and schedule staff so we can retain our core team and preserve site knowledge and continuity on each project.

To support staffing surges or to obtain specialty expertise, our team also has access to 11,674 staff nationwide in 389 offices, including 2,417 in the LRD AOR at 41 offices. We can obtain insights on best practices and technologies from hundreds of staff, including 100+ subject matter experts (SMEs) with expertise in sustainability, master planning, technical studies, NEPA compliance, storm water and site drainage, hydrology/hydraulic assessment, utility investigations, and other specialty areas.

To facilitate multiple TO execution, our team also has significant management capabilities/tools, including our cost estimating capabilities and experience with MII; P6 scheduling software; PM Dashboard for tracking cost/ schedule, QC Portal for organizing and sharing QC data, lessons learned database for capturing and deploying lessons learned, and our prequalified vendor database for quick identification of local and specialty subcontractors. Additionally, our team provides technical capabilities and tools to facilitate multiple TOs, including Design Centers with AutoCAD, Civil Information Modeling and all types of design software (e.g., Civil3D, InRoads, OpenRoads, etc.); design review checklists, access to SpecsIntact, DrChecks; H&H modeling software; geotechnical materials testing capabilities, etc.

Internal Controls and Procedures—For this contract, Kenall-Halff will serve as the prime contractor and our PgM will be the single POC to Louisville District Contracting, maximizing control and coordination across multiple TOs. The JV will retain program/project management, QC, project controls, and procurement, and will remain accountable for performance. We will manage all TOs under the direction of our Program Manager, Kris Prasad, PE, and in close collaboration with our PMs, USACE and other key stakeholders, to facilitate work planning and execution, communication lines/reporting, and cost, schedule, and quality enforcement.

To control our own A/E costs, our PM will upload the approved budget to our cost accounting system and work with our project controls staff to accumulate, track, and monitor costs and the actual progress of the work at the WBS activity level. These costs are captured in cost reports, which are electronically downloaded so cost/ schedule data can be updated and compared against the budget. Subcontractor cost data and progress records are collected at the same level of detail as our own costs, providing integrated cost reports. On a biweekly basis (or more frequently if needed for larger or more complex projects), our PM will reconcile costs incurred with actual costs through our cost accounting system. The PM will also evaluate actual versus planned progress and will identify any variances, identify/evaluate corrective action alternatives and recommend future measures to deliver services to ensure completion of TOs within budget/schedule requirements.

Project Scheduling—Kenall-Halff PMs employ scheduling practices that incorporate proven delivery processes to track and monitor A/E activities to meet deliverable schedules. PMs use Microsoft Project or Primavera (P6) to develop TO schedules, listing due dates for deliverables and periods for QC review prior to delivery, and to track milestones in real time. Our PMs prepare schedules by identifying schedule risks/constraints, incorporating lessons learned, and over staffing up front to allow float and contingency, enhancing our ability to deliver resources to meet project schedules. During the site visit, we assess site and/or facility conditions/issues and identify any additional scope issues. We incorporate subcontractors' inputs into our schedule so there is adequate time for integration of activities as well as government/regulatory review times. We identify the critical path and flag any other activities requiring special attention, such as long-lead items. Through kickoff meetings, design coordination meetings, formal design reviews, and routine project communications, PMs monitor progress against schedule to determine if there are any potential issues. If the PM encounters unforeseen schedule changes due to funding, regulatory delays, or changed conditions, the PM determines the impact to the schedule and assesses ways to mitigate them, including implementing workarounds, fast tracking the schedule, or reallocating resources. The PM is also responsible to ensure our design team conducts independent technical reviews (ITRs) and responds to reviewers comments following each design submittal to meet the schedule set for each milestone.

Construction Cost Estimating—Kenall-Halff included Construction Cost Management (CCM) on our team to support cost estimating, ensuring we can adequately respond to multiple task orders. CCM has 7 cost estimators, including 2 with cost certifications (CCE, CCC). Additionally, SVS provides value engineering services to identify potential cost savings across projects.

To develop the cost estimate, the estimator focuses on verifying the scope provided in the solicitation and identifying any out-of-scope elements along with any potential risks that could impact the Construction Cost Limit (CCL). Through discussions with USACE and stakeholders, we gather input on final scope and design expectations and other key cost drivers. Estimators, working with the PM, develop the WBS to determine resources required (labor, materials, equipment, subcontracts, ODCs, travel, indirect expenses, and fee) to address the level of effort (LOE) and prepare the construction cost estimate.

Kenall-Halff ensure costs remain within the CCL by preparing a parametric estimate at the 35% design re- view to set guidelines for different cost elements. At the 65% design review, we conduct a formal reverification that all systems, building materials, and constructability still meet the CCL. Finally at the 95% design review/ 100% RTA, we confirm that the design meets the CCL and end-user needs by recommending alternate solutions, value engineering, and/or creatively structuring "optional" bid items. We also get construction staff engaged in our later reviews to enhance constructability, cost accuracy, and buildability.

H(c).1.2 Management of Sub-consultants

Kenall-Halff has developed a sub-consultant management system that is based on the concept that work performance is a process that can be planned, performed, assessed, and improved. This system means we are positioned and have the right tools to serve USACE on multiple engagements in multiple areas concurrently. Sub-consultants are used to augment Kenall-Halff technical expertise and will be selected based on the best value to Kenall-Halff and, therefore, to the USACE. Best value determinations can include cost, technical capabilities and experience, schedule performance, quality practices, personnel and equipment resources, and responsiveness. While subconsultants may perform discrete tasks, Kenall-Halff retains control of overall project management, the project schedule, and quality throughout the duration of the TO performance period.

Exhibit H-13 presents the subconsultant acquisition and management process. Subconsultants are assigned discrete and measurable work elements defined by a written SOW that is prepared by the PM and the contract manager. The subconsultants are accountable for budget, deliverables, project safety, schedule, and quality. Only companies entering into a fully executed contractual relationship with the JV will be used to support this contract.

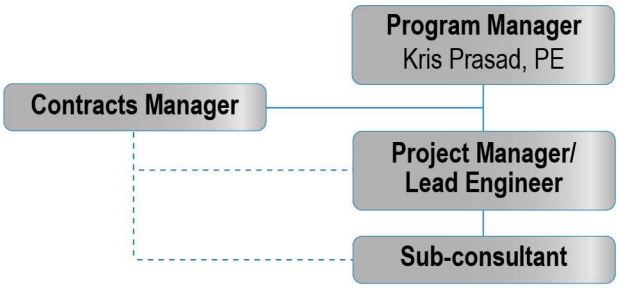
Our PMs coordinate with subconsultants through three phases of each TO—planning, project implementation, and reporting. During the planning phase, meetings and project plans are prepared to establish performance targets related to scope and schedule and ensure data management requirements are clearly identified and aligned. During project implementation, project status meetings and written status reports provide the PM with discrete performance targets leading to overall project metrics. The reporting phase involves final deliverable production and independent technical reviews (ITRs). This review is performed to verify that deliverables contain valid assumptions, designs, technical conclusions, and complete submittal packages.

H(c).1.3 Procedures for Obtaining Regulatory Permits

The Kenall-Halff JV-2 has well-established environmental planning, resource management, and permitting procedures to ensure permits are obtained in a timely manner. Our multi-disciplinary professionals provide integrated solutions for a full range of regulatory, technical and permitting services. The team's staff includes wetlands and NEPA specialists, engineers, architects, public

Exhibit H-13. Sub-consultant Management

Sub-consultant Organization



In-Place Sub-consultant Capabilities

- ✓ Executed $190M A-E design contracts for USACE; issued $75M in subcontracts
- ✓ Written sub-consultant procedures
- ✓ Contracts Manager has in-depth knowledge of FAR/DFARS
- ✓ Program Manager, PMs, and Contracts Manager are trained in Federal procurement, practices and procedures

Procurement Planning	Solicitation Development	Evaluation and Award	Subcontract Management	Task Order Closeout
• Review SOW; determine resource requirements • Conduct Make-Buy to evaluate team resources, cost, & capabilities • Define SB opportunities	• Prepare SOW, RFP packages • Define roles & responsibilities • Define Level of Effort • Develop schedule, budget & selection criteria • Validate contract provisions • Define QC requirements	• Review and evaluate proposals • Negotiate, prepare notifications • Award contracts to selected firms	• Conduct meetings, review work, schedule, deliverables • Establish procedures, cost/schedule, QC procedures • Approve sub schedule & plans • Monitor & review performance • Issue corrective actions	• Evaluate/review sub performance • Confirm receipt of deliverables • Ensure final invoices/reconciliation

involvement experts, and planners that provide progressive, sustainable, innovative planning, and permitting services to maximize the efficiency of project deliverables, keeping projects on time and within budget.

The Kenall-Halff JV-2 customizes the permitting strategy to address each project scope. To ensure optimum project efficiency, permit applications must be effective, complete, and acceptable to all parties and stakeholders. Our team achieves concurrence with a multi-step planning process that ensures that permit applications are complete and address regulatory requirements upon ini tial submittal. Permit requirements are identified during an initial project planning phase of each task order. Based on those requirements, the team establishes the permit team and independent review team that will guide each permit from development to implementation. During the preparation phase, completeness checks are employed to ensure all relevant elements are present and address all each required permit component. ITR provides a final level of completeness check to ensure timely permit issuance. We also communicate with the regulatory agencies to present the project plan and timeline to ensure permit applications are complete and often have obtained preliminary approval prior to the submittal of the formal permit application.

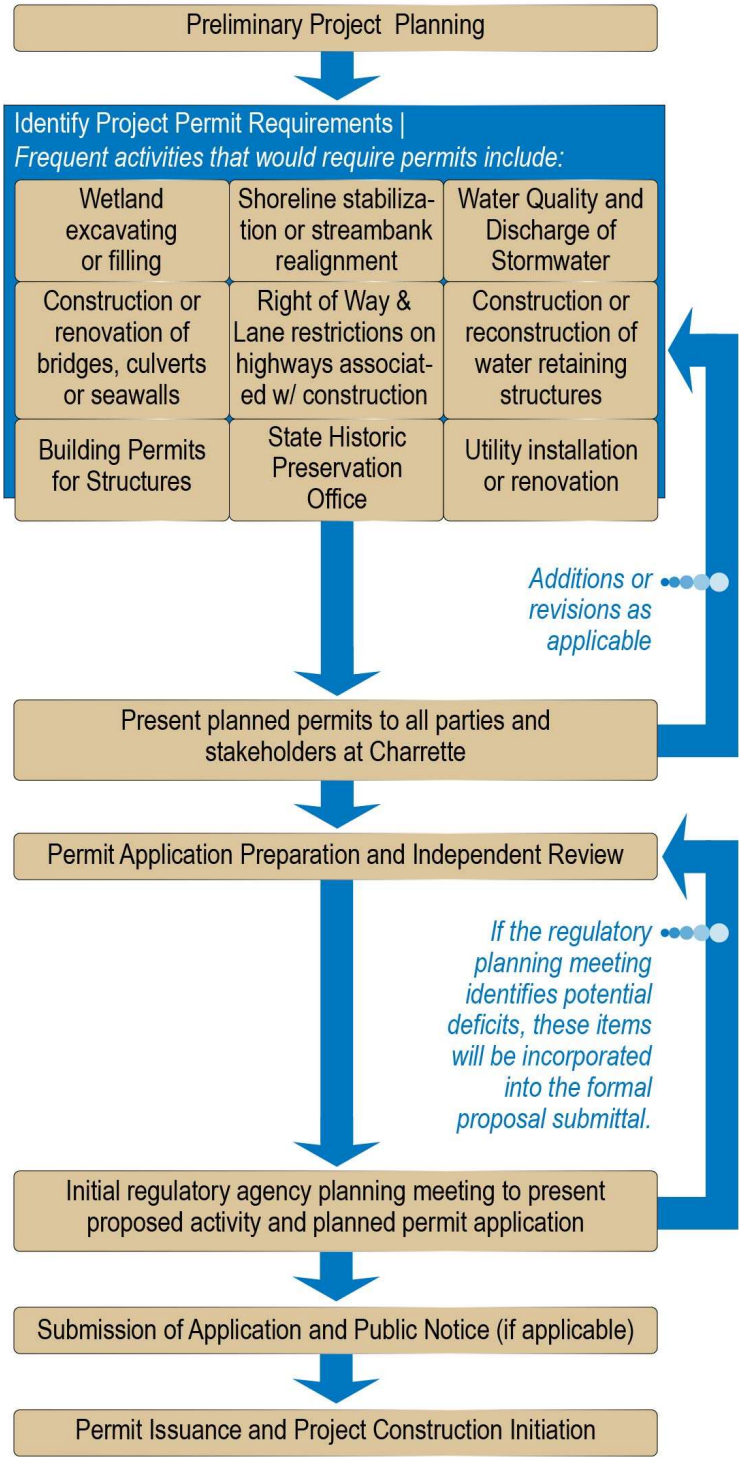
Exhibit H-14 presents the planning and review steps of the team's permitting procedures and summarizes the types of projects that would require permits. This level of collaboration with local, state, and federal regulatory agencies allows us to maintain open communication and results in expedited permit issuance.

The Kenall-Halff JV-2 has more than 20 years of experience preparing and obtaining permits for construction and A/E support services. A sample of permitting activities that our team has provided to USACE and other governmental entities includes the following:

- Bel Air Reservoir, Bel Air, Maryland
- Waterway and Dam Safety Permit Applications
- Stormwater, Erosion and Sediment Control Permits
- Forest Conservation Permits
- County Grading Permits
- Expansion of Morton Road and Rodeo Palm Parkway Design, Harris County, Texas
- Wetland delineation and critical habitat analysis, impact permitting and wetland mitigation
- Coordinated with SHPO
- A-E Services for Repair North Fort Hood Drainage, Fort Hood, Texas
- Pollutant Discharge Elimination System permit for Construction Stormwater
- Stormwater Pollution Prevention Plan
- Coordination with SHPO/ TX Historical Commission

Additionally, our JV and team members have worked applicable EPA Regions (3, 4, 5) and all state regulatory agencies within LRD, providing knowledge or permitting requirements to expedite the overall process.

H-14. Approach to Obtaining Regulatory Permits



H(c).1.4 Unique Design Features

Through the Kenall-Halff team's experience in completing hundreds of A/E and design projects throughout the LRD AOR and the country, our architects and engineers have in-depth knowledge of unique design features that we may need to address on this contract for the Louisville District. For example, for sites throughout the midwestern states, karst soil conditions provide a significan't design concern, particularly in Kentucky and Tennessee, requiring enhanced site characterization and detailed geotechnical engineering/analysis to avoid the risk of settlement and subsidence. Additionally, while many areas within the LRD AOR have lower seismic design categories (A, B), there are areas (primarily in western KY and TN) that have higher design categories (C, D, E) and will require additional A/E and design requirements to address seismic issues such as inclusion of life safety codes, selection of structural systems based on the seismic design category, and energy dissipating devices.

Our team also understands the A/E requirements for design of new and rehabilitated civil works projects. For example, for Mercer County, WV, Gannett Fleming completed A/E services for dam rehabilitation, including static and seismic slope stability analyses for the existing embankment and seismic assessments/analyses in accordance with the Seismic Design Manual and WVDEP requirements. We also conducted underwater inspections of the riser interiors/exteriors and seismic evaluations of the existing risers. Using this and other design data, prepared construction documents including drawings, specifications, design report, O&M plan, and construction schedule. We prepared design packages for submission/approval to WVDEP Dam Safety, including dam breach analysis report and inundation maps. Our team has extensive experience in many types of dam de- sign projects, including earth and rockfill, mass concrete and roller-compacted concrete gravity, timber crib, slab and buttress, moveable crest (steel or rubber gate) and concrete arch. Our team member, Gannett Fleming, has designed more than 100 new dams, modified more than 600 existing dams and 50 levee systems, and evaluated the safety of more than 1,000 dams. **Exhibit H-15** outlines specific procedures we consider as well as our capabilities to address unique design features on this contract.

H(c).1.5 Quality Control (QC) Procedures

The Kenall-Halff JV-2 has established QC procedures that include policies, procedures, roles, and responsibilities to ensure design deliverables satisfy USACE requirements and cover all facets of the project from inception to completion. These procedures are incorporated into our Quality Management Plan (QMP) that provides the framework for planning, establishing quality measures, monitoring performance, enforcing quality measures, and achieving continuous improvement to ensure consistent execution that meets USACE standards across multiple TOs. Our PMs, QC Manager, and quality support staff implement our QMP and monitor quality indicators using proven processes to enhance results.

Exhibit H-15. Procedures for Unique Design Features

Design Feature	Description of our Procedures/Capabilities
Local Design and Construction Codes (e.g., seismic)	• Experience working in all LRD states providing experience w/ state-specific codes, including zoning, height/area calculations, MEP requirements, structural loads, seismic, fire protection, foundations, etc. • Knowledge of materials compatible with local climate/soil conditions
Permit Requirements	• Familiar w/ 2021 modification to 12 existing Nationwide Permits (NWPs) and four new NWPs that authorize activities under Section 404 • Obtained Section 404 & other permits relevant to design projects
Knowledge of Varying Soil Conditions	• Conditions range from karst (limestone, dolomite) to glaciated sedimentary rocks with till/loess to metamorphic/sedimentary rocks requiring expertise in geotechnical engineering, geophysics, geology, etc.
Knowledge of Military Operations and Military Facilities	• Team has worked at many major military installations in LRD AOR • Knowledge of Installation missions, design/architectural guidelines, communications/security requirements
Knowledge of Local Market Conditions and Costs	• In-depth knowledge of regional pricing for material, labor, and equipment as well as variability in labor markets due to COVID impacts • Utilize various cost indices to track material costs & inflation impacts
Knowledge of Local Materials Availability	• Logistics staff track availability, scheduling & potential delays due to continuing COVID & severe weather, particularly for long-lead items • Need to analyze supply-chain issues in preparing estimate/schedules
Knowledge of Federal, State, and Local Regulations	• Team completed >200 DB and DBB Civil Works projects in all LRD states, requiring interaction with all key Federal, state/local regulators • Access to 100+ regulatory specialists & subject matter experts (SME)
Knowledge of Climatic Conditions/ Weather Reviews	• Utilize NOAA database, knowledge of local codes, and local weather conditions to define design requirements impacted by precipitation amounts, varying temperatures, humidity levels, severe weather • Significant range of temperatures requires knowledge of local area

Key Takeaways

- The Kenall-Halff team has experience working in every state in the LRD AOR, avoiding learning curve
- Team has established relationship all relevant regulatory agencies
- In-depth knowledge of local market and climate/weather conditions will enhance our ability to address local design reqs
- Our team's knowledge of local soil conditions, weather, cultural/historic issues, H&H issues, as well as navigable waterways, dams, levees in LRD AOR will result in reduced risk to USACE
- Provide recognized experts in various types of modeling, such as dimensional hydraulic modeling, 3D/ Computational Fluid Dynamics, interior/urban drainage, sediment transport modeling, etc.
- Our team has architects/engineers in every state w/in LRD, providing knowledge of local design, construction codes
- Our team has completed >120 projects for the Louisville District, providing knowledge of unique design requirements and procedures

Our procedures also incorporate SOPs to guide work execution for various activities, including:

- Surveying and investigations
- Design analysis
- Modeling
- CADD/BIM standards
- Engineering calculations
- Engineering drawings/review
- Design review procedures
- Specifications review/checking
- Comment incorporation
- Change control for engineering documents
- Submittal tracking

Our design teams prepare the designs, and our checkers ensure the design is complete for all construction activities and that our standard procedures are followed, including engineering calculations, calculation checking, drawing review, comment incorporation (RFI tracking), and specification checking. Technical discipline leads perform QC reviews for their respective disciplines at design milestones, 35/65/95/100% phases, using discipline checklists to ensure consistency. We conduct coordination checks at each design milestone, which are focused interdisciplinary peer reviews as well as ITRs to coordinate design disciplines and enhance technical adequacy of documents. Client reviews are performed at each major milestone or per USACE request, comments are reviewed and agreed upon and incorporated into subsequent design phases. We use DrChecks as our design review and checking system to track review comments and ensure their incorporation into the design.

For each TO, the PM provides recordkeeping and document management for submittals and implements configuration control to avoid issues. Kenall-Halff also has proven processes for ensuring design QC for subcontractors. We partner with our subcontractors to provide effective services/products and involve them in work planning, so they obtain a sense of ownership and understand the impact their performance has on cost/ schedule. We define their roles/responsibilities, outline expectations, and provide examples for reports and submittals. Our PM and QC Manager require our subcontractors to follow our quality plan. Our PM enhances integration and coordinates weekly or biweekly meetings/conference calls during TO execution to discuss schedules, issues, resources, and QC activities. Subcontractors submit completed QC documents for each phase submittal per the approved QC Plan. Our QC Manager reviews the subcontractor's QC documents for completeness and work products for contradictions/discrepancies, implements corrective actions as needed, and looks for ways to improve processes. **Exhibit H-16** provides an overview of our design QC process and approaches for managing key design tasks.

Exhibit H-16. Design QC Process and Approach

Design QC Process Overview

- USACE-compliant QC Program in place and refined for 20+ years; follows ISO 9001 procedures
- Design QC Manager (Mike Fallon) has 47 years of A-E design and construction experience
- Designated Checkers for each engineering discipline and architecture review all work by the designers
- Previously approved Design QC Plans to reduce time/cost of preparing plans, provide lessons learned
- 2,417 licensed engineers/architects to support ITRs & to provide specialized QC/design expertise (seismic)
- Independent QC reporting w/ authority to stop work for adverse quality issues or non-conformances
- Implemented Design QC processes/ procedures on 200+ A-E design projects for DoD
- SharePoint QC Portal to allow quick access/retrieval of TO documents, site photos, survey/investigation data, drawings, specifications, etc.

Project Task	Approach to Ensure Quality Results
Project Planning	• Identify complexities/issues/risks that could impact design process • Identify permit requirements and assess approval timeframes • Use previously approved plans to reduce time/cost for preparation
Engineering	• Review design requirements to determine accurate understanding • Conduct field reconnaissance to ensure required data is obtained • Use CIM and USACE CADBIM to develop/present accurate design data
Design Data	• Establish correct benchmarks and reference points prior to surveying • Use surveyors licensed in state where the project is being conducted • Use qualified subcontractors for investigative data, i.e., soil borings
Surveying and Investigations	• Use standard practices and latest design/engineering methods • Review calculations, computations by certified, senior personnel
Design Analysis	• Use approved cost estimating methods and ensure completeness and accuracy of spreadsheets with established formulas • Review against historical costs and use multiple sources for reasonableness; review with drawings and specifications
Cost Estimate	• Use trained CAD specialists to prepare drawings via AutoCAD, Revit • Use registered architects and engineers to oversee, review and stamp drawings in their respective fields to ensure accuracy/completeness
	• Prepare using SpecsIntact, UFGS, CSI Division/Section standards • Review to ensure that specifications match the contract drawings • Review with drawings for biddability and constructability
Contract Drawings Specifications	• Review by engineers for compliance with drawings/specifications • Reject for non-compliance and require revisions until shop drawing, sample or material submitted is acceptable
Shop Drawings DrChecks	• Set up DrChecks review process and establish procedures to ensure designers respond accurately & incorporate design changes into the deliverables; back check DrChecks comments/changes to the design deliverables

H(c).1.6 Risk Management Processes to Ensure Internal Resources are Not Over Committed

The Kenall-Halff JV-2 will ensure internal resources are not overcommitted on A/E projects by leveraging our in-place Risk Management Plan (RMP) that includes specified processes/procedures to manage and mitigate risks. Our risk process begins at TO proposal preparation when we develop our technical approach, schedule, and cost alternatives. Our process considers resource availability at this stage to ensure the JV and our team members have the resources to complete the project. We also consider design approaches, contractual, financial, safety, quality, cost/schedule, procurement, and logistical risks. Our risk process requires us to identify, analyze and prioritize, develop responses and contingency plans, and establish risk monitoring and controls with tracking and reporting tools. Our RMP addresses risk planning, risk handling strategies, roles/responsibilities, and timely feedback. As the person responsible for project execution, our PM leads the risk management process and coordinates with the project team, including USACE, to develop the RMP.

Upon receiving Notice to Proceed (NTP), our PM assembles our project delivery team to re-examine our earlier decisions, further brainstorm risks, determine probabilities/ consequences, and evaluate lessons learned from similar projects. We finalize our risk plan and create a risk register, so we can classify and prioritize each risk based upon occurrence probability and project impact. With a prioritized risk register, the PM prepares a response plan that includes contingencies for each risk that involves accepting (and managing), avoiding, mitigating, or transferring the risk. Throughout the project, the PM monitors each risk and reports on them during weekly status meetings and in monthly risk register updates.

As part of our risk process, our JV follows a defined process to resource our projects, as illustrated in **Exhibit H-17**. The exhibit also shows that we have implemented specific procedures to ensure the availability of internal resources. Specific procedures we employ to minimize the risk of over committing our internal resources include:

- Establishing a resource-loaded schedule for each awarded/ongoing project to track resources and developing a master schedule for the contract that rolls up resources across ongoing TOs to avoid conflicts and to allow resource leveling
- Reviewing Resource Utilization Reports and preparing 2-week lookahead forecasts to ensure resources are available to meet upcoming TO SOW requirements
- Leveraging our team's resources that offer 3,200+ engineers and architects nationwide to support surges; con- sider use of overtime as appropriate of the TO
- Implementing our COVID-19 Prevention Plan to avoid/minimize infections, maximizing the availability of resources for ongoing projects
- Conducting company-wide monthly resourcing meetings to assess/project resource requirements to ensure we have sufficient resources available

Exhibit H-17. Risk Management Plan to Ensure Adequate Internal Resources

Resourcing Approach	Understanding of Resource Requirements	Approach to Satisfy Internal Resource Requirements
Develop initial contract resource plan based on SOW ↓ Determine potential resource requirements for multiple TOs to meet the SOW ↓ Evaluate resource requirements against existing resources ↓ Recruit/hire new employees, provide training to existing employees to fill potential gaps ↓ Develop resource plans for individual TOs based on site specific requirements ↓ Monitor/supervise employees; evaluate performance via reviews/evaluations ↓ Implement corrective actions; identify improvements	Provide capacity to manage and perform multiple, concurrent TOs	• Utilize team's 21 proposed resource staff that cover all 11 solicitation required disciplines to satisfy the A/E MATOC SOW • Use resourcing software and tools including 3-week scheduling forecasts to fulfill capacity
	Provide educated employees covering multiple, varied disciplines	• Recruit and hire employees with minimum bachelor's degrees in architecture, engineering and sciences • Encourage higher education including master's and doctoral degrees through mentoring programs and incentives such as bonuses and salary increases • Assign employees to interesting projects that motivate and challenge them to utilize their knowledge and skills
	Implement effective training program to maximize employee performance	• Establish Individual Development Plans (IDPs) for employees to provide future growth opportunities, experience, advancement, and promotion • Leverage in-house training including classroom and online courses supplemented with on-the-job training
	Provide backup resources to cover sick days, vacations, supplemental services, and attrition	• Access to 11,674 employees to provide backup, including specially trained employees for specific supplemental needs • Utilize in-place contractual agreements with team subcontractors for additional staff, as needed • Use of overtime to cover short-term requirements • In-place HR capabilities and processes for recruiting and hiring new employees with required qualifications
	Establish retention plan to maintain resource levels, institutional knowledge	• Provide incentives recognizing outstanding performance such as spot bonuses and awards • Provide competitive salaries and benefits such as healthcare, retirement plans, and vacation/sick leave

H(c).1.7 Chain of Command

To lead and direct the A/E Civil Works contract, Kenall-Halff JV-2 assigned Kris Prasad, PE, as our Program Manager. Kris will serve as the single point of contact (POC) to the Louisville Contracting Officer and will be ac- countable for overall contract execution and compliance to SOW requirements. As a principal of Kenall, who is the managing member of the JV, Kris has autonomous decision-making authority to commit the JV to meet specific TO requirements under the oversight of the JV manage- ment committee. Kris has 20+ years of program/project management experience, including overseeing >$190M of A/E contracts for USACE over the last 7 years.

The JV Management Committee includes members from both companies to ensure our Program Manager has access to the full resources from each of the JV members. They will eliminate any corporate roadblocks for Kris, facilitate problem resolution as needed, ensure resources are available when required, and oversee work quality. The JV Management Committee includes senior leaders from both companies to facilitate overall contract execution and compliance.

Our Project Managers (PMs) will manage each individual task order and will report directly to our Program Manager on this contract. As required by the solicitation, we assigned two PMs as key personnel—Srujan Chikyala, PE and Levi Hein, PE. Both PMs have the required number of years of experience and have managed civil works projects for USACE. As PMs, each will be responsible for planning, staffing, risk mitigation, quality/safety oversight, budget and schedule manage- ment, recordkeeping, and compliance to contract and USACE requirements. They have the authority to manage the scope, budget, and schedule for each task order. Our PMs also have access to administrative support (reach back) to both JV members to support cost estimating, scheduling, contracts management, procurement, cost/schedule control, logistics, HR/resource planning, safety/security and any other support necessary.

Our Quality Control Manager, Mike Fallon, PE, reports independently to our Program Manager and directly to the JV Management Committee to ensure operations do not impact quality implementation. Our QC Manager implements the QMP and monitors quality indicators to ensure efficient performance. Our QC Manager also works with the PM to ensure engineering designs are developed under the supervision of a Professional Engineer (PE) registered in the state where the project is located and that all appropriate documents are stamped by a PE registered in the disciple required. Our Design QC Manager will report to the QC Manager to facilitate design QC activities and oversee the checkers to ensure they are performing required actions.

Finally, our architects/engineers will report to the PM and conduct activities to meet the TO SOW requirements in compliance with USACE, end-user, and Federal and state/local code and regulatory requirements. Checkers will work with architects/engineers in each discipline to ensure work accuracy and completeness. **Exhibit H-18** outlines specific reporting relationships and responsibilities for key staff on this contract.

Exhibit H-18. Chain of Command Roles and Responsibilities

Position/Reporting Chain	Responsibilities
Program Manager | Reports to JV Management Committee	• Single POC for the USACE KO; responsible for overall customer satisfaction • Ensures consistency across all TO management on the A/E MATOC IDIQ • Decision-making authority on contract related matters and resources
Project Managers | Report to Program Manager	• Single POC for USACE COR; supports the PgM to ensure compliance to contract requirements • Coordinates/oversees the TO performance including cost, schedule, and technical quality • Decision-making authority on TO-level related matters and scheduling • Approves schedules and costs; Approves subcontractor SOWs/invoices
QC Manager | Reports to Program Manager	• Responsible for Kenall-Halff's QC Program and compliance to contract/TO requirements • Conducts QC audits and inspections; oversee quality execution across multiple TOs • Detects/prevents deficiencies; enforces quality processes; provides training to quality staff
Design QC Manager | Reports to QC Manager	• Oversees architect/engineer checkers to ensure compliance to TO SOW and requirements • Assigns and directs Independent Technical Review (ITR) teams as needed for each project
Engineer/Architect Designers | Report to Project Managers	• Provides engineering expertise to projects requiring design support; works with team and local/specialty subconsultants to meet design requirements • Coordinates/directs multiple design disciplines; resolves design conflicts/ issues; resolves RFIs • Accepts/rejects shop drawings prior to submittal
Engineer/Architect Checkers | Report to Project Managers	• Works with the design team as a QC check to ensure contract/TO compliance and to ensure the design meets the SOW, USACE, and end-user requirements • Ensures design standard procedures are followed; checks design analysis, engineering calculations, drawings, specifications, comment incorporation (RFI tracking), and submittal tracking

H(c).1.8 Organizational Chart

The Kenall-Halff JV-2 will leverage the ongoing working relationship between our two firms to enhance our ability to implement an integrated execution plan through well-defined organizational interfaces and established communication channels. Our JV will serve as the prime contractor for the A/E Civil Works contract, and will be responsible and accountable for contract performance, the same as a single-company contractor. We will retain program/project management, quality control, project controls, and safety to maximize control and coordination across multiple task orders. To ensure best-value solutions to USACE, our PgM/PM will select subconsultants and will direct them throughout project planning and execution to achieve project objectives. Each sub- consultant will designate a point of contact for the contract, who will have the authority to make decisions and commit resources to support each task order as needed.

Our JV has established an integrated set of operating procedures from merging the best practices of both firms, which are documented in our JV Operating Plan. Our Program Manager has decision-making authority for the JV and the contract will be led and controlled under his leadership. Our JV will also use a common WBS framework for cost estimating, reporting, and invoicing, which will be rolled up to the JV cost structure for streamlined reporting to USACE. Additionally, Kenall will provide Halff with access to their cost accounting system (portioned for the JV) along with training to ensure consistent cost tracking/accounting. Through our three years of experience working together, our JV also has established communication interfaces, enhancing our ability to coordinate and control design activities and other work required under this contract. **Exhibit H-19** outlines the organizational structure of our JV and of our team structure, including major/specialty subconsultants.

As shown in the exhibit, Kenall-Halff added nine subconsultants to our team to enhance our capabilities and capacity to support multiple task orders across a diverse work scope. Specifically, we included six major and three specialty subconsultants based on the level of effort each will provide to the contract—major subconsultants will provide support across multiple disciplines and or facilities while specialty will provide expertise within a single discipline. Our JV has experience working with all our subconsultants, enhancing seamless delivery.

Our JV has signed teaming agreements with all our subconsultants to support the A/E Civil Works contract. The teaming agreements commit each firm to support our JV on this contract in specified SOW areas. The agreement acknowledges that past performance will be a key consideration for maintaining and obtaining new work and also specifies expectations and requirements for performing work under the contract. Following contract award, the JV will issue FFP contracts to each of our subconsultants and will flow down prime contract requirements to achieve all objectives for the contract.

H-19. Kenall-Halff JV-2 Organizational Chart including Subconsultants

Kenall-Halff JV-2 Organizational Structure

Kenall-Halff JV-2 Managemment Committee
Brad Ezell | Vishwa Bahl

↓

Civil Works A-E Program Manager
Kris Prasad, PE

↓

Kenall-Halff JV-2 Key Personnel, Team Resources

Benefits of our JV Structure

- Merges the resources and capabilities of seven proven USACE-based contractors to enhance capacity and expertise across SOW
- Established JV with 7 years of experience working together provides integrated management processes/procedures, minimizing risk to USACE
- Utilize common WBS framework for cost estimating, reporting, and invoicing rolled up to JV cost structure for streamlined reporting to USACE

Kenall-Halff JV-2 Team Organizational Structure

Kenall + HALFF

Prime Contractor
- Contract and Program/Project Management
- Cost/Schedule Management, Internal Controls
- Design Quality Management, S&H Oversight
- Subconsultant Management, Procurement

Major Subconsultants
- CCM | Cost Estimating
- Gannett Fleming | Earthen Structures, concrete bridges, culverts, mechanical, electrical, geotechnical
- Hana Engineering | Geotechnical and Environmental
- Smithgroup | Navigation Services
- Terracon | Geotechnical, Environmental, and Instrumentation

Specialty Subconsultants
- Biohabitats | Ecological restoration
- Jensen & Hughes | Fire Protection engineering and life safety design services
- SVS | Value engineering

H (d) Past Performance

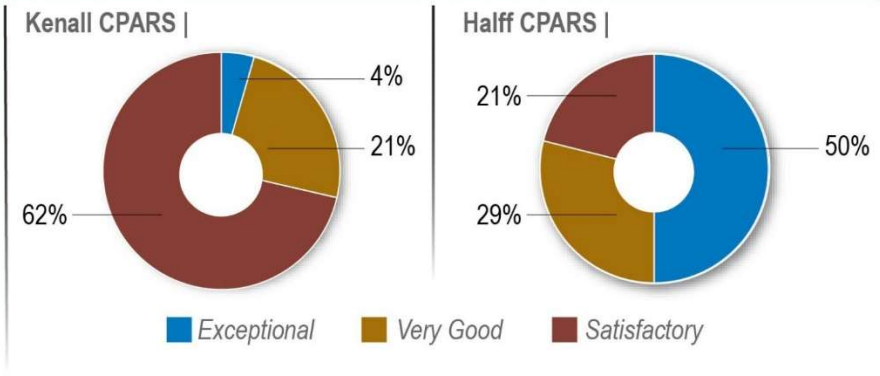
The Kenall-Halff team will minimize risk to the Louisville District by providing an outstanding past performance record that is based upon our customer-driven corporate strategy. As illustrated in **Exhibit H-20,** Kenall-Halff earned Exceptional and Very Good ratings on 62% of our CPARS, minimizing performance risk. Additionally, we have achieved a >90% repeat business rate and earned more than 120 commendations. We are routinely recognized by clients for our superior performance and cost-efficient approaches. Similarly, our team members are highly sought-after firms, and all our experienced Louisville contractors who have excellent performance records (no subcontractors have any unsatisfactory CPARS ratings).

Exhibit H-20. Past Performance Overview

Summary of Past Performance

Overview of our Past Performance

- Kenall Halff earned Exceptional or Very Good CPARS ratings on 73% of projects or 127 of 173 total ratings
- Halff was named to Zweig Group's 2018 "Best Firms to Work For" list based on a variety of factors, such as workplace practices, employee benefits, retention rates
- All Section F projects feature similar scopes of work and 3 were performed within LRD geographical boundaries



CPARS for Section F Projects

Project Name	Company	Loc.	Quality	Schedule	Cost Control	Management
Champion Lake Spillway Replacement	Kenall	TX	Exceptional	Exceptional	Exceptional	Exceptional
AE Services for Dallas Floodway AT&SF Bridge Demolition	Kenall	TX	Satisfactory	Very Good	Satisfactory	Very Good
A-E Services for multiple SRM & CTC Projects	Kenall	LA	Satisfactory	Satisfactory	Satisfactory	Satisfactory
IBWC Sunland Park Levee Forensic Investigation	Kenall	TX & NM	Very Good	Satisfactory	Very Good	Satisfactory
Colorado River Flood Control Levee Study and Design	Halff	TX	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Mill Creek-Peaks Branch Drainage Relief Tunnel	Halff	TX	Very Good	Exceptional	Very Good	Very Good
Port of Washburn Improvements	SmithGroup	WI	Exceptional	Exceptional	Exceptional	Exceptional
H2OHIO Sandusky Bay Restoration Initiative Nutrient Reduction Wetlands	Biohabitats	OH	Exceptional	Exceptional	Exceptional	Exceptional
Homer Road and Frampton Road Bridge Replacements	Ganett Fleming	OH	Exceptional	Exceptional	Exceptional	Exceptional

Team Awards/Commendations

2017 "Mentor Protégé Achievement Award" |
Kenall has been recognized as one of the successful Protégé firms for the year 2016, by City of Houston Department of Public Works and Engineering during "10th Annual Contracts in Five" Event, May 2017

2019 ACEC National Recognition Award |
Gannett Flemming completed the Bel Air Reservoir Design and Construction Project seven weeks ahead of schedule. The project has won numerous awards, including the 2019 National Recognition Award from the ACEC.

HANA ENGINEERS & CONSULTANTS, LLC

Exceptional Customer Service |
"The Contractor has demonstrated outstanding skills and exceptional customer service in providing the work under this contract. With all deliverables and assessments provided on time, it has been a true pleasure working with Hana Engineers and Consultants, LLC." USACE Norfolk District TO Project Manager.

HALFF

2018 ACEC Texas Engineering Excellence Awards |
Halff won a gold medal in the 2018 ACEC Texas Engineering Excellence Awards competition for a flood risk analysis project.

Kenall-Halff JV-2 offers structured processes to assess performance throughout TO execution so we can proactively adjust/make improvements to maximize customer satisfaction. At the start of each project, our PMs define TO objectives, customer expectations, and expected results. We identify key success factors for the project and develop tactics for achievement. We also identify risks, develop risk mitigation strategies, and evaluate alternative solutions that could result in cost/schedule savings. Many of these items are discussed during the charrette meeting with USACE and end users. During execution, our PM monitors design performance to ensure objectives are being met and pulses customers to assess satisfaction. Our JV management committee conducts project reviews on a monthly basis to assess project performance across multiple TOs and to address any issues and areas for improvement. Following project completion, we conduct a lessons-learned evaluation as part of project closeout. These lessons learned are communicated to project managers, QC staff, and key design staff to enhance performance on future TOs.

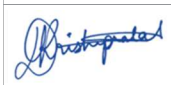
H (d).1 Execution of IDIQ Contracts

The Kenall-Halff JV-2 has successfully managed and executed 10 IDIQ contracts totaling $78M for the federal government including four for USACE. As requested per the solicitation, **Exhibit H-21** provides a list of our IDIQ contract and task order numbers, contract capacity and capacity used, number of task orders, ratings, DORs/checkers, and the managing company.

Exhibit H-21. Successful Execution of IDIQ Contracts

Contract #/TO #	Contract Capacity/ Capacity Used	# of TOs	TO Ratings	Section E DORs/ Checkers	Team Member Responsible for Contract Mgmt
W9126G17D0017/ W9126G17F0110 W9126G17F0109 W9126G17F0218 W9126G18F0396 W9126G18F0324 W9126G19F0130 W9126G18F0163 W9126G18F0363	$10M/$9M	14	6 Very Good 25 Satisfactory	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
W9126G17D0011/ W9126G17F0064 W9126G17F0049 W9126G17F0028 W9126G18F0081 W9126G17F0113 W9126G17F0165 W9126G17F0175 0002 W9126G18F0246 W9126G17F0020	$10M/$9.5M	11	9 Very Good 27 Satisfactory	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
W9126G17D0001/ W9126G19F0047	$7.5/$6.0M	2	2 Very Good 2 Satisfactory	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
140F0218C0030	Open/$345K	1	4 Exceptional	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
12SPEC18D0012/ 12FPC219F000	$10M/$2.0M	3	3 Satisfactory	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
IBM15C0002	$1.1M/$1.1M	1	1 Very Good 3 Satisfactory	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
12414619C0001	Open/$59K	1	2 Very Good 2 Satisfactory	S. Chikyala; R. Tolikonda; V. Bahl; R. Wijeratne	Kenall
W912BV-19-D-0002/ W9127S19F0045 W9127S19F0100 W9127S19F0136 W9127S19F0149 W912BV21F0078	Open/$9.5M	5	9 Exceptional 2 Very Good	L.Hein; A.Ickert	Halff

I. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

31. SIGNATURE	32. DATE
	7/11/2022
33. NAME AND TITLE	
Kris D. Prasad, PE - Program Manager	

TAB

G

SF330

Part IIs

Kenall · HALFF JOINT VENTURE

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (*If any*): W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME: **Kenall-Halff JV-2, LLC (Kenall-Halff)**	3. YEAR ESTABLISHED: 2022
	4. UNIQUE ENTITY IDENTIFIER: CLHNBD1KSMT3
2b. STREET: 8101 Westglen Drive	5. OWNERSHIP
2c. CITY: Houston / 2d. STATE: TX / 2e. ZIP CODE: 77063	a. TYPE: Partnership or LLC
	b. SMALL BUSINSSESS STATUS: Small Business, WOSB
6a. POINT OF CONTACT NAME AND TITLE: Kris D. Prasad, PE, President (JV Partner)	7. NAME OF FIRM (*If block 2a is a branch office*)
6b. TELEPHONE NUMBER: 832.251.8200 / 6c. E-MAIL ADDRESS: kris.prasad@kenallinc.com	
8a. FORMER FIRM NAME(S) (*If any*)	8b. YR. ESTABLISHED / 8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees (1) Firm	c. No. of Employees (2) Branch	a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
02	Administrative			A06	Airports; Terminals and Hangers; Freight	
02	Architect			B02	Bridges	
08	CADD Technician			C10	Commercial Building; (low rise); Shopping	
10	Chemical Engineer			C12	Communications Systems; TV; Microwave	
12	Civil Engineers			C15	Construction Management	
14	Computer Programmers			D02	Dams (Earth; Rock); Dikes; Levees	
15	Construction Inspectors			E02	Educational Facilities; Classrooms	
16	Construction Managers			E03	Electrical Studies and Design	
21	Electrical Engineers			E09	Environmental Impact Studies, Assessments or	
23	Environmental Engineers			G04	Geographic Information System Services:	
24	Environmental Scientists			H07	Highways; Streets; Airfield Paving; Parking Lots	
27	Foundation/Geotechnical			H09	Hospitals & Medical Facilities	
29	GIS Specialists			H11	Housing (Residential, Multifamily, Apartments,	
30	Geologists			I01	Industrial Buildings; Manufacturing Plants	
34	Hydrologists			L03	Landscape Architecture	
38	Land Surveyor			P04	Pipelines (Cross-country—Liquid & Gas)	
39	Landscape Architect			P06	Planning (Site, Installation and Project)	
42	Mechanical Engineers			R11	Rivers; Canals; Waterways; Flood Control	
47	Planner Urban/Reg			S04	Sewage Collection, Treatment and Disposal	
48	Project Managers			S05	Soils & Geologic Studies; Foundations	
57	Structural Engineers			S10	Surveying; Platting; Mapping: Flood Plain	
58	Technicians/Analysts			S11	Sustainable Design	
60	Transportation Engineer			S13	Storm Water Handling & Facilities	
62	Water Resources Engineer			W03	Water Supply; Treatment and Distribution	

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	
b. Non-Federal Work	
c. Total Work	

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: July 05, 2022

c. NAME AND TITLE: Kris D. Prasad, PE, President (JV Managing Partner)

STANDARD FORM 330 (REV. 7/2021)

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any): W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME: **Kenall, Inc.**		3. YEAR ESTABLISHED: 2002	4. UNIQUE ENTITY IDENTIFIER: QYNNJ1ELEB87
2b. STREET: 8101 Westglen Drive		5. OWNERSHIP	
2c. CITY: Houston	2d. STATE: TX / 2e. ZIP CODE: 77063	a. TYPE: Corporation	
6a. POINT OF CONTACT NAME AND TITLE: Kris D. Prasad, P.E., President		b. SMALL BUSINESS STATUS: SB, WOSB and MBE	
6b. TELEPHONE NUMBER: 832-251-8200	6c. E-MAIL ADDRESS: kris.prasad@kenallinc.com	7. NAME OF FIRM (If block 2a is a branch office): N/A	
8a. FORMER FIRM NAME(S) (If any): None		8b. YR. ESTABLISHED: N/A	8c. UNIQUE ENTITY IDENTIFIER: N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	C. No. of Employees (1) FIRM	(2) BRANCH
02	Administrative	5	4
06	Architect	1	1
08	CADD Technician	4	4
12	Civil Engineer	4	3
15	Construction Inspector	10	7
21	Electrical Engineer	1	1
23	Environmental Engineer	1	1
24	Environmental Scientist	1	1
25	Fire Protection Engineer	1	1
27	Geotechnical Engineer	3	2
29	GIS Specialist	1	1
34	Hydrologist	1	1
42	Mechanical Engineer	2	2
48	Project Manager	4	3
57	Structural Engineer	3	3
	Other - QA/QC	2	2
	Other Employees	3	1
TOTAL		**47**	**38**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	b. Revenue Index Number (See Below)
C10	Commercial Building (low rise)	2
C15	Construction Management	2
D02	Dams (Earth; Rock); Dikes; Levees	5
D04	Design-Build - Preparation of Requests for Proposals	1
E09	Environmental Impact Studies, Assessments or Statements	2
E10	Environmental & Natural Resource Mapping	4
E12	Environmental Remediation	2
E13	Environmental Testing and Analysis	2
F05	Forensic Engineering	4
G04	Geographic Information System Services: Development, Analysis, & Data	2
M05	Military Design Standards	4
P06	Planning (Site, Installation, and Project)	3
S05	Soils & Geologic Studies; Foundations	4
S09	Structural Design; Special Structures	2
T02	Testing & Inspection Services	4
T04	Topographic Surveying & Mapping	2
U03	Utilities (Gas and Steam)	2

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	6
b. Non-Federal Work	5
c. Total Work	6

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: July 05, 2022

c. NAME AND TITLE: Kris D. Prasad, PE, President/Principal

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any): W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME: **Kenall, Inc.**		3. YEAR ESTABLISHED: 2002	4. UNIQUE ENTITY IDENTIFIER: QYNNJ1ELEB87
2b. STREET: 5120 Storey Street		5. OWNERSHIP	
2c. CITY: Harahan	2d. STATE: LA / 2e. ZIP CODE: 70123	a. TYPE: Corporation	
6a. POINT OF CONTACT NAME AND TITLE: Kris D. Prasad, P.E., President		b. SMALL BUSINESS STATUS: SB, WOSB and MBE	
6b. TELEPHONE NUMBER: 832-251-8200	6c. E-MAIL ADDRESS: kris.prasad@kenallinc.com	7. NAME OF FIRM (If block 2a is a branch office): Kenall, Inc.	
8a. FORMER FIRM NAME(S) (If any): None		8b. YR. ESTABLISHED: N/A	8c. UNIQUE ENTITY IDENTIFIER: N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	C. No. of Employees (1) FIRM	C. No. of Employees (2) BRANCH
02	Administrative	5	1
06	Architect	1	
08	CADD Technician	4	
12	Civil Engineer	4	1
15	Construction Inspector	10	3
21	Electrical Engineer	1	
23	Environmental Engineer	1	
24	Environmental Scientist	1	
25	Fire Protection Engineer	1	
27	Geotechnical Engineer	3	1
29	GIS Specialist	1	
34	Hydrologist	1	
42	Mechanical Engineer	2	
48	Project Manager	4	1
57	Structural Engineer	3	
	Other - QA/QC	2	
	Other Employees	3	
	TOTAL	**47**	**7**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	b. Revenue Index Number (See Below)
C10	Commercial Building (low rise)	2
C15	Construction Management	2
D02	Dams (Earth; Rock); Dikes; Levees	5
D04	Design-Build - Preparation of Requests for Proposals	1
E09	Environmental Impact Studies, Assessments or Statements	2
E10	Environmental & Natural Resource Mapping	4
E12	Environmental Remediation	2
E13	Environmental Testing and Analysis	2
F05	Forensic Engineering	4
G04	Geographic Information System Services: Development, Analysis, & Data	2
M05	Military Design Standards	4
P06	Planning (Site, Installation, and Project)	3
S05	Soils & Geologic Studies; Foundations	4
S09	Structural Design; Special Structures	2
T02	Testing & Inspection Services	4
T04	Topographic Surveying & Mapping	2
U03	Utilities (Gas and Steam)	2

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	6
b. Non-Federal Work	5
c. Total Work	6

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: July 05, 2022

c. NAME AND TITLE: Kris D. Prasad, PE, President/Principal

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME **Halff Associates, Inc.**		**3. YEAR ESTABLISHED** 1950	**4. UNIQUE ENTITY IDENTIFIER** **PM6KMNBLWEY6**
2b. STREET 1201 N Bowser Road		**5. OWNERSHIP** **a. TYPE** Corporation	
2c. CITY Richardson	**2d. STATE** Texas	**2e. ZIP CODE** 75081	**b. SMALL BUSINESS STATUS** Large Business
6a. POINT OF CONTACT NAME AND TITLE Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)*	
6b. TELEPHONE NUMBER (214) 346-6200	**6c. E-MAIL ADDRESS** jbaker@halff.com		
8a. FORMER FIRM NAME(S) *(if any)* N/A		**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	147	56
06	Architect	15	11
08	CADD Technician	77	22
10	Chemical Engineer	8	4
12	Civil Engineer	281	47
14	Computer Programmer	31	27
15	Construction Inspector	37	6
16	Construction Manager	9	1
21	Electrical Engineer	17	5
24	Enviro. Scientist	30	14
29	GIS Specialist	44	12
30	Geologist	8	7
38	Land Surveyor	121	34
39	Landscape Architect	45	6
42	Mechanical Engineer	28	9
47	Planner Urban/Reg.	28	9
57	Structural Engineer	15	5
58	Technician/Analyst	65	21
60	Transportation Engineer	80	14
62	Water Resources Engineer	91	13
	Total	**1,177**	**323**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A06	Airports; Terminals and Hangars; Freight Handling	3
B02	Bridges	5
C10	Commercial Building; (low rise); Shopping Centers	8
C12	Communications Systems; TV; Microwave	4
E02	Educational Facilities; Classrooms	5
E03	Electrical Studies and Design	5
E09	Environmental Impact Studies, Assessments or Statements	6
G04	Geographic Information System Services: Development, Analysis, and Data Collection	6
H07	Highways; Streets; Airfield Paving; Parking Lots	9
H09	Hospitals & Medical Facilities	4
H11	Housing (Residential, Multifamily, Apartments, Condominiums)	6
I01	Industrial Buildings; Manufacturing Plants	6
L03	Landscape Architecture	7
P04	Pipelines (Cross-country—Liquid & Gas)	8
P06	Planning (Site, Installation and Project)	5
R11	Rivers; Canals; Waterways; Flood Control	8
S04	Sewage Collection, Treatment and Disposal	7
S10	Surveying; Platting; Mapping: Flood Plain Studies	8
S11	Sustainable Design	6
S13	Storm Water Handling & Facilities	7
W03	Water Supply; Treatment and Distribution	6

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	7
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $ 100,000
2. $ 100,000 to less than $ 250,000
3. $ 250,000 to less than $ 500,000
4. $ 500,000 to less than $ 1 million
5. $ 1 million to less than $ 2 million
6. $ 2 million to less than $ 5 million
7. $ 5 million to less than $10 million
8. $ 10 million to less than $ 25 million
9. $ 25 million to less than $ 50 million
10. $ 50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: Jessica Baker Daily

b. DATE: June 29th, 2022

c. NAME AND TITLE: Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	**Halff Associates, Inc.**
3. YEAR ESTABLISHED	1950
4. UNIQUE ENTITY IDENTIFIER	KH6SYRKBL3Z7
2b. STREET	4000 Fossil Creek Blvd.
5. OWNERSHIP	
a. TYPE	Corporation
2c. CITY	Fort Worth
2d. STATE	Texas
2e. ZIP CODE	76137
b. SMALL BUSINESS STATUS	Large Business
6a. POINT OF CONTACT NAME AND TITLE	Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer
7. NAME OF FIRM *(if Block 2a is a Branch Office)*	Halff Associates, Inc.
6b. TELEPHONE NUMBER	(817) 847-1422
6c. E-MAIL ADDRESS	jbaker@halff.com
8a. FORMER FIRM NAME(S) *(if any)*	N/A
8b. YEAR ESTABLISHED	N/A
8c. UNIQUE ENTITY IDENTIFIER	N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	147	10
06	Architect	15	
08	CADD Technician	77	9
10	Chemical Engineer	8	3
12	Civil Engineer	281	32
14	Computer Programmer	31	
15	Construction Inspector	37	1
16	Construction Manager	9	
21	Electrical Engineer	17	
24	Enviro. Scientist	30	
29	GIS Specialist	44	10
30	Geologist	8	
38	Land Surveyor	121	6
39	Landscape Architect	45	3
42	Mechanical Engineer	28	3
47	Planner Urban/Reg.	28	3
57	Structural Engineer	15	3
58	Technician/Analyst	65	
60	Transportation Engineer	80	7
62	Water Resources Engineer	91	20
	Total	**1,177**	**110**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A06	Airports; Terminals and Hangars; Freight Handling	3
B02	Bridges	5
C10	Commercial Building; (low rise); Shopping Centers	8
C12	Communications Systems; TV; Microwave	4
E02	Educational Facilities; Classrooms	5
E03	Electrical Studies and Design	5
E09	Environmental Impact Studies, Assessments or Statements	6
G04	Geographic Information System Services: Development, Analysis, and Data Collection	6
H07	Highways; Streets; Airfield Paving; Parking Lots	9
H09	Hospitals & Medical Facilities	4
H11	Housing (Residential, Multifamily, Apartments, Condominiums)	6
I01	Industrial Buildings; Manufacturing Plants	6
L03	Landscape Architecture	7
P04	Pipelines (Cross-country—Liquid & Gas)	8
P06	Planning (Site, Installation and Project)	5
R11	Rivers; Canals; Waterways; Flood Control	8
S04	Sewage Collection, Treatment and Disposal	7
S10	Surveying; Platting; Mapping: Flood Plain Studies	8
S11	Sustainable Design	6
S13	Storm Water Handling & Facilities	7
W03	Water Supply; Treatment and Distribution	6

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	7
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $ 100,000
2. $ 100,000 to less than $ 250,000
3. $ 250,000 to less than $ 500,000
4. $ 500,000 to less than $ 1 million
5. $ 1 million to less than $ 2 million
6. $ 2 million to less than $ 5 million
7. $ 5 million to less than $10 million
8. $ 10 million to less than $ 25 million
9. $ 25 million to less than $ 50 million
10. $ 50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: Jessica Baker Daily

b. DATE: June 29th, 2022

c. NAME AND TITLE: Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	**Halff Associates, Inc.**
3. YEAR ESTABLISHED	1950
4. UNIQUE ENTITY IDENTIFIER	NQJTU6VPKU84
2b. STREET	5000 West Military Highway, Ste. 100
5. OWNERSHIP	
a. TYPE	Corporation
2c. CITY	McAllen
2d. STATE	Texas
2e. ZIP CODE	78503
b. SMALL BUSINESS STATUS	Large Business
6a. POINT OF CONTACT NAME AND TITLE	Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer
7. NAME OF FIRM *(if Block 2a is a Branch Office)*	Halff Associates, Inc.
6b. TELEPHONE NUMBER	(956) 664-0286
6c. E-MAIL ADDRESS	jbaker@halff.com
8a. FORMER FIRM NAME(S) *(if any)*	N/A
8b. YEAR ESTABLISHED	N/A
8c. UNIQUE ENTITY IDENTIFIER	N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	147	4
06	Architect	15	
08	CADD Technician	77	12
10	Chemical Engineer	8	
12	Civil Engineer	281	15
14	Computer Programmer	31	1
15	Construction Inspector	37	1
16	Construction Manager	9	
21	Electrical Engineer	17	9
24	Enviro. Scientist	30	
29	GIS Specialist	44	
30	Geologist	8	
38	Land Surveyor	121	6
39	Landscape Architect	45	
42	Mechanical Engineer	28	5
47	Planner Urban/Reg.	28	
57	Structural Engineer	15	
58	Technician/Analyst	65	6
60	Transportation Engineer	80	
62	Water Resources Engineer	91	
	Total	**1,177**	**59**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A06	Airports; Terminals and Hangars; Freight Handling	3
B02	Bridges	5
C10	Commercial Building; (low rise); Shopping Centers	8
C12	Communications Systems; TV; Microwave	4
E02	Educational Facilities; Classrooms	5
E03	Electrical Studies and Design	5
E09	Environmental Impact Studies, Assessments or Statements	6
G04	Geographic Information System Services: Development, Analysis, and Data Collection	6
H07	Highways; Streets; Airfield Paving; Parking Lots	9
H09	Hospitals & Medical Facilities	4
H11	Housing (Residential, Multifamily, Apartments, Condominiums)	6
I01	Industrial Buildings; Manufacturing Plants	6
L03	Landscape Architecture	7
P04	Pipelines (Cross-country—Liquid & Gas)	8
P06	Planning (Site, Installation and Project)	5
R11	Rivers; Canals; Waterways; Flood Control	8
S04	Sewage Collection, Treatment and Disposal	7
S10	Surveying; Platting; Mapping: Flood Plain Studies	8
S11	Sustainable Design	6
S13	Storm Water Handling & Facilities	7
W03	Water Supply; Treatment and Distribution	6

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	7
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $ 100,000
2. $ 100,000 to less than $ 250,000
3. $ 250,000 to less than $ 500,000
4. $ 500,000 to less than $ 1 million
5. $ 1 million to less than $ 2 million
6. $ 2 million to less than $ 5 million
7. $ 5 million to less than $10 million
8. $ 10 million to less than $ 25 million
9. $ 25 million to less than $ 50 million
10. $ 50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: Jessica Baker Daily

b. DATE: June 29th, 2022

c. NAME AND TITLE: Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	**Halff Associates, Inc.**
3. YEAR ESTABLISHED	1950
4. UNIQUE ENTITY IDENTIFIER	CG6MJS3J9N61
2b. STREET	100 NE Loop 410, Suite 200
5. OWNERSHIP	
a. TYPE	Corporation
2c. CITY	San Antonio
2d. STATE	Texas
2e. ZIP CODE	78216
b. SMALL BUSINESS STATUS	Large Business
6a. POINT OF CONTACT NAME AND TITLE	Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer
7. NAME OF FIRM *(if Block 2a is a Branch Office)*	Halff Associates, Inc.
6b. TELEPHONE NUMBER	(210) 798-1895
6c. E-MAIL ADDRESS	jbaker@halff.com
8a. FORMER FIRM NAME(S) (if any)	N/A
8b. YEAR ESTABLISHED	N/A
8c. UNIQUE ENTITY IDENTIFIER	N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	147	6
06	Architect	15	
08	CADD Technician	77	
10	Chemical Engineer	8	
12	Civil Engineer	281	8
14	Computer Programmer	31	1
15	Construction Inspector	37	2
16	Construction Manager	9	
21	Electrical Engineer	17	1
24	Enviro. Scientist	30	
29	GIS Specialist	44	1
30	Geologist	8	
38	Land Surveyor	121	6
39	Landscape Architect	45	1
42	Mechanical Engineer	28	5
47	Planner Urban/Reg.	28	
57	Structural Engineer	15	
58	Technician/Analyst	65	
60	Transportation Engineer	80	13
62	Water Resources Engineer	91	11
	Total	**1,177**	**55**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A06	Airports; Terminals and Hangars; Freight Handling	3
B02	Bridges	5
C10	Commercial Building; (low rise); Shopping Centers	8
C12	Communications Systems; TV; Microwave	4
E02	Educational Facilities; Classrooms	5
E03	Electrical Studies and Design	5
E09	Environmental Impact Studies, Assessments or Statements	6
G04	Geographic Information System Services: Development, Analysis, and Data Collection	6
H07	Highways; Streets; Airfield Paving; Parking Lots	9
H09	Hospitals & Medical Facilities	4
H11	Housing (Residential, Multifamily, Apartments, Condominiums)	6
I01	Industrial Buildings; Manufacturing Plants	6
L03	Landscape Architecture	7
P04	Pipelines (Cross-country—Liquid & Gas)	8
P06	Planning (Site, Installation and Project)	5
R11	Rivers; Canals; Waterways; Flood Control	8
S04	Sewage Collection, Treatment and Disposal	7
S10	Surveying; Platting; Mapping: Flood Plain Studies	8
S11	Sustainable Design	6
S13	Storm Water Handling & Facilities	7
W03	Water Supply; Treatment and Distribution	6

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	7
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $ 100,000
2. $ 100,000 to less than $ 250,000
3. $ 250,000 to less than $ 500,000
4. $ 500,000 to less than $ 1 million
5. $ 1 million to less than $ 2 million
6. $ 2 million to less than $ 5 million
7. $ 5 million to less than $10 million
8. $ 10 million to less than $ 25 million
9. $ 25 million to less than $ 50 million
10. $ 50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: Jessica Baker Daily

b. DATE: June 29th, 2022

c. NAME AND TITLE: Jessica Baker Daily, PE, CFM, PMP – Chief Marketing Officer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*:

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (*or Branch Office*) NAME: Biohabitats, Inc. (Chesapeake/Delaware Bays Bioregion Branch)	3. YEAR ESTABLISHED: 1982
	4. UNIQUE ENTITY IDENTIFIER: 19-5209788
2b. STREET: The Stables Building, 2081 Clipper Park Road	5. OWNERSHIP
	a. TYPE: S Corporation
2c. CITY: Baltimore / 2d. STATE: MD / 2e. ZIP CODE: 21211	b. SMALL BUSINESS STATUS: NAICS 541620, 541330
6a. POINT OF CONTACT NAME AND TITLE: Adam Feuerstein, CPA – Corporate Treasurer	7. NAME OF FIRM *(If Block 2a is a Branch Office)*
6b. TELEPHONE NUMBER: 667.401.8495 / 6c. EMAIL ADDRESS: afeuerstein@ biohabitats.com	

8a. FORMER FIRM NAME(S) *(If any)*	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH
02	Administrative	11	9
08	CADD/GIS Technicians	4	2
12	Civil Engineers	6	
16	Construction Mgr/Coor.	5	2
19	Ecologists	6	2
23	Environmental Engineers	5	1
24	Environmental Scientists	8	7
39	Landscape Architects	6	4
62	Water Resources Engineers	11	8
	Other Employees		
	Total	62	35

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C07	Coastal Engineering	6
E01	Eco. and Arch. Investigation	5
E09	Env. Impact Studies	3
E13	Environmental Testing, Analysis	2
F04	Fisheries; Fish Ladders	2
L03	Landscape Architecture	5
H01	Harbors; Jetties; Piers	2
P05	Planning (Community;Regional)	6
P06	Planning (Site, Installation)	4
R04	Recreation Facilities	2
R11	Rivers, Canals, Waterways	6
S05	Soils Geologic Studies; Found	2
S13	Storm Water Handling	6
W02	Water Resources; Hydrology	4
W03	Water Supply Treatment & Dist	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	4
b. Non-Federal Work	8
c. Total Work	8

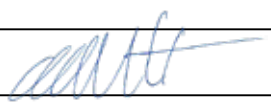
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE: June 30, 2022

c. NAME AND TITLE: Adam Feuerstein, CPA – Corporate Treasurer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (*or Branch Office*) NAME: Biohabitats, Inc. (Great Lakes Bioregion Branch Office)	3. YEAR ESTABLISHED: 2002 / 4. UNIQUE ENTITY IDENTIFIER: 19-5209788
2b. STREET: 2026 Murray Hill Road, Room 102	5. OWNERSHIP
2c. CITY: Cleveland / 2d. STATE: OH / 2e. ZIP CODE: 44106	a. TYPE: S Corporation
6a. POINT OF CONTACT NAME AND TITLE: Adam Feuerstein, CPA – Corporate Treasurer	b. SMALL BUSINESS STATUS: NAICS 541620, 541330
6b. TELEPHONE NUMBER: 667.401.8495 / 6c. EMAIL ADDRESS: afeuerstein@ biohabitats.com	7. NAME OF FIRM *(If Block 2a is a Branch Office)*: Biohabitats, Inc. 2081 Clipper Park Road Baltimore, Maryland 21211

8a. FORMER FIRM NAME(S) *(If any)*	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH
02	Administrative	11	
08	CADD/GIS Technicians	4	
12	Civil Engineers	6	
16	Construction Mgr/Coor.	5	
19	Ecologists	6	1
23	Environmental Engineers	5	1
24	Environmental Scientists	8	1
39	Landscape Architects	6	1
62	Water Resources Engineers	11	
	Other Employees		
	Total	62	4

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C07	Coastal Engineering	6
E01	Eco. and Arch. Investigation	5
E09	Env. Impact Studies	3
E13	Environmental Testing, Analysis	2
F04	Fisheries; Fish Ladders	2
L03	Landscape Architecture	5
H01	Harbors; Jetties; Piers	2
P05	Planning (Community;Regional)	6
P06	Planning (Site, Installation)	4
R04	Recreation Facilities	2
R11	Rivers, Canals, Waterways	6
S05	Soils Geologic Studies; Found	2
S13	Storm Water Handling	6
W02	Water Resources; Hydrology	4
W03	Water Supply Treatment & Dist	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

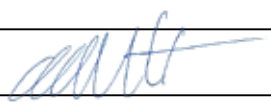
a. Federal Work	4
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 

b. DATE: June 30, 2022

c. NAME AND TITLE: Adam Feuerstein, CPA – Corporate Treasurer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*:

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (*or Branch Office*) NAME: Biohabitats, Inc. (Southern Rocky Mountain Bioregion Branch Office)	3. YEAR ESTABLISHED: 2004
	4. UNIQUE ENTITY IDENTIFIER: 19-5209788
2b. STREET: 1624 Market Street, Suite 202	5. OWNERSHIP
	a. TYPE: S Corporation
2c. CITY: Denver / 2d. STATE: CO / 2e. ZIP CODE: 80202	b. SMALL BUSINESS STATUS: NAICS 541620, 541330
6a. POINT OF CONTACT NAME AND TITLE: Adam Feuerstein, CPA – Corporate Treasurer	7. NAME OF FIRM *(If Block 2a is a Branch Office)*: Biohabitats, Inc. 2081 Clipper Park Road Baltimore, Maryland 21211
6b. TELEPHONE NUMBER: 667.401.8495 / 6c. EMAIL ADDRESS: afeuerstein@ biohabitats.com	

8a. FORMER FIRM NAME(S) *(If any)*	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH
02	Administrative	11	
08	CADD/GIS Technicians	4	
12	Civil Engineers	6	1
16	Construction Mgr/Coor.	5	
19	Ecologists	6	2
23	Environmental Engineers	5	
24	Environmental Scientists	8	2
39	Landscape Architects	6	1
62	Water Resources Engineers	11	
	Other Employees		
	Total	62	6

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C07	Coastal Engineering	6
E01	Eco. and Arch. Investigation	5
E09	Env. Impact Studies	3
E13	Environmental Testing, Analysis	2
F04	Fisheries; Fish Ladders	2
L03	Landscape Architecture	5
H01	Harbors; Jetties; Piers	2
P05	Planning (Community;Regional)	6
P06	Planning (Site, Installation)	4
R04	Recreation Facilities	2
R11	Rivers, Canals, Waterways	6
S05	Soils Geologic Studies; Found	2
S13	Storm Water Handling	6
W02	Water Resources; Hydrology	4
W03	Water Supply Treatment & Dist	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

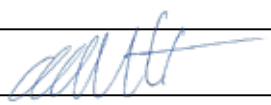
a. Federal Work	4
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: 

b. DATE: June 30, 2022

c. NAME AND TITLE: Adam Feuerstein, CPA – Corporate Treasurer

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any): W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM *(or branch office)* NAME	3. YEAR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
Construction Cost Management, Inc.	1979	KR12Q1ZVKLJ8

2b. STREET	2c. CITY	2d. STATE	2e. ZIP CODE
2413 North Main Street	Fort Worth	TX	76164

5. OWNERSHIP
a. TYPE: Corporation
b. SMALL BUSINESS STATUS: HUBZone, WOSB, WBE, SDB

6a. POINT OF CONTACT NAME AND TITLE	6b. TELEPHONE NUMBER	6c. E-MAIL ADDRESS
Katy Abraham, CEO / Owner	817.625.6200	Katy@ConstructionCostManagement.com

7. NAME OF FIRM *(if block 2a is a branch office)*

8a. FORMER FIRM NAME(S) (if any)	8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
Construction Cost Management Co.	1979	113618370 DUNS

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of employees (1) FIRM	c. No. of employees (2) BRANCH
18	Sr. Estimator / Cost Engineer	3	
18	Estimator / Cost Engineer	3	
02	Administrative	2	
	Total	8	

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C18	Cost Estimating, Structural, Civil, Architectural, Mechanical Electrical	2
V01	Value analysis; Life Cycle Cost	1
C15	Construction Management	1
C18	Cost Estimating, Structural, Civil, Architectural, Specialties, Interiors	1
		1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(insert revenue index number shown at right)

a. Federal Work	5
B. Non-Federal Work	1
c. Total Work	6

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 04/ 01/ 22

c. NAME AND TITLE
Keith Kothmann CPE CCC CCI

AUTHORIZED FOR LOCAL REPRODUCTION
MANDATORY USE DATE OF FORM 5/ 1/ 2004

ARCHITECT/ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*: W912QRR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM *(or Branch Office)* NAME	3. YEAR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
Gannett Fleming – Columbus, OH	1992	UEI: GDNCA387GRN5

2b. STREET	5. OWNERSHIP
2500 Corporate Exchange Drive, Suite 230	

2c. CITY	2d. STATE	2e. ZIP CODE	a. TYPE
Columbus	OH	43231	Corporation

6a. POINT OF CONTACT NAME AND TITLE	b. SMALL BUSINESS STATUS
Joseph Rikk, Jr., PE	N/A

6b. TELEPHONE NUMBER	6c. E-MAIL ADDRESS	7. NAME OF FIRM *(if Block 2a is a Branch Office)*
614.794.9424	jrikk@gfnet.com	Gannett Fleming, Inc.

8a. FORMER FIRM NAME(S) *(if any)*	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
N/A	N/A	N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) Firm	c. Number of Employees (2) Branch
02	Administrative	445	2
12	Civil Engineer	154	2
24	Environmental Scientist	55	1
27	Foundation/Geotech Engineer	83	2
57	Structural Engineer	161	7
59	Engineering Technician	80	1
60	Transportation Engineer	502	6
	Other Employees	1234	
	Total	2714	21

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number
A01	Acoustics, Noise Abatement	1
A06	Airports-Terminals/Hangars/Freight	1
B02	Bridges	6
C15	Construction Management	1
D01	Dams (Concrete; Arch)	1
D02	Dams (Earth/Rock); Dikes, Levees	2
E03	Electrical Studies and Design	1
E12	Environmental Remediation	1
G01	Garages; VMFs; Parking Decks	1
G02	Gas Systems (Propane, Natural)	1
G04	GIS Services	1
H07	Highways/Streets/Parking Lots	2
I04	ITS	2
P04	Pipelines (X-Country, Liquid, Gas)	1
P05	Planning (Comm/Reg/Areawide)	1
P06	Planning (Site/Installation)	1
P13	Public Safety Facilities	1
R03	Railroad; Rapid Transit	2
R04	Recreational Facilities	1
R05	Refrigeration Plants	1
S04	Sewage Coll./Treatment	1
S05	Soils/Geologic Studies	3
S09	Structural Design; Special Structures	1
T02	Testing & Inspection Services	1
T03	Traffic & Transportation Engineering	5
W02	Water Resources/Hydrology	1
W03	Water Supply Treatment/Distribution	1
	Dam Inspections	3
	Drilling	1
	Environmental Site Assessments	1
	Incident Mgmt/Emergency Mgmt	1
	Geophysical Investigations	1
	Management Consulting	1
	Transportation Planning	2
	Permitting (strmwtr/SPCC/gw/NPDES)	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a. Federal Work	1
b. Non-Federal Work	6
c. Total Work	6

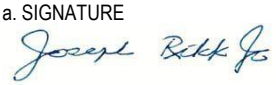
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE: 6.24.2022

c. NAME AND TITLE: Joseph Rikk, Jr., PE | VP, Ohio Transportation

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*: W912QR22R0059

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME: Hana Engineers and Consultants, LLC		3. YEAR ESTABLISHED: 2013	4. UNIQUE ENTITY IDENTIFIER: PPUJDLJBD7J3
2b. STREET: 7501 Boulder View Drive, Suite 620		5. OWNERSHIP a. TYPE: Limited Liability Company	
2c. CITY: Richmond	2d. STATE: VA	2e. ZIP CODE: 23225	b. SMALL BUSINESS STATUS: 8(a) Small Business
6a. POINT OF CONTACT NAME AND TITLE: H. Marcus Kim, President			7. NAME OF FIRM (If Block 2a is a Branch Office)
6b. TELEPHONE NUMBER: 804-621-1250	6c. E-MAIL ADDRESS: marcus.kim@hanaengineers.com		
8a. FORMER FIRM NAME(S) (If any)		8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (see below)
02	Administrative	3		C15	Construction Management	3
12	Civil Engineer	1		H03	HTRW Remediation	4
23	Environmental Engineer	4		E11	Environmental Planning	3
24	Environmental Scientist	2		E13	Environmental Testing/Analysis	4
27	Geotechnical Engineer	3		S05	Soils, Geotechnical Engineering	4
30	Geologist	3		W02	Water Resources; Hydrology; Ground Water	2
48	Project Manager	3		P06	Planning (Site & Installation)	2
58	Technician/Analyst	1				
	Other Employees	2				
	Total	22				

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	5
b. Non-Federal Work	2
c. Total Work	5

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 

b. DATE: 5/25/2022

NAME AND TITLE: H. Marcus Kim, President

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME: **Jensen Hughes, Inc.**	3. YEAR ESTABLISHED: 1980
	4. DUNS NUMBER: 035043744
2b. STREET: 8000 Regency Parkway, Suite 580	5. OWNERSHIP
2c. CITY: Cary / 2d. STATE: NC / 2c. ZIP CODE: 27518	a. TYPE: Corporation
	b. SMALL BUSINESS STATUS: Large Business
6a. POINT OF CONTACT NAME AND TITLE: Sean Lebel, Vice President	7. NAME OF FIRM *(If block 2a is a branch office)*: Jensen Hughes
6b. TELEPHONE NUMBER: +1 443-313-9832 / 6c. E-MAIL ADDRESS: sean.lebel@jensenhughes.com	
8a. FORMER FIRM NAME(S) *(If any)*	8b. YR. ESTABLISHED / 8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	291	0
06	Architect	23	0
08	CADD Technician	59	0
10	Chemical Engineer	40	0
12	Civil Engineer	11	0
14	Computer Programmer	30	0
21	Electrical Engineer	52	0
23	Environmental Engineer	10	0
24	Environmental Scientist	2	0
25	Fire Protection Engineer	342	7
26	Forensic Engineer	14	0
27	Foundation/Geotech Engr.	1	0
35	Industrial Engineer	5	0
40	Materials Engineer	5	0
42	Mechanical Engineer	101	1
54	Security Specialist	42	0
57	Structural Engineer	27	0
58	Technician/Analyst	3	0
	Nuclear Engineer	54	0
	Other Technical	202	0
	Total	**1,314**	**8**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A06	Airports; Terminals; Hangars	7
A09	Anti-Terrorism/Force Protection	8
C08	Codes; Standards; Ordinances	8
C10	Commercial Building (low rise; Shopping Centers	6
D04	Design-Build - Preparation of RFPs	6
E09	Environmental Testing and Analysis	5
F03	Fire Protection	8
F05	Forensic Engineering	8
H09	Hospital & Medical Facilities	8
H10	Hotels; Motels	8
H11	Housing	7
I01	Industrial Buildings; Manufacturing	8
L01	Laboratories; Medical Research	5
O01	Office Buildings; Industrial Parks	7
P07	Plumbing & Piping Design	6
R03	Railroad; Rapid Transit	7
R06	Rehabilitation (Buildings; Structures; Facilities)	7
R10	Risk Analysis	8
S09	Structural Design; Special Structures	6
T02	Testing & Inspection Services	6
U03	Utilities (Gas and Steam)	8
W01	Warehouses & Depots	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	8
b. Non-Federal Work	10
c. Total Work	**10**

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 01 July 2022

c. NAME AND TITLE: Sean Lebel, Vice President

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME: SmithGroup, Inc.

3. YEAR ESTABLISHED: 1977

4. UNIQUE ENTITY IDENTIFIER: 80-671-6051

2b. STREET: 35 E Wacker Dr, Ste 900

5. OWNERSHIP

a. TYPE: Corporation

2c. CITY: Chicago

2d. STATE: IL

2e. ZIP CODE: 60601

b. SMALL BUSINESS STATUS: No

6a. POINT OF CONTACT NAME AND TITLE: Tim Tracey, Vice President, Office Director

7. NAME OF FIRM *(If block 2a is a branch office)*: SmithGroup Companies, Inc.

6b. TELEPHONE NUMBER: 312.641.0770

6c. E-MAIL ADDRESS: Tim.Tracey@smithgroup.com

8a. FORMER FIRM NAME(S) *(If any)*	8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
SmithGroupJJR, Inc	2011	
SmithGroup, Inc.	2000	

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	(2) BRANCH
02	Administrative	197	15
06	Architects	276	20
	Architectural Designer	235	14
12	Civil Engineers	37	8
	Electrical Designer	40	4
21	Electrical Engineers	29	2
25	Fire Protection Engineer	15	3
	Graphics and Signage	2	1
31	Health Facility Planner	7	2
37	Interior Designers	76	4
	Intern	15	3
39	Landscape Architects	46	5
	Landscape Designer	24	6
	Mechanical Designer	43	4
42	Mechanical Engineers	42	5
47	Planner: Urban/Regional	14	1
48	Project Manager	39	2
57	Structural Engineers	22	4
	Other Employees	77	0
	Total	**1236**	**103**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
E02	Coastal Engineering	2
H05	Educational Facilities; Classrooms	6
H09	Health Systems Planning	3
I05	Hospitals & Medical Facilities	7
L01	Interior Design; Space Planning	4
O01	Laboratories; Medical Research Facilities	4
P05	Office Buildings; Industrial Parks	4
R06	Planning (Community; Regional; Areawide; State)	5
R08	Rehabilitation (Buildings; Structures; Facilities)	3
S11	Research Facilities	6
C07	Sustainable Design	7

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	4
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 1/10/2022

c. NAME AND TITLE: Tim Tracey, Vice President, Office Director

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME: SmithGroup, Inc.

3. YEAR ESTABLISHED: 1853

4. UNIQUE ENTITY IDENTIFIER: 82-506-6678

2b. STREET: 500 Griswold St, Ste 1700

5. OWNERSHIP

a. TYPE: Corporation

2c. CITY: Detroit

2d. STATE: MI

2e. ZIP CODE: 48226

b. SMALL BUSINESS STATUS: No

6a. POINT OF CONTACT NAME AND TITLE: Jeff Hausman, Senior Vice President, Office Director

7. NAME OF FIRM *(If block 2a is a branch office)*: SmithGroup Companies, Inc.

6b. TELEPHONE NUMBER: 313.983.3600

6c. E-MAIL ADDRESS: Jeff.Hausman@smithgroup.com

8a. FORMER FIRM NAME(S) *(If any)*	8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
SmithGroupJJR, Inc	2011	
SmithGroup, Inc.	2000	

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	(2) BRANCH
02	Administrative	197	42
06	Architects	276	52
	Architectural Designer	235	37
	BIM Technologist	11	2
12	Civil Engineer	37	1
	Construction Administrator	12	5
	Electrical Designer	40	11
21	Electrical Engineers	29	7
37	Interior Designers	76	9
	Intern	15	6
	Lighting Specialists	14	11
	Mechanical Designer	43	8
42	Mechanical Engineers	42	11
	Planner: Laboratory	14	8
47	Planner: Urban/Regional	14	2
48	Project Manager	39	12
57	Structural Engineers	22	16
	Other Employees	120	0
	Total	**1236**	**240**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A11	Auditoriums & Theatres	2
C11	Community Facilities	1
C13	Computer Facilities; Computer Service	1
D07	Dining Halls; Clubs; Restaurants	5
E02	Educational Facilities; Classrooms	9
E03	Electrical Studies and Design	4
E08	Engineering Economics	2
F02	Field Houses; Gymnasiums; Stadiums	4
G01	Garages; Vehicle Maintenance Facilities; Parking	1
H04	Heating, Ventilating, Air Conditioning	3
H05	Health Systems Planning	5
H08	Historical Preservation	4
H09	Hospitals & Medical Facilities	9
I05	Interior Design; Space Planning	4
L01	Laboratories; Medical Research Facilities	8
L04	Libraries; Museums; Galleries	5
L05	Lighting (Interior; Displays; Theatres; etc.)	4
O01	Office Buildings; Industrial Parks	6
P05	Planning (Community; Regional; Areawide; State)	5
R06	Rehabilitation (Buildings; Structures;	6
R08	Research Facilities	8
S11	Sustainable Design	2

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	6
b. Non-Federal Work	9
c. Total Work	9

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 1/10/2022

c. NAME AND TITLE: Jeff Hausman, Senior Vice President, Office Director

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*: W912QR22R0059

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME	3. YEAR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
SmithGroup, Inc.	1993	80-977-9689

2b. STREET	5. OWNERSHIP
44 E Mifflin St, Ste 500	a. TYPE: Corporation

2c. CITY	2d. STATE	2e. ZIP CODE
Madison	WI	53703

b. SMALL BUSINESS STATUS: No

6a. POINT OF CONTACT NAME AND TITLE	7. NAME OF FIRM *(If block 2a is a branch office)*
Gregg Calpino, Principal	SmithGroup Companies, Inc.

6b. TELEPHONE NUMBER	6c. E-MAIL ADDRESS
608.251.1177	Gregg.Calpino@smithgroup.com

8a. FORMER FIRM NAME(S) *(If any)*	8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
SmithGroupJJR, Inc	2011	
SmithGroup, Inc.	2000	

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	(2) BRANCH
02	Administrative	197	5
06	Architects	276	7
	Architectural Designer	235	3
12	Civil Engineers	37	17
37	Interior Designers	76	2
39	Landscape Architects	46	9
	Landscape Designer	24	5
62	Water Resources Engineer	2	2
	Other Employees	343	0
	Total	**1236**	**50**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C02	Cemeteries (Planning & Relocation)	2
C07	Coastal Engineering	6
C10	Commercial Building; (low rise); Shopping	1
E10	Environmental and Natural Resource	1
E09	Environmental Impact Studies, Assessments	1
E11	Environmental Planning	1
H09	Hospitals & Medical Facilities	1
H11	Housing (Residential, Multi-family,	1
L01	Laboratories; Medical Research Facilities	1
L02	Land Surveying	1
L03	Landscape Architecture	6
O01	Office Buildings; Industrial Parks	3
P05	Planning (Community; Regional; Areawide &	1
P06	Planning (Site, Installation and Project)	5
R04	Recreational Facilities (Parks; Marinas; etc.)	5
R11	Rivers Canals; Waterways; Flood Control	2
S10	Surveying; Platting; Mapping; Flood Plain	1
T04	Topographic Surveying and Mapping	1
T03	Traffic & Transportation Engineering	1
U02	Urban Renewals; Community Development	4
W02	Water Resources; Hydrology; Ground Water	4
Z01	Zoning; Land Use Studies	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	2
b. Non-Federal Work	7
c. Total Work	7

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE	b. DATE
	1/10/2022

c. NAME AND TITLE

Gregg Calpino, Principal

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any): **W912QR22R0059**

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM *(or branch office)* NAME	3. YEAR ESTABLISHED	4. UNIQUE ENTITY NUMBER
Strategic Value Solutions, Inc.	**2000**	**FAS6ELEG65M5**

2b. STREET	5. OWNERSHIP a. TYPE
1650 NE Grand, Suite 100	

2c. CITY	2d. STATE	2e. ZIP CODE	
Lees Summit	**MO**	**64086**	**Corporation**
			b. SMALL BUSINESS STATUS
6a. POINT OF CONTACT NAME AND TITLE			**Yes 541690 WOSB**
Korene V. Robinson, PE, VMA, LEED AP/President			7. NAME OF FIRM *(if block 2a is a branch office)*
6b. TELEPHONE NUMBER	6c. E-MAIL ADDRESS		
816-795-0700	**Korene.Robinson@SVS-inc.com**		

8a. FORMER FIRM NAME(S) (if any)	8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
Strategic Management Consultants, Inc.	**2000**	**FAS6ELEG65M5**

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. No. of employees (1) FIRM	c. No. of employees (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
02	**Administrative**	**10**		**V01**	**Value Analysis, LCC**	**6**
16	**Construction Manager**	**1**		**C15**	**Construction Management**	**1**
48	**Project Manager**	**3**		**C18**	**Cost Estimating**	**1**
61	**Value Engineer**	**8**		**R10**	**Risk Analysis**	**3**
56	**Risk Assessor**	**2**				
	Total	**24**				**7**

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(insert revenue index number shown at right)

a. Federal Work	**7**
B. Non-Federal Work	**4**
c. Total Work	**7**

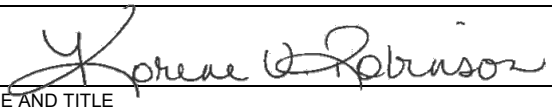
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less that $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE: **June 29, 2022**

c. NAME AND TITLE

Korene V. Robinson, President/Principal

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*: W912QR22R0059

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (*or Branch Office*) NAME: **Terracon Consultants, Inc.**	3. YEAR ESTABLISHED: 1999
	4. UNIQUE ENTITY IDENTIFIER: KQF8WXN8HU15
2b. STREET: 13050 Eastgate Park Way, Suite 101	5. OWNERSHIP
2c. CITY: Louisville; 2d. STATE: KY; 2e. ZIP CODE: 40223	a. TYPE: Corporation
	b. SMALL BUSINESS STATUS: N/A
6a. POINT OF CONTACT NAME AND TITLE: Benjamin Taylor, P.E., Office Manager	7. NAME OF FIRM *(If Block 2a is a Branch Office)*: Terracon Consultants, Inc. (Est. 1965, DUNS No. 613569961)
6b. TELEPHONE NUMBER: (502) 456-1256; 6c. E-MAIL ADDRESS: Benjamin.Taylor@terracon.com	

8a. FORMER FIRM NAME(S) *(If any)*	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
None		

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH
05	Archaeologist	44	
06	Architect	32	
07	Biologist	58	
08	CADD Technician	35	
12/27/55	Civil/Geotechnical/Foundation/ Soils Engineer	567	7
15	Construction Inspector	171	
23	Environmental Engineer	225	1
24	Environmental Scientist/NEPA	426	4
29	GIS Specialist	25	
30	Geologist	238	2
36	Industrial Hygienist	27	
39	Landscape Architect	7	
40	Construction Materials Engineer	427	3
51	Safety/Occupational Health Engr.	10	
58	Technician/Analyst (Testing Lab)	1774	9
	Driller	209	
	Engineering Manager	127	1
	Bldg Enclosure Cx/ Inspector	99	
	Geophysicist	25	
	Historic Preservationist	11	
	Other Employees	883	3
	Total	**5,420**	**30**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number
A06	Airports	9
A10	Asbestos Abatement	9
B02	Bridges	9
D01/D02	Dams/Dikes/Levees	8
D04	Design Build RFPs	9
E07	Renewable Energy/Conservation	9
E09/E13	EIS/NEPA/Env Testing & Analysis	10
E12/H03	Environmental Remediation/HTRW	9
H07	Highways/Streets/Parking	10
H09	Medical Facilities	9
H10	Hospitality	8
H11	Multi-Family Housing	9
I01/W01	Industrial Manufacturing/Warehouse	8
P12	Power Gen. Transmission Distribution	9
R03	Railroad/Rapid Transit	7
R12	Roofing	4
S03	Seismic Designs and Studies	4
S05	Soils/Geologic Studies/Foundations	10
P12	Power Gen. Transmission Distribution	9
S07/S13	Solid Waste Facilities/Stormwater	8
S11	Sustainable Design	7
T02	Testing and Inspection Services	10
W02	Water/Hydrology/Groundwater	6
W03	Water Supply/Treatment/Distribution	7

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	9
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

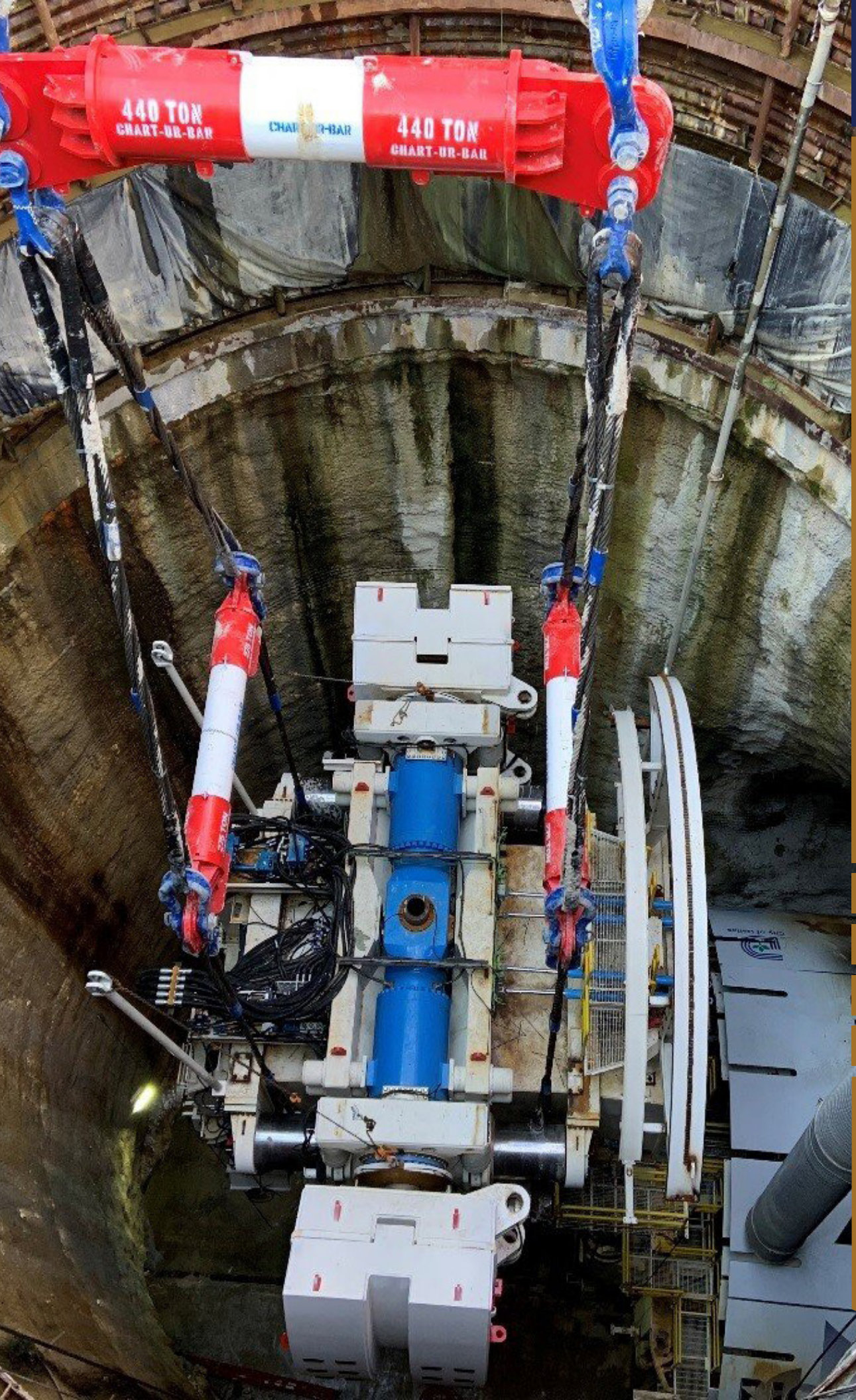
12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: Jeffrey A. Davis

b. DATE: 1/3/2022

c. NAME AND TITLE: Jeff Davis, FSAME National Director, Federal Services



TAB

H

Part II

CPARS/PPQ

JV AGREEMENT

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name: Kenall Inc
CAGE Code: 51NX2
Address: 8101 Westglen Drive, Houston, Texas
DUNs Number: 113105956
Phone Number: 8322518200
Email Address: kris.prasad@Kenallinc.com
Point of Contact: Kris Prasad
Contact Phone Number: 8322518200x101

2. Work Performed as: ☐ Prime Contractor ☒ Sub Contractor ☐ Joint Venture ☐ Other (Explain)
Percent of project work performed: 100 percent
If subcontractor, who was the prime (Name/Phone #): Lawton-Penna Joint Venture / 254-534-5067

3. Contract Information

Contract Number: 140F0219C0031
Delivery/Task Order Number (if applicable): 140F0219C0031
Contract Type: ☒ Firm Fixed Price ☐ Cost Reimbursement ☐ Other (Please specify):
Contract Title: Design for Reconstruction of Spillway for Champion Lake
Contract Location: Champion Lake, Trinity National Wildlife Refuge, Liberty County, Texas

Award Date (mm/dd/yy): 09/14/2019
Contract Completion Date (mm/dd/yy): 01/15/2021
Actual Completion Date (mm/dd/yy): 01/15/2021
Explain Differences:

Original Contract Price (Award Amount): $401,729.27
Final Contract Price (*to include all modifications, if applicable*): $401,729.27
Explain Differences:

4. Project Description:

Complexity of Work ☒ High ☐ Med ☐ Routine
How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*)

Engineering and Design Services for Dam and Spillway. Services included Hydrology and Hydraulic Modeling, Geotechnical Engineering and drilling and testing, Sheet Pile Wall Design, Levee Alignment and Design, Crest Road Design, Fill Material Recommendations, slope stability, seepage analysis, breach analysis, Providing plans, specifications and responding to the construction RFI's and construction inspection and construction management services

CLIENT INFORMATION (Client to complete Blocks 5-8)

5. Client Information

Name: Ray Fletcher
Title: R2 Contracting Officer
Phone Number: 505-248-6443
Email Address: ray_fletcher@fws.gov

6. Describe the client's role in the project: Design Build General Contractor (Construction)

7. Date Questionnaire was completed (mm/dd/yy)**:** 03/12/2021

8. Client's Signature: Ray A. Fletcher

NOTE: NAVFAC/USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESTIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUPLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESTIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

ADJECTIVE RATINGS AND DEFINITIONS TO BE USED TO BEST REFLECT YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE

RATING	DEFINITION	NOTE
(E) Exceptional	Performance meets contractual requirements and exceeds many to the Government/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with few minor problems for which corrective actions taken by the contractor was highly effective.	An Exceptional rating is appropriate when the Contractor successfully performed multiple significant events that were of benefit to the Government/Owner. A singular benefit, however, could be of such magnitude that it alone constitutes an Exceptional rating. Also, there should have been NO significant weaknesses identified.
(VG) Very Good	Performance meets contractual requirements and exceeds some to the Government's/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with some minor problems for which corrective actions taken by the contractor were effective.	A Very Good rating is appropriate when the Contractor successfully performed a significant event that was a benefit to the Government/Owner. There should have been no significant weaknesses identified.
(S) Satisfactory	Performance meets minimum contractual requirements. The contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory.	A Satisfactory rating is appropriate when there were only minor problems, or major problems that the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified. Per DOD policy, a fundamental principle of assigning ratings is that contractors will not be assessed a rating lower than Satisfactory solely for not performing beyond the requirements of the contract.
(M) Marginal	Performance does not meet some contractual requirements. The contractual performance of the element or sub-element being assessed reflects a serious problem for which the contractor has not yet identified corrective actions. The contractor's proposed actions appear only marginally effective or were not fully implemented.	A Marginal is appropriate when a significant event occurred that the contractor had trouble overcoming which impacted the Government/Owner.
(U) Unsatisfactory	Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element or sub-element contains serious problem(s) for which the contractor's corrective actions appear or were ineffective.	An Unsatisfactory rating is appropriate when multiple significant events occurred that the contractor had trouble overcoming and which impacted the Government/Owner. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating.
(N) Not Applicable	No information or did not apply to your contract	Rating will be neither positive nor negative.

TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY:	
a) Quality of technical data/report preparation efforts	■E ☐VG ☐S ☐M ☐U ☐N
b) Ability to meet quality standards specified for technical performance	■E ☐VG ☐S ☐M ☐U ☐N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	■E ☐VG ☐S ☐M ☐U ☐N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	■E ☐VG ☐S ☐M ☐U ☐N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:	
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	■E ☐VG ☐S ☐M ☐U ☐N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	■E ☐VG ☐S ☐M ☐U ☐N
3. CUSTOMER SATISFACTION:	
a) To what extent were the end users satisfied with the project?	■E ☐VG ☐S ☐M ☐U ☐N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	■E ☐VG ☐S ☐M ☐U ☐N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	■E ☐VG ☐S ☐M ☐U ☐N
d) Overall customer satisfaction	■E ☐VG ☐S ☐M ☐U ☐N
4. MANAGEMENT/ PERSONNEL/LABOR	
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	■E ☐VG ☐S ☐M ☐U ☐N
b) Ability to hire, apply, and retain a qualified workforce to this effort	■E ☐VG ☐S ☐M ☐U ☐N
c) Government Property Control	■E ☐VG ☐S ☐M ☐U ☐N
d) Knowledge/expertise demonstrated by contractor personnel	■E ☐VG ☐S ☐M ☐U ☐N
e) Utilization of Small Business concerns	☐E ☐VG ☐S ☐M ☐U ■N
f) Ability to simultaneously manage multiple projects with multiple disciplines	■E ☐VG ☐S ☐M ☐U ☐N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	■E ☐VG ☐S ☐M ☐U ☐N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	■E ☐VG ☐S ☐M ☐U ☐N
5. COST/FINANCIAL MANAGEMENT	
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	■E ☐VG ☐S ☐M ☐U ☐N

b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	■E ☐VG ☐S ☐M ☐U ☐N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	■E ☐VG ☐S ☐M ☐U ☐N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain in Remarks section.*	☐Yes ☐No
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	☐Yes ☐No
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	☐Yes ☐No
6. SAFETY/SECURITY	
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	■E ☐VG ☐S ☐M ☐U ☐N
b) Contractor complied with all security requirements for the project and personnel security requirements.	■E ☐VG ☐S ☐M ☐U ☐N
7. GENERAL	
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	■E ☐VG ☐S ☐M ☐U ☐N
b) Compliance with contractual terms/provisions *(explain if specific issues)*	■E ☐VG ☐S ☐M ☐U ☐N
c) Would you hire or work with this firm again? *(If no, please explain below)*	☐Yes ☐No
d) In summary, provide an overall rating for the work performed by this contractor.	■E ☐VG ☐S ☐M ☐U ☐N

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk *(please attach additional pages if necessary)*:

Print Close

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

INCOMPLETE-RATED **Architect-Engineer**

Name/Address of Contractor:

Vendor Name: KENALL-FREESE AND NICHOLS 8A MENTOR-PROTEGE JOINT VENTURE

Division Name:

Street: 8101 WESTGLEN DR

City: HOUSTON

State: TX Zip: 770636305

Country: USA

CAGE Code:

Unique Entity ID (DUNS): 079875018 Unique Entity ID (SAM):

Product/Service Code: C211 Principal NAICS Code: 541330

Evaluation Type: Interim

Contract Percent Complete: 94

Period of Performance Being Assessed: 02/10/2020 - 10/20/2020

Contract Number: W9126G17D0001 W9126G19F0047 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: US ARMY ENGINEER DISTRICT FT WORTH **Contracting Officer:** CARL C. OELSCHIG **Phone Number:** 817-886-1060

Location of Work:

Architect and Engineer Services for Dallas Floodway System - Dallas Floodway AT&SF Bridge Demolition

Date Signed: 03/25/2019 **Period of Performance Start Date:** 03/21/2019

Est. Ultimate Completion Date/Last Date to Order: 10/20/2020 **Estimated/Actual Completion Date:** 10/20/2021

Funding Office ID:

Base and All Options Value : $173,421 **Action Obligation:** $173,421

Complexity: Medium **Termination Type:** None

Extent Competed: Full and Open Competition after Exclusion of Sources **Type of Contract:** Firm Fixed Price

Key Subcontractors and Effort Performed:

Unique Entity ID (DUNS): Unique Entity ID (SAM):

Effort:

Unique Entity ID (DUNS): Unique Entity ID (SAM):

Effort:

Unique Entity ID (DUNS): Unique Entity ID (SAM):

Effort:

Project Number:

Project Title:

Architect and Engineer Services for Dallas Floodway System - Dallas Floodway AT&SF Bridge Demolition

Contract Effort Description:

Architect and Engineer Services for Dallas Floodway System - Dallas Floodway AT&SF Bridge Demolition

Small Business Subcontracting:

Does this contract include a subcontracting plan? No

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	Satisfactory	Satisfactory
Schedule:	Very Good	Satisfactory
Cost Control:	Satisfactory	Satisfactory
Management:	Very Good	Satisfactory
Small Business Subcontracting:	N/A	N/A
Regulatory Compliance:	N/A	N/A
Other Areas:		
(1) :		N/A

FOR OFFICIAL USE ONLY

(2) : N/A

(3) : N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The A-E is meeting task order requirements.

SCHEDULE: The A-E is meeting task order requirements.

COST CONTROL: The A-E is meeting task order requirements.

MANAGEMENT: The A-E is meeting task order requirements.

ADDITIONAL/OTHER: The POP will be extended to address RFIs during award of project. The A-E has been meeting task order requirements, the design portion of the work is completed.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: JAMES WRIGHT

Title: Professional Engineer

Organization: CESWF-EC-AM

Phone Number: 817-886-1305 Email Address: james.wright@usace.army.mil

Date: 10/22/2020

Contractor Comments:

Name and Title of Contractor Representative:

Name:

Title:

Phone Number: Email Address:

Date:

Review by Reviewing Official:

Name and Title of Reviewing Official:

Name:

Title:

Organization:

Phone Number: Email Address:

Date:

Print Close

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

INCOMPLETE-RATED **Architect-Engineer**

Name/Address of Contractor:

Company Name: KENALL-FREESE AND NICHOLS 8A MENTOR-PROTEGE JOINT VENTURE

Division Name:

Street Address: 8101 WESTGLEN DR

City: HOUSTON

State/Province: TX Zip Code: 770636305

Country: USA

CAGE Code:

DUNS Number: 079875018

PSC: C220 NAICS Code: 541330

Evaluation Type: Final

Contract Percent Complete: 100

Period of Performance Being Assessed: 01/01/2019 - 08/31/2019

Contract Number: W9126G17D0011 W9126G17F0028 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: W076 ENDIST FT WORTH **Contracting Officer:** JOHN H. RODGERS **Phone Number:** 817-886-1048

Location of Work:

Architect and Engineer Services for sustainability, Renovation, and Modernization (SRM), and Combat Training Center (CTC) Projects Fort Polk, LA - SRM and CTC Projects FY17 Program

Award Date: 06/19/2017 **Effective Date:** 06/19/2017

Completion Date: 08/31/2019 **Estimated/Actual Completion Date:** 08/31/2019

Total Dollar Value: $1,283,663 **Current Contract Dollar Value:** $755,230

Complexity: Medium **Termination Type:** None

Competition Type: Full and Open Competition after Exclusion of Sources **Contract Type:** Firm Fixed Price

Key Subcontractors and Effort Performed:

DUNS:

Effort:

DUNS:

Effort:

DUNS:

Effort:

Project Number:

Project Title:

Architect and Engineer Services for sustainability, Renovation, and Modernization (SRM), and Combat Training Center (CTC) Projects Fort Polk, LA - SRM and CTC Projects FY17 Program

Contract Effort Description:

Architect and Engineer Services for sustainability, Renovation, and Modernization (SRM), and Combat Training Center (CTC) Projects Fort Polk, LA - SRM and CTC Projects FY17 Program

Small Business Subcontracting:

Does this contract include a subcontracting plan? No

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	Satisfactory	Satisfactory

Schedule:	Very Good	Satisfactory
Cost Control:	Satisfactory	Satisfactory
Management:	Very Good	Satisfactory
Small Business Subcontracting:	N/A	N/A
Regulatory Compliance:	N/A	N/A
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The contractor met requirements of the task order.

SCHEDULE: The contractor met requirements of the task order.

COST CONTROL: The contractor met requirements of the task order.

MANAGEMENT: The contractor met requirements of the task order.

ADDITIONAL/OTHER: The contractor met requirements of the task order.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: JAMES WRIGHT

Title: Professional Engineer

Organization: CESWF-EC-AM

Phone Number: 817-886-1305 Email Address: james.wright@usace.army.mil

Date: 09/18/2019

Contractor Comments:

Name and Title of Contractor Representative:

Name:

Title:

Phone Number: Email Address:

Date:

Review by Reviewing Official:

Name and Title of Reviewing Official:

Name:

Title:

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

INCOMPLETE-RATED **Architect-Engineer**

Name/Address of Contractor:

Company Name: KENALL INC.

Division Name:

Street Address: 8101 WESTGLEN DR

City: HOUSTON

State/Province: TX Zip Code: 770636305

Country: USA

CAGE Code: 51NX2

DUNS Number: 113105956

PSC: C215 NAICS Code: 541330

Evaluation Type: Final

Contract Percent Complete: 100

Period of Performance Being Assessed: 02/02/2015 - 07/29/2016

Contract Number: IBM15C0002 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: IBWC **Contracting Officer:** LANISA MCCOLLUM **Phone Number:** 9158324120

Location of Work:

Sunland Park levee (CE2 and CW2) in El Paso County, TX and Dona Ana County, NM

Award Date: 02/02/2015 **Effective Date:** 02/02/2015

Completion Date: 12/04/2015 **Estimated/Actual Completion Date:** 07/29/2016

Total Dollar Value: $964,514 **Current Contract Dollar Value:** $964,514

Complexity: Medium **Termination Type:** None

Competition Type: Full and Open Competition after Exclusion of Sources **Contract Type:** Firm Fixed Price

Key Subcontractors and Effort Performed:

DUNS: 073177362

Effort:

(Freese and Nichols) Geotechnical engineering. Slope stability analysis. Settlement calculations. Three of Freese and Nichols engineers were co-authors of final report.

DUNS:

Effort:

(Dr. Peter Cali, Sea Level Engineering, LLC) Geotechnical engineering. Dr Cali was a co-author of final report

DUNS:

Effort:

(Barragan & Associates, Inc., El Paso, TX) Surveying of bore holes.

Project Number: IBM15C0002

Project Title:

Forensic Geotechnical Engineering Analysis for the Sunland Park Levee in El Paso, TX

Contract Effort Description:

The United States Section of the International Boundary and Water Commission (USIBWC) issued a construction contract to rehabilitate the Sunland Park levee segments in September 2010. The levee unfortunately has not held up to the durability that was expected after rehabilitation. With the durability

in question, the USIBWC is procuring the professional services of a Forensic Geotechnical Engineer to conduct field investigations and to provide the USIBWC with a professional opinion on whether the newly constructed levee segments will perform satisfactorily during the 100-year flood event per 44CFR65.10. Levee to be analyzed is 11.9 miles in length.

Contractor was required to:
1. Document visual observations made during the physical walk through of the existing Sunland Park levees.
2. Observe and document factors influencing the performance of the existing levees.
3. Document observations, site characteristics, and data deemed pertinent.
4. Take photographs to document the geotechnical investigations.
5. Survey and document the types of distress found on the existing levees.
6. Scrutinize all design documents, design criteria, construction specifications, geotechnical reports, and testing/inspection reports previously prepared by the engineering or construction companies who designed and constructed the existing levee.
7. Review results of original geotechnical investigations, their analysis, and selection of design parameters.
8. Study the field reports of construction.
9. Interview persons involved in planning, design, construction and performance monitoring, etc.
10. Perform at least 252 borings to collect soil for testing.
11. Perform geotechnical testing including ASTM D4318, D422, D4221, D4647, D6572, D2487, D1586, and D1140. Also perform chemical influence on dispersive behavior testing per NRCS guidelines.
12. Survey location of all boreholes.
13. Prepare a final report detailing all efforts, findings, and recommendations.

Analysis was required to include:
1. Evaluate the distress history and physical deterioration of the existing levee.
2. Identify and provide a professional opinion on the causes of distress for the existing levee. The professional opinion shall include the reason or reasons that triggered the distress or physical deterioration of the existing levee.
3. Identify the shortcomings of all previously prepared design documents, design criteria, construction specifications, geotechnical reports, and testing/inspection reports that contributed or could have triggered the distress of the existing levee.
4. Identify faulty construction techniques which were employed during the construction of the levee.
5. Identify inappropriate materials which were employed during the construction of the levee.

Small Business Subcontracting:

Does this contract include a subcontracting plan? No

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	N/A	Very Good
Schedule:	N/A	Satisfactory
Cost Control:	N/A	Satisfactory
Management:	N/A	Satisfactory
Small Business Subcontracting:	N/A	N/A

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

Regulatory Compliance:	N/A	Satisfactory
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): 4% Variance at Completion (%): 4%

Current Schedule Variance (%): 0

Assessing Official Comments:

QUALITY: The final report was comprehensive and professional. Additionally, a separate mini report was provided as attorney-client privileged information. Overall 4,413 photos were taken and logged. Based upon recommendation during proposal negotiations, electromagnetic survey and ground penetrating radar surveys were also performed. Contractor drilled 246 boreholes to collect soil samples. Contractor determined depth of soil placed by construction contractor.

SCHEDULE: Schedule was extended 285 days. Original end date was 10/18/2015. It was extended via no cost modifications to 7/29/2016.

COST CONTROL: At the end of the project, Kenall requested an REA for $211,493.97 in additional costs. Kenall stated these costs were for additional work completed throughout the project that went above the contract amount. It shall be noted, this contract was awarded as a firm fixed price contract which is defined as a contract that "provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract." After a review of the REA, the Government determined only $39,979.38 was found to be valid due to ambiguous wording in the SOW. The remaining costs was for additional work performed without input or approval from the Government. The additional costs were added to the contract via bilateral modification.

MANAGEMENT: Kenall was very easy to deal with. The only compliant would be their limited communications (see cost control). Since this was an A/E contract as opposed to a construction contract, Kenall was left to perform their work. Monthly updates were required in the form of monthly reports. These were provided.

I believe that Kenall was worried about "bothering" us when in fact it would have been beneficial to both parties if we had had more communications. This is being listed as satisfactory, because one, they performed sufficiently well enough to fully meet the contract requirements, and two, because some of the lack of communications should be directed to the Government. In hindsight, it would have been better to bug them more.

REGULATORY COMPLIANCE: There was one instance where a landowner sent in a picture of Kenall's leaking drill rig. Apparently a hydraulic hose was leaking. Less than 24 hours later, Kenall informed me that they had a meeting with the drilling crew regarding the issue, fixed the hydraulic hose, and had placed all contaminated soil in a steel drum awaiting proper disposal.

While it is always preferred that no leaks or contamination occurs, leaks happen, Kenall performed exactly like they should as soon as the item was brought to their attention.

ADDITIONAL/OTHER: Kenall performed well and presented a professional engineering report at the end of the contract.

RECOMMENDATION:

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: LANISA MCCOLLUM

Title: Contracting Officer

Organization: IBWC

Phone Number: 915-832-4120 Email Address: lanisa.mccollum@ibwc.gov

Date: 01/26/2018

Contractor Comments:

Name and Title of Contractor Representative:

Name:

Title:

Phone Number: Email Address:

Date:

Review by Reviewing Official:

Name and Title of Reviewing Official:

Name:

Title:

Organization:

Phone Number: Email Address:

Date:

FOR OFFICIAL USE ONLY

Print Close

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

INCOMPLETE-RATED **Architect-Engineer**

Name/Address of Contractor:

Vendor Name: INTEGRATED FEDERAL SERVICES JV

Division Name:

Street: 5910 W PLANO PKWY STE 200

City: PLANO

State: TX Zip: 750932203

Country: USA

CAGE Code:

Unique Entity ID (SAM): CYRPT3SW8A68

Product/Service Code: C211 Principal NAICS Code: 541330

Evaluation Type: Interim

Contract Percent Complete: 100

Period of Performance Being Assessed: 12/29/2021 - 06/26/2022

Contract Number: W9126G15D0015 W9126G19F0267 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: US ARMY ENGINEER DISTRICT FT WORTH **Contracting Officer:** ROBERT M. DURAN **Phone Number:** 817-886-1070

Location of Work:

Architect and Engineer Services for Update Design of Colorado River Levee Phase 1 Wharton, Texas

Date Signed: 07/12/2019 **Period of Performance Start Date:** 07/12/2019

Est. Ultimate Completion Date/Last Date to Order: 06/26/2022 **Estimated/Actual Completion Date:** 12/26/2022

Funding Office ID: 966501

Base and All Options Value : $1,238,933 **Action Obligation:** $1,218,532

Complexity: Medium **Termination Type:** None

Extent Competed: Full and Open Competition **Type of Contract:** Firm Fixed Price

Key Subcontractors and Effort Performed:

Unique Entity ID (SAM):

Effort:

Unique Entity ID (SAM):

Effort:

Unique Entity ID (SAM):

Effort:

Project Number:

Project Title:

Architect and Engineer Services for Update Design of Colorado River Levee Phase 1 Wharton, Texas

Contract Effort Description:

Architect and Engineer Services for Update Design of Colorado River Levee Phase 1 Wharton, Texas

Small Business Subcontracting:

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

Does this contract include a subcontracting plan? No

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	Very Good	Very Good
Schedule:	Satisfactory	Satisfactory
Cost Control:	Satisfactory	Satisfactory
Management:	Very Good	Very Good
Small Business Subcontracting:	N/A	N/A
Regulatory Compliance:	Satisfactory	Satisfactory
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: Very good service with thorough knowledge of design requirements and analysis. Levi Hein was extremely professional and able to provide technical support on a variety of topics to ranging from historical background, hydrology, impacts, alternatives options, prioritization of features, and other aspects of the project. Additionally, he was able to clearly explain logic and reasoning of design and how implementation would effect flood risk despite complexities of both the problem and solutions. The team went above and beyond to support a thorough design all the way to contract award to include developing site visit presentation, providing insight during site visit, and responding to technical questions.

SCHEDULE: Requirements of task order were met.

COST CONTROL: AE maintained cost of project to remain under statutory thresholds.

MANAGEMENT: Exceeded minimum requirements for this project. Project management was very helpful and proactive in ensuring that the bidding process started in a positive manner and provided slides to help describe the project to bidders.

REGULATORY COMPLIANCE: AE complied with all regulatory requirements and laws.

ADDITIONAL/OTHER: Contract requirement remains due to the T4C of the awarded construction contract due to construction contractor irregularities. The project remains valid and determination of construction procurement needs to be established and performed. Requirement for award document remains and there may possibly be a modification for a second round of bidder inquiries, this to be determined. These issues came about outside of the AE's control. A POP modification is being prepared to extend the task order completion for six months due need for determination of procurement to be used for the construction contract. If further requirements beyond those known are determined necessary a further modification may be made as for example

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

if a second round of bidder inquiries needs to be addressed.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: JAMES WRIGHT

Title: Professional Engineer

Organization: CESWF-EC-AM

Phone Number: 817-886-1305 Email Address: james.wright@usace.army.mil

Date: 06/30/2022

Contractor Comments:

Name and Title of Contractor Representative:

Name:

Title:

Phone Number: Email Address:

Date:

Review by Reviewing Official:

Name and Title of Reviewing Official:

Name:

Title:

Organization:

Phone Number: Email Address:

Date:

FOR OFFICIAL USE ONLY

NAVAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name:	Halff Associates, Inc.	CAGE Code:	0PPK6
Address:	1201 North Bowser Road, Richardson, Texas 75081	DUNS Number:	05-013-1655
Phone Number:	(214) 346-6234		
Email Address:	twoodson@halff.com		
Point of Contact:	Todd Woodson, PE, LEED AP BD+C		

2. Work Performed As: ☒ Prime Contractor ☐ Subcontractor ☐ Joint Venture ☐ Other (Explain):

Percent of project work performed: 100 %

If Subcontractor, who was the prime (Name / Phone #):

3. Contract Information

Contract Number:	TWM-2016-00000359
Delivery / Task Order:	N/A
Contract Type: ☒ Firm Fixed Price ☒ Cost Reimbursement ☐ Other (Please specify):	
Contract Title:	Mill Creek-Peaks Branch Drainage Relief Tunnel
Contract Location:	Dallas, TX
Award Date (mm/dd/yy):	07/09/07
Contract Completion Date (mm/dd/yy):	4/21/2026
Actual Completion (mm/dd/yy):	Project is in construction phase
Explain Differences:	Ongoing project
Original Contract Price (Award Amount):	$8,153,388.00
Final Contract Price (to include all modifications, if applicable):	$26,507,488.00
Explain Differences:	Increased project scope and added construction support services.

4. Project Description:

Complexity of Work: ☒ High ☐ Medium ☐ Routine

How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*)

Halff is responsible for the design program of the drainage system upgrades for Mill Creek, Peaks Branch and State-Thomas. The centerpiece of the drainage improvements is a 5-mile-long deep tunnel (2 miles of 30-foot diameter tunnel and 3 miles of 30-foot diameter tunnel). Upon design completion, Halff worked with the City of Dallas to advertise the project and support the City throughout the bidding process including responding to bidder questions, issuing clarifications, and reviewing proposals. During the construction phase, Halff provided construction support services including attending construction meetings, addressing contractor RFIs, reviewing construction claims, assisting with public meetings, and pre-preparing as-built drawings.

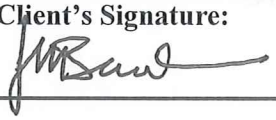
5. Client Information

Name: J. Milton Brooks, P.E.

Title: Senior Engineer

Organization: City of Dallas – DWU Stormwater Project Management

Phone Number: (469) 284-5561

Email Address: milton.brooks@dallas.org
6. Describe the client's role in the project: Project manager for the City of Dallas (Project Owner) J. Milton Brooks
7. Date Questionnaire was completed (mm/dd/yy): Type text here… 6/30/22
8. Client's Signature: 

NOTE: NAVFAC / USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUBLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

PLEASE CHECK THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY						
a) Quality of technical data / report preparation efforts	☐E	☒VG	☐S	☐M	☐U	☐N
b) Ability to meet quality standards specified for technical performance	☐E	☒VG	☐S	☐M	☐U	☐N
c) Timeliness / effectiveness of contract problem resolution without extensive customer guidance	☐E	☒VG	☐S	☐M	☐U	☐N
d) Adequacy / effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	☒E	☐VG	☐S	☐M	☐U	☐N
2. SCHEDULE / TIMELINESS OF PERFORMANCE:						
a) Compliance with contract delivery / completion schedules including any significant intermediate milestones. (*if liquidated damages were assessed or the schedule was not met, please address below)*	☐E	☒VG	☐S	☐M	☐U	☐N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	☒E	☐VG	☐S	☐M	☐U	☐N
3. CUSTOMER SATISFACTION:						
a) To what extent were the end users satisfied with the project?	☐E	☒VG	☐S	☐M	☐U	☐N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements / disputes; responsiveness to administrative reports, businesslike and communication)	☐E	☒VG	☐S	☐M	☐U	☐N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	☐E	☒VG	☐S	☐M	☐U	☐N
d) Overall customer satisfaction	☐E	☒VG	☐S	☐M	☐U	☐N
4. MANAGEMENT / PERSONNEL / LABOR						
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and / or labor force?	☐E	☒VG	☐S	☐M	☐U	☐N
b) Ability to hire, apply, and retain a qualified workforce to this effort	☒E	☐VG	☐S	☐M	☐U	☐N
c) Government Property Control	☒E	☐VG	☐S	☐M	☐U	☐N
d) Knowledge / expertise demonstrated by contractor personnel	☐E	☒VG	☐S	☐M	☐U	☐N
e) Utilization of Small Business concerns	☒E	☐VG	☐S	☐M	☐U	☐N
f) Ability to simultaneously manage multiple projects with multiple disciplines	☐E	☒VG	☐S	☐M	☐U	☐N

g) Ability to assimilate and incorporate changes in requirements and / or priority, including planning, execution, and response to Government changes	☐E	☒VG	☐S	☐M	☐U	☐N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	☐E	☒VG	☐S	☐M	☐U	☐N
5. COST / FINANCIAL MANAGEMENT						
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	☐E	☒VG	☐S	☐M	☐U	☐N
b) Contractor proposed innovative alternative methods / processes that reduced cost, improved maintainability or other factors that benefited the client	☐E	☒VG	☐S	☐M	☐U	☐N
c) If this is / was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports / budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	☒E	☐VG	☐S	☐M	☐U	☐N
d) Is the Contractor's accounting system adequate for management and tracking of costs? If no, please explain in Remarks section.	☒YES	☐NO				
e) If this is / was a Government contract, has / was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	☐YES	☒NO				
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	☐YES	☒NO				
6. SAFETY / SECURITY						
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	☒E	☐VG	☐S	☐M	☐U	☐N
b) Contractor complied with all security requirements for the project and personnel security requirements.	☒E	☐VG	☐S	☐M	☐U	☐N
7. GENERAL						
a) Ability to successfully respond to emergency and / or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	☐E	☒VG	☐S	☐M	☐U	☐N
b) Compliance with contractual terms / provisions (*explain if specific issues*)	☐E	☒VG	☐S	☐M	☐U	☐N
c) Would you hire or work with this firm again? (*If no, please explain below*)	☒YES	☐NO				
d) In summary, provide an overall rating for the work performed by this contractor.	☐E	☒VG	☐S	☐M	☐U	☐N

Please provide responses to the questions above (if applicable) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk (*please attach additional pages if necessary*):

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name: SmithGroup
CAGE Code:
Address: 44 East Mifflin Street, Suite 500
DUNs Number:
Phone Number: 608-251-1177
Email Address: robert.wright@smithgroup.com
Point of Contact: Rob Wright
Contact Phone Number: 608-327-4433

2. Work Performed as: ☒ Prime Contractor ☐ Sub Contractor ☐ Joint Venture ☐ Other (Explain)
Percent of project work performed: 100%
If subcontractor, who was the prime (Name/Phone #):

3. Contract Information

Contract Number:
Delivery/Task Order Number (if applicable):
Contract Type: ☒ Firm Fixed Price ☐ Cost Reimbursement ☐ Other (Please specify):
Contract Title: Washburn Coal Dock Rehabilation
Contract Location: Port of Washburn

Award Date (mm/dd/yy): 04/18/2018
Contract Completion Date (mm/dd/yy): 07/18/2018
Actual Completion Date (mm/dd/yy): 07/18/2018
Explain Differences:

Original Contract Price (Award Amount): $260,000 (engineering fee)
Final Contract Price (*to include all modifications, if applicable*): $260,000
Explain Differences:

4. Project Description:

Complexity of Work ☒ High ☐ Med ☐ Routine
How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*)

The coal dock reconstruction project resulted from damage from a severe wave / storm event. The wall sits in approximately 20 feet of water depth and is a key resource for navigation and operations at the Port and in the western basin of Lake Superior. The existing timber crib structures below the line of degradation were assessed New sheetpile was driven and mooring bollards were installed. The wall supports occasional use by a loaded 150 ton travel that hauls out recreational and commercial vessels and is used by Coast Guard, Army Corps, and other government vessels performing routine and emergency operations in the region.

CLIENT INFORMATION (Client to complete Blocks 5-8)

5. Client Information

Name: Scott Kluver
Title: City Administrator
Phone Number: 715-373-6160 ext 4
Email Address: washburnadmin@cityofwashburn.org

6. Describe the client's role in the project: Management of SmithGroup and Contractor Construction

7. Date Questionnaire was completed (mm/dd/yy): 062022

8. Client's Signature:

NOTE: NAVFAC/USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESTIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUPLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESTIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY:						
a) Quality of technical data/report preparation efforts	☒E	☐VG	☐S	☐M	☐U	☐N
b) Ability to meet quality standards specified for technical performance	☒E	☐VG	☐S	☐M	☐U	☐N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	☒E	☐VG	☐S	☐M	☐U	☐N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	☐E	☒VG	☐S	☐M	☐U	☐N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:						
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	☐E	☒VG	☐S	☐M	☐U	☐N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	☒E	☐VG	☐S	☐M	☐U	☐N
3. CUSTOMER SATISFACTION:						
a) To what extent were the end users satisfied with the project?	☒E	☐VG	☐S	☐M	☐U	☐N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	☒E	☐VG	☐S	☐M	☐U	☐N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	☒E	☐VG	☐S	☐M	☐U	☐N
d) Overall customer satisfaction	☒E	☐VG	☐S	☐M	☐U	☐N
4. MANAGEMENT/ PERSONNEL/LABOR						
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	☒E	☐VG	☐S	☐M	☐U	☐N
b) Ability to hire, apply, and retain a qualified workforce to this effort	☒E	☐VG	☐S	☐M	☐U	☐N
c) Government Property Control	☒E	☐VG	☐S	☐M	☐U	☐N
d) Knowledge/expertise demonstrated by contractor personnel	☒E	☐VG	☐S	☐M	☐U	☐N
e) Utilization of Small Business concerns	☐E	☐VG	☐S	☐M	☐U	☒N
f) Ability to simultaneously manage multiple projects with multiple disciplines	☐E	☐VG	☐S	☐M	☐U	☒N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	☐E	☐VG	☐S	☐M	☐U	☒N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	☒E	☐VG	☐S	☐M	☐U	☐N
5. COST/FINANCIAL MANAGEMENT						
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	☒E	☐VG	☐S	☐M	☐U	☐N

b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	☐E ☒VG ☐S ☐M ☐U ☐N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	☒E ☐VG ☐S ☐M ☐U ☐N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain in Remarks section.*	☒Yes ☐No
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	☐Yes ☒No
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	☐Yes ☒No
6. SAFETY/SECURITY	
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	☒E ☐VG ☐S ☐M ☐U ☐N
b) Contractor complied with all security requirements for the project and personnel security requirements.	☒E ☐VG ☐S ☐M ☐U ☐N
7. GENERAL	
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	☐E ☐VG ☐S ☐M ☐U ☒N
b) Compliance with contractual terms/provisions *(explain if specific issues)*	☒E ☐VG ☐S ☐M ☐U ☐N
c) Would you hire or work with this firm again? *(If no, please explain below)*	☒Yes ☐No
d) In summary, provide an overall rating for the work performed by this contractor.	☒E ☐VG ☐S ☐M ☐U ☐N

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk *(please attach additional pages if necessary)*:

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name: Kenall Inc
CAGE Code: 51NX2
Address: 8101 Westglen Drive, Houston, Texas
DUNs Number: 113105956
Phone Number: 8322518200
Email Address: kris.prasad@Kenallinc.com
Point of Contact: Kris Prasad
Contact Phone Number: 8322518200x101

2. Work Performed as: ☐ Prime Contractor ☒ Sub Contractor ☐ Joint Venture ☐ Other (Explain)
Percent of project work performed: 100 percent
If subcontractor, who was the prime (Name/Phone #): Lawton-Penna Joint Venture / 254-534-5067

3. Contract Information

Contract Number: 140F0219C0031
Delivery/Task Order Number (if applicable): 140F0219C0031
Contract Type: ☒ Firm Fixed Price ☐ Cost Reimbursement ☐ Other (Please specify):
Contract Title: Design for Reconstruction of Spillway for Champion Lake
Contract Location: Champion Lake, Trinity National Wildlife Refuge, Liberty County, Texas

Award Date (mm/dd/yy): 09/14/2019
Contract Completion Date (mm/dd/yy): 01/15/2021
Actual Completion Date (mm/dd/yy): 01/15/2021
Explain Differences:

Original Contract Price (Award Amount): $401,729.27
Final Contract Price (*to include all modifications, if applicable*): $401,729.27
Explain Differences:

4. Project Description:

Complexity of Work ☒ High ☐ Med ☐ Routine
How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*)

Engineering and Design Services for Dam and Spillway. Services included Hydrology and Hydraulic Modeling, Geotechnical Engineering and drilling and testing, Sheet Pile Wall Design, Levee Alignment and Design, Crest Road Design, Fill Material Recommendations, slope stability, seepage analysis, breach analysis, Providing plans, specifications and responding to the construction RFI's and construction inspection and construction management services

CLIENT INFORMATION (Client to complete Blocks 5-8)

5. Client Information

Name: Ray Fletcher
Title: R2 Contracting Officer
Phone Number: 505-248-6443
Email Address: ray_fletcher@fws.gov

6. Describe the client's role in the project: Design Build General Contractor (Construction)

7. Date Questionnaire was completed (mm/dd/yy)**:** 03/12/2021

8. Client's Signature:

NOTE: NAVFAC/USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESTIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUPLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESTIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY:	
a) Quality of technical data/report preparation efforts	■E ☐VG ☐S ☐M ☐U ☐N
b) Ability to meet quality standards specified for technical performance	■E ☐VG ☐S ☐M ☐U ☐N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	■E ☐VG ☐S ☐M ☐U ☐N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	■E ☐VG ☐S ☐M ☐U ☐N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:	
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	■E ☐VG ☐S ☐M ☐U ☐N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	■E ☐VG ☐S ☐M ☐U ☐N
3. CUSTOMER SATISFACTION:	
a) To what extent were the end users satisfied with the project?	■E ☐VG ☐S ☐M ☐U ☐N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	■E ☐VG ☐S ☐M ☐U ☐N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	■E ☐VG ☐S ☐M ☐U ☐N
d) Overall customer satisfaction	■E ☐VG ☐S ☐M ☐U ☐N
4. MANAGEMENT/ PERSONNEL/LABOR	
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	■E ☐VG ☐S ☐M ☐U ☐N
b) Ability to hire, apply, and retain a qualified workforce to this effort	■E ☐VG ☐S ☐M ☐U ☐N
c) Government Property Control	■E ☐VG ☐S ☐M ☐U ☐N
d) Knowledge/expertise demonstrated by contractor personnel	■E ☐VG ☐S ☐M ☐U ☐N
e) Utilization of Small Business concerns	☐E ☐VG ☐S ☐M ☐U ■N
f) Ability to simultaneously manage multiple projects with multiple disciplines	■E ☐VG ☐S ☐M ☐U ☐N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	■E ☐VG ☐S ☐M ☐U ☐N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	■E ☐VG ☐S ☐M ☐U ☐N
5. COST/FINANCIAL MANAGEMENT	
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	■E ☐VG ☐S ☐M ☐U ☐N

b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	■E ☐VG ☐S ☐M ☐U ☐N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	■E ☐VG ☐S ☐M ☐U ☐N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain in Remarks section.*	☐Yes ☐No
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	☐Yes ☐No
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	☐Yes ☐No
6. SAFETY/SECURITY	
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	■E ☐VG ☐S ☐M ☐U ☐N
b) Contractor complied with all security requirements for the project and personnel security requirements.	■E ☐VG ☐S ☐M ☐U ☐N
7. GENERAL	
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	■E ☐VG ☐S ☐M ☐U ☐N
b) Compliance with contractual terms/provisions *(explain if specific issues)*	■E ☐VG ☐S ☐M ☐U ☐N
c) Would you hire or work with this firm again? *(If no, please explain below)*	☐Yes ☐No
d) In summary, provide an overall rating for the work performed by this contractor.	■E ☐VG ☐S ☐M ☐U ☐N

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk *(please attach additional pages if necessary)*:

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name: Gannett Fleming, Inc.
CAGE Code: 0CF73
Address: 2500 Corporate Exchange Drive, Suite 230
DUNs Number: 147210715
Phone Number: 614.794.9424
Email Address: jrikk@gfnet.com
Point of Contact: Joseph Rikk, Jr., PE
Contact Phone Number: 614.964.6018

2. Work Performed as: ☒ Prime Contractor ☐ Sub Contractor ☐ Joint Venture ☐ Other (Explain)
Percent of project work performed: 71%
If subcontractor, who was the prime (Name/Phone #): n/a

3. Contract Information

Contract Number: Resolution No. 88-137
Delivery/Task Order Number (if applicable): n/a
Contract Type: ☒ Firm Fixed Price ☐ Cost Reimbursement ☐ Other (Please specify):
Contract Title: Homer Road and Frampton Bridge Replacements
Contract Location: 20 S. Second Street, Newark, OH 43055

Award Date (mm/dd/yy): 11/07/16
Contract Completion Date (mm/dd/yy): 12/31/17
Actual Completion Date (mm/dd/yy): 12/31/17
Explain Differences: n/a

Original Contract Price (Award Amount): $140,000
Final Contract Price (*to include all modifications, if applicable*): 140,000
Explain Differences: n/a

4. Project Description:

Complexity of Work ☐ High ☒ Med ☐ Routine
How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*)

Gannett Fleming was the prime consultant for the design of two bridge replacements for the Licking County Engineer. The Homer Road site replaced a 2-span 88-ft long steel beam bridge with a 85-ft single span prestressed concrete box beam bridge on integral abutments. The Frampton Road site replaced a 76-ft steel pony truss with a 100-ft single span prestressed concrete box beam bridge on integral abutments. The design effort included bridge, roadway, geotechnical, H&H, and survey. This project is relevant because it demonstrates successful design experience with concrete bridges.

CLIENT INFORMATION (Client to complete Blocks 5-8)

5. Client Information

Name: Jared Knerr, PE, PS
Title: County Engineer, Licking County, OH
Phone Number: 760-670-5280
Email Address: jknerr@lcounty.com

6. Describe the client's role in the project: Owner. Reviewed and approved construction plans.

7. Date Questionnaire was completed (mm/dd/yy): 6/22/2022

8. Client's Signature: Jared Knerr

NOTE: NAVFAC/USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESTIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUPLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESTIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS
YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY:	
a) Quality of technical data/report preparation efforts	☑E ☐VG ☐S ☐M ☐U ☐N
b) Ability to meet quality standards specified for technical performance	☑E ☐VG ☐S ☐M ☐U ☐N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	☑E ☐VG ☐S ☐M ☐U ☐N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	☑E ☐VG ☐S ☐M ☐U ☐N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:	
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	☑E ☐VG ☐S ☐M ☐U ☐N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	☑E ☐VG ☐S ☐M ☐U ☐N
3. CUSTOMER SATISFACTION:	
a) To what extent were the end users satisfied with the project?	☑E ☐VG ☐S ☐M ☐U ☐N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	☑E ☐VG ☐S ☐M ☐U ☐N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	☑E ☐VG ☐S ☐M ☐U ☐N
d) Overall customer satisfaction	☑E ☐VG ☐S ☐M ☐U ☐N
4. MANAGEMENT/ PERSONNEL/LABOR	
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	☐E ☐VG ☐S ☐M ☐U ☑N
b) Ability to hire, apply, and retain a qualified workforce to this effort	☐E ☐VG ☐S ☐M ☐U ☑N
c) Government Property Control	☐E ☐VG ☐S ☐M ☐U ☑N
d) Knowledge/expertise demonstrated by contractor personnel	☐E ☐VG ☐S ☐M ☐U ☑N
e) Utilization of Small Business concerns	☐E ☐VG ☐S ☐M ☐U ☑N
f) Ability to simultaneously manage multiple projects with multiple disciplines	☑E ☐VG ☐S ☐M ☐U ☐N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	☑E ☐VG ☐S ☐M ☐U ☐N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	☑E ☐VG ☐S ☐M ☐U ☐N
5. COST/FINANCIAL MANAGEMENT	
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	☑E ☐VG ☐S ☐M ☐U ☐N

b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	☑E ☐VG ☐S ☐M ☐U ☐N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	☐E ☐VG ☐S ☐M ☐U ☑N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain in Remarks section.*	☑Yes ☐No
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	☐Yes ☑No
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	☐Yes ☑No
6. SAFETY/SECURITY	
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	☐E ☐VG ☐S ☐M ☐U ☑N
b) Contractor complied with all security requirements for the project and personnel security requirements.	☑E ☐VG ☐S ☐M ☐U ☐N
7. GENERAL	
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	☑E ☐VG ☐S ☐M ☐U ☐N
b) Compliance with contractual terms/provisions *(explain if specific issues)*	☑E ☐VG ☐S ☐M ☐U ☐N
c) Would you hire or work with this firm again? *(If no, please explain below)*	☑Yes ☐No
d) In summary, provide an overall rating for the work performed by this contractor.	☑E ☐VG ☐S ☐M ☐U ☐N

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk *(please attach additional pages if necessary)*:

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101, 3.104, AND 42.1503

CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

INCOMPLETE-RATED **Architect-Engineer**

Name/Address of Contractor:

Company Name: KENALL-FREESE AND NICHOLS 8A MENTOR-PROTEGE JOINT VENTURE

Division Name:

Street Address: 8101 WESTGLEN DR

City: HOUSTON

State/Province: TX Zip Code: 770636305

Country: USA

CAGE Code:

DUNS Number: 079875018

PSC: C220 NAICS Code: 541330

Evaluation Type: Final

Contract Percent Complete: 100

Period of Performance Being Assessed: 04/21/2018 - 09/22/2018

Contract Number: W9126G17D0011 0002 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: W076 ENDIST FT WORTH **Contracting Officer:** JOHN H. RODGERS **Phone Number:** 817-886-1048

Location of Work:

Architect and Engineer Services for Design of Various Drainage Projects at Multiple Sites, Fort Hood, TX

Award Date: 04/26/2017 **Effective Date:** 04/28/2017

Completion Date: 09/22/2018 **Estimated/Actual Completion Date:** 09/22/2018

Total Dollar Value: $177,323 **Current Contract Dollar Value:** $177,323

Complexity: Medium **Termination Type:** None

Competition Type: Full and Open Competition after Exclusion of Sources **Contract Type:** Firm Fixed Price

Key Subcontractors and Effort Performed:

DUNS:

Effort:

DUNS:

Effort:

DUNS:

Effort:

Project Number:

Project Title:

Architect and Engineer Services for Design of Various Drainage Projects at Multiple Sites, Fort Hood, TX

Contract Effort Description:

Architect and Engineer Services for Design of Various Drainage Projects at Multiple Sites, Fort Hood, TX

Small Business Subcontracting:

Does this contract include a subcontracting plan? No

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	Satisfactory	Satisfactory
Schedule:	Satisfactory	Satisfactory
Cost Control:	N/A	Satisfactory
Management:	Satisfactory	Satisfactory

Small Business Subcontracting:	N/A	N/A
Regulatory Compliance:	N/A	N/A
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The AE met the requirements of the task order.

SCHEDULE: The AE met the requirements of the task order.

COST CONTROL: The AE met the requirements of the task order.

MANAGEMENT: The AE met the requirements of the task order.

ADDITIONAL/OTHER: The AE met the requirements of the task order providing required deliverables within schedule.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: JAMES WRIGHT

Title: Professional Engineer

Organization: CESWF-EC-AM

Phone Number: 817-886-1305 Email Address: james.wright@usace.army.mil

Date: 02/04/2019

Contractor Comments:

Name and Title of Contractor Representative:

Name:

Title:

Phone Number: Email Address:

Date:

Review by Reviewing Official:

Name and Title of Reviewing Official:

Name:

Title:

Organization:

Phone Number: Email Address:

KENALL-HALFF JV-2
AGREEMENT

JOINT VENTURE LIMITED LIABILITY COMPANY AGREEMENT BETWEEN KENALL INC. AND HALFF ASSOCIATES, INC.

April 21, 2022

TABLE OF CONTENTS

JOINT VENTURE LIMITED LIABILITY COMPANY AGREEMENT BETWEEN KENALL INC. AND HALFF ASSOCIATES, INC.

This is an agreement (Agreement) between Kenall, Inc. ("Kenall"), a Small Business (SB) and an SBA self-certified Women Owned SB, with headquarters located at 8101 Westglen Dr. Houston, TX 77063 and Halff Associates, Inc. (Halff), a Texas corporation with headquarters located at 1201 N. Bowser Road, Richardson, TX 75081-2275. This agreement is to form a SB Joint Venture (JV), in the form of a Texas Limited Liability Company (LLC), to be known as **Kenall-Halff JV-2, LLC**. The principal office of the JV shall be located at 8101 Westglen Dr. Houston, TX 77063.

Now, therefore, in consideration of the covenants and agreements set forth in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Kenall and Halff hereby agree as follows:

ARTICLE 1 – PURPOSE

1.01 *General*

A. Purpose. The purpose of the JV is to provide and perform, for profit, professional A&E services for various government clients with a primary focus being Federal clients. The JV is set up to be compliant to all requirements of the SBA regulations for SB firms.

B. JV Structure. This will be an unpopulated JV. All work will be subcontracted to one or both of the JV Members, and/or a named contract team member, hereinafter referred to as "JV Subconsultants".

C. LLC Managing Member. Kenall shall be the Managing Member of the JV. Should there be changes to this JV agreement such shall be evidenced by mutual agreement and execution of such changes by the parties to this Agreement.

CONTRACT PERFORMANCE

1.02 *Project Manager and Program Manager*

A. Contract Level Program Manager. Kenall, as the SB member, will provide Kris Prasad, PE, as a contract level program manager. The contract project manager is also known as the Program Manager for Federal contracts. The duties of the program manager will be detailed in a separate Joint Venture Operating Agreement (JV-OA).

B. Task Order Project Manager. For multiple award contacts, the task order (TO) project manager will be chosen from qualified candidates from both firms who best meet the requirements of each contract pursuit. Selection criteria of the TO project manager will be detailed in the JV-OA.

1.03 *Responsibilities of Parties*

A. Performance. Contract performance shall be reviewed monthly in meetings chaired by the Program Manager. All active TOs will be reviewed and progress/status evaluated prior to issuance of reports and invoices by the JV. The JV will perform the applicable percentage of work required by §124.510 which states that in the case of a contract for services (except construction), the JV Members will perform at least 60 percent of the cost of the contract incurred for personnel with its own employees. In this unpopulated LLC form of a JV, where both of the JV Members will be retained by JV to perform services as subcontractors to the JV (LLC), the amount of work (professional services) performed by the individual Members will be aggregated and the work done by Kenall, the SB member, shall be at least 40% of the total done by the JV Members over the life of the contract.

B. Source of Labor. This JV is unpopulated with JV Members providing labor to staff the requirements of individual task orders issued by a Federal client. The JV may also provide/procure/obtain labor from the JV Subconsultants provided the labor from these JV Subconsultants does not exceed 40% of the total contract labor over the life of the contract.

C. Negotiations. The parties, Kenall and Halff, will name an individual from their organizations to serve as a representative of their individual firms and as a JV member to lead negotiations for all efforts. These efforts and assignments may range from and include service in the capacity of the contract program manager, the project manager or someone agreed to by the JV Members.

D. Ensured Performance. Kenall and Halff are obligated to ensure completion of any Task Orders awarded under the contract and to complete performance of those awarded Task Orders despite the withdrawal of any party to the JV.

ARTICLE 2 – CAPITAL CONTRIBUTIONS AND JOINT VENTURE INTERESTS

2.01 *Joint Venture Interests*

A. Capital Contributions. No capital contributions are necessary for the creation of the JV.

B. Interests of the Members. The JV Member's interests in the JV shall be in accordance with the following percentages:

Kenall 51%
Halff 49%

C. Distribution of Fees and Profits. The fees and profits do not accrue to the JV as work and associated fees shall be allocated between and distributed to the JV Members and the JV Subconsultants. Fees shall be commensurate with the work performed by each JV member as documented in each Work Order issued to such Member(s), except, where a contract specific profit-sharing arrangement is mutually agreed to by both JV Members. The scope of work to be performed on task orders by each JV member will be assigned based on the Member's ability and capacity to perform work within the required timeframe.

2.02 *Fiscal year of Joint Venture*

A. The fiscal year of the JV is designated as the calendar year.

ARTICLE 3 – FINANCIAL MATTERS

3.01 *Joint Venture Account*

A. Joint Venture Operating Account. The JV has established a bank account (JV Operating Account) at Chase Bank. Payment received by or on behalf of the JV related to the performance of the contract shall be deposited in this JV account and all obligations of the JV shall be paid by check drawn on the JV Account. All disbursements from the JV Operating Account will require two (2) signatures, one from each JV Member.

3.02 *Books and Records*

A. Administrative Records. Accounting and other administrative records including the JV's books, and any other records relating to the JV shall be kept and maintained at the office of Kenall with duplicate copy kept at Halff. Each JV Member shall, during regular business hours, have access to and may inspect and copy any and all such books and records. The Kenall Program Manager shall promptly send to each JV Member copies of all reports, correspondence, documents and other information sent or received by the JV.

B. Retention of Final Records. Upon completion of the contract, final original records including accounting and other administrative records, shall be kept and maintained at the office of Kenall. Such books and records shall be preserved in good order until the later of (i) ten years completion of the final task order awarded under the subject contract, or (ii) the date required by applicable law, or (iii) the date required by the contract.

C. Close-out Financial Statements. A project-end profit and loss statement, including a statement of final profit distribution, will be submitted to each partner no later than 90 days after completion of the contract.

D. Quarterly Financial Statements. The executive committee of the JV will submit quarterly financial statements showing cumulative contract receipts and expenditures (including salaries of the JV's principals) to the Houston Small Business Administration (SBA) office not later than 45 days after each operating quarter of the JV. The Executive Committee roles and responsibilities will be detailed in the JV-OA.

E. Project-End Statements. The executive committee will submit a project-end profit and loss statement, including a statement of final profit distribution, to the Houston SBA office no later than 90 days after completion of the contract.

F. Certification of Compliance. Prior to the performance of the Contract, Kenall will submit a written certification to the contracting officer and SBA, signed by an authorized official of each JV Member, stating as follows:

(1) The parties have entered into a Joint Venture Agreement that fully complies with 13 CFR 125.8(B) (OR 124.513(J), 125.18(B)(4), 126.616(E), OR 127.506(E), as applicable); AND

(2) The parties will perform the contract in compliance with the Joint Venture Agreement and with the performance of work requirements set forth in 13 CFR 125.8(C) (OR 124.510, 125.18(B)(3), 126.616(D), OR 127.506(D0, as applicable).

G. SBA Inspection Rights. The JV Members will allow SBA's authorized representatives, including representatives authorized by the SBA Office Of Inspector General (OIG) access to its files to inspect and copy all records and documents relating to the Joint Venture during normal business hours.

H. Contract Completion Report. At the completion of the contract, Kenall will submit a report to the contracting officer and to the SBA, signed by an authorized official of each JV Member, explaining how and certifying that the performance of work requirements were met for the contract, and further certifying that the contract was performed in accordance with the provisions of this Agreement.

ARTICLE 4 – PROPERTY

4.01 *Joint Venture Property/ JV Member Property*

A. JV Member Property Contribution. Neither JV Member anticipates providing equipment, facilities, or resources to the JV. Each JV Member will be expected to utilize their individual equipment, facilities, and resources in the execution of work assigned by the JV and these assets will remain the property of the individual JV Member.

ARTICLE 5 – LIABILITY AND INDEMNIFICATION

5.01 *Liabilities*

A. Liability, Debts and Obligations. Subject to the terms of this JV Agreement, each Member's liability for the debts and obligations arising out of or relating to this JV Agreement shall be allocated according to each Member's individual interest and responsibilities for performance of their specific Work Order(s). Unless otherwise provided in this Agreement, if a partner is held liable to a non-Partner in excess of the partner's JV interest for such debts, obligations, or liabilities, then the other partner shall indemnify such partner for such excess up to the extent of their respective JV Interests.

5.02 *Indemnification*

A. Indemnification. To the fullest extent permitted by law, each partner (as an Indemnifying Member) shall indemnify and hold harmless the other Member and the JV (LLC) (as Indemnified Parties), including their officers, directors and employees, from and against any and all claims, suits, demands, allegations, costs, losses, and damages ("Claims") (including but not limited to reasonable compensation and charges of engineers, architects, attorneys, and other professionals, and reasonable court or arbitration or other dispute resolution costs) to the extent that such costs, losses, and damages are caused by the willful misconduct or negligent acts or omissions of such Indemnifying Member, its officers, directors or employees and, to the extent they are not involved in the services or actions that give rise to the Claims, those JV Subconsultants, in performing services under this Agreement or an associated Work Order or Task Order, but only to the extent such are not covered by a policy of insurance issued for the JV, it being understood and agreed, however, that at the formation of this JV, LLC the individual Members have expressed no desire or intent to purchase any such insurance on behalf of the JV, LLC. It is further understood and agreed that a JV Member's obligation to indemnify and hold harmless and provide defense shall be such JV Member's sole and exclusive responsibility and nothing contained herein shall limit or otherwise modify or reduce, in any way, such JV Member's responsibilities regardless of the interest of such JV Member with respect to the JV, LLC. The duty to indemnify and hold harmless does not include any duty to defend the Indemnified Member, but it is understood and agreed that should a Claim be made against an Indemnified Member and the facts are such that it is clear that the Indemnified Member should not be involved in such Claim the Indemnifying Member agrees to put forth reasonable efforts and execute such reasonable documents and other tangible things so as to allow the Indemnified Member a reasonable opportunity to extricate itself from such Claim.

ARTICLE 6 – INSURANCE

6.01 *Separate Member Insurance*

A. Each JV Member shall at its own expense procure and maintain separate insurance appropriate for the services to be performed or furnished by such JV Member for the Project. Evidence of compliance with such insurance shall be provided to the JV, LLC in the form of certificates of insurance. Further, each JV Member and, to the extent a JV Subconsultant is working directly for the JV, LLC, shall require that each JV Subconsultant purchase and maintain the same or higher insurance limits as set forth in the following list of items. It is further understood and agreed that any and all such separate insurance shall provide, at a minimum, protection from the claims set forth below:

1. Claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. Claims for damages because of bodily injury, occupational sickness or disease, or death of the partner's employees;

3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than the partner's employees;

4. Claims for damages insured by customary personal injury liability coverage which are sustained (a) by any person as a result of an offense directly or indirectly related to the employment of such person by a partner, or (b) by any other person for any other reason;

5. Claims for damages, other than to the Project itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting there from;

6. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle; and

7. Claims for damages arising from the JV Member's or JV Subconsultant's professional liability.

B. The limits of liability for the insurance required by Paragraph 7.01.A are set forth in Exhibit C, "Insurance." The insurance provided pursuant to Paragraph 7.01.A.3 and 5 shall include as additional insureds and notice parties the JV, each other Partner, and any other parties required by the contract.

6.02 *Joint Venture Insurance*

A. The JV will not have a separate policy. Each partner will name the other partner and the client as "additionally insured".

6.03 *Certificate of Insurance*

A. Each partner shall furnish to the JV, the other partner, and to any other parties required by the contract, certificates of insurance or other documentation expressly evidencing the coverages required from a partner under this JV Agreement. Such documents shall be furnished prior to the performance of services and at renewals thereafter during the term of this JV Agreement.

ARTICLE 7 – EXHIBITS AND SPECIAL PROVISIONS

7.01 *Exhibits Included*

A. Exhibit A1, "Kenall Services"

B. Exhibit A2, "Halff Services"

C. Exhibit B, "Property of Individual Partners"

D. Exhibit C, "Insurance"

7.02 *Total Agreement*

A. This JV Agreement together with the Exhibits identified above constitutes the entire agreement between the venturers and supersedes all prior written or oral understandings. This JV Agreement may only be amended, supplemented, modified, or canceled by a written instrument duly executed by each JV Member.

B. The parties consider all provisions of the Kenall-Halff JV-2 Agreement to be fair and equitable and affirm that the JV will substantially benefit Kenall, the SB participant. Halff is committed to assisting Kenall with marketing the JV to generate interest in and issuance of work by the Corps of Engineers, the U.S. Air Force, and all other potential DOD installations, or Federal entities identified as likely client targets. The broad capability of the Kenall-Halff JV-2, LLC will afford Kenall the opportunity to execute projects outside their current niche, and this expanded experience will improve both their project management skills and technical skills. The deeper portfolio of Federal work resulting from work achieved under this JV is expected to position Kenall more competitively for future work, upon completion of this contract and accordingly to their expansion and growth goals.

C. Kenall will bring substantial value to the JV by offering existing staff to manage and execute task orders. Whereas the JV Members as a whole are required to perform a minimum of 60% of all labor, Kenall as the Managing Member is required to perform a minimum of 40% of that 60%. Kenall is committed to hiring additional staff necessary to perform at this level of support.

D. The percentages discussed in 1.03 (A) and 7.02 (C) above shall be monitored on a cumulative basis no less often than 4 times per year. It is not the intent of this requirement to ensure Kenall performs 40% of the work done by the JV on every task order. It is customary to evaluate this metric at the end of each calendar year with a goal of making adjustments as necessary to ensure compliance in a reasonable period of time.

IN WITNESS WHEREOF, the parties hereto have executed this Joint Venture Agreement. The Effective Date is April 21, 2022.

JV Member Kenall:	**JV Member Halff:**
Signature:	Signature: Digitally signed by Bradford L Ezell Date: 2022.04.21 13:51:59 -04'00'
Name/Title: Prashanthi M. Prasad, CEO	Name/Title: Bradford L. Ezell, P.E., Vice President
Date Signed: April 21, 2022	Date Signed: April 21, 2022
Address for giving notices: Kenall Inc. 8101 Westglen Drive Houston, TX 77063	Address for giving notices: Halff Associates, Inc. 1201 N. Bowser Road Richardson, TX 75081-2275

JV Member Kenall's Services

This is **Exhibit A1**, referred to in and part of the **JV Agreement Between Engineers for Professional Services**.

Article 1 of the JV Agreement is supplemented to include the following agreement of the parties.

Kenall shall provide the following services to the JV, LLC, which include but are not limited to:

- **Architecture**
- **Civil Engineering**
- **Structural Engineering**
- **Geotechnical Engineering**
- **MEP Engineering**
- **Fire Protection Engineering**
- **Project Management**
- **Construction Management**
- **Cost Estimating**
- **Environmental**
- **Contract Administration**

The JV Member Halff or JV Subconsultant(s) may also provide the services listed above. Specific work assignment will be identified during scope evaluation of each task order.

The services to be provided by the JV Member Kenall will be agreed upon within each Work Order between the JV Members.

JV Member Halff's Services

This is **Exhibit A2**, referred to in and part of the **JV Agreement Between Engineers for Professional Services**.

Article 1 of the JV Agreement is supplemented to include the following agreement of the parties.

Halff Associates shall provide professional engineering services to the JV, LLC, which include, but are not limited to:

- **Architecture**
- **Landscape Architecture**
- **MEP Engineering**
- **Civil Engineering**
- **Structural Engineering**
- **Environmental Engineering**
- **Registered Communications Distribution Designer (RCDD)**
- **Survey and Mapping Services including SUE**

The JV Member-Kenall or JV Subconsultant(s) may also provide the services listed above. Specific work assignment will be identified during scope evaluation of each task order.

The services to be provided by JV Member Halff will be agreed upon within each Work Order between the JV Members.

Property of Individual JV Members

This is **Exhibit B**, referred to in and part of the **JV Agreement Between Engineers for Professional Services.**

Article 6 of the JV agreement is supplemented to include the following list of property which the parties agree to make available for the JV's use.

JV Member – Kenall's Property**: None**

JV Member – Halff's Property: **None**

Insurance

This is **Exhibit C,** referred to in and part of the **JV Agreement Between Engineers for Professional Services.**

Article 7 of the JV Agreement is supplemented to include the following agreement of the parties:

D1.01 *Insurance*

A. The minimum amounts of insurance required by Paragraph 10.01 are as required by the contract and/or as detailed below:

1. **By JV Member - Kenall:**

a) Comprehensive general liability insurance for bodily injury in the minimum limits of $500,000 per occurrence. No property damage liability is required.

b) Comprehensive automobile liability insurance covering the operations of all automobiles used in connection with the performance of the contract in the minimum limits of $200,000 per person and $100,000 per accident for bodily injury and $20,000 per accident for property damage.

c) Worker's Compensation and Employer's Liability Insurance in the minimum amount of $100,000, or in compliance with applicable State statutes.

d) Professional Liability insurance in the minimum amount of $1,000,000 per claim and $2,000,000 in the aggregate.

2. **By JV Member - Halff:**

a) Comprehensive general liability insurance for bodily injury in the minimum limits of $500,000 per occurrence. No property damage liability is required.

b) Comprehensive automobile liability insurance covering the operations of all automobiles used in connection with the performance of the contract in the minimum limits of $200,000 per person and $100,000 per accident for bodily injury and $20,000 per accident for property damage.

c) Worker's Compensation and Employer's Liability Insurance in the minimum amount of $100,000, or in compliance with applicable State statutes.

d) Professional Liability insurance in the minimum amount of $1,000,000 per claim and $2,000,000 in the aggregate.

B. **Additional Insureds**

The following persons or entities are to be listed on each Partner's policies as additional insureds under D1.01.A.1.(a),(b) and D1.01A.2.(a) and (b), as provided in Paragraph 6.01: (a) Kenall-Halff JV-2, LLC, and (b) As may be otherwise required as amended by the parties to this Agreement.

Kenall-Halff JV-2

6200 Savoy Drive, Suite 600
Houston, TX 77036
832.251.8200 x 101
Kris.Prasad@kenallinc.com