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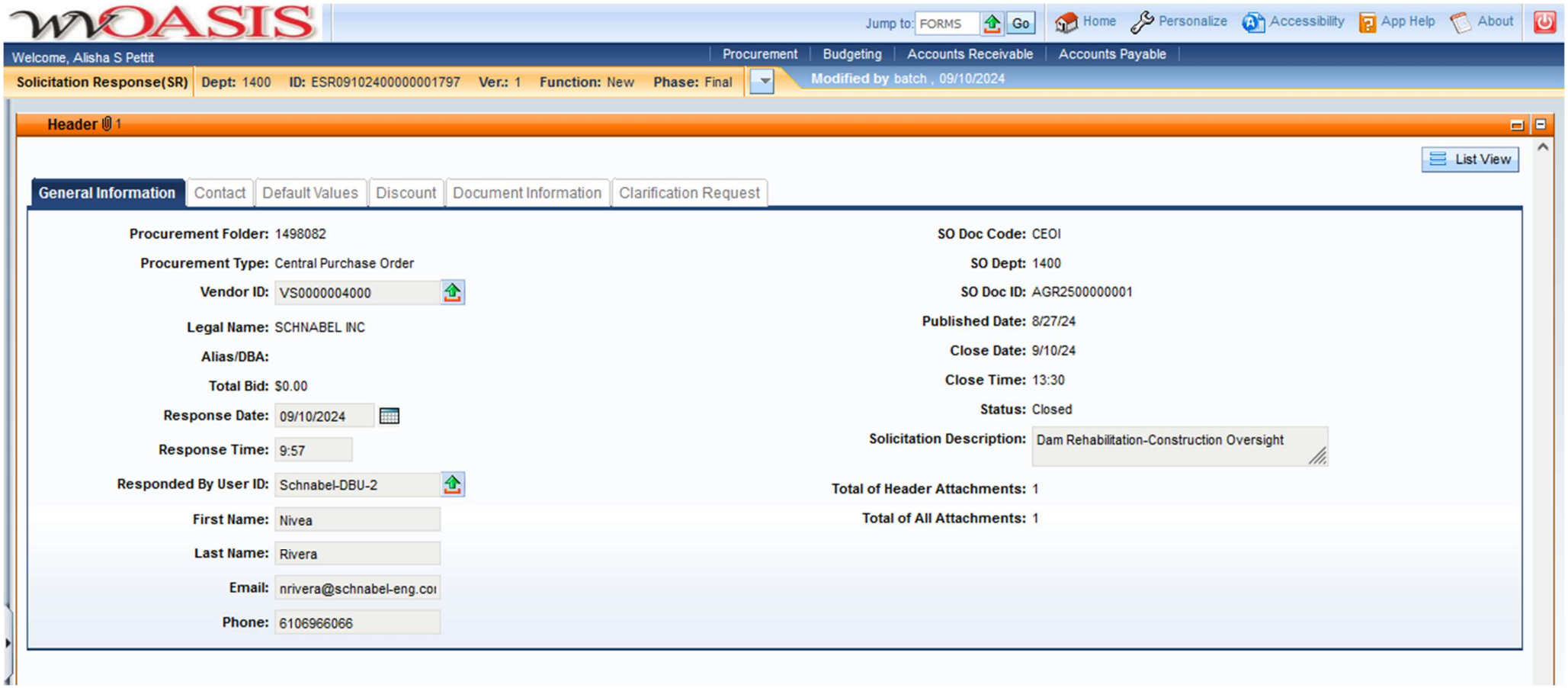
wvOASIS
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Accounts Receivable
Accounts Payable
Solicitation Response(SR)
Dept: 1400
ID: ESR09102400000001797
Ver.: 1
Function: New
Phase: Final
Modified by batch , 09/10/2024
Header 1
List View
General Information
Contact
Default Values
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Document Information
Clarification Request
Procurement Folder: 1498082
Procurement Type: Central Purchase Order
Vendor ID: VS0000004000
Legal Name: SCHNABEL INC
Alias/DBA:
Total Bid: $0.00
Response Date: 09/10/2024
Response Time: 9:57
Responded By User ID: Schnabel-DBU-2
First Name: Nivea
Last Name: Rivera
Email: nrivera@schnabel-eng.co
Phone: 6106966066
SO Doc Code: CEOI
SO Dept: 1400
SO Doc ID: AGR2500000001
Published Date: 8/27/24
Close Date: 9/10/24
Close Time: 13:30
Status: Closed
Solicitation Description: Dam Rehabilitation-Construction Oversight
Total of Header Attachments: 1
Total of All Attachments: 1

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

# State of West Virginia
# Solicitation Response

| | |
|---|---|
| **Proc Folder:** | 1498082 |
| **Solicitation Description:** | Dam Rehabilitation-Construction Oversight |
| **Proc Type:** | Central Purchase Order |

| Solicitation Closes | Solicitation Response | Version |
|---|---|---|
| 2024-09-10 13:30 | SR 1400 ESR09102400000001797 | 1 |

**VENDOR**

VS0000004000
SCHNABEL INC

**Solicitation Number:** CEOI 1400 AGR2500000001

**Total Bid:** 0 **Response Date:** 2024-09-10 **Response Time:** 09:57:05

**Comments:**

**FOR INFORMATION CONTACT THE BUYER**
Larry D McDonnell
304-558-2063
larry.d.mcdonnell@wv.gov

**Vendor**
**Signature X** **FEIN#** **DATE**

**All offers subject to all terms and conditions contained in this solicitation**

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Ln Total Or Contract Amount |
|---|---|---|---|---|---|
| 1 | EOI Dam Rehabilitation-Construction Oversight | | | | 0.00 |

| Comm Code | Manufacturer | Specification | Model # |
|---|---|---|---|
| 81101507 | | | |

**Commodity Line Comments:**

**Extended Description:**

Engineering Firm to provide Dam Rehabilitation-Construction Oversight and Quality Assurance.
See attached specifications for further details.

Schnabel ENGINEERING

# State of West Virginia Bid Opportunity Dam Rehabilitation - Construction Oversight

September 10, 2024 / CEOI / Solicitation No. AGR25*01

Hearthstone Lake Dam - North River, VA

Brush Creek Site #14 - Mercer County, WV

Brush Creek Site #15 - Mercer County, WV

Lake Laura and Lake Bird Haven - Shenandoah County, VA



11-A Oak Branch Drive / Greensboro, NC 27407 / 336-274-9456

# Table of Contents

# ARCHITECT – ENGINEER QUALIFICATIONS
## PART I - CONTRACT-SPECIFIC QUALIFICATIONS

### A. CONTRACT INFORMATION

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

Dam Rehabilitation-Construction Oversight, Princeton, West Virginia

| 2. PUBLIC NOTICE DATE | 3. SOLICITATION OR PROJECT NUMBER |
|---|---|
| 08/23/2024 | AGR25*01 |

### B. ARCHITECT-ENGINEER POINT OF CONTACT

**4. NAME AND TITLE**

Evan Binder, PE - Project Manager

**5. NAME OF FIRM**

**Schnabel Engineering, LLC**

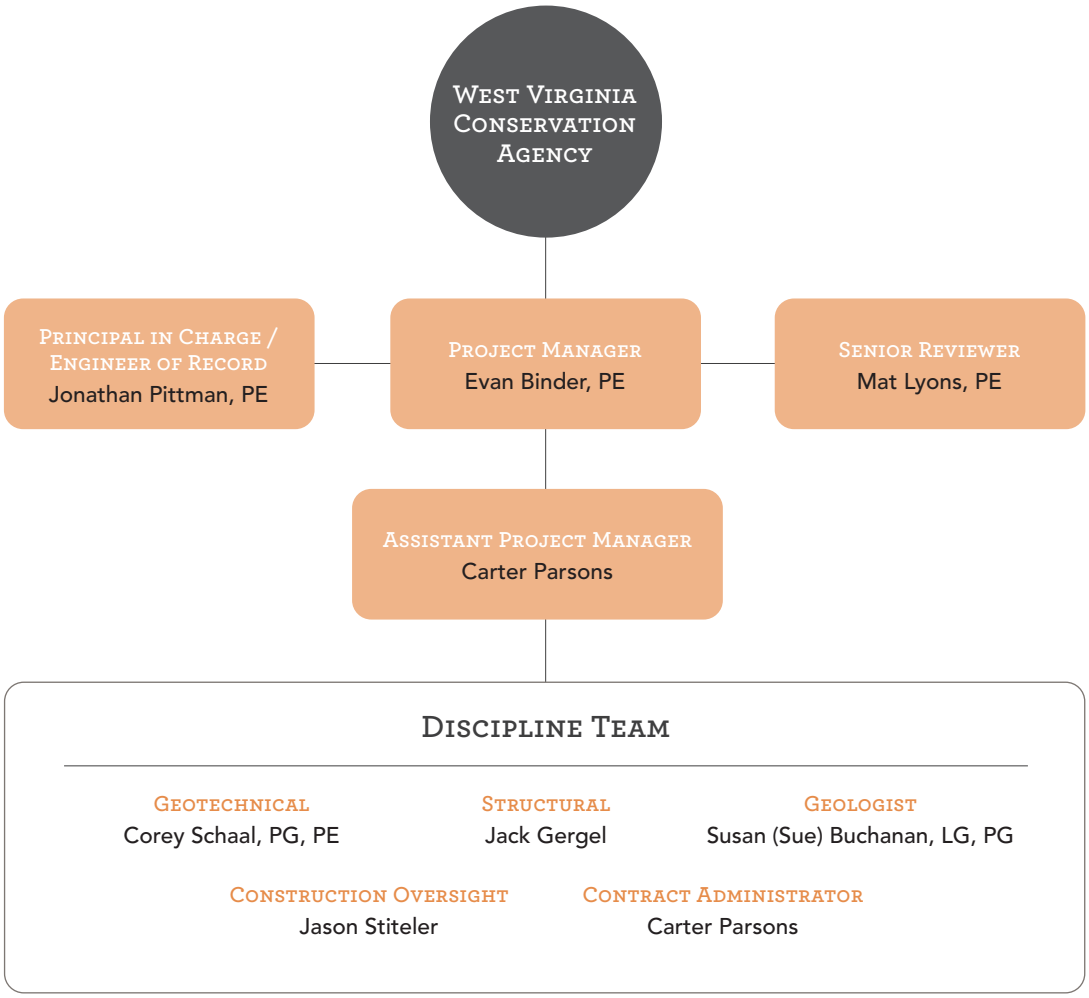
| 6. TELEPHONE NUMBER | 7. FAX NUMBER | 8. E-MAIL ADDRESS |
|---|---|---|
| 336-274-9456 | | ebinder@schnabel-eng.com |

### C. PROPOSED TEAM

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

| | (Check) PRIME | (Check) J-V PARTNER | (Check) SUBCON-TRACTOR | 9. FIRM NAME | 10. ADDRESS | 11. ROLE IN THIS CONTRACT |
|---|---|---|---|---|---|---|
| a. | ✓ | | | Schnabel Engineering, LLC<br>☑ CHECK IF BRANCH OFFICE | 11-A Oak Branch Drive<br>Greensboro, NC 27407 | Provide architectural/engineering services related to the construction oversight at Brush Creek Sites 14 and 15 |
| b. | ✓ | | | Schnabel Engineering, LLC<br>☑ CHECK IF BRANCH OFFICE | 3 Dickinson Drive, Suite 200<br>Chadds Ford, PA 19317 | Provide architectural/engineering services related to the construction oversight at Brush Creek Sites 14 and 15 |
| c. | | | | ☐ CHECK IF BRANCH OFFICE | | |
| d. | | | | ☐ CHECK IF BRANCH OFFICE | | |
| e. | | | | ☐ CHECK IF BRANCH OFFICE | | |
| f. | | | | ☐CHECK IF BRANCH OFFICE | | |
| g. | | | | ☐CHECK IF BRANCH OFFICE | | |

**D. ORGANIZATIONAL CHART OF PROPOSED TEAM** ☑ *(Attached)*


West Virginia Conservation Agency
Principal in Charge / Engineer of Record
Jonathan Pittman, PE
Project Manager
Evan Binder, PE
Senior Reviewer
Mat Lyons, PE
Assistant Project Manager
Carter Parsons
Discipline Team
Geotechnical
Corey Schaal, PG, PE
Structural
Jack Gergel
Geologist
Susan (Sue) Buchanan, LG, PG
Construction Oversight
Jason Stiteler
Contract Administrator
Carter Parsons

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| **Evan Binder, PE** | Project Manager | 16 | 16 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Greensboro, NC**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| MS / Civil Engineering<br>BS / Civil Engineering | **PA, MI, NC – Professional Civil Engineering** |

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

**19. RELEVANT PROJECTS**

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV** | Ongoing | Planned |

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

Project Manager. Responsible for the rehabilitation design of Sites 14 and 15 to upgrade the dams to meet current NRCS dam safety criteria. Both dams are multiple-purpose flood control and recreation structures. Rehabilitation designs are being performed to address hydraulic deficiencies and geotechnical issues at each dam and include replacement of earthen auxiliary spillway with a roller compacted concrete cutoff wall and a new toe drain system and embankment stability berm.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **NRCS Pohick Creek Watershed 8 (Huntsman Lake) Dam Rehabilitation / Fairfax County, VA** | 2014 | 2014 |

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

Assisted with the design for the dam rehabilitation to meet spillway requirements. Other responsibilities included developing construction specifications in NEH format, performing a stability analysis on the articulating concrete block system, performing a filter compatibility analysis of foundation soils, and developing a construction cost estimate.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA** | Ongoing | Ongoing |

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

Assisted with the design for this new offline storage reservoir, with pumping from and releases to the James River in Cumberland County. The dam is planned to be 4,800 feet long and 150 feet high, includes 3,000,000 cys of zoned earth fill, a 1,150-foot-high reinforced concrete inlet/outlet tower, a concrete overflow spillway, and three saddle dikes for the 1,100-acre reservoir. The intake will have a capacity of 150 mgd, the largest in the country.

**d.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Round Valley Reservoir / Clinton, NJ** | Ongoing | Ongoing |

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

Lead Designer. Responsible for the design for the rehabilitation of this 55 billion gallon pumped storage reservoir that is part of a water supply system for more than 1.5 million residents of central New Jersey and is a significant regional recreational resource. The reservoir is impounded by three embankment dams; all three among the 10 highest dams in the state (the largest is 180 feet high, and the third highest in the state). The initial phases included subsurface exploration and an extensive seepage analysis, calibrating seepage models to observed piezometric levels, and measured seepage flows. These models were used to attribute seepage quantities to different zones of the structure (abutments, foundation, and embankments).

**e.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **NRCS Mountain Run Sites 11 and 50 Rehabilitations / Culpeper, VA** | 2019 | 2019 |

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

Design Engineer. The project consisted of a designed labyrinth auxiliary spillway and riser structure improvements to address inadequate hydraulic capacity, integrity, and structural stability in order to bring the structure into compliance with current NRCS and state dam safety criteria. Analyses performed included geotechnical, hydraulic, hydrologic, and structural.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| Carter Parsons | Assistant Project Manager / Contract Administrator | 4 | 4 |

**15. FIRM NAME AND LOCATION** *(City and State)*

Schnabel Engineering, LLC / Greensboro, NC

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| BS / Civil Engineering | |

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

**19. RELEVANT PROJECTS**

**a.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

Senior Staff Engineer for development of the rehabilitation design report for these high hazard NRCS flood control earth dams. The project scope includes performing investigations and engineering analyses at each dam to meet NRCS and West Virginia DEP dam safety requirements. Rehabilitation measures are being designed to address stability and integrity issues in the auxiliary spillways, slope stability and seepage control issues in the embankments and/or foundations, and potential seismic instability of the principal spillway risers at each site. Carter assisted with the creation of drawings at all stages of design, 3D modeling and use of corridors in CAD, analysis, and design of an NRCS Impact Basin, construction staging and sequencing, construction specifications, and cost estimations for both sites.

**b.**

(1) TITLE AND LOCATION *(City and State)*: **High Point Upper Piedmont Dredging / High Point, NC**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2022; CONSTRUCTION (If applicable): 2022

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

Staff Engineer for the construction oversight of the dredging of a reservoir in High Point, North Carolina. Services included oversight of dredging operations by the contractor, and work with the contractor and the owner on scheduling and payment throughout the construction process. Carter's responsibilities included weekly site visits and reports on construction activities, corresponding with contractor and owner, working to come up with solutions to problems that arise during construction, and work towards completing the permitting closeout of this project.

**c.**

(1) TITLE AND LOCATION *(City and State)*: **Texas State Soil and Water Conservation Board (TSSWCB) 2019 Dam Upgrades / Ellis County, TX**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Staff Engineer. Schnabel is providing design services under this contract for the evaluation of spillway capacity upgrades for six flood control dams, as well as construction phase services for the repair of six additional flood control dams. Designs for the repairs of the six flood control dams were completed in August 2019. For each of the 12 design projects, initial site inspections were performed in order to develop the scope of required repairs. Carter's responsibilities included estimating the project costs for two of the six flood control dams.

**d.**

(1) TITLE AND LOCATION *(City and State)*: **Lake Louisa Dam Spillway Replacement / Louisa, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Senior Staff Engineer. The Lake Louisa Dam project includes replacing the existing concrete chute spillway with a new spillway due to address various structural deficiencies and evidence of slab undermining. The project also includes the rehabilitation of an existing principal spillway riser and filter diaphragm and an outlet pipe extension. Tasks related to the project included design of the erosion and sediment control features, assisting in permitting related to E&S and stormwater, cost estimation, construction specifications, and assisting in other design elements in the project. Since the start of construction, Carter has been one of the leads on construction administration related actives such as submittal review, payment application backchecking, and corresponding with the contractor on project related tasks.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| **Jonathan Pittman, PE** | Principal in Charge / Engineer of Record | 23 | 23 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Greensboro, NC**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| BS / Civil Engineering | **WV, VA, NC, KY, MD, AL – Professional Civil Engineering** |

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

**19. RELEVANT PROJECTS**

**a.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

Lead Engineer. Responsible for the rehabilitation design of Sites 14 and 15 to upgrade the dams to meet current NRCS dam safety criteria. Rehabilitation designs are being performed to address hydraulic deficiencies and geotechnical issues at each dam.

**b.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Upper North River Site No. 77, Hearthstone Lake Dam Rehabilitation / Augusta County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2020; CONSTRUCTION (If applicable): 2020

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

Project Manager/Lead Engineer. Responsible for the investigation, evaluation, and rehabilitation design of this nearly 100-foot-tall, high hazard, zoned earthen embankment. Responsible for management of the construction administration and oversight team during the rehabilitation work. Schnabel performed an extensive subsurface investigation to characterize the zoned earth embankment to analyze the filter compatibility between adjacent zones. Sonic drilling techniques and large test pits were required to adequately characterize the oversize materials in the embankment. Schnabel was able to show that the existing embankment zones generally met NRCS filter compatibility criteria, resulting in over $2 million of savings to the sponsors. Instead of a full height chimney drain, Schnabel developed a rehabilitation design to replace the rockfill toe with a graded filter toe drain installed to rock to control seepage through the foundation. Additional improvements include upgrading the principal spillway riser to meet seismic stability requirements, modifying the existing auxiliary spillway to improve hydraulic performance during the design storm, and other various operation and maintenance related improvements.

**c.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Fox Creek Watershed Multi-Purpose Structure No. 4 Dam / Fleming County, KY**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012; CONSTRUCTION (If applicable): 2012

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

Project Engineer. Responsible for the evaluation of alternatives and the geotechnical design and management of the subsurface investigation and laboratory testing programs for the rehabilitation of this 35-foot-high USDA-NRCS multi-purpose dam. The rehabilitation of this earth dam included the construction of a RCC chute spillway over the embankment, the first of its kind in the Commonwealth of Kentucky. Provided construction oversight and management services related to the implementation of the geotechnical engineering portions of the design. The rehabilitation design from site investigation through final approval, both NRCS and Kentucky Division of Water, was completed in nine months.

**d.**

(1) TITLE AND LOCATION *(City and State)*: **Virginia DCR Stony Creek Dams, Nos. 9 and 10 Rehabilitations (Lake Laura and Lake Bird Haven) / Shenandoah County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2017; CONSTRUCTION (If applicable): 2017

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

Project Engineer for Geotechnical Design and PM / Lead Engineer for Rehabilitation Construction. Responsible for the geotechnical design and management of the subsurface investigation and laboratory testing program to support the development of rehabilitation alternatives and rehabilitation design for these USDA-NRCS flood control dams in the Stony Creek Watershed. The rehabilitation design for Lake Laura dam includes RCC overtopping protection, and the rehabilitation design for Lake Bird Haven dam includes a structural spillway in the existing earthen auxiliary spillway.

**e.**

(1) TITLE AND LOCATION *(City and State)*: **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Assistant Project Manager and Lead Civil Engineer. Responsible for the evaluation of alternatives and design of a 160-foot-high, 4,000±-foot-long primary dam and concrete spillway, outlet works, and associated bridges on Cobbs Creek and a 30 foot-high, 800±-foot-long perimeter saddle dam. Responsible for managing the extensive geologic and geotechnical investigation program required to support the evaluation of alternatives and design of the dams.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| **Mathew Lyons, PE** | Senior Reviewer | 33 | 1 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Greensboro, NC**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| BS / Civil Engineering | **VA – Professional Civil Engineering** |

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

**19. RELEVANT PROJECTS**

**a.**

(1) TITLE AND LOCATION *(City and State)*: **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Senior Consultant for Construction. responsible for providing vegetative assessment and analysis to assist project team in identifying and correcting vegetative cover and erosion issues at the site.

**b.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Upper North River Site No. 77, Hearthstone Lake Dam Rehabilitation / Augusta County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2020; CONSTRUCTION (If applicable): 2020

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

NRCS VA State Engineer. The project consisted of A&E designed vegetated ASW widening, dam raise, toe drain installation, and riser structure to address inadequate hydraulic capacity, integrity, and structural stability in order to bring the structure into compliance with current NRCS and state dam safety criteria. Mat was the federal Engineer of Record for project planning, A&E design approval, and federal construction certification. He provided sponsor coordination for entire project from initial fund allocation through project completion. Managed an interdisciplinary project team consisting of environmental, economic, and engineering disciplines. Managed and/or performed all program management, project management, and engineering aspects for the project, including preparation of the Environmental Assessment, A&E design approval, and locally contracted construction oversight and certification.

**c.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Cherrystone Creek Dams 1 & 2A / Chatham, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

NRCS VA State Engineer. This ongoing NRCS dam rehabilitation design project consists of A&E designed RCC spillways, dam raise, toe drain installation, and riser structures to address inadequate hydraulic capacity, integrity, and structural stability in order to bring the two structures into compliance with current NRCS and state dam safety criteria. Mat provided sponsor coordination for the project from initial fund allocation, supplemental watershed work plan (EA) completed in 2019 through design start. Managed and/or performed all program management, project management, and engineering aspects including preparation of technical specifications, agreement documents, and project start..

**d.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Mountain Run Sites 11 and 50 Rehabilitations / Culpeper, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2019; CONSTRUCTION (If applicable): 2019

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

NRCS VA State Engineer. The project consisted of A&E designed labyrinth ASW and riser structure improvements to address inadequate hydraulic capacity, integrity, and structural stability in order to bring the structure into compliance with current NRCS and state dam safety criteria. Mat was the federal Engineer of Record for project planning, A&E design approval, and federal construction certification. He provided sponsor coordination for entire project from initial fund allocation through project completion. Managed an interdisciplinary project team consisting of environmental, economic, and engineering disciplines. Managed and/or performed all program management, project management, and engineering aspects for the project including preparation of Environmental Assessment, A&E design approval, and locally contracted construction oversight and certification.

**e.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS John's Creek Site 1 / Maggie, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

NRCS VA State Engineer. This ongoing NRCS dam rehabilitation design project consists of A&E designed RCC spillway, dam raise, toe drain installation and riser structure to address inadequate hydraulic capacity, integrity, and structural stability in order to bring the structure into compliance with current NRCS and state dam safety criteria. Mat provided sponsor coordination for the project from initial fund allocation, supplemental watershed work plan (EA) completed in 2019 through design start. Managed and/or performed all program management, project management and engineering aspects including preparation of technical specifications, agreement documents, and project start.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| **Corey Schaal, PE, PG** | Geotechnical Engineer | 7 | 7 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Greensboro, NC**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| MS / Civil Engineering-Geotechnical | **VA, NC, TN, – Professional Civil Engineering** |
| BS / Geotechnical Engineering | **NC – Professional Geologist** |

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

**19. RELEVANT PROJECTS**

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV** | Ongoing | Planned |

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

Geotechnical Engineer / Assistant Project Manager. Brush Creek Sites 9, 14, and 15 are existing high hazard embankment dams that have multiple hydraulic and geotechnical deficiencies and do not meet current safety and performance criteria. Developed and conducted subsurface investigations to support the final rehabilitation designs for the three sites that included soil augering and rock coring through the embankments, downhole geophysical logging, piezometer installation, in-situ hydraulic conductivity testing, and soil and rock laboratory testing. Evaluated embankment seepage and stability, filter compatibility, and foundation liquefaction potential. Developed rehabilitation designs and construction documents to meet NRCS and WV state dam safety requirements that included new embankment toe drains to address seepage-related issues, roller compacted concrete (RCC) cutoff walls in the auxiliary spillways to mitigate potential headcut erosion and breach, instrumentation and monitoring program, riser refurbishment or replacement, and miscellaneous operation and maintenance improvements.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA** | Ongoing | Ongoing |

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

Project Engineer and Lead Instrumentation Engineer. Cobbs Creek Reservoir is a new pumped storage facility providing 15 billion gallons of raw water storage within a 1,120-acre normal pool area that is impounded by three high hazard potential embankment dams, including the main dam which is a 3,850-foot-long, 160-foot-tall embankment dam. Reviewed instrumentation data during and after construction for over 30 vibrating wire piezometers, seven seepage monitoring points with vibrating wire water level indicators, the fiber optic distributed temperature sensing system, and survey monitoring points for the inlet/outlet tower, concrete spillway, and embankment. The electronic instrumentation components were part of an automated data collection and remote monitoring system. Also provided geotechnical engineering support during construction, including review of soil laboratory testing submittals for potential embankment fill materials and provided project leaders with recommendations. Conducted grout curtain quality assurance and foundation geologic mapping.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **NRCS Upper North River Site No. 77, Hearthstone Lake Dam / Augusta County, VA** | 2020 | 2020 |

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

Geotechnical Engineer / Assistant Project Manager. Hearthstone Lake Dam is a nearly 100-foot-tall, high hazard, zoned earthen embankment that was found to have issues with filter compatibility and internal instability of multiple embankment zones. Conducted extensive subsurface investigation including sonic drilling and field bulk gradation testing to characterize embankment fill containing oversize particles. Through this effort, Schnabel was able to show that the existing embankment zones generally met NRCS filter compatibility criteria, resulting in over $2 million of savings to the sponsors. Designed a robust toe drain system to replace the existing rockfill toe and provide an adequate filter for the embankment and foundation soils. The design included additional dam safety improvements such as upgrading the principal spillway riser to meet seismic stability requirements, modifying the existing auxiliary spillway to improve hydraulic performance during the design storm, and other various operation and maintenance-related improvements. The project received the 2022 VLWA Rehabilitation Project of the Year award.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| Susan (Sue) Buchanan, LG, PG | Project Geologist | 16 | 15 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Greensboro, NC**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| MS / Geology<br>BS / Geology | **VA – Professional Geologist** |

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

**19. RELEVANT PROJECTS**

**a.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Project Geologist. Responsible for logging soil and rock borings; sample collection and laboratory assignments; coordination of subcontractors and in situ field testing; and assisting project managers with invoicing, writing the geotechnical data report, and review of field logs and data.

**b.**

(1) TITLE AND LOCATION *(City and State)*: **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Senior Staff Geologist. Responsible for logging soil and rock borings; sample collection; packer permeability tests; well construction and development; and assisting project managers with invoicing, writing the geotechnical data report, drilling budget management, and review of field logs and data. Responsible for rock foundation mapping of outlet works conduit and core trench areas, followed by preparing geology maps in ArcGIS, photo documentation, and completing a geology technical memo. Project Geologist. Responsible for engineering geologic mapping, construction of digital geology maps, memo report, and assisting with rock core drilling within grout curtain to verify weathered rock versus competent rock depth.

**c.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Cherrystone Creek Dams 1 and 2A / Chatham, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

Senior Staff Geologist. Responsible for logging soil and rock borings; sample collection and laboratory assignments; assisting with headcut erodibility indices calculations; and assisting project managers with invoicing, writing the geotechnical data report, and review of field logs and data.

**d.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Red Lick Site #1 Dam Feasibility Study and Supplemental Watershed Plan / Berea, KY**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

Senior Staff Geologist. Responsible for geotechnical subsurface investigation that included soil and rock logging, sample collection, packer permeability tests, drilling and laboratory budgets, and report writing.

**e.**

(1) TITLE AND LOCATION *(City and State)*: **Consumers Energy Hardy Dam Auxiliary Spillway / Newaygo County, MI**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

Senior Staff Geologist/Project Geologist. Responsible for quality assurance, data monitoring, and development of evaluation spreadsheets of vibrating wire piezometers beneath the tailrace slab. Responsible for planning, writing task orders, completion of subconsultant agreements and roadway permit, and coordinating with five subconsultants for a drilling program with a short fieldwork timeframe. Fieldwork included layout of 60 CPT soundings and 10 soil borings through the dam and spillway crest, organization of drill rigs, traffic control, and construction support staff, logging soil and photo documentation, and report writing. Responsible for coordination of subcontractors, logging soil, assistance with evaluation of CPT logs, and report preparation of the subsurface investigation. Assisted project managers and lead geologists with preparing and completing a FERC-required Drilling Program Plan for the 2020, 2021, and 2022 subsurface investigations. Responsible for leading field effort, daily field reporting, installation of vibrating wire piezometers, and assisting with report completion of the subsurface investigations.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| Jack Gergel | Structural Engineer | 5 | 3 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Chadds Ford, PA**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| MS / Civil Engineering<br>BS / Civil Engineering | |

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

**19. RELEVANT PROJECTS**

**a.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Planned

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

Senior Staff Engineer. As part of a joint venture with Aterra Solutions, Schnabel developed the rehabilitation design for Brush Creek Sites 14 and 15 Dams in Bluefield, West Virginia. The dams are both multiple-purpose flood control, recreation, and municipal water supply dams designed by the NRCS. For Site 14, Jack completed structural design of a new reinforced concrete riser structure. This included designing the walls, foundation, and cover slab to resist both static and seismic loads. He also developed the structural details for the new riser, which included detailing all reinforcing steel and creating a steel schedule per NRCS guidelines. For Site 15, Jack performed the structural design of a tailwater weir wall at the downstream end of a new RCC auxiliary spillway. He designed the wall and associated footing for both stability and strength while considering loads generated by flow in the spillway during the probable maximum flood. The design also included design of steel dowels embedded in RCC to increase sliding resistance of the wall. Jack completed all drawings and steel reinforcement detailing for the walls, as well as a detailed structural calculation package.

**b.**

(1) TITLE AND LOCATION *(City and State)*: **Round Valley Reservoir Construction Phase Services / Clinton, NJ**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Senior Staff Engineer. Schnabel provided both design and construction phase services for the rehabilitation of three earthen embankment dams impounding the Round Valley Reservoir in Clinton, NJ. The three dams were constructed in the early 1960s and have had a history of seepage and stability issues. Schnabel designed upgrades to the existing drainage systems and to improve dam stability. As part of a two-month field assignment, Jack observed construction activities on the dams each day to ensure compliance with the project specifications and design intent. While on site, construction activities included excavation of the existing embankment fill, excavation of the existing blanket drain, placement of a new chimney drain and abutment drainage system, earth fill placement, and dewatering well abandonment. Jack created daily site observation reports to document the construction activities and to assist with the official daily field report prepared by the resident project representative.

**c.**

(1) TITLE AND LOCATION *(City and State)*: **Lake Louisa Dam Spillway Replacement / Louisa, VA**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Senior Staff Engineer. Lake Louisa Dam is an earthen embankment dam with a concrete auxiliary spillway and a pipe and riser principal spillway. The dam impounds Lake Louisa and is owned and operated by the Blue Ridge Property Association. As part of a dam rehabilitation design, Jack completed the structural design for a reinforced concrete replacement auxiliary spillway. He designed the chute and stilling basin slabs to resist uplift, and designed the spillway wall footings and reinforcement. Jack put together a comprehensive calc package detailing the structural calculations for the new spillway, and performed all of the drafting for the structural sheets. The auxiliary spillway included a broad-crested weir integral with a concrete roadway slab which contained advanced geometry and required many different structural details.

**d.**

(1) TITLE AND LOCATION *(City and State)*: **Lake Purdy Dam Rehabilitation Design / Birmingham, AL**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Senior Staff Engineer. Lake Purdy Dam is a buttressed overflow concrete gravity dam faced with Ashlar masonry located near Birmingham, Alabama. Schnabel is providing engineering services for a rehabilitation of the dam to address dam safety deficiencies such as stability and foundation seepage. The main features of the rehabilitation design included a new RCC downstream buttress, new spillway training walls, new cast-in-place concrete weir, and stilling basin. Jack assisted with updating the design and associated drawings between the 90% and 100% design submissions. He drafted geometry and design changes to the left and right training walls, including generating a profile and section views of the walls. Jack also checked the structural calculations for the walls and the uplift calculations for the stilling basin. He further assisted with the structural design of the rock dowels.

# E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person)

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. YEARS EXPERIENCE | |
|---|---|---|---|
| | | a. TOTAL | b. WITH CURRENT FIRM |
| **Jason Stiteler** | Construction Oversight | 7 | 7 |

**15. FIRM NAME AND LOCATION** *(City and State)*

**Schnabel Engineering, LLC / Alpharetta, GA (Lives in Central VA)**

| 16. EDUCATION *(Degree and Specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)* |
|---|---|
| Associates / Culinary Arts and Applied Science | |

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

**19. RELEVANT PROJECTS**

**a.**

(1) TITLE AND LOCATION *(City and State)*: **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION (If applicable): Ongoing

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

Technical Lead/Resident Project Representative. Responsible for technician oversite, quality control, construction observations of earthen embankments, drain installations and instrumentation of the new construction for this 160-foot zoned earthen Category 1 embankment.

**b.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Upper North River Site No. 77, Hearthstone Lake Dam / Augusta County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2020; CONSTRUCTION (If applicable): 2020

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

Resident Project Representative. Responsible for quality control, construction observations, and review of monthly payment application and pay quantities. Observations included observation of mass excavation of embankment slope, embankment fill, and toe drain fill installation for the rehabilitation of the existing 100-foot earthen Category 1 embankment.

**c.**

(1) TITLE AND LOCATION *(City and State)*: **NRCS Mountain Run Dams No. 50 and No. 11 / Culpeper, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2019; CONSTRUCTION (If applicable): 2019

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

Resident Project Representative. Responsible for quality control, construction observations, and review of monthly payment application and pay quantities. For Lake Pelham Dam (No. 50), construction observations included observation of embankment fill, reinforcing steel, drain fill installation, concrete placement, new gate installation, and new labyrinth spillway and chute construction. For Mountain Run Lake Dam (No. 11), construction observations included observation of embankment fill, reinforcing steel, drain fill installation, concrete placement, new gate installation, and new labyrinth spillway and chute construction.

**d.**

(1) TITLE AND LOCATION *(City and State)*: **Virginia DCR Stony Creek Dams, Nos. 9 and 10 Rehabilitations (Lake Laura and Lake Bird Haven) / Shenandoah County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2017; CONSTRUCTION (If applicable): 2017

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

Technician. Responsible for quality assurance and construction observations. For No. 9, construction observations included observation of embankment fill, reinforcing steel, drain fill installation, concrete placement, and RCC installation. For No. 10, construction observation of concrete, observation of reinforcing steel, drain fill installation, observation of embankment fill, and construction of an ogee crested weir and chute spillway.

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
1

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV** | Ongoing | Planned |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| USDA-NRCS West Virginia | Andy Deichert, PE | 304-284-7563 |

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

As a member of the Aterra-Schnabel JV and under a regional IDIQ contract with NRCS, Schnabel is the lead firm responsible for developing rehabilitation designs to bring these dams into compliance with NRCS and WVDEP dam safety criteria. Supplemental watershed Plan-EAs were completed for each dam by a previous consultant and NRCS.

**SERVICES**

Aerial Photography

Geophysical Investigation

Geotechnical Investigation and Evaluation

Seismic Structural Analysis

Rehabilitation Design

**Brush Creek Site No. 14** is multiple-purpose flood control and recreation dam constructed by the NRCS in 1966. The dam and its appurtenances consist of a zoned earthfill embankment with a maximum height of 75 feet. The dam has two spillways: a single-stage principal spillway and a vegetated open channel auxiliary spillway. The current rehabilitation design consists of the installation of a new toe drain, and installation of a roller compacted concrete (RCC) cutoff wall in the auxiliary spillway channel.

**Brush Creek Site No. 15** in series with and downstream of Site No. 14, is a multiple-purpose flood control and municipal water supply dam constructed by the NRCS in 1964. The dam and its appurtenances consist of a 692-foot-long zoned earthfill embankment with a maximum height of 41.8 feet. The dam has two spillways: a purpose-specific but outdated principal spillway, and a vegetated open channel auxiliary spillway. The current rehabilitation design consists of the installation of a new toe drain and the installation of a stepped RCC chute in the auxiliary spillway channel.

Brush Creek Site No. 14

Brush Creek Site No. 15

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Joint Venture |
| b. | Schnabel Engineering, LLC | Chadds Ford, PA | Joint Venture |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
**2**

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **NRCS Pohick Creek Watershed 8 (Huntsman Lake) Dam Rehabilitation / Fairfax County, VA** | 2014 | 2014 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| Fairfax County, Department of Public Works and Environmental Services | Dipmani Kumar, PE | 703-324-5500 |

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

The dam forming Huntsman Lake, known as Pohick Creek Watershed Dam No. 8, was constructed in 1973 by the Soil Conservation Service (now NRCS) and is owned by Fairfax County. The 42 ft high dam did not meet NRCS or Commonwealth of Virginia dam safety requirements for the integrity of the auxiliary spillway. In addition, the principal spillway riser did not meet NRCS seismic stability criteria.

Schnabel performed a subsurface exploration; hydrologic and hydraulic analyses, including stability and integrity analyses using SITES and HEC-RAS; and an evaluation of alternatives to bring the dam into regulatory compliance. These analyses were used by NRCS to develop the Supplemental Watershed Plan and Environmental Assessment for the dam. The selected alternative consisted of armoring the auxiliary spillway with articulating concrete blocks and constructing a replacement principal spillway riser structure.

Schnabel developed rehabilitation plans and specifications and provided permitting support to the County. Existing NRCS standard riser drawings were modified to meet then current NRCS seismic criteria, TR68 (based on dated Earthquake Zone Maps) and checked against proposed NRCS seismic criteria, NEH636-70 draft (based on ASCE 7-05 methodology). These two criteria documents satisfied then current State Building Code and Virginia dam safety requirements. An Alteration Permit was issued by VA DCR authorizing construction. Schnabel provided bid and construction phase services, including full time construction observation, including quality assurance testing, and contract administration support. Construction was completed in September 2014.

*The project received the 2016 "Most Improved Dam" award from the Virginia Lakes and Watersheds Association Dam Safety Committee*

**SERVICES**

Construction Management

Project Design

Planning of Conservation Measures

Spillway Stability & Integrity

SITES & HEC-RAS

Geotechnical Investigation

ACB Armoring

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |
| b. | Schnabel Engineering, LLC | Chadds Ford, PA | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
3

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **Cobbs Creek Regional Water Supply Reservoir / Columbia, VA** | Ongoing | Ongoing |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| County of Henrico | Paul Peterson, Principal Engineer (Arcadis) | 757-873-4347 |

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

In 2011, Schnabel commenced work on the new $280 million Cobbs Creek Regional Water Supply Reservoir, located on 1,800 acres in Cumberland County. In planning by owner Henrico County since 2002, the regional water supply project – with a 14.8 billion gallon raw water storage capacity within a 1,100-acre normal pool – is intended to meet customer needs for the next 50 years. Raw water will be pumped to the reservoir from the James River when river flows are adequate, and controlled releases from the reservoir will be made when the flows in the James River are inadequate to support regional demands. Water is then captured 50 miles east in Henrico County from the James River – i.e., the river becomes the water conveyance.

Schnabel provided full design services for the 160-foot-high, 3,850-foot-long primary embankment dam; a 30-foot-high, 800-foot-long saddle dam; and associated spillway, outlet works, and maintenance vehicle access bridges. Schnabel is providing full-time construction quality assurance testing and observation for the dams and associated seepage barriers (slurry walls and grout curtains).

Our services also include geotechnical engineering to support the design of the river intake, pump station, and transfer pipeline; bid support; and monitoring and inspections of the dam during the first filling of the reservoir.

**SERVICES**

Borrow Study
Construction Phase Engineering
Dam Engineering
Excavation Design Support
Geological Investigation
Geophysical Site Investigation
Geostructural Engineering
Geotechnical Engineering
Geotechnical Investigation
Hydraulic Engineering
Materials Testing
Numerical Analysis
Structural Engineering

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Subconsultant |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
4

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **NRCS Upper North River Site No. 77, Hearthstone Lake Dam Rehabilitation / Augusta County, VA** | 2020 | 2020 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| County of Augusta, VA | Jennifer Whetzel | 540-245-5610 |

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

As part of the NRCS Watershed Dam Rehabilitation Program, VA NRCS developed a 95% Design to upgrade Hearthstone Lake Dam, a high hazard potential embankment dam, to meet NRCS and Virginia DCR Dam Safety criteria. VA NRCS determined that the dam and spillway system met NRCS and Virginia DCR Dam Safety criteria for spillway capacity, integrity, and stability. However, several additional improvements were required to satisfy NRCS and Virginia DCR Dam Safety criteria, including the installation of slab extensions at the base of the riser structure to increase seismic stability, and to address other operational and maintenance issues. During a review of the NRCS design in November 2016, the NRCS National Design, Construction & Soil Mechanics Center (NDCSMC) identified potential issues with filter compatibility between and internal instability of multiple embankment zones, raising concerns about possible internal erosion failure modes. Based on the results of their filter compatibility evaluation, the NDCSMC recommended that a full-height chimney filter drain system be installed to collect seepage and mitigate the potential progression of internal erosion. However, VA NRCS did not have the capacity to further evaluate the filter compatibility of the various embankment zones and design the proposed modifications. Schnabel was selected to provide these services.

**SERVICES**

NRCS-Assisted Dam

Auxiliary Spillway Improvements

Bid and Construction Services

Embankment Seepage Controls and Modifications

Geotechnical Analyses

Hydrologic and Hydraulic Analysis

Permitting

Plans and Specifications

Riser Seismic Stability Analysis

SITES Analysis

Subsurface Investigation

Schnabel performed an extensive subsurface investigation to characterize the nearly 100-foot-tall zoned earth embankment to analyze the filter compatibility between adjacent zones. Sonic drilling techniques, large test pits, and field gradation testing of 2,000-lb bulk samples were required to adequately characterize the oversize materials in the embankment. Through this effort, Schnabel was able to demonstrate that the existing embankment zones generally met NRCS filter compatibility criteria, resulting in over $2 million of savings to the Project Sponsors. Instead of a full height chimney drain, Schnabel developed a rehabilitation design to replace the rockfill toe with a graded filter toe drain installed into rock to control seepage through the foundation. Construction of the proposed improvements began in late 2018, and Schnabel provided full-time contract administration and construction resident engineering oversight services until completion in May 2020.

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
5

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **Virginia DCR Stony Creek Dams, Nos. 9 and 10 Rehabilitations (Lake Laura and Lake Bird Haven) / Shenandoah County, VA** | 2017 | 2017 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| Virginia Department of Conservation and Recreation (VA-DCR) | Kelly McClary | 804-225-2738 |

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

Lake Laura and Bird Haven Lake dams (Stony Creek Dams Nos. 9 and 10, respectively) are earth-fill dams constructed by the USDA's Natural Resources Conservation Service (NRCS) in the early 1970s for flood control. They were designed as low hazard structures but were later re-classified as high-hazard due to downstream development. In 2010, the VA DCR determined that the dams did not meet current Virginia Dam Safety requirements, nor were they compliant with NRCS hydraulic capacity requirements or spillway stability and integrity criteria. VA DCR engaged Schnabel to provide up to three rehabilitation design options for each site based on geotechnical exploration of the dams and their auxiliary spillways. The preferred solution for Lake Laura consisted of a RCC spillway over the embankment and closure of the original auxiliary spillway. Incorporating construction efficiencies and cost savings, the new design also increased flood storage and limited the frequency of activation of the replacement spillway. The replacement spillway for Bird Haven Lake was designed with an ogee weir, which not only improved hydraulic efficiency but cut excavation-related costs and eliminated potential easement issues by fitting within the footprint of the existing spillway. The design also addressed stability and integrity issues through modification of the exit channel width, shape and alignment for more advantageous uniform flow patterns that exceed the criteria established by NRCS.

**SERVICES**

Alternatives Analysis
Auxiliary Spillway Rehabilitation
Construction Cost Estimate
Construction Administration and Oversight
Dam Hazard Classification
Dam Breach Analysis
Dam Inspections
Emergency Action Plan
Hydrologic & Hydraulic Analysis
Geotechnical Exploration
Operation and Maintenance Plan
Rehabilitation Design
Roller Compacted Concrete

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
6

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **NRCS Mountain Run Sites 11 and 50 Rehabilitations / Culpeper, VA** | 2019 | 2019 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| Town of Culpeper | Jim Hoy | 540-829-8280 |

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

Mountain Run Watershed Dams No. 11 and No. 50 are NRCS multi-purpose structures, providing flood control and water supply for Culpeper, Virginia. Prior to the recently completed rehabilitation measures, neither dam met state nor NRCS dam safety criteria for high hazard dams.

The deficiencies included inadequate spillway and storage capacity to pass the probable maximum flood; auxiliary spillways that did not meet NRCS stability and integrity criteria; and the principal spillway riser for Mountain Run No. 11 that did not meet seismic stability criteria. Schnabel completed a preliminary engineering and planning study for the dams to assess their condition. Each study comprised data review, hydraulic and hydrologic engineering analyses, geological and geotechnical evaluation, seismic stability analyses of the principal spillway risers, and development of rehabilitation alternatives. We used the NRCS SITES computer program to evaluate the dams and spillways, and to develop rehabilitation alternatives.

The alternatives were developed in accordance with Virginia and NRCS dam safety criteria. Final design for spillway and embankment improvements required additional geotechnical, hydraulic, hydrologic, and structural analyses. Our design solutions for each dam received VA DCR and NRCS approval. Following design, we provided bid and construction phase services.

Because both dams are located in areas with public access and include surrounding parks, residential areas, and a golf course, we also supported the town and NRCS in addressing stakeholder concerns. The selected alternatives for both dams repurpose the existing earthen auxiliary spillways into public use space. Construction was completed in December 2018 for Dam No. 50 and May 2019 for Dam No. 11.

**SERVICES**

Bid and Construction Services

Dam Design

Geotechnical Engineering

Hydrologic and Hydraulic Analyses

Permitting

Plans and Specifications

Reinforced Concrete Structural Design

Seismic Stability Analyses

SITES Analysis

Spillway Capacity Upgrades

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
7

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **Bullock Pen Lake Dam Rehabilitation / Crittenden, KY** | 2021 | 2021 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| Commonwealth of Kentucky | Glen Alexander, PE (Kentucky Division of Water) | 502-782-6874 |

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

**SERVICES**

Bidding and Construction Services

Geotechnical Evaluations

Hydrology and Hydraulics Analyses

Permitting

Rehabilitation Alternatives Analysis

Rehabilitation Design

Subsurface Investigation

Structural Modifications

Bullock Pen Lake Dam is located on the county line that separates Grant County and Boone County near the Town of Crittenden, Kentucky. The dam was constructed on Bullock Pen Creek in 1953 for the Kentucky Department of Fish and Wildlife Resources. The dam is classified as a Class C, high hazard potential dam and could previously only pass approximately 24% of the probable maximum precipitation (PMP) without overtopping the dam embankment. Within a few years of construction completion, erosion of the excavated rock spillway was observed, and the erosion progressed to the point where a spillway breach and loss of the reservoir was a significant concern. As a result of these deficiencies, the Commonwealth of Kentucky ranked this project the first priority for rehabilitation among all state-owned dams.

Schnabel was selected to assess the condition of the dam and spillway, including development of a subsurface investigation plan and development of alternatives for increasing spillway capacity and addressing the condition of the existing rock cut spillway. Following the alternatives analysis, Schnabel designed the selected alternative and obtained the necessary permits required for construction. Both the alternatives analysis and design processes required extensive coordination with multiple stakeholders, including multiple state agencies, the USACE, the local water supply district, and local landowners.

The modifications to the Bullock Pen Lake Dam included the construction of a 12½-cycle, 260-foot-wide, reinforced concrete labyrinth spillway over the dam embankment, including a reinforced concrete stepped chute and stilling basin. This passive labyrinth spillway system was sized to pass the PMP without overtopping the dam, while also being designed to minimize changes to upstream and downstream flooding. Other modifications included leveling the top of dam, grouting the rock foundation in the existing spillway, closure of the existing spillway, abandonment of the existing reservoir drain, installation of a permanent siphon to serve as the new reservoir drain, and various other site improvements to enhance the Commonwealth's ability to operate and maintain the dam.

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
8

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **NRCS Fox Creek Watershed Multi-Purpose Structure No. 4 Dam / Fleming County, KY** | 2012 | 2012 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| Natural Resources Conservation Service / Fox Creek Watershed Conservancy District | Alan Goble, PE | 859-224-7437 |

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

Fox Creek Watershed Multipurpose Structure No. 4 dam was originally constructed in 1968 for flood control and recreational use. The dam was designed as a significant (Class B) hazard structure. In 1979, it was documented that the structure was misclassified during the planning and design phase and should have been a high (Class C) hazard structure.

Schnabel completed dam break and alternatives analysis to confirm the hazard classification and to develop alternatives to address the inadequate capacity of the structure. In 2010, Schnabel was contracted to design a roller compacted concrete spillway through the dam to meet the current hazard classification. The spillway is 300 feet wide and includes an ogee crest to efficiently pass the design storm. The spillway walls, end sill, cutoff walls, and ogee crest are reinforced concrete. The dam rehabilitation was funded by the American Recovery and Reinvestment Act and had an abbreviated timetable.

The rehabilitation design from site investigation through final approval from both NRCS and Kentucky Division of Water was completed within nine months.

Construction began in January 2011 with an estimated construction schedule of 14 months. During the first nine months of construction, the project site received in excess of 90 inches of rainfall. Schnabel's Resident Project Representative worked closely with the contractor to ensure protection of the construction works and dam during this time period.

**SERVICES**

Alternatives Analysis

Bid Document Preparation

Construction Services

Dam Break Analysis

Emergency Action Plan

RCC Spillway Design


**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
9

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **North Fork Dam / Asheville, NC** | 2021 | 2021 |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| City of Asheville | Bill Hart | 828-271-6103 |

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

The North Fork Reservoir and water treatment plant provide 70 percent of Asheville's municipal water supply. The dam was constructed in 1955, and its design was based on available information and industry standards for that time. Best practices for modeling and simulating certain conditions have greatly improved, and Schnabel has been working with the city since 1996 to perform dam safety inspections and identify improvements to help protect the reservoir, the water source, and nearby residents in the event of a major storm event.

In 2015, evaluations and alternatives analyses for a new spillway system began. The final shortlist of upgrade alternatives consisted of a large labyrinth spillway or fusegates. Fusegates were selected as the most effective solution for this specific project, as this system resulted in less environmental impact on the site due to its much smaller footprint along with more than $5M in savings to the City. Duration of construction was also reduced, which was appreciated by the surrounding community. In addition to the new spillway system, other improvements included:

- Additional flood protection by raising the crest of the dam.
- Construction of seismic stability berms on the main dam and saddle dam embankments with excavated materials.
- Seepage collection and instrumentation monitoring system for the auxiliary spillway, main dam, and saddle dam.
- Replacement of three deficient steel radial gates on the principal spillway with two concrete gravity weirs and one Obermeyer gate and overlay of the principal spillway concrete chute.
- Upgrades to access roads and bridges.
- Refurbishment of the intake tower including interior coatings, valve stem replacement, flood protection doors, and safety platforms, ladders, and railings.

**SERVICES**

Annual Inspections
Bid Phase and Construction Services
Dam and Spillway Design
Emergency Action Plan and Tabletop Exercise
Gate Inspections and Operations
Hydrologic & Hydraulic Modeling and Analysis
Instrumentation Monitoring
Permitting
Risk Assessment
Seismic Stability Analyses
Structural Modeling and Evaluations
Subsurface Investigations & Analysis

During construction, Schnabel provided a full-time Resident Project Representative, contract administration, and on-site quality assurance testing. Throughout the 2+ years of construction, the control of water plan was updated to reduce risk to the City as different parts of the dam system were rehabilitated. Due to the critical nature of control of water during construction, Schnabel provided detailed modeling to support the City's water supply decisions and needs during construction and provided 24/7 on-call services during storm events throughout the construction period.

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Greensboro, NC | Prime |

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

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

**20. EXAMPLE PROJECT KEY NUMBER**
**10**

| 21. TITLE AND LOCATION *(City and State)* | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If applicable)* |
| **NRCS Conneautville Dam / Chester County, PA** | 2015 | Ongoing |

**23. PROJECT OWNER'S INFORMATION**

| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
|---|---|---|
| USDA Natural Resources Conservation Service | Don Murray | 570-417-2433 |

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

Conneautville Dam was designed and constructed by the Soil Conservation Service (now NRCS) to provide flood protection primarily to the Borough of Conneautville. An evaluation performed in 2005 by a previous consultant concluded that dispersive soils were present, and these soils were used to construct the embankment. In addition, the computed factors of safety for slope stability did not meet NRCS criteria. A Watershed Project Plan-Environmental Evaluation, prepared in 2012 by another consultant, identified additional needs. As a member of the GSFW JV, Schnabel developed a rehabilitation design to meet or exceed NRCS and PA state dam safety criteria, and to maintain or increase the current level of flood protection.

**SERVICES**

Auxiliary Spillway Analysis

Dam Rehabilitation Design

Geotechnical Investigation

Hydrologic and Hydraulic Design

Soils Laboratory Testing

Structural Condition Inspection

Wetland Permitting Services

The project included:

- Field surveys and site mapping.
- Wetland delineation and permitting services to authorize the proposed rehabilitation of the dam.
- Geotechnical investigation, laboratory testing and evaluation, including a seepage and slope stability of the existing embankment and functional analysis of the drainage system.
- Existing structural condition investigation. Performed field inspections of principal spillway riser, conduit, and embankment drain pipe. Provided recommendations for monitoring and measuring conduit joints and modifications to embankment drain outlets for future inspections.
- H&H Analysis: SITES used to analyze capacity, stability, and integrity of spillway. HEC-RAS 2D to confirm stability of proposed auxiliary spillway and to evaluate impacts of proposed auxiliary impact flows on embankment and impact basin.

Final design focused on lime treatment of surficial soils of embankment and auxiliary spillway; realignment of the auxiliary spillway; installation of a sheet pile wall along one side of spillway exit channel; extension of training dike on opposite side of exit channel; modifying embankment drain outlets; installation of a filter diaphragm around principal spillway conduit; and installation of a more robust trashrack on reservoir drain.

**25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT**

| | (1) FIRM NAME | (2) FIRM LOCATION *(City and State)* | (3) ROLE |
|---|---|---|---|
| a. | Schnabel Engineering, LLC | Chadds Ford, PA | Joint Venture |

## 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 (Fill in "Example Projects Key" section below, before completing table. Place "X" under project key number for project participation same or similar role.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Evan Binder, PE | Project Manager | X | X | X | | X | X | | | X | X |
| Carter Parsons | Assistant Project Manager / Contract Administrator | X | | | | | | | | X | |
| Jonathan Pittman, PE | Principal in Charge / Engineer of Record | X | | X | X | X | X | X | X | X | |
| Mathew Lyons, PE | Senior Reviewer | | | X | | | X | | | | |
| Corey Schaal, PE, PG | Geotechnical Engineer | X | | X | X | | | X | | X | |
| Susan (Sue) Buchanan, LG, PG | Geologist | X | | X | | | | X | | X | |
| Jack Gergel | Structural Engineer | X | | | | | | | | | |
| Jason Stiteler | Construction Oversight | | | | X | X | X | | | | |

**29. EXAMPLE PROJECT KEY**

| NO. | TITLE OF EXAMPLE PROJECT (FROM SECTION F) | No. | TITLE OF EXAMPLE PROJECT (FROM SECTION F) |
|---|---|---|---|
| 1. | NRCS Brush Creek Sites 14 and 15 Rehabilitation Design / Mercer County, WV | 6. | NRCS Mountain Run Sites 11 and 50 Rehabilitations / Culpeper, VA |
| 2. | NRCS Pohick Creek Watershed 8 (Huntsman Lake) Dam Rehabilitation | 7. | Bullock Pen Lake Dam Rehabilitation / Crittenden, KY |
| 3. | Cobbs Creek Regional Water Supply Reservoir / Columbia, VA | 8. | NRCS Fox Creek Watershed Multi-Purpose Structure No. 4 Dam / Fleming County, KY |
| 4. | NRCS Upper North River Site No. 77, Hearthstone Lake Dam Rehabilitation / Augusta County, VA | 9. | North Fork Dam / Asheville, NC |
| 5. | Virginia DCR Stony Creek Dams, Nos. 9 and 10 Rehabilitations (Lake Laura and Lake Bird Haven) / Shenandoah County, VA | 10. | NRCS Conneautville Dam / Chester County, PA |

## H. ADDITIONAL INFORMATION

**30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.**

### Qualifications, Experience, and Past Performance

Schnabel Engineering, LLC, an energetic and dynamic, 100% employee-owned company with roots dating back more than 68 years, provides professional engineering services within the United States (US) and abroad from 28 office and satellite locations across the US. Our 575+ employees offer highly specialized services in dams and levees, geotechnical engineering, geostructural design, tunnel and underground engineering, environmental and geophysical services, construction monitoring, laboratory and field QA/QC, and resident engineering services. Schnabel has 14 offices that are dedicated to dam engineering with more than 235 professionals dedicated exclusively to dam and dam-related projects. Since 1994, we have provided engineering assessment, design, and construction support services for more than 5,000 dam projects throughout the US. From concept through construction, all key disciplines are represented, including hydrology and hydraulics, engineering geology, geotechnical and civil engineering, structural analysis and design, mechanical engineering, bidding and procurement, and construction phase services. Dam engineering work is a corporate commitment and a critical part of our long-term strategy and business plan. Schnabel's commitment to the industry is exemplified by our involvement in professional societies and industry development initiatives. We are a corporate member of the Association of State Dam Safety Officials (ASDSO) and the US Society on Dams (USSD), the two preeminent dam and levee organizations in the US; our staff serve as Chairs and members of many committees within these organizations.

### West Virginia Experience

The Schnabel team has thorough knowledge of and significant experience in this general geographic location, having completed multiple planning, dam assessment, rehabilitation design, and/or construction projects and other subsurface engineering projects in West Virginia, Kentucky, Ohio, Pennsylvania, Virginia, and surrounding states over the last several years alone. This experience has led to extensive knowledge of local codes, regulations, climate, geology, geography, construction methods and costs, and changes in population centers and development, and includes the projects in the list below. Of note, Schnabel is part of the Aterra-Schnabel JV that are the design engineers for the Brush Creek Site 14 and 15 projects.

#### WV NRCS

- NRCS West Virginia Dam Assessments (59 Dams)
- Dam Rehabilitation Design, NRCS, Brush Creek Site 9, Mercer County, West Virginia
- Dam Rehabilitation Design, NRCS, Brush Creek Site 14, Mercer County, West Virginia
- Dam Rehabilitation Design, NRCS, Brush Creek Site 15, Mercer County, West Virginia

### NRCS Experience

In addition to our West Virginia dams experience, we have worked on over 400 NRCS and NRCS-assisted dams throughout the US. Through this experience and our ongoing work as a part of a Joint Venture team with NRCS contracts for the NE and SE regions of the US, our staff is very familiar with the NRCS organization, its goals, policies, and procedures. We have included a list below of some of our NRCS dam projects over the last five years. There is no substitute for this experience.

#### Aterra-Schnabel Joint Venture (Northeast and Southeast Region IDIQs Awarded in 2018)

- NRCS NE Massachusetts Rawson Hill Brook Dam Design
- NRCS NE West Virginia Brush Creek Sites 9, 14, and 15 Dam Rehabilitation
- NRCS NE West Virginia Blakes Creek-Armour Creek Site 7 Plan-ED
- NRCS SE Arkansas 52 High Hazard Dam Inspections
- NRCS SE Hurricane Damage Survey Reports
- NRCS SE Tennessee Pine Creek No. 4 Dam Rehabilitation
- NRCS SE Kentucky High Hazard Dam Assessments
- NRCS SE Kentucky Red Lick FRS No. 12 Dam Rehabilitation

#### GSFW Engineering Joint Venture

- NRCS Cherrystone Creek Dams 1 and 2A, Geotechnical Services, Virginia
- NRCS Conneautville Dam Rehabilitation, Pennsylvania
- NRCS Kintz Creek Dam Rehabilitation, Pennsylvania
- NRCS West Virginia Dam Assessments

#### USDA-NRCS (some work through local Sponsor(s))

- NRCS Upper North River 77 – Hearthstone Lake Dam Rehabiliation / Augusta County, VA
- NRCS South River 26 – Mid-Level Gate Installation and Riser Repairs / Augusta County, VA
- NRCS Red Lick MPS No. 1 Supplemental Watershed Plan and Env. Document and Dam Rehabilitation / Berea, KY

## H. ADDITIONAL INFORMATION

**30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.**

- NRCS Deep Creek Dam Assessments (9 Dams) and Principal Spillway Riser Design Improvements / Yadkin County, NC
- NRCS Deep Creek Dams 19A & 21 Supplemental Watershed Plan and Env. Document / Yadkin County, NC
- NRCS Crabtree Creek Dam Assessments (2 Dams) / Wake County, NC
- NRCS Ararat River Dams Principal Spillway Riser Repairs (5 Dams) / Henry County, VA

### Past Performance on Similar Projects and Record of Successfully Completed Projects

Schnabel is proud of our record of successful projects. We maintain a record of not having any legal or significant technical problems on our projects. Section F of the SF330 highlights our recent experience on projects similar, or with multiple similiar components, to the types of services requested in this Solicitation No. AGR25-01. Each of these projects was completed within the client's budget and on or ahead of schedule, some of which were very aggressive. We encourage you to contact the references listed.

### Project Team and Qualifications and Experience of our Project Manager

The dedication, integrity, and technical expertise of our employees is what sets Schnabel apart from other firms offering dam engineering services. As previously discussed, our engineering team for this contract will be led by Evan Binder, PE. Evan specializes in the evaluation and design of water resources projects, including 16 years of experience with earth dams, levees and embankments, and roller compacted concrete (RCC) dams and is currently the project manager for the design of Brush Creek Sites 14 and 15. Field experience includes construction oversight of grouting rehabilitations, observation and logging of test borings, and installation and monitoring of piezometers. He also has experience in hydraulic and hydrologic modeling of dams and reservoirs, embankment seepage and slope stability analyses, and cost estimating and design for dam rehabilitation projects. Evan has been a project manager on projects in West Virginia, Virginia, Maryland, North Carolina, and Pennsylvania.

Schnabel is planning to self-perform the materials testing, and will also rely on local, qualified firm for additional support as needed.

### Geographic Location and Responsiveness

At Schnabel, we pride ourselves on our responsiveness to our clients. Due to the nationwide scope of our dam engineering projects, responsiveness is crucial to our business success, ensuring we effectively serve clients across the United States. For this project, the majority of our services will be performed from our Greensboro, North Carolina office. We routinely travel to West Virginia for various projects and can be available for a face-to-face meeting or site visit within 24 hours, or sooner if necessary. We also routinely work with our geotechnical engineering offices strategically located across Virginia, including our headquarters in Glen Allen, and can call on them for additional support, as needed.

### CONSTRUCTION ADMINISTRATION CAPABILITIES

Our construction engineering work begins before construction bid documents are issued. We have experienced senior engineers that provide a thorough review of design documents throughout the design process. Their reviews ensure that the items of work provided as bidding documents are complete, biddable, and buildable.

Our construction phase engineering services will provide the WVCA with continued service by personnel familiar with the design. Continued involvement by our design engineers during construction is extremely important. We have found that this expedites responses to requests for information (RFIs) and submittals, as incomplete or late responses could affect project delivery or give the contractor the crutch needed for delay claims. Maintaining key design team members during construction is also critical to ensure the contractor meets the design intent. Specifically with dams, field decisions are commonly needed when excavating the foundation to modify the design to meet actual conditions. Having experienced construction staff with local support from our design engineers allows the Schnabel team to efficiently document that construction work is being performed in accordance with the design intent.

For these two projects specifically, Schnabel is uniquely qualified as we were the design engineers for the projects and have been involved with supporting the permitting efforts and coordinating the designs with NRCS and the Project Sponsors. As such, the coordination during construction with the involved parties (NRCS, WVCA, and local sponsors) will be a seamless transition from design to construction. In addition, as part of the design process Schnabel developed the framework for the Contractor plan submittals and has developed a preliminary construction schedule, so we are qualified to review and monitor the contractor's adherence to their proposed plans and schedule. During construction, we will review the construction contractor's pay estimates and coordinate submittal review responses in a timely manner. At the end of construction, we will provide As-Built drawings and Construction Reports, which will include daily logs, construction photographs, and relevant contractor reports.

## H. ADDITIONAL INFORMATION

**30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.**

We typically staff our dam construction projects with a Resident Project Representative (RPR) who has many years of experience with similar projects. The RPR will facilitate the identification of changed site conditions so that design modifications can be made in a timely and efficient manner, thus reducing construction delays and cost increases. The RPR is supported by the Engineer-of-Record and design engineers on a continuous basis, which allows us to provide the contractor with prompt responses to construction issues and results in less disruption to the project schedule. Our engineers are local and can be on site with short notice to address issues that may arise. During portions of the project, additional construction staff are available to support the RPR when multiple activities requiring observation are underway.

I. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts.

| 31. SIGNATURE | 32. DATE |
| --- | --- |
|  | September 10, 2024 |

33. NAME AND TITLE

Associate

# ARCHITECT – ENGINEER QUALIFICATIONS

**1. SOLICITATION NUMBER** (If any)
AGR25*01

## 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 |
|---|---|---|---|---|
| Schnabel Engineering, LLC (Greensboro Branch) | | | 2004 | CJEJPUDECQQ4 |
| **2b. STREET** 11-A Oak Branch Drive | | | **5. OWNERSHIP** **a. TYPE** Limited Liability Company | |
| **2c. CITY** Greensboro | **2d. STATE** NC | **2e. ZIP CODE** 27407 | **b. SMALL BUSINESS STATUS** | |

| 6a. POINT OF CONTACT NAME AND TITLE | | 7. NAME OF FIRM *(If block 2a is a branch office)* |
|---|---|---|
| Jonathan Pittman, PE, Principal | | Schnabel Engineering, LLC |
| **6b. TELEPHONE NUMBER** 336-274-9456 | **6c. E-MAIL ADDRESS** jpittman@schnabel-eng.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. No. of Employees (1) Firm | c. No. of Employees (2) Branch |
|---|---|---|---|
| 02 | Administrative | 87 | 2 |
| 08 | CADD Technician | 16 | 3 |
| 12 | Civil Engineer | 31 | 4 |
| 14 | Computer Programmer | 12 | 1 |
| 15 | Construction Inspectors | 71 | 3 |
| 16 | Construction Manager | 10 | 1 |
| | Cost Engineer/Estimator | 3 | |
| | Dam Engineer | 94 | 16 |
| 23 | Environmental Engineer | 9 | |
| 24 | Environmental Scientist | 9 | |
| 27 | Foundation/Geotech Engr | 101 | 4 |
| 29 | GIS Specialist | 2 | |
| 30 | Geologist | 33 | 10 |
| | Geophysicist | 5 | |
| 32 | Hydraulic Engineer | 14 | 2 |
| | Industrial Engineer | 1 | |
| 34 | Hydrologist/Hydrogeologist | 2 | |
| | Laboratory Technician | 3 | |
| 42 | Mechanical/ Engineer | 2 | |
| 43 | Mining Engineer | 3 | |
| 48 | Project Manager | 10 | |
| | Seismologist | 2 | |
| 57 | Structural Engineer | 13 | 3 |
| | Tunnel Engineer | 29 | |
| 62 | Water Resources Engineer | 11 | 1 |
| | Wetland Scientist | 2 | |
| **Total** | | 575 | 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) |
|---|---|---|
| 025 | Dams (Earth; Rock); Dikes; Levees | 9 |
| 024 | Dams (Concrete; Arch) | 8 |
| D805 | Dam Spillways | 7 |
| D804 | Dam Rehabilitation | 7 |
| 101 | Structural Design; Special Structures | 6 |
| D801 | Dam Inspection | 6 |
| H99 | Hydroelectric Power | 6 |
| D811 | NRCS | 5 |
| D995 | Dam Break/Dam Breach Analysis | 5 |
| P321 | Power Facilities | 3 |
| 097 | Soils & Geologic Studies; Foundations | 3 |
| R10 | Risk Analysis/Management | 3 |
| 033 | Environmental Impact Studies, Assessments | 3 |
| G300 | Geophysics | 3 |
| D803 | Dams Alternative Analysis | 3 |
| D809 | PFMA | 2 |
| D08 | Dredging Studies and Design | 2 |
| 115 | Reservoir Yield Studies | 1 |
| 092 | Rivers Canals; Waterways; Flood Control | 1 |
| 108 | Towers (Self-supporting & Guyed Systems) | 1 |
| 089 | Rehabilitation (Buildings; Structures; Facil | 1 |
| F306 | Fly Ash | 1 |
| I99 | Indefinite Delivery Contracts (IDC, IDIQ, On-Call) | 1 |
| 104 | Stormwater Handling & Facilities | 1 |
| D810 | Dam Safety | 1 |
| 032 | Energy Conservation; New Energy Sources | 1 |
| E11 | Environmental Planning | 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 | 9 |
| **c. Total Work** | 9 |

**PROFESSIONAL SERVICES REVENUE INDEX NUMBER**

| | | | |
|---|---|---|---|
| 1. | Less than $100,000 | 6. | $2 million to less than $5 million |
| 2. | $100,000 to less than $250,000 | 7. | $5 million to less than $10 million |
| 3. | $250,000 to less than $500,000 | 8. | $10 million to less than $25 million |
| 4. | $500,000 to less than $1 million | 9. | $25 million to less than $50 million |
| 5. | $1 million to less than $2 million | 10. | $50 million or greater |

**12. AUTHORIZED REPRESENTATIVE** The foregoing is a statement of facts.

| a. SIGNATURE | b. DATE |
|---|---|
| | February 14, 2024 |

**c. NAME AND TITLE**
Walter Rabe, PE, President/CEO

# ARCHITECT – ENGINEER QUALIFICATIONS

**1. SOLICITATION NUMBER** (If any) AGR25*01

## 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 |
|---|---|---|---|---|
| Schnabel Engineering, LLC (Chadds Ford Branch) | | | 2002 | LKC8P4SFM8J4 |
| **2b. STREET** | | | **5. OWNERSHIP** | |
| 3 Dickinson Drive, Suite 200 | | | **a. TYPE** Limited Liability Company | |
| **2c. CITY** | **2d. STATE** | **2e. ZIP CODE** | **b. SMALL BUSINESS STATUS** | |
| Chadds Ford | PA | 19317 | | |

| 6a. POINT OF CONTACT NAME AND TITLE | | 7. NAME OF FIRM *(If block 2a is a branch office)* |
|---|---|---|
| Sharon Krock, SPWS, Principal | | Schnabel Engineering, LLC |
| **6b. TELEPHONE NUMBER** | **6c. E-MAIL ADDRESS** | |
| 610-696-6066 | skrock@schnabel-eng.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. No. of Employees (1) Firm | c. No. of Employees (2) Branch |
|---|---|---|---|
| 02 | Administrative | 87 | 9 |
| 08 | CADD Technician | 16 | |
| 12 | Civil Engineer | 31 | |
| 14 | Computer Programmer | 12 | 2 |
| 15 | Construction Inspectors | 71 | 8 |
| 16 | Construction Manager | 10 | 1 |
| | Cost Engineer/Estimator | 3 | |
| | Dam Engineer | 94 | 15 |
| 23 | Environmental Engineer | 9 | |
| 24 | Environmental Scientist | 9 | |
| 27 | Foundation/Geotech Engr | 101 | 10 |
| 29 | GIS Specialist | 2 | 1 |
| 30 | Geologist | 33 | 1 |
| | Geophysicist | 5 | 3 |
| 32 | Hydraulic Engineer | 14 | |
| | Industrial Engineer | 1 | |
| 34 | Hydrologist/Hydrogeologist | 2 | |
| | Laboratory Technician | 3 | |
| 42 | Mechanical/ Engineer | 2 | |
| 43 | Mining Engineer | 3 | |
| 48 | Project Manager | 10 | |
| | Seismologist | 2 | |
| 57 | Structural Engineer | 13 | 1 |
| | Tunnel Engineer | 29 | 3 |
| 62 | Water Resources Engineer | 11 | |
| | Wetland Scientist | 2 | 2 |
| **Total** | | 575 | 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) |
|---|---|---|
| 025 | Dams (Earth; Rock); Dikes; Levees | 6 |
| D804 | Dam Rehabilitation | 6 |
| 011 | Bridges | 6 |
| 097 | Geostructural | 6 |
| 009 | Automation; Controls; Instrumentation (IMS) | 6 |
| 006 | Airports; Terminals; & Hangars; Freight Hand | 6 |
| D803 | Dams Alternative Analysis | 5 |
| D805 | Dam Spillways | 5 |
| 024 | Dams - Concrete | 5 |
| P321 | Power Facilities | 5 |
| T101 | Tunnel Inspection & Rehabilitation | 5 |
| I99 | Indefinite Delivery Contracts (IDC, IDIQ, On-Call) | 5 |
| 046 | Highways; Roads; Streets; Airfield Paving | 5 |
| W329 | Wetlands | 3 |
| G996 | Geotechnical Design | 3 |
| D801 | Dam Inspection | 3 |
| D995 | Dam Break/Dam Breach Analysis | 3 |
| 115 | Water Supply; Treatment and Distribution | 3 |
| 109 | Tunnels | 3 |
| 021 | Construction Management | 3 |
| 048 | Hospitals & Medical Facilities | 3 |
| G300 | Geophysics | 3 |
| 087 | Railroad and Rapid Transit | 3 |
| 054 | Industrial Waste Treatment | 2 |
| 092 | Rivers Canals; Waterways; Flood Control | 2 |
| 089 | Rehabilitation (Buildings; Structures; Facilities) | 2 |
| 096 | Sewage Collection, Treatment & Disposal | 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 | 8 |
| **c. Total Work** | 8 |

**PROFESSIONAL SERVICES REVENUE INDEX NUMBER**

| | | | |
|---|---|---|---|
| 1. | Less than $100,000 | 6. | $2 million to less than $5 million |
| 2. | $100,000 to less than $250,000 | 7. | $5 million to less than $10 million |
| 3. | $250,000 to less than $500,000 | 8. | $10 million to less than $25 million |
| 4. | $500,000 to less than $1 million | 9. | $25 million to less than $50 million |
| 5. | $1 million to less than $2 million | 10. | $50 million or greater |

**12. AUTHORIZED REPRESENTATIVE** The foregoing is a statement of facts.

| a. SIGNATURE | b. DATE |
|---|---|
| | February 14, 2024 |

**c. NAME AND TITLE**
Walter Rabe, PE, President/CEO

# Required Forms

**ADDENDUM ACKNOWLEDGEMENT FORM**
**SOLICITATION NO.:** CEOI AGR25*01

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**
(Check the box next to each addendum received)

| | | | |
|---|---|---|---|
| [ X ] | Addendum No. 1 | [ ] | Addendum No. 6 |
| [ ] | Addendum No. 2 | [ ] | Addendum No. 7 |
| [ ] | Addendum No. 3 | [ ] | Addendum No. 8 |
| [ ] | Addendum No. 4 | [ ] | Addendum No. 9 |
| [ ] | Addendum No. 5 | [ ] | Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Schnabel Engineering, LLC
Company

Authorized Signature

September 10, 2024
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

# Title 2 —Grants and Agreements
## Subtitle A —Office of Management and Budget Guidance for Grants and Agreements
## Chapter II —Office of Management and Budget Guidance
## Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
## Subpart D —Post Federal Award Requirements
## Procurement Standards

**Source:** 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
**Authority:** 31 U.S.C. 503
**Source:** 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

### § 200.317 Procurements by states.

When procuring property and services under a Federal award, a State must follow the same policies and procedures it uses for procurements from its non-Federal funds. The State will comply with §§ 200.321, 200.322, and 200.323 and ensure that every purchase order or other contract includes any clauses required by § 200.327. All other non-Federal entities, including subrecipients of a State, must follow the procurement standards in §§ 200.318 through 200.327.

# Title 2 —Grants and Agreements
## Subtitle A —Office of Management and Budget Guidance for Grants and Agreements
## Chapter II —Office of Management and Budget Guidance
## Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
## Subpart D —Post Federal Award Requirements
## Procurement Standards

**Source:** 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
**Authority:** 31 U.S.C. 503
**Source:** 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

## § 200.321 Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms.

(a) The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

(b) Affirmative steps must include:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

(4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;

(5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and

(6) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (b)(1) through (5) of this section.

# Title 2 —Grants and Agreements
## Subtitle A —Office of Management and Budget Guidance for Grants and Agreements
## Chapter II —Office of Management and Budget Guidance
## Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
## Subpart D —Post Federal Award Requirements
## Procurement Standards

**Source:** 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
**Authority:** 31 U.S.C. 503
**Source:** 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

## § 200.322 Domestic preferences for procurements.

(a) As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.

(b) For purposes of this section:

(1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

(c) Federal agencies providing Federal financial assistance for infrastructure projects must implement the Buy America preferences set forth in 2 CFR part 184.

*[85 FR 49543, Aug. 13, 2020, as amended at 88 FR 57790, Aug. 23, 2023]*

# Title 2 —Grants and Agreements
## Subtitle A —Office of Management and Budget Guidance for Grants and Agreements
## Chapter II —Office of Management and Budget Guidance
## Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
## Subpart D —Post Federal Award Requirements
## Procurement Standards

**Source:** 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
**Authority:** 31 U.S.C. 503
**Source:** 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

## § 200.323 Procurement of recovered materials.

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

# Title 2 —Grants and Agreements

## Subtitle A —Office of Management and Budget Guidance for Grants and Agreements

## Chapter II —Office of Management and Budget Guidance

## Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

## Subpart D —Post Federal Award Requirements

## Procurement Standards

**Source:** 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
**Authority:** 31 U.S.C. 503
**Source:** 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

## § 200.327 Contract provisions.

The non-Federal entity's contracts must contain the applicable provisions described in appendix II to this part.

# Title 2 —Grants and Agreements
## Subtitle A —Office of Management and Budget Guidance for Grants and Agreements
## Chapter II —Office of Management and Budget Guidance
## Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

**Source:** 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
**Source:** 85 FR 49539, Aug. 13, 2020, unless otherwise noted.
**Authority:** 31 U.S.C. 503
**Source:** 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

## Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

(A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part

3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any

other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

*[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]*

# Terms and Conditions

# EXPRESSION OF INTEREST

Dam Rehabilitation – Construction Oversight

CEOI AGR25*01

**SECTION FIVE: TERMS AND CONDITIONS**

Terms and conditions begin on the next page.

## GENERAL TERMS AND CONDITIONS:

**1. CONTRACTUAL AGREEMENT:** Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

**2. DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

**2.1. "Agency"** or **"Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

**2.2. "Bid"** or **"Proposal"** means the vendors submitted response to this solicitation.

**2.3. "Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

**2.4. "Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

**2.5. "Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

**2.6. "Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

**2.7. "Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

**2.8. "State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

**2.9. "Vendor"** or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

**3. CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☐ **Term Contract**

**Initial Contract Term:** The Initial Contract Term will be for a period of _____ _____. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Delivery Order Limitations:** In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☐ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:

☐ the contract will continue for _____ years;

☐ the contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

☐ **One-Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☑ **Construction/Project Oversight:** This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and continues until the project for which the vendor is providing oversight is complete.

☐ **Other:** Contract Term specified in _____

**4. AUTHORITY TO PROCEED:** Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

**5. QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☐ **Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☑ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☐ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One-Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

☐ **Construction:** This Contract is for construction activity more fully defined in the specifications.

**6. EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

**7. REQUIRED DOCUMENTS:** All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

☐

☐

☐

☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

**8. INSURANCE:** The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. ~~Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers.~~ The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

☑ **Commercial General Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☑ **Automobile Liability Insurance** in at least an amount of: $1,000,000.00 Combined single limit~~per occurrence~~.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

☐

☐
[ ]

☐
[ ]

☐

**9. WORKERS' COMPENSATION INSURANCE:** Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

**10. VENUE:** All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

**11. LIQUIDATED DAMAGES:** This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____.

☐ Liquidated Damages Contained in the Specifications.

☐ Liquidated Damages Are Not Included in this Contract.

**12. ACCEPTANCE:** Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

**13. PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

**14. PAYMENT IN ARREARS:** Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

**15. PAYMENT METHODS:** Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

**16. TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

**17. ADDITIONAL FEES:** Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

**18. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

**19. CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

**20. TIME:** Time is of the essence regarding all matters of time and performance in this Contract.

**21. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

**22. COMPLIANCE WITH LAWS:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

> **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**23. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

**24. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

**25. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

**26. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

**27. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

**28. REPRESENTATION~~WARRANTY~~:** The Vendor represents ~~expressly warrants~~ that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; ~~(b) be merchantable and fit for the purpose intended;~~ and (b~~e~~) be performed consistent with the level of skill and care ordinarily exercised by members of the its profession currently practicing in the same or similar locality under similar conditions at the time the services are performed (the "Standard of Care") ~~free from defect in material and workmanship~~.

**29. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

**30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in www.state.wv.us/admin/purchase/privacy.

**31. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**32. LICENSING:** In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**33. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

**34. VENDOR NON-CONFLICT:** Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

**35. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

**36. INDEMNIFICATION:** The Vendor agrees to indemnify~~, defend,~~ and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract to the extent caused by Vendor's negligent acts or omissions; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

**37. NO DEBT CERTIFICATION:** In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

**38. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

**39. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☐ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

**40. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

**41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.

b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.

c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

    1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars ($2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or

    2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

**42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars ($50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

**43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE:** W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least $1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

**44. PROHIBITION AGAINST USED OR REFURBISHED:** Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

**45. VOID CONTRACT CLAUSES:** This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

**46. ISRAEL BOYCOTT:** Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

**ADDITIONAL TERMS AND CONDITIONS**
**(Architectural and Engineering Contracts Only)**

**1. PLAN AND DRAWING DISTRIBUTION:** All plans and drawings must be completed and available for distribution at least five business days prior to a scheduled pre-bid meeting for the construction or other work related to the plans and drawings.

**2. PROJECT ADDENDA REQUIREMENTS:** The Architect/Engineer and/or Agency shall be required to abide by the following schedule in issuing construction project addenda. The Architect/Engineer shall prepare any addendum materials for which it is responsible, and a list of all vendors that have obtained drawings and specifications for the project. The Architect/Engineer shall then send a copy of the addendum materials and the list of vendors to the State Agency for which the contract is issued to allow the Agency to make any necessary modifications. The addendum and list shall then be forwarded to the Purchasing Division buyer by the Agency. The Purchasing Division buyer shall send the addendum to all interested vendors and, if necessary, extend the bid opening date. Any addendum should be received by the Purchasing Division at least fourteen (14) days prior to the bid opening date.

**3. PRE-BID MEETING RESPONSIBILITIES:** The Architect/Engineer shall be available to attend any pre-bid meeting for the construction or other work resulting from the plans, drawings, or specifications prepared by the Architect/Engineer.

**4. AIA DOCUMENTS:** All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the attached General Terms and Conditions Rev. 8/24/2023 ~~AIA documents, as amended by the Supplementary Conditions for the State of West Virginia~~, in addition to the terms and conditions contained herein. The terms and conditions of this document shall prevail over anything contained in the AIA Documents or the Supplementary Conditions.

**5. GREEN BUILDINGS MINIMUM ENERGY STANDARDS:** In accordance with West Virginia Code § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Evan Binder, PE

(Address) 11A Oak Branch Drive, Greensboro, NC 27407

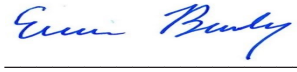
(Phone Number) / (Fax Number) 336-274-9456

(email address) ebinder@schnabel-eng.com

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

*By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.*

Schnabel Engineering, LLC



(Signature of Authorized Representative)

Evan Binder, PE - Associate September 10, 2024

(Printed Name and Title of Authorized Representative) (Date)

336-274-9456

(Phone Number) (Fax Number)

ebinder@schnabel-eng.com

(Email Address)